

APPENDIX A

Project Sample Count Tables per Round

| | | | | | | First Sample | | | | | | |
|-------------------------------|---------|------------|----------|-------|--------------|-------------------------|---------|-----------|----------|-----------|-------------|-----------------|
| | Total S | ampling Fr | equency | | No. of Field | Duplicates ¹ | No of C | ther QC S | amples 2 | Total No. | . of Sample | s to Laboratory |
| Laboratory Parameters | | | WWTF | | | | | | WWTF | | | |
| | | WWTF | Newingto | | WWTF | | | WWTF | Newingto | | WWTF | WWTF |
| | River | Pease | n | River | Pease | WWTF Newington | River | Pease | n | River | Pease | Newington |
| Biochemical Oxygen Demand | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 2 |
| Enterococci | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 2 |
| Fecal Coliform | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 2 |
| Total Suspended Solids | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 2 |
| Ammonia as N | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 2 |
| Total Residual Chlorine | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 2 |
| Total Kjeldhal Nitrogen | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 2 |
| Nitrate plus Nitrite Nitrogen | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 2 |
| Oil and Grease | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 2 |
| Total Phosphorus | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 2 |
| Total Dissolved Solids | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 2 |
| Turbidity (NTU) | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 2 |
| Metals | 1 | 1 | 1 | 1 | 1 | 1 | 2 3 | 2 3 | 2 3 | 4 | 4 | 4 |
| Cyanide | 1 | 1 | 1 | 1 | 1 | 1 | 2 4 | 1 5 | 1 5 | 4 | 3 | 3 |
| Total Phenolic Compounds | 1 | 1 | 1 | 1 | 1 | 1 | 2 4 | 1 5 | 1 5 | 4 | 3 | 3 |
| Volatile Organic Compounds | 1 | 1 | 1 | 1 | 1 | 1 | 2 4 | 1 5 | 1 5 | 4 | 3 | 3 |
| Acid Extactable Compounds | 1 | 1 | 1 | 1 | 1 | 1 | 2 4 | 1 5 | 1 5 | 4 | 3 | 3 |
| Base-Neutral Compounds | 1 | 1 | 1 | 1 | 1 | 1 | 2 4 | 1 5 | 1 5 | 4 | 3 | 3 |
| | | | | | | First Sample | | | | | | |
| | Total S | ampling Fr | 1 , | | No. Field R | eplicates 1 | No of C | ther QC S | | Total 1 | No. of Sam | ples in Field |
| Field Parameters | | | WWTF | | | | | | WWTF | | | |
| | | WWTF | Newingto | | WWTF | | | WWTF | Newingto | | WWTF | WWTF |
| | River | Pease | n | River | Pease | WWTF Newington | River | Pease | n | River | Pease | Newington |
| Dissolved Oxygen | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 2 |
| рН | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 2 |
| Conductivity | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 2 |
| Temperature | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 2 |

¹ - Includes Field Duplicates for Laboratory Samples and Field Replicates for Field Samples (In-situ)

² - Includes Trip Blanks (T), Equipment blanks (E), and Matrix Spike/Matrix Spike Duplicates(S)

³ - Includes Equipment blank (E), and Matrix Spike/Matrix Spike Duplicates(S)

⁴ - Includes Trip Blank (T) and Equipment blank (E)

⁵ - Includes Equipment blank (E)

| | | | | | | Second Sample | e Round | | | | | |
|-------------------------------|---------|------------|----------|-------|--------------|-------------------------|---------|------------|----------|-----------|------------|-----------------|
| | Total S | ampling Fr | equency | | No. of Field | Duplicates ¹ | No of C | ther QC S | amples 2 | Total No. | of Sample | s to Laboratory |
| Laboratory Parameters | | | WWTF | | | • | | | WWTF | | • | • |
| | | WWTF | Newingto | | WWTF | | | WWTF | Newingto | | WWTF | WWTF |
| | River | Pease | n | River | Pease | WWTF Newington | River | Pease | n | River | Pease | Newington |
| Biochemical Oxygen Demand | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| Enterococci | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| Fecal Coliform | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| Total Suspended Solids | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| Ammonia as N | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 2 |
| Total Residual Chlorine | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Total Kjeldhal Nitrogen | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 2 |
| Nitrate plus Nitrite Nitrogen | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 2 |
| Oil and Grease | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| Total Phosphorus | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 2 |
| Total Dissolved Solids | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| Turbidity (NTU) | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| Metals | 1 | 1 | 1 | 1 | 1 | 1 | 2 3 | 2 3 | 2 3 | 4 | 4 | 4 |
| Cyanide | 1 | 1 | 1 | 0 | 0 | 0 | 1 6 | 0 | 0 | 2 | 1 | 1 |
| Total Phenolic Compounds | 1 | 1 | 1 | 0 | 0 | 0 | 1 6 | 0 | 0 | 2 | 1 | 1 |
| Volatile Organic Compounds | 1 | 1 | 1 | 0 | 0 | 0 | 1 6 | 0 | 0 | 2 | 1 | 1 |
| Acid Extactable Compounds | 1 | 1 | 1 | 0 | 0 | 0 | 1 6 | 0 | 0 | 2 | 1 | 1 |
| Base-Neutral Compounds | 1 | 1 | 1 | 0 | 0 | 0 | 1 6 | 0 | 0 | 2 | 1 | 1 |
| | | | | | | Second Sample | | | | | | |
| | Total S | ampling Fr | equency | | No. Field R | eplicates 1 | No of C | Other QC S | amples 2 | Total 1 | No. of Sam | ples in Field |
| Field Parameters | | | WWTF | | | | | | WWTF | | | |
| | | WWTF | Newingto | | WWTF | | | WWTF | Newingto | | WWTF | WWTF |
| | River | Pease | n | River | Pease | WWTF Newington | River | Pease | n | River | Pease | Newington |
| Dissolved Oxygen | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 2 |
| pH | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 2 |
| Conductivity | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 2 |
| Temperature | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 2 |

¹ - Includes Field Duplicates for Laboratory Samples and Field Replicates for Field Samples (In-situ)

² - Includes Trip Blanks (T), Equipment blanks (E), and Matrix Spike/Matrix Spike Duplicates(S)

³ - Includes Equipment blank (E), and Matrix Spike/Matrix Spike Duplicates(S)

⁴ - Includes Trip Blank (T) and Equipment blank (E)

⁵ - Includes Equipment blank (E)

⁶ - Includes Trip blank (T)

| | | | | | | Third Sample | Round | | | | | |
|-------------------------------|---------|------------|----------|-------|--------------|-------------------------|---------|------------|----------|----------|-------------|-----------------|
| | Total S | ampling Fr | equency | | No. of Field | Duplicates ¹ | No of C | Other QC S | amples 2 | Total No | . of Sample | s to Laboratory |
| Laboratory Parameters | | | WWTF | | | | | | WWTF | | | |
| | | WWTF | Newingto | | WWTF | | | WWTF | Newingto | | WWTF | WWTF |
| | River | Pease | n | River | Pease | WWTF Newington | River | Pease | n | River | Pease | Newington |
| Biochemical Oxygen Demand | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| Enterococci | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| Fecal Coliform | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| Total Suspended Solids | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| Ammonia as N | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 2 |
| Total Residual Chlorine | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Total Kjeldhal Nitrogen | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 2 |
| Nitrate plus Nitrite Nitrogen | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 2 |
| Oil and Grease | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| Total Phosphorus | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 2 |
| Total Dissolved Solids | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| Turbidity (NTU) | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| Metals | 1 | 1 | 1 | 1 | 1 | 1 | 2 3 | 2 3 | 2 3 | 4 | 4 | 4 |
| Cyanide | 1 | 1 | 1 | 0 | 0 | 0 | 1 6 | 0 | 0 | 2 | 1 | 1 |
| Total Phenolic Compounds | 1 | 1 | 1 | 0 | 0 | 0 | 1 6 | 0 | 0 | 2 | 1 | 1 |
| Volatile Organic Compounds | 1 | 1 | 1 | 0 | 0 | 0 | 1 6 | 0 | 0 | 2 | 1 | 1 |
| Acid Extactable Compounds | 1 | 1 | 1 | 0 | 0 | 0 | 1 6 | 0 | 0 | 2 | 1 | 1 |
| Base-Neutral Compounds | 1 | 1 | 1 | 0 | 0 | 0 | 1 6 | 0 | 0 | 2 | 1 | 1 |
| | | | | | | Third Sample | Round | | | | | |
| | Total S | ampling Fr | | | No. Field R | eplicates 1 | No of C | Other QC S | | Total | No. of Sam | ples in Field |
| Field Parameters | | | WWTF | | | | | | WWTF | | | |
| | | WWTF | Newingto | | WWTF | | | WWTF | Newingto | | WWTF | WWTF |
| | River | Pease | n | River | Pease | WWTF Newington | River | Pease | n | River | Pease | Newington |
| Dissolved Oxygen | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 2 |
| pН | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 2 |
| Conductivity | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 2 |
| Temperature | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 2 |

¹ - Includes Field Duplicates for Laboratory Samples and Field Replicates for Field Samples (In-situ)
² - Includes Trip Blanks (T), Equipment blanks (E), and Matrix Spike/Matrix Spike Duplicates(S)

³ - Includes Equipment blank (E), and Matrix Spike/Matrix Spike Duplicates(S)

⁴ - Includes Trip Blank (T) and Equipment blank (E)

⁵ - Includes Equipment blank (E)

⁶ - Includes Trip blank (T)

| | | | | | | Fourth Sample | Round | | | | | |
|-------------------------------|---------|------------|----------|-------|--------------|-------------------------|---------|------------|----------|----------|-------------|-----------------|
| | Total S | ampling Fr | equency | | No. of Field | Duplicates ¹ | No of C | Other QC S | amples 2 | Total No | . of Sample | s to Laboratory |
| Laboratory Parameters | | | WWTF | | | | | | WWTF | | | |
| | | WWTF | Newingto | | WWTF | | | WWTF | Newingto | | WWTF | WWTF |
| | River | Pease | n | River | Pease | WWTF Newington | River | Pease | n | River | Pease | Newington |
| Biochemical Oxygen Demand | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| Enterococci | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| Fecal Coliform | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| Total Suspended Solids | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| Ammonia as N | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 2 |
| Total Residual Chlorine | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Total Kjeldhal Nitrogen | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 2 |
| Nitrate plus Nitrite Nitrogen | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 2 |
| Oil and Grease | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| Total Phosphorus | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 2 |
| Total Dissolved Solids | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| Turbidity (NTU) | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| Metals | 1 | 1 | 1 | 1 | 1 | 1 | 2 3 | 2 3 | 2 3 | 4 | 4 | 4 |
| Cyanide | 1 | 1 | 1 | 0 | 0 | 0 | 1 6 | 0 | 0 | 2 | 1 | 1 |
| Total Phenolic Compounds | 1 | 1 | 1 | 0 | 0 | 0 | 1 6 | 0 | 0 | 2 | 1 | 1 |
| Volatile Organic Compounds | 1 | 1 | 1 | 0 | 0 | 0 | 1 6 | 0 | 0 | 2 | 1 | 1 |
| Acid Extactable Compounds | 1 | 1 | 1 | 0 | 0 | 0 | 1 6 | 0 | 0 | 2 | 1 | 1 |
| Base-Neutral Compounds | 1 | 1 | 1 | 0 | 0 | 0 | 1 6 | 0 | 0 | 2 | 1 | 1 |
| | | | | | | Fourth Sample | Round | | | | | |
| | Total S | ampling Fr | | | No. Field R | eplicates 1 | No of C | Other QC S | | Total | No. of Sam | ples in Field |
| Field Parameters | | | WWTF | | | | | | WWTF | | | |
| | | WWTF | Newingto | | WWTF | | | WWTF | Newingto | | WWTF | WWTF |
| | River | Pease | n | River | Pease | WWTF Newington | River | Pease | n | River | Pease | Newington |
| Dissolved Oxygen | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 2 |
| pН | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 2 |
| Conductivity | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 2 |
| Temperature | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 2 |

¹ - Includes Field Duplicates for Laboratory Samples and Field Replicates for Field Samples (In-situ)
² - Includes Trip Blanks (T), Equipment blanks (E), and Matrix Spike/Matrix Spike Duplicates(S)

³ - Includes Equipment blank (E), and Matrix Spike/Matrix Spike Duplicates(S)

⁴ - Includes Trip Blank (T) and Equipment blank (E)

⁵ - Includes Equipment blank (E)

⁶ - Includes Trip blank (T)

| | | Project Total Sample Count | | | | | | | | | | | |
|-------------------------------|---------|----------------------------|----------|-------|--------------|-------------------------|------------|------------|----------|----------|-------------|-----------------|-------|
| | Total S | ampling Fr | equency | | No. of Field | Duplicates ¹ | No of C | Other QC S | amples 2 | Total No | . of Sample | s to Laboratory | |
| Laboratory Parameters | | | WWTF | | | • | | | WWTF | | | • | |
| | | WWTF | Newingto | | WWTF | | | WWTF | Newingto | | WWTF | WWTF | Total |
| | River | Pease | n | River | Pease | WWTF Newington | River | Pease | n | River | Pease | Newington | |
| Biochemical Oxygen Demand | 4 | 4 | 4 | 1 | 1 | 1 | 0 | 0 | 0 | 5 | 5 | 5 | 15 |
| Enterococci | 4 | 4 | 4 | 1 | 1 | 1 | 0 | 0 | 0 | 5 | 5 | 5 | 15 |
| Fecal Coliform | 4 | 4 | 4 | 1 | 1 | 1 | 0 | 0 | 0 | 5 | 5 | 5 | 15 |
| Total Suspended Solids | 4 | 4 | 4 | 1 | 1 | 1 | 0 | 0 | 0 | 5 | 5 | 5 | 15 |
| Ammonia as N | 4 | 4 | 4 | 4 | 4 | 4 | 0 | 0 | 0 | 8 | 8 | 8 | 24 |
| Total Residual Chlorine | 0 | 4 | 4 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 5 | 5 | 10 |
| Total Kjeldhal Nitrogen | 4 | 4 | 4 | 4 | 4 | 4 | 0 | 0 | 0 | 8 | 8 | 8 | 24 |
| Nitrate plus Nitrite Nitrogen | 4 | 4 | 4 | 4 | 4 | 4 | 0 | 0 | 0 | 8 | 8 | 8 | 24 |
| Oil and Grease | 4 | 4 | 4 | 1 | 1 | 1 | 0 | 0 | 0 | 5 | 5 | 5 | 15 |
| Total Phosphorus | 4 | 4 | 4 | 4 | 4 | 4 | 0 | 0 | 0 | 8 | 8 | 8 | 24 |
| Total Dissolved Solids | 4 | 4 | 4 | 1 | 1 | 1 | 0 | 0 | 0 | 5 | 5 | 5 | 15 |
| Turbidity (NTU) | 4 | 4 | 4 | 1 | 1 | 1 | 0 | 0 | 0 | 5 | 5 | 5 | 15 |
| Metals | 4 | 4 | 4 | 4 | 4 | 4 | 8 | 8 | 8 | 16 | 16 | 16 | 48 |
| Seawater | 4 | | | 4 | | | 8 | | | 16 | 0 | 0 | 16 |
| WWTF | | 4 | 4 | | 4 | 4 | | 8 | 8 | 0 | 16 | 16 | 32 |
| Cyanide | 4 | 4 | 4 | 1 | 1 | 1 | 5 | 1 | 1 | 10 | 6 | 6 | 22 |
| Total Phenolic Compounds | 4 | 4 | 4 | 1 | 1 | 1 | 5 | 1 | 1 | 10 | 6 | 6 | 22 |
| Volatile Organic Compounds | 4 | 4 | 4 | 1 | 1 | 1 | 5 | 1 | 1 | 10 | 6 | 6 | 22 |
| Acid Extactable Compounds | 4 | 4 | 4 | 1 | 1 | 1 | 5 | 1 | 1 | 10 | 6 | 6 | 22 |
| Base-Neutral Compounds | 4 | 4 | 4 | 1 | 1 | 1 | 5 | 1 | 1 | 10 | 6 | 6 | 22 |
| | | | | | | Project Total San | nple Count | | | | | | |
| | Total S | ampling Fr | equency | | No. Field R | eplicates 1 | No of C | Other QC S | amples 2 | Total | No. of Sam | ples in Field | |
| Field Parameters | | | WWTF | | | • | | <u> </u> | WWTF | | | | |
| | | WWTF | Newingto | | WWTF | | | WWTF | Newingto | | WWTF | WWTF | Total |
| | River | Pease | n | River | Pease | WWTF Newington | River | Pease | n | River | Pease | Newington | |
| Dissolved Oxygen | 4 | 4 | 4 | 4 | 4 | 4 | 0 | 0 | 0 | 8 | 8 | 8 | 24 |
| pH | 4 | 4 | 4 | 4 | 4 | 4 | 0 | 0 | 0 | 8 | 8 | 8 | 24 |
| Conductivity | 4 | 4 | 4 | 4 | 4 | 4 | 0 | 0 | 0 | 8 | 8 | 8 | 24 |
| Temperature | 4 | 4 | 4 | 4 | 4 | 4 | 0 | 0 | 0 | 8 | 8 | 8 | 24 |

¹ - Includes Field Duplicates for Laboratory Samples and Field Replicates for Field Samples (In-situ)

² - Includes Trip Blanks (T), Equipment blanks (E), and Matrix Spike/Matrix Spike Duplicates(S)

³ - Includes Equipment blank (E), and Matrix Spike/Matrix Spike Duplicates(S)

⁴ - Includes Trip Blank (T) and Equipment blank (E)

⁵ - Includes Equipment blank (E)

APPENDIX B

Laboratory Reports of Sample Results and Chain of Custody

 $Round\ 1-September\ 16\text{-}17,\ 2018$

EnviroSystems, Inc. One Lafayette Road P.O. Box 778 Hampton, N.H. 03843-0778 p 603 926 3345 · f 603 926 3521 envirosystems.com

Steve Clifton Underwood Engineers, Inc. 25 Vaughan Mall Portsmouth, NH 03801

PO Number:

None Report Number: 31148

Date Received: Date Reported:

09/17/18 10/12/18

Project: Piscataqua River

Attached please find results for analyses performed on samples received on 09/17/18 at 1125 and 1515.

Samples were received in acceptable condition, except where noted, and under chain of custody.

Samples for total phenolics and volatile organic compounds analyses were subcontracted to Alpha Analytical of Westborough, MA. Results for subcontracted samples may be found in the data appendix.

Instruments used in analysis were calibrated with the appropriate frequency and to the specifications of the referenced methods.

Analytes in blanks were below levels affecting sample results.

Matrix effects as monitored by matrix spike recovery or unusual physical properties were not apparent unless otherwise noted.

Accuracy and precision as monitored by laboratory control sample analyses were within acceptance limits unless otherwise noted.

Accreditations may be viewed at www.envirosystems.com.

The results presented in this report relate only to the samples described on the chain(s) of custody and sample receipt log(s), and are intended to be used only by the submittor.

EnviroSystems, Incorporated

Authorized

Signature

Attachment Report

1/69

31148

Piscataqua River

Sample ID: Matrix:

PEASE_001 Water

Sampled:

09/17/18 0830

| Parameter | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---------------------------|-----------|--------|----------------|-----------|------------------|---------------------|-----------------------|
| Total suspended solids | 31148-007 | 17 | 1 | mg/L | 09/18/18 1420 | 09/20/18 0945 | CA /SM 2540D |
| Total dissolved solids | 31148-019 | 2100 | 5 | mg/L | 09/19/18 0930 | | |
| Biochemical Oxygen Demand | 31148-001 | 13 | 5 | mg/L | 09/19/18 | 09/24/18 | KL /SM 5210 B |
| Ammonia-N | 31148-017 | 3.6 | 0.1 | mg/L as N | 10/05/18 1330 | 10/05/18 1330 | JHW/SM 4500-NH3 G |
| Total Kjeldahl Nitrogen | 31148-017 | 6.0 | 0.5 | mg/L as N | 10/08/18 1015 | | CA /SM 4500-N C |
| Total Nitrogen | 31148-017 | 6.8 | 0.5 | mg/L as N | 10/12/18 | 10/12/18 | JLH/Calculation |
| Nitrate plus nitrite-N | 31148-017 | 0.80 | 0.05 | mg/L as N | 09/25/18 1330 | 09/25/18 1400 | JHW/SM 4500-NO3 F |
| Total phosphorus | 31148-017 | 52 | 2 | mg/L | 10/08/18 1200 | | CA /SM 4500-P E |

SDG:

31148

SDG:

Units

Project:

Piscataqua River

Sample ID:

PEASE_001

Matrix:

Water

Sampled:

09/17/18 1040

Parameter

Result Quant Limit

Date Prepared Date of Analysis INIT/Method/Reference

Turbidity Oil and grease 31148-021 31148-015

8.33 ND

0.2 NTU 5 mg/L

09/17/18 1600 09/17/18 1600 JLH/SM 2130 B 09/24/18 1230 09/26/18 0830 RK /EPA 1664A

Notes:

31148

SDG:

Project:

Piscataqua River

Sample ID:

PEASE_001DUP

Matrix:

Water

Sampled:

09/17/18 0830

| Parameter | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|--|--|---------------------------------------|--------------------------------|--|--|--|--|
| Total suspended solids Ammonia-N Total Kjeldahl Nitrogen Total Nitrogen Nitrate plus nitrite-N Total phosphorus | 31148-008 31148-018 31148-018 31148-018 31148-018 31148-018 | 17 3.6 6.5 7.3 0.77 63 | 2 0.1 0.5 0.5 0.05 | mg/L mg/L as N mg/L as N mg/L as N mg/L as N mg/L | 10/05/18 1330 10/08/18 1015 10/12/18 | 10/11/18 1020 10/12/18 09/25/18 1400 | CA /SM 2540D JHW/SM 4500-NH3 G CA /SM 4500-N C JLH/Calculation JHW/SM 4500-NO3 F CA /SM 4500-P E |

Notes:

603-926-3345

31148

Piscataqua River

SDG:

Sample ID:

PEASE_001DUP

Matrix:

Water

Sampled:

09/17/18 1040

Parameter

Result Quant Limit Units

Date Date of Prepared Analysis INIT/Method/Reference

Turbidity

Oil and grease

31148-022 31148-016 8.28 ND

0.2 NTU 5 mg/L

09/17/18 1600 09/17/18 1600 JLH/SM 2130 B 09/24/18 1230 09/26/18 0830 RK /EPA 1664A

Notes:

31148

Piscataqua River

SDG:

Project:

Sample ID:

NEW_001

Water

Sampled:

Matrix:

09/17/18 0730

| Parameter | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|--|---|--------------------------------------|--------------------------------------|--|---|---|-----------------------|
| Total Nitrogen Nitrate plus nitrite-N | 31148-042 31148-054 31148-036 31148-052 31148-052 31148-052 31148-052 | 1.7 710 ND ND 1.2 1.5 | 1 5 5 0.1 1 1 0.05 | mg/L mg/L mg/L as N mg/L as N mg/L as N mg/L as N | 09/18/18 1420 09/19/18 0930 09/19/18 10/05/18 1330 10/08/18 1015 10/12/18 09/25/18 1330 | 09/20/18 1220 09/24/18 10/05/18 1330 10/11/18 1020 10/12/18 | |
| Total phosphorus | 31148-052 | 1.2 | 0.04 | mg/L | 10/08/18 1200 | | CA /SM 4500-P E |

Notes:

31148

Piscataqua River

SDG:

Sample ID:

Matrix:

NEW_001

Water

Sampled:

09/17/18 0845

Parameter

31148-056 31148-050

1.23

Units

Date Prepared Date of

INIT/Method/Reference

Analysis

Turbidity Oil and grease

ND

Result

0.2 NTU 5 mg/L

Quant

Limit

09/24/18 1230 09/26/18 0830 RK /EPA 1664A

09/17/18 1600 09/17/18 1600 JLH/SM 2130 B

Notes:

31148

Piscataqua River

SDG:

Sample ID:

NEW_001DUP

Matrix:

Water

Sampled:

09/17/18 0730

| Parameter | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---------------------------|-----------|--------|----------------|-----------|------------------|---------------------|-----------------------|
| Total suspended solids | 31148-043 | 1.8 | 1 | mg/L | 09/18/18 1420 | 09/20/18 0945 | CA /SM 2540D |
| Total dissolved solids | 31148-055 | 690 | 5 | mg/L | 09/19/18 0930 | 09/20/18 1220 | CA /SM 2540C |
| Biochemical Oxygen Demand | 31148-037 | ND | 5 | mg/L | 09/19/18 | 09/24/18 | KL /SM 5210 B |
| Ammonia-N | 31148-053 | ND | 0.1 | mg/L as N | 10/05/18 1330 | 10/05/18 1330 | JHW/SM 4500-NH3 G |
| Total Kjeldahl Nitrogen | 31148-053 | 1.1 | 1 | mg/L as N | 10/08/18 1015 | 10/11/18 1020 | CA /SM 4500-N C |
| Total Nitrogen | 31148-053 | 1.4 | 1 | mg/L as N | 10/12/18 | 10/12/18 | JLH/Calculation |
| Nitrate plus nitrite-N | 31148-053 | 0.34 | 0.05 | mg/L as N | 09/25/18 1330 | 09/25/18 1400 | JHW/SM 4500-NO3 F |
| Total phosphorus | 31148-053 | 1.2 | 0.04 | mg/L | 10/08/18 1200 | 10/10/18 1218 | CA /SM 4500-P E |

Notes:

ND = Not Detected

603-926-3345

31148

Piscataqua River

SDG:

Sample ID:

NEW_001DUP

Matrix:

Water

Sampled:

09/17/18 0845

Parameter

Result Quant Limit

Date

Date of

INIT/Method/Reference

Prepared Analysis

Turbidity

Oil and grease

31148-057 31148-051 1.2 ND 0.2 NTU 5 mg/L

Units

09/17/18 1600 09/17/18 1600 JLH/SM 2130 B 09/24/18 1230 09/26/18 0830 RK/EPA 1664A

Notes:

31148

SDG:

Project:

Piscataqua River

Sample ID:

RIVER_001

Matrix:

Water

Sampled:

09/17/18 1350

Parameter

Result

Quant Units

Date

Date of

INIT/Method/Reference

Prepared Analysis

Ammonia-N

31148-079

ND

0.1 mg/L as N

Limit

N 0

09/24/18 1000 09/24/18 1000 JHW/SM 4500-NH3 G

Notes:

31148

SDG:

Project:

Piscataqua River

Sample ID:

RIVER_001

Matrix:

Water

Sampled:

09/17/18 1352

| Parameter | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|-------------------------|-----------|--------|----------------|-----------|------------------|---------------------|-----------------------|
| Total Kjeldahl Nitrogen | 31148-081 | ND | 0.5 | mg/L as N | 10/10/18 0915 | 10/11/18 1020 | CA /SM 4500-N C |
| Total Nitrogen | 31148-081 | ND | 0.5 | mg/L as N | 10/12/18 | 10/12/18 | JLH/Calculation |
| Nitrate plus nitrite-N | 31148-081 | ND | 0.05 | mg/L as N | 09/20/18 1000 | 09/20/18 1200 | JHW/SM 4500-NO3 F |

Notes:

ND = Not Detected

603-926-3345

31148

SDG:

Project:

Piscataqua River

Sample ID:

RIVER_001

Matrix:

Water

Sampled:

09/17/18 1354

Parameter

Result

Quant Limit Units [

Date Prepared

Date of INIT/N

INIT/Method/Reference

Total phosphorus

31148-085

0.033

0.02 mg/L

10/08/18 1200 10/10/18 1218 CA /SM 4500-P E

Analysis

31148

SDG:

Project:

Piscataqua River

Sample ID:

RIVER_001

Matrix: Sampled: Water 09/17/18 1356

Parameter

Result

Quant Units

mg/L

Date

Date of

INIT/Method/Reference

Prepared Analysis

Oil and grease

31148-083

ND

5

Limit

09/24/18 1230 09/26/18 0830 RK/EPA 1664A

Notes:

31148

SDG:

Project:

Piscataqua River

Sample ID:

RIVER_001

Matrix: Sampled: Water 09/17/18 1358

Parameter

Result

Quant Units

Date

Date of

INIT/Method/Reference

Limit

Prepared

Analysis

Total dissolved solids

31148-087

31000

5

mg/L

09/19/18 0930 09/20/18 1220 CA /SM 2540C

31148

SDG:

Project:

Piscataqua River

Sample ID:

RIVER_001

Matrix: Sampled: Water 09/17/18 1359

Parameter

Result

Quant U

Units Date

Date of

INIT/Method/Reference

Prepared Analysis

Turbidity

31148-089

0.62

0.2

Limit

NTU

09/18/18 1530 09/18/18 1530 JLH/SM 2130 B

31148

Project:

Piscataqua River

Sample ID:

RIVER_001

Matrix: Sampled: Water 09/17/18 1402

Parameter

Result

Quant Limit

Units

Date

Date of

INIT/Method/Reference

Prepared Analysis

Total suspended solids

31148-077

20

mg/L

SDG:

09/18/18 1420 09/20/18 0945 CA /SM 2540D

31148

SDG:

Project:

Piscataqua River

Sample ID:

RIVER_001

Matrix:

Water

Sampled:

09/17/18 1410

Parameter

Result

Quant Limit Units

Date

Date of

INIT/Method/Reference

Prepared

Analysis

Biochemical Oxygen Demand 31148-071 ND 5 mg/L 09/19/18 09/24/18 KL /SM 5210 B

Notes:

31148

SDG:

Project:

Piscataqua River

Sample ID:

RIVER_001DUP

Matrix:

Water

Sampled:

09/17/18 1350

Parameter

Result

Quant Units Limit

Date

Date of

INIT/Method/Reference

Prepared

Analysis

Ammonia-N

31148-080

ND

0.1

mg/L as N 09/24/18 1000 09/24/18 1000 JHW/SM 4500-NH3 G

Notes:

31148

SDG:

Project:

Piscataqua River

Sample ID:

RIVER_001DUP

Matrix:

Water

Sampled:

09/17/18 1352

| Parameter | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|-------------------------|-----------|--------|----------------|-----------|------------------|---------------------|-----------------------|
| Total Kjeldahl Nitrogen | 31148-082 | ND | 0.5 | mg/L as N | 10/10/18 0915 | 10/11/18 1020 | CA /SM 4500-N C |
| Total Nitrogen | 31148-082 | ND | 0.5 | mg/L as N | 10/12/18 | 10/12/18 | JLH/Calculation |
| Nitrate plus nitrite-N | 31148-082 | ND | 0.05 | mg/L as N | 09/20/18 1000 | 09/20/18 1200 | JHW/SM 4500-NO3 F |

Notes:

ND = Not Detected

603-926-3345

31148

Piscataqua River

SDG:

Sample ID:

RIVER_001DUP

Matrix:

Water

Sampled:

09/17/18 1354

Parameter

Notes:

Result

Quant Limit Units

Date

Date of

INIT/Method/Reference

Prepared Analysis

Total phosphorus

31148-086

0.062

0.02

mg/L

10/08/18 1200 10/10/18 1218 CA /SM 4500-P E

ESI

31148

SDG:

Project:

Piscataqua River

Sample ID:

RIVER_001DUP

Matrix:

Water

Sampled:

09/17/18 1356

Parameter

Result Quant Units

Date

Date of

INIT/Method/Reference

Prepared

Analysis

Oil and grease

31148-084

ND

5 mg/L

Limit

09/24/18 1230 09/26/18 0830 RK /EPA 1664A

Notes:

31148

SDG:

Project:

Piscataqua River

Sample ID:

RIVER_001DUP

Matrix:

Water

Sampled:

09/17/18 1358

Parameter

Result

Quant Units Date

Date of

INIT/Method/Reference

Prepared Analysis

Total dissolved solids

31148-088

31000

5 mg/L

Limit

09/19/18 0930 09/20/18 1220 CA /SM 2540C

31148

SDG:

Project:

Piscataqua River

Sample ID:

RIVER_001DUP

Matrix:

Water

Sampled:

09/17/18 1359

Parameter

Result

Quant Units

Date

Date of

INIT/Method/Reference

Prepared Analysis

Turbidity

31148-090

0.63

0.2

Limit

NTU

09/18/18 1530 09/18/18 1530 JLH/SM 2130 B

31148

SDG:

Project:

Piscataqua River

Sample ID:

RIVER_001DUP

Matrix: Sampled: Water

09/17/18 1402

Parameter

Result

Quant Limit Units

Date

Date of

INIT/Method/Reference

Prepared Analysis

Total suspended solids

31148-078

9.8

1

mg/L

09/18/18 1420 09/20/18 0945 CA /SM 2540D

31148

SDG:

Project:

Piscataqua River

Sample ID:

RIVER_001DUP

Matrix:

Water

Sampled:

09/17/18 1410

Parameter

Result

Quant

Units Date

Date of

INIT/Method/Reference

Limit

Prepared

Analysis

Biochemical Oxygen Demand 31148-072

ND

5 mg/L

09/19/18

09/24/18

KL /SM 5210 B

Notes:

31148

Piscataqua River

SDG:

Sample ID:

Matrix:

RIVER_001

Water

Sampled:

09/17/18 1352

| Parameter | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---|--|------------------------|----------------|------------------------|--|--|-------------------------------------|
| pH Dissolved Oxygen Temperature Conductivity | 31148-107 31148-107 31148-107 31148-107 | 8.0 9.4 12 33 | 0.1 0.01 | mg/L deg C mS/cm | 09/17/18 09/17/18 09/17/18 09/17/18 | 09/17/18 09/17/18 09/17/18 09/17/18 | EPA 9041A SM 4500-O-G SM2510B |

Notes:

Lab Number: Sample Designation: 31148-032 PEASE_001

Date Sampled: Date Extracted: 09/17/18 09/21/18

Date Analyzed: Matrix:

09/25/18 Water

SEMIVOLATILE ORGANICS Method Reference: EPA 625.

| | Concentration | Reporting Limit | | Concentration | Reporting Limit |
|----------------------------------|---------------|-----------------|------------------------------------|---------------|-----------------|
| | (ug/L) | (ug/L) | | (ug/L) | (ug/L) |
| N-nitrosodimethylamine | U | 3 | acenaphthene | U | 3 |
| phenol | U | 3 | 2,4-dinitrophenol | U | 5 |
| 2-chlorophenol | U | 3 | 4-nitrophenol | U | 3 |
| bis(2-chloroethyl)ether | U | 3 | fluorene | U | 3 |
| 1,3-dichlorobenzene | U | 3 | 4-chlorophenyl-phenylether | U | 3 |
| 1,4-dichlorobenzene | U | 3 | diethylphthalate | U | 3 |
| 1,2-dichlorobenzene | U | 3 | 4,6-dinitro-2-methylphenol | U | 3 |
| 2-methylphenol (m-cresol) | U | 3 | N-nitrosodiphenylamine | U | 3 |
| bis(2-chloroisopropyl)ether | U | 3 | 1,2-diphenylhydrazine (azobenzene) | U | 3 |
| hexachioroethane | U | 3 | 4-bromophenyl-phenylether | U | 3 |
| N-nitroso-di-n-propylamine | 4.4 | 3 | hexachlorobenzene | U | 3 |
| 3- and 4-methylphenol (p-cresol) | U | 3 | pentachlorophenol | U | 3 |
| nitrobenzene | U | 3 | phenanthrene | U | 3 |
| isophorone | U | 3 | anthracene | U | 3 |
| 2-nitrophenol | U | 3 | di-n-butylphthalate | U | 3 |
| 2,4-dimethylphenol | U | 3 | fluoranthene | U | 3 |
| bis(2-chloroethoxy)methane | U | 3 | benzidine | U | 3 |
| 2,4-dichlorophenol | U | 3 | pyrene | U | 3 |
| 1,2,4-trichlorobenzene | U | 3 | butyibenzyiphthalate | U | 3 |
| naphthalene | U | 3 | benzo(a)anthracene | U | 3 |
| hexachloro-1,3-butadiene | U | 3 | chrysene | U | 3 |
| 4-chloro-3-methylphenol | U | 3 | 3,3'-dichlorobenzidine | U | 3 |
| hexachlorocyclopentadiene | U | 3 | bis(2-ethylhexyl)phthalate | U | 3 |
| 2,4,5-trichlorophenol | U | 3 | di-n-octylphthalate | U | 3 |
| 2,4,6-trichlorophenol | U | 3 | benzo(b)fluoranthene | U | 3 |
| 2-chloronaphthalene | U | 3 | benzo(k)fluoranthene | U | 3 |
| acenaphthylene | U | 3 | benzo(a)pyrene | U | 3 |
| dimethylphthalate | U | 3 | indeno(1,2,3-cd)pyrene | U | 3 |
| 2,6-dinitrotoluene | U | 3 | dibenzo(a,h)anthracene | U | 3 |
| 2,4-dinitrotoluene | U | 3 | benzo(g,h,i)perylene | U | 3 |

SURROGATE STANDARDS

| | Recovery | Acceptance Limits | | Recovery | Acceptance Limits |
|----------------------|----------|-------------------|------------------|----------|-------------------|
| | (%) | (%) | | (%) | (%) |
| 2-fluorophenol | 40 | 21-100 | nitrobenzene-d5 | 39 | 35-114 |
| phenol-d5 | 25 | 10-102 | 2-fluorobiphenyl | 33, J17 | 43-116 |
| 2,4,6-tribromophenol | 95 | 10-123 | terphenyi-d14 | 41 | 33-141 |

U = Below quantitation limit J17 = SUR %R below limit.

ESI

Lab Number: 31148-033
Sample Designation: PEASE_001DUP

Date Sampled: 09/17/18
Date Extracted: 09/21/18
Date Analyzed: 09/25/18
Matrix: Water

SEMIVOLATILE ORGANICS Method Reference: EPA 625.

| | Concentration | Reporting Limit | | Concentration | Reporting Limit |
|----------------------------------|---------------|-----------------|------------------------------------|---------------|-----------------|
| | (ug/L) | (ug/L) | | (ug/L) | (ug/L) |
| N-nitrosodimethylamine | U | 3 | acenaphthene | U | 3 |
| phenol | U | 3 | 2,4-dinitrophenol | U | 5 |
| 2-chlorophenol | U | 3 | 4-nitrophenol | U | 3 |
| bis(2-chloroethyl)ether | U | 3 | fluorene | U | 3 |
| 1,3-dichlorobenzene | U | 3 | 4-chlorophenyl-phenylether | U | 3 |
| 1,4-dichlorobenzene | U | 3 | diethylphthalate | U | 3 |
| 1,2-dichlorobenzene | U | 3 | 4,6-dinitro-2-methylphenol | U | 3 |
| 2-methylphenol (m-cresol) | U | 3 | N-nitrosodiphenylamine | U | 3 |
| bis(2-chloroisopropyl)ether | U | 3 | 1,2-diphenylhydrazine (azobenzene) | U | 3 |
| hexachloroethane | U | 3 | 4-bromophenyl-phenylether | U | 3 |
| N-nitroso-di-n-propylamine | 7.9 | 3 | hexachlorobenzene | U | 3 |
| 3- and 4-methylphenol (p-cresol) | U | 3 | pentachlorophenol | U | 3 |
| nitrobenzene | U | 3 | phenanthrene | U | 3 |
| isophorone | U | 3 | anthracene | U | 3 |
| 2-nitrophenol | U | 3 | di-n-butylphthalate | U | 3 |
| 2,4-dimethylphenol | U | 3 | fluoranthene | U | 3 |
| bis(2-chloroethoxy)methane | U | 3 | benzidine | U | 3 |
| 2,4-dichlorophenol | U | 3 | pyrene | U | 3 |
| 1,2,4-trichlorobenzene | U | 3 | butylbenzylphthalate | U | 3 |
| naphthalene | U | 3 | benzo(a)anthracene | U | 3 |
| hexachloro-1,3-butadiene | U | 3 | chrysene | U | 3 |
| 4-chloro-3-methylphenol | U | 3 | 3,3'-dichlorobenzidine | U | 3 |
| hexachlorocyclopentadiene | U | 3 | bis(2-ethylhexyl)phthalate | U | 3 |
| 2,4,5-trichlorophenol | U | 3 | di-n-octylphthalate | U | 3 |
| 2,4,6-trichlorophenol | U | 3 | benzo(b)fluoranthene | U | 3 |
| 2-chloronaphthalene | U | 3 | benzo(k)fluoranthene | U | 3 |
| acenaphthylene | U | 3 | benzo(a)pyrene | U | 3 |
| dimethylphthalate | U | 3 | indeno(1,2,3-cd)pyrene | U | 3 |
| 2,6-dinitrotoluene | U | 3 | dibenzo(a,h)anthracene | U | 3 |
| 2,4-dinitrotoluene | U | 3 | benzo(g,h,i)perylene | U | 3 |

SURROGATE STANDARDS

| | Recovery | Acceptance Limits | | Recovery | Acceptance Limits |
|----------------------|----------|-------------------|------------------|----------|-------------------|
| | (%) | (%) | | (%) | (%) |
| 2-fluorophenol | 47 | 21-100 | nitrobenzene-d5 | 65 | 35-114 |
| phenol-d5 | 31 | 10-102 | 2-fluorobiphenyl | 47 | 43-116 |
| 2,4,6-tribromophenol | 81 | 10-123 | terphenyl-d14 | 68 | 33-141 |

U = Below quantitation limit

ESI

31148-034

Sample Designation:

Equipment Blank PEASE_001

Date Sampled: Date Extracted: 09/16/18 09/21/18

Date Analyzed:

Matrix:

09/25/18 Water

SEMIVOLATILE ORGANICS Method Reference: EPA 625.

| | Concentration | Reporting Limit | | Concentration | Reporting Lirnit |
|----------------------------------|---------------|-----------------|------------------------------------|---------------|------------------|
| | (ug/L) | (ug/L) | | (ug/L) | (ug/L) |
| N-nitrosodimethylamine | U | 3 | acenaphthene | U | 3 |
| phenol | U | 3 | 2,4-dinitrophenol | U | 5 |
| 2-chiorophenol | U | 3 | 4-nitrophenol | U | 3 |
| bis(2-chloroethyl)ether | U | 3 | fluorene | U | 3 |
| 1,3-dichlorobenzene | U | 3 | 4-chlorophenyl-phenylether | U | 3 |
| 1,4-dichlorobenzene | U | 3 | diethylphthalate | U | 3 |
| 1,2-dichlorobenzene | U | 3 | 4,6-dinitro-2-methylphenol | U | 3 |
| 2-methylphenol (m-cresol) | U | 3 | N-nitrosodiphenylamine | U | 3 |
| bis(2-chloroisopropyl)ether | U | 3 | 1,2-diphenylhydrazine (azobenzene) | U | 3 |
| hexachloroethane | U | 3 | 4-bromophenyl-phenylether | U | 3 |
| N-nitroso-di-n-propylamine | U | 3 | hexachlorobenzene | U | 3 |
| 3- and 4-methylphenol (p-cresol) | U | 3 | pentachlorophenol | U | 3 |
| nitrobenzene | U | 3 | phenanthrene | U | 3 |
| isophorone | U | 3 | anthracene | U | 3 |
| 2-nitrophenol | U | 3 | di-n-butylphthalate | U | 3 |
| 2,4-dimethylphenol | U | 3 | fluoranthene | U | 3 |
| bis(2-chloroethoxy)methane | U | 3 | benzidine | U | 3 |
| 2,4-dichlorophenol | U | 3 | pyrene | U | 3 |
| 1,2,4-trichlorobenzene | U | 3 | butylbenzylphthalate | U | 3 |
| naphthalene | U | 3 | benzo(a)anthracene | U | 3 |
| hexachloro-1,3-butadiene | U | 3 | chrysene | U | 3 |
| 4-chloro-3-methylphenol | U | 3 | 3,3'-dichlorobenzidine | U | 3 |
| hexachlorocyclopentadiene | U | 3 | bis(2-ethylhexyl)phthalate | U | 3 |
| 2,4,5-trichlorophenol | U | 3 | di-n-octylphthalate | U | 3 |
| 2,4,6-trichlorophenol | U | 3 | benzo(b)fluoranthene | U | 3 |
| 2-chloronaphthalene | U | 3 | benzo(k)fluoranthene | U | 3 |
| acenaphthylene | U | 3 | benzo(a)pyrene | U | 3 |
| dimethylphthalate | U | 3 | indeno(1,2,3-cd)pyrene | U | 3 |
| 2,6-dinitrotoluene | U | 3 | dibenzo(a,h)anthracene | U | 3 |
| 2,4-dinitrotoluene | U | 3 | benzo(g,h,i)perylene | U | 3 |

SURROGATE STANDARDS

| | Recovery | Acceptance Limits | | Recovery | Acceptance Limits |
|----------------------|----------|-------------------|------------------|----------|-------------------|
| | (%) | (%) | | (%) | (%) |
| 2-fluorophenol | 37 | 21-100 | nitrobenzene-d5 | 52 | 35-114 |
| phenol-d5 | 24 | 10-102 | 2-fluorobiphenyl | 37 | 43-116 |
| 2,4,6-tribromophenol | 70 | 10-123 | terphenyl-d14 | 82 | 33-141 |
| | | | | | |

U = Below quantitation limit

Lab Number: 31148-067
Sample Designation: NEW_001
Date Sampled: 09/17/18
Date Extracted: 09/21/18
Date Analyzed: 09/25/18
Matrix: Water

SEMIVOLATILE ORGANICS Method Reference: EPA 625.

| | Concentration | Reporting Limit | | Concentration | Reporting Limit |
|----------------------------------|---------------|-----------------|------------------------------------|---------------|-----------------|
| | (ug/L) | (ug/L) | | (ug/L) | (ug/L) |
| N-nitrosodimethylamine | U | 3 | acenaphthene | U | 3 |
| phenol | U | 3 | 2,4-dinitrophenol | U | 5 |
| 2-chlorophenol | U | 3 | 4-nitrophenol | U | 3 |
| bis(2-chloroethyl)ether | U | 3 | fluorene | U | 3 |
| 1,3-dichlorobenzene | U | 3 | 4-chlorophenyl-phenylether | U | 3 |
| 1,4-dichlorobenzene | U | 3 | diethylphthalate | U | 3 |
| 1,2-dichlorobenzene | U | 3 | 4,6-dinitro-2-methylphenol | U | 3 |
| 2-methylphenol (m-cresol) | U | 3 | N-nitrosodiphenylamine | U | 3 |
| bis(2-chloroisopropyl)ether | U | 3 | 1,2-diphenylhydrazine (azobenzene) | U | 3 |
| hexachloroethane | U | 3 | 4-bromophenyl-phenylether | U | 3 |
| N-nitroso-di-n-propylamine | U | 3 | hexachlorobenzene | U | 3 |
| 3- and 4-methylphenol (p-cresol) | U | 3 | pentachlorophenol | U | 3 |
| nitrobenzene | U | 3 | phenanthrene | U | 3 |
| isophorone | U | 3 | anthracene | U | 3 |
| 2-nitrophenol | υ | 3 | di-n-butylphthalate | U | 3 |
| 2,4-dimethylphenol | υ | 3 | fluoranthene | U | 3 |
| bis(2-chloroethoxy)methane | U | 3 | benzidine | U | 3 |
| 2,4-dichlorophenol | U . | 3 | pyrene | U | 3 |
| 1,2,4-trichlorobenzene | U | 3 | butylbenzylphthalate | U | 3 |
| naphthalene | U | 3 | benzo(a)anthracene | U | 3 |
| hexachloro-1,3-butadiene | U | 3 | chrysene | U | 3 |
| 4-chioro-3-methylphenol | U | 3 | 3,3'-dichlorobenzidine | U | 3 |
| hexachlorocyclopentadiene | U | 3 | bis(2-ethylhexyl)phthalate | U | 3 |
| 2,4,5-trichlorophenol | U | 3 | di-n-octylphthalate | U . | 3 |
| 2,4,6-trichlorophenol | U | 3 | benzo(b)fluoranthene | U | 3 |
| 2-chloronaphthalene | U | 3 | benzo(k)fluoranthene | U | 3 |
| acenaphthylene | U | 3 | benzo(a)pyrene | U | 3 |
| dimethylphthalate | U | 3 | indeno(1,2,3-cd)pyrene | U | 3 |
| 2,6-dinitrotoluene | U | 3 | dibenzo(a,h)anthracene | U | 3 |
| 2,4-dinitrotoluene | U | 3 | benzo(g,h,i)perylene | υ | 3 |

SURROGATE STANDARDS

| | Recovery | Acceptance Limits | | Recovery | Acceptance Limits |
|----------------------|----------|-------------------|------------------|----------|-------------------|
| | (%) | (%) | | (%) | (%) |
| 2-fluorophenol | 39 | 21-100 | nitrobenzene-d5 | 55 | 35-114 |
| phenol-d5 | 24 | 10-102 | 2-fluorobiphenyl | 39 | 43-116 |
| 2,4,6-tribromophenol | 79 | 10-123 | terphenyl-d14 | 91 | 33-141 |

U = Below quantitation limit

Lab Number: 31148-068
Sample Designation: NEW_001DUP
Date Sampled: 09/17/18
Date Extracted: 09/21/18
Date Analyzed: 09/25/18
Matrix: Water

SEMIVOLATILE ORGANICS Method Reference: EPA 625.

| | Concentration | Reporting Limit | | Concentration | Reporting Limit |
|----------------------------------|---------------|-----------------|------------------------------------|---------------|-----------------|
| | (ug/L) | (ug/L) | | (ug/L) | (ug/L) |
| N-nitrosodimethylamine | U | 3 | acenaphthene | U | 3 |
| phenol | U | 3 | 2,4-dinitrophenol | U | 5 |
| 2-chlorophenol | U | 3 | 4-nitrophenol | U | 3 |
| bis(2-chloroethyl)ether | U | 3 | fluorene | U | 3 |
| 1,3-dichlorobenzene | U | 3 | 4-chlorophenyl-phenylether | U | 3 |
| 1,4-dichlorobenzene | U | 3 | diethylphthalate | U | 3 |
| 1,2-dichlorobenzene | U | 3 | 4,6-dinitro-2-methylphenol | U | 3 |
| 2-methylphenol (m-cresol) | U | 3 | N-nitrosodiphenylamine | U | 3 |
| bis(2-chloroisopropyl)ether | U | 3 | 1,2-diphenylhydrazine (azobenzene) | U | 3 |
| hexachloroethane | U | 3 | 4-bromophenyl-phenylether | U | 3 |
| N-nitroso-di-n-propylamine | U | 3 | hexachlorobenzene | U | 3 |
| 3- and 4-methylphenol (p-cresol) | U | 3 | pentachlorophenol | U | 3 |
| nitrobenzene | U | 3 | phenanthrene | U | 3 |
| isophorone | U | 3 | anthracene | U | 3 |
| 2-nitrophenol | U | 3 | di-n-butylphthalate | U | 3 |
| 2,4-dimethylphenol | U | 3 | fluoranthene | U | 3 |
| bis(2-chloroethoxy)methane | U | 3 | benzidine | U | 3 |
| 2,4-dichlorophenol | U | 3 | pyrene | U | 3 |
| 1,2,4-trichlorobenzene | U | 3 | butylbenzylphthalate | U | 3 |
| naphthalene | U | 3 | benzo(a)anthracene | U | 3 |
| hexachloro-1,3-butadiene | U | 3 | chrysene | U | 3 |
| 4-chloro-3-methylphenol | U | 3 | 3,3'-dichlorobenzidine | U | 3 |
| hexachlorocyclopentadiene | U | 3 | bis(2-ethylhexyl)phthalate | U | 3 |
| 2,4,5-trichlorophenol | U | 3 | di-n-octylphthalate | U | 3 |
| 2,4,6-trichlorophenol | U | 3 | benzo(b)fluoranthene | U | 3 |
| 2-chloronaphthalene | U | 3 | benzo(k)fluoranthene | U | 3 |
| acenaphthylene | U | 3 | benzo(a)pyrene | U | 3 |
| dimethylphthalate | U | 3 | indeno(1,2,3-cd)pyrene | U | 3 |
| 2,6-dinitrotoluene | U | 3 | dibenzo(a,h)anthracene | U | 3 |
| 2,4-dinitrotoluene | U | 3 | benzo(g,h,i)perylene | U | 3 |

SURROGATE STANDARDS

| | Recovery | Acceptance Limits | | Recovery | Acceptance Limits |
|----------------------|----------|-------------------|------------------|----------|-------------------|
| | (%) | (%) | | (%) | (%) |
| 2-fluorophenol | 29 | 21-100 | nitrobenzene-d5 | 58 | 35-114 |
| phenol-d5 | 18 | 10-102 | 2-fluorobiphenyl | 29 | 43-116 |
| 2,4,6-tribromophenol | 78 | 10-123 | terphenyl-d14 | 99 | 33-141 |

U = Below quantitation limit

31148-069

Sample Designation:

Equipment Blank NEW_001

Date Sampled: Date Extracted: 09/16/18 09/21/18

Date Analyzed:

09/25/18

Matrix:

Water

SEMIVOLATILE ORGANICS Method Reference: EPA 625.

| | Concentration | Reporting Limit | | Concentration | Reporting Limit |
|----------------------------------|---------------|-----------------|------------------------------------|---------------|-----------------|
| | (ug/L) | (ug/L) | | (ug/L) | (ug/L) |
| N-nitrosodimethylamine | U | 3 | acenaphthene | U | 3 |
| phenol | U | 3 | 2,4-dinitrophenol | U | 5 |
| 2-chlorophenol | U | 3 | 4-nitrophenol | U | 3 |
| bis(2-chloroethyl)ether | U | 3 | fluorene | U | 3 |
| 1,3-dichlorobenzene | U | 3 | 4-chlorophenyl-phenylether | U | 3 |
| 1,4-dichlorobenzene | U | 3 | diethylphthalate | U | 3 |
| 1,2-dichlorobenzene | U | 3 | 4,6-dinitro-2-methylphenol | U | 3 |
| 2-methylphenol (m-cresol) | U | 3 | N-nitrosodiphenylamine | U | 3 |
| bis(2-chloroisopropyl)ether | U | 3 | 1,2-diphenylhydrazine (azobenzene) | U | 3 |
| hexachioroethane | U | 3 | 4-bromophenyl-phenylether | U | 3 |
| N-nitroso-di-n-propylamine | U | 3 | hexachlorobenzene | U | 3 |
| 3- and 4-methylphenol (p-cresol) | U | 3 | pentachlorophenol | U | 3 |
| nitrobenzene | U | 3 | phenanthrene | U | 3 |
| isophorone | U | 3 | anthracene | U | 3 |
| 2-nitrophenol | U | 3 | di-n-butylphthalate | U | 3 |
| 2,4-dimethylphenol | U | 3 | fluoranthene | U | 3 . |
| bis(2-chloroethoxy)methane | U | 3 | benzidine | U | 3 |
| 2,4-dichlorophenol | U | 3 | pyrene | U | 3 |
| 1,2,4-trichlorobenzene | U | 3 | butylbenzylphthalate | U | 3 |
| naphthalene | U | 3 | benzo(a)anthracene | U | 3 |
| hexachloro-1,3-butadiene | U | 3 | chrysene | U | 3 |
| 4-chioro-3-methylphenol | U | 3 | 3,3'-dichlorobenzidine | U | 3 |
| hexachiorocyclopentadiene | U | 3 | bis(2-ethylhexyl)phthalate | 6.7 | 3 |
| 2,4,5-trichlorophenol | U | 3 | di-n-octylphthalate | U | 3 |
| 2,4,6-trichlorophenol | U | 3 | benzo(b)fluoranthene | U | 3 |
| 2-chłoronaphthalene | U | 3 | benzo(k)fluoranthene | U | 3 |
| acenaphthylene | U | 3 | benzo(a)pyrene | U | 3 |
| dimethylphthalate | υ | 3 | indeno(1,2,3-cd)pyrene | U | 3 |
| 2,6-dinitrotoluene | U | 3 | dibenzo(a,h)anthracene | U | 3 |
| 2,4-dinitrotoluene | U | 3 | benzo(g,h,i)perylene | U | 3 |

SURROGATE STANDARDS

| | Recovery | Acceptance Limits | | Recovery | Acceptance Limits |
|----------------------|----------|-------------------|------------------|----------|-------------------|
| | (%) | (%) | | (%) | (%) |
| 2-fluorophenoi | 32 | 21-100 | nitrobenzene-d5 | 55 | 35-114 |
| phenoi-d5 | 19 | 10-102 | 2-fluorobiphenyl | 32 | 43-116 |
| 2,4,6-tribromophenol | 66 | 10-123 | terphenyl-d14 | 90 | 33-141 |

U = Below quantitation limit

Lab Number: 31148-103
Sample Designation: RIVER_001
Date Sampled: 09/17/18
Date Extracted: 09/21/18
Date Analyzed: 09/25/18
Matrix: Water

SEMIVOLATILE ORGANICS Method Reference: EPA 625.

| | Concentration | Reporting Limit | | Concentration | Reporting Limit |
|----------------------------------|---------------|-----------------|------------------------------------|---------------|-----------------|
| | (ug/L) | (ug/L) | | (ug/L) | (ug/L) |
| N-nitrosodimethylamine | U | 3 | acenaphthene | U | 3 |
| phenol | U | 3 | 2,4-dinitrophenol | U | 5 |
| 2-chlorophenol | U | 3 | 4-nitrophenol | U | 3 |
| bis(2-chloroethyl)ether | U | 3 | fluorene | U | 3 |
| 1,3-dichlorobenzene | U | 3 | 4-chlorophenyl-phenylether | U | 3 |
| 1,4-dichlorobenzene | U | 3 | diethylphthalate | U | 3 |
| 1,2-dichlorobenzene | U | 3 | 4,6-dinitro-2-methylphenol | U | 3 |
| 2-methylphenol (m-cresol) | U | 3 | N-nitrosodiphenylamine | U | 3 |
| bis(2-chloroisopropyl)ether | U | 3 | 1,2-diphenylhydrazine (azobenzene) | U | 3 |
| hexachloroethane | U | 3 | 4-bromophenyl-phenylether | U | 3 |
| N-nitroso-di-n-propylamine | U | 3 | hexachlorobenzene | U | 3 |
| 3- and 4-methylphenol (p-cresol) | U | 3 | pentachlorophenol | U | 3 |
| nitrobenzene | U | 3 | phenanthrene | U | 3 |
| isophorone | U | 3 | anthracene | U | 3 |
| 2-nitrophenol | U | 3 | di-n-butylphthalate | U | 3 |
| 2,4-dimethylphenol | U | 3 | fluoranthene | U | 3 |
| bis(2-chloroethoxy)methane | U | 3 | benzidine | U | 3 |
| 2,4-dichlorophenol | U | 3 | pyrene | U | 3 |
| 1,2,4-trichlorobenzene | U | 3 | butylbenzylphthalate | U | 3 |
| naphthalene | U | 3 | benzo(a)anthracene | U | 3 |
| hexachioro-1,3-butadiene | U | 3 | chrysene | U | 3 |
| 4-chloro-3-methylphenol | U | 3 | 3,3'-dichlorobenzidine | U | 3 |
| hexachlorocyclopentadiene | U | 3 | bis(2-ethylhexyl)phthalate | U | 3 |
| 2,4,5-trichlorophenol | U | 3 | di-п-octylphthalate | U | 3 |
| 2,4,6-trichlorophenol | U | 3 | benzo(b)fluoranthene | U | 3 |
| 2-chloronaphthalene | U | 3 | benzo(k)fluoranthene | U | 3 |
| acenaphthylene | U | 3 | benzo(a)pyrene | U | 3 |
| dimethylphthalate | U | 3 | indeno(1,2,3-cd)pyrene | U | 3 |
| 2,6-dinitrotoluene | U | 3 | dibenzo(a,h)anthracene | U | 3 |
| 2,4-dinitrotoluene | U | 3 | benzo(g,h,i)perylene | U | 3 |

SURROGATE STANDARDS

| | Recovery | Acceptance Limits | | Recovery | Acceptance Limits |
|----------------------|----------|-------------------|------------------|----------|-------------------|
| | (%) | (%) | | (%) | (%) |
| 2-fluorophenol | 49 | 21-100 | nitrobenzene-d5 | 55 | 35-114 |
| phenoi-d5 | 36 | 10-102 | 2-fluorobiphenyl | 47 | 43-116 |
| 2,4,6-tribromophenol | 75 | 10-123 | terphenyl-d14 | 34 | 33-141 |

U = Below quantitation limit

31148-104

Sample Designation:

RIVER_001DUP

Date Sampled: Date Extracted:

09/17/18 09/21/18

Date Analyzed:

09/25/18

Matrix:

Water

SEMIVOLATILE ORGANICS Method Reference: EPA 625.

| N-nitrosodimethylamine Ug/L) (ug/L) (ug/L) N-nitrosodimethylamine U 3 acenaphthene U 3 phenol U 3 2,4-dinitrophenol U 5 2-chlorophenol U 3 4-nitrophenol U 3 bis(2-chloroethyl)ether U 3 fluorene U 3 1,3-dichlorobenzene U 3 4-chlorophenyl-phenylether U 3 1,4-dichlorobenzene U 3 4-chlorophenyl-phenylether U 3 1,2-dichlorobenzene U 3 A,6-dinitro-2-methylphenol U 3 2-methylphenol (m-cresol) U 3 N-nitrosodiphenylamine U 3 bis(2-chlorospropyl)ether U 3 A-bromophenyl-phenylamine U 3 hexachloroethane U 3 A-bromophenyl-phenylether U 3 N-nitroso-di-n-propylamine U 3 hexachlorobenzene U 3 N-nitroso-di-n-propyl |
|--|
| phenol U 3 2,4-dinitrophenol U 5 2-chlorophenol U 3 4-nitrophenol U 3 bis(2-chloroethyl)ether U 3 fluorene U 3 1,3-dichlorobenzene U 3 4-chlorophenyl-phenylether U 3 1,4-dichlorobenzene U 3 4,6-dinitro-2-methylphenol U 3 2-methylphenol (m-cresol) U 3 N-nitrosodiphenylamine U 3 bis(2-chloroispropylyether U 3 N-nitrosodiphenyl-phenylamine U 3 bis(2-chloroispropylyether U 3 N-nitroso-di-n-prophenyl-phenylether U 3 hexachloroethane U 3 hexachlorobenzene U 3 N-nitroso-di-n-propylamine U 3 hexachlorophenyl-phenylether U 3 3- and 4-methylphenol (p-cresol) U 3 pentachlorophenol U 3 3- and 4-methylphenol (p-cresol) U 3 phenanthrene |
| 2-chlorophenol U 3 4-nitrophenol U 3 bis(2-chloroethyl)ether U 3 fluorene U 3 1,3-dichlorobenzene U 3 4-chlorophenyl-phenylether U 3 1,4-dichlorobenzene U 3 4-chlorophenyl-phenylether U 3 1,2-dichlorobenzene U 3 4-dinitro-2-methylphenol U 3 2-methylphenol (m-cresol) U 3 N-nitroso-diphenylamine U 3 bis(2-chloroispropyl)ether U 3 4-bromophenyl-phenylether U 3 hexachloroethane U 3 4-bromophenyl-phenylether U 3 N-nitroso-di-n-propylamine U 3 hexachloroethenzene U 3 3- and 4-methylphenol (p-cresol) U 3 pentachlorophenol U 3 3- and 4-methylphenol (p-cresol) U 3 pentachlorophenol U 3 2-nitrophenol U 3 di-n-butylphthalate U 3 2-nitrophenol U 3 benzidine |
| bis(2-chloroethyl)ether U 3 fluorene U 3 1,3-dichlorobenzene U 3 4-chlorophenyl-phenylether U 3 1,4-dichlorobenzene U 3 diethylphthalate U 3 1,2-dichlorobenzene U 3 4,6-dinitro-2-methylphenol U 3 2-methylphenol (m-cresol) U 3 N-nitrosodiphenylamine U 3 bis(2-chloroisopropyl)ether U 3 1,2-diphenylhydrazine (azobenzene) U 3 bexachloroethane U 3 4-bromophenyl-phenylether U 3 N-nitroso-di-n-propylamine U 3 hexachlorobenzene U 3 N-nitroso-di-n-propylamine U 3 hexachlorophenol U 3 3- and 4-methylphenol (p-cresol) U 3 phenanthrene U 3 1itrobenzene U 3 phenanthrene U 3 2-nitrophenol U 3 di-n-butylphthalate U <td< td=""></td<> |
| 1,3-dichlorobenzene U 3 4-chlorophenyl-phenylether U 3 1,4-dichlorobenzene U 3 diethylphthalate U 3 1,2-dichlorobenzene U 3 4,6-dinitro-2-methylphenol U 3 2-methylphenol (m-cresol) U 3 N-nitrosodiphenylamine U 3 bis(2-chloroisopropyl)ether U 3 1,2-diphenylhydrazine (azobenzene) U 3 hexachloroethane U 3 4-bromophenyl-phenylether U 3 N-nitroso-di-n-propylamine U 3 hexachlorobenzene U 3 3- and 4-methylphenol (p-cresol) U 3 pentachlorophenol U 3 nitrobenzene U 3 nathracene U 3 2-nitrophenol U 3 anthracene U 3 2,4-dimethylphenol U 3 fluoranthene U 3 2,4-dichlorophenol U 3 penzidine U 3 |
| 1,4-dichlorobenzene U 3 diethylphthalate U 3 3 4,6-dinitro-2-methylphenol (m-cresol) U 3 3 N-nitrosodiphenylamine U 3 3 N-nitrosodiphenylamine U 3 3 N-nitrosodiphenylamine U 3 3 N-nitrosodiphenylamine U 3 N-nitroso-di-n-propylamine U 3 N-ni |
| 1,2-dichlorobenzene U 3 4,6-dinitro-2-methylphenol U 3 2-methylphenol (m-cresol) U 3 N-nitrosodiphenylamine U 3 bis(2-chloroisopropyl)ether U 3 1,2-diphenylhydrazine (azobenzene) U 3 hexachloroethane U 3 4-bromophenyl-phenylether U 3 N-nitroso-di-n-propylamine U 3 hexachlorobenzene U 3 3 and 4-methylphenol (p-cresol) U 3 pentachlorophenol U 3 3 isophorone U 3 phenanthrene U 3 isophorone U 3 anthracene U 3 2-nitrophenol U 3 anthracene U 3 2-nitrophenol U 3 di-n-butylphthalate U 3 2,4-dimethylphenol U 3 fluoranthene U 3 5 5 5 6 7 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 |
| 2-methylphenol (m-cresol) U 3 N-nitrosodiphenylamine U 3 Similar Siege-Chloroisopropyl)ether U 3 1,2-diphenylhydrazine (azobenzene) U 3 Similar Siege-Chloroisopropyl)ether U 3 1,2-diphenylhydrazine (azobenzene) U 3 Similar Siege-Chloroisopropylamine U 3 N-nitroso-di-n-propylamine U 3 N-nitroso-di-n-propylamin |
| bis(2-chloroisopropyl)ether U 3 1,2-diphenylhydrazine (azobenzene) U 3 hexachloroethane U 3 4-bromophenyl-phenylether U 3 N-nitroso-di-n-propylamine U 3 hexachlorobenzene U 3 hexachlorophenol U 3 he |
| hexachloroethane U 3 4-bromophenyl-phenylether U 3 N-nitroso-di-n-propylamine U 3 hexachlorobenzene U 3 3- and 4-methylphenol (p-cresol) U 3 pentachlorophenol U 3 nitrobenzene U 3 phenanthrene U 3 sophorone U 3 anthracene U 3 2-nitrophenol U 3 di-n-butylphthalate U 3 2,4-dimethylphenol U 3 fluoranthene U 3 2,4-dichlorophenol U 3 benzidine U 3 2,4-dichlorophenol U 3 butylbenzylphthalate U 3 1,2,4-trichlorobenzene U 3 butylbenzylphthalate U 3 1,2,4-trichlorobenzene U 3 butylbenzylphthalate U 3 1,2,4-trichlorophenol U 3 benzo(a)anthracene U 3 1,2,4-trichlorophenol U 3 benzo(a)anthracene U 3 1,2,4-trichlorophenol U 3 benzo(a)anthracene U 3 |
| N-nitroso-di-n-propylamine U 3 hexachlorobenzene U 3 pentachlorophenol U 3 pentachloroph |
| 3- and 4-methylphenol (p-cresol) U 3 pentachlorophenol U 3 nitrobenzene U 3 phenanthrene U 3 isophorone U 3 anthracene U 3 2-nitrophenol U 3 di-n-butylphthalate U 3 2,4-dimethylphenol U 3 fluoranthene U 3 bis(2-chloroethoxy)methane U 3 benzidine U 3 2,4-dichlorophenol U 3 pyrene U 3 1,2,4-trichlorobenzene U 3 butylbenzylphthalate U 3 naphthalene U 3 benzo(a)anthracene U 3 hexachloro-1,3-butadiene U 3 chrysene U 3 |
| nitrobenzene U 3 phenanthrene U 3 isophorone U 3 anthracene U 3 2-nitrophenol U 3 di-n-butylphthalate U 3 2,4-dimethylphenol U 3 benzidine U 3 2,4-dichloroethoxy)methane U 3 benzidine U 3 2,4-dichlorophenol U 3 pyrene U 3 1,2,4-trichlorobenzene U 3 butylbenzylphthalate U 3 naphthalene U 3 benzo(a)anthracene U 3 hexachloro-1,3-butadiene U 3 chrysene U 3 |
| isophorone U 3 anthracene U 3 2-nitrophenol U 3 di-n-butylphthalate U 3 2,4-dimethylphenol U 3 fluoranthene U 3 bis(2-chloroethoxy)methane U 3 benzidine U 3 2,4-dichlorophenol U 3 pyrene U 3 2,4-dichlorophenol U 3 butylbenzylphthalate U 3 1,2,4-trichlorobenzene U 3 butylbenzylphthalate U 3 1,2,4-trichloro-1,3-butadiene U 3 chrysene U 3 |
| 2-nitrophenol U 3 di-n-butylphthalate U 3 2,4-dimethylphenol U 3 fluoranthene U 3 bis(2-chloroethoxy)methane U 3 benzidine U 3 2,4-dichlorophenol U 3 pyrene U 3 1,2,4-trichlorobenzene U 3 butylbenzylphthalate U 3 naphthalene U 3 benzo(a)anthracene U 3 hexachloro-1,3-butadiene U 3 chrysene U 3 |
| 2,4-dimethylphenolU3fluorantheneU3bis(2-chloroethoxy)methaneU3benzidineU32,4-dichlorophenolU3pyreneU31,2,4-trichlorobenzeneU3butylbenzylphthalateU3naphthaleneU3benzo(a)anthraceneU3hexachloro-1,3-butadieneU3chryseneU3 |
| bis(2-chloroethoxy)methane U 3 benzidine U 3 2,4-dichlorophenol U 3 pyrene U 3 1,2,4-trichlorobenzene U 3 butylbenzylphthalate U 3 naphthalene U 3 benzo(a)anthracene U 3 hexachloro-1,3-butadiene U 3 chrysene U 3 |
| 2,4-dichlorophenolU3pyreneU31,2,4-trichlorobenzeneU3butylbenzylphthalateU3naphthaleneU3benzo(a)anthraceneU3hexachloro-1,3-butadieneU3chryseneU3 |
| 1,2,4-trichlorobenzeneU3butylbenzylphthalateU3naphthaleneU3benzo(a)anthraceneU3hexachloro-1,3-butadieneU3chryseneU3 |
| naphthalene U 3 benzo(a)anthracene U 3 hexachloro-1,3-butadiene U 3 chrysene U 3 |
| hexachloro-1,3-butadiene U 3 chrysene U 3 |
| · |
| 4-chloro-3-methylphenol U 3 3,3'-dichlorobenzidine II 3 |
| -, -, -, -, -, -, -, -, -, -, -, -, -, - |
| hexachlorocyclopentadiene U 3 bis(2-ethylhexyl)phthalate U 3 |
| 2,4,5-trichlorophenol U 3 di-n-octylphthalate U 3 |
| 2,4,6-trichlorophenol U 3 benzo(b)fluoranthene U 3 |
| 2-chloronaphthalene U 3 benzo(k)fluoranthene U 3 |
| acenaphthylene U 3 benzo(a)pyrene U 3 |
| dimethylphthalate U 3 indeno(1,2,3-cd)pyrene U 3 |
| 2,6-dinitrotoluene U 3 dibenzo(a,h)anthracene U 3 |
| 2,4-dinitrotoluene U 3 benzo(g,h,i)perylene U 3 |

SURROGATE STANDARDS

| | | Recovery | Acceptance Limits | | Recovery | Acceptance Limits |
|----------------|--------|----------|-------------------|------------------|----------|-------------------|
| | | (%) | (%) | | (%) | (%) |
| 2-fluorophenol | | 46 | 21-100 | nitrobenzene-d5 | 67 | 35-114 |
| phenol-d5 | | 33 | 10-102 | 2-fluorobiphenyl | 46 | 43-116 |
| 2,4,6-tribromo | ohenoi | 75 | 10-123 | terphenyl-d14 | 76 | 33-141 |

U = Below quantitation limit

31148-105

Sample Designation:

Field Blank RIVER_001

Date Sampled: Date Extracted: Date Analyzed: 09/17/18 09/21/18 10/03/18

Matrix:

Water

SEMIVOLATILE ORGANICS Method Reference: EPA 625.

| | Concentration | Reporting Limit | | Concentration | Reporting Limit |
|----------------------------------|---------------|-----------------|------------------------------------|---------------|-----------------|
| | (ug/L) | (ug/L) | | (ug/L) | (ug/L) |
| N-nitrosodimethylamine | U | 3 | acenaphthene | U | 3 |
| phenol | U | 3 | 2,4-dinitrophenol | U | 5 |
| 2-chlorophenol | U | 3 | 4-nitrophenol | U | 3 |
| bis(2-chloroethyl)ether | U | 3 | fluorene | U | 3 |
| 1,3-dichlorobenzene | U | 3 | 4-chlorophenyl-phenylether | U | 3 |
| 1,4-dichlorobenzene | U | 3 | diethylphthalate | U | 3 |
| 1,2-dichlorobenzene | U | 3 | 4,6-dinitro-2-methylphenol | U | 3 |
| 2-methylphenol (m-cresol) | U | 3 | N-nitrosodiphenylamine | U | 3 |
| bis(2-chloroisopropyl)ether | U, J | 3 | 1,2-diphenylhydrazine (azobenzene) | U | 3 |
| hexachloroethane | U | 3 | 4-bromophenyl-phenylether | U | 3 |
| N-nitroso-di-n-propylamine | U | 3 | hexachlorobenzene | U | 3 |
| 3- and 4-methylphenol (p-cresol) | U | 3 | pentachlorophenol | U | 3 |
| nitrobenzene | U | 3 | phenanthrene | U | 3 |
| isophorone | U | 3 | anthracene | U | 3 |
| 2-nitrophenol | U | 3 | di-п-butylphthalate | U | 3 |
| 2,4-dimethylphenol | U | 3 | fluoranthene | U | 3 |
| bis(2-chloroethoxy)methane | U | 3 | benzidine | U | 3 |
| 2,4-dichlorophenol | U | 3 | pyrene | U | 3 |
| 1,2,4-trichlorobenzene | U | 3 | butylbenzylphthalate | U | 3 |
| naphthalene | U | 3 | benzo(a)anthracene | U | 3 |
| hexachloro-1,3-butadiene | U | 3 | chrysene | U | 3 |
| 4-chloro-3-methylphenol | U | 3 | 3,3'-dichlorobenzidine | U | 3 |
| hexachlorocyclopentadiene | U | 3 | bis(2-ethylhexyl)phthalate | 2.8 | 3 |
| 2,4,5-trichlorophenol | U | 3 | di-n-octylphthalate | U, J | 3 |
| 2,4,6-trichlorophenol | U | 3 | benzo(b)fluoranthene | U | 3 |
| 2-chloronaphthalene | U | 3 | benzo(k)fluoranthene | U | 3 |
| acenaphthylene | U | 3 | benzo(a)pyrene | U | 3 |
| dimethylphthalate | U | 3 | indeno(1,2,3-cd)pyrene | U | 3 |
| 2,6-dinitrotoluene | U | 3 | dibenzo(a,h)anthracene | U | 3 |
| 2,4-dinitrotoluene | U | 3 | benzo(g,h,i)perylene | U | 3 |

SURROGATE STANDARDS

| | Recovery | Acceptance Limits | | Recovery | Acceptance Limits | |
|----------------------|----------|-------------------|------------------|----------|-------------------|--|
| | (%) | (%) | | (%) | (%) | |
| 2-fluorophenol | 27 | 21-100 | nitrobenzene-d5 | 50 | 35-114 | |
| phenol-d5 | 19 | 10-102 | 2-fluorobiphenyl | 27, J17 | 43-116 | |
| 2,4,6-tribromophenol | 69 | 10-123 | terphenyl-d14 | 64 | 33-141 | |

U = Below quantitation limit

J17 = SUR %R below limti.

J = CCV recovery below acceptable Ilimits. Internal standard within acceptable limits.

31148-106

Sample Designation:

Trip Blank RIVER_001

Date Sampled: Date Extracted: Date Analyzed: 09/17/18 09/21/18

Matrix:

10/03/18 Water

SEMIVOLATILE ORGANICS Method Reference: EPA 625.

| | Concentration | Reporting Limit | | Concentration | Reporting Limit |
|----------------------------------|---------------|-----------------|------------------------------------|---------------|-----------------|
| | (ug/L) | (ug/L) | | (ug/L) | (ug/L) |
| N-nitrosodimethylamine | U | 3 | acenaphthene | U | 3 |
| phenoi | U | 3 | 2,4-dinitrophenol | U | 5 |
| 2-chlorophenol | U | 3 | 4-nitrophenol | U | 3 |
| bis(2-chloroethyl)ether | U | 3 | fluorene | U | 3 |
| 1,3-dichlorobenzene | U | 3 | 4-chlorophenyl-phenylether | U | 3 |
| 1,4-dichlorobenzene | U | 3 | diethylphthalate | U | 3 |
| 1,2-dichlorobenzene | U | 3 | 4,6-dinitro-2-methylphenol | U | 3 |
| 2-methylphenol (m-cresol) | U | 3 | N-nitrosodiphenylamine | U | 3 |
| bis(2-chloroisopropyl)ether | U, J | 3 | 1,2-diphenylhydrazine (azobenzene) | U | 3 |
| hexachloroethane | U | 3 | 4-bromophenyl-phenylether | U | 3 |
| N-nitroso-di-n-propylamine | U | 3 | hexachlorobenzene | U | 3 |
| 3- and 4-methylphenol (p-cresol) | U | 3 | pentachlorophenol | U | 3 |
| nitrobenzene | U | 3 | phenanthrene | U | 3 |
| isophorone | U | 3 | anthracene | U | 3 |
| 2-nitrophenol | U | 3 | di-n-butylphthalate | U | 3 |
| 2,4-dimethylphenol | U | 3 | fluoranthene | U | 3 |
| bis(2-chloroethoxy)methane | U | 3 | benzidine | U | 3 |
| 2,4-dichlorophenol | U | 3 | pyrene | U | 3 |
| 1,2,4-trichlorobenzene | U | 3 | butylbenzylphthalate | U | 3 |
| naphthalene | U | 3 | benzo(a)anthracene | U | 3 |
| hexachloro-1,3-butadiene | U | 3 | chrysene | U | 3 |
| 4-chloro-3-methylphenol | U | 3 | 3,3'-dichlorobenzidine | U | 3 |
| hexachlorocyclopentadiene | U | 3 | bis(2-ethylhexyl)phthalate | U | 3 |
| 2,4,5-trichlorophenol | U | 3 | di-n-octylphthalate | U, J | 3 |
| 2,4,6-trichlorophenol | U | 3 | benzo(b)fluoranthene | U | 3 |
| 2-chloronaphthalene | U | 3 | benzo(k)fluoranthene | U | 3 |
| acenaphthylene | U | 3 | benzo(a)pyrene | U | 3 |
| dimethylphthalate | U | 3 | indeno(1,2,3-cd)pyrene | U | 3 |
| 2,6-dinitrotoluene | U | 3 | dibenzo(a,h)anthracene | U | 3 |
| 2,4-dinitrotoluene | U | 3 | benzo(g,h,i)perylene | U | 3 |

SURROGATE STANDARDS

| | Recovery | Acceptance Limits | | Recovery | Acceptance Limits |
|----------------------|----------|-------------------|------------------|----------|-------------------|
| | (%) | (%) | | (%) | (%) |
| 2-fluorophenol | 28 | 21-100 | nitrobenzene-d5 | 40 | 35-114 |
| phenol-d5 | 19 | 10-102 | 2-fluorobiphenyl | 28, J17 | 43-116 |
| 2,4,6-tribromophenol | 60 | 10-123 | terphenyl-d14 | 54 | 33-141 |

U = Below quantitation limit

J17 = SUR %R below limti.

J = CCV recovery below acceptable llimits. Internal standard within acceptable limits.

BACTERIAL ANALYSIS REPORT

ESI STUDY No.:

31148

Client:

Underwood Engineers

Sample Receipt:

09/17/18 1125

Fecal Coliform Method: SM 9222D

| Wettlod. Sin 9222L | | | | | | | | | |
|--------------------|----------|-----------------|----------|----------|-------------|---------|--|--|--|
| Sample | Sample (| Collection | Sample A | \nalysis | Result | | | | |
| Identification | Date | ate Time Date 1 | | Time | (CFU/100mL) | Analyst | | | |
| RIVER001 | 09/17/18 | 1400 | 09/17/18 | 1836 | 2 | MVV | | | |
| RIVER001DUP | 09/17/18 | 1400 | 09/17/18 | 1846 | 5 | MVV | | | |
| PEASE-001 | 09/17/18 | 1045 | 09/17/18 | 1310 | 3 | MVV | | | |
| PEASE-001 Dup | 09/17/18 | 1045 | 09/17/18 | 1310 | 4 | MVV | | | |
| NEW-001 | 09/17/18 | 0845 | 09/17/18 | 1315 | 5 | MVV | | | |
| NEW-001 Dup | 09/17/18 | 0845 | 09/17/18 | 1332 | 7 | MVV | | | |

Enterococcus Method: EPA 1600

| Sample | Sample (| Collection | Sample A | \nalysis | Result | Analyst |
|----------------|----------|----------------|----------|-------------|---------|---------|
| Identification | Date | Time Date Time | | (CFU/100mL) | Analyst | |
| RIVER001 | 09/17/18 | 1405 | 09/17/18 | 1830 | <1 | MVV |
| RIVER001DUP | 09/17/18 | 1405 | 09/17/18 | 1836 | <1 | MW |
| PEASE-001 | 09/17/18 | 1045 | 09/17/18 | 1524 | 40 | MVV |
| PEASE-001 Dup | 09/17/18 | 1045 | 09/17/18 | 1524 | 49 | муу |
| NEW-001 | 09/17/18 | 0845 | 09/17/18 | 1530 | 7 | MW |
| NEW-001 Dup | 09/17/18 | 0845 | 09/17/18 | 1551 | 4 | MVV |

Effluent Chemistry

| Total Residual Chlorine (mg/L) | _ a |
|--------------------------------|-----|

^a TRC was not measured at the lab prior to analysis.

Analytical Methods: APHA. 2012. Standard Methods for the Examination of Water and Wastewater, 22nd Edition. Washington D.C.

U.S. Environmental Protection Agency Office of Water (4303T). 2003. Method 1600: Membrane Filter Test for Enterococci in Water. Washington D.C.

Report No: Project:

31148

Piscataqua River

Sample ID: Matrix:

PEASE_001 Water

Sampled:

09/17/18 0830

| Parameter | | Result | True Value | Percerit Recovery | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---|-------------------------------|-----------------------------|-----------------------------|--------------------------------------|--------------------------------------|--|--|--|
| Total suspended solids Total suspended solids Total suspended solids | PB438W LCS438W LCSD438W | 0 10 10 | 10 10 | ND 99 99, 0%RSD | mg/L mg/L mg/L | 09/18/18 1420 | 09/20/18 0945 09/20/18 0945 09/20/18 0945 | CA /SM 2540D |
| Total dissolved solids Total dissolved solids Total dissolved solids | PB592W LCS592W LCSD592W | 0 518 505 | 0 500 500 | ND 104 101, 3%RSD | mg/L mg/L mg/L | 09/19/18 0930 | 09/20/18 1220 09/20/18 1220 09/20/18 1220 | CA/SM 2540C |
| Biochemical Oxygen Demand Biochemical Oxygen Demand Biochemical Oxygen Demand Biochemical Oxygen Demand Biochemical Oxygen Demand | PB859W LCS859W LCSD859W | 0 0 208 199 204 | 0 0 198 198 198 | ND ND 105 100 103, 2%RSD | mg/L mg/L mg/L mg/L mg/L | 09/19/18 09/19/18 09/19/18 09/19/18 09/19/18 | 09/24/18 09/24/18 09/24/18 09/24/18 09/24/18 | KL/SM 5210 B KL/SM 5210 B KL/SM 5210 B KL/SM 5210 B KL/SM 5210 B |
| Ammonia-N Ammonia-N Ammonia-N | PB967W LCS967W LCSD967 | 0 10 10 | 0 10 10 | ND 99 99, 0%RSD | mg/L as N mg/L as N mg/L as N | 10/05/18 1330 10/05/18 1330 10/05/18 1330 | 10/05/18 1330 | JHW/SM 4500-NH3 G JHW/SM 4500-NH3 G JHW/SM 4500-NH3 G |
| Total Kjeldahl Nitrogen Total Kjeldahl Nitrogen Total Kjeldahl Nitrogen | PB581W LCS581W LCSD581 | 0 8 10 | 0 10 10 | ND 83 98, 17%RSD | mg/L as N mg/L as N mg/L as N | 10/08/18 1015 | 10/11/18 1020 | CA/SM 4500-N C CA/SM 4500-N C CA/SM 4500-N C |
| Nitrate plus nitrite-N Nitrate plus nitrite-N Nitrate plus nitrite-N | PB378W LCS378W LCSD378W | 0 1 1 | 0 1 1 | ND 100 100, 0%RSD | mg/L as N mg/L as N mg/L as N | 09/25/18 1330 | 09/25/18 1400 | JHW/SM 4500-NO3 F JHW/SM 4500-NO3 F JHW/SM 4500-NO3 F |
| Total phosphorus Total phosphorus Total phosphorus | PB507W LCS507W LCSD507W | 0 1 1 | 0 1 1 | ND 102 102, 1%RSD | mg/L mg/L mg/L | 10/08/18 1200 10/08/18 1200 10/08/18 1200 | 10/10/18 1218 | CA/SM 4500-P E CA/SM 4500-P E CA/SM 4500-P E |

SDG:

Report No:

31148

Project:

Piscataqua River

SDG:

Sample ID: Matrix: Sampled: PEASE_001

Water 09/17/18 1040

Parameter Result True Percent Units Date Date of INIT/Method/Reference Value Recovery Prepared Analysis Oil and grease PB479W 0 0 ND mg/L 09/24/18 1230 09/26/18 0830 RK/EPA 1664A Oil and grease LCS479W 34 40 85 mg/L 09/24/18 1230 09/26/18 0830 RK/EPA 1664A Oil and grease LCSD479W 40 09/24/18 1230 09/26/18 0830 RK/EPA 1664A 33 83, 2%RSD mg/L

Notes:

ND = Not Detected

Report No: Project:

31148

Piscataqua River

Sample ID: Matrix:

PEASE_001DUP

Water

Sampled:

09/17/18 0830

| Parameter | | Result | True Value | Percent Recovery | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|-------------------------|----------|--------|---------------|---------------------|-----------|------------------|---------------------|-----------------------|
| Total suspended solids | PB438W | 0 | | ND | mg/L | 09/18/18 1420 | 09/20/18 0945 | CA /SM 2540D |
| Total suspended solids | LCS438W | 10 | 10 | 99 | mg/L | | 09/20/18 0945 | |
| Total suspended solids | LCSD438W | 10 | 10 | 99, 0%RSD | mg/L | | 09/20/18 0945 | |
| Ammonia-N | PB967W | 0 | 0 | ND | mg/L as N | 10/05/18 1330 | 10/05/18 1330 | JHW/SM 4500-NH3 G |
| Ammonia-N | LCS967W | 10 | 10 | 99 | mg/L as N | 10/05/18 1330 | 10/05/18 1330 | JHW/SM 4500-NH3 G |
| Ammonia-N | LCSD967 | 10 | 10 | 99, 0%RSD | mg/L as N | 10/05/18 1330 | 10/05/18 1330 | JHW/SM 4500-NH3 G |
| Total Kjeldahl Nitrogen | PB581W | 0 | 0 | ND | mg/L as N | 10/08/18 1015 | 10/11/18 1020 | CA/SM 4500-N C |
| Total Kjeldahl Nitrogen | LCS581W | 8 | 10 | 83 | mg/L as N | 10/08/18 1015 | 10/11/18 1020 | CA/SM 4500-N C |
| Total Kjeldahl Nitrogen | LCSD581 | 10 | 10 | 98, 17%RSD | mg/L as N | 10/08/18 1015 | 10/11/18 1020 | CA/SM 4500-N C |
| Nitrate plus nitrite-N | PB378W | 0 | 0 | ND | mg/L as N | 09/25/18 1330 | 09/25/18 1400 | JHW/SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCS378W | 1 | 1 | 100 | mg/L as N | 09/25/18 1330 | 09/25/18 1400 | JHW/SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCSD378W | 1 | 1 | 100, 0%RSD | mg/L as N | 09/25/18 1330 | 09/25/18 1400 | JHW/SM 4500-NO3 F |
| Total phosphorus | PB507W | 0 | 0 | ND | mg/L | 10/08/18 1200 | 10/10/18 1218 | CA/SM 4500-P E |
| Total phosphorus | LCS507W | 1 | 1 | 102 | mg/L | 10/08/18 1200 | 10/10/18 1218 | CA/SM 4500-P E |
| Total phosphorus | LCSD507W | 1 | 1 | 102, 1%RSD | mg/L | 10/08/18 1200 | | CA/SM 4500-P E |

SDG:

Notes:

ESI

EnviroSystems, Inc.

P.O. Box 778

Hampton, NH 03842-0778

603-926-3345 fax 603-926-3521 Report No:

31148

Project:

Piscataqua River

10,000.

Sample ID: Matrix: PEASE_001DUP

Water

Sampled:

09/17/18 1040

| Parameter | | Result | True Value | Percent Recovery | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|--|-------------------------------|---------------|---------------|-----------------------|----------------------|------------------|---------------------|--|
| Oil and grease Oil and grease Oil and grease | PB479W LCS479W LCSD479W | 0 34 33 | 0 40 40 | ND 85 83, 2%RSD | mg/L mg/L mg/L | 09/24/18 1230 | 09/26/18 0830 | RK/EPA 1664A RK/EPA 1664A RK/EPA 1664A |

SDG:

Notes:

ND = Not Detected

Report No: Project:

31148

Piscataqua River

Sample ID: Matrix:

NEW_001 Water

Sampled: 09/17/18 0730

| Parameter | | Result | True Value | Percent Recovery | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|-------------------------|-------------|--------|---------------|---------------------|-----------|------------------|---------------------|-----------------------|
| Total suspended solids | PB438W | 0 | | ND | mg/L | 09/18/18 1420 | 09/20/18 0945 | CA /SM 2540D |
| Total suspended solids | LCS438W | 10 | 10 | 99 | mg/L | | 09/20/18 0945 | |
| Total suspended solids | LCSD438W | 10 | 10 | 99, 0%RSD | mg/L | 09/18/18 1420 | 09/20/18 0945 | CA /SM 2540D |
| Total dissolved solids | PB592W | 0 | 0 | ND | mg/L | 09/19/18 0930 | 09/20/18 1220 | CA /SM 2540C |
| Total dissolved solids | LCS592W | 518 | 500 | 104 | mg/L | 09/19/18 0930 | 09/20/18 1220 | CA /SM 2540C |
| Total dissolved solids | LCSD592W | 505 | 500 | 101, 3%RSD | mg/L | 09/19/18 0930 | 09/20/18 1220 | CA /SM 2540C |
| Biochemical Oxygen Dema | nd PB859W | 0 | 0 | ND | mg/L | 09/19/18 | 09/24/18 | KL/SM 5210 B |
| Biochemical Oxygen Dema | nd PB859W | 0 | 0 | ND | mg/L | 09/19/18 | 09/24/18 | KL/SM 5210 B |
| Biochemical Oxygen Dema | nd LCS859W | 208 | 198 | 105 | mg/L | 09/19/18 | 09/24/18 | KL/SM 5210 B |
| Biochemical Oxygen Dema | | 199 | 198 | 100 | mg/L | 09/19/18 | 09/24/18 | KL/SM 5210 B |
| Biochemical Oxygen Dema | nd LCST859W | 204 | 198 | 103, 2%RSD | mg/L | 09/19/18 | 09/24/18 | KL/SM 5210 B |
| Ammonia-N | PB967W | 0 | 0 | ND | mg/L as N | 10/05/18 1330 | 10/05/18 1330 | JHW/SM 4500-NH3 G |
| Ammonia-N | LCS967W | 10 | 10 | 99 | mg/L as N | 10/05/18 1330 | 10/05/18 1330 | JHW/SM 4500-NH3 G |
| Ammonia-N | LCSD967 | 10 | 10 | 99, 0%RSD | mg/L as N | 10/05/18 1330 | 10/05/18 1330 | JHW/SM 4500-NH3 G |
| Total Kjeldahl Nitrogen | PB581W | 0 | 0 | ND | mg/L as N | 10/08/18 1015 | 10/11/18 1020 | CA /SM 4500-N C |
| Total Kjeldahl Nitrogen | LCS581W | 8 | 10 | 83 | mg/L as N | 10/08/18 1015 | 10/11/18 1020 | CA /SM 4500-N C |
| Total Kjeldahl Nitrogen | LCSD581 | 10 | 10 | 98, 17%RSD | mg/L as N | 10/08/18 1015 | 10/11/18 1020 | CA/SM 4500-N C |
| Nitrate plus nitrite-N | PB378W | 0 | 0 | ND | mg/L as N | 09/25/18 1330 | 09/25/18 1400 | JHW/SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCS378W | 1 | 1 | 100 | mg/L as N | 09/25/18 1330 | 09/25/18 1400 | JHW/SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCSD378W | 1 | 1 | 100, 0%RSD | mg/L as N | 09/25/18 1330 | 09/25/18 1400 | JHW/SM 4500-NO3 F |
| Total phosphorus | PB507W | 0 | 0 | ND | mg/L | 10/08/18 1200 | 10/10/18 1218 | CA /SM 4500-P E |
| Total phosphorus | LCS507W | 1 | 1 | 102 | mg/L | 10/08/18 1200 | | CA/SM 4500-P E |
| Total phosphorus | LCSD507W | 1 | 1 | 102, 1%RSD | mg/L | 10/08/18 1200 | 10/10/18 1218 | CA/SM 4500-P E |

SDG:

Notes:

ND = Not Detected

ESI

EnviroSystems, Inc. P.O. Box 778 Hampton, NH 03842-0778 603-926-3345 fax 603-926-3521 www.envirosystems.com Report No:

31148

Project:

Piscataqua River

Sample ID: Matrix:

NEW_001 Water

Sampled:

09/17/18 0845

Parameter

Oil and grease Oil and grease Oil and grease

| | Result | True Value | Percent Recovery | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|-------------------------------|---------------|---------------|-----------------------|----------------------|------------------|---------------------|--|
| PB479W LCS479W LCSD479W | 0 34 33 | 0 40 40 | ND 85 83, 2%RSD | mg/L mg/L mg/L | 09/24/18 1230 | 09/26/18 0830 | RK/EPA 1664A RK/EPA 1664A RK/EPA 1664A |

SDG:

Notes:

ND = Not Detected

Report No: Project:

31148

Piscataqua River

Sample ID:

NEW_001DUP

Matrix: Water

Sampled:

09/17/18 0730

| Parameter | | Result | True Value | Percent Recovery | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---------------------------|----------|--------|---------------|---------------------|-----------|------------------|---------------------|-----------------------|
| Total suspended solids | PB438W | 0 | | ND | mg/L | 09/18/18 1420 | 09/20/18 0945 | CA/SM 2540D |
| Total suspended solids | LCS438W | 10 | 10 | 99 | mg/L | 09/18/18 1420 | 09/20/18 0945 | CA/SM 2540D |
| Total suspended solids | LCSD438W | 10 | 10 | 99, 0%RSD | mg/L | 09/18/18 1420 | 09/20/18 0945 | CA /SM 2540D |
| Total dissolved solids | PB592W | 0 | 0 | ND | mg/L | 09/19/18 0930 | 09/20/18 1220 | CA /SM 2540C |
| Total dissolved solids | LCS592W | 518 | 500 | 104 | mg/L | 09/19/18 0930 | 09/20/18 1220 | CA /SM 2540C |
| Total dissolved solids | LCSD592W | 505 | 500 | 101, 3%RSD | mg/L | 09/19/18 0930 | 09/20/18 1220 | CA /SM 2540C |
| Biochemical Oxygen Demand | PB859W | 0 | 0 | ND | mg/L | 09/19/18 | 09/24/18 | KL/SM 5210 B |
| Biochemical Oxygen Demand | PB859W | 0 | 0 | ND | mg/L | 09/19/18 | 09/24/18 | KL/SM 5210 B |
| Biochemical Oxygen Demand | LCS859W | 208 | 198 | 105 | mg/L | 09/19/18 | 09/24/18 | KL/SM 5210 B |
| Biochemical Oxygen Demand | LCSD859W | 199 | 198 | 100 | mg/L | 09/19/18 | 09/24/18 | KL/SM 5210 B |
| Biochemical Oxygen Demand | LCST859W | 204 | 198 | 103, 2%RSD | mg/L | 09/19/18 | 09/24/18 | KL/SM 5210 B |
| Ammonia-N | PB967W | 0 | 0 | ND | mg/L as N | 10/05/18 1330 | 10/05/18 1330 | JHW/SM 4500-NH3 G |
| Ammonia-N | LCS967W | 10 | 10 | 99 | mg/L as N | 10/05/18 1330 | 10/05/18 1330 | JHW/SM 4500-NH3 G |
| Ammonia-N | LCSD967 | 10 | 10 | 99, 0%RSD | mg/L as N | 10/05/18 1330 | 10/05/18 1330 | JHW/SM 4500-NH3 G |
| Total Kjeldahl Nitrogen | PB581W | 0 | 0 | ND | mg/L as N | 10/08/18 1015 | 10/11/18 1020 | CA/SM 4500-N C |
| Total Kjeldahl Nitrogen | LCS581W | 8 | 10 | 83 | mg/L as N | 10/08/18 1015 | 10/11/18 1020 | CA/SM 4500-N C |
| Total Kjeldahl Nitrogen | LCSD581 | 10 | 10 | 98, 17%RSD | mg/L as N | 10/08/18 1015 | 10/11/18 1020 | CA/SM 4500-N C |
| Nitrate plus nitrite-N | PB378W | 0 | 0 | ND | mg/L as N | 09/25/18 1330 | 09/25/18 1400 | JHW/SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCS378W | 1 | 1 | 100 | mg/L as N | 09/25/18 1330 | 09/25/18 1400 | JHW/SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCSD378W | 1 | 1 | 100, 0%RSD | mg/L as N | 09/25/18 1330 | 09/25/18 1400 | JHW/SM 4500-NO3 F |
| Total phosphorus | PB507W | 0 | 0 | ND | mg/L | 10/08/18 1200 | 10/10/18 1218 | CA /SM 4500-P E |
| Total phosphorus | LCS507W | 1 | 1 | 102 | mg/L | 10/08/18 1200 | 10/10/18 1218 | CA /SM 4500-P E |
| Total phosphorus | LCSD507W | 1 | 1 | 102, 1%RSD | mg/L | 10/08/18 1200 | 10/10/18 1218 | CA /SM 4500-P E |

SDG:

Notes:

ND = Not Detected

ESI

EnviroSystems, Inc. P.O. Box 778 Hampton, NH 03842-0778 603-926-3345 fax 603-926-3521 www.envirosystems.com Report No:

31148

Project:

Piscataqua River

Sample ID: Matrix:

NEW_001DUP

Sampled:

Water 09/17/18 0845

| Parameter | | Result | True Value | Percent Recovery | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|----------------|----------|--------|---------------|---------------------|-------|------------------|---------------------|-----------------------|
| Oil and grease | PB479W | 0 | 0 | ND | mg/L | 09/24/18 1230 | 09/26/18 0830 | RK/EPA 1664A |
| Oil and grease | LCS479W | 34 | 40 | 85 | mg/L | 09/24/18 1230 | 09/26/18 0830 | |
| Oil and grease | LCSD479W | 33 | 40 | 83, 2%RSD | mg/L | 09/24/18 1230 | 09/26/18 0830 | |

SDG:

Notes:

ND = Not Detected

ESI

EnviroSystems, Inc.

P.O. Box 778

Hampton, NH 03842-0778

603-926-3345

fax 603-926-3521

www.envirosystems.com

Report No: Project:

31148

Piscataqua River

RIVER_001

Sample ID: Matrix: Water

| Parameter | | Result | True Value | Percent Recovery | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---------------------------|-----------|--------|---------------|---------------------|-----------|------------------|---------------------|-----------------------|
| Total suspended solids | PB438W | 0 | | ND | mg/L | 09/18/18 1420 | 09/20/18 0945 | CA /SM 2540D |
| Total suspended solids | LCS438W | 10 | 10 | 99 | mg/L | | 09/20/18 0945 | |
| Total suspended solids | LCSD438W | 10 | 10 | 99, 0%RSD | mg/L | | 09/20/18 0945 | |
| Tatal disastrad - did- | DDFOOM | • | _ | | _ | | | |
| Total dissolved solids | PB592W | 0 | 0 | ND | mg/L | | 09/20/18 1220 | |
| Total dissolved solids | LCS592W | 518 | 500 | 104 | mg/L | | 09/20/18 1220 | |
| Total dissolved solids | LCSD592W | 505 | 500 | 101, 3%RSD | mg/L | 09/19/18 0930 | 09/20/18 1220 | CA /SM 2540C |
| Biochemical Oxygen Demand | PB859W | 0 | 0 | ND | mg/L | 09/19/18 | 09/24/18 | KL/SM 5210 B |
| Biochemical Oxygen Demand | PB859W | 0 | 0 | ND | mg/L | 09/19/18 | 09/24/18 | KL/SM 5210 B |
| Biochemical Oxygen Demand | LCS859W | 208 | 198 | 105 | mg/L | 09/19/18 | 09/24/18 | KL/SM 5210 B |
| Biochemical Oxygen Demand | LCSD859W | 199 | 198 | 100 | mg/L | 09/19/18 | 09/24/18 | KL/SM 5210 B |
| Biochemical Oxygen Demand | LCST859W | 204 | 198 | 103, 2%RSD | mg/L | 09/19/18 | 09/24/18 | KL/SM 5210 B |
| A | DDOCOM | • | • | | ,, ,, | | | |
| Ammonia-N | PB959W | 0 | 0 | ND | mg/L as N | | | JHW/SM 4500-NH3 G |
| Ammonia-N | LCS959W | 10 | 10 | 100 | mg/L as N | | | JHW/SM 4500-NH3 G |
| Ammonia-N | LCSD959 | 8 | 10 | 85, 16%RSD | mg/L as N | 09/24/18 1000 | 09/24/18 1000 | JHW/SM 4500-NH3 G |
| Total Kjeldahl Nitrogen | PB581W | 0 | 0 | ND | mg/L as N | 10/08/18 1015 | 10/11/18 1020 | CA /SM 4500-N C |
| Total Kjeldahl Nitrogen | LCS581W | 8 | 10 | 83 | mg/L as N | 10/08/18 1015 | 10/11/18 1020 | CA/SM 4500-N C |
| Total Kjeldahl Nitrogen | LCSD581 | 10 | 10 | 98, 17%RSD | mg/L as N | 10/08/18 1015 | 10/11/18 1020 | CA/SM 4500-N C |
| Nitrate plus nitrite-N | PB386W | 0 | 0 | ND. | mg/L as N | 00/20/49 4000 | 00/20/19 1200 | JHW/SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCS386W | 1 | 1 | 100 | mg/L as N | | | JHW/SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCSD386W | 1 | 1 | | U | | | |
| Miliale plus milite-M | LC3D300VV | 1 | ' | 100, 0%RSD | mg/L as N | 09/20/18 1000 | 09/20/18 1200 | JHW/SM 4500-NO3 F |
| Total phosphorus | PB507W | 0 | 0 | ND | mg/L | 10/08/18 1200 | 10/10/18 1218 | CA /SM 4500-P E |
| Total phosphorus | LCS507W | 1 | 1 | 102 | mg/L | 10/08/18 1200 | 10/10/18 1218 | CA/SM 4500-P E |
| Total phosphorus | LCSD507W | 1 | 1 | 102, 1%RSD | mg/L | 10/08/18 1200 | 10/10/18 1218 | CA/SM 4500-P E |
| Oil and grease | PB479W | 0 | 0 | ND | mg/L | 09/24/18 1230 | 09/26/18 0830 | RK/EPA 1664A |
| Oil and grease | LCS479W | 34 | 40 | 85 | mg/L | | | RK/EPA 1664A |
| Oil and grease | LCSD479W | 33 | 40 | 83, 2%RSD | mg/L | | | RK/EPA 1664A |
| | | - | | 50, 270, 135 | 9, ⊏ | 33/E-7/10 1200 | 35,26,15 5500 | . W. C |

SDG:

Notes:

ND = Not Detected

ESI

EnviroSystems, Inc. P.O. Box 778 Hampton, NH 03842-0778 603-926-3345 fax 603-926-3521 www.envirosystems.com Report No: Project:

31148

Piscataqua River

Sample ID: Matrix:

RIVER_001DUP

Water

| Parameter | | Result | True Value | Percent Recovery | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---------------------------|------------|--------|---------------|---------------------|-----------|------------------|---------------------|--------------------------|
| Total suspended solids | PB438W | 0 | | ND | mg/L | 09/18/18 1420 | 09/20/18 0945 | CA/SM 2540D |
| Total suspended solids | LCS438W | 10 | 10 | 99 | mg/L | 09/18/18 1420 | 09/20/18 0945 | CA/SM 2540D |
| Total suspended solids | LCSD438W | 10 | 10 | 99, 0%RSD | mg/L | 09/18/18 1420 | 09/20/18 0945 | CA/SM 2540D |
| Total dissolved solids | PB592W | 0 | 0 | ND | mg/L | 09/19/18 0930 | 09/20/18 1220 | CA /SM 2540C |
| Total dissolved solids | LCS592W | 518 | 500 | 104 | mg/L | 09/19/18 0930 | 09/20/18 1220 | CA/SM 2540C |
| Total dissolved solids | LCSD592W | 505 | 500 | 101, 3%RSD | mg/L | 09/19/18 0930 | 09/20/18 1220 | |
| Biochemical Oxygen Demand | PB859W | 0 | 0 | ND | mg/L | 09/19/18 | 09/24/18 | KL/SM 5210 B |
| Biochemical Oxygen Demand | PB859W | 0 | Ō | ND | mg/L | 09/19/18 | 09/24/18 | KL/SM 5210 B |
| Biochemical Oxygen Demand | LCS859W | 208 | 198 | 105 | mg/L | 09/19/18 | 09/24/18 | KL/SM 5210 B |
| Biochemical Oxygen Demand | LCSD859W | 199 | 198 | 100 | mg/L | 09/19/18 | 09/24/18 | KL/SM 5210 B |
| Biochemical Oxygen Demand | LCST859W | 204 | 198 | 103, 2%RSD | mg/L | 09/19/18 | 09/24/18 | KL/SM 5210 B |
| Ammonia-N | PB960W | 0 | 0 | ND | | 00/04/40 4000 | 00/04/40 4000 | W 1144/04 A 4500 MU 10 O |
| Ammonia-N | LCS960W | 11 | 10 | 105 | mg/L as N | 09/24/18 1000 | 09/24/18 1000 | JHW/SM 4500-NH3 G |
| Ammonia-N | LCSD960 | 10 | | | mg/L as N | 09/24/18 1000 | 09/24/18 1000 | |
| Ammonia-N | 31148-080D | 0 | 10 | 102, 3%RSD | mg/L as N | 09/24/18 1000 | 09/24/18 1000 | |
| Ammonia-N | 31148-080S | 10 | 0 10 | NC 100 | mg/L as N | 09/24/18 1000 | 09/24/18 1000 | JHW/SM 4500-NH3 G |
| Ammonia-iv | 31140-0003 | 10 | 10 | 100 | mg/L as N | 09/24/18 1000 | 09/24/18 1000 | JHW/SM 4500-NH3 G |
| Total Kjeldahl Nitrogen | PB581W | 0 | 0 | ND | mg/L as N | 10/08/18 1015 | 10/11/18 1020 | CA/SM 4500-N C |
| Total Kjeldahl Nitrogen | LCS581W | 8 | 10 | 83 | mg/L as N | 10/08/18 1015 | 10/11/18 1020 | CA/SM 4500-N C |
| Total Kjeldahl Nitrogen | LCSD581 | 10 | 10 | 98, 17%RSD | mg/L as N | 10/08/18 1015 | | CA/SM 4500-N C |
| Nitrate plus nitrite-N | PB386W | 0 | 0 | ND | mg/L as N | 09/20/18 1000 | 09/20/18 1200 | JHW/SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCS386W | 1 | 1 | 100 | mg/L as N | 09/20/18 1000 | 09/20/18 1200 | JHW/SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCSD386W | 1 | i | 100, 0%RSD | mg/L as N | 09/20/18 1000 | 09/20/18 1200 | JHW/SM 4500-NO3 F |
| Till die plae filene fi | 200200011 | ' | • | 100, 0701(0D | mg/L as N | 09/20/10 1000 | 09/20/16 1200 | 3000-NO3 F |
| Total phosphorus | PB507W | 0 | 0 | ND | mg/L | 10/08/18 1200 | 10/10/18 1218 | CA/SM 4500-P E |
| Total phosphorus | LCS507W | 1 | 1 | 102 | mg/L | 10/08/18 1200 | 10/10/18 1218 | CA/SM 4500-P E |
| Total phosphorus | LCSD507W | 1 | 1 | 102, 1%RSD | mg/L | 10/08/18 1200 | 10/10/18 1218 | CA/SM 4500-P E |
| Oil and grease | PB479W | 0 | 0 | ND | mg/L | 09/24/18 1230 | 09/26/18 0830 | RK/EPA 1664A |
| Oil and grease | LCS479W | 34 | 40 | 85 | mg/L | 09/24/18 1230 | 09/26/18 0830 | RK/EPA 1664A |
| Oil and grease | LCSD479W | 33 | 40 | 83, 2%RSD | mg/L | 09/24/18 1230 | 09/26/18 0830 | |
| | | | | • | - | | | |

SDG:

Notes:

ND = Not Detected

ESI

EnviroSystems, Inc.

P.O. Box 778

Hampton, NH 03842-0778

603-926-3345 fax 603-926-3521

PB157W

Sample Designation: Date Sampled:

Laboratory Blank

Date Extracted:

09/21/18 0930 09/21/18 0930

Date Analyzed:

09/24/18

Matrix:

Water

SEMIVOLATILE ORGANICS Method Reference: EPA 625.

| | Concentration | Quantitation Limit | | Concentration | Quantitation Limit |
|-----------------------------|---------------|--------------------|------------------------------------|---------------|--------------------|
| | (ug/L) | (ug/L) | | (ug/L) | (ug/L) |
| N-nitrosodimethylamine | U | 3 | acenaphthene | U | 3 |
| phenol | U | 3 | 2,4-dinitrophenol | U | 5 |
| 2-chlorophenol | U | 3 | 4-nitrophenol | U | 3 |
| bis(2-chloroethyl)ether | U | 3 | fluorene | U | 3 |
| 1,3-dichlorobenzene | U | 3 | 4-chlorophenyl-phenylether | U | 3 |
| 1,4-dichlorobenzene | U | 3 | diethylphthalate | U | 3 |
| 1,2-dichlorobenzene | υ | 3 | 4,6-dinitro-2-methylphenol | U | 3 |
| 2-methylphenol (m-cresol) | U | 3 | N-nitrosodiphenylamine | U | 3 |
| bis(2-chloroisopropyl)ether | υ | 3 | 1,2-diphenylhydrazine (azobenzene) | U | 3 |
| hexachloroethane | U | 3 | 4-bromophenyl-phenylether | U | 3 |
| N-nitroso-di-n-propylamine | U | 3 | hexachlorobenzene | U | 3 |
| 4-methylphenol (p-cresol) | U | 3 | pentachlorophenol | U | 3 |
| nitrobenzene | U | 3 | phenanthrene | U | 3 |
| isophorone | U | 3 | anthracene | U | 3 |
| 2-nitrophenol | U | 3 | di-n-butylphthalate | U | 3 |
| 2,4-dimethylphenol | U | 3 | fluoranthene | υ | 3 |
| bis(2-chloroethoxy)methane | U | 3 | benzidine | U | 3 |
| 2,4-dichlorophenol | U | 3 | pyrene | υ | 3 |
| 1,2,4-trichlorobenzene | U | 3 | butylbenzylphthalate | U | 3 |
| naphthalene | U | 3 | benzo(a)anthracene | U | 3 |
| hexachloro-1,3-butadiene | U | 3 | chrysene | U | 3 |
| 4-chloro-3-methylphenol | U | 3 | 3,3'-dichlorobenzidine | U | 3 |
| hexachlorocyclopentadiene | U | 3 | bis(2-ethylhexyl)phthalate | U | 3 |
| 2,4,5-trichlorophenol | U | 3 | di-n-octylphthalate | U | 3 |
| 2,4,6-trichlorophenol | U | 3 | benzo(b)fluoranthene | U | 3 |
| 2-chloronaphthalene | U | 3 | benzo(k)fluoranthene | U | 3 |
| acenaphthylene | υ | 3 | benzo(a)pyrene | U | 3 |
| dimethylphthalate | U | 3 | indeno(1,2,3-cd)pyrene | U | 3 |
| 2,6-dinitrotoluene | U | 3 | dibenzo(a,h)anthracene | U | 3 |
| 2,4-dinitrotoluene | υ | 3 | benzo(g,h,i)perylene | U | 3 |

SURROGATE STANDARDS

| | Recovery | Acceptance Limits | | Recovery | Acceptance Limits |
|----------------------|----------|-------------------|------------------|----------|-------------------|
| | (%) | (%) | | (%) | (%) |
| 2-fluorophenol | 38 | 21-100 | nitrobenzene-d5 | 11, J17 | 35-114 |
| phenol-d5 | 23 | 10-102 | 2-fluorobiphenyl | 10,J17 | 43-116 |
| 2,4,6-tribromophenol | 72 | 10-123 | terphenyl-d14 | 15,J17 | 33-141 |

U = Below quantitation limit J17 = SUR %R below limit.

ES

Sample Designation: Date Sampled:

LCS157W

Laboratory Control Sample 09/21/18 0930

Date Extracted: Date Analyzed:

Matrix:

09/21/18 0930 09/25/18 Water

SEMIVOLATILE ORGANICS Method Reference: EPA 625.

| | Concentration | Added | Recovery | Limits | | Concentration | Added | Limits |
|-----------------------------|---------------|--------|----------|--------|----------------------------|---------------|--------|--------|
| | (ug/L) | (ug/L) | (%) | (%) | | (ug/L) | (ug/L) | (%) |
| N-nitrosodimethylamine | U | NA | NA | 30-150 | acenaphthene | 130 | 200 | 50-158 |
| phenol | 68 | 200 | 34 | 5-112 | 2,4-dinitrophenol | 20 | NA | 30-150 |
| 2-chlorophenol | 180 | 200 | 92 | 23-134 | 4-nitrophenol | 87 | 100 | 39-139 |
| bis(2-chloroethyl)ether | U | NA | NA | 36-166 | fluorene | 69 | 100 | 1-132 |
| 1,3-dichlorobenzene | U | NA | NA | 1-172 | 4-chlorophenyl-phenylether | U | NA | 59-121 |
| 1,4-dichlorobenzene | 55 | 100 | 55 | 20-124 | diethylphthalate | U | NA | 25-158 |
| 1,2-dichlorobenzene | U | NA | NA | 32-129 | 4,6-dinitro-2-methylphenol | Ü | NA | 30-150 |
| 2-methylphenol (m-cresol) | U | NA | NA | 30-150 | N-nitrosodiphenylamine | Ü | NA | 1-181 |
| bis(2-chloroisopropyl)ether | U | NA | NA | 53-127 | 1,2-diphenylhydrazine (azo | Ü | NA | 1-181 |
| hexachioroethane | U | NA | NA | 40-113 | 4-bromophenyl-phenylether | Ü | NA. | 30-150 |
| N-nitroso-di-n-propylamine | 55 | 100 | 55 | 1-150 | hexachlorobenzene | Ü | NA | 53-127 |
| 4-methylphenol (p-cresol) | U | NA | NA | 30-150 | pentachlorophenol | 160 | 200 | 1-152 |
| nitrobenzene | U | NA | NA | 35-180 | phenanthrene | 69 | 100 | 14-176 |
| isophorone | U | NA | NA | 21-196 | anthracene | 70 | 100 | 54-120 |
| 2-nitrophenol | U | NA | NA | 29-182 | di-n-butyiphthalate | 82 | 100 | 30-150 |
| 2,4-dimethylphenol | U | NA | NA | 32-119 | fluoranthene | 76 | 100 | 1-118 |
| bis(2-chloroethoxy)methane | U | NA | NA | 33-184 | benzidine | Ü | NA | 26-137 |
| 2,4-dichlorophenol | U | NA | NA | 39-135 | pyrene | 160 | 200 | 30-150 |
| 1,2,4-trichlorobenzene | 55 | 100 | 55 | 44-142 | butyibenzylphthalate | U | NA | 52-115 |
| naphthalene | 58 | 100 | 58 | 21-133 | benzo(a)anthrecene | 79 | 100 | 1-262 |
| hexachloro-1,3-butadiene | U | NA | NA | 24-118 | chrysene | 76 | 100 | 33-143 |
| 4-chloro-3-methylphenol | 180 | 200 | 90 | 22-147 | 3,3'-dichlorobenzidine | Ü | NA | 1-152 |
| hexachlorocyclopentadiene | U | NA | NA | 30-150 | bis(2-ethylhexyl)phthalate | Ū | NA | 17-168 |
| 2,4,6-trichlorophenol | U | NA | NA | 30-150 | di-n-octylphthalate | Ü | NA. | 1-158 |
| 2-chloronaphthalene | U | NA | NA | 30-150 | benzo(b)fluoranthene | 25 | 100 | 1-146 |
| acenaphthylene | 68 | 100 | 68 | 30-150 | benzo(k)fluoranthene | 28 | 100 | 24-159 |
| dimethylphthalate | U | NA | NA | 33-145 | benzo(a)pyrene | 29 | 100 | 11-162 |
| 2,6-dinitrotoluene | U | NA | NA | 1-112 | indeno(1,2,3-cd)pyrene | 62 | 100 | 17-163 |
| 2,4-dinitrotoluene | 79 | 100 | 79 | 30-150 | dibenzo(a,h)anthracene | 58 | 100 | 1-171 |
| | | | | | benzo(g,h,i)perytene | 55 | 100 | 1-227 |
| | | | | | | | | |

| 2-fluorophenol phenol-d5 | Recovery (%) 45 28 | Acceptance Limits (%) 21-100 10-102 | nitrobenzerie-d5 2-fluorobiphenyl | Recovery (%) 66 61 | Acceptance Limits (%) 35-114 43-116 |
|--------------------------|-----------------------------|--|--------------------------------------|-----------------------------|--|
| 2,4,6-tribromophenol | 90 | 10-123 | terphenyl-d14 | 82 | 33-141 |

U = Below quantitation limit

EnviroSystems, Inc. P.O. Box 778 One Lafayette Road Hampton, NH 03842-0788 603-926-3345 fax 603-926-3521 www.envirosystems.com

LCSD157W

Laboratory Control Sample Duplicate 09/21/18 0930

Lab Number: Sample Designation: Date Sampled: Date Extracted: Date Analyzed: Matrix:

09/21/18 0930 09/25/18 Water

SEMIVOLATILE ORGANICS Method Reference: EPA 625.

| | Concentration | Added | Recovery | Limits | | Concentration | Added | Recovery | Limits |
|-----------------------------|---------------|--------|----------|--------|----------------------------|---------------|--------|----------|---------------|
| | (ug/L) | (ug/L) | (%) | (%) | | (ug/L) | (ug/L) | (%) | (%) |
| N-nitrosodimethylamine | U | NA | NA | 30-150 | acenaphthene | 130 | 200 | 65 | 50-158 |
| phenol | 77 | 200 | 39 | 5-112 | 2,4-dinitrophenol | U | NA | NA | 30-150 |
| 2-chlorophenol | 170 | 200 | 85 | 23-134 | 4-nitrophenol | 93 | 100 | 93 | 39-139 |
| bis(2-chloroethyl)ether | U | NA | NA | 36-166 | fluorene | 70 | 100 | 70 | 1-132 |
| 1,3-dichlorobenzene | U | NA | NA | 1-172 | 4-chlorophenyl-phenylether | U | NA | NA | 59-121 |
| 1,4-dichlorobenzene | 55 | 100 | 55 | 20-124 | diethylphthalate | U | NA | NA | 25-158 |
| 1,2-dichlorobenzene | U | NA | NA | 32-129 | 4,6-dinitro-2-methylphenol | U | NA | NA | 30-150 |
| 2-methylphenol (m-cresol) | U | NA | NA | 30-150 | N-nitrosodiphenylamine | U | NA | NA | 1-181 |
| bis(2-chloroisopropyl)ether | U | NA | NA | 53-127 | 1,2-diphenylhydrazine (azo | U | NA | NA | 1-181 |
| hexachloroethane | U | NA | NA | 40-113 | 4-bromophenyl-phenylether | U | NA | NA | 30-150 |
| N-nitroso-di-n-propylamine | 60 | 100 | 60 | 1-150 | hexachlorobenzene | U | NA | NA | 53-127 |
| 4-methylphenol (p-cresol) | U | NA | NA | 30-150 | pentachiorophenol | 140 | 200 | 70 | 1-152 |
| nitrobenzene | U | NA | NA | 35-180 | phenanthrene | 71 | 100 | 71 | 14-176 |
| isophorone | U | NA | NA | 21-196 | anthracene | 72 | 100 | 72 | 54-120 |
| 2-nitrophenol | U | NA | NA | 29-182 | di-n-butylphthalate | 83 | 100 | 83 | 30-150 |
| 2,4-dimethylphenol | U | NA | NA | 32-119 | fluoranthene | 78 | 100 | 78 | 1-118 |
| bis(2-chloroethoxy)methane | U | NA | NA | 33-184 | benzidine | U | NA | NA | 26-137 |
| 2,4-dichlorophenol | U | NA | NA | 39-135 | pyrene | 160 | 200 | 80 | 30-150 |
| 1,2,4-trichlorobenzene | 56 | 100 | 56 | 44-142 | butylbenzylphthalate | U | NA | NA | 52-115 |
| naphthalene | 60 | 100 | 60 | 21-133 | benzo(a)anthracene | 78 | 100 | 78 | 1-262 |
| hexachloro-1,3-butadiene | U | NA | NA | 24-116 | chrysene | 77 | 100 | 77 | 33-143 |
| 4-chloro-3-methylphenol | 170 | 200 | 85 | 22-147 | 3,3'-dichlorobenzidine | U | NA | NA | 1-152 |
| hexachlorocyclopentadiene | U | NA | NA | 30-150 | bis(2-ethylhexyl)phthalate | U | NA | NA | 17-168 |
| 2,4,6-trichlorophenol | U | NA | NA | 30-150 | di-n-octylphthalate | U | NA | NA | 1-158 |
| 2-chloronaphthalene | U | NA | NA | 30-150 | benzo(b)fluoranthene | 26 | 100 | 26 | 1- 148 |
| acenaphthylene | 68 | 100 | 68 | 30-150 | benzo(k)fluoranthene | 29 | 100 | 29 | 24-159 |
| dimethylphthalate | U | NA | NA | 33-145 | benzo(a)pyrene | 29 | 100 | 29 | 11-182 |
| 2,6-dinitrotoluene | U | NA | NA | 1-112 | indeno(1,2,3-cd)pyrene | 63 | 100 | 63 | 17-163 |
| 2,4-dinitrotoluene | 80 | 100 | 80 | 30-150 | dibenzo(a,h)anthracene | 58 | 100 | 58 | 1-171 |
| | | | | | benzo(g,h,i)perylene | 55 | 100 | 55 | 1-227 |
| | | | | | | | | | |

| SURROGATE S | STANDARDS |
|-------------|-----------|
|-------------|-----------|

| | Recovery | Acceptance Limits | | Recovery | Acceptance Limits |
|----------------------|----------|-------------------|------------------|----------|-------------------|
| | (%) | (%) | | (%) | (%) |
| 2-fluorophenol | 46 | 21-100 | nitrobenzene-d5 | 64 | 35-114 |
| phenol-d5 | 31 | 10-102 | 2-fluorobiphenyl | 59 | 43-116 |
| 2,4,6-tribromophenol | 77 | 10-123 | terphenyl-d14 | 81 | 33-141 |

U = Below quantitation limit

EnviroSystems, Inc. One Lafayette Road P.O. Box 778 Hampton, NH 03842-0788 603-926-3345 fax 603-926-3521 www.envirosystems.com Lab Number:
Sample Designation:
Date Sampled:

31148-103MS Matrix Spike 09/17/18

Date Extracted: Date Analyzed: Matrix: 09/21/18 09/25/18 Water

SEMIVOLATILE ORGANICS Method Reference: EPA 625.

| | Concentration | Added | Recovery | Limits | | Concentration | Added | Recovery | Limits |
|-----------------------------|---------------|--------|----------|--------|---------------------------------------|---------------|--------|----------|--------|
| | (ug/L) | (ug/L) | (%) | (%) | | (ug/L) | (ug/L) | (%) | (%) |
| N-nitrosodimethylamine | U | NA | NA | 30-150 | acenaphthene | 130 | 200 | 64 | 50-158 |
| phenol | 94 | 200 | 47 | 5-112 | 2,4-dinitrophenot | U | NA | NA | 30-150 |
| 2-chlorophenol | 180 | 200 | 90 | 23-134 | 4-nitrophenol | 84 | 100 | 84 | 39-139 |
| bis(2-chloroethyl)ether | U | NA | NA | 36-166 | fluorene | 66 | 100 | 66 | 1-132 |
| 1,3-dichlorobenzene | U | NA | NA | 1-172 | 4-chlorophenyl-phenylether | U | NA | NA | 59-121 |
| 1,4-dichlorobenzene | 57 | 100 | 57 | 20-124 | diethylphthalate | U | NA | NA | 25-158 |
| 1,2-dichlorobenzene | U | NA | NA | 32-129 | 4,6-dinitro-2-methylphenol | U | NA | NA | 30-150 |
| 2-methylphenol (m-cresol) | U | NA | NA | 30-150 | N-nitrosodiphenylamine | U | NA | NA | 1-181 |
| bis(2-chloroisopropyl)ether | U | NA | NA | 53-127 | 1,2-diphenylhydrazine | U | NA | NA | 1-181 |
| hexachloroethane | U | NA | NA | 40-113 | 4-bromophenyl-phenylether | U | NA | NA | 30-150 |
| N-nitroso-di-n-propylamine | 55 | 100 | 55 | 1-150 | hexachiorobenzene | U | NA | NA | 53-127 |
| 4-methylphenol (p-cresol) | U | NA | NA | 30-150 | pentachlorophenol | 40 | 200 | 20 | 1-152 |
| nitrobenzene | U | NA | NA | 35-180 | phenanthrene | 64 | 100 | 64 | 14-176 |
| isophorone | U | NA | NA | 21-196 | anthracene | 64 | 100 | 64 | 54-120 |
| 2-nitrophenol | U | NA | NA | 29-182 | di-n-butylphthalate | 77 | 100 | 77 | 30-150 |
| 2,4-dimethylphenol | U | NA | NA | 32-119 | fluoranthene | 69 | 100 | 69 | 1-118 |
| bis(2-chloroethoxy)methane | U | NA | NA | 33-184 | benzidine | U | NA | NA | 26-137 |
| 2,4-dichlorophenol | U | NA | NA | 39-135 | pyrene | 140 | 200 | 72 | 30-150 |
| 1,2,4-trichlorobenzene | 59 | 100 | 59 | 44-142 | butylbenzylphthalate | U | NA | NA | 52-115 |
| naphthalene | 61 | 100 | 61 | 21-133 | benzo(a)anthracene | 68 | 100 | 68 | 1-262 |
| hexachloro-1,3-butadiene | U | NA | NA | 24-116 | chrysene | 67 | 100 | 67 | 33-143 |
| 4-chloro-3-methylphenol | 180 | 200 | 90 | 22-147 | 3,3'-dichlorobenzidine | U | NA | NA | 1-152 |
| hexachlorocyclopentadiene | U | NA | NA | 30-150 | bis(2-ethylhexyl)phthalate | U | NA | NA | 17-168 |
| 2,4,6-trichlorophenol | U | NA | NA | 30-150 | di-n-octylphthalate | U | NA | NA | 1-158 |
| 2-chloronaphthalene | U | NA | NA | 30-150 | benzo(b)fluoranthene | 24 | 100 | 24 | 1-146 |
| acenaphthylene | 67 | 100 | 67 | 30-150 | benzo(k)fluoranthene | 26 | 100 | 26 | 24-159 |
| dimethylphthalate | U | NA | NA | 33-145 | benzo(a)pyrene | 26 | 100 | 26 | 11-162 |
| 2,6-dinitrotoluene | U | NA | NA | 1-112 | indeno(1,2,3-cd)pyrene | 57 | 100 | 57 | 17-163 |
| 2,4-dinitrotoluene | 75 | 100 | 75 | 30-150 | dibenzo(a,h)anthracene | 54 | 100 | 54 | 1-171 |
| | | | | | benzo(g,h,i)perylene | 51 | 100 | 51 | 1-227 |
| | | | | | · · · · · · · · · · · · · · · · · · · | | | | |

| SURROGATE | STANDARDS |
|-----------|------------------|
|-----------|------------------|

| | Recovery | Acceptance Limits | | Recovery | Acceptance Limits |
|----------------------|----------|-------------------|------------------|----------|-------------------|
| | (%) | (%) | | (%) | (%) |
| 2-fluorophenol | 48 | 21-100 | nitrobenzene-d5 | 66 | 35-114 |
| phenol-d5 | 40 | 10-102 | 2-fluorobiphenyl | 62 | 43-116 |
| 2,4,6-tribromophenol | 64 | 10-123 | terphenyl-d14 | 72 | 33-141 |

U = Below quantitation limit

Page of ESI

EnviroSystems, Inc.

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Hampton, NH 03842-0788

603-926-3345 fax 603-926-3521

www.envirosystems.com

| | | MICRO | BIOLOGIC | AL ASSAY | / DATA SI | HEET | | | |
|--------------------|---|------------------|---|-------------|------------|-------|---|----------------|--|
| Client: Underw | ood Engine | ers | Date: 9/17/18 | | | | Initials: V | | |
| ESI#: 31148 | #: 31148 Col.Dil.H ₂ O: M-3312 / M-3310 M-FC: M-3311 | | | | | | | 3311 | |
| Date collected: 9 | /17/18 | | Pipette Used | d: A -5003/ | | | #: ECB083118/ | | |
| Sample ID | Time Sampled | Time Filtered | mls filtered per 100 mls total vol. | Media | CFU's | Tota | al w/ round | Comments | |
| Start Blank | - | 1310 | _ | M-FC | 0 | 0 | | | |
| PEASE_001 | 1045 | 1310 | 0.1 | M-FC | 0 | Ö | | 3 CMS INOML | |
| PEASE_001 | .1045 | 1315 | 1.0 | M-FC | | 0 | | 3 TromL | |
| PEASE_001 | 1045 | 1320 | 10 | M-FC | 1 0 | a | | | |
| PEASE_001 | 1045 | 1341 | 100 | M-FC | -3 | 137 | <u> </u> | | |
| PEASE_001D | 1045 | 1310 | 0.1 | M-FC | 10 | 0 | | 4 X100" 4 CFN | |
| PEASE_001D | 1045 | 1315 | 1.0 | M-FC | Ö | Ö | | 110. 1 10 | |
| PEASE_001D | 1045 | 1320 | 10 | M-FC | .) | R | | | |
| PEASE_001D | 1045 | 1341 | 100 | M-FC | 3 | 15% | (3) MW 1 10112 | | |
| NEW_001 | 0845 | 1315 | 0.1 | M-FC | 0 | 0 | | 10 X100 = 5 CF | |
| NEW_001 | 0845 | 1320 | 0.1dup | M-FC | 0 | 0 | | 1,10 | |
| NEW_001 | 0845 | 1324 | 1.0 | M-FC | 0 | Ö | | | |
| NEW_001 | 0845 | 1332 | 10 | M-FC | 1 | i | | | |
| NEW_001 | 0845 | 1349 | 100 | M-FC | 5 | 108 | <u> </u> | | |
| NEW_001D | 0845 | 1332 | 0.1 | M-FC | 0 | 0 | | 110 X100-7 CF4 | |
| NEW_001D | 0845 | 1335 | 0.1dup | M-FC | 0 | 0 | *************************************** | 100 | |
| NEW_001D | 0845 | 1332 | 1.0 | M-FC | 0 | 0 | | | |
| NEW_001D | 0845 | 1341 | 10 | M-FC | 2 | 2 | | | |
| NEW_001D | 0845 | 1349 | 100 | M-FC | (0 | 113 | | | |
| Positive | - | 1353 | 0.1 | M-FC | / | > | | | |
| End Blank | | 1353 | - | M-FC | 0 | 0 | | | |
| | | | | M-FC | | | | | |
| | | | | M-FC | | | | | |
| | | | | M-FC | | | | | |
| | | | | M-FC | | | | | |
| | | | | M-FC | | | | | |
| | | | | M-FC | · · | | | | |
| M-FC stored in Inc | cubator #303 | Temp: | | 44.7 | 1358 91171 | 16 to | 1258 | 9118118 | |

Counted By: MW

Counted:

1300

9/18/19

Method 9222D

| MICROBIOLOGICAL ASSAY DATA SHEET | | | | | | | | |
|----------------------------------|-----------------|------------------|---|--------|--------------|----------------------------|----------|--|
| Client: Underw | ood Engine | ers | Date: 9/1 | 7/18 | Initials: | | | |
| ESI#: 31148 | | | Col.Dil.H₂O: | M-3312 | M-EI: M-3313 | | | |
| Date collected: 9/17/18 | | | Pipette Used: A - 5003 / A - 5104 | | | Positive lot #: EFB083118A | | |
| Sample ID | Time Sampled | Time Filtered | mls filtered per 100 mls total vol. | Media | CFU's | Total w/ backround | Comments | |

| | Sample ID | Time Sampled | Time Filtered | mls filtered per 100 mls total vol. | Media | CFU's | Total w backroui | d Comments |
|------|--------------------|-----------------|------------------|---|--------|---------|---|---------------|
| | Start Blank | - | 1524 | _ | M-EI | 0 | 0 | |
| -003 | PEASE_001 | 1045 | 1524 | 0.1 | M-EI | 0 | 0 | 40 crus/100mL |
| -003 | PEASE_001 | 1045 | 1530 | 1.0 | M-EI | 0 | 0 | |
| -003 | PEASE_001 | 1045 | 153\05 | 10 | M-EI | 1 4 | 4 | |
| -003 | PEASE_001 | 1045 | 1539 | 100 | M-EI | 40 | 40 | |
| | PEASE_001D | 1045 | 1524 | 0.1 | M-EI | 0 | Ö | 49 Chrs |
| -004 | PEASE_001D | 1045 | 1530 | 1.0 | M-EI | Ŏ | 0 | 1 100.71 |
| | PEASE_001D | 1045 | 1530,5 | 10 | M-EI | 0 | v | |
| -004 | PEASE_001D | 1045 | 1539 | 100 | M-EI | 49 | 49 | B 110 X100= |
| 1 | NEW_001 | 0845 | 1530 | 0.1 | M-EI | Ö | Ö | 7 CFUS/100ml |
| 1 | NEW_001 | 0845 | 1535 | 0.1 du | P M-EI | 0 | Ö | |
| l | NEW_001 | 0845 | 1539 | 1.0 | M-EI | O | 0 | |
| | NEW_001 | 0845 | 1547 | 10 | M-EI | 2 | 2 | |
| 1 | NEW_001 | 0845 | 1551 | 100 | M-EI | G | 6 | |
| -039 | NEW_001D | 0845 | 1551 | 0.1 | M-EI | O | 0 | 4 CEN/10gmL |
| -039 | NEW_001D | 0845 | 1551 | 0.1 dup | M-EI | 0 | O | |
| -039 | NEW_001D | 0845 | 1557 | 1.0 | M-EI | 0 | 0 | |
| - 11 | NEW_001D | 0845 | 1557 | 10 | M-EI | Ŏ | 0 | |
| -039 | NEW_001D | 0845 | 1602 | 100 | M-EI | 4 | Ч | |
| | Positive | - | 1602 | 0.1 | M-EI | V | V | |
| | End Blank | - | 1602 | ••• | M-EI | Ö | Ö | |
| | | | | | . M-EI | | | |
| | | | | | M-EI | | | |
| | | | | | M-EI | | | |
| | | | | | M-EI | | *************************************** | |
| | | | | | M-EI | | | |
| | | | | | M-EI | | | |
| | | | | | M-EI | | | |
| | M-El stored in Inc | ubator #309 | Temp: | | 41.1 | 1605 | to | 124 9118/19 |
| | Method EPA 1600 | | Counted | : | 1426 | 9/18/18 | Counted | |

| | | | MICRO | BIOLOGICA | L ASSAY [| DATA SHEE | T | | |
|-----|---|------------------------|-------------------------|-----------------|-----------------------------|--------------|---|--------------|--|
| | Client: Unde | wood Engi | neers | Date: ק וז | , १ | | Initials: ٧٠_ | | |
| | Col.Dil.H2O: M-33/2 | | | m-FC: M-33 | 311 | m-El: M·33/3 | | | |
| | <u>Sample</u> I.D. | <u>Time</u> Sampled | <u>Time</u> Filtered | mLs Filtered | <u>Media</u> <u>Type</u> | <u>CFU's</u> | <u>Total</u> <u>with</u> Background | Comments | |
| - | Start Blank | | 1830 | | m-El | 0 | | | |
| | Start Blank | | | | m-FC | 0 | 0 | | |
| 073 | RIVER001 | 1405 | 1 | [60 | <u>m-El</u> | 0 | 0 | <1 CFu/Joans | |
| 074 | RIVER001DUP | 1405 | 1836 | 160 | <u>m-El</u> | 0 | 0 | 41 CFU 100mL | |
| ۵75 | RIVER001 | 14020 Ogu | ₩ ↓ | 100 | m-FC | 2 | 2 | 2 CFUS/100mL | |
| 076 | RIVER001DUP | MOD | 1846 | 100 | m-FC | 5 | 5 | 5 LFUS/100ML | |
| | End Blank | | T i | | <u>m-FC</u> | O | 0 | | |
| | <u>Positive</u> | lot Ecrobaniba | <u> </u> | 0.1 | <u>m-FC</u> | \ | | | |
| | <u>Positive</u> | lotefe=83(18A | 1849 | 0.1 | <u>m-El</u> | V | ✓ | | |
| | End Blank | | T V | | m-El | 0 | Ò | | |
| | m-El stored in incubator # 309 m-FC stored in incubator # 303 | | 309 | Temp: | 410 | 1853 | to 1655 | 9118/18 | |
| | | | 4 303 | Temp: | 44.5 | 1 | to J | J | |
| | m-El Method | EPA1600 | Counted: | 1655 | 9118119 | <u>;</u> | Counted By: | MW | |
| | m-FC Method | 9222D | Counted: | 1658 | | | Counted By: | V | |

Page 1 of 5

A-5085

| STUDY NO: SDG No: | 31148 | | | |
|----------------------------------|------------------|--|-------|------------|
| Project: | Piscataqua River | | | |
| Delivered via: | ESI | | | |
| Date and Time Received: | 09/17/18 1125 | Date and Time Logged into Lab: | 09/17 | 7/18 1330 |
| Received By: | DW | Logged into Lab by: | cs | C 5 |
| Air bill / Way bill: | No | Air bill included in folder if received? | NA | |
| Cooler on ice/packs: | Yes | Custody Seals present? | NA | |
| Cooler Blank Temp (C) at arrival | :6 | Custody Seals intact? | NA | |
| Number of COC Pages: | 6 | • | | |
| COC Serial Number(s): | A1016260 | | | |
| COC Complete: | Yes | Does the info on the COC match the samples? | Yes | |
| Sampled Date: | Yes | Were samples received within holding time? | Yes | |
| Field ID complete: | Yes | Were all samples properly labeled? | Yes | |
| Sampled Time: | Yes | Were proper sample containers used? | Yes | |
| Analysis request: | Yes | Were samples received intact? (none broken or leaking) | Yes | |
| COC Signed and dated: | Yes | Were sample volumes sufficient for requested analysis? | Yes | |
| Were all samples received? | Yes | Were VOC vials free of headspace? | Yes | |
| OF | | | | |

pH Test strip ID number:

| | | | | Bottle | Req'd | Verified |
|---------------------------|-----------|----|--------------------|------------|--------|----------|
| Field ID | Lab ID | Mx | Analysis Requested | | Pres'n | Pres'n |
| PEASE_001 | 31148-001 | W | BOD | 500 P | 4 C | Yes |
| PEASE_001 | 31148-003 | W | Enterococci | 100 mL Ste | r 4 C | Yes |
| PEASE_001DUP | 31148-004 | W | Enterococci | 100 mL Ste | r4 C | Yes |
| PEASE_001 | 31148-005 | W | FC | 100 mL Ste | 14 C | Yes |
| PEASE_001DUP | 31148-006 | W | FC | 100 mL Ste | 14 C | Yes |
| PEASE_001 | 31148-007 | W | TSS | 1000 P | 4 C | Yes |
| PEASE_001DUP | 31148-008 | W | TSS | 1000 P | 4 C | Yes |
| PEASE_001 | 31148-009 | W | NH3 | 125 mL P | H2SO4 | Yes |
| PEASE_001DUP | 31148-010 | W | NH3 | 125 mL P | H2SQ4 | Yes |
| PEASE_001DUP | 31148-010 | W | NH3 | 125 mL P | H2SO4 | Yes |
| PEASE_001 | 31148-013 | W | TKN,NO3+NO2,TN | 500 mL P | H2SO4 | Yes |
| PEASE001DUP | 31148-014 | W | TKN,NO3+NO2,TN | 500 mL P | H2SO4 | Yes |
| PEASE_001 | 31148-015 | W | OG | 2x1000 G | H2SO4 | Yes |
| PEASE_001DUP | 31148-016 | W | OG | 2x1000 G | H2SO4 | Yes |
| PEASE_001 | 31148-017 | W | TP | 250mL | H2SO4 | Yes |
| PEASE_001DUP | 31148-018 | W | TP | 250mL | H2SO4 | Yes |
| PEASE_001 | 31148-019 | W | TDS | 1000 P | 4 C | Yes |
| PEASE_001 | 31148-021 | W | Turbidity | 250 P | 4 C | Yes |
| PEASE_001DUP | 31148-022 | W | Turbidity | 250 P | 4 C | Yes |
| PEASE_001 | 31148-023 | W | TPhen | 1000 G | H2SO4 | |
| Equipment Blank PEASE_001 | 31148-024 | W | TPhen | 1000 G | H2SO4 | |
| PEASE_001 | 31148-026 | W | VOC624 | 2x40 mL | 4 C | No |
| PEASE_001DUP | 31148-027 | W | VOC624 | 2X40 ml | 4 C | No |

Notes and qualifications:

Client notification/authorization: Not required

| ee COC | |
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Page 2 of 5

STUDY NO: 31148 SDG No: Project: Piscataqua River Delivered via: ESI Date and Time Received: 09/17/18 1125 Date and Time Logged into Lab: 09/17/18 1330 Received By: DW Logged into Lab by: CS CS Air bill / Way bill: Nο Air bill included in folder if received? NA Cooler on ice/packs: Yes Custody Seals present? NA Cooler Blank Temp (C) at arrival: 6 **Custody Seals intact?** NA Number of COC Pages: COC Serial Number(s): A1016260 **COC Complete:** Yes Does the info on the COC match the samples? Yes Sampled Date: Yes Were samples received within holding time? Yes Field ID complete: Yes Were all samples properly labeled? Yes Sampled Time: Yes Were proper sample containers used? Yes

Analysis request: Yes Were samples received intact? (none broken or leaking) Yes COC Signed and dated: Yes Were sample volumes sufficient for requested analysis? Yes Were all samples received? Yes Were VOC vials free of headspace? Yes PH Test strip ID number: A-5085

| | | | | Bottle | Req'd | Verified |
|---------------------------|-----------|----|--------------------|-------------|--------|----------|
| Field ID | Lab ID | Mx | Analysis Requested | | Pres'n | Pres'n |
| Equipment Blank PEASE_001 | 31148-063 | W | VOC624 | 2x40 mL | 4 C | No |
| PEASE_001 | 31148-029 | W | HOLD VOC624 | 2x40 mL | HC1 | No |
| PEASE_001DUP | 31148-030 | W | HOLD VOC624 | 2x40 mL | HCI | No |
| Equipment Blank PEASE_001 | 31148-066 | W | HOLD VOC624 | 2x40 mL | HCI | No |
| PEASE_001 | 31148-032 | W | ABN625 | 2x1000 G | 4 C | Yes |
| PEASE_001DUP | 31148-033 | W | ABN625 | 2x1000 G | 4 C | Yes |
| Equipment Blank PEASE_001 | 31148-034 | W | ABN625 | 1000 G | 4 C | Yes |
| NEW_001 | 31148-036 | W | BOD | 500 P | 4 C | Yes |
| NEW_001DUP | 31148-037 | W | BOD | 500 P | 4 C | Yes |
| NEW_001 | 31148-038 | W | Enterococci | 100 mL Ster | 4 C | Yes |
| NEW_001DUP | 31148-039 | W | Enterococci | 100 mL Ster | 4 C | Yes |
| NEW_001 | 31148-040 | W | FC | 100 mL Ster | 4 C | Yes |
| NEW_001DUP | 31148-041 | W | FC | 100 mL Ster | 4 C | Yes |
| NEW_001 | 31148-042 | W | TSS | 1000 P | 4 C | Yes |
| NEW_001DUP | 31148-043 | W | TSS | 1000 P | 4 C | Yes |
| NEW_001 | 31148-044 | W | NH3 | | H2SO4 | |
| NEW_001DUP | 31148-045 | W | NH3 | | H2SO4 | |
| NEW_001 | 31148-048 | W | TKN,NO3+NO2,TN | | H2SO4 | |
| NEW_001DUP | 31148-049 | W | TKN,NO3+NO2,TN | | H2SO4 | |
| NEW_001 | 31148-050 | W | OG | | H2SO4 | |
| NEW_001DUP | 31148-051 | W | OG | | H2SO4 | |
| NEW_001 | 31148-052 | W | TP | | H2SO4 | |
| NEW_001DUP | 31148-053 | W | TP | 250mL | H2SO4 | |

Notes and qualifications:

| See COC | N. C. | |
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Page 3 of 5

| STUDY NO: SDG No: | 31148 | | | |
|------------------------------------|------------------|--|----------|------|
| Project: | Piscataqua River | • | | |
| Delivered via: | ESI | | | |
| Date and Time Received: | 09/17/18 1125 | Date and Time Logged into Lab: | 09/17/18 | 1330 |
| Received By: | DW | Logged into Lab by: | cs CS | J |
| Air bill / Way bill: | No | Air bill included in folder if received? | NA | |
| Cooler on ice/packs: | Yes | Custody Seals present? | NA | |
| Cooler Blank Temp (C) at arriva | ıl: 6 | Custody Seals intact? | NA | |
| Number of COC Pages: | 6 | • | | |
| COC Serial Number(s): | A1016260 | | | |
| COC Complete: | Yes | Does the info on the COC match the samples? | Yes | |
| Sampled Date | : Yes | Were samples received within holding time? | Yes | |
| Field ID complete | | Were all samples properly labeled? | Yes | |
| Sampled Time | : Yes | Were proper sample containers used? | Yes | |
| Analysis request | Yes | Were samples received intact? (none broken or leaking) | Yes | |
| COC Signed and dated: | Yes | Were sample volumes sufficient for requested analysis? | Yes | |
| Were all samples received? | Yes | Were VOC vials free of headspace? | Yes | |
| Client notification/authorization: | Not required | pH Test strip ID number: | A-5085 | |

| | | | | Bottle | Req'd | Verified |
|-------------------------|-----------|----|--------------------|----------|--------|----------|
| Field ID | Lab ID | Mx | Analysis Requested | | Pres'n | Pres'n |
| NEW_001 | 31148-054 | W | TDS | 1000 P | 4 C | No |
| NEW_001DUP | 31148-055 | W | TDS | 1000 P | 4 C | Yes |
| NEW_001 | 31148-056 | W | Turbidity | 250 P | 4 C | Yes |
| NEW_001DUP | 31148-057 | W | Turbidity | 250 P | 4 C | Yes |
| NEW_001 | 31148-058 | W | TPhen | 1000 G | H2S04 | |
| NEW_001DUP | 31148-059 | W | TPhen | 1000 G | H2S04 | |
| Equipment Blank NEW_001 | 31148-060 | W | TPhen | 1000 G | H2SO4 | |
| NEW_001 | 31148-061 | W | VOC624 | 2x40 mL | 4 C | No |
| NEW_001DUP | 31148-062 | W | VOC624 | 2x40 mL | 4 C | No |
| Equipment Blank NEW_001 | 31148-028 | W | VOC624 | 2x40 mL | 4 C | No |
| NEW_001 | 31148-064 | W | HOLD VOC624 | 2x40 mL | HCI | No |
| NEW_001DUP | 31148-065 | W | HOLD VOC624 | 2x40 mL | HCI | No |
| Equipment Blank NEW_001 | 31148-031 | W | HOLD VOC624 | 2x40 mL | HCI | No |
| NEW_001 | 31148-067 | W | ABN625 | 2x1000 G | 4 C | Yes |
| NEW_001DUP | 31148-068 | W | ABN625 | 2x1000 G | 4 C | Yes |
| Equipment Blank NEW 001 | 31148-069 | W | ABN625 | 2x1000 G | 4 C | Yes |

Notes and qualifications:

| ee COC | |
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EnviroSystems, Inc.

One Lafayette Road

P.O. Box 778

Hampton, NH 03842-0778

(603) 926-3345 fax (603) 926-3521

www.envirosystems.com

Page 4 of 5

STUDY NO:

31148

SDG No:

Project: Piscataqua River

Delivered via: ESI

Date and Time Received: 09/17/18 1515 Date and Time Logged into Lab: 09/17/18 1615

Received By: MG Logged into Lab by: 09/17/18 1615

Air bill / Way bill:

No Air bill included in folder if received?

NA Cooler on ice/packs:

Yes Custody Seals present?

NA Cooler Blank Temp (C) at arrival: 6

Custody Seals intact?

NA

Number of COC Pages: 4

COC Serial Number(s): A1016280

COC Complete: Yes Does the info on the COC match the samples? Yes
Sampled Date: Yes Were samples received within holding time? Yes
Field ID complete: Yes Were all samples properly labeled? Yes

Sampled Time: Yes Were proper sample containers used? Yes
Analysis request: Yes Were samples received intact? (none broken or leaking) Yes
d and dated: Yes Were sample volumes sufficient for requested analysis? Yes

COC Signed and dated: Yes Were sample volumes sufficient for requested analysis? Yes Were all samples received? Yes Were VOC vials free of headspace? Yes Client notification/authorization: Not required PH Test strip ID number: A-5085

| | | | | Bottle | Req'd | Verified |
|-----------------------|-----------|----|--------------------|------------|--------|----------|
| Field ID | Lab ID | Mx | Analysis Requested | | Pres'n | Pres'n |
| RIVER_001 | 31148-071 | W | BOD | 500 P | 4 C | Yes |
| RIVER_001DUP | 31148-072 | W | BOD | 500 P | 4 C | Yes |
| RIVER_001 | 31148-073 | W | Enterococci | 100 mL Ste | r4 C | Yes |
| RIVER_001DUP | 31148-074 | W | Enterococci | 100 mL Ste | 14 C | Yes |
| RIVER_001 | 31148-075 | W | FC | 100 mL Ste | г4 C | Yes |
| RIVER_001DUP | 31148-076 | W | FC | 100 mL Ste | r4C | Yes |
| RIVER_001 | 31148-077 | W | TSS | 1000 P | 4 C | Yes |
| RIVER_001DUP | 31148-078 | W | TSS | 1000 P | 4 C | Yes |
| RIVER_001 | 31148-079 | W | NH3 | 125 mL P | H2SO4 | Yes |
| RIVER_001DUP | 31148-080 | W | NH3 | 125 mL P | H2SO4 | Yes |
| RIVER_001 | 31148-081 | W | TKN,NO3+NO2,TN | 500 mL P | H2SO4 | |
| RIVER_001DUP | 31148-082 | W | TKN,NO3+NO2,TN | 500 mL P | H2SO4 | Yes |
| RIVER_001 | 31148-083 | W | OG | 2x1000 G | H2SO4 | Yes |
| RIVER_001DUP | 31148-084 | W | OG | 2x1000 G | H2SO4 | Yes |
| RIVER_001 | 31148-085 | W | TP | 250mL | H2SO4 | |
| RIVER_001DUP | 31148-086 | W | TP | 250mL | H2SO4 | |
| RIVER_001 | 31148-087 | W | TDS | 1000 P | 4 C | Yes |
| RIVER_001DUP | 31148-088 | W | TDS | 1000 P | 4 C | Yes |
| RIVER_001 | 31148-089 | W | Turbidity | 250 P | 4 C | Yes |
| RIVER_001DUP | 31148-090 | W | Turbidity | 250 P | 4 C | Yes |
| RIVER_001 | 31148-091 | W | TPhen | 1000 G | H2SO4 | |
| RIVER_001DUP | 31148-092 | W | TPhen | 1000 G | H2SO4 | |
| Field Blank RIVER_001 | 31148-093 | W | TPhen | 1000 G | H2SO4 | |

Notes and qualifications:

| See COC | | |
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Page 5 of 5

A-5085

STUDY NO: 31148 SDG No: Project: Piscataqua River Delivered via: Date and Time Received: 09/17/18 1515 Date and Time Logged into Lab: 09/17/18 1615 Received By: MG Logged into Lab by: cs Cs Air bill / Way bill: No Air bill included in folder if received? NA Cooler on ice/packs: Yes **Custody Seals present?** NA Cooler Blank Temp (C) at arrival: 6 Custody Seals intact? NA Number of COC Pages: A1016280 COC Serial Number(s): **COC Complete:** Yes Does the info on the COC match the samples? Yes Sampled Date: Yes Were samples received within holding time? Yes Field ID complete: Yes Were all samples properly labeled? Yes Sampled Time: Yes Were proper sample containers used? Yes Analysis request: Yes Were samples received intact? (none broken or leaking) Yes COC Signed and dated: Were sample volumes sufficient for requested analysis? Yes Yes Were all samples received? Were VOC vials free of headspace? Yes Yes

pH Test strip ID number:

| | | | | Bottle | Req'd | Verified |
|-----------------------|-----------|----|--------------------------------|----------|--------|----------|
| Field ID | Lab ID | Mx | Analysis Requested | | Pres'n | Pres'n |
| Trip Blank RIVER_001 | 31148-094 | W | TPhen | 1000 G | H2SO4 | Yes |
| RIVER_001 | 31148-095 | W | VOC624 | 2x40 mL | 4 C | No |
| RIVER_001DUP | 31148-096 | W | VOC624 | 2x40 mL | 4 C | No |
| Field Blank RIVER_001 | 31148-097 | W | VOC624 | 2x40 mL | 4 C | No |
| Trip Blank RIVER_001 | 31148-098 | W | VOC624 | 2x40 mL | 4 C | No |
| RIVER_001 | 31148-099 | W | HOLD VOC624 | 2x40 mL | HCI | No |
| RIVER_001DUP | 31148-100 | W | HOLD VOC624 | 2x40 mL | HCI | No |
| Field Blank/RIVER_001 | 31148-101 | W | HOLD VOC624 | 2x40 mL | HCI | No |
| rip Blank RIVER_001 | 31148-102 | W | HOLD VOC624 | 2x40 mL | HCI | No |
| RIVER_001 | 31148-103 | W | ABN625 | 2x1000 G | 4 C | Yes |
| RIVER_001DUP | 31148-104 | W | ABN625 | 2x1000 G | 4 C | Yes |
| Field Blank RIVER_001 | 31148-105 | W | ABN625 | 1000 G | 4 C | Yes |
| rip Blank RIVER_001 | 31148-106 | W | ABN625 | 1000 G | 4 C | Yes |
| RIVER_001 | 31148-107 | W | DO,pH,Temperature,Conductivity | 1000 P | 4 C | Yes |
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Notes and qualifications:

Client notification/authorization: Not required

| See COC | | |
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ESI Job No: 31148

EnviroSystems, Inc. 1 Lafayette Road Hampton, NH 03842

CHAIN OF CUSTODY DOCUMENTATION

Voice: 603-926-3345 FAX: 603-926-3521

| | | | | 5 | 2 | 5 | 2 | | | | | | ٠. |
|-------------------------|---|-----------------|--------------------------|---------------|-----------------|--|------------------------|---------------------|---|---------------|---|------------------------------|-----|
| Client: | Underwood Engineers, Inc. | Contact | Contact: Steve Clifton | lifton | | | Prc | Project Name: | je: | Piscatac | Piscataqua River | | |
| Report to: | Steve Clifton | Address | Address: 25 Vaughan Mall | han Mall | | | Pro | Project Number: | ber: | P0771 | | Task: 0001 | |
| Invoice to: | Steve Clifton | Address | Address: Portsmouth, NH | uth, NH | 03801 | | P | Project Manager: | ager: | Steve Cliffon | lifton | | |
| Voice: | 603-436-6192 | Fax: | 0 | | | ! | e | email: | | | | <u>ш</u> | ERR |
| 틧 | NPDES | | | | | | | | *************************************** | | | | |
| Lab Number (assigned | Your Field ID: (must agree with | Date Sampled | Date Time Sampled | Sampled By | Grab or com- | 5 v | Container Size Tv | Tvne | Field Preser- | Matrix | Filter | Filter Analyses Requested\ | |
| | container) | | | î | posite (G/C) | | | | vation | | F=Done in field | Opeca nordans. | |
| . 001 | 001 PEASE_001 | 9/14/18 | 91.76 8:201 | 174 RC | 0 | 1.00 | . 200 | o_ | 4 C | Water | 1 | BOD | |
| , 002 | 002 PEASE DOTDUP | | 18.34 18.30 | + | ţ | \rightarrow \frac{-}{\omega_{\overline{\omega}}} | - Jegs | <u> </u> a. | 4 C | Water | Jz | Boo Not Singles | |
| 003 | 003 PEASE 001 | 9/17/K | 9/FAK 10457 | ١ د | S | | | <u>o</u> | | Water | | Enterococci | |
| 004 | 004 PEASE_001DUP | 3/13/18 | glithis joins. | 11 | 5 | 7 | 100 | . <u>o</u> | 4 0 | Water | z | Enterococci | |
| 60/ | 005 PEASE_001 | ٦ | \$53.0V | 11 | Ĝ | 1 | 100 le | <u> </u> | 4 C | Water | | 5 | |
| | 006 PEASE 001DUP | ٤ | NSY:01 | זנ | Ç | + | 100 Ie | ō | 4 C | Water | z | FC | |
| 200 | 007 PEASE_001 | 7 | 8:304 | ŭ | V | 7 | 1000 | Ω. | 4 C | Water | z | TSS & | |
| 008 | PEASE_001DUP | در | 8:34 | נע | j | 1 | 1000 F | Q. | 4 C | Water | z | TSS | |
| 600 | 009 PEASE 001 | ن | 70.38 | ; | U | 12 | 125 F | <u>.</u> | H2SO4 | Water | z | NH3 | |
| 010 | 010 PEASE 001DUP | ٠ د ۲ | 8.30/4 | ir | U | 1, | 125 F | <u>.</u> | H2SO4 | Water | z | NH3 | |
| (F) 011 | 011 PEASE_001 | ני | 12:82 | Ų, | S | 1 50 | 500 F | · | 4C | Water | z | TRC | |
| 015 | 012 PEASE 001DUP | ۲ | 15.457 |); | B | 1 50 | 500 F | α. | 7 0 | Water | z | TRC | |
| Relinquished By: | W. Tim Old | | Date: % | Mey | Time: // | 254 | A Rece | Received By: | 7 | XX. | | Date V7/8 Time: 11.25 | |
| Relinquished By: | Х | | Date: | נ | Time: | | Rece | Received at Lab By: | , , , , , , , , , , , , , , , , , , , | 4 | | Date: Time: | |
| Comments: 98 | 19°C. (Em) Samples 011 and 012 not received | 012 no | it recei | ا | ı |) Yayon | 25,52 | nack | P. W.P. | P 12PX f | laboration as analyses were parformed in Geld |) | |
| ERR | | | | .1 | 1 | | 7 | - x - x - x | - N. C. | 17.7 | | | |

COC Number: A1016260

ERR

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May 2018

Sample Delivery Group No:

Voice: 603-926-3345 FAX: 603-926-3521

ESI Job No: 31148

EnviroSystems, Inc. 1 Lafayette Road Hampton, NH 03842

| | 1811pt01, 147 03042 | | CHAIN OF CUST | | уу рос | ODY DOCUMENTATION | TION | | | | |
|---|---------------------------|-------------------|--------------------------|------------------------------------|------------|------------------------|---------------------|----------------------------|------------------------------|-------------------------------------|--|
| Client: Underw | Underwood Engineers, Inc. | Contact: (| Contact: Steve Clifton | Ę | | | Project Name: | lame: | Piscata | Piscataqua River | |
| Report to: Steve Clifton | Clifton | Address: 2 | Address: 25 Vaughan Mall | Mall | | | Project Number: | lumber: | P0771 | | Task: 0001 |
| Invoice to: Steve Clifton | Clifton | Address: F | Address: Portsmouth, NH | 익 | 3801 | | Project N | Project Manager: | Steve Clifton | Clifton | |
| Voice: 603-43 | 603-436-6192 | Fax: | 0 | | | | email: | | | | ERR |
| 틧 | | | | | | | | | | | |
| Lab Number Your Field ID: (assigned (must agree with by lab) container) | ld ID: se with | Date Sampled S | Time Sar Sampled | Sampled Grab By or composite (G/C) | omNo | Container Size (mL) | Type (P/G/T) | Field Preser- vation | Matrix S=Solid W=Water | Filter N=Not needed F=Done in field | Filter Analyses Requested\\ N=Not needed Special Instructions: F=Done in field |
| 013 PEASE_001 | | 8/4/6 | 8:304 7 | | - | 500 | Δ. | H2S04 | Water | Z | TKN.NO3+NO2.TN |
| 014 PEASE 001DUP | 001DUP | 08:38 81/21/1 | | 8 5 0 0 0 | <u> </u> | 500 | a. | H2SO4 | Water | z | TKN,NO3+NO2,TN |
| . 015 PEASE 001 | | 1/1/18 10:404 | | | 2 | 1000 | 9 | H2S04 | Water | z | . 90 |
| 016 PEASE 001DUP | | 1/4/8 10:40A | 2.40 A R.C. | 6.to | 7 | 1000 | ტ | H2SO4 | Water | Z | 90 |
| 017 PEASE 001 | 001 | | , 1/05/8 |) | C 1 | 250m | mĹ | H2SO4 | Water | z | qT |
| 69 018 PEASE 001DUP | 001DUP | 2 | 8:304 | 2 | - | 250m | 뒽 | H2SO4 | Water | Z | ТР |
| 019 PEASE 001 | 001 | ت | 2 | 2 | <i>-</i> | 1000 | ۵ | 4 C | Water | Z | TDS |
| OZO PEASE TOTOUR | doroù | 3 | 7 | 2 | /- | | <u>_</u> | ر م | Water | N | the Samples |
| 021 PEASE 001 | 001 | 1) | Pr401 | = | - ~ | 250 | О. | 4 C | Water | z | Turbidity |
| 022 PEASE 001DUP | 001DUP | 11 | 10:40% | 2 | ر <i>ا</i> | 250 | Œ. | 4 C | Water | z | Turbidity |
| 023 PEASE_001 | 001 | 3 ~2 | T05:38 | 2 | - | 1000 | 9 | H2SO4 | Water | z | TPhen |
| 024 PEASE BOTDUP | eerbup | 7 | 7 778 38 | الا (ز | | 1000 |) 。 | H2SO4 | Water | Z | TPhen /b+ Sapled |
| Relinquished By: | i Pol | ۵ | Date: 4/17 | Time: | 11:254 | | Received By: | X. D | Il. | L | Date 5/7/ Time: 1/25 |
| Relinquished By: | | ٥ | Date: | Time: | | | Received at Lab By: | t Lab By: | , | | Date: Time: |
| Comments: 9/2 | | | | | | | | | - | | |

ERR

COC Number: A1016260

May 2018 Sample Delivery Group No:

ESI JOD NO: 3 11 48

Voice: 603-926-3345 FAX: 603-926-3521

EnviroSystems, Inc. 1 Lafayette Road Hampton, NH 03842

(A)

CHAIN OF CUSTODY DOCUMENTATION

ERR ampasate 9118118 DO,pH,Temperature,Conductivity Date 3777 Time: 3 Filter Analyses Requested N=Not needed Special Instructions: 000 HOLD VOC624 HOLD VOC624 HOLD VOC624 (ED) Sumple 035 not received ax laboratory, as anorusis was performed in field VOC624 VOC624 VOC624 ABN625 ABN625 ABN625 Task: TPhen F=Done in field Piscataqua River L=Lab to do Filter z z z z z z z z z z z Steve Clifton W=Water P0771 Matrix S=Solid Water H2S04 Field Preser-vation Project Manager: Project Number: 4 C 4 C ᄗ Received at Lab By: 4 C ᄗ ᄗ 4 C 4 C **4** 4 0 Project Name: Received By: Туре (Р/С/Т) email: ტ ത ტ ტ 핕 티 빌 ᆸ 텀 ۵. 텉 Containe 11:25A Size (mL) 1000 40 m 40 m 40 m 40 m 1000 1000 40 m 40 m 1000 1000 ž N Address: Portsmouth, NH 03801 or composite (G/C) D 1 1 Grab O/g/ Time: W L. 1 Address: 25 Vaughan Mall Sampled 7 **`** ₹0 " 7 3 よる 욠 Ĵ $\stackrel{\smile}{\sim}$ Contact: Steve Clifton 154:01 81/±1/8 8/17/18 10.45A Sampled 9/16/15,8411 8/17/18/0:45A 4/7/8 10:45A 7/2:8/8//t//E 154:01 S1/±1/13 9/16/18/8AM 9/16/18 84H Time VX:88/12/16 19/10/18 18AM Date: Date Sampled Fax: Underwood Engineers, Inc. DEN PINON TENSE DEASE 001 Eguipment pensi Eisle Blank PEASE 001 034 Field Blank PEASE 001 gaipment Egaipment 030 PEASE 001DUP 033 PEASE 001DUP 603-436-6192 027 PEASE 001DUP Steve Clifton Steve Clifton NPDES r Your Field ID: (must agree with 026 PEASE_001 032 PEASE 001 035 PEASE_001 029 PEASE_001 container) Comments: 9°C Relinquished By: 🗝 Relinguished By: 4 Protocol: NI Lab Number Invoice to: Report to: 990 063 Client: 024 (assigned **a** Voice: by lab) 62/69 **影** <u>~</u>≧

ERR

COC Number: A1016260

₽ 3 Page May 2018 Sample Delivery Group No:

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ESI Job No: 3 (148

Voice: 603-926-3345 FAX: 603-926-3521

Hampton, NH 03842

LITVILODYSIETIIS, ITIC.

1 Lafayette Road

ERR andiyses were performed in field Date 9-7- 18 Time: / Analyses Requested N=Not needed Special Instructions: 000 Enterococci Enterococci Task: BOD BOD TSS TSS 똜 **E** TRC ပ္ပ ည Piscataqua River F=Done in field L=Lab to do Filter Steve Clifton z z z z Z z z z z z z z P0771 S=Solid W=Water Matrix Water SS Project Manager: Field Preser-vation Project Number: H2S04 4 0 H2S04 4 C 4 C 4 0 Project Name: 4 0 4 C 4 C 4 0 4 C Received at Lab By: and and not received at Laboratory Received By: email: CHAIN OF CUSTODY DOCUMENTATION Type (P/G/T) ۵. ۵ <u>o</u> 0 ۵. 0 ٥. ٥. ۵. ۵. Container Size (500 500 100 1000 1000 100 100 100 125 125 500 500 718 Time: 11:254 Sampled Grab
By or comPosite
(GG) ŝ Address: Portsmouth, NH 03801 0 (1) 0 2 (1) Address: 25 Vaughan Mall 140 000 20 10 X Contact: Steve Clifton 0 Date Time Sampled Sampled 17/8/8/4/ Date: 9/ 9/17/18/8:451 1/2/18/2//4// 1/17/18 8:454 178 Fish 9117119 17:304 4/15/18/22A 17/8/34 toEx 81/41/8 8/18/10 F:30/ 9/H/8/9:154 1218 81121 Fax: Underwood Engineers, Inc. Eles Sampiles 603-436-6192 Steve Clifton Steve Clifton NPDES
er Your Field ID;
(must agree with container) 037 NEW 001DUP 039 NEW 001DUP 041 NEW 001DUP 043 NEW 001DUP 045 NEW 001DUP 047 NEW 001DUP 036 NEW 001 038 NEW 001 040 NEW 001 042 NEW 001 044 NEW 001 046 NEW 001 9 Relinquished By: Relinquished By: Report to: Invoice to: Protocol: N Lab Number Comments: Client: (assigned by lab) Voice: 63/69

COC Number: A1016260

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Page

May 2018

Sample Delivery Group No:

ESI JOD NO: 311代

Envirosystems, Inc. 1 Lafayette Road Hampton, NH 03842

Voice: 603-926-3345 FAX: 603-926-3521

ERR Date 5/7/9 Time: 11,3 Time: Filter Analyses Requested N=Not needed Special Instructions: TKN,NO3+NO2,TN TKN,NO3+NO2,TN 0001 Task: Turbidity Turbidity TPhen **TPhen** Date: TDS SOL 90 8 £. £ W≃Water | F=Done in field Piscataqua River L=Lab to do z Z z Steve Clifton z Z Z z z z z z P0771 S=Solid Matrix Water Project Manager. Field Preser-vation H2S04 H2S04 H2SO4 H2S04 H2S04 H2S04 H2S04 Project Number: H2S04 4 C A 0 Δ Ω 4 0 Project Name: Received at Lab By: Received By: / email: Type (P/G/T) CHAIN OF CUSTODY DOCUMENTATION ۵. ۵. ပ 0 틷 팀 Ω. ۵ ۵ Ω, O ග Container Size (mL) (1000 250m 250m 1000 1000 1000 500 500 1000 1000 250 250 Date: WAM Time: 16:25/4 ટ્ટ 2 Sampled Grab
By or composite
(G/C) Address: Portsmouth, NH 03801 S 0 ٥ J 3 Address: 25 Vaughan Mall 是 9/2/ AST 8/4/8 Ş 9/17/18 F34H TAP Contact: Steve Clifton Date Time Sampled Sampled 8/17/8/8/45/2 9/17/18/301 117/18/7:304 4/4/8/1/4/1/8 124.8 S/H/6 10/8/201 HE: 1/18/1/3 1/4/18/1/304 7/17/18 8:45A 17/18 7:24 Date: Fax: Underwood Engineers, Inc. 603-436-6192 Steve Clifton Steve Clifton NPDES

Your Field ID:
(must agree with container) 049 NEW 001DUP 051 NEW 001DUP 053 NEW 001DUP 055 NEW 001DUP 057 NEW 001DUP 059 NEW 001DUP 048 NEW 001 050 NEW 001 052 NEW 001 054 NEW 001 056 NEW 001 058 NEW 001 Relinquished By: Relinquished By: Comments: 9°C Invoice to: Lab Number Report to: Client: Voice: **Protocal**: (assigned by lab) 64/69

ERR

COC Number: A1016180

Sample Delivery Group No: May 2018 Page

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ESI JOD NO: 3 11 48

Euvirosystems, inc. 1 Lafayette Road Hampton, NH 03842

Voice: 603-926-3345 FAX: 603-926-3521

| | 24000 1111 (| CHAIN OF CL | CHAIN OF CUSTODY DOCUMENTATION | UMENTA | TION | | | | | |
|---|--|------------------------------|--------------------------------|---|------------------|----------------------------|----------------------------------|------------------|---|----------|
| Client: Underwood Engineers, Inc. | ngineers, Inc. | Contact: Steve Clifton | | | Project Name: | me: | Piscata | Piscataqua River | | 1 |
| Report to: Steve Clifton | | Address: 25 Vaughan Mall | lali | | Project Number: | mber: | P0771 | | Task: 0001 | |
| Invoice to: Steve Clifton | | Address: Portsmouth, NH | H 03801 | | Project Manager: | nager: | Steve Clifton | ifton | | |
| Voice: 603-436-6192 | | Fax: 0 | | | email: | | | | | |
| Protocol: NPDES | | | | | | | | | YU | Ĭ ' |
| Lab Number Your Field ID: (assigned (must agree with by lab) container) | | Date Time Sampled Sampled By | d Grab or com- posite | Container Size (mL) (| Type (P/G/T) | Field Preser- vation | Matrix S=Solid N W=Water F | 70 9 | Analyses Requested\ Special Instructions: | · 1 |
| E Buspment 060 Field Blank NEW 001 | 001 | 9/K/18 7411 TA | | 1000 | U | H2SO4 | Water | L=Lab to do | TDhen | |
| 061 NEW 001 | eria. Ante de la companya de la com | 9/17/18 7:30 TA | G 5 | 40 m | | | Water | | VOC624 | T |
| 062 NEW 001DUP | | 9/17/15 728.4 The | | 40 m | m[| | Water | | VOC624 | |
| 628 Fet Blank NEW 001 | 1001 | 8/16/18 74M 1AC | 6 2 | 40 m | mL | A 0 | Water | z | VOC624 | T |
| 9 064 NEW 001 | | 9/17/18 First TAR | S C | 40 m | 닐 | | Water | | HOLD WOC624 | T |
| N. | | 9/17/18 7-30# 7.AP | G 2 | 40 m | 듵 | | Water | | HOLD VOCES4 | T |
| 03 Lear P Mart 966 Field Blank NEW 001 | 001 | 9/16/18 7 AH RC | 6 2 | 40 m | mL | | Water | | HOLD VOC624 | T |
| 067 NEW 001 | | 9/14/18 7.30 A RC | C 2 | 1000 | တ | 0 4 0 5 | Water | | ABN625 | T |
| 068 NEW 001DUP | | 9/17/18 7:30A 1/2C | C 2 | 1000 | ၅ | | Water | | ABN625 | T |
| 069 Field Blank NEW 001 | 001 | 9/6/8 7 AM RC | - | 1000 | | | Water | | ABN625 | T |
| (20) 070 NEW 001 | | 5/17/18 8:45AT DC | - | 1000 | ۵. | 7 > | Water | Z | DO,pH,Temperature,Conductivity | T |
| | 70 | | | | | | | | | <u> </u> |
| Relinquished By: | 12/ | Date: 3/17/18 | Time: 11:25 | The BR | Received By: | DIL | X | | Date 9/7-1/4 Time: 1/1.3 5 | |
| Relinquished By: Comments: 9°C (STO | Sample 070 | not receved | Time: | phoratem | datLa | | SI YVYYYY IS | = | Time: | |
| ERR | • | | 1 | | 1 | 1 | 22 | 1 | 11818 41818 | |
| | | | L | *************************************** | | | | | | |

COC Number: A1016180

Page 10

May 2018

Sample Delivery Group No:

EnviroSystems, Inc. 1 Lafayette Road Hampton, NH 03842

ESI Job No: 314%

Voice: 603-926-3345 FAX: 603-926-3521

CHAIN OF CUSTODY DOCUMENTATION

ERR // & Time: Time: Analyses Requested N=Not needed Special Instructions: TKN,NO3+NO2,TN TKN,NO3+NO2,TN 90 Enterococci Enterococci Date: 9/ Task: BOD BOD Date: TSS TSS SE E SES. ပ္ပ 띥 F≂Done in field Piscataqua River L=Lab to do Filter z z z z z Steve Clifton z z z z z z z W=Water S=Solid P0771 Matrix Water Field Preser-vation H2S04 Project Manager: H2S04 H2S04 H2S04 Project Number: 4 C 4 C 4 0 4 C 4 C Δ Ω 4 0 4 0 Received at Lab By: Project Name: Received By: Type (P/G/T) email: ما ۵. ۵. ۵. ۵. <u>a</u> <u>o</u> <u>0</u> <u>a</u> ۵. Container Size (mL) (1000 1000 3150 200 100 100 500 5 100 125 500 125 500 ž Grab or com-posite (G/C) Address: Portsmouth, NH 03801 Date: 9.17. 18me. Time: Address: 25 Vaughan Mall Sampled いんのい 17/18/350 Median 70°K ģ Contact: Steve Clifton 1490g 150/1 1,339 14/05 1400 17/18/19/10 EO MI 1352 aph1 1355 Sampled Time Date: Date Sampled **Fax:** 5 Underwood Engineers, Inc. 603-436-6192 074 RIVER 001DUP 072 RIVER 001DUP Steve Clifton Steve Clifton 076 RIVER 001DUP 078 RIVER 001DUP 080 RIVER 001DUP 082 RIVER 001DUP Your Field ID: (must agree with container) 071 RIVER 001 073 RIVER 001 075 RIVER 001 077 RIVER_001 079 RIVER 001 081 RIVER 001 Comments: しょ NPDES Relinquished By: Relinquished By: Protocol: NF Lab Number Invoice to: Report to: Client: (assigned by lab) Voice: 66/69

COC Number: A1016180

Page May 2018 Sample Delivery Group No:

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EnviroSystems, Inc. 1 Lafayette Road Hampton, NH 03842

Voice: 603-926-3345 FAX: 603-926-3521

ESI Job No: 311代8

ERR 5:15 L & Time: Time: Filter Analyses Requested N=Not needed Special Instructions: 0001 Date: 9/17/ Turbidity Task: Turbidity TPhen TPhen TDS Date: TDS 90 ဗ္ဗ 므 Д F=Done in field L=Lab to do Piscataqua River z z z z Steve Clifton z z z z z z S=Solid W=Water P0771 Matrix Water H2S04 H2S04 Project Manager: Field Preser-vation H2S04 H2S04 H2S04 Project Number: H2S04 4 C 4 C 4 0 4 C Received at Lab By: Project Name: Received By: Туре (Р/G/T) email: CHAIN OF CUSTODY DOCUMENTATION ტ ပ 틷 핕 ۵. ۵. ۵ ပ დ Container Size (mL) (1000 1000 250m 250m 1000 1000 1000 1000 3150 250 250 £ Sampled Grab
By or composite (G/C) Address: Portsmouth, NH 03801 Date: 9 · 17 · 1 & Time: Address: 25 Vaughan Mall Contact: Steve Clifton 135 1330 1/358 1,358 11359 1354 (1358) 1389 1329 Sampled 1381 Time Date: Date Sampled Fax: Underwood Engineers, Inc. 603-436-6192 086 RIVER 001DUP Steve Clifton 084 RIVER 001DUP 088 RIVER 001DUP 090 RIVER 001DUP Steve Clifton 092 RIVER 001DUP NPDES er Your Field ID: (must agree with container) 083 RIVER 001 087 RIVER 001 085 RIVER 001 089 RIVER 001 091 RIVER 001 Comments: 🏖 Relinquished By: Relinquished By: Protocol: NP Lab Number Invoice to: Report to: Client: Voice: (assigned by (ab) 67/69

May 2018 Sample Delivery Group No:

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Page

ERR

COC Number: A1016180

EnviroSystems, Inc. 1 Lafayette Road Hampton, NH 03842

Voice: 603-926-3345 FAX: 603-926-3521

ESI JOB NO: 31148

ERR 3:15 Filter Analyses Requested/ N=Not needed Special Instructions: 000 HOLD VOC624 HOLD VOC624 HOLD VOC624 HOLD VOC624 Task: VOC624 VOC624 VOC624 VOC624 TPhen TPhen Date: Date: Piscataqua River W=Water F=Done in field Filter z Steve Clifton z z z z z z z z z Moon P0771 Matrix S=Solid Water Field Preser-vation H2S04 Project Manager: H2S04 Project Number: -cs al17/18 4 0 오 4 C 4 C 4 0 오 오 ᄗ Project Name: Received at Lab By: Received By: Type (P/G/T) email: CHAIN OF CUSTODY DOCUMENTATION တ Ø 딭 팀 딤 티 틷 핕 ᆸ 딭 Container Size (mL) (1000 1000 40 m added in lab @1730 Date: 9.17.18 me: 315.0 Sampled Grab or com- No posite (G/C) ž 7 ~ Address: Portsmouth, NH. 03801 Address: 25 Vaughan Mall negran Jamon Contact: Steve Clifton \geq 1358 10/F/ 14) OC Time Sampled 1881/11/16 0/1/1 19/10 190/1 12/00 14100 0077 Date Sampled Fax: -094 preservative Underwood Engineers, Inc. 093 Field Blank RIVER 001 097 Field Blank RIVER 001 094 Trip Blank RIVER 001 101 Field Blank RIVER 001 098 Trip Blank RIVER 001 102 Trip Blank RIVER 001 603-436-6192 Steve Clifton Steve Clifton 096 RIVER 001DUP 100 RIVER 001DUP Your Field ID: (must agree with 095 RIVER 001 099 RIVER 001 container) Comments: $({}_{\theta}{}^{\circ}C)$ Relinquished By: Relinquished By: Invoice to: Lab Number Report to: Client: Protocol: Voice: (assigned by lab) 68/69

COC Number: A1016180

Sample Delivery Group No:

May 2018

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XTPhen field blank no preservative

EnviroSystems, Inc. 1 Lafayette Road Hampton, NH 03842 の 山

Voice: 603-926-3345 FAX: 603-926-3521

ESI JOD NO: 3 1148

| | nampton, NH 03842 | ប៊ | CHAIN OF CUSTODY DOCUMENTATION | CUSTO | DY DOC | UMENTA | \TION | | | | | |
|------------------------------------|--|-------------------------|--------------------------------|---------------------------------------|------------------------------|-------------------------|-----------------------|----------------------------|------------------------------|--|--|-----|
| Client: | Underwood Engineers, Inc. | Contact: Steve Clifton | eve Clifto | Ē | | | Project Name: | Vame: | Piscata | Piscataqua River | | |
| Report to: | Steve Clifton | Address: 25 Vaughan Mal | Vaughai | lleM r | | | Project Number: | Vumber: | P0771 | | Task: 0001 | |
| Invoice to: | Steve Clifton | Address: Portsmouth, NH | ntsmouth | | 03801 | | Project N | Project Manager: | Steve Clifton | lifton | | |
| Voice: | 603-436-6192 | Fax: | 0 | | | | email: | | | | | ERR |
| Protocol: N | 0.1 | | | | | | | | | | | |
| Lab Number (assigned by lab) | Your Field ID: (must agree with container) | Date T Sampled Sar | Time Sar Sampled | Sampled Grab By or con posite | Grab or com- No posite | Container Size (mt.) | er Type (P/G/T) | Field Preser- vation | Matrix S=Solid W=Water | Matrix Filter S=Solid N=Not needed W=Water F=Done in field | Filter Analyses Requested\\n=\text{N=Not needed Special Instructions:} F=Done in field | |
| 10 | 103 RIVER 001 | 181/2 | 11/20 | 1 2 | Scah 2 | 1000 | o | 4 C | Water | L=Lab to do | ABN625 | |
| 10 | 104 RIVER 001DUP | | | | 2 | 1000 | _O | 4 C | Water | | ABN625 | |
| 10 | 105 Field Blank RIVER_001 | 27 | 1350 | interpret Chillips III X | _ | 1000 | 9 | 4 C | Water | z | ABN625 | |
| 10 | 106 Trip Blank RIVER 001 | | 1350 | · · · · · · · · · · · · · · · · · · · | | 1000 | ڻ ص | 4 O | Water | z | ABN625 | |
| 69/ | 107 RIVER 001 | 7 | 1350 | | | 1000 | Δ. | 7 0 | Water | | DO,pH.Temperature.Conductivity | |
| 69 | | | | 5 | , | | | | | | | |
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| - | | | | | | | | | | | | T |
| . | | | | | | | | | | | ***** | |
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| Relinquished By: | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | Dat | Date: 9 · 17 · 1 | | Fine: 3:50 | 1 1 | Received By: | M | baente | () | Date: 7/17/18 Time: 3:15 | |
| Relinquished By: | | Date: | ö | Time: | ë | | Received at Lab By: | t Lab By: | | | Date: Time: | |
| Comments: 6°C | 5,9 | | | | | | | | | | |] |

ERR

COC Number: A1016180

May 2018

Sample Delivery Group No:



ANALYTICAL REPORT

Lab Number:

L1837054

Client:

Envirosystems, Inc.

1 Lafayette Road

PO Box 778

Hampton, NH 03843

ATTN:

Catherine Sasso

Phone:

(603) 926-3345

Project Name:

31148

Project Number:

Not Specified

Report Date:

09/25/18

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Eight Walkup Drive, Westborough, MA 01581-1019 508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com



L1837054

Lab Number: Report Date:

09/25/18

Project Name: 31148
Project Number: Not Specified

ALPHA Receive Date 09/18/18 09/18/18 09/18/18 09/18/18 09/18/18 39/18/18 39/18/18 09/18/18 09/18/18 09/18/18 39/18/18 09/18/18 09/18/18 09/18/18 09/18/18 09/18/18 09/18/18 09/18/18 39/18/18 09/18/18 09/18/18 09/18/18 39/18/18 09/18/18 09/17/18 10:45 09/17/18 10:45 09/17/18 10:45 09/16/18 07:00 09/17/18 10:45 09/16/18 07:00 09/17/18 07:00 09/17/18 07:00 09/16/18 08:00 09/17/18 07:00 09/16/18 08:00 09/17/18 14:10 09/17/18 14:10 09/17/18 14:10 09/17/18 08:30 09/16/18 08:00 09/17/18 07:30 09/17/18 07:30 09/17/18 07:00 09/17/18 14:00 09/17/18 14:00 09/17/18 14:00 09/17/18 14:00 09/17/18 14:00 Date/Time Sollection Not Specified -ocation Sample WATER Matrix 31148-063 31148-065 31148-096 31148-026 31148-029 31148-030 31148-062 31148-064 31148-066 31148-095 31148-098 31148-099 31148-100 31148-023 31148-058 31148-028 31148-031 31148-097 31148-101 31148-102 31148-024 31148-059 31148-027 31148-061 Client ID L1837054-02 _1837054-03 -1837054-04 L1837054-05 _1837054-06 1837054-08 L1837054-09 L1837054-10 L1837054-12 L1837054-13 L1837054-14 L1837054-15 _1837054-16 _1837054-17 _1837054-18 _1837054-19 _1837054-20 1837054-22 L1837054-23 L1837054-07 L1837054-11 Pagg 2094524 -1837054-01 -1837054-21 Sample ID



| Alnha | | | S C C C C C C C C C C C C C C C C C C C | Serial_No: | Serial_No:09251813:33 |
|-------------|-----------|--------|---|----------------|-----------------------|
| Sample ID | Client ID | Matrix | Cocation | Date/Time | Receive Date |
| L1837054-25 | 31148-060 | WATER | Not Specified | 09/16/18 07:00 | 09/18/18 |
| L1837054-26 | 31148-091 | WATER | Not Specified | 09/17/18 13:58 | 09/18/18 |
| L1837054-27 | 31148-092 | WATER | Not Specified | 09/17/18 13:58 | 09/18/18 |
| L1837054-28 | 31148-093 | WATER | Not Specified | 09/17/18 13:58 | 09/18/18 |
| L1837054-29 | 31148-094 | WATER | Not Specified | 09/17/18 13:58 | 09/18/18 |

Project Name: Project Number:

31148

Not Specified

Lab Number:

L1837054

Report Date:

09/25/18

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.



Project Name:

31148

Project Number: Not Specified

Lab Number:

L1837054

Report Date:

09/25/18

Case Narrative (continued)

Sample Receipt

L1837054-29: The sample was received above the appropriate pH for the Total Phenolics analysis. The laboratory added additional H2SO4 to a pH <4.

Volatile Organics

L1837054-01, -02, -07, and -08: The pH of the sample was less than two. It should be noted that 2-chloroethylvinyl ether breaks down under acidic conditions.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Melissa Cripps Melissa Cripps

Authorized Signature:

Title: Technical Director/Representative

Date: 09/25/18



ORGANICS



VOLATILES



Project Name: 31148 Lab Number:

Lab Number: L1837054

Project Number: Not Specified Report Date: 09/25/18

SAMPLE RESULTS

Lab ID: L1837054-01 Date Collected: 09/17/18 10:45

Client ID: 31148-026 Date Received: 09/18/18
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 128,624.1
Analytical Date: 09/19/18 13:19

Analyst: NLK/G

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|----------------------------------|---------------|--|---|--|--|-----------------|
| Volatile Organics by GC/MS - Wes | stborough Lab | | | | | |
| Methylene chloride | ND | | ug/l | 1.0 | - | 1 |
| 1,1-Dichloroethane | ND | | ug/l | 1.5 | | 1 |
| Chloroform | 66 | ATTOTIS TO A COMMON MICH. AND REPORT OF THE PROPERTY OF THE PR | ug/l | 1.0 | | 1 |
| Carbon tetrachloride | ND | | ug/l | 1.0 | | 1 |
| 1,2-Dichloropropane | ND | | ug/l | 3.5 | | 1 |
| Dibromochloromethane | 24 | od o 171 19. u tudikiri sidikiri (1754-19. okudovina wovolimiki (1879 ovd | ug/l | 1.0 | | 1 |
| 1,1,2-Trichloroethane | ND | t ran heliodocomen i të ishtelitanë e lishtelit meliodocolitë avellit e letera e e manusum m | ug/l | 1.5 | | 1 |
| 2-Chloroethylvinyl ether | ND | | ug/l | 10 | The state of the s | 1 |
| Tetrachloroethene | ND | | ug/l | 1.0 | | 1 |
| Chlorobenzene | ND | | ug/l | 3.5 | | 1 |
| Trichlorofluoromethane | ND | to with Chambridge (A) A Abbridge and TP will Food the Thomas I A secure from a moment | ug/l | 5.0 | | 1 |
| 1,2-Dichloroethane | ND | | ug/l | 1.5 | | 1 |
| 1,1,1-Trichloroethane | · ND | | ug/l | 2.0 | | 1 |
| Bromodichloromethane | 53 | derekke kirja konstålendi konstille blegt at in har in sement dem kalle in kan it de konstallen en emmed | ug/l | 1.0 | and the second of the second o | 1 |
| trans-1,3-Dichloropropene | ND | | ug/l | 1.5 | | 1 |
| cis-1,3-Dichloropropene | ND | | ug/l | 1.5 | | 1 |
| Bromoform | 2.2 | | ug/l | 1.0 | | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | ug/l | 1.0 | ###*********************************** | 1 |
| Benzene | ND | A CONTRACTOR OF THE PARTY OF TH | ug/l | 1.0 | | 1 |
| Toluene | ND | eren eren eren eren eren eren beste had i folken bestekt bestekt bilde folke folke folke i believ er folken bes | ug/l | 1.0 | - | 1 |
| Ethylbenzene | ND | | ug/l | 1.0 | | 1 |
| Chloromethane | ND | | ug/l | 5.0 | | 1 |
| Bromomethane | ND | one and the second seco | ug/l | 5.0 | | 1 |
| Vinyl chloride | ND | | ug/l | 1.0 | | 1 |
| Chloroethane | ND | | ug/l | 2.0 | Andread and Andread Communities of the Communities | 1 |
| 1,1-Dichloroethene | ND | The second secon | ug/l | 1.0 | *** | 1 |
| trans-1,2-Dichloroethene | ND | | ug/l | 1.5 | | 1 |
| cis-1,2-Dichloroethene | ND | | ug/l | 1.0 | #**** | 1 |
| | | en en el manutan d'Archael e la latin Arben e dels miglion del la companya de la latin de latin de latin de la latin de la latin de la latin de la latin de latin de latin de latin de latin de la latin de la latin de la latin de latin de latin de latin de latin de la latin de lat | to an electrical territorial de de la Particular de la companya de la companya de la companya de la companya de | and the control of the second control of the | | |



Project Name: 31148 Lab Number: L1837054

Project Number: Not Specified Report Date: 09/25/18

SAMPLE RESULTS

 Lab ID:
 L1837054-01
 Date Collected:
 09/17/18 10:45

 Client ID:
 31148-026
 Date Received:
 09/18/18

Field Prep: Not Specified

Sample Depth:

Sample Location:

Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|--------------------------------|-----------------|--|-------|-----|-------------|--|
| Volatile Organics by GC/MS - V | Vestborough Lab | | | | | |
| Trichloroethene | ND | | ug/l | 1.0 | - | 1 |
| 1,2-Dichlorobenzene | ND | | ug/i | 5.0 | | 1 |
| 1,3-Dichlorobenzene | ND | | ug/l | 5.0 | | 1 |
| 1,4-Dichlorobenzene | ND | | ug/l | 5.0 | | 1 |
| p/m-Xylene | ND | | ug/l | 2.0 | | 1 |
| o-xylene | ND | | ug/l | 1.0 | | 1 |
| Xylenes, Total | ND | | ug/l | 1.0 | | 1 |
| Styrene | ND | | ug/l | 1.0 | | 1 |
| Acetone | 17 | | ug/l | 10 | | 1 |
| Carbon disulfide | ND | | ug/l | 5.0 | | 1 |
| 2-Butanone | ND | | ug/l | 10 | | 1 |
| Vinyl acetate | ND | The site as committee and an analysis of the passage of a continue and a continue | ug/l | 10 | | 1 |
| 4-Methyl-2-pentanone | ND | The second of th | ug/l | 10 | | 1 |
| 2-Hexanone | ND | | ug/l | 10 | | 1 |
| Acrolein | ND | CONTRACTOR OF THE PROPERTY OF | ug/l | 8.0 | | 1 |
| Acrylonitrile | ND | THE THE TAXABLE AND ALL THE STATE OF THE STA | ug/l | 10 | | The second secon |
| Dibromomethane | ND | | ug/l | 1.0 | | 1 |
| | | | | | | |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria | |
|----------------------|------------|-----------|------------------------|--|
| Pentafluorobenzene | 98 | | 60-140 | |
| Fluorobenzene | 99 | | 60-140 | |
| 4-Bromofluorobenzene | 97 | | 60-140 | |

Project Name: 31148

Project Number: Not Specified

SAMPLE RESULTS

Lab Number: L1837054

Report Date: 09/25/18

Lab ID: L1837054-02

Client ID: 31148-027 Sample Location: Not Specified Date Collected: 09/17/18 10:45 Date Received: 09/18/18 Field Prep: Not Specified

Sample Depth:

Matrix: Water Analytical Method: 128,624.1 09/19/18 13:56 Analytical Date:

Analyst: NLK/G

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|--------------------------------|----------------|--|-------|-----|---|-----------------|
| Volatile Organics by GC/MS - W | estborough Lab | | | | | |
| Methylene chloride | ND | | ug/l | 1.0 | | 1 |
| 1,1-Dichloroethane | ND | | ug/l | 1.5 | | 1 |
| Chloroform | 72 | | ug/l | 1.0 | | 1 |
| Carbon tetrachloride | ND | ent det kom i detende ovjeljelj prija grangsmijamim je grangsop, pro je | ug/l | 1.0 | | 1 |
| 1,2-Dichloropropane | ND | received the personal property description and a feet annual according to | ug/l | 3.5 | | 1 |
| Dibromochloromethane | 24 | | ug/l | 1.0 | | 1 |
| 1,1,2-Trichloroethane | ND | and and any an house defined the state of th | ug/l | 1.5 | - | 1 |
| 2-Chloroethylvinyl ether | ND | CAMPA AND AND THE SECOND COMMON PORT OF THE SECOND COMMON COMPANY OF THE SECOND COMMON COMPANY OF THE SECOND C | ug/l | 10 | | 1 |
| Tetrachloroethene | ND | th grinn I common an armony human lightings (princip) among a mily | ug/l | 1.0 | | 1 |
| Chiorobenzene | ND | | ug/l | 3.5 | *** | 1 |
| Trichlorofluoromethane | ND | | ug/i | 5.0 | | 1 |
| 1,2-Dichloroethane | ND | | ug/l | 1.5 | | 1 |
| 1,1,1-Trichloroethane | ND | | ug/l | 2.0 | - | 1 |
| Bromodichloromethane | 54 | | ug/l | 1.0 | | 1 |
| trans-1,3-Dichloropropene | ND | hat the Mark Mark Andrews and Mark and I and the second from Broad Art are an influence and common | ug/l | 1.5 | *** | 1 |
| cis-1,3-Dichloropropene | ND | | ug/l | 1.5 | | 1 |
| Bromoform | 2.5 | | ug/l | 1.0 | *** | |
| 1,1,2,2-Tetrachloroethane | ND | | ug/l | 1.0 | | 1 |
| Benzene | ND | | ug/l | 1.0 | | 1 |
| Toluene | ND | | ug/l | 1.0 | *** | 1 |
| Ethylbenzene | ND | | ug/l | 1.0 | | 1 |
| Chloromethane | ND | | ug/l | 5.0 | | 1 |
| Bromomethane | ND | engenera a versional del Horizon III e malema per en esperante e esperante e e que se en esperante e en este a | ug/l | 5.0 | ••• | 1 |
| Vinyl chloride | ND | | ug/l | 1.0 | the former to the backer to advantage of a consequence of the | 1 |
| Chloroethane | ND | | ug/l | 2.0 | *** | 1 |
| 1,1-Dichloroethene | ND | | ug/l | 1.0 | ** | 1 |
| trans-1,2-Dichloroethene | ND | | ug/l | 1.5 | | 1 |
| cis-1,2-Dichloroethene | ND | | ug/l | 1.0 | *** | 1 |



Project Name:

31148

Lab Number:

L1837054

Project Number:

Not Specified

Report Date:

09/25/18

SAMPLE RESULTS

Lab ID:

L1837054-02

Date Collected:

09/17/18 10:45

Client ID: Sample Location: 31148-027

Date Received:

09/18/18

Not Specified

Field Prep:

Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | |
|--------------------------------|-----------------|-----------|-------|-----|-----|-----------------|--|
| Volatile Organics by GC/MS - V | Vestborough Lab | | | | | | |
| Trichloroethene | ND | | ug/l | 1.0 | *** | 1 | |
| 1,2-Dichlorobenzene | ND | | ug/l | 5.0 | - | 1 | |
| 1,3-Dichlorobenzene | ND | | ug/l | 5.0 | | 1 | |
| 1,4-Dichlorobenzene | ND | | ug/l | 5.0 | | 1 | |
| p/m-Xylene | ND | | ug/l | 2.0 | ••• | 1 | |
| o-xylene | ND | | ug/l | 1.0 | | 1 | |
| Xylenes, Total | ND | | ug/l | 1.0 | *** | 1 | |
| Styrene | ND | | ug/l | 1.0 | | 1 | |
| Acetone | 18 | | ug/l | 10 | | 1 | |
| Carbon disulfide | ND | | ug/l | 5.0 | _ | 1 | |
| 2-Butanone | ND | | ug/l | 10 | | 1 | |
| Vinyl acetate | ND | | ug/l | 10 | | 1 | |
| 4-Methyl-2-pentanone | ND | | ug/l | 10 | | 1 | |
| 2-Hexanone | ND | | ug/l | 10 | - | 1 | |
| Acrolein | ND | | ug/l | 8.0 | - | 1 | |
| Acrylonitrile | ND | | ug/l | 10 | | 1 | |
| Dibromomethane | ND | | ug/l | 1.0 | | 1 | |
| | | | | | | | |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria | |
|----------------------|------------|-----------|------------------------|--|
| Pentafluorobenzene | 99 | | 60-140 | |
| Fluorobenzene | 97 | | 60-140 | |
| 4-Bromofluorobenzene | 98 | | 60-140 | |

Project Name: 31148

Project Number: Not Specified

SAMPLE RESULTS

Lab Number: L1837054

Report Date: 09/25/18

Lab ID: L1837054-03 Client ID: 31148-028

Field Prep:

Date Collected:

09/16/18 07:00

Sample Location: Not Specified Date Received: 09/18/18 Not Specified

Sample Depth:

Matrix: Analytical Method: Analytical Date:

Water 128,624.1 09/19/18 12:05

Analyst:

NLK/G

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | |
|---------------------------------|----------------|--|-------|-----|---|-----------------|---------------------------------------|
| Volatile Organics by GC/MS - Wo | estborough Lab | | | | | | |
| Methylene chloride | ND | | ug/l | 1.0 | | 1 | |
| 1,1-Dichloroethane | ND | | ug/l | 1.5 | - | 1 | Annual Committee of the State |
| Chloroform | ND | AND THE REAL PROPERTY OF THE P | ug/l | 1.0 | | 1 | Tallian also affa Variatio |
| Carbon tetrachloride | ND | (Principles & De and St. Americans and In 17 holded the down of the Property | ug/l | 1.0 | | 1 | and the contraction |
| 1,2-Dichloropropane | ND | | ug/l | 3.5 | | 1 | V V 12.72.774 WE ST |
| Dibromochloromethane | ND | | ug/l | 1.0 | antimotra in a franchista se naci antimotra e conse | 1 | |
| 1,1,2-Trichloroethane | ND | effek hit en kenn fin het de klasse af de forden. Hit klass i denne et noeden mek efen af de forde fer en | ug/l | 1.5 | | 1 | |
| 2-Chloroethylvinyl ether | ND | ele marije m | ug/l | 10 | **** | 1 | and the state of the state of |
| Tetrachloroethene | ND | | ug/l | 1.0 | | 1 | |
| Chlorobenzene | ND | | ug/l | 3.5 | **** | 1 | |
| Trichlorofluoromethane | ND | that challed a fall word that had a filter to the Michael and the words and a fall | ug/l | 5.0 | | 1 | |
| 1,2-Dichloroethane | ND | ricultura (militare de maria (militare de militare) de militare de militare de militare de militare de militar | ug/l | 1.5 | Jundy | 1 | da estado en estado de |
| 1,1,1-Trichloroethane | ND | | ug/l | 2.0 | | 1 | |
| Bromodichlorometharie | ND | | ug/l | 1.0 | | 1 | |
| trans-1,3-Dichloropropene | ND | | ug/l | 1.5 | | 1 | |
| cis-1,3-Dichloropropene | ND | | ug/l | 1.5 | ikker med kanan i dama meda (Dama manga mengana) | 1 | |
| Bromoform | ND | | ug/l | 1.0 | | 1 | |
| 1,1,2,2-Tetrachloroethane | ND | | ug/l | 1.0 | | 1 | |
| Benzene | ND | | ug/l | 1.0 | | 1 | A A A A A A A A A A A A A A A A A A A |
| Toluene | ND | entilee eentileise ee estateliikkoolisestasi hekkis Ee staak kuultuulii ettileis alkaleista taa | ug/l | 1.0 | | 1 | |
| Ethylbenzene | ND | | ug/l | 1.0 | | 1 | and an area of the state of |
| Chloromethane | ND | | ug/l | 5.0 | | 1 | |
| Bromomethane | ND | | ug/l | 5.0 | | 1 | |
| Vinyl chloride | ND | | ug/l | 1.0 | ************************************** | 1 | |
| Chloroethane | ND | and and another thank the selection and a singuistic selection of the sele | ug/l | 2.0 | *** | 1 | |
| 1,1-Dichloroethene | ND | | ug/l | 1.0 | | 1 | A THE CHICAGO CONTINUE. |
| trans-1,2-Dichloroethene | ND | | ug/l | 1.5 | | 1 | |
| cis-1,2-Dichloroethene | ND | mangan kana mengangan pangan pangan pantaman penganan at 1 km ming manan | ug/l | 1.0 | | 1 | madeline deletitis benevititi |



Project Name:

31148

Lab Number:

L1837054

Project Number:

Not Specified

Report Date:

09/25/18

SAMPLE RESULTS

Lab ID:

L1837054-03

Date Collected:

09/16/18 07:00

Client ID: Sample Location: 31148-028 Not Specified

Date Received: Field Prep:

09/18/18 Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|--------------------------------|-----------------|--|-------|-----|---|--|
| Volatile Organics by GC/MS - V | Vestborough Lab | | | | | |
| Trichloroethene | ND | | ug/l | 1.0 | | 1 |
| 1,2-Dichlorobenzene | ND | | ug/l | 5.0 | | 1 |
| 1,3-Dichlorobenzene | ND | | ug/l | 5.0 | | 1 |
| 1,4-Dichlorobenzene | ND | AND A THE OWNERS WHEN ARE NOT THE OWNERS OF | ug/l | 5.0 | | 1 |
| p/m-Xylene | ND | BOOK OF THE PROPERTY OF THE PR | ug/l | 2.0 | ************************************** | 1 |
| o-xylene | ND | | ug/l | 1.0 | | 1 |
| Xylenes, Total | ND | | ug/l | 1.0 | | engerspensenger opgense og er gregor på en greformerken menne men til efter frem menne men som annet tremselv PAN Ment Me |
| Styrene | ND | | ug/l | 1.0 | enterente transcribi en estra de l'estra de | de plante approvement au comment analysis que profession plante (index de la million d |
| Acetone | ND | alengiik in f. (ng shah ke ili (ng menegari (15 da hum 14 0 0 m an American pangan ang manah | ug/l | 10 | | 1 |
| Carbon disulfide | ND | A MARIN AND THE RESIDENCE AND | ug/l | 5.0 | | 1 |
| 2-Butanone | ND | il man si man mini pendi kinding ni makenkilah kila se manan yi hari masa mengi imakila da da m | ug/l | 10 | | 1 |
| Vinyl acetate | ND | agregopisch agent gener gesternacht eine Steine | ug/l | 10 | | 1 |
| 4-Methyl-2-pentanone | ND | TO COMPANY AND THE SECOND PROPERTY OF THE PROP | ug/l | 10 | *** | 1 |
| 2-Hexanone | ND | | ug/l | 10 | | 1 |
| Acrolein | ND | | ug/l | 8.0 | | 1 |
| Acrylonitrile | ND | kendinada makamatikadan nikatinan kendinta Andria Pada makamatikika dari dalah | ug/l | 10 | | 1 |
| Dibromomethane | ND | | ug/l | 1.0 | *** | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria | |
|----------------------|------------|-----------|------------------------|--|
| Pentafluorobenzene | 96 | | 60-140 | |
| Fluorobenzene | 99 | | 60-140 | |
| 4-Bromofluorobenzene | 101 | | 60-140 | |

L1837054

09/25/18

Project Name: 31148

Not Specified

Project Number:

SAMPLE RESULTS

09/17/18 07:00

Lab Number:

Report Date:

Date Collected: L1837054-07 31148-061 Date Received: -09/18/18

Field Prep: Sample Location: Not Specified Not Specified

Sample Depth:

Lab ID:

Client ID:

Matrix: Water Analytical Method: 128,624.1 Analytical Date: 09/19/18 14:33

Analyst: NLK/G

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---------------------------------|---------------|--|-------|-----|--|-----------------|
| Volatile Organics by GC/MS - We | stborough Lab | | | | 60 E 2012 | |
| Methylene chloride | ND | | ug/l | 1.0 | | 1 |
| 1,1-Dichloroethane | ND | ad a consistencia de Parlambilita de Africa de Africa e Africa de | ug/l | 1.5 | | 1 |
| Chloroform | 40 | | ug/l | 1.0 | to I falsa fara kina kina a manafati i kanaki i i ikanaki iki iki a a kina kin | 1 |
| Carbon tetrachloride | ND | | ug/l | 1.0 | CONTRACTOR OF STREET, | 1 |
| 1,2-Dichloropropane | ND | | ug/l | 3.5 | enterior in the first to the second s | 1 |
| Dibromochloromethane | 54 | andere vike uit for belande finde af miller vine to um mentere i en et alle et even een een een ee | ug/l | 1.0 | | 1 |
| 1,1,2-Trichloroethane | ND | | ug/l | 1.5 | | 1 |
| 2-Chloroethylvinyl ether | ND | | ug/l | 10 | | 1 |
| Tetrachloroethene | ND | ushahida Pilimba'a middi Ariba Mariba da Islamin na ka Islami'a ma'a ''Air Fara da Yila | ug/l | 1.0 | | 1 |
| Chlorobenzene | ND | ik dan selambah di Bandi Kadamatan dan di bahan banda dan berbana dan 19 Mari Unit 19 Marian dan | ug/l | 3.5 | | 1 |
| Trichlorofluoromethane | ND | and a common to the State of the State of the State of St | ug/i | 5.0 | - | 1 |
| I,2-Dichloroethane | ND | | ug/l | 1.5 | | 1 |
| I,1,1-Trichloroethane | ND | | ug/l | 2.0 | - | 1 |
| 3romodichloromethane | 71 | | ug/l | 1.0 | | 1 |
| rans-1,3-Dichloropropene | ND | | ug/l | 1.5 | | 1 |
| cis-1,3-Dichloropropene | ND | | ug/l | 1.5 | | 1 |
| 3romoform | 6.7 | | ug/l | 1.0 | | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | ug/l | 1.0 | | 1 |
| Benzene | ND | | ug/l | 1.0 | | 1 |
| Toluene . | ND | | ug/l | 1.0 | | 1 |
| Ethylbenzene | ND | | ug/l | 1.0 | | 1 |
| Chloromethane | ND | | ug/l | 5.0 | - | 1 |
| Bromomethane | ND | 10 0000000 | ug/l | 5.0 | _ | 1 |
| /inyl chloride | ND | | ug/l | 1.0 | | 1 |
| Chloroethane | ND | | ug/l | 2.0 | | 1 |
| 1,1-Dichloroethene | ND | | ug/l | 1.0 | | 1 |
| rans-1,2-Dichloroethene | ND | AND PROPERTY AND LOSS AS THE PARTY AND LOSS | ug/l | 1.5 | - | 1 |
| cis-1,2-Dichloroethene | ND | A CONTRACTOR OF STREET, STREET | ug/l | 1.0 | ** | 1 |



Project Name: 31148 Lab Number: L1837054

Project Number: Not Specified Report Date: 09/25/18

SAMPLE RESULTS

 Lab ID:
 L1837054-07
 Date Collected:
 09/17/18 07:00

 Client ID:
 31148-061
 Date Received:
 09/18/18

 Sample Location:
 Not Specified
 Field Prep:
 Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|--------------------------------|-----------------|--|-------|------------------------------|------------|-----------------|
| Volatile Organics by GC/MS - V | Vestborough Lab | | | | | |
| Trichloroethene | ND | | ug/l | 1.0 | | 1 |
| 1,2-Dichlorobenzene | ND | | ug/l | 5.0 | | 1 |
| 1,3-Dichlorobenzene | ND | | ug/l | 5.0 | | 1 |
| 1,4-Dichlorobenzene | ND | | ug/l | 5.0 | | 1 |
| p/m-Xylene | ND | | ug/l | 2.0 | | 1 |
| o-xylene | ND | | ug/l | 1.0 | 444 | 1 |
| Xylenes, Total | ND | | ug/l | 1.0 | | 1 |
| Styrene | ND | | ug/l | 1.0 | | 1 |
| Acetone | ND | | ug/l | 10 | | 1 |
| Carbon disulfide | ND | | ug/l | 5.0 | 4-4 | 1 |
| 2-Butanone | ND | And an Annual Control of the Control | ug/l | 10 | | 1 |
| Vinyl acetate | ND | | ug/l | 10 | *** | 1 |
| 4-Methyl-2-pentanone | ND | | ug/l | 10 | | 1 |
| 2-Hexanone | ND | en e | ug/l | 10 | *** | 1 |
| Acrolein | ND | and the second of the second s | ug/l | 8.0 | **** | 1 |
| Acrylonitrile | ND | | ug/l | 10 | *** | 1 |
| Dibromomethane | ND | Phas he had a selection for the constraint of th | ug/l | 1.0 | | 1 |
| | | | | **************************** | | |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria | |
|----------------------|------------|-----------|------------------------|--|
| Pentafluorobenzene | 96 | | 60-140 | |
| Fluorobenzene | 94 | | 60-140 | |
| 4-Bromofluorobenzene | 98 | | 60-140 | |

L1837054

09/25/18

Project Name: 31148

Project Number: Not Specified

SAMPLE RESULTS

Date Collected: 09/17/18 07:00

Lab Number:

Report Date:

Date Received: 09/18/18 Field Prep: Not Specified

Lab ID: L1837054-08 Client ID: 31148-062 Sample Location: Not Specified

Sample Depth:

Matrix: Water Analytical Method: 128,624.1 Analytical Date: 09/19/18 15:10

Analyst: NLK/G

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---------------------------------|----------------|--|-------|-----|--|-----------------|
| Volatile Organics by GC/MS - Wo | estborough Lab | | | | | |
| Methylene chloride | ND | | ug/l | 1.0 | _ | 1 |
| 1,1-Dichloroethane | ND | | ug/l | 1.5 | | 1 |
| Chloroform | 39 | | ug/l | 1.0 | | 1 |
| Carbon tetrachloride | ND | Million and the state of the forest of the second for the second f | ug/l | 1.0 | | 1 |
| 1,2-Dichloropropane | ND | | ug/l | 3,5 | - | 1 |
| Dibromochloromethane | 52 | | ug/l | 1.0 | | 1 |
| 1,1,2-Trichloroethane | ND | | ug/l | 1.5 | *** | 1 |
| 2-Chloroethylvinyl ether | ND | | ug/l | 10 | | 1 |
| Tetrachloroethene | ND | | ug/l | 1.0 | | 1 |
| Chloroberizene | ND | elikikushan dahir kalikan ishan ama ati'an oraha atika 19 ori konatra abilana o | ug/l | 3.5 | **** | 1 |
| Frichlorofluoromethane | ND | Permitte surent, ett. Lustren, sotisielt a rodelakustekonaria | ug/l | 5.0 | | 1 |
| I,2-Dichloroethane | ND | ANTONIO PER ESPAINA PER ANTONIO | ug/l | 1.5 | *** | 1 |
| I,1,1-Trichloroethane | ND | | ug/i | 2.0 | | 1 |
| Bromodichloromethane | 68 | THE SECTION OF THE SE | ug/l | 1.0 | | 1 |
| rans-1,3-Dichloropropene | ND | | ug/l | 1.5 | | 1 |
| cis-1,3-Dichloropropene | ND | etteki tikan intersit kata artik dari e kestakan (mek mentingi menga) dempan me | ug/l | 1.5 | | 1 |
| Bromoform | 6.6 | | ug/l | 1,0 | | 1 |
| 1,1,2,2-Tetrachloroethane | ND | Andronia konstancia e a kara kara kara sa a sistemi a kurik da yasinerin e e e interaka yang | ug/l | 1.0 | | 1 |
| Benzene | ND | | ug/i | 1.0 | | 1 |
| Foluene | ND | morphism in any district of new definition of a set is an electrical annual relation | ug/l | 1.0 | | 1 |
| Ethylbenzene | ND | | ug/l | 1.0 | | 1 |
| Chloromethane | ND | andrian and and the destroy among a behind a final facility and the latter of the destroy and the contributions of | ug/l | 5.0 | The first first to the first makes the Affilian in the first in the section of the Affilian in the section of t | 1 |
| Bromomethane | ND | | ug/l | 5.0 | | 1 |
| Vinyl chloride | ND | e de harille com mar en agus il l'immers d'ambié describent de la réside à à l'il leave d'une conduction de la | ug/l | 1.0 | NA ANTALAN AMERICAN ANTALAN AN | 1 |
| Chloroethane | ND | | ug/l | 2.0 | | 1 |
| I,1-Dichloroethene | ND | t den eine ist den ist eine Steinberg in Amerika vong gegennige besonde den mei de steinberg in den steinberg | ug/l | 1.0 | | 1 |
| rans-1,2-Dichloroethene | ND | had the decision of the contribute of the selection of th | ug/l | 1.5 | | 1 |
| cis-1,2-Dichloroethene | ND | | ug/l | 1.0 | *** | 1 |



Project Name: 31148 Lab Number: L1837054

Project Number: Not Specified Report Date: 09/25/18

SAMPLE RESULTS

 Lab ID:
 L1837054-08
 Date Collected:
 09/17/18 07:00

 Client ID:
 31148-062
 Date Received:
 09/18/18

 Sample Location:
 Not Specified
 Field Prep:
 Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---------------------------------|---------------|--|-------|------|--|--|
| Volatile Organics by GC/MS - We | stborough Lab | | | 1770 | 100 | |
| Trichloroethene | ND | | ug/l | 1.0 | | 1 |
| 1,2-Dichlorobenzene | ND | AND A SERVICE OF THE PARTY WITH THE PARTY AND THE PARTY AN | ug/l | 5.0 | Market at a transfer time is not a based as the market that a second control of the seco | 1 |
| 1,3-Dichlorobenzene | ND | | ug/l | 5.0 | | 1 |
| 1,4-Dichlorobenzene | ND | Committee to an extraordistation of the second section | ug/l | 5.0 | | |
| p/m-Xylene | ND | Children (1964) (Americk) de manuel (1964) (1964) (1964) (1964) (1964) (1964) (1964) (1964) (1964) (1964) (1964) | ug/l | 2.0 | **** | 1 |
| o-xylene | ND | | ug/l | 1.0 | | ************************************** |
| Xylenes, Total | ND | gan mananang kanamakan a Manan matah haran Andi Tan Bibb mana E bana caban dan di | ug/l | 1.0 | | 1 |
| Styrene | ND | | ug/l | 1.0 | | 1 |
| Acetone | ND | | ug/l | 10 | | 1 |
| Carbon disulfide | ND | | ug/l | 5.0 | entere Aminis in enteres montenantes en enteres. | 1 |
| 2-Butanone | ND | Mike Mind Collection (and an in the and head of the forward ("Meaning Collection of Anti- | ug/l | 10 | in tale (in district all affection dates on the Charles and and an in-in-consistent | T |
| Vinyl acetate | ND | | ug/l | 10 | | |
| 4-Methyl-2-pentanone | ND | | ug/l | 10 | | <u> </u> |
| 2-Hexanone | ND | ann 1900 aichte 160° airt a' Caileann ann 100° Ionna ' an ann ait an ann ait an ann aichte | ug/l | 10 | -France of comme France fra man franche frances man and a | 1 |
| Acrolein | ND | | ug/l | 8.0 | | 1 |
| Acrylonitrile | ND | | ug/l | 10 | | 1 |
| Dibromomethane | ND | | ug/l | 1.0 | | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria | |
|----------------------|------------|-----------|------------------------|--|
| Pentafluorobenzene | 98 | | 60-140 | |
| Fluorobenzene | 95 | | 60-140 | |
| 4-Bromofluorobenzene | 99 | | 60-140 | |

Project Name: 31148

Lab Number:

L1837054

Project Number:

Not Specified

Report Date:

09/25/18

SAMPLE RESULTS

Lab ID:

L1837054-09

Date Collected:

09/16/18 08:00

Client ID: Sample Location: 31148-063 Not Specified

Date Received: Field Prep:

09/18/18 Not Specified

Sample Depth:

Matrix:

Water

Analytical Method: Analytical Date: 128,624.1 09/19/18 12:42

Analyst:

NLK/G

| Volatile Organics by GC/MS - Westborough Lab Methylene chloride 1.2 ug/l 1.0 – 1 1,1-Dichloroethane ND ug/l 1.5 – 1 Chloroform ND ug/l 1.0 – 1 Carbon tetrachloride ND ug/l 1.0 – 1 Carbon tetrachloride ND ug/l 1.0 – 1 Dibromochloromethane ND ug/l 1.0 – 1 1,12-Trichloroethane ND ug/l 1.5 – 1 1,12-Trichloroethane ND ug/l 1.0 – 1 2-Chloroethylvinyl ether ND ug/l 1.0 – 1 Tetrachloroethane ND ug/l 1.0 – 1 Chloroethazene ND ug/l 5.0 – 1 1,1-Trichloroethane ND ug/l 1.5 – 1 1,1-Trichloroethane ND ug/l <th>Parameter</th> <th>Result</th> <th>Qualifier</th> <th>Units</th> <th>RL</th> <th>MDL</th> <th>Dilution Factor</th> <th></th> | Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | |
|--|--------------------------------|----------------|--|-------|-----|--|-----------------|--|
| 1,1-Dichloroethane ND ug/l 1.5 - 1 Chloroform ND ug/l 1.0 - 1 Carbon tetrachloride ND ug/l 1.0 - 1 1,2-Dichloropropane ND ug/l 1.0 - 1 Dibromochloromethane ND ug/l 1.5 - 1 1,1,2-Trichloroethane ND ug/l 1.0 - 1 2-Chloroethylvinyl ether ND ug/l 1.0 - 1 2-Chloroethane ND ug/l 1.0 - 1 2-Chloroethane ND ug/l 1.5 - 1 | Volatile Organics by GC/MS - W | estborough Lab | | | | | | |
| Chloroform ND ug/l 1.0 - 1 Carbon tetrachloride ND ug/l 1.0 - 1 1,2-Dichloropropane ND ug/l 3.5 - 1 Dibromochloromethane ND ug/l 1.0 - 1 1,1,2-Trichloroethane ND ug/l 1.5 - 1 2-Chloroethylvinyl ether ND ug/l 1.0 - 1 2-Chloroethylvinyl ether ND ug/l 1.0 - 1 Chloroethylvinyl ether ND ug/l 1.0 - 1 Chloroethylvinyl ether ND ug/l 1.0 - 1 Chloroethane ND ug/l 1.0 - 1 Chloroethane ND ug/l 1.5 - 1 Trichloroethane ND ug/l 1.0 - 1 Bromocilloromethane ND ug/l 1.0 - 1 | Methylene chloride | 1.2 | | ug/l | 1.0 | | 1 | |
| Carbon letrachloride ND ug/l 1.0 - 1 1,2-Dichloropropane ND ug/l 3.5 - 1 Dibromochloromethane ND ug/l 1.0 - 1 1,1,2-Tichlorosthane ND ug/l 1.5 - 1 2-Chloroethylvinyl ether ND ug/l 1.0 - 1 Chloroebhane ND ug/l 1.0 - 1 Chloroebhane ND ug/l 3.5 - 1 Trichlorofluoromethane ND ug/l 5.0 - 1 1,1-Trichloroethane ND ug/l 1.5 - 1 1,1-Trichloroethane ND ug/l 1.0 - 1 Bromodichloromethane ND ug/l 1.0 - 1 Bromodichloromethane ND ug/l 1.0 - 1 Bromodichloromethane ND ug/l 1.0 - 1 | 1,1-Dichloroethane | ND | ganggalankan glegan kelancan arawa 1965 ana amaraka arawa 1964 b | ug/l | 1.5 | | 1 | |
| 1,2-Dichloropropane ND ug/l 3.5 - 1 Dibromochloromethane ND ug/l 1.0 - 1 1,1,2-Trichloroethane ND ug/l 1.5 - 1 2-Chloroethylvinyl ether ND ug/l 1.0 - 1 Tetrachloroethane ND ug/l 3.5 - 1 Chloroethane ND ug/l 3.5 - 1 Trichlorofluoromethane ND ug/l 5.0 - 1 1,1,1-Trichloroethane ND ug/l 1.5 - 1 Bromodichloromethane ND ug/l 1.0 - 1 Bromodichloropropene ND ug/l 1.5 - 1 Bromoform ND ug/l 1.5 - 1 Bromoform ND ug/l 1.0 - 1 Benzene ND ug/l 1.0 - 1 Benzene< | Chloroform | ND | | ug/l | 1.0 | - | 1 | are and common described |
| Dibromochloromethane ND ug/l 1.0 - 1 1,1,2-Trichloroethane ND ug/l 1.5 - 1 2-Chloroethylvinyl ether ND ug/l 10 - 1 Tetrachloroethane ND ug/l 1.0 - 1 Chlorobenzene ND ug/l 3.5 - 1 Trichloroethane ND ug/l 5.0 - 1 1,2-Dichloroethane ND ug/l 1.5 - 1 1,1,1-Trichloroethane ND ug/l 1.0 - 1 Bromodichloromethane ND ug/l 1.0 - 1 Bromodichloropropene ND ug/l 1.5 - 1 Itans-1,3-Dichloropropene ND ug/l 1.5 - 1 Isin-1,2-2-Tetrachloroethane ND ug/l 1.0 - 1 Indexen ND ug/l 1.0 - 1 | Carbon tetrachloride | ND | and the second s | ug/l | 1.0 | | 1 | and the same of th |
| 1,1,2-Trichloroethane ND ug/l 1.5 - 1 2-Chloroethylvinyl ether ND ug/l 10 - 1 2-Chloroethylvinyl ether ND ug/l 1.0 - 1 Tetrachloroethane ND ug/l 3.5 - 1 Chlorobenzene ND ug/l 5.0 - 1 Trichlorofluoromethane ND ug/l 1.5 - 1 1,1,1-Trichloroethane ND ug/l 1.0 - 1 Bromodichloromethane ND ug/l 1.0 - 1 Bromodichloropropene ND ug/l 1.5 - 1 cis-1,3-Dichloropropene ND ug/l 1.5 - 1 bromodichloromethane ND ug/l 1.0 - 1 cis-1,3-Dichloropropene ND ug/l 1.0 - 1 bromodichloromethane ND ug/l 1.0 - | 1,2-Dichloropropane | ND | A THOUGH EASTERNANCE CONTINUES OF THE STATE | ug/l | 3.5 | and the transfer of the second state of the se | 1 | |
| 2-Chloroethylvinyl ether ND ug/l 10 - 1 Tetrachloroethene ND ug/l 1.0 - 1 Chlorobenzene ND ug/l 3.5 - 1 Trichlorofluoromethane ND ug/l 5.0 - 1 1,2-Dichloroethane ND ug/l 1.5 - 1 1,1,1-Trichloroethane ND ug/l 1.0 - 1 Bromodichloromethane ND ug/l 1.0 - 1 Bromodichloropropene ND ug/l 1.5 - 1 cis-1,3-Dichloropropene ND ug/l 1.5 - 1 Bromoform ND ug/l 1.0 - 1 Bromoform ND ug/l 1.0 - 1 Benzene ND ug/l 1.0 - 1 Ethylbenzene ND ug/l 1.0 - 1 Chloromethane </td <td>Dibromochloromethane</td> <td>ND</td> <td>Till delektrick kommenter fra de little Orien El Tille Som el Prima de Tille Som El Tille Som El Tille Som El</td> <td>ug/l</td> <td>1.0</td> <td></td> <td>1</td> <td></td> | Dibromochloromethane | ND | Till delektrick kommenter fra de little Orien El Tille Som el Prima de Tille Som El Tille Som El Tille Som El | ug/l | 1.0 | | 1 | |
| Tetrachloroethene ND ug/l 1.0 - 1 Chlorobenzene ND ug/l 3.5 - 1 Trichlorofluoromethane ND ug/l 5.0 - 1 1,2-Dichloroethane ND ug/l 1.5 - 1 1,1,1-Trichloroethane ND ug/l 1.0 - 1 Bromodichloromethane ND ug/l 1.5 - 1 Bromoforhoropropene ND ug/l 1.5 - 1 cis-1,3-Dichloropropene ND ug/l 1.5 - 1 Bromoform ND ug/l 1.0 - 1 Bromoform ND ug/l 1.0 - 1 1,1,2,2-Tetrachloroethane ND ug/l 1.0 - 1 Benzene ND ug/l 1.0 - 1 Toluene ND ug/l 1.0 - 1 Ethylbenzene | 1,1,2-Trichloroethane | ND | | ug/l | 1.5 | and of the state o | 1 | |
| Chlorobenzene ND ug/l 3.5 - 1 Trichlorofluoromethane ND ug/l 5.0 - 1 1,2-Dichloroethane ND ug/l 1.5 - 1 1,1,1-Trichloroethane ND ug/l 2.0 - 1 Bromodichloromethane ND ug/l 1.0 - 1 Bromodichloropropene ND ug/l 1.5 - 1 st-1,3-Dichloropropene ND ug/l 1.5 - 1 sis-1,3-Dichloropropene ND ug/l 1.5 - 1 Bromoform ND ug/l 1.0 - 1 Bromoform ND ug/l 1.0 - 1 1,1,2,2-Tetrachloroethane ND ug/l 1.0 - 1 Benzene ND ug/l 1.0 - 1 Ethylbenzene ND ug/l 5.0 - 1 Chlorome | 2-Chloroethylvinyl ether | ND | | ug/l | 10 | e manual material designed de communitation de politica e de difference qui d'amend de l'amend de l | 1 | |
| Tricklorofluoromethane ND ug/l 5.0 - 1 1,2-Dickloroethane ND ug/l 1.5 - 1 1,1,1-Trickloroethane ND ug/l 2.0 - 1 Bromodickloromethane ND ug/l 1.0 - 1 Bromofichloropropene ND ug/l 1.5 - 1 cis-1,3-Dickloropropene ND ug/l 1.5 - 1 Bromoform ND ug/l 1.0 - 1 Bromoform ND ug/l 1.0 - 1 1,1,2,2-Tetrachloroethane ND ug/l 1.0 - 1 Benzene ND ug/l 1.0 - 1 Toluene ND ug/l 1.0 - 1 Ethylbenzene ND ug/l 5.0 - 1 Chloromethane ND ug/l 5.0 - 1 Vinyl chloride | Tetrachloroethene | ND | | ug/l | 1.0 | **** | 1 | |
| 1,2-Dichloroethane ND ug/l 1.5 - 1 1,1,1-Trichloroethane ND ug/l 2.0 - 1 Bromodichloromethane ND ug/l 1.0 - 1 trans-1,3-Dichloropropene ND ug/l 1.5 - 1 cis-1,3-Dichloropropene ND ug/l 1.5 - 1 Bromoform ND ug/l 1.0 - 1 Bromoform ND ug/l 1.0 - 1 Benzene ND ug/l 1.0 - 1 Toluene ND ug/l 1.0 - 1 Ethylbenzene ND ug/l 1.0 - 1 Chloromethane ND ug/l 5.0 - 1 Stromomethane ND ug/l 5.0 - 1 Vinyl chloride ND ug/l 1.0 - 1 Chloroethane ND | Chlorobenzene | ND | AND THE RESERVE OF THE PROPERTY OF THE PROPERT | ug/l | 3.5 | and the state of t | 1 | ni Antoniano |
| 1,1,1-Trichloroethane ND ug/l 2.0 - 1 Bromodichloromethane ND ug/l 1.0 - 1 trans-1,3-Dichloropropene ND ug/l 1.5 - 1 cis-1,3-Dichloropropene ND ug/l 1.5 - 1 Bromoform ND ug/l 1.0 - 1 1,1,2,2-Tetrachloroethane ND ug/l 1.0 - 1 Benzene ND ug/l 1.0 - 1 Toluene ND ug/l 1.0 - 1 Ethylbenzene ND ug/l 1.0 - 1 Chloromethane ND ug/l 5.0 - 1 Bromomethane ND ug/l 5.0 - 1 Vinyl chloride ND ug/l 2.0 - 1 Chloroethane ND ug/l 1.0 - 1 1,1-Dichloroethene | Trichlorofluoromethane | ND | | ug/l | 5.0 | | 1 | |
| Bromodichloromethane ND ug/l 1.0 - 1 trans-1,3-Dichloropropene ND ug/l 1.5 - 1 cis-1,3-Dichloropropene ND ug/l 1.5 - 1 Bromoform ND ug/l 1.0 - 1 1,1,2,2-Tetrachloroethane ND ug/l 1.0 - 1 Benzene ND ug/l 1.0 - 1 Toluene ND ug/l 1.0 - 1 Ethylbenzene ND ug/l 1.0 - 1 Chloromethane ND ug/l 5.0 - 1 Vinyl chloride ND ug/l 5.0 - 1 Vinyl chloride ND ug/l 1.0 - 1 Chloroethane ND ug/l 1.0 - 1 Chloroethane ND ug/l 1.0 - 1 1,1-Dichloroethene | 1,2-Dichloroethane | ND | | ug/l | 1.5 | | 1 | |
| trans-1,3-Dichloropropene ND ug/l 1.5 - 1 cis-1,3-Dichloropropene ND ug/l 1.5 - 1 Bromoform ND ug/l 1.0 - 1 1,1,2,2-Tetrachloroethane ND ug/l 1.0 - 1 Benzene ND ug/l 1.0 - 1 Toluene ND ug/l 1.0 - 1 Ethylbenzene ND ug/l 1.0 - 1 Chloromethane ND ug/l 5.0 - 1 Sromomethane ND ug/l 5.0 - 1 Vinyl chloride ND ug/l 1.0 - 1 Chloroethane ND ug/l 2.0 - 1 1,1-Dichloroethene ND ug/l 1.0 - 1 trans-1,2-Dichloroethene ND ug/l 1.5 - 1 | 1,1,1-Trichloroethane | ND | | ug/l | 2.0 | | 1 | |
| cis-1,3-Dichloropropene ND ug/l 1.5 - 1 Bromoform ND ug/l 1.0 - 1 1,1,2,2-Tetrachloroethane ND ug/l 1.0 - 1 Benzene ND ug/l 1.0 - 1 Toluene ND ug/l 1.0 - 1 Ethylbenzene ND ug/l 1.0 - 1 Chloromethane ND ug/l 5.0 - 1 Vinyl chloride ND ug/l 1.0 - 1 Vinyl chloride ND ug/l 1.0 - 1 Chloroethane ND ug/l 1.0 - 1 1,1-Dichloroethene ND ug/l 1.0 - 1 1,1-Dichloroethene ND ug/l 1.0 - 1 1,1-Dichloroethene ND ug/l 1.0 - 1 | Bromodichloromethane | ND | And the second section is a second section of the second section of the second section is a second section of the second section is a second section of the second section sec | ug/l | 1.0 | - | 1 | |
| Bromoform ND ug/l 1.0 - 1 1,1,2,2-Tetrachloroethane ND ug/l 1.0 - 1 Benzene ND ug/l 1.0 - 1 Toluene ND ug/l 1.0 - 1 Ethylbenzene ND ug/l 5.0 - 1 Chloromethane ND ug/l 5.0 - 1 Bromomethane ND ug/l 5.0 - 1 Vinyl chloride ND ug/l 1.0 - 1 Chloroethane ND ug/l 2.0 - 1 1,1-Dichloroethene ND ug/l 1.0 - 1 trans-1,2-Dichloroethene ND ug/l 1.5 - 1 | trans-1,3-Dichloropropene | ND | | ug/l | 1.5 | | 1 | |
| 1,1,2,2-Tetrachloroethane ND ug/l 1.0 1 Benzene ND ug/l 1.0 1 Toluene ND ug/l 1.0 1 Ethylbenzene ND ug/l 5.0 1 Chloromethane ND ug/l 5.0 1 Bromomethane ND ug/l 5.0 1 Vinyl chloride ND ug/l 1.0 1 Chloroethane ND ug/l 2.0 1 1,1-Dichloroethene ND ug/l 1.0 1 trans-1,2-Dichloroethene ND ug/l 1.5 1 | cis-1,3-Dichloropropene | ND | Sold and the probability of the first of the sold of t | ug/l | 1.5 | *** | 1 | 2000000000 |
| Benzene ND ug/l 1.0 1 Toluene ND ug/l 1.0 1 Ethylbenzene ND ug/l 1.0 1 Chloromethane ND ug/l 5.0 1 Bromomethane ND ug/l 5.0 1 Vinyl chloride ND ug/l 1.0 1 Chloroethane ND ug/l 2.0 1 1,1-Dichloroethene ND ug/l 1.0 1 trans-1,2-Dichloroethene ND ug/l 1.5 1 | Bromoform | ND | | ug/l | 1.0 | The state of the s | 1 | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, |
| Toluene ND ug/l 1.0 — 1 Ethylbenzene ND ug/l 1.0 — 1 Chloromethane ND ug/l 5.0 — 1 Bromomethane ND ug/l 5.0 — 1 Vinyl chloride ND ug/l 1.0 — 1 Chloroethane ND ug/l 2.0 — 1 1,1-Dichloroethene ND ug/l 1.0 — 1 trans-1,2-Dichloroethene ND ug/l 1.5 — 1 | 1,1,2,2-Tetrachloroethane | ND | reteriorie e estra contra c | ug/l | 1.0 | | 1 | |
| Ethylbenzene ND ug/l 1.0 1 Chloromethane ND ug/l 5.0 1 Bromomethane ND ug/l 5.0 1 Vinyl chloride ND ug/l 1.0 1 Chloroethane ND ug/l 2.0 1 1,1-Dichloroethene ND ug/l 1.0 1 trans-1,2-Dichloroethene ND ug/l 1.5 1 | Benzene | ND | | ug/l | 1.0 | | 1 | . Cas concludes to the |
| Chloromethane ND ug/l 5.0 1 Bromomethane ND ug/l 5.0 1 Vinyl chloride ND ug/l 1.0 1 Chloroethane ND ug/l 2.0 1 1,1-Dichloroethene ND ug/l 1.0 1 trans-1,2-Dichloroethene ND ug/l 1.5 1 | Toluene | ND | that I am Fabricana al advantament II any construction between 15 construction | ug/l | 1.0 | **** | 1 | |
| Bromomethane ND ug/l 5.0 1 Vinyl chloride ND ug/l 1.0 1 Chloroethane ND ug/l 2.0 1 1,1-Dichloroethene ND ug/l 1.0 1 trans-1,2-Dichloroethene ND ug/l 1.5 1 | Ethylbenzene | ND | The State State State of the State of S | ug/l | 1.0 | | 1 | atam to day a district |
| Vinyl chloride ND ug/l 1.0 1 Chloroethane ND ug/l 2.0 1 1,1-Dichloroethene ND ug/l 1.0 1 trans-1,2-Dichloroethene ND ug/l 1.5 1 | Chloromethane | ND | | ug/l | 5.0 | | 1 | MANUFACTURE AND |
| Chloroethane ND ug/l 2.0 1 1,1-Dichloroethene ND ug/l 1.0 1 trans-1,2-Dichloroethene ND ug/l 1.5 1 | Bromomethane | ND | mande anno a colorido de la colorida del colorida del colorida de la colorida del la colorida de la colorida de la colorida de la colorida del la color | ug/l | 5.0 | | 1 | ************* |
| 1,1-Dichloroethene ND ug/l 1.0 1 trans-1,2-Dichloroethene ND ug/l 1.5 1 | Vinyl chloride | ND | | ug/l | 1.0 | *** | 1 | |
| trans-1,2-Dichloroethene ND ug/l 1.5 - 1 | Chloroethane | ND | | ug/l | 2.0 | | 1 | |
| | 1,1-Dichloroethene | ND | | ug/l | 1.0 | | 1 | |
| cis-1,2-Dichloroethene ND ug/l 1.0 1 | trans-1,2-Dichloroethene | ND | The second desires of the control of the second of the sec | ug/l | 1.5 | | 1 | |
| | cis-1,2-Dichloroethene | ND | | ug/l | 1.0 | | 1 | |



Project Name:

31148

Lab Number:

L1837054

Project Number:

Not Specified

Report Date:

09/25/18

SAMPLE RESULTS

Lab ID:

L1837054-09

Date Collected:

09/16/18 08:00

Client ID:

31148-063

Date Received:

09/18/18

Sample Location:

Not Specified

Field Prep:

Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|--------------------------------|-----------------|--|-------|-----|--|---|
| Volatile Organics by GC/MS - V | Vestborough Lab | | | | | |
| Trichloroethene | ND | | ug/l | 1.0 | | 1 |
| 1,2-Dichlorobenzene | ND | | ug/l | 5.0 | | 1 |
| 1,3-Dichlorobenzene | ND | COLUMN TO THE RESIDENCE OF THE SECURITION OF THE | ug/l | 5.0 | | 1 |
| 1,4-Dichlorobenzene | ND | | ug/l | 5.0 | *** | 1 |
| p/m-Xylene | ND | The second secon | ug/l | 2.0 | | 1 |
| o-xylene | ND | | ug/l | 1.0 | | 1 |
| Xylenes, Total | ND | ter de la completa de la Manual de la del Sance de que 14 mil en como en circle de company de la company de la | ug/l | 1.0 | | 1 |
| Styrene | ND | adia in site estrational i vi an est tellusquius auty an estimate est y destina quietta es | ug/l | 1.0 | | 1 |
| Acetone | ND | | ug/l | 10 | *** | 1 |
| Carbon disulfide | ND | ayar ilka silamida merjerdak ji dha gayara ji bayarara ji dahara kya barajash, jija adaja pida ga kinganji pil | ug/l | 5.0 | Omen's behind (American School) and Selection a second are a site of the second are a site of th | derkommenssommer hand senderssom i zum Biss som Dirkskar der Send dess perderkarbet kritikere faskettarerendetid 1 |
| 2-Butanone | ND | | ug/l | 10 | | 1 |
| Vinyl acetate | ND | | ug/l | 10 | | 1 |
| 4-Methyl-2-pentanone | ND | | ug/l | 10 | | 1 |
| 2-Hexanone | ND | | ug/l | 10 | | 1 |
| Acrolein | ND | | ug/l | 8.0 | | 1 |
| Acrylonitrile | ND | | ug/l | 10 | - | 1 |
| Dibromomethane | ND | electricity of the Steam of the control for the steam of the letter to the Steam of the control of the | ug/l | 1.0 | | 1 |

| Surrogate | % Recovery | Acceptance Qualifier Criteria | |
|----------------------|------------|----------------------------------|--|
| Pentafluorobenzene | 94 | 60-140 | |
| Fluorobenzene | 88 | 60-140 | |
| 4-Bromofluorobenzene | 101 | 60-140 | |

Project Name:

31148

Lab Number:

L1837054

Project Number:

Not Specified

Report Date:

09/25/18

SAMPLE RESULTS

Lab ID:

L1837054-13

Client ID: Sample Location: 31148-095 Not Specified Date Collected:

09/17/18 14:10

Date Received: Field Prep:

09/18/18 Not Specified

Sample Depth:

Matrix:

Water

Analytical Method: Analytical Date:

128,624.1 09/19/18 15:46

Analyst:

NLK/G

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---------------------------------|----------------|--|-------|-----|---|--|
| Volatile Organics by GC/MS - We | estborough Lab | | | | | |
| Methylene chloride | ND | | ug/l | 1.0 | | 1 |
| 1,1-Dichloroethane | ND | | ug/l | 1.5 | | 1 |
| Chloroform | ND | Marine Commission of the Commi | ug/l | 1.0 | | 1 |
| Carbon tetrachloride | ND | | ug/l | 1.0 | **** | The second secon |
| 1,2-Dichloropropane | ND | | ug/l | 3.5 | | 1 |
| Dibromochloromethane | ND | | ug/l | 1,0 | *** | 1 |
| 1,1,2-Trichloroethane | ND | | ug/l | 1.5 | | of a minimum minimum and the anti-transformation of a final scalar inflictation of the at a state discovered children and the discovered of the attention of th |
| 2-Chloroethylvinyl ether | ND | | ug/l | 10 | | 1 |
| Tetrachioroethene | ND | | ug/i | 1.0 | | 1 |
| Chlorobenzene | ND | | ug/l | 3.5 | | 1 |
| Trichlorofluoromethane | ND | | ug/i | 5.0 | | 1 |
| 1,2-Dichloroethane | ND | | ug/i | 1.5 | | 1 |
| 1,1,1-Trichloroethane | ND | | ug/l | 2.0 | | 1 |
| Bromodichloromethane | ND | | ug/l | 1.0 | *** | 1 |
| trans-1,3-Dichloropropene | ND | | ug/l | 1.5 | | 1 |
| cis-1,3-Dichloropropene | ND | | ug/l | 1.5 | *** | 1 |
| Bromoform | ND | | ug/l | 1.0 | | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | ug/l | 1.0 | *** | 1 |
| Benzene | ND | | ug/l | 1.0 | | 1 |
| Toluene | ND | APPENDENCE OF THE SECTION OF THE SEC | ug/l | 1.0 | | 1 |
| Ethylbenzene | ND | | ug/i | 1.0 | - | 1 |
| Chloromethane | ND | TRANSPORTER AND SOMETHING AND | ug/l | 5.0 | | 1 |
| Bromomethane | ND | | ug/l | 5.0 | *** | 1 |
| Vinyl chloride | ND | | ug/l | 1.0 | | 1 |
| Chloroethane | ND | den en med men for menen en y dyn Afrikaanse held headd the benedicht de select | ug/l | 2.0 | - | 1 |
| 1,1-Dichloroethene | ND | | ug/l | 1.0 | *** | 1 |
| trans-1,2-Dichloroethene | ND | | ug/l | 1.5 | | 1 |
| cis-1,2-Dichloroethene | ND | | ug/l | 1.0 | hand at the condition of the property banks of the general property of the second property | 1 |



Project Name: 31148 Lab Number: L1837054

Project Number: Not Specified Report Date: 09/25/18

SAMPLE RESULTS

Lab ID: L1837054-13 Date Collected: 09/17/18 14:10 Client ID: 31148-095 Date Received: 09/18/18 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|--------------------------------|----------------|--|-------|-----|--|-----------------|
| Volatile Organics by GC/MS - W | estborough Lab | | 14 | | | |
| Trichloroethene | ND | | ug/l | 1.0 | and the second | 1 |
| 1,2-Dichlorobenzene | ND | itheline kinnellen i hall filmenten der kall med en die erführe für die heit der die der der der der der der d | ug/l | 5.0 | | 1 |
| 1,3-Dichlorobenzene | ND | mante a manuscripture and a standard of Name White Visit Van | ug/l | 5.0 | | 1 |
| 1,4-Dichlorobenzene | ND | t 1979 is 1984 de ser 1994 had de en en en dell'hidde de sakule an en l'adde an endede en endede en endede en | ug/l | 5.0 | THE TAX TO SET THE TAX OF THE WAY AND THE TAX OF TA | 1 |
| p/m-Xylene | ND | | ug/l | 2.0 | A Contraction of the contract | 1 |
| o-xylene | ND | ang perjeranggan kanamatan ana manamatan ang kanamatan kanamatan kanamatan kanamatan kanamatan kanamatan kanam | ug/l | 1.0 | | 1 |
| Xylenes, Total | ND | e manifesta de la companya de la co | ug/l | 1.0 | | 1 |
| Styrene | ND | | ug/l | 1.0 | dendrigensk filmer militære han hann aftersom sammen som er | 1 |
| Acetone | ND | | ug/l | 10 | | 1 |
| Carbon disulfide | ND | | ug/l | 5.0 | **** | 1 |
| 2-Butanone | ND | | ug/l | 10 | *** | T |
| Vinyl acetate | ND | | ug/l | 10 | | 1 |
| 4-Methyl-2-pentanone | ND | harPhi Mhain 2 A Fhilis (Primanain) hEan-Painnean ann amain aidi | ug/l | 10 | 404 | 1 |
| 2-Hexanone | ND | | ug/l | 10 | | 1 |
| Acrolein | ND | PERSONAL AND PROGRAMMENT OF MALE AND | ug/l | 8.0 | | 1 |
| Acrylonitrile | ND | | ug/l | 10 | *** | 1 |
| Dibromomethane | ND | | ug/l | 1.0 | ** | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria | |
|----------------------|------------|-----------|------------------------|--|
| Pentafluorobenzene | 104 | | 60-140 | |
| Fluorobenzene | 95 | | 60-140 | |
| 4-Bromofluorobenzene | 92 | | 60-140 | |

Project Name: 31148

Project Number: Not Specified

SAMPLE RESULTS

Lab Number: L1837054

Report Date: 09/25/18

Lab ID: L1837054-14

Client ID: 31148-096

Sample Location: Not Specified

Sample Depth:

Matrix: Water Analytical Method: 128,624.1 09/19/18 16:23 Analytical Date:

Analyst: NLK/G

| Date Collected: | 09/17/18 14:10 |
|-----------------|----------------|
| Date Received: | 09/18/18 |
| Field Prep: | Not Specified |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---------------------------------|----------------|--|-------|-----|---|--|
| Volatile Organics by GC/MS - We | estborough Lab | | • | | | |
| Methylene chloride | ND | | ug/l | 1.0 | | 1 |
| 1,1-Dichloroethane | ND | The decidence of a contribute for the first of the second contribute and a defined by the first between | ug/l | 1.5 | | 1 |
| Chloroform | ND | and the state of t | ug/l | 1.0 | | 1 |
| Carbon tetrachloride | ND | Part (1970) In The Land American Season are as the Control of Control (1974) A Control of | ug/l | 1.0 | All Marketine (Marketine del Parketine) and Carbon and | 1 |
| 1,2-Dichloropropane | ND | | ug/l | 3.5 | | 1 |
| Dibromochloromethane | ND | | ug/l | 1.0 | | 1 |
| 1,1,2-Trichloroetharie | ND | | ug/l | 1.5 | | 1 |
| 2-Chloroethylvinyl ether | ND | | ug/l | 10 | | 1 |
| Tetrachloroethene | ND | e annua e commente manual de marte de la collection de la | ug/l | 1.0 | | 1 |
| Chlorobenzene | ND | | ug/l | 3.5 | *** | 1 |
| Trichlorofluoromethane | ND | and the control of th | ug/l | 5.0 | | 1 |
| 1,2-Dichloroethane | ND | | ug/l | 1.5 | | 1 |
| 1,1,1-Trichloroetharie | ND | | ug/l | 2.0 | | 1 |
| Bromodichloromethane | ND | | ug/l | 1.0 | | 1 |
| trans-1,3-Dichloropropene | ND | A COLOR OF A COLOR OF THE COLOR | ug/l | 1.5 | | 1 |
| cis-1,3-Dichloropropene | ND | | ug/l | 1.5 | | 1 |
| Bromoform | ND | METERNET - MANAGEMENTE ET EL ET MANTET ET AL ET MANTET AN ET MANTET ET ET ET MANTET ET ET ET MANTET ET MANTET E | ug/l | 1.0 | er Maries qui mai mai magaire finns finn agus gaine, mhailig ginn agus mhailte magair na air. Tha ag | 1 |
| 1,1,2,2-Tetrachloroethane | ND | entende as armetinin in mod antidentina i native menendi ili antideli ili mentili ili mentili ili mentili ili | ug/l | 1.0 | Connection (Activities and Activities Activities (Activities and Activities Activities) | en e |
| Benzene | ND | a Varanti III. di Lohim Yaliham bir i Abrika da mama andan madama Wilda a Mari (1954 | ug/l | 1.0 | | 1 |
| Toluene | ND | | ug/l | 1.0 | 4000 | 1 |
| Ethylbenzene | ND | | ug/l | 1.0 | | 1 |
| Chloromethane | ND | | ug/l | 5.0 | | 1 |
| Bromomethane | ND | | ug/l | 5.0 | | 1 |
| Vinyl chloride | ND | | ug/l | 1.0 | Phad madde had a Philosholden a beambannaid Phasis day day of d | 1 |
| Chloroethane | ND | A DESCRIPTION OF THE PROPERTY | ug/l | 2.0 | | 1 |
| 1,1-Dichloroethene | ND | | ug/l | 1.0 | | 1 |
| trans-1,2-Dichloroethene | ND | The second secon | ug/l | 1.5 | | 1 |
| cis-1,2-Dichloroethene | ND | | ug/l | 1.0 | | 1 |



Project Name: 31148

Project Number: Not Specified

L1837054-14

Not Specified

31148-096

SAMPLE RESULTS

Lab Number:

L1837054

Report Date: 09/25/18

Date Collected: 09/17/18 14:10

Date Received: 09/18/18
Field Prep: Not Specified

Sample Depth:

Sample Location:

Lab ID:

Client ID:

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|----------------------------------|---------------|--|-------|-----|--|--|
| Volatile Organics by GC/MS - Wes | stborough Lab | | | | 1000 | |
| Trichloroethene | ND | | ug/l | 1.0 | | 1 |
| 1,2-Dichlorobenzene | ND | | ug/l | 5.0 | | 1 |
| 1,3-Dichlorobenzene | ND | | ug/l | 5.0 | | 1 |
| 1,4-Dichlorobenzene | ND | | ug/l | 5.0 | - | 1 |
| p/m-Xylene | ND | | ug/l | 2.0 | | |
| o-xylene | ND | | ug/l | 1.0 | | 1 |
| Xylenes, Total | ND | The second section of the second second section sectio | ug/l | 1.0 | | 1 |
| Styrene | ND | -1912 | ug/l | 1.0 | | and the contract of the set of settled days (2015), which were (300 feetled only 100 feetled and 100 feetled of the set \$100 feetled of the set \$100 feetled only 100 feetled on |
| Acetone | ND | | ug/l | 10 | | 1 |
| Carbon disulfide | ND | THE COLOR OF THE C | ug/l | 5.0 | | 1 |
| 2-Butanone | ND | a a a a a a a a a a a a a a a a a a a | ug/l | 10 | | 1 |
| Vinyl acetate | ND | | ug/l | 10 | *** | 1 |
| 4-Methyl-2-pentanone | ND | The A Charles and A Charles an | ug/l | 10 | | 1 |
| 2-Hexanone | ND | and the control of the second of the second sec | ug/l | 10 | A CONTRACTOR CONTRACTO | 1 |
| Acrolein | ND | | ug/l | 8.0 | | 1 |
| Acrylonitrile | ND | The section of the se | ug/l | 10 | | 1 |
| Dibromomethane | ND | | ug/l | 1.0 | | 1 |

| Surrogate | % Recovery | Acceptance Qualifier Criteria | |
|----------------------|------------|----------------------------------|--|
| Pentafluorobenzene | 97 | 60-140 | |
| Fluorobenzene | 95 | 60-140 | |
| 4-Bromofluorobenzene | 95 | 60-140 | |

Project Name: 31148

Not Specified

Project Number:

Lab Number:

L1837054

Report Date:

Date Collected:

09/25/18

09/17/18 14:10

SAMPLE RESULTS

Lab ID: L1837054-15

Client ID: 31148-097 Sample Location: Not Specified Date Received: 09/18/18

Field Prep: Not Specified

Sample Depth:

Matrix: Water Analytical Method: Analytical Date: 09/19/18 17:00

128,624.1

Analyst:

NLK/G

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---------------------------------|----------------|--|-------|-----|--|-----------------|
| Volatile Organics by GC/MS - Wo | estborough Lab | | | 100 | 10 | |
| Methylene chloride | ND | | ug/l | 1.0 | _ | 1 |
| 1,1-Dichloroethane | ND | | ug/i | 1.5 | | 1 |
| Chloroform | ND | hide communities and make the control of the contro | ug/l | 1.0 | | 1 |
| Carbon tetrachloride | ND | | ug/i | 1.0 | | 1 |
| 1,2-Dichloropropane | ND | enember en de komite de | ug/l | 3.5 | | 1 |
| Dibromochloromethane | ND | and they become to have decided and decimal entire and it where and it | ug/l | 1.0 | ************************************** | 1 |
| 1,1,2-Trichloroethane | ND | OMB PASSIFICATION AND CONTRACT LABORATION CONTRACTOR | ug/l | 1.5 | | 1 |
| 2-Chloroethylvinyl ether | ND | | ug/l | 10 | | 1 |
| Tetrachloroethene | ND | | ug/l | 1.0 | | 1 |
| Chlorobenzene | ND | and der to the constitute of the constitute of the second | ug/i | 3.5 | | 1 |
| Trichlorofluoromethane | ND | | ug/l | 5.0 | *** | 1 |
| 1,2-Dichloroethane | ND | | ug/l | 1.5 | | 1 |
| 1,1,1-Trichloroethane | ND | dere dere de l'insertité d'un destination de l'anche de la solid d'un destination de la some de se cultificati | ug/l | 2.0 | | T |
| Bromodichloromethane | ND | | ug/l | 1.0 | | 1 |
| trans-1,3-Dichloropropene | ND | | ug/l | 1.5 | | 1 |
| cis-1,3-Dichloropropene | ND | The contract of the Contract o | ug/l | 1.5 | | 1 |
| Bromoform | ND | | ug/l | 1.0 | **** | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | ug/l | 1.0 | | 1 |
| Benzene | ND | | ug/l | 1.0 | | 1 |
| Toluene | ND | AND THE RESERVE AND A SECURITY OF THE RESERVE AND ASSESSMENT OF THE RESERVE AND ASSESSMENT OF THE RESERVE AND ASSESSMENT OF THE RESERVE ASSESSMENT O | ug/l | 1.0 | • | 1 |
| Ethylbenzene | ND | | ug/l | 1.0 | | 1 |
| Chloromethane | ND | | ug/l | 5.0 | | 1 |
| Bromomethane | ND | | ug/l | 5.0 | | 1 |
| Vinyl chloride | ND | de and medical and an fermion and means development development development development. | ug/l | 1.0 | Address of the Control of the Contro | 1 |
| Chloroethane | ND | | ug/l | 2.0 | | 1 |
| 1,1-Dichloroethene | ND | N Charles and Charles Annual States of the S | ug/l | 1.0 | *** | 1 |
| rans-1,2-Dichloroethene | ND | | ug/i | 1.5 | | 1 |
| cis-1,2-Dichloroetheпе | ND | | ug/i | 1.0 | | 1 |



Project Name: 31148 Lab Number: L1837054

Project Number: Not Specified Report Date: 09/25/18

SAMPLE RESULTS

 Lab ID:
 L1837054-15
 Date Collected:
 09/17/18 14:10

 Client ID:
 31148-097
 Date Received:
 09/18/18

 Sample Location:
 Not Specified
 Field Prep:
 Not Specified

| arameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---------------------------------|--------------|--|-------|-----|--|-----------------|
| olatile Organics by GC/MS - Wes | tborough Lab | | | | | |
| richloroethene | ND | | ug/l | 1.0 | | 1 |
| ,2-Dichlorobenzene | ND | | ug/l | 5.0 | | 1 |
| ,3-Dichlorobenzene | ND | | ug/l | 5.0 | | 1 |
| ,4-Dichlorobenzerie | ND | | ug/l | 5.0 | | 1 |
| /m-Xylene | ND | | ug/l | 2.0 | With the second | 1 |
| -xylene | ND | the state of the second to a distinct the solid base in the solid base of the second section of section in the second | ug/l | 1.0 | | 1 |
| (ylenes, Total | ND | | ug/l | 1.0 | | 1 |
| Styrene | ND | | ug/l | 1.0 | *** | 1 |
| cetone | ND | aniguni, lanigup, ani lani nahirah nungiya, yang u garan sasuta uning ngapagagagagagagagaga | ug/l | 10 | | 1 |
| Carbon disulfide | ND | AT A MANUFACTURE OF A M | ug/l | 5.0 | | 1 |
| -Butanone | ND | en alem meller komme delt av sachellem kilde milde delt de manne Sachellem aus met semannesse met | ug/l | 10 | | 1 |
| 'inyl acetate | ND | Park 1004 de la la 1977 Profession Parkelle au de la grécie de plate (1884). | ug/l | 10 | Anna Control C | 1 |
| -Methyl-2-pentanone | ND | | ug/l | 10 | | 1 |
| -Hexanone | ND | | ug/l | 10 | | 1 |
| crolein | ND | | ug/l | 8.0 | Man. | 1 |
| crylonitrile | ND | edenthemente i descendif ha blir i bendi e vid des a a la 11 annuel i bendi i la ce l'a c | ug/l | 10 | ek de ek ad an kankadian amada kan an adik kan an adik kan anama ja a saman Manuta | 1 |
| Dibromomethane | ND | Annual Control of the | ug/l | 1.0 | | 1 |

| Surrogate | % Recovery | Acceptance Qualifier Criteria | |
|----------------------|------------|----------------------------------|--|
| Pentafluorobenzene | 106 | 60-140 | |
| Fluorobenzene | 101 | 60-140 | |
| 4-Bromofluorobenzene | 102 | 60-140 | |



Project Name: 31148

Lab Number:

L1837054

Project Number:

Not Specified

Report Date:

09/25/18

SAMPLE RESULTS

Lab ID:

L1837054-16

Date Collected:

09/17/18 14:00

Client ID:

31148-098

Date Received:

09/18/18

Sample Location:

Not Specified

Field Prep:

Not Specified

Sample Depth:

Matrix:

Water

Analytical Method:

128,624.1 09/19/18 17:37

Analytical Date: Analyst:

NLK/G

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|------------------------------|--|--|---|--|---|---|
| Volatile Organics by GC/MS - | Westborough Lab | | | | | |
| Methylene chloride | ND | | ug/l | 1.0 | | 1 |
| 1,1-Dichloroethane | ND | | ug/l | 1.5 | | 1 |
| Chloroform | ND | | ug/l | 1.0 | - | 1 |
| Carbon tetrachloride | ND | | ug/l | 1.0 | | 1 |
| 1,2-Dichloropropane | ND | 4 100 12 11 11 11 11 11 11 11 11 11 11 11 11 | ug/l | 3.5 | - | 1 |
| Dibromochloromethane | ND | | ug/l | 1.0 | ••• | T |
| 1,1,2-Trichloroethane | ND | de anno 1900 a 1900 a 1900 a nomeno medien e e en ego a nobembro en emperior generale que e y en espe | ug/l | 1.5 | | 1 |
| 2-Chloroethylvinyl ether | ND | The course and an experience of the course o | ug/l | 10 | | ************************************** |
| Tetrachloroethene | ND | ka 18 diba (andamanda kili di Hambari ka mbari) a aman Hamil bara birandari | ug/l | 1.0 | | 1 |
| Chlorobenzene | ND | | ug/l | 3.5 | | 1 |
| Trichlorofluoromethane | ND | de des Marcelos (for casa de los casas), se bras como a deservara a como compactivida que el c | ug/l | 5.0 | | 1 |
| 1,2-Dichloroethane | ND | than the accomply makes than 13 y plant accomplished planting against a filled you by by gardy | ug/l | 1.5 | | entremante de construir de la constitució de la |
| 1,1,1-Trichloroethane | ND | | ug/l | 2.0 | M. William Salam (1965) of Chance of Americka (1964) of Chanters (1964) and the Chanter of Chanter | терения и положения, и под техно по постоя пост Постоя постоя посто |
| Bromodichloromethane | ND | ekenkelen ya ku manui iliku usalen yanni in yilis arkan ilinek ilihuni arvermaan | ug/l | 1.0 | | 1 |
| trans-1,3-Dichloropropene | ND | | ug/l | 1.5 | | 1 |
| cis-1,3-Dichloropropene | ND | | ug/l | 1.5 | | 1 |
| Bromoform | ND | | ug/l | 1.0 | *** | ************************************** |
| 1,1,2,2-Tetrachloroethane | ND | | ug/l | 1.0 | | ************************************** |
| Benzene | ND | | ug/l | 1.0 | | 1 |
| Toluene | ND | interestricture (g. m. etc.). Etc.) in the enterestricture of the figure (g. free enc. syn familia, | ug/l | 1.0 | | 1 |
| Ethylbenzene | ND | | ug/l | 1.0 | | 1 |
| Chloromethane | ND | | ug/l | 5.0 | | 1 |
| Bromomethane | ND | and a set of the section of the section of sections and the section of the set of the set of the section of the | ug/l | 5.0 | | 1 |
| Vinyl chloride | ND | | ug/i | 1.0 | | 1 |
| Chloroethane | ND | | ug/l | 2.0 | | 1 |
| 1,1-Dichloroethene | ND | | ug/l | 1.0 | | 1 |
| trans-1,2-Dichloroethene | ND | | ug/l | 1.5 | *** | 1 |
| cis-1,2-Dichloroethene | ND | | ug/l | 1.0 | | 1 |
| | and the property of the proper | | en, menginganjum apin, anama apinkhingk mengaman kinim nyimnya si | Service and the second second second of perform desire for the first of the second | | |



Project Name: 31148 Lab Number: L1837054

Project Number: Not Specified Report Date: 09/25/18

SAMPLE RESULTS

 Lab ID:
 L1837054-16
 Date Collected:
 09/17/18 14:00

 Client ID:
 31148-098
 Date Received:
 09/18/18

 Sample Location:
 Not Specified
 Field Prep:
 Not Specified

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|--|---|--|---|-----|--|--|
| Volatile Organics by GC/MS - V | Vestborough Lab | | | | | |
| Trichloroethene | ND | | ug/l | 1.0 | | 1 |
| 1,2-Dichlorobenzene | ND | | ug/I | 5.0 | | 1 |
| 1,3-Dichlorobenzene | ND | | ug/l | 5.0 | | 1 |
| 1,4-Dichlorobenzene | ND | | ug/l | 5.0 | | 1 |
| p/m-Xylene | ND | | ug/l | 2.0 | | 1 |
| o-xylene | ND | e e e e e e e e e e e e e e e e e e e | ug/l | 1.0 | | 1 |
| Xylenes, Total | ND | | ug/l | 1.0 | | 1 |
| Styrene | ND | and the control of th | ug/l | 1.0 | | 1 |
| Acetone | ND | | ug/l | 10 | | 1 |
| Carbon disulfide | ND | | ug/l | 5.0 | And the second s | 1 |
| 2-Butanone | ND | Madelline (Vive (Madelline de Vive), de desemble accessor y serva d'en Massagnes en manie | ug/l | 10 | ALTERNATION OF THE PROPERTY OF | 1 |
| Vinyl acetate | ND | | ug/l | 10 | | 1 |
| 4-Methyl-2-pentanone | ND | | ug/l | 10 | **** | 1 |
| 2-Hexanone | ND | a manana a m | ug/l | 10 | ••• | 1 |
| Acrolein | ND | and the conference of the contract of the second of the contract of the contra | ug/l | 8.0 | THE RESERVE THE PROPERTY OF THE PARTY OF THE | 1 |
| Acrylonitrile | ND | | ug/l | 10 | | 1 |
| Dibromomethane | ND | | ug/l | 1.0 | | 1 |
| APPENDED PPROCESSES SERVICE SERVICE PROCESSES ACCUSED AND SERVICE SERV | quity reform, parties a replacement and a series and material state from a first transformation to the transformation and the series and the | | *************************************** | | | and a first term of the first and the first and the commence of the first term of the first and the first term of the fi |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria | |
|----------------------|------------|-----------|------------------------|--|
| Pentafluorobenzene | 107 | | 60-140 | |
| Fluorobenzene | 101 | | 60-140 | |
| 4-Bromofluorobenzene | 103 | | 60-140 | |

Project Name: 31148 Lab Number: L1837054

Project Number: Not Specified Report Date: 09/25/18

Method Blank Analysis Batch Quality Control

Analytical Method: 128,624.1 Analytical Date: 09/19/18 11:29

Analyst: NLK/G

| arameter | Result | Qualifier | Units | RL | MDL |
|-----------------------------|---|--|-----------|--------------|--|
| olatile Organics by GC/MS - | Westborough La | b for sampl | e(s): 01- | 03,07-09,13- | 16 Batch: |
| /G1157786-16 | • | | ` ' | | |
| Methylene chloride | ND | | ug/i | 1.0 | |
| 1,1-Dichloroethane | ND | | ug/l | 1.5 | |
| Chloroform | ND | 50° 0° 1 50° ° 12 6° 12 6° 12 6° 12 6° 12 6° 12 6° 12 6° 12 6° 12 6° 12 6° 12 6° 12 6° 12 6° 12 6° 12 6° 12 6° | ug/l | 1.0 | |
| Carbon tetrachloride | ND | | ug/l | 1.0 | |
| 1,2-Dichloropropane | ND | | ug/l | 3.5 | |
| Dibromochloromethane | ND | | ug/l | 1.0 | |
| 1,1,2-Trichloroethane | ND | | ug/l | 1.5 | Annual and compared the analysis representation for the conferent delication of the conference of the |
| 2-Chloroethylvinyl ether | ND | | ug/l | 10 | a "Ad Mariff and a da all all all all all all all and a same for a same for a same for a same and a same and a |
| Tetrachloroethene | ND | alimentalismood a maaamaa sada aagaa bagaa ayaaya,ga | ug/l | 1.0 | |
| Chlorobenzene | , year one of the property of | laker dilk dimerkensi dengan di Sarkaraharah dan sebadi secera ampuda sering | ug/l | 3.5 | |
| Trichlorofluoromethane | ND | | ug/l | 5.0 | |
| 1,2-Dichloroethane | ND | | ug/l | 1.5 | |
| 1,1,1-Trichloroethane | ND | CALLED AND THE STREET | ug/i | 2.0 | |
| Bromodichloromethane | ND | | ug/i | 1.0 | er terret er van mei van deutsche de til er van geven de som kommen men van hal og dette han plat er plat hal per hal og van de green de geven de green de g |
| trans-1,3-Dichloropropene | ND | Print to the Print Print Print Print Control C | ug/l | 1.5 | |
| cis-1,3-Dichloropropene | ND | | ug/i | 1.5 | |
| Bromoform | ND | | ug/i | 1.0 | |
| 1,1,2,2-Tetrachioroetharre | ND | PROVINCE OF PROPERTY OF THE PARTY OF THE PAR | ug/l | 1.0 | et selle et lette hit till til det ett stort til til se et seller til det et blev et bleve his before senemen och enga gega yven eg se |
| Benzene | ND | and the state of t | ug/l | 1.0 | THE CONTROL OF THE PROBLEM CONTROL OF THE SECURITIES OF THE CONTROL OF THE CONTRO |
| Toluene | ND | | ug/l | 1.0 | |
| Ethylbenzene | ND | | ug/l | 1.0 | *** |
| Chloromethane | ND | | ug/l | 5.0 | |
| Bromomethane | ND | | ug/l | 5.0 | - Marie Andrew and distributed in a character in a contract of contract in a contract |
| Vinyl chloride | ND | an and market of the Copy of the standard terms of the and defends designed the State of State of State of Sta | ug/l | 1.0 | |
| Chloroethane | ND | and we will the head of the first of the state of the sta | ug/l | 2.0 | *** |
| 1,1-Dichloroethene | ND | and a service and a consequence of the service post-framework and service and a service of the s | ug/l | 1.0 | |
| trans-1,2-Dichloroethene | ND | kanangan ng aya _a ngan mamika dilikikanalkanmananah ayaha 17 da ada | ug/l | 1.5 | |
| cis-1,2-Dichloroethene | ND | die en een zegemeens hynothem yn den hit is de in den de deed is de ee it 1966 in de de de de de de de de de d | ug/l | 1.0 | |
| Trichloroethene | ND | enconnection of the second | ug/l | 1.0 | |



Project Name: 31148

Project Number: Not Specified

Lab Number:

L1837054

Report Date: 0

09/25/18

Method Blank Analysis Batch Quality Control

Analytical Method: 128,624.1 Analytical Date: 09/19/18 11:29

Analyst: NLK/G

| arameter | Result | Qualifier | Units | RL | MDL | |
|---|----------------|--|-----------|----------------|--|---|
| olatile Organics by GC/MS - /G1157786-16 | Westborough La | b for sampl | e(s): 01- | 03,07-09,13-16 | Batch; | |
| 1,2-Dichlorobenzene | ND | | ug/l | 5.0 | | |
| 1,3-Dichlorobenzene | ND | | ug/l | 5.0 | | |
| 1,4-Dichlorobenzene | ND | ET SHIFT ET THE SAN SAN AND AND AND AND AND AND AND AND AND A | ug/l | 5.0 | The second secon | |
| p/m-Xylene | ND | nd vittimatinas at et madea italiantelismojantelyteletta (s) ett | ug/l | 2.0 | itali kalakatan kalamatan kalamatan kalamatan kalamatan kalamatan kalamatan kalamatan kalamatan kalamatan kala Mariesa | |
| o-xylene | ND | | ug/l | 1.0 | | |
| Xylenes, Total | ND | and the second section of the section of the second section of the second section of the second section of the section of the second section of the | ug/l | 1.0 | | |
| Styrene | ND | e ambient ment e sent e sent me die de entre de la version en entre en sent e sent en sent en sent en sent en | ug/l | 1.0 | | |
| Acetone | ND | | ug/l | 10 | The state of the s | |
| Carbon disulfide | ND | · | ug/l | 5.0 | *** | |
| 2-Butanone | ND | | ug/l | 10 | | |
| Vinyl acetate | ND | | ug/l | 10 | | |
| 4-Methyl-2-pentanone | ND | | ug/l | 10 | | |
| 2-Hexanone | ND | kananda a Afrikana a Makhari da ghil kanangkan melaggan menga | ug/l | 10 | ************************************** | ALLEY THE PARTY OF |
| Acrolein | ND | Monte en en villenen en ik 11 i en en e diene van en envers 11 en | ug/l | 8.0 | Marie | |
| Acrylonitrile | ND | | ug/l | 10 | | |
| n-Hexane ¹ | ND | | ug/l | 20 | | |
| Methyl tert butyl ether | ND | th (a mill) (a) in a franchische (b) die (b) de hand die voll weiter der biel de some hand van de some (a des de soude | ug/l | 10 | | Maria Navara |
| Dibromomethane | ND | | ug/l | 1.0 | ************************************** | *************************************** |
| 1,4-Dioxane ¹ | ND | | ug/l | 2000 | CONTROL OF THE ABOVE AND THE STATE OF THE ST | |
| Tert-Butyl Alcohol | ND | anni di , yannin dikalim mandina para yi majyelda, dayar isroolay inq | ug/l | 100 | | |
| Tertiary-Amyl Methyl Ether | ND | ine to have been been the think the think property to be before a figure any assessment | ug/l | 20 | | and a second deposits of the |

| | | | Acceptance |
|----------------------|-----------|-----------|------------|
| Surrogate | %Recovery | Qualifier | Criteria |
| Pentafluorobenzene | 96 | | 60-140 |
| Fluorobenzene | 99 | | 60-140 |
| 4-Bromofluorobenzene | 97 | | 60-140 |



Lab Control Sample Analysis Batch Quality Control

L1837054 Lab Number:

09/25/18 Report Date:

> Not Specified Project Number:

31148

Project Name:

RPD Limits "Recovery TCSD SO7

| Parameter | %Recovery | Qual | %Recovery | Qual | Limits | RPD | Qual | Limits |
|---|---|--|--|--|--|--|--|---|
| Volatile Organics by GC/MS - Westborough Lab Associated sam | stborough Lab Associated s | ample(s): | ple(s): 01-03,07-09,13-16 | | Batch: WG1157786-15 | | | |
| | | | | | | | | |
| Methylene chloride | 95 | | • | Manuschilliphide a pro- train a collection of the Manuschill and Collection of the State of the | 60-140 | enteren en e | | 28 |
| 1,1-Dichloroethane | 82 | | • | | 50-150 | 1 | | 49 |
| Chloroform | 100 | | 1 | | 70-135 | | | 54 |
| Carbon tetrachloride | 06 | New Director and major and and the second state of the second stat | | | 70-130 | 7 | | |
| 1,2-Dichloropropane | 855 | | | | 35-165 | • | | 55 |
| Dibromochloromethane | 0.01 | consents to informity of constant and all stores in the security of the | | | 70-135 | 1 | | 20 |
| 1,1,2-Trichloroethane | 06 | | | | 70-130 | ı | | 45 |
| 2-Chloroethylvinyl ether | 855 | | | | 1-225 | 1 | | 7.1 |
| Tetrachloroethene | | may think and downward and downward to be the control of the contr | • | | 70-130 | 1 | | 39 |
| Chlorobenzene | BS. | | | | 65-135 | 1 | | 53 |
| Trichlorofluoromethane | 06 | | • | | 50-150 | , | | 84 |
| 1,2-Dichloroethane | 95 | | • | | 70-130 | ANTICOMETE CONTRACTOR | an opposition to the contract of contract and contract out of the contract of the contract of the contract out of the contract | 49 |
| 1,1,1-Trichloroethane | 06 | | • | a Demokratisk (f. 100 and Prijsko) defenden (f. f. februarisk (f. f. februarisk februari | 70-130 | e destrict and a march and destrict an analysis and a second second by the second destrict and d | (b) Charles of the case of the second control of the second contro | 38 |
| Bromodichloromethane | 105 | | 1 | | 65-135 | The second secon | | |
| trans-1,3-Dichloropropene | 06 | | ī | | 50-150 | • | | 38 |
| cis-1,3-Dichloropropene | 105 | | Ē | | 25-175 | | | 58 |
| Bromoform | 100 | | 1 | | 70-130 | 4 | Continue of the Continue of th | 42 |
| 1,1,2,2-Tetrachloroethane | 75 | | ı | | 60-140 | * | | 61 Sections and the section of the s |
| Benzene | 06 | | t | | 65-135 | • | committee of the control of the cont | 61 |
| Toluene | 06 | | • | | 70-130 | • | | 41 |
| Ethylbenzene | 06 | | | hard affaite fide annual to the construction of the construction o | 60-140 | | | 63 |
| Chloromethane | 06 | | • | | 1-205 | | A CONTRACTOR CONTRACTO | |
| Bromomethane | 2,0 | | ŧ | | 15-185 | • | | 61 |
| | THE RESIDENCE OF THE PROPERTY | man i sello alcante dell'alcante dell'alcant | a contract and contract and contracts of collisions of the contract to the contract of the con | Charles of the Control of the Contro | A CAME AND A STATE OF THE STATE | | | |



Lab Control Sample Analysis Batch Quality Control

L1837054 Lab Number:

09/25/18

Report Date:

Not Specified 31148 Project Number: Project Name:

CSU 00 Para

| Parameter | LCS %Recovery Qual | LCSD %Recovery | %Recovery Qual Limits | RPD | RPD Qual Limits |
|--|----------------------------------|--|-----------------------|--|--|
| Volatile Organics by GC/MS - Westborough Lab Associated sa | orough Lab Associated sample(s); | 01-03,07-09,13-16 | Batch: WG1157786-15 | | |
| Vinyl chloride | 115 | • | 5-195 | , | 99 |
| Chloroethane | 06 | | 40-160 | | 78 |
| 1,1-Dichloroethene | 85 | Production (Control of Control of | 50-150 | | 32 |
| trans-1,2-Dichloroethene | 95 | ************************************** | 70-130 | The state of the s | |
| cis-1,2-Dichloroethene | 06 | | 60-140 | | 30 |
| Trichloroethene | 90 | | 65-135 | | 48 |
| 1,2-Dichlorobenzene | 06 | • | 65-135 | • | 57 |
| 1,3-Dichlorobenzene | 80 | • | 70-130 | 1 | 43 |
| 1,4-Dichlorobenzene | 06 | | 65-135 | Property of the first of the fi | and the contraction of the contr |
| p/m-Xyłene | 86 | • | 60-140 | ı | 30 |
| o-xylene | 06 | | 60-140 | | 30 |
| Styrene | 85 | 1 | 60-140 | • | 30 |
| Acetone | 120 | • | 40-160 | • | 30 |
| Carbon disulfide | 06 | • | 60-140 | • | 30 |
| 2-Butanone | 108 | ŧ | 60-140 | 1 | 30 |
| Vinyl acetate | 140 | • | 60-140 | 1 | 30 |
| 4-Methyl-2-pentanone | 104 | • | 60-140 | 1 | 30 |
| 2-Hexanone | 112 | • | 60-140 | | 30 |
| Acrolein | 86 | | 60-140 | 1 | 30 |
| Acrylonitrile | -115 | • | 60-140 | 1 | 09 |
| Methyl tert butyl ether | 100 | | 60-140 | 1 | 30 |
| Dibromomethane | 06 | • | 70-130 | 1 | 30 |
| 1,4-Dioxane¹ | 80 | # () () () () () () () () () (| 60-140 | B | 30 |
| | | | | | |



Lab Control Sample Analysis Batch Quality Control

L1837054 Lab Number:

> Not Specified Project Number:

31148

Project Name:

09/25/18 Report Date:

RPD Limits Qual RPD "Recovery Limits Qual LCSD %Recovery Qual LCS %Recovery Parameter

39 30 Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03,07-09,13-16 Batch: WG1157786-15 60-140 60-140 85 86 Tertiary-Amyl Methyl Ether Tert-Butyl Alcohol

| S LCSD Acceptance rery Qual %Recovery Qual Criteria | 60-140 60-140 60-140 |
|--|--|
| LCS Surrogate %Recovery | 110 Pentafluorobenzene 98 4-Bromofluorobenzene 101 |



INORGANICS & MISCELLANEOUS



Project Name:

31148

Lab Number:

L1837054

Project Number: Not Specified

Report Date:

09/25/18

SAMPLE RESULTS

Lab ID:

L1837054-21

Client ID: Sample Location:

31148-023

Not Specified

Date Collected:

09/17/18 08:30

Date Received:

09/18/18

Field Prep:

Not Specified

Sample Depth:

Matrix:

Water

| Parameter | Result | Qualifier L | nits | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|-----------------------|-----------------|-------------|------|-------|-----|--------------------|------------------|------------------|----------------------|---------|
| General Chemistry - V | Vestborough Lat |) | | | | | | | | |
| Phenolics, Total | ND | 1 | ng/i | 0.030 | | 1 | 09/19/18 09:14 | 09/19/18 13:08 | 4,420.1 | BR |



Project Name: 31148

Lab Number: L1837054

Project Number: Not Specified Report Date: 09/25/18

SAMPLE RESULTS

 Lab ID:
 L1837054-22
 Date Collected:
 09/16/18 08:00

 Client ID:
 31148-024
 Date Received:
 09/18/18

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water

Analytical Method Dilution Date Date **Factor** Prepared Analyzed MDL. Parameter Result Qualifier Units RL. Analyst General Chemistry - Westborough Lab 4,420.1 BR Phenolics, Total ND mg/l 0.030 1 09/19/18 09:14 09/19/18 13:11



Project Name: 31148 Lab Number:

L1837054

Project Number:

Not Specified

Report Date:

09/25/18

SAMPLE RESULTS

Lab ID:

L1837054-23

Date Collected:

09/17/18 07:30

Client ID: Sample Location: Not Specified

31148-058

Date Received: Field Prep:

09/18/18 Not Specified

Sample Depth:

| Matrix: | Water | | | | | Dilation | D-4- | | | |
|-----------|--------|-----------|-------|----|-----|--------------------|------------------|------------------|----------------------|---------|
| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |

General Chemistry - Westborough Lab Phenolics, Total ND mg/l 0.030 09/19/18 09:14 09/19/18 13:12 4,420.1 BR 1

Project Name: 31148 Lab Number: L1837054

Project Number: Not Specified Report Date: 09/25/18

SAMPLE RESULTS

Lab ID: L1837054-24 Date Collected: 09/17/18 07:30

Client ID: 31148-059 Date Received: 09/18/18
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|------------------------|----------------|-----------|-------|-------|-----|--------------------|------------------|------------------|----------------------|---------|
| General Chemistry - We | estborough Lab |) | | | | | | | | |
| Phenolics, Total | ND | | mg/l | 0.030 | | 1 | 09/19/18 09:14 | 09/19/18 13:15 | 4,420.1 | BR |

Project Name:

Project Number:

31148

Not Specified

Lab Number:

L1837054

Report Date:

09/25/18

SAMPLE RESULTS

Lab ID:

L1837054-25

Not Specified

Client ID:

31148-060

Date Collected:

09/16/18 07:00

Date Received:

09/18/18

Not Specified

Sample Depth:

Sample Location:

Matrix:

Water

Field Prep:

Dilution Date Date **Analytical** Factor Method Prepared Analyzed **Parameter** Result Qualifier Units RL MDL Analyst General Chemistry - Westborough Lab 0.030 4,420.1 BR Phenolics, Total mg/l 1 09/19/18 09:14 09/19/18 13:16



Project Name:

31148

Lab Number:

L1837054

Project Number:

Not Specified

Report Date:

09/25/18

SAMPLE RESULTS

Lab ID:

L1837054-26

Date Collected:

09/17/18 13:58

Client ID: Sample Location:

31148-091 Not Specified Date Received:

09/18/18

Sample Depth:

Matrix:

Water

Field Prep: Not Specified

Analytical Method Dilution Date Date Factor Prepared Analyzed **Parameter** Result Qualifier Units RL MDL Analyst General Chemistry - Westborough Lab Phenolics, Total 0.030 mg/l 1 09/19/18 09:14 09/19/18 13:17 4,420.1 BR



Project Name:

31148

Lab Number:

L1837054

Project Number:

Not Specified

Report Date:

09/25/18

SAMPLE RESULTS

Lab ID:

L1837054-27

Client ID:

31148-092

Date Collected:

09/17/18 13:58

Sample Location: Not Specified Date Received:

09/18/18

Sample Depth:

Matrix:

Water

Field Prep:

Not Specified

Dilution Analytical Method Date Date Factor Prepared Analyzed Parameter Result Qualifier Units RL MDL Analyst General Chemistry - Westborough Lab 0.030 4,420.1 BR Phenolics, Total mg/l 1 09/19/18 09:14 09/19/18 13:18



Project Name: 31148

Lab Number: L1837054

Project Number: Not Specified Report Date: 09/25/18

SAMPLE RESULTS

 Lab ID:
 L1837054-28
 Date Collected:
 09/17/18 13:58

 Client ID:
 31148-093
 Date Received:
 09/18/18

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water

Analytical Method Dilution Date Date Factor Prepared Analyzed Parameter Result Qualifier Units RL. MDL Analyst General Chemistry - Westborough Lab Phenolics, Total mg/l 0.030 1 09/19/18 09:14 09/19/18 13:19 4,420.1 BR



Project Name:

31148

Lab Number:

L1837054

Project Number: Not Specified

Report Date:

09/25/18

SAMPLE RESULTS

Lab ID:

L1837054-29

Client ID:

31148-094

Date Collected:

09/17/18 13:58

Sample Location: Not Specified

Date Received:

09/18/18

Field Prep:

Not Specified

Sample Depth:

Matrix:

Water

| Parameter | Result | Qualifier U | nits RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|-----------------------|-----------------|-------------|-----------|-----|--------------------|------------------|------------------|----------------------|---------|
| General Chemistry - W | Vestborough Lab | | | | | | | Established | |
| Phenolics, Total | ND | п | ng/l 0.03 | 30 | 1 | 09/19/18 09:14 | 09/19/18 13:20 | 4,420.1 | BR |



Project Name:

31148

Lab Number:

L1837054

Project Number: Not Specified

Report Date:

09/25/18

Method Blank Analysis Batch Quality Control

| Parameter | Result Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|-----------------------|------------------------|------------|----------|---------|--------------------|------------------|------------------|----------------------|---------|
| General Chemistry - W | estborough Lab for sam | ple(s): 21 | 1-29 Bat | tch: W0 | 91158476-1 | | | | |
| Phenolics, Total | ND | mg/l | 0.030 | | 1 | 09/19/18 09:14 | 09/19/18 13:06 | 4,420.1 | BR |



Lab Control Sample Analysis Batch Quality Control

L1837054 Lab Number:

31148

Project Name:

09/25/18 Report Date:

> Not Specified Project Number:

RPD Limits Qual RPD %Recovery Limits Qual LCSD %Recovery Qual LCS %Recovery Parameter

General Chemistry - Westborough Lab Associated sample(s): 21-29 Batch: WG1158476-2 102

Phenolics, Total

70-130



Matrix Spike Analysis Batch Quality Control

Not Specified

Project Number: Project Name:

31148

L1837054 Lab Number:

09/25/18 Report Date:

| Parameter | Native Sample | MS Added | MS Found | MS MS Found %Recovery | MSD Qual Found | - | MSD Recovery %Recovery Qual Limits | / RPD Q | RPD Qual Limits |
|--|------------------|-------------------|------------------|--------------------------|--------------------------|---|---------------------------------------|--------------|-----------------|
| General Chemistry - Westborough Lab Associated | igh Lab Asso | 32 <u>586</u> 888 | sample(s); 21-29 | 9 QC Batch IL | QC Batch ID: WG1158476-4 | . QC Sample: L1837054-21 Client ID: 31148-023 | .1837054-21 C | lient ID: 31 | 148-023 |
| Phenolics, Total | QN | 9.4 | 0.41 | 102 | • | ŧ | 70-130 | | 20 |



Lab Duplicate Analysis
Batch Quality Control

Not Specified

Project Number: Project Name:

31148

L1837054 Lab Number: Report Date:

09/25/18

RPD Limits General Chemistry - Westborough Lab Associated sample(s): 21-29 QC Batch ID: WG1158476-3 QC Sample: L1837054-21 Client ID: 31148-023 20 Qual NC RPD Units ∥g/l **Duplicate Sample** 9 Native Sample 9 Phenolics, Total Parameter



Lab Number: L1837054

Report Date: 09/25/18

Sample Receipt and Container Information

Were project specific reporting limits specified?

Project Number: Not Specified

31148

Project Name:

YES

Custody Seal Absent Cooler Information Cooler

| Container Information | rmation | | Initial | je | Temp | | | Frozen | |
|-----------------------|--------------------|--------|---------|----|-------|---------------|--------|-----------|--------------|
| Container ID | Container Type | Cooler | Н | | deg C | Pres | Seal | Date/Time | Analysis(*) |
| L1837054-01A | Vial unpreserved | ∢ | Ą Z | | 4.5 | > | Absent | | 624.1(3) |
| L1837054-01B | Vial unpreserved | ∢ | ¥ Z | | 4.5 | > | Absent | | 624.1(3) |
| L1837054-02A | Vial unpreserved | 4 | ¥ Z | | 4.5 | > | Absent | | 624.1(3) |
| L1837054-02B | Vial unpreserved | 4 | ¥ Z | | 4.5 | > | Absent | | 624.1(3) |
| L1837054-03A | Vial unpreserved | 4 | Ą Z | | 4.5 | > | Absent | | 624.1(3) |
| L1837054-03B | Vial unpreserved | ∢ | Ą V | | 4.5 | > | Absent | | 624.1(3) |
| L1837054-04A | Vial HCl preserved | ∢ | Υ Y | | 4.5 | > | Absent | | HOLD-624(14) |
| L1837054-04B | Vial HCl preserved | 4 | A V | | 4.5 | > | Absent | | HOLD-624(14) |
| L1837054-05A | Vial HCl preserved | ∢ | ¥ Z | | 4.5 | > | Absent | | HOLD-624(14) |
| L1837054-05B | Vial HCl preserved | 4 | ¥ Z | | 4.5 | > | Absent | | HOLD-624(14) |
| L1837054-06A | Vial HCl preserved | 4 | Υ V | | 4.5 | > | Absent | | HOLD-624(14) |
| L1837054-06B | Vial HCl preserved | ∢ | Ą Z | | 4.5 | > | Absent | | HOLD-624(14) |
| L1837054-07A | Vial unpreserved | ∢ | ¥Z | | 4.5 | > | Absent | | 624.1(3) |
| L1837054-07B | Vial unpreserved | 4 | Y Y | | 4.5 | > | Absent | | 624.1(3) |
| L1837054-08A | Vial unpreserved | ∢ | N A | | 4.5 | > | Absent | | 624.1(3) |
| L1837054-08B | Vial unpreserved | ٧ | A A | | 4.5 | > | Absent | | 624.1(3) |
| L1837054-09A | Vial unpreserved | ∢ | A A | | 4.5 | > | Absent | | 624.1(3) |
| L1837054-09B | Vial unpreserved | 4 | A N | | 4.5 | > | Absent | | 624.1(3) |
| L1837054-10A | Vial HCI preserved | 4 | ΑN | | 4.5 | > | Absent | | HOLD-624(14) |
| L1837054-10B | Vial HCI preserved | 4 | A N | | 4.5 | > | Absent | | HOLD-624(14) |
| L1837054-11A | Vial HCI preserved | ∢ | Υ V | | 4.5 | > . | Absent | | HOLD-624(14) |
| L1837054-11B | Vial HCI preserved | ∢ | Ϋ́Z | | 4.5 | > | Absent | | HOLD-624(14) |
| L1837054-12A | Vial HCl preserved | ٧ | Ϋ́Z | | 4.5 | > | Absent | | HOLD-624(14) |



Lab Number: L1837054 Report Date: 09/25/18

| Container Information | Initial | Initial | Final | Final Temp | Frozen | |
|----------------------------|---------|---------|-------|------------|-----------|------|
| Container O Container Time | 20,000 | 2 | Į | 7-70 0000 | Dato/Timo | A 1. |

Project Number: Not Specified

31148

Project Name:

| Container Information | ormation | | Initial | Final | Temp | | | Frozen | |
|-----------------------|-----------------------------|--------|---------|----------|-------|------|--------|-----------|-----------------|
| Container ID | Container Type | Cooler | Н | Hd | deg C | Pres | Seal | Date/Time | Analysis(*) |
| L1837054-12B | Vial HCl preserved | A | ΑN | | 4.5 | > | Absent | | HOLD-624(14) |
| L1837054-13A | Vial unpreserved | ٧ | Ϋ́ | | 4.5 | > | Absent | | 624.1(3) |
| L1837054-13B | Vial unpreserved | ٧ | ΑN | | 4.5 | > | Absent | | 624.1(3) |
| L1837054-14A | Vial unpreserved | ٧ | NA A | | 4.5 | > | Absent | | 624.1(3) |
| L1837054-14B | Vial unpreserved | A | A A | | 4.5 | > | Absent | | 624.1(3) |
| L1837054-15A | Vial unpreserved | ٧ | A A | | 4.5 | > | Absent | | 624.1(3) |
| L1837054-15B | Vial unpreserved | ٧ | A A | | 4.5 | > | Absent | | 624.1(3) |
| L1837054-16A | Vial unpreserved | ٧ | Ą | | 4.5 | > | Absent | | 624.1(3) |
| L1837054-16B | Vial unpreserved | ٧ | Ą V | | 4.5 | > | Absent | | 624.1(3) |
| L1837054-17A | Vial HCI preserved | ٧ | Ą | | 4.5 | > | Absent | | HOLD-624(14) |
| L1837054-17B | Vial HCI preserved | ۷ | Ą Z | | 4.5 | > | Absent | | HOLD-624(14) |
| L1837054-18A | Vial HCI preserved | ٧ | Ą | | 4.5 | > | Absent | | HOLD-624(14) |
| L1837054-18B | Vial HCI preserved | ٧ | Ą | | 4.5 | > | Absent | | HOLD-624(14) |
| L1837054-19A | Vial HCI preserved | ∢ | Ϋ́ | | 4.5 | > | Absent | | HOLD-624(14) |
| L1837054-19B | Vial HCI preserved | ∢ | Ą. | | 4.5 | > | Absent | | HOLD-624(14) |
| L1837054-20A | Vial HCl preserved | ∢ | AN A | | 4.5 | > | Absent | | HOLD-624(14) |
| L1837054-20B | Vial HCI preserved | ∢ | Ϋ́ | | 4.5 | > | Absent | | HOLD-624(14) |
| L1837054-21A | Amber 950ml H2SO4 preserved | ∢ | 4 | 4 | 4.5 | > | Absent | | TPHENOL-420(28) |
| L1837054-22A | Amber 950ml H2SO4 preserved | ∢ | 4> | <u>^</u> | 4.5 | > | Absent | | TPHENOL-420(28) |
| L1837054-23A | Amber 950ml H2SO4 preserved | ∢ | 4 | ^ | 4.5 | >- | Absent | * | TPHENOL-420(28) |
| L1837054-24A | Amber 950ml H2SO4 preserved | ∢ | 4> | ^ 4 | 4.5 | > | Absent | | TPHENOL-420(28) |
| L1837054-25A | Amber 950ml H2SO4 preserved | ∢ | 4 | ^ 4 | 4.5 | > | Absent | | TPHENOL-420(28) |
| L1837054-26A | Amber 950ml H2SO4 preserved | ⋖ | 4 | ^ 4 | 4.5 | > | Absent | | TPHENOL-420(28) |
| L1837054-27A | Amber 950ml H2SO4 preserved | ∢ | 4 | ^ 4 | 4.5 | > | Absent | | TPHENOL-420(28) |
| L1837054-28A | Amber 950ml H2SO4 preserved | ∢ | 4 | 4 | 4.5 | > | Absent | | TPHENOL-420(28) |
| L1837054-29A | Amber 950ml H2SO4 preserved | ∢ | 7 | 4 | 4.5 | z | Absent | | TPHENOL-420(28) |



Project Name: 31148 Lab Number: L1837054

Project Number: Not Specified Report Date: 09/25/18

GLOSSARY

Acronyms

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated

values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis

of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case

estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of

analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of

analytes or a material containing known and verified amounts of analytes.

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any

adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for

which an independent estimate of target analyte concentration is available.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's

reporting unit.

NDPA/DPA · N-Nitrosodiphenylamine/Diphenylamine.

NI · Not Ignitable.

NP · Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL RL

includes any adjustments from dilutions, concentrations or moisture content, where applicable

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the

precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the

values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the

associated field samples.

Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEO - Toxic Equivalent: The measure of a sample ¿s toxicity derived by multiplying each dioxin and furan by its corresponding TEF

and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

- The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the 1 original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Waterpreserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'. Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Report Format: Data Usability Report



Project Name:31148Lab Number:L1837054Project Number:Not SpecifiedReport Date:09/25/18

Data Qualifiers

A - Spectra identified as "Aldol Condensation Product".

- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte was detected above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- Co-clution: The target analyte co-clutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations
 of the analyte.
- E Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G The concentration may be biased high due to matrix interferences (i.e, co-clution) with non-target compound(s). The result should be considered estimated.
- H . The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- The lower value for the two columns has been reported due to obvious interference.
- M Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P The RPD between the results for the two columns exceeds the method-specified criteria.
- The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R Analytical results are from sample re-analysis.
- RE Analytical results are from sample re-extraction.
- S Analytical results are from modified screening analysis.
- J Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report



Project Name:

31148

Lab Number:

L1837054

Project Number:

Not Specified

Report Date:

09/25/18

REFERENCES

4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised March 1983.

128 Method 624.1: Purgeables by GC/MS, EPA 821-R-16-008, December 2016.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:17873

Revision 11

Published Date: 1/8/2018 4:15:49 PM

Page 1 of 1

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624: m/p-xylene, o-xylene

EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: lodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-

Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

EPA 300: DW: Bromide

EPA 6860: SCM: Perchlorate

EPA 9010: NPW and SCM: Amenable Cyanide Distillation

SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility

SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water

EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; EPA 353.2: Nitrate-N, Nitrite-N; SM4500NO3-F: Nitrate-N, Nitrite-N; SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B

EPA 332: Perchlorate; EPA 524.2: THMs and VOCs; EPA 504.1: EDB, DBCP.

Microbiology: SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D.

Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, EPA 350.1: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, EPA 351.1, SM4500NO3-F, EPA 353.2: Nitrate-N, EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.

EPA 624: Volatile Halocarbons & Aromatics,

EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625: SVOC (Acid/Base/Neutral Extractables), EPA 600/4-81-045: PCB-Oil.

Microbiology: SM9223B-Colilert-QT; Enterolert-QT, SM9221E, SM9222D.

Mansfield Facility:

Drinking Water

EPA 200.7: Al, Ba, Be, Cd, Cr, Cu, Mn, Ni, Na, Ag, Ca, Zn. EPA 200.8: Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. EPA 245.1 Hg. **EPA 522.**

Non-Potable Water

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.

EPA 245.1 Hg.

SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

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| Enviro | EnviroSystems, Inc. | conrach Jason Hobbs Email: Jason.hobbs/ CC: catherine.sasse | соитаст. Jason Hobbs Email: jason.hobbs@enthalpy.com CC: catherine.sasso@enthalpy.com | El el | - Article - Arti | PROJECT NAME 3110 | | P.O.# |
| REPORT TO: Jason Hobbs | lobbs | ADDRESS | P.O. Box 778 | ox 778 | | | | PHONE: Ext. 208 |
| NVOICE TO: Jason Hobbs | lobbs | ADDRESS | Hampt | Hampton, NH 03843 | 43 | | | SAMPLED BY: CS |
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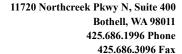
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| P.O. Box 778, | P.O. Box 778, Hampton, New Hampshire 03842 | e 03842 | | | Customer Se | Customer Services: Phone # (603) 926-3345 Fax # (603) 926-3521 | 5-3346 5-3521 | ш |
| OLIENT. Enviro | EnviroSystems, Inc. | CONTACT Jason Hobbs Email: jason.ho CC: catherine.s | оолтот. Jason Hobb s Emall: <u>iason.hobbs@enthalpy.com</u> CC: cathorine.sasso@enthalpy.com | E E | | PROJECT NAME | 8 | P,O,# |
| REPORT TO: Jason Hobbs | Hobbs | ADDRESS: | P.O. Box 778 | 0x 778 | | | AND THE PROPERTY OF THE PROPER | Prone Ext. 208 |
| NVOICE TO: Jason Hobbs | Hobbs | ADDRESS: | Hampt | Hampton, NH 03843 | 143 | NAMES OF THE PROPERTY OF THE P | | SAMPLED BY: C.S. |
| Program Requirements: | O NPDES | □ RCRA □ US | USACE □ EPA | OTHER | 8 | | | |
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Page 55665 NOTE ON PROE I FOR VOC ANALYSIS GUIDANCE

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| P.O. Box 778, | P.O. Box 778, Hampton, New Hampshire 03842 | 03842 | | | Customer Se | Customer Services: Phone # (603) 926-3345 Fax # (603) 926-3521 | 6-3345 6-3521 | ш | 3 or 3 |
| CLEWN Enviro | EnviroSystems, Inc. | cowrach Jason Hobbs Email: jason.ho CC: catherine.s | oonrach Jason Hobbs Email: <u>fason.hobbs@enthalpy.com</u> CC: catherine.sasso@enthalpy.com | 퇴종 | | PROJECT NAME: 311-18 | | P.O. 4 | |
| REPORT TO: Jason Hobbs | lobbs | ADDRESS | P.O. Box 778 | 0x 778 | | | | Ext. 208 | |
| INVOICE TO: Jason Hobbs | lobbs | ADDRESS: | Hampt | Hampton, NH 03843 | 2 | | <u> The philippe of the free transfer of the philippe of the phi</u> | SAMPLED BY: | 5 |
| Program Requirements: | □ NPDES | DIRCRA DUS | USACE [] EPA | OTHER | | | | | |
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24 October 2018

Steven Clifton
Underwood Engineers
25 Vaughan Mall
Portsmouth, NH 03801

RE: Trace Metals In Wastewater

Marin dem Kosa

Enclosed are the analytical results for samples received by Eurofins Frontier Global Sciences. All quality control measurements are within established control limits and there were no analytical difficulties encountered with the exception of those listed in the case narrative section of this report.

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

Sincerely,

Maricris dela Rosa

Project Manager



Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Steven Clifton24-Oct-18 12:43

ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|---------------------------|---------------|--------|-----------------|-----------------|
| NEW-EB-01 NEW-EB-TM | 8100809-02 | Water | 16-Sep-18 07:00 | 19-Sep-18 10:20 |
| NEW-EB-01 NEW-EB-Hg | 8100809-03 | Water | 16-Sep-18 07:00 | 19-Sep-18 10:20 |
| PEASE-EB-01 PEASE-EB-TM | 8100809-05 | Water | 16-Sep-18 08:00 | 19-Sep-18 10:20 |
| PEASE-EB-01 PEASE-EB-Hg | 8100809-06 | Water | 16-Sep-18 08:00 | 19-Sep-18 10:20 |
| NEW-COMP-01 NEW-01-TM | 8100809-09 | Water | 17-Sep-18 07:30 | 19-Sep-18 10:20 |
| NEW-COMP-01 NEW-02-TM | 8100809-10 | Water | 17-Sep-18 07:30 | 19-Sep-18 10:20 |
| NEW-COMP-01 NEW-01-Hg | 8100809-11 | Water | 17-Sep-18 07:30 | 19-Sep-18 10:20 |
| NEW-COMP-01 NEW-02-Hg | 8I00809-12 | Water | 17-Sep-18 07:30 | 19-Sep-18 10:20 |
| PEASE-COMP-01 PEASE-01-TM | 8100809-14 | Water | 17-Sep-18 08:45 | 19-Sep-18 10:20 |
| PEASE-COMP-01 PEASE-02-TM | 8100809-15 | Water | 17-Sep-18 08:45 | 19-Sep-18 10:20 |
| PEASE-COMP-01 PEASE-01-Hg | 8I00809-16 | Water | 17-Sep-18 08:45 | 19-Sep-18 10:20 |

Eurofins Frontier Global Sciences, LLC

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Marin dem Kose



Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Steven Clifton 24-Oct-18 12:43

SAMPLE RECEIPT

Samples were received at Eurofins Frontier Global Sciences (EFGS) on 19-Sep-18 10:20. The samples were received intact, on-ice within a sealed cooler at

<u>Cooler</u> <u>Temp C°</u> Default Cooler 8.0

Samples were shipped to Eurofins Calscience in Garden Grove, CA for the EPA SM4500 Total CN analysis per the initial project setup.

The subcontract report is located after the notes and definitions section of the EFGS report.

SAMPLE PREPARATION AND ANALYSIS

Samples were prepared and analyzed for total mercury by flow injection atomic fluorescence spectrometry (FI-AFS) in accordance with EPA 1631E.

Samples were prepared and analyzed for total recoverable metals by inductively coupled plasma mass spectrometry (ICP-MS) in accordance with EPA 200.8 (EFGS-054).

ANALYTICAL AND QUALITY CONTROL ISSUES

Method blanks were prepared for every preparation to assess possible blank contribution from the sample preparation procedure. The method blanks were carried through the entire analytical procedure. All blanks fell within the established acceptance criteria with the exception of any items narrated above or flagged and described in the notes and definitions section of the report.

Liquid spikes, certified reference material (CRM) or a quality control samples (QCS) were prepared for every preparation as a measure of accuracy. All liquid spikes, CRMs and/or QCS samples fell within the established acceptance criteria with the exception of any items narrated above or flagged and described in the notes and definitions section of the report.

As an additional measure of the accuracy of the methods used and to check for matrix interference, matrix spikes (MS) and matrix spike duplicates (MSD) were digested and analyzed. All of the matrix spike recoveries fell within the established acceptance criteria with the exception of any items flagged and described in the notes and definitions section of the report.

Eurofins Frontier Global Sciences, LLC

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Marin dem Kosa



Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Steven Clifton 24-Oct-18 12:43

A reasonable measure of the precision of the analytical methods is the relative percent difference (RPD) between a matrix spike recovery and a matrix spike duplicate recovery and between laboratory control sample recovery and laboratory control sample duplicate recoveries. All of the relative percent differences fell within established acceptance criteria with the exception of any items flagged and described in the notes and definitions section of the report.

Eurofins Frontier Global Sciences, LLC

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Marin dem kosa



Sample Receipt Checklist

| Client: Unger used | | Date & Time F | Received: <u>919/13</u> 90/2 | ン _ Dat | e Labeled: 4/15/14 | Labeled By | () |
|--|-------------------------------|--------------------|-----------------------------------|-------------|-----------------------------------|------------------------------|-------------|
| Project: | | Received By: | 18 | | | _ and cred by | · col |
| | samples Arrived By:Sh | ipping Service | Courier Hand | Cab | el Verified By: (Specify: | <u>r</u> |) |
| Coolant: ☐ None/Ambient ☐ Loo | se Ice 🛮 Gel Ice 🗘 Dry | ice Coolant R | equired: Y / N Temp | Blank Use | ed Ý/N for Coole | er(s): | |
| Notify Project Manager if packages/coo | lers are received without coo | lant or with thawe | ed coolant and at a temperat | ture in exc | ess of 6°C. PM no | otified: Y/N | |
| Cooler Information: | Y/N/NA Comm | nents | TID: 12240525 CF: 10.1 | °C Dat | 11: 9/1/1/10 | 1 Stomat | 70 |
| The coolers do not appear to be tampered with: | 8 | | 44 | - 2 | e/time: 9//9/8 | 90,28y:/ | |
| Custody Seals are present and intact: | N/ | | Cooler 2: °C w/ CF | | Cooler 4: °C | | °C |
| Custody seals signed: | | | | | Cooler 5: °C | | °C |
| | | | Cooler 3: °C w/ CF | *C | Cooler 6: °C | w/ CF: | °C |
| Chain of Custody: Y/N/NA Sample ID/Description: | Comments | Sample Condition | | Y/N/NA | Comn | nents | |
| Date and time of collection: | | | e present and legible: | 1 | | | |
| Sampled by: | | | tainer/bag matches COC: | Wil . | | | |
| Preservation type: | | Correct sample co | | M/ | | | |
| Requested analyses: | | | within holding times: | 10 | | | |
| Required signatures: | | | ufficient for requested analyses: | WAX | | | |
| nternal COC required: | | | ive used for requested analyses: | 1/1/ | | | |
| Anomalies/Non-conformances (attach additi | onal pages if needed): | correct preservat | ive used for requested analyses: | W. '' | | | \Box |
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Chain of Custody Record & Laboratory Analysis Request: Air, Water, Sediments, Plant and Animal Tissue, Hydrocarbon & Other Samples

11720 Northcreek Pkwy N, Suite 400 Bothell, WA 98011

Date:

Page 6 of 45

Fax: 425-686-3096

Phone: 425-686-1996

Frontier Global Sciences

weeks after report (storage fees may apply)

🖒 eurofins

□ Retain for

Page / of 2 info@FrontierGS.com http://www.FrontierGS.com Client: UNDERWOOD ENGINEERS, INC. Contact: Tim Puls EFGS PM: Address: 25 VAUGHAN MALL, Phone: (603) 436-6192 Analyses Requested Fax: Date: PORTSMOUTH, NH 03801 % E-mail: tpuls@underwoodengineers.com TAT (business days):20 (std) Project Name: Anti-Degradation Contract/PO: Other 15 10 5 4 3 2 24 hrs. Report To: Tim Puls Invoice To: (For TAT < 10 days, contact PM, Field Filtered (Y/N) Address: 25 VAUGHAN MALL, Surcharges apply for expedited TAT) Address: Preserved: 3 HCl BrCl Saturday delivery? □ Y □N PORTSMOUTH, NH 03801 Total Mercury **Total Metals** (If yes, please contact PM) Phone: (603) 436-6192 Phone: Fax: Sampled By Fax: EDD 🗆 Y 🗆 N E-mail: tpuls@underwoodengineers.com $_{\Sigma}$ E-mail: ☐ Standard ☐ High Field P HNO₃ Engraved Total # of No. Sample ID Matrix Date & Time Bottle ID **Bottles** Comments NEW-EB-OINEW-EB-CA TAP Fresh 9/16/18 7AM NoCH Total Metals include: Sb, As, 2 NEW-ED-CI NEW-EB-TM * # ff Be, Cd, Cr, Cu, Fe, Pb, Ni, Se, X NEW-EB-01 NEW-EB-Hg Ag, Tl, Zn ** . . te 11 X PEASE-EB-OI PEASE-EB-CA 8111 t_I (1 NoCH 10 X PEASE-EB-UI PEASE-EB-TM Œ X * * PEASE-EB-01 PEASE-EB- He 11 X NEW-COMPOINEW-OI-11 NOH X 11 8 NEW-UZ - Co 11 (1 6 NGOH NEW-CI - TM 10 €, ŧ, X 10 * (NEW-02 - TM 11 11 ¥¢ X " 11 10 NOW-01 - Ho 11 fr ٠, X NEW-02 - HC 12 11 11 ١(For Laboratory Use Only Matrix Codes: Relinguished By: Received By: Received By: FW: Fresh Water COC Seal: Comments: Am Pals WW: Waste Water Cooler Temp: SB: Sea and Brackish Water Name: Tim Puls Name: SS: Soil and Sediment Name: Carrier: TS: Plant and Animal Tissue Organization: UF Organization: Organization: VTSR: **HC:** Hydrocarbons Date & Time: 9/17/18 3/17 TR: Trap Date & Time: Date & Time: # of Coolers: OT: Other Tracking number: Sample Disposal: By signing, you declare that you agree with EFGS' terms and conditions, and that ☐ Return (shipping fees may apply) you authorize EFGS to perform the specified analyses. □ Standard Disposal – 30 Days after report

Customer Approval:

Chain of Custody Record & Lataratory Analysis Request: Air, Water, Sediments, Plant and Animal Tissue,

Hydrocarbon & Other Samples

Page 2 of 2

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☐ Retain for

Frontier Global Sciences

weeks after report (storage fees may apply)

8106869

11720 Northcreek Pkwv N, Suite 400

Date:

Page 7 of 45

Bot WA 98011 Phone: 425-686-1996

Fax: 425-686-3096 info@FrontierGS.com

| Clie | ent: UNDERWOOD I | ENGINEEDS INC | Contr | ct. Tim Dul | | | | | | | | | | | http://www.FrontierGS.cor |
|-------|----------------------|---------------------------------------|--------|--|-----------------------|----------------|----------------------|----------------------|--------------------------|----------------|-----------------|-----------------|------------------|-----------------------|--|
| | dress: 25 VAUGHAN | | | act: Tim Puls e: (603) 436 | | Fax: | \dashv | | | | Ana' | lvses | Real | uested | EFGS PM: |
| | RTSMOUTH, NH 03 | | | | | dengineers.com | \dashv | | (%) | <u> </u> | | _ | | | Date: |
| _ | ject Name: Anti-De | | | act/PO: | idei WOOD | lengineers.com | | ĺ | 1 | | | | | | TAT (business days):20 (std |
| Rep | oort To: Tim Puls | | Invoic | | 4ME | | 7 | | Other | <u>;</u> | | | | | 15 10 5 4 3 2 24 hrs (For TAT < 10 days, contact PM |
| | lress: 25 VAUGHAN | | Addres | ess: | 1,00 | | \dashv | N. N. | | | | | | | Surcharges apply for expedited TAT) |
| _ | RTSMOUTH, NH 03 | | | | | | | C | Preserved: 3 HCl BrCl | | S | | Ž | | Saturday delivery? ☐ Y ☐N (If yes, please contact PM) |
| | ne: (603) 436-6192 | | Phone | | Fax: | | <u></u> | ere | Ser | , 1 | etal | _ | - Juli | | EDD Y N |
| E-m | nail: tpuls@underwo | oodengineers.com | E-mail | | | |] B | HE H | Pre | . [| ž | 5 | Σ | | QA ☐ Standard ☐ High |
| No. | Bottle ID | Sample ID | _ | # of Bottles | Matrix | Date & Time | Sampled By | Field Filtered (Y/N) | Field P | | Total Metals | Total Cn | Total Mercury | | Comments |
| | PEASE-COMP.C | U PEASE-01-C | - 4 | 1 | Fresh | 9/17/18 8:45, | | N | NOCH | | | X | + | + + - | Total Metals include: Sb, As |
| 2 | 11 | PEASE-01- | TM | t | re | 11 | C | N | - | +- | x | ļ , | + | - | Be, Cd, Cr, Cu, Fe, Pb, Ni, Se |
| 3 | () | PEASE-02 - | TM | | ¥r | 11 | (1 | Ü | | + | X | + | + | + | Ag, Tl, Zn |
| 4 | 11 | PEASE-01- | Ha | (| te | ** | 11 | N | - | + | + | | X | - | _ |
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| | For Labora | atory Use Only | | Mati | rix Codes | Polingu | ished By | | | | | | | | |
| coc | Seal: | Comments: | | FW: Fresh Wa | /ater | . Keiniqui | islied by | ; : | | Rece | eived | By: | | | Received By: |
| | er Temp: | | | WW: Waste \ SB: Sea and I | | later Name | | | | ļ | | | | | |
| Carri | | - | ŀ | SS: Soil and S | Sediment | Ivanie. | Tim Pa | <u>u/s</u> | | Nam | | | | | Name: |
| VTSF | | - | | TS: Plant and HC: Hydrocar | : Animai Tis rbons | sue Organiza | zation: (| 1 <u>E</u> | 20.4 | ļ <u> </u> | anizati | | | | Organization: |
| | Coolers: | | | TR: Trap OT: Other | | | Time: 9/ | | 3PM | Date | e & Tir | ne: | | | Date & Time: |
| | ple Disposal: | | | OI. Other | | | g numbe | | | | | | | | |
| □ Re | eturn (shipping fees | es may apply) 30 Days after report | t | | | | By signi you autl | ng, you horize E | ມ declar EFGS to | e that perf | at you orm t | ı agre he sp | ee wi secific | ith EFGS ed analys | 5' terms and conditions, and that rses. |

Customer Approval:

SUBCONTRACT ORDER

Eurofins Frontier Global Sciences, Inc.

6080018

| SENDING LABORATORY: | RECEIVING LABORATORY: |
|--|--------------------------|
| Eurofins Frontier Global Sciences, LLC | Eurofins Calscience, LLC |
| 11720 North Creek Parkway North, Suite 400 | 7440 Lincoln Way |
| Bothell, WA 98011 | Garden Grove, CA 92841 |
| Phone: (425) 686-1996 | Phone :7148955494 |
| Fax: (425) 686-3096 | Fax: x |
| Project Manager: Amy Goodall | |

Comments Analysis

Sample ID: NEW-EB-01 NEW-EB-Cn

EFGS Lab ID: 8100809-01 Matrix: Water

Due: 17-Oct-18 19:00 Sampled: 16-Sep-18 07:00 (GMT-05:00) Eastern Time (US &

EPA SM4500 CN E Misc. Subcontract 1

Containers Supplied:

23_Client Specific Bottle

Sample ID: PEASE-EB-01 PEASE-EB-Cn

EFGS Lab ID: 8100809-04 Matrix: Water

Due: 17-Oct-18 19:00 Sampled: 16-Sep-18 08:00 (GMT-05:00) Eastern Time (US &

EPA SM4500 CN E Misc. Subcontract 1

Containers Supplied:

23_Client Specific Bottle

Sample ID: NEW-COMP-01 NEW-01-Cn

EFGS Lab ID: 8100809-07 Matrix: Water Sampled: 17-Sen-18 07:30 (GMT-05:00) Eastern Time (US &

Due: 17-Oct-18 19:00 Sampled: 17-Sep-18 07:30 (GMT-05:00) Eastern Time (US &

EPA SM4500 CN E Misc. Subcontract 1

Containers Supplied:

23_Client Specific Bottle

Page 1 of 2 Date Date Received By Received By Date Date sed By sed By Page 8 of 45

SUBCONTRACT ORDER

Eurofins Frontier Global Sciences, Inc.

8100800

| Analysis | Comments | | | |
|--|---|-------------|----------------------|-------------|
| Sample ID: NEW-COMP-01 NEW-02-Cn | /2-Cn | | | |
| EFGS Lab ID: 8100809-08 Matrix: Water Sampled: 17-Sep-18 07:30 (GMT-05:00) Eastern Time (US & | Matrix: Water :00) Eastern Time (US & | Due: | Due: 17-Oct-18 19:00 | |
| Misc. Subcontract 1 | EPA SM4500 CN E | | | |
| Containers Supplied: 23_Client Specific Bottle | | | | |
| Sample ID: PEASE-COMP-01 PEASE-01-Cn | SE-01-Cn | | | |
| EFGS Lab ID: 8100809-13 Matrix: Water Sampled: 17-Sep-18 08:45 (GMT-05:00) Eastern Time (US & | Matrix: Water ::00) Eastern Time (US & | Due: | Due: 17-Oct-18 19:00 | |
| Misc. Subcontract 1 | EPA SM4500 CN E | | | |
| Containers Supplied: 23_Client Specific Bottle | | | | |
| | | | | |
| Page S | Date | Received By | Date | |
| of 45 | Date | Received By | Date Pa | Page 2 of 2 |



Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Steven Clifton24-Oct-18 12:43

NEW-EB-01 NEW-EB-TM 8100809-02

| Analyte | Result | Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|----------------------------------|-----------|------------|--------------------|-----------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP2836 | Closed Ve | ssel Water | · Oven Di | gestion | | | | | | | |
| Antimony | ND | 0.009 | 0.020 | μg/L | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | U |
| Arsenic | ND | 0.10 | 0.30 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | U |
| Beryllium | 0.007 | 0.004 | 0.061 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | J |
| Cadmium | ND | 0.008 | 0.020 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | U |
| Chromium | 0.03 | 0.02 | 0.10 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | J |
| Copper | 0.07 | 0.02 | 0.10 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | J |
| Iron | 2 | 1 | 10 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | J |
| Lead | ND | 0.005 | 0.040 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | U |
| Nickel | 0.13 | 0.04 | 0.10 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |
| Selenium | ND | 0.44 | 0.61 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | U |
| Silver | 0.002 | 0.002 | 0.020 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | J |
| Thallium | ND | 0.006 | 0.020 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | U |
| Zinc | 1.53 | 0.16 | 0.50 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |

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Marin dem Kosa



Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Steven Clifton24-Oct-18 12:43

NEW-EB-01 NEW-EB-Hg 8100809-03

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|---------------------------------|---------------|--------------------|--------------------|-------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP279 | 96 EPA 1631 (| Oxidation | 1 | | | | | | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | 1 | F810184 | 25-Sep-18 | 8J02006 | 01-Oct-18 | EPA 1631E | U |

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Marin dem Kosa



Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Steven Clifton 24-Oct-18 12:43

PEASE-EB-01 PEASE-EB-TM 8100809-05

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|-------------------------------|----------------|--------------------|--------------------|-------------------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP2 | 836 Closed Ves | sel Water | Oven Di | gestion | | | | | | | |
| Antimony | ND | 0.009 | 0.020 | μg/L | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | U |
| Arsenic | ND | 0.10 | 0.30 | $\mu \text{g}/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | U |
| Beryllium | 0.008 | 0.004 | 0.061 | $\mu g \! / \! L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | J |
| Cadmium | ND | 0.008 | 0.020 | $\mu \text{g}/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | U |
| Chromium | ND | 0.02 | 0.10 | $\mu \text{g}/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | U |
| Copper | 0.05 | 0.02 | 0.10 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | J |
| Iron | ND | 1 | 10 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | U |
| Lead | ND | 0.005 | 0.040 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | U |
| Nickel | ND | 0.04 | 0.10 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | U |
| Selenium | ND | 0.44 | 0.61 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | U |
| Silver | ND | 0.002 | 0.020 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | U |
| Thallium | ND | 0.006 | 0.020 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | U |
| Zinc | 15.6 | 0.16 | 0.50 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Steven Clifton24-Oct-18 12:43

PEASE-EB-01 PEASE-EB-Hg

8100809-06

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|-------------------------------|----------------|--------------------|--------------------|-------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP2 | 796 EPA 1631 (| Oxidation | 1 | | | | | | | | |
| Mercury | 0.11 | 0.08 | 0.50 | ng/L | 1 | F810184 | 25-Sep-18 | 8J02006 | 01-Oct-18 | EPA 1631E | J |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Steven Clifton24-Oct-18 12:43

NEW-COMP-01 NEW-01-TM 8100809-09

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|------------------------------------|-----------|--------------------|--------------------|-------------------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP2836 (| Closed Ve | ssel Water | Oven Di | gestion | | | | | | | |
| Antimony | 0.118 | 0.009 | 0.020 | μg/L | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |
| Arsenic | 1.28 | 0.10 | 0.30 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |
| Beryllium | 0.005 | 0.004 | 0.061 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | J |
| Cadmium | 0.014 | 0.008 | 0.020 | $\mu g \! / \! L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | J |
| Chromium | 0.39 | 0.02 | 0.10 | $\mu g \! / \! L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |
| Copper | 2.16 | 0.02 | 0.10 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |
| Iron | 63 | 1 | 10 | $\mu g \! / \! L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |
| Lead | 0.400 | 0.005 | 0.040 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |
| Nickel | 2.22 | 0.04 | 0.10 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |
| Selenium | 1.09 | 0.44 | 0.61 | μg/L | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |
| Silver | 0.217 | 0.002 | 0.020 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |
| Thallium | ND | 0.006 | 0.020 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | U |
| Zinc | 85.4 | 1.62 | 5.05 | $\mu g/L$ | 10 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Steven Clifton24-Oct-18 12:43

NEW-COMP-01 NEW-02-TM 8I00809-10

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|------------------------------|-----------------|--------------------|--------------------|-----------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP | 2836 Closed Ves | ssel Water | Oven Di | gestion | | | | | | | |
| Antimony | 0.116 | 0.009 | 0.020 | μg/L | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |
| Arsenic | 1.30 | 0.10 | 0.30 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |
| Beryllium | 0.006 | 0.004 | 0.061 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | J |
| Cadmium | 0.014 | 0.008 | 0.020 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | J |
| Chromium | 0.41 | 0.02 | 0.10 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |
| Copper | 2.13 | 0.02 | 0.10 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |
| Iron | 63 | 1 | 10 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |
| Lead | 0.401 | 0.005 | 0.040 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |
| Nickel | 2.21 | 0.04 | 0.10 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |
| Selenium | 1.12 | 0.44 | 0.61 | μg/L | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |
| Silver | 0.224 | 0.002 | 0.020 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |
| Thallium | ND | 0.006 | 0.020 | μg/L | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | U |
| Zinc | 106 | 1.62 | 5.05 | $\mu g/L$ | 10 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Steven Clifton24-Oct-18 12:43

NEW-COMP-01 NEW-01-Hg

8100809-11

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|---------------------------------|---------------|--------------------|--------------------|-------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP279 | 06 EPA 1631 (| Oxidation | 1 | | | | | | | | |
| Mercury | 0.99 | 0.08 | 0.50 | ng/L | 1 | F810184 | 25-Sep-18 | 8J02006 | 01-Oct-18 | EPA 1631E | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Steven Clifton24-Oct-18 12:43

NEW-COMP-01 NEW-02-Hg

8100809-12

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|---------------------------------|--------------|--------------------|--------------------|-------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP279 | 6 EPA 1631 (| Oxidation | 1 | | | | | | | | |
| Mercury | 1.06 | 0.08 | 0.50 | ng/L | 1 | F810184 | 25-Sep-18 | 8J02006 | 01-Oct-18 | EPA 1631E | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Steven Clifton24-Oct-18 12:43

PEASE-COMP-01 PEASE-01-TM 8I00809-14

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|------------------------------|-----------------|--------------------|--------------------|------------------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOF | 2836 Closed Ves | ssel Water | Oven Di | gestion | | | | | | | |
| Antimony | 0.230 | 0.091 | 0.202 | μg/L | 10 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |
| Arsenic | 3.64 | 0.10 | 0.30 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |
| Beryllium | 0.004 | 0.004 | 0.061 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | J |
| Cadmium | ND | 0.081 | 0.202 | $\mu g/L$ | 10 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | U |
| Chromium | 0.73 | 0.02 | 0.10 | μg/L | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |
| Copper | 10.8 | 0.02 | 0.10 | μg/L | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |
| Iron | 802 | 1 | 10 | μg/L | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |
| Lead | 1.03 | 0.050 | 0.404 | μg/L | 10 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |
| Nickel | 8.31 | 0.04 | 0.10 | μg/L | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |
| Selenium | 1.45 | 0.44 | 0.61 | μg/L | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |
| Silver | 0.027 | 0.020 | 0.202 | μg/L | 10 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | J |
| Thallium | ND | 0.061 | 0.202 | $\mu \text{g}/L$ | 10 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | U |
| Zinc | 96.4 | 1.62 | 5.05 | $\mu g/L$ | 10 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Steven Clifton24-Oct-18 12:43

PEASE-COMP-01 PEASE-02-TM 8I00809-15

| Analyte | Result | Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|----------------------------------|------------|------------|--------------------|------------------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP2836 | Closed Ves | ssel Water | · Oven Dig | gestion | | | | | | | |
| Antimony | 0.541 | 0.091 | 0.202 | μg/L | 10 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |
| Arsenic | 3.66 | 0.10 | 0.30 | $\mu \text{g}/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |
| Beryllium | 0.004 | 0.004 | 0.061 | $\mu g\!/\!L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | J |
| Cadmium | 0.059 | 0.008 | 0.020 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |
| Chromium | 0.75 | 0.02 | 0.10 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |
| Copper | 10.7 | 0.02 | 0.10 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |
| Iron | 814 | 1 | 10 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |
| Lead | 1.06 | 0.050 | 0.404 | $\mu g/L$ | 10 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |
| Nickel | 8.29 | 0.04 | 0.10 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |
| Selenium | 1.53 | 0.44 | 0.61 | μg/L | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |
| Silver | 0.031 | 0.020 | 0.202 | $\mu g/L$ | 10 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | J |
| Thallium | ND | 0.061 | 0.202 | μg/L | 10 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | U |
| Zinc | 101 | 1.62 | 5.05 | $\mu g/L$ | 10 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Steven Clifton24-Oct-18 12:43

PEASE-COMP-01 PEASE-01-Hg

8100809-16

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|----------------------------------|--------------|--------------------|--------------------|-------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP2790 | 6 EPA 1631 (| Oxidation | 1 | | | | | | | | |
| Mercury | 3.17 | 0.08 | 0.50 | ng/L | 1 | F810184 | 25-Sep-18 | 8J02006 | 01-Oct-18 | EPA 1631E | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported: Portsmouth NH, 03801 Project Manager: Steven Clifton 24-Oct-18 12:43

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------------------------------|-------------|--------------------|--------------------|-------|----------------|------------------|-----------|----------------|------|--------------|-----------|
| Batch F810184 - EFGS SOP2796 EP | A 1631 Oxid | ation | | | | | | | | | |
| Blank (F810184-BLK1) | | | | | Prepared & | : Analyzed: | 01-Oct-18 | | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | | | | | | | U |
| Blank (F810184-BLK2) | | | | | Prepared & | Analyzed: | 01-Oct-18 | | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | | | | | | | U |
| Blank (F810184-BLK3) | | | | | Prepared & | Analyzed: | 01-Oct-18 | | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | | | | | | | U |
| Blank (F810184-BLK4) | | | | | Prepared & | : Analyzed: | 01-Oct-18 | | | | |
| Mercury | ND | 0.09 | 0.52 | ng/L | | | | | | | QB-06, U |
| LCS (F810184-BS1) | | | | | Prepared & | : Analyzed: | 01-Oct-18 | | | | |
| Mercury | 16.46 | 0.08 | 0.50 | ng/L | 14.688 | | 112 | 80-120 | | | |
| LCS Dup (F810184-BSD1) | | | | | Prepared & | : Analyzed: | 01-Oct-18 | | | | |
| Mercury | 15.02 | 0.08 | 0.50 | ng/L | 14.688 | | 102 | 80-120 | 9.18 | 24 | |
| Duplicate (F810184-DUP1) | | Source: | 8100630-01 | | Prepared & | : Analyzed: | 01-Oct-18 | | | | |
| Mercury | 1.67 | 0.08 | 0.50 | ng/L | | 1.19 | | | 33.1 | 24 | AD, QR-07 |
| Matrix Spike (F810184-MS1) | | Source: | 8100809-12 | | Prepared & | : Analyzed: | 01-Oct-18 | | | | |
| Mercury | 5.87 | 0.08 | 0.50 | ng/L | 5.0702 | 1.06 | 94.8 | 71-125 | | | AS |
| Matrix Spike (F810184-MS2) | | Source: | 8100809-16 | : | Prepared & | : Analyzed: | 01-Oct-18 | | | | |
| Mercury | 12.48 | 0.08 | 0.50 | ng/L | 10.140 | 3.17 | 91.8 | 71-125 | | | AS |
| Matrix Spike Dup (F810184-MSD1) | | Source: | 8100809-12 | | Prepared & | : Analyzed: | 01-Oct-18 | | | | |
| Mercury | 6.11 | 0.08 | 0.50 | ng/L | 5.0702 | 1.06 | 99.6 | 71-125 | 4.10 | 24 | AS |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Steven Clifton24-Oct-18 12:43

Quality Control Data

| | | Detection | Reporting | | Spike | Source | | %REC | | RPD | |
|----------------------------------|--------------|------------|------------|-----------|-------------|------------|-------------|----------|------|-------|-------|
| Analyte | Result | Limit | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | Notes |
| Batch F810184 - EFGS SOP2796 EP | A 1631 Oxid | ation | | | | | | | | | |
| Matrix Spike Dup (F810184-MSD2) | | Source: | 8100809-16 | i | Prepared & | Analyzed: | 01-Oct-18 | | | | |
| Mercury | 12.28 | 0.08 | 0.50 | ng/L | 10.140 | 3.17 | 89.8 | 71-125 | 1.65 | 24 | AS |
| Batch F810306 - EFGS SOP2836 Clo | sed Vessel W | Vater Oven | Digestion | | | | | | | | |
| Blank (F810306-BLK1) | | | | | Prepared: 1 | 5-Oct-18 A | Analyzed: 1 | 6-Oct-18 | | | |
| Silver | 0.002 | 0.002 | 0.020 | $\mu g/L$ | | | | | | | J |
| Blank (F810306-BLK2) | | | | | Prepared: 1 | 5-Oct-18 A | Analyzed: 1 | 6-Oct-18 | | | |
| Arsenic | ND | 0.10 | 0.30 | $\mu g/L$ | | | | | | | U |
| Silver | ND | 0.002 | 0.020 | $\mu g/L$ | | | | | | | U |
| LCS (F810306-BS1) | | | | | Prepared: 1 | 5-Oct-18 A | Analyzed: 1 | 6-Oct-18 | | | |
| Arsenic | 44.96 | 0.50 | 1.50 | $\mu g/L$ | 50.000 | | 89.9 | 85-115 | | | |
| Silver | 22.93 | 0.010 | 0.100 | $\mu g/L$ | 25.000 | | 91.7 | 85-115 | | | |
| LCS Dup (F810306-BSD1) | | | | | Prepared: 1 | 5-Oct-18 A | Analyzed: 1 | 6-Oct-18 | | | |
| Arsenic | 47.23 | 0.50 | 1.50 | μg/L | 50.000 | | 94.5 | 85-115 | 4.91 | 20 | |
| Silver | 23.98 | 0.010 | 0.100 | $\mu g/L$ | 25.000 | | 95.9 | 85-115 | 4.45 | 20 | |
| Matrix Spike (F810306-MS1) | | Source: | 8100809-10 |) | Prepared: 1 | 5-Oct-18 A | Analyzed: 1 | 6-Oct-18 | | | |
| Arsenic | 47.33 | 1.01 | 3.04 | μg/L | 50.000 | ND | 94.7 | 70-130 | | | |
| Silver | 23.70 | 0.020 | 0.202 | $\mu g/L$ | 25.000 | 0.220 | 93.9 | 70-130 | | | |
| Matrix Spike (F810306-MS2) | | Source: | 8100809-15 | <u> </u> | Prepared: 1 | 5-Oct-18 A | Analyzed: 1 | 6-Oct-18 | | | |
| Arsenic | 47.25 | 1.01 | 3.04 | μg/L | 50.000 | 2.89 | 88.7 | 70-130 | | | |
| Silver | 21.98 | 0.020 | 0.202 | $\mu g/L$ | 25.000 | 0.031 | 87.8 | 70-130 | | | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Steven Clifton24-Oct-18 12:43

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|----------------------------------|------------------------|--------------------|--------------------|-----------|----------------|--------------------|-------------|----------------|-------|--------------|-------|
| Batch F810306 - EFGS SOP2836 Clo | | | | Omts | Level | Result | /UKLC | Limits | МЪ | Liiiit | |
| Matrix Spike (F810306-MS4) | iscu vessei v | | 8I00809-10 |) | Prepared: | 15-Oct-18 <i>A</i> | Analyzed: 1 | 6-Oct-18 | | | |
| Arsenic | 383.3 | 1.01 | 3.03 | μg/L | 410.00 | ND | 93.5 | 70-130 | | | AS |
| Silver | 19.90 | 0.020 | 0.202 | $\mu g/L$ | 20.500 | 0.220 | 96.0 | 70-130 | | | AS |
| Matrix Spike (F810306-MS5) | | Source: | 8100809-15 | ; | Prepared: | 15-Oct-18 A | Analyzed: 1 | 6-Oct-18 | | | |
| Arsenic | 383.6 | 1.01 | 3.03 | μg/L | 410.00 | 2.89 | 92.9 | 70-130 | | | AS |
| Silver | 19.03 | 0.020 | 0.202 | $\mu g/L$ | 20.500 | 0.031 | 92.7 | 70-130 | | | AS |
| Matrix Spike (F810306-MS8) | | Source: | 8100810-04 | RE1 | Prepared: | 15-Oct-18 A | Analyzed: 1 | 6-Oct-18 | | | |
| Arsenic | 51.11 | 2.53 | 7.59 | μg/L | 50.000 | 3.16 | 95.9 | 70-130 | | | |
| Silver | 21.26 | 0.051 | 0.506 | $\mu g/L$ | 25.000 | ND | 85.0 | 70-130 | | | |
| Matrix Spike (F810306-MSA) | | Source: | 8100810-04 | RE1 | Prepared: | 15-Oct-18 A | Analyzed: 1 | 6-Oct-18 | | | |
| Arsenic | 1004 | 2.52 | 7.57 | μg/L | 1025.0 | 3.16 | 97.6 | 70-130 | | | AS |
| Matrix Spike Dup (F810306-MSD1) | | Source: | 8100809-10 |) | Prepared: | 15-Oct-18 A | Analyzed: 1 | 6-Oct-18 | | | |
| Arsenic | 47.49 | 1.01 | 3.04 | μg/L | 50.000 | ND | 95.0 | 70-130 | 0.341 | 20 | |
| Silver | 23.64 | 0.020 | 0.202 | $\mu g/L$ | 25.000 | 0.220 | 93.7 | 70-130 | 0.270 | 20 | |
| Matrix Spike Dup (F810306-MSD2) | | Source: | 8100809-15 | ; | Prepared: | 15-Oct-18 A | Analyzed: 1 | 6-Oct-18 | | | |
| Arsenic | 49.48 | 1.01 | 3.04 | μg/L | 50.000 | 2.89 | 93.2 | 70-130 | 4.60 | 20 | |
| Silver | 22.66 | 0.020 | 0.202 | $\mu g/L$ | 25.000 | 0.031 | 90.5 | 70-130 | 3.04 | 20 | |
| Matrix Spike Dup (F810306-MSD4) | | Source: | 8100809-10 |) | Prepared: | 15-Oct-18 A | Analyzed: 1 | 6-Oct-18 | | | |
| Arsenic | 378.3 | 1.01 | 3.03 | μg/L | 410.00 | ND | 92.3 | 70-130 | 1.32 | 20 | AS |
| Silver | 19.57 | 0.020 | 0.202 | $\mu g/L$ | 20.500 | 0.220 | 94.4 | 70-130 | 1.68 | 20 | AS |
| Matrix Spike Dup (F810306-MSD5) | D5) Source: 8100809-15 | | | | Prepared: | 15-Oct-18 A | Analyzed: 1 | 6-Oct-18 | | | |
| Arsenic | 384.2 | 1.01 | 3.03 | μg/L | 410.00 | 2.89 | 93.0 | 70-130 | 0.157 | 20 | AS |
| Silver | 18.80 | 0.020 | 0.202 | $\mu g/L$ | 20.500 | 0.031 | 91.6 | 70-130 | 1.22 | 20 | AS |
| | | | | | | | | | | | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Steven Clifton 24-Oct-18 12:43

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|-----------------------------------|--------------|--------------------|--------------------|-----------|----------------|------------------|-------------|----------------|-------|--------------|-------|
| Batch F810306 - EFGS SOP2836 Clos | sed Vessel V | Vater Oven | Digestion | | | | | | | | |
| Matrix Spike Dup (F810306-MSD8) | | Source: | 8100810-04 | 4RE1 | Prepared: 1 | 15-Oct-18 A | nalyzed: 16 | 6-Oct-18 | | | |
| Arsenic | 52.74 | 2.53 | 7.59 | μg/L | 50.000 | 3.16 | 99.2 | 70-130 | 3.14 | 20 | |
| Silver | 21.90 | 0.051 | 0.506 | $\mu g/L$ | 25.000 | ND | 87.6 | 70-130 | 2.97 | 20 | |
| Matrix Spike Dup (F810306-MSDA) | | Source: | 8100810-04 | 4RE1 | Prepared: 1 | 15-Oct-18 A | nalyzed: 16 | 6-Oct-18 | | | |
| Arsenic | 1012 | 2.52 | 7.57 | μg/L | 1025.0 | 3.16 | 98.5 | 70-130 | 0.879 | 20 | AS |

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RPD

Underwood Engineers Project: Trace Metals In Wastewater

Detection Reporting

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Steven Clifton24-Oct-18 12:43

Quality Control Data

Spike

Source

%REC

| | | Detection | Reporting | | Spike | Source | 0.470 | 70KEC | n | KI D | |
|------------------------------|-----------------|------------|-----------|-----------|-------------|-------------|--------------|----------|-------|-------|-------|
| Analyte | Result | Limit | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | Notes |
| Batch F810306 - EFGS SOP2836 | Closed Vessel V | Vater Oven | Digestion | | | | | | | | |
| Blank (F810306-BLK2) | | | | | Prepared: 1 | 15-Oct-18 A | nalyzed: 16 | 6-Oct-18 | | | |
| Beryllium | ND | 0.004 | 0.060 | μg/L | | | | | | | |
| Chromium | ND | 0.02 | 0.10 | μg/L | | | | | | | |
| Iron | 3 | 1 | 10 | $\mu g/L$ | | | | | | | |
| Nickel | ND | 0.04 | 0.10 | $\mu g/L$ | | | | | | | |
| Copper | ND | 0.02 | 0.10 | $\mu g/L$ | | | | | | | |
| Zinc | ND | 0.16 | 0.50 | $\mu g/L$ | | | | | | | |
| Selenium | ND | 0.44 | 0.60 | $\mu g/L$ | | | | | | | |
| Cadmium | ND | 0.008 | 0.020 | $\mu g/L$ | | | | | | | |
| Antimony | ND | 0.009 | 0.020 | $\mu g/L$ | | | | | | | |
| Thallium | ND | 0.006 | 0.020 | $\mu g/L$ | | | | | | | |
| Lead | ND | 0.005 | 0.040 | $\mu g/L$ | | | | | | | |
| LCS (F810306-BS1) | | | | | Prepared: 1 | 15-Oct-18 A | analyzed: 16 | 5-Oct-18 | | | |
| Beryllium | 38.06 | 0.020 | 0.301 | μg/L | 40.010 | | 95.1 | 85-115 | | | |
| Chromium | 48.54 | 0.10 | 0.50 | $\mu g/L$ | 49.990 | | 97.1 | 85-115 | | | |
| fron | 1125 | 6 | 50 | $\mu g/L$ | 1250.0 | | 90.0 | 85-115 | | | |
| Nickel | 48.32 | 0.20 | 0.50 | $\mu g/L$ | 50.010 | | 96.6 | 85-115 | | | |
| Copper | 48.41 | 0.10 | 0.50 | $\mu g/L$ | 50.000 | | 96.8 | 85-115 | | | |
| Zinc | 46.53 | 0.80 | 2.50 | $\mu g/L$ | 50.010 | | 93.1 | 85-115 | | | |
| Selenium | 48.47 | 2.20 | 3.01 | $\mu g/L$ | 49.990 | | 97.0 | 85-115 | | | |
| Cadmium | 38.25 | 0.040 | 0.100 | $\mu g/L$ | 40.010 | | 95.6 | 85-115 | | | |
| Antimony | 41.01 | 0.045 | 0.100 | $\mu g/L$ | 40.030 | | 102 | 85-115 | | | QB-0 |
| Thallium | 36.59 | 0.030 | 0.100 | $\mu g/L$ | 39.990 | | 91.5 | 85-115 | | | |
| Lead | 47.08 | 0.025 | 0.200 | $\mu g/L$ | 50.010 | | 94.1 | 85-115 | | | |
| LCS Dup (F810306-BSD1) | | | | | Prepared: 1 | 15-Oct-18 A | analyzed: 16 | 5-Oct-18 | | | |
| Beryllium | 40.12 | 0.020 | 0.301 | μg/L | 40.010 | | 100 | 85-115 | 5.28 | 20 | |
| Chromium | 51.15 | 0.10 | 0.50 | $\mu g/L$ | 49.990 | | 102 | 85-115 | 5.24 | 20 | |
| Iron | 1134 | 6 | 50 | μg/L | 1250.0 | | 90.7 | 85-115 | 0.826 | 20 | |
| Nickel | 49.97 | 0.20 | 0.50 | $\mu g/L$ | 50.010 | | 99.9 | 85-115 | 3.36 | 20 | |
| Copper | 50.53 | 0.10 | 0.50 | $\mu g/L$ | 50.000 | | 101 | 85-115 | 4.29 | 20 | |
| Zinc | 48.05 | 0.80 | 2.50 | μg/L | 50.010 | | 96.1 | 85-115 | 3.20 | 20 | |
| Selenium | 49.59 | 2.20 | 3.01 | μg/L | 49.990 | | 99.2 | 85-115 | 2.29 | 20 | |
| Cadmium | 40.00 | 0.040 | 0.100 | μg/L | 40.010 | | 100 | 85-115 | 4.49 | 20 | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Steven Clifton24-Oct-18 12:43

Quality Control Data

| | | Detection | Reporting | | Spike | Source | | %REC | | RPD | |
|------------------------------|-----------------|------------|------------|-----------|-------------|-------------|--------------|----------|------|-------|-------|
| Analyte | Result | Limit | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | Notes |
| Batch F810306 - EFGS SOP2836 | Closed Vessel V | Vater Oven | Digestion | | | | | | | | |
| LCS Dup (F810306-BSD1) | | | | | Prepared: 1 | 15-Oct-18 A | nalyzed: 10 | 6-Oct-18 | | | |
| Antimony | 41.99 | 0.045 | 0.100 | μg/L | 40.030 | | 105 | 85-115 | 2.37 | 20 | QB-01 |
| Thallium | 38.15 | 0.030 | 0.100 | $\mu g/L$ | 39.990 | | 95.4 | 85-115 | 4.18 | 20 | |
| Lead | 48.70 | 0.025 | 0.200 | $\mu g/L$ | 50.010 | | 97.4 | 85-115 | 3.39 | 20 | |
| Matrix Spike (F810306-MS1) | | Source: | 8100809-10 | | Prepared: 1 | 15-Oct-18 A | analyzed: 10 | 6-Oct-18 | | | |
| Beryllium | 39.06 | 0.040 | 0.607 | μg/L | 40.010 | 0.073 | 97.4 | 70-130 | | | |
| Chromium | 50.57 | 0.20 | 1.01 | $\mu g/L$ | 49.990 | 0.38 | 100 | 70-130 | | | |
| Iron | 1207 | 11 | 101 | $\mu g/L$ | 1250.0 | 115 | 87.4 | 70-130 | | | |
| Nickel | 51.70 | 0.40 | 1.01 | $\mu g/L$ | 50.010 | 2.56 | 98.2 | 70-130 | | | |
| Copper | 51.98 | 0.20 | 1.01 | $\mu g/L$ | 50.000 | 2.29 | 99.4 | 70-130 | | | |
| Zinc | 149.7 | 1.62 | 5.06 | $\mu g/L$ | 50.010 | 106.2 | 87.0 | 70-130 | | | |
| Selenium | 50.97 | 4.45 | 6.07 | $\mu g/L$ | 49.990 | ND | 102 | 70-130 | | | |
| Cadmium | 39.89 | 0.081 | 0.202 | $\mu g/L$ | 40.010 | ND | 99.7 | 70-130 | | | |
| Antimony | 40.29 | 0.091 | 0.202 | $\mu g/L$ | 40.030 | 0.296 | 99.9 | 70-130 | | | QB-01 |
| Thallium | 38.85 | 0.061 | 0.202 | $\mu g/L$ | 39.990 | ND | 97.1 | 70-130 | | | |
| Lead | 49.12 | 0.051 | 0.405 | $\mu g/L$ | 50.010 | 0.390 | 97.4 | 70-130 | | | |
| Matrix Spike (F810306-MS2) | | Source: | 8100809-15 | | Prepared: 1 | 15-Oct-18 A | nalyzed: 10 | 6-Oct-18 | | | |
| Beryllium | 36.50 | 0.040 | 0.607 | μg/L | 40.010 | 0.044 | 91.1 | 70-130 | | | |
| Chromium | 47.37 | 0.20 | 1.01 | $\mu g/L$ | 49.990 | 0.69 | 93.4 | 70-130 | | | |
| Iron | 1796 | 11 | 101 | $\mu g/L$ | 1250.0 | 764 | 82.5 | 70-130 | | | |
| Nickel | 55.82 | 0.40 | 1.01 | $\mu g/L$ | 50.010 | 8.59 | 94.4 | 70-130 | | | |
| Copper | 56.86 | 0.20 | 1.01 | $\mu g/L$ | 50.000 | 11.81 | 90.1 | 70-130 | | | |
| Selenium | 49.15 | 4.45 | 6.07 | $\mu g/L$ | 49.990 | ND | 98.3 | 70-130 | | | |
| Cadmium | 37.51 | 0.081 | 0.202 | $\mu g/L$ | 40.010 | ND | 93.7 | 70-130 | | | |
| Antimony | 37.71 | 0.091 | 0.202 | $\mu g/L$ | 40.030 | 0.541 | 92.8 | 70-130 | | | |
| Thallium | 37.46 | 0.061 | 0.202 | $\mu g/L$ | 39.990 | ND | 93.7 | 70-130 | | | |
| Lead | 47.23 | 0.051 | 0.405 | $\mu g/L$ | 50.010 | 1.057 | 92.3 | 70-130 | | | |
| | | | | | | | | | | | |

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RPD

Underwood Engineers Project: Trace Metals In Wastewater

Detection Reporting

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Steven Clifton24-Oct-18 12:43

Quality Control Data

Spike

Source

%REC

| | | Detection | Reporting | | Spike | Source | | %REC | | KPD | |
|------------------------------|-----------------|------------|------------|-----------|-------------|-------------|-------------|----------|-----|-------|-------|
| Analyte | Result | Limit | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | Notes |
| Batch F810306 - EFGS SOP2836 | Closed Vessel V | Vater Oven | Digestion | | | | | | | | |
| Matrix Spike (F810306-MS4) | | Source: | 8100809-10 |) | Prepared: 1 | 15-Oct-18 A | nalyzed: 1 | 6-Oct-18 | | | |
| Beryllium | 19.83 | 0.040 | 0.606 | μg/L | 20.500 | 0.073 | 96.4 | 70-130 | | | A |
| Chromium | 400.2 | 0.20 | 1.01 | $\mu g/L$ | 410.00 | 0.38 | 97.5 | 70-130 | | | A |
| ron | 1959 | 11 | 101 | $\mu g/L$ | 2050.0 | 115 | 89.9 | 70-130 | | | A |
| Nickel | 491.8 | 0.40 | 1.01 | $\mu g/L$ | 512.50 | 2.56 | 95.5 | 70-130 | | | A |
| Copper | 492.6 | 0.20 | 1.01 | $\mu g/L$ | 512.50 | 2.29 | 95.7 | 70-130 | | | A |
| Zinc | 1062 | 1.62 | 5.05 | $\mu g/L$ | 1025.0 | 106.2 | 93.3 | 70-130 | | | A |
| Selenium | 406.8 | 4.44 | 6.06 | $\mu g/L$ | 410.00 | ND | 99.2 | 70-130 | | | A |
| Cadmium | 40.10 | 0.081 | 0.202 | $\mu g/L$ | 41.000 | ND | 97.8 | 70-130 | | | A |
| Antimony | 19.19 | 0.091 | 0.202 | $\mu g/L$ | 20.500 | 0.296 | 92.2 | 70-130 | | | A |
| Γhallium | 19.38 | 0.061 | 0.202 | $\mu g/L$ | 20.500 | ND | 94.6 | 70-130 | | | A |
| Lead | 98.13 | 0.050 | 0.404 | $\mu g/L$ | 102.50 | 0.390 | 95.4 | 70-130 | | | A |
| Matrix Spike (F810306-MS5) | | Source: | 8100809-15 | 5 | Prepared: 1 | 15-Oct-18 A | analyzed: 1 | 6-Oct-18 | | | |
| Beryllium | 19.30 | 0.040 | 0.606 | μg/L | 20.500 | 0.044 | 93.9 | 70-130 | | | A |
| Chromium | 394.6 | 0.20 | 1.01 | $\mu g/L$ | 410.00 | 0.69 | 96.1 | 70-130 | | | A |
| ron | 2571 | 11 | 101 | $\mu g/L$ | 2050.0 | 764 | 88.2 | 70-130 | | | A |
| Nickel | 480.8 | 0.40 | 1.01 | $\mu g/L$ | 512.50 | 8.59 | 92.1 | 70-130 | | | A |
| Copper | 484.2 | 0.20 | 1.01 | $\mu g/L$ | 512.50 | 11.81 | 92.2 | 70-130 | | | A |
| Selenium | 405.4 | 4.44 | 6.06 | $\mu g/L$ | 410.00 | ND | 98.9 | 70-130 | | | A |
| Cadmium | 39.47 | 0.081 | 0.202 | $\mu g/L$ | 41.000 | ND | 96.3 | 70-130 | | | A |
| Antimony | 19.49 | 0.091 | 0.202 | $\mu g/L$ | 20.500 | 0.541 | 92.4 | 70-130 | | | A |
| Γhallium | 19.45 | 0.061 | 0.202 | $\mu g/L$ | 20.500 | ND | 94.9 | 70-130 | | | A |
| Lead | 98.28 | 0.050 | 0.404 | $\mu g/L$ | 102.50 | 1.057 | 94.9 | 70-130 | | | A |
| Matrix Spike (F810306-MS7) | | Source: | 8100809-15 | 5RE2 | Prepared: 1 | 15-Oct-18 A | nalyzed: 1 | 6-Oct-18 | | | |
| Zinc | 134.0 | 1.62 | 5.06 | $\mu g/L$ | 50.010 | 95.49 | 77.1 | 70-130 | | | |
| Matrix Spike (F810306-MS8) | | Source: | 8100810-04 | 4RE1 | Prepared: 1 | 15-Oct-18 A | nalyzed: 1 | 6-Oct-18 | | | |
| Beryllium | 40.03 | 0.101 | 1.52 | $\mu g/L$ | 40.010 | ND | 100 | 70-130 | | | |
| Chromium | 52.27 | 0.51 | 2.53 | $\mu g/L$ | 49.990 | ND | 105 | 70-130 | | | |
| fron | 1286 | 28 | 253 | $\mu g/L$ | 1250.0 | 128 | 92.6 | 70-130 | | | |
| Nickel | 45.67 | 1.01 | 2.53 | $\mu g/L$ | 50.010 | ND | 91.3 | 70-130 | | | |
| Copper | 44.37 | 0.51 | 2.53 | $\mu g/L$ | 50.000 | 0.57 | 87.6 | 70-130 | | | |
| Zinc | 45.85 | 4.05 | 12.6 | μg/L | 50.010 | ND | 91.7 | 70-130 | | | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Steven Clifton24-Oct-18 12:43

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|----------------------------------|--------------|--------------------|--------------------|-----------|----------------|------------------|-------------|----------------|-------|--------------|-----------------|
| Batch F810306 - EFGS SOP2836 Clo | sed Vessel V | Vater Oven | Digestion | | | | | | | | |
| Matrix Spike (F810306-MS8) | | | 8100810-04 | RE1 | Prepared: | 15-Oct-18 A | Analyzed: 1 | 6-Oct-18 | | | |
| Cadmium | 36.89 | 0.202 | 0.506 | μg/L | 40.010 | ND | 92.2 | 70-130 | | | |
| Antimony | 39.09 | 0.228 | 0.506 | $\mu g/L$ | 40.030 | 0.904 | 95.4 | 70-130 | | | |
| Matrix Spike (F810306-MS9) | | Source: | 8100809-15 | RE2 | Prepared: | 15-Oct-18 A | Analyzed: 1 | 6-Oct-18 | | | |
| Zinc | 932.2 | 1.62 | 5.05 | $\mu g/L$ | 1025.0 | 95.49 | 81.6 | 70-130 | | | AS |
| Matrix Spike (F810306-MSA) | | Source: | 8100810-04 | RE1 | Prepared: | 15-Oct-18 A | Analyzed: 1 | 6-Oct-18 | | | |
| Beryllium | 45.15 | 0.101 | 1.51 | $\mu g/L$ | 51.250 | ND | 88.1 | 70-130 | | | AS |
| Chromium | 995.5 | 0.50 | 2.52 | $\mu g/L$ | 1025.0 | ND | 97.1 | 70-130 | | | AS |
| Iron | 4751 | 28 | 252 | $\mu g/L$ | 5125.0 | 128 | 90.2 | 70-130 | | | AS |
| Nickel | 1131 | 1.01 | 2.52 | $\mu g/L$ | 1281.2 | ND | 88.3 | 70-130 | | | AS |
| Copper | 1113 | 0.50 | 2.52 | $\mu g/L$ | 1281.2 | 0.57 | 86.8 | 70-130 | | | AS |
| Cadmium | 93.08 | 0.202 | 0.505 | $\mu g/L$ | 102.50 | ND | 90.8 | 70-130 | | | AS |
| Antimony | 46.56 | 0.227 | 0.505 | $\mu g/L$ | 51.250 | 0.904 | 89.1 | 70-130 | | | AS |
| Matrix Spike (F810306-MSB) | | Source: | 8100810-04 | RE1 | Prepared: | 15-Oct-18 A | Analyzed: 1 | 8-Oct-18 | | | |
| Thallium | 36.21 | 0.152 | 0.506 | $\mu g/L$ | 39.990 | ND | 90.5 | 70-130 | | | |
| Lead | 43.87 | 0.126 | 1.01 | $\mu g/L$ | 50.010 | 0.260 | 87.2 | 70-130 | | | |
| Matrix Spike (F810306-MSC) | | Source: | 8100810-04 | RE1 | Prepared: | 15-Oct-18 A | Analyzed: 1 | 8-Oct-18 | | | |
| Thallium | 43.15 | 0.151 | 0.505 | $\mu g/L$ | 51.250 | ND | 84.2 | 70-130 | | | AS |
| Lead | 208.1 | 0.126 | 1.01 | $\mu g/L$ | 256.25 | 0.260 | 81.1 | 70-130 | | | AS |
| Matrix Spike (F810306-MSD) | | Source: | 8100810-04 | RE2 | Prepared: | 15-Oct-18 A | Analyzed: 2 | 0-Oct-18 | | | |
| Selenium | 111.7 | 22.3 | 30.4 | $\mu g/L$ | 49.990 | ND | 223 | 70-130 | | | QM-07 |
| Matrix Spike Dup (F810306-MSD1) | | Source: | 8100809-10 |) | Prepared: | 15-Oct-18 A | Analyzed: 1 | 6-Oct-18 | | | |
| Beryllium | 38.78 | 0.040 | 0.607 | $\mu g/L$ | 40.010 | 0.073 | 96.7 | 70-130 | 0.732 | 20 | |
| Chromium | 50.37 | 0.20 | 1.01 | $\mu g/L$ | 49.990 | 0.38 | 100 | 70-130 | 0.388 | 20 | |
| Iron | 1834 | 11 | 101 | $\mu g/L$ | 1250.0 | 115 | 138 | 70-130 | 41.2 | 20 | QM-07, QR-08 |
| Nickel | 52.02 | 0.40 | 1.01 | $\mu g/L$ | 50.010 | 2.56 | 98.9 | 70-130 | 0.619 | 20 | • |
| Copper | 52.06 | 0.20 | 1.01 | $\mu g/L$ | 50.000 | 2.29 | 99.5 | 70-130 | 0.143 | 20 | |
| Zinc | 150.0 | 1.62 | 5.06 | $\mu g/L$ | 50.010 | 106.2 | 87.8 | 70-130 | 0.261 | 20 | |
| Selenium | 50.38 | 4.45 | 6.07 | $\mu g/L$ | 49.990 | ND | 101 | 70-130 | 1.15 | 20 | |
| Cadmium | 40.45 | 0.081 | 0.202 | $\mu g/L$ | 40.010 | ND | 101 | 70-130 | 1.39 | 20 | |
| | | | | | | | | | | | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported: Portsmouth NH, 03801 Project Manager: Steven Clifton 24-Oct-18 12:43

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|----------------------------------|--------------|--------------------|--------------------|-----------|----------------|------------------|-------------|----------------|-------|--------------|-------|
| Batch F810306 - EFGS SOP2836 Clo | sed Vessel V | Vater Oven | Digestion | | | | | | | | |
| Matrix Spike Dup (F810306-MSD1) | | Source: | 8100809-10 | | Prepared: 1 | 15-Oct-18 A | nalyzed: 10 | 6-Oct-18 | | | |
| Antimony | 40.51 | 0.091 | 0.202 | μg/L | 40.030 | 0.296 | 100 | 70-130 | 0.533 | 20 | QB-0 |
| Thallium | 38.92 | 0.061 | 0.202 | $\mu g/L$ | 39.990 | ND | 97.3 | 70-130 | 0.181 | 20 | |
| Lead | 48.70 | 0.051 | 0.405 | $\mu g/L$ | 50.010 | 0.390 | 96.6 | 70-130 | 0.843 | 20 | |
| Matrix Spike Dup (F810306-MSD2) | | Source: | 8100809-15 | | Prepared: 1 | 15-Oct-18 A | nalyzed: 10 | 6-Oct-18 | | | |
| Beryllium | 37.05 | 0.040 | 0.607 | μg/L | 40.010 | 0.044 | 92.5 | 70-130 | 1.50 | 20 | |
| Chromium | 49.46 | 0.20 | 1.01 | $\mu g/L$ | 49.990 | 0.69 | 97.6 | 70-130 | 4.32 | 20 | |
| Iron | 1845 | 11 | 101 | $\mu g/L$ | 1250.0 | 764 | 86.4 | 70-130 | 2.69 | 20 | |
| Nickel | 55.64 | 0.40 | 1.01 | $\mu g/L$ | 50.010 | 8.59 | 94.1 | 70-130 | 0.308 | 20 | |
| Copper | 58.75 | 0.20 | 1.01 | $\mu g/L$ | 50.000 | 11.81 | 93.9 | 70-130 | 3.27 | 20 | |
| Selenium | 53.20 | 4.45 | 6.07 | $\mu g/L$ | 49.990 | ND | 106 | 70-130 | 7.90 | 20 | |
| Cadmium | 39.34 | 0.081 | 0.202 | $\mu g/L$ | 40.010 | ND | 98.3 | 70-130 | 4.78 | 20 | |
| Antimony | 39.77 | 0.091 | 0.202 | $\mu g/L$ | 40.030 | 0.541 | 98.0 | 70-130 | 5.34 | 20 | |
| Thallium | 38.10 | 0.061 | 0.202 | $\mu g/L$ | 39.990 | ND | 95.3 | 70-130 | 1.70 | 20 | |
| Lead | 48.98 | 0.051 | 0.405 | $\mu g/L$ | 50.010 | 1.057 | 95.8 | 70-130 | 3.64 | 20 | |
| Matrix Spike Dup (F810306-MSD4) | | Source: | 8100809-10 | | Prepared: 1 | 15-Oct-18 A | nalyzed: 10 | 6-Oct-18 | | | |
| Beryllium | 19.15 | 0.040 | 0.606 | μg/L | 20.500 | 0.073 | 93.1 | 70-130 | 3.45 | 20 | A |
| Chromium | 389.6 | 0.20 | 1.01 | $\mu g/L$ | 410.00 | 0.38 | 94.9 | 70-130 | 2.68 | 20 | A |
| Iron | 1920 | 11 | 101 | $\mu g/L$ | 2050.0 | 115 | 88.0 | 70-130 | 2.01 | 20 | A |
| Nickel | 482.9 | 0.40 | 1.01 | $\mu g/L$ | 512.50 | 2.56 | 93.7 | 70-130 | 1.84 | 20 | A |
| Copper | 490.3 | 0.20 | 1.01 | $\mu g/L$ | 512.50 | 2.29 | 95.2 | 70-130 | 0.467 | 20 | A |
| Zinc | 1048 | 1.62 | 5.05 | $\mu g/L$ | 1025.0 | 106.2 | 91.9 | 70-130 | 1.35 | 20 | A |
| Selenium | 397.4 | 4.44 | 6.06 | $\mu g/L$ | 410.00 | ND | 96.9 | 70-130 | 2.33 | 20 | A |
| Cadmium | 39.55 | 0.081 | 0.202 | $\mu g/L$ | 41.000 | ND | 96.5 | 70-130 | 1.37 | 20 | A |
| Antimony | 19.17 | 0.091 | 0.202 | $\mu g/L$ | 20.500 | 0.296 | 92.1 | 70-130 | 0.111 | 20 | A |
| Thallium | 19.35 | 0.061 | 0.202 | $\mu g/L$ | 20.500 | ND | 94.4 | 70-130 | 0.194 | 20 | A |
| Lead | 96.94 | 0.050 | 0.404 | $\mu g/L$ | 102.50 | 0.390 | 94.2 | 70-130 | 1.22 | 20 | A |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Steven Clifton24-Oct-18 12:43

Quality Control Data

| | | Detection | Reporting | | Spike | Source | | %REC | | RPD | |
|----------------------------------|--------------|------------|------------|-----------|-----------|-------------|-------------|----------|--------|-------|-------|
| Analyte | Result | Limit | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | Notes |
| Batch F810306 - EFGS SOP2836 Clo | sed Vessel V | Vater Oven | Digestion | | | | | | | | |
| Matrix Spike Dup (F810306-MSD5) | | Source: | 8100809-15 | | Prepared: | 15-Oct-18 A | nalyzed: 1 | 6-Oct-18 | | | |
| Beryllium | 19.09 | 0.040 | 0.606 | μg/L | 20.500 | 0.044 | 92.9 | 70-130 | 1.10 | 20 | AS |
| Chromium | 391.8 | 0.20 | 1.01 | $\mu g/L$ | 410.00 | 0.69 | 95.4 | 70-130 | 0.714 | 20 | AS |
| Iron | 2586 | 11 | 101 | $\mu g/L$ | 2050.0 | 764 | 88.9 | 70-130 | 0.549 | 20 | AS |
| Nickel | 481.7 | 0.40 | 1.01 | $\mu g/L$ | 512.50 | 8.59 | 92.3 | 70-130 | 0.189 | 20 | AS |
| Copper | 488.0 | 0.20 | 1.01 | $\mu g/L$ | 512.50 | 11.81 | 92.9 | 70-130 | 0.779 | 20 | AS |
| Selenium | 411.3 | 4.44 | 6.06 | μg/L | 410.00 | ND | 100 | 70-130 | 1.45 | 20 | AS |
| Cadmium | 39.26 | 0.081 | 0.202 | μg/L | 41.000 | ND | 95.7 | 70-130 | 0.543 | 20 | AS |
| Antimony | 19.03 | 0.091 | 0.202 | μg/L | 20.500 | 0.541 | 90.2 | 70-130 | 2.42 | 20 | AS |
| Thallium | 19.26 | 0.061 | 0.202 | μg/L | 20.500 | ND | 94.0 | 70-130 | 0.955 | 20 | AS |
| Lead | 96.72 | 0.050 | 0.404 | $\mu g/L$ | 102.50 | 1.057 | 93.3 | 70-130 | 1.60 | 20 | AS |
| Matrix Spike Dup (F810306-MSD7) | | Source: | 8100809-15 | RE2 | Prepared: | 15-Oct-18 A | nalyzed: 1 | 6-Oct-18 | | | |
| Zinc | 125.8 | 1.62 | 5.06 | μg/L | 50.010 | 95.49 | 60.7 | 70-130 | 6.31 | 20 | QM-0 |
| Matrix Spike Dup (F810306-MSD8) | | Source: | 8100810-04 | RE1 | Prepared: | 15-Oct-18 A | .nalyzed: 1 | 6-Oct-18 | | | |
| Beryllium | 41.51 | 0.101 | 1.52 | μg/L | 40.010 | ND | 104 | 70-130 | 3.63 | 20 | |
| Chromium | 53.92 | 0.51 | 2.53 | μg/L | 49.990 | ND | 108 | 70-130 | 3.10 | 20 | |
| Iron | 1350 | 28 | 253 | μg/L | 1250.0 | 128 | 97.7 | 70-130 | 4.87 | 20 | |
| Nickel | 47.07 | 1.01 | 2.53 | μg/L | 50.010 | ND | 94.1 | 70-130 | 3.02 | 20 | |
| Copper | 45.15 | 0.51 | 2.53 | μg/L | 50.000 | 0.57 | 89.1 | 70-130 | 1.73 | 20 | |
| Zinc | 47.77 | 4.05 | 12.6 | μg/L | 50.010 | ND | 95.5 | 70-130 | 4.11 | 20 | |
| Cadmium | 38.08 | 0.202 | 0.506 | μg/L | 40.010 | ND | 95.2 | 70-130 | 3.18 | 20 | |
| Antimony | 38.36 | 0.228 | 0.506 | $\mu g/L$ | 40.030 | 0.904 | 93.6 | 70-130 | 1.90 | 20 | |
| Matrix Spike Dup (F810306-MSD9) | | Source: | 8100809-15 | RE2 | Prepared: | 15-Oct-18 A | nalyzed: 1 | 6-Oct-18 | | | |
| Zinc | 962.0 | 1.62 | 5.05 | μg/L | 1025.0 | 95.49 | 84.5 | 70-130 | 3.15 | 20 | AS |
| Matrix Spike Dup (F810306-MSDA) | | Source: | 8100810-04 | RE1 | Prepared: | 15-Oct-18 A | nalyzed: 1 | 6-Oct-18 | | | |
| Beryllium | 43.33 | 0.101 | 1.51 | μg/L | 51.250 | ND | 84.6 | 70-130 | 4.11 | 20 | AS |
| Chromium | 999.9 | 0.50 | 2.52 | μg/L | 1025.0 | ND | 97.6 | 70-130 | 0.446 | 20 | AS |
| Iron | 4846 | 28 | 252 | μg/L | 5125.0 | 128 | 92.0 | 70-130 | 1.98 | 20 | AS |
| Nickel | 1138 | 1.01 | 2.52 | μg/L | 1281.2 | ND | 88.8 | 70-130 | 0.606 | 20 | AS |
| Copper | 1121 | 0.50 | 2.52 | μg/L | 1281.2 | 0.57 | 87.5 | 70-130 | 0.714 | 20 | AS |
| Cadmium | 93.85 | 0.202 | 0.505 | μg/L | 102.50 | ND | 91.6 | 70-130 | 0.825 | 20 | AS |
| Antimony | 46.54 | 0.227 | 0.505 | μg/L | 51.250 | 0.904 | 89.0 | 70-130 | 0.0605 | 20 | AS |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Steven Clifton24-Oct-18 12:43

Quality Control Data

| | | Detection | Reporting | | Spike | Source | | %REC | | RPD | |
|----------------------------------|--------------|------------|------------|-----------|-------------|-------------|--------------|----------|------|-------|-------|
| Analyte | Result | Limit | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | Notes |
| Batch F810306 - EFGS SOP2836 Clo | sed Vessel V | Vater Oven | Digestion | | | | | | | | |
| Matrix Spike Dup (F810306-MSDB) | | Source | 8100810-04 | RE1 | Prepared: 1 | 15-Oct-18 A | nalyzed: 18 | 8-Oct-18 | | | |
| Thallium | 37.10 | 0.152 | 0.506 | μg/L | 39.990 | ND | 92.8 | 70-130 | 2.45 | 20 | |
| Lead | 45.16 | 0.126 | 1.01 | $\mu g/L$ | 50.010 | 0.260 | 89.8 | 70-130 | 2.90 | 20 | |
| Matrix Spike Dup (F810306-MSDC) | | Source | 8100810-04 | RE1 | Prepared: 1 | 15-Oct-18 A | nalyzed: 18 | 8-Oct-18 | | | |
| Thallium | 45.31 | 0.151 | 0.505 | μg/L | 51.250 | ND | 88.4 | 70-130 | 4.90 | 20 | AS |
| Lead | 219.3 | 0.126 | 1.01 | $\mu g/L$ | 256.25 | 0.260 | 85.5 | 70-130 | 5.22 | 20 | AS |
| Matrix Spike Dup (F810306-MSDD) | | Source | 8100810-04 | RE2 | Prepared: 1 | 15-Oct-18 A | nalyzed: 20 | 0-Oct-18 | | | |
| Selenium | 118.2 | 22.3 | 30.4 | μg/L | 49.990 | ND | 236 | 70-130 | 5.66 | 20 | QM-07 |
| Matrix Spike Dup (F810306-MSDE) | | Source | 8100810-04 | RE2 | Prepared: 1 | 15-Oct-18 A | analyzed: 20 | 0-Oct-18 | | | |
| Zinc | 5119 | 8.08 | 25.2 | μg/L | 5125.0 | ND | 99.9 | 70-130 | 126 | 20 | AS |
| Selenium | 2271 | 22.2 | 30.3 | $\mu g/L$ | 2050.0 | ND | 111 | 70-130 | 2.13 | 20 | AS |
| Matrix Spike (F810306-MSE) | | Source | 8100810-04 | RE2 | Prepared: 1 | 15-Oct-18 A | nalyzed: 20 | 0-Oct-18 | | | |
| Selenium | 2223 | 22.2 | 30.3 | μg/L | 2050.0 | ND | 108 | 70-130 | | | AS |

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Portsmouth NH, 03801

11720 Northcreek Pkwy N, Suite 400 Bothell, WA 98011 425.686.1996 Phone 425.686.3096 Fax

Underwood Engineers Project: Trace Metals In Wastewater
25 Vaughan Mall Project Number: Trace Metals In Wastewater

Project Number: Trace Metals In Wastewater Reported:

Project Manager: Steven Clifton 24-Oct-18 12:43

Notes and Definitions

| U | Analyte was not detected and is reported as less than the LOD or as defined by the client. The LOD has been adjusted for any dilution or concentration of the sample. |
|-------|---|
| QR-08 | The RPD value for the MS/MSD was outside of acceptance limits. Batch QC acceptable based on matrix duplicate and/or LCS/LCSD RPD values within control limits. |
| QR-07 | The RPD/RSD value for the matrix duplicate/triplicate was outside of acceptance limits. Batch QC acceptable based on MS/MSD and/or LCS/LCSD RPD values within control limits. |
| QM-07 | The spike recovery was outside control limits for the MS and/or MSD. The batch was accepted based on LCS and LCSD recoveries within control limits and, when analysis permits, acceptable AS/ASD. |
| QB-06 | The blank was preserved to 5% BrCl rather than 1%. The control limit for blanks preserved to greater than 1% BrCl is the preservation percentage multiplied by the MRL. |
| QB-01 | The method blank and/or initial/continuing calibration blank contains analyte at a concentration above the MRL. However, the blank concentration(s) are less than 10% of the sample result. |
| J | The result is an estimated concentration. |
| AS | This MS and/or MSD is an analytical spike and/or an analytical spike duplicate. |
| AD | This matrix duplicate is an analytical duplicate. |
| DET | Analyte DETECTED |
| ND | Analyte NOT DETECTED at or above the method detection limit if reported to the MDL or above the reporting limit if reported to the MRL. |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |

Eurofins Frontier Global Sciences, LLC

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Calscience

Supplemental Report 1

The original report has been revised/corrected.



WORK ORDER NUMBER: 18-09-2104

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Eurofins Frontier Global Sciences, Inc.

Client Project Name: 8100809

Attention: Amy Goodall

11720 North Creek Parkway North

Suite 4

Bothell, WA 98011-8244



Approved for release on 10/19/2018 by: Carla Hollowell Project Manager

ResultLink >

Email your PM >

Eurofins Calscience (Calscience) certifies that the test results provided in this report meet all NELAC Institute requirements for parameters for which accreditation is required or available. Any exceptions to NELAC Institute requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.



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| 5 | Glossary of Terms and Qualifiers | 7 |
| 6 | Chain-of-Custody/Sample Receipt Form | 8 |



Work Order Narrative

Work Order: 18-09-2104 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 09/28/18. They were assigned to Work Order 18-09-2104.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

DoD Projects:

The test results contained in this report are accredited under the laboratory's ISO/IEC 17025:2005 and DoD-ELAP accreditation issued by the ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation ADE-1864.



Sample Summary

Client: Eurofins Frontier Global Sciences, Inc.

11720 North Creek Parkway North, Suite 4

Bothell, WA 98011-8244

Work Order: 18-09-2104 Project Name: 8100809

PO Number:

Date/Time 09/28/18 11:00

Received:

5 Number of

Containers:

Amy Goodall Attn:

| Sample Identification | Lab Number | Collection Date and Time | Number of Containers | Matrix |
|---------------------------|--------------|--------------------------|----------------------|---------|
| NEW-EB-01 NEW-EB-Cn | 18-09-2104-1 | 09/16/18 07:00 | 1 | Aqueous |
| PEASE-EB-01 PEASE-EB-Cn | 18-09-2104-2 | 09/16/18 08:00 | 1 | Aqueous |
| NEW-COMP-01 NEW-01-Cn | 18-09-2104-3 | 09/17/18 07:30 | 1 | Aqueous |
| NEW-COMP-01 NEW-02-Cn | 18-09-2104-4 | 09/17/18 07:30 | 1 | Aqueous |
| PEASE-COMP-01 PEASE-01-Cn | 18-09-2104-5 | 09/17/18 08:45 | 1 | Aqueous |





Cyanide, Total

Analytical Report

Eurofins Frontier Global Sciences, Inc. Date Received: 09/28/18 18-09-2104 11720 North Creek Parkway North, Suite 4 Work Order: Bothell, WA 98011-8244 Preparation: N/A Method: SM 4500-CN E Units: mg/L Project: 8100809 Page 1 of 1

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|-----------------------------------|---------------------------|------------------------|----------------|-----------------|-------------------|-----------------------|-------------------|
| NEW-EB-01 NEW-EB-Cn | 18-09-2104-1-A | 09/16/18 07:00 | Aqueous | UV 9 | 09/28/18 | 09/28/18 19:14 | I0928CNL2 |
| Comment(s): - Results were evalua | ted to the MDL (DL), cond | centrations >= t | to the MDL (DI | L) but < RL (LC | Q), if found, are | qualified with a | "J" flag. |
| <u>Parameter</u> | Resu | <u>ılt</u> | <u>RL</u> | <u>MDL</u> | <u>DF</u> | <u>C</u> | <u>Qualifiers</u> |
| Cyanide, Total | ND | (| 0.020 | 0.0070 | 1.00 | | |

| PEASE-EB-01 I | PEASE-EB-Cn | 18-09-2104-2-A | 09/16/18 08:00 | Aqueous | UV 9 | 09/28/18 | 09/28/18 19:14 | 10928CNL2 |
|------------------|-----------------------------|--------------------|-------------------|----------------|-----------------|--------------------|-------------------|-------------------|
| Comment(s): | - Results were evaluated to | the MDL (DL), cond | entrations >= | to the MDL (DL | _) but < RL (L0 | DQ), if found, are | qualified with a | a "J" flag. |
| <u>Parameter</u> | | Resu | <u>lt</u> | <u>RL</u> | <u>MDL</u> | <u>DF</u> | <u> </u> | <u>Qualifiers</u> |
| Cyanide, Total | | ND | | 0.020 | 0.0070 | 1.00 | | |

| NEW-COMP-01 | NEW-01-Cn | 18-09-2104-3-A | 09/17/18 07:30 | Aqueous | UV 9 | 09/28/18 | 09/28/18 19:14 | 10928CNL2 |
|------------------|--------------------------|-----------------------|-------------------|----------------|--------------|-------------------|-------------------|-------------------|
| Comment(s): | - Results were evaluated | to the MDL (DL), cond | centrations >= 1 | to the MDL (DL | but < RL (LC | Q), if found, are | qualified with a | "J" flag. |
| <u>Parameter</u> | | <u>Resu</u> | <u>lt</u> | <u>RL</u> | <u>MDL</u> | <u>DF</u> | <u>C</u> | <u>Qualifiers</u> |
| Cyanide, Total | | ND | | 0.020 | 0.0070 | 1.00 | | |

| .,, | | | | | | | | |
|-------------|-------------------------|---------------------------|-------------------|----------------|----------------|--------------------|-------------------|-------------|
| NEW-COMP-0 | 1 NEW-02-Cn | 18-09-2104-4-A | 09/17/18 07:30 | Aqueous | UV 9 | 09/28/18 | 09/28/18 19:14 | 10928CNL2 |
| Comment(s): | - Results were evaluate | ted to the MDL (DL), con- | centrations >= | to the MDL (DI | L) but < RL (L | OQ), if found, are | qualified with | a "J" flag. |
| Parameter | | Resu | ılt | RI | MDI | DF | | Qualifiers |

| PEASE-COMP-01 PEASE-01-Cn | 18-09-2104-5-A | 09/17/18 | Aqueous | UV 9 | 09/28/18 | 09/28/18 | 10928CNL2 |
|---------------------------|----------------|----------|------------|--------|-----------|----------|------------|
| Cyanide, Total | ND | | 0.020 | 0.0070 | 1.00 | | |
| <u>raiametei</u> | Resul | <u>L</u> | <u>IXL</u> | IVIDE | <u>DI</u> | | Qualifiers |

| | | 08:45 | | | 19: | 14 |
|------------------|--|--------------------|------------------|-----------------------|---------------------|---------------------|
| Comment(s): | - Results were evaluated to the MDL (D | L), concentrations | >= to the MDL (I | DL) but < RL (LOQ), i | f found, are qualif | ed with a "J" flag. |
| <u>Parameter</u> | | <u>Result</u> | <u>RL</u> | <u>MDL</u> | <u>DF</u> | Qualifiers |
| Cyanide, Total | | 0.012 | 0.020 | 0.0070 | 1.00 | J |

0.0070

1.00

| Method Blank | 099-05-06 | 1-4297 N | I/A | Aqueous | UV 9 | 09/28/18 | 09/28/18 19:14 | 10928CNL2 |
|------------------|--|--------------|-------------------|-------------|---------------|--------------------|--------------------|-----------------|
| Comment(s): | - Results were evaluated to the MDL (D | DL), concent | trations >= to th | ne MDL (DL) | but < RL (LOQ |), if found, are q | ualified with a ". | l" flag. |
| <u>Parameter</u> | | Result | <u>RL</u> | | <u>MDL</u> | <u>DF</u> | <u>Qu</u> | <u>alifiers</u> |

0.020

RL: Reporting Limit. MDL: Method Detection Limit. DF: Dilution Factor.

ND



Project: 8I00809

Quality Control - LCS/LCSD

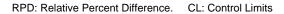
Eurofins Frontier Global Sciences, Inc. 11720 North Creek Parkway North, Suite 4 Bothell, WA 98011-8244 Date Received: Work Order: Preparation: 09/28/18 18-09-2104 N/A

SM 4500-CN E

Method:

Page 1 of 1

| Quality Control Sample ID | Туре | Mat | rix | Instrument | Date Pre | pared Dat | te Analyzed | LCS/LCSD B | atch Number |
|---------------------------|-------------|-----------|--------------|------------|---------------|-----------|-------------|------------|-------------|
| 099-05-061-4297 | LCS | Aqı | ieous | UV 9 | 09/28/18 | 09/2 | 28/18 19:14 | 10928CNL2 | |
| 099-05-061-4297 | LCSD | Aqu | ieous | UV 9 | 09/28/18 | 09/2 | 28/18 19:14 | 10928CNL2 | |
| Parameter | Spike Added | LCS Conc. | LCS %Rec. | LCSD Conc. | LCSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
| Cyanide, Total | 0.2000 | 0.1885 | 94 | 0.2166 | 108 | 80-120 | 14 | 0-20 | |





Glossary of Terms and Qualifiers

Work Order: 18-09-2104 Page 1 of 1

| Qualifiers | <u>Definition</u> |
|------------|--|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control. |
| 4 | The MS/MSD RPD was out of control due to suspected matrix interference. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| В | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| BV | Sample received after holding time expired. |
| CI | See case narrative. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| HDH | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected). |
| HDL | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected). |
| J | Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated. |
| JA | Analyte positively identified but quantitation is an estimate. |
| ME | LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean). |
| ND | Parameter not detected at the indicated reporting limit. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| Χ | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |
| | Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are |

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

SUBCONTRACT ORDER

Eurofins Frontier Global Sciences, Inc.

8100809

SENDING LABORATORY:

Eurofins Frontier Global Sciences, LLC 11720 North Creek Parkway North, Suite 400

Bothell, WA 98011 Phone: (425) 686-1996 Fax: (425) 686-3096

Project Manager: Amy Goodall **RECEIVING LABORATORY:**

Eurofins Calscience, LLC 7440 Lincoln Way

Garden Grove, CA 92841 Phone:7148955494

Fax: x

Analysis

Comments

Sample ID: NEW-EB-01 NEW-EB-Cn

①

EFGS Lab ID: 8I00809-01

Matrix: Water

Sampled: 16-Sep-18 07:00 (GMT-05:00) Eastern Time (US &

Due: 17-Oct-18 19:00

Misc. Subcontract 1

EPA SM4500 CN E

Containers Supplied:

23_Client Specific Bottle

Sample ID: PEASE-EB-01 PEASE-EB-Cn



EFGS Lab ID: 8100809-04

Matrix: Water

Sampled: 16-Sep-18 08:00 (GMT-05:00) Eastern Time (US &

Due: 17-Oct-18 19:00

Misc. Subcontract 1

EPA SM4500 CN E

Containers Supplied:

23 Client Specific Bottle

Sample ID: NEW-COMP-01 NEW-01-Cn



EFGS Lab ID: 8100809-07

Matrix: Water

Sampled: 17-Sep-18 07:30 (GMT-05:00) Eastern Time (US &

Due: 17-Oct-18 19:00

Misc. Subcontract 1

EPA SM4500 CN E

Containers Supplied:

23 Client Specific Bottle

Received By

Date

Received By

Page 40 of 45

SUBCONTRACT ORDER

Eurofins Frontier Global Sciences, Inc.

8100809

| | _ | | _ |
|---|---|---------|--------------|
| _ | | | 4) |
| 1 | 2 | 16 1 | 4 |
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| • | | | |

Analysis

Comments

Sample ID: NEW-COMP-01 NEW-02-Cn

4

EFGS Lab ID: 8100809-08

Matrix: Water

Sampled: 17-Sep-18 07:30 (GMT-05:00) Eastern Time (US &

Due: 17-Oct-18 19:00

Misc. Subcontract 1

EPA SM4500 CN E

Containers Supplied:

23_Client Specific Bottle

Sample ID: PEASE-COMP-01 PEASE-01-Cn



EFGS Lab ID: 8100809-13

Matrix: Water

Sampled: 17-Sep-18 08:45 (GMT-05:00) Eastern Time (US &

Due: 17-Oct-18 19:00

Misc. Subcontract 1

EPA SM4500 CN E

Containers Supplied:

23 Client Specific Bottle



Back 9/27h

n 7/22/0

Received By

2 Jakt

9/28/18

1100

Released By

Date

Received By

Fracking number:

By signing, you declare that you agree with EFGS' terms and conditions, and that you authorize EFGS to perform the specified analyses.

Date:

Chain of Custody Record & Laboratory Analysis Request: Air, Water, Sediments, Plant and Animal Tissue, Hydrocarbon & Other Samples

Frontier Global Sciences

🖏 eurofins

11720 Northcreek Pkwy N, Suite 400

Bothell, WA 98011

Phone: 425-686-1996

| 3 5 | Ĕ | П | | (std) | hrs. | <u>.</u> | J | | | | | As | à | | | | | | | | | | | | | | | Pa | ye T | · |
|---------------------------|-----------------------------------|---------------------------|--------------------------------------|---|---------------------|--------------------------|----------------------|-----------------------|--------------------------------------|------------------------|----------|------------------------------|--------------------|--------------|-------------|------------------------|------------------------|-------------------|--------------|--------|-----------------|------------|---------|-------------------------|-----------------|-------------------------|-----------------------|----------------------|----------------|-----------------|
| SCOTO Info@FrontierGS.com | | EFGS PM: | Date: | (business days):20 | 7 | | Saturday delivery? | | | QA ☐ Standard ☐ High | Comments | Total Metals include: Sb. A. | r, Cu, Fe, Pb, Ni, | — Ag, TI, Zn | T | | | | | | | | | | Received By: | | Name: | Organization: | Date & Time: | |
| 7 | | ested | - | | | | | | | | | | | | | - | - | + | 1 | | | | | | | | | | | |
| <u>ろ</u> つ | | Analyses Requested | • | | | | ٨ | uno | /ler | 1 lsto | л | | | 5 | < | 1 | > | < | | | | 2 | × > | <u>S</u> | | | | | | |
| ! | | nalyse | - | • | | | | SIP | | l leto otal (| - | \times | ر ح | _ | | < | | 1 | 4 3 | K | | _ | _ | _ : | d By: | | | ation: | Time: | |
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| ~ | | | | · · · · · · · · · · · · · · · · · · · | | | T | λε | pe | oldme | 25 | , 6c | ٢ | 2 | z | ي | 2 | 3 | : | ; = | . | - : | ; 2 | | | 1 4/2 | 1 Z | | me: 5/ | h |
|) Parie | - | Fax: | E-mail: tpuls@underwoodengineers.com | | | <i></i> | | | | Date & Time | 11-11 | 1116/118 +417 | z | | ". 84H | " 04n | 1178 1 | 1/2/18/21/ | | | ,, | 1 | J. | Dollaringhad | | ater Name: | | | Date & lime: 6 | Tracking number |
| | | -6192 | derwood | | 4MF | 1 | | Fax. | | Matrix | I I | 166 | ٠, | 22 | 1,3 | ۳ | 2 | 3 | 2 | = | = | 5 | = | Matrix Codes | ter | ≥ | ediment | Anlimai 1855 Ions | | |
| נעא | Contact: Tim Puls | Phone: (603) 436-6192 | il: tpuls@un | Contract/PO: | Invoice To: | | į. | ته | | # of | sanna , | | / | • | ~ | - |) | _ | | | 1 | - | | Matri | FW: Fresh Water | SB: Sea and Brackish W. | SS: Soil and Sediment | HC: Hydrocarbons | TR: Trap | OT: Other |
| i ionicel global sciences | Γ | | | | Invoi | MAII. | | Fax: Phone: | | Sample ID | IEIL-FR | 10-01 FIRST | 12-12-12 | NEW- FB- HG | 158E- EB-CG | PEASE-EB-TM | 15KE-EB- HC | NEU-01-C2 | となっていって | , | NEW-COLTH | NOV-01- He | 1- | For Laboratory Use Only | Comments: | | | | | |
| - | Client: UNDERWOOD ENGINEERS, INC. | Address: 25 VAUGHAN MALL, | POKISMOUIH, NH 03801 | Project Name: Anti-Degradation | Report To: Tim Puls | Address: 25 VAUGHAN MAII | PORTSMOUTH, NH 03801 | Phone: (603) 436-6192 | E-mail: tpuls@underwoodengineers.com | No. Engraved Bottle ID | 3 | 1517 50 | 7 | | 3 | 5 PEASE-EB-OI PEASE-EB | 6 PEASF-EB-01 NEASE-EB | 7 NEW CAMOINEU-01 | 8 | 7 6 | 10 " | 11 14 | 12 1, 1 | For Laborato | COC Seal: | Cooler Temp: | Carrier: | YESK: | T Coolers. | מטומו אי |

Customer Approval:

weeks after report (storage fees may apply)

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Page 42 of 45

ple Disposal: Coolers:

Return to Contents

Date & Time: Organization:

Organization: Date & Time:

Date & Time: **9/17/18**

HC: Hydrocarbons TR: Trap OT: Other

Fracking number:

Organization: \mathcal{UE}

By signing, you declare that you agree with EFGS' terms and conditions, and that

you authorize EFGS to perform the specified analyses.

Date:

8100809 Chain of Custody Record & Lahratory Analysis Request: Air, Water, Sediments, Pla. ر and Animal Tissue,

Hydrocarbon & Other Samples

Page 2 of 2

Frontier Global Sciences

eurofins eurofins

11720 Northcreek Pkwy. N, Suite 400

Phone: 425-686-1996

Fax: 425-686-3096 info@FrontierGS.com

http://www.FrontierGS.com **15 10 5 4 3 2 24 hrs.** (For TAT < 10 days, contact PM. Total Metals include: Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Ni, Se, Ag, Tl, Zn TAT (business days):20 (std) Surcharges apply for expedited TAT) Saturday delivery? □ Y □N ☐ Standard ☐ High (If yes, please contact PM) Comments Received By: EFGS PM: EDD Name: Date: Analyses Requested Total Mercury Total Cn Received By: メメ Total Metals Name: HNO3 HCI BrCI Other (%) Field Preserved: 1 Field Filtered (Y/N) Vame: Tim Puls Relinquished By Sampled By ت 11/2/18 8:42/ Date & Time E-mail: tpuls@underwoodengineers.com Fax: SS: Soil and Sediment TS: Plant and Animal Tissue SB: Sea and Brackish Water Matrix Codes: Matrix 1557 Fax: Phone: (603) 436-6192 ĭ WW: Waste Water FW: Fresh Water Contact: Tim Puls Bottles # of Contract/PO: Invoice To: Address Phone: E-mail: PEASE-01-TH PEASE-02-TH 15/5E-01-H2 PEKEF-COMP.UN PEASE-CI-Cu Sample ID E-mail: tpuls@underwoodengineers.com Fax: Client: UNDERWOOD ENGINEERS, INC. For Laboratory Use Only Comments: Project Name: Anti-Degradation Address: 25 VAUGHAN MALL, Address: 25 VAUGHAN MALL, PORTSMOUTH, NH 03801 PORTSMOUTH, NH 03801 Phone: (603) 436-6192 Report To: Tim Puls Engraved Bottle ID Cooler Temp: 7 2 COC Seal: Carrier:



Customer Approval:

weeks after report (storage fees may apply)

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Page 43 of 45

f Coolers:

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FRONT DESK (425) 586 - 1996 FRONTIER GLOBAL SCIENCES 11720 N CREEK PKWY N BOTHELL WA 98911 - 8244

37 LBS

1 OF 1

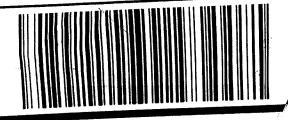
DWT: 24,13,14

SHIP TO:
SAMPLE RECEIVING
(714) 855-5494
EUROFINS CALSCIENCE, INC.
7440 LINCOLN WAY
GARDEN GROVE CA 92841





TRACKING #: 1Z 86W 050 01 5166 4242



BILLING: P/P

EUROFINS CAL

GARDEN

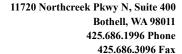


Calscience

WORK ORDER NUMBER: 18 0 1 2 104

SAMPLE RECEIPT CHECKLIST COOLER ___ OF ___

| CLIENT: FFOTS | DA. | TE: <u>09 / 2</u> | 28 / 2018 |
|---|-------------------------------|--------------------|------------------------------------|
| TEMPERATURE: (Criteria: 0.0°C − 6.0°C, not frozen except sediment/tissue Thermometer ID: SC6 (CF: -0.5°C); Temperature (w/o CF): 2 - 9 — °C (w ☐ Sample(s) outside temperature criteria (PM/APM contacted by: ☐ Sample(s) outside temperature criteria but received on ice/chilled on sample(s) | v/ CF): <u>2 - 4</u> °C;) | □ Blank | Sample |
| ☐ Sample(s) received at ambient temperature; placed on ice for transport by Ambient Temperature: ☐ Air ☐ Filter | y courier | Checked | by: <u>VJ6</u> P |
| | Present □ N/A Present □ N/A | Checked Checked | by: <u>Vd6P</u> by: <u>TTL5</u> |
| SAMPLE CONDITION: | | Yes | No N/A |
| Chain-of-Custody (COC) document(s) received with samples | | | |
| COC document(s) received complete | | | |
| ☐ Sampling date ☐ Sampling time ☐ Matrix ☐ Number of containers | | ··· • | |
| ☐ No analysis requested ☐ Not relinquished ☐ No relinquished date | | ne | |
| Sampler's name indicated on COC | · | | |
| Sample container label(s) consistent with COC | | | |
| Sample container(s) intact and in good condition | | | |
| Proper containers for analyses requested | | | |
| Sufficient volume/mass for analyses requested | | | |
| Samples received within holding time | | | 0 0 |
| Aqueous samples for certain analyses received within 15-minute holding | | • | |
| □ pH □ Residual Chlorine □ Dissolved Sulfide □ Dissolved Oxygen | | 🗆 | |
| Proper preservation chemical(s) noted on COC and/or sample container | | _ | |
| Unpreserved aqueous sample(s) received for certain analyses | | • | |
| ☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals | | | |
| Acid/base preserved samples - pH within acceptable range | | 🗹 | |
| Container(s) for certain analysis free of headspace | | | |
| ☐ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxyge | | | |
| ☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen S | | | , |
| Tedlar™ bag(s) free of condensation | | 🗖 | |
| - | (Trip Blank Lot Numl | | 1 |
| Aqueous: UVOA UVOAh UVOAna2 U100PJ U100PJna2 U125AGB U125AG | • | | |
| □ 250AGB □ 250CGB □ 250CGBs (pH_2) □ 250PB □ 250PBn (pH_2) □ 500A | | | |
| ☐ 1AGB ☐ 1AGBna₂ ☐ 1AGBs (pH_2) ☐ 1AGBs (O&G) ☐ 1PB 🗷 1PBna (pH_) 1 | | | |
| Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve () ☐ EnCores® () ☐ Ter | rraCores [®] () 🛘 | | |
| Air: ☐ Tedlar™ ☐ Canister ☐ Sorbent Tube ☐ PUF ☐ Other Matrix (|): 🗆 | | |
| Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G = Glass, J = Jar, P = F | | | |
| Preservative: b = buffered, f = filtered, h = HCl, n = HNO ₃ , na = NaOH, na ₂ = Na ₂ S ₂ C | O_3 , $p = H_3PO_4$, Label | | |
| s = H ₂ SO ₄ , u = ultra-pure, x = Na ₂ SO ₃ +NaHSO ₄ ,H ₂ O, znna = Zn (CH ₃ C | CO2)2 + NaOH | Reviewed | by: USS |





05 December 2018

Steven Clifton Underwood Engineers 25 Vaughan Mall Portsmouth, NH 03801

RE: Trace Metals In Wastewater

Amy Sodall.

Enclosed are the analytical results for samples received by Eurofins Frontier Global Sciences. All quality control measurements are within established control limits and there were no analytical difficulties encountered with the exception of those listed in the case narrative section of this report.

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

Sincerely,

Amy Goodall

Project Manager



Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Steven Clifton05-Dec-18 12:27

ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|-----------------------------|---------------|--------|-----------------|-----------------|
| River-01 Dissolved-1 | 8100810-01 | Water | 17-Sep-18 13:23 | 19-Sep-18 10:20 |
| River-01 Dissolved-2 | 8100810-02 | Water | 17-Sep-18 13:23 | 19-Sep-18 10:20 |
| River-01 TM-1 | 8100810-03 | Water | 17-Sep-18 13:38 | 19-Sep-18 10:20 |
| River-01 TM-2 | 8100810-04 | Water | 17-Sep-18 13:38 | 19-Sep-18 10:20 |
| River-01 TM-Blank | 8100810-05 | Water | 17-Sep-18 13:38 | 19-Sep-18 10:20 |
| River-01 Dissolved Hg-1 | 8100810-06 | Water | 17-Sep-18 13:33 | 19-Sep-18 10:20 |
| River-01 Dissolved Hg-2 | 8100810-07 | Water | 17-Sep-18 13:33 | 19-Sep-18 10:20 |
| River-01 Dissolved Hg-Blank | 8100810-08 | Water | 17-Sep-18 13:33 | 19-Sep-18 10:20 |

Eurofins Frontier Global Sciences, LLC

Amy Sodall.



Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Steven Clifton 05-Dec-18 12:27

SAMPLE RECEIPT

Samples were received at Eurofins Frontier Global Sciences (EFGS) on 19-Sep-18 10:20. The samples were received intact, on-ice within a sealed cooler at

<u>Cooler</u> <u>Temp C°</u> Default Cooler 8.0

Samples were shipped to Eurofins Calscience in Garden Grove, CA for the EPA SM4500 Total CN analysis per the initial project setup.

The subcontract report is located after the notes and definitions section of the EFGS report.

SAMPLE PREPARATION AND ANALYSIS

Samples were prepared and analyzed for total mercury by flow injection atomic fluorescence spectrometry (FI-AFS) in accordance with EPA 1631E.

Samples were prepared and analyzed for total recoverable metals by inductively coupled plasma mass spectrometry (ICP-MS) in accordance with EPA 1638 (EFGS-054).

ANALYTICAL AND QUALITY CONTROL ISSUES

Method blanks were prepared for every preparation to assess possible blank contribution from the sample preparation procedure. The method blanks were carried through the entire analytical procedure. All blanks fell within the established acceptance criteria with the exception of any items narrated above or flagged and described in the notes and definitions section of the report.

Liquid spikes, certified reference material (CRM) or a quality control samples (QCS) were prepared for every preparation as a measure of accuracy. All liquid spikes, CRMs and/or QCS samples fell within the established acceptance criteria with the exception of any items narrated above or flagged and described in the notes and definitions section of the report.

As an additional measure of the accuracy of the methods used and to check for matrix interference, matrix spikes (MS) and matrix spike duplicates (MSD) were digested and analyzed. All of the matrix spike recoveries fell within the established acceptance criteria with the exception of any items flagged and described in the notes and definitions section of the report.

A reasonable measure of the precision of the analytical methods is the relative percent difference (RPD) between a matrix spike recovery

Eurofins Frontier Global Sciences, LLC

Amy Sodall.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Steven Clifton 05-Dec-18 12:27

and a matrix spike duplicate recovery and between laboratory control sample recovery and laboratory control sample duplicate recoveries. All of the relative percent differences fell within established acceptance criteria with the exception of any items flagged and described in the notes and definitions section of the report.

Eurofins Frontier Global Sciences, LLC

Amy Sodall.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Frontier Global Sciences

Sample Receipt Checklist

| Client: Vanger wood | | Date & Time | Received: 911/13 900 | Date | e Labeled: <u>*^\ /2</u> | 5/1√ Labeled By | :: <u>C5</u> f |
|---|---------------------|---|-------------------------------------|------------------|--------------------------|---|----------------|
| Project: | | Received By: | 125 | Labe | l Verified By: | 2 | Ü |
| | | v: Shipping Service | Courier Hand | Other (| Specify: | | |
| Coolant: None/Ambient Loos Notify Project Manager if packages/cool | | | Required: Y / N Temp | | _ | = | |
| Cooler Information: | Y/N/NA | Comments | TID: 122465225CF: 0/ | °C Date | e/time: 9//4 | 18 91574 | Til. |
| The coolers do not appear to be tampered with: | Y | | Cooler 1: 2%°C w/ CF | | Cooler 4: | /8 9 <i>0 ⊅</i> By: , °C w/ CF: | |
| Custody Seals are present and intact: | N/ | | Cooler 2: °C w/ CF | | Cooler 5: | °C w/ CF: | °C |
| Custody seals signed: | | 70 to 1 10 10 10 10 10 10 10 10 10 10 10 10 1 | Cooler 3: °C w/ CF | | Cooler 6: | | °C |
| | | | | | Coolei B. | °C w/ CF: | °C |
| Chain of Custody: Y/N/NA | Comments | Sample Condit | ion/Integrity: | Y/N/NA | C | omments | |
| Sample ID/Description: | | Sample contain | ners intact/present: | VY | | | |
| Date and time of collection: | | Sample labels a | are present and legible: | IN | | | |
| ampled by: | | Sample ID on co | ontainer/bag matches COC: | V | | | |
| Preservation type: | | Correct sample | containers used: | 10 | | | |
| Requested analyses: | | Samples receive | ed within holding times: | 1 | | | |
| Required signatures: | | Sample volume | sufficient for requested analyses: | M | | | |
| nternal COC required: | | Correct preserv | vative used for requested analyses: | M ! | · | | |
| Anomalies/Non-conformances (attach additi | onal pages if neede | ed): | | 7 - - - | 8100 | 0810 | \$. |
| | | | | _ | #4 | ma m 1 # 1 # 14 B 3 M 14 | |

8 (00810

Analyses Requested

Chain of Custody Record & Laboratory Analysis Request: Air, Water, Sediments, Plant and Animal Tissue,

Hydrocarbon & Other Samples

eurofins Frontier Global Sciences

Client: Underwood Frances Contact: Tim Puls

Page _/_ of _

11720 Northcreek Pkwy N, Suite 400 Bothell, WA 98011 Phone: 425-686-1996 Fax: 425-686-3096

info@frontiergs.com

http://www.frontiergs.com EFGS PM: Date: TAT (business days):20 (std)

| | Phone: 603 436 = 6192 Por 27 18 19 03 500 E-mail: touls e underworkingli | | | | | | | | 1 | 1 | _ | 1 | anaiy | /ses r | ceques | teu | Date: |
|------------------|--|---------------------------------------|------------------------|----------|--------------------------|----------------|----------|---------|------------|----------------------|---|----------|----------|--------------|--------------------------------|--------|--|
| Addi | ess: ນ | SVaus | they Mally | -mail | touls e u | welers | and en o | west ox | L | | (%) | 6 | | | | T | TAT (business days):20 (std) |
| Pmi | ort Name | er Arch | - Degradoston | Contra | ct/PO: | ~ Q | <u> </u> | | 1 | | | ধ | | | 7 | | 15 10 5 4 3 2 24 hrs. |
| Ren | ort To: | - / (1 6) (- | 3 12 | nvoice | To: 57 | سوو بدا | | | 1 | | Other | 4 | N | | Discoher Herry | | (For TAT < 10 days, contact PM. |
| | | Tim (| | Addres | | 3145 | | | 1 | N. | | 13 | 7 | ک | 3 | | Surcharges apply for expedited TAT) Saturday delivery? Y |
| Add | ess: 92 | , vaugi | on Maly 1 | Adures | 5; | | | | ļ | 5 | 활동 | 7 | uctor | | 3 | | (If yes, please contact PM) |
| Obo | C TOWNO | CIZ ES | OH 03801 | hone: | | Fax: | | | <u>a</u> |) <u>§</u> | 8 - | Ived | ĭ | 9 | ₹ | | EDD DY DN |
| F-m | 16. (00) | 43. Fax | · | -mail: | | 1 47. | | | Sampled By | Field Filtered (Y/N) | Field Preserved: HNO ₃ HCI BrCI | 0 | | Total | 20 | | QA 🗆 Standard 🗆 High |
| 111 | Foo | raved | orderwood cont | | # of | T | | | 声 | 9 | _ బ్రా | 8 | Ę | 9 | -3 | | |
| No. | | tie ID | Sample ID | | Bottles | Matrix | 14. | & Time | Sal | 쁜 | 운 | ۵ | Total | V | $ \mathcal{O} $ | | Comments |
| 1 | River | | Dissolved - | 10 | 1 | CXX | 9.17 | 18 1323 | JEL | N | 2 | 1 | • | | | | * Dissolved Hg Sample bottles are labeled as |
| 2 | | · · · · · · · · · · · · · · · · · · · | Dissolved - | a | 1 | } | | 8 1323 | 1 | 1 | 1 | 1 | | | | | Cample hattles |
| 3 | | | TM-1 | | 1 | | 1 | 1335 | | | | | ~ | | | | Supple bed as |
| 4 | | | TM-3 | | | | | 1338 | | | | | <u> </u> | | | | are lavel to as |
| 5 | | | TM-Blank | - | \ | | | 1338 | | | | | 4 | | | | Total Hg * No Blank included for |
| 6 | | | Dissolved Ha - 1 | * | i | | | 1333 | | | | | | | 1 | | * Ala Blank |
| 7 | | | Dissolved Ha- | 2* | / | | | 1333 | | | | | | | 4 | | The Stank for |
| 8 | | | Dissolved Ha- | Blank | . \ | | | 133 | | | | | |] | 4 | | included for |
| 9 | | | Tetal CN-10 | | Ĭ | | | 1390 | | | | | | \preceq | | | Dissolved Metals |
| 10 | | / | Total CN-2 | | | | IV, | 1340 | | | | | | \leq | | _ | 1 |
| 11 | | | Total CN-BI | ank | 1 | 4 | | 1340 | 7 | A | | ! | | \checkmark | | | - |
| 12 | | | | Í | | | | | | | | | l |] | | | |
| | | For Labora | tory Use Only | | Mata FW: Fresh W | tx Code | s: | Relingu | { \ | | | Recei | ved I | Ву: | | | Received By: |
| COC | Seal: N | 0 | Comments: | | WW: Waste | Water | | | h two | | | RH | | | | | |
| Cool | er Temp | :40 | | | SB: Sea and SS: Soil and | | | Name: | Meghan | 2457 | huck | Name | :: [l/s | dr- | -52c | _ | Name: |
| Carr | er: W | 5 | 1 | | TS: Plant and | | | Organiz | ation: u | 1/401 | EL | Organ | nizati | on: | | | Organization: |
| VTS | ₹: <i> \till\ta</i> | 70 | | | HC: Hydrocai TR: Trap | bons | | Date & | | | | Date | & Tir | ne: | | | Date & Time: |
| | | | | | | Tracking | | | J 49 | <i>d</i> | | 196 | | <i>70</i> | 3 | | |
| Sample Disposal: | | | | | | | | | | | | | | | terms and conditions, and that | | |
| □R | 1 Return (shipping fees may apply) | | | | | | | | you aut | horize | EFGS to | perfo | orm t | he sp | ecified | anaiys | es. |
| | | | 30 Days after report | | , | | | | | | | | | | | | Data |
| TI R | etain for | wee | ks after report (stora | ae fee | s may app | V) | | | Custom | ier appi | rovai: | | | | | | Date: |

SUBCONTRACT ORDER

Eurofins Frontier Global Sciences, Inc.

8100810

| SENDING LABORATORY: | RECEIVING LABORATORY: |
|--|--------------------------|
| Eurofins Frontier Global Sciences, LLC | Eurofins Calscience, LLC |

11720 North Creek Parkway North, Suite 400 Bothell, WA 98011

Phone: (425) 686-1996 Fax: (425) 686-3096 Amy Goodall Project Manager:

Eurofins Calscience, LLC Garden Grove, CA 92841 7440 Lincoln Way

Phone:7148955494

Fax: x

Comments Analysis

Sample ID: River-01 Total Cn-1

Matrix: Water EFGS Lab 1D: 8100810-09

Sampled: 17-Sep-18 13:40 (GMT-05:00) Eastern Time (US &

Due: 17-Oct-18 19:00

EPA SM4500 CN E

Containers Supplied:

Misc. Subcontract 1

23 Client Specific Bottle

Sample ID: River-01 Total Cn-2

Matrix: Water EFGS Lab ID: 8100810-10

Due: 17-Oct-18 19:00 Sampled: 17-Sep-18 13:40 (GMT-05:00) Eastern Time (US &

EPA SM4500 CN E Misc. Subcontract 1

23_Client Specific Bottle

Containers Supplied:

Sample ID: River-01 Total Cn-Blank

Matrix: Water EFGS Lab ID: 8100810-11 Sampled: 17-Sep-18 13:40 (GMT-05:00) Eastern Time (US &

Due: 17-Oct-18 19:00

EPA SM4500 CN E

Misc. Subcontract 1

Containers Supplied:

23_Client Specific Bottle

Page 1 of 1 Date Date Received By Received By Date Date ased By sed By Page 7 of 37



Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Steven Clifton05-Dec-18 12:27

River-01 Dissolved-1 8I00810-01

| Analyte Sample Preparation: EFGS SOP2820 F | Result | Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|---|---------------------------------------|----------|-----------------|-----------|----------|---------|-----------|----------|-----------|---------------|-------|
| Sample 1 reparation. Er G5 501 2020 1 | · · · · · · · · · · · · · · · · · · · | Тестріса | | | | | | | | | |
| Arsenic | 0.97 | 0.04 | 0.38 | $\mu g/L$ | 5 | F810462 | 30-Oct-18 | 8K02008 | 01-Nov-18 | EPA 1640 | |
| Cadmium | 0.135 | 0.020 | 0.100 | $\mu g/L$ | 5 | F810462 | 30-Oct-18 | 8K02008 | 01-Nov-18 | EPA 1640 | |
| Copper | 0.71 | 0.08 | 0.25 | μg/L | 5 | F810462 | 30-Oct-18 | 8K02008 | 01-Nov-18 | EPA 1640 | |
| Lead | 0.021 | 0.020 | 0.100 | μg/L | 5 | F810462 | 30-Oct-18 | 8K02008 | 01-Nov-18 | EPA 1640 | J |
| Nickel | 0.48 | 0.08 | 0.25 | μg/L | 5 | F810462 | 30-Oct-18 | 8K02008 | 01-Nov-18 | EPA 1640 | |
| Selenium | ND | 0.16 | 1.50 | μg/L | 5 | F810462 | 30-Oct-18 | 8K02008 | 01-Nov-18 | EPA 1640 Mod. | U |
| Silver | 0.09 | 0.01 | 0.10 | μg/L | 5 | F810462 | 30-Oct-18 | 8K02008 | 01-Nov-18 | EPA 1640 | J |
| Zinc | 0.57 | 0.14 | 0.50 | μg/L | 5 | F811191 | 12-Nov-18 | 8K26019 | 15-Nov-18 | EPA 1640 | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Steven Clifton05-Dec-18 12:27

River-01 Dissolved-2 8I00810-02

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|------------------------------|-----------------|--------------------|--------------------|------------------|----------|---------|-----------|----------|-----------|---------------|-------|
| Sample Preparation: EFGS SOI | P2820 Reductive | Precipita | ition | | | | | | | | |
| Arsenic | 0.99 | 0.04 | 0.38 | μg/L | 5 | F810462 | 30-Oct-18 | 8K02008 | 01-Nov-18 | EPA 1640 | |
| Cadmium | 1.64 | 0.020 | 0.100 | $\mu \text{g}/L$ | 5 | F810462 | 30-Oct-18 | 8K02008 | 01-Nov-18 | EPA 1640 | |
| Copper | 1.27 | 0.08 | 0.25 | $\mu g \! / L$ | 5 | F810462 | 30-Oct-18 | 8K02008 | 01-Nov-18 | EPA 1640 | |
| Lead | 0.080 | 0.020 | 0.100 | $\mu g/L$ | 5 | F810462 | 30-Oct-18 | 8K02008 | 01-Nov-18 | EPA 1640 | J |
| Nickel | 0.42 | 0.08 | 0.25 | μg/L | 5 | F810462 | 30-Oct-18 | 8K02008 | 01-Nov-18 | EPA 1640 | |
| Selenium | 0.17 | 0.16 | 1.50 | μg/L | 5 | F810462 | 30-Oct-18 | 8K02008 | 01-Nov-18 | EPA 1640 Mod. | J |
| Silver | 0.09 | 0.01 | 0.10 | μg/L | 5 | F810462 | 30-Oct-18 | 8K02008 | 01-Nov-18 | EPA 1640 | J |
| Zinc | 0.91 | 0.28 | 1.00 | $\mu g/L$ | 5 | F811191 | 12-Nov-18 | 8K26019 | 15-Nov-18 | EPA 1640 | J |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Steven Clifton05-Dec-18 12:27

River-01 TM-1 8I00810-03

| Analyte Sample Preparation: EFGS SOP2836 0 | Result | Limit | Reporting Limit Oven Di | Units gestion | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|---|--------|-------|-------------------------|------------------|----------|---------|-----------|----------|-----------|-----------|---------|
| Antimony | 0.356 | 0.227 | 0.505 | μg/L | 25 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | R-05, J |
| Beryllium | ND | 0.040 | 0.606 | $\mu g/L$ | 10 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | U, R-05 |
| Chromium | 0.38 | 0.20 | 1.01 | $\mu g/L$ | 10 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | R-05, J |
| Iron | 142 | 11 | 101 | μg/L | 10 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | R-05 |
| Thallium | ND | 0.151 | 0.505 | $\mu g/L$ | 25 | F810306 | 15-Oct-18 | 8J19007 | 18-Oct-18 | EPA 200.8 | U, R-05 |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Steven Clifton 05-Dec-18 12:27

River-01 TM-2 8I00810-04

| Analyte Sample Preparation: EFGS SOP2836 C | Result | Limit | Reporting Limit Oven Di | Units gestion | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|---|--------|-------|-------------------------|------------------|----------|---------|-----------|----------|-----------|-----------|---------|
| Antimony | ND | 0.227 | 0.505 | μg/L | 25 | F810306 | 15-Oct-18 | 8J19007 | 18-Oct-18 | EPA 200.8 | U, R-05 |
| Beryllium | ND | 0.101 | 1.51 | $\mu g/L$ | 25 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | U, R-05 |
| Chromium | ND | 0.50 | 2.52 | $\mu g/L$ | 25 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | U, R-05 |
| Iron | 128 | 28 | 252 | $\mu g/L$ | 25 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | R-05, J |
| Thallium | ND | 0.151 | 0.505 | $\mu g/L$ | 25 | F810306 | 15-Oct-18 | 8J19007 | 18-Oct-18 | EPA 200.8 | U, R-05 |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Steven Clifton05-Dec-18 12:27

River-01 TM-Blank 8I00810-05

| Analyte Sample Preparation: EFGS SOP2836 | Result Closed Ve | Limit | Reporting Limit Oven Di | Units gestion | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|---|------------------|-------|-------------------------|------------------|----------|---------|-----------|----------|-----------|-----------|-------|
| Antimony | ND | 0.009 | 0.020 | μg/L | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | U |
| Beryllium | 0.007 | 0.004 | 0.061 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | J |
| Chromium | ND | 0.02 | 0.10 | $\mu \text{g}/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | U |
| Iron | 2 | 1 | 10 | μg/L | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | J |
| Thallium | ND | 0.006 | 0.020 | $\mu g/L$ | 1 | F810306 | 15-Oct-18 | 8J15014 | 16-Oct-18 | EPA 200.8 | U |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Steven Clifton 05-Dec-18 12:27

River-01 Dissolved Hg-1 8I00810-06

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|------------------------------|------------------|--------------------|--------------------|-------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOI | P2796 EPA 1631 (| Oxidation | ı | | | | | | | | |
| Mercury | 0.35 | 0.08 | 0.50 | ng/L | 1 | F810185 | 25-Sep-18 | 8J02006 | 01-Oct-18 | EPA 1631E | J |

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Amy Goodall, Project Manager

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Steven Clifton 05-Dec-18 12:27

River-01 Dissolved Hg-2 8I00810-07

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|-------------------------------|----------------|--------------------|--------------------|-------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP2 | 796 EPA 1631 (| Oxidation | ı | | | | | | | | |
| Mercury | 0.38 | 0.08 | 0.50 | ng/L | 1 | F810185 | 25-Sep-18 | 8J02006 | 01-Oct-18 | EPA 1631E | J |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Steven Clifton05-Dec-18 12:27

River-01 Dissolved Hg-Blank 8I00810-08

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|-------------------------------|----------------|--------------------|--------------------|-------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP2 | 796 EPA 1631 (| Oxidation | l | | | | | | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | 1 | F810185 | 25-Sep-18 | 8J02006 | 01-Oct-18 | EPA 1631E | U |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Steven Clifton05-Dec-18 12:27

Quality Control Data

| | | Detection | Reporting | | Spike | Source | | %REC | | RPD | |
|---------------------------------|---------------|-----------|------------|-------|------------|-------------|-----------|--------|------|-------|-----------|
| Analyte | Result | Limit | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | Notes |
| Batch F810185 - EFGS SOP2796 El | PA 1631 Oxida | ation | | | | | | | | | |
| Blank (F810185-BLK1) | | | | | Prepared & | Analyzed: | 01-Oct-18 | | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | | | | | | | Ţ |
| Blank (F810185-BLK2) | | | | | Prepared & | Analyzed: | 01-Oct-18 | | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | | | | | | | Ţ |
| Blank (F810185-BLK3) | | | | | Prepared & | Analyzed: | 01-Oct-18 | | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | | | | | | | Ţ |
| Blank (F810185-BLK4) | | | | | Prepared & | Analyzed: | 01-Oct-18 | | | | |
| Mercury | ND | 0.09 | 0.52 | ng/L | | | | | | | U, QB-06 |
| LCS (F810185-BS1) | | | | | Prepared & | Analyzed: | 01-Oct-18 | | | | |
| Mercury | 15.70 | 0.08 | 0.50 | ng/L | 14.688 | | 107 | 80-120 | | | |
| LCS Dup (F810185-BSD1) | | | | | Prepared & | Analyzed: | 01-Oct-18 | | | | |
| Mercury | 16.29 | 0.08 | 0.50 | ng/L | 14.688 | | 111 | 80-120 | 3.72 | 24 | |
| Duplicate (F810185-DUP1) | | Source: | 8100842-01 | | Prepared & | Analyzed: | 01-Oct-18 | | | | |
| Mercury | 29.34 | 0.08 | 0.50 | ng/L | | 30.35 | | | 3.39 | 24 | AΓ |
| Matrix Spike (F810185-MS1) | | Source: | 8100810-07 | , | Prepared & | : Analyzed: | 01-Oct-18 | | | | |
| Mercury | 4.47 | 0.08 | 0.50 | ng/L | 2.5351 | 0.38 | 162 | 71-125 | | | AS, QM-07 |
| Matrix Spike (F810185-MS2) | | Source: | 8100842-01 | | Prepared & | Analyzed: | 01-Oct-18 | | | | |
| Mercury | 132.0 | 0.83 | 5.00 | ng/L | 101.40 | 30.35 | 100 | 71-125 | | | AS |
| Matrix Spike (F810185-MS3) | | Source: | 8100810-07 | , | Prepared & | : Analyzed: | 01-Oct-18 | | | | |
| Mercury | 3.44 | 0.08 | 0.50 | ng/L | 2.5351 | 0.38 | 121 | 71-125 | | | AS |

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Underwood Engineers Project: Trace Metals In Wastewater

0.08

0.01

0.10

 $\mu g/L$

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Steven Clifton05-Dec-18 12:27

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|----------------------------------|-------------|--------------------|--------------------|-----------|----------------|------------------|-------------|----------------|------|--------------|-----------|
| Anaryte | Result | Lillit | Lillit | Ollits | Level | Result | 70KEC | Lillits | KFD | Lillit | Notes |
| Batch F810185 - EFGS SOP2796 EPA | 1631 Oxid | ation | | | | | | | | | |
| Matrix Spike Dup (F810185-MSD1) | | Source: | 8100810-07 | | Prepared & | Analyzed: | 01-Oct-18 | | | | |
| Mercury | 3.49 | 0.08 | 0.50 | ng/L | 2.5351 | 0.38 | 123 | 71-125 | 24.6 | 24 | AS, QR-08 |
| Matrix Spike Dup (F810185-MSD2) | | Source: | 8100842-01 | | Prepared & | : Analyzed: | 01-Oct-18 | | | | |
| Mercury | 136.2 | 0.83 | 5.00 | ng/L | 101.40 | 30.35 | 104 | 71-125 | 3.08 | 24 | AS |
| Matrix Spike Dup (F810185-MSD3) | | Source: | 8100810-07 | | Prepared & | : Analyzed: | 01-Oct-18 | | | | |
| Mercury | 3.68 | 0.08 | 0.50 | ng/L | 2.5351 | 0.38 | 130 | 71-125 | 6.96 | 24 | AS, QM-07 |
| D-4-L E010462 - FEGG COD2020 D-1 | | | | | | | | | | | |
| Batch F810462 - EFGS SOP2820 Red | uctive Prec | ipitation | | | | | | | | | |
| Blank (F810462-BLK1) | | | | | Prepared: 3 | 0-Oct-18 A | nalyzed: 0 | 1-Nov-18 | | | |
| Nickel | 0.09 | 0.03 | 0.10 | μg/L | | | | | | | |
| Copper | 0.07 | 0.03 | 0.10 | μg/L | | | | | | | |
| Arsenic | ND | 0.02 | 0.15 | $\mu g/L$ | | | | | | | J |
| Selenium | ND | 0.06 | 0.60 | $\mu g/L$ | | | | | | | J |
| Cadmium | ND | 0.008 | 0.040 | $\mu g/L$ | | | | | | | J |
| Lead | 0.010 | 0.008 | 0.040 | $\mu g/L$ | | | | | | | |
| Blank (F810462-BLK2) | | | | | Prepared: 3 | 0-Oct-18 A | nalyzed: 0 | 1-Nov-18 | | | |
| Nickel | 0.07 | 0.03 | 0.10 | μg/L | | | | | | | |
| Copper | 0.09 | 0.03 | 0.10 | μg/L | | | | | | | ; |
| Arsenic | ND | 0.02 | 0.15 | μg/L | | | | | | | Ţ |
| Selenium | 0.10 | 0.06 | 0.60 | μg/L | | | | | | | |
| Cadmium | 0.013 | 0.008 | 0.040 | μg/L | | | | | | | |
| Lead | ND | 0.008 | 0.040 | μg/L | | | | | | | Ţ |
| Blank (F810462-BLK3) | | | | | Prepared: 3 | 0-Oct-18 A | nalyzed: 02 | 2-Nov-18 | | | |

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Silver

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Amy Goodall, Project Manager

J, QM-12



Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Steven Clifton05-Dec-18 12:27

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|-----------------------------------|--------------|--------------------|--------------------|-----------|----------------|------------------|-------------|----------------|-------|--------------|----------|
| - | | | - | | | | | | | • | |
| Batch F810462 - EFGS SOP2820 Redu | ictive Preci | ipitation | | | | | | | | | |
| Blank (F810462-BLK4) | | | | | Prepared: 3 | 80-Oct-18 A | nalyzed: 02 | 2-Nov-18 | | | |
| Silver | 0.08 | 0.01 | 0.10 | μg/L | | | | | | | J, QM-12 |
| LCS (F810462-BS1) | | | | | Prepared: 3 | 30-Oct-18 A | nalyzed: 0 | 1-Nov-18 | | | |
| Silver | 6.15 | 0.05 | 0.50 | $\mu g/L$ | 6.2500 | | 98.4 | 30-151 | | | |
| Cadmium | 9.081 | 0.101 | 0.500 | $\mu g/L$ | 10.002 | | 90.8 | 73-105 | | | |
| Lead | 12.00 | 0.100 | 0.500 | $\mu g/L$ | 12.502 | | 96.0 | 62-129 | | | |
| LCS (F810462-BS2) | | | | | Prepared: 3 | 30-Oct-18 A | analyzed: 0 | 1-Nov-18 | | | |
| Nickel | 8.67 | 0.03 | 0.10 | μg/L | 12.502 | | 69.3 | 26-147 | | | |
| Copper | 12.86 | 0.03 | 0.10 | $\mu g/L$ | 12.500 | | 103 | 77-109 | | | |
| Arsenic | 10.16 | 0.02 | 0.15 | $\mu g/L$ | 12.500 | | 81.3 | 58-110 | | | |
| Selenium | 11.22 | 0.06 | 0.60 | $\mu g/L$ | 12.498 | | 89.8 | 55-120 | | | |
| LCS Dup (F810462-BSD1) | | | | | Prepared: 3 | 80-Oct-18 A | nalyzed: 0 | 1-Nov-18 | | | |
| Silver | 6.25 | 0.05 | 0.50 | μg/L | 6.2500 | | 100 | 30-151 | 1.62 | 20 | |
| Cadmium | 9.031 | 0.101 | 0.500 | $\mu g/L$ | 10.002 | | 90.3 | 73-105 | 0.556 | 20 | |
| Lead | 12.16 | 0.100 | 0.500 | $\mu g/L$ | 12.502 | | 97.2 | 62-129 | 1.26 | 20 | |
| LCS Dup (F810462-BSD2) | | | | | Prepared: 3 | 30-Oct-18 A | nalyzed: 0 | 1-Nov-18 | | | |
| Nickel | 8.97 | 0.03 | 0.10 | μg/L | 12.502 | | 71.7 | 26-147 | 3.39 | 20 | |
| Copper | 12.78 | 0.03 | 0.10 | $\mu g/L$ | 12.500 | | 102 | 77-109 | 0.648 | 20 | |
| Arsenic | 10.42 | 0.02 | 0.15 | $\mu g/L$ | 12.500 | | 83.4 | 58-110 | 2.54 | 20 | |
| Selenium | 11.60 | 0.06 | 0.60 | $\mu g/L$ | 12.498 | | 92.8 | 55-120 | 3.28 | 25 | |
| Matrix Spike (F810462-MS1) | | Source: | 8100810-02 | | Prepared: 3 | 80-Oct-18 A | analyzed: 0 | 1-Nov-18 | | | |
| Silver | 6.06 | 0.05 | 0.50 | μg/L | 6.2500 | 0.09 | 95.5 | 30-151 | | | |
| Cadmium | 9.365 | 0.101 | 0.500 | μg/L | 10.002 | 1.644 | 77.2 | 73-105 | | | |
| Lead | 12.31 | 0.100 | 0.500 | $\mu g/L$ | 12.502 | ND | 98.5 | 62-129 | | | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Steven Clifton05-Dec-18 12:27

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|----------------------------------|---------------|--------------------|--------------------|-----------|----------------|------------------|-------------|----------------|-------|--------------|-------|
| Batch F810462 - EFGS SOP2820 Rec | ductive Prec | ipitation | | | | | | | | | |
| Matrix Spike (F810462-MS2) | | Source: | 8100810-02 | | Prepared: 3 | 30-Oct-18 A | Analyzed: 0 | 1-Nov-18 | | | |
| Nickel | 10.78 | 0.03 | 0.10 | μg/L | 12.502 | 0.42 | 82.9 | 71-130 | | | |
| Copper | 12.59 | 0.03 | 0.10 | $\mu g/L$ | 12.500 | 1.27 | 90.6 | 77-109 | | | |
| Arsenic | 12.74 | 0.02 | 0.15 | $\mu g/L$ | 12.500 | 0.99 | 94.0 | 58-110 | | | |
| Selenium | 11.94 | 0.06 | 0.60 | $\mu g/L$ | 12.498 | 0.17 | 94.1 | 25-135 | | | |
| Matrix Spike Dup (F810462-MSD1) | | Source: | 8100810-02 | | Prepared: 3 | 30-Oct-18 A | Analyzed: 0 | 1-Nov-18 | | | |
| Silver | 5.69 | 0.05 | 0.50 | μg/L | 6.2500 | 0.09 | 89.7 | 30-151 | 6.21 | 20 | |
| Cadmium | 9.351 | 0.101 | 0.500 | $\mu g/L$ | 10.002 | 1.644 | 77.0 | 73-105 | 0.159 | 20 | |
| Lead | 12.33 | 0.100 | 0.500 | $\mu g/L$ | 12.502 | ND | 98.7 | 62-129 | 0.179 | 20 | |
| Matrix Spike Dup (F810462-MSD2) | | Source: | 8100810-02 | | Prepared: 3 | 30-Oct-18 A | Analyzed: 0 | 1-Nov-18 | | | |
| Nickel | 11.29 | 0.03 | 0.10 | μg/L | 12.502 | 0.42 | 87.0 | 71-130 | 4.63 | 20 | |
| Copper | 13.02 | 0.03 | 0.10 | $\mu g/L$ | 12.500 | 1.27 | 94.0 | 77-109 | 3.32 | 20 | |
| Arsenic | 13.03 | 0.02 | 0.15 | $\mu g/L$ | 12.500 | 0.99 | 96.3 | 58-110 | 2.25 | 20 | |
| Selenium | 11.09 | 0.06 | 0.60 | $\mu g/L$ | 12.498 | 0.17 | 87.3 | 25-135 | 7.38 | 25 | |
| Batch F811191 - EFGS SOP2820 Rec | luctive Preci | ipitation | | | | | | | | | |
| Blank (F811191-BLK1) | | | | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 5-Nov-18 | | | |
| Zinc | 0.19 | 0.14 | 0.50 | μg/L | - | | - | | | | |
| LCS (F811191-BS1) | | | | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 5-Nov-18 | | | |
| Zinc | 10.78 | 0.69 | 2.50 | μg/L | 12.502 | | 86.2 | 75-95 | | | |
| LCS (F811191-BS3) | | | | | Prepared: 1 | 12-Nov-18 | Analyzed: 0 | 3-Dec-18 | | | |
| Zinc | 11.51 | 0.14 | 0.50 | μg/L | 12.502 | | 92.1 | 75-95 | | | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Steven Clifton05-Dec-18 12:27

Quality Control Data

| | | Detection | Reporting | | Spike | Source | | %REC | | RPD | |
|----------------------------------|--------------|-----------|--------------|-------|-------------|-----------|-------------|----------|------|-------|-----------------|
| Analyte | Result | Limit | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | Notes |
| Batch F811191 - EFGS SOP2820 Red | luctive Prec | ipitation | | | | | | | | | |
| LCS Dup (F811191-BSD1) | | | | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 5-Nov-18 | | | |
| Zinc | 10.29 | 0.69 | 2.50 | μg/L | 12.502 | | 82.3 | 75-95 | 4.65 | 20 | |
| LCS Dup (F811191-BSD3) | | | | | Prepared: 1 | 12-Nov-18 | Analyzed: 0 | 3-Dec-18 | | | |
| Zinc | 11.02 | 0.14 | 0.50 | μg/L | 12.502 | | 88.1 | 75-95 | 4.37 | 20 | |
| Matrix Spike (F811191-MS1) | | Source: | 8100810-02 | 2RE1 | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 5-Nov-18 | | | |
| Zinc | 23.15 | 1.39 | 5.00 | μg/L | 25.005 | ND | 92.6 | 75-95 | | | |
| Matrix Spike (F811191-MS3) | | Source | : 8100810-02 | 2RE1 | Prepared: 1 | 12-Nov-18 | Analyzed: 0 | 3-Dec-18 | | | |
| Zinc | 23.51 | 0.28 | 1.00 | μg/L | 25.005 | 0.91 | 90.4 | 75-95 | | | |
| Matrix Spike Dup (F811191-MSD1) | | Source | : 8100810-02 | 2RE1 | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 5-Nov-18 | | | |
| Zinc | 18.00 | 1.39 | 5.00 | μg/L | 25.005 | ND | 72.0 | 75-95 | 25.0 | 20 | QM-05, QR-08 |
| Matrix Spike Dup (F811191-MSD3) | | Source: | : 8I00810-02 | 2RE1 | Prepared: | 12-Nov-18 | Analyzed: 0 | 3-Dec-18 | | | |
| Zinc | 18.40 | 0.28 | 1.00 | μg/L | 25.005 | 0.91 | 69.9 | 75-95 | 24.4 | 20 | QM-05, QR-08 |

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RPD

Underwood Engineers Project: Trace Metals In Wastewater

Detection Reporting

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Steven Clifton05-Dec-18 12:27

Quality Control Data

Spike

Source

%REC

| | | Detection | reporting | | Spike | Source | | /OICEC | | KID | |
|--------------------------------|-----------------|------------|------------|-----------|-------------|-------------|--------------|----------|-------|-------|-------|
| Analyte | Result | Limit | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | Notes |
| Batch F810306 - EFGS SOP2836 (| Closed Vessel V | Vater Oven | Digestion | | | | | | | | |
| Blank (F810306-BLK2) | | | | | Prepared: 1 | 15-Oct-18 A | analyzed: 10 | 6-Oct-18 | | | |
| Beryllium | ND | 0.004 | 0.060 | μg/L | | | | | | | 1 |
| Chromium | ND | 0.02 | 0.10 | $\mu g/L$ | | | | | | | |
| Iron | 3 | 1 | 10 | $\mu g/L$ | | | | | | | |
| Antimony | ND | 0.009 | 0.020 | $\mu g/L$ | | | | | | | |
| Thallium | ND | 0.006 | 0.020 | $\mu g/L$ | | | | | | | |
| LCS (F810306-BS1) | | | | | Prepared: 1 | 15-Oct-18 A | nalyzed: 10 | 6-Oct-18 | | | |
| Beryllium | 38.06 | 0.020 | 0.301 | μg/L | 40.010 | | 95.1 | 85-115 | | | |
| Chromium | 48.54 | 0.10 | 0.50 | $\mu g/L$ | 49.990 | | 97.1 | 85-115 | | | |
| Iron | 1125 | 6 | 50 | $\mu g/L$ | 1250.0 | | 90.0 | 85-115 | | | |
| Antimony | 41.01 | 0.045 | 0.100 | $\mu g/L$ | 40.030 | | 102 | 85-115 | | | QB-0 |
| Thallium | 36.59 | 0.030 | 0.100 | $\mu g/L$ | 39.990 | | 91.5 | 85-115 | | | |
| LCS Dup (F810306-BSD1) | | | | | Prepared: 1 | 15-Oct-18 A | analyzed: 10 | 6-Oct-18 | | | |
| Beryllium | 40.12 | 0.020 | 0.301 | μg/L | 40.010 | | 100 | 85-115 | 5.28 | 20 | |
| Chromium | 51.15 | 0.10 | 0.50 | $\mu g/L$ | 49.990 | | 102 | 85-115 | 5.24 | 20 | |
| Iron | 1134 | 6 | 50 | $\mu g/L$ | 1250.0 | | 90.7 | 85-115 | 0.826 | 20 | |
| Antimony | 41.99 | 0.045 | 0.100 | $\mu g/L$ | 40.030 | | 105 | 85-115 | 2.37 | 20 | QB-0 |
| Thallium | 38.15 | 0.030 | 0.100 | $\mu g/L$ | 39.990 | | 95.4 | 85-115 | 4.18 | 20 | |
| Matrix Spike (F810306-MS1) | | Source: | 8100809-10 | | Prepared: 1 | 15-Oct-18 A | analyzed: 10 | 6-Oct-18 | | | |
| Beryllium | 39.06 | 0.040 | 0.607 | μg/L | 40.010 | 0.073 | 97.4 | 70-130 | | | |
| Chromium | 50.57 | 0.20 | 1.01 | μg/L | 49.990 | 0.38 | 100 | 70-130 | | | |
| Iron | 1207 | 11 | 101 | $\mu g/L$ | 1250.0 | 115 | 87.4 | 70-130 | | | |
| Antimony | 40.29 | 0.091 | 0.202 | $\mu g/L$ | 40.030 | 0.296 | 99.9 | 70-130 | | | QB-0 |
| Thallium | 38.85 | 0.061 | 0.202 | $\mu g/L$ | 39.990 | ND | 97.1 | 70-130 | | | |
| Matrix Spike (F810306-MS2) | | Source: | 8100809-15 | | Prepared: 1 | 15-Oct-18 A | analyzed: 10 | 6-Oct-18 | | | |
| Beryllium | 36.50 | 0.040 | 0.607 | μg/L | 40.010 | 0.044 | 91.1 | 70-130 | | | |
| Chromium | 47.37 | 0.20 | 1.01 | $\mu g/L$ | 49.990 | 0.69 | 93.4 | 70-130 | | | |
| Iron | 1796 | 11 | 101 | $\mu g/L$ | 1250.0 | 764 | 82.5 | 70-130 | | | |
| Antimony | 37.71 | 0.091 | 0.202 | $\mu g/L$ | 40.030 | 0.541 | 92.8 | 70-130 | | | |
| Thallium | 37.46 | 0.061 | 0.202 | μg/L | 39.990 | ND | 93.7 | 70-130 | | | |

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Amy Sodall.



Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Steven Clifton05-Dec-18 12:27

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|--------------------------------|-----------------|--------------------|--------------------|-----------|----------------|------------------|-------------|----------------|-----|--------------|--------|
| Batch F810306 - EFGS SOP2836 (| | | | Omo | Ecver | Result | , ore EC | Limits | МЪ | Eiiiit | 110003 |
| Matrix Spike (F810306-MS4) | ciosca vessei v | | 8100809-10 | | Prepared: 1 | 15-Oct-18 A | nalyzed: 1 | 6-Oct-18 | | | |
| Beryllium | 19.83 | 0.040 | 0.606 | μg/L | 20.500 | 0.073 | 96.4 | 70-130 | | | A |
| Chromium | 400.2 | 0.20 | 1.01 | μg/L | 410.00 | 0.38 | 97.5 | 70-130 | | | A |
| Iron | 1959 | 11 | 101 | μg/L | 2050.0 | 115 | 89.9 | 70-130 | | | A |
| Antimony | 19.19 | 0.091 | 0.202 | μg/L | 20.500 | 0.296 | 92.2 | 70-130 | | | A |
| Thallium | 19.38 | 0.061 | 0.202 | $\mu g/L$ | 20.500 | ND | 94.6 | 70-130 | | | A |
| Matrix Spike (F810306-MS5) | | Source: | 8100809-15 | | Prepared: 1 | 15-Oct-18 A | nalyzed: 10 | 6-Oct-18 | | | |
| Beryllium | 19.30 | 0.040 | 0.606 | μg/L | 20.500 | 0.044 | 93.9 | 70-130 | | | A |
| Chromium | 394.6 | 0.20 | 1.01 | $\mu g/L$ | 410.00 | 0.69 | 96.1 | 70-130 | | | A |
| Iron | 2571 | 11 | 101 | $\mu g/L$ | 2050.0 | 764 | 88.2 | 70-130 | | | A |
| Antimony | 19.49 | 0.091 | 0.202 | $\mu g/L$ | 20.500 | 0.541 | 92.4 | 70-130 | | | A |
| Thallium | 19.45 | 0.061 | 0.202 | $\mu g/L$ | 20.500 | ND | 94.9 | 70-130 | | | A |
| Matrix Spike (F810306-MS8) | | Source: | 8100810-04 | RE1 | Prepared: 1 | 15-Oct-18 A | nalyzed: 10 | 6-Oct-18 | | | |
| Beryllium | 40.03 | 0.101 | 1.52 | μg/L | 40.010 | ND | 100 | 70-130 | | | |
| Chromium | 52.27 | 0.51 | 2.53 | $\mu g/L$ | 49.990 | ND | 105 | 70-130 | | | |
| Iron | 1286 | 28 | 253 | $\mu g/L$ | 1250.0 | 128 | 92.6 | 70-130 | | | |
| Antimony | 39.09 | 0.228 | 0.506 | $\mu g/L$ | 40.030 | 0.904 | 95.4 | 70-130 | | | |
| Matrix Spike (F810306-MSA) | | Source: | 8100810-04 | RE1 | Prepared: 1 | 15-Oct-18 A | nalyzed: 10 | 6-Oct-18 | | | |
| Beryllium | 45.15 | 0.101 | 1.51 | μg/L | 51.250 | ND | 88.1 | 70-130 | | | A |
| Chromium | 995.5 | 0.50 | 2.52 | μg/L | 1025.0 | ND | 97.1 | 70-130 | | | A |
| Iron | 4751 | 28 | 252 | μg/L | 5125.0 | 128 | 90.2 | 70-130 | | | A |
| Antimony | 46.56 | 0.227 | 0.505 | $\mu g/L$ | 51.250 | 0.904 | 89.1 | 70-130 | | | A |
| Matrix Spike (F810306-MSB) | | Source: | 8100810-04 | RE1 | Prepared: 1 | 15-Oct-18 A | analyzed: 1 | 8-Oct-18 | | | |
| Thallium | 36.21 | 0.152 | 0.506 | μg/L | 39.990 | ND | 90.5 | 70-130 | | | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Steven Clifton 05-Dec-18 12:27

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|------------------------------------|-------------|--------------------|--------------------|-----------|----------------|------------------|------------|----------------|-------|--------------|-----------------|
| Batch F810306 - EFGS SOP2836 Close | ed Vessel V | Vater Oven | Digestion | | | | | | | | |
| Matrix Spike (F810306-MSC) | | Source: | 8100810-04 | RE1 | Prepared: 1 | 15-Oct-18 A | nalyzed: 1 | 8-Oct-18 | | | |
| Thallium | 43.15 | 0.151 | 0.505 | μg/L | 51.250 | ND | 84.2 | 70-130 | | | AS |
| Matrix Spike Dup (F810306-MSD1) | | Source: | 8100809-10 | 1 | Prepared: 1 | 15-Oct-18 A | nalyzed: 1 | 6-Oct-18 | | | |
| Beryllium | 38.78 | 0.040 | 0.607 | μg/L | 40.010 | 0.073 | 96.7 | 70-130 | 0.732 | 20 | |
| Chromium | 50.37 | 0.20 | 1.01 | μg/L | 49.990 | 0.38 | 100 | 70-130 | 0.388 | 20 | |
| Iron | 1834 | 11 | 101 | $\mu g/L$ | 1250.0 | 115 | 138 | 70-130 | 41.2 | 20 | QM-07, OR-08 |
| Antimony | 40.51 | 0.091 | 0.202 | μg/L | 40.030 | 0.296 | 100 | 70-130 | 0.533 | 20 | QB-01 |
| Thallium | 38.92 | 0.061 | 0.202 | $\mu g/L$ | 39.990 | ND | 97.3 | 70-130 | 0.181 | 20 | |
| Matrix Spike Dup (F810306-MSD2) | | Source: | 8100809-15 | | Prepared: 1 | 15-Oct-18 A | nalyzed: 1 | 6-Oct-18 | | | |
| Beryllium | 37.05 | 0.040 | 0.607 | μg/L | 40.010 | 0.044 | 92.5 | 70-130 | 1.50 | 20 | |
| Chromium | 49.46 | 0.20 | 1.01 | $\mu g/L$ | 49.990 | 0.69 | 97.6 | 70-130 | 4.32 | 20 | |
| Iron | 1845 | 11 | 101 | $\mu g/L$ | 1250.0 | 764 | 86.4 | 70-130 | 2.69 | 20 | |
| Antimony | 39.77 | 0.091 | 0.202 | $\mu g/L$ | 40.030 | 0.541 | 98.0 | 70-130 | 5.34 | 20 | |
| Thallium | 38.10 | 0.061 | 0.202 | $\mu g/L$ | 39.990 | ND | 95.3 | 70-130 | 1.70 | 20 | |
| Matrix Spike Dup (F810306-MSD4) | | Source: | 8100809-10 | ı | Prepared: 1 | 15-Oct-18 A | nalyzed: 1 | 6-Oct-18 | | | |
| Beryllium | 19.15 | 0.040 | 0.606 | $\mu g/L$ | 20.500 | 0.073 | 93.1 | 70-130 | 3.45 | 20 | AS |
| Chromium | 389.6 | 0.20 | 1.01 | $\mu g/L$ | 410.00 | 0.38 | 94.9 | 70-130 | 2.68 | 20 | AS |
| Iron | 1920 | 11 | 101 | $\mu g/L$ | 2050.0 | 115 | 88.0 | 70-130 | 2.01 | 20 | AS |
| Antimony | 19.17 | 0.091 | 0.202 | $\mu g/L$ | 20.500 | 0.296 | 92.1 | 70-130 | 0.111 | 20 | AS |
| Thallium | 19.35 | 0.061 | 0.202 | $\mu g/L$ | 20.500 | ND | 94.4 | 70-130 | 0.194 | 20 | AS |
| Matrix Spike Dup (F810306-MSD5) | | Source: | 8100809-15 | | Prepared: 1 | 15-Oct-18 A | nalyzed: 1 | 6-Oct-18 | | | |
| Beryllium | 19.09 | 0.040 | 0.606 | $\mu g/L$ | 20.500 | 0.044 | 92.9 | 70-130 | 1.10 | 20 | AS |
| Chromium | 391.8 | 0.20 | 1.01 | $\mu g/L$ | 410.00 | 0.69 | 95.4 | 70-130 | 0.714 | 20 | AS |
| Iron | 2586 | 11 | 101 | $\mu g/L$ | 2050.0 | 764 | 88.9 | 70-130 | 0.549 | 20 | AS |
| Antimony | 19.03 | 0.091 | 0.202 | $\mu g/L$ | 20.500 | 0.541 | 90.2 | 70-130 | 2.42 | 20 | AS |
| Thallium | 19.26 | 0.061 | 0.202 | $\mu g/L$ | 20.500 | ND | 94.0 | 70-130 | 0.955 | 20 | AS |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Steven Clifton05-Dec-18 12:27

Quality Control Data

| | | Detection | Reporting | | Spike | Source | | %REC | | RPD | |
|----------------------------------|--------------|------------|------------|-----------|-------------|-------------|-------------|----------|--------|-------|-------|
| Analyte | Result | Limit | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | Notes |
| Batch F810306 - EFGS SOP2836 Clo | sed Vessel V | Vater Oven | Digestion | | | | | | | | |
| Matrix Spike Dup (F810306-MSD8) | | Source: | 8100810-04 | RE1 | Prepared: 1 | 15-Oct-18 A | nalyzed: 1 | 6-Oct-18 | | | |
| Beryllium | 41.51 | 0.101 | 1.52 | μg/L | 40.010 | ND | 104 | 70-130 | 3.63 | 20 | |
| Chromium | 53.92 | 0.51 | 2.53 | $\mu g/L$ | 49.990 | ND | 108 | 70-130 | 3.10 | 20 | |
| Iron | 1350 | 28 | 253 | $\mu g/L$ | 1250.0 | 128 | 97.7 | 70-130 | 4.87 | 20 | |
| Antimony | 38.36 | 0.228 | 0.506 | $\mu g/L$ | 40.030 | 0.904 | 93.6 | 70-130 | 1.90 | 20 | |
| Matrix Spike Dup (F810306-MSDA) | | Source: | 8100810-04 | RE1 | Prepared: 1 | 15-Oct-18 A | analyzed: 1 | 6-Oct-18 | | | |
| Beryllium | 43.33 | 0.101 | 1.51 | $\mu g/L$ | 51.250 | ND | 84.6 | 70-130 | 4.11 | 20 | AS |
| Chromium | 999.9 | 0.50 | 2.52 | $\mu g/L$ | 1025.0 | ND | 97.6 | 70-130 | 0.446 | 20 | AS |
| Iron | 4846 | 28 | 252 | $\mu g/L$ | 5125.0 | 128 | 92.0 | 70-130 | 1.98 | 20 | AS |
| Antimony | 46.54 | 0.227 | 0.505 | $\mu g/L$ | 51.250 | 0.904 | 89.0 | 70-130 | 0.0605 | 20 | AS |
| Matrix Spike Dup (F810306-MSDB) | | Source: | 8100810-04 | RE1 | Prepared: 1 | 15-Oct-18 A | analyzed: 1 | 8-Oct-18 | | | |
| Thallium | 37.10 | 0.152 | 0.506 | μg/L | 39.990 | ND | 92.8 | 70-130 | 2.45 | 20 | |
| Matrix Spike Dup (F810306-MSDC) | | Source: | 8100810-04 | IRE1 | Prepared: 1 | 15-Oct-18 A | nalyzed: 1 | 8-Oct-18 | | | |
| Thallium | 45.31 | 0.151 | 0.505 | μg/L | 51.250 | ND | 88.4 | 70-130 | 4.90 | 20 | AS |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Steven Clifton05-Dec-18 12:27

Notes and Definitions

| U | Analyte was not detected and is reported as less than the LOD or as defined by the client. The LOD has been adjusted for any dilution or concentration of the sample. |
|-------|---|
| R-05 | The sample was diluted due to the presence of high levels of non-target analytes or particulates resulting in elevated reporting limits. |
| QR-08 | The RPD value for the MS/MSD was outside of acceptance limits. Batch QC acceptable based on matrix duplicate and/or LCS/LCSD RPD values within control limits. |
| QM-12 | Continuing calibration verification (CCV) and/or blank spike/blank spike duplicate (BS/BSD) recoveries above upper control limits. All reported sample concentrations were below the reporting limit. |
| QM-07 | The spike recovery was outside control limits for the MS and/or MSD. The batch was accepted based on LCS and LCSD recoveries within control limits and, when analysis permits, acceptable AS/ASD. |
| QM-05 | The spike recovery was outside acceptance limits for the MS/MSD and or AS/ASD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable. |
| QB-06 | The blank was preserved to 5% BrCl rather than 1% . The control limit for blanks preserved to greater than 1% BrCl is the preservation percentage multiplied by the MRL. |
| QB-01 | The method blank and/or initial/continuing calibration blank contains analyte at a concentration above the MRL. However, the blank concentration(s) are less than 10% of the sample result. |
| J | The result is an estimated concentration. |
| AS | This MS and/or MSD is an analytical spike and/or an analytical spike duplicate. |
| AD | This matrix duplicate is an analytical duplicate. |
| DET | Analyte DETECTED |
| ND | Analyte NOT DETECTED at or above the method detection limit if reported to the MDL or above the reporting limit if reported to the MRL. |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |

Eurofins Frontier Global Sciences, LLC

Amy Sodall.



Calscience

Supplemental Report 1

The original report has been revised/corrected.



WORK ORDER NUMBER: 18-09-2146

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Eurofins Frontier Global Sciences, Inc.

Client Project Name: 8100810

Attention: Amy Goodall

11720 North Creek Parkway North

Suite 4

Bothell, WA 98011-8244



Approved for release on 10/19/2018 by: Carla Hollowell Project Manager

ResultLink >

Email your PM >

Eurofins Calscience (Calscience) certifies that the test results provided in this report meet all NELAC Institute requirements for parameters for which accreditation is required or available. Any exceptions to NELAC Institute requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.



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Work Order Narrative

Work Order: 18-09-2146 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 09/28/18. They were assigned to Work Order 18-09-2146.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

DoD Projects:

The test results contained in this report are accredited under the laboratory's ISO/IEC 17025:2005 and DoD-ELAP accreditation issued by the ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation ADE-1864.



Sample Summary

Client: Eurofins Frontier Global Sciences, Inc.

11720 North Creek Parkway North, Suite 4

Bothell, WA 98011-8244

Work Order: Project Name:

PO Number:

Date/Time Received:

Number of

Containers:

18-09-2146

8100810

09/28/18 11:00

3

Amy Goodall Attn:

| Sample Identification | Lab Number | Collection Date and Time | Number of Containers | Matrix |
|-------------------------|--------------|--------------------------|-------------------------|---------|
| River-01 Total Cn-1 | 18-09-2146-1 | 09/17/18 13:40 | 1 | Aqueous |
| River-01 Total Cn-2 | 18-09-2146-2 | 09/17/18 13:40 | 1 | Aqueous |
| River-01 Total Cn-Blank | 18-09-2146-3 | 09/17/18 13:40 | 1 | Aqueous |





Analytical Report

Eurofins Frontier Global Sciences, Inc. 11720 North Creek Parkway North, Suite 4 Bothell, WA 98011-8244

Date Received: Work Order: Preparation:

N/A SM 4500-CN E

09/28/18

18-09-2146

Units:

Method:

mg/L

Page 1 of 1

Project: 8100810

Client Sample Number Lab Sample Number QC Batch ID Matrix Date/Time Date/Time Instrument Date Collected Prepared Analyzed

09/17/18 13:40 10/01/18 18:08 River-01 Total Cn-1 10/01/18 I1001CNL2 18-09-2146-1-A Aqueous UV9

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag. **Parameter** MDL <u>DF</u> Result ND 0.020 Cyanide, Total 0.0070 1.00

River-01 Total Cn-2 UV9 10/01/18 11001CNL2 18-09-2146-2-A 09/17/18 Aqueous 10/01/18 13:40 18:08 Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter Result MDL <u>DF</u> Qualifiers <u>RL</u> Cyanide, Total ND 0.020 0.0070 1.00

River-01 Total Cn-Blank 18-09-2146-3-A 09/17/18 Aqueous UV9 10/01/18 10/01/18 11001CNL2

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag. **Parameter** Result <u>RL</u> MDL <u>DF</u> Qualifiers Cyanide, Total ND 0.020 0.0070 1.00

10/01/18 18:08 **Method Blank** 099-05-061-4300 N/A Aqueous UV 9 10/01/18 I1001CNL2

- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag. Comment(s): Qualifiers <u>Parameter</u> Result RL **MDL** <u>DF</u> Cyanide, Total ND 0.020 0.0070 1.00





Project: 8I00810

Quality Control - LCS/LCSD

Eurofins Frontier Global Sciences, Inc. 11720 North Creek Parkway North, Suite 4 Bothell, WA 98011-8244 Date Received: Work Order: Preparation: 09/28/18 18-09-2146 N/A

Method: SM 4500-CN E

Page 1 of 1

| Quality Control Sample ID | Туре | Mat | rix | Instrument | Date Pre | pared Date | Analyzed | LCS/LCSD Ba | atch Number |
|---------------------------|-------------|-----------|--------------|------------|---------------|------------|------------|-------------|-------------|
| 099-05-061-4300 | LCS | Aqı | ieous | UV 9 | 10/01/18 | 10/0 | 1/18 18:08 | I1001CNL2 | |
| 099-05-061-4300 | LCSD | Aqı | ieous | UV 9 | 10/01/18 | 10/0 | 1/18 18:08 | I1001CNL2 | |
| Parameter | Spike Added | LCS Conc. | LCS %Rec. | LCSD Conc. | LCSD %Rec. | %Rec. CL | <u>RPD</u> | RPD CL | Qualifiers |
| Cyanide, Total | 0.2000 | 0.1710 | 85 | 0.1727 | 86 | 80-120 | 1 | 0-20 | |





Glossary of Terms and Qualifiers

Work Order: 18-09-2146 Page 1 of 1

| Qualifiers | <u>Definition</u> |
|------------|--|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control. |
| 4 | The MS/MSD RPD was out of control due to suspected matrix interference. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| В | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| BV | Sample received after holding time expired. |
| CI | See case narrative. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| HDH | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected). |
| HDL | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected). |
| J | Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated. |
| JA | Analyte positively identified but quantitation is an estimate. |
| ME | LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean). |
| ND | Parameter not detected at the indicated reporting limit. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| Χ | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |
| | |

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

to Contents

SUBCONTRACT ORDER

Eurofins Frontier Global Sciences, Inc.

8100810

<u>18-09-2146</u>

SENDING LABORATORY:

Eurofins Frontier Global Sciences, LLC 11720 North Creek Parkway North, Suite 400

Bothell, WA 98011 Phone: (425) 686-1996 Fax: (425) 686-3096

Project Manager:

Released By

Released By

Amy Goodall

RECEIVING LABORATORY:

Eurofins Calscience, LLC 7440 Lincoln Way Garden Grove, CA 92841 Phone :7148955494

Fax: x

| Analysis | Comments | | , , , , , , , |
|----------------------------------|-----------------------------|----------------------|---------------|
| Sample ID: River-01 Total Cn-1 | | | |
| EFGS Lab ID: 8100810-09 | Matrix: Water | | |
| Sampled: 17-Sep-18 13:40 (GMT | -05:00) Eastern Time (US & | Due: 17-Oct-18 19:00 | |
| Misc. Subcontract 1 | DEPARTMEND ON E | | |
| Containers Supplied: | | | |
| 23 Client Specific Bottle | | | |
| Sample ID: River-01 Total Cn-2 | | | |
| EFGS Lab ID: 8100810-10 | Matrix: Water | | |
| Sampled: 17-Sep-18 13:40 (GMT | -05:00) Eastern Time (US & | Due: 17-Oct-18 19:00 | |
| Misc. Subcontract 1 | SEPA SNI4500 EN E | | |
| Containers Supplied: | | | |
| 23 Client Specific Bottle | | | |
| Sample ID: River-01 Total Cn-Bla | ank ' | | |
| EFGS Lab ID: 8100810-11 | Matrix: Water | | |
| Sampled: 17-Sep-18 13:40 (GMT | 2-05:00) Eastern Time (US & | Due: 17-Oct-18 19:00 | |
| Misc. Subcontract 1 | EPA SW4500 CIN E | | |
| Containers Supplied: | | | |
| 23_Client Specific Bottle | | | |
| | | | |

Date

Date

9/25/18 1100 Date



• eurofins

Sample Receipt Checklist

| Client: Vingest word | | | <u> </u> | Date & Time Received: 414/13 90 2 | 11/3 dis 50 | Date Labeled: 1/2/1/2 Labeled By: 25 |
|---------------------------------|-----------------|---------------------|---------------------|-----------------------------------|------------------|--|
| Project: | | | 8 | Received By: /む / | | Label Verified By: |
| # of Coolers Received: | Samples | Samples Arrived By: | Shipping | Shipping Service Courier | Hand | Other (Specify: |
| Coolant: None/Ambient Loose Ice | ☐ Loose Ice | Ø Gel Ice | Z Gel Ice □ Dry Ice | Coolant Required: Y / N | | Temp Blank Used (VN for Cooler(s): |
| Notify Project Manager if packa | ges/coolers are | received wit | hout coolant c | or with thawed coolant and | at a temperature | Notify Project Manager if packages/coolers are received without coolant or with thawed coolant and at a temperature in excess of 6°C. PM notified: Y/N |

| Cooler Information: | Y/N/NA | Comments | TID: 122442756577 1 °C Datakima 9/10/18 9/174 112 | 1 11/20/22 | ٠, | to/time. 9/ | 8/10/ | 41176 | 3 |
|--|-------------|----------|---|------------|---------|--|-------|---------|----|
| The coolers do not appear to be tampered with: | > | | | 77. | , | 7) | 4/1. | 60 NOV. | |
| | , | | Cooler I: AT C W/ CF-4/2 C Cooler 4: °C w/ CF. | , / C W/C | 3. 7 | Cooler 4: | ပ္ | w∕ CF: | ٩ |
| Custody Seals are present and intact: | <u>_</u> | | Cooler 2: |), w | | Cooler 2: "C w/CE "C Cooler 5: "C w/CE | ٠ | m/ CE | 1. |
| | - | | | | | | ر | ۳/ دو. | ز |
| custody seals signed: | > | | Cooler 3: °C w/ CF: °C Cooler 6: w/ CF | °c √× | ٠,٠ | Cooler 6 | ړ | W/CF | ٠ |
| | | | | | - | | , | | , |

| | | | | | |] |
|---|-------------|----------------------------------|---|--------|----------|---|
| Chain of Custody: | Y/N/NA | Comments | Sample Condition/Integrity: | V/N/NA | Comments | Г |
| Sample ID/Description: | <u>^</u> | | Sample containers intact/present: | > | SHIP | T |
| Date and time of collection: | <u> </u> | | Sample labels are present and legible: | /4 | | T |
| Sampled by: | // /M | | Sample ID on container/bag matches COC: | 7 | | Т |
| Preservation type: | Š | | Correct sample containers used: | 100 | | 1 |
| Requested analyses: | 8 | | Samples received within holding times: | 2 | | Т |
| Required signatures: |), v) | | Sample volume sufficient for requested analyses: | 7 | | Т |
| Internal COC required: | 17/ | | Correct preservative used for requested analyses: | | | Т |
| Anomalies/Non-conformances (attach additional pages | ances (att. | ach additional pages if needed): | | | | 1 |

res/ Non-conformances (attach additional pages if needed):



8100810

Date:

Customer Approval:

weeks after report (storage fees may apply)

Return to Contents

01800)8

Chain of Custody Record & Laboratory Analysis Request: Air, Water, Sediments, Plant and Animal Tissue,

Phone: 425-686-1996 Fax: 425-686-3096

Bothell, WA 98011

11720 Northcreek Pkwy N, Suite 400

Hydrocarbon & Other Samples

eurofins.

info@frontlergs.com http://www.frontlergs.com EFGS PM: ಕ Page _ Frontier Global Sciences

By signing, you declare that you agree with EFGS' terms and conditions, and that For TAT < 10 days, contact PM For TAT < 10 usp., Surcharges apply for expedited TAT) 8 C Standard C High 15 10 5 4 3 2 24 (business days):20 * Dissolve (If yes, please contact PM) Comments D. Ssalved EDD CIY CIN includes * No blan are labe Samole Total Organization: Date & Time: Received By: Name: Date: you authorize EFGS to perform the specified analyses. Analyses Requested Name: Median HallbuckName: 15m Received By: Organization: Date & Time: S Other HO3 HCI BICI (%) 2 Organization: 0014/18L Field Preserved: Date & Time: 4.18-18 to the Field Filtered (Y/N) ァ Fracking number: Relinguished By: لم لا Sampled By हर्स 1933 1340 1338 1333 1338 E-mail: touts a unclearmater of wast or 1340 920 1333 5641 8. TI-P1975 Date & Time 9.17.18 FW: Fresh Water
WW: Waste Water
SB: Sea and Bracket Water
SS: Soil and Sediment
TS: Plant and Animal Tissue
HC: Hydrocarbons
TR: Trap
OT: Other Contact: 7, 2 P. 18
Phone: 603 476 - 6192 Matrix Codes Matrix Involce To: STAME Fax: Bottles # of Contract/PO: (mgineas Contact: Address Phone: Phone: 603 42, Fax:
E-mail: 40-4/5 west. Dissolved His-Bline Total CN-Blan Dissoluca - 2 Standard Disposal – 30 Days after report
 Retain for _____ weeks after report (storact) IM-Blank Dissolved Ha -1 Tetal CN-10 Sample 1D Total cu-2 Arth-Deoradoson Pord 25 Vays) The Malan Dissolved Disched He 03807 For Laboratory Use Only Return (shipping fees may apply) Comments: C-WL ーーエー Address: 25 vaughan Report To: Tum Puls 47 Client: Wanderwood Portemoreth D 101 Cooler Temp: 4.7 Bottle ID Sample Disposal Project Name: Piver COC Seal: 1/0 # of Coolers: Carrier: VTSR: ddress: σ 20 Ħ 9 œ

9618 965 C5DC

2146

37 LBS

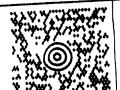
1 OF 1

DWT: 24,13,14

FRONT DESK (425) 685 - 1996 FRONTIER GLOBAL SCIENCES 11720 N CREEK PKWY N BOTHELL WA 98911 - 8244

SHIP TO:
SAMPLE RECEIVING
(714) 855-5494
EUROFINS CALSGIENCE, INC.
7440 LINCOLN WAY

GARDEN GROVE CA 92841



CA 927 9-09



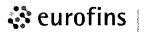
TRACKING #: 1Z 86W 050 01 5166 4242



BILLING: P/P

LAND LINC.

GARDEN



Calscience

SAMPLE RECEIPT CHECKLIST

1 OF **COOLER**

| CLIENT: EF6S DATE | ΓΕ: <u>09 /</u> | 28 | 2018 |
|---|-----------------|---------|--------|
| TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue) Thermometer ID: SC6 (CF: -0.5°C); Temperature (w/o CF):°C (w/ CF):°C; Sample(s) outside temperature criteria (PM/APM contacted by:) Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling | □ Blank | P | Sample |
| ☐ Sample(s) received at ambient temperature; placed on ice for transport by courier Ambient Temperature: ☐ Air ☐ Filter | Checked | d by: _ | WLP |
| CUSTODY SEAL: | | | |
| Cooler ☐ Present and Intact ☐ Present but Not Intact ☐ Not Present ☐ N/A | Checked | | |
| Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☐ Not Present ☐ N/A | Checke | d by: . | WSO |
| SAMPLE CONDITION: | Yes | No | N/A |
| Chain-of-Custody (COC) document(s) received with samples | 🗷 | | |
| COC document(s) received complete | | *Z | |
| ☐ Sampling date ☐ Sampling time ☐ Matrix ☐ Number of containers | | 2 | |
| ☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished tim | е | | |
| Sampler's name indicated on COC | | | |
| Sample container label(s) consistent with COC | 🔎 | | |
| Sample container(s) intact and in good condition | 7 | | |
| Proper containers for analyses requested | 🙀 | | |
| Sufficient volume/mass for analyses requested | . 9 | | |
| Samples received within holding time | | | |
| Aqueous samples for certain analyses received within 15-minute holding time | - | | _ |
| □ pH □ Residual Chlorine □ Dissolved Sulfide □ Dissolved Oxygen | 🛮 | | Ø |
| Proper preservation chemical(s) noted on COC and/or sample container | 🖊 | | |
| Unpreserved aqueous sample(s) received for certain analyses | | | |
| ☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals | | | |
| Acid/base preserved samples - pH within acceptable range | 🗷 | | |
| Container(s) for certain analysis free of headspace | 🗖 | | Ø |
| ☐ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500) | 4 | | |
| ☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach) | | | _ |
| Tedlar™ bag(s) free of condensation | 🛮 | | Ø |
| CONTAINER TYPE: (Trip Blank Lot Numb | er: | |) |
| Aqueous: □ VOA □ VOAh □ VOAna₂ □ 100PJ □ 100PJna₂ □ 125AGB □ 125AGBh □ 125AGBp □ 125 | | | |
| □ 250AGB □ 250CGB □ 250CGBs (pH_2) □ 250PB □ 250PBn (pH_2) □ 500AGB □ 500AGJ □ 500A | | | |
| □ 1AGB □ 1AGBna₂ □ 1AGBs (pH_2) □ 1AGBs (O&G) □ 1PB ☑ 1PBna (pH_7_12) □ □ | | | |
| Solid: □ 4ozCGJ □ 8ozCGJ □ 16ozCGJ □ Sleeve () □ EnCores® () □ TerraCores® () □ Air: □ Tedlar™ □ Canister □ Sorbent Tube □ PUF □ Other Matrix (): □ | | | |
| | | | |
| Container: $A = Amber$, $B = Bottle$, $C = Clear$, $E = Envelope$, $G = Glass$, $J = Jar$, $P = Plastic$, and $Z = Ziploc/Reservative$: $Preservative$: $Pres$ | | | WFSO |

Preservative: \mathbf{b} = buffered, \mathbf{f} = filtered, \mathbf{h} = HCl, \mathbf{n} = HNO₃, \mathbf{na} = NaOH, $\mathbf{na_2}$ = Na₂S₂O₃, \mathbf{p} = H₃PO₄,

 $s = H_2SO_4$, u = ultra-pure, $x = Na_2SO_3+NaHSO_4$. H_2O , $znna = Zn (CH_3CO_2)_2 + NaOH$

Reviewed by:

APPENDIX B

Laboratory Reports of Sample Results and Chain of Custody

Round 2 – October 17-18, 2018

EnviroSystems, Inc., One Lafayette Road P.O. Box 778 Hampton, N.H. 03843-0778 p. 603 926 3345 • † 603 926 3521 anvirosystems.com

Steve Clifton Underwood Engineers, Inc. 25 Vaughan Mall Portsmouth, NH 03801 PO Number: None Report Number: 31233 Date Received: 10/18/18 Date Reported: 11/12/18

Project: Piscataqua River

Attached please find results for analyses performed on samples received on 10/18/18 at 1100 and 164. The total phenol results were provided by Alpha Analytical of Westborough, Massachusetts Total phenol results are included in Appendix 1 of this report.

Samples were received in acceptable condition, except where noted, and under chain of custody.

Instruments used in analysis were calibrated with the appropriate frequency and to the specifications of the referenced methods.

Analytes in blanks were below levels affecting sample results.

Matrix effects as monitored by matrix spike recovery or unusual physical properties were not apparent unless otherwise noted.

Accuracy and precision as monitored by laboratory control sample analyses were within acceptance limits unless otherwise noted.

Accreditations may be viewed at www.envirosystems.com.

The results presented in this report relate only to the samples described on the chain(s) of custody and sample receipt log(s), and are intended to be used only by the submittor.

EnviroSystems, Incorporated

Jason Hobbs - Technical Manager of Analytical Chemistry

Date 11 13 18

31233

Piscataqua River

SDG:

Sample ID: Matrix:

PEASE_002

Water

Sampled:

10/18/18 0935

Parameter

Result Quant

Units

Date

Date of

INIT/Method/Reference

Limit Prepared

Analysis

Turbidity

31233-016

3.64

0.2 NTU

10/19/18 1500 10/19/18 1500 JLH/SM 2130 B

Notes:

31233

Piscataqua River

SDG:

Sample ID:

Matrix: Sampled: PEASE_002

Water

10/18/18 0925

Parameter

Result Quant Units

Date

Date of

INIT/Method/Reference

Limit

Prepared

Analysis

Oil and grease

31233-011

ND

5

mg/L

10/24/18 1300 10/30/18 0900 RK /EPA 1664A

Notes:

ND = Not Detected

ESI

Report No:

31233

SDG:

Project:

Piscataqua River

Sample ID:

PEASE_002

Matrix:

Water

Sampled:

10/18/18 0000

| Parameter | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---------------------------|-----------|--------|----------------|-----------|------------------|---------------------|-----------------------|
| Total dissolved solids | 31233-014 | 1800 | 5 | mg/L | 10/24/18 1640 | 10/30/18 1255 | CA /SM 2540C |
| Total suspended solids | 31233-005 | 6.1 | 1 | mg/L | 10/22/18 1000 | 10/30/18 1315 | CA /SM 2540D |
| Biochemical Oxygen Demand | 31233-001 | ND | 5 | mg/L | 10/19/18 | 10/24/18 | KL /SM 5210 B |
| Ammonia-N | 31233-006 | 2.1 | 0.1 | mg/L as N | 10/25/18 1130 | 10/25/18 1130 | JHW/SM 4500-NH3 G |
| Total Kjeldahl Nitrogen | 31233-009 | 2.8 | 0.5 | mg/L as N | 10/25/18 0859 | 10/28/18 | CA /SM 4500-NH3 G |
| Total Nitrogen | 31233-009 | 6.5 | 0.5 | mg/L as N | 11/09/18 | 11/09/18 | AM/Calculation |
| Nitrate plus nitrite-N | 31233-009 | 3.7 | 0.25 | mg/L as N | 10/24/18 0900 | 10/24/18 1145 | JHW/SM 4500-NO3 F |
| Total phosphorus | 31233-012 | 51 | 2 | mg/L | 10/23/18 1045 | 10/26/18 1530 | CA /SM 4500-P E |

Notes:

ND = Not Detected

603-926-3345

Report No:

31233

SDG:

Project:

Piscataqua River

Sample ID:

PEASE_002DUP

Matrix:

Water

Sampled:

10/18/18 0000

| Parameter | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---------------------------|-----------|--------|----------------|-----------|------------------|---------------------|-----------------------|
| Total dissolved solids | 31233-015 | 1800 | 5 | mg/L | 10/24/18 1640 | 10/30/18 1255 | CA /SM 2540C |
| Biochemical Oxygen Demand | 31233-002 | ND | 5 | mg/L | 10/19/18 | 10/24/18 | KL /SM 5210 B |
| Ammonia-N | 31233-007 | 2.1 | 0.1 | mg/L as N | 10/25/18 1130 | 10/25/18 1130 | JHW/SM 4500-NH3 G |
| Total Kjeldahl Nitrogen | 31233-010 | 1.6 | 0.5 | mg/L as N | 10/25/18 0859 | 10/28/18 | CA /SM 4500-NH3 G |
| Total Nitrogen | 31233-010 | 5.1 | 0.5 | mg/L as N | 11/09/18 | 11/09/18 | AM/Calculation |
| Nitrate plus nitrite-N | 31233-010 | 3.5 | 0.25 | mg/L as N | 10/31/18 1000 | 10/31/18 1000 | JHW/SM 4500-NO3 F |
| Total phosphorus | 31233-013 | 51 | 2 | mg/L | 10/23/18 1045 | 10/26/18 1530 | CA /SM 4500-P E |

Notes

ND = Not Detected

31233

Piscataqua River

SDG:

Sample ID:

NEW_002

Matrix: Sampled: Water

10/18/18 0835

Parameter

Result Quant Units

Date

Date of

INIT/Method/Reference

Limit

Prepared

Analysis

Turbidity

31233-040

2.04

0.2 NTU

10/19/18 1500 10/19/18 1500 JLH/SM 2130 B

Notes:

31233

Piscataqua River

SDG:

Sample ID:

Matrix:

NEW_002 Water

Sampled:

10/18/18 0825

Parameter

Result

Units Quant

Date

Date of

INIT/Method/Reference

Limit

Prepared

Analysis

Oil and grease

31233-036

ND

5

mg/L

10/24/18 1300 10/30/18 0900 RK /EPA 1664A

Notes:

ND = Not Detected

Report No:

31233

SDG:

Project:

Piscataqua River

Sample ID: Matrix: Sampled: NEW_002 Water

Water 10/18/18 0000

| Parameter | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---------------------------|-----------|--------|----------------|-----------|------------------|---------------------|-----------------------|
| Total dissolved solids | 31233-039 | 740 | 5 | mg/L | 10/24/18 1640 | 10/30/18 1255 | CA /SM 2540C |
| Total suspended solids | 31233-030 | 4.6 | 1 | mg/L | 10/22/18 1000 | 10/30/18 1315 | CA /SM 2540D |
| Biochemical Oxygen Demand | 31233-027 | ND | 5 | mg/L | 10/19/18 | 10/24/18 | KL /SM 5210 B |
| Ammonia-N | 31233-031 | ND | 0.1 | mg/L as N | 10/25/18 1130 | 10/25/18 1130 | JHW/SM 4500-NH3 G |
| Total Kjeldahl Nitrogen | 31233-034 | 1.1 | 0.5 | mg/L as N | 10/25/18 0859 | 10/28/18 | CA /SM 4500-NH3 G |
| Total Nitrogen | 31233-034 | 2.4 | 0.5 | mg/L as N | 11/09/18 | 11/09/18 | AM/Calculation |
| Nitrate plus nitrite-N | 31233-034 | 1.4 | 0.05 | mg/L as N | 10/24/18 0900 | 10/24/18 1145 | JHW/SM 4500-NO3 F |
| Total phosphorus | 31233-037 | 0.25 | 0.04 | mg/L | 10/29/18 1135 | 10/30/18 1510 | CA /SM 4500-P E |

Notes:

ND = Not Detected

31233

SDG:

Piscataqua River

Sample ID:

NEW_002DUP

Matrix: Sampled: Water 10/18/18 0000

| Parameter | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference | |
|-------------------------|-----------|--------|----------------|-----------|------------------|---------------------|-----------------------|--|
| Ammonia-N | 31233-032 | ND | 0.1 | mg/L as N | 10/25/18 1130 | 10/25/18 1130 | JHW/SM 4500-NH3 G | |
| Total Kjeldahl Nitrogen | 31233-035 | 1.3 | 0.5 | mg/L as N | 10/25/18 0859 | 10/28/18 | CA /SM 4500-NH3 G | |
| Total Nitrogen | 31233-035 | 2.7 | 0.5 | mg/L as N | 11/09/18 | 11/09/18 | AM/Calculation | |
| Nitrate plus nitrite-N | 31233-035 | 1.4 | 0.05 | mg/L as N | 10/24/18 0900 | 10/24/18 1145 | JHW/SM 4500-NO3 F | |
| Total phosphorus | 31233-038 | 0.25 | 0.04 | mg/L | 10/29/18 1135 | 10/30/18 1510 | CA /SM 4500-P E | |
| | | | | | | | | |

Notes:

ND = Not Detected

Hampton, NH 03842-0778

EnviroSystems, Inc.

Report No:

31233

SDG:

Project:

Piscataqua River

Sample ID: Matrix:

RIVER_002 Water

Sampled:

10/18/18 1600

Parameter

Result Quant

Units

Date

Date of

INIT/Method/Reference

Limit

Prepared

Analysis

Turbidity

31233-062

0.87

0.2

NTU

10/19/18 1500 10/19/18 1500 JLH/SM 2130 B

Notes:

ESI

Hampton, NH 03842-0778

603-926-3345 fax 603-926-3521

31233

Piscataqua River

SDG:

Sample ID:

Matrix:

RIVER_002

Water

Sampled:

10/18/18 1610

Parameter

Result Quant Units

Date

Date of

INIT/Method/Reference

Limit

Prepared

Analysis

Total suspended solids

31233-053

3.9

1 mg/L

10/22/18 1000 10/30/18 1315 CA /SM 2540D

Notes:

Report No:

31233

SDG:

Project:

Piscataqua River

Sample ID: Matrix

RIVER_002

Sampled:

Water 10/18/18 1550

| Parameter | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---------------------------|-----------|--------|----------------|-----------|------------------|---------------------|-----------------------|
| Biochemical Oxygen Demand | 31233-050 | ND | 5 | mg/L | 10/19/18 | 10/24/18 | KL /SM 5210 B |
| Ammonia-N | 31233-054 | ND | 0.1 | mg/L as N | 10/25/18 1130 | 10/25/18 1130 | JHW/SM 4500-NH3 G |

Notes:

ND = Not Detected

ESI

www.envirosystems.com

Hampton, NH 03842-0778 603-926-3345

EnviroSystems, Inc.

P.O. Box 778

fax 603-926-3521

Report No:

31233

SDG:

Project:

Piscataqua River

Sample ID: Matrix: Sampled:

RIVER_002

Water 10/18/18 1545

| Parameter | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---------------------------------------|------------------------|-------------|----------------|--------------|--------------------------------|---------------------|-------------------------------|
| Total dissolved solids Oil and grease | 31233-061 31233-058 | 26000 ND | 5 | mg/L mg/L | 10/24/18 1640 10/24/18 1300 | | CA /SM 2540C RK /EPA 1664A |
| Total Kjeldahl Nitrogen | 31233-056 | ND | 2.5 | mg/L as N | 10/25/18 0859 | 10/28/18 | CA /SM 4500-NH3 G |
| Total Nitrogen | 31233-056 | ND | 2.5 | mg/L as N | 11/09/18 | 11/09/18 | AM/Calculation |
| Nitrate plus nitrite-N | 31233-056 | 0.06 | 0.05 | mg/L as N | 10/24/18 0900 | 10/24/18 1145 | JHW/SM 4500-NO3 F |
| Total phosphorus | 31233-059 | 1.4 | 0.04 | mg/L | 10/29/18 1135 | 10/30/18 1510 | CA /SM 4500-P E |

Notes:

ND = Not Detected

603-926-3345

31233 Piscataqua River

SDG:

Sample ID:

RIVER_002DUP

Matrix:

Water

Sampled:

10/18/18 1545

| Parameter | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|-------------------------|-----------|--------|----------------|-----------|------------------|---------------------|-----------------------|
| Ammonia-N | 31233-055 | ND | 0.1 | mg/L as N | 10/25/18 1130 | 10/25/18 1130 | JHW/SM 4500-NH3 G |
| Total Kjeldahl Nitrogen | 31233-057 | ND | 2.5 | mg/L as N | 10/25/18 0859 | 10/28/18 | CA /SM 4500-NH3 G |
| Total Nitrogen | 31233-057 | ND | 2.5 | mg/L as N | 11/09/18 | 11/09/18 | AM/Calculation |
| Nitrate plus nitrite-N | 31233-057 | 0.06 | 0.05 | mg/L as N | 10/24/18 0900 | 10/24/18 1145 | JHW/SM 4500-NO3 F |
| Total phosphorus | 31233-060 | 0.58 | 0.04 | mg/L | 10/29/18 1135 | 10/30/18 1510 | CA /SM 4500-P E |

Notes:

ND = Not Detected

ESI

603-926-3345

 Lab Number:
 31233-020

 Sample Designation:
 PEASE_002

 Date Sampled:
 10/18/18 0930

 Date Analyzed:
 10/22/18

 Matrix:
 Water

VOLATILE ORGANICS Method Reference: EPA Method 624.

| | Concentration | Quantitation Limi |
|---------------------------|---------------|---|
| | (ug/L) | (ug/L) |
| acrolein | U | 10 |
| acrylonitrile | U | 10 |
| dichlorodifluoromethane | U | 2 |
| chloromethane | Ü | 2 |
| vinyl chloride | ũ | 2 |
| bromomethane | U | 2 2 |
| chloroethane | - Ü | |
| trichlorofluoromethane | Ü | 2 |
| 1,1-dichloroethene | Ũ | 2 |
| methylene chloride | Ü | 2 |
| trans-1,2-dichloroethene | Ü | 2 |
| 1,1-dichloroethane | Ü | 2 |
| cis-1,2-dichloroethene | ŭ | 2 |
| chloroform | 92 | 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 |
| 1,1,1-trichloroethane | Ü | 2 |
| carbon tetrachloride | Ü | 5 |
| benzene | ŭ | 2 |
| 1,2-dichloroethane | ŭ | 2 |
| trichloroethene | ŭ | 2 |
| 1,2-dichloropropane | ii. | 2 |
| dibromomethane | Ŭ | 2 |
| bromodichloromethane | 40 | 2 |
| cis-1,3-dichloropropene | U | 2 |
| 2-chloroethylvinylether | ü | 4 |
| | Ŭ | 3 |
| toluene | ŭ | 2 |
| trans-1,3-dichloropropene | ŭ | 2 2 2 2 2 |
| 1,1,2-trichloroethane | Ü | 2 |
| tetrachloroethene | Ü | 2 |
| 1,3-dichloropropane | 18 | |
| dibromochloromethane | | 2 |
| chlorobenzene | U | 2 |
| ethylbenzene | U | 2 |
| bromoform | U | 2 |
| 1,1,2,2-tetrachloroethane | u | 2 |
| 1,2-dichlorobenzene | u | 2 2 2 2 2 2 2 2 |
| 1,3-dichlorobenzene | Ü | 2 |
| 1,4-dichlorobenzene | U | 2 |
| SURROGATE STANDARDS | 3 % | Acceptance |
| | Recovery | Limits |
| dibromofluoromethane | 104 | 70 - 130 |
| toluene-d8 | 100 | 70 - 130 |
| 4-bromofluorobenzene | 104 | 70 - 130 |

Lab Number: 31233-043
Sample Designation: NEW_002
Date Sampled: 10/18/18 0840
Date Analyzed: 10/23/18
Matrix: Water

VOLATILE ORGANICS

Method Reference: EPA Method 624.

| | Concentration | Quantitation Limit |
|---------------------------|---------------|---|
| | (ug/L) | (ug/L) |
| acrolein | U | 10 |
| acrylonitrile | Ũ | 10 |
| dichlorodifluoromethane | Ü | 2 |
| chloromethane | ŭ | 2 |
| vinyl chloride | ŭ | 2 |
| bromomethane | Ũ | 2 |
| chloroethane | ŭ | 2 |
| trichlorofluoromethane | ŭ | 2 |
| 1,1-dichloroethene | ŭ | 2 |
| methylene chloride | ŭ | 2 |
| trans-1,2-dichloroethene | ŭ | 2 |
| 1.1-dichloroethane | ŭ | 2 |
| cis-1,2-dichloroethene | ŭ | 2 |
| chloroform | 220 | 2 |
| | U | 2 |
| 1,1,1-trichloroethane | Ü | 2 |
| carbon tetrachloride | Ü | 2 |
| benzene | | 2 |
| 1,2-dichloroethane | U | 2 2 2 2 2 2 2 2 2 2 2 |
| trichloroethene | U | 2 |
| 1,2-dichloropropane | U | 2 |
| dibromomethane | U | 2 |
| bromodichloromethane | 140 | 2 |
| cis-1,3-dichloropropene | U | 2 |
| 2-chloroethylvinylether | U | 4 |
| toluene | U | 2 |
| trans-1,3-dichloropropene | U | 2 |
| 1,1,2-trichloroethane | U | 2 |
| tetrachloroethene | U | 2 |
| 1,3-dichloropropane | U | 2 |
| dibromochloromethane | 79 | 2 |
| chlorobenzene | U | 2 |
| ethylbenzene | U | 2 |
| bromoform | 7 | 2 2 2 2 2 2 |
| 1,1,2,2-tetrachloroethane | U | 2 |
| 1,2-dichlorobenzene | U | 2 |
| 1,3-dichlorobenzene | U | 2 |
| 1,4-dichlorobenzene | Ü | 2 |
| SURROGATE STANDARDS | % | Acceptance |
| | Recovery | Limits |
| dibromofluoromethane | 108 | 70 - 130 |
| toluene-d8 | 102 | 70 - 130 |
| 4-bromofluorobenzene | 104 | 70 - 130 |
| | | |

Lab Number: 31233-065
Sample Designation: RIVER_002
Date Sampled: 10/18/18 1530
Date Analyzed: 10/23/18
Matrix: Water

VOLATILE ORGANICS

Method Reference: EPA Method 624.

| | Concentration | Quantitation Limi |
|---|---------------|--|
| | (ug/L) | (ug/L) |
| acrolein | U | 10 |
| acrylonitrile | Ü | 10 |
| dichlorodifluoromethane | U | 2 |
| chloromethane | Ü | |
| vinyl chloride | Ü | 2 2 2 2 2 2 2 2 2 2 2 2 |
| bromomethane | Ü | 2 |
| chloroethane | Ü | 2 |
| trichlorofluoromethane | U | 2 |
| 1,1-dichloroethene | Ü | 2 |
| methylene chloride | Ü | 2 |
| trans-1,2-dichloroethene | ŭ | 2 |
| 1,1-dichloroethane | ŭ | 2 |
| cis-1,2-dichloroethene | ŭ | 2 |
| chloroform | ŭ | 2 |
| 1,1,1-trichloroethane | Ü | 2 |
| carbon tetrachloride | ŭ | 2 2 2 2 2 2 2 2 2 2 2 |
| | Ŭ | 2 |
| benzene 1,2-dichloroethane | Ŭ | 2 |
| trichloroethene | U | 2 |
| 1,2-dichloropropane | Ŭ | 2 |
| dibromomethane | ŭ | 2 |
| bromodichloromethane | ŭ | 2 |
| cis-1,3-dichloropropene | ŭ | 5 |
| 2-chloroethylvinylether | ŭ | 4 |
| toluene | ŭ | 2 |
| trans-1,3-dichloropropene | ŭ | 2 |
| 1,1,2-trichloroethane | ŭ | 2 |
| | ŭ | 2 |
| tetrachloroethene | ŭ | 2 |
| 1,3-dichloropropane dibromochloromethane | ŭ | 2 |
| THE STORY OF BUILDING SHOWS IN | ŭ | 2 |
| chlorobenzene | Ü | 2 |
| ethylbenzene | | 2 |
| bromoform | U | 2 |
| 1,1,2,2-tetrachloroethane | | 2 |
| 1,2-dichlorobenzene | U. | 2 |
| 1,3-dichlorobenzene | Ü | 2 |
| 1,4-dichlorobenzene | U | 2 |
| SURROGATE STANDARD | | Acceptance |
| | Recovery | Limits |
| dibromofluoromethane | 100 | 70 - 130 |
| toluene-d8 | 102 | 70 - 130 |
| 4-bromofluorobenzene | 108 | 70 - 130 |
| U = Below quantitation limit | | |
| | | |

Lab Number: 31233-066
Sample Designation: RIVER_002TP
Date Sampled: 10/18/18 1530
Date Analyzed: 10/23/18
Matrix: Water

VOLATILE ORGANICS

Method Reference: EPA Method 624.

| | Concentration | Quantitation Limit |
|---------------------------|-----------------|---------------------------------|
| | (ug/L) | (ug/L) |
| acrolein | U | 10 |
| acrylonitrile | U | 10 |
| dichlorodifluoromethane | Ü | 2 |
| chloromethane | ũ | 2 |
| vinyl chloride | ũ | 2 |
| bromomethane | ŭ | 2 |
| chloroethane | ŭ | |
| trichlorofluoromethane | Ü | 2 2 2 2 2 |
| 1,1-dichloroethene | ŭ | 2 |
| methylene chloride | ŭ | 2 |
| trans-1,2-dichloroethene | ŭ | 5 |
| 1,1-dichloroethane | ŭ | 2 |
| | Ü | 2 |
| cis-1,2-dichloroethene | Ü | 2 |
| chloroform | Ü | 2 |
| 1,1,1-trichloroethane | Ü | 2 2 2 2 2 |
| carbon tetrachloride | Ű | 2 |
| benzene | _ | 2 |
| 1,2-dichloroethane | U | 2 |
| trichloroethene | U | 2 |
| 1,2-dichloropropane | U | 2 |
| dibromomethane | U | 2 |
| bromodichloromethane | U | 2 |
| cis-1,3-dichloropropene | U | 2 |
| 2-chloroethylvinylether | U | 4 |
| toluene | U | 2 |
| trans-1,3-dichloropropene | U | 2 |
| 1,1,2-trichloroethane | U | 2 |
| tetrachloroethene | U | 2 2 2 2 2 2 2 |
| 1,3-dichloropropane | U | 2 |
| dibromochloromethane | U | 2 |
| chlorobenzene | U | 2 |
| ethylbenzene | U | 2 |
| bromoform | U | 2 |
| 1,1,2,2-tetrachloroethane | U | 2 |
| 1,2-dichlorobenzene | U | 2 |
| 1,3-dichlorobenzene | U | 2 |
| 1,4-dichlorobenzene | Ŋ | 2 |
| SURROGATE STANDARD | S % Recovery | Acceptance Limits |
| dibromofluoromethane | 98 | 70 - 130 |
| toluene-d8 | 104 | 70 - 130 |
| 4-bromofluorobenzene | 104 | 70 - 130 |
| | | |

Lab Number: 31233-024
Sample Designation: PEASE_002
Date Sampled: 10/18/18
Date Extracted: 10/23/18
Date Analyzed: 10/30/18
Matrix: Water

SEMIVOLATILE ORGANICS Method Reference: EPA 625.

| | Concentration | Reporting Limit | | Concentration | Reporting Limit |
|----------------------------------|---------------|-----------------|------------------------------------|---------------|-----------------|
| | (ug/L) | (ug/L) | | (ug/L) | (ug/L) |
| N-nitrosodimethylamine | U | 3 | acenaphthene | U | 3 |
| phenol | u | 3 | 2,4-dinitrophenol | u | 22 |
| 2-chlorophenol | U | 3 | 4-nitrophenol | u | 5 |
| bis(2-chloroethyl)ether | U | 3 | fluorene | U | 3 |
| 1,3-dichlorobenzene | ·U | 3 | 4-chlorophenyl-phenylether | u | 3 |
| 1,4-dichlorobenzene | U | 3 | diethylphthalate | ŭ | 3 |
| 1,2-dichlorobenzene | U | 3 | 4,6-dinitro-2-methylphenol | u | 5 |
| 2-methylphenol (m-cresol) | U | 3 | N-nitrosodiphenylamine | U | 3 |
| bis(2-chloroisopropyl)ether | U | 3 | 1,2-diphenylhydrazine (azobenzene) | U | 3 |
| hexachloroethane | u | 3 | 4-bromophenyl-phenylether | U | 3 |
| N-nitroso-di-n-propylamine | u | 5 | hexachlorobenzene | U | 3 |
| 3- and 4-methylphenol (p-cresol) | U | 3 | pentachlorophenol | U | 3 |
| nitrobenzene | u | 3 | phenanthrene | Ů. | 3 |
| isophorone | M | 3 | anthracene | u | 3 |
| 2-nitrophenol | u | 3 | di-n-butylphthalate | u | 3 |
| 2,4-dimethylphenol | u | 3 | fluoranthene | u | 3 |
| bis(2-chloroethoxy)methane | u | 3 | benzidine | u | 22 |
| 2,4-dichlorophenol | u | 3 | pyrene | u | 3 |
| 1,2,4-trichlorobenzene | u | 3 | butylbenzylphthalate | u | 3 |
| naphthalene | U | 3 | benzo(a)anthracene | U | 3 |
| hexachloro-1,3-butadiene | U | 3 | chrysene | U | 3 |
| 4-chloro-3-methylphenol | u | 3 | 3,3'-dichlorobenzidine | U | 3 |
| hexachlorocyclopentadiene | U | 22 | bis(2-ethylhexyl)phthalate | U | 3 |
| 2.4.5-trichlorophenol | U | 3 | di-n-octylphthalate | U | 3 |
| 2,4,6-trichlorophenol | U | 3 | benzo(b)fluoranthene | u | 3 |
| 2-chloronaphthalene | u | 3 | benzo(k)fluoranthene | u | 3 |
| acenaphthylene | U | 3 | benzo(a)pyrene | U | 3 |
| dimethylphthalate | u | 3 | indeno(1,2,3-cd)pyrene | Ü | 3 |
| 2,6-dinitrotoluene | .u | 3 | dibenzo(a,h)anthracene | Ħ | 3 |
| 2.4-dinitrotoluene | .W. | 3 | benzo(g,h,i)perylene | ,U | 3 |

| Recovery | Acceptance Lim | its | Recovery | Acceptance Limits |
|----------|-----------------|-----------------------------------|--|--|
| (%) | (%) | | (%) | (%) |
| 56 | 25-175 | nitrobenzene-d5 | 67 | 22-178 |
| 49 | 24-176 | 2-fluorobiphenyl | 62 | 38-162 |
| 109 | 24-176 | terphenyl-d14 | 86 | 53-147 |
| | (%) 56 49 | (%) (%) 56 25-175 49 24-176 | (%) (%) 56 25-175 nitrobenzene-d5 49 24-176 2-fluorobiphenyl | (%) (%) (%) 56 25-175 nitrobenzene-d5 67 49 24-176 2-fluorobiphenyl 62 |

Lab Number: Sample Designation: 31233-047 NEW_002 10/18/18

Date Sampled: Date Extracted Date Analyzed

10/23/18 10/30/18

Matrix:

Water

SEMIVOLATILE ORGANICS Method Reference: EPA 625.

| | Concentration | Reporting Limit | | Concentration | Reporting Limit |
|----------------------------------|---------------|-----------------|------------------------------------|---------------|-----------------|
| | (ug/L) | (ug/L) | | (ug/L) | (ug/L) |
| N-nitrosodimethylamine | u | 3 | acenaphthene | U | 3 |
| phenol | U | 3 | 2,4-dinitrophenol | U | . 21 |
| 2-chlorophenol | U. | 3 | 4-nitrophenol | U | 5 |
| bis(2-chloroethyl)ether | U | 3 | fluorene | U | 3 |
| 1,3-dichlorobenzene | U | 3 | 4-chlorophenyl-phenylether | U | 3 |
| 1,4-dichlorobenzene | 0 | 3 | diethylphthalate | U | 3 |
| 1,2-dichlorobenzene | U | 3 | 4,6-dinitro-2-methylphenol | U | 5 |
| 2-methylphenol (m-cresol) | U | 3 | N-nitrosodiphenylamine | U | 3 |
| bis(2-chloroisopropyl)ether | U | 3 | 1,2-diphenylhydrazine (azobenzene) | 0 | 3 |
| hexachloroethane | U | 3 | 4-bromophenyl-phenylether | U | 3 |
| N-nitroso-di-n-propylamine | U | 5 | hexachlorobenzene | U | 3 |
| 3- and 4-methylphenol (p-cresol) | U | 3 | pentachlorophenol | U | 3 |
| nitrobenzene | U | 3 | phenanthrene | U | 3 |
| isophorone | U | 3 | anthracene | U | 3 |
| 2-nitrophenol | Ü | 3 | di-n-butylphthalate | U | 3 |
| 2,4-dimethylphenol | U | 3 | fluoranthene | U | 3 |
| bis(2-chloroethoxy)methane | 0 | 3 | benzidine | U | 21 |
| 2,4-dichlorophenol | U | 3 | pyrene | U | 3 |
| 1,2,4-trichlorobenzene | U | 3 | butylbenzylphthalate | U | 3 |
| naphthalene | U | 3 | benzo(a)anthracene | U | 3 |
| hexachloro-1,3-butadiene | 0 | 3 | chrysene | U | 3 |
| 4-chloro-3-methylphenol | Ü | 3 | 3,3'-dichlorobenzidine | U | 3 |
| hexachlorocyclopentadiene | Ü | 21 | bis(2-ethylhexyl)phthalate | U | 3 |
| 2,4,5-trichlorophenol | · O | 3 | di-n-octylphthalate | U | 3 |
| 2,4,6-trichlorophenol | U | 3 | benzo(b)fluoranthene | U | 3 |
| 2-chloronaphthalene | 0 | 3 | benzo(k)fluoranthene | U | 3 |
| acenaphthylene | U | 3 | benzo(a)pyrene | 0 | 3 |
| dimethylphthalate | U | 3 | indeno(1,2,3-cd)pyrene | U | 3 |
| 2,6-dinitrotoluene | U | 3 | dibenzo(a,h)anthracene | U | 3 |
| 2.4-dinitrotoluene | U | 3 | benzo(g,h,i)perylene | U | .3 |

SURROGATE STANDARDS

| Section 15 Section 2015 Men. | Recovery | Acceptance Limits | | Recovery | Acceptance Limits |
|------------------------------|----------|-------------------|------------------|----------|-------------------|
| | (%) | (%) | | (%) | (%) |
| 2-fluorophenol | 56 | 25-175 | nitrobenzene-d5 | 67 | 22-178 |
| phenol-d5 | 46 | 24-176 | 2-fluorobiphenyl | 63 | 38-162 |
| 2,4,6-tribromophenol | 115 | 24-176 | terphenyl-d14 | 85 | 53-147 |

Lab Number: 31233-069
Sample Designation: RIVER_002
Date Sampled: 10/18/18
Date Extracted: 10/23/18
Date Analyzed: 10/31/18
Matrix: Water

SEMIVOLATILE ORGANICS Method Reference: EPA 625.

| | Concentration | Reporting Limit | | Concentration | Reporting Limit |
|----------------------------------|---------------|-----------------|------------------------------------|---------------|-----------------|
| | (ug/L) | (ug/L) | | (ug/L) | (ug/L) |
| N-nitrosodimethylamine | U | 3 | acenaphthene | U | 3 |
| phenol | U | 3 | 2,4-dinitrophenol | U | 21 |
| 2-chlorophenol | U | 3 | 4-nitrophenol | U | 5 |
| bis(2-chloroethyl)ether | U | 3 | fluorene | .0. | 3 |
| 1,3-dichlorobenzene | 0 | 3 | 4-chlorophenyl-phenylether | U | 3 |
| 1,4-dichlorobenzene | U | 3 | diethylphthalate | U | 3 |
| 1,2-dichlorobenzene | U | 3 | 4,6-dinitro-2-methylphenol | U | 5 |
| 2-methylphenol (m-cresol) | U | 3 | N-nitrosodiphenylamine | 0 | 3 |
| bis(2-chloroisopropyl)ether | Ü | 3 | 1,2-diphenylhydrazine (azobenzene) | U | 3 |
| hexachloroethane | Ü | 3 | 4-bromophenyl-phenylether | 0 | 3 |
| N-nitroso-di-n-propylamine | U | 5 | hexachlorobenzene | U | 3 |
| 3- and 4-methylphenol (p-cresol) | U | 3 | pentachlorophenol | Ú. | 3 |
| nitrobenzene | U | 3 | phenanthrene | U | 3 |
| isophorone | U | 3 | anthracene | U | 3 |
| 2-nitrophenol | U | 3 | di-n-butylphthalate | 26, B | 3 |
| 2,4-dimethylphenol | U | 3 | fluoranthene | U | 3 |
| bis(2-chloroethoxy)methane | U | 3 | benzidine | 0 | 21 |
| 2,4-dichlorophenol | U | 3 | pyrene | u | 3 |
| 1,2,4-trichlorobenzene | U | 3 | butylbenzylphthalate | U | 3 |
| naphthalene | U | 3 | benzo(a)anthracene | U | 3 |
| hexachloro-1,3-butadiene | U | 3 | chrysene | U | 3 |
| 4-chloro-3-methylphenol | Ü | 3 | 3,3'-dichlorobenzidine | 0 | 3 |
| hexachlorocyclopentadiene | U | 21 | bis(2-ethylhexyl)phthalate | U | 3 |
| 2,4,5-trichlorophenol | U | 3 | di-n-octylphthalate | U | 3 |
| 2,4,6-trichlorophenol | U | 3 | benzo(b)fluoranthene | U | 3 |
| 2-chloronaphthalene | u | 3 | benzo(k)fluoranthene | U | 3 |
| acenaphthylene | U | 3 | benzo(a)pyrene | U | 3 |
| dimethylphthalate | U | 3 | indeno(1,2,3-cd)pyrene | Ü | 3 |
| 2,6-dinitrotoluene | . 0 | 3 | dibenzo(a,h)anthracene | U | 3 |
| 2,4-dinitrotoluene | U | 3 | benzo(g,h,i)perylene | υ | 3 |

| SURROGATE STANDARDS | | | | | |
|----------------------|----------|----------------|------------------|----------|-------------------|
| | Recovery | Acceptance Lin | nits | Recovery | Acceptance Limits |
| | (%) | (%) | | (%) | (%) |
| 2-fluorophenol | 57 | 25-175 | nitrobenzene-d5 | 71 | 22-178 |
| phenol-d5 | 63 | 24-176 | 2-fluorobiphenyl | 63 | 38-162 |
| 2,4,6-tribromophenol | 90 | 24-176 | terphenyl-d14 | 67 | 53-147 |

U = Below quantitation limit

B = di-n-butylphthalate was found in the blank with a concentration of 4 ug/L.

Lab Number: 31233-070
Sample Designation: RIVER_002TP
Date Sampled: 10/18/18
Date Extracted: 10/23/18
Date Analyzed: 10/31/18
Matrix: Water

SEMIVOLATILE ORGANICS Method Reference: EPA 625.

| | Concentration | Reporting Limit | | Concentration | Reporting Limit |
|----------------------------------|---------------|-----------------|------------------------------------|---------------|-----------------|
| | (ug/L) | (ug/L) | | (ug/L) | (ug/L) |
| N-nitrosodimethylamine | U | 3 | acenaphthene | 0 | 3 |
| phenol | U | 3 | 2,4-dinitrophenol | U | 21 |
| 2-chlorophenol | U | 3 | 4-nitrophenol | U | 5 |
| bis(2-chloroethyl)ether | U | 3 | fluorene | U | 3 |
| 1,3-dichlorobenzene | U | 3 | 4-chlorophenyl-phenylether | U | 3 |
| 1,4-dichlorobenzene | U | 3 | diethylphthalate | U | 3 |
| 1,2-dichlorobenzene | U | 3 | 4,6-dinitro-2-methylphenol | U | 5 |
| 2-methylphenol (m-cresol) | U | 3 | N-nitrosodiphenylamine | U | 3 |
| bis(2-chloroisopropyl)ether | .0. | 3 | 1,2-diphenylhydrazine (azobenzene) | U | 3 |
| hexachloroethane | U | 3 | 4-bromophenyl-phenylether | U | 3 |
| N-nitroso-di-n-propylamine | .U. | 5 | hexachlorobenzene | U | 3 |
| 3- and 4-methylphenol (p-cresol) | U | 3 | pentachlorophenol | U | 3 |
| nitrobenzene | U | 3 | phenanthrene | U | 3 |
| isophorone | U | 3 | anthracene | U | 3 |
| 2-nitrophenol | U | 3 | di-n-butyiphthalate | 4.6, B | 3 |
| 2,4-dimethylphenol | O | 3 | fluoranthene | U | 3 |
| bis(2-chloroethoxy)methane | U | 3 | benzidine | U | 21 |
| 2,4-dichlorophenol | U | 3 | pyrene | U | 3 |
| 1,2,4-trichlorobenzene | U | 3 | butylbenzylphthalate | U | 3 |
| naphthalene | U | 3 | benzo(a)anthracene | U | 3 |
| hexachloro-1,3-butadiene | U | 3 | chrysene | 0. | 3 |
| 4-chloro-3-methylphenol | U | 3 | 3,3'-dichlorobenzidine | U | 3 |
| hexachlorocyclopentadiene | U | 21 | bis(2-ethylhexyl)phthalate | U | 3 |
| 2,4,5-trichlorophenol | U | 3 | di-n-octylphthalate | u | 3 |
| 2,4,6-trichlorophenol | · O | 3 | benzo(b)fluoranthene | U. | 3 |
| 2-chloronaphthalene | U | 3 | benzo(k)fluoranthene | U | 3 |
| acenaphthylene | u | 3 | benzo(a)pyrene | U. | 3 |
| dimethylphthalate | U | 3 | indeno(1,2,3-cd)pyrene | U | 3 |
| 2,6-dinitrotoluene | Ü | 3 | dibenzo(a,h)anthracene | U | 3 |
| 2,4-dinitrotoluene | U_ | 3 | benzo(g,h,i)perylene | U | 3 |

| SURROGATE STANDARDS | | | | | |
|----------------------|----------|----------------|------------------|----------|-------------------|
| | Recovery | Acceptance Lin | mits | Recovery | Acceptance Limits |
| | (%) | (%) | | (%) | (%) |
| 2-fluorophenol | 54 | 25-175 | nitrobenzene-d5 | 78 | 22-178 |
| phenol-d5 | 46 | 24-176 | 2-fluorobiphenyl | 71 | 38-162 |
| 2,4,6-tribromophenol | 119 | 24-176 | terphenyl-d14 | 113 | 53-147 |

U = Below quantitation limit

B = di-n=butylphthalate was found in the blank at a concentration of 4 ug/L

BACTERIAL ANALYSIS REPORT

ESI STUDY No.: 31233

Client: Underwood Engineers Sample Receipt: 10/18/18 1100 & 1645

Fecal Coliform Method: SM 9222D

| Sample Lab ID Identification Number | Sample Collection | | Sample A | Analysis | Result | Analyst | |
|-------------------------------------|-------------------|----------|----------|----------|-------------|---------|----|
| | Date | Time | Date | Time | (CFU/100mL) | Analyst | |
| PEASE_002 | 31233-004 | 10/18/18 | 0935 | 10/18/18 | 1414 | 1 | MW |
| NEW_002 | 31233-029 | 10/18/18 | 0830 | 10/18/18 | 1303 | 1 | MW |
| RIVER_002 | 31233-052 | 10/18/18 | 1610 | 10/18/18 | 1726 | 1 | MW |

Enterococcus Method: EPA 1600

| Sample Lab ID Number | Sample Collection | | Sample A | nalysis | Result | Analyst | |
|----------------------|-------------------|----------|----------|----------|-------------|---------|----|
| | Date | Time | Date | Time | (CFU/100mL) | Analyst | |
| PEASE_002 | 31233-003 | 10/18/18 | 0935 | 10/18/18 | 1300 | <1 | MW |
| NEW_002 | 31233-028 | 10/18/18 | 0830 | 10/18/18 | 1303 | <1 | MW |
| RIVER_002 | 31233-051 | 10/18/18 | 1610 | 10/18/18 | 1724 | 1 | MW |

Effluent Chemistry

| 31131100319.0.10331110.013 | |
|--------------------------------|-----|
| Total Residual Chlorine (mg/L) | _ a |

a TRC was not measured at the lab prior to analysis.

Analytical Methods: APHA. 2012. Standard Methods for the Examination of Water and

Wastewater, 22nd Edition. Washington D.C.

U.S. Environmental Protection Agency Office of Water (4303T). 2003. Method 1600: Membrane Filter Test for Enterococci in Water.

Washington D.C.

31233

Piscataqua River

Sample ID: Matrix:

PEASE_002 Water

| Parameter | | Result | True Value | Percent Recovery | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|-----------------------------------|-------|--------|---------------|---------------------|-------------------|------------------|---------------------|-----------------------|
| Total dissolved Solids | PB | ND | 0.00 | ND | mg/L | 10/24/18 1640 | 10/30/18 1255 | SM 2540C |
| Total dissolved Solids | LCS | 493.00 | 450.00 | 110%R | mg/L | 10/24/18 1640 | 10/30/18 1255 | SM 2540C |
| Total dissolved Solids | LCSD | 527.00 | 450.00 | 117%R, 7%RPD | mg/L | 10/24/18 1640 | 10/30/18 1255 | SM 2540C |
| Total Suspended Solids | PB | ND | 0.00 | ND | mg/L | 10/22/18 1000 | 10/30/18 1315 | SM 2540D |
| Total Suspended Solids | LCS | 7.50 | 10.00 | 75%R | mg/L | 10/22/18 1000 | 10/30/18 1315 | SM 2540D |
| Total Suspended Solids | LCSD | 9.50 | 9.80 | 97%R, 24%RPD | mg/L | 10/22/18 1000 | 10/30/18 1315 | SM 2540D |
| Biochemical Oxygen Demand | РВА | 0.08 | 0.00 | ND | mg/L DO depletion | 10/19/18 | 10/24/18 | SM 5210 B |
| Biochemical Oxygen Demand | PBB | 0.02 | 0.00 | ND | mg/L DO depletion | 10/19/18 | 10/24/18 | SM 5210 B |
| Biochemical Oxygen Demand | LCS | 174.00 | 198.00 | 88%R | mg/L DO depletion | 10/19/18 | 10/24/18 | SM 5210 B |
| Biochemical Oxygen Demand | LCSD | 168,00 | 198.00 | 85%R | mg/L DO depletion | 10/19/18 | 10/24/18 | SM 5210 B |
| Biochemical Oxygen Demand | LCST | 172.50 | 198.00 | 87%R, 1%RR | mg/L DO depletion | 10/19/18 | 10/24/18 | SM 5210 B |
| Oil and grease | PB | ND | 0.00 | ND | mg/L | 10/24/18 1300 | 10/30/18 0900 | EPA 1664A |
| Oil and grease | LCS | 35.50 | 40.00 | 89%R | mg/L | 10/24/18 1300 | 10/30/18 0900 | EPA 1664A |
| Oil and grease | LCSD | 30.00 | 40,00 | 75%R, 16%RR | mg/L | 10/24/18 1300 | 10/30/18 0900 | EPA 1664A |
| Ammonia-N | PB | ND | 0.00 | ND | mg/L as N | 10/25/18 1130 | 10/25/18 1130 | SM 4500-NH3 G |
| Ammonia-N | LCS | 9.80 | 10.00 | 98%R | mg/L as N | 10/25/18 1130 | 10/25/18 1130 | SM 4500-NH3 G |
| Ammonia-N | LCS | 9,80 | 10.00 | 98%R, 0%RPD | mg/L as N | 10/25/18 1130 | 10/25/18 1130 | SM 4500-NH3 G |
| Total Kjeldahi Nitrogen | РВ | ND | 0.00 | ND | mg/L as N | 10/25/18 0859 | 10/28/18 | SM 4500-N C |
| Total Kjeldahl Nitrogen | LCS | 9.21 | 10,00 | 92%R | mg/L as N | 10/25/18 0859 | 10/28/18 | SM 4500-N C |
| Total Kjeldahl Nitrogen | LCS | 9,38 | 10,00 | 94%R, 2%RPD | mg/L as N | 10/25/18 0859 | 10/28/18 | SM 4500-N C |
| Nitrate plus nitrite-N | PB | ND | 0.00 | ND | mg/L as N | 10/24/18 0900 | 10/24/18 1145 | SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCS | 1.00 | 1.00 | 100%R | mg/L as N | 10/24/18 0900 | 10/24/18 1145 | SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCSD | 1.00 | 1,00 | 100%R, 0%RPD | mg/L as N | 10/24/18 0900 | 10/24/18 1145 | SM 4500-NO3 F |
| Total phosphorus | РВ | ND | 0.00 | ND | mg/L | 10/26/18 1530 | 10/26/18 1530 | SM 4500-P E |
| Total phosphorus | LCS | 0.50 | 0.50 | 101%R | mg/L | 10/23/18 1045 | 10/26/18 1530 | SM 4500-P E |
| Total phosphorus | LCSD | 0.50 | 0.50 | 99%R, 2%RPD | mg/L | 10/23/18 1045 | 10/26/18 1530 | SM 4500-P E |
| Total phosphorus | S1D | 0.34 | 0.29 | 17%RPD | mg/L | 10/23/18 1045 | 10/23/18 1045 | SM 4500-P E |
| Total phosphorus | S1S | 0.50 | 0.50 | 60%R | mg/L | 10/23/18 1045 | 10/23/18 1045 | SM 4500-P E |
| The New York of Galactic Carriers | 21170 | | | and account | ~~~ | | | |

SDG

EnviroSystems, Inc.

31233

Piscataqua River

Sample ID: Matrix:

PEASE_002DUP

Water

| Parameter | | Result | True Value | Percent Recovery | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---------------------------|------|--------|---------------|---------------------|-------------------|------------------|---------------------|-----------------------|
| Total dissolved Solids | РВ | ND | 0.00 | ND | mg/L | 10/24/18 1640 | 10/30/18 1255 | SM 2540C |
| Total dissolved Solids | LCS | 493.00 | 450.00 | 110%R | mg/L | 10/24/18 1640 | 10/30/18 1255 | SM 2540C |
| Total dissolved Solids | LCSD | 527.00 | 450.00 | 117%R, 7%RPD | mg/L | 10/24/18 1640 | 10/30/18 1255 | SM 2540C |
| Biochemical Oxygen Demand | PBA | 0.08 | 0.00 | ND | mg/L DO depletion | 10/19/18 | 10/24/18 | SM 5210 B |
| Biochemical Oxygen Demand | PBB | 0.02 | 0.00 | ND | mg/L DO depletion | 10/19/18 | 10/24/18 | SM 5210 B |
| Biochemical Oxygen Demand | LCS | 174.00 | 198.00 | 88%R | mg/L DO depletion | 10/19/18 | 10/24/18 | SM 5210 B |
| Biochemical Oxygen Demand | LCSD | 168.00 | 198.00 | 85%R | mg/L DO depletion | 10/19/18 | 10/24/18 | SM 5210 B |
| Biochemical Oxygen Demand | LCST | 172.50 | 198.00 | 87%R, 1%RR | mg/L DO depletion | 10/19/18 | 10/24/18 | SM 5210 B |
| Ammonia-N | PB | ND | 0.00 | ND | mg/L as N | 10/25/18 1130 | 10/25/18 1130 | SM 4500-NH3 G |
| Ammonia-N | LCS | 9.80 | 10.00 | 98%R | mg/L as N | 10/25/18 1130 | 10/25/18 1130 | SM 4500-NH3 G |
| Ammonia-N | LCS | 9.80 | 10.00 | 98%R, 0%RPD | mg/L as N | 10/25/18 1130 | 10/25/18 1130 | SM 4500-NH3 G |
| Total Kjeldahl Nitrogen | PB | ND | 0.00 | ND | mg/L as N | 10/25/18 0859 | 10/28/18 | SM 4500-N C |
| Total Kieldahl Nitrogen | LCS | 9.21 | 10.00 | 92%R | mg/L as N | 10/25/18 0859 | 10/28/18 | SM 4500-N C |
| Total Kjeldahl Nitrogen | LCS | 9.38 | 10.00 | 94%R, 2%RPD | mg/L as N | 10/25/18 0859 | 10/28/18 | SM 4500-N C |
| Nitrate plus nitrite-N | PB | ND | 0.00 | ND | mg/L as N | 10/31/18 1000 | 10/31/18 1000 | SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCS | 1.00 | 1.00 | 100%R | mg/L as N | 10/31/18 1000 | 10/31/18 1000 | SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCSD | 1.00 | 1.00 | 100%R, 0%RPD | mg/L as N | 10/31/18 1000 | 10/31/18 1000 | SM 4500-NO3 F |
| Total phosphorus | PB | ND | 0.00 | ND | mg/L | 10/26/18 1530 | 10/26/18 1530 | SM 4500-P E |
| Total phosphorus | LCS | 0.50 | 0.50 | 101%R | mg/L | 10/23/18 1045 | 10/26/18 1530 | SM 4500-P E |
| Total phosphorus | LCSD | 0.50 | 0.60 | 99%R, 2%RPD | mg/L | 10/23/18 1045 | 10/26/18 1530 | SM 4500-P E |
| Total phosphorus | S1D | 0.34 | 0.29 | 17%RPD | mg/L | 10/23/18 1045 | 10/23/18 1045 | SM 4500-P E |
| Total phosphorus | S1S | 0.50 | 0.50 | 60%R | mg/L | 10/23/18 1045 | 10/23/18 1045 | SM 4500-P E |

SDG:

31233

Piscataqua River

Sample ID: Matrix:

NEW_002 Water

| Parameter | | Result | True Value | Percent Recovery | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---------------------------|------|--------|---------------|---------------------|-------------------|--------------------------|---------------------|-----------------------|
| Total dissolved Solids | PB | ND | 0.00 | ND | mg/L | 10/24/18 1640 | 10/30/18 1255 | SM 2540C |
| Total dissolved Solids | LCS | 493.00 | 450.00 | 110%R | mg/L | 10/24/18 1640 | 10/30/18 1255 | SM 2540C |
| Total dissolved Solids | LCSD | 527.00 | 450.00 | 117%R, 7%RPD | mg/L | 10/24/18 1640 | 10/30/18 1255 | SM 2540C |
| Total Suspended Solids | PB | ND | 0.00 | ND | mg/L | 10/22/18 1000 | 10/30/18 1315 | SM 2540D |
| Total Suspended Solids | LCS | 7.50 | 10.00 | 75%R | mg/L | 10/22/18 1000 | 10/30/18 1315 | SM 2540D |
| Total Suspended Solids | LCSD | 9.50 | 9.80 | 97%R, 24%RPD | mg/L | 10/22/18 1000 | 10/30/18 1315 | SM 2540D |
| Biochemical Oxygen Demand | PBA | 0.08 | 0.00 | ND | mg/L DO depletion | 10/19/18 | 10/24/18 | SM 5210 B |
| Biochemical Oxygen Demand | PBB | 0.02 | 0.00 | ND | mg/L DO depletion | 10/19/18 | 10/24/18 | SM 5210 B |
| Biochemical Oxygen Demand | LCS | 174.00 | 198.00 | 88%R | mg/L DO depletion | 10/19/18 | 10/24/18 | SM 5210 B |
| Biochemical Oxygen Demand | LCSD | 168.00 | 198.00 | 85%R | mg/L DO depletion | 10/19/18 | 10/24/18 | SM 5210 B |
| Biochemical Oxygen Demand | LCST | 172.50 | 198.00 | 87%R, 1%RR | mg/L DO depletion | 10/19/18 | 10/24/18 | SM 5210 B |
| Oil and grease | PB | ND | 0.00 | ND | mg/L | 10/24/18 1300 | 10/30/18 0900 | EPA 1664A |
| Oil and grease | LCS | 35.50 | 40.00 | 89%R | mg/L | 10/24/18 1300 | 10/30/18 0900 | EPA 1664A |
| Oil and grease | LCSD | 30.00 | 40.00 | 75%R, 16%RR | mg/L | 10/24/18 1300 | 10/30/18 0900 | EPA 1664A |
| Ammonia-N | РВ | ND | 0.00 | ND | mg/L as N | 10/25/18 1130 | 10/25/18 1130 | SM 4500-NH3 G |
| Ammonia-N | LCS | 9.80 | 10.00 | 98%R | mg/L as N | 10/25/18 1130 | 10/25/18 1130 | SM 4500-NH3 G |
| Ammonia-N | LCS | 9.80 | 10.00 | 98%R, 0%RPD | mg/L as N | 10/25/18 1130 | 10/25/18 1130 | SM 4500=NH3 G |
| Total Kjeldahl Nitrogen | PB | ND | 0.00 | ND | mg/L as N | 10/25/18 0859 | 10/28/18 | SM 4500-N C |
| Total Kjeldahl Nitrogen | LCS | 9,21 | 10.00 | 92%R | mg/L as N | 10/25/18 0859 | 10/28/18 | SM 4500-N C |
| Total Kjeldahl Nitrogen | LCS | 9.38 | 10.00 | 94%R, 2%RPD | mg/L as N | 10/25/18 0859 | 10/28/18 | SM 4500-N C |
| Nitrate plus nitrite-N | PB | ND | 0.00 | ND | mg/L as N | 10/24/18 0900 | | SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCS | 1.00 | 1.00 | 100%R | mg/L as N | 10/24/18 0900 | 10/24/18 1145 | SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCSD | 1.00 | 1.00 | 100%R, 0%RPD | mg/L as N | 10/24/18 0900 | 10/24/18 1145 | SM 4500-NO3 F |
| Total phosphorus | PB | ND | 0.00 | ND | mg/L | 10/26/18 1530 | 10/26/18 1530 | 2 100 ME W/2 1 1 1/2 |
| Total phosphorus | LCS | 0.50 | 0.50 | 101%R | mg/L | 10/23/18 1045 | 10/26/18 1530 | |
| Total phosphorus | LCSD | 0.50 | 0.50 | 99%R, 2%RPD | mg/L | The second second second | | |
| Total phosphorus | S1D | 0.34 | 0.29 | 17%RPD | mg/L | | 10/23/18 1045 | |
| Total phosphorus | S1S | 0.50 | 0.50 | 60%R | mg/L | 10/23/18 1045 | 10/23/18 1045 | SM 4500-P E |

SDG:

Hampton, NH 93842-0778 603-926-3345 fax 603-926-3521 www.envirosystems.com EnviroSystems, Inc. P.O. Box 778

31233

Piscataqua River

Sample ID: Matnx:

NEW_002DUP Water

| Parameter | | Result | True Value | Percent Recovery | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|-------------------------|------|--------|---------------|---------------------|-----------|------------------|---------------------|-----------------------|
| Ammonia-N | РВ | ND | 0.00 | ND | mg/L as N | 10/25/18 1130 | 10/25/18 1130 | SM 4500-NH3 G |
| Ammonia-N | LCS | 9.80 | 10.00 | 98%R | mg/L as N | 10/25/18 1130 | 10/25/18 1130 | SM 4500-NH3 G |
| Ammonia-N | LCS | 9.80 | 10.00 | 98%R, 0%RPD | mg/L as N | 10/25/18 1130 | 10/25/18 1130 | SM 4500-NH3 G |
| Total Kjeldahl Nitrogen | PB | ND | 0.00 | ND | mg/L as N | 10/25/18 0859 | 10/28/18 | SM 4500-N C |
| Total Kjeldahl Nitrogen | LCS | 9.21 | 10.00 | 92%R | mg/L as N | 10/25/18 0859 | 10/28/18 | SM 4500-N C |
| Total Kjeldahl Nitrogen | LCS | 9.38 | 10.00 | 94%R, 2%RPD | mg/L as N | 10/25/18 0859 | 10/28/18 | SM 4500-N C |
| Nitrate plus nitrite-N | PB | ND | 0.00 | ND | mg/L as N | 10/31/18 1000 | 10/31/18 1000 | SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCS | 1.00 | 1.00 | 100%R | mg/L as N | 10/31/18 1000 | 10/31/18 1000 | SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCSD | 1.00 | 1,00 | 100%R, 0%RPD | mg/L as N | 10/31/18 1000 | 10/31/18 1000 | SM 4500-NO3 F |
| Total phosphorus | PB | ND | 0.00 | ND | mg/L | 10/30/18 1510 | 10/30/18 1510 | SM 4500-P E |
| Total phosphorus | LCS | 0.51 | 0.50 | 102%R | mg/L | 10/29/18 1135 | 10/30/18 1510 | SM 4500-P E |
| Total phosphorus | LCSD | 0.51 | 0.50 | 102%R, 0%RPD | mg/L | 10/29/18 1135 | 10/30/18 1510 | SM 4500-P E |
| Total phosphorus | S1D | 0.26 | 0.25 | 3%RPD | mg/L | 10/29/18 1135 | 10/29/18 1135 | SM 4500-P E |
| Total phosphorus | S1MS | 0.78 | 0.50 | 105%R | mg/L | 10/29/18 1135 | 10/29/18 1135 | SM 4500-P E |
| | | 400 | | | | | | |

SDG

EnviroSystems, Inc.

31233

Piscataqua River

Sample ID: Matrix:

RIVER_002 Water

| Parameter | | Result | True Value | Percent Recovery | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---------------------------|------|--------|---------------|---------------------|-------------------|------------------|---------------------|-----------------------|
| Total dissolved Solids | PB | ND | 0.00 | ND | mg/L | 10/24/18 1640 | 10/30/18 1255 | SM 2540C |
| Total dissolved Solids | LCS | 493.00 | 450.00 | 110%R | mg/L | 10/24/18 1640 | 10/30/18 1255 | SM 2540C |
| Total dissolved Solids | LCSD | 527.00 | 450.00 | 117%R, 7%RPD | mg/L | 10/24/18 1640 | 10/30/18 1255 | SM 2540C |
| Total dissolved Solids | LUSD | 527.00 | 450.00 | 11776K, 776KFD | mg/L | 10/24/10 1040 | 10/30/10 1255 | 3W 2040C |
| Total Suspended Solids | PB | ND | 0.00 | ND | mg/L | 10/22/18 1000 | 10/30/18 1315 | SM 2540D |
| Total Suspended Solids | LCS | 7.50 | 10.00 | 75%R | mg/L | 10/22/18 1000 | 10/30/18 1315 | SM 2540D |
| Total Suspended Solids | LCSD | 9.50 | 9.80 | 97%R, 24%RPD | mg/L | 10/22/18 1000 | 10/30/18 1315 | SM 2540D |
| Biochemical Oxygen Demand | РВА | 0.08 | 0.00 | ND | mg/L DO depletion | 10/19/18 | 10/24/18 | SM 5210 B |
| Biochemical Oxygen Demand | PBB | 0.02 | 0.00 | ND | mg/L DO depletion | 10/19/18 | 10/24/18 | SM 5210 B |
| Biochemical Oxygen Demand | LCS | 174.00 | 198.00 | 88%R | mg/L DO depletion | 10/19/18 | 10/24/18 | SM 5210 B |
| Biochemical Oxygen Demand | LCSD | 168.00 | 198.00 | 85%R | mg/L DO depletion | 10/19/18 | 10/24/18 | SM 5210 B |
| Biochemical Oxygen Demand | LCST | 172.50 | 198,00 | 87%R, 1%RR | mg/L DO depletion | 10/19/18 | 10/24/18 | SM 5210 B |
| Oil and grease | РВ | ND | 0.00 | ND | mg/L | 10/24/18 1300 | 10/30/18 0900 | EPA 1664A |
| Oil and grease | LCS | 35.50 | 40.00 | 89%R | mg/L | 10/24/18 1300 | 10/30/18 0900 | EPA 1664A |
| Oil and grease | LCSD | 30.00 | 40.00 | 75%R, 16%RR | mg/L | 10/24/18 1300 | 10/30/18 0900 | EPA 1664A |
| Ammonia-N | PB | ND | 0.00 | ND | mg/L as N | 10/25/18 1130 | 10/25/18 1130 | SM 4500-NH3 G |
| Ammonia-N | LCS | 9.80 | 10.00 | 98%R | mg/L as N | 10/25/18 1130 | 10/25/18 1130 | SM 4500-NH3 G |
| Ammonia-N | LCS | 9.80 | 10.00 | 98%R, 0%RPD | mg/L as N | 10/25/18 1130 | 10/25/18 1130 | SM 4500-NH3 G |
| Total Kjeldahl Nitrogen | PB | ND | 0.00 | ND | mg/L as N | 10/25/18 0859 | 10/28/18 | SM 4500-N C |
| Total Kjeldahl Nitrogen | LCS | 9.21 | 10.00 | 92%R | mg/L as N | 10/25/18 0859 | 10/28/18 | SM 4500-N C |
| Total Kjeldahl Nitrogen | LCS | 9.38 | 10.00 | 94%R, 2%RPD | mg/L as N | 10/25/18 0859 | 10/28/18 | SM 4500-N C |
| Nitrate plus nitrite-N | РВ | ND | 0.00 | ND | mg/L as N | 10/24/18 0900 | 10/24/18 1145 | SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCS | 1.00 | 1.00 | 100%R | mg/L as N | 10/24/18 0900 | 10/24/18 1145 | SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCSD | 1.00 | 1.00 | 100%R, 0%RPD | mg/L as N | 10/24/18 0900 | 10/24/18 1145 | SM 4500-NO3 F |
| Total phosphorus | PB | ND | 0.00 | ND | mg/L | 10/26/18 1530 | 10/26/18 1530 | SM 4500-P E |
| Total phosphorus | LCS | 0.50 | 0.50 | 101%R | mg/L | 10/23/18 1045 | 10/26/18 1530 | SM 4500-P E |
| Total phosphorus | LCSD | 0.50 | 0.50 | 99%R, 2%RPD | mg/L | 10/23/18 1045 | 10/26/18 1530 | SM 4500-P E |
| Total phosphorus | S1D | 0.34 | 0.29 | 17%RPD | mg/L | 10/23/18 1045 | 10/23/18 1045 | SM 4500-P E |
| Total phosphorus | S1S | 0.50 | 0.50 | 60%R | mg/L | 10/23/18 1045 | 10/23/18 1045 | SM 4500-P E |
| | | | | | | | | |

SDG.

EnviroSystems, Inc.

31233

Piscataqua River

Sample ID: Matrix:

RIVER_002DUP Water

| Parameter | | Result | True Value | Percent Recovery | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|-------------------------|------|--------|---------------|---------------------|-----------|------------------|---------------------|-----------------------|
| Ammonia-N | PB | ND | 0.00 | ND | mg/L as N | 10/25/18 1130 | 10/25/18 1130 | SM 4500-NH3 G |
| Ammonīa-N | LCS | 9.80 | 10.00 | 98%R | mg/L as N | 10/25/18 1130 | 10/25/18 1130 | SM 4500-NH3 G |
| Ammonia-N | LCS | 9.80 | 10.00 | 98%R, 0%RPD | mg/L as N | 10/25/18 1130 | 10/25/18 1130 | SM 4500-NH3 G |
| Total Kjeldahl Nitrogen | PB | ND | 0.00 | ND | mg/L as N | 10/25/18 0859 | 10/28/18 | SM 4500-N C |
| Total Kjeldahl Nitrogen | LCS | 9.21 | 10.00 | 92%R | mg/L as N | 10/25/18 0859 | 10/28/18 | SM 4500-N C |
| Total Kjeldahl Nitrogen | LCS | 9.38 | 10.00 | 94%R, 2%RPD | mg/L as N | 10/25/18 0859 | 10/28/18 | SM 4500-N C |
| Nitrate plus nitrite-N | PB | ND | 0.00 | ND | mg/L as N | 10/24/18 0900 | 10/24/18 1145 | SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCS | 1.00 | 1.00 | 100%R | mg/L as N | 10/24/18 0900 | 10/24/18 1145 | SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCSD | 1.00 | 1.00 | 100%R, 0%RPD | mg/L as N | 10/24/18 0900 | 10/24/18 1145 | SM 4500-NO3 F |
| Total phosphorus | PB | ND | 0.00 | ND | mg/L | 10/26/18 1530 | 10/26/18 1530 | SM 4500-P E |
| Total phosphorus | LCS | 0.50 | 0.50 | 101%R | mg/L | 10/23/18 1045 | 10/26/18 1530 | SM 4500-P E |
| Total phosphorus | LCSD | 0.50 | 0.50 | 99%R, 2%RPD | mg/L | 10/23/18 1045 | 10/26/18 1530 | SM 4500-P E |
| Total phosphorus | S1D | 0.34 | 0.29 | 17%RPD | mg/L | 10/23/18 1045 | 10/23/18 1045 | SM 4500-P E |
| Total phosphorus | S1S | 0.50 | 0.50 | 60%R | mg/L | 10/23/18 1045 | 10/23/18 1045 | SM 4500-P E |

SDG:

Lab Number. CCB102218W
Sample Designation: Laboratory Blank
Date Sampled: 10/22/18
Date Analyzed: 10/22/18
Matrix: Water

VOLATILE ORGANICS

Method Reference: EPA Method 624.

| | Concentration | Quantitation Limit |
|---------------------------|---------------|--------------------|
| | (ug/L) | (ug/L) |
| acrolein | U | 10 |
| acrylonitrile | U | 10 |
| dichlorodifluoromethane | U | 2 |
| chloromethane | U | 2 |
| vinyl chloride | U | 2 |
| bromomethane | U | 2 2 |
| chloroethane | U | 2 |
| trichlorofluoromethane | U | 2 |
| 1,1-dichloroethene | U | 2 |
| methylene chloride | U | 2 |
| trans-1,2-dichloroethene | u | 2 |
| 1,1-dichloroethane | U | 2 |
| cis-1,2-dichloroethene | U | 2 |
| chloroform | U | 2 |
| 1,1,1-trichloroethane | U | 2 |
| carbon tetrachloride | U | 2 |
| benzene | U | 2 |
| 1,2-dichloroethane | U | 2 |
| trichloroethene | U | 2 2 2 |
| 1,2-dichloropropane | U | 2 |
| dibromomethane | U | 2 |
| bromodichloromethane | U | 2 |
| cis-1,3-dichloropropene | U | 2 |
| 2-chloroethylvinylether | U | 2 |
| toluene | Ü | 2 2 2 |
| trans-1,3-dichloropropene | U | 2 |
| 1,1,2-trichloroethane | U | 2 |
| tetrachloroethene | U | 2 |
| 1,3-dichloropropane | Ü | 2 |
| dibromochloromethane | Ü | 2 |
| chlorobenzene | U | 2 |
| ethylbenzene | U | 2 |
| bromoform | u | 2 |
| 1,1,2,2-tetrachloroethane | U | 2 |
| 1,2-dichlorobenzene | U | 5 |
| 1,3-dichlorobenzene | U | 2 |
| 1,4-dichlorobenzene | U | 5 |

| SURROGATE STANDARDS | % Recovery | Acceptance Limits | |
|-----------------------|---------------|----------------------|--|
| 1,2-dichloroethane-d4 | 96.5 | 70 - 130 | |
| toluene-d8 | 104.5 | 70 - 130 | |
| 4-bromofluorobenzene | 79.8 | 70 - 130 | |
| | | | |

U = Below quantitation limit

Lab Number: LCS102218W

Sample Designation: Laboratory Control Sample

Date Sampled: 10/22/18
Date Analyzed: 10/22/18
Matrix: Water

VOLATILE ORGANICS

Method Reference: EPA Method 624.

| | LCS | Amount | | Accep |
|---------------------------|---------------|--------|----------|----------|
| | Concentration | Added | Recovery | Limits |
| | (ug/L) | (ug/L) | (%) | (%) |
| acrolein | 14 | 20 | 72 | NA - NA |
| acrylonitrile | 16 | 20 | 78 | NA - NA |
| dichlorodifluoromethane | 17 | 20 | 86 | NA - NA |
| chloromethane | 16 | 20 | 80 | 1 - 273 |
| vinyl chloride | 17 | 20 | 84 | 1 - 251 |
| bromomethane | 14 | 20 | 72 | 1 - 242 |
| chloroethane | 17 | 20 | 84 | 14 - 230 |
| trichlorofluoromethane | 18 | 20 | 91 | 17 - 181 |
| 1,1-dichloroethene | 18 | 20 | 91 | 1 - 234 |
| methylene chloride | 15 | 20 | 74 | 1 - 221 |
| trans-1,2-dichloroethene | 18 | 20 | 91 | 54 - 156 |
| 1,1-dichloroethane | 18 | 20 | 92 | 59 - 155 |
| cis-1,2-dichloroethene | 18 | 20 | 89 | NA - NA |
| chloroform | 19 | 20 | 97 | 51 - 138 |
| 1,1,1-trichloroethane | 18 | 20 | 91 | 52 - 162 |
| carbon tetrachloride | 18 | 20 | 92 | 70 - 140 |
| benzene | 19 | 20 | 93 | 37 - 151 |
| 1,2-dichloroethane | 19 | 20 | 94 | 49 - 155 |
| trichloroethene | 19 | 20 | 97 | 71 - 157 |
| 1,2-dichloropropane | 18 | 20 | 90 | 1 - 210 |
| dibromomethane | 19 | 20 | 95 | NA - NA |
| bromodichloromethane | 19 | 20 | 97 | 35 - 155 |
| cis-1,3-dichloropropene | 18 | 20 | 89 | 1 - 227 |
| 2-chloroethylvinylether | 13 | 20 | 66 | 1 - 305 |
| toluene | 17 | 20 | 86 | 47 - 150 |
| trans-1,3-dichloropropene | 17 | 20 | 85 | 17 - 183 |
| 1,1,2-trichloroethane | 18 | 20 | 92 | 52 - 150 |
| tetrachloroethene | 18 | 20 | 91 | 64 - 148 |
| 1,3-dichloropropane | 20 | 20 | 98 | NA - NA |
| dibromochloromethane | 20 | 20 | 98 | 53 - 149 |
| chlorobenzene | 19 | 20 | 97 | 37 - 160 |
| ethylbenzene | 19 | 20 | 94 | 37 - 162 |
| bromoform | 18 | 20 | 92 | 45 - 169 |
| 1,1,2,2-tetrachioroethane | 17 | 20 | 83 | 46 - 157 |
| 1,2-dichlorobenzene | 18 | 20 | 89 | 18 - 190 |
| 1,3-dichlorobenzene | 19 | 20 | 93 | 59 - 156 |
| 1,4-dichlorobenzene | 18 | 20 | 92 | 18 - 190 |

| SURROGATE STANDARDS | % Recovery | Acceptance Limits |
|----------------------|---------------|----------------------|
| dibromofluoromethane | 103.0 | 70 - 130 |
| toluene-d8 | 100.3 | 70 - 130 |
| 4-bromofluorobenzene | 100.5 | 70 - 130 |

U = Below quantitation limit NA = Not added or evaluated.

31233-020S

Sample Designation:

PEASE_002 (Matrix Spike)

Date Sampled: Date Analyzed: Matrix: 10/18/18 0930 10/22/18 Water

VOLATILE ORGANICS

Method Reference: EPA Method 624.

| Welliod Reference. EFA We | Sample | Matrix Spike | Amount | | Acceptance |
|---|---------------|----------------|--------|----------|------------|
| | Concentration | Concentration | Added | Recovery | Limits |
| | Concentration | Confecturation | ridaca | (%) | (%) |
| 0.000 | 0.0 | | | 3-0- | 9 |
| acrolein | NA | NA | NA | NA | NA |
| acrylonitrile | NA | NA | NA | NA | NA |
| dichlorodifluoromethane | U | 18 | 20 | 89 | NA |
| chloromethane | U | 18 | 20 | 89 | 1-273 |
| vinyl chloride | U | 18 | 20 | 91 | 1-251 |
| bromomethane | U | 17 | 20 | 83 | 1-242 |
| chloroethane | U | 19 | 20 | 96 | 14-230 |
| trichlorofluoromethane | U | 19 | 20 | 96 | 17-181 |
| 1,1-dichloroethene | U | 19 | 20 | 97 | 1-234 |
| methylene chloride | U | 20 | 20 | 98 | 1-221 |
| trans-1,2-dichloroethene | U | 19 | 20 | 96 | 54-156 |
| 1,1-dichloroethane | U | 20 | 20 | 100 | 59-155 |
| cis-1,2-dichloroethene | U | 19 | 20 | 95 | NA |
| chloroform | 92 | 110 | 20 | 84 | 51-138 |
| 1,1,1-trichloroethane | U | 19 | 20 | 93 | 52-162 |
| carbon tetrachloride | U | 20 | 20 | 98 | 70-140 |
| benzene | U | 20 | 20 | 98 | 37-151 |
| 1,2-dichloroethane | U | 20 | 20 | 97 | 49-155 |
| trichloroethene | U | 19 | 20 | 95 | 71-157 |
| 1,2-dichloropropane | U | 19 | 20 | 96 | 1-210 |
| dibromomethane | U | 20 | 20 | 100 | NA |
| bromodichloromethane | 40 | 60 | 20 | 97 | 35-155 |
| cis-1,3-dichloropropene | U | 19 | 20 | 97 | 1-227 |
| toluene | U | 18 | 20 | 90 | 47-150 |
| trans-1,3-dichloropropene | U | 19 | 20 | .97 | 17-183 |
| 1,1,2-trichloroethane | U | 20 | 20 | 99 | 52-150 |
| tetrachloroethene | U | 19 | 20 | 94 | 64-148 |
| 1,3-dichloropropane | U | 21 | 20 | 103 | NA |
| dibromochloromethane | 18 | 38 | 20 | 104 | 53-149 |
| chlorobenzene | U | 20 | 20 | 101 | 37-160 |
| ethylbenzene | U | 19 | 20 | 97 | 37-162 |
| bromoform | U | 21 | 20 | 98 | 45-169 |
| 1,1,2,2-tetrachloroethane | U | 19 | 20 | 96 | 46-157 |
| 1,2-dichlorobenzene | U | 18 | 20 | 92 | 18-190 |
| 1,3-dichlorobenzene | U | 19 | 20 | 97 | 59-156 |
| 1,4-dichlorobenzene | Ü | 19 | 20 | 97 | 59-156 |
| CAN STRUCTURE CALLED AND AND AND AND AND AND AND AND AND AN | (6) | 100 | 6.74 | | 1277,000 |

| SURROGATE STANDARDS | % Recovery | % Recovery | Acceptance Limits |
|-----------------------|---------------|---------------|----------------------|
| 1,2-dichloroethane-d4 | 104.0 | 104.5 | 70 - 130 |
| toluene-d8 | 100.0 | 99.5 | 70 - 130 |
| 4-bromofluorobenzene | 104.0 | 101.1 | 70 - 130 |

U = Below quantitation limit NA = Not added or evaluated.

PB167W

Sample Designation: Date Sampled: Laboratory Blank 10/23/18 0930 10/23/18 0930

Date Extracted: Date Analyzed:

Matrix:

10/30/18 Water

SEMIVOLATILE ORGANICS Method Reference: EPA 625.

| | Concentration | Quantitatio | on Limit | Concentration | Quantitation Limit |
|-----------------------------|---------------|-------------|--------------------------------|---------------|--------------------|
| N-nitrosodimethylamine | (ug/L) | (ug/L) | o a a a a a b i b o a a | (ug/L) U | (ug/L) |
| | U | 100 | acenaphthene | U. | |
| phenol | U | 3 | 2,4-dinitrophenol | U | 20 |
| 2-chlorophenol | U | 3 | 4-nitrophenol | U | 5 |
| bis(2-chloroethyl)ether | U | 3 | fluorene | U | 3 |
| 1,3-dichlorobenzene | U | 3 | 4-chlorophenyl-phenylether | U | 3 |
| 1,4-dichlorobenzene | U | 3 | diethylphthalate | U | 3 |
| 1,2-dichlorobenzene | U | 3 | 4,6-dinitro-2-methylphenol | U | 5 |
| 2-methylphenol (m-cresol) | U | 3 | N-nitrosodiphenylamine | U | |
| bis(2-chloroisopropyl)ether | U | 3 | 1,2-diphenylhydrazine (azobena | | 3 |
| hexachloroethane | U | 3 | 4-bromophenyl-phenylether | U | 3 |
| N-nitroso-di-n-propylamine | U | 5 | hexachlorobenzene | U | 3 |
| 4-methylphenol (p-cresol) | U | 3 | pentachlorophenol | U | 3 |
| nitrobenzene | U | 3 | phenanthrene | U | 3 |
| isophorone | U | 3 | anthracene | U | 3 |
| 2-nitrophenol | U | 3 | di-n-butylphthalate | 4, B | 3 |
| 2,4-dimethylphenol | U | 3 | fluoranthene | U | 3 |
| bis(2-chloroethoxy)methane | U | 3 | benzidine | U | 20 |
| 2,4-dichlorophenol | U | 3 | pyrene | U | 3 |
| 1,2,4-trichlorobenzene | U | 3 | butylbenzylphthalate | U | 3 |
| naphthalene | U | 3 | benzo(a)anthracene | U | 3 |
| hexachloro-1,3-butadiene | U | 3 | chrysene | U | 3 |
| 4-chloro-3-methylphenol | U | 3 | 3,3'-dichlorobenzidine | U | 3 |
| hexachlorocyclopentadiene | U | 20 | bis(2-ethylhexyl)phthalate | U | 3 |
| 2,4,5-trichlorophenol | U | 3 | di-n-octylphthalate | U | 3 |
| 2,4,6-trichlorophenol | U | 3 | benzo(b)fluoranthene | U | 3 |
| 2-chloronaphthalene | U | 3 | benzo(k)fluoranthene | U | 3 |
| acenaphthylene | U | 3 | benzo(a)pyrene | U | 3 |
| dimethylphthalate | U | 3 | indeno(1,2,3-cd)pyrene | U | 3 |
| 2,6-dinitrotoluene | U | 3 | dibenzo(a,h)anthracene | U | 3 |
| 2,4-dinitrotoluene | Ü | 3 | benzo(g,h,i)perylene | U | 3 |

SUPPOGATE STANDARDS

| 1331 X 2 2 A TE 5 A T 1 A A | Recovery | Acceptance I | Limits | Recovery | Acceptance Limits |
|-----------------------------|----------|--------------|------------------|----------|-------------------|
| | (%) | (%) | | (%) | (%) |
| 2-fluorophenol | 62 | 25-175 | nitrobenzene-d5 | 60 | 22-178 |
| phenol-d5 | 56 | 24-176 | 2-fluorobiphenyl | 54 | 38-162 |
| 2,4,6-tribromophenol | 116 | 24-176 | terphenyl-d14 | 89 | 53-147 |

U = Below quantitation limit

B = di-n-butylphthalate was found in the blank at a concentration of 4 ug/L.

LCS167W

Sample Designation:

Laboratory Control Sample 10/23/18 0930

Date Sampled: Date Extracted: Date Analyzed:

10/23/18 0930

10/30/18 Matrix: Water

SEMIVOLATILE ORGANICS Method Reference: EPA 625.

| | Concentration | Added | Recovery | Limits | | Concentration | Added | Recovery | Limits |
|-----------------------------|---------------|--------|----------|--------|------------------------------|---------------|--------|----------|--------|
| | (ug/L) | (ug/L) | (%) | (%) | | (ug/L) | (ug/L) | (%) | (%) |
| N-nitrosodimethylamine | 82 | 100 | 82 | 30-150 | acenaphthene | 70 | 100 | 76 | 47-145 |
| phenol | 51 | 100 | 51 | 5-120 | 2,4-dinitrophenol | 38 | 100 | 38 | 1-191 |
| 2-chlorophenol | 82 | 100 | 82 | 23-134 | 4-nitrophenol | 46 | 100 | 46 | 1-132 |
| bis(2-chloroethyl)ether | 63 | 100 | 63 | 12-158 | fluorene | 73 | 100 | 73 | 59-121 |
| 1,3-dichlorobenzene | 61 | 100 | 61 | 30-150 | · 4-chlorophenyl-phenylether | 79 | 100 | 79 | 25-158 |
| 1,4-dichlorobenzene | 60 | 100 | 60 | 30-150 | diethylphthalate | 70 | 100 | 70 | 1-120 |
| 1,2-dichlorobenzene | 61 | 100 | 61 | 30-150 | 4,6-dinitro-2-methylphenol | 59 | 100 | 59 | 1-181 |
| 2-methylphenol (m-cresol) | NA | NA | NA | 30-150 | N-nitrosodiphenylamine | 92 | 100 | 92 | 30-150 |
| bis(2-chloroisopropyl)ether | 76 | 100 | 76 | 36-166 | 1,2-diphenylhydrazine | NA | NA | NA | 30-150 |
| hexachloroethane | 51 | 100 | .51 | 40-120 | 4-bromophenyl-phenylether | 85 | 100 | 85 | 53-127 |
| N-nitroso-di-n-propylamine | 72 | 100 | 72 | 1-230 | hexachlorobenzene | 81 | 100 | 81 | 1-152 |
| 4-methylphenol (p-cresol) | NA | NA | NA | 30-150 | pentachlorophenol | 92 | 100 | 92 | 14-176 |
| nitrobenzene | 73 | 100 | 73 | 35-180 | phenanthrene | 79 | 100 | 79 | 54-120 |
| isophorone | 83 | 100 | 83 | 21-196 | anthracene | 79 | 100 | 79 | 27-133 |
| 2-nitrophenol | 79 | 100 | 79 | 29-182 | di-n-butylphthalate | 84 | 100 | 84 | 1-120 |
| 2,4-dimethylphenol | 79 | 100 | 79 | 32-119 | fluoranthene | 86 | 100 | 86 | 26-137 |
| bis(2-chloroethoxy)methane | 82 | 100 | 82 | 33-184 | benzidine | NA | NA | NA | 30-150 |
| 2,4-dichlorophenol | 77 | 100 | 77 | 39-135 | pyrene | 89 | 100 | 89 | 52-120 |
| 1,2,4-trichlorobenzene | 59 | 100 | 59 | 44-142 | butylbenzylphthalate | 88 | 100 | 88 | 1-152 |
| naphthalene | 59 | 100 | 59 | 21-133 | benzo(a)anthracene | 89 | 100 | 89 | 33-143 |
| hexachloro-1,3-butadiene | 57 | 100 | 57 | 24-120 | chrysene | 85 | 100 | 85 | 17-168 |
| 4-chloro-3-methylphenol | 87 | 100 | 87 | 22-147 | 3,3'-dichlorobenzidine | NA | NA | NA. | 1-262 |
| hexachlorocyclopentadiene | 51 | 100 | 51 | 30-150 | bis(2-ethylhexyl)phthalate | 89 | 100 | 89 | 8-158 |
| 2,4,6-trichlorophenol | 85 | 100 | 85 | 37-144 | di-n-octylphthalate | 97 | 100 | 97 | 4-146 |
| 2-chloronaphthalene | 66 | 100 | 66 | 60-120 | benzo(b)fluoranthene | 97 | 100 | 97 | 24-159 |
| acenaphthylene | 67 | 100 | 67 | 33-145 | benzo(k)fluoranthene | 97 | 100 | 97 | 11-162 |
| dimethylphthalate | 63 | 100 | 63 | 1-120 | benzo(a)pyrene | 98 | 100 | 98 | 17-163 |
| 2,6-dinitrotoluene | 81 | 100 | 81 | 50-158 | indeno(1,2,3-cd)pyrene | 117 | 100 | 117 | 1-171 |
| 2,4-dinitrotoluene | 85 | 100 | 85 | 39-139 | dibenzo(a,h)anthracene | 108 | 100 | 108 | 1-227 |
| | | | | | benzo(g,h,i)perylene | 117 | 100 | 117 | 1-219 |

| SURROGATE STANDARDS | | | | | |
|----------------------|----------|-------------------|------------------|----------|-------------------|
| | Recovery | Acceptance Limits | | Recovery | Acceptance Limits |
| | (%) | (%) | | (%) | (%) |
| 2-fluorophenol | 59 | 25-175 | nitrobenzene-d5 | 81 | 22-178 |
| phenol-d5 | 48 | 24-176 | 2-fluorobiphenyl | 72 | 38-162 |
| 2,4,6-tribromophenol | 114 | 24-176 | terphenyl-d14 | 103 | 53-147 |

U = Below quantitation limit NA = Not added or evaluated.

LCSD167W

Sample Designation:

Laboratory Control Sample Duplicate

Date Sampled: Date Extracted: 10/23/18 0930 10/23/18 0930

Date Analyzed: Matrix:

10/30/18 Water

SEMIVOLATILE ORGANICS Method Reference: EPA 625.

| | Concentration | Added | Recovery | Limits | | Concentration | Added | Recovery | Limits |
|-----------------------------|---------------|--------|----------|--------|----------------------------|---------------|--------|----------|--------|
| | (ug/L) | (ug/L) | (%) | (%) | | (ug/L) | (ug/L) | (%) | (%) |
| N-nitrosodimethylamine | 86 | 100 | 86 | 30-150 | acenaphthene | 73 | 100 | 73 | 47-145 |
| phenol | 50 | 100 | 50 | 5-120 | 2,4-dinitrophenol | 57 | 100 | 57 | 1-191 |
| 2-chlorophenol | 84 | 100 | 84 | 23-134 | 4-nitrophenol | 43 | 100 | 43 | 1-132 |
| bis(2-chloroethyl)ether | 63 | 100 | 63 | 12-128 | fluorene | 77 | 100 | 7.7 | 59-121 |
| 1,3-dichlorobenzene | 60 | 100 | 60 | 30-150 | 4-chlorophenyl-phenylether | 83 | 100 | 83 | 25-158 |
| 1,4-dichlorobenzene | 62 | 100 | 62 | 30-150 | diethylphthalate | 71 | 100 | 71 | 1-120 |
| 1,2-dichlorobenzene | 62 | 100 | 62 | 30-150 | 4,6-dinitro-2-methylphenol | 71 | 100 | 71 | 1-181 |
| 2-methylphenol (m-cresol) | NA | NA | NA | 30-150 | N-nitrosodiphenylamine | 94 | 100 | 94 | 30-150 |
| bis(2-chloroisopropyl)ether | 76 | 100 | 76 | 36-166 | 1,2-diphenylhydrazine | NA | NA | NA | 30-150 |
| hexachloroethane | 53 | 100 | 53 | 40-120 | 4-bromophenyl-phenylether | 88 | 100 | 88 | 53-127 |
| N-nitroso-di-n-propylamine | 73 | 100 | 73 | 1-230 | hexachlorobenzene | 85 | 100 | 85 | 1-152 |
| 4-methylphenol (p-cresol) | NA. | NA | NA | 30-150 | pentachlorophenol | 100 | 100 | 100 | 14-176 |
| nitrobenzene | 72 | 100 | 72 | 35-180 | phenanthrene | 81 | 100 | 81 | 54-120 |
| isophorone | 85 | 100 | 85 | 21-196 | anthracene | 81 | 100 | 81 | 27-133 |
| 2-nitrophenol | 95 | 100 | 95 | 29-182 | di-n-butylphthalate | 85 | 100 | 85 | 1-120 |
| 2,4-dimethylphenol | 81 | 100 | 81 | 32-119 | fluoranthene | 89 | 100 | 89 | 26-137 |
| bis(2-chloroethoxy)methane | 83 | 100 | 83 | 33-184 | benzidine | NA | NA | NA | 30-150 |
| 2,4-dichlorophenol | 82 | 100 | 82 | 39-135 | pyrene | 92 | 100 | 92 | 52-120 |
| 1,2,4-trichlorobenzene | 61 | 100 | 61 | 44-142 | butylbenzylphthalate | 88 | 100 | 88 | 1-152 |
| naphthalene | 59 | 100 | 59 | 21-133 | benzo(a)anthracene | 88 | 100 | 88 | 33-143 |
| hexachloro-1,3-butadiene | 59 | 100 | 59 | 24-120 | chrysene | 87 | 100 | 87 | 17-168 |
| 4-chloro-3-methylphenol | 89 | 100 | 89 | 22-147 | 3,3'-dichlorobenzidine | NA | NA | NA | 1-262 |
| hexachlorocyclopentadiene | 54 | 100 | 54 | 30-150 | bis(2-ethylhexyl)phthalate | 45 | 100 | 45 | 8-158 |
| 2,4,6-trichlorophenol | 92 | 100 | 92 | 37-144 | di-n-octylphthalate | 49 | 100 | 49 | 4-146 |
| 2-chloronaphthalene | 66 | 100 | 66 | 60-120 | benzo(b)fluoranthene | 100 | 100 | 100 | 24-159 |
| acenaphthylene | 69 | 100 | 69 | 33-145 | benzo(k)fluoranthene | 100 | 100 | 100 | 11-162 |
| dimethylphthalate | 61 | 100 | 61 | 1-120 | benzo(a)pyrene | 100 | 100 | 100 | 17-163 |
| 2,6-dinitrotoluene | 86 | 100 | 86 | 50-158 | indeno(1,2,3-cd)pyrene | 118 | 100 | 118 | 1-171 |
| 2,4-dinitrotoluene | 91 | 100 | 91 | 39-139 | dibenzo(a,h)anthracene | 111 | 100 | 111 | 1-227 |
| | | | | | benzo(g,h,i)perylene | 119 | 100 | 119 | 1-219 |

| | Recovery | Acceptance Limits | | Recovery | Acceptance Limits |
|----------------------|----------|-------------------|------------------|----------|-------------------|
| | (%) | (%) | | (%) | (%) |
| 2-fluorophenol | 58 | 25-175 | nitrobenzene-d5 | 80 | 22-178 |
| phenol-d5 | 49 | 24-176 | 2-fluorobiphenyl | 74 | 38-162 |
| 2,4,6-tribromophenol | 122 | 24-176 | terphenyl-d14 | 106 | 53-147 |

U = Below quantitation limit NA = Not added or evaluated. Lab Number:

31233-024

Sample Designation: Date Sampled:

PEASE_002 (Matrix Spike) 10/18/18 0000

Date Extracted:

10/23/18 0930

10/31/18 Date Analyzed: Matrix: Water

SEMIVOLATILE ORGANICS Method Reference: EPA 625.

| | Concentration | Added | Recovery | Limits | | Concentration | Added | Recovery | Limits |
|-----------------------------|---------------|--------|----------|--------|----------------------------|---------------|--------|----------|--------|
| | (ug/L) | (ug/L) | (%) | (%) | | (ug/L) | (ug/L) | (%) | (%) |
| N-nitrosodimethylamine | 77 | 100 | 77 | 30-150 | acenaphthene | 71 | 100 | 71 | 47-145 |
| phenol | 51 | 100 | 51 | 5-120 | 2,4-dinitrophenol | 50 | 100 | 50 | 1-191 |
| 2-chlorophenol | 85 | 100 | 85 | 23-134 | 4-nitrophenol | 40 | 100 | 40 | 1-132 |
| bis(2-chloroethyl)ether | 61 | 100 | 61 | 12-128 | fluorene | 71 | 100 | 71 | 59-121 |
| 1,3-dichlorobenzene | 63 | 100 | 63 | 30-150 | 4-chlorophenyl-phenylether | 76 | 100 | 76 | 25-158 |
| 1,4-dichlorobenzene | 64 | 100 | 64 | 30-150 | diethylphthalate | 71 | 100 | 71 | 1-120 |
| 1,2-dichlorobenzene | 64 | 100 | 64 | 30-150 | 4,6-dinitro-2-methylphenol | 64 | 100 | 64 | 1-181 |
| 2-methylphenol (m-cresol) | NA | NA | NA | 30-150 | N-nitrosodiphenylamine | 88 | 100 | 88 | 30-150 |
| bis(2-chloroisopropyl)ether | 76 | 100 | 76 | 36-166 | 1,2-diphenylhydrazine | NA | NA | NA. | 30-150 |
| hexachloroethane | .56 | 100 | 56 | 40-120 | 4-bromophenyl-phenylether | 79 | 100 | 79 | 53-127 |
| N-nitroso-di-n-propylamine | 70 | 100 | 70 | 1-230 | hexachlorobenzene | 75 | 100 | 75 | 1-152 |
| 4-methylphenol (p-cresol) | NA | NA | NA | 30-150 | pentachlorophenol | 95 | 100 | 95 | 14-176 |
| nitrobenzene | 74 | 100 | 74 | 35-180 | phenanthrene | 74 | 100 | 74 | 54-120 |
| isophorone | 80 | 100 | 80 | 21-196 | anthracene | 73 | 100 | 73 | 27-133 |
| 2-nitrophenol | 82 | 100 | 82 | 29-182 | di-n-butylphthalate | 80 | 100 | 80 | 1-120 |
| 2,4-dimethylphenol | 72 | 100 | 72 | 32-119 | fluoranthene | 80 | 100 | 80 | 26-137 |
| bis(2-chloroethoxy)methane | 80 | 100 | 80 | 33-184 | benzidine | U | NA | NA | 30-150 |
| 2,4-dichlorophenol | 76 | 100 | 76 | 39-135 | pyrene | 82 | 100 | 82 | 52-120 |
| 1,2,4-trichlorobenzene | 62 | 100 | 62 | 44-142 | butylbenzylphthalate | 82 | 100 | 82 | 1-152 |
| naphthalene | 61 | 100 | 61 | 21-133 | benzo(a)anthracene | 81 | 100 | 81 | 33-143 |
| hexachloro-1,3-butadiene | 57 | 100 | 57 | 24-120 | chrysene | 78 | 100 | 78 | 17-168 |
| 4-chloro-3-methylphenol | 89 | 100 | 89 | 22-147 | 3,3'-dichlorobenzidine | U | NA | NA | 1-262 |
| hexachlorocyclopentadiene | 50 | 100 | 50 | 30-150 | bis(2-ethylhexyl)phthalate | 41 | 100 | 41 | 8-158 |
| 2,4,6-trichlorophenol | 88 | 100 | 88 | 37-144 | di-n-octylphthalate | 46 | 100 | 46 | 4-146 |
| 2-chloronaphthalene | 66 | 100 | 66 | 60-120 | benzo(b)fluoranthene | 90 | 100 | 90 | 24-159 |
| acenaphthylene | 68 | 100 | 68 | 33-145 | benzo(k)fluoranthene | 90 | 100 | 90 | 11-162 |
| dimethylphthalate | 73 | 100 | 73 | 1-120 | benzo(a)pyrene | 88 | 100 | 88 | 17-163 |
| 2,6-dinitrotoluene | 77 | 100 | 77 | 50-158 | indeno(1,2,3-cd)pyrene | 106 | 100 | 106 | 1-171 |
| 2,4-dinitrotoluene | 81 | 100 | 81 | 39-139 | dibenzo(a,h)anthracene | 99 | 100 | 99 | 1-227 |
| | | | | | benzo(g,h,i)perylene | 100 | 100 | 100 | 1-219 |

| SURROGATE STANDARDS | | | | | |
|----------------------|----------|-------------------|------------------|----------|-------------------|
| | Recovery | Acceptance Limits | | Recovery | Acceptance Limits |
| | (%) | (%) | | (%) | (%) |
| 2-fluorophenol | 57 | 25-175 | nitrobenzene-d5 | 76 | 22-178 |
| phenol-d5 | 47 | 24-176 | 2-fluorobiphenyl | 72 | 38-162 |
| 2,4,6-tribromophenol | 117 | 24-176 | terphenyl-d14 | 92 | 53-147 |

U = Below quantitation limit NA = Not added or evaluated.

P.O. Box 778

| MICROBIOLOGICAL ASSAY DATA SHEET | | | | | |
|----------------------------------|-----------------------------------|-----------------------------|--|--|--|
| Client: Underwood Engineers | Date: 10[(8)18 | Initials: MW | | | |
| ESI #: 31233 | Col.Dil.H ₂ O: M- 3323 | M-FC: M-3320 | | | |
| Date collected: 10(18)16 | Pipette Used: A- 507.5, A- 5003 | Positive lot #: £cBCQ7.818A | | | |

| Sample ID | Time Sampled | Time Filtered | mls filtered per 100 mls total vol. | Media | CFU's | Total w/ backround | Comments |
|------------------|-----------------|------------------|---|-------|----------|-----------------------|---------------------|
| Start Blank | | 1414 | 100 | M-FC | O | 0 | Sylfalis - |
| 004 | 0935 | | 1 | M-FC | 0 | 0 | 100 X100= 100 cty/a |
| 1 | 1 | | 10 | M-FC | 0 | 0 | |
| | | 1416 | 100 | M-FC | 0 | 0 | |
| 1 | | 4 | 100 | M-FC | I | (| |
| Positive | | 1418 | 100 | M-FC | V | V | |
| end Blank | | 1 | 100 | M-FC | 0 | 0 | |
| | | | | M-FC | | | |
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| | | ,=1 | | M-FC | | | |
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| | | | | M-FC | | | |
| | | | | M-FC | | | |
| | | | | M-FC | | | |
| M-FC stored in I | ncubator #30 | 3 Temp: | 44.4 | 1420 | 10/18/18 | to 144 | ० १०११व११८ |
| Method 922D | | Count | | 1440 | 10/19/18 | Counted B | |

| MICROBIOLOGICAL ASSAY DATA SHEET | | | | |
|----------------------------------|----------------------------------|----------------------------|--|--|
| Client: Underwood Engineers | Date: 10/18/18 | Initials: MVV | | |
| ESI#: 31233 | Col.Dil.H ₂ O: M-3323 | M-FC: M-3320 | | |
| Date collected: 10 18 18 | Pipette Used: A-5025, A-5003 | Positive lot #: ECB092818A | | |

| Sample ID | Time Sampled | Time Filtered | mls filtered per 100 mls total vol. | Media | CFU's | Total w/ backround | Comments |
|-------------------|-----------------|------------------|---|-------|----------|-----------------------|------------------|
| Start Blank | | 1300 | 100 | M-FC | 0 | 6 | |
| 029 | 0930 | 1303 | 1 | M-FC | 0 | 0 | to 1100=1 CFY am |
| | 4 | 1306 | 10 | M-FC | 0 | 0 | |
| | | 1309 | 100 | M-FC | 0 | 0 | |
| 1 | 7 | 1311 | 100 | M-FC | 1-1- | | |
| Positive | | 1314 | 100 | M-FC | V | / | |
| Fnd Blank | | 1 | 100 | M-FC | 0 | 0 | |
| | | | | M-FC | | | |
| | | | | M-FC | | | |
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| | | 1 | | M-FC | | 1 | |
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| | | | | M-FC | | | |
| | 11 | | | M-FC | | | |
| | | | | M-FC | | | <u> </u> |
| M-FC stored in Ir | cubator #30 | 3 Temp: | 44.3 | 1318 | 10/18/18 | to 1436 | 10/19/18 |
| Method 922D | | Count | | 1436 | lolique | Counted E | |

MICROBIOLOGICAL ASSAY DATA SHEET Client: Underwood Engineers Date: Initials: M.W. ESI #: 31233 Col.Dil.H20: M-3323 M-FC: M-3320 Date collected: 1011(9)1(9) Pipette Used: H-50251 M-5003 Positive lot #: ECB092(9) BA

| Sample ID | Time Sampled | Time Filtered | mls filtered per 100 mls total vol. | Media | CFU's | Total w/ backround | Comments |
|------------------|-----------------|------------------|---|-------|----------|-----------------------|--------------------|
| Start Blank | | 1724 | 100 | M-FC | 0 | 0 | |
| (52 | 1610 | 1724 | | M-FC | 0 | 0 | 150 X100= 1 6 Fram |
| | | 1728 | 10 | M-FC | 0 | 0 | |
| | | 1730 | 10d | M-FC | 0 | 0 | |
| 1 | 7 | 1732 | (00) | M-FC | 1 | | |
| Positive. | | 1734 | 100 | M-FC | V | ~ | |
| nd Blank | | 1 | 100 | M-FC | 0 | 0 | |
| 113 | | | | M-FC | | | |
| | | | | M-FC | | | |
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| | , | | | M-FC | | | |
| | 0 | | | M-FC | | | |
| | | - | | M-FC | | | |
| | | | | M-FC |) | | |
| M-FC stored in I | ncubator #30 | 3 Temp | 44.5 | 1736 | 10/18/18 | to 1500 | 10/19118 |
| Method 922D | | Count | | 1500 | 10/19/19 | Counted E | |

| MICROBIOLOGICAL ASSAY DATA SHEET | | | | | | |
|----------------------------------|----------------------------------|-----------------------------|--|--|--|--|
| Client: Underwood Engineers | Date: 10 18 18 | Initials: \(\sqrt{\psi}\) | | | | |
| ESI#: 31233 | Col.Dil.H ₂ O: M-3373 | M-EI: N- 3322 | | | | |
| Date collected: 10/18/19 | Pipette Used: A - 5025, A -5003 | Positive lot #: EFB 0928184 | | | | |

| Sample ID | Time Sampled | Time Filtered | mls filtered per 100 mls total vol. | Media | CFU's | Total w/ backround | Comments |
|--------------------|-----------------|------------------|---|-------|----------|-----------------------|---|
| Start Blank | | 1300 | 100 | M-EI | 0 | 0 | |
| 003 | 0935 | 1 | 4 | M-EI | 0 | 0 | KI CFU/100mL |
| | | 1303 | 10 | M-EI | 0 | 0 | |
| | | 1306 | 10d | M-EI | 0 | 0 | |
| | 1 | 1309 | 100 | M-EI | 0 | 0 | |
| 028 | 0830 | 1303 | | M-EI | 0 | 0 | <1 CFU 100mL |
| 1 | | 1306 | 10 | M-EI | 0 | 0 | |
| 1 | 1 | 1309 | 100 | M-EI | 0 | 0 | |
| Positive | | 1311 | 100 | M-EI | / | 1 | |
| End Blank | | 1314 | 100 | M-EI | 0 | 0 | |
| | | | | M-EI | | | |
| | | | | M-EI | | | |
| | 1 | | | M-EI | | | |
| | | | | M-EI | | | |
| | | | | M-EI | | | |
| | | | | M-EI |) | | |
| | | | | M-EI | | | |
| | | | 1 | M-EI | | | |
| | | | | M-EI | | | |
| | | | | M-EI | 1 | | |
| | | | | M-EI | | | |
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| | | | | M-EI | , | | |
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| | | | | M-EI | | | |
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| | | | | M-EI | | | |
| | | | | M-EI | | | ! = = = = = = = = = = = = = = = = = = = |
| /I-El stored in In | cubator #309 | Temp: | 40.8 | 1318 | 10/18/18 | to 143 | 1 lolialis |
| Method EPA 160 | | Counte | | 1437 | polialia | Counted B | |

MICROBIOLOGICAL ASSAY DATA SHEET Client: Underwood Engineers Date: 10/19/19 Linitials: M.W. ESI#: 31233 Col.Dil.H20: M-3323 M-EI: M-3322 Date collected: 10/19/19 Pipette Used: A-5025, A-5003 Positive lot #: EFB0925184

| Sample ID | Time Sampled | Time Filtered | mls filtered per 100 mls total vol. | Media | CFU's | Total w/ backround | Comments |
|----------------|-----------------|------------------|---|-------|----------|-----------------------|-----------------|
| Start Blank | | 1724 | 100 | M-EI | 0 | 0 | |
| 051 | 1610 | 1 | | M-EI | 0 | G | 100 X100= 1 CFY |
| | | 1726 | 10 | M-EI | 0 | 0 | |
| | | 1728 | 10d | M-EI | 0 | 0 | |
| 1 | 1 | 1730 | 100 | M-EI | -1 | 1 | |
| Positive | | 1732 | 100 | M-EI | V | V | |
| na Blank | | 1734 | 100 | M-EI | 0 | 0 | |
| | | | 1 | M-EI | 4 | | |
| | | | | M-EI | | | |
| | | | | M-EI | | | |
| | | | | M-EI | | | |
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| | | | | M-EI | | | |
| | | | | M-EI | | | |
| | | | | M-EI | | | |
| | | | | M-EI | 11 | | |
| | | | | M-EI | | | |
| | | | | M-EI | | | |
| | | | - | M-EI | | | |
| | | | | M-EI | | | |
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| | | | 4.0 | M-EI | | | |
| | | | | M-EI | | | |
| | | | | M-EI | | | |
| | | | | M-EI | | | |
| | | | | M-EI | | | |
| | | | | M-EI | | | |
| | | | | M-EI | | | |
| Frataura to to | cubator #309 | Temp: | Um 7 | 1736 | 10/13/18 | to 1505 | 10/19/18 |

SAMPLE RECEIPT AND CONDITION DOCUMENTATION

Page 1 of 2

STUDY NO: 31233 SDG No. October 2018 Project: Piscataqua River

Delivered via: ESI

Date and Time Received: Date and Time Logged into Lab: 10/18/18 1338 10/18/18 1100 ELJ ELJ Received By: MW Logged into Lab by:

Air bill / Way bill: No Air bill included in folder if received? NA Cooler on ice/packs: Yes Custody Seals present? NA Cooler Blank Temp (C) at arrival: 13.1 Custody Seals intact? NA Number of COC Pages: 5

COC Serial Number(s): A1016844

COC Complete:

Does the info on the COC match the samples? Yes Sampled Date: Yes Were samples received within holding time? Yes Field ID complete: Yes Were all samples properly labeled? Yes Sampled Time: No Were proper sample containers used? Yes

Analysis request: Yes Were samples received intact? (none broken or leaking) Yes COC Signed and dated: Were sample volumes sufficient for requested analysis? Yes Yes Were all samples received? Were VOC vials free of headspace? Yes Yes Client notification/authorization: Required pH Test strip ID number: A-5084

| | | | | Bottle | Req'd | Verified |
|--------------|-----------|----|--------------------------------|------------|--------|----------|
| Field ID | Lab ID | Mx | Analysis Requested | | Pres'n | Pres'n |
| PEASE_002 | 31233-001 | W | BOD | 500 P | 4 C | Yes |
| PEASE_002DUP | 31233-002 | W | BOD | 500 P | 4 C | Yes |
| PEASE_002 | 31233-003 | W | Enterococci | 100 mL Ste | 14C | Yes |
| PEASE_002 | 31233-004 | W | FC | 100 mL Ste | 14 C | Yes |
| PEASE_002 | 31233-005 | W | TSS | 1000 P | 4 C | Yes |
| PEASE_002 | 31233-006 | W | NH3 | 125 mL P | H2SO4 | Yes |
| PEASE_002DUP | 31233-007 | W | NH3 | 125 mL P | H2SO4 | Yes |
| PEASE_002 | 31233-008 | W | TRC | 500 mL P | 4 C | Yes |
| PEASE_002 | 31233-009 | W | TKN,NO3+NO2,TN | 500 mL P | H2SO4 | Yes |
| PEASE_002DUP | 31233-010 | W | TKN NO3+NO2,TN | 500 mL P | H2SO4 | Yes |
| PEASE_002 | 31233-011 | W | OG | 2x1000 G | H2SO4 | Yes |
| PEASE_002 | 31233-012 | W | TP | 250mL | H2SO4 | Yes |
| PEASE_002DUP | 31233-013 | W | TP | 250mL | H2SO4 | Yes |
| PEASE_002 | 31233-014 | W | TDS | 1000 P | 4 C | Yes |
| PEASE_002DUP | 31233-015 | W | TDS | 1000 P | 4 C | Yes |
| PEASE_002 | 31233-016 | W | Turbidity | 250 P | 4 C | Yes |
| PEASE_002 | 31233-017 | W | TPhen | 1000 G | H2SO4 | Yes |
| PEASE_002DUP | 31233-018 | W | TPhen | 1000 G | H2SO4 | Yes |
| PEASE_002 | 31233-020 | W | VOC624 | 2x40 mL | 4 C | Yes |
| PEASE_002 | 31233-022 | W | HOLD VOC624 | 2x40 mL | HCI | Yes |
| PEASE_002 | 31233-024 | W | ABN625 | 2x1000 G | 4 C | Yes |
| PEASE_002 | 31233-026 | W | DO,pH,Temperature,Conductivity | 1000 P | 4 C | Yes |
| NEW 002 | 31233-027 | W | BOD | 500 P | 4 C | Yes |

Notes and qualifications:

| See COC | | | |
|---------|--|--|--|
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Hampton, NH 03842-0778

SAMPLE RECEIPT AND CONDITION DOCUMENTATION

Required

Page 2 of 2

A-5084

STUDY NO: 31233 SDG No: October 2018 Project: Piscataqua River Delivered via: Date and Time Received: 10/18/18 1100 Date and Time Logged into Lab: 10/18/18 1338 Received By: MW Logged into Lab by: ELJ ELD Air bill / Way bill: No Air bill included in folder if received? NA Cooler on ice/packs: Yes Custody Seals present? NA Cooler Blank Temp (C) at arrival: 13.1 Custody Seals intact? NA Number of COC Pages: 5 A1016844 COC Serial Number(s): COC Complete: Does the info on the COC match the samples? Yes Sampled Date: Yes Were samples received within holding time? Yes Field ID complete: Yes Were all samples properly labeled? Yes Sampled Time: No Were proper sample containers used? Yes Analysis request: Yes Were samples received intact? (none broken or leaking) Yes COC Signed and dated: Were sample volumes sufficient for requested analysis? Yes Yes Were all samples received? Yes Yes Were VOC vials free of headspace?

pH Test strip ID number:

| | | | | Bottle | Req'd | Verified |
|------------|-----------|----|--------------------------------|------------|--------|----------|
| Field ID | Lab ID | Mx | Analysis Requested | | Pres'n | Pres'n |
| NEW_002 | 31233-028 | W | Enterococci | 100 mL Ste | ri4C | Yes |
| NEW_002 | 31233-029 | W | FC | 100 mL Ste | ri4C | Yes |
| NEW_002 | 31233-030 | W | TSS | 1000 P | 4 C | Yes |
| NEW_002 | 31233-031 | W | NH3 | 125 mL P | H2SO4 | Yes |
| NEW_002DUP | 31233-032 | W | NH3 | 125 mL P | H2SO4 | Yes |
| NEW_002 | 31233-033 | W | TRC | 500 mL P | 4 C | Yes |
| NEW_002 | 31233-034 | W | TKN,NO3+NO2,TN | 500 mL P | H2SO4 | Yes |
| NEW_002DUP | 31233-035 | W | TKN,NO3+NO2,TN | 500 mL P | H2SO4 | Yes |
| NEW_002 | 31233-036 | W | OG | 2x1000 G | H2SO4 | Yes |
| NEW_002 | 31233-037 | W | TP | 250mL | H2SO4 | Yes |
| NEW_002DUP | 31233-038 | W | TP | 250mL | H2SO4 | Yes |
| NEW_002 | 31233-039 | W | TDS | 1000 P | 4 C | Yes |
| NEW_002 | 31233-040 | W | Turbidity | 250 P | 4 C | Yes |
| NEW_002 | 31233-041 | W | TPhen | 1000 G | H2SO4 | Yes |
| NEW_002 | 31233-043 | W | VOC624 | 2x40 mL | 4 C | Yes |
| NEW_002 | 31233-045 | W | HOLD VOC624 | 2x40 mL | HCI | Yes |
| NEW_002 | 31233-047 | W | ABN625 | 2x1000 G | 4 C | Yes |
| NEW 002 | 31233-049 | W | DO,pH,Temperature,Conductivity | 1000 P | 4 C | Yes |

Notes and qualifications:

Client notification/authorization:

| See COC | | |
|---------|--|--|
| | | |
| | | |
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SAMPLE RECEIPT AND CONDITION DOCUMENTATION

Page 1 of 1

STUDY NO:

SDG No: Project:

Piscataqua River

Delivered via:

31233

10/18/18 1645 Date and Time Logged into Lab:

10/19/18 1145

Date and Time Received:

Logged into Lab by:

KL KL

Received By: Air bill / Way bill:

No

NA

Cooler on ice/packs: Cooler Blank Temp (C) at arrival: 2.3

Yes

Air bill included in folder if received? Custody Seals present? Custody Seals intact?

NA. NA.

Number of COC Pages: COC Serial Number(s):

A1016844

COC Complete:

Sampled Date: Yes Field ID complete: Yes Sampled Time: Yes Does the info on the COC match the samples? Were samples received within holding time? Were all samples properly labeled? Were proper sample containers used?

Yes Yes Yes Yes

Yes

Analysis request: Yes COC Signed and dated: Were all samples received?

Yes Yes Client notification/authorization: Not required

Were samples received intact? (none broken or leaking) Were sample volumes sufficient for requested analysis? Were VOC vials free of headspace? pH Test strip ID number:

NA A-4177

Yes

| | | | | Bottle | Req'd | Verified |
|--------------|-----------|----|--------------------|------------|--------|----------|
| Field ID | Lab ID | Mx | Analysis Requested | | Pres'n | Pres'n |
| RIVER_002 | 31233-050 | W | BOD | 500mL P | 4 C | Yes |
| RIVER_002 | 31233-051 | W | Enterococci | 100mL le | 4 C | Yes |
| RIVER_002 | 31233-052 | W | FC | 100mL le | 4 C | Yes |
| RIVER_002 | 31233-053 | W | TSS | 1000mL P | 4 C | Yes |
| RIVER_002 | 31233-054 | W | NH3 | 125mL P | H2SO4 | Yes |
| RIVER_002DUP | 31233-055 | W | NH3 | 125mL P | H2SO4 | Yes |
| RIVER_002 | 31233-056 | W | TKN,NO3+NO2,TN | 500mL P | H2SO4 | Yes |
| RIVER_002DUP | 31233-057 | W | TKN,NO3+NO2,TN | 500mL P | H2SO4 | Yes |
| RIVER_002 | 31233-058 | W | OG | 2x1000mL G | H2SO4 | Yes |
| RIVER_002 | 31233-059 | W | TP | 250mL P | H2SO4 | Yes |
| RIVER_002DUP | 31233-060 | W | TP | 250mL P | H2SO4 | Yes |
| RIVER_002 | 31233-061 | W | TDS | 1000mL P | 4 C | Yes |
| RIVER_002 | 31233-062 | W | Turbidity | 250mL P | 4 C | Yes |
| RIVER_002 | 31233-063 | W | TPhen | 1000mL G | H2SO4 | Yes |
| RIVER_002TP | 31233-064 | W | TPhen | 1000mL G | H2SO4 | Yes |
| RIVER_002 | 31233-065 | W | VOC624 | 2x40mL G | 4 C | Yes |
| RIVER_002TP | 31233-066 | W | VOC624 | 2x40mL G | 4 C | Yes |
| RIVER_002 | 31233-067 | W | HOLD VOC624 | 2x40mL G | HCI | Yes |
| RIVER_002TP | 31233-068 | W | HOLD VOC624 | 2x40mL G | HCI | Yes |
| RIVER_002 | 31233-069 | W | ABN625 | 2x1000mL G | 4 C | Yes |
| RIVEr_002TP | 31233-070 | W | ABN625 | 2x1000mL G | 4 C | Yes |

Notes and qualifications:

EnviroSystems, Inc. 1 Lafayette Road Hampton, NH 03842

ESI Job No: 31233

Voice: 603-926-3345 FAX: 603-926-3521

| Client: | Underwood Engineers, Inc. | Contact: Steve Clifton | e Clifton | | | | Project Name: | vame: | Piscata | Piscataqua River | |
|------------------------------------|--|------------------------------|---------------|------------------------------------|------|---------------------------|-----------------|----------------------------|------------------------------|------------------|--|
| Report to: | Steve Clifton | Address: 25 Vaughan Mal | aughan Ma | = | | | Project Number: | \undamper: | P0771 | | Task: 0001 |
| Invoice to: | Steve Clifton | Address: Portsmouth, NH | smouth, NF | 1 03801 | | | Project A | Project Manager: | Steve Clifton | Clifton | |
| Voice: | 603-436-6192 | Fax: | | | | | email: Sc/i+ | cliften | 0 | under | under wedengineers. com |
| Protocol: NP | NPDES | | | | | | | | | | • |
| Lab Number (assigned by lab) | Your Field ID: (must agree with container) | Date Time Sampled Sampled | .74 | Grab or com- posite (G/C) | No | Container Size (mL) | Type (P/G/T) | Field Preser- vation | Matrix S=Solid W=Water | | Filter Analyses Requested\ N=Not needed Special Instructions: F=Done in field L=Labe to do |
| 100 | 001 PEASE_002 | 1/c//0/ | 12001/1/20 | 0 | + | 200 | ۵ | 4 C | Water | z |) |
| 000 | 002 PEASE 002DUP | 2 | | U | ÷ | 200 | à | 4 C | Water | z | Pod / |
| 003 | 003 PEASE 002 | Wholis 9.354 | 9 | C | ÷ | 100 | 9 | A C | Water | z | Enterococci |
| 004 | 004 PEASE 002 | wheh 9:354 | P | O | - | 100 | le | 4 C | Water | z | 7 |
| 900 | 005 PEASE 002 | 14/15 24h | | U | | 1000 | ۵ | 0 | Water | Z | 7 |
| 900 | 006 PEASE 002 | 1,1 6,1 | | U | 1.7- | 125 | ۵ | H2SO4 | Water | z | Z Z |
| 200 | 007 PEASE 002DUP | 3 | | S | | 125 | ۵ | H2SO4 | Water | z | 7 |
| 800 | 008 PEASE 002 | W/8/18 9:354 | | 0 | | 500 | ۵ | 04 | Water | z | TRC / |
| 600 | 009 PEASE 002 | 14/2/1/21 | | U | - | 200 | ۵ | H2SO4 | Water | z | TKN,NO3+NO2.TN |
| 010 | 010 PEASE 002DUP | , L) | | U | - | 200 | ۵ | H2SO4 | Water | z | TKN,NO3+NO2.TN |
| 011 | 011 PEASE 002 | 6/18/18 9:54 | 1 | 9 | 2 | 1000 | O | H2S04 | Water | z | 90 |
| 012 | 012 PEASE 002 | 10/17/18 24h | > | U | , | 250m | mL | H2S04 | Water | z | 7 |
| Relinquished By: | len Cals | Date:// | Date:10/18/11 | //STime: | MM | | Received By: | Much | 11/1 | Mole | Date: (0//8/18/ Time: 1/00 |
| Relinguished By: | | | | | | | | | | | |

Comments: Analysis for Sample -008 completed in field,

T:13.7°C

COC Number: A1016844

to October 2018 Sample Delivery Group No:

M

Voice: 603-926-3345 FAX: 603-926-3521

ESI Job No: 31233

EnviroSystems, Inc. 1 Lafayette Road Hampton, NH 03842

ESI

| | | | CHAIN | CHAIN OF CUSTODY DOCUMENTATION | ODY DO | COUME | ENTATIO | z | | | | | |
|---|---------------------------|----------------|-------------------------|--------------------------------|------------------------------------|-----------|--|---------------------|----------------------------|----------------------------------|-------------------------------------|--|--|
| Client: Underwoo | Underwood Engineers, Inc. | Contact: | Contact: Steve Clifton | fton | | | Pro | Project Name: | | Siscatac | Piscataqua River | | |
| Report to: Steve Clifton | ton | Address: | Address: 25 Vaughan Mal | lan Mall | | | Pro | Project Number: | 1 | P0771 | | Task: 0001 | |
| Invoice to: Steve Clifton | ton | Address: | Address: Portsmouth, NH | | 03801 | | Pro | Project Manager: | | Steve Clifton | ifton | | |
| Voice: 603-436-6192 | 3192 | Fax: | | | | | email: | ail: | | | | | |
| Protocol: NPDES | | | | | | | | | Ĭ | | | | |
| Lab Number Your Field ID; (assigned (must agree with by lab) container) | - | Date | Time | pe | Grab or com- posite (G/C) | No S S | Container Size Type (mL) (P/G/T) | | Field Preser- vation | Matrix S=Solid N W=Water F | Filter N=Not needed F=Dane in field | Analyses Requested\ Special Instructions: | |
| 013 PEASE_002DUP | DUP | 10/14/18 | 14/8 24h | gon | U | 1 25 | 250m mL | | H2SO4 V | Water | z | 7 = | |
| 014 PEASE_002 | | 11 | ب | _ | U | 7 | 1000 P | | 4 C V | Water | z | √ sar | |
| 015 PEASE 002DUP | DUP | , C | 11 | | C | + | 1000 P | 4 | O | Water | z | 7 sor | |
| 016 PEASE_002 | | 10/18/18 9:254 | 1:254 | | 0 | 1 2 | 250 P | | 4 C × | Water | z | Turbidity | |
| 017 PEASE_002 | | W/7/18 246 | 24hr | | U | 10 | 1000 G | | H2SO4 V | Water | | TPhen V | |
| 018 PEASE_002DUP | DUP | 2 | : | | O | 1 | 1000 G | | H2SO4 V | Water | z | TPhen V | |
| CO19 PEASE 092TP | | 5 | 1 | 5 | 1 | 1 | 1000 | 7 | H2SO4 V | Water | N | IPrien | |
| 020 PEASE_002 | | 1/8/12 | 1/18 9:30/A | 200 | 0 | 2 40 | 40 m mL | | 4 C V | Water | z | VOC624 | |
| 02 PEASE 002T | 1 | 3 | 9.30 N. C. | 30 | 0 | 2 40 | 40 m | | 0 | Water | z | VBC624 | |
| 022 PEASE 002 | | E | 7.34 Cal | यहें | 5 | 2 40 | 40 m mL | | N N | Water | z | HOLD VOC624 | |
| OZS PEASE OGELP | 7 | 5 | 6.30A | 5 | 0 | 2 40 | 40 m | \frac{1}{2} | 1 | Water | Z | HOLD VACEZA L | |
| 024 PEASE 002 | | 10/14/8 24/h | Mh | į, | () | 2 10 | 1000 G | | A > | Water | z | ABN625 | |
| Relinquished By: | Pech | | Date: 10 | Kella | Time: | AM | Rece | Received By: | lunto | " (Ilm | 2 | Date: (0/18/18 Time: 1/.00 | |
| Relinquished By: | | | Date: | 1 | Time: | | Rece | Received at Lab By: | 3y: | | | Date: Time: | |
| Comments: 7 12 7 1 | | | | | | | | | | | | | |

J. C S 1. C

COC Number: A1016844

Page October 2018 Sample Delivery Group No:

M

of

EnviroSystems, Inc. 1 Lafayette Road Hampton, NH 03842

Voice: 603-926-3345 FAX: 603-926-3521

ESI Job No: 3/233

| Report to: Steve Clifton Noice to: Steve Clifton Noice: 603-436-6192 Protocol: NPDES Lab Number Your Field ID: Sampled (must agree with container) 025 PEASE 002 TP 026 PEASE 002 CARAMA O26 PEASE 002 CARAMA O27 PEASE 002 03801 3rab | Project Name: | | Piscataqua River | |
|--|-------------------|------------------|--------------------------------|---|---|
| to: Steve Clifton 603-436-6192 NPDES Ther Your Field ID: (must agree with container) 025 PEASE 002TP | 03801 3rab | | | | |
| 603-436-6192 603-436-6192 NPDES Ther Your Field ID: (must agree with container) 025 PEASE 002TP | 03801 Grab | Project Number: | lber: P0771 | | Task: 0001 |
| NPDES NPDES NPDES Ther Your Field ID; Container) O25 PEASE 002TP O26 PEASE 002 C////// 912M | Grab | Project Manager: | | Steve Clifton | |
| Your Field ID: (must agree with container) 5 PEASE 002TP 6 PEASE 002 | Grab | email: | | | |
| (must agree with container) 5 PEASE 002TP 6 PEASE 002 | Grab | | I | | |
| 10/18/18 9/34 | posite (mL) (G/C) | Type (P/G/T) | Preser- S=Solid vation W=Water | K Filter d N=Not needed er F=Done in field L=Lab to do | Filter Analyses Requested\ N=Not needed Special Instructions: E=Done in field L=Lab to do |
| 10/18/10 9:30M | | 1 | 1 | 1 | 1 |
| 10/18/10 STAN | 2 1000 | 9 0 | 4 C Water | z | ABN625 |
| 0590 | 1 1000 | d. | 4 C Water | z | DO,pH,Temperature,Conductivity |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| Relinquished By: Tem Pate: 10/18/18 | Time: 1/4M | Received By: | Received By Mar Alta While. | Mul. | Date: 10//8//? Time: //U/ |
| Relinguished Bv: | Time. | de la fonica d | 0 | | i i |

Comments: Analysis for sample -026 completed in field.

COC Number: A1016844

October 2018 Sample Delivery Group No:

EnviroSystems, Inc. 1 Lafayette Road Hampton, NH 03842

ESI

Voice: 603-926-3345 FAX: 603-926-3521

ESI Job No: 31237

| ## Sampled Grab Project Nu | | |
|---|--|---|
| to: Steve Clifton Address: 25 Vaughan Mall Project Ma 603-436-6192 Fax: NPDES Project Name: Piscataqua River | |
| Contained Cont | Project Number: P0771 Tas | Task: 0001 |
| Date Time Sampled Grab Container Time Sampled Grab Container Time Sampled Grab Container Time Time Time Container Time Time C | Project Manager: Steve Clifton | |
| Your Field ID: Sampled Sampled Grab Order Time Sampled Sampl | email: | |
| Your Field ID: Sampled | |
| 19/14/14 24/4, 6204 C 1 500 P 19/14/14 8:24 C 1 100 le 11 24/4 C 1 125 P 11 24/4 C 1 500 P 12 24/4 C 1 500 P 14 21 C 1 500 P 16 11 C 1 500 P 16 11 C 1 500 P 17 14/4 8:254 C 1 500 P 17 125 P 18 14/4 8:254 C 1 500 P 18 14/4 8:254 C 1 500 P | Type Preser- S=Solid N=Not needed Preser- V=Watron v=Water r=Done in field V=Matrix Filter | Filter Analyses Requested\ N=Not needed Special Instructions: F=Done in field L=Lab to do |
| 10/8/18 8:34 6 1 100 le 10/18/18 8:34 6 1 100 le 11 24 | P 4C Water | 7 |
| 1. 24 C 1 100 le le l' 24 C 1 100 P C 1 125 P P C 1 120 P P P C 1 120 P P P P P P P P P P P P P P P P P P P | le 4C Water N | Enterococci |
| 11 24 C 1 1000 P 11 24 C 1 125 P 12 24 C 1 125 P 13 24 C 1 500 P 14 11 C 1 500 P 14 11 C 1 500 P 14 11 C 1 500 P 15 11 C 1 500 P 16 11 C 1 500 P 16 11 C 1 500 P 17 11 C 1 500 P 18 12 11 C 1 500 P 19 12 11 C 1 500 P 19 12 11 C 1 500 P 10 12 11 C 1 500 P 11 12 12 12 12 12 12 12 12 12 12 12 12 1 | le 4C Water N | 1 |
| 11 24 C 1 125 P WKM 8148 (C 1 500 P (4/7/m 24/h C 1 500 P (4/4/8 8:354 C 1 500 P (4/4/8 8:354 C 1 500 G (4/4/8 8:354 C 1 250m mL | P 4C Water N | \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ |
| 14 11 C 1 125 P 14 11 C 1 125 P 14 11 C 1 500 P 16/14/18 8:354 C 1 500 P 16/14/18 8:354 C 1 500 P 16/14/18 8:354 C 1 250m mL | | 7 |
| 19/4/18 8:354 6 1 500 P 19/4/18 8:354 6 1 500 P 10/14/18 8:354 6 2 1000 G 10/14/18 8:354 6 1 250m mL | | 7 |
| 19/14/14 34h. C 1 500 P 6/14/18 8:254 C 2 1000 G 6/14/18 8:44. C 1 250m mL | P 4C | 0 |
| 10/16/18 8:25/4 C 1 5500 P 10/16/18 8:25/4 C 2 1000 G 10/17/18 74/4 C 1 250m mL | P H2SO4 Water N | TKN,NO3+NO2,TN |
| 16/16/18 8:2514 6 2 1000 G W/4/18 24/6, C 1 250m mL | P H2SO4 Water N | TKN,NO3+NO2,TN |
| 6/7/18 24h, C 1 250m mL | | 7 |
| | mL H2SO4 Water N TP | 7 |
| 038 NEW 002DUP | - | 1 |
| Relinquished By Lan: Received By Marine: 114M Received By M | Rudiolehun | Date: 10/12/14 Time: 1/06 |
| Relinquished By: | Renained at Lah Ru- | Times |

Comments: Analysis for sample -033 completed in field. $\uparrow:(3), \ \mid \ \circ \ \cup$

COC Number: A1016844

October 2018 Sample Delivery Group No:

to

EnviroSystems, Inc. 1 Lafayette Road Hampton, NH 03842 ESI

Voice: 603-926-3345 FAX: 603-926-3521

31233

ESI Job No:

Project Manager: Steve Clifton email: Scliffon @ under woodens neers. com Date:/0/18/18 Time: //00 DO, pH, Temperature, Conductivity Time: Analyses Requested N≍Not needed Special Instructions: F=Done in field 0001 HOLD VOC624 HOLD VOC624 Turbidity VOC624 VOC624 ABN625 Task: TPhen TPhen TDS Date: Piscataqua River L=Lab to do Filter z z Z z z z Z z Matrix S=Solid W=Water P0771 Water Water Water Water Water Water Water Water Date: 19/18/18 Time: 114 M Received By: // Chts Water Water Field Preser-vation H2S04 HZS04 HC Project Number: 4 C 4 C 4 C 4 C HC 4 C Received at Lab By: Project Name: Type (P/G/T) 9 CHAIN OF CUSTODY DOCUMENTATION E g ۵ O ۵. m E m 0 ۵ Container Size (mL) (40 m 1000 1000 1000 40 m 40 m 1000 1000 40 m 1000 250 2 N or com-posite (G/C) Address: Portsmouth, NH 03801 1 0 Sampled Grab 1 Time: Address: 25 Vaughan Mall 14/18 74.4. US 10/18/8 8/18/10 14/18 34-41 03 al 3 By Contact: Steve Clifton Date Time Sampled Sampled 10/18/18/354 10/18/88:201 VOD:8 8/20/0) Date: Underwood Engineers, Inc. 603-436-6192 Steve Clifton Steve Clifton Relinquished By Leny 0 Your Field ID: (must agree with 042 NEW 002TP 044 NEW 002TP 046 NEW 002TP 048 NEW 002TP 041 NEW 002 043 NEW 002 039 NEW 002 040 NEW 002 045 NEW 002 047 NEW 002 049 NEW 002 container) NPDES Relinquished By: Invoice to: Report to: ab Number Client: Protocol: Voice: (assigned by (ab)

Comments: Analysis for sample -049 completed in field.

24hr Composite 10/12/18 7:51411 - 10/18/18 12:54AM

J. 1. 81:1 COC Number: A1016844

Sample Delivery Group No:

October 2018

3 Page

2

EnviroSystems, Inc. 1 Lafayette Road Hampton, NH 03842 の出

Voice: 603-926-3345 FAX: 603-926-3521

31273

ESI Job No:

9h:h Date: (0/18/18 Time: Time: Analyses Requested\ N=Not needed Special Instructions: TKN,NO3+NO2,TN TKN,NO3+NO2,TN 0001 Enterococci Task: Date: BOD NH3 NH3 TSS TDS S 90 TP TP F=Done in field Piscataqua River L=Lab to do Filter z z Z z z Z Z z Z z Z Z Steve Clifton W=Water Matrix S=Solid P0771 Water Field Preser-vation H2S04 H2S04 H2S04 H2S04 H2S04 H2S04 H2S04 Project Manager: 4 C 4 C Project Number: 4 C 4 C 4 C Received at Lab By Project Name: Date; 10/8/7 Time: 4.45 PM Received By: Type (P/G/T) email: CHAIN OF CUSTODY DOCUMENTATION ۵ ۵ ۵ ۵ ۵ ø ۵ G 0 ᆔ m Container Size (mL) 250m 1000 250m 1000 1000 500 100 100 125 500 500 125 S 2 Sampled Grab
By or composite (G/C) Address: Portsmouth, NH 03801 S Time: Address: 25 Vaughan Mall 5 Contact: Steve Clifton 53 1550 543 1530 Time Date: Date Sampled 10/18/18 Fax: Underwood Engineers, Inc. 603-436-6192 055 RIVER 002DUP 057 RIVER 002DUP 060 RIVER 002DUP Steve Clifton Steve Clifton Your Field ID: (must agree with 050 RIVER 002 051 RIVER 002 052 RIVER 002 053 RIVER 002 059 RIVER 002 054 RIVER 002 056 RIVER 002 058 RIVER 002 061 RIVER 002 container) NPDES Relinquished By: Relinquished By: Invoice to: Lab Number Report to: Protocol: Client: Voice: (assigned by lab)

Comments:

01.6 2.30

Page October 2018 Sample Delivery Group No:

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COC Number: A1016844

ESI Job No: 31233

'/oica: 603-926-3345 FAX: 603-926-3521 EnviroSystems, Inc 1 Lafayette Road Hampton, NH 03842

| Client: | Underwood Engineers, Inc. | Contact: Steve Clifton | Steve C | ifton | | | Proje | Project Name: | Piscata | Piscataqua River | |
|------------------|--|--------------------------|-----------------|---------------|------------------------------------|--------|--|------------------|------------------------------|---|--|
| Report to: | Steve Clifton | Address: 25 Vaughan Mall | 25 Vaug | han Mall | | 1 | Proje | Project Number: | P0771 | | Task: 0001 |
| Invoice to: | Steve Clifton | Address: Portsmouth, N | Portsmo | uth, NH | H 03801 | | Proje | Project Manager: | Steve Clifton | Clifton | |
| Voice: | 603-436-6192 | Fax: | | | | | email: | 35 | | | |
| Protocol: NP | NPDES | | | | | | | | | | |
| эег | Your Field ID: (must agree with container) | Sampled (| Time Sampled | Sampled By | Grab or com- posite (G/C) | Si2 F | Container Size Type (mL) (P/G/T) | Field Preser- | Matrix S=Solid W=Water | Filter N=Not needed F=Done in field L=Lab to do | Filter Analyses Requested\(N=Not needed Special Instructions: F=Done in field L=Lab to do |
| 062 | 062 RIVER_002 | 10/18/16/1600 | 1600 | 53 | 9 | 1 250 | 0 | A C | Water | z | Turbidity |
| 063 | 063 RIVER 002 | | 1530 | 15- | | 1 10 | 1000 G | H2S04 | Water | z | TPhen |
| 064 | 064 RIVER 002TP | | 530 | | | 1 10 | 1000 G | H2SO4 | Water | z | TPhen |
| 065 | 065 RIVER 002 | | | | | 2 40 | 40 m mL | 4 C | Water | z | VOC624 |
| 990 | 066 RIVER 002TP | |) | | | 2 40 | 40 m mL | 94 0 | Water | z | VOC624 |
| 190 | 067 RIVER_002 | | 045 | | | 2 40 | 40 m mL | Ę | Water | z | HOLD VOC624 |
| 068 | 068 RIVER_002TP | | 154 | | | 2 40 m | m | HCI | Water | Z | HOLD VOC624 |
| 690 | 069 RIVER_002 | | 000 | | | 2 10 | 1000 G | 0 | Water | z | ABN625 |
| 020 | 070 RIVER 002TP | | | | | 2 1000 | 00 | 4 C | Water | z | ABN625 |
| 071 | 071 RIVER_002 | > | 7 | 7 | > | 1000 | 00 | 4 C | Water | z | DO,pH,Temperature,Conductivity |
| | | | | | | | | | | | |
| Relinquished By: | 75 | ¥0 4 | Date | 8/18 | Brine: 4:45PM | 18 P | Received By: | ed By: M | GORA | W | Date: 10 / 18 / 8 Time: 4:45 |
| Relinguished Bv. | | | Date: | | Timo | | Good | de le bouleage | | | . Times |

2.30 02 16

October 2018

Sample Delivery Group No:

o

COC Number: A1016844



ANALYTICAL REPORT

Lab Number

L1842635

Client:

Enthalpy Analytical

1 Lafayette Road

PO Box 778

Hampton, NH 03843

ATTN:

Jason Hobbs

Phone:

(603) 926-3345

Project Name:

31233

Project Number:

Not Specified

Report Date:

10/30/18

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019 508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

L1842635 10/30/18

Lab Number: Report Date:

Project Name: 31233
Project Number: Not Specified

| Receive Date | 10/19/18 | 10/19/18 | 10/19/18 | 10/19/18 | 10/19/18 |
|-------------------------|----------------|----------------|----------------|----------------|----------------|
| Collection Date/Time | 10/18/18 00:00 | 10/18/18 00:00 | 10/18/18 00:00 | 10/18/18 15:30 | 10/18/18 15:30 |
| Sample Location | Not Specified |
| Matrix | WATER | WATER | WATER | WATER | WATER |
| Client ID | 31233-017 | 31233-018 | 31233-041 | 31233-063 | 31233-064 |
| Alpha Sample ID | L1842635-01 | L1842635-02 | L1842635-03 | L1842635-04 | L1842635-05 |

Project Name: 31233 Lab Number: L1842635

Project Number: Not Specified Report Date: 10/30/18

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE". respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

31233 Project Name:

Lab Number:

L1842635

Project Number:

Not Specified

Report Date:

10/30/18

Case Narrative (continued)

Sample Receipt

The samples were received at the laboratory above the required temperature range and were not on ice

The analyses performed were specified by the client.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

Michelle M. Morris

Title: Technical Director/Representative

Date: 10/30/18

INORGANICS & MISCELLANEOUS

Project Name: 31233 Lab Number:

L1842635

Project Number:

Not Specified

Report Date:

10/30/18

SAMPLE RESULTS

Lab ID:

L1842635-01

Date Collected:

10/18/18 00:00

Client ID:

31233-017

Date Received:

10/19/18

Sample Location:

Not Specified

Field Prep:

Not Specified

Sample Depth:

Water

| Matrix: | vvater | | | | | | 1.7.7 | | | |
|-------------------|-------------------|-----------|-------|-------|-----|--------------------|------------------|------------------|----------------------|---------|
| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
| General Chemistry | - Westborough Lal | Ò | | | | | | | | |
| Phenolics Total | ND | | ma/l | 0.030 | - | 1 | 10/22/18 04:44 | 10/23/18 05:52 | 4,420.1 | GD |



Project Name:

31233

Lab Number:

L1842635

Project Number:

Not Specified

Report Date:

10/30/18

SAMPLE RESULTS

MDL

RL

0.030

Dilution Factor

1

Lab ID:

L1842635-02

Client ID:

31233-018

Sample Location: Not Specified

Result Qualifier Units

mg/l

Date Collected:

10/18/18 00:00

4,420.1

GD

Date Received:

10/22/18 04:44 10/23/18 05:53

10/19/18

Field Prep:

Not Specified

Sample Depth:

General Chemistry - Westborough Lab

Matrix:

Parameter

Phenolics, Total

Water

| Date | Date | Analytical | |
|----------|----------|------------|---------|
| Prepared | Analyzed | Method | Analyst |



Project Name: 31233 Lab Number: L1842635

Project Number: Not Specified Report Date: 10/30/18

SAMPLE RESULTS

 Lab ID:
 L1842635-03
 Date Collected:
 10/18/18 00:00

 Client ID:
 31233-041
 Date Received:
 10/19/18

 Sample Location:
 Not Specified
 Not Specified

Sample Depth:

Matrix: Water

| Tricati IX. | · · · · · · · | | | | | | | | | |
|---------------------|-----------------|-----------|-------|-------|-----|--------------------|------------------|------------------|----------------------|---------|
| Parameter | Result Q | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
| General Chemistry - | Westborough Lab | | | | | | | | | |
| Phenolics, Total | ND | | mg/l | 0.030 | ú | 1 | 10/22/18 04:44 | 10/23/18 05:54 | 4,420.1 | GD |

Project Name: 31233 Lab Number:

L1842635

Project Number:

Not Specified

Report Date:

10/30/18

SAMPLE RESULTS

Lab ID:

L1842635-04

Date Collected:

10/18/18 15:30

Client ID: Sample Location:

31233-063 Not Specified Date Received:

10/19/18

Sample Depth:

Matrix:

Water

Not Specified Field Prep:

Analytical Method Dilution Date Date Factor Prepared Analyzed Result Qualifier Units RL MDL Parameter Analyst General Chemistry - Westborough Lab Phenolics, Total 0.030 1 4,420.1 GD mg/l 10/22/18 04:44 10/23/18 05:55



Project Name: 31233 Lab Number:

L1842635

Project Number:

Not Specified

Report Date:

10/30/18

SAMPLE RESULTS

Lab ID:

L1842635-05

Date Collected:

10/18/18 15:30

Client ID:

31233-064

Date Received:

10/19/18

Sample Location: Not Specified

Field Prep:

Not Specified

Sample Depth:

| Matrix: | vvater | | | | | | | | | |
|-------------------|-------------------|-----------|-------|-------|-----|--------------------|------------------|------------------|----------------------|---------|
| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
| General Chemistry | - Westborough Lab | Ó | | | | | | | | |
| Phenolics, Total | ND | | mg/l | 0.030 | | 1 | 10/22/18 04:44 | 10/23/18 05:56 | 4,420.1 | GD |

Project Name:

31233

Lab Number:

L1842635

Project Number: Not Specified

Report Date:

10/30/18

Method Blank Analysis Batch Quality Control

| Parameter | Result Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---------------------|-------------------------|-------------|---------|--------|--------------------|------------------|------------------|----------------------|---------|
| General Chemistry - | Westborough Lab for sam | nple(s): 0° | 1-05 Ba | tch: W | G1170758-1 | | | - 0 | |
| Phenolics, Total | ND | mg/l | 0.030 | - | 1 | 10/22/18 04:44 | 10/23/18 05:50 | 4,420.1 | GD |



Lab Control Sample Analysis Batch Quality Control

Not Specified

Project Number: Project Name:

31233

L1842635 Lab Number:

10/30/18 Report Date: RPD Limits

Qual

RPD

%Recovery Limits

Qual LCSD %Recovery Qual LCS %Recovery Parameter

General Chemistry - Westborough Lab Associated sample(s): 01-05 Batch: WG1170758-2

Phenolics, Total

93

70-130

ALPHA

Matrix Spike Analysis Batch Quality Control

L1842635 Lab Number:

Project Number: Not Specified 31233

Project Name:

10/30/18

Report Date:

| Parameter | Native Sample | MS | Found | MS %Recovery | MSD Qual Found | | MSD Recovery %Recovery Qual Limits | Reco Qual Lin | very RPD Qual Lit | Qual | RPD Limits |
|-----------------------|----------------------|---------------|-----------------|----------------------------|-------------------|---------|------------------------------------|------------------|----------------------|---------|---------------|
| General Chemistry - V | /estborough Lab Asso | iciated sampl | imple(s): 01-05 | 5 QC Batch ID: WG1170758-4 |): WG11 | 70758-4 | QC Sample: L1842635-05 | L1842635-05 | Client ID: 31233-064 | : 31233 | -064 |

113

0.45

4.0

ND

Phenolics, Total

20

70-130



Lab Duplicate Analysis
Batch Quality Control

Project Number: Not Specified

31233

Project Name:

L1842635 Lab Number:

10/30/18 Report Date:

20

NC

l/gm

RPD Limits General Chemistry - Westborough Lab Associated sample(s): 01-05 QC Batch ID: WG1170758-3 QC Sample: L1842635-05 Client ID: 31233-064 Qual RPD Units **Duplicate Sample** Native Sample Parameter

QN 2 Phenolics, Total

ALPHA



Project Name: 31233

Project Number: Not Specified

Sample Receipt and Container Information

Lab Number: L1842635 Report Date: 10/30/18

Serial No:10301812:22

YES

Were project specific reporting limits specified?

Cooler Information

Custody Seal

| | Absent | | | | | | | | |
|-----------------------|--------------------------|--------|---------|-------------|------------|------|--------|-----------|--|
| Container Information | mation | | Initial | Final | Temp | | | Frozen | |
| Container ID | Container Type | Cooler | Н | pH pH deg C | deg C Pres | Pres | Seal | Date/Time | |
| L1842635-01A | Glass 1000ml unpreserved | ¥ | 42 | <2 | 8.6 | > | Absent | | |
| L1842635-02A | Glass 1000ml unpreserved | < | 2 | 42 | 8,6 | > | Absent | | |
| L1842635-03A | Glass 1000ml unpreserved | 4 | 2 | 5 | 8.6 | > | Absent | | |
| _1842635-04A | Glass 1000ml unpreserved | ∢ | <2 | <2 | 8.6 | > | Absent | | |
| 1842635-05A | Glass 1000ml unpreserved | < | <2 | <2 | 8.6 | > | Absent | | |

TPHENOL-420(28)
TPHENOL-420(28)

Analysis(*)

TPHENOL-420(28)
TPHENOL-420(28)

Project Name: 31233 Lab Number: L1842635

Project Number: Not Specified Report Date: 10/30/18

GLOSSARY

Acronyms

EDL Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any

values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis

of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an

analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case

estimate of the concentration.

EPA - Environmental Protection Agency.

LCS Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of

analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of

analytes or a material containing known and verified amounts of analytes.

MDL Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any

adjustments from dilutions, concentrations or moisture content, where applicable.

MS Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for

which an independent estimate of target analyte concentration is available.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's

reporting unit.

NDPA/DPA · N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL

includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the
precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less

precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the

values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the

associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3.7.8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample; s toxicity derived by multiplying each dioxin and furan by its corresponding TEF

and then summing the resulting values.

 Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

 The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

Total: With respect to Organic analyses, a "Total' result is defined as the summation of results for individual isomers or Aroclors. If a "Total' result is requested, the results of its individual components will also be reported. This is applicable to "Total' results for methods 8260, 8081 and 8082.

Report Format: Data Usability Report



Project Name: 31233 Lab Number: L1842635

Project Number: Not Specified Report Date: 10/30/18

Data Qualifiers

- A Spectra identified as "Aldol Condensation Product",
- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations
 of the analyte.
- E Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
- H The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- The lower value for the two columns has been reported due to obvious interference.
- M Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P The RPD between the results for the two columns exceeds the method-specified criteria.
- Q The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- Analytical results are from sample re-analysis.
- RE Analytical results are from sample re-extraction.
- S Analytical results are from modified screening analysis.
- J Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report



Project Name: Lab Number: L1842635 31233 Project Number: Not Specified

Report Date: 10/30/18

REFERENCES

Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised 4 March 1983.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:17873

Revision 12 Published Date: 10/9/2018 4:58:19 PM

Page 1 of 1

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624/624.1: m/p-xylene, o-xylene

EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: lodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-

Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine

EPA 6860: SCM: Perchlorate

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187,

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water

EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; EPA 353.2: Nitrate-N, Nitrite-N; SM4500NO3-F: Nitrate-N, Nitrite-N; SM4500F-C, SM4500CN-CE,

EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B EPA 332: Perchlorate; EPA 524.2: THMs and VOCs; EPA 504.1: EDB, DBCP.

Microbiology: SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D.

Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, EPA 350.1: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, EPA 351.1, SM4500NO3-F, EPA 353.2: Nitrate-N, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate-

EPA 624.1: Volatile Halocarbons & Aromatics,

EPA 608,3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan II, Endosulfan III

Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables), EPA 600/4-81-045: PCB-Oil. Microbiology SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.

Mansfield Facility:

Drinking Water

EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. EPA 200.8: Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. EPA 245.1 Hg.

EPA 522.

Non-Potable Water

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.

EPA 245.1 Hg.

SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

Page 19 of 20

Document Type: Form

CHAIN OF CUSTODY RECORD

1842635

| VIROS | ENVIROSYSTEMS, INCORPORATED | ORALED | | | | ES | ESI Study Number: | mber: 3:233 |
|---------------------------|---|---|--|-------------------|------------------------------------|---|-------------------|---|
| Box 778, | P.O. Box 778, Hampton, New Hampshire 03842 | 9 03842 | | | Customer Se | Customer Services; Phane # (603) 926-3345 Fax # (603) 926-3521 | 6-3345 | PAGE 1 OF 1 |
| CLIENT. Enviro | EnviroSystems, Inc. | CONTACT: Jason Hobbs Email: jason.hob CC: catherine.sa | CONTACT. Jason Hobbs Email: jason.hobbs@enthalpy.com CC; catherine.sasso@enthalpy.com | ΕΙĒ | | PROJECT NAME 31233 | -0 | P.O.# |
| REPORT TO. Jason Hobbs | sqqo | ADORESS | P.O. Box 778 | 877 × | | | | Ext. 208 |
| INVOICE TO: Jason Hobbs | sqqo | ADDRESS | Hampto | Hampton, NH 03843 | 43 | | | SAMPLED BY KL |
| gram Req | Program Requirements: INPDES | □ RCRA □ USAC | ACE □ EPA | □ OTHER | ~ | | | |
| SAMPLE | YOUR FIELD IDENTIFICATION (MUST AGREE WITH CONTAINER) | DATE | TIME | COMPOSITE | E-EFFLUENT D-DILUENT O-OTHER | CONTABLER #NOLTYPE | FIELD | ANALYSIS REQUESTED (SPECIAL INSTRUCTIONS, ETC.) |
| | 31233-617 | 8118/101 | 0000 | S | | 1x 1000 ×1 | H2504 | |
| | 31233-018 | 81181101 | 0000 | ن | | 1x 1000 mL G | H2504 | |
| | 31233-041 | 10113118 | 0000 | S | | 1x loop mL G | H2504 | |
| | 31733-063 | 81181101 | 1530 | J | | 1x 1000 ml 6 | H 2504 | |
| | 31233-664 | 81181171 | 065) | S | | 1x 1000 mL G | H2504 | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | Reminders below: |
| | | | | | | | | Please email report |
| | | | | | | | | NH ELAP Cert. with report |
| RELINGUISHED | OBY: | DATE: 1 | 11ME: 8:59 | | RECEIVED BY | S elean | 0/ | 10/19/18 8:59 |

Analytical Report Review Checklist

| DATE IN: 10/18/2018 | STUDY #: 31233 |
|----------------------|----------------------------------|
| DATE DUE: 11/01/2018 | CLIENT: Underwood Engineers Inc. |
| | PROJECT: Piscatagha River |
| DD Required Yes No | QC Report Pages Required: Yes No |

| Analyst Data Review | Date | Initials | Comments |
|--------------------------------|----------|----------|--------------------------|
| Chains of Custody Complete | (0/18/18 | ELD | REVIEWED 10/22/18 AM |
| Sample Receipt Complete | 10/18/18 | ELJ | 4 |
| QC Reports Generated | | | |
| EDD Generated | | | |
| Analytical Components Complete | 11/29/18 | AM | |
| Data Acceptability Review | The Arms | 1 | |
| Analytical Reports Generated | - L | 1 | |
| Microbiology Report Generated | 11/7/18 | ¥. | Micro reviewed: 11/13/18 |

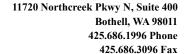
| Technical Report Review | Date | Initials | Comments |
|--|----------|----------|----------|
| All Elements of QC Reports Incorporated, MDL, etc. | | | |
| EDD Checked and Results Saved | | | |
| Data Appendix Compiled | | | |
| Analytical Report Reviewed | W/12/18 | KM | |
| QA Audit / Review Complete | | | |
| Final Report Reviewed and Authorized | illis/18 | JUL | |
| Final Reports Printed - PDF | 11/13/18 | AM | |
| Hard Copy Sent or E-Mailed To Client | 1 | | |
| Report Logged Out / Invoice Sent | | | |
| Report Scanned to Archive | . | 1 | |
| | | | |
| | | | |

Microbiology Report Review Checklist

| STUDY #: | 31233 | | | |
|----------|-----------|----------|-----------|--|
| CLIENT: | Underwood | Engineus | | |
| PROJECT: | | 3 | | |
| DATE IN: | 10/18/101 | | DATE DUE: | |

| Analyst Data Review | Date | Initials | Comments |
|---|---------------|----------|----------|
| Chains of Custody Complete | 10/19/19 | MW | |
| Sample Receipt Complete | Total Control | | |
| Bench Sheets Complete (dates, times, initials, etc) | 1 | | |

| Technical Report Review | Date | Initials | Comments |
|----------------------------|----------|----------|----------------|
| Data Acceptability Review | 1117178 | LFO | |
| Draft Report | 1 | 1 | |
| Final Report Reviewed | 11(12/18 | cs | |
| QA Audit / Review Complete | | | |
| Report Printed to PDF | 11/12/18 | CS | |
| Report scanned to archive | | | See Analytical |
| Report Sent to Client | | V | report review |
| Invoice Sent | | 1 | chequist |





02 January 2019

Tim Puls Underwood Engineers 25 Vaughan Mall Portsmouth, NH 03801

RE: Trace Metals In Wastewater

Amy Sodall.

Enclosed are the analytical results for samples received by Eurofins Frontier Global Sciences. All quality control measurements are within established control limits and there were no analytical difficulties encountered with the exception of those listed in the case narrative section of this report.

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

Sincerely,

Amy Goodall

Project Manager



Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 02-Jan-19 15:03

ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|-----------------------|---------------|--------|-----------------|-----------------|
| NEW_02 NEW_01_TM | 8J01082-01 | Water | 18-Oct-18 00:00 | 29-Oct-18 10:10 |
| NEW_02 NEW_02_TM | 8J01082-02 | Water | 18-Oct-18 00:00 | 29-Oct-18 10:10 |
| NEW_02 NEW_EB_TM | 8J01082-03 | Water | 17-Oct-18 06:50 | 29-Oct-18 10:10 |
| NEW_02 NEW_01_THg | 8J01082-06 | Water | 18-Oct-18 00:00 | 29-Oct-18 10:10 |
| NEW_02 NEW_02_THg | 8J01082-07 | Water | 18-Oct-18 00:00 | 29-Oct-18 10:10 |
| NEW_02 NEW_EB_THg | 8J01082-08 | Water | 17-Oct-18 06:55 | 29-Oct-18 10:10 |
| PEASE_02 PEASE_01_TM | 8J01082-10 | Water | 18-Oct-18 00:00 | 29-Oct-18 10:10 |
| PEASE_02 PEASE_02_TM | 8J01082-11 | Water | 18-Oct-18 00:00 | 29-Oct-18 10:10 |
| PEASE_02 PEASE_EB_TM | 8J01082-12 | Water | 17-Oct-18 07:40 | 29-Oct-18 10:10 |
| PEASE_02 PEASE_01_THg | 8J01082-15 | Water | 18-Oct-18 00:00 | 29-Oct-18 10:10 |
| PEASE_02 PEASE_02_THg | 8J01082-16 | Water | 18-Oct-18 00:00 | 29-Oct-18 10:10 |
| PEASE_02 PEASE_EB_THg | 8J01082-17 | Water | 17-Oct-18 07:45 | 29-Oct-18 10:10 |

Eurofins Frontier Global Sciences, LLC

Amy Sodall.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 02-Jan-19 15:03

SAMPLE RECEIPT

Samples were received at Eurofins Frontier Global Sciences (EFGS) on 29-Oct-18 10:10. The samples were received intact, on-ice within a sealed cooler at

<u>Cooler</u> <u>Temp C°</u> Default Cooler 16.2

Samples were shipped to Eurofins Calscience in Garden Grove, CA for the EPA SM4500 Total CN analysis per the initial project setup.

The subcontract report is located after the notes and definitions section of the EFGS report.

SAMPLE PREPARATION AND ANALYSIS

Samples were prepared and analyzed for total mercury by flow injection atomic fluorescence spectrometry (FI-AFS) in accordance with EPA 1631E.

Samples were prepared and analyzed for total recoverable metals by inductively coupled plasma mass spectrometry (ICP-MS) in accordance with EPA 200.8 (EFGS-054).

ANALYTICAL AND QUALITY CONTROL ISSUES

Method blanks were prepared for every preparation to assess possible blank contribution from the sample preparation procedure. The method blanks were carried through the entire analytical procedure. All blanks fell within the established acceptance criteria with the exception of any items narrated above or flagged and described in the notes and definitions section of the report.

Liquid spikes, certified reference material (CRM) or a quality control samples (QCS) were prepared for every preparation as a measure of accuracy. All liquid spikes, CRMs and/or QCS samples fell within the established acceptance criteria with the exception of any items narrated above or flagged and described in the notes and definitions section of the report.

As an additional measure of the accuracy of the methods used and to check for matrix interference, matrix spikes (MS) and matrix spike duplicates (MSD) were digested and analyzed. All of the matrix spike recoveries fell within the established acceptance criteria with the exception of any items flagged and described in the notes and definitions section of the report.

A reasonable measure of the precision of the analytical methods is the relative percent difference (RPD) between a matrix spike recovery and a matrix spike duplicate recovery and between laboratory control sample recovery and laboratory control sample duplicate recoveries.

Eurofins Frontier Global Sciences, LLC

Amy Sodall.

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All of the relative percent differences fell within established acceptance criteria with the exception of any items flagged and described in the notes and definitions section of the report.

Eurofins Frontier Global Sciences, LLC

Amy Sodall.

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Sample Receipt Checklist

| Client: Underwood Project: Anti-Deg WWIF | | | Received: <u>[0/29//</u> | | | | | |
|---|---------------------------------------|-------------------|---------------------------|-----------|----------------|--|---------------|-------------------|
| # of Coolers Received: Sa | amples Arrived By: Sh | | | | | | | |
| | se Ice 🔲 Gel Ice 🔲 Dry | | | | | | | ················/ |
| Notify Project Manager if packages/cool | | | | | | | | |
| Cooler Information: | Y/N/NA Comn | nents | 710'-34/0Cm | a= (1) | | | ml | |
| he coolers do not appear to be tampered with: | 7 | Terres | TID: -240525 | | | | 1116 10:10 By | : M |
| Custody Seals are present and intact: | No. | | Cooler 1: 15, 7°C | | | Cooler 4: | °C w/ CF: | °C |
| Custody seals signed: | No | | Cooler 3: °C | | | Cooler 5: | °C w/ CF: | °C |
| Chain of Custody: Y/N/NA | Comments | Sample Condition | n/Integrity: | | V/A1/A1A | | | |
| ample ID/Description: | | Sample container | | | Y/N/NA | | Comments | |
| Date and time of collection: | | | present and legible: | | | | | |
| ampled by: | | _ | tainer/bag matches CO | C: | | | | |
| reservation type: | | Correct sample co | | | 4 | | | |
| equested analyses: | | Samples received | within holding times: | | $\frac{1}{V}$ | · · · · · · · · · · · · · · · · · · · | | |
| equired signatures: | , , , , , , , , , , , , , , , , , , , | | ufficient for requested a | nalvses: | / | | | |
| nternal COC required: | | | ive used for requested a | | \'_ | ······································ | | |
| Anomalies/Non-conformances (attach addition | onal pages if needed): | | | mary ses. | Ζ ' | | | |
| Ten samples in this | is work order | were | recieved | | | 810 | 1082 | |
| ON 10.26-18 within | 1 temperature | : range. L | EC 10-30-18 | | - | | | |
| | | | | | - - - | | | |

Chain of Custody Record & Laboratory Analysis Request: Air, Water, Sediments, Plant and Animal Tissue, Hydrocarbon & Other Samples

11720 Northcreek Pkwy N, Suite 400 Bothell, WA 98011

Phone: 425-686-1996

Fax: 425-686-3096 info@FrontierGS.com

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Frontier Global Sciences

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8501007

http://www.FrontierGS.com Client: UNDERWOOD ENGINEERS, INC. Contact: Tim Puls EFGS PM: Address: 25 VAUGHAN MALL, Analyses Requested Phone: (603) 436-6192 Fax: Date: % PORTSMOUTH, NH 03801 E-mail: tpuls@underwoodengineers.com TAT (business days):20 (std) Project Name: Anti-Degradation - WWTF Contract/PO: Other 15 10 5 4 3 2 24 hrs. Report To: Tim Puls Invoice To: Client (THg) (For TAT < 10 days, contact PM Field Filtered (Y/N) Total Metals (TM) Surcharges apply for expedited TAT) Address: 25 VAUGHAN MALL, Address: Preserved: 3 HCl BrCl Saturday delivery? ☐ Y 🖄 N (TCn) Mercury (PORTSMOUTH, NH 03801 (If yes, please contact PM) Phone: (603) 436-6192 Sampled By Phone: Fax: Fax: EDD XY IN 5 E-mail: tpuls@underwoodengineers.com E-mail: Standard | High Total Field P HNO₃ Total Engraved # of No. Sample ID Matrix Date & Time Bottle ID **Bottles** Comments OSUWI NEW 02 NEW 01 TM 1 1 WW X Total Metals include: Sb, As, 2 NEW 02 NEW 02 TM 1 ww Be, Cd, Cr, Cu, Fe, Pb, Ni, Se, X Ag, TI, Zn 3 NEW 02 NEW EB TM 1 7/1806:50 45 RW NEW 02 4 NEW MS TM 1 WW 5 NEW 02 NEW 01 TCn 1 ww X 6 NEW 02 NEW_01 THa 1 WW X . . 7 NEW 02 NEW 02 THa 1 WW X 8 NEW 02 NEW_EB_THg 1 RW NEW_02 NEW_MS_THq 9 1 WW K/18/18 246 PEASE 02 PEASE_01_TM 10 1 WW PEASE 02 PEASE 02 TM 11 1 WW PEASE 02 10/17/1807:40 OSIG 12 PEASE EB TM 1 RW For Laboratory Use Only Matrix Codes: Relinauished By Received By Received By: FW: Fresh Water COC Seal: Comments: WW: Waste Water Cooler Temp: 16. ユ SB: Sea and Brackish Water Name: Name: SS: Soil and Sediment Carrier: Organization://F TS: Plant and Animal Tissue Organization: Organization: HC: Hydrocarbons 10/10 VTSR: Date & Time: 10/18/18 4PM Date & Time: 10/24/18 16:00 Date & Time: TR: Trap # of Coolers: OT: Other Tracking number: 14524468365 Sample Disposal: RW: Reagent Water By signing, you declare that you agree with EFGS' terms and conditions, and that ☐ Return (shipping fees may apply) you authorize EFGS to perform the specified analyses. ✓ Standard Disposal – 30 Days after report weeks after report (storage fees may apply) ☐ Retain for Customer Approval: Date:

Chain of Custody Record & Laboratory Analysis Request: Air, Water, Sediments, Plant and Animal Tissue, Hydrocarbon & Other Samples

11720 Northcreek Pkwy N, Suite 400 Bothell, WA 98011

Date:

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Phone: 425-686-1996

Fax: 425-686-3096 info@FrontierGS.com

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Page <u>2</u> of <u>2</u> http://www.FrontierGS.com Client: UNDERWOOD ENGINEERS, INC. Contact: Tim Puls EFGS PM: Address: 25 VAUGHAN MALL, Analyses Requested Phone: (603) 436-6192 Fax: Date: % PORTSMOUTH, NH 03801 E-mail: tpuls@underwoodengineers.com TAT (business days):20 (std) Project Name: Anti-Degradation - WWTF Contract/PO: Other 15 10 5 4 3 2 24 hrs. Report To: Tim Puls Invoice To: Client Mercury (THg) (For TAT < 10 days, contact PM, Field Filtered (Y/N) Total Metals (TM) Surcharges apply for expedited TAT) Address: 25 VAUGHAN MALL. Address: Preserved: 3 HCl BrCl Saturday delivery? ☐ Y 🗖 N Ch (TCh) PORTSMOUTH, NH 03801 (If yes, please contact PM) Phone: (603) 436-6192 Phone: Fax: Sampled By Fax: **⊠**Y □ N EDD E-mail: tpuls@underwoodengineers.com E-mail: Standard □ High Field Pr HNO₃ I Total Total Engraved # of No. Sample ID Matrix Date & Time Bottle ID **Bottles** Comments PEASE 02 PEASE_MS_TM 1 WW Total Metals include: Sb, As, PEASE 02 PEASE 01 TCn 1 ww Be, Cd, Cr, Cu, Fe, Pb, Ni, Se, NacH N 11 PEASE 02 3 PEASE_01_THg Ag, Tl, Zn 1 ww N 11 1/ PEASE_02 PEASE 02 THa 4 1 WW 11 PEASE 02 5 PEASE_EB THO 1 RW 118 07:45 UE OUI PEASE 02 6 PEASE_MS_THg 1 WW 7 8 9 10 11 12 For Laboratory Use Only Matrix Codes: Relinquished By: Received By: Received By: FW: Fresh Water COC Seal: Comments: WW: Waste Water Cooler Temp: SB: Sea and Brackish Water Name: Name: SS: Soil and Sediment Carrier: Organization: UE TS: Plant and Animal Tissue Organization: Organization: VTSR: HC: Hydrocarbons Date & Time: 10/18/18 4PH Date & Time: TR: Trap Date & Time: # of Coolers: OT: Other Tracking number: Sample Disposal: RW: Reagent Water By signing, you declare that you agree with EFGS' terms and conditions, and that ☐ Return (shipping fees may apply) you authorize EFGS to perform the specified analyses. ☑ Standard Disposal – 30 Days after report ☐ Retain for weeks after report (storage fees may apply) Customer Approval:

SUBCONTRACT ORDER

Eurofins Frontier Global Sciences, Inc.

8J01082

| SENDING LABORATORY: | RECEIVING LABORATORY: |
|--|--------------------------|
| Eurofins Frontier Global Sciences, LLC | Eurofins Calscience, LLC |
| 11720 North Creek Parkway North, Suite 400 | 7440 Lincoln Way |
| Bothell, WA 98011 | Garden Grove, CA 92841 |
| Phone: (425) 686-1996 | Phone :7148955494 |
| Fax: (425) 686-3096 | Fax; x |
| Project Manager: Amy Goodall | |
| | |

Comments Sample ID: NEW_02 NEW_01_TCn Analysis

Matrix: Water EFGS Lab ID: 8J01082-05

Sampled: 18-Oct-18 00:00 (GMT-05:00) Eastern Time (US & Arrived on 10/26/18, temp 0.4C LEL 10/29/18

Due: 28-Nov-18 19:00

Misc. Subcontract 1

EPA SM4500 CN E

Containers Supplied:

250 mL PETG (A)

Sample ID: PEASE_02 PEASE_01_TCn

Matrix: Water EFGS Lab ID: 8J01082-14

Sampled: 18-Oct-18 00:00 (GMT-05:00) Eastern Time (US & Arrived on 10/26/18, temp 0.4C LEL 10/29/18

Due: 28-Nov-18 19:00

EPA SM4500 CN E

Misc. Subcontract 1

250 mL PETG (A)

Containers Supplied:

h888 nt/5 10 050 098 Z

Received By Received By 5 Page 8 of 52

Date

Date

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 02-Jan-19 15:03

NEW_02 NEW_01_TM 8J01082-01

| Analyte Sample Preparation: EFGS SOP2836 C | Result | Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|---|--------|---|-----------------|-----------|----------|---------|-----------|----------|-----------|-----------|-------|
| | | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | | 50011011 | | | | | | | |
| Antimony | 0.160 | 0.009 | 0.020 | $\mu g/L$ | 1 | F811325 | 12-Nov-18 | 8K16011 | 16-Nov-18 | EPA 200.8 | |
| Arsenic | 0.87 | 0.10 | 0.30 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | |
| Beryllium | 0.007 | 0.004 | 0.061 | $\mu g/L$ | 1 | F811325 | 12-Nov-18 | 8K26022 | 20-Nov-18 | EPA 200.8 | J |
| Cadmium | 0.015 | 0.008 | 0.020 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | J |
| Chromium | 0.42 | 0.02 | 0.10 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | |
| Copper | 2.40 | 0.02 | 0.10 | μg/L | 1 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | |
| Iron | 57 | 1 | 10 | μg/L | 1 | F811325 | 12-Nov-18 | 8K26022 | 20-Nov-18 | EPA 200.8 | |
| Lead | 2.00 | 0.005 | 0.040 | μg/L | 1 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | |
| Nickel | 2.31 | 0.04 | 0.10 | μg/L | 1 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | |
| Selenium | 1.11 | 0.44 | 0.61 | μg/L | 1 | F811325 | 12-Nov-18 | 8K26022 | 20-Nov-18 | EPA 200.8 | |
| Silver | 0.267 | 0.002 | 0.020 | μg/L | 1 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | |
| Thallium | ND | 0.006 | 0.020 | μg/L | 1 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | U |
| Zinc | 93.2 | 0.16 | 0.50 | μg/L | 1 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 02-Jan-19 15:03

NEW_02 NEW_02_TM 8J01082-02

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|------------------------------|-----------------|--------------------|--------------------|-----------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP | 2836 Closed Ves | ssel Water | Oven Di | gestion | | | | | | | |
| Antimony | 0.169 | 0.009 | 0.020 | μg/L | 1 | F811325 | 12-Nov-18 | 8K16011 | 16-Nov-18 | EPA 200.8 | |
| Arsenic | 0.85 | 0.10 | 0.30 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K26023 | 21-Nov-18 | EPA 200.8 | |
| Beryllium | 0.005 | 0.004 | 0.061 | $\mu g/L$ | 1 | F811325 | 12-Nov-18 | 8K26022 | 21-Nov-18 | EPA 200.8 | J |
| Cadmium | 0.016 | 0.008 | 0.020 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | J |
| Chromium | 0.29 | 0.02 | 0.10 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K26023 | 21-Nov-18 | EPA 200.8 | |
| Copper | 2.30 | 0.02 | 0.10 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K26023 | 21-Nov-18 | EPA 200.8 | |
| Iron | 57 | 1 | 10 | $\mu g/L$ | 1 | F811325 | 12-Nov-18 | 8K26022 | 21-Nov-18 | EPA 200.8 | |
| Lead | 1.96 | 0.005 | 0.040 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | |
| Nickel | 2.12 | 0.04 | 0.10 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K26023 | 21-Nov-18 | EPA 200.8 | |
| Selenium | 1.31 | 0.44 | 0.61 | $\mu g/L$ | 1 | F811325 | 12-Nov-18 | 8K26022 | 21-Nov-18 | EPA 200.8 | |
| Silver | 0.263 | 0.002 | 0.020 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | |
| Thallium | ND | 0.006 | 0.020 | μg/L | 1 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | U |
| Zinc | 91.2 | 0.16 | 0.50 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K26023 | 21-Nov-18 | EPA 200.8 | |

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Underwood Engineers Project: Trace Metals In Wastewater

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Portsmouth NH, 03801 Project Manager: Tim Puls 02-Jan-19 15:03

NEW_02 NEW_EB_TM 8J01082-03

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|----------------------------------|-----------|--------------------|--------------------|------------------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP2836 | Closed Ve | ssel Water | Oven Di | gestion | | | | | | | |
| Antimony | ND | 0.009 | 0.020 | μg/L | 1 | F811325 | 12-Nov-18 | 8K16011 | 15-Nov-18 | EPA 200.8 | U |
| Arsenic | ND | 0.10 | 0.30 | $\mu \text{g}/L$ | 1 | F811271 | 12-Nov-18 | 8K16013 | 15-Nov-18 | EPA 200.8 | U |
| Beryllium | ND | 0.004 | 0.061 | $\mu \text{g}/L$ | 1 | F811325 | 12-Nov-18 | 8K16011 | 15-Nov-18 | EPA 200.8 | U |
| Cadmium | ND | 0.008 | 0.020 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K16013 | 15-Nov-18 | EPA 200.8 | U |
| Chromium | ND | 0.02 | 0.10 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K16013 | 15-Nov-18 | EPA 200.8 | U |
| Copper | 0.03 | 0.02 | 0.10 | μg/L | 1 | F811271 | 12-Nov-18 | 8K16013 | 15-Nov-18 | EPA 200.8 | J |
| Iron | ND | 1 | 10 | $\mu g/L$ | 1 | F811325 | 12-Nov-18 | 8K16011 | 15-Nov-18 | EPA 200.8 | U |
| Lead | ND | 0.005 | 0.040 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K16013 | 15-Nov-18 | EPA 200.8 | U |
| Nickel | ND | 0.04 | 0.10 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K16013 | 15-Nov-18 | EPA 200.8 | U |
| Selenium | ND | 0.44 | 0.61 | $\mu g/L$ | 1 | F811325 | 12-Nov-18 | 8K16011 | 15-Nov-18 | EPA 200.8 | U |
| Silver | ND | 0.002 | 0.020 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | U |
| Thallium | ND | 0.006 | 0.020 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K16013 | 15-Nov-18 | EPA 200.8 | U |
| Zinc | 9.86 | 0.16 | 0.50 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K16013 | 15-Nov-18 | EPA 200.8 | |

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Portsmouth NH, 03801 Project Manager: Tim Puls 02-Jan-19 15:03

NEW_02 NEW_01_THg 8J01082-06

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|------------------------------------|----------|--------------------|--------------------|-------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP2796 l | EPA 1631 | Oxidation | 1 | | | | | | | | |
| Mercury | 1.45 | 0.08 | 0.50 | ng/L | 1 | F810476 | 29-Oct-18 | 8K01002 | 31-Oct-18 | EPA 1631E | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 02-Jan-19 15:03

NEW_02 NEW_02_THg 8J01082-07

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|----------------------------------|----------|--------------------|--------------------|-------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP2796 | EPA 1631 | Oxidation | 1 | | | | | | | | |
| Mercury | 0.75 | 0.08 | 0.50 | ng/L | 1 | F810476 | 29-Oct-18 | 8K01002 | 31-Oct-18 | EPA 1631E | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 02-Jan-19 15:03

NEW_02 NEW_EB_THg

8J01082-08

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|---------------------------------|---------------|--------------------|--------------------|-------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP279 | 96 EPA 1631 (| Oxidation | 1 | | | | | | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | 1 | F810476 | 29-Oct-18 | 8K01002 | 31-Oct-18 | EPA 1631E | U |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 02-Jan-19 15:03

PEASE_02 PEASE_01_TM 8J01082-10

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|------------------------------------|------------|--------------------|--------------------|---------------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP2836 C | Closed Ves | ssel Water | Oven Di | gestion | | | | | | | |
| Antimony | 0.315 | 0.009 | 0.020 | μg/L | 1 | F811325 | 12-Nov-18 | 8K26022 | 20-Nov-18 | EPA 200.8 | |
| Arsenic | 4.57 | 0.10 | 0.30 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | |
| Beryllium | ND | 0.004 | 0.061 | $\mu g/L$ | 1 | F811325 | 12-Nov-18 | 8K26022 | 20-Nov-18 | EPA 200.8 | U |
| Cadmium | 0.095 | 0.008 | 0.020 | $\mu g\!/\!L$ | 1 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | |
| Chromium | 0.48 | 0.02 | 0.10 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | |
| Copper | 19.8 | 0.02 | 0.10 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | |
| Iron | 254 | 1 | 10 | $\mu g\!/\!L$ | 1 | F811325 | 12-Nov-18 | 8K26022 | 20-Nov-18 | EPA 200.8 | |
| Lead | 0.224 | 0.005 | 0.040 | $\mu g\!/\!L$ | 1 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | |
| Nickel | 4.61 | 0.04 | 0.10 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | |
| Selenium | 1.35 | 0.44 | 0.61 | μg/L | 1 | F811325 | 12-Nov-18 | 8K26022 | 20-Nov-18 | EPA 200.8 | |
| Silver | 0.016 | 0.002 | 0.020 | μg/L | 1 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | J |
| Thallium | ND | 0.006 | 0.020 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | U |
| Zinc | 84.9 | 0.16 | 0.50 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 02-Jan-19 15:03

PEASE_02 PEASE_02_TM 8J01082-11

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|----------------------------------|-----------|--------------------|--------------------|-----------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP2836 | Closed Ve | ssel Water | Oven Di | gestion | | | | | | | |
| Antimony | 0.193 | 0.009 | 0.020 | μg/L | 1 | F811325 | 12-Nov-18 | 8K26022 | 21-Nov-18 | EPA 200.8 | |
| Arsenic | 4.52 | 0.10 | 0.30 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | |
| Beryllium | ND | 0.004 | 0.061 | $\mu g/L$ | 1 | F811325 | 12-Nov-18 | 8K26022 | 21-Nov-18 | EPA 200.8 | U |
| Cadmium | 0.098 | 0.008 | 0.020 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | |
| Chromium | 0.50 | 0.02 | 0.10 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | |
| Copper | 19.1 | 0.02 | 0.10 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | |
| Iron | 234 | 1 | 10 | $\mu g/L$ | 1 | F811325 | 12-Nov-18 | 8K26022 | 21-Nov-18 | EPA 200.8 | |
| Lead | 0.322 | 0.005 | 0.040 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | |
| Nickel | 4.56 | 0.04 | 0.10 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | |
| Selenium | 1.45 | 0.44 | 0.61 | $\mu g/L$ | 1 | F811325 | 12-Nov-18 | 8K26022 | 21-Nov-18 | EPA 200.8 | |
| Silver | 0.013 | 0.002 | 0.020 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | J |
| Thallium | ND | 0.006 | 0.020 | μg/L | 1 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | U |
| Zinc | 84.6 | 0.16 | 0.50 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 02-Jan-19 15:03

PEASE_02 PEASE_EB_TM 8J01082-12

| Analyte Sample Preparation: EFGS SOP2836 0 | Result | Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|---|-----------|------------|-----------------|-----------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample 1 reparation. E1 G5 501 2050 | closed ve | ssci watei | Oven Dig | Sestion | | | | | | | |
| Antimony | ND | 0.009 | 0.020 | $\mu g/L$ | 1 | F811325 | 12-Nov-18 | 8K16011 | 15-Nov-18 | EPA 200.8 | U |
| Arsenic | 0.14 | 0.10 | 0.30 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K16013 | 15-Nov-18 | EPA 200.8 | J |
| Beryllium | ND | 0.004 | 0.061 | $\mu g/L$ | 1 | F811325 | 12-Nov-18 | 8K16011 | 15-Nov-18 | EPA 200.8 | U |
| Cadmium | ND | 0.008 | 0.020 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | U |
| Chromium | 0.05 | 0.02 | 0.10 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K16013 | 15-Nov-18 | EPA 200.8 | J |
| Copper | 0.07 | 0.02 | 0.10 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K16013 | 15-Nov-18 | EPA 200.8 | J |
| Iron | 3 | 1 | 10 | $\mu g/L$ | 1 | F811325 | 12-Nov-18 | 8K16011 | 15-Nov-18 | EPA 200.8 | J |
| Lead | 0.010 | 0.005 | 0.040 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K16013 | 15-Nov-18 | EPA 200.8 | J |
| Nickel | 0.20 | 0.04 | 0.10 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K16013 | 15-Nov-18 | EPA 200.8 | |
| Selenium | 1.71 | 0.44 | 0.61 | $\mu g/L$ | 1 | F811325 | 12-Nov-18 | 8K16011 | 15-Nov-18 | EPA 200.8 | |
| Silver | ND | 0.002 | 0.020 | μg/L | 1 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | U |
| Thallium | ND | 0.006 | 0.020 | μg/L | 1 | F811271 | 12-Nov-18 | 8K16013 | 15-Nov-18 | EPA 200.8 | U |
| Zinc | 9.25 | 0.16 | 0.50 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K16013 | 15-Nov-18 | EPA 200.8 | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 02-Jan-19 15:03

PEASE_02 PEASE_01_THg 8J01082-15

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|---------------------------------|--------------|--------------------|--------------------|-------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP279 | 6 EPA 1631 (| Oxidation | 1 | | | | | | | | |
| Mercury | 2.16 | 0.08 | 0.50 | ng/L | 1 | F810476 | 29-Oct-18 | 8K01002 | 31-Oct-18 | EPA 1631E | |

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Amy Goodall, Project Manager

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 02-Jan-19 15:03

PEASE_02 PEASE_02_THg 8J01082-16

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|---------------------------------|---------------|--------------------|--------------------|-------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP279 | 96 EPA 1631 (| Oxidation | 1 | | | | | | | | |
| Mercury | 2.14 | 0.08 | 0.50 | ng/L | 1 | F810476 | 29-Oct-18 | 8K01002 | 31-Oct-18 | EPA 1631E | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 02-Jan-19 15:03

PEASE_02 PEASE_EB_THg 8J01082-17

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|---------------------------------|---------------|--------------------|--------------------|-------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP279 | 96 EPA 1631 (| Oxidation | 1 | | | | | | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | 1 | F810476 | 29-Oct-18 | 8K01002 | 31-Oct-18 | EPA 1631E | U |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 02-Jan-19 15:03

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|--------------------------------|---------------|--------------------|--------------------|----------|----------------|------------------|-----------|----------------|-------|--------------|----------|
| Batch F810476 - EFGS SOP2796 E | PA 1631 Oxida | ation | | | | | | | | | |
| Blank (F810476-BLK1) | | | | | Prepared & | : Analyzed: | 31-Oct-18 | | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | | | | | | | U |
| Blank (F810476-BLK2) | | | | | Prepared & | Analyzed: | 31-Oct-18 | | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | | | | | | | U |
| Blank (F810476-BLK3) | | | | | Prepared & | Analyzed: | 31-Oct-18 | | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | | | | | | | U |
| Blank (F810476-BLK4) | | | | | Prepared & | : Analyzed: | 31-Oct-18 | | | | |
| Mercury | ND | 1.65 | 9.90 | ng/L | | | | | | | QB-08, U |
| LCS (F810476-BS1) | | | | | Prepared & | : Analyzed: | 31-Oct-18 | | | | |
| Mercury | 14.30 | 0.08 | 0.50 | ng/L | 14.688 | | 97.4 | 80-120 | | | |
| LCS Dup (F810476-BSD1) | | | | | Prepared & | : Analyzed: | 31-Oct-18 | | | | |
| Mercury | 14.37 | 0.08 | 0.50 | ng/L | 14.688 | | 97.8 | 80-120 | 0.481 | 24 | |
| Duplicate (F810476-DUP1) | | Source: | 8J00788-06 | • | Prepared & | : Analyzed: | 31-Oct-18 | | | | |
| Mercury | 7.83 | 0.08 | 0.50 | ng/L | | 7.96 | | | 1.66 | 24 | AD |
| Matrix Spike (F810476-MS1) | | Source: | 8J01082-06 | , | Prepared & | : Analyzed: | 31-Oct-18 | | | | |
| Mercury | 5.83 | 0.08 | 0.50 | ng/L | 5.0702 | 1.45 | 86.5 | 71-125 | | | AS |
| Matrix Spike (F810476-MS2) | | Source: | 8J01082-15 | ; | Prepared & | : Analyzed: | 31-Oct-18 | | | | |
| Mercury | 11.16 | 0.08 | 0.50 | ng/L | 10.140 | 2.16 | 88.7 | 71-125 | | | AS |
| Matrix Spike (F810476-MS3) | | Source: | 8J01083-11 | | Prepared & | : Analyzed: | 31-Oct-18 | | | | |
| Mercury | 5.99 | 0.08 | 0.50 | ng/L | 5.0702 | 1.38 | 90.9 | 71-125 | | | AS |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls02-Jan-19 15:03

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|----------------------------------|--------------|--------------------|--------------------|-----------|----------------|------------------|-------------|----------------|------|--------------|-------|
| Batch F810476 - EFGS SOP2796 EPA | A 1631 Oxid | ation | | | | | | | | | |
| Matrix Spike Dup (F810476-MSD1) | | Source: | 8J01082-06 | 5 | Prepared & | Analyzed: | 31-Oct-18 | | | | |
| Mercury | 5.72 | 0.08 | 0.50 | ng/L | 5.0702 | 1.45 | 84.3 | 71-125 | 1.90 | 24 | AS |
| Matrix Spike Dup (F810476-MSD2) | | Source: | 8J01082-15 | ; | Prepared & | Analyzed: | 31-Oct-18 | | | | |
| Mercury | 11.42 | 0.08 | 0.50 | ng/L | 10.140 | 2.16 | 91.3 | 71-125 | 2.33 | 24 | AS |
| Matrix Spike Dup (F810476-MSD3) | | Source: | 8J01083-11 | | Prepared & | z Analyzed: | 31-Oct-18 | | | | |
| Mercury | 5.71 | 0.08 | 0.50 | ng/L | 5.0702 | 1.38 | 85.3 | 71-125 | 4.83 | 24 | AS |
| Batch F811271 - EFGS SOP2836 Clo | sed Vessel V | Vater Oven | Digestion | | D 1.1 | 12 N 10 | A 1 11 | 14 N 10 | | | |
| Blank (F811271-BLK1) Silver | 0.002 | 0.002 | 0.020 | μg/L | Prepared: 1 | 12-Nov-18 | Analyzed: I | 14-Nov-18 | | | |
| Blank (F811271-BLK2) | 0.002 | 0.002 | 0.020 | r-6- | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Silver | ND | 0.002 | 0.020 | $\mu g/L$ | | | | | | | U |
| Blank (F811271-BLK3) | | | | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 5-Nov-18 | | | |
| Arsenic | ND | 0.10 | 0.30 | μg/L | | | - | | | | U |
| Silver | ND | 0.002 | 0.020 | $\mu g/L$ | | | | | | | U |
| Blank (F811271-BLK4) | | | | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 5-Nov-18 | | | |
| Arsenic | ND | 0.10 | 0.30 | μg/L | | | | | | | U |
| Silver | ND | 0.002 | 0.020 | $\mu g/L$ | | | | | | | U |
| LCS (F811271-BS1) | | | | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Silver | 25.00 | 0.010 | 0.100 | μg/L | 25.000 | | 100 | 85-115 | | | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 02-Jan-19 15:03

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|------------------------------|-----------------|--------------------|--------------------|-----------|----------------|------------------|-------------|----------------|------|--------------|--------|
| Batch F811271 - EFGS SOP2836 | | | - | Cinto | Lovei | Rosuit | , or c. c. | Limito | M D | Limit | 110103 |
| LCS (F811271-BS2) | Closed ressel v | atti Oven | Digestion | | Prepared: 1 | 12-Nov-18 | Analyzed: | 15-Nov-18 | | | |
| Arsenic | 43.99 | 0.50 | 1.50 | μg/L | 50.000 | 12 1107 101 | 88.0 | 85-115 | | | |
| Silver | 22.77 | 0.010 | 0.100 | μg/L | 25.000 | | 91.1 | 85-115 | | | |
| LCS (F811271-BS3) | | | | | Prepared: 1 | 12-Nov-18 | Analyzed: 2 | 20-Nov-18 | | | |
| Arsenic | 46.85 | 0.50 | 1.50 | μg/L | 50.000 | | 93.7 | 85-115 | | | |
| LCS Dup (F811271-BSD1) | | | | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 14-Nov-18 | | | |
| Silver | 24.71 | 0.010 | 0.100 | μg/L | 25.000 | | 98.8 | 85-115 | 1.18 | 20 | |
| LCS Dup (F811271-BSD2) | | | | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 15-Nov-18 | | | |
| Arsenic | 42.68 | 0.50 | 1.50 | μg/L | 50.000 | | 85.4 | 85-115 | 3.03 | 20 | |
| Silver | 21.80 | 0.010 | 0.100 | $\mu g/L$ | 25.000 | | 87.2 | 85-115 | 4.33 | 20 | |
| LCS Dup (F811271-BSD3) | | | | | Prepared: 1 | 12-Nov-18 | Analyzed: 2 | 20-Nov-18 | | | |
| Arsenic | 47.99 | 0.50 | 1.50 | μg/L | 50.000 | | 96.0 | 85-115 | 2.40 | 20 | |
| Matrix Spike (F811271-MS1) | | Source: | 8J01082-01 | 1 | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 14-Nov-18 | | | |
| Silver | 25.05 | 0.020 | 0.202 | μg/L | 25.000 | 0.267 | 99.1 | 70-130 | | | |
| Matrix Spike (F811271-MS2) | | Source: | 8J01082-10 |) | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 14-Nov-18 | | | |
| Silver | 23.85 | 0.020 | 0.202 | μg/L | 25.000 | ND | 95.4 | 70-130 | | | |
| Matrix Spike (F811271-MS3) | | Source: | 8J01083-01 | 1 | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 14-Nov-18 | | | |
| Arsenic | 58.20 | 1.01 | 3.04 | μg/L | 50.000 | 3.36 | 110 | 70-130 | | | |
| Silver | 21.78 | 0.020 | 0.202 | $\mu g/L$ | 25.000 | ND | 87.1 | 70-130 | | | |
| Matrix Spike (F811271-MS4) | | Source: | 8J01083-07 | 7 | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 14-Nov-18 | | | |
| Arsenic | 59.38 | 1.01 | 3.04 | μg/L | 50.000 | 3.47 | 112 | 70-130 | | | |
| Silver | 21.63 | 0.020 | 0.202 | $\mu g/L$ | 25.000 | ND | 86.5 | 70-130 | | | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls02-Jan-19 15:03

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|--------------------------------|-----------------|--------------------|--------------------|-----------|----------------|------------------|-------------|----------------|-----|--------------|-------|
| Batch F811271 - EFGS SOP2836 C | Closed Vessel W | ater Oven | Digestion | | | | | | | | |
| Matrix Spike (F811271-MS5) | | Source: | 8J01082-01 | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Silver | 16.82 | 0.020 | 0.202 | μg/L | 20.500 | 0.267 | 80.7 | 70-130 | | | AS |
| Matrix Spike (F811271-MS6) | | Source: | 8J01082-10 |) | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Silver | 14.78 | 0.020 | 0.202 | μg/L | 20.500 | ND | 72.1 | 70-130 | | | AS |
| Matrix Spike (F811271-MS7) | | Source: | 8J01083-01 | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Arsenic | 371.4 | 1.01 | 3.03 | μg/L | 410.00 | 3.36 | 89.8 | 70-130 | | | AS |
| Silver | 15.09 | 0.020 | 0.202 | $\mu g/L$ | 20.500 | ND | 73.6 | 70-130 | | | AS |
| Matrix Spike (F811271-MS8) | | Source: | 8J01083-07 | , | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Arsenic | 363.2 | 1.01 | 3.03 | μg/L | 410.00 | 3.47 | 87.7 | 70-130 | | | AS |
| Silver | 14.85 | 0.020 | 0.202 | $\mu g/L$ | 20.500 | ND | 72.4 | 70-130 | | | AS |
| Matrix Spike (F811271-MS9) | | Source: | 8J01082-01 | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Arsenic | 47.34 | 1.01 | 3.04 | μg/L | 50.000 | ND | 94.7 | 70-130 | | | |
| Silver | 23.28 | 0.020 | 0.202 | $\mu g/L$ | 25.000 | 0.267 | 92.1 | 70-130 | | | |
| Matrix Spike (F811271-MSA) | | Source: | 8J01082-10 |) | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Arsenic | 53.92 | 1.01 | 3.04 | μg/L | 50.000 | 4.57 | 98.7 | 70-130 | | | |
| Silver | 23.56 | 0.020 | 0.202 | $\mu g/L$ | 25.000 | ND | 94.2 | 70-130 | | | |
| Matrix Spike (F811271-MSB) | | Source: | 8J01082-01 | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Arsenic | 402.8 | 1.01 | 3.03 | μg/L | 410.00 | ND | 98.2 | 70-130 | | | AS |
| Silver | 20.62 | 0.020 | 0.202 | $\mu g/L$ | 20.500 | 0.267 | 99.3 | 70-130 | | | AS |
| Matrix Spike (F811271-MSC) | | Source: | 8J01082-10 |) | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Arsenic | 419.0 | 1.01 | 3.03 | μg/L | 410.00 | 4.57 | 101 | 70-130 | | | AS |
| Silver | 20.11 | 0.020 | 0.202 | μg/L | 20.500 | ND | 98.1 | 70-130 | | | AS |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 02-Jan-19 15:03

Quality Control Data

| | | Detection | Reporting | | Spike | Source | | %REC | | RPD | |
|----------------------------------|--------------|-----------|------------|-----------|-------------|----------|-------------|----------|-------|-------|-----------|
| Analyte | Result | Limit | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | Notes |
| Batch F811271 - EFGS SOP2836 Clo | sed Vessel W | ater Oven | Digestion | | | | | | | | |
| Matrix Spike (F811271-MSD) | | Source: | 8J01082-01 | 1 | Prepared: 1 | 2-Nov-18 | Analyzed: 2 | 0-Nov-18 | | | |
| Arsenic | 47.99 | 2.53 | 7.59 | $\mu g/L$ | 50.000 | ND | 96.0 | 70-130 | | | |
| Matrix Spike Dup (F811271-MSD1) | | Source: | 8J01082-01 | 1 | Prepared: 1 | 2-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Silver | 25.17 | 0.020 | 0.202 | $\mu g/L$ | 25.000 | 0.267 | 99.6 | 70-130 | 0.485 | 20 | |
| Matrix Spike Dup (F811271-MSD2) | | Source: | 8J01082-10 |) | Prepared: 1 | 2-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Silver | 24.91 | 0.020 | 0.202 | $\mu g/L$ | 25.000 | ND | 99.6 | 70-130 | 4.33 | 20 | |
| Matrix Spike Dup (F811271-MSD3) | | Source: | 8J01083-01 | 1 | Prepared: 1 | 2-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Arsenic | 57.97 | 1.01 | 3.04 | μg/L | 50.000 | 3.36 | 109 | 70-130 | 0.401 | 20 | |
| Silver | 21.73 | 0.020 | 0.202 | $\mu g/L$ | 25.000 | ND | 86.9 | 70-130 | 0.206 | 20 | |
| Matrix Spike Dup (F811271-MSD4) | | Source: | 8J01083-07 | 7 | Prepared: 1 | 2-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Arsenic | 58.98 | 1.01 | 3.04 | μg/L | 50.000 | 3.47 | 111 | 70-130 | 0.674 | 20 | |
| Silver | 22.47 | 0.020 | 0.202 | $\mu g/L$ | 25.000 | ND | 89.9 | 70-130 | 3.80 | 20 | |
| Matrix Spike Dup (F811271-MSD5) | | Source: | 8J01082-01 | 1 | Prepared: 1 | 2-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Silver | 16.03 | 0.020 | 0.202 | μg/L | 20.500 | 0.267 | 76.9 | 70-130 | 4.77 | 20 | AS |
| Matrix Spike Dup (F811271-MSD6) | | Source: | 8J01082-10 |) | Prepared: 1 | 2-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Silver | 15.97 | 0.020 | 0.202 | μg/L | 20.500 | ND | 77.9 | 70-130 | 7.76 | 20 | AS |
| Matrix Spike Dup (F811271-MSD7) | | Source: | 8J01083-01 | 1 | Prepared: 1 | 2-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Arsenic | 340.7 | 1.01 | 3.03 | μg/L | 410.00 | 3.36 | 82.3 | 70-130 | 8.64 | 20 | AS |
| Silver | 13.99 | 0.020 | 0.202 | $\mu g/L$ | 20.500 | ND | 68.2 | 70-130 | 7.60 | 20 | AS, QM-05 |
| Matrix Spike Dup (F811271-MSD8) | | Source: | 8J01083-07 | 7 | Prepared: 1 | 2-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Arsenic | 368.5 | 1.01 | 3.03 | μg/L | 410.00 | 3.47 | 89.0 | 70-130 | 1.46 | 20 | AS |
| Silver | 14.91 | 0.020 | 0.202 | $\mu g/L$ | 20.500 | ND | 72.7 | 70-130 | 0.386 | 20 | AS |
| | | | | | | | | | | | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls02-Jan-19 15:03

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|----------------------------------|--------|--------------------|---------------------------------------|-----------|----------------|------------------|-------------|----------------|-------|--------------|-------|
| Batch F811271 - EFGS SOP2836 Clo | | · | · · · · · · · · · · · · · · · · · · · | | | | | | | | |
| Matrix Spike Dup (F811271-MSD9) | | | 8J01082-01 | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Arsenic | 49.40 | 1.01 | 3.04 | μg/L | 50.000 | ND | 98.8 | 70-130 | 4.27 | 20 | |
| Silver | 24.61 | 0.020 | 0.202 | $\mu g/L$ | 25.000 | 0.267 | 97.4 | 70-130 | 5.52 | 20 | |
| Matrix Spike Dup (F811271-MSDA) | | Source: | 8J01082-10 | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Arsenic | 53.57 | 1.01 | 3.04 | μg/L | 50.000 | 4.57 | 98.0 | 70-130 | 0.649 | 20 | |
| Silver | 23.92 | 0.020 | 0.202 | $\mu g/L$ | 25.000 | ND | 95.7 | 70-130 | 1.54 | 20 | |
| Matrix Spike Dup (F811271-MSDB) | | Source | 8J01082-01 | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Arsenic | 403.7 | 1.01 | 3.03 | μg/L | 410.00 | ND | 98.5 | 70-130 | 0.219 | 20 | AS |
| Silver | 20.79 | 0.020 | 0.202 | $\mu g/L$ | 20.500 | 0.267 | 100 | 70-130 | 0.794 | 20 | AS |
| Matrix Spike Dup (F811271-MSDC) | | Source | 8J01082-10 | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Arsenic | 421.7 | 1.01 | 3.03 | μg/L | 410.00 | 4.57 | 102 | 70-130 | 0.650 | 20 | AS |
| Silver | 20.20 | 0.020 | 0.202 | $\mu g/L$ | 20.500 | ND | 98.6 | 70-130 | 0.470 | 20 | AS |
| Matrix Spike Dup (F811271-MSDD) | | Source: | 8J01082-01 | | Prepared: 1 | 12-Nov-18 | Analyzed: 2 | 20-Nov-18 | | | |
| Arsenic | 47.81 | 2.53 | 7.59 | μg/L | 50.000 | ND | 95.6 | 70-130 | 0.386 | 20 | |
| Matrix Spike Dup (F811271-MSDE) | | Source: | 8J01082-10 | | Prepared: 1 | 12-Nov-18 | Analyzed: 2 | 21-Nov-18 | | | |
| Arsenic | 51.28 | 2.53 | 7.59 | μg/L | 50.000 | 4.57 | 93.4 | 70-130 | 1.98 | 20 | |
| Matrix Spike Dup (F811271-MSDF) | | Source: | 8J01082-01 | | Prepared: 1 | 12-Nov-18 | Analyzed: 2 | 20-Nov-18 | | | |
| Arsenic | 1003 | 2.52 | 7.57 | μg/L | 1025.0 | ND | 97.9 | 70-130 | 0.485 | 20 | AS |
| Matrix Spike Dup (F811271-MSDG) | | Source: | 8J01082-10 | | Prepared: 1 | 12-Nov-18 | Analyzed: 2 | 21-Nov-18 | | | |
| Arsenic | 1020 | 2.52 | 7.57 | μg/L | 1025.0 | 4.57 | 99.0 | 70-130 | 0.361 | 20 | AS |
| Matrix Spike (F811271-MSE) | | Source: | 8J01082-10 | | Prepared: 1 | 12-Nov-18 | Analyzed: 2 | 21-Nov-18 | | | |
| Arsenic | 52.30 | 2.53 | 7.59 | μg/L | 50.000 | 4.57 | 95.5 | 70-130 | | | |

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RPD

%REC

Underwood Engineers Project: Trace Metals In Wastewater

Detection Reporting

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 02-Jan-19 15:03

Quality Control Data

Spike

Source

| Analyte | Result | Limit | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | Notes |
|--------------------------------|-----------------|-----------|-------------|-----------|-----------|-----------|-------------|-----------|-----|-------|-------|
| Batch F811271 - EFGS SOP2836 C | Closed Vessel W | ater Oven | Digestion | | | | | | | | |
| Matrix Spike (F811271-MSF) | | Source | : 8J01082-0 | 1 | Prepared: | 12-Nov-18 | Analyzed: 2 | 20-Nov-18 | | | |
| Arsenic | 1008 | 2.52 | 7.57 | $\mu g/L$ | 1025.0 | ND | 98.3 | 70-130 | | | AS |
| Matrix Spike (F811271-MSG) | | Source: | : 8J01082-1 | 0 | Prepared: | 12-Nov-18 | Analyzed: 2 | 21-Nov-18 | | | |
| Arsenic | 1016 | 2.52 | 7.57 | μg/L | 1025.0 | 4.57 | 98.7 | 70-130 | | | AS |

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Underwood Engineers Project: Trace Metals In Wastewater

Detection Reporting

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls02-Jan-19 15:03

Quality Control Data

Spike

Source

%REC

| Analyte | Result | Limit | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | Notes |
|-----------------------------|--------------------|-----------|-----------|-----------|-------------|-----------|-------------|----------|-----|-------|-------|
| Batch F811271 - EFGS SOP283 | 36 Closed Vessel W | ater Oven | Digestion | | | | | | | | |
| Blank (F811271-BLK2) | | | | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Cadmium | ND | 0.008 | 0.020 | μg/L | | | | | | | |
| Blank (F811271-BLK3) | | | | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 5-Nov-18 | | | |
| Chromium | ND | 0.02 | 0.10 | μg/L | | | | | | | 1 |
| Nickel | ND | 0.04 | 0.10 | $\mu g/L$ | | | | | | | |
| Copper | ND | 0.02 | 0.10 | $\mu g/L$ | | | | | | | |
| Zinc | 0.16 | 0.16 | 0.50 | $\mu g/L$ | | | | | | | |
| Cadmium | ND | 0.008 | 0.020 | $\mu g/L$ | | | | | | | |
| Thallium | ND | 0.006 | 0.020 | $\mu g/L$ | | | | | | | |
| Lead | ND | 0.005 | 0.040 | $\mu g/L$ | | | | | | | |
| Blank (F811271-BLK4) | | | | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 5-Nov-18 | | | |
| Chromium | ND | 0.02 | 0.10 | μg/L | | | | | | | |
| Nickel | ND | 0.04 | 0.10 | $\mu g/L$ | | | | | | | |
| Copper | ND | 0.02 | 0.10 | $\mu g/L$ | | | | | | | |
| Zinc | 0.32 | 0.16 | 0.50 | $\mu g/L$ | | | | | | | |
| Cadmium | ND | 0.008 | 0.020 | $\mu g/L$ | | | | | | | |
| Thallium | ND | 0.006 | 0.020 | $\mu g/L$ | | | | | | | |
| Lead | ND | 0.005 | 0.040 | $\mu g/L$ | | | | | | | |
| LCS (F811271-BS2) | | | | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 5-Nov-18 | | | |
| Zinc | 47.20 | 0.80 | 2.50 | μg/L | 50.010 | | 94.4 | 85-115 | | | |
| Cadmium | 36.41 | 0.040 | 0.100 | μg/L | 40.010 | | 91.0 | 85-115 | | | |
| Thallium | 35.20 | 0.030 | 0.100 | μg/L | 39.990 | | 88.0 | 85-115 | | | |
| Lead | 46.08 | 0.025 | 0.200 | $\mu g/L$ | 50.010 | | 92.1 | 85-115 | | | |
| LCS (F811271-BS3) | | | | | Prepared: 1 | 12-Nov-18 | Analyzed: 2 | 0-Nov-18 | | | |
| Chromium | 48.05 | 0.10 | 0.50 | μg/L | 49.990 | | 96.1 | 85-115 | | | |
| Nickel | 49.10 | 0.20 | 0.50 | $\mu g/L$ | 50.010 | | 98.2 | 85-115 | | | |
| Copper | 48.43 | 0.10 | 0.50 | μg/L | 50.000 | | 96.9 | 85-115 | | | |
| Zinc | 48.46 | 0.80 | 2.50 | μg/L | 50.010 | | 96.9 | 85-115 | | | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 02-Jan-19 15:03

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|--------------------------------|-----------------|--------------------|--------------------|-----------|----------------|------------------|-------------|----------------|------|--------------|-------|
| Batch F811271 - EFGS SOP2836 (| Closed Vessel W | ater Oven | Digestion | | | | | | | | |
| LCS Dup (F811271-BSD2) | | | | | Prepared: | 12-Nov-18 A | Analyzed: 1 | 15-Nov-18 | | | |
| Zinc | 43.41 | 0.80 | 2.50 | μg/L | 50.010 | | 86.8 | 85-115 | 8.36 | 20 | |
| Cadmium | 35.03 | 0.040 | 0.100 | $\mu g/L$ | 40.010 | | 87.6 | 85-115 | 3.86 | 20 | |
| Thallium | 36.16 | 0.030 | 0.100 | μg/L | 39.990 | | 90.4 | 85-115 | 2.68 | 20 | |
| Lead | 46.71 | 0.025 | 0.200 | $\mu g/L$ | 50.010 | | 93.4 | 85-115 | 1.36 | 20 | |
| LCS Dup (F811271-BSD3) | | | | | Prepared: | 12-Nov-18 A | Analyzed: 2 | 20-Nov-18 | | | |
| Chromium | 49.37 | 0.10 | 0.50 | μg/L | 49.990 | | 98.8 | 85-115 | 2.70 | 20 | |
| Nickel | 50.87 | 0.20 | 0.50 | μg/L | 50.010 | | 102 | 85-115 | 3.53 | 20 | |
| Copper | 50.70 | 0.10 | 0.50 | μg/L | 50.000 | | 101 | 85-115 | 4.57 | 20 | |
| Zinc | 49.72 | 0.80 | 2.50 | $\mu g/L$ | 50.010 | | 99.4 | 85-115 | 2.56 | 20 | |
| Matrix Spike (F811271-MS1) | | Source: | 8J01082-01 | [| Prepared: | 12-Nov-18 A | Analyzed: 1 | 14-Nov-18 | | | |
| Thallium | 38.04 | 0.061 | 0.202 | $\mu g/L$ | 39.990 | ND | 95.1 | 70-130 | | | |
| Lead | 51.14 | 0.051 | 0.405 | $\mu g/L$ | 50.010 | 2.002 | 98.2 | 70-130 | | | |
| Matrix Spike (F811271-MS2) | | Source: | 8J01082-10 |) | Prepared: | 12-Nov-18 A | Analyzed: 1 | 14-Nov-18 | | | |
| Thallium | 39.59 | 0.061 | 0.202 | $\mu g/L$ | 39.990 | ND | 99.0 | 70-130 | | | |
| Lead | 51.25 | 0.051 | 0.405 | $\mu g/L$ | 50.010 | 0.224 | 102 | 70-130 | | | |
| Matrix Spike (F811271-MS3) | | Source: | 8J01083-01 | l | Prepared: | 12-Nov-18 A | Analyzed: 1 | 14-Nov-18 | | | |
| Chromium | 48.61 | 0.20 | 1.01 | μg/L | 49.990 | 0.43 | 96.4 | 70-130 | | | |
| Nickel | 44.70 | 0.40 | 1.01 | $\mu g/L$ | 50.010 | 0.62 | 88.1 | 70-130 | | | |
| Copper | 44.41 | 0.20 | 1.01 | $\mu g/L$ | 50.000 | 0.61 | 87.6 | 70-130 | | | |
| Zinc | 57.34 | 1.62 | 5.06 | $\mu g/L$ | 50.010 | 2.90 | 109 | 70-130 | | | |
| Cadmium | 37.45 | 0.081 | 0.202 | $\mu g/L$ | 40.010 | ND | 93.6 | 70-130 | | | |
| Thallium | 45.92 | 0.061 | 0.202 | $\mu g/L$ | 39.990 | ND | 115 | 70-130 | | | |
| Lead | 55.39 | 0.051 | 0.405 | $\mu g/L$ | 50.010 | 0.314 | 110 | 70-130 | | | |
| | | | | | | | | | | | |

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RPD

Underwood Engineers Project: Trace Metals In Wastewater

Detection Reporting

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 02-Jan-19 15:03

Quality Control Data

Spike

Source

%REC

| Analyte | Result | Limit | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | Notes |
|------------------------------|-----------------|-----------|------------|-----------|-------------|----------|-------------|----------|-----|-------|----------|
| Batch F811271 - EFGS SOP2836 | Closed Vessel W | ater Oven | Digestion | | | | | | | | |
| Matrix Spike (F811271-MS4) | | Source: | 8J01083-0' | 7 | Prepared: 1 | 2-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Chromium | 48.26 | 0.20 | 1.01 | μg/L | 49.990 | ND | 96.5 | 70-130 | | | |
| Nickel | 44.11 | 0.40 | 1.01 | $\mu g/L$ | 50.010 | 0.63 | 87.0 | 70-130 | | | |
| Copper | 43.40 | 0.20 | 1.01 | $\mu g/L$ | 50.000 | 0.55 | 85.7 | 70-130 | | | |
| Zinc | 60.07 | 1.62 | 5.06 | $\mu g/L$ | 50.010 | 2.43 | 115 | 70-130 | | | |
| Cadmium | 37.46 | 0.081 | 0.202 | $\mu g/L$ | 40.010 | ND | 93.6 | 70-130 | | | |
| Thallium | 46.91 | 0.061 | 0.202 | $\mu g/L$ | 39.990 | ND | 117 | 70-130 | | | |
| Lead | 55.92 | 0.051 | 0.405 | $\mu g/L$ | 50.010 | ND | 112 | 70-130 | | | |
| Matrix Spike (F811271-MS5) | | Source: | 8J01082-0 | 1 | Prepared: 1 | 2-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Cadmium | 33.90 | 0.081 | 0.202 | $\mu g/L$ | 41.000 | ND | 82.7 | 70-130 | | | A |
| Thallium | 15.39 | 0.061 | 0.202 | $\mu g/L$ | 20.500 | ND | 75.1 | 70-130 | | | A |
| Lead | 80.71 | 0.050 | 0.404 | $\mu g/L$ | 102.50 | 2.002 | 76.8 | 70-130 | | | A |
| Matrix Spike (F811271-MS6) | | Source: | 8J01082-1 | 0 | Prepared: 1 | 2-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Thallium | 14.36 | 0.061 | 0.202 | $\mu g/L$ | 20.500 | ND | 70.0 | 70-130 | | | A |
| Lead | 73.06 | 0.050 | 0.404 | $\mu g/L$ | 102.50 | 0.224 | 71.1 | 70-130 | | | A |
| Matrix Spike (F811271-MS7) | | Source: | 8J01083-0 | 1 | Prepared: 1 | 2-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Chromium | 307.1 | 0.20 | 1.01 | μg/L | 410.00 | 0.43 | 74.8 | 70-130 | | | A |
| Nickel | 353.2 | 0.40 | 1.01 | $\mu g/L$ | 512.50 | 0.62 | 68.8 | 70-130 | | | AS, QM-0 |
| Copper | 351.0 | 0.20 | 1.01 | $\mu g/L$ | 512.50 | 0.61 | 68.4 | 70-130 | | | AS, QM-0 |
| Zinc | 842.1 | 1.62 | 5.05 | $\mu g/L$ | 1025.0 | 2.90 | 81.9 | 70-130 | | | A |
| Cadmium | 31.02 | 0.081 | 0.202 | $\mu g/L$ | 41.000 | ND | 75.7 | 70-130 | | | A |
| Thallium | 19.00 | 0.061 | 0.202 | $\mu g/L$ | 20.500 | ND | 92.7 | 70-130 | | | A |
| Lead | 90.68 | 0.050 | 0.404 | $\mu g/L$ | 102.50 | 0.314 | 88.2 | 70-130 | | | A |
| Matrix Spike (F811271-MS8) | | Source: | 8J01083-0 | 7 | Prepared: 1 | 2-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Chromium | 301.3 | 0.20 | 1.01 | $\mu g/L$ | 410.00 | ND | 73.5 | 70-130 | | | A |
| Nickel | 348.5 | 0.40 | 1.01 | $\mu g/L$ | 512.50 | 0.63 | 67.9 | 70-130 | | | AS, QM-0 |
| Copper | 346.0 | 0.20 | 1.01 | $\mu g/L$ | 512.50 | 0.55 | 67.4 | 70-130 | | | AS, QM-0 |
| Zinc | 833.5 | 1.62 | 5.05 | $\mu g/L$ | 1025.0 | 2.43 | 81.1 | 70-130 | | | A |
| Cadmium | 30.12 | 0.081 | 0.202 | $\mu g/L$ | 41.000 | ND | 73.5 | 70-130 | | | A |
| Thallium | 18.75 | 0.061 | 0.202 | $\mu g/L$ | 20.500 | ND | 91.5 | 70-130 | | | A |
| Lead | 89.91 | 0.050 | 0.404 | μg/L | 102.50 | ND | 87.7 | 70-130 | | | A |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls02-Jan-19 15:03

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|--------------------------------|--------|--------------------|--------------------|-----------|----------------|------------------|-------------|----------------|-----|--------------|-------|
| Batch F811271 - EFGS SOP2836 (| | - | | | 20,01 | resur | ,,,,, | | | | 11000 |
| Matrix Spike (F811271-MS9) | | | 8J01082-01 | | Prepared: | 12-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Zinc | 126.5 | 1.62 | 5.06 | μg/L | 50.010 | 93.15 | 66.6 | 70-130 | | | QM-07 |
| Cadmium | 37.58 | 0.081 | 0.202 | μg/L | 40.010 | ND | 93.9 | 70-130 | | | |
| Thallium | 39.55 | 0.061 | 0.202 | $\mu g/L$ | 39.990 | ND | 98.9 | 70-130 | | | |
| Lead | 53.44 | 0.051 | 0.405 | $\mu g/L$ | 50.010 | 2.002 | 103 | 70-130 | | | |
| Matrix Spike (F811271-MSA) | | Source: | 8J01082-10 | 1 | Prepared: | 12-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Zinc | 129.0 | 1.62 | 5.06 | μg/L | 50.010 | 84.88 | 88.3 | 70-130 | | | |
| Cadmium | 40.99 | 0.081 | 0.202 | $\mu g/L$ | 40.010 | 0.095 | 102 | 70-130 | | | |
| Thallium | 40.03 | 0.061 | 0.202 | $\mu g/L$ | 39.990 | ND | 100 | 70-130 | | | |
| Lead | 51.59 | 0.051 | 0.405 | $\mu g/L$ | 50.010 | 0.224 | 103 | 70-130 | | | |
| Matrix Spike (F811271-MSB) | | Source: | 8J01082-01 | | Prepared: | 12-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Zinc | 1073 | 1.62 | 5.05 | $\mu g/L$ | 1025.0 | 93.15 | 95.6 | 70-130 | | | AS |
| Cadmium | 40.16 | 0.081 | 0.202 | $\mu g/L$ | 41.000 | ND | 98.0 | 70-130 | | | AS |
| Thallium | 19.88 | 0.061 | 0.202 | $\mu g/L$ | 20.500 | ND | 97.0 | 70-130 | | | AS |
| Lead | 104.1 | 0.050 | 0.404 | $\mu g/L$ | 102.50 | 2.002 | 99.6 | 70-130 | | | AS |
| Matrix Spike (F811271-MSC) | | Source: | 8J01082-10 | ı | Prepared: | 12-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Zinc | 1091 | 1.62 | 5.05 | $\mu g/L$ | 1025.0 | 84.88 | 98.1 | 70-130 | | | AS |
| Cadmium | 41.27 | 0.081 | 0.202 | $\mu g/L$ | 41.000 | 0.095 | 100 | 70-130 | | | AS |
| Thallium | 20.16 | 0.061 | 0.202 | $\mu g/L$ | 20.500 | ND | 98.4 | 70-130 | | | AS |
| Lead | 103.5 | 0.050 | 0.404 | $\mu g/L$ | 102.50 | 0.224 | 101 | 70-130 | | | AS |
| Matrix Spike (F811271-MSD) | | Source: | 8J01082-01 | | Prepared: | 12-Nov-18 | Analyzed: 2 | 20-Nov-18 | | | |
| Chromium | 49.48 | 0.51 | 2.53 | μg/L | 49.990 | ND | 99.0 | 70-130 | | | |
| Nickel | 51.31 | 1.01 | 2.53 | $\mu g/L$ | 50.010 | 2.31 | 98.0 | 70-130 | | | |
| Copper | 51.23 | 0.51 | 2.53 | $\mu g/L$ | 50.000 | 2.40 | 97.7 | 70-130 | | | |
| Zinc | 130.5 | 4.05 | 12.6 | $\mu g/L$ | 50.010 | 93.15 | 74.6 | 70-130 | | | |
| | | | | | | | | | | | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 02-Jan-19 15:03

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|----------------------------------|--------------|--------------------|--------------------|-----------|----------------|------------------|-------------|----------------|-------|--------------|-------|
| Batch F811271 - EFGS SOP2836 Clo | sed Vessel V | Vater Oven | Digestion | | | | | | | | |
| Matrix Spike Dup (F811271-MSD1) | | Source: | 8J01082-01 | 1 | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Thallium | 38.24 | 0.061 | 0.202 | μg/L | 39.990 | ND | 95.6 | 70-130 | 0.530 | 20 | |
| Lead | 51.64 | 0.051 | 0.405 | $\mu g/L$ | 50.010 | 2.002 | 99.3 | 70-130 | 0.985 | 20 | |
| Matrix Spike Dup (F811271-MSD2) | | Source: | 8J01082-10 |) | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Thallium | 39.04 | 0.061 | 0.202 | μg/L | 39.990 | ND | 97.6 | 70-130 | 1.41 | 20 | |
| Lead | 50.73 | 0.051 | 0.405 | $\mu g/L$ | 50.010 | 0.224 | 101 | 70-130 | 1.02 | 20 | |
| Matrix Spike Dup (F811271-MSD3) | | Source: | 8J01083-01 | 1 | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Chromium | 47.60 | 0.20 | 1.01 | μg/L | 49.990 | 0.43 | 94.4 | 70-130 | 2.11 | 20 | |
| Nickel | 43.85 | 0.40 | 1.01 | μg/L | 50.010 | 0.62 | 86.5 | 70-130 | 1.91 | 20 | |
| Copper | 43.86 | 0.20 | 1.01 | $\mu g/L$ | 50.000 | 0.61 | 86.5 | 70-130 | 1.25 | 20 | |
| Zinc | 53.91 | 1.62 | 5.06 | $\mu g/L$ | 50.010 | 2.90 | 102 | 70-130 | 6.17 | 20 | |
| Cadmium | 37.70 | 0.081 | 0.202 | $\mu g/L$ | 40.010 | ND | 94.2 | 70-130 | 0.660 | 20 | |
| Thallium | 45.45 | 0.061 | 0.202 | $\mu g/L$ | 39.990 | ND | 114 | 70-130 | 1.02 | 20 | |
| Lead | 54.63 | 0.051 | 0.405 | $\mu g/L$ | 50.010 | 0.314 | 109 | 70-130 | 1.38 | 20 | |
| Matrix Spike Dup (F811271-MSD4) | | Source: | 8J01083-07 | 7 | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Chromium | 48.85 | 0.20 | 1.01 | μg/L | 49.990 | ND | 97.7 | 70-130 | 1.21 | 20 | |
| Nickel | 44.40 | 0.40 | 1.01 | $\mu g/L$ | 50.010 | 0.63 | 87.5 | 70-130 | 0.663 | 20 | |
| Copper | 44.52 | 0.20 | 1.01 | $\mu g/L$ | 50.000 | 0.55 | 87.9 | 70-130 | 2.55 | 20 | |
| Zinc | 56.63 | 1.62 | 5.06 | $\mu g/L$ | 50.010 | 2.43 | 108 | 70-130 | 5.89 | 20 | |
| Cadmium | 37.94 | 0.081 | 0.202 | μg/L | 40.010 | ND | 94.8 | 70-130 | 1.25 | 20 | |
| Thallium | 46.85 | 0.061 | 0.202 | $\mu g/L$ | 39.990 | ND | 117 | 70-130 | 0.126 | 20 | |
| Lead | 56.12 | 0.051 | 0.405 | $\mu g/L$ | 50.010 | ND | 112 | 70-130 | 0.354 | 20 | |
| Matrix Spike Dup (F811271-MSD5) | | Source: | 8J01082-01 | 1 | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Cadmium | 31.78 | 0.081 | 0.202 | μg/L | 41.000 | ND | 77.5 | 70-130 | 6.45 | 20 | A |
| Thallium | 14.64 | 0.061 | 0.202 | $\mu g/L$ | 20.500 | ND | 71.4 | 70-130 | 4.96 | 20 | Α |
| Lead | 76.99 | 0.050 | 0.404 | $\mu g/L$ | 102.50 | 2.002 | 73.2 | 70-130 | 4.72 | 20 | A |
| | | | | | | | | | | | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 02-Jan-19 15:03

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|----------------------------------|--------------|--------------------|--------------------|-----------|----------------|------------------|-------------|----------------|-------|--------------|-----------|
| Batch F811271 - EFGS SOP2836 Clo | sed Vessel W | Vater Oven | Digestion | | | | | | | | |
| Matrix Spike Dup (F811271-MSD6) | | Source: | 8J01082-10 | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Thallium | 15.24 | 0.061 | 0.202 | μg/L | 20.500 | ND | 74.4 | 70-130 | 6.01 | 20 | AS |
| Lead | 78.52 | 0.050 | 0.404 | $\mu g/L$ | 102.50 | 0.224 | 76.4 | 70-130 | 7.21 | 20 | AS |
| Matrix Spike Dup (F811271-MSD7) | | Source: | 8J01083-01 | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Chromium | 282.3 | 0.20 | 1.01 | μg/L | 410.00 | 0.43 | 68.7 | 70-130 | 8.44 | 20 | AS, QM-05 |
| Nickel | 326.0 | 0.40 | 1.01 | $\mu g/L$ | 512.50 | 0.62 | 63.5 | 70-130 | 8.02 | 20 | AS, QM-05 |
| Copper | 323.1 | 0.20 | 1.01 | $\mu g/L$ | 512.50 | 0.61 | 62.9 | 70-130 | 8.30 | 20 | AS, QM-05 |
| Zinc | 770.4 | 1.62 | 5.05 | $\mu g/L$ | 1025.0 | 2.90 | 74.9 | 70-130 | 8.89 | 20 | AS |
| Cadmium | 27.78 | 0.081 | 0.202 | $\mu g/L$ | 41.000 | ND | 67.8 | 70-130 | 11.0 | 20 | AS, QM-05 |
| Thallium | 17.22 | 0.061 | 0.202 | $\mu g/L$ | 20.500 | ND | 84.0 | 70-130 | 9.81 | 20 | AS |
| Lead | 83.23 | 0.050 | 0.404 | $\mu g/L$ | 102.50 | 0.314 | 80.9 | 70-130 | 8.57 | 20 | AS |
| Matrix Spike Dup (F811271-MSD8) | | Source: | 8J01083-07 | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Chromium | 306.8 | 0.20 | 1.01 | μg/L | 410.00 | ND | 74.8 | 70-130 | 1.82 | 20 | AS |
| Nickel | 356.0 | 0.40 | 1.01 | $\mu g/L$ | 512.50 | 0.63 | 69.3 | 70-130 | 2.14 | 20 | AS, QM-05 |
| Copper | 349.5 | 0.20 | 1.01 | $\mu g/L$ | 512.50 | 0.55 | 68.1 | 70-130 | 1.01 | 20 | AS, QM-05 |
| Zinc | 839.5 | 1.62 | 5.05 | $\mu g/L$ | 1025.0 | 2.43 | 81.7 | 70-130 | 0.716 | 20 | AS |
| Cadmium | 31.09 | 0.081 | 0.202 | $\mu g/L$ | 41.000 | ND | 75.8 | 70-130 | 3.16 | 20 | AS |
| Thallium | 18.99 | 0.061 | 0.202 | $\mu g/L$ | 20.500 | ND | 92.6 | 70-130 | 1.26 | 20 | AS |
| Lead | 91.16 | 0.050 | 0.404 | $\mu g/L$ | 102.50 | ND | 88.9 | 70-130 | 1.39 | 20 | AS |
| Matrix Spike Dup (F811271-MSD9) | | Source: | 8J01082-01 | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Zinc | 131.8 | 1.62 | 5.06 | $\mu g/L$ | 50.010 | 93.15 | 77.2 | 70-130 | 4.10 | 20 | |
| Cadmium | 40.24 | 0.081 | 0.202 | $\mu g/L$ | 40.010 | ND | 101 | 70-130 | 6.85 | 20 | |
| Thallium | 39.37 | 0.061 | 0.202 | $\mu g/L$ | 39.990 | ND | 98.5 | 70-130 | 0.452 | 20 | |
| Lead | 52.54 | 0.051 | 0.405 | $\mu g/L$ | 50.010 | 2.002 | 101 | 70-130 | 1.71 | 20 | |
| Matrix Spike Dup (F811271-MSDA) | | Source: | 8J01082-10 | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Zinc | 127.5 | 1.62 | 5.06 | μg/L | 50.010 | 84.88 | 85.1 | 70-130 | 1.22 | 20 | |
| Cadmium | 40.31 | 0.081 | 0.202 | $\mu g/L$ | 40.010 | 0.095 | 101 | 70-130 | 1.67 | 20 | |
| Thallium | 39.14 | 0.061 | 0.202 | $\mu g/L$ | 39.990 | ND | 97.9 | 70-130 | 2.25 | 20 | |
| Lead | 50.67 | 0.051 | 0.405 | $\mu g/L$ | 50.010 | 0.224 | 101 | 70-130 | 1.79 | 20 | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls02-Jan-19 15:03

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|----------------------------------|--------------|--------------------|--------------------|-----------|----------------|------------------|-------------|----------------|--------|--------------|-------|
| Batch F811271 - EFGS SOP2836 Clo | sed Vessel W | Vater Oven | Digestion | | | | | | | | |
| Matrix Spike Dup (F811271-MSDB) | | Source: | 8J01082-01 | l | Prepared: 1 | 2-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Zinc | 1066 | 1.62 | 5.05 | μg/L | 1025.0 | 93.15 | 94.9 | 70-130 | 0.616 | 20 | AS |
| Cadmium | 40.21 | 0.081 | 0.202 | $\mu g/L$ | 41.000 | ND | 98.1 | 70-130 | 0.114 | 20 | AS |
| Thallium | 20.00 | 0.061 | 0.202 | $\mu g/L$ | 20.500 | ND | 97.6 | 70-130 | 0.618 | 20 | AS |
| Lead | 104.3 | 0.050 | 0.404 | $\mu g/L$ | 102.50 | 2.002 | 99.8 | 70-130 | 0.215 | 20 | AS |
| Matrix Spike Dup (F811271-MSDC) | | Source: | 8J01082-10 |) | Prepared: 1 | 2-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Zinc | 1097 | 1.62 | 5.05 | $\mu g/L$ | 1025.0 | 84.88 | 98.7 | 70-130 | 0.586 | 20 | AS |
| Cadmium | 41.36 | 0.081 | 0.202 | μg/L | 41.000 | 0.095 | 101 | 70-130 | 0.225 | 20 | AS |
| Thallium | 20.43 | 0.061 | 0.202 | μg/L | 20.500 | ND | 99.7 | 70-130 | 1.31 | 20 | AS |
| Lead | 104.6 | 0.050 | 0.404 | $\mu g/L$ | 102.50 | 0.224 | 102 | 70-130 | 1.04 | 20 | AS |
| Matrix Spike Dup (F811271-MSDD) | | Source: | 8J01082-01 | l | Prepared: 1 | 2-Nov-18 | Analyzed: 2 | 20-Nov-18 | | | |
| Chromium | 50.95 | 0.51 | 2.53 | μg/L | 49.990 | ND | 102 | 70-130 | 2.92 | 20 | |
| Nickel | 51.12 | 1.01 | 2.53 | $\mu g/L$ | 50.010 | 2.31 | 97.6 | 70-130 | 0.371 | 20 | |
| Copper | 51.66 | 0.51 | 2.53 | $\mu g/L$ | 50.000 | 2.40 | 98.5 | 70-130 | 0.826 | 20 | |
| Zinc | 125.6 | 4.05 | 12.6 | $\mu g/L$ | 50.010 | 93.15 | 64.9 | 70-130 | 3.79 | 20 | QM-05 |
| Matrix Spike Dup (F811271-MSDE) | | Source: | 8J01082-10 |) | Prepared: 1 | 2-Nov-18 | Analyzed: 2 | 21-Nov-18 | | | |
| Chromium | 50.28 | 0.51 | 2.53 | μg/L | 49.990 | ND | 101 | 70-130 | 0.459 | 20 | |
| Nickel | 55.05 | 1.01 | 2.53 | $\mu g/L$ | 50.010 | 4.61 | 101 | 70-130 | 0.976 | 20 | |
| Copper | 70.51 | 0.51 | 2.53 | $\mu g/L$ | 50.000 | 19.84 | 101 | 70-130 | 1.15 | 20 | |
| Zinc | 123.6 | 4.05 | 12.6 | $\mu g/L$ | 50.010 | 84.88 | 77.5 | 70-130 | 0.0994 | 20 | |
| Matrix Spike Dup (F811271-MSDF) | | Source: | 8J01082-01 | [| Prepared: 1 | 2-Nov-18 | Analyzed: 2 | 20-Nov-18 | | | |
| Chromium | 1003 | 0.50 | 2.52 | μg/L | 1025.0 | ND | 97.8 | 70-130 | 2.36 | 20 | AS |
| Nickel | 1250 | 1.01 | 2.52 | $\mu g/L$ | 1281.2 | 2.31 | 97.4 | 70-130 | 1.73 | 20 | AS |
| Copper | 1276 | 0.50 | 2.52 | $\mu g/L$ | 1281.2 | 2.40 | 99.4 | 70-130 | 0.872 | 20 | AS |
| Zinc | 2587 | 4.04 | 12.6 | $\mu g/L$ | 2562.5 | 93.15 | 97.3 | 70-130 | 1.28 | 20 | AS |
| | | | | | | | | | | | |

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Amy Sodall.

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls02-Jan-19 15:03

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|------------------------------------|-------------|--------------------|--------------------|-----------|----------------|------------------|-------------|----------------|-------|--------------|-------|
| Batch F811271 - EFGS SOP2836 Close | ed Vessel W | ater Oven | Digestion | | | | | | | | |
| Matrix Spike Dup (F811271-MSDG) | | Source: | 8J01082-10 | | Prepared: 1 | 12-Nov-18 | Analyzed: 2 | 1-Nov-18 | | | |
| Chromium | 1015 | 0.50 | 2.52 | μg/L | 1025.0 | ND | 99.0 | 70-130 | 0.647 | 20 | AS |
| Nickel | 1273 | 1.01 | 2.52 | $\mu g/L$ | 1281.2 | 4.61 | 99.0 | 70-130 | 0.468 | 20 | AS |
| Copper | 1279 | 0.50 | 2.52 | $\mu g/L$ | 1281.2 | 19.84 | 98.3 | 70-130 | 0.984 | 20 | AS |
| Zinc | 2597 | 4.04 | 12.6 | $\mu g/L$ | 2562.5 | 84.88 | 98.0 | 70-130 | 1.18 | 20 | AS |
| Matrix Spike (F811271-MSE) | | Source: | 8J01082-10 | | Prepared: 1 | 12-Nov-18 | Analyzed: 2 | 1-Nov-18 | | | |
| Chromium | 50.51 | 0.51 | 2.53 | μg/L | 49.990 | ND | 101 | 70-130 | | | |
| Nickel | 54.52 | 1.01 | 2.53 | $\mu g/L$ | 50.010 | 4.61 | 99.8 | 70-130 | | | |
| Copper | 71.32 | 0.51 | 2.53 | $\mu g/L$ | 50.000 | 19.84 | 103 | 70-130 | | | |
| Zinc | 123.5 | 4.05 | 12.6 | $\mu g/L$ | 50.010 | 84.88 | 77.2 | 70-130 | | | |
| Matrix Spike (F811271-MSF) | | Source: | 8J01082-01 | | Prepared: 1 | 12-Nov-18 | Analyzed: 2 | 0-Nov-18 | | | |
| Chromium | 1027 | 0.50 | 2.52 | μg/L | 1025.0 | ND | 100 | 70-130 | | | AS |
| Nickel | 1272 | 1.01 | 2.52 | $\mu g/L$ | 1281.2 | 2.31 | 99.1 | 70-130 | | | AS |
| Copper | 1287 | 0.50 | 2.52 | $\mu g/L$ | 1281.2 | 2.40 | 100 | 70-130 | | | AS |
| Zinc | 2620 | 4.04 | 12.6 | $\mu g/L$ | 2562.5 | 93.15 | 98.6 | 70-130 | | | AS |
| Matrix Spike (F811271-MSG) | | Source: | 8J01082-10 | | Prepared: 1 | 12-Nov-18 | Analyzed: 2 | 1-Nov-18 | | | |
| Chromium | 1022 | 0.50 | 2.52 | μg/L | 1025.0 | ND | 99.7 | 70-130 | | | AS |
| Nickel | 1279 | 1.01 | 2.52 | $\mu g/L$ | 1281.2 | 4.61 | 99.5 | 70-130 | | | AS |
| Copper | 1292 | 0.50 | 2.52 | $\mu g/L$ | 1281.2 | 19.84 | 99.3 | 70-130 | | | AS |
| Zinc | 2628 | 4.04 | 12.6 | $\mu g/L$ | 2562.5 | 84.88 | 99.2 | 70-130 | | | AS |
| Batch F811325 - EFGS SOP2836 Close | ed Vessel W | ater Oven | Digestion | | | | | | | | |
| Blank (F811325-BLK1) | | | | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 5-Nov-18 | | | |
| Beryllium | ND | 0.004 | 0.060 | μg/L | | | | | | | U |
| Iron | ND | 1 | 10 | $\mu g/L$ | | | | | | | U |
| Selenium | ND | 0.44 | 0.60 | $\mu g/L$ | | | | | | | U |
| Antimony | 0.013 | 0.009 | 0.020 | $\mu g/L$ | | | | | | | J |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 02-Jan-19 15:03

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|----------------------------------|--------------|--------------------|--------------------|-----------|----------------|------------------|-----------|----------------|-------|--------------|-------|
| Analyte | Resuit | LIIIII | LIIIII | Units | Level | Resuit | 70KEC | LIIIIIS | KrD | FIIIII | notes |
| Batch F811325 - EFGS SOP2836 Clo | sed Vessel W | Vater Oven | Digestion | | | | | | | | |
| Blank (F811325-BLK2) | | | | | Prepared: | 12-Nov-18 | Analyzed: | 15-Nov-18 | | | |
| Beryllium | ND | 0.004 | 0.060 | $\mu g/L$ | | | | | | | U |
| Iron | ND | 1 | 10 | $\mu g/L$ | | | | | | | U |
| Selenium | ND | 0.44 | 0.60 | $\mu g/L$ | | | | | | | U |
| Antimony | ND | 0.009 | 0.020 | $\mu g/L$ | | | | | | | U |
| LCS (F811325-BS1) | | | | | Prepared: | 12-Nov-18 | Analyzed: | 15-Nov-18 | | | |
| Antimony | 38.26 | 0.045 | 0.100 | μg/L | 40.030 | | 95.6 | 85-115 | | | |
| LCS (F811325-BS3) | | | | | Prepared: | 12-Nov-18 | Analyzed: | 20-Nov-18 | | | |
| Beryllium | 42.22 | 0.020 | 0.301 | μg/L | 40.010 | | 106 | 85-115 | | | |
| Iron | 1166 | 6 | 50 | $\mu g/L$ | 1250.0 | | 93.3 | 85-115 | | | |
| Selenium | 49.14 | 2.20 | 3.01 | $\mu g/L$ | 49.990 | | 98.3 | 85-115 | | | |
| LCS Dup (F811325-BSD1) | | | | | Prepared: | 12-Nov-18 | Analyzed: | 15-Nov-18 | | | |
| Antimony | 38.90 | 0.045 | 0.100 | $\mu g/L$ | 40.030 | | 97.2 | 85-115 | 1.68 | 20 | |
| LCS Dup (F811325-BSD3) | | | | | Prepared: | 12-Nov-18 | Analyzed: | 20-Nov-18 | | | |
| Beryllium | 42.41 | 0.020 | 0.301 | μg/L | 40.010 | | 106 | 85-115 | 0.441 | 20 | |
| Iron | 1184 | 6 | 50 | $\mu g/L$ | 1250.0 | | 94.7 | 85-115 | 1.51 | 20 | |
| Selenium | 48.99 | 2.20 | 3.01 | $\mu g/L$ | 49.990 | | 98.0 | 85-115 | 0.306 | 20 | |
| Matrix Spike (F811325-MS1) | | Source: | 8J01082-01 | RE1 | Prepared: | 12-Nov-18 | Analyzed: | 16-Nov-18 | | | |
| Antimony | 42.47 | 0.091 | 0.202 | μg/L | 40.030 | 0.160 | 106 | 70-130 | | | |
| Matrix Spike (F811325-MS2) | | Source: | 8J01082-10 | RE1 | Prepared: | 12-Nov-18 | Analyzed: | 16-Nov-18 | | | |
| Antimony | 40.01 | 0.091 | 0.202 | μg/L | 40.030 | 0.272 | 99.3 | 70-130 | | | |
| Matrix Spike (F811325-MS5) | | Source: | 8J01082-01 | RE1 | Prepared: | 12-Nov-18 | Analyzed: | 16-Nov-18 | | | |
| Antimony | 19.46 | 0.091 | 0.202 | μg/L | 20.500 | 0.160 | 94.2 | 70-130 | | | AS |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls02-Jan-19 15:03

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|------------------------------------|------------|--------------------|--------------------|-----------|----------------|------------------|-------------|----------------|-----|--------------|-------|
| Batch F811325 - EFGS SOP2836 Close | d Vessel W | ater Oven | Digestion | | | | | | | | |
| Matrix Spike (F811325-MS6) | | Source: | 8J01082-10 | RE1 | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Antimony | 19.42 | 0.091 | 0.202 | μg/L | 20.500 | 0.272 | 93.4 | 70-130 | | | AS |
| Matrix Spike (F811325-MS7) | | Source: | 8J01083-01 | RE1 | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Antimony | 18.93 | 0.091 | 0.202 | μg/L | 20.500 | 0.409 | 90.3 | 70-130 | | | AS |
| Matrix Spike (F811325-MS8) | | Source: | 8J01083-07 | RE1 | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Antimony | 19.04 | 0.091 | 0.202 | μg/L | 20.500 | 0.263 | 91.6 | 70-130 | | | AS |
| Matrix Spike (F811325-MS9) | | Source: | 8J01082-01 | RE1 | Prepared: 1 | 12-Nov-18 | Analyzed: 2 | 20-Nov-18 | | | |
| Beryllium | 42.94 | 0.101 | 1.52 | μg/L | 40.010 | ND | 107 | 70-130 | | | |
| Iron | 1241 | 28 | 253 | μg/L | 1250.0 | 62 | 94.4 | 70-130 | | | |
| Selenium | 50.13 | 11.1 | 15.2 | $\mu g/L$ | 49.990 | ND | 100 | 70-130 | | | |
| Matrix Spike (F811325-MSA) | | Source: | 8J01082-10 | RE1 | Prepared: 1 | 12-Nov-18 | Analyzed: 2 | 21-Nov-18 | | | |
| Beryllium | 40.52 | 0.101 | 1.52 | μg/L | 40.010 | ND | 101 | 70-130 | | | |
| Iron | 1461 | 28 | 253 | $\mu g/L$ | 1250.0 | 274 | 94.9 | 70-130 | | | |
| Selenium | 51.93 | 11.1 | 15.2 | $\mu g/L$ | 49.990 | ND | 104 | 70-130 | | | |
| Matrix Spike (F811325-MSB) | | Source: | 8J01083-01 | RE1 | Prepared: 1 | 12-Nov-18 | Analyzed: 2 | 21-Nov-18 | | | |
| Beryllium | 41.33 | 0.101 | 1.52 | μg/L | 40.010 | ND | 103 | 70-130 | | | |
| Iron | 1423 | 28 | 253 | $\mu g/L$ | 1250.0 | 213 | 96.8 | 70-130 | | | |
| Selenium | 65.49 | 11.1 | 15.2 | $\mu g/L$ | 49.990 | 13.20 | 105 | 70-130 | | | |
| Antimony | 40.96 | 0.228 | 0.506 | $\mu g/L$ | 40.030 | 0.409 | 101 | 70-130 | | | |
| Matrix Spike (F811325-MSC) | | Source: | 8J01083-07 | RE1 | Prepared: 1 | 12-Nov-18 | Analyzed: 2 | 21-Nov-18 | | | |
| Beryllium | 41.60 | 0.101 | 1.52 | μg/L | 40.010 | ND | 104 | 70-130 | | | |
| Iron | 1262 | 28 | 253 | $\mu g/L$ | 1250.0 | 66 | 95.7 | 70-130 | | | |
| Selenium | 70.66 | 11.1 | 15.2 | $\mu g/L$ | 49.990 | 22.60 | 96.1 | 70-130 | | | |
| Antimony | 40.98 | 0.228 | 0.506 | $\mu g/L$ | 40.030 | 0.263 | 102 | 70-130 | | | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls02-Jan-19 15:03

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|--|---------------------------------|--|---|---|---|--|--|--|-------------------------------|----------------------|-------|
| Batch F811325 - EFGS SOP2836 Clos | ed Vessel V | Vater Oven | Digestion | | | | | | | | |
| Matrix Spike (F811325-MSD) | | Source: | 8J01082-01 | RE1 | Prepared: 1 | 2-Nov-18 | Analyzed: 2 | 0-Nov-18 | | | |
| Beryllium | 51.90 | 0.101 | 1.51 | μg/L | 51.250 | ND | 101 | 70-130 | | | AS |
| Iron | 5033 | 28 | 252 | $\mu g/L$ | 5125.0 | 62 | 97.0 | 70-130 | | | AS |
| Selenium | 1023 | 11.1 | 15.1 | $\mu g/L$ | 1025.0 | ND | 99.8 | 70-130 | | | AS |
| Matrix Spike Dup (F811325-MSD1) | | Source: | Source: 8J01082-01RE1 | | | 2-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Antimony | 40.49 | 0.091 | 0.202 | μg/L | 40.030 | 0.160 | 101 | 70-130 | 4.77 | 20 | |
| Matrix Spike Dup (F811325-MSD2) | | Source: | 8J01082-10 | RE1 | Prepared: 1 | 2-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Antimony | 39.90 | 0.091 | 0.202 | μg/L | 40.030 | 0.272 | 99.0 | 70-130 | 0.274 | 20 | |
| Matrix Spike Dup (F811325-MSD5) | | Source: | 8J01082-01 | RE1 | Prepared: 1 | 2-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Antimony | 19.32 | 0.091 | 0.202 | μg/L | 20.500 | 0.160 | 93.5 | 70-130 | 0.732 | 20 | AS |
| Matrix Spike Dup (F811325-MSD6) | | Source: 8J01082-10RE1 | | | Prepared: 1 | 2-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Antimony | 19.76 | 0.091 | 0.202 | μg/L | 20.500 | 0.272 | 95.1 | 70-130 | 1.73 | 20 | AS |
| N | | | | | | 2.37 10 | Nabyzad: 1 | 6 Nov. 19 | | | |
| Matrix Spike Dup (F811325-MSD7) | | Source: | 8J01083-01 | RE1 | Prepared: 1 | 2-Nov-18 A | maiyzcu, i | 0-1NUV-10 | | | |
| Antimony (F811325-MSD7) | 18.86 | Source: 0.091 | 8J01083-01 0.202 | RE1 μg/L | Prepared: 1 20.500 | 0.409 | 90.0 | 70-130 | 0.380 | 20 | AS |
| Antimony | 18.86 | 0.091 | | μg/L | | 0.409 | 90.0 | 70-130 | 0.380 | 20 | AS |
| | 18.86 | 0.091 | 0.202 | μg/L | 20.500 | 0.409 | 90.0 | 70-130 | 0.380 | 20 | AS |
| Antimony Matrix Spike Dup (F811325-MSD8) Antimony | | 0.091 Source: 0.091 | 0.202 8J01083-0 7 | μg/L (RE1 μg/L | 20.500 Prepared: 1 | 0.409 2-Nov-18 A 0.263 | 90.0 Analyzed: 1 89.3 | 70-130 6-Nov-18 70-130 | | | |
| Antimony Matrix Spike Dup (F811325-MSD8) | | 0.091 Source: 0.091 | 0.202 8J01083-07 0.202 | μg/L (RE1 μg/L | 20.500 Prepared: 1 20.500 | 0.409 2-Nov-18 A 0.263 | 90.0 Analyzed: 1 89.3 | 70-130 6-Nov-18 70-130 | | | |
| Antimony Matrix Spike Dup (F811325-MSD8) Antimony Matrix Spike Dup (F811325-MSD9) | 18.57 | 0.091 Source: 0.091 Source: | 0.202 8J01083-07 0.202 8J01082-01 | μg/L (RE1 μg/L RE1 | 20.500 Prepared: 1 20.500 Prepared: 1 | 0.409 2-Nov-18 A 0.263 2-Nov-18 A | 90.0 Analyzed: 1 89.3 Analyzed: 2 | 70-130 6-Nov-18 70-130 20-Nov-18 | 2.47 | 20 | |
| Antimony Matrix Spike Dup (F811325-MSD8) Antimony Matrix Spike Dup (F811325-MSD9) Beryllium | 18.57 | 0.091 Source: 0.091 Source: 0.101 | 0.202 8J01083-07 0.202 8J01082-01 1.52 | μg/L (RE1 μg/L RE1 μg/L | 20.500 Prepared: 1 20.500 Prepared: 1 40.010 | 0.409 2-Nov-18 A 0.263 2-Nov-18 A ND | 90.0 Analyzed: 1 89.3 Analyzed: 2 | 70-130 6-Nov-18 70-130 0-Nov-18 70-130 | 2.47 | 20 | |
| Antimony Matrix Spike Dup (F811325-MSD8) Antimony Matrix Spike Dup (F811325-MSD9) Beryllium Iron | 18.57 44.18 1252 | 0.091 Source: 0.091 Source: 0.101 28 11.1 | 0.202 8J01083-07 0.202 8J01082-01 1.52 253 | μg/L (RE1 μg/L RE1 μg/L μg/L μg/L μg/L | 20.500 Prepared: 1 20.500 Prepared: 1 40.010 1250.0 | 0.409 2-Nov-18 A 0.263 2-Nov-18 A ND 62 ND | 90.0 Analyzed: 1 89.3 Analyzed: 2 110 95.3 98.4 | 70-130 6-Nov-18 70-130 0-Nov-18 70-130 70-130 70-130 | 2.47 2.85 0.883 | 20 20 20 | |
| Antimony Matrix Spike Dup (F811325-MSD8) Antimony Matrix Spike Dup (F811325-MSD9) Beryllium Iron Selenium | 18.57 44.18 1252 | 0.091 Source: 0.091 Source: 0.101 28 11.1 | 0.202 8J01083-07 0.202 8J01082-01 1.52 253 15.2 | μg/L (RE1 μg/L RE1 μg/L μg/L μg/L μg/L | 20.500 Prepared: 1 20.500 Prepared: 1 40.010 1250.0 49.990 | 0.409 2-Nov-18 A 0.263 2-Nov-18 A ND 62 ND | 90.0 Analyzed: 1 89.3 Analyzed: 2 110 95.3 98.4 | 70-130 6-Nov-18 70-130 0-Nov-18 70-130 70-130 70-130 | 2.47 2.85 0.883 | 20 20 20 | |
| Antimony Matrix Spike Dup (F811325-MSD8) Antimony Matrix Spike Dup (F811325-MSD9) Beryllium Iron Selenium Matrix Spike Dup (F811325-MSDA) | 18.57 44.18 1252 49.17 | 0.091 Source: 0.091 Source: 0.101 28 11.1 Source: | 0.202 8J01083-07 0.202 8J01082-01 1.52 253 15.2 8J01082-10 | μg/L (RE1 μg/L RE1 μg/L μg/L μg/L μg/L μg/L | 20.500 Prepared: 1 20.500 Prepared: 1 40.010 1250.0 49.990 Prepared: 1 | 0.409 2-Nov-18 A 0.263 2-Nov-18 A ND 62 ND 2-Nov-18 A | 90.0 Analyzed: 1 89.3 Analyzed: 2 110 95.3 98.4 Analyzed: 2 | 70-130 6-Nov-18 70-130 0-Nov-18 70-130 70-130 70-130 | 2.47 2.85 0.883 1.94 | 20 20 20 20 | |

Eurofins Frontier Global Sciences, LLC

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 02-Jan-19 15:03

Quality Control Data

| | _ | Detection | Reporting | | Spike | Source | | %REC | | RPD | |
|-----------------------------------|--------------|-----------------------|------------|-----------|---|-----------|-------------|-----------|-------|-------|-----------------|
| Analyte | Result | Limit | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | Notes |
| Batch F811325 - EFGS SOP2836 Clos | sed Vessel V | Vater Oven | Digestion | | | | | | | | |
| Matrix Spike Dup (F811325-MSDB) | | Source: | 8J01083-01 | RE1 | Prepared: 1 | 12-Nov-18 | Analyzed: 2 | 21-Nov-18 | | | |
| Beryllium | 40.99 | 0.101 | 1.52 | μg/L | 40.010 | ND | 102 | 70-130 | 0.825 | 20 | |
| Iron | 1394 | 28 | 253 | $\mu g/L$ | 1250.0 | 213 | 94.5 | 70-130 | 2.03 | 20 | |
| Selenium | 68.03 | 11.1 | 15.2 | $\mu g/L$ | 49.990 | 13.20 | 110 | 70-130 | 3.81 | 20 | |
| Antimony | 40.42 | 0.228 | 0.506 | $\mu g/L$ | 40.030 | 0.409 | 100 | 70-130 | 1.33 | 20 | |
| Matrix Spike Dup (F811325-MSDC) | | Source: | 8J01083-07 | RE1 | Prepared: 1 | 12-Nov-18 | Analyzed: 2 | 21-Nov-18 | | | |
| Beryllium | 43.37 | 0.101 | 1.52 | $\mu g/L$ | 40.010 | ND | 108 | 70-130 | 4.16 | 20 | |
| Iron | 4735 | 28 | 253 | μg/L | 1250.0 | 66 | 374 | 70-130 | 116 | 20 | QM-07, QR-08 |
| Selenium | 69.05 | 11.1 | 15.2 | $\mu g/L$ | 49.990 | 22.60 | 92.9 | 70-130 | 2.30 | 20 | |
| Antimony | 41.58 | 0.228 | 0.506 | $\mu g/L$ | 40.030 | 0.263 | 103 | 70-130 | 1.46 | 20 | |
| Matrix Spike Dup (F811325-MSDD) | | Source: 8J01082-01RE1 | | | Prepared: 1 | 12-Nov-18 | Analyzed: 2 | 20-Nov-18 | | | |
| Beryllium | 52.13 | 0.101 | 1.51 | μg/L | 51.250 | ND | 102 | 70-130 | 0.445 | 20 | AS |
| Iron | 4921 | 28 | 252 | $\mu g/L$ | 5125.0 | 62 | 94.8 | 70-130 | 2.26 | 20 | AS |
| Selenium | 1014 | 11.1 | 15.1 | $\mu g/L$ | 1025.0 | ND | 98.9 | 70-130 | 0.860 | 20 | AS |
| Matrix Spike Dup (F811325-MSDE) | | Source: | 8J01082-10 | RE1 | Prepared: 12-Nov-18 Analyzed: 21-Nov-18 | | | | | | |
| Beryllium | 52.24 | 0.101 | 1.51 | $\mu g/L$ | 51.250 | ND | 102 | 70-130 | 1.51 | 20 | AS |
| Iron | 5144 | 28 | 252 | $\mu g/L$ | 5125.0 | 274 | 95.0 | 70-130 | 0.963 | 20 | AS |
| Selenium | 1039 | 11.1 | 15.1 | $\mu g/L$ | 1025.0 | ND | 101 | 70-130 | 0.861 | 20 | AS |
| Matrix Spike Dup (F811325-MSDF) | | Source: | 8J01083-01 | RE1 | Prepared: 1 | 12-Nov-18 | Analyzed: 2 | 21-Nov-18 | | | |
| Beryllium | 55.85 | 0.101 | 1.51 | $\mu g/L$ | 51.250 | ND | 109 | 70-130 | 0.545 | 20 | AS |
| Iron | 5154 | 28 | 252 | $\mu g/L$ | 5125.0 | 213 | 96.4 | 70-130 | 1.56 | 20 | AS |
| Selenium | 1073 | 11.1 | 15.1 | $\mu g/L$ | 1025.0 | 13.20 | 103 | 70-130 | 1.22 | 20 | AS |
| Antimony | 50.93 | 0.227 | 0.505 | $\mu g/L$ | 51.250 | 0.409 | 98.6 | 70-130 | 1.10 | 20 | AS |
| Matrix Spike Dup (F811325-MSDG) | | Source: | 8J01083-07 | RE1 | Prepared: 1 | 12-Nov-18 | Analyzed: 2 | 21-Nov-18 | | | |
| Beryllium | 53.78 | 0.101 | 1.51 | $\mu g/L$ | 51.250 | ND | 105 | 70-130 | 2.62 | 20 | AS |
| Iron | 4975 | 28 | 252 | $\mu g/L$ | 5125.0 | 66 | 95.8 | 70-130 | 1.58 | 20 | AS |
| Selenium | 1084 | 11.1 | 15.1 | $\mu g/L$ | 1025.0 | 22.60 | 104 | 70-130 | 0.949 | 20 | AS |
| Antimony | 51.26 | 0.227 | 0.505 | $\mu g/L$ | 51.250 | 0.263 | 99.5 | 70-130 | 2.33 | 20 | AS |
| | | | | | | | | | | | |

Eurofins Frontier Global Sciences, LLC

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 02-Jan-19 15:03

Quality Control Data

| | | Detection | Reporting | | Spike | Source | | %REC | | RPD | |
|------------------------------|-----------------|------------|------------|-----------|-------------|----------|-------------|-----------|-----|-------|-------|
| Analyte | Result | Limit | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | Notes |
| Batch F811325 - EFGS SOP2836 | Closed Vessel V | Vater Oven | Digestion | | | | | | | | |
| Matrix Spike (F811325-MSE) | | Source | 8J01082-10 | DRE1 | Prepared: 1 | 2-Nov-18 | Analyzed: 2 | 21-Nov-18 | | | |
| Beryllium | 53.03 | 0.101 | 1.51 | μg/L | 51.250 | ND | 103 | 70-130 | | | A |
| Iron | 5194 | 28 | 252 | $\mu g/L$ | 5125.0 | 274 | 96.0 | 70-130 | | | A |
| Selenium | 1030 | 11.1 | 15.1 | $\mu g/L$ | 1025.0 | ND | 101 | 70-130 | | | Α |
| Matrix Spike (F811325-MSF) | | Source | 8J01083-01 | IRE1 | Prepared: 1 | 2-Nov-18 | Analyzed: 2 | 21-Nov-18 | | | |
| Beryllium | 55.54 | 0.101 | 1.51 | μg/L | 51.250 | ND | 108 | 70-130 | | | A |
| Iron | 5235 | 28 | 252 | $\mu g/L$ | 5125.0 | 213 | 98.0 | 70-130 | | | Α |
| Selenium | 1086 | 11.1 | 15.1 | $\mu g/L$ | 1025.0 | 13.20 | 105 | 70-130 | | | A |
| Antimony | 50.38 | 0.227 | 0.505 | $\mu g/L$ | 51.250 | 0.409 | 97.5 | 70-130 | | | A |
| Matrix Spike (F811325-MSG) | | Source | 8J01083-0 | 7RE1 | Prepared: 1 | 2-Nov-18 | Analyzed: 2 | 21-Nov-18 | | | |
| Beryllium | 55.21 | 0.101 | 1.51 | μg/L | 51.250 | ND | 108 | 70-130 | | | A |
| Iron | 5054 | 28 | 252 | $\mu g/L$ | 5125.0 | 66 | 97.3 | 70-130 | | | A |
| Selenium | 1094 | 11.1 | 15.1 | $\mu g/L$ | 1025.0 | 22.60 | 105 | 70-130 | | | Α |
| Antimony | 50.08 | 0.227 | 0.505 | μg/L | 51.250 | 0.263 | 97.2 | 70-130 | | | A |

Eurofins Frontier Global Sciences, LLC

Amy Sodall.

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Underwood EngineersProject: Trace Metals In Wastewater25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls02-Jan-19 15:03

Notes and Definitions

| U | Analyte was not detected and is reported as less than the LOD or as defined by the client. The LOD has been adjusted for any dilution or concentration of the sample. |
|-------|---|
| QR-08 | The RPD value for the MS/MSD was outside of acceptance limits. Batch QC acceptable based on matrix duplicate and/or LCS/LCSD RPD values within control limits. |
| QM-07 | The spike recovery was outside control limits for the MS and/or MSD. The batch was accepted based on LCS and LCSD recoveries within control limits and, when analysis permits, acceptable AS/ASD. |
| QM-05 | The spike recovery was outside acceptance limits for the MS/MSD and or AS/ASD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable. |
| QB-08 | The blank was preserved to 50% BrCl rather than 1%. The control limit for blanks preserved to greater than 1% BrCl is the preservation percentage multiplied by the MRL. |
| J | The result is an estimated concentration. |
| AS | This MS and/or MSD is an analytical spike and/or an analytical spike duplicate. |
| AD | This matrix duplicate is an analytical duplicate. |
| DET | Analyte DETECTED |
| ND | Analyte NOT DETECTED at or above the method detection limit if reported to the MDL or above the reporting limit if reported to the MRL. |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |

Eurofins Frontier Global Sciences, LLC

Amy Sodall.

Relative Percent Difference

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RPD



Calscience



WORK ORDER NUMBER: 18-10-2295

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Eurofins Frontier Global Sciences, Inc.

Client Project Name: 8J01082

Attention: Amy Goodall

11720 North Creek Parkway North

Suite 4

Bothell, WA 98011-8244



Approved for release on 11/07/2018 by: Carla Hollowell Project Manager

ResultLink >

Email your PM >

Eurofins Calscience (Calscience) certifies that the test results provided in this report meet all NELAC Institute requirements for parameters for which accreditation is required or available. Any exceptions to NELAC Institute requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.



Contents

Client Project Name: 8J01082 Work Order Number: 18-10-2295

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| 6 | Chain-of-Custody/Sample Receipt Form. | 8 |



Work Order Narrative

Work Order: 18-10-2295 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 10/31/18. They were assigned to Work Order 18-10-2295.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

DoD Projects:

The test results contained in this report are accredited under the laboratory's ISO/IEC 17025:2005 and DoD-ELAP accreditation issued by the ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation ADE-1864.



Sample Summary

Client: Eurofins Frontier Global Sciences, Inc.

11720 North Creek Parkway North, Suite 4

Bothell, WA 98011-8244

Work Order: Project Name:

PO Number:

Date/Time Received:

Number of

Containers:

10/31/18 10:00

18-10-2295

8J01082

2

Amy Goodall Attn:

| Sample Identification | Lab Number | Collection Date and Time | Number of Containers | Matrix |
|-----------------------|--------------|--------------------------|----------------------|---------|
| NEW_02 NEW_01_TCn | 18-10-2295-1 | 10/18/18 00:00 | 1 | Aqueous |
| PEASE_02 PEASE_01_TCn | 18-10-2295-2 | 10/18/18 00:00 | 1 | Aqueous |





Analytical Report

Eurofins Frontier Global Sciences, Inc. 11720 North Creek Parkway North, Suite 4 Bothell, WA 98011-8244 Date Received: Work Order: Preparation: Method:

18-10-2295 N/A

10/31/18

Units:

SM 4500-CN E mg/L

Project: 8J01082

Page 1 of 1

| 1 10ject. 030 1002 | | | | | | 1 4 | ge i oi i |
|-----------------------|----------------------|------------------------|-----------|------------|------------------|-----------------------|-----------------|
| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
| NEW_02 NEW_01_TCn | 18-10-2295-1-A | 10/18/18 00:00 | Aqueous | UV 9 | 11/01/18 | 11/01/18 12:35 | I1101CNL1 |
| <u>Parameter</u> | | Result | <u>RL</u> | | <u>DF</u> | Qua | <u>llifiers</u> |
| Cyanide, Total | | ND | 0.0 | 20 | 1.00 | | |
| PEASE_02 PEASE_01_TCn | 18-10-2295-2-A | 10/18/18 00:00 | Aqueous | UV 9 | 11/01/18 | 11/01/18 12:35 | I1101CNL1 |
| Parameter | | Result | <u>RL</u> | 1 | <u>DF</u> | Qua | <u>llifiers</u> |
| Cyanide, Total | | ND | 0.0 | 20 | 1.00 | | |
| Method Blank | 099-05-061-4307 | N/A | Aqueous | UV 9 | 11/01/18 | 11/01/18 12:35 | I1101CNL1 |
| Parameter | | Result | RL | | <u>DF</u> | Qua | <u>lifiers</u> |
| Cyanide, Total | | ND | 0.0 | 20 | 1.00 | | |



RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Quality Control - LCS/LCSD

Eurofins Frontier Global Sciences, Inc. 11720 North Creek Parkway North, Suite 4 Bothell, WA 98011-8244

Date Received: Work Order: Preparation:

10/31/18 18-10-2295

N/A

Method: SM 4500-CN E

Project: 8J01082 Page 1 of 1

| Quality Control Sample ID | Туре | Mat | rix | Instrument | Date Pre | pared Date | Analyzed | LCS/LCSD Ba | atch Number |
|---------------------------|-------------|-----------|--------------|------------|---------------|------------|------------|-------------|-------------|
| 099-05-061-4307 | LCS | Aqı | ieous | UV 9 | 11/01/18 | 11/0 | 1/18 12:35 | I1101CNL1 | |
| 099-05-061-4307 | LCSD | Aqι | ieous | UV 9 | 11/01/18 | 11/0 | 1/18 12:35 | I1101CNL1 | |
| Parameter | Spike Added | LCS Conc. | LCS %Rec. | LCSD Conc. | LCSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
| Cyanide, Total | 0.2000 | 0.1660 | 83 | 0.1688 | 84 | 80-120 | 2 | 0-20 | |



RPD: Relative Percent Difference. CL: Control Limits



Glossary of Terms and Qualifiers

Work Order: 18-10-2295 Page 1 of 1

| Qualifiers | <u>Definition</u> |
|------------|--|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control. |
| 4 | The MS/MSD RPD was out of control due to suspected matrix interference. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| В | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| BV | Sample received after holding time expired. |
| CI | See case narrative. |
| Е | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| HDH | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected). |
| HDL | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected). |
| J | Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated. |
| JA | Analyte positively identified but quantitation is an estimate. |
| ME | LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean). |
| ND | Parameter not detected at the indicated reporting limit. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| Χ | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

SUBCONTRACT ORDER

Eurofins Frontier Global Sciences, Inc.

8J01082

18-10-2295

SENDING LABORATORY:

Eurofins Frontier Global Sciences, LLC 11720 North Creek Parkway North, Suite 400

Bothell, WA 98011 Phone: (425) 686-1996 Fax: (425) 686-3096

Project Manager:

Amy Goodall

RECEIVING LABORATORY:

Eurofins Calscience, LLC 7440 Lincoln Way Garden Grove, CA 92841 Phone:7148955494

Fax: x

| Analysis | Comments | | |
|--|---|----------------------|---|
| Sample ID: NEW_02 NEW_01_1 | ГСп | |) |
| EFGS Lab ID: 8J01082-05 | Matrix: Water | | |
| Sampled: 18-Oct-18 00:00 (GM' Arrived on 10/26/18, temp 0.4C | | Due: 28-Nov-18 19:00 | |
| Misc. Subcontract 1 | EPA SM4500 CN E | | |
| Containers Supplied: | | | |
| 250 mL PETG (A) | | | |
| Sample ID: PEASE_02 PEASE_ | 01_TCn | | 2 |
| EFGS Lab ID: 8J01082-14 | Matrix: Water | | |
| Sampled: 18-Oct-18 00:00 (GM Arrived on 10/26/18, temp 0.4C | T-05:00) Eastern Time (US & LEL 10/29/18 | Due: 28-Nov-18 19:00 | |
| Misc. Subcontract 1 | EPA SM4500 CN E | | |
| Containers Supplied: | | | |
| 250 mL PETG (A) | • | | |

Released By Date

Received By Date

10 30 18

Received By Date

10 30 18

Received By Date

10 30 18

Received By Date

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1000



FRONT BESK 425) 685 = 1996 FRONTIER GLOBAL SCIENCES 11720 N CREEK PKWY N BOTHERL WA 98011 - 8244

29 LBS

1 OF 1

DWT: 16,12,16

SHIP TO:
SAMPLE RECEIVING
(714) 895 – 5494
EUROFINS CALSCIENCE, INC.
7440 LINCOLN WAY
GARDEN GROVE CA 9284







UPS NEXT DAY AIR

TRACKING #: 1Z 86W 050 01 5174 4334



BILLING: P/P

Dept No.: OVERHEAD REF 2:Subcontract

W8 21.0.28 Zebra ZP 468 06.0A 10/2018



Calscience

WORK ORDER NUMBER: 18-10-2995

SAMPLE RECEIPT CHECKLIST COOLER ____ OF ___

| CLIENT: EF65 | DATE | : <u>10 / 3</u> | 3/ / 20 1 | 18 |
|--|---|---------------------------------------|--------------------------------------|----------|
| TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue) Thermometer ID: SC6 (CF: 0.0°C); Temperature (w/o CF):°C (w/ CF): □ Sample(s) outside temperature criteria (PM/APM contacted by:) □ Sample(s) outside temperature criteria but received on ice/chilled on same of Sample(s) received at ambient temperature; placed on ice for transport by county Ambient Temperature: □ Air □ Filter | day of sampling | □ Blank Checked | 5 Sample | |
| CUSTODY SEAL: Cooler | | | by: <u>VV6 I</u> by: <u>Се</u> ре | |
| SAMPLE CONDITION: Chain-of-Custody (COC) document(s) received with samples COC document(s) received complete Sampling date Sampling time Matrix Number of containers | | N N | | N/A |
| □ No analysis requested □ Not relinquished □ No relinquished date □ No Sampler's name indicated on COC Sample container label(s) consistent with COC Sample container(s) intact and in good condition Proper containers for analyses requested Sufficient volume/mass for analyses requested Samples received within holding time | | D STANGE | | |
| Aqueous samples for certain analyses received within 15-minute holding time □ pH □ Residual Chlorine □ Dissolved Sulfide □ Dissolved Oxygen Proper preservation chemical(s) noted on COC and/or sample container Unpreserved aqueous sample(s) received for certain analyses □ Volatile Organics □ Total Metals □ Dissolved Metals | | | | |
| Acid/base preserved samples - pH within acceptable range | 6M 4500) de (Hach) | . 🗆 | | |
| Aqueous: ☐ VOA ☐ VOAh ☐ VOAna₂ ☐ 100PJ ☐ 100PJna₂ ☐ 125AGB ☐ 125AGBh ☐ 250AGB ☐ 250CGB ☐ 250CGBs (pH 2) ☐ 250PB ☐ 250PBn (pH_2) ☐ 500AGB | Blank Lot Numbe □ 125AGBp □ 125P □ 500AGJ □ 500AG | er: PB | 3znna (pH | _9) |
| □ 1AGB □ 1AGBna₂ □ 1AGBs (pH_2) □ 1AGBs (O&G) □ 1PB 1PBna (pH 12) □ Solid: □ 4ozCGJ □ 8ozCGJ □ 16ozCGJ □ Sleeve () □ EnCores® () □ TerraColonic □ Tedlar™ □ Canister □ Sorbent Tube □ PUF □ Other Matrix (Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G = Glass, J = Jar, P = Plastic Preservative: b = buffered, f = filtered, h = HCl, n = HNO₃, na = NaOH, na₂ = Na₂S₂O₃, p s = H₂SO₄, u = ultra-pure, x = Na₂SO₃+NaHSO₄,H₂O, znna = Zn (CH₃CO₂); | ores [®] () D): D c. and Z = Ziploc/Res | □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ | | |
| $s = H_2SO_4$, $u = ultra$ -pure, $x = Na_2SO_3+NaHSO_4$, H_2O , $znna = Zn$ (CH ₃ CO ₂); | ₂ + NaOH | Reviewed | by: W. | <u>、</u> |



Calscience

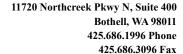
WORK ORDER NUMBER: 18-10-23-95

SAMPLE ANOMALY REPORT

DATE: 10 /3 // 2018

2017-08-29 Revision

| SAMPLES, CONTAINERS, AND LABELS: | Comments |
|--|--|
| ☐ Sample(s) NOT RECEIVED but listed on COC | |
| ☐ Sample(s) received but NOT LISTED on COC | |
| ☐ Holding time expired (list client or ECI sample ID and analysis) | |
| ☐ Insufficient sample amount for requested analysis (list analysis) | |
| ☐ Improper container(s) used (list analysis) | <u> </u> |
| ☐ Improper preservative used (list analysis) | |
| ☐ pH outside acceptable range (list analysis) | |
| ☐ No preservative noted on COC or label (list analysis and notify lab) | |
| ☐ Sample container(s) not labeled | |
| ☐ Client sample label(s) illegible (list container type and analysis) | |
| ☐ Client sample label(s) do not match COC (comment) | |
| ☐ Project information | |
| ☐ Client sample ID | |
| ☐ Sampling date and/or time | |
| ☐ Number of container(s) | |
| ☐ Requested analysis | |
| ☐ Sample container(s) compromised (comment) | *(1-2) Received Sample in |
| ☐ Broken | 1 liter plastic confainer |
| ☐ Water present in sample container | ato m/ per coc. |
| ☐ Air sample container(s) compromised (comment) | |
| □ Flat | |
| ☐ Very low in volume | |
| ☐ Leaking (not transferred; duplicate bag submitted) | |
| ☐ Leaking (transferred into ECI Tedlar™ bags*) | |
| ☐ Leaking (transferred into client's Tedlar™ bags*) | |
| * Transferred at client's request. | |
| MISCELLANEOUS: (Describe) | Comments |
| | |
| HEADSPACE: | |
| (Containers with bubble > 6 mm or ¼ inch for volatile organic or dissolved gas analysis) | (Containers with bubble for other analysis) |
| ECI ECI Total ECI ECI Total | ECI ECI Total |
| Sample ID Container ID Number** Sample ID Container ID Number** | Sample ID Container ID Number** Requested Analysis |
| | |
| | |
| | |
| | |
| comments: * Contaner type | |
| Comments: * CONTAINED 1995 | Reported by: WTSO |
| | Reported by: Reviewed by: Page 52 of 52 |
| ** Record the total number of containers (i.e., vials or bottles) for the affected sample. | Page 52 of 52 |





15 January 2019

Tim Puls Underwood Engineers 25 Vaughan Mall Portsmouth, NH 03801

RE: Trace Metals In Wastewater

Amy Sodall.

Enclosed are the analytical results for samples received by Eurofins Frontier Global Sciences. All quality control measurements are within established control limits and there were no analytical difficulties encountered with the exception of those listed in the case narrative section of this report.

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

Sincerely,

Amy Goodall

Project Manager



Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls15-Jan-19 17:30

ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|---------------------|---------------|--------|-----------------|-----------------|
| RIVER-02 RIV_01_TM | 8J01083-01 | Water | 18-Oct-18 15:35 | 29-Oct-18 10:10 |
| RIVER-02 RIV_02_TM | 8J01083-02 | Water | 18-Oct-18 15:35 | 29-Oct-18 10:10 |
| RIVER-02 RIV_EB_TM | 8J01083-03 | Water | 18-Oct-18 15:35 | 29-Oct-18 10:10 |
| RIVER-02 RIV_01_DM | 8J01083-07 | Water | 18-Oct-18 15:45 | 29-Oct-18 10:10 |
| RIVER-02 RIV_02_DM | 8J01083-08 | Water | 18-Oct-18 15:45 | 29-Oct-18 10:10 |
| RIVER-02 RIV_EB_DM | 8J01083-09 | Water | 18-Oct-18 15:55 | 29-Oct-18 10:10 |
| RIVER-02 RIV_01_DHg | 8J01083-11 | Water | 18-Oct-18 15:55 | 29-Oct-18 10:10 |
| RIVER-02 RIV_02_DHg | 8J01083-12 | Water | 18-Oct-18 15:55 | 29-Oct-18 10:10 |
| RIVER-02 RIV_EB_DHg | 8J01083-13 | Water | 18-Oct-18 16:00 | 29-Oct-18 10:10 |
| RIVER-02 RIV_MS_DHg | 8J01083-14 | Water | 18-Oct-18 16:00 | 29-Oct-18 10:10 |

Eurofins Frontier Global Sciences, LLC

Amy Sodall.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 15-Jan-19 17:30

SAMPLE RECEIPT

Samples were received at Eurofins Frontier Global Sciences (EFGS) on 29-Oct-18 10:10. The samples were received intact, on-ice within a sealed cooler at

<u>Cooler</u> <u>Temp C°</u> Default Cooler 16.2

Samples were shipped to Eurofins Calscience in Garden Grove, CA for the EPA SM4500 Total CN analysis per the initial project setup.

The subcontract report is located after the notes and definitions section of the EFGS report.

SAMPLE PREPARATION AND ANALYSIS

Samples were prepared and analyzed for total mercury by flow injection atomic fluorescence spectrometry (FI-AFS) in accordance with EPA 1631E.

Samples were prepared and analyzed for total recoverable metals by inductively coupled plasma mass spectrometry (ICP-MS) in accordance with EPA 200.8 (EFGS-054).

Samples were prepared and analyzed for total metals by preconcentration followed by analysis via inductively coupled plasma mass spectrometry (ICP-MS) in accordance with EPA 1640 Mod.

ANALYTICAL AND QUALITY CONTROL ISSUES

Method blanks were prepared for every preparation to assess possible blank contribution from the sample preparation procedure. The method blanks were carried through the entire analytical procedure. All blanks fell within the established acceptance criteria with the exception of any items narrated above or flagged and described in the notes and definitions section of the report.

Liquid spikes, certified reference material (CRM) or a quality control samples (QCS) were prepared for every preparation as a measure of accuracy. All liquid spikes, CRMs and/or QCS samples fell within the established acceptance criteria with the exception of any items narrated above or flagged and described in the notes and definitions section of the report.

As an additional measure of the accuracy of the methods used and to check for matrix interference, matrix spikes (MS) and matrix spike duplicates (MSD) were digested and analyzed. All of the matrix spike recoveries fell within the established acceptance criteria with the exception of any items flagged and described in the notes and definitions section of the report.

Eurofins Frontier Global Sciences, LLC

Amy Sodall.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 15-Jan-19 17:30

A reasonable measure of the precision of the analytical methods is the relative percent difference (RPD) between a matrix spike recovery and a matrix spike duplicate recovery and between laboratory control sample recovery and laboratory control sample duplicate recoveries. All of the relative percent differences fell within established acceptance criteria with the exception of any items flagged and described in the notes and definitions section of the report.

Eurofins Frontier Global Sciences, LLC

Amy Sodall.



Frontier Global Sciences

Sample Receipt Checklist

| | Δ. | | | | | | | | | | | | | |
|------------------------------|-------------|--|-------------------|---------------------------------------|---|---|---------------|-------------|---------|--------------|---------------|---------|------------------|-------------|
| Client: Under woo | | | | | | Date & Time F | deceived: | 29/18 | 10:10 | , Dat | e Labeled: (0 | 2291B | l aheled ¤ | w. USL |
| Project: Anti-Deo | , win | The state of the s | Riv | ver Sar | mples | | 11 | | | | | | l | y. <u></u> |
| # of Coolers Received: | 4 | (6-3° Sa | નેન્દ ımples A | arrived By: | Shipp | Received By:_ ing Service Coolant R | Courier | Haı | nd | _ Other | (Specify: | | |) |
| Coolant: 🛱 None/A | mbient | Loos | e Ice | ☐ Gel Ice | ☐ Dry Ice | Coolant R | equired (Y) N | | Temp & | Blank Use | ed(ŶĴN for | Cooler(| (s): <u></u> | |
| Notify Project Manage | r if packag | ges/cool | ers are re | eceived witho | out coolan | t or with thawe | d coolant and | at a tei | mperatu | re in exc | ess of 6°C. | PM not | ified: Y/N | |
| Cooler Information: | | | Y/N/NA | | Comment | ts | TID: -24/) | 526 0 | F. (1) | °C D-4 | te/time: 10/3 | ollier | 107 101 | |
| he coolers do not appear to | | d with: | 7 | | | | Cooler 1: 15 | 700 CI | W/CE | 6.2°° | Cooler 4: | | | |
| Custody Seals are present an | d intact: | | Po | | 100000000000000000000000000000000000000 | | Cooler 2: | °C | w/ CF: | °C | Cooler 5: | °C | w/ CF: | °C |
| Custody seals signed: | | | 16 | | | | Cooler 3: | °C | w/ CF: | °c | Cooler 6: | °C | w/ CF: w/ CF: | °C |
| Chain of Custody: | Y/N/NA | | Co | mments | | Sample Conditio | n/Integrity: | | | V/8-/8-4 | | | | |
| ample ID/Description: | Y | | | | | Sample containe | | | | Y/N/NA | | Comme | ents | |
| Date and time of collection: | Y | | | | | Sample labels are | | ole: | | 7 | | | | |
| ampled by: | У | | | | | Sample ID on cor | _ | | | V | | | | |
| reservation type: | Y | · | | | | Correct sample of | | | | Y | | | | |
| lequested analyses: | У | | | | | Samples received | | nes. | | Y | | | | |
| equired signatures: | y | | | · · · · · · · · · · · · · · · · · · · | | Sample volume si | _ | | lyses. | \checkmark | | | | |
| nternal COC required: | NA | ****** | | | | Correct preservat | | | | \leftarrow | · | | | |
| Anomalies/Non-conforma | | ch additio | nal page | s if needed): | | | | | alyses. | <u>/</u> | | | | |
| one sample | | | | • | Sans | ple', LEL 10 | · 27-15 | | | | 810 | 108 | 3 | |
| Y | | | | | | | | | | - | | | | |
| | | | | | <u></u> | | | | | _ _ | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | V | | | | | F | Page 5 of 5 |
| | | | | | | | | | | 1 | | | | |

EFGS Sample Receipt Checklist Revision 7: 9/15/2017

Chain of Custody Record & Laboratory Analysis Request: Air, Water, Sediments, Plant and Animal Tissue,

Hydrocarbon & Other Samples

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Page 1 of 2 850083

11720 Northcreek Pkwy N, Suite 400 Bothell, WA 98011

Phone: 425-686-1996

Fax: 425-686-3096

info@FrontierGS.com http://www.FrontierGS.com

| | ent: UNDERWOOD E | | Conta | ict: Tim Pul: | <u> </u> | | | | | | T | | *************************************** | | | | EFGS PM: | |
|-----------------|---|--|-------------|---------------------------------|------------|---|----------|-----------|---|---|----------------|---|---|---|---|---|---|---|
| | dress: 25 VAUGHAN | | | e: (603) 436 | | | Fax: | | and the second | | | Anal | yses | Requ | ested | | Date: | |
| - | RTSMOUTH, NH 038 | | | l: tpuls@un | derwood | engin | eers.com | | *************************************** | (%) | | T | 5 | 12 | | | TAT (business days)(20 (si | |
| *************** | ject Name: RIVER S | SAMPLES | | act/PO: | | *************************************** | | | | 5 | | | DH | 048 | | - 1 | 15 10 5 4 3 2 24 h | |
| | port To: Tim Puls | | | **** | Clie. | n+ | 7 | | 9 | Other | X | 5 | | N((| | | (For TAT < 10 days, contact P Surcharges apply for expedited TAT) | |
| | dress: 25 VAUGHAN RTSMOUTH, NH 038 | - | Addre | ss: | | | | | [(A) | HG R | 1)5 | 15, | Metals | Mercury (| | | Saturday delivery? DY AT (If yes, please contact PM) | |
| | one: (603) 436-6192 | | Phone | 2; | Fax: | T | | 命 |) je | 8 7 | 草 | | 5 | 5 | | j. | EDD DY DN | |
| E-n | nail: tpuls@underwo | | E-mai | | | | | <u> </u> | | ξ, χ | Σ | 5 |] ≷e | <u>Ş</u> | | t t | QA & Standard D, High | |
| No. | Engraved Bottle ID | Sample ID | | # of Bottles | Matrix | Dat | e & Time | Sampled I | Field Filtered (Y/N) | Field Preserved: HNO ₃ HCI BrCI | Total Metals (| Total | Dissolved | Dissolved | | | Comments | |
| 1 | RIVER-02 | RIV_01_TI | 1 | 1 | SB | 1018 | B 1535 | | N | N | | | | | | | Total Metals include: Sb, Be, | - |
| 2 | | RIV_ OQ_ T | | 1 1 | SB | | | | Í | | V | | | | | | Cr, Fe, Tl | - |
| | 7 | RIV_EBIT | | 1 | RW | | | | | | V | | | | | | Dissolved Metals include: As, | *************************************** |
| | | KIV_MS_T | | <u> </u> | SB | | 154 | | | 7 | 1 | · | | | | (| Cd, Cu, Pb, Ni, Se, Ag, Zn | - |
| *********** | RIVER - 02 | , , | | | SB | | | | | 1501 | | V | | | | | | (Metablecolumn |
| 6 | RIVER - O2 | RIV_TB_T | Cn | 1 | RW | | 154 | | | 1 ? | | V | | | | | | Month |
| 7 | RIVER -02 | RIV_ OI_ D | M | 1 | SB | | | | | | | | V | | | | | |
| | RIVER-OR | | H | 1 | SB | _/_ | | | | | | | 1/ | | | | | |
| 9 | RIVER - OR | RIV_(EB)_ [| DM | 1 | RW | | 1555 | | | | | | 1/ | , | | | | |
| 10 | RIVER - 02 | RIV_MS_ D | M | | SB | | | | | | * | | X | * | | | X- No semple | |
| 11 | RIVER -02 | RIV_OI_DI | 15 | 1 | SB | _) | | | 1 | VI | | | | V | | | | |
| 12 | RIVER-02 | RIV-02-D1 | 18 | 1 | SB | A | | -4 | 4 | V | | | | $\sqrt{}$ | | | Guille service de la companya de la | |
| | For Laborat | tory Use Only | | | ix Codes | • | Relingui | shed By | - | | Recei | yed F | Зу: | - ' | ************************************** | R | eceived By: | |
| :00 | Seal: | Comments: | : | FW: Fresh W. WW: Waste | | | 101 | | | | 0 | | | | | | | |
| :00 | ler Temp: | 00000000000000000000000000000000000000 | | SB: Sea and I SS: Soil and S | | ater | Name: | Sherk | June | 5 | Name | 3; | *************************************** | *************************************** | | N | lame: | |
| | ier: | • | | TS: Plant and | Animal Tis | sue | Organiza | ation: (| MH | | Orgai | nizati | on: | | | 0 | rganization: | |
| TS | R: | | | HC: Hydrocar TR: Trap | bons | | Date & 7 | Time: 10 | 129/18 | 16:001 | Date | & Tin | ne: | | | D | ate & Time: | |
| of | Coolers: | | | OT: Other | | | Tracking | | | A. Communication | | *************************************** | | 2,444 | *************************************** | *************************************** | ************************************** | |
| R SI | ple Disposal: eturn (shipping fees tandard Disposal – 3 | 30 Days after report | | RW:Reag | | ter | | you auth | orize El | GS to | | | | | | | | |
| J R | etain forweek | s arter report (stora | ige tee | s may appl | <u>y)</u> | |] (| Custome | r Appro | val: | | | | *** | ······································ | | Date: Page 6 of 54 | - |
| | | | | | | | | | | | | | | | | | 1 490000 | |

Chain of Custody Record & Laboratory Analysis Request: Air, Water, Sediments, Plant and Animal Tissue, Hydrocarbon & Other Samples

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Frontier Global Sciences

Page 2 of 2

11720 Northcreek Pkwy N, Suite 400

Bothell, WA 98011 Phone: 425-686-1996

Fax: 425-686-3096 info@FrontierGS.com

http://www.FrontierGS.com

| PROTESMOUTH, NH 03801 E-mail: totals@underwoodengineers.com Project Name: RIVER SAMPLES Contract/Pro: | Add | ress: 25 VAUGHAN | <u>:NGINEERS, INC.</u> MALL. | Phon | ict: Tim Pul: e: (603) 436 | | F | ax: | - | *************************************** | | | Anal | yses | Requ | ested | l | EFGS PM: Date: |
|--|---|--|---|--|--|---|---|--|-----------------------|--|---|---|------------------------|--|---|---|-----------------|---|
| Project Name: RIVER SAMPLES Contract/PO: Report To: Tim Puls Invoice To: C/ient Report To: Tim Puls Received By: Recei | | | | | | | | | 1 | *************************************** | 8 | - | T | T | | Ţ | Γ | |
| Address: 25 VAUGHAN MALL, PORTSMOUTH, NH 03801 PORT | Proj | ect Name: RIVER S | SAMPLES | | | | | | 1 | Nation of the last | } | | | E | 50 | | | 15 10 5 4 3 2 24 hrs |
| Address: 25 VAUGHAN MALL, Potensis: Fax: Phone: Phone: Fax: Phone: Phone | Rep | ort To: Tim Puls | | Account to the last of the las | ************************************* | lient | - | ************************************** | | | Othe | E | | | Š | | | (For TAT < 10 days, contact PM. |
| 1 RTVER-OQ RTV-ED DHg | 8 | | • | Addre | SS: | | *************************************** | | 1 | S | Gä | E | 2 | tals: | 큠 | | | Saturday delivery? ☐ Y ØN |
| 1 RTVER-OQ RTV-ED DHg | <u></u> | ************************************** | ************************************** | | | | | | - | 8 | 1 2 1 | SE SE | K. | Σe | <u>₩</u> | | 3 | I |
| 1 RTVER-OQ RTV-ED DHg | \$ | | ************************************** | | *************************************** | Fax: | ····· • · · · · · · · · · · · · · · · · | | | Leur L | 시 있 그 | Jet 1 | L. | B | - G | | | EDD DY DN |
| 1 RTVER-OQ RTV-ED DHg | E-M | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ | odengineers.com | <u>IL-mai</u> | ************************************** | 7 | *************************************** | | 1 8 | 一臣 | 트 | 2 | 2 | 승 | ㅎ | | | QA ZStandard □ High |
| 1 RTVER-OQ RTV-ED DHg | No. | Bottle ID | | | 1 | Matrix | Date | & Time | Sam | Field | HROH | Tota | Tota | Diss | Diss | | | Comments |
| 2 RTVEN-O2 RTV MS_DH2 SB N N N Dissolved Metals include: As, Cd, Cu, Pb, Ni, Se, Ag, Zn 1 Dissolved Metals include: As, Cd, Cu, Pb, Ni, Se, Ag, Zn 1 Cd, Cu, Pb, Ni, Se, Ag, Zn 2 RTVEN-O2 RTV MS_DH2 SB N N N Dissolved Metals include: As, Cd, Cu, Pb, Ni, Se, Ag, Zn 2 RTVEN-O2 RTV MS_DH2 SB N N N Dissolved Metals include: As, Cd, Cu, Pb, Ni, Se, Ag, Zn 2 RTVEN-O2 RTV MS_DH2 SB N N N Dissolved Metals include: As, Cd, Cu, Pb, Ni, Se, Ag, Zn 2 RTVEN-O2 RTV MS_DH2 SB N N N N N N N N N N N N N N N N N | 1 | RIVER-02 | RIVED. | DHg | 1 | RW | ICIRIE | 3 1600 | J56 | N | ф 35 0тиниции, уронически | | | | V | | | |
| Dissover Metals include: As, Cd, Cu, Pb, Ni, Se, Ag, Zn | 2 | RIVER-02 | RIV_MS_ | DHS | <u> </u> | SB | | * | -4 | 2 | 17 | | | | \checkmark | | | Cr, Fe, Tl |
| Sample Disposal: Retain for weeks after report (Storage fees may apply) Retain for weeks after report (Storage fees may apply) Retain for weeks after report (Storage fees may apply) Retain for weeks after report (Storage fees may apply) Customer Approval: Customer App | | | WW | | | | | | | | | | | | | | | Dissolved Metals include: As, |
| # of Coolers: Age Disposal: Return (shipping fees may apply) Retain for weeks after report Retain for weeks after r | | | | *** | ļ | | <u></u> | | | | | | | | | | | Cd, Cu, Pb, Ni, Se, Ag, Zn |
| 8 8 9 9 10 10 11 12 | | | ······································ | | | | | | | | | | | | | | | |
| 8 9 10 10 11 1 12 | | | | | | | | | | | | | | | | | | |
| For Laboratory Use Only For Laboratory Use On | ······································ | | | | | | · | | | | | *************************************** | | | | | | |
| For Laboratory Use Only For Laboratory Use Only For Laboratory Use Only For Laboratory Use Only FW: Fresh Water WW: Waste Water SB: Sea and BrackIsh Name: | | | | ······· | | | | | | | | | | | | | | |
| For Laboratory Use Only For Laboratory Use Only Fw: Fresh Water Ww: Waste Water Ss: Sea and BrackIsh Water Ss: Soil and Sediment Ts: Plant and Animal Tissue HC: Hydrocarbons TR: Trap of Coolers: Fw: Fresh Water Ww: Waste Water Ss: Soil and Sediment Ts: Plant and Animal Tissue HC: Hydrocarbons TR: Trap of Coolers: Fw: Fresh Water Ww: Waste Water Ss: Soil and Sediment Ts: Plant and Animal Tissue HC: Hydrocarbons TR: Trap of Coolers: Fw: Fresh Water Ww: Waste Water Ss: Soil and Sediment Ts: Plant and Animal Tissue HC: Hydrocarbons TR: Trap of Coolers: Fw: Fresh Water Will Eagent Water By signing, you declare that you agree with EFGS' terms and conditions, and that you authorize EFGS to perform the specified analyses. By signing, you declare that you agree with EFGS' terms and conditions, and that you authorize EFGS to perform the specified analyses. | | | | | *************************************** | | | | | | | | | | | | | |
| For Laboratory Use Only For Laboratory Use Only For Laboratory Use Only COC Seal: Comments: Www. Waste Water SB: Sea and BrackIsh Water SS: Soil and Sediment TS: Plant and Animal Tissue HC: Hydrocarbons TR: Trap For Coolers: For Laboratory Use Only Matrix Codes: Fw: Fresh Water Www. Waste Water SB: Sea and BrackIsh Water SS: Soil and Sediment TS: Plant and Animal Tissue HC: Hydrocarbons TR: Trap Organization: Date & Time: Tracking number: By signing, you declare that you agree with EFGS' terms and conditions, and that you authorize EFGS to perform the specified analyses. Retain for weeks after report (storage fees may apply) Customer Approval: | | | · | ļ | | ····· | | | | | | | | | | | Automobile de la constante de |
| For Laboratory Use Only Matrix Codes: FW: Fresh Water WW: Waste Water SB: Sea and BrackIsh Water SS: Soil and Sediment TS: Plant and Animal Tissue HC: Hydrocarbons TR: Trap of Coolers: Tracking number: Date & Time: Date & | | | | ···· | | | | | | | | | | | | | | |
| FW: Fresh Water WW: Waste Water SB: Sea and Bracklish Water SS: Soil and Sediment TS: Plant and Animal Tissue HC: Hydrocarbons TR: Trap OT: Other Tracking number: Tracking number: Tracking number: By signing, you declare that you agree with EFGS' terms and conditions, and that you authorize EFGS to perform the specified analyses. Tracking number: Tracking number: By signing, you declare that you agree with EFGS' terms and conditions, and that you authorize EFGS to perform the specified analyses. Tracking number: Tracking number: Date & Time: Ioles Dotton Dott | 12 | | | ····· ································ | | | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ | | | | | | | | | | | |
| Www. waste Water SB: Sea and BrackIsh Water SS: Soil and Sediment TS: Plant and Animal Tissue HC: Hydrocarbons TR: Trap OT: Other Tracking number: Aware water SS: Soil and Sediment Tracking number: By signing, you declare that you agree with EFGS' terms and conditions, and that you authorize EFGS to perform the specified analyses. By signing, you declare that you agree with EFGS' terms and conditions, and that you authorize EFGS to perform the specified analyses. | | | | 1000 | | | ; | Relinger | shed By: | t t | *************************************** | Recei | ved I | Ву: | | | ŀ | Received By: |
| Carrier: VTSR: | *************************************** | | Comments: | | WW: Waste V | Vater | | | 1 | | | 4 | | <u> </u> | espella 1 | | | 1 |
| TS: Plant and Animal Tissue HC: Hydrocarbons TR: Trap Date & Time: Date | | *************************************** | *************************************** | | 2 | | ater | Name 2 | Teve. | Love | l | Vame | 2. | Wight - commence as a disk | *************************************** | *************************************** | ı | Name: |
| # of Coolers: # of Coolers: Tracking number: Sample Disposal: Return (shipping fees may apply) Standard Disposal – 30 Days after report Tracking number: By signing, you declare that you agree with EFGS' terms and conditions, and that you authorize EFGS to perform the specified analyses. Tracking number: Customer Approval: Customer Approval: | | | | | TS: Plant and | Animal Tis | sue | Organiza | ation: 🔾 | M | , (| Orgar | nizati | on: | *************************************** | · | | Organization: |
| # of Coolers: Tracking number: Sample Disposal: | VTSR | * | | | HC: Hydrocan | bons | | Date & | Time: 10, | 185/18 | 6:00 | Date | & Tin | ne: | · | | | Date & Time: |
| ☐ Return (shipping fees may apply) ☐ Standard Disposal – 30 Days after report ☐ Retain forweeks after report (storage fees may apply) ☐ Customer Approval: | # of | Coolers: | | | | | | \$ | ***** | CONTRACTOR OF THE PARTY AND ADDRESS OF THE PAR | · | ************************************** | , ********* | ······································ | *************************************** | -, | | |
| Retain forweeks after report (storage fees may apply) Customer Approval: Date: Page 7 of 54 | □ Re Sta | turn (shipping fees andard Disposal – 3 | 30 Days after repo | ort | • | | ter | | By signir you auth | ng, you Iorize E | declare FGS to | that perfo | you rm th | agre ne spo | e wit | h EFO | GS' te lyses | erms and conditions, and that s. |
| | _l Re | tain for week | s after report (sto | orage fee | s may apply | <u>/) </u> | *************************************** | | Custome | r Appro | oval: | | | ********************** | | | | Date: Page 7 of 54 |

SUBCONTRACT ORDER

Eurofins Frontier Global Sciences, Inc.

8J01083

| Eurofins Frontier Global Sciences, LLC 11720 North Creek Parkway North, Suite 400 Bothell, WA 98011 Phone: (425) 686-1996 Fax: (425) 686-3096 Project Manager: Amy Goodall | RECEIVING LABORATORY: Eurofins Calscience, LLC 7440 Lincoln Way Garden Grove, CA 92841 Phone :7148955494 Fax: x |
|--|--|
| Analysis | |
| Sample ID: RIVER-02 RIV_01_TCn | |
| EFGS Lab ID: 8J01083-05 Matrix: Water Sampled: 18-Oct-18 15:40 (GMT-05:00) Eastern Time (US & Arrived on 10/26/18, temp 0.4C LEL 10/29/18 | Due: 28-Nov-18 19:00 |
| Misc. Subcontract 1 EPA SM4500 CN E | |
| Containers Supplied: 250 mL PETG (A) | |
| Sample ID: RIVER-02 RIV_TB_TCn | |
| EFGS Lab ID: 8J01083-06 Matrix: Water Sampled: 18-Oct-18 15:45 (GMT-05:00) Eastern Time (US & Arrived on 10/26/18, temp 0.4C LEL 10/29/18 | Due: 28-Nov-18 19:00 |
| Misc. Subcontract 1 EPA SM4500 CN E | |
| Containers Supplied: 250 mL PETG (A) | |
| | |

Received By Received By 10/36/18 Page 8 of 54

Date

Date

Page 1 of 1



Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 15-Jan-19 17:30

RIVER-02 RIV_01_TM 8J01083-01

| Analyte | Result | Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|----------------------------------|-----------|------------|--------------------|-----------|----------|---------|-----------|----------|-----------|-----------|---------|
| Sample Preparation: EFGS SOP2836 | Closed Ve | ssel Water | Oven Di | gestion | | | | | | | |
| Antimony | 0.624 | 0.091 | 0.202 | μg/L | 10 | F811325 | 12-Nov-18 | 8K26022 | 21-Nov-18 | EPA 200.8 | R-05 |
| Beryllium | ND | 0.040 | 0.606 | $\mu g/L$ | 10 | F811325 | 12-Nov-18 | 8K26022 | 21-Nov-18 | EPA 200.8 | U, R-05 |
| Chromium | 0.43 | 0.20 | 1.01 | μg/L | 10 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | R-05, J |
| Iron | 189 | 11 | 101 | μg/L | 10 | F811325 | 12-Nov-18 | 8K26022 | 21-Nov-18 | EPA 200.8 | R-05 |
| Thallium | ND | 0.061 | 0.202 | $\mu g/L$ | 10 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | U, R-05 |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 15-Jan-19 17:30

RIVER-02 RIV_02_TM 8J01083-02

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|-----------------------------|------------------|--------------------|--------------------|-----------|----------|---------|-----------|----------|-----------|-----------|---------|
| Sample Preparation: EFGS SO | P2836 Closed Ves | sel Water | r Oven Dig | gestion | | | | | | | |
| Antimony | 0.240 | 0.091 | 0.202 | μg/L | 10 | F811325 | 12-Nov-18 | 8K26022 | 21-Nov-18 | EPA 200.8 | R-05 |
| Beryllium | ND | 0.040 | 0.606 | $\mu g/L$ | 10 | F811325 | 12-Nov-18 | 8K26022 | 21-Nov-18 | EPA 200.8 | U, R-05 |
| Chromium | 0.47 | 0.20 | 1.01 | $\mu g/L$ | 10 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | R-05, J |
| Iron | 173 | 11 | 101 | $\mu g/L$ | 10 | F811325 | 12-Nov-18 | 8K26022 | 21-Nov-18 | EPA 200.8 | R-05 |
| Thallium | ND | 0.061 | 0.202 | $\mu g/L$ | 10 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | U, R-05 |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 15-Jan-19 17:30

RIVER-02 RIV_EB_TM 8J01083-03

| Analyte Sample Preparation: EFGS SOP2836 | Result Closed Ves | Limit | Reporting Limit Oven Di | Units gestion | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|---|--------------------|-------|-------------------------|------------------|----------|---------|-----------|----------|-----------|-----------|-------|
| Antimony | ND | 0.009 | 0.020 | μg/L | 1 | F811325 | 12-Nov-18 | 8K16011 | 15-Nov-18 | EPA 200.8 | U |
| Beryllium | ND | 0.004 | 0.061 | $\mu g/L$ | 1 | F811325 | 12-Nov-18 | 8K16011 | 15-Nov-18 | EPA 200.8 | U |
| Chromium | 0.06 | 0.02 | 0.10 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K16013 | 15-Nov-18 | EPA 200.8 | J |
| Iron | ND | 1 | 10 | $\mu g/L$ | 1 | F811325 | 12-Nov-18 | 8K16011 | 15-Nov-18 | EPA 200.8 | U |
| Thallium | ND | 0.006 | 0.020 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K16013 | 15-Nov-18 | EPA 200.8 | U |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 15-Jan-19 17:30

RIVER-02 RIV_01_DM 8J01083-07

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes | | | |
|--|------------|--------------------|--------------------|------------------|----------|---------|-----------|----------|-----------|---------------|---------|--|--|--|
| Sample Preparation: EFGS SOP2820 Reductive Precipitation | | | | | | | | | | | | | | |
| Arsenic | 0.88 | 0.04 | 0.38 | μg/L | 5 | F812486 | 02-Jan-19 | 9A07016 | 07-Jan-19 | EPA 1640 | | | | |
| Cadmium | 0.038 | 0.020 | 0.100 | $\mu g/L$ | 5 | F812486 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | J | | | |
| Chromium | 0.13 | 0.01 | 0.25 | $\mu g/L$ | 5 | F812486 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | J | | | |
| Copper | 0.53 | 0.08 | 0.25 | $\mu g/L$ | 5 | F812486 | 02-Jan-19 | 9A07016 | 07-Jan-19 | EPA 1640 | | | | |
| Lead | 0.024 | 0.020 | 0.100 | $\mu g/L$ | 5 | F812486 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | J | | | |
| Nickel | 0.41 | 0.08 | 0.25 | $\mu g/L$ | 5 | F812486 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | | | | |
| Selenium | ND | 0.16 | 1.50 | $\mu \text{g}/L$ | 5 | F812486 | 02-Jan-19 | 9A07016 | 07-Jan-19 | EPA 1640 Mod. | U | | | |
| Silver | 0.02 | 0.01 | 0.10 | $\mu g/L$ | 5 | F812486 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | J | | | |
| Zinc | 0.91 | 0.14 | 0.50 | $\mu g/L$ | 5 | F812486 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | | | | |
| Sample Preparation: EFGS SOP2836 | Closed Ves | ssel Water | Oven Di | gestion | | | | | | | | | | |
| Arsenic | 3.47 | 1.01 | 3.03 | μg/L | 10 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | R-05 | | | |
| Cadmium | ND | 0.081 | 0.202 | $\mu \text{g}/L$ | 10 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | U, R-05 | | | |
| Copper | 0.55 | 0.20 | 1.01 | $\mu g/L$ | 10 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | R-05, J | | | |
| Lead | ND | 0.050 | 0.404 | $\mu \text{g}/L$ | 10 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | U, R-05 | | | |
| Nickel | 0.63 | 0.40 | 1.01 | $\mu g/L$ | 10 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | R-05, J | | | |
| Selenium | 14.3 | 4.44 | 6.06 | μg/L | 10 | F811325 | 12-Nov-18 | 8K26022 | 21-Nov-18 | EPA 200.8 | R-05 | | | |
| Silver | ND | 0.020 | 0.202 | $\mu g/L$ | 10 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | U, R-05 | | | |
| Zinc | 2.43 | 1.62 | 5.05 | $\mu g/L$ | 10 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | R-05, J | | | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 15-Jan-19 17:30

RIVER-02 RIV_02_DM 8J01083-08

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes | | | |
|--|-----------|--------------------|--------------------|------------------|----------|---------|-----------|----------|-----------|---------------|---------|--|--|--|
| Sample Preparation: EFGS SOP2820 Reductive Precipitation | | | | | | | | | | | | | | |
| Arsenic | 1.02 | 0.04 | 0.38 | μg/L | 5 | F812486 | 02-Jan-19 | 9A07016 | 07-Jan-19 | EPA 1640 | | | | |
| Cadmium | 0.042 | 0.020 | 0.100 | $\mu g/L$ | 5 | F812486 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | J | | | |
| Chromium | 0.17 | 0.01 | 0.25 | $\mu g/L$ | 5 | F812486 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | J | | | |
| Copper | 0.52 | 0.08 | 0.25 | $\mu g/L$ | 5 | F812486 | 02-Jan-19 | 9A07016 | 07-Jan-19 | EPA 1640 | | | | |
| Lead | 0.028 | 0.020 | 0.100 | $\mu g/L$ | 5 | F812486 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | J | | | |
| Nickel | 0.41 | 0.08 | 0.25 | $\mu g/L$ | 5 | F812486 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | | | | |
| Selenium | ND | 0.16 | 1.50 | $\mu \text{g}/L$ | 5 | F812486 | 02-Jan-19 | 9A07016 | 07-Jan-19 | EPA 1640 Mod. | U | | | |
| Silver | 0.02 | 0.01 | 0.10 | $\mu g/L$ | 5 | F812486 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | J | | | |
| Zinc | 1.24 | 0.14 | 0.50 | μg/L | 5 | F812486 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | | | | |
| Sample Preparation: EFGS SOP2836 | Closed Ve | ssel Water | Oven Di | gestion | | | | | | | | | | |
| Arsenic | 3.45 | 1.01 | 3.03 | μg/L | 10 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | R-05 | | | |
| Cadmium | ND | 0.081 | 0.202 | $\mu g/L$ | 10 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | U, R-05 | | | |
| Copper | 0.56 | 0.20 | 1.01 | $\mu g/L$ | 10 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | R-05, J | | | |
| Lead | ND | 0.050 | 0.404 | $\mu \text{g}/L$ | 10 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | U, R-05 | | | |
| Nickel | 0.64 | 0.40 | 1.01 | $\mu g/L$ | 10 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | R-05, J | | | |
| Selenium | 16.9 | 4.44 | 6.06 | $\mu g/L$ | 10 | F811325 | 12-Nov-18 | 8K26022 | 21-Nov-18 | EPA 200.8 | R-05 | | | |
| Silver | ND | 0.020 | 0.202 | $\mu g/L$ | 10 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | U, R-05 | | | |
| Zinc | 2.92 | 1.62 | 5.05 | μg/L | 10 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | R-05, J | | | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 15-Jan-19 17:30

RIVER-02 RIV_EB_DM 8J01083-09

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes | | | |
|--|------------|--------------------|--------------------|-------------------|----------|---------|-----------|----------|-----------|---------------|-------|--|--|--|
| Sample Preparation: EFGS SOP2820 Reductive Precipitation | | | | | | | | | | | | | | |
| Arsenic | ND | 0.04 | 0.38 | μg/L | 5 | F812486 | 02-Jan-19 | 9A07016 | 07-Jan-19 | EPA 1640 | U | | | |
| Cadmium | 0.026 | 0.020 | 0.100 | $\mu \text{g}/L$ | 5 | F812486 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | J | | | |
| Chromium | 0.06 | 0.01 | 0.25 | $\mu \text{g}/L$ | 5 | F812486 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | J | | | |
| Copper | ND | 0.08 | 0.25 | $\mu g/L$ | 5 | F812486 | 02-Jan-19 | 9A07016 | 07-Jan-19 | EPA 1640 | U | | | |
| Lead | ND | 0.020 | 0.100 | $\mu g/L$ | 5 | F812486 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | U | | | |
| Nickel | 0.17 | 0.08 | 0.25 | $\mu g \! / \! L$ | 5 | F812486 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | J | | | |
| Selenium | ND | 0.16 | 1.50 | $\mu \text{g}/L$ | 5 | F812486 | 02-Jan-19 | 9A07016 | 07-Jan-19 | EPA 1640 Mod. | U | | | |
| Silver | 0.03 | 0.01 | 0.10 | $\mu g\!/\!L$ | 5 | F812486 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | J | | | |
| Zinc | 0.32 | 0.14 | 0.50 | $\mu g/L$ | 5 | F812486 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | J | | | |
| Sample Preparation: EFGS SOP2836 | Closed Ves | ssel Water | Oven Dig | gestion | | | | | | | | | | |
| Arsenic | ND | 0.10 | 0.30 | μg/L | 1 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | U | | | |
| Cadmium | ND | 0.008 | 0.020 | $\mu \text{g}/L$ | 1 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | U | | | |
| Copper | ND | 0.02 | 0.10 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | U | | | |
| Lead | ND | 0.005 | 0.040 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K16013 | 16-Nov-18 | EPA 200.8 | U | | | |
| Nickel | ND | 0.04 | 0.10 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | U | | | |
| Selenium | ND | 0.44 | 0.61 | $\mu g/L$ | 1 | F811325 | 12-Nov-18 | 8K16011 | 16-Nov-18 | EPA 200.8 | U | | | |
| Silver | ND | 0.002 | 0.020 | μg/L | 1 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | U | | | |
| Zinc | 0.26 | 0.16 | 0.50 | $\mu g/L$ | 1 | F811271 | 12-Nov-18 | 8K15007 | 14-Nov-18 | EPA 200.8 | J | | | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls15-Jan-19 17:30

RIVER-02 RIV_01_DHg 8J01083-11

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|---------------------------------|---------------|--------------------|--------------------|-------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP279 | 06 EPA 1631 C | Oxidation | l | | | | | | | | |
| Mercury | 1.38 | 0.08 | 0.50 | ng/L | 1 | F810476 | 29-Oct-18 | 8K01002 | 31-Oct-18 | EPA 1631E | |

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Amy Goodall, Project Manager

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 15-Jan-19 17:30

RIVER-02 RIV_02_DHg

8J01083-12

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|---------------------------------|--------------|--------------------|--------------------|-------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP279 | 6 EPA 1631 (| Oxidation | 1 | | | | | | | | |
| Mercury | 1.21 | 0.08 | 0.50 | ng/L | 1 | F810476 | 29-Oct-18 | 8K01002 | 31-Oct-18 | EPA 1631E | |

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Amy Sodall.



Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls15-Jan-19 17:30

RIVER-02 RIV_EB_DHg 8J01083-13

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|--------------------------------|---------------|--------------------|--------------------|-------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP27 | 96 EPA 1631 (| Oxidation | 1 | | | | | | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | 1 | F810476 | 29-Oct-18 | 8K01002 | 31-Oct-18 | EPA 1631E | U |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 15-Jan-19 17:30

RIVER-02 RIV_MS_DHg 8J01083-14

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|---------------------------------|---------------|--------------------|--------------------|-------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP279 | 96 EPA 1631 (| Oxidation | ı | | | | | | | | |
| Mercury | 1.18 | 0.08 | 0.50 | ng/L | 1 | F810476 | 29-Oct-18 | 8K01002 | 31-Oct-18 | EPA 1631E | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls15-Jan-19 17:30

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|--------------------------------|---------------|--------------------|--------------------|----------|----------------|------------------|-----------|----------------|-------|--------------|----------|
| Batch F810476 - EFGS SOP2796 E | PA 1631 Oxida | ation | | | | | | | | | |
| Blank (F810476-BLK1) | | | | | Prepared & | : Analyzed: | 31-Oct-18 | | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | | | | | | | U |
| Blank (F810476-BLK2) | | | | | Prepared & | Analyzed: | 31-Oct-18 | | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | | | | | | | U |
| Blank (F810476-BLK3) | | | | | Prepared & | Analyzed: | 31-Oct-18 | | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | | | | | | | U |
| Blank (F810476-BLK4) | | | | | Prepared & | : Analyzed: | 31-Oct-18 | | | | |
| Mercury | ND | 1.65 | 9.90 | ng/L | | | | | | | QB-08, U |
| LCS (F810476-BS1) | | | | | Prepared & | : Analyzed: | 31-Oct-18 | | | | |
| Mercury | 14.30 | 0.08 | 0.50 | ng/L | 14.688 | | 97.4 | 80-120 | | | |
| LCS Dup (F810476-BSD1) | | | | | Prepared & | : Analyzed: | 31-Oct-18 | | | | |
| Mercury | 14.37 | 0.08 | 0.50 | ng/L | 14.688 | | 97.8 | 80-120 | 0.481 | 24 | |
| Duplicate (F810476-DUP1) | | Source: | 8J00788-06 | • | Prepared & | : Analyzed: | 31-Oct-18 | | | | |
| Mercury | 7.83 | 0.08 | 0.50 | ng/L | | 7.96 | | | 1.66 | 24 | AD |
| Matrix Spike (F810476-MS1) | | Source: | 8J01082-06 | , | Prepared & | : Analyzed: | 31-Oct-18 | | | | |
| Mercury | 5.83 | 0.08 | 0.50 | ng/L | 5.0702 | 1.45 | 86.5 | 71-125 | | | AS |
| Matrix Spike (F810476-MS2) | | Source: | 8J01082-15 | ; | Prepared & | : Analyzed: | 31-Oct-18 | | | | |
| Mercury | 11.16 | 0.08 | 0.50 | ng/L | 10.140 | 2.16 | 88.7 | 71-125 | | | AS |
| Matrix Spike (F810476-MS3) | | Source: | 8J01083-11 | | Prepared & | : Analyzed: | 31-Oct-18 | | | | |
| Mercury | 5.99 | 0.08 | 0.50 | ng/L | 5.0702 | 1.38 | 90.9 | 71-125 | | | AS |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 15-Jan-19 17:30

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|----------------------------------|--------------|--------------------|--------------------|-----------|----------------|------------------|-------------|----------------|------|--------------|-------|
| Batch F810476 - EFGS SOP2796 EPA | A 1631 Oxid | ation | | | | | | | | | |
| Matrix Spike Dup (F810476-MSD1) | | Source: | 8J01082-06 | 6 | Prepared & | : Analyzed: | 31-Oct-18 | | | | |
| Mercury | 5.72 | 0.08 | 0.50 | ng/L | 5.0702 | 1.45 | 84.3 | 71-125 | 1.90 | 24 | AS |
| Matrix Spike Dup (F810476-MSD2) | | Source: | 8J01082-15 | 5 | Prepared & | : Analyzed: | 31-Oct-18 | | | | |
| Mercury | 11.42 | 0.08 | 0.50 | ng/L | 10.140 | 2.16 | 91.3 | 71-125 | 2.33 | 24 | AS |
| Matrix Spike Dup (F810476-MSD3) | | Source: | 8J01083-11 | | Prepared & | : Analyzed: | 31-Oct-18 | | | | |
| Mercury | 5.71 | 0.08 | 0.50 | ng/L | 5.0702 | 1.38 | 85.3 | 71-125 | 4.83 | 24 | AS |
| Batch F811271 - EFGS SOP2836 Clo | sed Vessel V | Vater Oven | Digestion | | | | | | | | |
| Blank (F811271-BLK1) | | | | | Prepared: 1 | 2-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Silver | 0.002 | 0.002 | 0.020 | μg/L | | | | | | | ; |
| Blank (F811271-BLK2) | | | | | Prepared: 1 | 2-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Silver | ND | 0.002 | 0.020 | μg/L | | | | | | | U |
| Blank (F811271-BLK3) | | | | | Prepared: 1 | 2-Nov-18 | Analyzed: 1 | 5-Nov-18 | | | |
| Arsenic | ND | 0.10 | 0.30 | μg/L | | | - | | | | U |
| Silver | ND | 0.002 | 0.020 | $\mu g/L$ | | | | | | | U |
| Blank (F811271-BLK4) | | | | | Prepared: 1 | 2-Nov-18 | Analyzed: 1 | 5-Nov-18 | | | |
| Arsenic | ND | 0.10 | 0.30 | μg/L | | | | | | | U |
| Silver | ND | 0.002 | 0.020 | $\mu g/L$ | | | | | | | Ū |
| LCS (F811271-BS1) | | | | | Prepared: 1 | 2-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Silver | 25.00 | 0.010 | 0.100 | μg/L | 25.000 | | 100 | 85-115 | | | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls15-Jan-19 17:30

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|--------------------------------|-----------------|--------------------|--------------------|-----------|----------------|------------------|-------------|----------------|------|--------------|-------|
| Batch F811271 - EFGS SOP2836 (| Closed Vessel W | ater Oven | Digestion | | | | | | | | |
| LCS (F811271-BS2) | | | | | Prepared: | 12-Nov-18 | Analyzed: | 15-Nov-18 | | | |
| Arsenic | 43.99 | 0.50 | 1.50 | μg/L | 50.000 | | 88.0 | 85-115 | | | |
| Silver | 22.77 | 0.010 | 0.100 | $\mu g/L$ | 25.000 | | 91.1 | 85-115 | | | |
| LCS (F811271-BS3) | | | | | Prepared: | 12-Nov-18 | Analyzed: 2 | 20-Nov-18 | | | |
| Arsenic | 46.85 | 0.50 | 1.50 | μg/L | 50.000 | | 93.7 | 85-115 | | | |
| LCS Dup (F811271-BSD1) | | | | | Prepared: | 12-Nov-18 | Analyzed: | 14-Nov-18 | | | |
| Silver | 24.71 | 0.010 | 0.100 | μg/L | 25.000 | | 98.8 | 85-115 | 1.18 | 20 | |
| LCS Dup (F811271-BSD2) | | | | | Prepared: | 12-Nov-18 | Analyzed: | 15-Nov-18 | | | |
| Arsenic | 42.68 | 0.50 | 1.50 | μg/L | 50.000 | | 85.4 | 85-115 | 3.03 | 20 | |
| Silver | 21.80 | 0.010 | 0.100 | μg/L | 25.000 | | 87.2 | 85-115 | 4.33 | 20 | |
| LCS Dup (F811271-BSD3) | | | | | Prepared: | 12-Nov-18 | Analyzed: 2 | 20-Nov-18 | | | |
| Arsenic | 47.99 | 0.50 | 1.50 | μg/L | 50.000 | | 96.0 | 85-115 | 2.40 | 20 | |
| Matrix Spike (F811271-MS1) | | Source: | 8J01082-01 | 1 | Prepared: | 12-Nov-18 | Analyzed: | 14-Nov-18 | | | |
| Silver | 25.05 | 0.020 | 0.202 | μg/L | 25.000 | 0.267 | 99.1 | 70-130 | | | |
| Matrix Spike (F811271-MS2) | | Source: | 8J01082-10 |) | Prepared: 1 | 12-Nov-18 | Analyzed: | 14-Nov-18 | | | |
| Silver | 23.85 | 0.020 | 0.202 | μg/L | 25.000 | ND | 95.4 | 70-130 | | | |
| Matrix Spike (F811271-MS3) | | Source: | 8J01083-01 | 1 | Prepared: 1 | 12-Nov-18 | Analyzed: | 14-Nov-18 | | | |
| Arsenic | 58.20 | 1.01 | 3.04 | μg/L | 50.000 | 3.36 | 110 | 70-130 | | | |
| Silver | 21.78 | 0.020 | 0.202 | μg/L | 25.000 | ND | 87.1 | 70-130 | | | |
| Matrix Spike (F811271-MS4) | | Source: | 8J01083-0 | 7 | Prepared: | 12-Nov-18 | 14-Nov-18 | | | | |
| Arsenic | 59.38 | 1.01 | 3.04 | μg/L | 50.000 | 3.47 | 112 | 70-130 | | | |
| Silver | 21.63 | 0.020 | 0.202 | $\mu g/L$ | 25.000 | ND | 86.5 | 70-130 | | | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 15-Jan-19 17:30

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------------------------------|---------------|--------------------|--------------------|-----------|----------------|------------------|-------------|----------------|-----|--------------|-------|
| Batch F811271 - EFGS SOP2836 Cl | osed Vessel W | ater Oven | Digestion | | | | | | | | |
| Matrix Spike (F811271-MS5) | | Source: | 8J01082-01 | | Prepared: | 12-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Silver | 16.82 | 0.020 | 0.202 | $\mu g/L$ | 20.500 | 0.267 | 80.7 | 70-130 | | | AS |
| Matrix Spike (F811271-MS6) | | Source: | 8J01082-10 | | Prepared: | 12-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Silver | 14.78 | 0.020 | 0.202 | $\mu g/L$ | 20.500 | ND | 72.1 | 70-130 | | | AS |
| Matrix Spike (F811271-MS7) | | Source: | 8J01083-01 | | Prepared: | 12-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Arsenic | 371.4 | 1.01 | 3.03 | μg/L | 410.00 | 3.36 | 89.8 | 70-130 | | | AS |
| Silver | 15.09 | 0.020 | 0.202 | $\mu g/L$ | 20.500 | ND | 73.6 | 70-130 | | | AS |
| Matrix Spike (F811271-MS8) | | Source: | 8J01083-07 | | Prepared: | 12-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Arsenic | 363.2 | 1.01 | 3.03 | μg/L | 410.00 | 3.47 | 87.7 | 70-130 | | | AS |
| Silver | 14.85 | 0.020 | 0.202 | $\mu g/L$ | 20.500 | ND | 72.4 | 70-130 | | | AS |
| Matrix Spike (F811271-MS9) | | Source: | 8J01082-01 | | Prepared: | 12-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Arsenic | 47.34 | 1.01 | 3.04 | μg/L | 50.000 | ND | 94.7 | 70-130 | | | |
| Silver | 23.28 | 0.020 | 0.202 | $\mu g/L$ | 25.000 | 0.267 | 92.1 | 70-130 | | | |
| Matrix Spike (F811271-MSA) | | Source: | 8J01082-10 | | Prepared: | 12-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Arsenic | 53.92 | 1.01 | 3.04 | μg/L | 50.000 | 4.57 | 98.7 | 70-130 | | | |
| Silver | 23.56 | 0.020 | 0.202 | $\mu g/L$ | 25.000 | ND | 94.2 | 70-130 | | | |
| Matrix Spike (F811271-MSB) | | Source: | 8J01082-01 | | Prepared: | 12-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Arsenic | 402.8 | 1.01 | 3.03 | μg/L | 410.00 | ND | 98.2 | 70-130 | | | AS |
| Silver | 20.62 | 0.020 | 0.202 | $\mu g/L$ | 20.500 | 0.267 | 99.3 | 70-130 | | | AS |
| Matrix Spike (F811271-MSC) | | Source: | 8J01082-10 | | Prepared: | 12-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Arsenic | 419.0 | 1.01 | 3.03 | μg/L | 410.00 | 4.57 | 101 | 70-130 | | | AS |
| Silver | 20.11 | 0.020 | 0.202 | $\mu g/L$ | 20.500 | ND | 98.1 | 70-130 | | | AS |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls15-Jan-19 17:30

Quality Control Data

| | | Detection | Reporting | | Spike | Source | | %REC | | RPD | |
|----------------------------------|--------------|------------|------------|-----------|---|-----------|-------------|----------|-------|-------|-----------|
| Analyte | Result | Limit | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | Notes |
| Batch F811271 - EFGS SOP2836 Clo | sed Vessel W | Vater Oven | Digestion | | | | | | | | |
| Matrix Spike (F811271-MSD) | | Source: | 8J01082-01 | | Prepared: 1 | 12-Nov-18 | Analyzed: 2 | 0-Nov-18 | | | |
| Arsenic | 47.99 | 2.53 | 7.59 | μg/L | 50.000 | ND | 96.0 | 70-130 | | | |
| Matrix Spike Dup (F811271-MSD1) | | Source: | 8J01082-01 | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Silver | 25.17 | 0.020 | 0.202 | $\mu g/L$ | 25.000 | 0.267 | 99.6 | 70-130 | 0.485 | 20 | |
| Matrix Spike Dup (F811271-MSD2) | | Source: | 8J01082-10 |) | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Silver | 24.91 | 0.020 | 0.202 | $\mu g/L$ | 25.000 | ND | 99.6 | 70-130 | 4.33 | 20 | |
| Matrix Spike Dup (F811271-MSD3) | | Source: | 8J01083-01 | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Arsenic | 57.97 | 1.01 | 3.04 | $\mu g/L$ | 50.000 | 3.36 | 109 | 70-130 | 0.401 | 20 | |
| Silver | 21.73 | 0.020 | 0.202 | $\mu g/L$ | 25.000 | ND | 86.9 | 70-130 | 0.206 | 20 | |
| Matrix Spike Dup (F811271-MSD4) | | Source: | 8J01083-07 | , | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Arsenic | 58.98 | 1.01 | 3.04 | μg/L | 50.000 | 3.47 | 111 | 70-130 | 0.674 | 20 | |
| Silver | 22.47 | 0.020 | 0.202 | $\mu g/L$ | 25.000 | ND | 89.9 | 70-130 | 3.80 | 20 | |
| Matrix Spike Dup (F811271-MSD5) | | Source: | 8J01082-01 | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Silver | 16.03 | 0.020 | 0.202 | μg/L | 20.500 | 0.267 | 76.9 | 70-130 | 4.77 | 20 | AS |
| Matrix Spike Dup (F811271-MSD6) | | Source: | 8J01082-10 |) | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Silver | 15.97 | 0.020 | 0.202 | $\mu g/L$ | 20.500 | ND | 77.9 | 70-130 | 7.76 | 20 | AS |
| Matrix Spike Dup (F811271-MSD7) | | Source: | 8J01083-01 | | Prepared: 12-Nov-18 Analyzed: 14-Nov-18 | | | | | | |
| Arsenic | 340.7 | 1.01 | 3.03 | $\mu g/L$ | 410.00 | 3.36 | 82.3 | 70-130 | 8.64 | 20 | AS |
| Silver | 13.99 | 0.020 | 0.202 | $\mu g/L$ | 20.500 | ND | 68.2 | 70-130 | 7.60 | 20 | AS, QM-05 |
| Matrix Spike Dup (F811271-MSD8) | | Source: | 8J01083-07 | , | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Arsenic | 368.5 | 1.01 | 3.03 | μg/L | 410.00 | 3.47 | 89.0 | 70-130 | 1.46 | 20 | AS |
| Silver | 14.91 | 0.020 | 0.202 | $\mu g/L$ | 20.500 | ND | 72.7 | 70-130 | 0.386 | 20 | AS |
| | | | | | | | | | | | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls15-Jan-19 17:30

Quality Control Data

| | | Detection | Reporting | | Spike | Source | | %REC | | RPD | |
|----------------------------------|--------------|------------|------------|-----------|-----------|-----------|-------------|-----------|-------|-------|-------|
| Analyte | Result | Limit | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | Notes |
| Batch F811271 - EFGS SOP2836 Clo | sed Vessel V | Vater Oven | Digestion | | | | | | | | |
| Matrix Spike Dup (F811271-MSD9) | | Source: | 8J01082-01 | | Prepared: | 12-Nov-18 | Analyzed: 1 | 16-Nov-18 | | | |
| Arsenic | 49.40 | 1.01 | 3.04 | μg/L | 50.000 | ND | 98.8 | 70-130 | 4.27 | 20 | |
| Silver | 24.61 | 0.020 | 0.202 | $\mu g/L$ | 25.000 | 0.267 | 97.4 | 70-130 | 5.52 | 20 | |
| Matrix Spike Dup (F811271-MSDA) | | Source: | 8J01082-10 | | Prepared: | 12-Nov-18 | Analyzed: 1 | 16-Nov-18 | | | |
| Arsenic | 53.57 | 1.01 | 3.04 | μg/L | 50.000 | 4.57 | 98.0 | 70-130 | 0.649 | 20 | |
| Silver | 23.92 | 0.020 | 0.202 | $\mu g/L$ | 25.000 | ND | 95.7 | 70-130 | 1.54 | 20 | |
| Matrix Spike Dup (F811271-MSDB) | | Source: | 8J01082-01 | | Prepared: | 12-Nov-18 | Analyzed: 1 | 16-Nov-18 | | | |
| Arsenic | 403.7 | 1.01 | 3.03 | μg/L | 410.00 | ND | 98.5 | 70-130 | 0.219 | 20 | AS |
| Silver | 20.79 | 0.020 | 0.202 | $\mu g/L$ | 20.500 | 0.267 | 100 | 70-130 | 0.794 | 20 | AS |
| Matrix Spike Dup (F811271-MSDC) | | Source: | 8J01082-10 | 1 | Prepared: | 12-Nov-18 | Analyzed: 1 | 16-Nov-18 | | | |
| Arsenic | 421.7 | 1.01 | 3.03 | μg/L | 410.00 | 4.57 | 102 | 70-130 | 0.650 | 20 | AS |
| Silver | 20.20 | 0.020 | 0.202 | $\mu g/L$ | 20.500 | ND | 98.6 | 70-130 | 0.470 | 20 | AS |
| Matrix Spike Dup (F811271-MSDD) | | Source: | 8J01082-01 | | Prepared: | 12-Nov-18 | Analyzed: 2 | 20-Nov-18 | | | |
| Arsenic | 47.81 | 2.53 | 7.59 | μg/L | 50.000 | ND | 95.6 | 70-130 | 0.386 | 20 | |
| Matrix Spike Dup (F811271-MSDE) | | Source: | 8J01082-10 | | Prepared: | 12-Nov-18 | Analyzed: 2 | 21-Nov-18 | | | |
| Arsenic | 51.28 | 2.53 | 7.59 | μg/L | 50.000 | 4.57 | 93.4 | 70-130 | 1.98 | 20 | |
| Matrix Spike Dup (F811271-MSDF) | | Source: | 8J01082-01 | | Prepared: | 12-Nov-18 | Analyzed: 2 | 20-Nov-18 | | | |
| Arsenic | 1003 | 2.52 | 7.57 | μg/L | 1025.0 | ND | 97.9 | 70-130 | 0.485 | 20 | AS |
| Matrix Spike Dup (F811271-MSDG) | | Source: | 8J01082-10 | | Prepared: | 12-Nov-18 | Analyzed: 2 | 21-Nov-18 | | | |
| Arsenic | 1020 | 2.52 | 7.57 | μg/L | 1025.0 | 4.57 | 99.0 | 70-130 | 0.361 | 20 | AS |
| Matrix Spike (F811271-MSE) | | Source: | 8J01082-10 | | Prepared: | 12-Nov-18 | Analyzed: 2 | 21-Nov-18 | | | |
| Arsenic | 52.30 | 2.53 | 7.59 | μg/L | 50.000 | 4.57 | 95.5 | 70-130 | | | |
| | | | | | | | | | | | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported: Portsmouth NH, 03801 Project Manager: Tim Puls 15-Jan-19 17:30

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------------------------------------|-----------------|--------------------|--------------------|-----------|----------------|------------------|-------------|----------------|-----|--------------|-------|
| Batch F811271 - EFGS SOP2836 (| Closed Vessel W | /ater Oven | Digestion | | | | | | | | |
| Matrix Spike (F811271-MSF) | | Source: | 8J01082-01 | | Prepared: 1 | 2-Nov-18 | Analyzed: 2 | 0-Nov-18 | | | |
| Arsenic | 1008 | 2.52 | 7.57 | μg/L | 1025.0 | ND | 98.3 | 70-130 | | | A |
| Matrix Spike (F811271-MSG) | | Source: | 8J01082-10 | | Prepared: 1 | 2-Nov-18 | Analyzed: 2 | 1-Nov-18 | | | |
| Arsenic | 1016 | 2.52 | 7.57 | μg/L | 1025.0 | 4.57 | 98.7 | 70-130 | | | A |
| Batch F812486 - EFGS SOP2820 I | Reductive Prec | ipitation | | | | | | | | | |
| Blank (F812486-BLK1) | | | | | Prepared: (|)2-Jan-19 A | nalyzed: 04 | 1-Jan-19 | | | |
| Chromium | 0.07 | 0.01 | 0.25 | μg/L | | | | | | | |
| Nickel | 0.23 | 0.08 | 0.25 | $\mu g/L$ | | | | | | | |
| Zinc | 0.47 | 0.14 | 0.50 | $\mu g/L$ | | | | | | | |
| Silver | 0.02 | 0.01 | 0.10 | $\mu g/L$ | | | | | | | |
| Cadmium | 0.022 | 0.020 | 0.100 | $\mu g/L$ | | | | | | | |
| Lead | ND | 0.020 | 0.100 | $\mu g/L$ | | | | | | | Ţ |
| Blank (F812486-BLK2) | | | | | Prepared: (|)2-Jan-19 A | nalyzed: 04 | 1-Jan-19 | | | |
| Chromium | 0.05 | 0.01 | 0.25 | μg/L | | | | | | | |
| Nickel | 0.21 | 0.08 | 0.25 | $\mu g/L$ | | | | | | | |
| Zinc | 0.31 | 0.14 | 0.50 | $\mu g/L$ | | | | | | | |
| Silver | 0.02 | 0.01 | 0.10 | $\mu g/L$ | | | | | | | |
| Cadmium | 0.020 | 0.020 | 0.100 | $\mu g/L$ | | | | | | | |
| Lead | ND | 0.020 | 0.100 | $\mu g/L$ | | | | | | | Ţ |
| Blank (F812486-BLK3) | | | | | Prepared: (|)2-Jan-19 A | nalyzed: 07 | 7-Jan-19 | | | |
| Copper | ND | 0.08 | 0.25 | μg/L | | | | | | | Ţ |
| Arsenic | ND | 0.04 | 0.38 | $\mu g/L$ | | | | | | | Ţ |
| Selenium | ND | 0.16 | 1.50 | $\mu g/L$ | | | | | | | Ţ |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls15-Jan-19 17:30

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|-------------------------------------|-----------------|--------------------|--------------------|-----------|----------------|------------------|-------------|----------------|------|--------------|-------|
| Batch F812486 - EFGS SOP2820 | Reductive Preci | pitation | | | | | | | | | |
| Blank (F812486-BLK4) | | | | | Prepared: (|)2-Jan-19 A | nalyzed: 07 | '-Jan-19 | | | |
| Copper | ND | 0.08 | 0.25 | $\mu g/L$ | | | | | | | U |
| Arsenic | ND | 0.04 | 0.38 | $\mu g/L$ | | | | | | | U |
| Selenium | ND | 0.16 | 1.50 | $\mu g/L$ | | | | | | | U |
| LCS (F812486-BS1) | | | | | Prepared: (|)2-Jan-19 A | nalyzed: 04 | -Jan-19 | | | |
| Silver | 4.68 | 0.05 | 0.50 | $\mu g/L$ | 6.2500 | | 74.9 | 30-151 | | | |
| LCS (F812486-BS2) | | | | | Prepared: (|)2-Jan-19 A | nalyzed: 04 | -Jan-19 | | | |
| Chromium | 10.47 | 0.01 | 0.25 | μg/L | 12.498 | | 83.8 | 75-125 | | | |
| Nickel | 9.55 | 0.08 | 0.25 | $\mu g/L$ | 12.502 | | 76.4 | 71-130 | | | |
| Lead | 10.58 | 0.020 | 0.100 | $\mu g/L$ | 12.502 | | 84.6 | 62-129 | | | |
| LCS (F812486-BS3) | | | | | Prepared: (|)2-Jan-19 A | nalyzed: 04 | -Jan-19 | | | |
| Zinc | 11.13 | 0.69 | 2.50 | μg/L | 12.502 | | 89.0 | 75-95 | | | |
| Cadmium | 8.920 | 0.101 | 0.500 | $\mu g/L$ | 10.002 | | 89.2 | 73-105 | | | |
| LCS (F812486-BS4) | | | | | Prepared: (|)2-Jan-19 A | nalyzed: 07 | '-Jan-19 | | | |
| Copper | 10.92 | 0.08 | 0.25 | μg/L | 12.500 | | 87.4 | 77-109 | | | |
| Arsenic | 9.84 | 0.04 | 0.38 | $\mu g/L$ | 12.500 | | 78.8 | 58-110 | | | |
| Selenium | 11.11 | 0.16 | 1.50 | $\mu g/L$ | 12.498 | | 88.9 | 70-120 | | | |
| LCS Dup (F812486-BSD1) | | | | | Prepared: (|)2-Jan-19 A | nalyzed: 04 | -Jan-19 | | | |
| Silver | 2.54 | 0.05 | 0.50 | μg/L | 6.2500 | | 40.7 | 30-151 | 59.2 | 20 | QR-06 |
| LCS Dup (F812486-BSD2) | | | | | Prepared: (|)2-Jan-19 A | nalyzed: 04 | -Jan-19 | | | |
| Chromium | 10.12 | 0.01 | 0.25 | μg/L | 12.498 | | 80.9 | 75-125 | 3.43 | 20 | |
| Nickel | 9.17 | 0.08 | 0.25 | μg/L | 12.502 | | 73.4 | 71-130 | 4.04 | 20 | |
| Lead | 10.26 | 0.020 | 0.100 | μg/L | 12.502 | | 82.1 | 62-129 | 3.06 | 20 | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls15-Jan-19 17:30

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|--------------------------------|----------------|--------------------|--------------------|-----------|----------------|------------------|-------------|----------------|-------|--------------|-------|
| Batch F812486 - EFGS SOP2820 R | eductive Preci | pitation | | | | | | | | | |
| LCS Dup (F812486-BSD3) | | | | | Prepared: 0 |)2-Jan-19 A | nalyzed: 04 | 1-Jan-19 | | | |
| Zinc | 9.46 | 0.69 | 2.50 | μg/L | 12.502 | | 75.7 | 75-95 | 16.2 | 20 | |
| Cadmium | 8.082 | 0.101 | 0.500 | $\mu g/L$ | 10.002 | | 80.8 | 73-105 | 9.86 | 20 | |
| LCS Dup (F812486-BSD4) | | | | | Prepared: 0 |)2-Jan-19 A | nalyzed: 07 | 7-Jan-19 | | | |
| Copper | 12.19 | 0.08 | 0.25 | μg/L | 12.500 | | 97.5 | 77-109 | 11.0 | 20 | |
| Arsenic | 9.93 | 0.04 | 0.38 | $\mu g/L$ | 12.500 | | 79.4 | 58-110 | 0.825 | 20 | |
| Selenium | 11.07 | 0.16 | 1.50 | $\mu g/L$ | 12.498 | | 88.6 | 70-120 | 0.327 | 25 | |
| Matrix Spike (F812486-MS1) | | Source: | 8J01083-07 | , | Prepared: 0 |)2-Jan-19 A | nalyzed: 04 | 1-Jan-19 | | | |
| Silver | 4.40 | 0.05 | 0.50 | μg/L | 6.2500 | ND | 70.4 | 30-151 | | | |
| Cadmium | 9.480 | 0.101 | 0.500 | $\mu g/L$ | 10.002 | ND | 94.8 | 73-105 | | | |
| Matrix Spike (F812486-MS2) | | Source: | 8K00762-0 | 8 | Prepared: 0 |)2-Jan-19 A | nalyzed: 04 | 1-Jan-19 | | | |
| Silver | 5.83 | 0.05 | 0.50 | μg/L | 6.2500 | ND | 93.2 | 30-151 | | | |
| Cadmium | 9.482 | 0.101 | 0.500 | $\mu g/L$ | 10.002 | ND | 94.8 | 73-105 | | | |
| Matrix Spike (F812486-MS3) | | Source: | 8J01083-07 | , | Prepared: 0 |)2-Jan-19 A | nalyzed: 04 | 1-Jan-19 | | | |
| Chromium | 11.63 | 0.01 | 0.25 | μg/L | 12.498 | 0.13 | 92.0 | 75-125 | | | |
| Nickel | 6.93 | 0.08 | 0.25 | $\mu g/L$ | 12.502 | 0.41 | 52.2 | 71-130 | | | QM-05 |
| Zinc | 12.02 | 0.14 | 0.50 | $\mu g/L$ | 12.502 | 0.91 | 88.9 | 75-95 | | | |
| Lead | 11.71 | 0.020 | 0.100 | $\mu g/L$ | 12.502 | 0.024 | 93.5 | 62-129 | | | |
| Matrix Spike (F812486-MS4) | | Source: | 8K00762-0 | 8 | Prepared: 0 |)2-Jan-19 A | nalyzed: 04 | 1-Jan-19 | | | |
| Chromium | 12.04 | 0.01 | 0.25 | μg/L | 12.498 | 0.22 | 94.5 | 75-125 | | | |
| Nickel | 10.72 | 0.08 | 0.25 | $\mu g/L$ | 12.502 | 0.68 | 80.3 | 71-130 | | | |
| Zinc | 13.54 | 0.14 | 0.50 | $\mu g/L$ | 12.502 | 2.11 | 91.4 | 75-95 | | | |
| Lead | 11.97 | 0.020 | 0.100 | $\mu g/L$ | 12.502 | 0.103 | 94.9 | 62-129 | | | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls15-Jan-19 17:30

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|----------------------------------|--------------|--------------------|--------------------|-----------|----------------|------------------|-------------|----------------|-------|--------------|-------|
| Batch F812486 - EFGS SOP2820 Rec | ductive Prec | ipitation | | | | | | | | | |
| Matrix Spike (F812486-MS5) | | Source: | 8J01083-07 | RE1 | Prepared: 0 |)2-Jan-19 A | nalyzed: 07 | 7-Jan-19 | | | |
| Copper | 13.48 | 0.08 | 0.25 | μg/L | 12.500 | 0.53 | 104 | 77-109 | | | |
| Arsenic | 11.88 | 0.04 | 0.38 | $\mu g/L$ | 12.500 | 0.88 | 88.0 | 58-110 | | | |
| Selenium | 8.22 | 0.16 | 1.50 | $\mu g/L$ | 12.498 | ND | 65.8 | 42-131 | | | |
| Matrix Spike (F812486-MS6) | | Source: | 8K00762-0 | 8RE1 | Prepared: 0 | 2-Jan-19 A | nalyzed: 07 | 7-Jan-19 | | | |
| Copper | 13.24 | 0.08 | 0.25 | $\mu g/L$ | 12.500 | 0.58 | 101 | 77-109 | | | |
| Arsenic | 12.14 | 0.04 | 0.38 | $\mu g/L$ | 12.500 | 0.76 | 91.0 | 58-110 | | | |
| Selenium | 11.75 | 0.16 | 1.50 | $\mu g/L$ | 12.498 | ND | 94.0 | 42-131 | | | |
| Matrix Spike Dup (F812486-MSD1) | | Source: | 8J01083-07 | , | Prepared: 0 |)2-Jan-19 A | nalyzed: 04 | 4-Jan-19 | | | |
| Silver | 5.27 | 0.05 | 0.50 | $\mu g/L$ | 6.2500 | ND | 84.3 | 30-151 | 17.9 | 20 | |
| Cadmium | 9.298 | 0.101 | 0.500 | $\mu g/L$ | 10.002 | ND | 93.0 | 73-105 | 1.93 | 20 | |
| Matrix Spike Dup (F812486-MSD2) | | Source: | 8K00762-0 | 8 | Prepared: 0 |)2-Jan-19 A | nalyzed: 04 | 4-Jan-19 | | | |
| Silver | 5.48 | 0.05 | 0.50 | μg/L | 6.2500 | ND | 87.7 | 30-151 | 6.10 | 20 | |
| Cadmium | 8.670 | 0.101 | 0.500 | $\mu g/L$ | 10.002 | ND | 86.7 | 73-105 | 8.94 | 20 | |
| Matrix Spike Dup (F812486-MSD3) | | Source: | 8J01083-07 | , | Prepared: 0 |)2-Jan-19 A | nalyzed: 04 | 4-Jan-19 | | | |
| Chromium | 12.13 | 0.01 | 0.25 | μg/L | 12.498 | 0.13 | 96.0 | 75-125 | 4.20 | 20 | |
| Nickel | 8.43 | 0.08 | 0.25 | $\mu g/L$ | 12.502 | 0.41 | 64.2 | 71-130 | 19.5 | 20 | QM-05 |
| Zinc | 12.08 | 0.14 | 0.50 | $\mu g/L$ | 12.502 | 0.91 | 89.3 | 75-95 | 0.499 | 20 | |
| Lead | 12.27 | 0.020 | 0.100 | $\mu g/L$ | 12.502 | 0.024 | 98.0 | 62-129 | 4.67 | 20 | |
| Matrix Spike Dup (F812486-MSD4) | | Source: | 8K00762-0 | 8 | Prepared: 0 |)2-Jan-19 A | nalyzed: 04 | 4-Jan-19 | | | |
| Chromium | 11.57 | 0.01 | 0.25 | μg/L | 12.498 | 0.22 | 90.8 | 75-125 | 3.99 | 20 | |
| Nickel | 10.56 | 0.08 | 0.25 | $\mu g/L$ | 12.502 | 0.68 | 79.0 | 71-130 | 1.53 | 20 | |
| Zinc | 12.85 | 0.14 | 0.50 | $\mu g/L$ | 12.502 | 2.11 | 85.9 | 75-95 | 5.21 | 20 | |
| Lead | 11.54 | 0.020 | 0.100 | $\mu g/L$ | 12.502 | 0.103 | 91.5 | 62-129 | 3.61 | 20 | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls15-Jan-19 17:30

Quality Control Data

| | | Detection | Reporting | | Spike | Source | | %REC | | RPD | |
|----------------------------------|--------------|-----------|------------|-----------|-------------|------------|-------------|----------|--------|-------|-------|
| Analyte | Result | Limit | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | Notes |
| | | | | | | | | | | | |
| Batch F812486 - EFGS SOP2820 Rec | ductive Prec | ipitation | | | | | | | | | |
| Matrix Spike Dup (F812486-MSD5) | | Source: | 8J01083-07 | RE1 | Prepared: 0 | 2-Jan-19 A | nalyzed: 07 | 7-Jan-19 | | | |
| Copper | 13.63 | 0.08 | 0.25 | $\mu g/L$ | 12.500 | 0.53 | 105 | 77-109 | 1.10 | 20 | |
| Arsenic | 12.09 | 0.04 | 0.38 | $\mu g/L$ | 12.500 | 0.88 | 89.6 | 58-110 | 1.71 | 20 | |
| Selenium | 8.23 | 0.16 | 1.50 | $\mu g/L$ | 12.498 | ND | 65.8 | 42-131 | 0.0359 | 25 | |
| Matrix Spike Dup (F812486-MSD6) | | Source: | 8K00762-0 | 8RE1 | Prepared: 0 | 2-Jan-19 A | nalyzed: 07 | 7-Jan-19 | | | |
| Copper | 13.39 | 0.08 | 0.25 | μg/L | 12.500 | 0.58 | 102 | 77-109 | 1.14 | 20 | |
| Arsenic | 12.22 | 0.04 | 0.38 | $\mu g/L$ | 12.500 | 0.76 | 91.7 | 58-110 | 0.696 | 20 | |
| Selenium | 11.41 | 0.16 | 1.50 | μg/L | 12.498 | ND | 91.3 | 42-131 | 2.92 | 25 | |

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RPD

Underwood Engineers Project: Trace Metals In Wastewater

Detection Reporting

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls15-Jan-19 17:30

Quality Control Data

Spike

Source

%REC

| Analyte | Result | Limit | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | Notes |
|-----------------------------|--------------------|-----------|-----------|-----------|-------------|-----------|-------------|----------|-----|-------|-------|
| Batch F811271 - EFGS SOP283 | 36 Closed Vessel W | ater Oven | Digestion | | | | | | | | |
| Blank (F811271-BLK2) | | | | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Cadmium | ND | 0.008 | 0.020 | μg/L | | | | | | | |
| Blank (F811271-BLK3) | | | | | Prepared: | 12-Nov-18 | Analyzed: 1 | 5-Nov-18 | | | |
| Chromium | ND | 0.02 | 0.10 | μg/L | | | | | | | 1 |
| Nickel | ND | 0.04 | 0.10 | $\mu g/L$ | | | | | | | |
| Copper | ND | 0.02 | 0.10 | $\mu g/L$ | | | | | | | |
| Zinc | 0.16 | 0.16 | 0.50 | $\mu g/L$ | | | | | | | |
| Cadmium | ND | 0.008 | 0.020 | $\mu g/L$ | | | | | | | |
| Thallium | ND | 0.006 | 0.020 | $\mu g/L$ | | | | | | | |
| Lead | ND | 0.005 | 0.040 | $\mu g/L$ | | | | | | | |
| Blank (F811271-BLK4) | | | | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 5-Nov-18 | | | |
| Chromium | ND | 0.02 | 0.10 | μg/L | | | | | | | |
| Nickel | ND | 0.04 | 0.10 | $\mu g/L$ | | | | | | | |
| Copper | ND | 0.02 | 0.10 | $\mu g/L$ | | | | | | | |
| Zinc | 0.32 | 0.16 | 0.50 | $\mu g/L$ | | | | | | | |
| Cadmium | ND | 0.008 | 0.020 | $\mu g/L$ | | | | | | | |
| Thallium | ND | 0.006 | 0.020 | $\mu g/L$ | | | | | | | |
| Lead | ND | 0.005 | 0.040 | $\mu g/L$ | | | | | | | |
| LCS (F811271-BS2) | | | | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 5-Nov-18 | | | |
| Zinc | 47.20 | 0.80 | 2.50 | μg/L | 50.010 | | 94.4 | 85-115 | | | |
| Cadmium | 36.41 | 0.040 | 0.100 | μg/L | 40.010 | | 91.0 | 85-115 | | | |
| Thallium | 35.20 | 0.030 | 0.100 | μg/L | 39.990 | | 88.0 | 85-115 | | | |
| Lead | 46.08 | 0.025 | 0.200 | $\mu g/L$ | 50.010 | | 92.1 | 85-115 | | | |
| LCS (F811271-BS3) | | | | | Prepared: | 12-Nov-18 | Analyzed: 2 | 0-Nov-18 | | | |
| Chromium | 48.05 | 0.10 | 0.50 | μg/L | 49.990 | | 96.1 | 85-115 | | | |
| Nickel | 49.10 | 0.20 | 0.50 | $\mu g/L$ | 50.010 | | 98.2 | 85-115 | | | |
| Copper | 48.43 | 0.10 | 0.50 | $\mu g/L$ | 50.000 | | 96.9 | 85-115 | | | |
| Zinc | 48.46 | 0.80 | 2.50 | μg/L | 50.010 | | 96.9 | 85-115 | | | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls15-Jan-19 17:30

Quality Control Data

| Analida | D1 | Detection Limit | Reporting Limit | 11 | Spike | Source | %REC | %REC | DDD | RPD Limit | NI-4 |
|--------------------------------|-----------------|--------------------|--------------------|-----------|-------------|-------------|-------------|-----------|------|--------------|-------|
| Analyte | Result | Limit | Limit | Units | Level | Result | %KEC | Limits | RPD | Limit | Notes |
| Batch F811271 - EFGS SOP2836 (| Closed Vessel W | ater Oven | Digestion | | | | | | | | |
| LCS Dup (F811271-BSD2) | | | | | Prepared: 1 | 12-Nov-18 A | Analyzed: 1 | 5-Nov-18 | | | |
| Zinc | 43.41 | 0.80 | 2.50 | μg/L | 50.010 | | 86.8 | 85-115 | 8.36 | 20 | |
| Cadmium | 35.03 | 0.040 | 0.100 | $\mu g/L$ | 40.010 | | 87.6 | 85-115 | 3.86 | 20 | |
| Thallium | 36.16 | 0.030 | 0.100 | $\mu g/L$ | 39.990 | | 90.4 | 85-115 | 2.68 | 20 | |
| Lead | 46.71 | 0.025 | 0.200 | $\mu g/L$ | 50.010 | | 93.4 | 85-115 | 1.36 | 20 | |
| LCS Dup (F811271-BSD3) | | | | | Prepared: 1 | 12-Nov-18 A | Analyzed: 2 | 20-Nov-18 | | | |
| Chromium | 49.37 | 0.10 | 0.50 | μg/L | 49.990 | | 98.8 | 85-115 | 2.70 | 20 | |
| Nickel | 50.87 | 0.20 | 0.50 | $\mu g/L$ | 50.010 | | 102 | 85-115 | 3.53 | 20 | |
| Copper | 50.70 | 0.10 | 0.50 | $\mu g/L$ | 50.000 | | 101 | 85-115 | 4.57 | 20 | |
| Zinc | 49.72 | 0.80 | 2.50 | $\mu g/L$ | 50.010 | | 99.4 | 85-115 | 2.56 | 20 | |
| Matrix Spike (F811271-MS1) | | Source: | 8J01082-01 | | Prepared: 1 | 12-Nov-18 A | Analyzed: 1 | 4-Nov-18 | | | |
| Thallium | 38.04 | 0.061 | 0.202 | μg/L | 39.990 | ND | 95.1 | 70-130 | | | |
| Lead | 51.14 | 0.051 | 0.405 | $\mu g/L$ | 50.010 | 2.002 | 98.2 | 70-130 | | | |
| Matrix Spike (F811271-MS2) | | Source: | 8J01082-10 |) | Prepared: 1 | 12-Nov-18 A | Analyzed: 1 | 4-Nov-18 | | | |
| Thallium | 39.59 | 0.061 | 0.202 | μg/L | 39.990 | ND | 99.0 | 70-130 | | | |
| Lead | 51.25 | 0.051 | 0.405 | $\mu g/L$ | 50.010 | 0.224 | 102 | 70-130 | | | |
| Matrix Spike (F811271-MS3) | | Source: | 8J01083-01 | | Prepared: 1 | 12-Nov-18 A | Analyzed: 1 | 4-Nov-18 | | | |
| Chromium | 48.61 | 0.20 | 1.01 | μg/L | 49.990 | 0.43 | 96.4 | 70-130 | | | |
| Nickel | 44.70 | 0.40 | 1.01 | $\mu g/L$ | 50.010 | 0.62 | 88.1 | 70-130 | | | |
| Copper | 44.41 | 0.20 | 1.01 | $\mu g/L$ | 50.000 | 0.61 | 87.6 | 70-130 | | | |
| Zinc | 57.34 | 1.62 | 5.06 | $\mu g/L$ | 50.010 | 2.90 | 109 | 70-130 | | | |
| Cadmium | 37.45 | 0.081 | 0.202 | $\mu g/L$ | 40.010 | ND | 93.6 | 70-130 | | | |
| Thallium | 45.92 | 0.061 | 0.202 | $\mu g/L$ | 39.990 | ND | 115 | 70-130 | | | |
| Lead | 55.39 | 0.051 | 0.405 | $\mu g/L$ | 50.010 | 0.314 | 110 | 70-130 | | | |
| | | | | | | | | | | | |

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RPD

Underwood Engineers Project: Trace Metals In Wastewater

Detection Reporting

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls15-Jan-19 17:30

Quality Control Data

Spike

Source

%REC

| Analyte | Result | Limit | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | Notes |
|------------------------------|-----------------|-----------|-----------|-----------|-------------|----------|-------------|----------|-----|-------|----------|
| Batch F811271 - EFGS SOP2836 | Closed Vessel W | ater Oven | Digestion | | | | | | | | |
| Matrix Spike (F811271-MS4) | | Source: | 8J01083-0 | 7 | Prepared: 1 | 2-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Chromium | 48.26 | 0.20 | 1.01 | μg/L | 49.990 | ND | 96.5 | 70-130 | | | |
| Nickel | 44.11 | 0.40 | 1.01 | $\mu g/L$ | 50.010 | 0.63 | 87.0 | 70-130 | | | |
| Copper | 43.40 | 0.20 | 1.01 | $\mu g/L$ | 50.000 | 0.55 | 85.7 | 70-130 | | | |
| Zinc | 60.07 | 1.62 | 5.06 | $\mu g/L$ | 50.010 | 2.43 | 115 | 70-130 | | | |
| Cadmium | 37.46 | 0.081 | 0.202 | $\mu g/L$ | 40.010 | ND | 93.6 | 70-130 | | | |
| Thallium | 46.91 | 0.061 | 0.202 | $\mu g/L$ | 39.990 | ND | 117 | 70-130 | | | |
| Lead | 55.92 | 0.051 | 0.405 | $\mu g/L$ | 50.010 | ND | 112 | 70-130 | | | |
| Matrix Spike (F811271-MS5) | | Source: | 8J01082-0 | 1 | Prepared: 1 | 2-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Cadmium | 33.90 | 0.081 | 0.202 | $\mu g/L$ | 41.000 | ND | 82.7 | 70-130 | | | A |
| Thallium | 15.39 | 0.061 | 0.202 | $\mu g/L$ | 20.500 | ND | 75.1 | 70-130 | | | A |
| Lead | 80.71 | 0.050 | 0.404 | $\mu g/L$ | 102.50 | 2.002 | 76.8 | 70-130 | | | A |
| Matrix Spike (F811271-MS6) | | Source: | 8J01082-1 | 0 | Prepared: 1 | 2-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Thallium | 14.36 | 0.061 | 0.202 | $\mu g/L$ | 20.500 | ND | 70.0 | 70-130 | | | A |
| Lead | 73.06 | 0.050 | 0.404 | $\mu g/L$ | 102.50 | 0.224 | 71.1 | 70-130 | | | A |
| Matrix Spike (F811271-MS7) | | Source: | 8J01083-0 | 1 | Prepared: 1 | 2-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Chromium | 307.1 | 0.20 | 1.01 | μg/L | 410.00 | 0.43 | 74.8 | 70-130 | | | A |
| Nickel | 353.2 | 0.40 | 1.01 | $\mu g/L$ | 512.50 | 0.62 | 68.8 | 70-130 | | | AS, QM-0 |
| Copper | 351.0 | 0.20 | 1.01 | $\mu g/L$ | 512.50 | 0.61 | 68.4 | 70-130 | | | AS, QM-0 |
| Zinc | 842.1 | 1.62 | 5.05 | $\mu g/L$ | 1025.0 | 2.90 | 81.9 | 70-130 | | | A |
| Cadmium | 31.02 | 0.081 | 0.202 | $\mu g/L$ | 41.000 | ND | 75.7 | 70-130 | | | A |
| Thallium | 19.00 | 0.061 | 0.202 | $\mu g/L$ | 20.500 | ND | 92.7 | 70-130 | | | A |
| Lead | 90.68 | 0.050 | 0.404 | $\mu g/L$ | 102.50 | 0.314 | 88.2 | 70-130 | | | A |
| Matrix Spike (F811271-MS8) | | Source: | 8J01083-0 | 7 | Prepared: 1 | 2-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Chromium | 301.3 | 0.20 | 1.01 | $\mu g/L$ | 410.00 | ND | 73.5 | 70-130 | | | A |
| Nickel | 348.5 | 0.40 | 1.01 | $\mu g/L$ | 512.50 | 0.63 | 67.9 | 70-130 | | | AS, QM-0 |
| Copper | 346.0 | 0.20 | 1.01 | $\mu g/L$ | 512.50 | 0.55 | 67.4 | 70-130 | | | AS, QM-0 |
| Zinc | 833.5 | 1.62 | 5.05 | $\mu g/L$ | 1025.0 | 2.43 | 81.1 | 70-130 | | | A |
| Cadmium | 30.12 | 0.081 | 0.202 | $\mu g/L$ | 41.000 | ND | 73.5 | 70-130 | | | A |
| Thallium | 18.75 | 0.061 | 0.202 | $\mu g/L$ | 20.500 | ND | 91.5 | 70-130 | | | A |
| Lead | 89.91 | 0.050 | 0.404 | μg/L | 102.50 | ND | 87.7 | 70-130 | | | A |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls15-Jan-19 17:30

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|------------------------------------|--------|--------------------|--------------------|-----------|----------------|------------------|-------------|----------------|-----|--------------|-------|
| Batch F811271 - EFGS SOP2836 Close | | | | | | | | | | - | |
| Matrix Spike (F811271-MS9) | | Source: | 8J01082-01 | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Zinc | 126.5 | 1.62 | 5.06 | μg/L | 50.010 | 93.15 | 66.6 | 70-130 | | | QM-07 |
| Cadmium | 37.58 | 0.081 | 0.202 | $\mu g/L$ | 40.010 | ND | 93.9 | 70-130 | | | |
| Thallium | 39.55 | 0.061 | 0.202 | $\mu g/L$ | 39.990 | ND | 98.9 | 70-130 | | | |
| Lead | 53.44 | 0.051 | 0.405 | $\mu g/L$ | 50.010 | 2.002 | 103 | 70-130 | | | |
| Matrix Spike (F811271-MSA) | | Source: | 8J01082-10 | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Zinc | 129.0 | 1.62 | 5.06 | μg/L | 50.010 | 84.88 | 88.3 | 70-130 | | | |
| Cadmium | 40.99 | 0.081 | 0.202 | $\mu g/L$ | 40.010 | 0.095 | 102 | 70-130 | | | |
| Thallium | 40.03 | 0.061 | 0.202 | $\mu g/L$ | 39.990 | ND | 100 | 70-130 | | | |
| Lead | 51.59 | 0.051 | 0.405 | $\mu g/L$ | 50.010 | 0.224 | 103 | 70-130 | | | |
| Matrix Spike (F811271-MSB) | | Source: | 8J01082-01 | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Zinc | 1073 | 1.62 | 5.05 | μg/L | 1025.0 | 93.15 | 95.6 | 70-130 | | | AS |
| Cadmium | 40.16 | 0.081 | 0.202 | $\mu g/L$ | 41.000 | ND | 98.0 | 70-130 | | | AS |
| Thallium | 19.88 | 0.061 | 0.202 | $\mu g/L$ | 20.500 | ND | 97.0 | 70-130 | | | AS |
| Lead | 104.1 | 0.050 | 0.404 | $\mu g/L$ | 102.50 | 2.002 | 99.6 | 70-130 | | | AS |
| Matrix Spike (F811271-MSC) | | Source: | 8J01082-10 | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Zinc | 1091 | 1.62 | 5.05 | μg/L | 1025.0 | 84.88 | 98.1 | 70-130 | | | AS |
| Cadmium | 41.27 | 0.081 | 0.202 | $\mu g/L$ | 41.000 | 0.095 | 100 | 70-130 | | | AS |
| Thallium | 20.16 | 0.061 | 0.202 | $\mu g/L$ | 20.500 | ND | 98.4 | 70-130 | | | AS |
| Lead | 103.5 | 0.050 | 0.404 | $\mu g/L$ | 102.50 | 0.224 | 101 | 70-130 | | | AS |
| Matrix Spike (F811271-MSD) | | Source: | 8J01082-01 | | Prepared: 1 | 12-Nov-18 | Analyzed: 2 | 0-Nov-18 | | | |
| Chromium | 49.48 | 0.51 | 2.53 | μg/L | 49.990 | ND | 99.0 | 70-130 | | | |
| Nickel | 51.31 | 1.01 | 2.53 | $\mu g/L$ | 50.010 | 2.31 | 98.0 | 70-130 | | | |
| Copper | 51.23 | 0.51 | 2.53 | $\mu g/L$ | 50.000 | 2.40 | 97.7 | 70-130 | | | |
| Zinc | 130.5 | 4.05 | 12.6 | $\mu g/L$ | 50.010 | 93.15 | 74.6 | 70-130 | | | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls15-Jan-19 17:30

Quality Control Data

| | | Detection | Reporting | | Spike | Source | | %REC | | RPD | |
|----------------------------------|--------------|------------------------------|------------|-----------|-------------|--------------------------------------|-------------|----------|-------|-------|-------|
| Analyte | Result | Limit | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | Notes |
| Batch F811271 - EFGS SOP2836 Clo | sed Vessel V | Vater Oven | Digestion | | | | | | | | |
| Matrix Spike Dup (F811271-MSD1) | | | 8J01082-01 | 1 | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Thallium | 38.24 | 0.061 | 0.202 | μg/L | 39.990 | ND | 95.6 | 70-130 | 0.530 | 20 | |
| Lead | 51.64 | 0.051 | 0.405 | $\mu g/L$ | 50.010 | 2.002 | 99.3 | 70-130 | 0.985 | 20 | |
| Matrix Spike Dup (F811271-MSD2) | | Source: | 8J01082-10 | 0 | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Thallium | 39.04 | 0.061 | 0.202 | μg/L | 39.990 | ND | 97.6 | 70-130 | 1.41 | 20 | |
| Lead | 50.73 | 0.051 | 0.405 | $\mu g/L$ | 50.010 | 0.224 | 101 | 70-130 | 1.02 | 20 | |
| Matrix Spike Dup (F811271-MSD3) | | Source: | 8J01083-01 | 1 | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Chromium | 47.60 | 0.20 | 1.01 | μg/L | 49.990 | 0.43 | 94.4 | 70-130 | 2.11 | 20 | |
| Nickel | 43.85 | 0.40 | 1.01 | $\mu g/L$ | 50.010 | 0.62 | 86.5 | 70-130 | 1.91 | 20 | |
| Copper | 43.86 | 0.20 | 1.01 | $\mu g/L$ | 50.000 | 0.61 | 86.5 | 70-130 | 1.25 | 20 | |
| Zinc | 53.91 | 1.62 | 5.06 | $\mu g/L$ | 50.010 | 2.90 | 102 | 70-130 | 6.17 | 20 | |
| Cadmium | 37.70 | 0.081 | 0.202 | $\mu g/L$ | 40.010 | ND | 94.2 | 70-130 | 0.660 | 20 | |
| Thallium | 45.45 | 0.061 | 0.202 | $\mu g/L$ | 39.990 | ND | 114 | 70-130 | 1.02 | 20 | |
| Lead | 54.63 | 0.051 | 0.405 | $\mu g/L$ | 50.010 | 0.314 | 109 | 70-130 | 1.38 | 20 | |
| Matrix Spike Dup (F811271-MSD4) | | Source: | 8J01083-07 | 7 | Prepared: 1 | Prepared: 12-Nov-18 Analyzed: 14-Nov | | 4-Nov-18 | | | |
| Chromium | 48.85 | 0.20 | 1.01 | μg/L | 49.990 | ND | 97.7 | 70-130 | 1.21 | 20 | |
| Nickel | 44.40 | 0.40 | 1.01 | $\mu g/L$ | 50.010 | 0.63 | 87.5 | 70-130 | 0.663 | 20 | |
| Copper | 44.52 | 0.20 | 1.01 | $\mu g/L$ | 50.000 | 0.55 | 87.9 | 70-130 | 2.55 | 20 | |
| Zinc | 56.63 | 1.62 | 5.06 | $\mu g/L$ | 50.010 | 2.43 | 108 | 70-130 | 5.89 | 20 | |
| Cadmium | 37.94 | 0.081 | 0.202 | $\mu g/L$ | 40.010 | ND | 94.8 | 70-130 | 1.25 | 20 | |
| Thallium | 46.85 | 0.061 | 0.202 | $\mu g/L$ | 39.990 | ND | 117 | 70-130 | 0.126 | 20 | |
| Lead | 56.12 | 0.051 | 0.405 | $\mu g/L$ | 50.010 | ND | 112 | 70-130 | 0.354 | 20 | |
| Matrix Spike Dup (F811271-MSD5) | | Source: 8J01082-01 Pr | | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Cadmium | 31.78 | 0.081 | 0.202 | μg/L | 41.000 | ND | 77.5 | 70-130 | 6.45 | 20 | A |
| Thallium | 14.64 | 0.061 | 0.202 | $\mu g/L$ | 20.500 | ND | 71.4 | 70-130 | 4.96 | 20 | A |
| Lead | 76.99 | 0.050 | 0.404 | $\mu g/L$ | 102.50 | 2.002 | 73.2 | 70-130 | 4.72 | 20 | A |
| | | | | | | | | | | | |

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Amy Sodall.



Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 15-Jan-19 17:30

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|----------------------------------|--------------|--------------------|--------------------|-----------|----------------|---|-------------|----------------|-------|--------------|-----------|
| Batch F811271 - EFGS SOP2836 Clo | sed Vessel V | Vater Oven | Digestion | | | | | | | | |
| Matrix Spike Dup (F811271-MSD6) | | Source: | 8J01082-10 | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Thallium | 15.24 | 0.061 | 0.202 | μg/L | 20.500 | ND | 74.4 | 70-130 | 6.01 | 20 | AS |
| Lead | 78.52 | 0.050 | 0.404 | $\mu g/L$ | 102.50 | 0.224 | 76.4 | 70-130 | 7.21 | 20 | AS |
| Matrix Spike Dup (F811271-MSD7) | | Source: | 8J01083-01 | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Chromium | 282.3 | 0.20 | 1.01 | μg/L | 410.00 | 0.43 | 68.7 | 70-130 | 8.44 | 20 | QM-05, AS |
| Nickel | 326.0 | 0.40 | 1.01 | $\mu g/L$ | 512.50 | 0.62 | 63.5 | 70-130 | 8.02 | 20 | AS, QM-05 |
| Copper | 323.1 | 0.20 | 1.01 | $\mu g/L$ | 512.50 | 0.61 | 62.9 | 70-130 | 8.30 | 20 | AS, QM-05 |
| Zinc | 770.4 | 1.62 | 5.05 | $\mu g/L$ | 1025.0 | 2.90 | 74.9 | 70-130 | 8.89 | 20 | AS |
| Cadmium | 27.78 | 0.081 | 0.202 | $\mu g/L$ | 41.000 | ND | 67.8 | 70-130 | 11.0 | 20 | AS, QM-05 |
| Thallium | 17.22 | 0.061 | 0.202 | $\mu g/L$ | 20.500 | ND | 84.0 | 70-130 | 9.81 | 20 | AS |
| Lead | 83.23 | 0.050 | 0.404 | $\mu g/L$ | 102.50 | 0.314 | 80.9 | 70-130 | 8.57 | 20 | AS |
| Matrix Spike Dup (F811271-MSD8) | | Source: | 8J01083-07 | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 4-Nov-18 | | | |
| Chromium | 306.8 | 0.20 | 1.01 | μg/L | 410.00 | ND | 74.8 | 70-130 | 1.82 | 20 | AS |
| Nickel | 356.0 | 0.40 | 1.01 | $\mu g/L$ | 512.50 | 0.63 | 69.3 | 70-130 | 2.14 | 20 | AS, QM-05 |
| Copper | 349.5 | 0.20 | 1.01 | $\mu g/L$ | 512.50 | 0.55 | 68.1 | 70-130 | 1.01 | 20 | AS, QM-05 |
| Zinc | 839.5 | 1.62 | 5.05 | $\mu g/L$ | 1025.0 | 2.43 | 81.7 | 70-130 | 0.716 | 20 | AS |
| Cadmium | 31.09 | 0.081 | 0.202 | $\mu g/L$ | 41.000 | ND | 75.8 | 70-130 | 3.16 | 20 | AS |
| Thallium | 18.99 | 0.061 | 0.202 | $\mu g/L$ | 20.500 | ND | 92.6 | 70-130 | 1.26 | 20 | AS |
| Lead | 91.16 | 0.050 | 0.404 | $\mu g/L$ | 102.50 | ND | 88.9 | 70-130 | 1.39 | 20 | AS |
| Matrix Spike Dup (F811271-MSD9) | | Source: | 8J01082-01 | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Zinc | 131.8 | 1.62 | 5.06 | $\mu g/L$ | 50.010 | 93.15 | 77.2 | 70-130 | 4.10 | 20 | |
| Cadmium | 40.24 | 0.081 | 0.202 | $\mu g/L$ | 40.010 | ND | 101 | 70-130 | 6.85 | 20 | |
| Thallium | 39.37 | 0.061 | 0.202 | $\mu g/L$ | 39.990 | ND | 98.5 | 70-130 | 0.452 | 20 | |
| Lead | 52.54 | 0.051 | 0.405 | $\mu g/L$ | 50.010 | 2.002 | 101 | 70-130 | 1.71 | 20 | |
| Matrix Spike Dup (F811271-MSDA) | | Source: | | | | Prepared: 12-Nov-18 Analyzed: 16-Nov-18 | | | | | |
| Zinc | 127.5 | 1.62 | 5.06 | μg/L | 50.010 | 84.88 | 85.1 | 70-130 | 1.22 | 20 | |
| Cadmium | 40.31 | 0.081 | 0.202 | $\mu g/L$ | 40.010 | 0.095 | 101 | 70-130 | 1.67 | 20 | |
| Thallium | 39.14 | 0.061 | 0.202 | $\mu g/L$ | 39.990 | ND | 97.9 | 70-130 | 2.25 | 20 | |
| Lead | 50.67 | 0.051 | 0.405 | $\mu g/L$ | 50.010 | 0.224 | 101 | 70-130 | 1.79 | 20 | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls15-Jan-19 17:30

Quality Control Data

| | | Detection | Reporting | | Spike | Source | | %REC | | RPD | |
|----------------------------------|--------------|------------|------------|-----------|-----------|-----------|-------------|-----------|--------|-------|-------|
| Analyte | Result | Limit | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | Notes |
| Batch F811271 - EFGS SOP2836 Clo | sed Vessel W | Vater Oven | Digestion | | | | | | | | |
| Matrix Spike Dup (F811271-MSDB) | | Source: | 8J01082-01 | l | Prepared: | 12-Nov-18 | Analyzed: 1 | 16-Nov-18 | | | |
| Zinc | 1066 | 1.62 | 5.05 | μg/L | 1025.0 | 93.15 | 94.9 | 70-130 | 0.616 | 20 | AS |
| Cadmium | 40.21 | 0.081 | 0.202 | $\mu g/L$ | 41.000 | ND | 98.1 | 70-130 | 0.114 | 20 | AS |
| Thallium | 20.00 | 0.061 | 0.202 | $\mu g/L$ | 20.500 | ND | 97.6 | 70-130 | 0.618 | 20 | AS |
| Lead | 104.3 | 0.050 | 0.404 | $\mu g/L$ | 102.50 | 2.002 | 99.8 | 70-130 | 0.215 | 20 | AS |
| Matrix Spike Dup (F811271-MSDC) | | Source: | 8J01082-10 |) | Prepared: | 12-Nov-18 | Analyzed: 1 | 16-Nov-18 | | | |
| Zinc | 1097 | 1.62 | 5.05 | $\mu g/L$ | 1025.0 | 84.88 | 98.7 | 70-130 | 0.586 | 20 | AS |
| Cadmium | 41.36 | 0.081 | 0.202 | $\mu g/L$ | 41.000 | 0.095 | 101 | 70-130 | 0.225 | 20 | AS |
| Thallium | 20.43 | 0.061 | 0.202 | $\mu g/L$ | 20.500 | ND | 99.7 | 70-130 | 1.31 | 20 | AS |
| Lead | 104.6 | 0.050 | 0.404 | $\mu g/L$ | 102.50 | 0.224 | 102 | 70-130 | 1.04 | 20 | AS |
| Matrix Spike Dup (F811271-MSDD) | | Source: | 8J01082-01 | [| Prepared: | 12-Nov-18 | Analyzed: 2 | 20-Nov-18 | | | |
| Chromium | 50.95 | 0.51 | 2.53 | μg/L | 49.990 | ND | 102 | 70-130 | 2.92 | 20 | |
| Nickel | 51.12 | 1.01 | 2.53 | $\mu g/L$ | 50.010 | 2.31 | 97.6 | 70-130 | 0.371 | 20 | |
| Copper | 51.66 | 0.51 | 2.53 | $\mu g/L$ | 50.000 | 2.40 | 98.5 | 70-130 | 0.826 | 20 | |
| Zinc | 125.6 | 4.05 | 12.6 | $\mu g/L$ | 50.010 | 93.15 | 64.9 | 70-130 | 3.79 | 20 | QM-05 |
| Matrix Spike Dup (F811271-MSDE) | | Source: | 8J01082-10 |) | Prepared: | 12-Nov-18 | Analyzed: 2 | 21-Nov-18 | | | |
| Chromium | 50.28 | 0.51 | 2.53 | μg/L | 49.990 | ND | 101 | 70-130 | 0.459 | 20 | |
| Nickel | 55.05 | 1.01 | 2.53 | $\mu g/L$ | 50.010 | 4.61 | 101 | 70-130 | 0.976 | 20 | |
| Copper | 70.51 | 0.51 | 2.53 | $\mu g/L$ | 50.000 | 19.84 | 101 | 70-130 | 1.15 | 20 | |
| Zinc | 123.6 | 4.05 | 12.6 | $\mu g/L$ | 50.010 | 84.88 | 77.5 | 70-130 | 0.0994 | 20 | |
| Matrix Spike Dup (F811271-MSDF) | | Source: | 8J01082-01 | [| Prepared: | 12-Nov-18 | Analyzed: 2 | 20-Nov-18 | | | |
| Chromium | 1003 | 0.50 | 2.52 | μg/L | 1025.0 | ND | 97.8 | 70-130 | 2.36 | 20 | AS |
| Nickel | 1250 | 1.01 | 2.52 | $\mu g/L$ | 1281.2 | 2.31 | 97.4 | 70-130 | 1.73 | 20 | AS |
| Copper | 1276 | 0.50 | 2.52 | $\mu g/L$ | 1281.2 | 2.40 | 99.4 | 70-130 | 0.872 | 20 | AS |
| Zinc | 2587 | 4.04 | 12.6 | $\mu g/L$ | 2562.5 | 93.15 | 97.3 | 70-130 | 1.28 | 20 | AS |
| | | | | | | | | | | | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls15-Jan-19 17:30

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|------------------------------------|-------------|--------------------|--------------------|-----------|----------------|------------------|-------------|----------------|-------|--------------|-------|
| Batch F811271 - EFGS SOP2836 Close | ed Vessel W | ater Oven | Digestion | | | | | | | | |
| Matrix Spike Dup (F811271-MSDG) | | Source: | 8J01082-10 | | Prepared: 1 | 12-Nov-18 | Analyzed: 2 | 1-Nov-18 | | | |
| Chromium | 1015 | 0.50 | 2.52 | μg/L | 1025.0 | ND | 99.0 | 70-130 | 0.647 | 20 | AS |
| Nickel | 1273 | 1.01 | 2.52 | $\mu g/L$ | 1281.2 | 4.61 | 99.0 | 70-130 | 0.468 | 20 | AS |
| Copper | 1279 | 0.50 | 2.52 | $\mu g/L$ | 1281.2 | 19.84 | 98.3 | 70-130 | 0.984 | 20 | AS |
| Zinc | 2597 | 4.04 | 12.6 | $\mu g/L$ | 2562.5 | 84.88 | 98.0 | 70-130 | 1.18 | 20 | AS |
| Matrix Spike (F811271-MSE) | | Source: | 8J01082-10 | | Prepared: 1 | 12-Nov-18 | Analyzed: 2 | 1-Nov-18 | | | |
| Chromium | 50.51 | 0.51 | 2.53 | μg/L | 49.990 | ND | 101 | 70-130 | | | |
| Nickel | 54.52 | 1.01 | 2.53 | $\mu g/L$ | 50.010 | 4.61 | 99.8 | 70-130 | | | |
| Copper | 71.32 | 0.51 | 2.53 | $\mu g/L$ | 50.000 | 19.84 | 103 | 70-130 | | | |
| Zinc | 123.5 | 4.05 | 12.6 | $\mu g/L$ | 50.010 | 84.88 | 77.2 | 70-130 | | | |
| Matrix Spike (F811271-MSF) | | Source: | 8J01082-01 | | Prepared: 1 | 12-Nov-18 | Analyzed: 2 | 0-Nov-18 | | | |
| Chromium | 1027 | 0.50 | 2.52 | μg/L | 1025.0 | ND | 100 | 70-130 | | | AS |
| Nickel | 1272 | 1.01 | 2.52 | $\mu g/L$ | 1281.2 | 2.31 | 99.1 | 70-130 | | | AS |
| Copper | 1287 | 0.50 | 2.52 | $\mu g/L$ | 1281.2 | 2.40 | 100 | 70-130 | | | AS |
| Zinc | 2620 | 4.04 | 12.6 | $\mu g/L$ | 2562.5 | 93.15 | 98.6 | 70-130 | | | AS |
| Matrix Spike (F811271-MSG) | | Source: | 8J01082-10 | | Prepared: 1 | 12-Nov-18 | Analyzed: 2 | 1-Nov-18 | | | |
| Chromium | 1022 | 0.50 | 2.52 | μg/L | 1025.0 | ND | 99.7 | 70-130 | | | AS |
| Nickel | 1279 | 1.01 | 2.52 | $\mu g/L$ | 1281.2 | 4.61 | 99.5 | 70-130 | | | AS |
| Copper | 1292 | 0.50 | 2.52 | $\mu g/L$ | 1281.2 | 19.84 | 99.3 | 70-130 | | | AS |
| Zinc | 2628 | 4.04 | 12.6 | $\mu g/L$ | 2562.5 | 84.88 | 99.2 | 70-130 | | | AS |
| Batch F811325 - EFGS SOP2836 Close | ed Vessel W | ater Oven | Digestion | | | | | | | | |
| Blank (F811325-BLK1) | | | | | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 5-Nov-18 | | | |
| Beryllium | ND | 0.004 | 0.060 | μg/L | | | | | | | U |
| Iron | ND | 1 | 10 | $\mu g/L$ | | | | | | | U |
| Selenium | ND | 0.44 | 0.60 | $\mu g/L$ | | | | | | | U |
| Antimony | 0.013 | 0.009 | 0.020 | $\mu g/L$ | | | | | | | J |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls15-Jan-19 17:30

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|--------------------------------|--------|--------------------|--------------------|-----------|---|------------------|-------------|----------------|-------|--------------|--------|
| Batch F811325 - EFGS SOP2836 C | | | | Omis | Level | resuit | /UKLC | Limits | NI D | Limit | 110103 |
| Blank (F811325-BLK2) | | | | | Prepared: 1 | 2-Nov-18 | Analyzed: 1 | 5-Nov-18 | | | |
| Beryllium | ND | 0.004 | 0.060 | μg/L | | | | | | | J |
| Iron | ND | 1 | 10 | μg/L | | | | | | | Ţ |
| Selenium | ND | 0.44 | 0.60 | $\mu g/L$ | | | | | | | Ţ |
| Antimony | ND | 0.009 | 0.020 | $\mu g/L$ | | | | | | | Ţ |
| LCS (F811325-BS1) | | | | | Prepared: 1 | 2-Nov-18 | Analyzed: 1 | 5-Nov-18 | | | |
| Antimony | 38.26 | 0.045 | 0.100 | μg/L | 40.030 | | 95.6 | 85-115 | | | |
| LCS (F811325-BS3) | | | | | Prepared: 1 | 2-Nov-18 | Analyzed: 2 | 0-Nov-18 | | | |
| Beryllium | 42.22 | 0.020 | 0.301 | μg/L | 40.010 | | 106 | 85-115 | | | |
| Iron | 1166 | 6 | 50 | $\mu g/L$ | 1250.0 | | 93.3 | 85-115 | | | |
| Selenium | 49.14 | 2.20 | 3.01 | $\mu g/L$ | 49.990 | | 98.3 | 85-115 | | | |
| LCS Dup (F811325-BSD1) | | | | | Prepared: 1 | 2-Nov-18 | Analyzed: 1 | 5-Nov-18 | | | |
| Antimony | 38.90 | 0.045 | 0.100 | μg/L | 40.030 | | 97.2 | 85-115 | 1.68 | 20 | |
| LCS Dup (F811325-BSD3) | | | | | Prepared: 1 | 2-Nov-18 | Analyzed: 2 | 0-Nov-18 | | | |
| Beryllium | 42.41 | 0.020 | 0.301 | μg/L | 40.010 | | 106 | 85-115 | 0.441 | 20 | |
| Iron | 1184 | 6 | 50 | $\mu g/L$ | 1250.0 | | 94.7 | 85-115 | 1.51 | 20 | |
| Selenium | 48.99 | 2.20 | 3.01 | $\mu g/L$ | 49.990 | | 98.0 | 85-115 | 0.306 | 20 | |
| Matrix Spike (F811325-MS1) | | Source: | 8J01082-01 | RE1 | Prepared: 1 | 2-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Antimony | 42.47 | 0.091 | 0.202 | μg/L | 40.030 | 0.160 | 106 | 70-130 | | | |
| Matrix Spike (F811325-MS2) | | Source: | 8J01082-10 | RE1 | Prepared: 12-Nov-18 Analyzed: 16-Nov-18 | | | | | | |
| Antimony | 40.01 | 0.091 | 0.202 | μg/L | 40.030 | 0.272 | 99.3 | 70-130 | | | |
| Matrix Spike (F811325-MS5) | | Source: | 8J01082-01 | RE1 | Prepared: 1 | 2-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Antimony | 19.46 | 0.091 | 0.202 | μg/L | 20.500 | 0.160 | 94.2 | 70-130 | | | AS |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 15-Jan-19 17:30

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|------------------------------------|------------|--------------------|--------------------|-----------|----------------|------------------|-------------|----------------|-----|--------------|-------|
| Batch F811325 - EFGS SOP2836 Close | d Vessel W | ater Oven | Digestion | | | | | | | | |
| Matrix Spike (F811325-MS6) | | Source: | 8J01082-10 | RE1 | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Antimony | 19.42 | 0.091 | 0.202 | μg/L | 20.500 | 0.272 | 93.4 | 70-130 | | | AS |
| Matrix Spike (F811325-MS7) | | Source: | 8J01083-01 | RE1 | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Antimony | 18.93 | 0.091 | 0.202 | μg/L | 20.500 | 0.409 | 90.3 | 70-130 | | | AS |
| Matrix Spike (F811325-MS8) | | Source: | 8J01083-07 | RE1 | Prepared: 1 | 12-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Antimony | 19.04 | 0.091 | 0.202 | μg/L | 20.500 | 0.263 | 91.6 | 70-130 | | | AS |
| Matrix Spike (F811325-MS9) | | Source: | 8J01082-01 | RE1 | Prepared: 1 | 12-Nov-18 | Analyzed: 2 | 20-Nov-18 | | | |
| Beryllium | 42.94 | 0.101 | 1.52 | μg/L | 40.010 | ND | 107 | 70-130 | | | |
| Iron | 1241 | 28 | 253 | μg/L | 1250.0 | 62 | 94.4 | 70-130 | | | |
| Selenium | 50.13 | 11.1 | 15.2 | $\mu g/L$ | 49.990 | ND | 100 | 70-130 | | | |
| Matrix Spike (F811325-MSA) | | Source: | 8J01082-10 | RE1 | Prepared: 1 | 12-Nov-18 | Analyzed: 2 | | | | |
| Beryllium | 40.52 | 0.101 | 1.52 | μg/L | 40.010 | ND | 101 | 70-130 | | | |
| Iron | 1461 | 28 | 253 | $\mu g/L$ | 1250.0 | 274 | 94.9 | 70-130 | | | |
| Selenium | 51.93 | 11.1 | 15.2 | $\mu g/L$ | 49.990 | ND | 104 | 70-130 | | | |
| Matrix Spike (F811325-MSB) | | Source: | 8J01083-01 | RE1 | Prepared: 1 | 12-Nov-18 | Analyzed: 2 | 21-Nov-18 | | | |
| Beryllium | 41.33 | 0.101 | 1.52 | μg/L | 40.010 | ND | 103 | 70-130 | | | |
| Iron | 1423 | 28 | 253 | $\mu g/L$ | 1250.0 | 213 | 96.8 | 70-130 | | | |
| Selenium | 65.49 | 11.1 | 15.2 | $\mu g/L$ | 49.990 | 13.20 | 105 | 70-130 | | | |
| Antimony | 40.96 | 0.228 | 0.506 | $\mu g/L$ | 40.030 | 0.409 | 101 | 70-130 | | | |
| Matrix Spike (F811325-MSC) | | Source: | 8J01083-07 | RE1 | Prepared: 1 | 12-Nov-18 | Analyzed: 2 | 21-Nov-18 | | | |
| Beryllium | 41.60 | 0.101 | 1.52 | μg/L | 40.010 | ND | 104 | 70-130 | | | |
| Iron | 1262 | 28 | 253 | $\mu g/L$ | 1250.0 | 66 | 95.7 | 70-130 | | | |
| Selenium | 70.66 | 11.1 | 15.2 | $\mu g/L$ | 49.990 | 22.60 | 96.1 | 70-130 | | | |
| Antimony | 40.98 | 0.228 | 0.506 | $\mu g/L$ | 40.030 | 0.263 | 102 | 70-130 | | | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 15-Jan-19 17:30

Quality Control Data

| | | Detection | Reporting | | Spike | Source | | %REC | | RPD | |
|----------------------------------|--------------|--------------------------|------------|-----------|-------------|----------|-------------|-----------|-------|-------|-------|
| Analyte | Result | Limit | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | Notes |
| Batch F811325 - EFGS SOP2836 Clo | sed Vessel V | Vater Oven | Digestion | | | | | | | | |
| Matrix Spike (F811325-MSD) | | Source: | 8J01082-01 | RE1 | Prepared: 1 | 2-Nov-18 | Analyzed: 2 | 20-Nov-18 | | | |
| Beryllium | 51.90 | 0.101 | 1.51 | μg/L | 51.250 | ND | 101 | 70-130 | | | AS |
| Iron | 5033 | 28 | 252 | $\mu g/L$ | 5125.0 | 62 | 97.0 | 70-130 | | | AS |
| Selenium | 1023 | 11.1 | 15.1 | $\mu g/L$ | 1025.0 | ND | 99.8 | 70-130 | | | AS |
| Matrix Spike Dup (F811325-MSD1) | | Source: | 8J01082-01 | RE1 | Prepared: 1 | 2-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Antimony | 40.49 | 0.091 | 0.202 | $\mu g/L$ | 40.030 | 0.160 | 101 | 70-130 | 4.77 | 20 | |
| Matrix Spike Dup (F811325-MSD2) | | Source: | 8J01082-10 | RE1 | Prepared: 1 | 2-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Antimony | 39.90 | 0.091 | 0.202 | μg/L | 40.030 | 0.272 | 99.0 | 70-130 | 0.274 | 20 | |
| Matrix Spike Dup (F811325-MSD5) | | Source: | 8J01082-01 | RE1 | Prepared: 1 | 2-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Antimony | 19.32 | 0.091 | 0.202 | μg/L | 20.500 | 0.160 | 93.5 | 70-130 | 0.732 | 20 | AS |
| Matrix Spike Dup (F811325-MSD6) | | Source: | 8J01082-10 | RE1 | Prepared: 1 | 2-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Antimony | 19.76 | 0.091 | 0.202 | μg/L | 20.500 | 0.272 | 95.1 | 70-130 | 1.73 | 20 | AS |
| Matrix Spike Dup (F811325-MSD7) | | Source: | 8J01083-01 | RE1 | Prepared: 1 | 2-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Antimony | 18.86 | 0.091 | 0.202 | μg/L | 20.500 | 0.409 | 90.0 | 70-130 | 0.380 | 20 | AS |
| Matrix Spike Dup (F811325-MSD8) | | Source: | 8J01083-07 | RE1 | Prepared: 1 | 2-Nov-18 | Analyzed: 1 | 6-Nov-18 | | | |
| Antimony | 18.57 | 0.091 | 0.202 | μg/L | 20.500 | 0.263 | 89.3 | 70-130 | 2.47 | 20 | AS |
| Matrix Spike Dup (F811325-MSD9) | | Source: | 8J01082-01 | RE1 | Prepared: 1 | 2-Nov-18 | Analyzed: 2 | 20-Nov-18 | | | |
| Beryllium | 44.18 | 0.101 | 1.52 | μg/L | 40.010 | ND | 110 | 70-130 | 2.85 | 20 | |
| Iron | 1252 | 28 | 253 | μg/L | 1250.0 | 62 | 95.3 | 70-130 | 0.883 | 20 | |
| Selenium | 49.17 | 11.1 | 15.2 | $\mu g/L$ | 49.990 | ND | 98.4 | 70-130 | 1.94 | 20 | |
| Matrix Spike Dup (F811325-MSDA) | | Source: 8J01082-10RE1 Pr | | | Prepared: 1 | 2-Nov-18 | Analyzed: 2 | 21-Nov-18 | | | |
| Beryllium | 39.78 | 0.101 | 1.52 | μg/L | 40.010 | ND | 99.4 | 70-130 | 1.82 | 20 | |
| Iron | 1427 | 28 | 253 | $\mu g/L$ | 1250.0 | 274 | 92.2 | 70-130 | 2.34 | 20 | |
| Selenium | 49.34 | 11.1 | 15.2 | $\mu g/L$ | 49.990 | ND | 98.7 | 70-130 | 5.13 | 20 | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls15-Jan-19 17:30

Quality Control Data

| | D 1: | Detection | Reporting | TT | Spike | Source | 0/DEC | %REC | DDD | RPD | N |
|----------------------------------|--------------|------------|-----------------------|-----------|---|---|-------------|----------|-------|-------|-----------------|
| Analyte | Result | Limit | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | Notes |
| Batch F811325 - EFGS SOP2836 Clo | sed Vessel V | Vater Oven | Digestion | | | | | | | | |
| Matrix Spike Dup (F811325-MSDB) | | Source: | 8J01083-01 | IRE1 | Prepared: | 12-Nov-18 | Analyzed: 2 | 1-Nov-18 | | | |
| Beryllium | 40.99 | 0.101 | 1.52 | μg/L | 40.010 | ND | 102 | 70-130 | 0.825 | 20 | |
| Iron | 1394 | 28 | 253 | $\mu g/L$ | 1250.0 | 213 | 94.5 | 70-130 | 2.03 | 20 | |
| Selenium | 68.03 | 11.1 | 15.2 | $\mu g/L$ | 49.990 | 13.20 | 110 | 70-130 | 3.81 | 20 | |
| Antimony | 40.42 | 0.228 | 0.506 | $\mu g/L$ | 40.030 | 0.409 | 100 | 70-130 | 1.33 | 20 | |
| Matrix Spike Dup (F811325-MSDC) | | Source: | 8J01083-07 | 7RE1 | Prepared: | 12-Nov-18 | Analyzed: 2 | 1-Nov-18 | | | |
| Beryllium | 43.37 | 0.101 | 1.52 | $\mu g/L$ | 40.010 | ND | 108 | 70-130 | 4.16 | 20 | |
| Iron | 4735 | 28 | 253 | $\mu g/L$ | 1250.0 | 66 | 374 | 70-130 | 116 | 20 | QM-07, QR-08 |
| Selenium | 69.05 | 11.1 | 15.2 | $\mu g/L$ | 49.990 | 22.60 | 92.9 | 70-130 | 2.30 | 20 | |
| Antimony | 41.58 | 0.228 | 0.506 | $\mu g/L$ | 40.030 | 0.263 | 103 | 70-130 | 1.46 | 20 | |
| Matrix Spike Dup (F811325-MSDD) | | Source: | Source: 8J01082-01RE1 | | | Prepared: 12-Nov-18 Analyzed: 20-Nov-18 | | | | | |
| Beryllium | 52.13 | 0.101 | 1.51 | $\mu g/L$ | 51.250 | ND | 102 | 70-130 | 0.445 | 20 | AS |
| Iron | 4921 | 28 | 252 | $\mu g/L$ | 5125.0 | 62 | 94.8 | 70-130 | 2.26 | 20 | AS |
| Selenium | 1014 | 11.1 | 15.1 | $\mu g/L$ | 1025.0 | ND | 98.9 | 70-130 | 0.860 | 20 | AS |
| Matrix Spike Dup (F811325-MSDE) | | Source: | 8J01082-10 | DRE1 | Prepared: 12-Nov-18 Analyzed: 21-Nov-18 | | | | | | |
| Beryllium | 52.24 | 0.101 | 1.51 | $\mu g/L$ | 51.250 | ND | 102 | 70-130 | 1.51 | 20 | AS |
| Iron | 5144 | 28 | 252 | $\mu g/L$ | 5125.0 | 274 | 95.0 | 70-130 | 0.963 | 20 | AS |
| Selenium | 1039 | 11.1 | 15.1 | $\mu g/L$ | 1025.0 | ND | 101 | 70-130 | 0.861 | 20 | AS |
| Matrix Spike Dup (F811325-MSDF) | | Source: | 8J01083-01 | IRE1 | Prepared: 12-Nov-18 Analyzed: 21-Nov-18 | | | | | | |
| Beryllium | 55.85 | 0.101 | 1.51 | $\mu g/L$ | 51.250 | ND | 109 | 70-130 | 0.545 | 20 | AS |
| Iron | 5154 | 28 | 252 | $\mu g/L$ | 5125.0 | 213 | 96.4 | 70-130 | 1.56 | 20 | AS |
| Selenium | 1073 | 11.1 | 15.1 | $\mu g/L$ | 1025.0 | 13.20 | 103 | 70-130 | 1.22 | 20 | AS |
| Antimony | 50.93 | 0.227 | 0.505 | $\mu g/L$ | 51.250 | 0.409 | 98.6 | 70-130 | 1.10 | 20 | AS |
| Matrix Spike Dup (F811325-MSDG) | | Source: | 8J01083-07 | 7RE1 | Prepared: 12-Nov-18 Analyzed: 21-Nov-18 | | | | | | |
| Beryllium | 53.78 | 0.101 | 1.51 | $\mu g/L$ | 51.250 | ND | 105 | 70-130 | 2.62 | 20 | AS |
| Iron | 4975 | 28 | 252 | $\mu g/L$ | 5125.0 | 66 | 95.8 | 70-130 | 1.58 | 20 | AS |
| Selenium | 1084 | 11.1 | 15.1 | $\mu g/L$ | 1025.0 | 22.60 | 104 | 70-130 | 0.949 | 20 | AS |
| Antimony | 51.26 | 0.227 | 0.505 | $\mu g/L$ | 51.250 | 0.263 | 99.5 | 70-130 | 2.33 | 20 | AS |
| | | | | | | | | | | | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 15-Jan-19 17:30

Quality Control Data

| | | Detection | Reporting | | Spike | Source | | %REC | | RPD | |
|------------------------------|-----------------|------------|------------|-----------|-------------|----------|-------------|-----------|-----|-------|-------|
| Analyte | Result | Limit | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | Notes |
| Batch F811325 - EFGS SOP2836 | Closed Vessel V | Vater Oven | Digestion | | | | | | | | |
| Matrix Spike (F811325-MSE) | | Source: | 8J01082-10 | RE1 | Prepared: 1 | 2-Nov-18 | Analyzed: 2 | 21-Nov-18 | | | |
| Beryllium | 53.03 | 0.101 | 1.51 | μg/L | 51.250 | ND | 103 | 70-130 | | | A |
| Iron | 5194 | 28 | 252 | $\mu g/L$ | 5125.0 | 274 | 96.0 | 70-130 | | | A |
| Selenium | 1030 | 11.1 | 15.1 | $\mu g/L$ | 1025.0 | ND | 101 | 70-130 | | | A |
| Matrix Spike (F811325-MSF) | | Source: | 8J01083-01 | IRE1 | Prepared: 1 | 2-Nov-18 | Analyzed: 2 | 21-Nov-18 | | | |
| Beryllium | 55.54 | 0.101 | 1.51 | μg/L | 51.250 | ND | 108 | 70-130 | | | A |
| Iron | 5235 | 28 | 252 | $\mu g/L$ | 5125.0 | 213 | 98.0 | 70-130 | | | A |
| Selenium | 1086 | 11.1 | 15.1 | $\mu g/L$ | 1025.0 | 13.20 | 105 | 70-130 | | | A |
| Antimony | 50.38 | 0.227 | 0.505 | $\mu g/L$ | 51.250 | 0.409 | 97.5 | 70-130 | | | A |
| Matrix Spike (F811325-MSG) | | Source: | 8J01083-07 | RE1 | Prepared: 1 | 2-Nov-18 | Analyzed: 2 | 21-Nov-18 | | | |
| Beryllium | 55.21 | 0.101 | 1.51 | μg/L | 51.250 | ND | 108 | 70-130 | | | A |
| Iron | 5054 | 28 | 252 | $\mu g/L$ | 5125.0 | 66 | 97.3 | 70-130 | | | A |
| Selenium | 1094 | 11.1 | 15.1 | $\mu g/L$ | 1025.0 | 22.60 | 105 | 70-130 | | | A |
| Antimony | 50.08 | 0.227 | 0.505 | μg/L | 51.250 | 0.263 | 97.2 | 70-130 | | | A |

Eurofins Frontier Global Sciences, LLC

Amy Sodall.

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls15-Jan-19 17:30

Notes and Definitions

| U | Analyte was not detected and is reported as less than the LOD or as defined by the client. The LOD has been adjusted for any dilution or concentration of the sample. |
|-------|---|
| R-05 | The sample was diluted due to the presence of high levels of non-target analytes or particulates resulting in elevated reporting limits. |
| QR-08 | The RPD value for the MS/MSD was outside of acceptance limits. Batch QC acceptable based on matrix duplicate and/or LCS/LCSD RPD values within control limits. |
| QR-06 | The RPD value for the LCS/LCSD was outside of acceptance limits. Batch QC acceptable based on MS/MSD, and where applicable, matrix duplicate RPD value(s) within control limits. |
| QM-07 | The spike recovery was outside control limits for the MS and/or MSD. The batch was accepted based on LCS and LCSD recoveries within control limits and, when analysis permits, acceptable AS/ASD. |
| QM-05 | The spike recovery was outside acceptance limits for the MS/MSD and or AS/ASD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable. |
| QB-08 | The blank was preserved to 50% BrCl rather than 1%. The control limit for blanks preserved to greater than 1% BrCl is the preservation percentage multiplied by the MRL. |
| J | The result is an estimated concentration. |
| AS | This MS and/or MSD is an analytical spike and/or an analytical spike duplicate. |
| AD | This matrix duplicate is an analytical duplicate. |
| DET | Analyte DETECTED |
| ND | Analyte NOT DETECTED at or above the method detection limit if reported to the MDL or above the reporting limit if reported to the MRL. |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |

Eurofins Frontier Global Sciences, LLC

Amy Sodall.

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Calscience



WORK ORDER NUMBER: 18-10-2296

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Eurofins Frontier Global Sciences, Inc.

Client Project Name: 8J01083

Attention: Amy Goodall

11720 North Creek Parkway North

Suite 4

Bothell, WA 98011-8244



Approved for release on 11/07/2018 by: Carla Hollowell Project Manager

ResultLink >

Email your PM >

Eurofins Calscience (Calscience) certifies that the test results provided in this report meet all NELAC Institute requirements for parameters for which accreditation is required or available. Any exceptions to NELAC Institute requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.



Contents

Client Project Name: 8J01083 Work Order Number: 18-10-2296

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| 6 | Chain-of-Custody/Sample Receipt Form | 8 |



Work Order Narrative

Work Order: 18-10-2296 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 10/31/18. They were assigned to Work Order 18-10-2296.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

DoD Projects:

The test results contained in this report are accredited under the laboratory's ISO/IEC 17025:2005 and DoD-ELAP accreditation issued by the ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation ADE-1864.



Sample Summary

Client: Eurofins Frontier Global Sciences, Inc.

11720 North Creek Parkway North, Suite 4

Bothell, WA 98011-8244

Work Order: Project Name:

PO Number:

Date/Time Received:

Number of

Containers:

18-10-2296

8J01083

10/31/18 10:00

2

Amy Goodall Attn:

| Sample Identification | Lab Number | Collection Date and Time | Number of Containers | Matrix |
|-----------------------|--------------|--------------------------|----------------------|---------|
| RIVER-02 RIV_01_TCn | 18-10-2296-1 | 10/18/18 15:40 | 1 | Aqueous |
| RIVER-02 RIV_TB_TCn | 18-10-2296-2 | 10/18/18 15:45 | 1 | Aqueous |





Analytical Report

Eurofins Frontier Global Sciences, Inc. 11720 North Creek Parkway North, Suite 4 Bothell, WA 98011-8244

Work Order:
Preparation:
Method:

Date Received:

18-10-2296 N/A SM 4500-CN E

Units:

mg/L Page 1 of 1

10/31/18

Project: 8J01083

Lab Sample Number Date/Time Collected Date Prepared Date/Time Analyzed Client Sample Number Matrix QC Batch ID Instrument 10/18/18 15:40 11/01/18 12:35 RIVER-02 RIV_01_TCn 18-10-2296-1-A UV 9 11/01/18 I1101CNL1 Aqueous <u>Parameter</u> Result <u>RL</u> <u>DF</u> Qualifiers Cyanide, Total ND 0.020 1.00

| RIVER-02 RIV_TB_TCn | 18-10-2296-2-A | 10/18/18 15:45 | Aqueous UV 9 | 11/01/18 | 11/01/18 I1101CNL1 12:35 |
|---------------------|----------------|-------------------|--------------|-----------|-----------------------------|
| Parameter | | Result | <u>RL</u> | <u>DF</u> | Qualifiers |
| Cvanide, Total | | ND | 0.020 | 1.00 | |

| Method Blank | 099-05-061-4307 | N/A | Aqueous UV 9 | 11/01/18 | 11/01/18 I1101CNL1 12:35 |
|------------------|-----------------|--------|--------------|-----------|-----------------------------|
| <u>Parameter</u> | | Result | <u>RL</u> | <u>DF</u> | <u>Qualifiers</u> |
| Cvanide, Total | | ND | 0.020 | 1.00 | |



RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Quality Control - LCS/LCSD

Eurofins Frontier Global Sciences, Inc. 11720 North Creek Parkway North, Suite 4 Bothell, WA 98011-8244

Date Received: Work Order: Preparation: Method:

10/31/18 18-10-2296 N/A

SM 4500-CN E

Project: 8J01083 Page 1 of 1

| Quality Control Sample ID | Туре | Mat | rix | Instrument | Date Pre | pared Date | Analyzed | LCS/LCSD Ba | atch Number |
|---------------------------|-------------|-----------|--------------|------------|---------------|------------|------------|-------------|-------------|
| 099-05-061-4307 | LCS | Aqı | ieous | UV 9 | 11/01/18 | 11/0 | 1/18 12:35 | I1101CNL1 | |
| 099-05-061-4307 | LCSD | Aqı | ieous | UV 9 | 11/01/18 | 11/0 | 1/18 12:35 | I1101CNL1 | |
| Parameter | Spike Added | LCS Conc. | LCS %Rec. | LCSD Conc. | LCSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
| Cyanide, Total | 0.2000 | 0.1660 | 83 | 0.1688 | 84 | 80-120 | 2 | 0-20 | |



RPD: Relative Percent Difference. CL: Control Limits



Glossary of Terms and Qualifiers

Work Order: 18-10-2296 Page 1 of 1

| Qualifiers | <u>Definition</u> |
|------------|--|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control. |
| 4 | The MS/MSD RPD was out of control due to suspected matrix interference. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| В | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| BV | Sample received after holding time expired. |
| CI | See case narrative. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| HDH | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected). |
| HDL | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected). |
| J | Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated. |
| JA | Analyte positively identified but quantitation is an estimate. |
| ME | LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean). |
| ND | Parameter not detected at the indicated reporting limit. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| Χ | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

SUBCONTRACT ORDER

Eurofins Frontier Global Sciences, Inc.

8J01083

Fax: x

RECEIVING LABORATORY:

Due: 28-Nov-18 19:00

Due: 28-Nov-18 19:00

Eurofins Calscience, LLC

Garden Grove, CA 92841

7440 Lincoln Way

Phone:7148955494

18-10-2296

SENDING LABORATORY:

Eurofins Frontier Global Sciences, LLC 11720 North Creek Parkway North, Suite 400 Bothell, WA 98011

Phone: (425) 686-1996 Fax: (425) 686-3096

Project Manager: Amy Goodall

Analysis

Comments

Sample ID: RIVER-02 RIV_01_TCn

EFGS Lab ID: 8J01083-05

Matrix: Water

Sampled: 18-Oct-18 15:40 (GMT-05:00) Eastern Time (US &

Arrived on 10/26/18, temp 0.4C LEL 10/29/18

EPA SM4500 CN E

Containers Supplied:

Misc. Subcontract 1

250 mL PETG (A)

Sample ID: RIVER-02 RIV_TB_TCn

EFGS Lab ID: 8J01083-06

Matrix: Water

Sampled: 18-Oct-18 15:45 (GMT-05:00) Eastern Time (US &

Arrived on 10/26/18, temp 0.4C LEL 10/29/18

EPA SM4500 CN E

Containers Supplied:

Misc. Subcontract 1

250 mL PETG (A)

_ 1

Released By

Date

Received By

Date

Received By

Date

Received By

Date

Received By

Date

Page 51 of 54



HON BESK 425 605 3996 FRONTER GLOBAL SCIENCES 11720 N CREEK PKWY N BOTHERL WA 98011 - 8244

SHIP TO: SAMPLE RECEIVING (714) 895 – 5494 EUROFINS CALSCIENCE, INC. 7440 LINCOLN WAY

GARDEN GROVE CA 92841

DWT: 16,12,16

1 OF 1



. . . **29 LBS**

DAY AIR

TRACKING #: 1Z 86W 050 01 5174 4334



BILLING: P/P

Dept No.: OVERHEAD REF 2:Subcontract

W8 21.0.28 Zebra ZP 450 06.0A 10/2018





Calscience

WORK ORDER NUMBER: 18 つかい

SAMPLE RECEIPT CHECKLIST COOLER 1 OF 1

| CLIENT: EFGS | DAT | re: <u>10 /</u> | <u>3/ / 2018</u> |
|---|---|-----------------|-------------------------|
| TEMPERATURE: (Criteria: 0.0°C − 6.0°C, not frozen except sediment/tissue) Thermometer ID: SC6 (CF: 0.0°C); Temperature (w/o CF): | <u>3 · 6</u> ·c; | □ Blank | Sample |
| ☐ Sample(s) outside temperature criteria but received on ice/chilled on same day | of sampling | | |
| ☐ Sample(s) received at ambient temperature; placed on ice for transport by courier | | | 0 |
| Ambient Temperature: ☐ Air ☐ Filter | | Checked | l by: <u>VJ6V</u> |
| CUSTODY SEAL: | <u>, , , , , , , , , , , , , , , , , , , </u> | | |
| Cooler | □ N/A | Checked | i by: <u>VV6P</u> |
| Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☐ Not Present | □ N/A | Checked | l by: (L&L) |
| SAMPLE CONDITION: | | Yes | No N/A |
| Chain-of-Custody (COC) document(s) received with samples | | z | |
| COC document(s) received complete | | | |
| ☐ Sampling date ☐ Sampling time ☐ Matrix ☐ Number of containers | | • | |
| ☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No re | linquished tim | е | |
| Sampler's name indicated on COC | | | |
| | | | |
| Sample container label(s) consistent with COC | | B/3/18 | |
| Proper containers for analyses requested | | 🗹 | |
| Sufficient volume/mass for analyses requested | | | |
| Samples received within holding time | | , , | |
| Aqueous samples for certain analyses received within 15-minute holding time | | | |
| □ pH □ Residual Chlorine □ Dissolved Sulfide □ Dissolved Oxygen | | 🗖 | |
| Proper preservation chemical(s) noted on COC and/or sample container | | _ | |
| Unpreserved aqueous sample(s) received for certain analyses | | - | |
| □ Volatile Organics □ Total Metals □ Dissolved Metals | | | |
| Acid/base preserved samples - pH within acceptable range | | e i | |
| Container(s) for certain analysis free of headspace | | , | |
| □ Volatile Organics □ Dissolved Gases (RSK-175) □ Dissolved Oxygen (SM 4 | | | |
| ☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (I | | | |
| Tedlar™ bag(s) free of condensation | | 🗖 | o o/ |
| ,— . — . — . — . — . — . — . — . — . — . | ank Lot Numb | | |
| CONTAINER TYPE: (Trip Bia | | | |
| □ 250AGB □ 250CGB □ 250CGBs (pH_2) □ 250PB □ 250PBn (pH_2) □ 500AGB □ 5 | | | |
| □ 1AGB □ 1AGBna₂ □ 1AGBs (pH_2) □ 1AGBs (O&G) □ 1PB 1PBna (pH_12) □ | 0_ | | |
| Solid: 4ozCGJ 8ozCGJ 16ozCGJ Sleeve () EnCores® () TerraCores® | () 🗆 | 🗆 | _ 0 |
| Air: □ Tedlar™ □ Canister □ Sorbent Tube □ PUF □ Other Matrix (|): 🗆 | _ 🛮 | _ 0 |
| Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G = Glass, J = Jar, P = Plastic, ar | | | |
| Preservative: \mathbf{b} = buffered, \mathbf{f} = filtered, \mathbf{h} = HCl, \mathbf{n} = HNO ₃ , \mathbf{na} = NaOH, $\mathbf{na_2}$ = Na ₂ S ₂ O ₃ , \mathbf{p} = H ₃ | | | |
| $s = H_2SO_4$, $u = ultra-pure$, $x = Na_2SO_3+NaHSO_4.H_2O$, $znna = Zn (CH_3CO_2)_2 + NaHSO_4.H_2O$ | | Reviewed | 1 by: Ma |

Calscience

work order number: 18-10-2296

SAMPLE ANOMALY REPORT

DATE: 10/3//2018

2017-08-29 Revision

| SAMPLES, CONTAINERS, AND LABELS | 3: | | Commer | nts | | | |
|--|---------------------|-------------------|----------------------------|---------------------|-------------------|---|--|
| ☐ Sample(s) NOT RECEIVED but listed on CO | C | | | | | | |
| ☐ Sample(s) received but NOT LISTED on CO | С | | | | | | |
| ☐ Holding time expired (list client or ECI sample | e ID and anal | ysis) | | | | | |
| ☐ Insufficient sample amount for requested and | alysis (list ana | alysis) | | , | | | |
| ☐ Improper container(s) used (list analysis) | | | | | | | |
| ☐ Improper preservative used (list analysis) | | | | | | | |
| ☐ pH outside acceptable range (list analysis) | | | | | | | |
| ☐ No preservative noted on COC or label (list a | analysis and r | notify lab) | | | | | |
| ☐ Sample container(s) not labeled | | | | | | | |
| ☐ Client sample label(s) illegible (list container | type and ana | lysis) | | | | | |
| ☐ Client sample label(s) do not match COC (co | omment) | | | | | | |
| ☐ Project information | | | | | | | |
| ☐ Client sample ID | | | | | | | |
| ☐ Sampling date and/or time | | | | | | | |
| □ Number of container(s) | | 4 | | | | | |
| ☐ Requested analysis | | | | | | | |
| ☐ Sample container(s) compromised (commen | t) | | | | | | |
| ☐ Broken | | | | | | | |
| ☐ Water present in sample container | | | | | | | |
| ☐ Air sample container(s) compromised (comm | nent) | | | 10- | | | |
| □ Flat | | | * (1-2) Received Sample in | | | | |
| ☐ Very low in volume | | | I/Iter Plastic Confainer, | | | | |
| ☐ Leaking (not transferred; duplicate bag su | ubmitted) | | 20 m per coc. | | | | |
| ☐ Leaking (transferred into ECI Tedlar™ ba | ags*) | | | | | | |
| ☐ Leaking (transferred into client's Tedlar™ | ¹ bags*) | | | | | | |
| * Transferred at client's request. | | | | | | | |
| MISCELLANEOUS: (Describe) | | | Comments | | | | |
| | | | | | | | |
| HEADSPACE: | | | | | | | |
| (Containers with bubble > 6 mm or ¼ inch for volatile organic | c or dissolved gas | s analysis) | (Containers w | ith bubble for othe | r analysis) | | |
| ECI ECI Total ECI Sample ID Container ID Number** Sample ID | ECI Container ID | Total Number** | ECI Sample ID | ECI Container ID | Total Number** | Requested Analysis | |
| Cample 15 | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| Comments: * Container +/- | se_ | ì | | , | | | |
| Comments. | | | | | | Reported by: UFSO | |
| ** Record the total number of containers (i.e., vials or bottles | s) for the affected | sample. | | | F | Reported by: USO Reviewed by: USO Page 54 of 54 | |

APPENDIX B

Laboratory Reports of Sample Results and Chain of Custody

Round 3 – November 14-15, 2018

EnviroSystems, Inc.
One Lafayette Road
P.O. Box 778
Hampton, N.H. 03843-0778
p 603 926 3345 • 1 603 926 3521
envirosystems.com

Steve Clifton Underwood Engineers, Inc. 25 Vaughan Mall Portsmouth, NH 03801 PO Number: None Report Number: 31381 Date Received: 11/15/18 Date Reported: 12/20/18

Project: Piscataqua River

Attached please find results for analyses performed on samples received on 11/15/18 at 1400. Samples for total kjeldahl nitrogen, total phenol, and VOC analyses were subcontracted to Alpha Analytical of Westborough, MA. Data for subcontracted samples may be found in the report appendix.

Samples were received in acceptable condition, except where noted, and under chain of custody.

Instruments used in analysis were calibrated with the appropriate frequency and to the specifications of the referenced methods.

Analytes in blanks were below levels affecting sample results.

Matrix effects as monitored by matrix spike recovery or unusual physical properties were not apparent unless otherwise noted.

Accuracy and precision as monitored by laboratory control sample analyses were within acceptance limits unless otherwise noted.

Accreditations may be viewed at www.envirosystems.com.

The results presented in this report relate only to the samples described on the chain(s) of custody and sample receipt log(s), and are intended to be used only by the submittor.

EnviroSystems, Incorporated

Jason Hobbs - Technical Manager of Analytical Chemistry

Signature

Attachment Report

31381

Piscataqua River

SDG:

Sample ID: Matrix: Sampled:

PEASE_003

Water

11/15/18 0000

| Parameter | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---------------------------|-----------|--------|----------------|-----------|------------------|---------------------|-----------------------|
| Total suspended solids | 31381-004 | 15 | 4 | mg/L | 11/16/18 1500 | 11/19/18 1345 | CA /SM 2540D |
| Total dissolved solids | 31381-013 | 1600 | 5 | mg/L | 11/19/18 1645 | 11/20/18 1645 | CA /SM 2540C |
| Biochemical Oxygen Demand | 31381-001 | 6.2 | 5 | mg/L | 11/16/18 | 11/21/18 | CA /SM 5210 B |
| Ammonia-N | 31381-005 | 3.4 | 0.1 | mg/L as N | 11/16/18 1330 | 11/16/18 1330 | JHW/SM 4500-NH3 G |
| Nitrate plus nitrite-N | 31381-008 | 3.2 | 0.25 | mg/L as N | 11/19/18 1200 | 11/19/18 1213 | JHW/SM 4500-NO3 F |
| Total Nitrogen | 31381-008 | 8.6 | 0.25 | mg/L as N | 12/18/18 | 12/18/18 | AM/Calculation |
| Total phosphorus | 31381-011 | 30 | 0.8 | mg/L | 11/27/18 1145 | 11/28/18 1135 | CA /SM 4500-P E |

Notes:

31381

Piscataqua River

SDG:

Sample ID: Matrix: Sampled:

PEASE_003 Water

11/15/18 0824

Parameter Result Quant Units Limit

Date Date of INIT/Method/Reference Prepared Analysis

Turbidity Oil and grease 31381-014 2.43 31381-010 ND

0.2 5

NTU 11/15/18 1300 11/15/18 1300 JLH/SM 2130 B 11/19/18 0900 11/27/18 0900 RkVEPA 1664A mg/L

Notes:

31381

SDG:

Sample ID:

Piscataqua River

Matrix:

PEASE_003DUP Water

Sampled: 11/15/18 0000

| Parameter | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|------------------------|-----------|--------|----------------|-----------|------------------|---------------------|-----------------------|
| Ammonia-N | 31381-006 | 3.4 | 0.1 | mg/L as N | 11/16/18 1330 | 11/16/18 1330 | JHW/SM 4500-NH3 G |
| Nitrate plus nitrite-N | 31381-009 | 3 | 0.25 | mg/L as N | 11/19/18 1200 | 11/19/18 1213 | JHW/SM 4500-NO3 F |
| Total Nitrogen | 31381-009 | 8.5 | 0.25 | mg/L as N | 12/18/18 | 12/18/18 | AM/Calculation |
| Total phosphorus | 31381-012 | 31 | 0.8 | mg/L | 11/27/18 1145 | 11/28/18 1135 | CA /SM 4500-P E |

Notes:

ESI

31381

Piscataqua River

SDG:

Sample ID:

NEW_003

Matrix:

Water

Sampled:

11/15/18 0000

| Parameter | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---------------------------|-----------|--------|----------------|-----------|------------------|---------------------|-----------------------|
| Total suspended solids | 31381-023 | 12 | 4 | mg/L | 11/16/18 1500 | 11/19/18 1345 | CA /SM 2540D |
| Total dissolved solids | 31381-032 | 630 | 5 | mg/L | 11/19/18 1645 | 11/20/18 1645 | CA /SM 2540C |
| Biochemical Oxygen Demand | 31381-020 | 31 | 5 | mg/L | 11/16/18 | 11/21/18 | CA /SM 5210 B |
| Ammonia-N | 31381-024 | ND | 0.1 | mg/L as N | 11/16/18 1330 | 11/16/18 1330 | JHW/SM 4500-NH3 G |
| Nitrate plus nitrite-N | 31381-027 | 0.6 | 0.05 | mg/L as N | 11/19/18 1200 | 11/19/18 1213 | JHW/SM 4500-NO3 F |
| Total Nitrogen | 31381-027 | 2.3 | 0.05 | mg/L as N | 12/18/18 | 12/18/18 | AM/Calculation |
| Total phosphorus | 31381-030 | 0.61 | 0.02 | mg/L | 12/03/18 1215 | 12/05/18 1146 | CA /SM 4500-P E |

Notes:

31381

Piscataqua River

SDG:

Sample ID: Matrix: Sampled: NEW_003 Water

11/15/18 1016

Parameter Result Quant Units Date Date of INIT/Method/Reference Limit Prepared Analysis Turbidity 31381-033 7.38 0.2 NTU 11/15/18 1300 11/15/18 1300 JLH/SM 2130 B 11/19/18 0900 11/27/18 0900 RkVEPA 1664A Oil and grease 31381-029 ND 5 mg/L

Notes:

31381

Piscataqua River

SDG:

Sample ID: Matrix: Sampled: NEW_003DUP

Water

11/15/18 0000

| Parameter | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|------------------------|-----------|--------|----------------|-----------|------------------|---------------------|-----------------------|
| Ammonia-N | 31381-025 | ND | 0.1 | mg/L as N | 11/16/18 1330 | 11/16/18 1330 | JHW/SM 4500-NH3 G |
| Nitrate plus nitrite-N | 31381-028 | 0.6 | 0.05 | mg/L as N | 11/19/18 1200 | 11/19/18 1213 | JHW/SM 4500-NO3 F |
| Total Nitrogen | 31381-028 | 2.4 | 0.05 | mg/L as N | 12/18/18 | 12/18/18 | AM/Calculation |
| Total phosphorus | 31381-031 | 0.6 | 0.02 | mg/L | 12/03/18 1215 | 12/05/18 1146 | CA /SM 4500-P E |

Notes:

31381

SDG:

Piscataqua River

Sample ID: Matrix: Sampled:

RIVER_003 Water 11/15/18

| Parameter | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---------------------------|-----------|--------|----------------|-----------|------------------|---------------------|-----------------------|
| Total suspended solids | 31381-042 | 29 | 3 | mg/L | 11/16/18 1500 | 11/19/18 1345 | CA /SM 2540D |
| Total dissolved solids | 31381-050 | 12000 | 5 | mg/L | 11/19/18 1645 | 11/20/18 1645 | CA /SM 2540C |
| Biochemical Oxygen Demand | 31381-039 | ND | 5 | mg/L | 11/16/18 | 11/21/18 | CA /SM 5210 B |
| Ammonia-N | 31381-043 | ND | 0.1 | mg/L as N | 11/16/18 1330 | 11/16/18 1330 | JHW/SM 4500-NH3 G |
| Nitrate plus nitrite-N | 31381-045 | 0.09 | 0.05 | mg/L as N | 11/19/18 1200 | 11/19/18 1213 | JHW/SM 4500-NO3 F |
| Total Nitrogen | 31381-045 | 0.439 | 0.05 | mg/L as N | 12/18/18 | 12/18/18 | AM/Calculation |
| Total phosphorus | 31381-048 | 0.084 | 0.02 | mg/L | 12/03/18 1215 | 12/05/18 1146 | CA /SM 4500-P E |
| Turbidity | 31381-051 | 1.07 | 0.2 | NTU | 11/15/18 1300 | 11/15/18 1300 | JLH/SM 2130 B |
| Oil and grease | 31381-047 | ND | 5 | mg/L | 11/19/18 0900 | 11/27/18 0900 | RKVEPA 1664A |

Notes:

31381

Piscataqua River

SDG:

Sample ID: Matrix:

Sampled:

RIVER_003DUP

Water 11/15/18

| Parameter | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|------------------------|-----------|--------|----------------|-----------|------------------|---------------------|-----------------------|
| Ammonia-N | 31381-044 | ND | 0.1 | mg/L as N | 11/16/18 1330 | 11/16/18 1330 | JHW/SM 4500-NH3 G |
| Nitrate plus nitrite-N | 31381-046 | 0.09 | 0.05 | mg/L as N | 11/19/18 1200 | 11/19/18 1213 | JHW/SM 4500-NO3 F |
| Total Nitrogen | 31381-046 | 0.435 | 0.05 | mg/L as N | 12/18/18 | 12/18/18 | AM/Calculation |
| Total phosphorus | 31381-049 | 0.11 | 0.02 | mg/L | 12/03/18 1215 | 12/05/18 1146 | CA /SM 4500-P E |

Notes:

 Lab Number:
 31381-018

 Sample Designation:
 PEASE_003

 Date Sampled:
 11/15/18

 Date Extracted:
 11/20/18

 Date Analyzed:
 12/07/18

 Matrix:
 Water

SEMIVOLATILE ORGANICS Method Reference: EPA 625.

| | Concentration | Reporting Limit | | Concentration | Reporting Limit |
|----------------------------------|---------------|-----------------|------------------------------------|---------------|-----------------|
| | (ug/L) | (ug/L) | | (ug/L) | (ug/L) |
| N-nitrosodimethylamine | U | 5 | acenaphthene | U, J5 | 3 |
| phenol | U | 3 | 2,4-dinitrophenol | u | 11. |
| 2-chlorophenol | U | 3 | 4-nitrophenol | U | 11 |
| bis(2-chloroethyl)ether | 0 | 3 | fluorene | U, J5 | 3 |
| 1,3-dichlorobenzene | U, J5 | 3 | 4-chlorophenyl-phenylether | U | 3 |
| 1,4-dichlorobenzene | U | 3 | diethylphthalate | U | 3 |
| 1,2-dichlorobenzene | U | 5 | 4,6-dinitro-2-methylphenol | U | 11 |
| 2-methylphenol (m-cresol) | U | 3 | N-nitrosodiphenylamine | U | 5 |
| bis(2-chloroisopropyl)ether | U | 3 | 1,2-diphenylhydrazine (azobenzene) | U | 3 |
| hexachloroethane | U, J5 | 3 | 4-bromophenyl-phenylether | U, J5 | 3 |
| N-nitroso-di-n-propylamine | U | 5 | hexachlorobenzene | U | 3 |
| 3- and 4-methylphenol (p-cresol) | U | 3 | pentachlorophenol | u | 3 |
| nitrobenzene | U | 3 | phenanthrene | U, J5 | 3 |
| isophorone | U | 3 | anthracene | U | 3 |
| 2-nitrophenol | U | 3 | di-n-butylphthalate | 20,B | 3 |
| 2,4-dimethylphenol | Ü' | 3 | fluoranthene | U | 3 |
| bis(2-chloroethoxy)methane | U | 3 | benzidine | U | 43 |
| 2,4-dichlorophenol | Ü | 3 | pyrene | U, J5 | 3 |
| 1,2,4-trichlorobenzene | U,J2, J5 | 5 | butylbenzylphthalate | U | 3 |
| naphthalene | U | 3 | benzo(a)anthracene | U, J5 | 3 |
| hexachloro-1,3-butadiene | U, J5 | 3 | chrysene | U | 3 |
| 4-chloro-3-methylphenol | U | 3 | 3,3'-dichlorobenzidine | U | 22 |
| hexachlorocyclopentadiene | U, J5 | 5 | bis(2-ethylhexyl)phthalate | U | 3 |
| 2,4,5-trichlorophenol | U | 3 | di-n-octylphthalate | U | 3 |
| 2,4,6-trichlorophenol | U | 3 | benzo(b)fluoranthene | U | .5 |
| 2-chloronaphthalene | U,J2, J5 | 5 | benzo(k)fluoranthene | U | 5 |
| acenaphthylene | U | 3 | benzo(a)pyrene | U | 3 |
| dimethylphthalate | Û | 3 | indeno(1,2,3-cd)pyrene | U | 3 |
| 2,6-dinitrotoluene | U, J5 | 3 | dibenzo(a,h)anthracene | U | 3 |
| 2,4-dinitrotoluene | U | 3 | benzo(g,h,i)perylene | U | 3 |

| SURROGATE STANDARDS | | | | | |
|----------------------|----------|-----------------|------------------|----------|-------------------|
| | Recovery | Acceptance Limi | ts | Recovery | Acceptance Limits |
| | (%) | (%) | | (%) | (%) |
| 2-fluorophenol | 38 | 25-175 | nitrobenzene-d5 | 51 | 22-178 |
| phenol-d5 | 33 | 24-176 | 2-fluorobiphenyl | 47 | 38-162 |
| 2,4,6-tribromophenol | 65 | 24-176 | terphenyl-d14 | 64 | 53-147 |

U = Below quantitation limit

B = di-n-butylpthalate was found in the blank at a concentration of 9 ug/L.

J2 = LCS %R below limit. No sample remaining.

J5 = MS %R below limit.

EnviroSystems, Inc. One Lafayette Road P.O. Box 778 Hampton, NH 03842-0788 603-926-3345 fax 603-926-3521 www.envirosystems.com

Lab Number: 31381-037
Sample Designation: NEW_003
Date Sampled: 11/15/18
Date Extracted: 11/20/18
Date Analyzed: 12/07/18
Matrix: Water

SEMIVOLATILE ORGANICS Method Reference: EPA 625.

| | Concentration | Reporting Limit | | Concentration | Reporting Limit |
|----------------------------------|---------------|-----------------|------------------------------------|---------------|-----------------|
| | (ug/L) | (ug/L) | | (ug/L) | (ug/L) |
| N-nitrosodimethylamine | U | 6 | acenaphthene | U | 3 |
| phenol | U | 3 | 2,4-dinitrophenol | U | 11 |
| 2-chlorophenol | U | 3 | 4-nitrophenol | U | 11 |
| bis(2-chloroethyl)ether | U | 3 | fluorene | U | 3 |
| 1,3-dichlorobenzene | U. | 3 | 4-chlorophenyl-phenylether | U | 3 |
| 1,4-dichlorobenzene | U | 3 | diethylphthalate | U | 3 |
| 1,2-dichlorobenzene | U | 6 | 4,6-dinitro-2-methylphenol | U | 11 |
| 2-methylphenol (m-cresol) | U | 3 | N-nitrosodiphenylamine | Ü | 6 |
| bis(2-chloroisopropyl)ether | U | 3 | 1,2-diphenylhydrazine (azobenzene) | U | 3 |
| hexachloroethane | U | 3 | 4-bromophenyl-phenylether | U | 3 |
| N-nitroso-di-n-propylamine | U | 6 | hexachlorobenzene | U | 3 |
| 3- and 4-methylphenol (p-cresol) | U | 3 | pentachlorophenol | U | 3 |
| nitrobenzene | U | 3 | phenanthrene | U | 3 |
| isophorone | U | 3 | anthracene | U | 3 |
| 2-nitrophenol | U | 3 | di-n-butylphthalate | 12, B | 3 |
| 2,4-dimethylphenol | U | 3 | fluoranthene | U | 3 |
| bis(2-chloroethoxy)methane | U | 3 | benzidine | U | 45 |
| 2,4-dichlorophenol | U | 3 | pyrene | U | 3 |
| 1,2,4-trichlorobenzene | U,J2 | 6 | butylbenzylphthalate | U | 3 |
| naphthalene | Ü | 3 | benzo(a)anthracene | U | 3 |
| hexachloro-1,3-butadiene | U | 3 | chrysene | U | 3 |
| 4-chloro-3-methylphenol | Ú. | 3 | 3,3'-dichlorobenzidine | U | 22 |
| hexachlorocyclopentadiene | U | 6 | bis(2-ethylhexyl)phthalate | U | 3 |
| 2,4,5-trichlorophenol | U | 3 | di-n-octylphthalate | U | 3 |
| 2,4,6-trichlorophenol | U | 3 | benzo(b)fluoranthene | U | 6 |
| 2-chloronaphthalene | U,J2 | 6 | benzo(k)fluoranthene | U | 6 |
| acenaphthylene | U | 3 | benzo(a)pyrene | U | 3 |
| dimethylphthalate | U | 3 | indeno(1,2,3-cd)pyrene | U | 3 |
| 2,6-dinitrotoluene | U | 3 | dibenzo(a,h)anthracene | U | 3. |
| 2,4-dinitrotoluene | U | 3 | benzo(g,h,i)perylene | U | 3 |

SURROGATE STANDARDS

| | Recovery | Acceptance Limi | its | Recovery | Acceptance Limits |
|----------------------|----------|-----------------|------------------|----------|-------------------|
| | (%) | (%) | | (%) | (%) |
| 2-fluorophenol | 35 | 25-175 | nitrobenzene-d5 | 58 | 22-178 |
| phenol-d5 | 32 | 24-176 | 2-fluorobiphenyl | 57 | 38-162 |
| 2,4,6-tribromophenol | 64 | 24-176 | terphenyl-d14 | 67 | 53-147 |

U = Below quantitation limit

B = di-n-butylpthalate was found in the blank at a concentration of 9 ug/L.

J2 = LCS %R below limit. No sample remaining.

Page of ESI

EnviroSystems, Inc. One Lafayette Road P.O. Box 778 Hampton, NH 03842-0788 603-926-3345 fax 603-926-3521 www.envirosystems.com

Lab Number: 31381-058
Sample Designation: RIVER_003
Date Sampled: 11/15/18
Date Extracted: 11/20/18
Date Analyzed: 12/07/18
Matrix: Water

SEMIVOLATILE ORGANICS Method Reference: EPA 625.

| | Concentration | Reporting Limit | | Concentration | Reporting Limit |
|----------------------------------|---------------|-----------------|------------------------------------|---------------|-----------------|
| | (ug/L) | (ug/L) | | (ug/L) | (ug/L) |
| N-nitrosodimethylamine | U | 6 | acenaphthene | υ | 3 |
| phenol | U | 3 | 2,4-dinitrophenol | U | 12 |
| 2-chlorophenol | U | 3 | 4-nitrophenol | U | 12 |
| bis(2-chloroethyl)ether | U | 3 | fluorene | U | 3 |
| 1,3-dichlorobenzene | U | 3 | 4-chlorophenyl-phenylether | U | 3 |
| 1,4-dichlorobenzene | U | 3 | diethylphthalate | U | 3 |
| 1,2-dichlorobenzene | U | 6 | 4,6-dinitro-2-methylphenol | U | 12 |
| 2-methylphenol (m-cresol) | U | 3 | N-nitrosodiphenylamine | U. | 6 |
| bis(2-chloroisopropyl)ether | U | 3 | 1,2-diphenylhydrazine (azobenzene) | U | 3 |
| hexachloroethane | U | 3 | 4-bromophenyl-phenylether | U | 3 |
| N-nitroso-di-n-propylamine | U | 6 | hexachlorobenzene | U | 3 |
| 3- and 4-methylphenol (p-cresol) | U | 3 | pentachlorophenol | U | 3 |
| nitrobenzene | U | 3 | phenanthrene | U | 3 |
| isophorone | U | 3 | anthracene | U | 3 |
| 2-nitrophenol | U | 3 | di-n-butylphthalate | 29, B | 3 |
| 2,4-dimethylphenol | O. | 3 | fluoranthene | U | 3 |
| bis(2-chloroethoxy)methane | U | 3 | benzidine | U | 49 |
| 2,4-dichlorophenol | U | 3 | pyrene | u | 3 |
| 1,2,4-trichlorobenzene | U,J2 | 6 | butylbenzylphthalate | u | 3 |
| naphthalene | U | 3 | benzo(a)anthracene | U | 3 |
| hexachloro-1,3-butadiene | U | 3 | chrysene | U | 3 |
| 4-chloro-3-methylphenol | U | 3 | 3,3'-dichlorobenzidine | U | 24 |
| hexachlorocyclopentadiene | U | 6 | bis(2-ethylhexyl)phthalate | U | 3 |
| 2,4,5-trichlorophenol | U | 3 | di-n-octylphthalate | U | 3 |
| 2,4,6-trichlorophenol | U | 3 | benzo(b)fluoranthene | U | 6 |
| 2-chloronaphthalene | U,J2 | 6 | benzo(k)fluoranthene | U | 6 |
| acenaphthylene | U | 3 | benzo(a)pyrene | U | 3 |
| dimethylphthalate | U | 3 | indeno(1,2,3-cd)pyrene | U | 3 |
| 2,6-dinitrotoluene | U | 3 | dibenzo(a,h)anthracene | U | 3 |
| 2,4-dinitrotoluene | Ü | 3 | benzo(g,h,i)perylene | U | 3 |

| Recovery | Acceptance Lim | nits | Recovery | Acceptance Limits |
|----------|-----------------|-----------------------------------|--|--|
| (%) | (%) | | (%) | (%) |
| 45 | 25-175 | nitrobenzene-d5 | 60 | 22-178 |
| 48 | 24-176 | 2-fluorobiphenyl | 60 | 38-162 |
| 60 | 24-176 | terphenyl-d14 | 60 | 53-147 |
| | (%) 45 48 | (%) (%) 45 25-175 48 24-176 | (%) (%) 45 25-175 nitrobenzene-d5 48 24-176 2-fluorobiphenyl | (%) (%) (%) 45 25-175 nitrobenzene-d5 60 48 24-176 2-fluorobiphenyl 60 |

U = Below quantitation limit

B = di-n-butylpthalate was found in the blank at a concentration of 9 ug/L.

J2 = LCS %R below limit. No sample remaining.

Page of ESI

Lab Number; 31381-059
Sample Designation: RIVER_003TB
Date Sampled: 11/15/18
Date Extracted: 11/20/18
Date Analyzed: 12/07/18
Matrix: Water

SEMIVOLATILE ORGANICS Method Reference: EPA 625.

| | Concentration | Reporting Limit | | Concentration | Reporting Limit |
|----------------------------------|---------------|-----------------|------------------------------------|---------------|-----------------|
| | (ug/L) | (ug/L) | | (ug/L) | (ug/L) |
| N-nitrosodimethylamine | U | 5 | acenaphthene | U | 3 |
| phenol | Ü | 3 | 2,4-dinitrophenol | U | 11 |
| 2-chlorophenol | U | 3 | 4-nitrophenol | U | 11 |
| bis(2-chloroethyl)ether | U | 3 | fluorene | u | 3 |
| 1,3-dichlorobenzene | U | 3 | 4-chlorophenyl-phenylether | Ü | 3 |
| 1,4-dichlorobenzene | U | 3 | diethylphthalate | U | 3 |
| 1,2-dichlorobenzene | O. | 5 | 4,6-dinitro-2-methylphenol | U | 11 |
| 2-methylphenol (m-cresol) | U | 3 | N-nitrosodiphenylamine | U | 5 |
| bis(2-chloroisopropyl)ether | U | 3 | 1,2-diphenylhydrazine (azobenzene) | U | 3 |
| hexachloroethane | U | 3 | 4-bromophenyl-phenylether | Ú | 3 |
| N-nitroso-di-n-propylamine | U | 5 | hexachlorobenzene | U | 3 |
| 3- and 4-methylphenol (p-cresol) | U | 3 | pentachlorophenol | U | 3 |
| nitrobenzene | U | 3 | phenanthrene | U | 3 |
| isophorone | U | 3 | anthracene | U | 3 |
| 2-nitrophenol | U | 3 | di-n-butylphthalate | 8, B | 3 |
| 2,4-dimethylphenol | U | 3 | fluoranthene | U | 3 |
| bis(2-chloroethoxy)methane | U | 3 | benzidine | U | 43 |
| 2,4-dichlorophenol | u. | 3 | pyrene | U | 3 |
| 1,2,4-trichlorobenzene | U,J2 | 5 | butylbenzylphthalate | Ü | 3 |
| naphthalene | U | 3 | benzo(a)anthracene | U | 3 |
| hexachloro-1,3-butadiene | U | 3 | chrysene | U | 3 |
| 4-chloro-3-methylphenol | U | 3 | 3,3'-dichlorobenzidine | U | 21 |
| hexachlorocyclopentadiene | U | 5 | bis(2-ethylhexyl)phthalate | U | 3 |
| 2,4,5-trichlorophenol | U | 3 | di-n-octylphthalate | U | 3 |
| 2,4,6-trichlorophenol | U | 3 | benzo(b)fluoranthene | U | 5 |
| 2-chloronaphthalene | U,J2 | 5 | benzo(k)fluoranthene | U | 5 |
| acenaphthylene | U | 3 | benzo(a)pyrene | U | 3 |
| dimethylphthalate | U | 3 | indeno(1,2,3-cd)pyrene | Ü | 3 |
| 2,6-dinitrotoluene | Ú | 3 | dibenzo(a,h)anthracene | U | 3 |
| 2,4-dinitrotoluene | U | 3 | benzo(g,h,i)perylene | U | 3 |

| SURROGATE STANDARDS | | | | | |
|----------------------|----------|----------------|------------------|----------|-------------------|
| | Recovery | Acceptance Lin | nits | Recovery | Acceptance Limits |
| | (%) | (%) | | (%) | (%) |
| 2-fluorophenol | 50 | 25-175 | nitrobenzene-d5 | 60 | 22-178 |
| phenol-d5 | 44 | 24-176 | 2-fluorobiphenyl | 59 | 38-162 |
| 2,4,6-tribromophenol | 90 | 24-176 | terphenyl-d14 | 80 | 53-147 |

U = Below quantitation limit

B = di-n-butylpthalate was found in the blank at a concentration of 9 ug/L.

J2 = LCS %R below limit. No sample remaining.

Page of ESI

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BACTERIAL ANALYSIS REPORT

ESI STUDY No .: 31381

Client: **Underwood Engineers**

Sample Receipt: 11/15/18 1400

Fecal Coliform Method: SM 9222D

| Sample Lab ID Identification Number | Sample C | ollection | Sample Analysis Result | | | A constituted | |
|-------------------------------------|-----------|-----------|------------------------|----------|-------------|---------------|----|
| | Date | Time | Date | Time | (CFU/100mL) | Analyst | |
| PEASE_003 | 31381-003 | 11/15/18 | 0823 | 11/15/18 | 1526 | <2 | КС |
| NEW_003 | 31381-022 | 11/15/18 | 1015 | 11/15/18 | 1523 | 5 | кс |
| RIVER_003 | 31381-041 | 11/15/18 | 1243 | 11/15/18 | 1523 | 107 | KC |

Method: EPA 1600 Enterococcus

| Sample Lab ID Identification Number | Sample C | ollection | Sample A | nalysis | Result | 100 | |
|-------------------------------------|-----------|-----------|----------|----------|-------------|---------|----|
| | Date | Time | Date | Time | (CFU/100mL) | Analyst | |
| PEASE_003 | 31381-002 | 11/15/18 | 0823 | 11/15/18 | 1548 | 2 | кс |
| NEW_003 | 31381-021 | 11/15/18 | 1015 | 11/15/18 | 1546 | <2 | KC |
| RIVER_003 | 31381-040 | 11/15/18 | 1320 | 11/15/18 | 1546 | 143 | KC |

Effluent Chemistry

| Sample Number | Total Residual Chlorine (mg/L) |
|---------------|--------------------------------|
| 002 | 0.0 |
| 003 | 0.0 |
| 021 | 0.0 |
| 022 | 0.0 |
| 040 | 0.0 |
| 041 | 0.0 |

APHA. 2012. Standard Methods for the Examination of Water and Wastewater, 22nd Edition. Washington D.C. Analytical Methods:

U.S. Environmental Protection Agency Office of Water (4303T). 2003. Method 1600: Membrane Filter Test for Enterococci in Water. Washington D.C.

31381

Piscataqua River

Sample ID: Matrix:

PEASE_003

Water Sampled: 11/15/18 0000

| Parameter | | Result | True Value | Percent Recovery | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---------------------------|------|--------|---------------|---------------------|-------------------|------------------|---------------------|-----------------------|
| Total Suspended Solids | PB | ND | | ND | mg/L | 11/16/18 1500 | 11/19/18 1345 | SM 2540D |
| Total Suspended Solids | LCS | 10.4 | 10.6 | 98%R | mg/L | 11/16/18 1500 | 11/19/18 1345 | SM 2540D |
| Total Suspended Solids | LCSD | 11.7 | 11.2 | 104%R, 12%RPD | mg/L | 11/16/18 1500 | 11/19/18 1345 | SM 2540D |
| Total dissolved Solids | РВ | ND | | ND | mg/L | 11/19/18 1645 | 11/20/18 1645 | SM 2540C |
| Total dissolved Solids | LCS | 563 | 500 | 113%R | mg/L | 11/19/18 1645 | 11/20/18 1645 | SM 2540C |
| Total dissolved Solids | LCSD | 599 | 500 | 120%R, 6%RPD | mg/L | 11/19/18 1645 | 11/20/18 1645 | SM 2540C |
| Biochemical Oxygen Demand | PBA. | ND | 9 | ND | mg/L DO depletion | 11/16/18 | 11/21/18 | SM 5210 B |
| Biochemical Oxygen Demand | PBB | ND | 9 | ND | mg/L DO depletion | 11/16/18 | 11/21/18 | SM 5210 B |
| Biochemical Oxygen Demand | LCS | 179 | 198 | 90%R | mg/L DO depletion | 11/16/18 | 11/21/18 | SM 5210 B |
| Biochemical Oxygen Demand | LCSD | 184 | 198 | 93%R | mg/L DO depletion | 11/16/18 | 11/21/18 | SM 5210 B |
| Biochemical Oxygen Demand | LCST | 184 | 198 | 93%R,1%RR | | 11/16/18 | 11/21/18 | SM 5210 B |
| Ammonia-N | РВ | ND | | ND | mg/L as N | 11/16/18 1330 | 11/16/18 1330 | SM 4500-NH3 G |
| Ammonia-N | LCS | 9.8 | 10.0 | 98%R | mg/L as N | 11/16/18 1330 | 11/16/18 1330 | SM 4500-NH3 G |
| Ammonia-N | LCS | 9,8 | 10.0 | 98%R, 0%RPD | mg/L as N | 11/16/18 1330 | 11/16/18 1330 | SM 4500-NH3 G |
| Nitrate plus nitrite-N | РВ | ND | | ND | mg/L as N | 11/19/18 1200 | 11/19/18 1213 | SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCS | 0.99 | 1.00 | 99%R | mg/L as N | 11/19/18 1200 | 11/19/18 1213 | SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCSD | 0.95 | 1.00 | 95%R, 4%RPD | mg/L as N | 11/19/18 1200 | 11/19/18 1213 | SM 4500-NO3 F |
| Total phosphorus | РВ | 0.00 | 0.00 | ND | mg/L | 12/05/18 1146 | 12/05/18 1146 | SM 4500-P E |
| Total phosphorus | LCS | 0.49 | 0.50 | 98%R | mg/L | 12/03/18 1215 | 12/05/18 1146 | SM 4500-P E |
| Total phosphorus | LCSD | 0.48 | 0.50 | 97%R, 1%RPD | mg/L | 12/03/18 1215 | 12/05/18 1146 | SM 4500-P E |
| Total phosphorus | S1D | 0.62 | | 0%RPD | mg/L | 12/03/18 1215 | 12/03/18 1215 | SM 4500-P E |
| Total phosphorus | SIS | 1.01 | 0.50 | 80%R | mg/L | 12/03/18 1215 | 12/03/18 1215 | SM 4500-P E |

SDG

Notes:

31381

Piscataqua River

SDG:

- 47

Sample ID: Matrix: PEASE_003 Water

Sampled: 11/15/18 0825

Parameter Result True Percent Units Date Date of INIT/Method/Reference Value Prepared Analysis Recovery Oil and grease PB ND mg/L 11/19/18 0900 11/19/18 1600 EPA 1664A Oil and grease LCS 39 40 11/19/18 0900 EPA 1664A 98%R mg/L 11/19/18 1600 Oil and grease LCSD 36 40 89%R,9.6%RR mg/L 11/19/18 0900 11/19/18 1600 **EPA 1664A** Oil and grease S1MS 41 40 102%R mg/L 11/19/18 0900 11/27/18 0900 EPA 1664A

Notes:

31381

Piscataqua River

Sample ID:

PEASE_003DUP

Water

Matrix:

Sampled: 11/15/18 0000

| Parameter | | Result | True Value | Percent Recovery | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|------------------------|------|--------|---------------|---------------------|------------|------------------|---------------------|-----------------------|
| Ammonia-N | РВ | ND | | ND | mg/L as N | 11/16/18 1330 | 11/16/18 1330 | SM 4500-NH3 G |
| Ammonia-N | LCS | 9.8 | 10.0 | 98%R | mg/L as N | 11/16/18 1330 | 11/16/18 1330 | SM 4500-NH3 G |
| Ammonia-N | LCS | 9.8 | 10.0 | 98%R, 0%RPD | mg/L as N. | 11/16/18 1330 | 11/16/18 1330 | SM 4500-NH3 G |
| Nitrate plus nitrite-N | РВ | ND | | ND | mg/L as N | 11/19/18 1200 | 11/19/18 1213 | SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCS | 0.99 | 1.00 | 99%R | mg/L as N | 11/19/18 1200 | 11/19/18 1213 | SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCSD | 0.95 | 1.00 | 95%R, 4%RPD | mg/L as N | 11/19/18 1200 | 11/19/18 1213 | SM 4500-NO3 F |
| Total phosphorus | PB | 0.00 | 0.00 | ND | mg/L | 12/05/18 1146 | 12/05/18 1146 | SM 4500-P E |
| Total phosphorus | LCS | 0.49 | 0.50 | 98%R | mg/L | 12/03/18 1215 | 12/05/18 1146 | SM 4500-P E |
| Total phosphorus | LCSD | 0.48 | 0.50 | 97%R, 1%RPD | mg/L | 12/03/18 1215 | 12/05/18 1146 | SM 4500-P E |
| Total phosphorus | S1D | 0.62 | 40.4 | 0%RPD | mg/L | 12/03/18 1215 | 12/03/18 1215 | SM 4500-P E |
| Total phosphorus | S1S | 1.01 | 0.50 | 80%R | mg/L | 12/03/18 1215 | 12/03/18 1215 | SM 4500-P E |
| | | | | | | | | |

SDG:

Notes:

31381

Piscataqua River

Sample ID: Matrix:

NEW_003 Water Sampled: 11/15/18 0000

| Parameter | | Result | True Value | Percent Recovery | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---------------------------|------|--------|---------------|---------------------|-------------------|------------------|---------------------|-----------------------|
| Total Suspended Solids | PB | ND | | ND | mg/L | 11/16/18 1500 | 11/19/18 1345 | SM 2540D |
| Total Suspended Solids | LCS | 10.4 | 10.6 | 98%R | mg/L | 11/16/18 1500 | 11/19/18 1345 | SM 2540D |
| Total Suspended Solids | LCSD | 11.7 | 11.2 | 104%R, 12%RPD | mg/L | 11/16/18 1500 | 11/19/18 1345 | SM 2540D |
| Total dissolved Solids | PB | ND | | ND | mg/L | 11/19/18 1645 | 11/20/18 1645 | SM 2540C |
| Total dissolved Solids | LCS | 563 | 500 | 113%R | mg/L | 11/19/18 1645 | 11/20/18 1645 | SM 2540C |
| Total dissolved Solids | LCSD | 599 | 500 | 120%R, 6%RPD | mg/L | 11/19/18 1645 | 11/20/18 1645 | SM 2540C |
| Biochemical Oxygen Demand | PBA | ND | 9 | ND | mg/L DO depletion | 11/16/18 | 11/21/18 | SM 5210 B |
| Biochemical Oxygen Demand | PBB | ND | 9 | ND | mg/L DO depletion | 11/16/18 | 11/21/18 | SM 5210 B |
| Biochemical Oxygen Demand | LCS | 179 | 198 | 90%R | mg/L DO depletion | 11/16/18 | 11/21/18 | SM 5210 B |
| Biochemical Oxygen Demand | LCSD | 184 | 198 | 93%R | mg/L DO depletion | 11/16/18 | 11/21/18 | SM 5210 B |
| Biochemical Oxygen Demand | LCST | 184 | 198 | 93%R,1%RR | mg/L DO depletion | 11/16/18 | 11/21/18 | SM 5210 B |
| Ammonia-N | РВ | ND | | ND | mg/L as N | 11/16/18 1330 | 11/16/18 1330 | SM 4500-NH3 G |
| Ammonia-N | LCS | 9.8 | 10.0 | 98%R | mg/L as N | 11/16/18 1330 | 11/16/18 1330 | SM 4500-NH3 G |
| Ammonia-N | LCS | 9,8 | 10.0 | 98%R, 0%RPD | mg/L as N | 11/16/18 1330 | 11/16/18 1330 | SM 4500-NH3 G |
| Nitrate plus nitrite-N | PB | ND | | ND | mg/L as N | 11/19/18 1200 | 11/19/18 1213 | SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCS | 0.99 | 1.00 | 99%R | mg/L as N | 11/19/18 1200 | 11/19/18 1213 | SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCSD | 0.95 | 1.00 | 95%R, 4%RPD | mg/L as N | 11/19/18 1200 | 11/19/18 1213 | SM 4500-NO3 F |
| Total phosphorus | РВ | 0.00 | 0.00 | ND | mg/L | 12/05/18 1146 | 12/05/18 1146 | SM 4500-P E |
| Total phosphorus | LCS | 0.49 | 0.50 | 98%R | mg/L | 12/03/18 1215 | 12/05/18 1146 | SM 4500-P E |
| Total phosphorus | LCSD | 0.48 | 0.50 | 97%R, 1%RPD | mg/L | 12/03/18 1215 | 12/05/18 1146 | SM 4500-P E |
| Total phosphorus | SID | 0.62 | | 0%RPD | mg/L | 12/03/18 1215 | 12/03/18 1215 | SM 4500-P E |
| Total phosphorus | SIS | 1.01 | 0.50 | 80%R | mg/L | 12/03/18 1215 | 12/03/18 1215 | SM 4500-P E |

SDG:

Notes:

ND = Not Detected

ESI

31381

Piscataqua River

SDG:

Sample ID; Matrix:

NEW_003 Water

| Sam | pled: | |
|-----|-------|--|
| | | |

11/15/18 1015

| Parameter | | Result | True Value | Percent Recovery | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|----------------|------|--------|---------------|---------------------|-------|------------------|---------------------|-----------------------|
| Oil and grease | PB | ND | | | mg/L | 11/19/18 0900 | 11/19/18 1600 | EPA 1664A |
| Oil and grease | LCS | 39 | 40 | 98%R | mg/L | 11/19/18 0900 | 11/19/18 1600 | EPA 1664A |
| Oil and grease | LCSD | 36 | 40 | 89%R,9.6%RR | mg/L | 11/19/18 0900 | 11/19/18 1600 | EPA 1664A |
| Oil and grease | SIMS | 41 | 40 | 102%R | mg/L | 11/19/18 0900 | 11/27/18 0900 | EPA 1664A |

Notes:

31381

Piscataqua River

Sample ID: Matrix: Sampled:

NEW_003DUP Water

11/15/18 0000

| Parameter | | Result | True Value | Percent Recovery | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|--|--------------------|----------------------|---------------|------------------------------|----------------------|---|---|---|
| Ammonia-N | РВ | ND | | ND | mg/L as N | 11/16/18 1330 | 11/16/18 1330 | SM 4500-NH3 G |
| Ammonia-N | LCS | 9.8 | 10.0 | 98%R | mg/L as N | 11/16/18 1330 | 11/16/18 1330 | SM 4500-NH3 G |
| Ammonia-N | LCS | 9.8 | 10.0 | 98%R, 0%RPD | mg/L as N | 11/16/18 1330 | 11/16/18 1330 | SM 4500-NH3 G |
| Nitrate plus nitrite-N | РВ | ND | | ND | mg/L as N | 11/19/18 1200 | 11/19/18 1213 | SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCS | 0.99 | 1.00 | 99%R | mg/L as N | 11/19/18 1200 | 11/19/18 1213 | SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCSD | 0.95 | 1.00 | 95%R, 4%RPD | mg/L as N | 11/19/18 1200 | 11/19/18 1213 | SM 4500-NO3 F |
| Total phosphorus | PB | 0.00 | 0.00 | ND | mg/L | 12/05/18 1146 | 12/05/18 1146 | SM 4500-P E |
| Total phosphorus | LCS | 0.49 | 0.50 | 98%R | mg/L | 12/03/18 1215 | 12/05/18 1146 | SM 4500-P E |
| Total phosphorus | LCSD | 0.48 | 0.50 | 97%R, 1%RPD | mg/L | 12/03/18 1215 | 12/05/18 1146 | SM 4500-P E |
| | S1D | 0.62 | 37.94 | 0%RPD | mg/L | 12/03/18 1215 | 12/03/18 1215 | SM 4500-P E |
| Total phosphorus | SIS | 1.01 | 0.50 | 80%R | mg/L | 12/03/18 1215 | 12/03/18 1215 | SM 4500-P E |
| Total phosphorus Total phosphorus Total phosphorus | LCS LCSD S1D | 0.49 0.48 0.62 | 0.50 0.50 | 98%R 97%R, 1%RPD 0%RPD | mg/L mg/L mg/L | 12/03/18 1215 12/03/18 1215 12/03/18 1215 | 12/05/18 1146 12/05/18 1146 12/03/18 1215 | SM 4500-P E SM 4500-P E SM 4500-P E |

SDG:

Notes:

Report No:

31381

Project: Piscataqua River

Sample ID: Matrix: Sampled: RIVER_003 Water 11/15/18

Date of INIT/Method/Reference Parameter Result True Percent Units Date Value Recovery Prepared Analysis Total Suspended Solids PB ND ND mg/L 11/16/18 1500 11/19/18 1345 SM 2540D Total Suspended Solids LCS 10.4 10.6 98%R mg/L 11/16/18 1500 11/19/18 1345 SM 2540D 104%R, 12%RPD 11/19/18 1345 SM 2540D Total Suspended Solids LCSD 11/16/18 1500 11.7 mg/L 11.2 11/20/18 1645 PB SM 2540C Total dissolved Solids ND ND mg/L 11/19/18 1645 Total dissolved Solids LCS 563 500 113%R mg/L 11/19/18 1645 11/20/18 1645 SM 2540C Total dissolved Solids LCSD 599 500 120%R, 6%RPD mg/L 11/19/18 1645 11/20/18 1645 SM 2540C Biochemical Oxygen Demand ND 9 11/21/18 SM 5210 B **PBA** ND mg/L DO depletion 11/16/18 PBB ND ND mg/L DO depletion 11/16/18 11/21/18 SM 5210 B Biochemical Oxygen Demand 9 90%R 11/21/18 SM 5210 B Biochemical Oxygen Demand LCS 179 198 mg/L DO depletion 11/16/18 Biochemical Oxygen Demand LCSD 184 198 93%R mg/L DO depletion 11/16/18 11/21/18 SM 5210 B SM 5210 B Biochemical Oxygen Demand LCST 198 93%R,1%RR mg/L DO depletion 11/16/18 11/21/18 184 PB ND 11/16/18 1330 11/16/18 1330 SM 4500-NH3 G Ammonia-N ND mg/L as N Ammonia-N LCS 9.8 10.0 98%R mg/L as N 11/16/18 1330 11/16/18 1330 SM 4500-NH3 G 11/16/18 1330 SM 4500-NH3 G mg/L as N 11/16/18 1330 Ammonia-N LCS 9.8 10.0 98%R, 0%RPD SM 4500-NO3 F PB. ND ND 11/19/18 1200 11/19/18 1213 Nitrate plus nitrite-N mg/L as N Nitrate plus nitrite-N LCS 0.99 1.00 99%R mg/L as N 11/19/18 1200 11/19/18 1213 SM 4500-NO3 F SM 4500-NO3 F LCSD 95%R, 4%RPD mg/L as N 11/19/18 1213 Nitrate plus nitrite-N 0.95 1.00 11/19/18 1200 12/05/18 1146 SM 4500-P E Total phosphorus PB 0.00 0.00 ND mg/L 12/05/18 1146 mg/L 12/05/18 1146 SM 4500-P E Total phosphorus LCS 0.49 0.50 98%R 12/03/18 1215 SM 4500-P E Total phosphorus LCSD 0.48 0.50 97%R, 1%RPD mg/L 12/03/18 1215 12/05/18 1146 Total phosphorus SID 0.62 0%RPD mg/L 12/03/18 1215 12/03/18 1215 SM 4500-P E SM 4500-P E Total phosphorus SIS 1.01 0.50 80%R mg/L 12/03/18 1215 12/03/18 1215 EPA 1664A ND mg/L 11/19/18 0900 11/19/18 1600 Oil and grease PB Oil and grease LCS 39 40 98%R mg/L 11/19/18 0900 11/19/18 1600 EPA 1664A EPA 1664A Oil and grease LCSD 36 40 89%R.9.6%RR 11/19/18 0900 11/19/18 1600 mg/L **EPA 1664A** 11/19/18 0900 11/27/18 0900 Oil and grease S1MS 41 40 102%R mg/L

SDG:

Notes:

31381

Piscataqua River

Sample ID: Matrix: Sampled:

RIVER_003DUP

Water 11/15/18

| Parameter | | Result | True Value | Percent Recovery | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|------------------------|------|--------|---------------|---------------------|-----------|------------------|---------------------|-----------------------|
| Ammonia-N | PB | ND | | ND | mg/L as N | 11/16/18 1330 | 11/16/18 1330 | SM 4500-NH3 G |
| Ammonia-N | LCS | 9.8 | 10.0 | 98%R | mg/L as N | 11/16/18 1330 | 11/16/18 1330 | SM 4500-NH3 G |
| Ammonia-N | LCS | 9.8 | 10.0 | 98%R, 0%RPD | mg/L as N | 11/16/18 1330 | 11/16/18 1330 | SM 4500-NH3 G |
| Nitrate plus nitrite-N | PB | ND | | ND | mg/L as N | 11/19/18 1200 | 11/19/18 1213 | SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCS | 0.99 | 1.00 | 99%R | mg/L as N | 11/19/18 1200 | 11/19/18 1213 | SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCSD | 0.95 | 1.00 | 95%R, 4%RPD | mg/L as N | 11/19/18 1200 | 11/19/18 1213 | SM 4500-NO3 F |
| Total phosphorus | РВ | 0.00 | 0.00 | ND | mg/L | 12/05/18 1146 | 12/05/18 1146 | SM 4500-P E |
| Total phosphorus | LCS | 0.49 | 0.50 | 98%R | mg/L | 12/03/18 1215 | 12/05/18 1146 | SM 4500-P E |
| Total phosphorus | LCSD | 0.48 | 0.50 | 97%R, 1%RPD | mg/L | 12/03/18 1215 | 12/05/18 1146 | SM 4500-P E |
| Total phosphorus | S1D | 0.62 | | 0%RPD | mg/L | 12/03/18 1215 | 12/03/18 1215 | SM 4500-P E |
| Total phosphorus | S1S | 1.01 | 0.50 | 80%R | mg/L | 12/03/18 1215 | 12/03/18 1215 | SM 4500-P E |

SDG:

Notes:

Lab Number: PB170W

Sample Designation: Laboratory Blank
Date Sampled: 11/20/18 0900
Date Extracted: 11/20/18 0900
Date Analyzed: 11/27/18
Matrix: Water

SEMIVOLATILE ORGANICS Method Reference: EPA 625.

| | Concentration | Quantitation Limit | | Concentration | Quantitation Limit |
|-----------------------------|---------------|--------------------|------------------------------------|---------------|--------------------|
| | (ug/L) | (ug/L) | | (ug/L) | (ug/L) |
| N-nitrosodimethylamine | U | 5 | acenaphthene | U | 3 |
| phenol | U | 3 | 2,4-dinitrophenol | Ü | 10 |
| 2-chlorophenol | Ü | 3 | 4-nitrophenol | U | 10 |
| bis(2-chloroethyl)ether | U | 3 | fluorene | U | 3 |
| 1,3-dichlorobenzene | U. | 3 | 4-chlorophenyl-phenylether | U | 3 |
| 1,4-dichlorobenzene | u | 3 | diethylphthalate | U | 3 |
| 1,2-dichlorobenzene | U | 5 | 4,6-dinitro-2-methylphenol | U | 10 |
| 2-methylphenol (m-cresol) | U | 3 | N-nitrosodiphenylamine | U | 5 |
| bis(2-chloroisopropyl)ether | U | 3 | 1,2-diphenylhydrazine (azobenzene) | Ü | 3 |
| hexachloroethane | U | 3 | 4-bromophenyl-phenylether | U | 3 |
| N-nitroso-di-n-propylamine | U | 10 | hexachlorobenzene | U | 3 |
| 4-methylphenol (p-cresol) | U | 3 | pentachlorophenol | U | 3 |
| nitrobenzene | U | 3 | phenanthrene | U | 3 |
| isophorone | Ú | 3 | anthracene | U | 3 |
| 2-nitrophenol | U | 3 | di-n-butylphthalate | 9, B | 3 |
| 2,4-dimethylphenol | U | 3 | fluoranthene | U | 3 |
| bis(2-chloroethoxy)methane | U | 3 | benzidine | U | 40 |
| 2,4-dichlorophenol | Ú | 3 | pyrene | U | 3 |
| 1,2,4-trichlorobenzene | U | 5 | butylbenzylphthalate | U | 3 |
| naphthalene | U | 3 | benzo(a)anthracene | u | 3 |
| hexachloro-1,3-butadiene | U | 3 | chrysene | U | 3 |
| 4-chloro-3-methylphenol | U | 3 | 3,3'-dichlorobenzidine | u | 20 |
| hexachlorocyclopentadiene | U | 10 | bis(2-ethylhexyl)phthalate | U | 3 |
| 2,4,5-trichlorophenol | U | 3 | di-n-octylphthalate | U | 3 |
| 2,4,6-trichlorophenol | U | 3 | benzo(b)fluoranthene | U | 5 |
| 2-chloronaphthalene | U | 5 | benzo(k)fluoranthene | U | 5 |
| acenaphthylene | U | 3 | benzo(a)pyrene | Ų | 3 |
| dimethylphthalate | U | 3 | indeno(1,2,3-cd)pyrene | U | 3 |
| 2,6-dinitrotoluene | U | 3 | dibenzo(a,h)anthracene | U | 3 |
| 2.4-dinitrotoluene | U. | 3 | benzo(g,h,i)perylene | U | 3 |

| SURROGATE STANDARDS | Recovery | Acceptance Lim | nits | Recovery | Acceptance Limits |
|----------------------|----------|----------------|------------------|----------|-------------------|
| | (%) | (%) | | (%) | (%) |
| 2-fluorophenol | 43 | 25-175 | nitrobenzene-d5 | 76 | 22-178 |
| phenol-d5 | 39 | 24-176 | 2-fluorobiphenyl | 67 | 38-162 |
| 2,4,6-tribromophenol | 90 | 24-176 | terphenyl-d14 | 90 | 53-147 |

U = Below quantitation limit

B = di-n-butylpthalate was found in the blank at a concentration of 9 ug/L.

Page of ESI

Lab Number:

LCS170W

Sample Designation:

Laboratory Control Sample

Date Sampled: Date Extracted:

11/20/18 1030 11/20/18 1030

Date Analyzed: 11/28/18 Matrix: Water

SEMIVOLATILE ORGANICS Method Reference: EPA 625.

| | Concentration | Added | Recovery | Limits | | Concentration | Added | Recovery | Limits |
|-----------------------------|---------------|--------|----------|--------|----------------------------|---------------|--------|----------|--------|
| | (ug/L) | (ug/L) | (%) | (%) | | (ug/L) | (ug/L) | (%) | (%) |
| N-nitrosodimethylamine | 69 | 100 | 69 | 30-150 | acenaphthene | 64 | 100 | 64 | 47-145 |
| phenol | 34 | 100 | 34 | 5-120 | 2,4-dinitrophenol | 43 | 100 | 43 | 1-191 |
| 2-chlorophenol | 56 | 100 | 56 | 30-150 | 4-nitrophenol | 41 | 100 | 41 | 1-132 |
| bis(2-chloroethyl)ether | 61 | 100 | 61 | 12-158 | fluorene | 69 | 100 | 69 | 59-121 |
| 1,3-dichlorobenzene | 41 | 100 | 41 | 30-150 | 4-chlorophenyl-phenylether | 74 | 100 | 74 | 25-158 |
| 1,4-dichlorobenzene | 42 | 100 | 42 | 30-150 | diethylphthalate | 75 | 100 | 75 | 1-120 |
| 1,2-dichlorobenzene | 43 | 100 | 43 | 30-150 | 4,6-dinitro-2-methylphenol | 58 | 100 | 58 | 1-181 |
| 2-methylphenol (m-cresol) | NA | NA | NA | 30-150 | N-nitrosodiphenylamine | 90 | 100 | 90 | 30-150 |
| bis(2-chloroisopropyl)ether | 61 | 100 | 61 | 36-166 | 1,2-diphenylhydrazine | NA. | NA | NA | 30-150 |
| hexachloroethane | 44 | 100 | 44 | 40-120 | 4-bromophenyl-phenylether | 78 | 100 | 78 | 53-127 |
| N-nitroso-di-n-propylamine | 67 | 100 | 67 | 1-230 | hexachlorobenzene | 77 | 100 | 77 | 1-152 |
| 4-methylphenol (p-cresol) | NA | NA | NA | 30-150 | pentachlorophenol | 65 | 100 | 65 | 14-176 |
| nitrobenzene | 60 | 100 | 60 | 35-180 | phenanthrene | 78 | 100 | 78 | 54-120 |
| isophorone | 75 | 100 | 75 | 21-196 | anthracene | 79 | 100 | 79 | 27-133 |
| 2-nitrophenol | 58 | 100 | 58 | 29-182 | di-n-butylphthalate | 95 | 100 | 95 | 1-120 |
| 2,4-dimethylphenol | 68 | 100 | 68 | 32-119 | fluoranthene | 87 | 100 | 87 | 26-137 |
| bis(2-chloroethoxy)methane | 70 | 100 | 70 | 33-184 | benzidine | NA | NA | NA | 30-150 |
| 2,4-dichlorophenol | 61 | 100 | 61 | 32-135 | pyrene | 77 | 100 | 77 | 52-120 |
| 1,2,4-trichlorobenzene | 44 | 100 | 44 | 44-142 | butylbenzylphthalate | 81 | 100 | 81 | 1-152 |
| naphthalene | 46 | 100 | 46 | 21-133 | benzo(a)anthracene | 89 | 100 | 89 | 33-143 |
| hexachloro-1,3-butadiene | 42 | 100 | 42 | 24-120 | chrysene | 87 | 100 | 87 | 17-168 |
| 4-chloro-3-methylphenol | 64 | 100 | 64 | 22-147 | 3,3'-dichlorobenzidine | NA | NA | NA | 1-262 |
| hexachlorocyclopentadiene | 64 | 100 | 64 | 30-150 | bis(2-ethylhexyl)phthalate | 51 | 100 | 51 | 8-158 |
| 2,4,6-trichlorophenol | 62 | 100 | 62 | 37-144 | di-n-octylphthalate | 46 | 100 | 46 | 4-146 |
| 2-chloronaphthalene | 56 | 100 | 56, J2 | 60-120 | benzo(b)fluoranthene | 85 | 100 | 85 | 24-159 |
| acenaphthylene | 61 | 100 | 61 | 33-145 | benzo(k)fluoranthene | 85 | 100 | 85 | 11-162 |
| dimethylphthalate | 71 | 100 | 71 | 1-112 | benzo(a)pyrene | 88 | 100 | 88 | 17-163 |
| 2,6-dinitrotoluene | 77 | 100 | 77 | 50-158 | indeno(1,2,3-cd)pyrene | 85 | 100 | 85 | 1-171 |
| 2,4-dinitrotoluene | 78 | 100 | 78 | 39-139 | dibenzo(a,h)anthracene | 78 | 100 | 78 | 1-227 |
| | | | | | benzo(g,h,i)perylene | 89 | 100 | 89 | 1-219 |

| | | | | 3 - T P. T. |
|-----|------|------|------|-------------|
| SUR | ROGA | TE S | TAND | ARDS |

| Recovery | Acceptance Limits | | Recovery | Acceptance Limits |
|----------|-------------------|-----------------------------------|--|--|
| (%) | (%) | | (%) | (%) |
| 41 | 21-100 | nitrobenzene-d5 | 73 | 35-114 |
| 36 | 10-102 | 2-fluorobiphenyl | 65 | 43-116 |
| 85 | 10-123 | terphenyl-d14 | 93 | 33-141 |
| | (%) 41 36 | (%) (%) 41 21-100 36 10-102 | (%) (%) 41 21-100 nitrobenzene-d5 36 10-102 2-fluorobiphenyl | (%) (%) (%) 41 21-100 nitrobenzene-d5 73 36 10-102 2-fluorobiphenyl 65 |

U = Below quantitation limit NA = Not Added J2 = LCS %R below limit.

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ESI

Lab Number: LCSD170W

Sample Designation: Laboratory Control Sample Duplicate

 Date Sampled:
 11/20/18 1030

 Date Extracted:
 11/20/18 1030

 Date Analyzed:
 11/28/18

 Matrix:
 Water

SEMIVOLATILE ORGANICS Method Reference: EPA 625.

| | Concentration | Added | Recovery | Limits | | Concentration | Added | Recovery | Limits |
|-----------------------------|---------------|--------|----------|--------|----------------------------|---------------|--------|----------|--------|
| | (ug/L) | (ug/L) | (%) | (%) | | (ug/L) | (ug/L) | (%) | (%) |
| N-nitrosodimethylamine | 70 | 100 | 70 | 30-150 | acenaphthene | 57 | 100 | 57 | 47-145 |
| phenol | 41 | 100 | 41 | 5-120 | 2,4-dinitrophenol | 53 | 100 | 53 | 1-191 |
| 2-chlorophenol | 66 | 100 | 66 | 23-134 | 4-nitrophenol | 52 | 100 | 52 | 1-132 |
| bis(2-chloroethyl)ether | 58 | 100 | 58 | 12-158 | fluorene | 60 | 100 | 60 | 59-121 |
| 1,3-dichlorobenzene | 41 | 100 | 41 | 30-150 | 4-chlorophenyl-phenylether | 64 | 100 | 64 | 25-158 |
| 1,4-dichlorobenzene | 42 | 100 | 42 | 30-150 | diethylphthalate | 62 | 100 | 62 | 1-120 |
| 1,2-dichlorobenzene | 43 | 100 | 43 | 30-150 | 4,6-dinitro-2-methylphenol | 70 | 100 | 70 | 1-181 |
| 2-methylphenol (m-cresol) | NA | NA | NA | 30-150 | N-nitrosodiphenylamine | 73 | 100 | 73 | 30-150 |
| bis(2-chloroisopropyl)ether | 59 | 100 | 59 | 36-166 | 1,2-diphenylhydrazine | NA | NA | NA | 30-150 |
| hexachloroethane | 43 | 100 | 43 | 40-120 | 4-bromophenyl-phenylether | 65 | 100 | 65 | 53-127 |
| N-nitroso-di-n-propylamine | 64 | 100 | 64 | 1-230 | hexachlorobenzene | 63 | 100 | 63 | 1-152 |
| 4-methylphenol (p-cresol) | NA | NA | NA. | 30-150 | pentachlorophenol | 78 | 100 | 78 | 14-176 |
| nitrobenzene | 58 | 100 | 58 | 35-180 | phenanthrene | 65 | 100 | 65 | 54-120 |
| isophorone | 73 | 100 | 73 | 21-196 | anthracene | 65 | 100 | 65 | 27-133 |
| 2-nitrophenol | 67 | 100 | 67 | 29-182 | di-n-butylphthalate | 75 | 100 | 75 | 1-120 |
| 2,4-dimethylphenol | 73 | 100 | 73 | 32-119 | fluoranthene | 71 | 100 | 71 | 26-137 |
| bis(2-chloroethoxy)methane | 67 | 100 | 67 | 33-184 | benzidine | NA | NA | NA | 30-150 |
| 2,4-dichlorophenol | 73 | 100 | 73 | 39-135 | pyrene | 61 | 100 | 61 | 52-120 |
| 1,2,4-trichlorobenzene | 43 | 100 | 43, J2 | 44-142 | butylbenzylphthalate | 63 | 100 | 63 | 1-152 |
| naphthalene | 45 | 100 | 45 | 21-133 | benzo(a)anthracene | 71 | 100 | 71 | 33-143 |
| hexachloro-1,3-butadiene | 41 | 100 | 41 | 24-120 | chrysene | 69 | 100 | 69 | 17-168 |
| 4-chloro-3-methylphenol | 74 | 100 | 74 | 22-147 | 3,3'-dichlorobenzidine | NA | NA | NA | 1-262 |
| hexachlorocyclopentadiene | 68 | 100 | 68 | 30-150 | bis(2-ethylhexyl)phthalate | 35 | 100 | 35 | 8-158 |
| 2,4,6-trichlorophenol | 75 | 100 | 75 | 37-144 | di-n-octylphthalate | 32 | 100 | 32 | 4-146 |
| 2-chloronaphthalene | 53 | 100 | 53, J2 | 60-120 | benzo(b)fluoranthens | 68 | 100 | 68 | 24-159 |
| acenaphthylene | 56 | 100 | 56 | 33-145 | benzo(k)fluoranthene | 70 | 100 | 70 | 11-162 |
| dimethylphthalate | 59 | 100 | 59 | 1-120 | benzo(a)pyrene | 70 | 100 | 70 | 17-163 |
| 2,6-dinitrotoluene | 65 | 100 | 65 | 50-158 | indeno(1,2,3-cd)pyrene | 66 | 100 | 66 | 1-171 |
| 2,4-dinitrotoluene | 65 | 100 | 65 | 39-139 | dibenzo(a,h)anthracene | 60 | 100 | 60 | 1-227 |
| | | | | | benzo(g,h,i)perylene | 67 | 100 | 67 | 1-219 |

| SURROGATE STANDARDS | | | | | |
|----------------------|----------|-------------------|------------------|----------|-------------------|
| | Recovery | Acceptance Limits | | Recovery | Acceptance Limits |
| | (%) | (%) | | (%) | (%) |
| 2-fluorophenol | 48 | 21-100 | nitrobenzene-d5 | 70 | 35-114 |
| phenol-d5 | 42 | 10-102 | 2-fluorobiphenyl | 59 | 43-116 |
| 2,4,6-tribromophenol | 99 | 10-123 | terphenyl-d14 | 70 | 33-141 |
| | | | | | |

U = Below quantitation limit NA = Not Added J2 = LCS %R below limit.

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EnviroSystems, Inc. One Lafayette Road P.O. Box 778 Hampton, NH 03842-0788 603-926-3345 fax 603-926-3521 www.envirosystems.com

Lab Number: 31381-018MS
Sample Designation: Matrix Spike
Date Sampled: 11/20/18 1030
Date Extracted: 11/20/18 1030
Date Analyzed: 12/07/18
Matrix: Water

SEMIVOLATILE ORGANICS Method Reference: EPA 625.

| | Concentration | Added | Recovery | Limits | | Concentration | Added | Recovery | Limits |
|-----------------------------|---------------|--------|----------|--------|------------------------------|---------------|--------|----------|--------|
| | (ug/L) | (ug/L) | (%) | (%) | | (ug/L) | (ug/L) | (%) | (%) |
| N-nitrosodimethylamine | 52 | 100 | 52 | 30-150 | acenaphthene | 33 | 100 | 33, J5 | 47-145 |
| phenol | 32 | 100 | 32 | 5-120 | 2,4-dinitrophenol | 53 | 100 | 53 | 1-191 |
| 2-chlorophenol | 56 | 100 | 56 | 23-134 | 4-nitrophenol | 39 | 100 | 39 | 1-132 |
| bis(2-chloroethyl)ether | 39 | 100 | 39 | 12-158 | fluorene | 32 | 100 | 32, J5 | 59-121 |
| 1,3-dichlorobenzene | 29 | 100 | 29, J5 | 30-150 | · 4-chlorophenyl-phenylether | 33 | 100 | 33 | 25-158 |
| 1,4-dichlorobenzene | 30 | 100 | 30 | 30-150 | diethylphthalate | 40 | 100 | 40 | 1-120 |
| 1,2-dichlorobenzene | 30 | 100 | 30 | 30-150 | 4,6-dinitro-2-methylphenol | 62 | 100 | 62 | 1-181 |
| 2-methylphenol (m-cresol) | NA | NA | NA | 30-150 | N-nitrosodiphenylamine | 41 | 100 | 41 | 30-150 |
| bis(2-chloroisopropyl)ether | 41 | 100 | 41 | 36-166 | 1,2-diphenylhydrazine | NA | NA. | NA | 30-150 |
| hexachloroethane | 31 | 100 | 31, J5 | 40-120 | 4-bromophenyl-phenylether | 33 | 100 | 33, J5 | 53-127 |
| N-nitroso-di-n-propylamine | 46 | 100 | 46 | 1-230 | hexachlorobenzene | 30 | 100 | 30 | 1-152 |
| 4-methylphenol (p-cresol) | NA | NA | NA | 30-150 | pentachlorophenol | 64 | 100 | 64 | 14-176 |
| nitrobenzene | 40 | 100 | 40 | 35-180 | phenanthrene | 32 | 100 | 32, J5 | 54-120 |
| isophorone | 48 | 100 | 48 | 21-196 | anthracene | 32 | 100 | 32 | 27-133 |
| 2-nitrophenol | 58 | 100 | 58 | 29-182 | di-n-butylphthalate | 53 | 100 | 53 | 1-120 |
| 2,4-dimethylphenol | 35 | 100 | 35 | 32-119 | fluoranthene | 33 | 100 | 33 | 26-137 |
| bis(2-chloroethoxy)methane | 44 | 100 | 44 | 33-184 | benzidine | NA | NA | NA | 30-150 |
| 2,4-dichlorophenol | 59 | 100 | 59 | 39-135 | pyrene | 31 | 100 | 31, J5 | 52-120 |
| 1,2,4-trichlorobenzene | 29 | 100 | 29, J5 | 44-142 | butylbenzylphthalate | 34 | 100 | 34 | 1-152 |
| naphthalene | 31 | 100 | 31 | 21-133 | benzo(a)anthracene | 32 | 100 | 32, J5 | 33-143 |
| hexachloro-1,3-butadiene | 22 | 100 | 22, J5 | 24-120 | chrysene | 31 | 100 | 31 | 17-168 |
| 4-chloro-3-methylphenol | 61 | 100 | 61 | 22-147 | 3,3'-dichlorobenzidine | NA | NA | NA | 1-262 |
| hexachlorocyclopentadiene | 29 | 100 | 29, J5 | 30-150 | bis(2-ethylhexyl)phthalate | 18 | 100 | 18 | 8-158 |
| 2,4,6-trichlorophenol | 64 | 100 | 64 | 37-144 | di-n-octylphthalate | 16 | 100 | 16 | 4-146 |
| 2-chloronaphthalene | 32 | 100 | 32, J5 | 60-120 | benzo(b)fluoranthene | 34 | 100 | 34 | 24-159 |
| acenaphthylene | 33 | 100 | 33 | 33-145 | benzo(k)fluoranthene | 34 | 100 | 34 | 11-162 |
| dimethylphthalate | 41 | 100 | 41 | 1-120 | benzo(a)pyrene | 32 | 100 | 32 | 17-163 |
| 2,6-dinitrotoluene | 41 | 100 | 41, J5 | 50-158 | indeno(1,2,3-cd)pyrene | 37 | 100 | 37 | 1-171 |
| 2,4-dinitrotoluene | 41 | 100 | 41 | 39-139 | dibenzo(a,h)anthracene | 29 | 100 | 29 | 1-227 |
| 2.000 | | | | | benzo(g,h,i)perylene | 35 | 100 | 35 | 1-219 |

| SURROGATE STANDARDS | | | | | |
|----------------------|----------|-------------------|------------------|----------|-------------------|
| | Recovery | Acceptance Limits | | Recovery | Acceptance Limits |
| | (%) | (%) | | (%) | (%) |
| 2-fluorophenol | 39 | 21-100 | nitrobenzene-d5 | 45 | 35-114 |
| phenol-d5 | 35 | 10-102 | 2-fluorobiphenyl | 37 | 43-116 |
| 2,4,6-tribromophenol | 73 | 10-123 | terphenyl-d14 | 35 | 33-141 |

U = Below quantitation limit NA = Not Added J5 = MS %R below limit.

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EnviroSystems, Inc. One Lafayette Road P.O. Box 778 Hampton, NH 03842-0788 603-926-3345 fax 603-926-3521 www.envirosystems.com

MICROBIOLOGICAL ASSAY DATA SHEET Initials: MW Client: Underwood Engineers Date: 11115118 Col.Dil.H2O: M-3339 ESI#: 21381 M-FC: M-3332 Pipette Used: A - 5003 Date collected: 11/15/18 Positive lot #: ECBIO3118A mls filtered Time Sampled Time Filtered Total w/ Sample ID per 100 Media CFU's Comments backround mls total vol. M-FC 0 Start Blank 1523 0 100 M-FC 003 0823 0 27 CRUSTICOML 1526 M-FC 0 0 1530 10 M-FC 0 6 1532 10d 0 0 M-FC 50 1534 3 X100 = 5 Chis M-FC 0 0 022 1015 1523 M-FC 1526 10 Z M-FC 2 50 1530 60×100=107 chis 0 0 M-FC 1245 041 1523 6 3 M-FC 1526 10 61 63 M-FC 50 1530 M-FC Positive 1536 100 M-FC 0 End Blank 0 100 M-FC
M-FC

11/15/19

1538

Temp: 44.5

Counted:

M-FC stored in Incubator #303

Method 922D

| Counted By: WC | | | | | | |
|----------------|---------------|--|--|--|--|--|
| | Page 27 of 39 | | | | | |

1600

11/11/18

MICROBIOLOGICAL ASSAY DATA SHEET Client: Underwood Engineers Date: 1115118 Initials: Mw ESI#: 31381 Col.Dil.H₂O: M-3339 M-EI: M-3337 Date collected: (115118 Pipette Used: A-5003 Positive lot #: EFB103118}

| Sample ID | Time Sampled | Time Filtered | mls filtered per 100 mls total vol. | Media | CFU's | Total w/ backround | Comments |
|--------------------|-----------------|------------------|---|-------|----------|-----------------------|-------------------|
| Start Blank | | 1540 | 100 | M-EI | 0 | 0 | |
| 002 | 0823 | 1548 | | M-EI | 0 | 0 | 50 x100= 2 ctus |
| 1 | | 1551 | 10 | M-EI | 6 | 0 | |
| | | 1553 | 100 | M-EI | 0 | 0 | |
| 1 | 1 | 1556 | 50 | M-EI | I V | | |
| 021 | 1015 | 1546 | 1 | M-EI | 0 | 0 | LZ LFUS 100mL |
| | | 1548 | 10 | M-EI | 0 | 0 | |
| 1 | 1 | 1551 | 50 | M-EI | 0 | 0 | |
| 040 | 1320 | 1546 | | M-EI | Z | 2 | 37 ×100 = 143 CFU |
| | | 1548 | 10 | M-EI | 10 | 10 | |
| 4 | 1 | 1551 | 50 | M-EI | 75 | 172 | |
| Positive | | 1558 | 100 | M-EI | / | V | |
| End Blank | | 7 | 100 | M-EI | 0 | 0 | |
| | / | | | M-EI | | | |
| | | | | M-EI | | | |
| | | | | M-EI | | | |
| | | | | M-EI | | | |
| | | | | M-EI | | | |
| | | | | M-EI | | | |
| | | 1 1 | | M-EI | | | 1 = - |
| | | | | M-EI | | | |
| | | | | M-EI | | | |
| | | | | M-EI | | | |
| - | | 1 | | M-EI | | | T |
| | | - | | M-EI | | | |
| | | | | M-EI | | | V |
| | | | | M-EI | | | |
| | | | | M-EI | | | |
| | | | | M-EI | | | |
| M-El stored in Inc | ubator #309 | Temp: | 40.7 | 1600 | 11/15/19 | to 1515 | 11/16/18 |
| Method EPA 1600 | | Counte | | | | Counted B | |

Sample Chlorine Check

CI Strips A-5224 Date & Time 1115116 1520 Initial MW

| Sample | Rest | alt |
|--------|------|------|
| 002 | 0.0 | mg/L |
| 021 | 0.0 | mg/L |
| 040 | 0.0 | mg/L |

Sample Chlorine Check

CI Strips A-S224 Date & Time 11 15 118 1515 Initial MW

| Sample | Resu | ilt |
|--------|------|------|
| 603 | 0.0 | mg/L |
| 022 | 0.0 | mg/L |
| 041 | 0.0 | mg/L |

SAMPLE RECEIPT AND CONDITION DOCUMENTATION

31381

Page 1 of 3

STUDY NO:

SDG No:

Project: Piscataqua River

Delivered via:

Date and Time Received: 11/15/18 1400 Date and Time Logged into Lab: 11/15/18 1600 Received By: MG Logged into Lab by: CS (S)

Air bill / Way bill: No Air bill included in folder if received? NA
Cooler on ice/packs: Yes Custody Seals present? NA
Cooler Blank Temp (C) at arrival 2 Custody Seals intact? NA

Number of COC Pages: 6

COC Serial Number(s): A1016927

COC Complete: Yes Does the info on the COC match the samples? Yes
Sampled Date: Yes Were samples received within holding time? Yes
Field ID complete: Yes Were all samples properly labeled? Yes
Sampled Time: Yes Were proper sample containers used? Yes

Analysis request: Yes Were samples received intact? (none broken or leaking) Yes
COC Signed and dated: Yes Were sample volumes sufficient for requested analysis? Yes
Were all samples received? Yes Were VOC vials free of headspace? Yes
Client notification/authorization: Not required PH Test strip ID number: A-5314

| Field ID | Lab ID | Mx | Analysis Requested | Bottle | Req'd Pres'n | Verified Pres'n |
|--------------|-----------|----|--------------------|-------------|-----------------|--------------------|
| PEASE 003 | 31381-001 | w | BOD | 500 P | 4C | Yes |
| PEASE_003 | 31381-002 | W | Enterococci | 100 Sterile | 4C | Yes |
| PEASE 003 | 31381-003 | W | FC | 100 Sterile | 4C | Yes |
| PEASE 003 | 31381-004 | W | TSS | 1000 P | 4C | Yes |
| PEASE_003 | 31381-005 | W | NH3 | 125 P | H2SO4 | Yes |
| PEASE_003DUP | 31381-006 | W | NH3 | 125 P | H2SO4 | Yes |
| PEASE_003 | 31381-008 | W | TKN,NO3+NO2,TN | 500 P | H2SO4 | Yes |
| PEASE_003DUP | 31381-009 | W | TKN,NO3+NO2,TN | 500 P | H2SO4 | Yes |
| PEASE_003 | 31381-010 | W | OG | 2x1000 G | H2SO4 | Yes |
| PEASE 003 | 31381-011 | W | TP | 250 P | H2SO4 | Yes |
| PEASE 003DUP | 31381-012 | W | TP | 250 P | H2SO4 | Yes |
| PEASE 003 | 31381-013 | W | TDS | 1000 P | 4C | Yes |
| PEASE 003 | 31381-014 | W | Turbidity | 250 P | 4C | Yes |
| PEASE 003 | 31381-015 | W | TPhen | 1000 G | H2SO4 | Yes |
| PEASE 003 | 31381-016 | W | VOC624 | 2x40 G | 4C | Yes |
| PEASE 003 | 31381-017 | W | HOLD VOC624 | 2x40 G | HCI | Yes |
| PEASE_003 | 31381-018 | W | ABN625 | 2x1000 G | 4C | Yes |

Notes and qualifications:

| See COC | | |
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SAMPLE RECEIPT AND CONDITION DOCUMENTATION

Page 2 of 3

STUDY NO:

31381

SDG No:

Project: Piscataqua River

Delivered via:

11/15/18 1600 Date and Time Received: 11/15/18 1400 Date and Time Logged into Lab: CS CS Received By: Logged into Lab by: MG

NA Air bill / Way bill: No Air bill included in folder if received? Cooler on ice/packs: Yes **Custody Seals present?** NA **Custody Seals intact?** Cooler Blank Temp (C) at arrival 2 NA

Number of COC Pages:

COC Serial Number(s): A1016927

COC Complete: Yes Does the info on the COC match the samples? Yes Sampled Date: Yes Were samples received within holding time? Yes Field ID complete: Yes Were all samples properly labeled?

Yes Sampled Time: Yes Were proper sample containers used? Yes Analysis request: Yes Were samples received intact? (none broken or leaking) Yes COC Signed and dated: Yes Were sample volumes sufficient for requested analysis? Yes Were all samples received? Yes Were VOC vials free of headspace? Yes Client notification/authorization: Not required pH Test strip ID number: A-5314

| | | | | Bottle | Req'd | Verified |
|------------|-----------|----|--------------------|-------------|--------|----------|
| Field ID | Lab ID | Mx | Analysis Requested | | Pres'n | Pres'n |
| NEW_003 | 31381-020 | W | BOD | 500 P | 4C | Yes |
| NEW_003 | 31381-021 | W | Enterococci | 100 Sterile | 4C | Yes |
| NEW_003 | 31381-022 | W | FC | 100 Sterile | 4C | Yes |
| NEW_003 | 31381-023 | W | TSS | 1000 P | 4C | Yes |
| NEW_003 | 31381-024 | W | NH3 | 125 P | H2SO4 | Yes |
| NEW_003DUP | 31381-025 | W | NH3 | 125 P | H2SO4 | Yes |
| NEW_003 | 31381-027 | W | TKN,NO3+NO2,TN | 500 P | H2SO4 | Yes |
| NEW_003DUP | 31381-028 | W | TKN,NO3+NO2,TN | 500 P | H2SO4 | Yes |
| NEW_003 | 31381-029 | W | OG | 2x1000 G | H2SO4 | Yes |
| NEW_003 | 31381-030 | W | TP | 250 P | H2SO4 | Yes |
| NEW_003DUP | 31381-031 | W | TP | 250 P | H2SO4 | Yes |
| NEW_003 | 31381-032 | W | TDS | 1000 P | 4C | Yes |
| NEW_003 | 31381-033 | W | Turbidity | 250 P | 4C | Yes |
| NEW_003 | 31381-034 | W | TPhen | 1000 G | H2SO4 | Yes |
| NEW_003 | 31381-035 | W | VOC624 | 2x40 G | 4C | Yes |
| NEW_003 | 31381-036 | W | HOLD VOC624 | 2x40 G | HCI | Yes |
| NEW_003 | 31381-037 | W | ABN625 | 2x1000 G | 4C | Yes |

Notes and qualifications:

| See COC | |
|---------|--|
| | |
| | |
| | |
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SAMPLE RECEIPT AND CONDITION DOCUMENTATION

Page 3 of 3

STUDY NO:

31381

SDG No:

Project:

Piscataqua River

Delivered via:

Date and Time Received: MG

11/15/18 1400 Date and Time Logged into Lab:

CS CS

Received By:

COC Complete:

No

Logged into Lab by:

11/15/18 1600

Air bill / Way bill: Cooler on ice/packs: Yes Cooler Blank Temp (C) at arrival 2

Air bill included in folder if received? Custody Seals present? Custody Seals intact?

NA NA NA

Number of COC Pages: COC Serial Number(s):

A1016927 Yes

Does the info on the COC match the samples? Yes Were samples received within holding time?

Yes Yes Yes

Field ID complete: Yes Sampled Time: Yes Analysis request: Yes COC Signed and dated: Yes

Sampled Date: Yes

Were proper sample containers used? Were samples received intact? (none broken or leaking) Yes Were sample volumes sufficient for requested analysis? Yes Were VOC vials free of headspace?

No

Were all samples received? Yes Client notification/authorization: Not required

pH Test strip ID number:

Were all samples properly labeled?

A-5314

| | | | | Bottle | Req'd | Verified |
|--------------|-----------|----|--------------------|-------------|--------|----------|
| Field ID | Lab ID | Mx | Analysis Requested | | Pres'n | Pres'n |
| RIVER_003 | 31381-039 | W | BOD | 500 P | 4C | Yes |
| RIVER_003 | 31381-040 | W | Enterococci | 100 Sterile | 4C | Yes |
| RIVER_003 | 31381-041 | W | FC | 100 Sterile | 4C | Yes |
| RIVER_003 | 31381-042 | W | TSS | 1000 P | 4C | Yes |
| RIVER_003 | 31381-043 | W | NH3 | 125 P | H2SO4 | Yes |
| RIVER_003DUP | 31381-044 | W | NH3 | 125 P | H2SO4 | Yes |
| RIVER_003 | 31381-045 | W | TKN,NO3+NO2,TN | 500 P | H2SO4 | Yes |
| RIVER_003DUP | 31381-046 | W | TKN,NO3+NO2,TN | 500 P | H2SO4 | Yes |
| RIVER_003 | 31381-047 | W | OG | 2x1000 G | H2SO4 | Yes |
| RIVER_003 | 31381-048 | W | TP | 250 P | H2SO4 | Yes |
| RIVER_003DUP | 31381-049 | W | TP | 250 P | H2SO4 | Yes |
| RIVER_003 | 31381-050 | W | TDS | 1000 P | 4C | Yes |
| RIVER_003 | 31381-051 | W | Turbidity | 250 P | 4C | Yes |
| RIVER_003 | 31381-052 | W | TPhen | 1000 G | H2SO4 | Yes |
| RIVER_003TB | 31381-053 | W | TPhen | 1000 G | H2SO4 | Yes |
| RIVER_003 | 31381-054 | W | VOC624 | 2x40 G | 4C | Yes |
| RIVER_003TB | 31381-055 | W | VOC624 | 2x40 G | 4C | Yes |
| RIVER_003 | 31381-056 | W | HOLD VOC624 | 2x40 G | HCI | Yes |
| RIVER_003TB | 31381-057 | W | HOLD VOC624 | 2x40 G | HCI | Yes |
| RIVER 003 | 31381-058 | W | ABN625 | 2x1000 G | 4C | Yes |
| RIVER_003TB | 31381-059 | W | ABN625 | 2x1000 G | 4C | Yes |

Notes and qualifications:

| See | CO | C |
|-----|------|---|
| | S 05 | |

P.O. Box 778

Hampton, NH 03842-0778

(603) 926-3345 fax (603) 926-3521

www.envirosystems.com

EnviroSystems, Inc. 1 Lafayette Road Hamnton NH 03842

Voice: 603-926-3345 FAX: 603-926-3521

ESI Job No: 31381

| Client: Underwood Engineers, Inc. | | | |
|---|---------------------------------|---|---|
| to: Steve Clifton Address: 25 Vaughan Mall 603-436-6192 Fax: NPDES iber Your Field ID: Fax: 001 PEASE 003 Date ontained or completed or | Project Name: | : Piscataqua River | ver |
| 10. Steve Clifton Hobes Bo3-436-6192 Fax: NPDES Date Time Sampled Grab posite (m.) Out PEASE 003 Date Contained By or com- No Size (m.) Out PEASE 003 Out PEASE 0 | Project Number; | er: P0771 | Task: 0001 |
| NPDES NPD | Project Manager: | ger: Steve Clifton | |
| Date container Time sampled Grab container Container Container 001 PEASE 003 11/15/18 344, 45, 60, 60, 60, 60, 60, 60, 60, 60, 60, 60 | email: | | |
| Three container Your Field ID: Time Sampled | | | |
| 001 PEASE 003 11/5/8 344, 45 C 1 500 002 PEASE 003 8:334 C 1 100 003 PEASE 003 8:334 C 1 100 006 PEASE 003 344 C 1 100 006 PEASE 003DUP " C 1 125 007 PEASE 003 8:354 C 1 500 008 PEASE 003DUP 8:354 C 1 500 009 PEASE 003DUP 8:354 C 1 500 010 PEASE 003 344 C 1 500 011 PEASE 003 344 C 1 250 012 PEASE 003QUP 1 C 1 250 | Container Size Type (mL) (P(GT) | Preser- S=Solid N=Not needed vation W=Water F=Done in field | r Analyses Requested\ eded Special Instructions: n field oo |
| 002 PEASE 003 8:234 € 1 100 003 PEASE 003 8:334 € 1 100 004 PEASE 003 24hr € 1 100 006 PEASE 003 '' € 1 100 007 PEASE 003 8:334 € 1 125 007 PEASE 003 8:354 € 1 500 008 PEASE 003 8:354 € 1 500 010 PEASE 003 8:354 € 1 500 010 PEASE 003 8:34r € 1 500 011 PEASE 003 8:34r € 1 500 012 PEASE 003 1 1 250 | ۵ | 4C Water N | BOD |
| 003 PEASE 003 8:334 € 1 100 004 PEASE 003 244. € 1 100 005 PEASE 003 € 1 125 006 PEASE 003DUP € 1 125 007 PEASE 003 8:354 € 1 500 008 PEASE 003DUP 8:354 € 1 500 010 PEASE 003DUP € 1 500 011 PEASE 003DUP 8:34 € 1 500 011 PEASE 003DUP € 1 500 011 PEASE 003DUP € 1 500 011 PEASE 003DUP € 1 500 012 PEASE 003DUP € 1 250 | <u>o</u> | 4C Water N | Enterococci |
| 004 PEASE 003 244 C 1 100 006 PEASE 003 " C 1 125 007 PEASE 003 DUP S.334 C 1 500 008 PEASE 003 244 C 1 500 009 PEASE 003 DUP " C 1 500 010 PEASE 003 DUP S.244 C 1 500 011 PEASE 003 DUP S.244 C 1 500 011 PEASE 003 DUP S.244 C 1 250 012 PEASE 003 DUP " C 1 250 | <u>ə</u> | 4C Water N | FC^ |
| 006 PEASE 003 (1 C 1 125 006 PEASE 003DuP 8:354 C 1 125 008 PEASE 003 244 C 1 500 009 PEASE 003DuP (1 C 1 500 011 PEASE 003 8:344 C 1 500 012 PEASE 003DuP 344 C 1 250 012 PEASE 003DuP (1 C 1 250 | ۵. | 4C Water N | , SSI |
| 006 PEASE 003DUP S:354 C 1 125 007 PEASE 003 S:354 C 1 500 008 PEASE 003 344 C 1 500 010 PEASE 003DUP 1 C 1 500 011 PEASE 003 8:344 C 1 250 012 PEASE 003DUP 1 250 1 250 | ۵ | | NH3 Č |
| OOT PEASE 003 8:354 C 1 500 008 PEASE 003 24ん C 1 500 009 PEASE 003 UP '' C 1 500 010 PEASE 003 8:344 C 1 500 011 PEASE 003 34ん C 1 250 012 PEASE 003QUP ' C 1 250 | Q. | H2SO4 Water N | NH3 |
| 34, C 1 500 1. C 1 500 8:34, C 1 500 34, C 1 250 | ۵ | 4C Water N | TRE Measured (a Pease |
| 8:34, C 1 500 8:34, C 1 250 | a. | H2SO4 Water N | TKN,NO3+NO2,TN ^ |
| 8:344 6 2 1000 344- | ů. | H2SO4 Water N | TKN.NO3+NO2.TN |
| 3.4. C 1 250 | တ | Water | . 90 |
| (| ē | Water | , <u>4</u> |
| | ۵ | Water | _ TP ~ |
| Relinquished By: Lin Hills Date: 14/15/18/1me: 2 PM Receive | PM Received By: / | M (sperue | Date: 11/15/18 Time: 2 PM |
| Relinmished By Time Date: | Received of the Re- | Š | Date: |

Nov 2018

Sample Delivery Group No:

COC Number: A1016927

EnviroSystems, Inc. 1 Lafayette Road Hampton, NH 03842 ESI

Voice: 603-926-3345 FAX: 603-926-3521

31381

ESI Job No:

Measurel (G) Pease DO, PH. Temperature, Conductivity 2 PM 15/18 Time: Time: Filter Analyses Requested N=Not needed Special Instructions: 0001 HOLD VOC624 Date: // Turbidity VOC624 **ABN625** Task: TPhen Date: TDS F=Done in field Piscataqua River L=Lab to do Z z z z z z z Steve Clifton S=Solid W=Water P0771 Matrix Water Water Water Water Water Water Water Project Manager: Field Preser-vation H2S04 Received at Lab By: Project Number: SE 40 54 40 5 5 Project Name: Received By: email: Type (P/G/T) CHAIN OF CUSTODY DOCUMENTATION O 0 O ۵. O. a O Container Size (mL) 40,0 1000 40 G 1000 1000 1000 250 3/4 å Sampled Grab By or composite (G/C) Address: Portsmouth, NH 03801 0 0 5 Sime: Time: 100 Address: 25 Vaughan Mall Contact: Steve Clifton Date: 17 8:33 Date Time Sampled Sampled 8.34 3th 24hr 8:33 8:34 11/15/18/24 Date: Fax 019 not in cooler Underwood Engineers, Inc. 603-436-6192 Steve Clifton Steve Clifton Your Field ID: (must agree with 013 PEASE 003 014 PEASE 003 015 PEASE 003 016 PEASE 003 017 PEASE 003 018 PEASE 003 019 PEASE 003 container) Comments: # NPDES Relinquished By: Relinquished By: Invoice to: Lab Number Report to: Client: Protocol: (assigned by lab) Voice:

Nov 2018 Sample Delivery Group No:

Page

COC Number: A1016927

EnviroSystems, Inc. 1 Lafayette Road Hampton, NH 03842 ESI

Voice: 603-926-3345 FAX: 603-926-3521

31381

ESI Job No:

Yeasurella Pease 2:00 Time: Time: Filter Analyses Requested N=Not needed Special Instructions: TKN,NO3+NO2,TN TKN,NO3+NO2,TN 000 Enterococci Date: 11/ Task: Date: **BOD** TRC TSS NH3 NH3 5 90 4 Piscataqua River F=Done in field L=Lab to do z z z z z z Z Z z Z Z z Steve Clifton W=Water S=Solid Matrix P0771 Water H2S04 H2S04 H2SO4 H2S04 H2S04 H2S04 H2S04 Preser-vation Project Manager: Project Number: Field Received at Lab By: 40 40 4 40 4C Project Name: Received By: email: Type (P/G/T) CHAIN OF CUSTODY DOCUMENTATION ۵ e 0 ٥. à ۵. ۵ ۵. ۵ 0 D. Container Size (mL) 1000 1000 200 100 100 200 500 250 250 500 125 125 Sampled Grab
By or comPosite
(GC) å Address: Portsmouth, NH 03801 1 1 0 0 0 Ame: Time: Address: 25 Vaughan Mall い万 Contact: Steve Clifton -Date: 11, Date Time Sampled Sampled 151.Q 12.0 15:184 DS/S 34h THE SUSIN 74/1/ 34/ : 23 11 -Date: Fax: not in coden Underwood Engineers, Inc. 603-436-6192 Steve Clifton Steve Clifton 025 NEW 003DUP 028 NEW 003DUP 031 NEW 003DUP NPDES
ber Your Field ID;
(must agree with 250# 021 NEW 003 029 NEW 003 020 NEW 003 030 NEW 003 022 NEW 003 023 NEW 003 024 NEW 003 026 NEW 003 027 NEW 003 container) Relinquished By: Relinquished By: Comments: Report to: Invoice to: Lab Number Protocol: Client: (assigned Voice: by lab) X

2°C

COC Number; A1016927

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Nov 2018

Sample Delivery Group No:

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EnviroSystems, Inc. 1 Lafayette Road Hampton, NH 03842 ESI ESI

Voice: 603-926-3345 FAX: 603-926-3521

31381

ESI Job No:

Measured (a) Newse // X Time: Time: Filter Analyses Requested N=Not needed Special Instructions: 0001 18 HOLD VOC624 Date: // Turbidity **ABN625** VOC624 Task: TPhen Date: TDS W=Water F=Done in field Piscataqua River L=Lab to do z z z Z z z Z Steve Clifton S=Solid P0771 Matrix Water Water Water Water Water Water Water Field Preser-vation H2S04 Project Manager: Project Number: Received at Lab By: 4 40 40 I 4C 40 Project Name: Received By: Type (P/G/T) email: CHAIN OF CUSTODY DOCUMENTATION ۵. ۵ 0 O O O α. Container Size (mL) (1000 1000 40 G 40 G 1000 1000 250 SPH S Address: Portsmouth, NH 03801 Sampled Grab By or com-/Sime: posite (G/C) 1 1 0 Time: Address: 25 Vaughan Mall 100 121 Contact: Steve Clifton SE る。近ろ Date: 19 12.C 10:184 184 Date Time Sampled Sampled 1/18/18/1 The 24h -Date: Fax: # 038 NO+ 1,1 Underwood Engineers, Inc. 603-436-6192 Steve Clifton Steve Clifton (must agree with container) Your Field ID: 032 NEW 003 033 NEW 003 034 NEW 003 035 NEW 003 036 NEW 003 037 NEW 003 038 NEW 003 NPDES Relinquished By: Relinquished By: Invoice to: Lab Number Report to: Client: Protocol: (assigned by lab) Voice:

Sample Delivery Group No:

Nov 2018

Page

Comments:

EnviroSystems, Inc. 1 Lafayette Road Hampton, NH 03842 回 S I

Voice: 603-926-3345 FAX: 603-926-3521

31381

ESI Job No:

WIC Time: Filter Analyses Requested N=Not needed Special Instructions: TKN,NO3+NO2,TN TKN,NO3+NO2,TN 0001 Enterococci Date: 1/1 Task: Date: BOD NH3 TSS NH3 TDS R 8 4 4 F=Done in field L=Lab to do Piscataqua River z z z z z z Z z z Z z z Steve Clifton GREUE S=Solid W=Water P0771 Matrix Water H2S04 H2S04 H2S04 H2S04 H2S04 H2S04 H2S04 Field Preser-vation Project Manager: Received at Lab By: Project Number: 4C 40 40 40 Project Name: Received By: email: Type (P/G/T) CHAIN OF CUSTODY DOCUMENTATION ۵. 0 0 ۵ 0 ۵ ۵ O ۵ ۵ Container Size (mL) 1000 1000 1000 125 250 250 100 500 125 500 500 100 Time: A PM 2 or com-posite (G/C) Address: Portsmouth, NH 03801 Sampled Grab By or corr 8 Time: Address: 25 Vaughan Mall 定 Date: 11/15/18 P Contact: Steve Clifton 1214C) 18:30 33.85 200 Date Time Sampled Sampled 3.72 5.5 15.16 12:56 23 18:3 Date: ille/18 Fax: Underwood Engineers, Inc. 603-436-6192 044 RIVER 003DUP 046 RIVER 003DUP 049 RIVER 003DUP Steve Clifton Steve Clifton Your Field ID: (must agree with Relinquished By: 16m 040 RIVER 003 039 RIVER 003 041 RIVER 003 047 RIVER 003 048 RIVER 003 050 RIVER 003 042 RIVER 003 043 RIVER 003 045 RIVER 003 container) NPDES Relinquished By: Invoice to: Lab Number Report to: Client: Protocol: (assigned by lab) Voice: Page 38 of 39

Nov 2018 Sample Delivery Group No:

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Page

COC Number: A1016927

Comments:

31381 1000 Task: ESI Job No: Piscataqua River Steve Clifton P0771 Project Manager: Project Number: Project Name: email: Voice: 603-926-3345 FAX: 603-926-3521 CHAIN OF CUSTODY DOCUMENTATION Address: Portsmouth, NH 03801 Address: 25 Vaughan Mall Contact: Steve Clifton Fax: EnviroSystems, Inc. 1 Lafayette Road Hampton, NH 03842 Underwood Engineers, Inc. 603-436-6192 Invoice to: Steve Clifton Steve Clifton

Report to:

Voice:

Client:

| Lab Number (assigned by lab) | Your Field ID: (must agree with container) | Date Sampled | Time Sampled | Sampled By | Grab or com- posite (G/C) | 8 | Container Size (mL) | Type (P/G/T) | Field Preser- vation | Matrix S=Solid W=Water | Filter N=Not needed F=Done in field L=Lab to do | Filter Analyses Requested\ N=Not needed Special Instructions: F=Done in field L=Lab to do |
|------------------------------------|--|-----------------|-----------------|---------------|------------------------------------|-------|---------------------------|-----------------|----------------------------|------------------------------|--|---|
| /50 | 051 RIVER 003 | 11/15/18 | | 73(| ৩ | - | 250 | ۵ | 5 | Water | z | Turbidity |
| 052 | 052 RIVER 003 1213 | | 12:30 | | | | 1000 | ø | H2SO4 | Water | z | TPhen |
| 053 | 053 RIVER 003TB | | 12:29 | | 7 | | 1000 | Ø | H2SO4 | Water | Z | TPhen |
| / 054 | 054 RIVER 003 | | 125 | | | 2 | 40 G | ဗ | 40 | Water | z | VOC624 |
| / 055 | 055 RIVER 003TB | | 13:5 | NA. | | 7 | 40 G | တ | 40 | Water | z | VOC624 |
| 056 | 056 RIVER 003 | | 12.3 | 12 | | 7 | 40 G | O | 豆 | Water | z | HOLD VOC624 |
| 057 | 057 RIVER 003TB | | 10.01 | 170 | | 7 | 40 G | o | 豆 | Water | Z | HOLD VOC624 |
| 058 | 058 RIVER 003 | | 18:45 | 10 | | 2 | 1000 | Ø | 40 | Water | Z | ABN625 |
| 059 | 059 RIVER 003TB | | (8% | 10 | | 2 | 1000 | Ø | 5 | Water | Z | ABN625 |
| /090 | 060 RIVER 003 | 7 | (3:46) | > | > | ÷ | 1000 | 0. | 40 | Water | z | DO,pH,Temperature,Conductivity |
| | | | | | | | | | | | | |
| Relinquished By: | y Time Cash | | Date:((// | 115/18 | Time: 2PM | 3/0/2 | | Received By: | 1, | M Gottue | 1,, | Date: 11/15/18 Time: 2 PM |
| Relinquished By: | , A | | Date: | | Time: | | | Seceived | Received at Lab Bv: | | | Date |

3

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Nov 2018

Sample Delivery Group No:

COC Number: A1016927



ANALYTICAL REPORT

Lab Number:

L1847214

Client:

Enthalpy Analytical

1 Lafayette Road

PO Box 778

Hampton, NH 03843

ATTN:

Jason Hobbs

Phone:

(603) 926-3345

Project Name:

31381

Project Number:

Not Specified

Report Date:

11/29/18

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019 508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com



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| L1847214 | 11/29/18 | |
| Lab Number: | Report Date: | |
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31381 Not Specified

Project Name: Project Number:

| Alpha Sample ID Client ID Matrix Location L1847214-01 31381-015 WATER Not Specified L1847214-02 31381-052 WATER Not Specified L1847214-03 31381-052 WATER Not Specified L1847214-04 31381-016 WATER Not Specified L1847214-05 31381-017 WATER Not Specified L1847214-06 31381-035 WATER Not Specified L1847214-09 31381-054 WATER Not Specified L1847214-10 31381-055 WATER Not Specified L1847214-11 31381-055 WATER Not Specified L1847214-12 31381-055 WATER Not Specified | | | | | | |
|--|-------------|-----------|--------|--------------------|-------------------------|--------------|
| 31381-015 WATER 31381-034 WATER 31381-052 WATER 31381-017 WATER 31381-035 WATER 31381-035 WATER 31381-054 WATER 31381-055 WATER | a ple ID | Client ID | Matrix | Sample Location | Collection Date/Time | Receive Date |
| WATER WATER WATER WATER WATER WATER | 7214-01 | 31381-015 | WATER | Not Specified | 11/15/18 00:00 | 11/16/18 |
| 31381-052 WATER 31381-016 WATER 31381-017 WATER 31381-054 WATER 31381-055 WATER 31381-055 WATER | 7214-02 | 31381-034 | WATER | Not Specified | 11/15/18 00:00 | 11/16/18 |
| 31381-053 WATER 31381-017 WATER 31381-035 WATER 31381-054 WATER 31381-055 WATER 31381-055 WATER | 7214-03 | 31381-052 | WATER | Not Specified | 11/15/18 12:30 | 11/16/18 |
| 31381-016 WATER 31381-035 WATER 31381-054 WATER 31381-055 WATER 31381-055 WATER | 7214-04 | 31381-053 | WATER | Not Specified | 11/15/18 12:32 | 11/16/18 |
| 31381-017 WATER 31381-036 WATER 31381-054 WATER 31381-055 WATER 31381-055 WATER | 7214-05 | 31381-016 | WATER | Not Specified | 11/15/18 08:23 | 11/16/18 |
| 31381-035 WATER 31381-054 WATER 31381-055 WATER 31381-056 WATER 31381-057 WATER | 7214-06 | 31381-017 | WATER | Not Specified | 11/15/18 08:23 | 11/16/18 |
| 31381-036 WATER 31381-055 WATER 31381-056 WATER 31381-057 WATER | 7214-07 | 31381-035 | WATER | Not Specified | 11/15/18 10:18 | 11/16/18 |
| 31381-054 WATER 31381-056 WATER 31381-056 WATER | 7214-08 | 31381-036 | WATER | Not Specified | 11/15/18 10:18 | 11/16/18 |
| 31381-055 WATER 31381-056 WATER 31381-057 WATER | 7214-09 | 31381-054 | WATER | Not Specified | 11/15/18 12:54 | 11/16/18 |
| 31381-056 WATER 31381-057 WATER | 7214-10 | 31381-055 | WATER | Not Specified | 11/15/18 12:53 | 11/16/18 |
| 31381-057 WATER | 7214-11 | 31381-056 | WATER | Not Specified | 11/15/18 12:37 | 11/16/18 |
| | 7214-12 | 31381-057 | WATER | Not Specified | 11/15/18 12:37 | 11/16/18 |
| | | | | | | |

Project Name: 31381 Lab Number: L1847214

Project Number: Not Specified Peport Date: 11/20/18

Project Number: Not Specified Report Date: 11/29/18

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.



Project Name:

31381

Lab Number:

L1847214

Project Number:

Not Specified

Report Date:

11/29/18

Case Narrative (continued)

Report Submission

November 29, 2018: This final report includes the results of all requested analyses.

November 27, 2018: This is a preliminary report.

Sample Receipt

L1847214-09: Headspace was noted in the sample containers submitted for VOC 624 analysis. The analysis was cancelled at the client's request.

L1847214-11: Headspace was noted in the sample containers submitted for VOC 624 analysis. The analysis was performed at the client's request.

Volatile Organics

L1847214-11: Headspace was noted in the sample container utilized for analysis. The analysis was performed at the client's request.

L1847214-11: The analysis of Volatile Organics was performed with the method required holding time exceeded for Acrolein.

L1847214-11: The pH of the sample was less than two. It should be noted that 2-chloroethylvinyl ether breaks down under acidic conditions.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Whelle M. Univer Michelle M. Morris

Authorized Signature:

Title: Technical Director/Representative

Date: 11/29/18



ORGANICS



VOLATILES



Lab Number:

L1847214

Report Date:

Date Collected:

Date Received:

Field Prep:

11/29/18

11/15/18 08:23

Not Specified

11/16/18

SAMPLE RESULTS

Lab ID:

L1847214-05

Not Specified

31381

Client ID: Sample Location:

Project Name:

Project Number:

31381-016 Not Specified

Sample Depth:

Matrix:

Water 128,624.1

Analytical Method: Analytical Date:

11/17/18 15:25

Analyst:

NLK

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---------------------------------|----------------|-----------|-------|-----|------|-----------------|
| Volatile Organics by GC/MS - We | estborough Lab | | | | | |
| Methylene chloride | ND | | ug/l | 1.0 | - 4 | 1 |
| 1,1-Dichloroethane | ND | | ug/l | 1.5 | - | 1 |
| Chloroform | 74 | | ug/l | 1.0 | - | 4 |
| Carbon tetrachloride | ND | | ug/l | 1.0 | - | 1 |
| 1,2-Dichloropropane | ND | | ug/l | 3.5 | 9. | 1 |
| Dibromochloromethane | 10 | | ug/l | 1.0 | ÷ | 1 |
| 1,1,2-Trichloroethane | ND | | ug/l | 1.5 | 4 | 1 |
| 2-Chloroethylvinyl ether | ND | | ug/l | 10 | - | 1 |
| Tetrachloroethene | ND | | ug/l | 1.0 | - | 1 |
| Chlorobenzene | ND | | ug/l | 3.5 | + | 1 |
| Trichlorofluoromethane | ND | | ug/l | 5.0 | - | 1 |
| 1,2-Dichloroethane | ND | | ug/l | 1.5 | - | 1 |
| 1,1,1-Trichloroethane | ND | | ug/l | 2.0 | - | 1. |
| Bromodichloromethane | 28 | | ug/l | 1.0 | - | 1 |
| trans-1,3-Dichloropropene | ND | | ug/l | 1.5 | - | i i |
| cis-1,3-Dichloropropene | ND | | ug/l | 1.5 | | 1 |
| Bromoform | ND | | ug/l | 1.0 | - C- | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | ug/l | 1.0 | ÷ | 1 |
| Benzene | ND | | ug/l | 1.0 | + | 1 |
| Toluene | ND | | ug/l | 1.0 | - | 1 |
| Ethylbenzene | ND | | ug/l | 1.0 | | 1 |
| Chloromethane | ND | | ug/l | 5.0 | 4- | 1 |
| Bromomethane | ND | | ug/l | 5.0 | 4 | 1 |
| Vinyl chloride | ND | | ug/l | 1.0 | - | 1 |
| | | | - 2 | | | |

ND

ND

ND

ND



1

1

1

1

Chloroethane

1,1-Dichloroethene

trans-1,2-Dichloroethene

cis-1,2-Dichloroethene

2.0

1.0

1.5

1.0

-

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ug/l

ug/l

ug/l

ug/l

Project Name: 31381 Lab Number: L1847214

Project Number: Not Specified Report Date: 11/29/18

SAMPLE RESULTS

 Lab ID:
 L1847214-05
 Date Collected:
 11/15/18 08:23

 Client ID:
 31381-016
 Date Received:
 11/16/18

 Sample Location:
 Not Specified
 Field Prep:
 Not Specified

Sample Depth:

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---------------------------------|----------------|-----------|-------|-----|------|-----------------|
| Volatile Organics by GC/MS - Wo | estborough Lab | | | | | |
| Trichloroethene | ND | | ug/l | 1.0 | 4 | 1 |
| 1,2-Dichlorobenzene | ND | | ug/l | 5.0 | - | 1 |
| 1,3-Dichlorobenzene | ND | | ug/l | 5.0 | - | 1 |
| 1,4-Dichlorobenzene | ND | | ug/l | 5.0 | - | 1 |
| p/m-Xylene | ND | | ug/l | 2.0 | - | 4 |
| o-xylene | ND | | ug/l | 1.0 | _ | 9 |
| Xylenes, Total | ND | | ug/l | 1.0 | + | 1 |
| Styrene | ND | | ug/l | 1.0 | | i i |
| Acetone | ND | | ug/I | 10 | - | 1 |
| Carbon disulfide | ND | | ug/l | 5.0 | - | 1 |
| 2-Butanone | ND | | ug/l | 10 | - | 1 |
| Vinyl acetate | ND | | ug/l | 10 | | 1 |
| 4-Methyl-2-pentanone | ND | | ug/l | 10 | - | 1 |
| 2-Hexanone | ND | | ug/l | 10 | | 1 |
| Acrolein | ND | | ug/l | 8.0 | 100 | 1 |
| Acrylonitrile | ND | | ug/l | 10 | (Li) | 1 |
| Dibromomethane | ND | | ug/l | 1.0 | - | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria | |
|----------------------|------------|-----------|------------------------|--|
| Pentafluorobenzene | 120 | | 60-140 | |
| Fluorobenzene | 108 | | 60-140 | |
| 4-Bromofluorobenzene | 104 | | 60-140 | |



Lab Number:

L1847214

Report Date:

11/29/18

SAMPLE RESULTS

Lab ID: L1847214-07

31381

Not Specified

Client ID: 31381-035 Sample Location: Not Specified

Sample Depth:

Project Name:

Project Number:

Matrix: Water Analytical Method: 128,624.1 Analytical Date: 11/17/18 15:58

Analyst: NLK

| Date Collected: | 11/15/18 10:18 |
|-----------------|----------------|
| Date Received: | 11/16/18 |
| Field Prep: | Not Specified |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---------------------------------|----------------|-----------|-------|-----|--------------|------------------------|
| Volatile Organics by GC/MS - We | estborough Lab | | | | | |
| Methylene chloride | ND | | ug/l | 1.0 | - | 1 |
| 1,1-Dichloroethane | ND | | ug/l | 1.5 | - | 1 |
| Chloroform | 53 | | ug/l | 1.0 | 04 | 1 |
| Carbon tetrachloride | ND | | ug/l | 1.0 | - | 1 |
| 1,2-Dichloropropane | ND | | ug/l | 3.5 | - | 1 |
| Dibromochloromethane | 17 | | ug/l | 1.0 | 44 | 1 |
| 1,1,2-Trichloroethane | ND | | ug/l | 1.5 | | á) |
| 2-Chloroethylvinyl ether | ND | | ug/l | 10 | 4 | 1 |
| Tetrachloroethene | ND | | ug/l | 1.0 | - | 1 |
| Chlorobenzene | ND | | ug/l | 3.5 | | 1 |
| Trichlorofluoromethane | ND | | ug/l | 5.0 | - | 1 |
| 1,2-Dichloroethane | ND | | ug/l | 1.5 | - | a |
| 1,1,1-Trichloroethane | ND | | ug/l | 2.0 | - | 1> |
| Bromodichloromethane | 30 | | ug/l | 1.0 | | 1 |
| rans-1,3-Dichloropropene | ND | | ug/l | 1.5 | - | 1 |
| cis-1,3-Dichloropropene | ND | | ug/l | 1.5 | - | đ |
| Bromoform | 1.6 | | ug/l | 1.0 | - C# | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | ug/l | 1.0 | - | 1 |
| Benzene | ND | | ug/l | 1.0 | - | 1 |
| Toluene | ND | | ug/l | 1.0 | - | 1 |
| Ethylbenzene | ND | | ug/l | 1.0 | | À |
| Chloromethane | ND | | ug/l | 5.0 | + | 1 |
| Bromomethane | ND | | ug/l | 5.0 | - | 1 |
| Vinyl chloride | ND | | ug/l | 1,0 | | 1 |
| Chloroethane | ND | | ug/l | 2.0 | - | 1 |
| 1,1-Dichloroethene | ND | | ug/l | 1.0 | - | a l |
| trans-1,2-Dichloroethene | ND | | ug/l | 1.5 | - | 1 |
| cis-1,2-Dichloroethene | ND | | ug/l | 1.0 | - | 1 |



Lab Number: L1847214

Report Date: 11/29/18

SAMPLE RESULTS

Lab ID: L1847214-07
Client ID: 31381-035
Sample Location: Not Specified

31381

Not Specified

Date Collected: 11/15/18 10:18
Date Received: 11/16/18
Field Prep: Not Specified

Sample Depth:

Project Name:

Project Number:

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|--------------------------------|----------------|-----------|-------|-----|------------------|-----------------|
| Volatile Organics by GC/MS - W | estborough Lab | | | | | |
| Trichloroethene | ND | | ug/l | 1.0 | - L | 40 |
| 1,2-Dichlorobenzene | ND | | ug/l | 5.0 | 44 | 1 |
| 1,3-Dichlorobenzene | ND | | ug/l | 5.0 | + | 1 |
| 1,4-Dichlorobenzene | ND | | ug/l | 5.0 | 4 | 1 |
| p/m-Xylene | ND | | ug/l | 2.0 | - | 1 |
| o-xylene | ND | | ug/l | 1.0 | - | 4 |
| Xylenes, Total | ND | | ug/l | 1.0 | 144 | 1 |
| Styrene | ND | | ug/l | 1.0 | + | 1 |
| Acetone | ND | | ug/l | 10 | , = / | 1 |
| Carbon disulfide | ND | | ug/l | 5.0 | - | 1 |
| 2-Butanone | ND | | ug/l | 10 | - | 1 |
| Vinyl acetate | ND | | ug/l | 10 | * | 3 |
| 4-Methyl-2-pentanone | ND | | ug/l | 10 | ÷ | 1 |
| 2-Hexanone | ND | | ug/l | 10 | * | i, |
| Acrolein | ND | | ug/l | 8.0 | - | 1 |
| Acrylonitrile | ND | | ug/l | 10 | - | 1 |
| Dibromomethane | ND | | ug/l | 1.0 | | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria | |
|----------------------|------------|-----------|------------------------|--|
| Pentafluorobenzene | 120 | | 60-140 | |
| Fluorobenzene | 108 | | 60-140 | |
| 4-Bromofluorobenzene | 106 | | 60-140 | |



Lab Number:

L1847214

Report Date:

11/29/18

SAMPLE RESULTS

Lab ID:

L1847214-10

Not Specified

31381

Client ID:

31381-055

Sample Location:

Project Name:

Project Number:

Not Specified

Sample Depth:

Matrix:

Water 128,624.1

Analytical Method: Analytical Date:

11/17/18 16:31

Analyst:

NLK

| Date Collected: | 11/15/18 12:53 |
|-----------------|----------------|
| Date Received: | 11/16/18 |
| Field Prep: | Not Specified |
| | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---------------------------------|----------------|-----------|-------|-----|-------------------|-----------------|
| Volatile Organics by GC/MS - We | estborough Lab | | | | | |
| Methylene chloride | ND | | ug/l | 1.0 | | 1 |
| 1,1-Dichloroethane | ND | | ug/l | 1.5 | - | 1 |
| Chloroform | ND | | ug/l | 1.0 | - | 1 |
| Carbon tetrachloride | ND | | ug/l | 1.0 | - | 1 |
| 1,2-Dichloropropane | ND | | ug/l | 3.5 | 12. | 1 |
| Dibromochloromethane | ND | | ug/l | 1.0 | 4 | 1 |
| 1,1,2-Trichloroethane | ND | | ug/l | 1.5 | - | 1 |
| 2-Chloroethylvinyl ether | ND | | ug/l | 10 | - | 1 |
| Tetrachloroethene | ND | | ug/l | 1,0 | 4 | 1 |
| Chlorobenzene | ND | | ug/l | 3.5 | 4. | 1 |
| Trichlorofluoromethane | ND | | ug/l | 5.0 | 247 | 1 |
| 1,2-Dichloroethane | ND | | ug/I | 1.5 | - | 1 |
| 1,1,1-Trichloroethane | ND | | ug/l | 2.0 | - | 1 |
| Bromodichloromethane | ND | | ug/l | 1.0 | - | 1 |
| trans-1,3-Dichloropropene | ND | | ug/l | 1.5 | 1 to 1 | 1 |
| cis-1,3-Dichloropropene | ND : | | ug/l | 1.5 | 4 | 1 |
| Bromoform | ND | | ug/l | 1.0 | - | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | ug/l | 1.0 | - | 1 |
| Benzene | ND | | ug/l | 1.0 | - | 1 |
| Toluene | ND | | ug/l | 1.0 | 4 | 1 |
| Ethylbenzene | ND | | ug/l | 1.0 | 4 | 1 |
| Chloromethane | ND | | ug/l | 5.0 |)) | 1 |
| Bromomethane | ND | | ug/l | 5.0 | 5 -2 - | 1 |
| Vinyl chloride | ND | | ug/l | 1.0 | - | 1 |
| Chloroethane | ND | | ug/l | 2.0 | 4 | 1 |
| 1,1-Dichloroethene | ND | | ug/l | 1.0 | 144 | 1 |
| trans-1,2-Dichloroethene | ND | | ug/l | 1.5 | 1.00 | 1 |
| cis-1,2-Dichloroethene | ND | | ug/l | 1.0 | 144 | 1 |



Lab Number:

L1847214

Report Date:

11/29/18

SAMPLE RESULTS

Lab ID: Client ID: L1847214-10 31381-055

Not Specified

31381

Date Collected: Date Received: 11/15/18 12:53

Sample Location:

Project Name:

Project Number:

Not Specified

Date Received: 11/16/18
Field Prep: Not Specified

Sample Depth:

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|--------------------------------|-----------------|-----------|-------|-----|---------------------|-----------------|
| Volatile Organics by GC/MS - W | Vestborough Lab | | | | | |
| Trichloroethene | ND | | ug/l | 1.0 | ÷. | d' |
| 1,2-Dichlorobenzene | ND | | ug/l | 5.0 | - | 1 |
| 1,3-Dichlorobenzene | ND | | ug/I | 5.0 | - | 1 |
| 1,4-Dichlorobenzene | ND | | ug/l | 5.0 | · ** · · | 1 |
| p/m-Xylene | ND | | ug/l | 2.0 | - | 1 |
| o-xylene | ND | | ug/l | 1.0 | | 4 |
| Xylenes, Total | ND | | ug/l | 1.0 | - | 1 |
| Styrene | ND | | ug/l | 1.0 | / | 1 |
| Acetone | ND | | ug/l | 10 | - | 14 |
| Carbon disulfide | ND | | ug/l | 5.0 | - | 1 |
| 2-Butanone | ND | | ug/l | 10 | | 1 |
| Vinyl acetate | ND | | ug/l | 10 | - | 1 |
| 4-Methyl-2-pentanone | ND | | ug/l | 10 | - | 1 |
| 2-Hexanone | ND | | ug/l | 10 | 44 | 1 |
| Acrolein | ND | | ug/l | 8.0 | - | 1 |
| Acrylonitrile | ND | | ug/l | 10 | - | 1 |
| Dibromomethane | ND | | ug/l | 1.0 | - | 1 |
| | | | | | | |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria | |
|----------------------|------------|-----------|------------------------|--|
| Pentafluorobenzene | 117 | | 60-140 | |
| Fluorobenzene | 102 | | 60-140 | |
| 4-Bromofluorobenzene | 107 | | 60-140 | |

Lab Number:

L1847214

Report Date:

Date Collected:

Date Received:

Field Prep:

11/29/18

11/15/18 12:37

Not Specified

11/16/18

SAMPLE RESULTS

Lab ID:

L1847214-11

Not Specified

Client ID:

31381-056

Sample Location:

Project Name:

Project Number:

Not Specified

Sample Depth:

Matrix:

Water

31381

Analytical Method:

128,624.1

Analytical Date:

11/28/18 13:59

Analyst:

GT

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---------------------------------|----------------|-----------|-------|-----|-----------------|-----------------|
| Volatile Organics by GC/MS - We | estborough Lab | | | | | |
| Methylene chloride | ND | | ug/l | 1.0 | *** | 1 |
| 1,1-Dichloroethane | ND | | ug/l | 1.5 | 40 | 1 |
| Chloroform | ND | | ug/l | 1.0 | · /* | 1 |
| Carbon tetrachloride | ND | | ug/l | 1.0 | | 1 |
| 1,2-Dichloropropane | ND | | ug/l | 3.5 | 140 | 1 |
| Dibromochloromethane | ND | | ug/l | 1.0 | | 1 |
| 1,1,2-Trichloroethane | ND | | ug/l | 1.5 | 141 | ì |
| 2-Chloroethylvinyl ether | ND | | ug/l | 10 | ÷ | 1 |
| Tetrachloroethene | ND | | ug/l | 1.0 | - E | 1 |
| Chlorobenzene | ND | | ug/l | 3.5 | - | 1 |
| Trichlorofluoromethane | ND | | ug/l | 5.0 | 1 | 1 |
| 1,2-Dichloroethane | ND | | ug/l | 1.5 | - | 4 |
| 1,1,1-Trichloroethane | ND | | ug/l | 2.0 | - | 1 |
| Bromodichloromethane | ND | | ug/l | 1.0 | | 1 |
| trans-1,3-Dichloropropene | ND | | ug/l | 1.5 | - | 1 |
| cis-1,3-Dichloropropene | ND | | ug/l | 1.5 | | 1. |
| Bromoform | ND | | ug/l | 1.0 | - | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | ug/l | 1.0 | - | 1 |
| Benzene | ND | | ug/l | 1.0 | - | 1 |
| Toluene | ND | | ug/l | 1.0 | - | 1 |
| Ethylbenzene | ND | | ug/l | 1.0 | - | 1 |
| Chloromethane | ND | | ug/l | 5.0 | - € | 1 |
| Bromomethane | ND | | ug/l | 5.0 | | 1 |
| Vinyl chloride | ND | | ug/l | 1.0 | ~ | 1 |
| Chloroethane | ND | | ug/l | 2.0 | - | 1 |
| 1,1-Dichloroethene | ND | | ug/l | 1.0 | - | 1 |
| trans-1,2-Dichloroethene | ND | | ug/l | 1.5 | ÷ | |
| cis-1,2-Dichloroethene | ND | | ug/l | 1.0 | | 1 |



Lab Number: L1847214

Report Date: 11/29/18

SAMPLE RESULTS

Lab ID: L1847214-11
Client ID: 31381-056
Sample Location: Not Specified

31381

Not Specified

Date Collected: 11/15/18 12:37
Date Received: 11/16/18
Field Prep: Not Specified

Sample Depth:

Project Name:

Project Number:

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|--------------------------------|----------------|-----------|-------|-----|------------------|-----------------|
| Volatile Organics by GC/MS - W | estborough Lab | | | | | |
| Trichloroethene | ND | | ug/l | 1.0 | - | 1 |
| 1,2-Dichlorobenzene | ND | | ug/l | 5.0 | 16 | 1 |
| 1,3-Dichlorobenzene | ND | | ug/l | 5.0 | 4 | 1 |
| 1,4-Dichlorobenzene | ND | | ug/l | 5.0 | n e | 1 |
| p/m-Xylene | ND | | ug/l | 2.0 | 74 | 1 |
| o-xylene | ND | | ug/l | 1.0 | - | 4 |
| Xylenes, Total | ND | | ug/l | 1.0 | - | Ì |
| Styrene | ND | | ug/l | 1.0 | | 40 |
| Acetone | ND | | ug/l | 10 | - | 1 |
| Carbon disulfide | ND | | ug/l | 5.0 | - - - | 4 |
| 2-Butanone | ND | | ug/l | 10 | - | Ì |
| Vinyl acetate | ND | | ug/l | 10 | - | 1 |
| 4-Methyl-2-pentanone | ND | | ug/l | 10 | • | 1 |
| 2-Hexanone | ND | | ug/l | 10 | 9 | 1 |
| Acrolein | ND | | ug/l | 8.0 | - | 1 |
| Acrylonitrile | ND | | ug/l | 10 | - | 1 |
| Dibromomethane | ND | | ug/l | 1.0 | 1,000 | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria | |
|----------------------|------------|-----------|------------------------|--|
| Pentafluorobenzene | 98 | | 60-140 | |
| Fluorobenzene | 96 | | 60-140 | |
| 4-Bromofluorobenzene | 97 | | 60-140 | |



Project Name:

31381

Lab Number:

L1847214

Project Number:

Not Specified

Report Date:

11/29/18

Method Blank Analysis Batch Quality Control

Analytical Method: Analytical Date:

128,624.1 11/17/18 10:25

Analyst:

NLK

| Parameter | Result | Qualifier | Units | RI | | MDL |
|------------------------------|----------------|------------|-------|----------|--------|--------------------|
| /olatile Organics by GC/MS - | Westborough La | b for samp | e(s): | 05,07,10 | Batch: | WG1181010-8 |
| Methylene chloride | ND | | ug/l | 1.0 | 0 | - |
| 1,1-Dichloroethane | ND | | ug/l | 1.3 | 5 | - |
| Chloroform | ND | | ug/l | 1.0 |) | - |
| Carbon tetrachloride | ND | | ug/l | 1.0 |) | - |
| 1,2-Dichloropropane | ND | | ug/l | 3.5 | 5 | 0 1 = 0 |
| Dibromochloromethane | ND | | ug/l | 1.0 |) | |
| 1,1,2-Trichloroethane | ND | | ug/l | 1.9 | 5 | - |
| 2-Chloroethylvinyl ether | ND | | ug/l | 10 |) | 4 |
| Tetrachloroethene | ND | | ug/l | 1.0 |) | - |
| Chlorobenzene | ND | | ug/l | 3.5 | 5 | - |
| Trichlorofluoromethane | ND | | ug/l | 5.0 |) | - |
| 1,2-Dichloroethane | ND | | ug/l | 1.0 |) | - |
| 1,1,1-Trichloroethane | ND | | ug/l | 2.0 | 5 | - |
| Bromodichloromethane | ND | | ug/l | 1,0 |) | ō . |
| trans-1,3-Dichloropropene | ND | | ug/l | 1.9 | 5 | |
| cis-1,3-Dichloropropene | ND | | ug/l | 13 | 5 | |
| Bromoform | ND | | ug/l | 1.0 |) | 2 |
| 1,1,2,2-Tetrachloroethane | ND | | ug/l | 1.0 |) | |
| Benzene | ND | | ug/l | 1.0 |) | + |
| Toluene | ND | | ug/l | 1.0 |) | + |
| Ethylbenzene | ND | | ug/l | 1.0 |) | + |
| Chloromethane | ND | | ug/l | 5.0 |) | ,, |
| Bromomethane | ND | | ug/l | 5.0 |) | ÷. |
| Vinyl chloride | ND | | ug/l | 1.0 | Ò | 4 |
| Chloroethane | ND | | ug/l | 2.0 |) | CAT. |
| 1,1-Dichloroethene | ND | | ug/l | 1,0 |) | 40 |
| trans-1,2-Dichloroethene | ND | | ug/l | 1.5 | 5 | + |
| cis-1,2-Dichloroethene | ND | | ug/l | 1.0 |) | 4 |
| Trichloroethene | ND | | ug/l | 1.0 |) | + |



Project Name: 31381

Project Number: Not Specified

Lab Number: L1

Lab Number.

L1847214

Report Date: 11/29/18

Method Blank Analysis Batch Quality Control

Analytical Method: Analytical Date: 128,624.1 11/17/18 10:25

Analyst:

NLK

| arameter | Result | Qualifier | Units | R | 4 | MDL |
|--------------------------------------|----------------|------------|--------|----------|--------|------------------|
| olatile Organics by GC/MS - | Westborough La | b for samp | le(s): | 05,07,10 | Batch: | WG1181010-8 |
| 1,2-Dichlorobenzene | ND | | ug/l | 5. | 0 | 77 |
| 1,3-Dichlorobenzene | ND | | ug/l | 5. | 0 | - |
| 1,4-Dichlorobenzene | ND | | ug/l | 5. | 0 | ** |
| p/m-Xylene | ND | | ug/l | 2. | 0 | + |
| o-xylene | ND | | ug/l | 1.0 | 0 | - |
| Xylenes, Total | ND | | ug/l | 1. | 0 | - |
| Styrene | ND | | ug/l | 1. | 0 | |
| Acetone | ND | | ug/l | 10 |) | |
| Carbon disulfide | ND | | ug/l | 5. | 0 | - |
| 2-Butanone | ND | | ug/l | 10 |) | - |
| Vinyl acetate | ND | | ug/l | 10 |) | - |
| 4-Methyl-2-pentanone | ND | | ug/l | 10 |) | - |
| 2-Hexanone | ND | | ug/l | 10 |) | \ # / |
| Acrolein | ND | | ug/l | 8. | 0 | - |
| Acrylonitrile | ND | | ug/l | 10 |) | - 2 |
| n-Hexane¹ | ND | | ug/l | 20 |) | |
| Methyl tert butyl ether | ND | | ug/l | 10 |) | - |
| Dibromomethane | ND | | ug/l | 1. | 0 | 1 4 |
| 1,4-Dioxane ¹ | ND | | ug/l | 200 | 00 | - |
| Tert-Butyl Alcohol | ND | | ug/l | 10 | 0 | - |
| Tertiary-Amyl Methyl Ether | ND | | ug/l | 20 |) | - |
| Dichlorodifluoromethane ¹ | ND | | ug/I | 1. | 0 | 1997 |

| Surrogate | | Acceptance | | | |
|----------------------|---------------|------------------|--|--|--|
| | %Recovery Qua | alifier Criteria | | | |
| Pentafluorobenzene | 121 | 60-140 | | | |
| Fluorobenzene | 110 | 60-140 | | | |
| 4-Bromofluorobenzene | 101 | 60-140 | | | |



L1847214

Project Name: 31381

Not Specified

Report Date: 11/29/18

Lab Number:

Method Blank Analysis Batch Quality Control

Analytical Method: Analytical Date:

Project Number:

128,624.1 11/28/18 11:42

Analyst: GT

| arameter | Result | Qualifier | Units | RL | MDL |
|-----------------------------|----------------|------------|---------|----------|-------------|
| olatile Organics by GC/MS - | Westborough La | b for samp | e(s): 1 | 1 Batch: | WG1183083-8 |
| Methylene chloride | ND | | ug/I | 1.0 | 4 |
| 1,1-Dichloroethane | ND | | ug/l | 1.5 | - |
| Chloroform | ND | | ug/l | 1.0 | 1,0 |
| Carbon tetrachloride | ND | | ug/l | 1.0 | - |
| 1,2-Dichloropropane | ND | | ug/l | 3.5 | • |
| Dibromochloromethane | ND | | ug/l | 1.0 | - |
| 1,1,2-Trichloroethane | ND | | ug/l | 1.5 | 1 4 L |
| 2-Chloroethylvinyl ether | ND | | ug/l | 10 | ¥ |
| Tetrachloroethene | ND | | ug/l | 1.0 | 4 |
| Chlorobenzene | ND | | ug/l | 3.5 | - |
| Trichlorofluoromethane | ND | | ug/l | 5.0 | - |
| 1,2-Dichloroethane | ND | | ug/l | 1.5 | |
| 1,1,1-Trichloroethane | ND | | ug/l | 2.0 | T |
| Bromodichloromethane | ND | | ug/l | 1.0 | į į |
| trans-1,3-Dichloropropene | ND | | ug/l | 1.5 | - |
| cis-1,3-Dichloropropene | ND | | ug/l | 1.5 | 12 |
| Bromoform | ND | | ug/l | 1.0 | - |
| 1,1,2,2-Tetrachloroethane | ND | | ug/l | 1.0 | 1.4 |
| Benzene | ND | | ug/l | 1.0 | (H) |
| Toluene | ND | | ug/l | 1.0 | 9 |
| Ethylbenzene | ND | | ug/l | 1.0 | e e |
| Chloromethane | ND | | ug/l | 5.0 | + |
| Bromomethane | ND | | ug/l | 5.0 | · · · |
| Vinyl chloride | ND | | ug/l | 1.0 | H |
| Chloroethane | ND | | ug/l | 2.0 | 12 |
| 1,1-Dichloroethene | ND | | ug/l | 1.0 | - |
| trans-1,2-Dichloroethene | ND | | ug/l | 1.5 | - 4 |
| cis-1,2-Dichloroethene | ND | | ug/l | 1.0 | 9 |
| Trichloroethene | ND | | ug/l | 1.0 | - |



Project Name: 31381 Lab Number: L1847214

Project Number: Not Specified Report Date: 11/29/18

Method Blank Analysis Batch Quality Control

Analytical Method: 128,624.1 Analytical Date: 11/28/18 11:42

Analyst: GT

| arameter | Result | Qualifier | Units | RL | MDL |
|-----------------------------|----------------|------------|-----------|--------|----------------|
| olatile Organics by GC/MS - | Westborough La | b for samp | le(s): 11 | Batch: | WG1183083-8 |
| 1,2-Dichlorobenzene | ND | | ug/l | 5.0 | - |
| 1,3-Dichlorobenzene | ND | | ug/l | 5.0 | - |
| 1,4-Dichlorobenzene | ND | | ug/l | 5.0 | - |
| p/m-Xylene | ND | | ug/l | 2.0 | (#) |
| o-xylene | ND | | ug/l | 1.0 | - |
| Xylenes, Total | ND | | ug/l | 1.0 | - |
| Styrene | ND | | ug/l | 1.0 | + |
| Acetone | ND | | ug/l | 10 | 9 |
| Carbon disulfide | ND | | ug/l | 5.0 | - |
| 2-Butanone | ND | | ug/l | 10 | ÷ |
| Vinyl acetate | ND | | ug/l | 10 | - |
| 4-Methyl-2-pentanone | ND | | ug/l | 10 | + |
| 2-Hexanone | ND | | ug/l | 10 | 1.00 |
| Acrolein | ND | | ug/l | 8.0 | - - |
| Acrylonitrile | ND | | ug/l | 10 | - |
| n-Hexane¹ | ND | | ug/l | 20 | - |
| Methyl tert butyl ether | ND | | ug/l | 10 | - |
| Dibromomethane | ND | | ug/l | 1.0 | - |
| Tert-Butyl Alcohol | ND | | ug/l | 100 | - |
| Tertiary-Amyl Methyl Ether | ND | | ug/l | 20 | - |
| Dichlorodifluoromethane¹ | ND | | ug/l | 1.0 | |

| | | Acceptance |
|----------------------|--------------|-------------------|
| Surrogate | %Recovery Qu | ualifier Criteria |
| Pentafluorobenzene | 99 | 60-140 |
| Fluorobenzene | 97 | 60-140 |
| 4-Bromofluorobenzene | 100 | 60-140 |



31381 Project Name:

Project Number: Not Specified

L1847214 Lab Number:

11/29/18 Report Date:

| Volatile Organitics by GCMAS - Westborrough Lab Associated sample(e); 05,07,10 Batch: WG1181010-7 Methylene chloride 120 - 50-150 - 49 1,1-Ochtoroughane 115 - 70-135 - 49 Calicular batchooked 115 - 70-130 - 49 1,2-Ochtoroughane 110 - 70-130 - 41 1,2-Ochtoroughane 100 - 70-130 - 45 1,2-Ochtoroughane 100 - 70-130 - 45 Calcibrocharane 113 - 80-130 - 89 Introductore 112.2 Chloroughane 80 - 80-130 - 89< | Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits | |
|--|--|------------------|-----------|-------------------|---------|---------------------|-----|------|---------------|--|
| 120 - 660-140 - 115 - 56-150 - 116 - 770-135 - 110 - 770-136 - 100 - 770-130 - 56 - 770-130 - 56 - 770-130 - 100 - 770-130 - 113 - 770-130 - 115 - 770-130 - 116 - 770-130 - 115 - 770-130 - 100 - 56-135 - 115 - 66-136 - 116 - 66-140 - 116 - 66-140 - 116 - 66-136 - 116 - 66-140 - 1100 - 66-136 - 1100 - 1-206 - 11-205 - - - 1100 - | Volatile Organics by GC/MS - Westborough | Lab Associated s | ample(s): | 05,07,10 Batch: | WG11810 | 10-7 | | | | |
| 115 - 50-150 - 115 - 70-135 - 110 - 35-165 - 100 - 70-135 - 100 - 70-135 - 100 - 70-136 - 105 - 70-130 - 106 - 70-130 - 115 - 70-130 - 115 - 70-130 - 115 - 70-130 - 115 - 70-130 - 115 - 70-130 - 116 - 70-130 - 115 - 70-130 - 110 - 70-130 - 110 - 70-130 - 100 - 60-140 - 100 - 60-140 - 100 - 60-140 - 100 - 60-140 - 100 - 60-14 | Methylene chloride | 120 | | | | 60-140 | · | | 28 | |
| 115 70-136 - 110 - 35-165 - 100 - 70-130 - 55 - 70-130 - 90 - 70-130 - 115 - 65-135 - 115 - 70-130 - 115 - 70-130 - 100 - 65-135 - 115 - 70-130 - 100 - 65-135 - 115 - 65-135 - 100 - 65-135 - 115 - 70-130 - 100 - 65-135 - 115 - 70-130 - 116 - 70-130 - 110 - 65-135 - 110 - 60-140 - 100 - 60-140 - 100 - 60-140 - 100 - 60-140 -< | 1,1-Dichloroethane | 100 | | 30 | | 50-150 | | | 49 | |
| 115 70-130 - 35-165 - 35-165 - 35-165 - 70-135 - - 70-135 - - 70-130 - - 70-130 - - 70-130 - | Chloroform | 115 | | ·e | | 70-135 | 15 | | 25 | |
| 110 - 35-165 - 100 - 70-135 - 55 - 70-130 - 105 - 70-130 - 105 - 70-130 - 130 - 65-135 - 115 - 70-130 - 100 - 66-135 - 90 - 66-135 - 100 - 60-140 - 116 - 60-140 - 100 - 60-140 - 100 - 60-140 - 100 - 60-140 - 95 - 60-140 - 100 - 60-140 - 95 - 60-140 - 95 - 60-140 - 100 - 60-140 - 95 - 1-205 - 15-185 - 1-205 - | Carbon tetrachloride | 115 | | | | 70-130 | | | 14 | |
| 100 - 70-135 - 55 - 70-130 - 105 - 70-130 - 130 - 86-135 - 145 - 80-150 - 115 - 70-130 - 100 - 80-150 - 90 - 80-150 - 100 - 80-150 - 115 - 80-140 - 100 - 60-140 - 100 - 60-140 - 100 - 60-140 - 100 - 60-140 - 100 - 60-140 - 100 - 1-205 - 100 - 1-205 - 100 - 1-205 - 115 - 1-205 - 100 - 1-205 - 100 - 1-205 - 1100 - 1-205 - 1110 - 1-205 - 1110 - 1-205 - 1110 - 1-200 - | 1,2-Dichloropropane | 110 | | - | | 35-165 | | | 55 | |
| 55 - 70-130 - 105 - 70-130 - 90 - 65-135 - 115 - 50-150 - 116 - 70-130 - 100 - 65-135 - 80 - 50-150 - 90 - 50-150 - 95 - 60-140 - 100 - 60-140 - 100 - 60-140 - 100 - 60-140 - 95 - 1-205 - 95 - 1-205 - 85 - 1-205 - 15-185 - 1-205 - | Dibromochloromethane | 100 | | a) | | 70-135 | ā) | | 20 | |
| 55 - 1-225 - 105 - 70-130 - 130 - 50-150 - 115 - 70-130 - 100 - 70-130 - 100 - 65-135 - 90 - 50-150 - 90 - 50-150 - 115 - 60-140 - 100 - 60-140 - 100 - 60-140 - 100 - 60-140 - 95 - 60-140 - 100 - 60-140 - 95 - 1-205 - 95 - 1-205 - 100 - 1-205 - 100 - 1-205 - 1-205 - 1-205 - 1-205 - 1-205 - | 1,1,2-Trichloroethane | 100 | | · | | 70-130 | ٠ | | 45 | |
| 105 - 70-130 - 90 - 65-135 - 130 - 50-150 - 115 - 70-130 - 100 - 65-135 - 80 - 65-135 - 90 - 50-150 - 90 - 60-140 - 115 - 66-140 - 100 - 66-135 - 100 - 60-140 - 100 - 60-140 - 95 - 60-140 - 100 - 60-140 - 95 - 1-205 - 85 - 1-205 - 15-185 - 1-205 - | 2-Chloroethylvinyl ether | 55 | | | | 1-225 | , | | 77 | |
| 90 - 66-135 - 130 - 50-150 - 115 - 70-130 - 100 - 65-135 - 90 - 50-150 - 90 - 50-150 - 90 - 70-130 - 115 - 60-140 - 100 - 60-140 - 100 - 60-140 - 95 - 70-130 - 100 - 60-140 - 95 - 1-205 - 85 - 1-205 - 15-15-15-15-15-15-15-15-15-15-15-15-15-1 | Tetrachloroethene | 105 | | 1- | | 70-130 | | | 39 | |
| 130 - 50-150 - 115 - 70-130 - 100 - 65-135 - 80 - 50-150 - 90 - 25-175 - 90 - 70-130 - 115 - 60-140 - 100 - 60-140 - 100 - 60-140 - 95 - 60-140 - 95 - 1-205 - 85 - 1-205 - | Chlorobenzene | 06 | | d. | | 65-135 | | | 23 | |
| 115 - 70-130 - 100 - 65-135 - 80 - 50-150 - 90 - 70-130 - 90 - 60-140 - 115 - 66-140 - 100 - 66-140 - 100 - 60-140 - 95 - 1-205 - 85 - 1-205 - | Trichlorofluoromethane | 130 | | 3 | | 50-150 | | | 84 | |
| 115 - 70-130 - 100 - 65-135 - 90 - 25-175 - 90 - 70-130 - 115 - 60-140 - 100 - 65-135 - 100 - 60-140 - 95 - 60-140 - 95 - 1-205 - 85 - 1-205 - | 1,2-Dichloroethane | 115 | | ě | | 70-130 | | | 49 | |
| 100 - 65-135 - 80 - 50-150 - 90 - 70-130 - 90 - 60-140 - 115 - 65-135 - 100 - 65-135 - 100 - 60-140 - 95 - 1-205 - 85 - 15-185 - | 1,1,1-Trichloroethane | 115 | | | | 70-130 | | | 36 | |
| 80 - 50-150 - 90 - 25-175 - 90 - 60-130 - 115 - 66-140 - 100 - 70-130 - 100 - 66-140 - 95 - 1-205 - 85 - 15-185 - | Bromodichloromethane | 100 | | | | 65-135 | | | 99 | |
| oropene 90 - 25-175 - pos - 70-130 - oroelhane 90 - 60-140 - 110 - 70-130 - 100 - 60-140 - 95 - 11-205 - 85 - 15-185 - | trans-1,3-Dichloropropene | 80 | | ě | | 50-150 | • | | 98 | |
| 95 - 70-130 - oroethane 90 - 60-140 - 115 - 65-135 - - 100 - 70-130 - - 100 - 60-140 - - 95 - 1-205 - 85 - 15-185 - | cis-1,3-Dichloropropene | 06 | | · | | 25-175 | | | 58 | |
| oroethane 90 - 60-140 - 115 - 65-135 - 100 - 70-130 - 100 - 60-140 - 95 - 1-205 - 85 - 15-185 - | Bromoform | 95 | | • | | 70-130 | ÷ | | 42 | |
| 115 - 65-135 - 100 - 70-130 - 100 - 60-140 - 95 - 1-205 - 85 - 15-185 - | 1,1,2,2-Tetrachloroethane | 06 | | | | 60-140 | | | 19 | |
| 100 - 70-130 - 100 - 60-140 - 95 - 1-205 - 85 - 15-185 - | Benzene | 115 | | | | 65-135 | | | 19 | |
| 100 - 60-140 - 95 - 1-205 - 85 - 15-185 - | Toluene | 100 | | | | 70-130 | | | 14 | |
| 95 - 1-205 - 15-185 - | Ethylbenzene | 100 | | ž | | 60-140 | ÷ | | 63 | |
| . 15-185 | Chloromethane | 95 | | 1 | | 1-205 | | | 09 | |
| | Bromomethane | 82 | | | | 15-185 | | | 19 | |



Not Specified 31381 Project Number: Project Name:

L1847214 Lab Number:

11/29/18 Report Date:

| rameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits | |
|--|------------------|-----------|-------------------|----------|---------------------|-----|------|---------------|--|
| latile Organics by GC/MS - Westborough Lab Associated sample(s): 05,07,10 Batch: WG1181010-7 | Lab Associated s | ample(s): | 05,07,10 Batch: | WG118101 | 2-0 | | | | |
| Vinyl chloride | 120 | | - | | 5-195 | e i | | 99 | |
| Chloroethane | 105 | | Ť. | | 40-160 | | | 78 | |
| 1,1-Dichloroethene | 120 | | ÷ | | 50-150 | | | 32 | |
| trans-1,2-Dichloroethene | 130 | | ٠ | | 70-130 | • | | 45 | |
| cis-1,2-Dichloroethene | 100 | | , | | 60-140 | | | 30 | |
| Trichloroethene | 125 | | | | 65-135 | · | | 48 | |
| 1,2-Dichlorobenzene | 100 | | | | 65-135 | 7. | | 22 | |
| 1,3-Dichlorobenzene | 06 | | 8- | | 70-130 | | | 43 | |
| 1,4-Dichlorobenzene | 100 | | | | 65-135 | | | 25 | |
| p/m-Xylene | 92 | | | | 60-140 | - | | 30 | |
| o-xylene | 06 | | ٠ | | 60-140 | è | | 30 | |
| Styrene | 85 | | ÷ | | 60-140 | • | | 30 | |
| Acetone | 104 | | i | | 40-160 | | | 30 | |
| Carbon disulfide | 100 | | • | | 60-140 | (3. | | 30 | |
| 2-Butanone | 116 | | | | 60-140 | , | | 30 | |
| Vinyl acetate | 112 | | | | 60-140 | Ç. | | 30 | |
| 4-Methyl-2-pentanone | 96 | | | | 60-140 | | | 30 | |
| 2-Нехапопе | 06 | | | | 60-140 | · | | 30 | |
| Acrolein | 100 | | â | | 60-140 | | | 30 | |
| Acrylonitrile | 105 | | | | 60-140 | | | 09 | |
| Methyl tert butyl ether | 105 | | | | 60-140 | -1 | | 30 | |
| Dibromomethane | 115 | | i | | 70-130 | | | 30 | |
| 1,4-Dioxane¹ | 115 | | =3, | | 60-140 | | | 30 | |
| | | | | | | | | | |



Not Specified

Project Number: Project Name:

31381

L1847214 Lab Number:

RPD Limits

Qual

RPD

11/29/18 Report Date:

> %Recovery Limits Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 05,07,10 Batch: WG1181010-7 Qual LCSD %Recovery Qual LCS %Recovery Parameter

| ert-Butyl Alcohol | 110 | | 60-140 | j. | 30 |
|---------------------------|-----|----|--------|----|----|
| ertiary-Amyl Methyl Ether | 100 | 7. | 60-140 | • | 30 |
| ichlorodifluoromelhane¹ | 100 | • | 70-130 | * | 30 |

| Surrogate | LCS %Recovery Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|----------------------|-----------------------|-------------------|------|------------------------|
| Pentafluorobenzene | 121 | | | 60-140 |
| Fluorobenzene | 108 | | | 60-140 |
| 4-Bromofluorobenzene | 104 | | | 60-140 |



Not Specified 31381 Project Number: Project Name:

L1847214 Lab Number:

11/29/18 Report Date:

| Parameter | %Recovery | Qual | "Recovery | Qual | Limits | |
|--|--|-----------------|--|-----------------------|--------|---|
| | | | | | | l |
| | | | | | | |
| AND AND AND ADDRESS OF A DESCRIPTION OF A PARTY OF A PA | Charles of the Control of the Contro | Annual Sections | And the second s | man destribution com- | | |

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits | |
|---|-----------------------|------------|-----------------------|----------|---------------------|-----|------|---------------|--|
| Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 11 | orough Lab Associated | sample(s): | 11 Batch: WG1183083-7 | 183083-7 | | | | | |
| Methylene chloride | 96 | | -3. | | 60-140 | , | | 28 | |
| 1,1-Dichloroethane | 95 | | ŧ | | 50-150 | ٠ | | 49 | |
| Chloroform | 100 | | è | | 70-135 | • | | 22 | |
| Carbon tetrachloride | 100 | | ٠ | | 70-130 | | | 41 | |
| 1,2-Dichloropropane | 96 | | • | | 35-165 | | | 55 | |
| Dibromochloromethane | 86 | | | | 70-135 | | | 20 | |
| 1,1,2-Trichloroethane | 95 | | i. | | 70-130 | | | 45 | |
| 2-Chloroethylvinyl ether | 115 | | ٠ | | 1-225 | | | 71 | |
| Tetrachloroethene | 100 | | ٠ | | 70-130 | į. | | 39 | |
| Chlorobenzene | 96 | | • | | 65-135 | | | 53 | |
| Trichlorofluoromethane | 110 | | | | 50-150 | ě | | 48 | |
| 1,2-Dichloroethane | 96 | | , | | 70-130 | è | | 49 | |
| 1,1,1-Trichloroethane | 100 | | ė | | 70-130 | | | 36 | |
| Bromodichloromethane | 105 | | • | | 65-135 | ٠ | | 26 | |
| trans-1,3-Dichloropropene | 82 | | 4 | | 50-150 | à | | 86 | |
| cis-1,3-Dichloropropene | 06 | | i. | | 25-175 | ٠ | | 58 | |
| Bromoform | 96 | | i | | 70-130 | ı | | 42 | |
| 1,1,2,2-Tetrachloroethane | 06 | | ٠ | | 60-140 | ji. | | 19 | |
| Benzene | 100 | | i | | 65-135 | · | | 19 | |
| Toluene | 100 | | | | 70-130 | | | 41 | |
| Ethylbenzene | 100 | | ٠ | | 60-140 | ağ. | | 63 | |
| Chloromethane | 98 | | ř | | 1-205 | • | | 09 | |
| Bromomethane | 125 | | × | | 15-185 | · | | 19 | |
| | | | | | | | | | |



Not Specified

Project Number: Project Name:

31381

L1847214 Lab Number:

Report Date:

11/29/18

| olatile Organics by GC/MS - Westborough Lab Associated sample(s): 11 Vinyl chloride Chloroethane | | | and | 2 | מאני | |
|--|--------------------------|-----------------------|---|----|------|--|
| Vinyl chloride Chloroethane | ab Associated sample(s): | 11 Batch: WG1183083-7 | 83083-7 | | | |
| Chloroethane | 130 | | 5-195 | 35 | | |
| | 100 | • | 40-160 | 09 | 100 | |
| 1,1-Dichloroethene | 100 | | 50-150 | 20 | ¥. | |
| trans-1,2-Dichloroethene | 100 | ÷ | 70-130 | 30 | | |
| cis-1,2-Dichloroethene | 82 | • | 60-140 | 40 | į | |
| Trichloroethene | 100 | ý. | 65-135 | 35 | i je | |
| 1,2-Dichlorobenzene | 100 | * | 65-135 | 35 | è | |
| 1,3-Dichlorobenzene | 95 | | 70-130 | 30 | i | |
| 1,4-Dichlorobenzene | 100 | | 65-135 | 35 | | |
| p/m-Xylene | 06 | o- <u>i</u> | 60-140 | 40 | á | |
| o-xylene | 06 | | 60-140 | 40 | i | |
| Styrene | 80 | • | 60-140 | 40 | | |
| Acetone | 100 | | 40-160 | 09 | oğ. | |
| Carbon disulfide | 06 | × | 60-140 | 40 | à | |
| 2-Butanone | 96 | • | 60-140 | 40 | ě | |
| Vinyl acetate | 86 | * | 60-140 | 40 | , | |
| 4-Methyl-2-pentanone | 96 | * | 60-140 | 40 | à | |
| 2-Hexanone | 96 | | 60-140 | 40 | 3 | |
| Acrolein | 95 | • | 60-140 | 40 | | |
| Acrylonitrile | 06 | • | 60-140 | 40 | • | |
| Methyl tert butyl ether | 06 | | 60-140 | 40 | 4. | |
| Dibromomethane | 06 | * | 70-130 | 30 | | |
| Tert-Butyl Alcohol | 76 | æ | 60-140 | 40 | | |



Not Specified

Project Number: Project Name:

31381

L1847214 Lab Number:

Report Date:

11/29/18

RPD Limits

Qual

RPD

39 30

%Recovery Limits Qual LCSD %Recovery Qual LCS %Recovery Parameter

. . 60-140 70-130 Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 11 Batch: WG1183083-7 100 92 Tertiary-Amyl Methyl Ether Dichlorodifluoromethane1

| Acceptance |
|------------|
| TCSD |
| S27 |
| |
| |

Criteria 60-140 60-140 60-140 Qual "Recovery Qual "Recovery 101 100 Fluorobenzene 4-Bromofluorobenzene Pentafluorobenzene Surrogate



INORGANICS & MISCELLANEOUS



Project Name: 31381 Lab Number:

Project Number: Not Specified Report Date: 11/29/18

SAMPLE RESULTS

Lab ID:

L1847214-01

Client ID:

31381-015

Sample Location:

Not Specified

Date Collected:

11/15/18 00:00

L1847214

Date Received: 11/16/18

Field Prep:

Not Specified

Sample Depth: Matrix:

Water

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|-----------------------|-----------------|-----------|-------|-------|-----|--------------------|------------------|------------------|----------------------|---------|
| General Chemistry - ' | Westborough Lat | o l | | | | | | | | |
| Phenolics, Total | ND | | mg/l | 0.030 | + | 1 | 11/20/18 04:20 | 11/20/18 06:55 | 4,420.1 | GD |



Project Name: 31381

Not Specified

Lab Number:

L1847214

Project Number:

Report Date:

11/29/18

SAMPLE RESULTS

Lab ID:

L1847214-02

Client ID:

31381-034

Sample Location:

Not Specified

Date Collected:

11/15/18 00:00

Date Received:

11/16/18

Field Prep:

Not Specified

Sample Depth: Matrix:

Water

| Maura. | vvalei | | | | | | | | | |
|---------------------|-----------------|-----------|-------|-------|------|--------------------|------------------|------------------|----------------------|---------|
| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
| General Chemistry - | Westborough Lab | | | 255 | | | | | | |
| Phenolics, Total | ND | | mg/l | 0.030 | 1.80 | 1 | 11/20/18 04:20 | 11/20/18 06:58 | 4,420.1 | GD |



Lab Number: **Project Name:** 31381 L1847214

Report Date: **Project Number:** 11/29/18 Not Specified

SAMPLE RESULTS

Lab ID: L1847214-03 Date Collected: 11/15/18 12:30 Client ID: 31381-052 Date Received: 11/16/18

Not Specified Field Prep: Sample Location: Not Specified

Sample Depth: Matrix: Water

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---------------------|-----------------|-----------|-------|-------|-----|--------------------|------------------|------------------|----------------------|---------|
| General Chemistry - | Westborough Lab | | | | | | | | | |
| Phenolics, Total | ND | | mg/l | 0.030 | 149 | 1 | 11/20/18 04:20 | 11/20/18 07:01 | 4,420.1 | GD |



Project Name: Lab Number: 31381 L1847214

Project Number: Not Specified Report Date: 11/29/18

SAMPLE RESULTS

Date Collected: Lab ID: L1847214-04 11/15/18 12:32 31381-053 Date Received: Client ID: 11/16/18 Field Prep: Not Specified Sample Location: Not Specified

Sample Depth:

Matrix: Water

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|-----------------------|-----------------|-----------|-------|-------|-----|--------------------|------------------|------------------|----------------------|---------|
| General Chemistry - 1 | Westborough Lab | | | | | | | | | |
| Phenolics, Total | ND | | mg/l | 0.030 | | 1 | 11/20/18 04:20 | 11/20/18 07:02 | 4,420.1 | GD |



Project Name: 31381

Lab Number:

L1847214

Project Number: Not Specified

Report Date:

11/29/18

Method Blank Analysis Batch Quality Control

| Parameter | Result Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---------------------|-------------------------|-----------|---------|---------|--------------------|------------------|------------------|----------------------|---------|
| General Chemistry - | Westborough Lab for sam | ple(s): 0 | 1-04 Ba | itch: W | G1181237-1 | i. | | | |
| Phenolics, Total | ND | mg/l | 0.030 | 44 | 1 | 11/20/18 04:20 | 11/20/18 06:53 | 4,420.1 | GD |



Not Specified

Project Number: Project Name:

31381

Lab Control Sample Analysis
Batch Quality Control

Lab Number:

L1847214

11/29/18 Report Date:

> %Recovery Limits Qual LCSD %Recovery Qual LCS %Recovery Parameter

General Chemistry - Westborough Lab Associated sample(s): 01-04 Batch: WG1181237-2

96

Phenolics, Total

70-130

RPD Limits

Qual

RPD

Matrix Spike Analysis Batch Quality Control

Not Specified

Project Number: Project Name:

31381

L1847214 Lab Number:

11/29/18 Report Date:

RPD Qual Limits QC Sample: L1847214-01 Client ID: 31381-015 MSD Recovery Maal Limits General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1181237-4 MSD Qual Found MS %Recovery MS MS Native Sample Parameter

70-130 96 0.38

0.4

9

Phenolics, Total

20

Lab Duplicate Analysis
Batch Quality Control

Lab Number:

L1847214 11/29/18

Report Date:

General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1181237-3 QC Sample: L1847214-01 Client ID: 31381-015 Qual RPD Units **Duplicate Sample**

Native Sample

Not Specified

Project Number: Project Name:

31381

RPD Limits

Phenolics, Total

Parameter

2

2

mg/l

NG

20

Page 33 of 39



Project Name: 31381

Project Number: Not Specified

Sample Receipt and Container Information

Lab Number: L1847214 Report Date: 11/29/18

Serial_No:11291814:38

YES

Were project specific reporting limits specified?

Cooler Information

Custody Seal

A Absent

| Container Information | ormation | | Initial | Final | Temp | | | Frozen | |
|-----------------------|------------------------------|--------|----------|-------|-------|------|--------|-----------|-----------------|
| Container ID | Container Type | Cooler | | | deg C | Pres | Seal | Date/Time | Analysis(*) |
| L1847214-01A | Glass 1000ml H2SO4 preserved | 4 | 8 | 8 | 4.2 | > | Absent | | TPHENOL-420(28) |
| L1847214-02A | Glass 1000ml H2SO4 preserved | 4 | 7 | 2 | 4.2 | > | Absent | | TPHENOL-420(28) |
| L1847214-03A | Glass 1000ml H2SO4 preserved | 4 | 8 | 7 | 4.2 | ۶ | Absent | | TPHENOL-420(28) |
| L1847214-04A | Glass 1000ml H2SO4 preserved | 4 | 8 | 8 | 4.2 | > | Absent | | TPHENOL-420(28) |
| L1847214-05A | Vial unpreserved | 4 | AN | | 4.2 | > | Absent | | 624.1(3) |
| L1847214-05B | Vial unpreserved | 4 | NA | | 4.2 | > | Absent | | 624.1(3) |
| L1847214-06A | Vial HCI preserved | 4 | NA V | | 4.2 | > | Absent | | HOLD-624(14) |
| L1847214-06B | Vial HCI preserved | 4 | NA A | | 4.2 | > | Absent | | HOLD-624(14) |
| L1847214-07A | Vial unpreserved | 4 | NA VA | | 4.2 | > | Absent | | 624.1(3) |
| L1847214-07B | Vial unpreserved | 4 | NA V | | 4.2 | > | Absent | | 624.1(3) |
| L1847214-08A | Vial HCI preserved | < | NA. | | 4.2 | > | Absent | | HOLD-624(14) |
| L1847214-08B | Vial HCI preserved | 4 | NA VA | | 4.2 | > | Absent | | HOLD-624(14) |
| L1847214-09A | Vial unpreserved | 4 | Y. | | 4.2 | z | Absent | | HOLD-624(7) |
| L1847214-09B | Vial unpreserved | 4 | NA. | | 4.2 | z | Absent | | HOLD-624(7) |
| L1847214-10A | Vial unpreserved | 4 | NA NA | | 4.2 | > | Absent | | 624.1(3) |
| L1847214-10B | Vial unpreserved | 4 | NA | | 4.2 | > | Absent | | 624.1(3) |
| L1847214-11A | Vial HCl preserved | 4 | NA V | | 4.2 | z | Absent | | 624.1(14) |
| L1847214-11B | Vial HCl preserved | 4 | NA | | 4.2 | z | Absent | | 624.1(14) |
| L1847214-12A | Vial HCI preserved | 4 | NA | | 4.2 | z | Absent | | HOLD-624(14) |
| L1847214-12B | Vial HCl preserved | 4 | NA NA | | 4.2 | > | Absent | | HOLD-624(14) |
| | | | | | | | | | |

Project Name: 31381 Lab Number: L1847214
Project Number: Not Specified Report Date: 11/29/18

GLOSSARY

Acronyms

MDL

Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an
analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case
estimate of the concentration.

EPA - Environmental Protection Agency.

 Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

 Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

 Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any

values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

 MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

 Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignītable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD
 Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample, s toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound
list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

 The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'. Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Report Format: Data Usability Report

Διрна

Project Name: 31381 Lab Number: L1847214
Project Number: Not Specified Report Date: 11/29/18

Data Qualifiers

- A Spectra identified as "Aldol Condensation Product".
- -The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations
 of the analyte.
- Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
- H The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- The lower value for the two columns has been reported due to obvious interference.
- M -Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P The RPD between the results for the two columns exceeds the method-specified criteria.
- The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R Analytical results are from sample re-analysis.
- RE Analytical results are from sample re-extraction.
- Analytical results are from modified screening analysis.
- Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report



Project Name: 31381 Lab Number: L1847214
Project Number: Not Specified Report Date: 11/29/18

REFERENCES

4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020, Revised March 1983.

128 Method 624.1: Purgeables by GC/MS, EPA 821-R-16-008, December 2016.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Alpha Analytical, Inc.
Facility: Company-wide
Department: Quality Assurance
Title: Certificate/Approval Program Summary

ID No.:17873

Revision 12

Published Date: 10/9/2018 4:58:19 PM

Page 1 of 1

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624/624.1: m/p-xylene, o-xylene

EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: lodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D: NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.

EPA 6860: SCM: Perchlorate

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.

EPA TO-15: Halothane, 2,4,4-Trimelhyl-2-pentene, 2,4,4-Trimelhyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water

EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; EPA 353.2: Nitrate-N, Nitrite-N; SM4500NO3-F: Nitrate-N, Nitrite-N; SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B EPA 332: Perchlorate; EPA 524.2: THMs and VOCs; EPA 504.1: EDB, DBCP.

Microbiology: SM9215B; SM9223-P/A, SM9223B-Colliert-QT,SM9222D.

Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, EPA 350.1: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, EPA 351.1, SM4500NO3-F, EPA 353.2: Nitrate-N, SM4500P-B, E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate. EPA 624.1: Volatile Halocarbons & Aromatics,

EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan II, Endosulfan III, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables), EPA 600/4-81-045: PCB-Oil.

Microbiology: SM9223B-Colliert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.

Mansfield Facility:

Drinking Water

EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. EPA 200.8: Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. EPA 245.1 Hg. EPA 522.

Non-Potable Water

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.

EPA 245.1 Hg.

SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

Document Type: Form

Pre-Qualtrax Document ID: 08-113

| CUBNT: | motor Now Comment | P.O. Box 778 Homerton Now Linearity | | | | ESI | Study No | ESI Study Number: 3138 | 81 |
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| | cuerr. | e 03842 | | | Customer Se | Customer Services: Phone # (603) 926-3345 Fax # (603) 926-3521 | -3345 | PAGE | OF |
| EnviroSy | EnviroSystems, Inc. | Email: jason.hol | conner: Jason Hobbs Email: <u>jason.hobbs@enthalpy.com</u> CC: catherine.sasso@enthalpy.com | mo mo | | 7138 | 188 | P.O.# | # PO10277810 |
| REPORT TO: Jason Hobbs | ş | ADDRESS: | P.O.B | P.O. Box 778 | | | | PHONE | |
| INVOICE TO: | | ADDRESS: | | | | | | Ext. 208 | |
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| i rogiam nequilements. | L NPDES | LI KCKA LI USA(| ACE DEPA | D OTHER | ~ | | | | |
| SAMPLE# | YOUR FIELD IDENTIFICATION (MUST AGREE WITH CONTAINER) | DATE SAMPLED | TIME | COMPOSITE /GRAB | E-EFFLUENT D-DILUENT O-OTHER | CONTAINER | FIELD | ANALYSI | ANALYSIS REQUESTED |
| 47214-61 3 | 31381-015 | 11/15/18 | 0000 | J | | P) IMUWIXI | Ho So. | 1 | TDbero (EDS 12201) |
| 62 3 | 31381-034 | 11/15/18 | 0000 | J | | | Hassi | 1.1 | (1001) |
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| Nr 3 | 31381-016 | 1115/18 | MQ22 | | | lo suppose : | 1580Z | | TIME OBYTH UZO. 1) |
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| 000 | 710 - 1851E | 81)51111 | 0823 | D | | 2xyomig HCI | HCI | HOUD VOC 1024 | 25024 |
| 77 3 | 31381-035 | 11/12/18 | 1018 | T | | 2x40ml G | TIC | 1501 2021 | Addices T |
| 08 3 | 31381-036 | 11/15/18 | 8101 | 5 | | A Line | 7 7 | TAN LOINT | ו הרגומאוגנוב |
| 8 | 31381-054 | 11/15/18 | 1254 | D | | | Z Z | יייטומיייי | אנאכירבווא + שנאכירבווא + |
| 11 3 | 31381-055 | 11111118 | 1253 | වි | | S KULINI G | 2 7 | VOC 62 | VOCUZONT HERYCONTRILLE |
| (2) | 31381-056 | 11/15/18 | 1237 | . E | | | | 100 100 TOL | FOLC VOC 100 1 |
| 0 | 31381-057 | 8 | 1237 | D | | 2xyomus HCI | | Hold VIT 1021 | r (00) r |
| RELINQUISHED BY: | 色しかい | DATE: 11 | 16 (18-TIME: 1 | 1345 | RECEIVED | RECEIVED BY: 72. C. AM. | 71- | DATE: WAS TIME: ALC | AE ALC |
| | 1 71.60 | | | 1241 | Met de | 1 HILDAR DIES | | | 027 |



ANALYTICAL REPORT

Lab Number:

Client: Enthalpy Analytical

1 Lafayette Road

PO Box 778

L1847584

Hampton, NH 03843

ATTN: Alexandra Mackinnon Phone: (603) 926-3345

Project Name: 31381

Project Number: Not Specified

Report Date: 11/29/18

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019 508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com



| L1847584 | 11/29/18 | |
|-------------|--------------|--|
| Lab Number: | Report Date: | |
| Ľ | ž | |
| | | |
| | | |
| | | |

31381 Not Specified

Project Name: Project Number:

| Collection Date/Time Receive Date | 11/15/18 00:00 11/20/18 | 1/15/18 00:00 11/20/18 | 11/15/18 00:00 11/20/18 | 1/15/18 00:00 11/20/18 | 1/15/18 00:00 11/20/18 | 11/15/18 00:00 11/20/18 |
|--------------------------------------|-------------------------|------------------------|-------------------------|------------------------|------------------------|-------------------------|
| Sample Co Location Do | Not Specified 11 | Not Specified | Not Specified 11 | Not Specified 11 | Not Specified 11 | Not Specified 11 |
| Sam Matrix Loca | WATER Not 8 | WATER Not 8 | WATER Not 8 | WATER Not 8 | WATER Not 8 | WATER Not 8 |
| Client ID | 31381-008 | 31381-009 | 31381-027 | 31381-028 | 31381-046 | 31381-045 |
| Alpha Sample ID | L1847584-01 | L1847584-02 | L1847584-03 | L1847584-04 | L1847584-05 | L1847584-06 |

Project Name: 31381 Lab Number: L1847584
Project Number: Not Specified Report Date: 11/29/18

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.



Project Name: 31381 Lab Number: L1847584
Project Number: Not Specified Report Date: 11/29/18

Case Narrative (continued)

Sample Receipt

L1847584-06: The sample identified as "31381-047" on the chain of custody was identified as "31381-045" on the container label. At the client's request, the sample is reported as "31381-045".

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

ENSON Kelly Stenstrom

Authorized Signature:

Title: Technical Director/Representative

Date: 11/29/18

INORGANICS & MISCELLANEOUS



Project Name: 31381

Lab Number:

L1847584

Project Number:

Not Specified

Report Date:

11/29/18

SAMPLE RESULTS

Lab ID:

L1847584-01

Date Collected:

11/15/18 00:00

Client ID:

31381-008

Date Received:

11/20/18

Sample Location:

Not Specified

Field Prep:

Not Specified

Sample Depth:

Matrix:

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|--------------------------|----------------|-----------|-------|-------|-----|--------------------|------------------|------------------|----------------------|---------|
| General Chemistry - We | estborough Lab |) | | | | | | | | |
| Nitrogen, Total Kjeldahl | 5.35 | | mg/l | 0,300 | - | 1 | 11/25/18 09:20 | 11/28/18 20:08 | 121,4500NH3-H | AT |



Project Name: 31381 Lab Number:

11/29/18

Report Date:

L1847584

SAMPLE RESULTS

Lab ID:

L1847584-02

Not Specified

31381-009

Date Collected:

11/15/18 00:00

Client ID:

Date Received:

11/20/18

Sample Location:

Project Number:

Not Specified

Field Prep:

Not Specified

Sample Depth:

Matrix:

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|--------------------------|---------------|-----------|-------|-------|-----|--------------------|------------------|------------------|----------------------|---------|
| General Chemistry - We | stborough Lat |) | | | | | | | | |
| Nitrogen, Total Kjeldahl | 5.46 | | mg/l | 0.300 | - | 1 | 11/25/18 09:20 | 11/28/18 20:09 | 121,4500NH3-H | AT |



Project Name: 31381

Not Specified

Lab Number:

L1847584

Project Number:

Report Date:

11/29/18

SAMPLE RESULTS

Lab ID:

L1847584-03

Client ID:

31381-027

Sample Location:

Date Collected: Date Received: 11/15/18 00:00

11/20/18

Not Specified

Field Prep:

Not Specified

Sample Depth: Matrix:

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|--------------------------|----------------|-----------|-------|-------|-----|--------------------|------------------|------------------|----------------------|---------|
| General Chemistry - We | estborough Lat |) | | | | | | | | |
| Nitrogen, Total Kjeldahl | 1.72 | | mg/l | 0.300 | - | 1 | 11/25/18 09:20 | 11/28/18 20:13 | 121,4500NH3-H | AT |



Project Name: 31381

Lab Number:

L1847584

Project Number: Not Specified Report Date:

11/29/18

SAMPLE RESULTS

Lab ID:

L1847584-04

31381-028 Client ID:

Date Collected:

11/15/18 00:00

Date Received:

11/20/18

Sample Location:

Not Specified

Field Prep:

Not Specified

Sample Depth:

| Matrix: | vvater | | | | | | | | | |
|--------------------------|----------------|-----------|-------|-------|-----|--------------------|------------------|------------------|----------------------|---------|
| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
| General Chemistry - W | estborough Lab |) | | | | | | | | |
| Nitrogen, Total Kieldahl | 1.84 | | mg/I | 0.300 | - | 1 | 11/25/18 09:20 | 11/28/18 20:14 | 121,4500NH3-H | AT |



Project Name: 31381

Not Specified

Lab Number:

L1847584

Project Number:

Report Date:

11/29/18

SAMPLE RESULTS

Lab ID:

L1847584-05

Date Collected:

11/15/18 00:00

Client ID:

31381-046

Date Received:

11/20/18

Sample Location:

Not Specified

Field Prep:

Not Specified

Sample Depth:

Matrix:

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|--------------------------|----------------|-----------|-------|-------|-----|--------------------|------------------|------------------|----------------------|---------|
| General Chemistry - We | estborough Lat |) | | | | | | | | |
| Nitrogen, Total Kjeldahl | 0.349 | | mg/l | 0.300 | - | 1 | 11/25/18 09:20 | 11/28/18 20:14 | 121,4500NH3-H | AT. |



Project Name:

31381

Lab Number:

L1847584

Project Number:

Not Specified

Report Date:

11/29/18

SAMPLE RESULTS

Lab ID:

L1847584-06

Client ID:

31381-045

Sample Location:

Not Specified

Date Collected:

11/15/18 00:00

Date Received:

11/20/18

Field Prep:

Not Specified

Sample Depth: Matrix:

Water

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|--------------------------|----------------|-----------|-------|-------|-----|--------------------|------------------|------------------|----------------------|---------|
| General Chemistry - W | estborough Lal | 0 | | | | | | | | |
| Nitrogen, Total Kjeldahl | 0.345 | | mg/l | 0.300 | 100 | 1 | 11/25/18 09:20 | 11/28/18 20:15 | 121,4500NH3-H | AT |



Project Name: 31381

Lab Number:

L1847584

Project Number: Not Specified

Report Date:

11/29/18

Method Blank Analysis Batch Quality Control

| Parameter | Result Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|--------------------------|------------------------|-------------|---------|--------|--------------------|------------------|------------------|----------------------|---------|
| General Chemistry - W | estborough Lab for san | nple(s): 0° | 1-06 Ba | tch: W | G1182279-1 | | | | |
| Nitrogen, Total Kjeldahl | ND | mg/l | 0.300 | - 4 | 1 | 11/25/18 09:20 | 11/28/18 20:00 | 121,4500NH3-H | TA I |



Lab Control Sample Analysis Batch Quality Control

Not Specified

Project Number: Project Name:

31381

L1847584 Lab Number:

RPD Limits

Qual

RPD

"Recovery Limits

Qual

LCSD %Recovery

Qual

LCS %Recovery

11/29/18 Report Date:

General Chemistry - Westborough Lab Associated sample(s): 01-06 Batch: WG1182279-2

Nitrogen, Total Kjeldahl

Parameter

102

78-122

Matrix Spike Analysis Batch Quality Control

Not Specified

Project Number:

31381

Project Name:

L1847584 Lab Number:

11/29/18 Report Date: RPD Qual Limits QC Sample: L1847584-06 Client ID: 31381-045 Recovery Limits "Recovery Qual General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1182279-4 MSD Qual Found MS %Recovery MS MS Native Sample Parameter

96 8.00

0.345

Nitrogen, Total Kjeldahl

24

77-111

Дгэна

Lab Duplicate Analysis

Batch Quality Control

Lab Number:

L1847584 11/29/18

Report Date:

RPD Limits General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1182279-3 QC Sample: L1847584-06 Client ID: 31381-045 Qual RPD Units **Duplicate Sample** Native Sample Parameter

Not Specified

Project Number:

31381

Project Name:

21 l/gm

0.424

0.345

Nitrogen, Total Kjeldahl

24

ALPHA

Lab Number: L1847584 Serial_No:11291811:56

Report Date: 11/29/18

Sample Receipt and Container Information

YES

Were project specific reporting limits specified?

Project Number: Not Specified

31381

Project Name:

Custody Seal Cooler Information Cooler

| 4 | Absent | | | | | | | | |
|---|--|--------|---------------|-------|--------------------|------|--------|---------------------|--------------|
| Container Information Container ID Contair | Container Information Container ID Container Type | Cooler | Initial pH | Final | Temp deg C Pres | Pres | Seal | Frozen Date/Time | Analysis(*) |
| L1847584-01A | Plastic 500ml H2SO4 preserved | V | 42 | 2 | 5.4 | > | Absent | | TKN-4500(28) |
| L1847584-02A | Plastic 500ml H2SO4 preserved | A | 7 | 7 | 5.4 | > | Absent | | TKN-4500(28) |
| L1847584-03A | Plastic 500ml H2SO4 preserved | ∢ | 42 | 8 | 5.4 | > | Absent | | TKN-4500(28) |
| L1847584-04A | Plastic 500ml H2SO4 preserved | V | 2 | 0 | 5.4 | > | Absent | | TKN-4500(28) |
| L1847584-05A | Plastic 500ml H2SO4 preserved | 4 | 3 | 0 | 5.4 | > | Absent | | TKN-4500(28) |
| L1847584-06A | Plastic 500ml H2SO4 preserved | A | 0 | 0 | 5.4 | > | Absent | | TKN-4500(28) |

Project Name: Lab Number: 31381 L1847584 Project Number: Not Specified Report Date: 11/29/18

GLOSSARY

Acronyms

EDL. - Estimated Detection Limit; This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis

of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case

estimate of the concentration.

EPA Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of

analytes or a material containing known and verified amounts of analytes.

LCSD Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

· Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated MDL values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA. · Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's

reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

 Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL RL

includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less

than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the

associated field samples. STLP Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

 Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD. TEF

- Toxic Equivalent: The measure of a sample is toxicity derived by multiplying each dioxin and furan by its corresponding TEF TEQ

and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

SRM

- The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Waterpreserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'. Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

Total: With respect to Organic analyses, a "Total' result is defined as the summation of results for individual isomers or Aroclors. If a "Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Report Format: Data Usability Report

ALPHA

Project Name: 31381 Lab Number: L1847584
Project Number: Not Specified Report Date: 11/29/18

Data Qualifiers

- A Spectra identified as "Aldol Condensation Product".
- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- Co-clution: The target analyte co-clutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted
 analyses.
- Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations
 of the analyte.
- E Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- The concentration may be biased high due to matrix interferences (i.e, co-clution) with non-target compound(s). The result should be considered estimated.
- II The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- The lower value for the two columns has been reported due to obvious interference.
- M Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P The RPD between the results for the two columns exceeds the method-specified criteria.
- Q -The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- Analytical results are from sample re-analysis.
- RE Analytical results are from sample re-extraction.
- Analytical results are from modified screening analysis.
- Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report



Project Name: 31381

Project Number: Not Specified

Lab Number:

L1847584

Report Date:

11/29/18

REFERENCES

121 Standard Methods for the Examination of Water and Wastewater, APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

ALPHA

Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:17873

Revision 12

Published Date: 10/9/2018 4:58:19 PM

Page 1 of 1

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624/624.1: m/p-xylene, o-xylene

EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-

Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

EPA 6860: SCM: Perchlorate

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water

EPA 300.0; Chloride, Nitrate-N, Fluoride, Sulfate; EPA 353.2; Nitrate-N, Nitrite-N; SM4500NO3-F; Nitrate-N, Nitrite-N; SM4500F-C, SM4500CN-CE,

EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B

EPA 332: Perchlorate; EPA 524.2: THMs and VOCs; EPA 504.1: EDB, DBCP.

Microbiology: SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D.

Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, EPA 350.1: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, EPA 351.1, SM4500NO3-F, EPA 353.2: Nitrate-N, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate. EPA 624.1: Volatile Halocarbons & Aromatics,

EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan II, Endosulfan III,

Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables), EPA 600/4-81-045: PCB-Oil. Microbiology: SM9223B-Colliert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.

Mansfield Facility:

Drinking Water

EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. EPA 200.8: Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. EPA 245.1 Hg. EPA 522.

Non-Potable Water

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.

EPA 245.1 Hg.

SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

Pre-Qualtrax Document ID: 08-113

Document Type: Form

EnviroSystems, Inc. 1 Lafayette Road Hampton, NH 03842 ESI

Voice: 603-926-3345 FAX: 603-926-3521

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101 Quote No: Jolean Date: 11/20/19 Time. riller Analysos Requesied.

Ver Fabore in feld

(=Lab to do 0001 email: alexandra.mackinnon@enthalp|P.O.No: 1 イKN 1KN マメト TKN 1KN マント Task: Alexandra MacKinnon Z Z Z Z Z Z Matrix S=Solid W=Water 3 3 3 3 3 3 3138 PO # 1027868 Received By Chin H250+ H250+ H 2504 H.SOL H250+ H2504 Project Manager: Field Preser-vation Project Number: Project Name: Type (P/G/T) CHAIN OF CUSTODY DOCUMENTATION م 9 0 Δ 0 0 Container 200 200 200 200 200 200 Size e Grab or com-posite (G/C) ic/ Prime Contact: Alexandra MacKinnon Address: Hampton, NH 03843 U Sampled By Address: P.O. Box 778 Sampled 1115/18 0000 Time Date Sampled Fax: (603) 926-3345 Ext 15014 31381-046 Alexandra MacKinnon 31381-047 31381-009 31381-027 31381-008 31381-028 **Enthalpy Analytical** Victoria Bourque Your Field ID: (must agree with container) NPDES Relinquished By: 00 62 03 3 SS 10 Invoice to: Lab Number Report to: 7554 Client: Protocol paugisse! Voice: by tab!

Page November 2018 Sample Delivery Group No:

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Time:

Date:

Received at Lab By:

Time:

Date:

Page 21 of 21

COC Number: A1016969

Relinquished By:

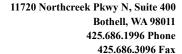
Comments

Analytical Report Review Checklist

| DATE IN: | 11/15/18 | STUDY #: | 31381 | | |
|---------------|----------|-------------|-----------------|----------|--|
| DATE DUE: | | CLIENT: | UNDERWOO | a | |
| - | | PROJECT: | PISCATA QUA | RNER | |
| DD Required (| Yes No | QC Report F | Pages Required: | (Yes) No | |

| Analyst Data Review | Date | Initials | Comments |
|--------------------------------|----------|----------|----------|
| Chains of Custody Complete | 11/15/18 | CS | |
| Sample Receipt Complete | 1 | 7 | |
| QC Reports Generated | | | |
| EDD Generated | | | |
| Analytical Components Complete | 12/19/18 | NM | |
| Data Acceptability Review | | | |
| Analytical Reports Generated | 1 | 1 | |

| Technical Report Review | Date | Initials | Comments |
|--|----------|----------|----------|
| All Elements of QC Reports Incorporated, MDL, etc. | | | |
| EDD Checked and Results Saved | | | |
| Data Appendix Compiled | | | |
| Analytical Report Reviewed | 12/20/18 | Kon | |
| QA Audit / Review Complete | | | |
| Final Report Reviewed and Authorized | rhilis | Jul | |
| Final Reports Printed - PDF | 12/21/18 | AM | |
| Hard Copy Sent or E-Mailed To Client | | 1,000 | |
| Report Logged Out / Invoice Sent | | | |
| Report Scanned to Archive | l | | |
| | | | |
| | | | |





21 January 2019

Tim Puls Underwood Engineers 25 Vaughan Mall Portsmouth, NH 03801

RE: Trace Metals In Wastewater

Marin dem Kosa

Enclosed are the analytical results for samples received by Eurofins Frontier Global Sciences. All quality control measurements are within established control limits and there were no analytical difficulties encountered with the exception of those listed in the case narrative section of this report.

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

Sincerely,

Maricris dela Rosa

Project Manager



11720 Northcreek Pkwy N, Suite 400 Bothell, WA 98011 425.686.1996 Phone 425.686.3096 Fax

Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls21-Jan-19 11:44

ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|----------------------|---------------|--------|-----------------|-----------------|
| B182042 NEW_01_TM | 8K00745-01 | Water | 15-Nov-18 00:00 | 21-Nov-18 10:30 |
| B182043 NEW_02_TM | 8K00745-02 | Water | 15-Nov-18 00:00 | 21-Nov-18 10:30 |
| B182044 NEW_EB_TM | 8K00745-03 | Water | 14-Nov-18 09:15 | 21-Nov-18 10:30 |
| B182046 NEW_MS_TM | 8K00745-04 | Water | 15-Nov-18 00:00 | 21-Nov-18 10:30 |
| B181937 NEW_01_THg | 8K00745-06 | Water | 15-Nov-18 00:00 | 21-Nov-18 10:30 |
| B181959 NEW_02_THg | 8K00745-07 | Water | 15-Nov-18 00:00 | 21-Nov-18 10:30 |
| B181960 NEW_EB_THg | 8K00745-08 | Water | 14-Nov-18 09:17 | 21-Nov-18 10:30 |
| B181961 NEW_MS_THg | 8K00745-09 | Water | 15-Nov-18 00:00 | 21-Nov-18 10:30 |
| B181962 PEASE_01_TM | 8K00745-10 | Water | 15-Nov-18 00:00 | 21-Nov-18 10:30 |
| B181965 PEASE_02_TM | 8K00745-11 | Water | 15-Nov-18 00:00 | 21-Nov-18 10:30 |
| B181967 PEASE_EB_TM | 8K00745-12 | Water | 14-Nov-18 08:27 | 21-Nov-18 10:30 |
| B181969 PEASE_MS_TM | 8K00745-13 | Water | 15-Nov-18 00:00 | 21-Nov-18 10:30 |
| B181970 PEASE_01_THg | 8K00745-15 | Water | 15-Nov-18 00:00 | 21-Nov-18 10:30 |
| B181971 PEASE_02_THg | 8K00745-16 | Water | 15-Nov-18 00:00 | 21-Nov-18 10:30 |
| B181972 PEASE_EB_THg | 8K00745-17 | Water | 14-Nov-18 08:29 | 21-Nov-18 10:30 |
| B181973 PEASE_MS_THg | 8K00745-18 | Water | 15-Nov-18 00:00 | 21-Nov-18 10:30 |

Eurofins Frontier Global Sciences, LLC

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Marin dem kosa



11720 Northcreek Pkwy N, Suite 400 Bothell, WA 98011 425.686.1996 Phone 425.686.3096 Fax

Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 21-Jan-19 11:44

SAMPLE RECEIPT

Samples were received at Eurofins Frontier Global Sciences (EFGS) on 21-Nov-18 10:30. The samples were received intact, on-ice within a sealed cooler at

 Cooler
 Temp C°

 Cooler #1
 3.3

 Cooler #2
 11.5

Samples were shipped to Eurofins Calscience in Garden Grove, CA for the EPA SM4500 Total CN analysis per the initial project setup.

The subcontract report is located after the notes and definitions section of the EFGS report.

SAMPLE PREPARATION AND ANALYSIS

Samples were prepared and analyzed for total mercury by flow injection atomic fluorescence spectrometry (FI-AFS) in accordance with EPA 1631E.

Samples were prepared and analyzed for total recoverable metals by inductively coupled plasma mass spectrometry (ICP-MS) in accordance with EPA 200.8 (EFGS-054).

ANALYTICAL AND QUALITY CONTROL ISSUES

Method blanks were prepared for every preparation to assess possible blank contribution from the sample preparation procedure. The method blanks were carried through the entire analytical procedure. All blanks fell within the established acceptance criteria with the exception of any items narrated above or flagged and described in the notes and definitions section of the report.

Liquid spikes, certified reference material (CRM) or a quality control samples (QCS) were prepared for every preparation as a measure of accuracy. All liquid spikes, CRMs and/or QCS samples fell within the established acceptance criteria with the exception of any items narrated above or flagged and described in the notes and definitions section of the report.

As an additional measure of the accuracy of the methods used and to check for matrix interference, matrix spikes (MS) and matrix spike duplicates (MSD) were digested and analyzed. All of the matrix spike recoveries fell within the established acceptance criteria with the exception of any items flagged and described in the notes and definitions section of the report.

Eurofins Frontier Global Sciences, LLC

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Marin dem kose



11720 Northcreek Pkwy N, Suite 400 Bothell, WA 98011 425.686.1996 Phone 425.686.3096 Fax

Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 21-Jan-19 11:44

A reasonable measure of the precision of the analytical methods is the relative percent difference (RPD) between a matrix spike recovery and a matrix spike duplicate recovery and between laboratory control sample recovery and laboratory control sample duplicate recoveries. All of the relative percent differences fell within established acceptance criteria with the exception of any items flagged and described in the notes and definitions section of the report.

Eurofins Frontier Global Sciences, LLC

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Marin dem Kosa



Sample Receipt Checklist

| Client: Under | wood | | | | Date & Time | Rece | eived: 11/21 | hs 10 | <u>36</u> Da | ate Labeled: | | _abeled By | 4D |
|--|-------------|-----------|------------|-------------|-----------------|--------------|--------------------|------------------|---|-----------------|-----------|---------------------------------------|----------|
| Project: | | | | | Received By: | · | Be | | La | bel Verified By | 1: Lt | = | 11-21 |
| # of Coolers Received: | | Sa | amples Arr | rived By:Sh | ipping Service | | Courier | Hand _ | Othe | r (Specify: | · | |) |
| Coolant: None/A Notify Project Manage | | | | Gel Ice Dry | | | _ | | | • | | | |
| Cooler Information: | | - | Y/N/NA | Comr | nents | 7 [| TID: 9780 | CF: †0 | 1. 3°C D | ate/time: 11(2 | .14 | D | 0. |
| The coolers do not appear to | be tampere | d with: | 7 | | | | Cooler 1: 3-0 | | CF: 3·2 °C | | °C | w/ CF: | · BC- |
| Custody Seals are present an | d intact: | | N. | | | | Cooler 2: 11.0 | | 'CF: \\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | | °C | w/ CF: | °c |
| Custody seals signed: | | | \sim | | | }- | | | 'CF: °C | | <u>°C</u> | w/ CF: | ·c |
| | T | | | | | | | | | | | | |
| Chain of Custody: | Y/N/NA | | Com | ments | Sample Condit | | | | Y/N/NA | | Comme | ents | |
| Sample ID/Description: | <u> </u> | | | | Sample contain | | | | 4 | | | | |
| Date and time of collection: | ч | | | | | | esent and legible: | | 9 | | | *- | |
| Sampled by: | 4 | | | | | | ner/bag matches (| COC: | 9 | | | | |
| Preservation type: | 4 | | ww | | Correct sample | conta | iners used: | | 4 | | | | |
| Requested analyses: | 4 | | | | | | hin holding times | | 4 | | | | |
| Required signatures: | 7 | | | | Sample volume | suffic | ient for requeste | d analyses | : 4 | | | | |
| Internal COC required: | Au | | | | Correct preserv | vative | used for requeste | d analyses | s: 4 | | | · · · · · · · · · · · · · · · · · · · | |
| Anomalies/Non-conforma | ances (atta | ch additi | onal pages | • | - Used There | m) | 34804 | 4 0.5 | | 8 | (007 | 45 | |
| EFGS Sample Receipt Cl | hecklist Re | vision 7 | ; 9/15/201 | 17 | | | , | - | | | | _ | Dana Ful |

Page 5 of 43

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Frontier Global Sciences

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Chain of Custody Record & Laboratory Analysis Request: Air, Water, Sediments, Plant and Animal Tissue, Hydrocarbon & Other Samples

Page <u>1</u> of <u>2</u>

11720 Northcreek Pkwy N, Suite 400 Bothell, WA 98011

Phone: 425-686-1996 Fax: 425-686-3096 info@FrontlerGS.com

http://www.FrontierGS.com

| | nt: UNDERWOOD E | ************************************** | | t: Tim Puls : (603) 436 | ***** | | ax: | - | | | A | nalys | ses R | .equ | ested | EFGS PM: Date: |
|--|---|--|--------------|--|------------|----------------|-----------|--|----------------|--------------------------|---------|--|----------------|---------|--|--|
| | ress: 25 VAUGHAN TSMOUTH, NH 038 | | ************ | : tpuls@un | | | | 1 | | (%) | · | | | | | TAT (business days): (o) (std) |
| | ect Name: Anti-Dec | | Contra | | uci vvooc | ici igii ic | CISICOIII | 1 | | | | ****** | A STANFASTA | | | 15 10 5 4 3 2 24 hrs. |
| — | ort To: Tim Puls | TOURIST TYTE | · | e To: Client | | | | | Î | Other | - | | | (EHL) | | (For TAT < 10 days, contact PM. Surcharges apply for expedited TAT) |
| ŧ | ress: 25 VAUGHAN | • | Addres | 55: | · | | | 1 | Filtered (Y/N) | Preserved: 3 HCl BrCl | (ME) | | £ ! | ر ح | | Saturday delivery? Y (If yes, please contact PM) |
| | TSMOUTH, NH 038 | ······································ | | | | | | · A | 8 | 2 60 | Ī | g | E | ਰੁ | | EDD Y ON |
| | ne: (603) 436-6192 | ······································ | Phone | g., | Fax: | ann markanakan | | | 亞 | 원모 | Motor | ָם בּיוּ | ნ : | Mercury | i i | QA X Standard High |
| E-M | ail: tpuls@underwo | odengineers.com | E-mail | # of | | | | Sampled | II. | P G | to t | ğ | Total Cn (TCn) | Total | | QA Ja Standard Li High |
| No. | Engraved Bottle ID | Sample ID | | # 01 Bottles | Matrix | Date | & Time | San | Fied | Field F | F | 2 | P I | ٩ | | Comments |
| 1 | B182042 | NEW_01_TM | 1 | 1 | WW | 11/5/ | 18 24hc | | N_ | - | | | | | | Total Metals include: Sb, As, |
| 2 | B182043 | NEW_02_TM | 1 | 1 | WW | 1/15/1 | V 11 | | V | | | X | | | | ⊣Be, Cd, Cr, Cu, Fe, Pb, Ni, Se, ⊣Ag, Tl, Zn |
| 3 | B182044 | NEW_EB_TM | 1 | 1 | RW | 11/14/1 | 8 9:15 | NUE/DO | N | ***** | 5 | | | | | |
| 4 | B182046 | NEW_MS_TN | 1 | 1 | WW | | 8 24hr | | Ŋ | | > | | | 4.1 | | RW= Reagent Water |
| 5 | 002256 | NEW_01_TC | Π | 1 | WW | 1. | ٠, | | V | NaOl- | 1 | | X | 41 | | * |
| 6 | B181937 | NEW_01_TH | g | 1 | WW | Ħ | ۲, | | N | | | | | × | | |
| 7 | B181959 | NEW_02_TH | g | 1 | WW | ч | (1 | V | IJ | | | | | X | | |
| 8 | B181960 | NEW_EB_TH | g | 1 | RW | 11/14/1 | 89:174 | UEbo | N | | | | , | X | | |
| 9 | B181961 | NEW_MS_TH | g | 1 | WW | 115/ | 182411 | 1 | V | | | and the same of th | | X | and the same of th | |
| 10 | B181962 | PEASE_01_T | М | 1 | WW | 11 | 246- | | V | dia | 7 | (| | | | |
| 11 | B181965 | PEASE_02_T | ٧Į | 1 | WW | (1 | 244 | | V | -100- | > | | | | | |
| 12 | B181967 | PEASE_EB_TI | М | 1 | RW | 11/14/18 | 8:27A | V | N | · | | | | | | Might ded |
| | For Laboral | tory Use Only | | | ix Codes | 5: | Relingu | ished By | Ç | | Receive | ed B | y: | | | Received By: |
| COC | Seal: NA | Comments: | | FW: Fresh W. WW: Waste \ | | | Ha | : la | Bin | | | |) | | | 15/kD |
| Cool | er Temp: 3-3 | | | SB: Sea and i | Brackish W | /ater | Name: | 77. | Puls | S | Name: | 50 | In | MS | ······································ | Name: Ustra bas |
| Carr | Marie Company and | | | SS: Soil and S TS: Plant and | Animal Ti | ssue | Organiz | ation: (| | | Organiz | | | NA | | Organization 1/N-7 |
| VTS | R: 1030 | | | HC: Hydrocar TR: Trap | bons | | Date & | Time: /g | 15/ | 18 | Date & | Tim | e:/// | SIR | | Date & Time: /// //////////////////////////////// |
| # of | Coolers: | - Are term | | OT: Other | | | Trackin | g numbe | r: J | 545 | 2 4 | 90 | 0 | 8 | 221 | √ |
| Sample Disposal: □ Return (shipping fees may apply) Standard Disposal – 30 Days after report | | | | The state of the s | | | | By signing, you declare that you agree with EFGS' terms and conditions you authorize EFGS to perform the specified analyses. | | | | | | | | |



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Chain of Custody Record & Laboratory Analysis Request: Air, Water, Sediments, Plant and Animal Tissue, Hydrocarbon & Other Samples

Page 2 of 2

11720 Northcreek Pkwy N, Suite 400 Bothell, WA 98011

Phone: 425-686-1996 Fax: 425-686-3096 info@FrontierGS.com

http://www.FrontierGS.com

EFGS PM: Client: UNDERWOOD ENGINEERS, INC. Contact: Tim Puls Analyses Requested Date: Phone: (603) 436-6192 Fax: Address: 25 VAUGHAN MALL TAT (business days)(20)(std) E-mail: tpuls@underwoodengineers.com PORTSMOUTH, NH 03801 15 10 5 4 3 2 24 hrs. Contract/PO: Other Project Name: Anti-Degradation - WWTF (For TAT < 10 days, contact PM Total Mercury (THg) Invoice To: Client Report To: Tim Puls Surcharges apply for expedited TAT) Field Filtered (Y/N) Total Metals (TM) Field Preserved: HNO3 HCI BrCI Saturday delivery? ☐ Y XN Cn (TCn) Address: 25 VAUGHAN MALL, Address: (If yes, please contact PM) PORTSMOUTH, NH 03801 Sampled By EDD XY IN Phone: Fax: Phone: (603) 436-6192 Fax: OA E-mail: tpuls@underwoodengineers.com E-mail: Total # of Engraved Date & Time Comments Matrix Sample ID No. **Bottles** Bottle ID Total Metals include: Sb, As, 1 B181969 PEASE MS TM 1 Be, Cd, Cr, Cu, Fe, Pb, Ni, Se, 1 U.OH X WW 002268 PEASE_01_TCn 2 Ag, Tl, Zn 1 WW B181970 PEASE_01_THg 3 RW=Reagent Water B181971 PEASE 02 THG 1 WW N 4 1 RW B181972 PEASE EB THO 5 1 WW PEASE MS THO б B18197 8 9 10 11 12 Received by Relinquished By: Matrix Codes: For Laboratory Use Only FW: Fresh Water COC Seal: Comments: WW: Waste Water SB: Sea and Brackish Water Name: Tim Pals Name: Stanes Cooler Temp: SS: Soil and Sediment Organization: (ょ/5 Organization: Organization: Carrier: TS: Plant and Animal Tissue HC: Hydrocarbons Date & Time: 11/5/18 Date & Time: 11 Date & Time: VTSR: TR: Trap OT: Other Tracking number: # of Coolers: By signing, you declare that you agree with EFGS' terms and conditions, and that Sample Disposal: you authorize EFGS to perform the specified analyses. □ Return (shipping fees may apply) X Standard Disposal - 30 Days after report Customer Approval: weeks after report (storage fees may apply) ☐ Retain for

SUBCONTRACT ORDER

Eurofins Frontier Global Sciences, Inc.

8K00745

| SENDING LABORATORY: | RECEIVING LABORATORY: |
|--|--------------------------|
| Eurofins Frontier Global Sciences, LLC | Eurofins Calscience, LLC |
| 11720 North Creek Parkway North, Suite 400 | 7440 Lincoln Way |
| Bothell, WA 98011 | Garden Grove, CA 92841 |
| Phone: (425) 686-1996 Eav. (425) 686-2006 | Phone :7148955494 |
| Project Manager: Amy Goodall | rax: X |
| Analysis | |
| Sample ID: 002256 NEW_01_TCn | |
| EFGS Lab ID: 8K00745-05 Matrix: Water Sampled: 15-Nov-18 00:00 (CMT-05-00) Eactorn Time (TIS & | |
| CONTRACT OF THE CONTRACT OF TH | Due: 21-Dec-18 19:00 |
| Misc. Subcontract 1 EPA SM4500 CN E | |
| Containers Supplied: 57_1000 mL PETG (A) | |
| Sample ID: 002268 PEASE_01_TCn | |
| EFGS Lab ID: 8K00745-14 Matrix: Water Sampled: 15-Nov-18 00:00 (GMT-05:00) Eastern Time (US & | Due: 21-Dec-18 19:00 |
| | |
| Misc. Subcontract 1 EPA SM4500 CN E | |
| Containers Supplied: 57_1000 mL PETG (A) | |
| | |
| 17 86 w 0 20 0 10 20 1948 | 37948 |
| | |
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| a based By Control of the control of | Received By Date |
| of 43 | Received By Date Date |

Page 1 of 1



Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 21-Jan-19 11:44

B182042 NEW_01_TM 8K00745-01

| Analyte Sample Preparation: EFGS SOP2836 | Result Closed Ve | Limit | Reporting Limit Oven Dig | Units gestion | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|---|-------------------|-------|--------------------------|------------------|----------|---------|-----------|----------|-----------|-----------|-------|
| Antimony | 0.114 | 0.018 | 0.040 | μg/L | 2 | F812177 | 03-Dec-18 | 8L10010 | 10-Dec-18 | EPA 200.8 | |
| Arsenic | 1.00 | 0.10 | 0.30 | μg/L | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Beryllium | ND | 0.004 | 0.061 | μg/L | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | U |
| Cadmium | 0.050 | 0.008 | 0.020 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Chromium | 0.29 | 0.02 | 0.10 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Copper | 6.03 | 0.02 | 0.10 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Iron | 142 | 1 | 10 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Lead | 1.30 | 0.005 | 0.040 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Selenium | 1.59 | 0.44 | 0.61 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Silver | 0.953 | 0.002 | 0.020 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Thallium | ND | 0.006 | 0.020 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | U |
| Zinc | 85.5 | 0.16 | 0.50 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |

Eurofins Frontier Global Sciences, LLC

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 21-Jan-19 11:44

B182043 NEW_02_TM 8K00745-02

| Analyte Sample Preparation: EFGS SOP2836 | Result | Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|--|--------------|-------|-----------------|-----------|----------|---------|-----------|----------|-----------|-----------|-------|
| | - Closed ves | | O TON DI | 50000 | | | | | | | |
| Antimony | 0.124 | 0.018 | 0.040 | μg/L | 2 | F812177 | 03-Dec-18 | 8L10010 | 10-Dec-18 | EPA 200.8 | |
| Arsenic | 1.02 | 0.10 | 0.30 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Beryllium | ND | 0.004 | 0.061 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | U |
| Cadmium | 0.046 | 0.008 | 0.020 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Chromium | 0.28 | 0.02 | 0.10 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Copper | 5.91 | 0.02 | 0.10 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Iron | 139 | 1 | 10 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Lead | 1.30 | 0.005 | 0.040 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Selenium | 1.58 | 0.44 | 0.61 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Silver | 0.844 | 0.002 | 0.020 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Thallium | ND | 0.006 | 0.020 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | U |
| Zinc | 85.0 | 0.16 | 0.50 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |

Eurofins Frontier Global Sciences, LLC

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 21-Jan-19 11:44

B182044 NEW_EB_TM 8K00745-03

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|------------------------------------|-----------|--------------------|--------------------|-----------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP2836 (| Closed Ve | ssel Water | Oven Di | gestion | | | | | | | |
| Antimony | ND | 0.009 | 0.020 | μg/L | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | U |
| Arsenic | ND | 0.10 | 0.30 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | U |
| Beryllium | ND | 0.004 | 0.061 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | U |
| Cadmium | ND | 0.008 | 0.020 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | U |
| Chromium | ND | 0.02 | 0.10 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | U |
| Copper | 0.05 | 0.02 | 0.10 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | J |
| Iron | ND | 1 | 10 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | U |
| Lead | ND | 0.005 | 0.040 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | U |
| Selenium | ND | 0.44 | 0.61 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | U |
| Silver | ND | 0.002 | 0.020 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | U |
| Thallium | ND | 0.006 | 0.020 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | U |
| Zinc | 5.51 | 0.16 | 0.50 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls21-Jan-19 11:44

B182046 NEW_MS_TM 8K00745-04

| Analyte Sample Preparation: EFGS SO | Result | Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|-------------------------------------|-------------------|-----------|-----------------|-------------------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Treparation. EFGS SOI | 1 2050 Closed Ves | sei watei | Oven Di | gestion | | | | | | | |
| Antimony | 0.114 | 0.009 | 0.020 | μg/L | 1 | F812177 | 03-Dec-18 | 8L08005 | 07-Dec-18 | EPA 200.8 | |
| Arsenic | 1.04 | 0.10 | 0.30 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Beryllium | ND | 0.004 | 0.061 | $\mu \text{g/L}$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | U |
| Cadmium | 0.054 | 0.008 | 0.020 | $\mu g \! / \! L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Chromium | 0.28 | 0.02 | 0.10 | $\mu g \! / \! L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Copper | 5.91 | 0.02 | 0.10 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Iron | 139 | 1 | 10 | $\mu \text{g}/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Lead | 1.39 | 0.005 | 0.040 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Selenium | 1.54 | 0.44 | 0.61 | $\mu g \! / \! L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Silver | 0.889 | 0.002 | 0.020 | $\mu g \! / \! L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Thallium | ND | 0.006 | 0.020 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | U |
| Zinc | 86.2 | 0.16 | 0.50 | $\mu \text{g}/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls21-Jan-19 11:44

B181937 NEW_01_THg 8K00745-06

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|---------------------------------|---------------|--------------------|--------------------|-------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP279 | 96 EPA 1631 (| Oxidation | ı | | | | | | | | |
| Mercury | 12.6 | 0.08 | 0.50 | ng/L | 1 | F812271 | 06-Dec-18 | 8L08004 | 07-Dec-18 | EPA 1631E | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls21-Jan-19 11:44

B181959 NEW_02_THg 8K00745-07

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|---------------------------------|--------------|--------------------|--------------------|-------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP279 | 6 EPA 1631 (| Oxidation | ı | | | | | | | | _ |
| Mercury | 8.55 | 0.08 | 0.50 | ng/L | 1 | F812271 | 06-Dec-18 | 8L08004 | 07-Dec-18 | EPA 1631E | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls21-Jan-19 11:44

B181960 NEW_EB_THg 8K00745-08

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|----------------------------------|----------|--------------------|--------------------|-------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP2796 | EPA 1631 | Oxidation | 1 | | | | | | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | 1 | F812271 | 06-Dec-18 | 8L08004 | 07-Dec-18 | EPA 1631E | U |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls21-Jan-19 11:44

B181961 NEW_MS_THg 8K00745-09

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|----------------------------------|--------------|--------------------|--------------------|-------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP2790 | 6 EPA 1631 (| Oxidation | ı | | | | | | | | |
| Mercury | 8.59 | 0.08 | 0.50 | ng/L | 1 | F812271 | 06-Dec-18 | 8L08004 | 07-Dec-18 | EPA 1631E | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls21-Jan-19 11:44

B181962 PEASE_01_TM 8K00745-10

| Analyte Sample Preparation: EFGS SOP2836 | Result Closed Ve | Limit | Reporting Limit Oven Dis | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|--|-------------------|-------|---------------------------|------------------|----------|---------|-----------|----------|-----------|-----------|-------|
| | | | | | | | | | | | |
| Antimony | 0.197 | 0.018 | 0.040 | $\mu \text{g}/L$ | 2 | F812177 | 03-Dec-18 | 8L10010 | 10-Dec-18 | EPA 200.8 | |
| Arsenic | 4.63 | 0.10 | 0.30 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Beryllium | ND | 0.004 | 0.061 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | U |
| Cadmium | 0.118 | 0.008 | 0.020 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Chromium | 0.59 | 0.02 | 0.10 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Copper | 17.5 | 0.02 | 0.10 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Iron | 271 | 1 | 10 | $\mu \text{g}/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Lead | 0.304 | 0.005 | 0.040 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Selenium | 2.23 | 0.44 | 0.61 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Silver | 0.030 | 0.002 | 0.020 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Thallium | ND | 0.006 | 0.020 | μg/L | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | U |
| Zinc | 117 | 0.16 | 0.50 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 21-Jan-19 11:44

B181965 PEASE_02_TM 8K00745-11

| Analyte Sample Propagation, FECS SOR2826 | Result | Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|---|-----------|------------|-----------------|-----------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP2836 | Closed ve | ssei watei | r Oven Di | gestion | | | | | | | |
| Antimony | 0.206 | 0.018 | 0.040 | μg/L | 2 | F812177 | 03-Dec-18 | 8L10010 | 10-Dec-18 | EPA 200.8 | |
| Arsenic | 4.64 | 0.10 | 0.30 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Beryllium | ND | 0.004 | 0.061 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | U |
| Cadmium | 0.110 | 0.008 | 0.020 | μg/L | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Chromium | 0.57 | 0.02 | 0.10 | μg/L | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Copper | 17.4 | 0.02 | 0.10 | μg/L | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Iron | 272 | 1 | 10 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Lead | 0.320 | 0.005 | 0.040 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Selenium | 2.58 | 0.44 | 0.61 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Silver | 0.020 | 0.002 | 0.020 | μg/L | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Thallium | ND | 0.006 | 0.020 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | U |
| Zinc | 117 | 0.16 | 0.50 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 21-Jan-19 11:44

B181967 PEASE_EB_TM 8K00745-12

| Analyte Sample Preparation: EFGS SOP283 | Result 86 Closed Ves | Limit | Reporting Limit r Oven Dig | Units gestion | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|--|-----------------------|-------|-----------------------------|------------------|----------|---------|-----------|----------|-----------|-----------|-------|
| Antimony | ND | 0.009 | 0.020 | μg/L | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | U |
| Arsenic | ND | 0.10 | 0.30 | μg/L | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | U |
| Beryllium | ND | 0.004 | 0.061 | μg/L | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | U |
| Cadmium | ND | 0.008 | 0.020 | μg/L | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | U |
| Chromium | ND | 0.02 | 0.10 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | U |
| Copper | 0.04 | 0.02 | 0.10 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | J |
| Iron | ND | 1 | 10 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | U |
| Lead | ND | 0.005 | 0.040 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | U |
| Selenium | ND | 0.44 | 0.61 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | U |
| Silver | ND | 0.002 | 0.020 | $\mu \text{g}/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | U |
| Thallium | ND | 0.006 | 0.020 | $\mu \text{g}/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | U |
| Zinc | 31.3 | 0.16 | 0.50 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls21-Jan-19 11:44

B181969 PEASE_MS_TM 8K00745-13

| Analyte | Result | Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|-------------------------------|----------------|------------|--------------------|-----------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP2 | 836 Closed Ves | ssel Water | · Oven Di | gestion | | | | | | | |
| Antimony | 0.214 | 0.018 | 0.040 | μg/L | 2 | F812177 | 03-Dec-18 | 8L10010 | 10-Dec-18 | EPA 200.8 | |
| Arsenic | 4.52 | 0.10 | 0.30 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Beryllium | ND | 0.004 | 0.061 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | U |
| Cadmium | 0.109 | 0.008 | 0.020 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Chromium | 0.56 | 0.02 | 0.10 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Copper | 17.1 | 0.02 | 0.10 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Iron | 261 | 1 | 10 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Lead | 0.305 | 0.005 | 0.040 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Selenium | 1.99 | 0.44 | 0.61 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Silver | 0.032 | 0.002 | 0.020 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |
| Thallium | ND | 0.006 | 0.020 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | U |
| Zinc | 115 | 0.16 | 0.50 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls21-Jan-19 11:44

B181970 PEASE_01_THg

8K00745-15

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|----------------------------------|----------|--------------------|--------------------|-------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP2796 | EPA 1631 | Oxidation | 1 | | | | | | | | |
| Mercury | 5.15 | 0.08 | 0.50 | ng/L | 1 | F812271 | 06-Dec-18 | 8L08004 | 07-Dec-18 | EPA 1631E | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls21-Jan-19 11:44

B181971 PEASE_02_THg

8K00745-16

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|---------------------------------|---------------|--------------------|--------------------|-------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP279 | 06 EPA 1631 C | Oxidation | 1 | | | | | | | | |
| Mercury | 4.83 | 0.08 | 0.50 | ng/L | 1 | F812271 | 06-Dec-18 | 8L08004 | 07-Dec-18 | EPA 1631E | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls21-Jan-19 11:44

B181972 PEASE_EB_THg

8K00745-17

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|----------------------------------|------------|--------------------|--------------------|-------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP2796 | 6 EPA 1631 | Oxidation | 1 | | | | | | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | 1 | F812271 | 06-Dec-18 | 8L08004 | 07-Dec-18 | EPA 1631E | U |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls21-Jan-19 11:44

B181973 PEASE_MS_THg 8K00745-18

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|--------------------------------|---------------|--------------------|--------------------|-------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP27 | 96 EPA 1631 C | Oxidation | ı | | | | | | | | |
| Mercury | 5.10 | 0.08 | 0.50 | ng/L | 1 | F812271 | 06-Dec-18 | 8L08004 | 07-Dec-18 | EPA 1631E | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 21-Jan-19 11:44

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|------------------------------------|-------------|--------------------|--------------------|-----------|----------------|------------------|-------------|----------------|-------|--------------|-------|
| Batch F812177 - EFGS SOP2836 Close | ed Vessel V | Vater Oven | Digestion | | | | | | | | |
| Blank (F812177-BLK1) | | | | | Prepared: (|)3-Dec-18 A | Analyzed: 0 | 5-Dec-18 | | | |
| Arsenic | ND | 0.10 | 0.30 | μg/L | | | | | | | U |
| Silver | 0.012 | 0.002 | 0.020 | $\mu g/L$ | | | | | | | J |
| Blank (F812177-BLK2) | | | | | Prepared: (|)3-Dec-18 A | Analyzed: 0 | 5-Dec-18 | | | |
| Silver | 0.007 | 0.002 | 0.020 | μg/L | | | | | | | J |
| Blank (F812177-BLK3) | | | | | Prepared: (|)3-Dec-18 A | Analyzed: 0 | 5-Dec-18 | | | |
| Arsenic | ND | 0.10 | 0.30 | μg/L | | | | | | | U |
| LCS (F812177-BS1) | | | | | Prepared: (|)3-Dec-18 A | Analyzed: 0 | 5-Dec-18 | | | |
| Arsenic | 50.41 | 0.50 | 1.50 | μg/L | 50.000 | | 101 | 85-115 | | | |
| Silver | 24.76 | 0.010 | 0.100 | $\mu g/L$ | 25.000 | | 99.0 | 85-115 | | | |
| LCS Dup (F812177-BSD1) | | | | | Prepared: (|)3-Dec-18 A | Analyzed: 0 | 5-Dec-18 | | | |
| Arsenic | 50.50 | 0.50 | 1.50 | μg/L | 50.000 | | 101 | 85-115 | 0.187 | 20 | |
| Silver | 24.88 | 0.010 | 0.100 | $\mu g/L$ | 25.000 | | 99.5 | 85-115 | 0.475 | 20 | |
| Matrix Spike (F812177-MS1) | | Source: | 8K00745-0 | 4 | Prepared: (|)3-Dec-18 A | Analyzed: 0 | 5-Dec-18 | | | |
| Arsenic | 53.52 | 0.51 | 1.52 | μg/L | 50.000 | 1.04 | 105 | 70-130 | | | |
| Silver | 25.54 | 0.010 | 0.101 | $\mu g/L$ | 25.000 | 0.889 | 98.6 | 70-130 | | | |
| Matrix Spike (F812177-MS2) | | Source: | 8K00745-1 | 3 | Prepared: (|)3-Dec-18 A | Analyzed: 0 | 5-Dec-18 | | | |
| Arsenic | 58.54 | 0.51 | 1.52 | μg/L | 50.000 | 4.52 | 108 | 70-130 | | | |
| Silver | 24.22 | 0.010 | 0.101 | $\mu g/L$ | 25.000 | 0.032 | 96.7 | 70-130 | | | |
| Matrix Spike (F812177-MS3) | | Source: | 8K00745-0 | 4 | Prepared: (|)3-Dec-18 A | Analyzed: 0 | 5-Dec-18 | | | |
| Arsenic | 219.8 | 0.50 | 1.51 | μg/L | 205.00 | 1.04 | 107 | 70-130 | | | AS |
| Silver | 11.14 | 0.010 | 0.101 | $\mu g/L$ | 10.250 | 0.889 | 100 | 70-130 | | | AS |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls21-Jan-19 11:44

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|----------------------------------|--------------|---|--------------------|-----------|---|------------------|-------------|----------------|-------|--------------|-------|
| Batch F812177 - EFGS SOP2836 Clo | sed Vessel V | Vater Oven | Digestion | | | | | | | | |
| Matrix Spike (F812177-MS4) | | Source: | 8K00745-1 | 3 | Prepared: (|)3-Dec-18 A | Analyzed: 0 | 5-Dec-18 | | | |
| Arsenic | 226.0 | 0.50 | 1.51 | μg/L | 205.00 | 4.52 | 108 | 70-130 | | | AS |
| Silver | 10.09 | 0.010 | 0.101 | $\mu g/L$ | 10.250 | 0.032 | 98.1 | 70-130 | | | AS |
| Matrix Spike Dup (F812177-MSD1) | | Source: | 8K00745-0 | 4 | Prepared: (|)3-Dec-18 A | Analyzed: 0 | 5-Dec-18 | | | |
| Arsenic | 56.14 | 0.51 | 1.52 | $\mu g/L$ | 50.000 | 1.04 | 110 | 70-130 | 4.78 | 20 | |
| Silver | 25.93 | 0.010 | 0.101 | $\mu g/L$ | 25.000 | 0.889 | 100 | 70-130 | 1.52 | 20 | |
| Matrix Spike Dup (F812177-MSD2) | | Source: | 8K00745-1 | 3 | Prepared: (|)3-Dec-18 A | Analyzed: 0 | 5-Dec-18 | | | |
| Arsenic | 58.88 | 0.51 | 1.52 | μg/L | 50.000 | 4.52 | 109 | 70-130 | 0.568 | 20 | |
| Silver | 24.39 | 0.010 | 0.101 | $\mu g/L$ | 25.000 | 0.032 | 97.4 | 70-130 | 0.701 | 20 | |
| Matrix Spike Dup (F812177-MSD3) | | Source: | 8K00745-0 | 4 | Prepared: (|)3-Dec-18 A | Analyzed: 0 | 5-Dec-18 | | | |
| Arsenic | 219.2 | 0.50 | 1.51 | μg/L | 205.00 | 1.04 | 106 | 70-130 | 0.289 | 20 | AS |
| Silver | 11.35 | 0.010 | 0.101 | $\mu g/L$ | 10.250 | 0.889 | 102 | 70-130 | 1.89 | 20 | AS |
| Matrix Spike Dup (F812177-MSD4) | | Source: | 8K00745-1 | 3 | Prepared: (|)3-Dec-18 A | Analyzed: 0 | 5-Dec-18 | | | |
| Arsenic | 227.6 | 0.50 | 1.51 | μg/L | 205.00 | 4.52 | 109 | 70-130 | 0.713 | 20 | AS |
| Silver | 10.10 | 0.010 | 0.101 | $\mu g/L$ | 10.250 | 0.032 | 98.3 | 70-130 | 0.131 | 20 | AS |
| Batch F812271 - EFGS SOP2796 EPA | A 1631 Oxid | ation | | | | | | | | | |
| Blank (F812271-BLK1) | | | | | Prepared: 06-Dec-18 Analyzed: 07-Dec-18 | | | | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | | | | | | | U |
| Blank (F812271-BLK2) | | Prepared: 06-Dec-18 Analyzed: 07-Dec-18 | | | | | | | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | | | | | | | U |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 21-Jan-19 11:44

Quality Control Data

| | | Detection | Reporting | | Spike | Source | | %REC | | RPD | |
|---------------------------------|-------------|--|-----------|-------|-------------|-----------|-------------|----------|-------|-------|----------|
| Analyte | Result | Limit | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | Notes |
| Batch F812271 - EFGS SOP2796 EP | A 1631 Oxid | ation | | | | | | | | | |
| Blank (F812271-BLK3) | | | | | Prepared: (|)6-Dec-18 | Analyzed: 0 | 7-Dec-18 | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | | | | | | | Ţ |
| Blank (F812271-BLK4) | | | | | Prepared: (| 06-Dec-18 | Analyzed: 0 | 7-Dec-18 | | | |
| Mercury | ND | 0.09 | 0.52 | ng/L | | | | | | | QB-06, U |
| LCS (F812271-BS1) | | | | | Prepared: (|)6-Dec-18 | Analyzed: 0 | 7-Dec-18 | | | |
| Mercury | 15.41 | 0.08 | 0.50 | ng/L | 14.688 | | 105 | 80-120 | | | |
| LCS Dup (F812271-BSD1) | | | | | Prepared: (| 06-Dec-18 | Analyzed: 0 | 7-Dec-18 | | | |
| Mercury | 15.48 | 0.08 | 0.50 | ng/L | 14.688 | | 105 | 80-120 | 0.428 | 24 | |
| Duplicate (F812271-DUP1) | | Source: | 8K00745-0 | 6 | Prepared: (| 06-Dec-18 | Analyzed: 0 | 7-Dec-18 | | | |
| Mercury | 12.48 | 0.08 | 0.50 | ng/L | | 12.62 | | | 1.08 | 24 | АΓ |
| Matrix Spike (F812271-MS1) | | Source: | 8K00745-0 | 9 | Prepared: (|)6-Dec-18 | Analyzed: 0 | 7-Dec-18 | | | |
| Mercury | 27.11 | 0.08 | 0.50 | ng/L | 20.281 | 8.59 | 91.3 | 71-125 | | | AS |
| Matrix Spike (F812271-MS2) | | Source: | 8K00745-1 | 8 | Prepared: (|)6-Dec-18 | Analyzed: 0 | 7-Dec-18 | | | |
| Mercury | 24.25 | 0.08 | 0.50 | ng/L | 20.281 | 5.10 | 94.4 | 71-125 | | | AS |
| Matrix Spike Dup (F812271-MSD1) | | Source: | 8K00745-0 | 9 | Prepared: (|)6-Dec-18 | Analyzed: 0 | 7-Dec-18 | | | |
| Mercury | 27.79 | 0.08 | 0.50 | ng/L | 20.281 | 8.59 | 94.7 | 71-125 | 2.49 | 24 | AS |
| Matrix Spike Dup (F812271-MSD2) | | Source: 8K00745-18 Prepared: 06-Dec-18 Analyzed: 07-Dec-18 | | | | | | | | | |
| Mercury | 24.59 | 0.08 | 0.50 | ng/L | 20.281 | 5.10 | 96.1 | 71-125 | 1.40 | 24 | AS |

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RPD

Underwood Engineers Project: Trace Metals In Wastewater

Detection Reporting

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls21-Jan-19 11:44

Quality Control Data

Spike

Source

%REC

| Analyte | Result | Limit | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | Notes |
|-----------------------------|--------------------|-----------|-----------|-----------|-------------|------------|-------------|----------|-----|-------|-------|
| Batch F812177 - EFGS SOP283 | 36 Closed Vessel W | ater Oven | Digestion | | | | | | | | |
| Blank (F812177-BLK1) | | | | | Prepared: (| 3-Dec-18 A | Analyzed: 0 | 5-Dec-18 | | | |
| Beryllium | ND | 0.004 | 0.060 | μg/L | | | | | | | 1 |
| Chromium | ND | 0.02 | 0.10 | μg/L | | | | | | | 1 |
| Iron | ND | 1 | 10 | $\mu g/L$ | | | | | | | 1 |
| Copper | ND | 0.02 | 0.10 | $\mu g/L$ | | | | | | | 1 |
| Zinc | ND | 0.16 | 0.50 | $\mu g/L$ | | | | | | | 1 |
| Selenium | ND | 0.44 | 0.60 | $\mu g/L$ | | | | | | | 1 |
| Cadmium | ND | 0.008 | 0.020 | $\mu g/L$ | | | | | | | 1 |
| Antimony | 0.011 | 0.009 | 0.020 | $\mu g/L$ | | | | | | | |
| Γhallium | ND | 0.006 | 0.020 | $\mu g/L$ | | | | | | | 1 |
| Lead | ND | 0.005 | 0.040 | $\mu g/L$ | | | | | | | 1 |
| Blank (F812177-BLK2) | | | | | Prepared: (| 3-Dec-18 A | Analyzed: 0 | 5-Dec-18 | | | |
| Beryllium | ND | 0.004 | 0.060 | μg/L | | | | | | | 1 |
| Chromium | ND | 0.02 | 0.10 | $\mu g/L$ | | | | | | | 1 |
| Iron | ND | 1 | 10 | $\mu g/L$ | | | | | | | 1 |
| Copper | ND | 0.02 | 0.10 | $\mu g/L$ | | | | | | | 1 |
| Zinc | 0.19 | 0.16 | 0.50 | $\mu g/L$ | | | | | | | |
| Antimony | ND | 0.009 | 0.020 | $\mu g/L$ | | | | | | | 1 |
| Thallium | ND | 0.006 | 0.020 | $\mu g/L$ | | | | | | | 1 |
| Lead | ND | 0.005 | 0.040 | $\mu g/L$ | | | | | | | 1 |
| Blank (F812177-BLK3) | | | | | Prepared: (| 3-Dec-18 A | Analyzed: 0 | 5-Dec-18 | | | |
| Selenium | ND | 0.44 | 0.60 | μg/L | | | | | | | 1 |
| Cadmium | ND | 0.008 | 0.020 | $\mu g/L$ | | | | | | | 1 |
| LCS (F812177-BS1) | | | | | Prepared: (| 3-Dec-18 A | Analyzed: 0 | 5-Dec-18 | | | |
| Beryllium | 42.21 | 0.020 | 0.301 | μg/L | 40.010 | | 105 | 85-115 | | | |
| Chromium | 46.78 | 0.10 | 0.50 | $\mu g/L$ | 49.990 | | 93.6 | 85-115 | | | |
| Iron | 1178 | 6 | 50 | $\mu g/L$ | 1250.0 | | 94.2 | 85-115 | | | |
| Copper | 53.36 | 0.10 | 0.50 | μg/L | 50.000 | | 107 | 85-115 | | | |
| Zinc | 52.44 | 0.80 | 2.50 | μg/L | 50.010 | | 105 | 85-115 | | | |
| Selenium | 52.64 | 2.20 | 3.01 | μg/L | 49.990 | | 105 | 85-115 | | | |
| Cadmium | 39.05 | 0.040 | 0.100 | μg/L | 40.010 | | 97.6 | 85-115 | | | |
| Antimony | 42.72 | 0.045 | 0.100 | μg/L | 40.030 | | 107 | 85-115 | | | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls21-Jan-19 11:44

Quality Control Data

| | | Detection | Reporting | | Spike | Source | | %REC | | RPD | |
|--------------------------------|-----------------|------------|------------|-----------|-------------|------------|-------------|----------|--------|-------|-------|
| Analyte | Result | Limit | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | Notes |
| Batch F812177 - EFGS SOP2836 C | Closed Vessel V | Vater Oven | Digestion | | | | | | | | |
| LCS (F812177-BS1) | | | | | Prepared: (| 3-Dec-18 A | nalvzed: 0 | 5-Dec-18 | | | |
| Thallium | 39.17 | 0.030 | 0.100 | μg/L | 39.990 | | 97.9 | 85-115 | | | |
| Lead | 50.12 | 0.025 | 0.200 | μg/L | 50.010 | | 100 | 85-115 | | | |
| LCS Dup (F812177-BSD1) | | | | | Prepared: (| 3-Dec-18 A | Analyzed: 0 | 5-Dec-18 | | | |
| Beryllium | 42.53 | 0.020 | 0.301 | μg/L | 40.010 | | 106 | 85-115 | 0.756 | 20 | |
| Chromium | 47.02 | 0.10 | 0.50 | μg/L | 49.990 | | 94.0 | 85-115 | 0.502 | 20 | |
| Iron | 1180 | 6 | 50 | μg/L | 1250.0 | | 94.4 | 85-115 | 0.178 | 20 | |
| Copper | 53.57 | 0.10 | 0.50 | μg/L | 50.000 | | 107 | 85-115 | 0.384 | 20 | |
| Zinc | 52.43 | 0.80 | 2.50 | μg/L | 50.010 | | 105 | 85-115 | 0.0113 | 20 | |
| Selenium | 52.92 | 2.20 | 3.01 | μg/L | 49.990 | | 106 | 85-115 | 0.525 | 20 | |
| Cadmium | 38.56 | 0.040 | 0.100 | μg/L | 40.010 | | 96.4 | 85-115 | 1.26 | 20 | |
| Antimony | 42.77 | 0.045 | 0.100 | μg/L | 40.030 | | 107 | 85-115 | 0.126 | 20 | |
| Thallium | 39.61 | 0.030 | 0.100 | μg/L | 39.990 | | 99.0 | 85-115 | 1.12 | 20 | |
| Lead | 50.89 | 0.025 | 0.200 | $\mu g/L$ | 50.010 | | 102 | 85-115 | 1.53 | 20 | |
| Matrix Spike (F812177-MS1) | | Source: | 8K00745-04 | 4 | Prepared: (| 3-Dec-18 A | Analyzed: 0 | 5-Dec-18 | | | |
| Beryllium | 42.88 | 0.020 | 0.304 | μg/L | 40.010 | ND | 107 | 70-130 | | | |
| Chromium | 47.84 | 0.10 | 0.51 | $\mu g/L$ | 49.990 | 0.28 | 95.1 | 70-130 | | | |
| Iron | 1246 | 6 | 51 | $\mu g/L$ | 1250.0 | 139 | 88.6 | 70-130 | | | |
| Copper | 58.34 | 0.10 | 0.51 | $\mu g/L$ | 50.000 | 5.91 | 105 | 70-130 | | | |
| Zinc | 128.1 | 0.81 | 2.53 | $\mu g/L$ | 50.010 | 86.18 | 83.8 | 70-130 | | | |
| Selenium | 56.52 | 2.23 | 3.04 | $\mu g/L$ | 49.990 | ND | 113 | 70-130 | | | |
| Cadmium | 40.09 | 0.040 | 0.101 | $\mu g/L$ | 40.010 | 0.054 | 100 | 70-130 | | | |
| Thallium | 38.29 | 0.030 | 0.101 | $\mu g/L$ | 39.990 | ND | 95.8 | 70-130 | | | |
| Lead | 50.54 | 0.025 | 0.202 | $\mu g/L$ | 50.010 | 1.391 | 98.3 | 70-130 | | | |
| Matrix Spike (F812177-MS2) | | Source: | 8K00745-13 | 3 | Prepared: (| 3-Dec-18 A | Analyzed: 0 | 5-Dec-18 | | | |
| Beryllium | 41.54 | 0.020 | 0.304 | μg/L | 40.010 | ND | 104 | 70-130 | | | |
| Chromium | 47.11 | 0.10 | 0.51 | $\mu g/L$ | 49.990 | 0.56 | 93.1 | 70-130 | | | |
| Iron | 1344 | 6 | 51 | $\mu g/L$ | 1250.0 | 261 | 86.7 | 70-130 | | | |
| Copper | 67.91 | 0.10 | 0.51 | $\mu g/L$ | 50.000 | 17.12 | 102 | 70-130 | | | |
| Zinc | 158.2 | 0.81 | 2.53 | $\mu g/L$ | 50.010 | 115.0 | 86.6 | 70-130 | | | |
| Selenium | 58.16 | 2.23 | 3.04 | $\mu g/L$ | 49.990 | ND | 116 | 70-130 | | | |
| Cadmium | 39.64 | 0.040 | 0.101 | μg/L | 40.010 | 0.109 | 98.8 | 70-130 | | | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls21-Jan-19 11:44

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------------------------------|---------------|--------------------|--------------------|-----------|----------------|------------------|-------------|----------------|-----|--------------|-------|
| Analyte | Result | Limit | LIIIII | Ullits | Level | Result | 70KEC | Lillits | KrD | Lillit | notes |
| Batch F812177 - EFGS SOP2836 CI | osed Vessel V | Vater Oven | Digestion | | | | | | | | |
| Matrix Spike (F812177-MS2) | | Source: | 8K00745-1 | 3 | Prepared: (|)3-Dec-18 | Analyzed: 0 | 5-Dec-18 | | | |
| Thallium | 37.24 | 0.030 | 0.101 | $\mu g/L$ | 39.990 | ND | 93.1 | 70-130 | | | |
| Lead | 48.06 | 0.025 | 0.202 | $\mu g/L$ | 50.010 | 0.305 | 95.5 | 70-130 | | | |
| Matrix Spike (F812177-MS3) | | Source: | 8K00745-0 | 4 | Prepared: (|)3-Dec-18 A | Analyzed: 0 | 5-Dec-18 | | | |
| Beryllium | 10.83 | 0.020 | 0.303 | μg/L | 10.250 | ND | 106 | 70-130 | | | AS |
| Chromium | 192.8 | 0.10 | 0.50 | $\mu g/L$ | 205.00 | 0.28 | 93.9 | 70-130 | | | AS |
| Iron | 1115 | 6 | 50 | $\mu g/L$ | 1025.0 | 139 | 95.2 | 70-130 | | | AS |
| Copper | 269.9 | 0.10 | 0.50 | $\mu g/L$ | 256.25 | 5.91 | 103 | 70-130 | | | AS |
| Zinc | 620.7 | 0.81 | 2.52 | $\mu g/L$ | 512.50 | 86.18 | 104 | 70-130 | | | AS |
| Selenium | 220.6 | 2.22 | 3.03 | $\mu g/L$ | 205.00 | ND | 108 | 70-130 | | | AS |
| Cadmium | 20.42 | 0.040 | 0.101 | $\mu g/L$ | 20.500 | 0.054 | 99.3 | 70-130 | | | AS |
| Thallium | 9.824 | 0.030 | 0.101 | $\mu g/L$ | 10.250 | ND | 95.8 | 70-130 | | | AS |
| Lead | 51.86 | 0.025 | 0.202 | $\mu g/L$ | 51.250 | 1.391 | 98.5 | 70-130 | | | AS |
| Matrix Spike (F812177-MS4) | | Source: | 8K00745-1 | 3 | Prepared: (|)3-Dec-18 A | Analyzed: 0 | 5-Dec-18 | | | |
| Beryllium | 10.21 | 0.020 | 0.303 | μg/L | 10.250 | ND | 99.6 | 70-130 | | | AS |
| Chromium | 224.5 | 0.10 | 0.50 | μg/L | 205.00 | 0.56 | 109 | 70-130 | | | AS |
| Iron | 1331 | 6 | 50 | μg/L | 1025.0 | 261 | 104 | 70-130 | | | AS |
| Copper | 275.2 | 0.10 | 0.50 | $\mu g/L$ | 256.25 | 17.12 | 101 | 70-130 | | | AS |
| Zinc | 680.2 | 0.81 | 2.52 | $\mu g/L$ | 512.50 | 115.0 | 110 | 70-130 | | | AS |
| Selenium | 223.7 | 2.22 | 3.03 | $\mu g/L$ | 205.00 | ND | 109 | 70-130 | | | AS |
| Cadmium | 20.04 | 0.040 | 0.101 | $\mu g/L$ | 20.500 | 0.109 | 97.2 | 70-130 | | | AS |
| Thallium | 9.262 | 0.030 | 0.101 | $\mu g/L$ | 10.250 | ND | 90.4 | 70-130 | | | AS |
| Lead | 48.09 | 0.025 | 0.202 | $\mu g/L$ | 51.250 | 0.305 | 93.2 | 70-130 | | | AS |
| Matrix Spike (F812177-MS9) | | Source: | 8K00745-0 | 4 | Prepared: (|)3-Dec-18 A | Analyzed: 0 | 7-Dec-18 | | | |
| Antimony | 41.43 | 0.046 | 0.101 | μg/L | 40.030 | 0.124 | 103 | 70-130 | | | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls21-Jan-19 11:44

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|----------------------------------|--------------|--------------------|--------------------|-----------|----------------|------------------|-------------|----------------|-------|--------------|-------|
| Batch F812177 - EFGS SOP2836 Clo | sed Vessel V | Vater Oven | Digestion | | | | | | | | |
| Matrix Spike (F812177-MSA) | | Source: | 8K00745-13 | 3 | Prepared: 0 | 3-Dec-18 A | Analyzed: 0 | 7-Dec-18 | | | |
| Antimony | 40.14 | 0.046 | 0.101 | μg/L | 40.030 | 0.229 | 99.7 | 70-130 | | | |
| Matrix Spike (F812177-MSB) | | Source: | 8K00745-04 | 4 | Prepared: 0 | 3-Dec-18 A | Analyzed: 0 | 7-Dec-18 | | | |
| Antimony | 10.05 | 0.045 | 0.101 | $\mu g/L$ | 10.250 | 0.124 | 96.9 | 70-130 | | | AS |
| Matrix Spike Dup (F812177-MSD1) | | Source: | 8K00745-04 | 4 | Prepared: 0 | 3-Dec-18 A | Analyzed: 0 | 5-Dec-18 | | | |
| Beryllium | 43.21 | 0.020 | 0.304 | μg/L | 40.010 | ND | 108 | 70-130 | 0.780 | 20 | |
| Chromium | 49.02 | 0.10 | 0.51 | $\mu g/L$ | 49.990 | 0.28 | 97.5 | 70-130 | 2.44 | 20 | |
| Iron | 1255 | 6 | 51 | $\mu g/L$ | 1250.0 | 139 | 89.3 | 70-130 | 0.741 | 20 | |
| Copper | 59.45 | 0.10 | 0.51 | $\mu g/L$ | 50.000 | 5.91 | 107 | 70-130 | 1.89 | 20 | |
| Zinc | 131.9 | 0.81 | 2.53 | $\mu g/L$ | 50.010 | 86.18 | 91.3 | 70-130 | 2.89 | 20 | |
| Selenium | 57.19 | 2.23 | 3.04 | $\mu g/L$ | 49.990 | ND | 114 | 70-130 | 1.19 | 20 | |
| Cadmium | 40.91 | 0.040 | 0.101 | $\mu g/L$ | 40.010 | 0.054 | 102 | 70-130 | 2.02 | 20 | |
| Thallium | 39.00 | 0.030 | 0.101 | μg/L | 39.990 | ND | 97.5 | 70-130 | 1.83 | 20 | |
| Lead | 51.41 | 0.025 | 0.202 | $\mu g/L$ | 50.010 | 1.391 | 100 | 70-130 | 1.71 | 20 | |
| Matrix Spike Dup (F812177-MSD2) | | Source: | 8K00745-13 | 3 | Prepared: 0 | 3-Dec-18 A | Analyzed: 0 | 5-Dec-18 | | | |
| Beryllium | 40.87 | 0.020 | 0.304 | $\mu g/L$ | 40.010 | ND | 102 | 70-130 | 1.62 | 20 | |
| Chromium | 48.69 | 0.10 | 0.51 | $\mu g/L$ | 49.990 | 0.56 | 96.3 | 70-130 | 3.29 | 20 | |
| Iron | 1373 | 6 | 51 | $\mu g/L$ | 1250.0 | 261 | 89.0 | 70-130 | 2.12 | 20 | |
| Copper | 69.47 | 0.10 | 0.51 | $\mu g/L$ | 50.000 | 17.12 | 105 | 70-130 | 2.26 | 20 | |
| Zinc | 162.1 | 0.81 | 2.53 | $\mu g/L$ | 50.010 | 115.0 | 94.3 | 70-130 | 2.41 | 20 | |
| Selenium | 58.59 | 2.23 | 3.04 | $\mu g/L$ | 49.990 | ND | 117 | 70-130 | 0.734 | 20 | |
| Cadmium | 40.69 | 0.040 | 0.101 | $\mu g/L$ | 40.010 | 0.109 | 101 | 70-130 | 2.61 | 20 | |
| Thallium | 36.50 | 0.030 | 0.101 | $\mu g/L$ | 39.990 | ND | 91.3 | 70-130 | 1.98 | 20 | |
| Lead | 47.19 | 0.025 | 0.202 | $\mu g/L$ | 50.010 | 0.305 | 93.8 | 70-130 | 1.83 | 20 | |
| Matrix Spike Dup (F812177-MSD3) | | Source: | 8K00745-04 | 4 | Prepared: 0 | 3-Dec-18 A | Analyzed: 0 | 5-Dec-18 | | | |
| Beryllium | 10.69 | 0.020 | 0.303 | μg/L | 10.250 | ND | 104 | 70-130 | 1.29 | 20 | AS |
| Chromium | 191.4 | 0.10 | 0.50 | $\mu g/L$ | 205.00 | 0.28 | 93.2 | 70-130 | 0.730 | 20 | AS |
| Iron | 1120 | 6 | 50 | $\mu g/L$ | 1025.0 | 139 | 95.7 | 70-130 | 0.404 | 20 | AS |
| Copper | 269.0 | 0.10 | 0.50 | $\mu g/L$ | 256.25 | 5.91 | 103 | 70-130 | 0.335 | 20 | AS |
| Zinc | 623.3 | 0.81 | 2.52 | $\mu g/L$ | 512.50 | 86.18 | 105 | 70-130 | 0.424 | 20 | AS |
| Selenium | 220.0 | 2.22 | 3.03 | μg/L | 205.00 | ND | 107 | 70-130 | 0.264 | 20 | AS |
| | | | | | | | | | | | |

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Marin dem Rose



Underwood Engineers Project: Trace Metals In Wastewater

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Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|----------------------------------|--------|--------------------|--------------------|-----------|---|------------------|-------------|----------------|-------|--------------|-------|
| Batch F812177 - EFGS SOP2836 Clo | | | | - ~ | | | | | | <u> </u> | |
| Matrix Spike Dup (F812177-MSD3) | | | 8K00745-0 | 4 | Prepared: (| 3-Dec-18 A | Analyzed: 0 | 5-Dec-18 | | | |
| Thallium | 9.603 | 0.030 | 0.101 | μg/L | 10.250 | ND | 93.7 | 70-130 | 2.27 | 20 | AS |
| Lead | 50.47 | 0.025 | 0.202 | $\mu g/L$ | 51.250 | 1.391 | 95.8 | 70-130 | 2.72 | 20 | AS |
| Matrix Spike Dup (F812177-MSD4) | | Source: | 8K00745-1 | 3 | Prepared: (| 3-Dec-18 A | Analyzed: 0 | 5-Dec-18 | | | |
| Beryllium | 10.32 | 0.020 | 0.303 | μg/L | 10.250 | ND | 101 | 70-130 | 1.10 | 20 | AS |
| Chromium | 192.5 | 0.10 | 0.50 | μg/L | 205.00 | 0.56 | 93.6 | 70-130 | 15.4 | 20 | AS |
| Iron | 1227 | 6 | 50 | μg/L | 1025.0 | 261 | 94.2 | 70-130 | 8.13 | 20 | AS |
| Copper | 274.1 | 0.10 | 0.50 | μg/L | 256.25 | 17.12 | 100 | 70-130 | 0.402 | 20 | AS |
| Zinc | 646.4 | 0.81 | 2.52 | μg/L | 512.50 | 115.0 | 104 | 70-130 | 5.09 | 20 | AS |
| Selenium | 227.9 | 2.22 | 3.03 | μg/L | 205.00 | ND | 111 | 70-130 | 1.87 | 20 | AS |
| Cadmium | 20.33 | 0.040 | 0.101 | μg/L | 20.500 | 0.109 | 98.6 | 70-130 | 1.39 | 20 | AS |
| Thallium | 9.383 | 0.030 | 0.101 | μg/L | 10.250 | ND | 91.5 | 70-130 | 1.29 | 20 | AS |
| Lead | 48.28 | 0.025 | 0.202 | $\mu g/L$ | 51.250 | 0.305 | 93.6 | 70-130 | 0.405 | 20 | AS |
| Matrix Spike Dup (F812177-MSD9) | | Source: | 8K00745-0 | 4 | Prepared: 03-Dec-18 Analyzed: 07-Dec-18 | | | | | | |
| Antimony | 38.63 | 0.046 | 0.101 | μg/L | 40.030 | 0.124 | 96.2 | 70-130 | 6.99 | 20 | |
| Matrix Spike Dup (F812177-MSDA) | | Source: | 8K00745-1 | 3 | Prepared: (| 3-Dec-18 A | Analyzed: 0 | 7-Dec-18 | | | |
| Antimony | 42.92 | 0.046 | 0.101 | μg/L | 40.030 | 0.229 | 107 | 70-130 | 6.70 | 20 | |
| Matrix Spike Dup (F812177-MSDB) | | Source: | 8K00745-0 | 4 | Prepared: (| 3-Dec-18 A | Analyzed: 0 | 7-Dec-18 | | | |
| Antimony | 10.56 | 0.045 | 0.101 | μg/L | 10.250 | 0.124 | 102 | 70-130 | 4.92 | 20 | AS |

Eurofins Frontier Global Sciences, LLC





Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 21-Jan-19 11:44

Notes and Definitions

U Analyte was not detected and is reported as less than the LOD or as defined by the client. The LOD has been adjusted for any dilution or concentration of the sample.

QB-06 The blank was preserved to 5% BrCl rather than 1%. The control limit for blanks preserved to greater than 1% BrCl is the preservation percentage multiplied by the MRL.

The result is an estimated concentration.

AS This MS and/or MSD is an analytical spike and/or an analytical spike duplicate.

AD This matrix duplicate is an analytical duplicate.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the method detection limit if reported to the MDL or above the reporting limit if

reported to the MRL.

NR Not Reported

J

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

Eurofins Frontier Global Sciences, LLC

Marin dem Kosa



Calscience



WORK ORDER NUMBER: 18-11-1947

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Eurofins Frontier Global Sciences, Inc.

Client Project Name: 8K00745

Attention: Amy Goodall

11720 North Creek Parkway North

Suite 4

Bothell, WA 98011-8244

agogo

Approved for release on 12/05/2018 by:

Carla Hollowell Project Manager

ResultLink >

Email your PM >

Eurofins Calscience (Calscience) certifies that the test results provided in this report meet all NELAC Institute requirements for parameters for which accreditation is required or available. Any exceptions to NELAC Institute requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.



Contents

Client Project Name: 8K00745 Work Order Number: 18-11-1947

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| 2 | Sample Summary | 4 |
| 3 | Client Sample Data | 5 5 |
| 4 | Quality Control Sample Data. 4.1 LCS/LCSD. | 6 |
| 5 | Glossary of Terms and Qualifiers | 7 |
| 6 | Chain-of-Custody/Sample Receipt Form. | 8 |



Work Order Narrative

Work Order: 18-11-1947 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 11/27/18. They were assigned to Work Order 18-11-1947.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

DoD Projects:

The test results contained in this report are accredited under the laboratory's ISO/IEC 17025:2005 and DoD-ELAP accreditation issued by the ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation ADE-1864.



Sample Summary

Client: Eurofins Frontier Global Sciences, Inc.

11720 North Creek Parkway North, Suite 4

Bothell, WA 98011-8244

Work Order: Project Name:

PO Number:

Date/Time Received:

Number of

Containers:

18-11-1947

8K00745

11/27/18 10:15

2

Amy Goodall Attn:

| Sample Identification | Lab Number | Collection Date and Time | Number of Containers | Matrix |
|-----------------------|--------------|--------------------------|-------------------------|---------|
| 002256 NEW_01_TCn | 18-11-1947-1 | 11/15/18 00:00 | 1 | Aqueous |
| 002268 PEASE_01_TCn | 18-11-1947-2 | 11/15/18 00:00 | 1 | Aqueous |





Project: 8K00745

Analytical Report

Eurofins Frontier Global Sciences, Inc. 11720 North Creek Parkway North, Suite 4 Bothell, WA 98011-8244 Date Received: Work Order: Preparation: Method:

18-11-1947 N/A SM 4500-CN E

11/27/18

Units: mg/L Page 1 of 1

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|----------------------|----------------------|------------------------|---------|------------|------------------|-----------------------|-----------------|
| 002256 NEW_01_TCn | 18-11-1947-1-A | 11/15/18 00:00 | Aqueous | UV 9 | 11/29/18 | 11/29/18 14:28 | I1129CNL1 |
| Parameter | · | Result | RL | : | <u>DF</u> | Qua | <u>llifiers</u> |
| Cyanide, Total | | ND | 0.0 |)20 | 1.00 | | |
| 002268 PEASE_01_TCn | 18-11-1947-2-A | 11/15/18 00:00 | Aqueous | UV 9 | 11/29/18 | 11/29/18 14:28 | I1129CNL1 |
| Parameter | | Result | RL | : | <u>DF</u> | Qua | <u>llifiers</u> |
| Cyanide, Total | | ND | 0.0 |)20 | 1.00 | | |

| Method Blank | 099-05-061-4315 | N/A | Aqueous UV 9 | 11/29/18 | 11/29/18 I1129CNL1 14:28 |
|------------------|-----------------|--------|--------------|-----------|-----------------------------|
| <u>Parameter</u> | | Result | <u>RL</u> | <u>DF</u> | Qualifiers |
| Cyanide, Total | | ND | 0.020 | 1.00 | |



RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Quality Control - LCS/LCSD

Eurofins Frontier Global Sciences, Inc. 11720 North Creek Parkway North, Suite 4 Bothell, WA 98011-8244

Date Received: Work Order: Preparation:

11/27/18 18-11-1947 N/A

Method: SM 4500-CN E

Project: 8K00745 Page 1 of 1

| Quality Control Sample ID | Туре | Mat | rix | Instrument | Date Pre | pared Date | Analyzed | LCS/LCSD Ba | atch Number |
|---------------------------|-------------|-----------|--------------|------------|---------------|------------|------------|-------------|-------------|
| 099-05-061-4315 | LCS | Aqı | ieous | UV 9 | 11/29/18 | 11/29 | 9/18 14:28 | I1129CNL1 | |
| 099-05-061-4315 | LCSD | Aqı | ieous | UV 9 | 11/29/18 | 11/29 | 9/18 14:28 | I1129CNL1 | |
| Parameter | Spike Added | LCS Conc. | LCS %Rec. | LCSD Conc. | LCSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
| Cyanide, Total | 0.2000 | 0.1705 | 85 | 0.1662 | 83 | 80-120 | 3 | 0-20 | |





Glossary of Terms and Qualifiers

Work Order: 18-11-1947 Page 1 of 1

| Qualifiers | <u>Definition</u> |
|-------------------|--|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control. |
| 4 | The MS/MSD RPD was out of control due to suspected matrix interference. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| В | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| BV | Sample received after holding time expired. |
| CI | See case narrative. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| HDH | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected). |
| HDL | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected). |
| J | Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated. |
| JA | Analyte positively identified but quantitation is an estimate. |
| ME | LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean). |
| ND | Parameter not detected at the indicated reporting limit. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| Χ | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

SUBCONTRACT ORDER

Eurofins Frontier Global Sciences, Inc.

8K00745

18-11-1947

SENDING LABORATORY:

Eurofins Frontier Global Sciences, LLC 11720 North Creek Parkway North, Suite 400

Bothell, WA 98011 Phone: (425) 686-1996 Fax: (425) 686-3096

Project Manager: Amy Goodall

RECEIVING LABORATORY:

Eurofins Calscience, LLC 7440 Lincoln Way Garden Grove, CA 92841 Phone:7148955494

Fax: x

W.

Analysis

Comments

Sample ID: 002256 NEW_01_TCn

EFGS Lab ID: 8K00745-05

Matrix: Water

Sampled: 15-Nov-18 00:00 (GMT-05:00) Eastern Time (US &

Due: 21-Dec-18 19:00

Misc. Subcontract 1

EPA SM4500 CN E

Containers Supplied:

57_1000 mL PETG (A)

Sample ID: 002268 PEASE_01_TCn

(2)

EFGS Lab ID: 8K00745-14

Matrix: Water

Sampled: 15-Nov-18 00:00 (GMT-05:00) Eastern Time (US &

Due: 21-Dec-18 19:00

Misc. Subcontract 1

EPA SM4500 CN E

Containers Supplied:

57_1000 mL PETG (A)

rn to Contents

Released By

Date

Received By

Date

| 1/27/8 | 10/5

| Received By

Date

| Page 41 of 43





FRONT DESK (425) 685 – 1995 FRONTIER GLOBAL SCÆNCES 11720 N CREEK PKWY N BOTHELL WA 96011 – 8244

1 OF 1 25 BS DWT: 19,14,14

SHIP TO:
SAMPLE RECEIVING
(714) 895 – 5494
EUROFINS CALSCIENCE, INC.
7440 LINCOLN WAY
GARDEN GROVE CA





UPS NEXT DAY AIR
TRACKING #: 1Z 86W 050 01 5075 7948

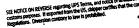


BILLING: P/P

Dept No.: OVERHEAD REF 2:Subcontract

W6 21.0.23 Zebra ZP 450 06.0A 10/2018





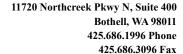


Calscience

WORK ORDER NUMBER: 180110 1947

SAMPLE RECEIPT CHECKLIST COOLER / OF /

| CLIENT: EFGS | DAT | E: <u>11 /</u> 9 | <u> </u> | 018 |
|---|------------------------|--------------------|---|-----------|
| TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue) Thermometer ID: SC6 (CF: 0.0°C); Temperature (w/o CF): 3 · 7 · °C (w/ CF): Sample(s) outside temperature criteria (PM/APM contacted by:) Sample(s) outside temperature criteria but received on ice/chilled on same day of Sample(s) received at ambient temperature; placed on ice for transport by courier Ambient Temperature: □ Air □ Filter | | □ Blank Checked | | — |
| | | | | |
| Custody seal: Cooler Present and Intact Present but Not Intact Not Present Sample(s) Present and Intact Present but Not Intact Not Present | □ N/A □ N/A | Checked Checked | | 450 |
| SAMPLE CONDITION: | | Yes | No | N/A |
| Chain-of-Custody (COC) document(s) received with samples | | | | |
| COC document(s) received complete | | . 🗹 | | |
| ☐ Sampling date ☐ Sampling time ☐ Matrix ☐ Number of containers | | • | | |
| ☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No reli | nquished time | 9 | | , |
| Sampler's name indicated on COC | | . 🗖 | | Ø |
| Sample container label(s) consistent with COC | | . 🗷 | | |
| Sample container(s) intact and in good condition | | _ | | |
| Proper containers for analyses requested | | . 🗷 | | |
| Sufficient volume/mass for analyses requested | | . 9 | | |
| Samples received within holding time | | . 🙀 | | |
| Aqueous samples for certain analyses received within 15-minute holding time | , | • | | |
| □ pH □ Residual Chlorine □ Dissolved Sulfide □ Dissolved Oxygen | | . 🗆 | | 7 |
| Proper preservation chemical(s) noted on COC and/or sample container | | . 7 | | |
| Unpreserved aqueous sample(s) received for certain analyses | | / | | |
| ☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals | | | | |
| Acid/base preserved samples - pH within acceptable range | | 左 | . | |
| Container(s) for certain analysis free of headspace | | | | Ø |
| ☐ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 45 | | | | |
| ☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (H | | | | |
| Tedlar™ bag(s) free of condensation | | 🗆 | | 7 |
| CONTAINER TYPE: (Trip Blai | nk Lot Numb | er: | | () |
| Aqueous: □ VOA □ VOAh □ VOAna₂ □ 100PJ □ 100PJna₂ □ 125AGB | 5AGBp | PB | B znna (p⊦) □ 500F □ □ | H9) PB |
| Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G = Glass, J = Jar, P = Plastic, and | d Z = Ziploc/Re | sealable Bag | 141 | 160 |
| Preservative: $\mathbf{b} = \text{buffered}$, $\mathbf{f} = \text{filtered}$, $\mathbf{h} = \text{HCI}$, $\mathbf{n} = \text{HNO}_3$, $\mathbf{na} = \text{NaOH}$, $\mathbf{na}_2 = \text{Na}_2\text{S}_2\text{O}_3$, $\mathbf{p} = \text{H}_3\text{F}_3$ | | | | 1121 |
| $a = 4.50$, $a = altro pure x = Na_2SO_2 + NaHSO_1 + O, a = 7n (CH_2CO_2)_2 + NaHSO_2 + O$ | .ΩH | Reviewer | ihv:[/ | w u |





15 January 2019

Tim Puls Underwood Engineers 25 Vaughan Mall Portsmouth, NH 03801

RE: Trace Metals In Wastewater

Amy Sodall.

Enclosed are the analytical results for samples received by Eurofins Frontier Global Sciences. All quality control measurements are within established control limits and there were no analytical difficulties encountered with the exception of those listed in the case narrative section of this report.

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

Sincerely,

Amy Goodall

Project Manager



Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 15-Jan-19 17:37

ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|--------------------------------|---------------|--------|-----------------|-----------------|
| B182032 RIVER_02_TM | 8K00762-02 | Water | 15-Nov-18 13:02 | 21-Nov-18 10:30 |
| B182033 RIVER_EB_TM | 8K00762-03 | Water | 15-Nov-18 12:37 | 21-Nov-18 10:30 |
| B182034 RIVER_MS_TM | 8K00762-04 | Water | 15-Nov-18 13:07 | 21-Nov-18 10:30 |
| D2852 RIVER_01_DM Dissolved | 8K00762-05 | Water | 15-Nov-18 12:48 | 21-Nov-18 10:30 |
| D2854 RIVER_02_DM Dissolved | 8K00762-06 | Water | 15-Nov-18 12:51 | 21-Nov-18 10:30 |
| D2856 RIVER_EB_DM Dissolved | 8K00762-07 | Water | 15-Nov-18 12:35 | 21-Nov-18 10:30 |
| D2858 RIVER_MS_DM Dissolved | 8K00762-08 | Water | 15-Nov-18 12:55 | 21-Nov-18 10:30 |
| B182035 RIVER_01_DHg Dissolved | 8K00762-09 | Water | 15-Nov-18 13:09 | 21-Nov-18 10:30 |
| B182037 RIVER_02_DHg Dissolved | 8K00762-10 | Water | 15-Nov-18 13:11 | 21-Nov-18 10:30 |
| B182038 RIVER_EB_DHg Dissolved | 8K00762-11 | Water | 15-Nov-18 12:39 | 21-Nov-18 10:30 |
| B182039 RIVER_MS_DHg Dissolved | 8K00762-12 | Water | 15-Nov-18 13:13 | 21-Nov-18 10:30 |

Eurofins Frontier Global Sciences, LLC

Amy Sodall.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 15-Jan-19 17:37

SAMPLE RECEIPT

Samples were received at Eurofins Frontier Global Sciences (EFGS) on 21-Nov-18 10:30. The samples were received intact, on-ice within two sealed coolers at

 Cooler
 Temp C°

 Cooler #1
 3.3

 Cooler #2
 11.5

Samples were shipped to Eurofins Calscience in Garden Grove, CA for the EPA SM4500 Total CN analysis per the initial project setup.

The subcontract report is located after the notes and definitions section of the EFGS report.

SAMPLE PREPARATION AND ANALYSIS

Samples were prepared and analyzed for total mercury by flow injection atomic fluorescence spectrometry (FI-AFS) in accordance with EPA 1631E.

Samples were prepared and analyzed for total recoverable metals by inductively coupled plasma mass spectrometry (ICP-MS) in accordance with EPA 200.8 (EFGS-054).

Samples were prepared and analyzed for total metals by preconcentration followed by analysis via inductively coupled plasma mass spectrometry (ICP-MS) in accordance with EPA 1640 Mod.

Client was contacted during the analysis of the 1st sample, 8K00762-01, as the results did not match 8K00762-02 or the MS/MSD sample. Client requested that we cancel the analysis of this sample and only report the EB and the field duplicate.

ANALYTICAL AND QUALITY CONTROL ISSUES

Method blanks were prepared for every preparation to assess possible blank contribution from the sample preparation procedure. The method blanks were carried through the entire analytical procedure. All blanks fell within the established acceptance criteria with the exception of any items narrated above or flagged and described in the notes and definitions section of the report.

Liquid spikes, certified reference material (CRM) or a quality control samples (QCS) were prepared for every preparation as a measure of accuracy. All liquid spikes, CRMs and/or QCS samples fell within the established acceptance criteria with the exception of any items narrated above or flagged and described in the notes and definitions section of the report.

Eurofins Frontier Global Sciences, LLC

Amy Sodall.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 15-Jan-19 17:37

As an additional measure of the accuracy of the methods used and to check for matrix interference, matrix spikes (MS) and matrix spike duplicates (MSD) were digested and analyzed. All of the matrix spike recoveries fell within the established acceptance criteria with the exception of any items flagged and described in the notes and definitions section of the report.

A reasonable measure of the precision of the analytical methods is the relative percent difference (RPD) between a matrix spike recovery and a matrix spike duplicate recovery and between laboratory control sample recovery and laboratory control sample duplicate recoveries. All of the relative percent differences fell within established acceptance criteria with the exception of any items flagged and described in the notes and definitions section of the report.

Eurofins Frontier Global Sciences, LLC

Amy Sodall.



Sample Receipt Checklist

| Client: Under Wood | | | Date & Time R | deceived: 11/21/18 1030 | Date | ์เไน e Labeled: | (18 Lal | peled By: | <u>BI)</u> |
|---|-----------------|-------------------|------------------|------------------------------------|---------------------------------------|--------------------|------------|-----------|------------|
| Project: | - | | Received By:_ | Be | Labe | | | | <u></u> |
| # of Coolers Received: Sa | mples Arrivec | d By: Shipp | ing Service | Courier Hand | Other (| Specify: | | |) |
| | | | | equired: (Y) N Temp | | | | | |
| Notify Project Manager if packages/cool | ers are receive | ed without coolan | t or with thaw | | · · · · · · · · · · · · · · · · · · · | | | | |
| Cooler Information: | Y/N/NA | Commen | ts | TID: 9780 CF: +0- | | e/time: 11/24 | * | | BC |
| The coolers do not appear to be tampered with: | 7 | | | 3 9 | :3.3 ℃ | Cooler 4: | °C | w/ CF: | °C |
| Custody Seals are present and intact: | 2 | | | Cooler 2: 100 °C w/ CF | :11.5 °C | Cooler 5: | °C | w/ CF: | °C |
| Custody seals signed: | \sim | | | Cooler 3: °C w/ CI | :: °C | Cooler 6: | °C | w/ CF: | °C |
| Chain of Custody: Y/N/NA | Commer | nts | Sample Condition | on/Integrity: | Y/N/NA | | Commen | ts | |
| Chain of Custody: Y/N/NA Sample ID/Description: 4 | Commen | | Sample contain | ers intact/present: | ٦ | | | | |
| Sample 10/ Description. | | | Sample labels a | re present and legible: | 4 | | | | |
| | | | Sample ID on co | ntainer/bag matches COC: | 14 | | | | |
| | | | Correct sample | contain e rs used: | 1 | | | | |
| Preservation type: | | | Samples receive | ed within holding times: | u | | | | |
| Requested analyses: | | | Sample volume | sufficient for requested analyses: | 4 | | | | |
| Required signatures: | | | Correct preserv | ative used for requested analyses: | 4 | | | | |
| Anomalies/Non-conformances (attach additi | onal pages if n | l eeded): | | | 1-1 | | | | |
| 21, bottles on Co | ر مل | not mete | de bottle | | | 8k | (007€ | 52 | |
| Rottle IDS: D2851, D | 12853, | D2855, | D1857 | | | | | | |
| COS: 02852, D285 | 4.028 | 56 11728 | 58 | | | | | | |
| | | | used > | Thermo 39664 +0.5 | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| EFGS Sample Receipt Checklist Revision | 7; 9/15/2017 | | | | | | | Б | 200 5 0 |

Page 5 of 39

8100762



weeks after report (storage fees may apply)

🐉 eurofins

□ Retain for ...

Chain of Custody Record & Laboratory Analysis Request: Air, Water, Sediments, Plant and Animal Tissue, Hydrocarbon & Other Samples

11720 Northcreek Pkwy N, Suite 400

Bothell, WA 98011 Phone: 425-686-1996 Fax: 425-686-3096

Info@FrontierGS.com http://www.FrontierGS.com

Frontier Global Sciences Page _1_ of _2_ EFGS PM: Contact: Tim Puls Client: UNDERWOOD ENGINEERS, INC. Analyses Requested Date: Fax: Address: 25 VAUGHAN MALL. Phone: (603) 436-6192 TAT (business days):20 (std) E-mail: tpuls@underwoodengineers.com PORTSMOUTH, NH 03801 15 10 5 4 3 2 24 hrs. Other Dissolved Metals (DM) Contract/PO: Project Name: Anti-Degradation - RIVER (For TAT < 10 days, contact PM. (TC) Dissolved Hg (DHg) Involce To: Client Report To: Tim Puls Surcharges apply for expedited TAT) Field Filtered (Y/N) Total Metals (TM) Field Preserved: HNO3 HCI BrCI Saturday delivery? ☐ Y 💆 N Address: 25 VAUGHAN MALL, Address: Total Cyanide (If yes, please contact PM) PORTSMOUTH, NH 03801 Sampled By EDD XXIY IIN Fax: Phone: Phone: (603) 436-6192 Fax: Standard D High E-mail: tpuls@underwoodengineers.com E-mall: # of Engraved Comments Date & Time Matrix No. Sample ID **Bottles Bottle ID** Total Metals include: Sb. Be. VIAR 13:05 RIVER 01 TM 58 B182031 1 Cr, Fe, Ti SB B1B2032 RIVER 02 TM 1 13:02 2 1 RW 12:37 Dissolved Metals Include: As. B182033 RIVER_EB_TM 3 Cd. Cu. Pb. Ni. Se. Ag. Zn RIVER MS TM 1 SB B182034 13:07 4 SB D2852 RIVER_01_DM 5 12:48 RW -Reagent Water 1 SB D2854 RIVER 02 DM 6 12:51 1 X DZ856 RIVER_EB_DM RW12:35 7 X 1 SB D2858 RIVER_MS_DM 12:55 8 1 SB B182035 RIVER_01_DHg 13:09 9 1 SB B182037 RIVER_02_DHg 12:11 10 RIVER_EB_DHg 1 RW B182038 17:39 11 SB 13:13 8182039 RIVER_MS_DHq 12 Received By? Received By: Matrix Codes: For Laboratory Use Only FW: Fresh Water Was P Comments: COC Seal: WW: Waste Water Name: Biyun warle Mame: SB: Sea and Brackish Water Name: GOUR Cooler Temp: K SS: Soil and Sediment Organization: Efgs Organization: Organization: 1 1AH Wes TS: Plant and Animal Tissue Carrler: HC: Hydrocarbons Date & Time: 11/21/4 1030 Date & Time: Date & Time: 1// 19 VTSR: 1020 TR: Trap OT: Other Tracking numbér: 496 822 # of Coolers: By signing, you declare that you agree with EFGS' terms and conditions, and that Sample Disposal: you authorize EFGS to perform the specified analyses. ☐ Return (shipping fees may apply) Standard Disposal - 30 Days after report

Customer Approval:

Date:



Standard Disposal - 30 Days after report

☐ Retain for ____ weeks after report (storage fees may apply)

💸 eurofins

Chain of Custody Record & Laboratory Analysis Request: Air, Water, Sediments, Plant and Animal Tissue, Hydrocarbon & Other Samples

11720 Northcreek Pkwy N, Suite 400

Bothell, WA 98011 Phone: 425-686-1996 Fax: 425-686-3096

info@FrontlerG5.com

| Frontier Global | Sciences | | | | | | | | | | | imominantieros.com |
|---|---|-----------------|---|--------------------|----------------------|--|--|-----------------------|----------------|------------------|-------------------|---|
| 2 4 2 6 5 5 5 7 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 | ~ | | Page _2_ (| or <u>2</u> | } | | T | | **** | | | http://www.FrontierGS.com |
| Client: UNDERWOOD ENGINEERS, INC. | Contact: Tim Pul | | | _ | | | | Anal | yses | Requ | ested | EFGS PM: Date: |
| Address: 25 VAUGHAN MALL, | Phone: (603) 43 | 5-6192 | Fax: | - | | (%) | - | т | T | T | | TAT (business days) 20 (sto |
| PORTSMOUTH, NH 03801 | E-mail: tpuls@ur | <u>iderwood</u> | engineers.com | 4. | | 5 | | | | | | 15 10 5 4 3 2 24 hr |
| Project Name: Anti-Degradation - RIVER | Contract/PO: | | | 4 | | Other | | Įξ | | 2 | | (For TAT < 10 days, contact PI |
| Report To: Tim Puls | Involce To: Clien | t | | | E | ಠ | $\mathbf{\Sigma}$ | ls (| (<u>PHO</u>) | (JCB) | | Surcharges apply for expedited TAT) |
| Address: 25 VAUGHAN MALL, PORTSMOUTH, NH 03801 | Address: | | | | Field Filtered (Y/N) | rved: | Total Metals (TM) | Dissolved Metals (DM) | 문 | Cyanide (| | Saturday delivery? ☐ Y QN (If yes, please contact PM) |
| Phone: (603) 436-6192 Fax: | Phone: | Fax: | | | ter | % | let let | g | PQ (| Ż | | EDD KY ON |
| E-mail: tpuls@underwoodengineers.com | E-mail: | | · | 1 8 | 宦 | E - | = | 승 | ļģ | 76 | | QA CXStandard D High |
| No. Engraved Sample ID | # of Bottles | Matrix | Date & Time | Sampled | | Field Preserved: HNO ₃ HCI BrCI | <u> </u> | Olssi | Dissolved | Total | | Comments |
| 1 002258 RIVER_01_T | Cn 1 | SB | 1/25/18/12:42 | JEL | N | NaDt | <u></u> | <u> </u> | | X | | Total Metals include: Sb, 8e Cr, Fe, Tl |
| 2 002259 RIVER_TB_T | Cn 1 | RW | ¥ 11:45 | 4 | 4 | <u> </u> | | | | X | | U, FE, 11 |
| 3 | | | | | | | | | | | | Dissolved Metals include: As |
| 4 | | 1 | <u> </u> | | | | | | | | | Cd, Cu, Pb, Ni, Se, Ag, Zn |
| | | | | 1 | | † | | ! | İ | | | RW - Reagent Water |
| 5 | | | | ! | | † | l | † | † | | | Avv Keagene Water |
| 6 | ····· | | *************************************** | | ····· | | 1 | | \vdash | | | |
| 7 | | - | | | | - | | | | | | |
| 8 | | | · · · · · · · · · · · · · · · · · · · | ļ | | <u> </u> | | | | | | • |
| 9 | | | | <u> </u> | | | | | | | | |
| 10 | | <u> </u> | ······································ | ļ | | ļ | _ | | | | _ | |
| 11 | | <u> </u> | | ļ | | ļ | | | | | | |
| 12 | | | | | $ \bigcirc $ | | | | | | | |
| For Laboratory Use Only | | rix Codes | : Relingu | ising a | | | Rece | ived | Ву: | | | Received By: |
| COC Seal: Comments: | FW: Fresh V WW: Waste | | | &t) | <u> </u> | | | | <u></u> | | | |
| Cooler Temp: | SB: Sea and SS: Soil and | | later Name: | 340 | <u>e Soc</u> | <u> </u> | Nam | e: | | | | Name: |
| Carrier: | TS: Plant an | d Animal Ti | I | | 14/18/ |) | Orga | nizat | ion: | | ····· | Organization: |
| VTSR: | HC: Hydroca | rbons | Date & | Time:) |)))))))))) | ** | Date | & TI | me: | | | Date & Time: |
| # of Coolers: | OT: Other | | | g nu mbe | | | | | | | | |
| Sample Disposal: | | | | By sign you aut | ing, yo horize | u declar EFGS to | re tha | it you | u agr he si | ee wi secifie | th EFG ed anal | S' terms and conditions, and tha yses. |

Customer Approval:

Date:

SUBCONTRACT ORDER

Eurofins Frontier Global Sciences, Inc.

8K00762

| SENDING LABORATORY: | RECEIVING LABORATORV. |
|---|---|
| Eurofins Frontier Global Sciences, LLC 11720 North Creek Parkway North, Suite 400 Bothell, WA 98011 Phone: (425) 686-1996 Fax: (425) 686-3096 Project Manager: Amy Goodall | Eurofins Calscience, LLC 7440 Lincoln Way Garden Grove, CA 92841 Phone: 7148955494 Fax: x |
| Analysis Comments | |
| Sample ID: 002258 RIVER_01_TCn EFGS Lab ID: 8K00762-13 Matrix: Water Sampled: 15-Nov-18 12:42 (GMT-05:00) Eastern Time (US & | Due: 21-Dec-18 19:00 |
| Misc. Subcontract 1 EPA SM4500 CN E | |
| Containers Supplied: 57_1000 mL PETG (A) | |
| Sample ID: 002259 RIVER_TB_TCn EFGS Lab ID: 8K00762-14 Matrix: Water Sampled: 15-Nov-18 11:45 (GMT-05:00) Eastern Time (US & | Due: 21-Dec-18 19:00 |
| Misc. Subcontract 1 EPA SM4500 CN E | |
| Containers Supplied: 57_1000 mL PETG (A) | |
| 12 86 w 050 C/ 50 | and L |
| Page 8 of 39 Page 8 of 39 | Received By Date Received By Date Page 1 of 1 |



Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 15-Jan-19 17:37

B182032 RIVER_02_TM 8K00762-02

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes | | |
|---|--------|--------------------|--------------------|------------------|----------|---------|-----------|----------|-----------|-----------|-------------------|--|--|
| Sample Preparation: EFGS SOP2836 Closed Vessel Water Oven Digestion | | | | | | | | | | | | | |
| Antimony | 0.159 | 0.091 | 0.202 | μg/L | 10 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | QM-12, R-05, J | | |
| Beryllium | ND | 0.040 | 0.606 | $\mu \text{g}/L$ | 10 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | U, R-05 | | |
| Chromium | 0.67 | 0.20 | 1.01 | $\mu g/L$ | 10 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | R-05, J | | |
| Iron | 284 | 11 | 101 | $\mu g/L$ | 10 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | R-05 | | |
| Thallium | ND | 0.061 | 0.202 | $\mu g/L$ | 10 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | U, R-05 | | |

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Amy Sodall.



Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 15-Jan-19 17:37

B182033 RIVER_EB_TM 8K00762-03

| Analyte Sample Preparation: EFGS SOP2836 | Result Closed Ve | Limit | Reporting Limit Oven Di | Units gestion | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|---|-------------------|-------|-------------------------|------------------|----------|---------|-----------|----------|-----------|-----------|-------|
| Antimony | 0.010 | 0.009 | 0.020 | μg/L | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | J |
| Beryllium | ND | 0.004 | 0.061 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | U |
| Chromium | ND | 0.02 | 0.10 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | U |
| Iron | ND | 1 | 10 | $\mu \text{g}/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | U |
| Thallium | ND | 0.006 | 0.020 | $\mu g/L$ | 1 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | U |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls15-Jan-19 17:37

B182034 RIVER_MS_TM 8K00762-04

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes | | |
|---|--------|--------------------|--------------------|---------------|----------|---------|-----------|----------|-----------|-----------|-------------------|--|--|
| Sample Preparation: EFGS SOP2836 Closed Vessel Water Oven Digestion | | | | | | | | | | | | | |
| Antimony | 0.154 | 0.091 | 0.202 | μg/L | 10 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | QM-12, R-05, J | | |
| Beryllium | ND | 0.040 | 0.606 | $\mu g/L$ | 10 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | U, R-05 | | |
| Chromium | 0.71 | 0.20 | 1.01 | $\mu g\!/\!L$ | 10 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | R-05, J | | |
| Iron | 304 | 11 | 101 | $\mu g\!/\!L$ | 10 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | R-05 | | |
| Thallium | ND | 0.061 | 0.202 | $\mu g/L$ | 10 | F812177 | 03-Dec-18 | 8L04026 | 05-Dec-18 | EPA 200.8 | R-05, U | | |

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Amy Sodall.



Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 15-Jan-19 17:37

D2852 RIVER_01_DM Dissolved 8K00762-05

| Analyte Sample Preparation: EFGS SOP2 | Result 820 Reductive | Limit | Reporting Limit tion | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|--|----------------------|-------|----------------------|-----------|----------|---------|-----------|----------|-----------|---------------|-------|
| Arsenic | 0.76 | 0.04 | 0.38 | μg/L | 5 | F812486 | 02-Jan-19 | 9A07016 | 07-Jan-19 | EPA 1640 | |
| Cadmium | 0.051 | 0.020 | 0.100 | μg/L | 5 | F812486 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | J |
| Copper | 0.60 | 0.08 | 0.25 | μg/L | 5 | F812486 | 02-Jan-19 | 9A08016 | 08-Jan-19 | EPA 1640 | |
| Lead | 0.105 | 0.020 | 0.100 | μg/L | 5 | F812486 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | |
| Nickel | 0.68 | 0.08 | 0.25 | μg/L | 5 | F812486 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | |
| Selenium | ND | 0.16 | 1.50 | μg/L | 5 | F812486 | 02-Jan-19 | 9A07016 | 07-Jan-19 | EPA 1640 Mod. | U |
| Silver | 0.02 | 0.01 | 0.10 | μg/L | 5 | F812486 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | J |
| Zinc | 2.39 | 0.14 | 0.50 | $\mu g/L$ | 5 | F812486 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 15-Jan-19 17:37

D2854 RIVER_02_DM Dissolved 8K00762-06

| Analyte Sample Preparation: EFGS SOP2820 | Result Reductive | Limit | Reporting Limit tion | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|---|------------------|-------|----------------------|-----------|----------|---------|-----------|----------|-----------|---------------|-------|
| Arsenic | 0.76 | 0.04 | 0.38 | μg/L | 5 | F812486 | 02-Jan-19 | 9A07016 | 07-Jan-19 | EPA 1640 | |
| Cadmium | 0.040 | 0.020 | 0.100 | μg/L | 5 | F812486 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | J |
| Copper | 0.58 | 0.08 | 0.25 | μg/L | 5 | F812486 | 02-Jan-19 | 9A08016 | 08-Jan-19 | EPA 1640 | |
| Lead | 0.105 | 0.020 | 0.100 | μg/L | 5 | F812486 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | |
| Nickel | 0.73 | 0.08 | 0.25 | μg/L | 5 | F812486 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | |
| Selenium | ND | 0.16 | 1.50 | $\mu g/L$ | 5 | F812486 | 02-Jan-19 | 9A07016 | 07-Jan-19 | EPA 1640 Mod. | U |
| Silver | 0.03 | 0.01 | 0.10 | μg/L | 5 | F812486 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | J |
| Zinc | 2.31 | 0.14 | 0.50 | $\mu g/L$ | 5 | F812486 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | |

Eurofins Frontier Global Sciences, LLC

Amy Sodall.



Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 15-Jan-19 17:37

D2856 RIVER_EB_DM Dissolved 8K00762-07

| Analyte Sample Preparation: EFGS SOP2 | Result 820 Reductive | Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|--|----------------------|-------|-----------------|------------------|----------|---------|-----------|----------|-----------|---------------|-------|
| Arsenic | ND | 0.04 | 0.38 | μg/L | 5 | F812486 | 02-Jan-19 | 9A07016 | 07-Jan-19 | EPA 1640 | U |
| Cadmium | 0.123 | 0.020 | 0.100 | μg/L | 5 | F812486 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | |
| Copper | ND | 0.08 | 0.25 | $\mu \text{g}/L$ | 5 | F812486 | 02-Jan-19 | 9A07016 | 07-Jan-19 | EPA 1640 | U |
| Lead | ND | 0.020 | 0.100 | $\mu \text{g}/L$ | 5 | F812486 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | U |
| Nickel | 0.20 | 0.08 | 0.25 | μg/L | 5 | F812486 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | J |
| Selenium | ND | 0.16 | 1.50 | $\mu \text{g}/L$ | 5 | F812486 | 02-Jan-19 | 9A07016 | 07-Jan-19 | EPA 1640 Mod. | U |
| Silver | 0.02 | 0.01 | 0.10 | μg/L | 5 | F812486 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | J |
| Zinc | 0.24 | 0.14 | 0.50 | $\mu g/L$ | 5 | F812486 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | J |

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Amy Sodall.

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 15-Jan-19 17:37

D2858 RIVER_MS_DM Dissolved 8K00762-08

| Analyte Sample Preparation: EFGS SO | Result P2820 Reductive | Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|-------------------------------------|------------------------|-------|-----------------|-----------|----------|---------|-----------|----------|-----------|---------------|-------|
| Arsenic | 0.76 | 0.04 | 0.38 | μg/L | 5 | F812486 | 02-Jan-19 | 9A07016 | 07-Jan-19 | EPA 1640 | |
| Cadmium | 0.039 | 0.020 | 0.100 | μg/L | 5 | F812486 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | J |
| Copper | 0.58 | 0.08 | 0.25 | μg/L | 5 | F812486 | 02-Jan-19 | 9A07016 | 07-Jan-19 | EPA 1640 | |
| Lead | 0.103 | 0.020 | 0.100 | $\mu g/L$ | 5 | F812486 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | |
| Nickel | 0.68 | 0.08 | 0.25 | $\mu g/L$ | 5 | F812486 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | |
| Selenium | ND | 0.16 | 1.50 | $\mu g/L$ | 5 | F812486 | 02-Jan-19 | 9A07016 | 07-Jan-19 | EPA 1640 Mod. | U |
| Silver | 0.02 | 0.01 | 0.10 | $\mu g/L$ | 5 | F812486 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | J |
| Zinc | 2.11 | 0.14 | 0.50 | $\mu g/L$ | 5 | F812486 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | |

Eurofins Frontier Global Sciences, LLC

Amy Sodall.



Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 15-Jan-19 17:37

B182035 RIVER_01_DHg Dissolved 8K00762-09

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|---------------------------------|---------------|--------------------|--------------------|-------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP279 | 06 EPA 1631 (| Oxidation | 1 | | | | | | | | |
| Mercury | 1.23 | 0.08 | 0.50 | ng/L | 1 | F812291 | 20-Nov-18 | 8L08008 | 08-Dec-18 | EPA 1631E | |

Eurofins Frontier Global Sciences, LLC

Amy Sodall.



Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls15-Jan-19 17:37

B182037 RIVER_02_DHg Dissolved 8K00762-10

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|---------------------------------|---------------|--------------------|--------------------|-------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP279 | 06 EPA 1631 (| Oxidation | l | | | | | | | | |
| Mercury | 1.19 | 0.08 | 0.50 | ng/L | 1 | F812291 | 20-Nov-18 | 8L08008 | 08-Dec-18 | EPA 1631E | |

Eurofins Frontier Global Sciences, LLC

Amy Sodall.

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls15-Jan-19 17:37

B182038 RIVER_EB_DHg Dissolved 8K00762-11

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|-------------------------------|-----------------|--------------------|--------------------|-------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP2 | 2796 EPA 1631 (| Oxidation | ı | | | | | | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | 1 | F812291 | 20-Nov-18 | 8L08008 | 08-Dec-18 | EPA 1631E | U |

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Amy Sodall.

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Amy Goodall, Project Manager

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls15-Jan-19 17:37

B182039 RIVER_MS_DHg Dissolved 8K00762-12

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|---------------------------------|---------------|--------------------|--------------------|-------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP279 | 96 EPA 1631 (| Oxidation | ı | | | | | | | | |
| Mercury | 1.23 | 0.08 | 0.50 | ng/L | 1 | F812296 | 26-Nov-18 | 8L11018 | 10-Dec-18 | EPA 1631E | |

Eurofins Frontier Global Sciences, LLC

Amy Sodall.



Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 15-Jan-19 17:37

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|----------------------------------|-------------|--------------------|--------------------|-------|----------------|------------------|-----------|----------------|-------|--------------|-------|
| Batch F812291 - EFGS SOP2796 EPA | A 1631 Oxid | ation | | | | | | | | | |
| Blank (F812291-BLK1) | | | | | Prepared & | : Analyzed: | 08-Dec-18 | | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | | | | | | | U |
| Blank (F812291-BLK2) | | | | | Prepared & | Analyzed: | 08-Dec-18 | | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | | | | | | | U |
| Blank (F812291-BLK3) | | | | | Prepared & | Analyzed: | 08-Dec-18 | | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | | | | | | | U |
| LCS (F812291-BS1) | | | | | Prepared & | : Analyzed: | 08-Dec-18 | | | | |
| Mercury | 14.30 | 0.08 | 0.50 | ng/L | 14.688 | | 97.3 | 80-120 | | | |
| LCS Dup (F812291-BSD1) | | | | | Prepared & | : Analyzed: | 08-Dec-18 | | | | |
| Mercury | 14.41 | 0.08 | 0.50 | ng/L | 14.688 | | 98.1 | 80-120 | 0.771 | 24 | |
| Duplicate (F812291-DUP1) | | Source: | 8K00376-0 | 9 | Prepared & | : Analyzed: | 08-Dec-18 | | | | |
| Mercury | 1.61 | 0.08 | 0.50 | ng/L | • | 1.65 | | | 2.83 | 24 | AD |
| Matrix Spike (F812291-MS1) | | Source: | 8K00376-0 | 9 | Prepared & | Analyzed: | 08-Dec-18 | | | | |
| Mercury | 6.38 | 0.08 | 0.50 | ng/L | 5.0702 | 1.65 | 93.3 | 71-125 | | | AS |
| Matrix Spike (F812291-MS2) | | Source: | 8K00376-1 | 2 | Prepared & | : Analyzed: | 08-Dec-18 | | | | |
| Mercury | 2.73 | 0.08 | 0.50 | ng/L | 2.5351 | 0.24 | 98.1 | 71-125 | | | AS |
| Matrix Spike Dup (F812291-MSD1) | | Source: | 8K00376-0 | 9 | Prepared & | : Analyzed: | 08-Dec-18 | | | | |
| Mercury | 6.58 | 0.08 | 0.50 | ng/L | 5.0702 | 1.65 | 97.1 | 71-125 | 2.98 | 24 | AS |
| Matrix Spike Dup (F812291-MSD2) | | Source | 8K00376-1 | 2 | Prepared & | : Analyzed: | 08-Dec-18 | | | | |
| Mercury | 2.64 | 0.08 | 0.50 | ng/L | 2.5351 | 0.24 | 94.6 | 71-125 | 3.23 | 24 | AS |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls15-Jan-19 17:37

Quality Control Data

| | | Detection | Reporting | | Spike | Source | | %REC | | RPD | |
|---------------------------------|-------------|-----------|-----------|-------|-----------------------------------|-----------|-----------|--------|-------|-------|-------|
| Analyte | Result | Limit | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | Notes |
| Batch F812296 - EFGS SOP2796 EP | A 1631 Oxid | ation | | | | | | | | | |
| Blank (F812296-BLK1) | | | | | Prepared & | Analyzed: | 10-Dec-18 | | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | | | | | | | U |
| Blank (F812296-BLK2) | | | | | Prepared & | Analyzed: | 10-Dec-18 | | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | | | | | | | U |
| Blank (F812296-BLK3) | | | | | Prepared & | Analyzed: | 10-Dec-18 | | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | | | | | | | U |
| LCS (F812296-BS1) | | | | | Prepared & | Analyzed: | 10-Dec-18 | | | | |
| Mercury | 14.85 | 0.08 | 0.50 | ng/L | 14.688 | | 101 | 80-120 | | | |
| LCS Dup (F812296-BSD1) | | | | | Prepared & | Analyzed: | 10-Dec-18 | | | | |
| Mercury | 14.95 | 0.08 | 0.50 | ng/L | 14.688 | | 102 | 80-120 | 0.684 | 24 | |
| Duplicate (F812296-DUP1) | | Source: | 8L00092-0 | 1 | Prepared & | Analyzed: | 10-Dec-18 | | | | |
| Mercury | 12.72 | 0.08 | 0.50 | ng/L | | 12.42 | | | 2.39 | 24 | AD |
| Matrix Spike (F812296-MS1) | | Source: | 8K00369-0 | 5 | Prepared & | Analyzed: | 10-Dec-18 | | | | |
| Mercury | 11.72 | 0.08 | 0.50 | ng/L | 10.140 | 2.50 | 90.9 | 71-125 | | | AS |
| Matrix Spike (F812296-MS2) | | Source: | 8K00762-1 | 2RE1 | Prepared & | Analyzed: | 10-Dec-18 | | | | |
| Mercury | 6.16 | 0.08 | 0.50 | ng/L | 5.0702 | 1.23 | 97.2 | 71-125 | | | AS |
| Matrix Spike Dup (F812296-MSD1) | | Source: | 8K00369-0 | 5 | Prepared & | Analyzed: | 10-Dec-18 | | | | |
| Mercury | 11.52 | 0.08 | 0.50 | ng/L | 10.140 | 2.50 | 89.0 | 71-125 | 1.64 | 24 | AS |
| Matrix Spike Dup (F812296-MSD2) | | Source: | 8K00762-1 | 2RE1 | E1 Prepared & Analyzed: 10-Dec-18 | | | | | | |
| Mercury | 6.12 | 0.08 | 0.50 | ng/L | 5.0702 | 1.23 | 96.4 | 71-125 | 0.644 | 24 | AS |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls15-Jan-19 17:37

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|-----------------------------------|------------|--------------------|--------------------|-----------|----------------|------------------|-------------|----------------|-----|--------------|-------|
| Batch F812486 - EFGS SOP2820 Redu | ctive Prec | ipitation | | | | | | | | | |
| Blank (F812486-BLK1) | | | | | Prepared: (|)2-Jan-19 A | nalyzed: 04 | -Jan-19 | | | |
| Nickel | 0.23 | 0.08 | 0.25 | μg/L | | | | | | | J |
| Zinc | 0.47 | 0.14 | 0.50 | $\mu g/L$ | | | | | | | J |
| Silver | 0.02 | 0.01 | 0.10 | $\mu g/L$ | | | | | | | J |
| Cadmium | 0.022 | 0.020 | 0.100 | $\mu g/L$ | | | | | | | J |
| Lead | ND | 0.020 | 0.100 | $\mu g/L$ | | | | | | | U |
| Blank (F812486-BLK2) | | | | | Prepared: (|)2-Jan-19 A | nalyzed: 04 | -Jan-19 | | | |
| Nickel | 0.21 | 0.08 | 0.25 | μg/L | | | | | | | J |
| Zinc | 0.31 | 0.14 | 0.50 | $\mu g/L$ | | | | | | | J |
| Silver | 0.02 | 0.01 | 0.10 | $\mu g/L$ | | | | | | | J |
| Cadmium | 0.020 | 0.020 | 0.100 | $\mu g/L$ | | | | | | | J |
| Lead | ND | 0.020 | 0.100 | $\mu g/L$ | | | | | | | U |
| Blank (F812486-BLK3) | | | | | Prepared: (| 02-Jan-19 A | nalyzed: 07 | '-Jan-19 | | | |
| Copper | ND | 0.08 | 0.25 | μg/L | | | | | | | U |
| Arsenic | ND | 0.04 | 0.38 | $\mu g/L$ | | | | | | | U |
| Selenium | ND | 0.16 | 1.50 | $\mu g/L$ | | | | | | | U |
| Blank (F812486-BLK4) | | | | | Prepared: (| 02-Jan-19 A | nalyzed: 07 | '-Jan-19 | | | |
| Copper | ND | 0.08 | 0.25 | μg/L | | | | | | | U |
| Arsenic | ND | 0.04 | 0.38 | $\mu g/L$ | | | | | | | U |
| Selenium | ND | 0.16 | 1.50 | $\mu g/L$ | | | | | | | U |
| LCS (F812486-BS1) | | | | | Prepared: (| 02-Jan-19 A | nalyzed: 04 | -Jan-19 | | | |
| Silver | 4.68 | 0.05 | 0.50 | μg/L | 6.2500 | | 74.9 | 30-151 | | | |
| LCS (F812486-BS2) | | | | | Prepared: (|)2-Jan-19 A | nalyzed: 04 | -Jan-19 | | | |
| Nickel | 9.55 | 0.08 | 0.25 | μg/L | 12.502 | | 76.4 | 71-130 | | | |
| Lead | 10.58 | 0.020 | 0.100 | μg/L | 12.502 | | 84.6 | 62-129 | | | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 15-Jan-19 17:37

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|------------------------------|----------------|--------------------|--------------------|-----------|---|------------------|-------------|----------------|-------|--------------|-------|
| Batch F812486 - EFGS SOP2820 | Reductive Prec | ipitation | | | | | | | | | |
| LCS (F812486-BS3) | | | | | Prepared: (|)2-Jan-19 A | nalyzed: 04 | 1-Jan-19 | | | |
| Zinc | 11.13 | 0.69 | 2.50 | μg/L | 12.502 | | 89.0 | 75-95 | | | |
| Cadmium | 8.920 | 0.101 | 0.500 | $\mu g/L$ | 10.002 | | 89.2 | 73-105 | | | |
| LCS (F812486-BS4) | | | | | Prepared: (|)2-Jan-19 A | nalyzed: 0' | 7-Jan-19 | | | |
| Copper | 10.92 | 0.08 | 0.25 | μg/L | 12.500 | | 87.4 | 77-109 | | | |
| Arsenic | 9.84 | 0.04 | 0.38 | $\mu g/L$ | 12.500 | | 78.8 | 58-110 | | | |
| Selenium | 11.11 | 0.16 | 1.50 | $\mu g/L$ | 12.498 | | 88.9 | 70-120 | | | |
| LCS Dup (F812486-BSD1) | | | | | Prepared: (|)2-Jan-19 A | nalyzed: 04 | 4-Jan-19 | | | |
| Silver | 2.54 | 0.05 | 0.50 | μg/L | 6.2500 | | 40.7 | 30-151 | 59.2 | 20 | QR-0 |
| LCS Dup (F812486-BSD2) | | | | | Prepared: (|)2-Jan-19 A | nalyzed: 04 | 1-Jan-19 | | | |
| Nickel | 9.17 | 0.08 | 0.25 | μg/L | 12.502 | | 73.4 | 71-130 | 4.04 | 20 | |
| Lead | 10.26 | 0.020 | 0.100 | $\mu g/L$ | 12.502 | | 82.1 | 62-129 | 3.06 | 20 | |
| LCS Dup (F812486-BSD3) | | | | | Prepared: (|)2-Jan-19 A | nalyzed: 04 | 1-Jan-19 | | | |
| Zinc | 9.46 | 0.69 | 2.50 | μg/L | 12.502 | | 75.7 | 75-95 | 16.2 | 20 | |
| Cadmium | 8.082 | 0.101 | 0.500 | $\mu g/L$ | 10.002 | | 80.8 | 73-105 | 9.86 | 20 | |
| LCS Dup (F812486-BSD4) | | | | | Prepared: (|)2-Jan-19 A | nalyzed: 0' | 7-Jan-19 | | | |
| Copper | 12.19 | 0.08 | 0.25 | μg/L | 12.500 | | 97.5 | 77-109 | 11.0 | 20 | |
| Arsenic | 9.93 | 0.04 | 0.38 | $\mu g/L$ | 12.500 | | 79.4 | 58-110 | 0.825 | 20 | |
| Selenium | 11.07 | 0.16 | 1.50 | $\mu g/L$ | 12.498 | | 88.6 | 70-120 | 0.327 | 25 | |
| Matrix Spike (F812486-MS1) | | Source: | 8J01083-07 | , | Prepared: 02-Jan-19 Analyzed: 04-Jan-19 | | | | | | |
| Silver | 4.40 | 0.05 | 0.50 | μg/L | 6.2500 | ND | 70.4 | 30-151 | | | |
| Cadmium | 9.480 | 0.101 | 0.500 | μg/L | 10.002 | ND | 94.8 | 73-105 | | | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 15-Jan-19 17:37

Quality Control Data

| | | Detection | Reporting | | Spike | Source | | %REC | | RPD | |
|----------------------------------|--------------|-------------------------------|------------|-----------|-------------|-------------|-------------|----------|------|-------|---------|
| Analyte | Result | Limit | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | Notes |
| Batch F812486 - EFGS SOP2820 Rec | luctive Prec | ipitation | | | | | | | | | |
| Matrix Spike (F812486-MS2) | | Source: | 8K00762-0 | 8 | Prepared: (|)2-Jan-19 A | nalyzed: 04 | 4-Jan-19 | | | |
| Silver | 5.83 | 0.05 | 0.50 | μg/L | 6.2500 | ND | 93.2 | 30-151 | | | |
| Cadmium | 9.482 | 0.101 | 0.500 | $\mu g/L$ | 10.002 | ND | 94.8 | 73-105 | | | |
| Matrix Spike (F812486-MS3) | | Source: | 8J01083-07 | 7 | Prepared: (|)2-Jan-19 A | nalyzed: 04 | 4-Jan-19 | | | |
| Nickel | 6.93 | 0.08 | 0.25 | μg/L | 12.502 | 0.41 | 52.2 | 71-130 | | | QM-05 |
| Zinc | 12.02 | 0.14 | 0.50 | $\mu g/L$ | 12.502 | 0.91 | 88.9 | 75-95 | | | |
| Lead | 11.71 | 0.020 | 0.100 | $\mu g/L$ | 12.502 | 0.024 | 93.5 | 62-129 | | | |
| Matrix Spike (F812486-MS4) | | Source: | 8K00762-0 | 8 | Prepared: (|)2-Jan-19 A | nalyzed: 04 | 4-Jan-19 | | | |
| Nickel | 10.72 | 0.08 | 0.25 | μg/L | 12.502 | 0.68 | 80.3 | 71-130 | | | |
| Zinc | 13.54 | 0.14 | 0.50 | $\mu g/L$ | 12.502 | 2.11 | 91.4 | 75-95 | | | |
| Lead | 11.97 | 0.020 | 0.100 | $\mu g/L$ | 12.502 | 0.103 | 94.9 | 62-129 | | | |
| Matrix Spike (F812486-MS5) | | Source: | 8J01083-07 | RE1 | Prepared: (|)2-Jan-19 A | nalyzed: 0' | 7-Jan-19 | | | |
| Copper | 13.48 | 0.08 | 0.25 | $\mu g/L$ | 12.500 | 0.53 | 104 | 77-109 | | | |
| Arsenic | 11.88 | 0.04 | 0.38 | $\mu g/L$ | 12.500 | 0.88 | 88.0 | 58-110 | | | |
| Selenium | 8.22 | 0.16 | 1.50 | $\mu g/L$ | 12.498 | ND | 65.8 | 42-131 | | | |
| Matrix Spike (F812486-MS6) | | Source: | 8K00762-0 | 8RE1 | Prepared: (|)2-Jan-19 A | nalyzed: 0' | 7-Jan-19 | | | |
| Copper | 13.24 | 0.08 | 0.25 | μg/L | 12.500 | 0.58 | 101 | 77-109 | | | |
| Arsenic | 12.14 | 0.04 | 0.38 | $\mu g/L$ | 12.500 | 0.76 | 91.0 | 58-110 | | | |
| Selenium | 11.75 | 0.16 | 1.50 | $\mu g/L$ | 12.498 | ND | 94.0 | 42-131 | | | |
| Matrix Spike Dup (F812486-MSD1) | | Source: | 8J01083-07 | 7 | Prepared: (|)2-Jan-19 A | nalyzed: 04 | 4-Jan-19 | | | |
| Silver | 5.27 | 0.05 | 0.50 | μg/L | 6.2500 | ND | 84.3 | 30-151 | 17.9 | 20 | <u></u> |
| Cadmium | 9.298 | 0.101 | 0.500 | $\mu g/L$ | 10.002 | ND | 93.0 | 73-105 | 1.93 | 20 | |
| Matrix Spike Dup (F812486-MSD2) | | Source: 8K00762-08 Pre | | | Prepared: (| nalyzed: 04 | 4-Jan-19 | | | | |
| Silver | 5.48 | 0.05 | 0.50 | μg/L | 6.2500 | ND | 87.7 | 30-151 | 6.10 | 20 | |
| Cadmium | 8.670 | 0.101 | 0.500 | $\mu g/L$ | 10.002 | ND | 86.7 | 73-105 | 8.94 | 20 | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls15-Jan-19 17:37

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|----------------------------------|--------------|----------------------------|--------------------|-----------|----------------|------------------|-------------|----------------|--------|--------------|-------|
| Batch F812486 - EFGS SOP2820 Rec | ductive Prec | ipitation | | | | | | | | | |
| Matrix Spike Dup (F812486-MSD3) | | Source: | 8J01083-07 | , | Prepared: 0 |)2-Jan-19 A | nalyzed: 04 | 1-Jan-19 | | | |
| Nickel | 8.43 | 0.08 | 0.25 | μg/L | 12.502 | 0.41 | 64.2 | 71-130 | 19.5 | 20 | QM-05 |
| Zinc | 12.08 | 0.14 | 0.50 | $\mu g/L$ | 12.502 | 0.91 | 89.3 | 75-95 | 0.499 | 20 | |
| Lead | 12.27 | 0.020 | 0.100 | $\mu g/L$ | 12.502 | 0.024 | 98.0 | 62-129 | 4.67 | 20 | |
| Matrix Spike Dup (F812486-MSD4) | | Source: | 8K00762-0 | 8 | Prepared: 0 |)2-Jan-19 A | nalyzed: 04 | 4-Jan-19 | | | |
| Nickel | 10.56 | 0.08 | 0.25 | μg/L | 12.502 | 0.68 | 79.0 | 71-130 | 1.53 | 20 | |
| Zinc | 12.85 | 0.14 | 0.50 | $\mu g/L$ | 12.502 | 2.11 | 85.9 | 75-95 | 5.21 | 20 | |
| Lead | 11.54 | 0.020 | 0.100 | $\mu g/L$ | 12.502 | 0.103 | 91.5 | 62-129 | 3.61 | 20 | |
| Matrix Spike Dup (F812486-MSD5) | | Source: | 8J01083-07 | RE1 | Prepared: 0 |)2-Jan-19 A | nalyzed: 0 | 7-Jan-19 | | | |
| Copper | 13.63 | 0.08 | 0.25 | μg/L | 12.500 | 0.53 | 105 | 77-109 | 1.10 | 20 | |
| Arsenic | 12.09 | 0.04 | 0.38 | $\mu g/L$ | 12.500 | 0.88 | 89.6 | 58-110 | 1.71 | 20 | |
| Selenium | 8.23 | 0.16 | 1.50 | $\mu g/L$ | 12.498 | ND | 65.8 | 42-131 | 0.0359 | 25 | |
| Matrix Spike Dup (F812486-MSD6) | | Source: 8K00762-08RE1 Prep | | | Prepared: 0 |)2-Jan-19 A | nalyzed: 07 | 7-Jan-19 | | | |
| Copper | 13.39 | 0.08 | 0.25 | μg/L | 12.500 | 0.58 | 102 | 77-109 | 1.14 | 20 | |
| Arsenic | 12.22 | 0.04 | 0.38 | $\mu g/L$ | 12.500 | 0.76 | 91.7 | 58-110 | 0.696 | 20 | |
| Selenium | 11.41 | 0.16 | 1.50 | μg/L | 12.498 | ND | 91.3 | 42-131 | 2.92 | 25 | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls15-Jan-19 17:37

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|-------------------------------------|------------|--------------------|--------------------|-----------|----------------|------------------|-------------|----------------|-------|--------------|-------|
| Batch F812177 - EFGS SOP2836 Closed | | | | | | | , | | | | |
| | u vessei v | vater Oven | Digestion | | | | | | | | |
| Blank (F812177-BLK1) | | | | | Prepared: 0 | 03-Dec-18 A | Analyzed: 0 | 5-Dec-18 | | | |
| Beryllium | ND | 0.004 | 0.060 | μg/L | | | | | | | U |
| Chromium | ND | 0.02 | 0.10 | μg/L | | | | | | | U |
| Iron | ND | 1 | 10 | μg/L | | | | | | | U |
| Antimony | 0.011 | 0.009 | 0.020 | μg/L | | | | | | | J |
| Thallium | ND | 0.006 | 0.020 | μg/L | | | | | | | U |
| Blank (F812177-BLK2) | | | | | Prepared: 0 | 3-Dec-18 A | Analyzed: 0 | 5-Dec-18 | | | |
| Beryllium | ND | 0.004 | 0.060 | μg/L | | | | | | | U |
| Chromium | ND | 0.02 | 0.10 | $\mu g/L$ | | | | | | | U |
| Iron | ND | 1 | 10 | $\mu g/L$ | | | | | | | U |
| Antimony | ND | 0.009 | 0.020 | $\mu g/L$ | | | | | | | U |
| Thallium | ND | 0.006 | 0.020 | $\mu g/L$ | | | | | | | U |
| LCS (F812177-BS1) | | | | | Prepared: 0 | 3-Dec-18 A | Analyzed: 0 | 5-Dec-18 | | | |
| Beryllium | 42.21 | 0.020 | 0.301 | μg/L | 40.010 | | 105 | 85-115 | | | |
| Chromium | 46.78 | 0.10 | 0.50 | μg/L | 49.990 | | 93.6 | 85-115 | | | |
| Iron | 1178 | 6 | 50 | $\mu g/L$ | 1250.0 | | 94.2 | 85-115 | | | |
| Antimony | 42.72 | 0.045 | 0.100 | $\mu g/L$ | 40.030 | | 107 | 85-115 | | | |
| Thallium | 39.17 | 0.030 | 0.100 | $\mu g/L$ | 39.990 | | 97.9 | 85-115 | | | |
| LCS Dup (F812177-BSD1) | | | | | Prepared: 0 | 3-Dec-18 A | Analyzed: 0 | 5-Dec-18 | | | |
| Beryllium | 42.53 | 0.020 | 0.301 | μg/L | 40.010 | | 106 | 85-115 | 0.756 | 20 | |
| Chromium | 47.02 | 0.10 | 0.50 | μg/L | 49.990 | | 94.0 | 85-115 | 0.502 | 20 | |
| Iron | 1180 | 6 | 50 | μg/L | 1250.0 | | 94.4 | 85-115 | 0.178 | 20 | |
| Antimony | 42.77 | 0.045 | 0.100 | $\mu g/L$ | 40.030 | | 107 | 85-115 | 0.126 | 20 | |
| Thallium | 39.61 | 0.030 | 0.100 | $\mu g/L$ | 39.990 | | 99.0 | 85-115 | 1.12 | 20 | |
| Matrix Spike (F812177-MS1) | | Source: | 8K00745-0 | 4 | Prepared: 0 |)3-Dec-18 A | Analyzed: 0 | 5-Dec-18 | | | |
| Beryllium | 42.88 | 0.020 | 0.304 | μg/L | 40.010 | ND | 107 | 70-130 | | | |
| Chromium | 47.84 | 0.10 | 0.51 | μg/L | 49.990 | 0.28 | 95.1 | 70-130 | | | |
| Iron | 1246 | 6 | 51 | μg/L | 1250.0 | 139 | 88.6 | 70-130 | | | |
| Thallium | 38.29 | 0.030 | 0.101 | μg/L | 39.990 | ND | 95.8 | 70-130 | | | |

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Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls15-Jan-19 17:37

Quality Control Data

| Analisa | DIt | Detection | Reporting | 11 | Spike | Source | 0/ DEC | %REC | DDD | RPD | N-4 |
|---|--------------|--------------------|--------------------|---|---|-------------|-------------|--------|-------|-------|-------|
| Analyte | Result | Limit | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | Notes |
| Batch F812177 - EFGS SOP2836 Clo | sed Vessel V | Vater Oven | Digestion | | | | | | | | |
| Matrix Spike (F812177-MS2) | | Source: 8K00745-13 | | | Prepared: (| 03-Dec-18 A | Analyzed: 0 | | | | |
| Beryllium | 41.54 | 0.020 | 0.304 | μg/L | 40.010 | ND | 104 | 70-130 | | | |
| Chromium | 47.11 | 0.10 | 0.51 | $\mu g/L$ | 49.990 | 0.56 | 93.1 | 70-130 | | | |
| Iron | 1344 | 6 | 51 | $\mu g/L$ | 1250.0 | 261 | 86.7 | 70-130 | | | |
| Thallium | 37.24 | 0.030 | 0.101 | $\mu g/L$ | 39.990 | ND | 93.1 | 70-130 | | | |
| Matrix Spike (F812177-MS3) | | Source: | Source: 8K00745-04 | | | 03-Dec-18 A | Analyzed: 0 | | | | |
| Beryllium | 10.83 | 0.020 | 0.303 | μg/L | 10.250 | ND | 106 | 70-130 | | | AS |
| Chromium | 192.8 | 0.10 | 0.50 | $\mu g/L$ | 205.00 | 0.28 | 93.9 | 70-130 | | | AS |
| Iron | 1115 | 6 | 50 | $\mu g/L$ | 1025.0 | 139 | 95.2 | 70-130 | | | AS |
| Thallium | 9.824 | 0.030 | 0.101 | $\mu g/L$ | 10.250 | ND | 95.8 | 70-130 | | | AS |
| Matrix Spike (F812177-MS4) | | Source: | 8K00745-1 | 3 | Prepared: (|)3-Dec-18 A | Analyzed: 0 | | | | |
| Beryllium | 10.21 | 0.020 | 0.303 | μg/L | 10.250 | ND | 99.6 | 70-130 | | | AS |
| Chromium | 224.5 | 0.10 | 0.50 | $\mu g/L$ | 205.00 | 0.56 | 109 | 70-130 | | | AS |
| Iron | 1331 | 6 | 50 | $\mu g/L$ | 1025.0 | 261 | 104 | 70-130 | | | AS |
| Thallium | 9.262 | 0.030 | 0.101 | $\mu g/L$ | 10.250 | ND | 90.4 | 70-130 | | | AS |
| Matrix Spike (F812177-MS9) | | Source: 8K00745-04 | | Prepared: 03-Dec-18 Analyzed: 07-Dec-18 | | | | | | | |
| Antimony | 41.43 | 0.046 | 0.101 | μg/L | 40.030 | 0.124 | 103 | 70-130 | | | |
| Matrix Spike (F812177-MSA) | | Source: 8K00745-13 | | | Prepared: (| 03-Dec-18 A | Analyzed: 0 | | | | |
| Antimony | 40.14 | 0.046 | 0.101 | μg/L | 40.030 | 0.229 | 99.7 | 70-130 | | | |
| Matrix Spike (F812177-MSB) | | Source: 8K00745-04 | | | Prepared: 03-Dec-18 Analyzed: 07-Dec-18 | | | | | | |
| Antimony | 10.05 | 0.045 | 0.101 | μg/L | 10.250 | 0.124 | 96.9 | 70-130 | | | AS |
| Matrix Spike Dup (F812177-MSD1) | | Source: 8K00745-04 | | 4 | Prepared: 03-Dec-18 Analyzed: 05-Dec-18 | | | | | | |
| Beryllium | 43.21 | 0.020 | 0.304 | μg/L | 40.010 | ND | 108 | 70-130 | 0.780 | 20 | |
| Chromium | 49.02 | 0.10 | 0.51 | $\mu g/L$ | 49.990 | 0.28 | 97.5 | 70-130 | 2.44 | 20 | |
| Iron | 1255 | 6 | 51 | μg/L | 1250.0 | 139 | 89.3 | 70-130 | 0.741 | 20 | |
| Thallium | 39.00 | 0.030 | 0.101 | $\mu g/L$ | 39.990 | ND | 97.5 | 70-130 | 1.83 | 20 | |
| | | | | | | | | | | | |

Eurofins Frontier Global Sciences, LLC

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Amy Sodall.



Underwood Engineers Project: Trace Metals In Wastewater

25 Vaughan Mall Project Number: Trace Metals In Wastewater Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 15-Jan-19 17:37

Quality Control Data

| | | Detection | Reporting | | Spike | Source | | %REC | | RPD | |
|--|--------------|--------------------|---|---|---|-------------|-------------|----------|-------|-------|-------|
| Analyte | Result | Limit | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | Notes |
| Batch F812177 - EFGS SOP2836 Clo | sed Vessel V | Vater Oven | Digestion | | | | | | | | |
| Matrix Spike Dup (F812177-MSD2) | Source: | Source: 8K00745-13 | | | Prepared: 03-Dec-18 Analyzed: 05-Dec-18 | | | | | | |
| Beryllium | 40.87 | 0.020 | 0.304 | $\mu g/L$ | 40.010 | ND | 102 | 70-130 | 1.62 | 20 | |
| Chromium | 48.69 | 0.10 | 0.51 | $\mu g/L$ | 49.990 | 0.56 | 96.3 | 70-130 | 3.29 | 20 | |
| Iron | 1373 | 6 | 51 | $\mu g/L$ | 1250.0 | 261 | 89.0 | 70-130 | 2.12 | 20 | |
| Thallium | 36.50 | 0.030 | 0.101 | $\mu g/L$ | 39.990 | ND | 91.3 | 70-130 | 1.98 | 20 | |
| Matrix Spike Dup (F812177-MSD3) | | Source: 8K00745-04 | | | Prepared: (|)3-Dec-18 A | | | | | |
| Beryllium | 10.69 | 0.020 | 0.303 | μg/L | 10.250 | ND | 104 | 70-130 | 1.29 | 20 | AS |
| Chromium | 191.4 | 0.10 | 0.50 | $\mu g/L$ | 205.00 | 0.28 | 93.2 | 70-130 | 0.730 | 20 | AS |
| Iron | 1120 | 6 | 50 | $\mu g/L$ | 1025.0 | 139 | 95.7 | 70-130 | 0.404 | 20 | AS |
| Thallium | 9.603 | 0.030 | 0.101 | $\mu g/L$ | 10.250 | ND | 93.7 | 70-130 | 2.27 | 20 | AS |
| Matrix Spike Dup (F812177-MSD4) Source: 8K00745-13 | | | Prepared: 03-Dec-18 Analyzed: 05-Dec-18 | | | | | | | | |
| Beryllium | 10.32 | 0.020 | 0.303 | $\mu g/L$ | 10.250 | ND | 101 | 70-130 | 1.10 | 20 | AS |
| Chromium | 192.5 | 0.10 | 0.50 | $\mu g/L$ | 205.00 | 0.56 | 93.6 | 70-130 | 15.4 | 20 | AS |
| Iron | 1227 | 6 | 50 | $\mu g/L$ | 1025.0 | 261 | 94.2 | 70-130 | 8.13 | 20 | AS |
| Thallium | 9.383 | 0.030 | 0.101 | $\mu g/L$ | 10.250 | ND | 91.5 | 70-130 | 1.29 | 20 | AS |
| Matrix Spike Dup (F812177-MSD9) | Source: | Source: 8K00745-04 | | |)3-Dec-18 A | Analyzed: 0 | | | | | |
| Antimony | 38.63 | 0.046 | 0.101 | μg/L | 40.030 | 0.124 | 96.2 | 70-130 | 6.99 | 20 | |
| Matrix Spike Dup (F812177-MSDA) | | Source: 8K00745-13 | | Prepared: 03-Dec-18 Analyzed: 07-Dec-18 | | | | | | | |
| Antimony | 42.92 | 0.046 | 0.101 | μg/L | 40.030 | 0.229 | 107 | 70-130 | 6.70 | 20 | |
| Matrix Spike Dup (F812177-MSDB) | | Source: | 8K00745-0 | 4 | Prepared: (|)3-Dec-18 A | Analyzed: 0 | 7-Dec-18 | | | |
| Antimony | 10.56 | 0.045 | 0.101 | μg/L | 10.250 | 0.124 | 102 | 70-130 | 4.92 | 20 | AS |
| | | | | | | | | | | | |

Eurofins Frontier Global Sciences, LLC

Amy Sodall.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Underwood EngineersProject: Trace Metals In Wastewater25 Vaughan MallProject Number: Trace Metals In WastewaterReported:Portsmouth NH, 03801Project Manager: Tim Puls15-Jan-19 17:37

Notes and Definitions

| U | Analyte was not detected and is reported as less than the LOD or as defined by the client. The LOD has been adjusted for any dilution or concentration of the sample. |
|-------|---|
| R-05 | The sample was diluted due to the presence of high levels of non-target analytes or particulates resulting in elevated reporting limits. |
| QR-06 | The RPD value for the LCS/LCSD was outside of acceptance limits. Batch QC acceptable based on MS/MSD, and where applicable, matrix duplicate RPD value(s) within control limits. |
| QM-12 | Continuing calibration verification (CCV) and/or blank spike/blank spike duplicate (BS/BSD) recoveries above upper control limits. All reported sample concentrations were below the reporting limit. |
| QM-05 | The spike recovery was outside acceptance limits for the MS/MSD and or AS/ASD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable. |
| J | The result is an estimated concentration. |
| AS | This MS and/or MSD is an analytical spike and/or an analytical spike duplicate. |
| AD | This matrix duplicate is an analytical duplicate. |
| DET | Analyte DETECTED |
| ND | Analyte NOT DETECTED at or above the method detection limit if reported to the MDL or above the reporting limit if reported to the MRL. |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |

Eurofins Frontier Global Sciences, LLC

Amy Sodall.

Relative Percent Difference

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

RPD



Calscience



WORK ORDER NUMBER: 18-11-1948

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Eurofins Frontier Global Sciences, Inc.

Client Project Name: 8K00762

Attention: Amy Goodall

11720 North Creek Parkway North

Suite 4

Bothell, WA 98011-8244

agres

Approved for release on 12/05/2018 by: Carla Hollowell

Carla Hollowell Project Manager

ResultLink >

Email your PM >

Eurofins Calscience (Calscience) certifies that the test results provided in this report meet all NELAC Institute requirements for parameters for which accreditation is required or available. Any exceptions to NELAC Institute requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.



Contents

Client Project Name: 8K00762 Work Order Number: 18-11-1948

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Work Order Narrative

Work Order: 18-11-1948 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 11/27/18. They were assigned to Work Order 18-11-1948.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

DoD Projects:

The test results contained in this report are accredited under the laboratory's ISO/IEC 17025:2005 and DoD-ELAP accreditation issued by the ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation ADE-1864.



Sample Summary

Client: Eurofins Frontier Global Sciences, Inc.

11720 North Creek Parkway North, Suite 4

Bothell, WA 98011-8244

Work Order: Project Name:

PO Number:

Date/Time Received:

Number of

Containers:

18-11-1948

8K00762

11/27/18 10:15

2

Amy Goodall Attn:

| Sample Identification | Lab Number | Collection Date and Time | Number of Containers | Matrix |
|-----------------------|--------------|--------------------------|-------------------------|---------|
| 002258 RIVER_01_TCn | 18-11-1948-1 | 11/15/18 12:42 | 1 | Aqueous |
| 002259 RIVER_TB_TCn | 18-11-1948-2 | 11/15/18 11:45 | 1 | Aqueous |





Analytical Report

Eurofins Frontier Global Sciences, Inc. 11720 North Creek Parkway North, Suite 4 Bothell, WA 98011-8244

Date Received: Work Order: Preparation: Method:

11/27/18 18-11-1948 N/A

mg/L

SM 4500-CN E Units:

Project: 8K00762 Page 1 of 1

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|----------------------|----------------------|------------------------|-----------|------------|------------------|-----------------------|-------------|
| 002258 RIVER_01_TCn | 18-11-1948-1-A | 11/15/18 12:42 | Aqueous | UV 9 | 11/29/18 | 11/29/18 14:28 | I1129CNL1 |
| Parameter | | Result | RL | | <u>DF</u> | Qua | alifiers |
| Cyanide, Total | | ND | 0.0 | 20 | 1.00 | | |
| 002259 RIVER_TB_TCn | 18-11-1948-2-A | 11/15/18 11:45 | Aqueous | UV 9 | 11/29/18 | 11/29/18 14:28 | I1129CNL1 |
| Parameter | | Result | <u>RL</u> | | <u>DF</u> | Qua | alifiers |
| Cyanide, Total | | | | | | | |

| Method Blank | 099-05-061-4315 | N/A | Aqueous UV 9 | 11/29/18 | 11/29/18 I1129CNL1 14:28 |
|------------------|-----------------|--------|--------------|----------|-----------------------------|
| <u>Parameter</u> | | Result | <u>RL</u> | DF | Qualifiers |
| Cyanide, Total | | ND | 0.020 | 1.00 | |



RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Quality Control - LCS/LCSD

Eurofins Frontier Global Sciences, Inc. 11720 North Creek Parkway North, Suite 4 Bothell, WA 98011-8244

Date Received: Work Order: Preparation: Method:

18-11-1948 N/A

11/27/18

SM 4500-CN E

Project: 8K00762 Page 1 of 1

| Quality Control Sample ID | Туре | Mat | rix | Instrument | Date Prep | pared Date | Analyzed | LCS/LCSD B | atch Number |
|---------------------------|-------------|-----------|--------------|------------|---------------|------------|------------|------------|-------------|
| 099-05-061-4315 | LCS | Aqı | leous | UV 9 | 11/29/18 | 11/2 | 9/18 14:28 | I1129CNL1 | |
| 099-05-061-4315 | LCSD | Aqı | ueous | UV 9 | 11/29/18 | 11/2 | 9/18 14:28 | I1129CNL1 | |
| Parameter | Spike Added | LCS Conc. | LCS %Rec. | LCSD Conc. | LCSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
| Cyanide, Total | 0.2000 | 0.1705 | 85 | 0.1662 | 83 | 80-120 | 3 | 0-20 | |



RPD: Relative Percent Difference. CL: Control Limits



Glossary of Terms and Qualifiers

Work Order: 18-11-1948 Page 1 of 1

| Qualifiers | <u>Definition</u> |
|-------------------|--|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control. |
| 4 | The MS/MSD RPD was out of control due to suspected matrix interference. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| В | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| BV | Sample received after holding time expired. |
| CI | See case narrative. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| HDH | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected). |
| HDL | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected). |
| J | Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated. |
| JA | Analyte positively identified but quantitation is an estimate. |
| ME | LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean). |
| ND | Parameter not detected at the indicated reporting limit. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| Χ | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |
| | Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are |

reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

SUBCONTRACT ORDER

Eurofins Frontier Global Sciences, Inc.

8K00762

18-11-1948

SENDING LABORATORY:

Eurofins Frontier Global Sciences, LLC 11720 North Creek Parkway North, Suite 400

Bothell, WA 98011 Phone: (425) 686-1996 Fax: (425) 686-3096

Project Manager: Amy Goodall

RECEIVING LABORATORY:

Eurofins Calscience, LLC 7440 Lincoln Way Garden Grove, CA 92841 Phone:7148955494

Fax: x

Analysis

Comments

Sample ID: 002258 RIVER_01_TCn

EFGS Lab ID: 8K00762-13

Matrix: Water

Sampled: 15-Nov-18 12:42 (GMT-05:00) Eastern Time (US &

Due: 21-Dec-18 19:00

Misc. Subcontract 1

EPA SM4500 CN E

Containers Supplied:

57_1000 mL PETG (A)

Sample ID: 002259 RIVER_TB_TCn

EFGS Lab ID: 8K00762-14

Matrix: Water

Sampled: 15-Nov-18 11:45 (GMT-05:00) Eastern Time (US &

Due: 21-Dec-18 19:00

Misc. Subcontract 1

EPA SM4500 CN E

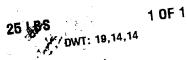
Containers Supplied:

57_1000 mL PETG (A)

Date Received By Released By Page 37 of 39







SHIP TO:
SAMPLE RECEIVING
(714) 895-5494
EUROFINS CALSCIENCE, INC.
7440 LINCOLN WAY
GARDEN GROVE CA





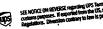
UPS NEXT DAY AIR TRACKING #: 1Z 86W 050 01 5075 7948

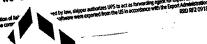


BILLING: P/P

Dept No.: OVERHEAD REF 2:Subcontract

W8 21.0.23 Zebra .ZP 450 06.0A 10/2018







Calscience

WORK ORDER NUMBER: 1801 1948

COOLER / OF / SAMPLE RECEIPT CHECKLIST CLIENT: EFGS DATE: 11/27/2018 **TEMPERATURE:** (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue) Thermometer ID: SC6 (CF: 0.0°C); Temperature (w/o CF): 3 - 7 °C (w/ CF): 3 - 7 °C: ☐ Blank ☐ Sample ☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____ ☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling ☐ Sample(s) received at ambient temperature; placed on ice for transport by courier Checked by: WJC Ambient Temperature: ☐ Air ☐ Filter **CUSTODY SEAL:** □ N/A Checked by: □ Not Present Present and Intact ☐ Present but Not Intact Cooler Not Present □ N/A Checked by: ☐ Present but Not Intact ☐ Present and Intact Sample(s) Yes No N/A **SAMPLE CONDITION:** Chain-of-Custody (COC) document(s) received with samples ☐ Sampling date ☐ Sampling time ☐ Matrix ☐ Number of containers ☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time Sampler's name indicated on COC Sample container label(s) consistent with COC Sample container(s) intact and in good condition Proper containers for analyses requested Sufficient volume/mass for analyses requested Samples received within holding time Aqueous samples for certain analyses received within 15-minute holding time □ pH □ Residual Chlorine □ Dissolved Sulfide □ Dissolved Oxygen □ Proper preservation chemical(s) noted on COC and/or sample container Unpreserved aqueous sample(s) received for certain analyses ☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals Container(s) for certain analysis free of headspace..... ☐ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500) □ Carbon Dioxide (SM 4500) □ Ferrous Iron (SM 3500) □ Hydrogen Sulfide (Hach) Tedlar™ bag(s) free of condensation (Trip Blank Lot Number: _ **CONTAINER TYPE:** Aqueous: □ VOA □ VOAh □ VOAna₂ □ 100PJ □ 100PJna₂ □ 125AGB □ 125AGBh □ 125AGBp □ 125PB □ 125PBznna (pH_9) □ 250AGB □ 250CGB □ 250CGBs (pH_2) □ 250PB □ 250PBn (pH_2) □ 500AGB □ 500AGJ □ 500AGJs (pH_2) □ 500PB □ 1AGB □ 1AGBna₂ □ 1AGBs (pH_2) □ 1AGBs (O&G) □ 1PB □ 1PBna (pH 7 12) □ □ □ □ □ □ □ Solid: 🗆 4ozCGJ 🗆 8ozCGJ 🗎 16ozCGJ 🗎 Sleeve (____) 🗆 EnCores® (____) 🗆 TerraCores® (____) 🗆 ____ 🗆 ___ Air: □ Tedlar™ □ Canister □ Sorbent Tube □ PUF □ _____ Other Matrix (______): □ ____ □ ___ Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G = Glass, J = Jar, P = Plastic, and Z = Ziploc/Resealable Bag Labeled/Checked by: Preservative: b = buffered, f = filtered, h = HCI, $n = HNO_3$, na = NaOH, $na_2 = Na_2S_2O_3$, $p = H_3PO_4$, $s = H_2SO_4$, u = ultra-pure, $x = Na_2SO_3+NaHSO_4$. H_2O , $znna = Zn (CH_3CO_2)_2 + NaOH$ Reviewed by

Page 39 of 39

2017-08-29 Revision

APPENDIX B

Laboratory Reports of Sample Results and Chain of Custody

Round 4 – December 11-12, 2018

EnviroSystems, Inc.
One Lafayette Road
P.O. Box 778
Hampton, N.H. 03843-0778
p 603 926 3345 • f 603 926 3521
envirosystems.com

Steve Clifton Underwood Engineers, Inc. 25 Vaughan Mall Portsmouth, NH 03801 PO Number: None Report Number: 31456 Date Received: 12/12/18 Date Reported: 12/27/18

Project: Piscataqua River

Attached please find results for analyses performed on samples received on 12/12/18 at 1200. Samples for total phenol analyses were subcontracted to Alpha Analytical of Westborough, MA. Data for subcontracted samples may be found in the report appendix.

Samples were received in acceptable condition, except where noted, and under chain of custody.

Instruments used in analysis were calibrated with the appropriate frequency and to the specifications of the referenced methods.

Analytes in blanks were below levels affecting sample results.

Matrix effects as monitored by matrix spike recovery or unusual physical properties were not apparent unless otherwise noted.

Accuracy and precision as monitored by laboratory control sample analyses were within acceptance limits unless otherwise noted.

Accreditations may be viewed at www.envirosystems.com.

The results presented in this report relate only to the samples described on the chain(s) of custody and sample receipt log(s), and are intended to be used only by the submittor.

EnviroSystems, Incorporated

Jason Hobbs - Technical Manager of Analytical Chemistry

Signature

nistry Date 01/04/19

Attachment Report

31456

Piscataqua River

SDG:

Sample ID:

PEASE_004

Water

Matrix: Sampled:

12/12/18 0000

| Parameter | | Result | | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---------------------------|-----------|--------|----|----------------|-----------|------------------|---------------------|-----------------------|
| Total suspended solids | 31456-004 | 19 | | 2 | mg/L | 12/17/18 1425 | 12/21/18 0830 | CA /SM 2540D |
| Total dissolved solids | 31456-013 | 1900 | | 5 | mg/L | 12/18/18 1510 | 12/20/18 1150 | CA /SM 2540C |
| Biochemical Oxygen Demand | 31456-001 | 7.8 | J2 | 5 | mg/L | 12/12/18 | 12/17/18 | CA /SM 5210 B |
| Ammonia-N | 31456-003 | 3.2 | | 0.1 | mg/L as N | 12/17/18 1400 | 12/17/18 1400 | JHW/SM 4500-NH3 G |
| Total Kjeldahl Nitrogen | 31456-008 | 4.6 | | 0.5 | mg/L as N | 12/18/18 0945 | 12/21/18 1000 | CA /SM 4500-N C |
| Total Nitrogen | 31456-008 | 7.02 | | 0.5 | mg/L as N | 12/27/18 | 12/27/18 | AM/Calculation |
| Nitrate plus nitrite-N | 31456-008 | 2.42 | | 0.1 | mg/L as N | 12/18/18 1200 | 12/18/18 1200 | JHW/SM 4500-NO3 F |
| Total phosphorus | 31456-011 | 31 | | 0.8 | mg/L | 12/17/18 1230 | 12/18/18 1150 | CA /SM 4500-P E |

Notes:

J2 = LCS %R below limit.

EnviroSystems, Inc.

603-926-3345

31456

Piscataqua River

SDG:

Sample ID: Matrix: Sampled: PEASE_004 Water

12/12/18 0845

Parameter Result Quant Units Date INIT/Method/Reference Date of Limit Prepared Analysis Turbidity 31456-014 2 0.2 NTU 12/13/18 1800 12/13/18 1800 JLH/SM 2130 B Oil and grease 31456-010 ND 12/13/18 1130 12/18/18 1300 ELJ/EPA 1664A mg/L 5

Notes:

ND = Not Detected

31456

SDG:

Sample ID:

Piscataqua River

PEASE_004DUP

Matrix:

Water

Sampled:

12/12/18 0000

| Parameter | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|-------------------------|-----------|--------|----------------|-----------|------------------|---------------------|-----------------------|
| Ammonia-N | 31456-006 | 3.2 | 0.1 | mg/L as N | 12/17/18 1400 | 12/17/18 1400 | JHW/SM 4500-NH3 G |
| Total Kjeldahl Nitrogen | 31456-009 | 5.1 | 0.5 | mg/L as N | 12/18/18 0945 | 12/21/18 1000 | CA /SM 4500-N C |
| Total Nitrogen | 31456-009 | 7.54 | 0.5 | mg/L as N | 12/27/18 | 12/27/18 | AM/Calculation |
| Nitrate plus nitrite-N | 31456-009 | 2.44 | 0.1 | mg/L as N | 12/18/18 1200 | 12/18/18 1200 | JHW/SM 4500-NO3 F |
| Total phosphorus | 31456-012 | 35 | 0.8 | mg/L | 12/17/18 1230 | 12/18/18 1150 | CA /SM 4500-P E |

Notes:

603-926-3345

31456

Piscataqua River

Sample ID:

Matrix:

NEW_004 Water

Sampled: 12/12/18 0000

| Parameter | | Result | | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---------------------------|-----------|--------|----|----------------|-----------|------------------|---------------------|-----------------------|
| Total suspended solids | 31456-023 | 27 | | 8 | mg/L | 12/17/18 1425 | 12/21/18 0830 | CA /SM 2540D |
| Total dissolved solids | 31456-032 | 1200 | | 5 | mg/L | 12/18/18 1510 | 12/20/18 1150 | CA /SM 2540C |
| Biochemical Oxygen Demand | 31456-020 | ND | J2 | 5 | mg/L | 12/12/18 | 12/17/18 | CA /SM 5210 B |
| Ammonia-N | 31456-024 | 0.65 | | 0.1 | mg/L as N | 12/17/18 1400 | 12/17/18 1400 | JHW/SM 4500-NH3 G |
| Total Kjeldahl Nitrogen | 31456-027 | 1.7 | | 1 | mg/L as N | 12/18/18 0945 | 12/21/18 1000 | CA /SM 4500-N C |
| Total Nitrogen | 31456-027 | 2.24 | | 1 | mg/L as N | 12/27/18 | 12/27/18 | AM/Calculation |
| Nitrate plus nitrite-N | 31456-027 | 0.54 | | 0.05 | mg/L as N | 12/18/18 1200 | 12/18/18 1200 | JHW/SM 4500-NO3 F |
| Total phosphorus | 31456-030 | 0.77 | | 0.4 | mg/L | 12/17/18 1230 | 12/18/18 1150 | CA /SM 4500-P E |

SDG:

Notes:

ND = Not Detected

J2 = LCS %R below limit.

603-926-3345

31456

Piscataqua River

SDG:

Units

Sample ID: Matrix:

NEW_004 Water

Sampled:

Parameter

12/12/18 0711

Turbidity Oil and grease

31456-033 31456-029 2.2 ND

Result

0,2 NTU 5 mg/L

Quant

Limit

Prepared

Date

INIT/Method/Reference Date of Analysis

12/13/18 1800 12/13/18 1800 JLH/SM 2130 B 12/13/18 1130 12/18/18 1300 ELJ/EPA 1664A

Notes:

ND = Not Detected

31456

SDG:

Piscataqua River

Sample ID: Matrix:

NEW_004DUP

Sampled:

Water 12/12/18 0000

| Parameter | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|-------------------------|-----------|--------|----------------|-----------|------------------|---------------------|-----------------------|
| Ammonia-N | 31456-025 | 0.66 | 0.1 | mg/L as N | 12/17/18 1400 | 12/17/18 1400 | JHW/SM 4500-NH3 G |
| Total Kjeldahl Nitrogen | 31456-028 | 2 | 0.5 | mg/L as N | 12/18/18 0945 | 12/21/18 1000 | CA /SM 4500-N C |
| Total Nitrogen | 31456-028 | 2.54 | 0.5 | mg/L as N | 12/27/18 | 12/27/18 | AM/Calculation |
| Nitrate plus nitrite-N | 31456-028 | 0.54 | 0.05 | mg/L as N | 12/18/18 1200 | 12/18/18 1200 | JHW/SM 4500-NO3 F |
| Total phosphorus | 31456-031 | 1.6 | 0.4 | mg/L | 12/17/18 1230 | 12/18/18 1150 | CA /SM 4500-P E |

31456

Piscataqua River

SDG:

Sample ID: Matrix:

RIVER_004

Water Sampled: 12/12/18

| Parameter | | Result | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|----------------------|-----------|--------|----------------|-------|------------------|---------------------|-----------------------|
| Temperature | 31456-060 | 14.3 | 0.05 | Units | 12/12/18 | 12/12/18 | MS/SM 2550B |
| Specific conductance | 31456-060 | 33000 | 0.01 | uS/cm | 12/12/18 | 12/12/18 | MS/SM 2510B |
| Dissolved Oxygen | 31456-060 | 9.87 | 0.1 | mg/L | 12/12/18 | 12/12/18 | MS/SM 4500-O-G |
| ρΗ | 31456-060 | 7.8 | 0.05 | Units | 12/12/18 | 12/12/18 | MS/SM 4500 H+ B |
| Conductivity | 31456-060 | 28000 | 0.01 | uS/cm | 12/12/18 | 12/12/18 | MS/SM 2510B |

Notes:

603-926-3345

31456

Piscataqua River

SDG:

Sample ID: Matrix:

RIVER_004 Water

Sampled:

12/12/18 1000

Parameter

Result Quant

Date Date of INIT/Method/Reference

Limit

Prepared

Units

Analysis.

Turbidity

31456-051

2.3

0.2 NTU 12/13/18 1800 12/13/18 1800 JLH/SM 2130 B

Report No:

31456

SDG:

Project:

Piscataqua River

Sample ID: Matrix: Sampled: RIVER_004 Water

12/12/18 1021

Parameter

Result

Quant Limit Units Date

Date of

INIT/Method/Reference

Prepared Analysis

Total suspended solids

31456-042

15

1 mg/L

12/17/18 1425 12/21/18 0830 CA /SM 2540D

31456

7.7

Piscataqua River

Sample ID: Matrix: RIVER_004

Water

Sampled:

12/12/18 1020

Parameter

Result

Quant Units Limit

SDG:

Date

Date of

INIT/Method/Reference

Prepared Analysis

Total dissolved solids

31456-050

21000

5 mg/L

12/18/18 1510 12/20/18 1150 CA /SM 2540C

31456

Piscataqua River

SDG:

Sample ID:

RIVER_004

Matrix:

Water

Sampled:

12/12/18 1024

Parameter

Result

Quant

Units

Date of

INIT/Method/Reference

Limit

Date Prepared

Analysis

Biochemical Oxygen Demand 31456-039

ND

5

J2

mg/L

12/12/18

12/17/18

CA /SM 5210 B

Notes:

ND = Not Detected J2 = LCS %R below limit.

31456

1456

i iojeou.

Piscataqua River

Sample ID: Matrix: Sampled: RIVER_004 Water

12/12/18 1020

Parameter

Result

Units

SDG:

Date

Date of

INIT/Method/Reference

Prepared Analysis

Oil and grease

31456-047

ND

5

Quant

Limit

mg/L

12/13/18 1130 12/18/18 1300 ELJ/EPA 1664A

Notes:

ND = Not Detected

31456

Piscataqua River

SDG:

Sample ID: Matrix: Sampled:

RIVER_004

Water

12/12/18 1032

Parameter

Result Quant Units

Date

Date of

INIT/Method/Reference

Limit Prepared Analysis

Ammonia-N

31456-043

ND

0.1 mg/L as N

12/17/18 1400 12/17/18 1400 JHW/SM 4500-NH3 G

Notes:

ND = Not Detected

31456

SDG:

Piscataqua River

Sample ID: Matrix: Sampled: RIVER_004

Water 12/12/18 1027

Parameter

Result

Quant Units Limit Date

Date of

INIT/Method/Reference

Prepared Analysis

Total phosphorus

31456-048

0.047

0.02

mg/L

12/17/18 1230 12/18/18 1150 CA /SM 4500-P E

31456

31456

SDG:

Sample ID:

Piscataqua River

Matrix:

Water

Sampled:

12/12/18 1032

Parameter

Result Quant Limit Units

Date

Date of

INIT/Method/Reference

Prepared Analysis

Ammonia-N

31456-044

ND

0.1 mg/L as N

12/17/18 1400 12/17/18 1400 JHW/SM 4500-NH3 G

Notes:

ND = Not Detected

31456

Piscataqua River

Sample ID:

RIVER_004 Water

Matrix: Sampled:

12/12/18 1024

| Parameter | | Result | | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference | |
|-------------------------|-----------|--------|---|----------------|-----------|------------------|---------------------|-----------------------|--|
| Total Kjeldahl Nitrogen | 31456-045 | 0.15 | J | 0.5 | mg/L as N | 12/18/18 0945 | 12/21/18 1000 | CA /SM 4500-N C | |
| Total Nitrogen | 31456-045 | 0.29 | | 0.05 | mg/L as N | 12/27/18 | 12/27/18 | AM/Calculation | |
| Nitrate plus nitrite-N | 31456-045 | 0.14 | | 0.05 | mg/L as N | 12/18/18 1200 | 12/18/18 1200 | JHW/SM 4500-NO3 F | |

SDG:

J = Result less than the sample quantitation limit but greater than MDL.

Report No:

31456

SDG:

Project:

Piscataqua River

Sample ID: Matrix:

RIVER_003DUP

Sampled:

Water 12/12/18 1025

| Parameter | | Result | | Quant Limit | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|--|------------------------|--------|---|----------------|------------------------|---------------------------|---------------------|-----------------------------------|
| Total Kjeldahl Nitrogen | 31456-046 | 0.43 | J | 0.5 | mg/L as N | 12/18/18 0945 12/27/18 | 12/21/18 1000 | CA /SM 4500-N C AM/Calculation |
| Total Nitrogen Nitrate plus nitrite-N | 31456-046 31456-046 | 0.57 | | 0.5 0.05 | mg/L as N mg/L as N | | | JHW/SM 4500-NO3 F |

Notes:

J = Result less than the sample quantitation limit but greater than MDL.

Report No:

31456

SDG:

Project:

Piscataqua River

Sample ID:

RIVER_003DUP

Matrix:

Water

Sampled:

12/12/18 1027

Parameter

Result

Quant Units Date

Date of

INIT/Method/Reference

Limit.

Prepared

Analysis

Total phosphorus

31456-049

0.038

0.02 mg/L

12/17/18 1230 12/18/18 1150 CA /SM 4500-P E

Lab Number: 31456-016 Sample Designation: PEASE_004 Date Sampled: 12/12/18 0845 Date Analyzed: 12/14/18 Matrix: Water

VOLATILE ORGANICS

Method Reference: EPA Method 624.

| | Concentration | Quantitation Limit |
|---------------------------|---------------|---|
| | (ug/L) | (ug/L) |
| acrolein | U | 10 |
| acrylonitrile | ŭ | 10 |
| dichlorodifluoromethane | ŭ | 2 |
| chloromethane | ŭ | 2 |
| vinyl chloride | ŭ | 2 |
| bromomethane | ŭ | 2 |
| chloroethane | ŭ | 2 |
| trichlorofluoromethane | ŭ | 2 |
| 1,1-dichloroethene | ŭ | 2 |
| methylene chloride | ŭ | 2 |
| trans-1,2-dichloroethene | ŭ | 2 |
| 1,1-dichloroethane | ŭ | 2 |
| cis-1,2-dichloroethene | Ü | 2 |
| chloroform | 25 | 2 |
| 1,1,1-trichloroethane | Ü | 2 |
| carbon tetrachloride | U | 2 |
| benzene | U | 2 |
| 1.2-dichloroethane | U | 2 |
| trichloroethene | U | 2 |
| 1,2-dichloropropane | U | 2 |
| dibromomethane | U | 222222222222222222222222222222222222222 |
| bromodichloromethane | 14 | 2 |
| cis-1,3-dichloropropene | U | 2 |
| 2-chloroethylvinylether | U | 4 |
| toluene | U | 2 |
| trans-1,3-dichloropropene | U | 2 |
| 1,1,2-trichloroethane | U | 2 |
| tetrachloroethene | U | 2 |
| 1,3-dichloropropane | u | 2 |
| dibromochloromethane | 6.6 | 2 |
| chlorobenzene | U | 2 |
| ethylbenzene | U | 2 |
| bromoform | U | 2 |
| 1,1,2,2-tetrachloroethane | U | 2 |
| 1,2-dichlorobenzene | U | 2 |
| 1,3-dichlorobenzene | U | 2 |
| 1,4-dichlorobenzene | U | 2 |
| SURROGATE STANDARDS | % | Acceptance |
| | Recovery | Limits |
| dibromofluoromethane | 86 | 70 - 130 |
| toluene-d8 | 96 | 70 - 130 |

| SURRUGATE STANDARDS | Recovery | Limits | |
|----------------------|----------|----------|--|
| dibromofluoromethane | 86 | 70 - 130 | |
| toluene-d8 | 96 | 70 - 130 | |
| 4-bromofluorobenzene | 98 | 70 - 130 | |
| | | | |

U = Below quantitation limit

Page of

 Lab Number:
 31456-035

 Sample Designation:
 NEW_004

 Date Sampled:
 12/12/18 0711

 Date Analyzed:
 12/14/18

 Matrix:
 Water

VOLATILE ORGANICS

Method Reference: EPA Method 624.

| | Concentration | Quantitation Limit |
|---------------------------|---------------|--------------------|
| | (ug/L) | (ug/L) |
| acrolein | U | 10 |
| acrylonitrile | ŭ | 10 |
| dichlorodifluoromethane | ŭ | 2 |
| chloromethane | Ü | 2 |
| vinyl chloride | ŭ | 2 |
| bromomethane | ŭ | 2 |
| chloroethane | ŭ | 2 |
| trichlorofluoromethane | ŭ | 2 |
| 1,1-dichloroethene | ŭ | 2 |
| methylene chloride | Ü | 2 |
| trans-1,2-dichloroethene | ŭ | 2 |
| | ΰ | |
| 1,1-dichloroethane | Ü | 2 2 2 2 |
| cis-1,2-dichloroethene | 18 | á |
| chloroform | 7,5 | 5 |
| 1,1,1-trichloroethane | Ü | 2 |
| carbon tetrachloride | 42.1 | 2 |
| benzene | Ü | 2 |
| 1,2-dichloroethane | Ü | 2 |
| trichloroethene | u | 2 2 2 |
| 1,2-dichloropropane | Ü | 2 |
| dibromomethane | u | 2 |
| bromodichloromethane | 22 | |
| cis-1,3-dichloropropene | U | 2 4 |
| 2-chloroethylvinylether | ŭ | |
| toluene | U | 2 |
| trans-1,3-dichloropropene | U | 2 |
| 1,1,2-trichloroethane | U | 2 |
| tetrachloroethene | U | 2 |
| 1,3-dichloropropane | U | 2 2 |
| dibromochloromethane | 12 | |
| chlorobenzene | Ü | 2 |
| ethylbenzene | U | 2 |
| bromoform | 2.3 | 2 |
| 1,1,2,2-tetrachloroethane | U | 2 |
| 1,2-dichlorobenzene | U | 2 2 2 |
| 1,3-dichlorobenzene | U | 2 |
| 1,4-dichlorobenzene | u | 2 |
| SURROGATE STANDARDS | 8 % | Acceptance |
| | Recovery | Limits |
| dibromofluoromethane | 88 | 70 - 130 |
| toluene-d8 | 94 | 70 - 130 |
| 4-bromofluorobenzene | 100 | 70 - 130 |
| | | |

Page of ESI

U = Below quantitation limit

Lab Number: 31456-054 Sample Designation: RIVER_004 12/12/18 1034 Date Sampled: Date Analyzed: 12/14/18 Matrix: Water

VOLATILE ORGANICS

Method Reference: EPA Method 624.

| | Concentration | Quantitation Limit |
|------------------------------------|---------------|---------------------------------|
| | (ug/L) | (ug/L) |
| acrolein | U | 10 |
| acrylonitrile | ŭ | 10 |
| dichlorodifluoromethane | ŭ | 2 |
| chloromethane | Ŭ | 2 |
| vinyl chloride | ŭ | 2 |
| bromomethane | Ü | 2 |
| chloroethane | ű | 2 |
| trichlorofluoromethane | Ü | 2 |
| | Ü | 2 |
| 1,1-dichloroethene | ŭ | 2 |
| methylene chloride | ŭ | 2 |
| trans-1,2-dichloroethene | ~ | |
| 1,1-dichloroethane | Ü | 2 |
| cis-1,2-dichloroethene | Ü | 2 |
| chloroform | U | 2 |
| 1,1,1-trichloroethane | U | 2 |
| carbon tetrachloride | U | 2 |
| benzene | U | 2 |
| 1,2-dichloroethane | U | 2 |
| trichloroethene | u | 2 |
| 1,2-dichloropropane | Ü | 2 |
| dibromomethane | U | 2 |
| bromodichloromethane | U | 2 |
| cis-1,3-dichloropropene | U | 2 |
| 2-chloroethylvinylether | υ | 4 |
| toluene | U | 2 |
| trans-1,3-dichloropropene | U | 2 |
| 1,1,2-trichloroethane | U | 2 |
| tetrachloroethene | U | 2 |
| 1,3-dichloropropane | u | 2 |
| dibromochloromethane | U | 2 |
| chlorobenzene | U | 2 |
| ethylbenzene | U. | 2 |
| bromoform | U | 2 |
| 1,1,2,2-tetrachloroethane | U | 2 2 2 2 2 2 2 |
| 1,2-dichlorobenzene | U | 2 |
| 1,3-dichlorobenzene | U | 2 |
| 1,4-dichlorobenzene | U | 2 |
| | | |
| SURROGATE STANDARDS | % | Acceptance |
| | Recovery | Limits |
| W. Co. Targette Co. | 88 | 70 - 130 |
| dibromofluoromethane | | |
| dibromofluoromethane toluene-d8 | 96 | 70 - 130 |

| dibromofluoromethane | 88 | 70 - 130 |
|----------------------|----|----------|
| toluene-d8 | 96 | 70 - 130 |
| 4-bromofluorobenzene | 98 | 70 - 130 |

U = Below quantitation limit

Page of

Lab Number: 31456-055
Sample Designation: RIVER_004TB
Date Sampled: 12/12/18 1034
Date Analyzed: 12/14/18
Matrix: Water

VOLATILE ORGANICS

Method Reference: EPA Method 624.

| | Concentration | Quantitation Limit |
|---------------------------|---------------|--|
| | (ug/L) | (ug/L) |
| acrolein | U | 10 |
| acrylonitrile | Ũ | 10 |
| dichlorodifluoromethane | Ũ | 2 |
| chloromethane | Ü | 2 |
| vinyl chloride | ŭ | 2 |
| bromomethane | ŭ | 2 |
| chloroethane | ŭ | 2 |
| trichlorofluoromethane | ŭ | 2 2 2 2 2 2 2 2 2 2 |
| | ŭ | 2 |
| 1,1-dichloroethene | 260 | 2 |
| methylene chloride | U | 2 |
| trans-1,2-dichloroethene | 17. | 2 |
| 1,1-dichloroethane | U | 2 |
| cis-1,2-dichloroethene | | 2 |
| chloroform | U | 2 |
| 1,1,1-trichloroethane | Ü | 2 |
| carbon tetrachloride | U | 2 |
| benzene | U | 2 |
| 1,2-dichloroethane | U | 2 |
| trichloroethene | U | 2 |
| 1,2-dichloropropane | U | 2 |
| dibromomethane | U | 2 |
| bromodichloromethane | U | 2 |
| cis-1,3-dichloropropene | U | 2 |
| 2-chloroethylvinylether | U | 4 |
| toluene | U | 2 |
| trans-1,3-dichloropropene | U | 2 |
| 1,1,2-trichloroethane | U | 2 |
| tetrachloroethene | U | 2 |
| 1,3-dichloropropane | U | 2 |
| dibromochloromethane | U | 2 |
| chlorobenzene | U | 2 2 |
| ethylbenzene | U | |
| bromoform | U | 2 |
| 1,1,2,2-tetrachloroethane | U | 2 |
| 1,2-dichlorobenzene | U | 2 |
| 1,3-dichlorobenzene | U | 2 |
| 1,4-dichlorobenzene | U | 2 |
| SURROGATE STANDARDS | % | Acceptance |
| | Recovery | Limits |
| dibromofluoromethane | 88 | 70 - 130 |
| toluene-d8 | 98 | 70 - 130 |
| 4-bromofluorobenzene | 98 | 70 - 130 |
| | | |

U = Below quantitation limit

Page of ESI

Lab Number: 31456-018
Sample Designation: PEASE_004
Date Sampled: 12/12/18
Date Extracted: 12/14/18
Date Analyzed: 12/21/18
Matrix: Water

SEMIVOLATILE ORGANICS Method Reference: EPA 625.

| | Concentration | Reporting Limit | | Concentration | Reporting Limit |
|----------------------------------|---------------|-----------------|------------------------------------|---------------|-----------------|
| | (ug/L) | (ug/L) | | (ug/L) | (ug/L) |
| N-nitrosodimethylamine | U | 5 | acenaphthene | U | 3 |
| phenol | U | 3 | 2,4-dinitrophenol | U | 11 |
| 2-chlorophenol | U | 3 | 4-nitrophenol | U | 11 |
| bis(2-chloroethyl)ether | U | 3 | fluorene | U | 3 |
| 1,3-dichlorobenzene | U | 3 | 4-chlorophenyl-phenylether | 0 | 3 |
| 1,4-dichlorobenzene | U | 3 | diethylphthalate | U | 3 |
| 1,2-dichlorobenzene | U | 5 | 4,6-dinitro-2-methylphenol | U | 11 |
| 2-methylphenol (m-cresol) | U | 3 | N-nitrosodiphenylamine | U | 5 |
| bis(2-chloroisopropyl)ether | U | 3 | 1,2-diphenylhydrazine (azobenzene) | U | 3 |
| hexachloroethane | U | 3 | 4-bromophenyl-phenylether | U | 3 |
| N-nitroso-di-n-propylamine | Ü | .5 | hexachlorobenzene | U | 3 |
| 3- and 4-methylphenol (p-cresol) | U | 3 | pentachlorophenol | U | 3 |
| nitrobenzene | Ü | 3 | phenanthrene | U | 3 |
| Isophorone | U | 3 | anthracene | U | 3 |
| 2-nitrophenol | U | 3 | di-n-butylphthalate | 21, B | 3 |
| 2,4-dimethylphenol | U | 3 | fluoranthene | U | 3 |
| bis(2-chloroethoxy)methane | U | 3 | benzidine | U | 44 |
| 2,4-dichlorophenol | U | 3 | pyrene | U | 3 |
| 1,2,4-trichlorobenzene | U | 5 | butylbenzylphthalate | U | 3 |
| naphthalene | U | 3 | benzo(a)anthracene | U | 3 |
| hexachloro-1,3-butadiene | U | 3 | chrysene | U | 3 |
| 4-chloro-3-methylphenol | U | 3 | 3,3'-dichlorobenzidine | U | 22 |
| hexachlorocyclopentadiene | U | 5 | bis(2-ethylhexyl)phthalate | U | 3 |
| 2,4,5-trichlorophenol | U | 3 | di-n-octylphthalate | U | 3 |
| 2,4,6-trichlorophenol | U | 3 | benzo(b)fluoranthene | U | 5 |
| 2-chloronaphthalene | U, J2 | 5 | benzo(k)fluoranthene | U | 5 |
| acenaphthylene | U | 3 | benzo(a)pyrene | U | 3 |
| dimethylphthalate | U | 3 | indeno(1,2,3-cd)pyrene | Ú | 3 |
| 2,6-dinitrotoluene | U | 3 | dibenzo(a,h)anthracene | U | 3 |
| 2,4-dinitrotoluene | U | 3 | benzo(g,h,i)perylene | U | 3 |

SURROGATE STANDARDS

| COLLING OF THE CHARLES | | | | | |
|------------------------|----------|-----------------|------------------|----------|-------------------|
| | Recovery | Acceptance Limi | ts | Recovery | Acceptance Limits |
| | (%) | (%) | | (%) | (%) |
| 2-fluorophenol | 22, J17 | 25-175 | nitrobenzene-d5 | 36 | 22-178 |
| phenol-d5 | 20, J17 | 24-176 | 2-fluorobiphenyl | 33, J17 | 38-162 |
| 2,4,6-tribromophenol | 60 | 24-176 | terphenyl-d14 | 59 | 53-147 |

U = Below quantitation limit

B = di-n-butylpthalate was found in the blank at a concentration of 6.8 ug/L.

EnviroSystems, Inc. One Lafayette Road P.O. Box 778 Hampton, NH 03842-0788

J2 = LCS %R below limit. No sample remianing.

J17 = SUR %R below limit.

Page of ESI

603-926-3345 fax 603-926-3521

www.envirosystems.com

Lab Number: 31456-037
Sample Designation: NEW_004
Date Sampled: 12/12/18
Date Extracted: 12/14/18
Date Analyzed: 12/21/18
Matrix: Water

SEMIVOLATILE ORGANICS Method Reference: EPA 625.

| | Concentration | Reporting Limit | | Concentration | Reporting Limit |
|----------------------------------|---------------|-----------------|------------------------------------|---------------|-----------------|
| | (ug/L) | (ug/L) | | (ug/L) | (ug/L) |
| N-nitrosodimethylamine | U | 5 | acenaphthene | U | 3 |
| phenol | 0 | 3 | 2,4-dinitrophenol | U | - 66 |
| 2-chlorophenol | U | 3 | 4-nitrophenol | U | 11 |
| bis(2-chloroethyl)ether | U | 3 | fluorene | U | 3 |
| 1,3-dichlorobenzene | U | 3 | 4-chlorophenyl-phenylether | U | 3 |
| 1,4-dichlorobenzene | Ú | 3 | diethylphthalate | U | 3 |
| 1,2-dichlorobenzene | U | 5 | 4,6-dinitro-2-methylphenol | U | 11 |
| 2-methylphenol (m-cresol) | U | 3 | N-nitrosodiphenylamine | U | 5 |
| bis(2-chloroisopropyl)ether | U | 3 | 1,2-diphenylhydrazine (azobenzene) | U | 3 |
| hexachloroethane | Ü | 3 | 4-bromophenyl-phenylether | U | 3 |
| N-nitroso-di-n-propylamine | U | 5 | hexachlorobenzene | U | 3 |
| 3- and 4-methylphenol (p-cresol) | Ų | 3 | pentachlorophenol | U | 3 |
| nitrobenzene | U | 3 | phenanthrene | u | 3 |
| isophorone | U | 3 | anthracene | Ü | 3 |
| 2-nitrophenol | U | 3 | di-n-butylphthalate | 19, B | 3 |
| 2,4-dimethylphenol | U | 3 | fluoranthene | U | 3 |
| bis(2-chloroethoxy)methane | U | 3 | benzidine | U | 43 |
| 2,4-dichlorophenol | U | 3 | pyrene | U | 3 |
| 1,2,4-trichlorobenzene | U | 5 | butylbenzylphthalate | U | 3 |
| naphthalene | Ü | 3 | benzo(a)anthracene | U | 3 |
| hexachloro-1,3-butadiene | U | 3 | chrysene | U | 3 |
| 4-chloro-3-methylphenol | U | 3 | 3,3'-dichlorobenzidine | U | 22 |
| hexachlorocyclopentadiene | U | 5 | bis(2-ethylhexyl)phthalate | U | 3 |
| 2,4,5-trichlorophenol | U | 3 | di-n-octylphthalate | U | 3 |
| 2,4,6-trichlorophenol | U | 3 | benzo(b)fluoranthene | U | 5 |
| 2-chloronaphthalene | U, J2 | 5 | benzo(k)fluoranthene | U | 5 |
| acenaphthylene | U | 3 | benzo(a)pyrene | U | 3 |
| dimethylphthalate | U | 3 | indeno(1,2,3-cd)pyrene | U | 3 |
| 2,6-dinitrotoluene | U | 3 | dibenzo(a,h)anthracene | Ü | 3 |
| 2,4-dinitrotoluene | U | 3 | benzo(g,h,i)perylene | U | 3 |

| SURROGATE STANDARDS | Recovery | Acceptance Limit | s | Recovery | Acceptance Limits |
|---------------------|----------|------------------|------------------|----------|-------------------|
| | (%) | (%) | | (%) | (%) |
| 2-fluorophenol | 23, J17 | 25-175 | nitrobenzene-d5 | 43 | 22-178 |
| phenol-d5 | 22, J17 | 24-176 | 2-fluorobiphenyl | 41 | 38-162 |

24-176

U = Below quantitation limit

2,4,6-tribromophenol

B = di-n-butylpthalate was found in the blank at a concentration of 6.8 ug/L,

82

J2 = LCS %R below limit. No sample remaining.

J17 = SUR %R below limit.

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53-147

terphenyl-d14

Lab Number: 31456-058
Sample Designation: RIVER_004
Date Sampled: 12/12/18
Date Extracted: 12/14/18
Date Analyzed: 12/21/18
Matrix: Water

SEMIVOLATILE ORGANICS Method Reference: EPA 625.

| | Concentration | Reporting Limit | | Concentration | Reporting Limit |
|----------------------------------|---------------|-----------------|------------------------------------|---------------|-----------------|
| | (ug/L) | (ug/L) | | (ug/L) | (ug/L) |
| N-nitrosodimethylamine | U | 7 | acenaphthene | U | 3 |
| phenol | U | 3 | 2,4-dinitrophenol | U | 13 |
| 2-chlorophenol | U | 3 | 4-nitrophenol | U | 13 |
| bis(2-chloroethyl)ether | υ | 3 | fluorene | U | 3 |
| 1,3-dichlorobenzene | u | 3 | 4-chlorophenyl-phenylether | U | 3 |
| 1,4-dichlorobenzene | Ü | 3 | diethylphthalate | U | 3 |
| 1,2-dichlorobenzene | U | 7 | 4,6-dinitro-2-methylphenol | υ | 13 |
| 2-methylphenol (m-cresol) | Ü | 3 | N-nitrosodiphenylamine | U | 7 |
| bis(2-chloroisopropyl)ether | U | 3 | 1,2-diphenylhydrazine (azobenzene) | U | 3 |
| hexachloroethane | U | 3 | 4-bromophenyl-phenylether | U | 3 |
| N-nitroso-di-n-propylamine | U | 7 | hexachlorobenzene | U | 3 |
| 3- and 4-methylphenol (p-cresol) | U | 3 | pentachlorophenol | U | 3 |
| nitrobenzene | U | 3 | phenanthrene | U | 3 |
| isophorone | Ū | 3 | anthracene | U | 3 |
| 2-nitrophenol | U | 3 | di-n-butylphthalate | 25, B | 3 |
| 2,4-dimethylphenol | U | 3 | fluoranthene | Ü | 3 |
| bis(2-chloroethoxy)methane | U | 3 | benzidine | U | 53 |
| 2,4-dichlorophenol | U | 3 | pyrene | U | 3 |
| 1,2,4-trichlorobenzene | U | 7 | butylbenzylphthalate | u | 3 |
| naphthalene | U | 3 | benzo(a)anthracene | u | 3 |
| hexachloro-1,3-butadiene | Ü | 3 | chrysene | Ü | 3 |
| 4-chloro-3-methylphenol | U | 3 | 3,3'-dichlorobenzidine | Ü | 26 |
| hexachlorocyclopentadiene | U | 7 | bis(2-ethylhexyl)phthalate | U | 3 |
| 2,4,5-trichlorophenol | U | 3 | di-n-octylphthalate | U | 3 |
| 2,4,6-trichlorophenol | u. | 3 | benzo(b)fluoranthene | u | 7 |
| 2-chloronaphthalene | U, J2, J5 | 7 | benzo(k)fluoranthene | U | 7 |
| acenaphthylene | U | 3 | benzo(a)pyrene | U | 3 |
| dimethylphthalate | U | 3 | indeno(1,2,3-cd)pyrene | Ú | 3 |
| 2,6-dinitrotoluene | u. | 3 | dibenzo(a,h)anthracene | Q. | 3 |
| 2,4-dinitrotoluene | U | 3 | benzo(g,h,i)perylene | U | 3 |

| 12 | IRRO | GATE | ST | AND | ARDS |
|----|------|------|----|-----|------|

| COURTOON E OF MIDNIES | Recovery | Acceptance Limit | ts | Recovery | Acceptance Limits |
|-----------------------|----------|------------------|------------------|----------|-------------------|
| | (%) | (%) | | (%) | (%) |
| 2-fluorophenol | 34 | 25-175 | nitrobenzene-d5 | 44 | 22-178 |
| phenol-d5 | 41 | 24-176 | 2-fluorobiphenyl | 42 | 38-162 |
| 2,4,6-tribromophenol | 62 | 24-176 | terphenyl-d14 | 64 | 53-147 |

U = Below quantitation limit

B = di-n-butylpthalate was found in the blank at a concentration of 6.8 ug/L.

J2 = LCS %R below limit. No sample remaining.

J5 = MS %R below limit.

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Lab Number: 31456-059
Sample Designation: RIVER_004TB
Date Sampled: 12/12/18
Date Extracted: 12/14/18
Date Analyzed: 12/21/18
Matrix: Water

SEMIVOLATILE ORGANICS Method Reference: EPA 625.

| | Concentration | Reporting Limit | | Concentration | Reporting Limit |
|----------------------------------|---------------|-----------------|------------------------------------|---------------|-----------------|
| | (ug/L) | (ug/L) | | (ug/L) | (ug/L) |
| N-nitrosodimethylamine | U | 6 | acenaphthene | U | 3 |
| phenol | U | 3 | 2,4-dinitrophenol | U | 12 |
| 2-chlorophenol | U | 3 | 4-nitrophenol | U | 12 |
| bis(2-chloroethyl)ether | U | 3 | fluorene | U | 3 |
| 1,3-dichlorobenzene | U | 3 | 4-chlorophenyl-phenylether | U | 3 |
| 1,4-dichlorobenzene | U | 3 | diethylphthalate | U | 3 |
| 1,2-dichlorobenzene | υ | 6 | 4,6-dinitro-2-methylphenol | U | 12 |
| 2-methylphenol (m-cresol) | U | 3 | N-nitrosodiphenylamine | U | 6 |
| bis(2-chloroisopropyl)ether | U | 3 | 1,2-diphenylhydrazine (azobenzene) | U | 3 |
| hexachloroethane | U | 3 | 4-bromophenyl-phenylether | U | 3 |
| N-nitroso-di-n-propylamine | U | 6 | hexachlorobenzene | U | 3 |
| 3- and 4-methylphenol (p-cresol) | u | 3 | pentachlorophenol | U | 3 |
| nitrobenzene | U | 3 | phenanthrene | U | 3 |
| isophorone | U | 3 | anthracene | U | 3 |
| 2-nitrophenol | U | 3 | di-n-butylphthalate | 8.5, B | 3 |
| 2,4-dimethylphenol | U | 3 | fluoranthene | U | 3 |
| bis(2-chloroethoxy)methane | U | 3 | benzidine | U | 47 |
| 2,4-dichlorophenol | U | 3 | pyrene | U | 3 |
| 1,2,4-trichlorobenzene | U | 6 | butylbenzylphthalate | U | 3 |
| naphthalene | U | 3 | benzo(a)anthracene | U | 3 |
| hexachloro-1,3-butadiene | υ | 3 | chrysene | Ù. | 3 |
| 4-chloro-3-methylphenol | U | 3 | 3,3'-dichlorobenzidine | U | 24 |
| hexachlorocyclopentadiene | U | 6 | bis(2-ethylhexyl)phthalate | U | 3 |
| 2,4,5-trichlorophenol | U | 3 | di-n-octylphthalate | U | 3 |
| 2,4,6-trichlorophenol | U | 3 | benzo(b)fluoranthene | U | 6 |
| 2-chloronaphthalene | U, J2 | 6 | benzo(k)fluoranthene | U | 6 |
| acenaphthylene | U | 3 | benzo(a)pyrene | U | 3 |
| dimethylphthalate | U | 3 | indeno(1,2,3-cd)pyrene | U | 3 |
| 2,6-dinitrotoluene | U | 3 | dibenzo(a,h)anthracene | U | 3 |
| 2,4-dinitrotoluene | U | 3 | benzo(g.h.i)perylene | ,U | 3 |

SURROGATE STANDARDS

| | Recovery | Acceptance Limits | | Recovery | Acceptance Limits |
|----------------------|----------|-------------------|------------------|----------|-------------------|
| | (%) | (%) | | (%) | (%) |
| 2-fluorophenol | 41 | 25-175 | nitrobenzene-d5 | 62 | 22-178 |
| phenol-d5 | 38 | 24-176 | 2-fluorobiphenyl | 65 | 38-162 |
| 2,4,6-tribromophenol | 92 | 24-176 | terphenyl-d14 | 87 | 53-147 |

U = Below quantitation limit

B = di-n-butylpthalate was found in the blank at a concentration of 6.8 ug/L.

J2 = LCS %R below limit.

Page of ESI

BACTERIAL ANALYSIS REPORT

ESI STUDY No .: 31456

Client: **Underwood Engineers**

Sample Receipt: 12/12/18 1200

Fecal Coliform Method: SM 9222D

| Sample | Lab ID | Sample C | ollection | Sample A | nalysis | Result | |
|----------------|-----------|----------|-----------|----------|---------|-------------|---------|
| Identification | Number | Date | Time | Date | Time | (CFU/100mL) | Analyst |
| PEASE_004 | 31456-003 | 12/12/18 | 0845 | 12/12/18 | 1456 | 1 | MW |
| NEW_004 | 31456-022 | 12/12/18 | 0711 | 12/12/18 | 1459 | <2 | MW |
| RIVER_004 | 31456-041 | 12/12/18 | 1033 | 12/12/18 | 1456 | 20 | MW |

Method: EPA 1600 Enterococcus

| Sample | Lab ID | Sample C | ollection | Sample A | nalysis | Result | Actions |
|----------------|-----------|----------|-----------|----------|---------|-------------|---------|
| Identification | Number | Date | Time | Date | Time | (CFU/100mL) | Analyst |
| PEASE_004 | 31456-002 | 12/12/18 | 0845 | 12/12/18 | 1436 | 40 | MW |
| NEW_004 | 31456-021 | 12/12/18 | 0711 | 12/12/18 | 1439 | 69 | MW |
| RIVER_004 | 31456-040 | 12/12/18 | 1033 | 12/12/18 | 1436 | 13 | MW |

Effluent Chemistry

| Sample Number | Total Residual Chlorine (mg/L) |
|---------------|--------------------------------|
| 31456-002 | 0.0 |
| 31456-003 | 0.0 |
| 31456-021 | 0.0 |
| 31456-022 | 0.0 |
| 31456-040 | 0.0 |
| 31456-041 | 0.0 |

APHA. 2012. Standard Methods for the Examination of Water and Wastewater, 22nd Edition. Washington D.C. Analytical Methods:

U.S. Environmental Protection Agency Office of Water (4303T). 2003. Method 1600: Membrane Filter Test for Enterococci in Water. Washington D.C.

31456

AND THE RESERVE OF THE PERSON

SDG:

Sample ID: Matrix: PEASE_004 Water

Piscataqua River

Sampled: 12/12/18 0000

| Parameter | | Result | True | Percent | Units | Date | Date of | INIT/Method/Reference |
|---------------------------|------|--------|-------|--------------|-------------------|---------------|---------------|-----------------------|
| | | | Value | Recovery | | Prepared | Analysis | |
| Total Suspended Solids | PB | ND | 0 | ND | mg/L | 12/17/18 1425 | 12/21/18 0830 | SM 2540D |
| Total Suspended Solids | LCS | 10.1 | 10 | 102%R | mg/L | 12/17/18 1425 | 12/21/18 0830 | SM 2540D |
| Total Suspended Solids | LCSD | 9.6 | 10 | 100%R, 5%RPD | mg/L | 12/17/18 1425 | 12/21/18 0830 | SM 2540D |
| Total dissolved Solids | PB | ND | 0 | ND | mg/L | 12/18/18 1510 | 12/20/18 1150 | SM 2540C |
| Total dissolved Solids | LCS | 478 | 500 | 96%R | mg/L | 12/18/18 1510 | 12/20/18 1150 | SM 2540C |
| Total dissolved Solids | LCSD | 516 | 500 | 103%R, 8%RPD | mg/L | 12/18/18 1510 | 12/20/18 1150 | SM 2540C |
| Total dissolved Solids | S1D | 21534 | | 2%RPD | mg/L | 12/18/18 1510 | 12/20/18 1150 | SM 2540C |
| Total dissolved Solids | S1S | 22375 | 250 | SNR | mg/L | 12/18/18 1510 | 12/20/18 1150 | SM 2540C |
| Biochemical Oxygen Demand | PBA | ND | D | | mg/L DO depletion | 12/12/18 | 12/17/18 | SM 5210 B |
| Biochemical Oxygen Demand | | ND | 0 | | mg/L DO depletion | 12/12/18 | 12/17/18 | SM 5210 B |
| Biochemical Oxygen Demand | LCS | 129 | 198 | 65%R | mg/L DO depletion | 12/12/18 | 12/17/18 | SM 5210 B |
| Biochemical Oxygen Demand | LCSD | 136 | 198 | 69%R | mg/L DO depletion | 12/12/18 | 12/17/18 | SM 5210 B |
| Biochemical Oxygen Demand | | 135 | 198 | 68%R, 2.3%RR | mg/L DO depletion | 12/12/18 | 12/17/18 | SM 5210 B |
| Ammonia-N | PB | ND | 0 | | mg/L as N | 12/17/18 1400 | 12/17/18 1400 | SM 4500-NH3 G |
| Ammonia-N | LCS | 10.2 | 10 | 102%R | mg/L as N | 12/17/18 1400 | 12/17/18 1400 | SM 4500-NH3 G |
| Ammonia-N | LCS | 10.3 | 10 | 103%R, 1%RPD | mg/L as N | 12/17/18 1400 | 12/17/18 1400 | SM 4500-NH3 G |
| Ammonia-N | S1D | 3.2 | | 0%RPD | mg/L as N | 12/17/18 1400 | 12/17/18 1400 | SM 4500-NH3 G |
| Ammonia-N | S1S | 12.7 | 10 | 95%R | mg/L as N | 12/17/18 1400 | 12/17/18 1400 | SM 4500-NH3 G |
| Total Kjeldahl Nitrogen | РВ | ND | 0 | | mg/L as N | 12/18/18 0945 | 12/21/18 1000 | SM 4500-N C |
| Total Kjeldahl Nitrogen | LCS | 9.6 | 10 | 96%R | mg/L as N | 12/18/18 0945 | 12/21/18 1000 | SM 4500-N C |
| Total Kjeldahl Nitrogen | LCS | 9.9 | 10 | 99%R, 3%RPD | mg/L as N | 12/18/18 0945 | 12/21/18 1000 | SM 4500-N C |
| Nitrate plus nitrite-N | PB | ND | | | mg/L as N | 12/18/18 1200 | 12/18/18 1200 | SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCS | 1.0 | 9 | 100%R | mg/L as N | 12/18/18 1200 | 12/18/18 1200 | SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCSD | 1.0 | 1 | 100%R, 0%RPD | mg/L as N | 12/18/18 1200 | 12/18/18 1200 | SM 4500-NO3 F |
| Total phosphorus | PB | ND | 0 | ND | mg/L | 12/18/18 1150 | 12/18/18 1150 | SM 4500-P E |
| Total phosphorus | LCS | 0.5 | 4 | 100%R | mg/L | 12/17/18 1230 | 12/18/18 1150 | SM 4500-P E |
| Total phosphorus | LCSD | 0.5 | 4 | 102%R, 2%RPD | mg/L | 12/17/18 1230 | 12/18/18 1150 | SM 4500-P E |
| Total phosphorus | S1D | 31.8 | | 3%RPD | mg/L | 12/17/18 1230 | 12/17/18 1230 | SM 4500-P E |
| Total phosphorus | SIS | 51.6 | 20 | 104%R | mg/L | 12/17/18 1230 | 12/17/18 1230 | SM 4500-P E |
| | | | | | | | | |

Notes:

31456

Piscataqua River

SDG:

Sample ID: Matrix:

PEASE_004

Water

Sampled: 12/12/18 0845

| Parameter | | Result | True | Percent | Units | Date | Date of | INIT/Method/Reference | |
|----------------|------|--------|-------|-------------|-------|---------------|---------------|------------------------|--|
| T dramater | | nesur. | Value | Recovery | Omia | Prepared | Analysis | NAT TWICE HOUT RESERVE | |
| Oil and grease | РВ | ND | | | mg/L | 12/13/18 1130 | 12/18/18 1300 | EPA 1664A | |
| Oil and grease | LCS | 43 | 40 | 108%R | mg/L | 12/13/18 1130 | 12/18/18 1300 | EPA 1664A | |
| Oil and grease | LCSD | 42 | 40 | 105%R, 3%RR | mg/L | 12/13/18 1130 | 12/18/18 1300 | EPA 1664A | |
| Oil and grease | SIMS | 44 | 40 | 108%R | mg/L | 12/13/18 1130 | 12/18/18 1300 | EPA 1664A | |
| | | | | | | | | | |

Notes:

31456

Piscataqua River

Sample ID: Matrix:

PEASE_004DUP

Water

Sampled:

12/12/18 0000

| Parameter | | Result | True Value | Percent Recovery | Units | Date Prepared | Date of Analysis | iNIT/Method/Reference |
|-------------------------|------|--------|---------------|---------------------|-----------|------------------|---------------------|-----------------------|
| Ammonia-N | РВ | ND | 0 | | mg/L as N | 12/17/18 1400 | 12/17/18 1400 | SM 4500-NH3 G |
| Ammonia-N | LCS | 10.2 | 10 | 102%R | mg/L as N | 12/17/18 1400 | 12/17/18 1400 | SM 4500-NH3 G |
| Ammonia-N | LCS | 10.3 | 10 | 103%R, 1%RPD | mg/L as N | 12/17/18 1400 | 12/17/18 1400 | SM 4500-NH3 G |
| Ammonia-N | SID | 3.2 | | 0%RPD | mg/L as N | 12/17/18 1400 | 12/17/18 1400 | SM 4500-NH3 G |
| Ammonia-N | SIS | 12.7 | 10 | 95%R | mg/L as N | 12/17/18 1400 | 12/17/18 1400 | SM 4500-NH3 G |
| Total Kjeldahl Nitrogen | PB | ND | o | | mg/L as N | 12/18/18 0945 | 12/21/18 1000 | SM 4500-N C |
| Total Kjeldahl Nitrogen | LCS | 9.6 | 10 | 96%R | mg/L as N | 12/18/18 0945 | 12/21/18 1000 | SM 4500-N C |
| Total Kjeldahl Nitrogen | LCS | 9.9 | 10 | 99%R, 3%RPD | mg/L as N | 12/18/18 0945 | 12/21/18 1000 | SM 4500-N C |
| Nitrate plus nitrite-N | РВ | ND | | | mg/L as N | 12/18/18 1200 | 12/18/18 1200 | SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCS | 1.0 | 1 | 100%R | mg/L as N | 12/18/18 1200 | 12/18/18 1200 | SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCSD | 1.0 | 1 | 100%R, 0%RPD | mg/L as N | 12/18/18 1200 | 12/18/18 1200 | SM 4500-NO3 F |
| Total phosphorus | PB | ND | 0 | ND | mg/L | 12/18/18 1150 | 12/18/18 1150 | SM 4500-P E |
| Total phosphorus | LCS | 0.5 | 1 | 100%R | mg/L | 12/17/18 1230 | 12/18/18 1150 | SM 4500-P E |
| Total phosphorus | LCSD | 0.5 | 1 | 102%R, 2%RPD | mg/L | 12/17/18 1230 | 12/18/18 1150 | SM 4500-P E |
| Total phosphorus | S1D | 31.8 | | 3%RPD | mg/L | 12/17/18 1230 | 12/17/18 1230 | SM 4500-P E |
| Total phosphorus | S1S | 51.6 | 20 | 104%R | mg/L | 12/17/18 1230 | 12/17/18 1230 | SM 4500-P E |
| | | | | | | | | |

SDG:

Notes:

Report No:

31456

Project: Piscataqua River

Sample ID: Matrix: Sampled:

NEW_004 Water 12/12/18 0000

| Parameter | | Result | True Value | Percent Recovery | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---------------------------|------|--------|---------------|---------------------|-------------------|------------------|---------------------|-----------------------|
| Total Suspended Solids | РВ | ND | 0 | ND | mg/L | 12/17/18 1425 | 12/21/18 0830 | SM 2540D |
| Total Suspended Solids | LCS | 10.1 | 10 | 102%R | mg/L | 12/17/18 1425 | 12/21/18 0830 | SM 2540D |
| Total Suspended Solids | LCSD | 9.6 | 10 | 100%R, 5%RPD | mg/L | 12/17/18 1425 | 12/21/18 0830 | SM 2540D |
| Total dissolved Solids | PB | ND | 0 | ND | mg/L | 12/18/18 1510 | 12/20/18 1150 | SM 2540C |
| Total dissolved Solids | LCS | 478 | 500 | 96%R | mg/L | 12/18/18 1510 | 12/20/18 1150 | SM 2540C |
| Total dissolved Solids | LCSD | 516 | 500 | 103%R, 8%RPD | mg/L | 12/18/18 1510 | 12/20/18 1150 | SM 2540C |
| Total dissolved Solids | SID | 21534 | | 2%RPD | mg/L | 12/18/18 1510 | 12/20/18 1150 | SM 2540C |
| Total dissolved Solids | S1S | 22375 | 250 | SNR | mg/L | 12/18/18 1510 | 12/20/18 1150 | SM 2540C |
| Biochemical Oxygen Demand | PBA | ND | 0 | | mg/L DO depletion | 12/12/18 | 12/17/18 | SM 5210 B |
| Biochemical Oxygen Demand | PBB | ND | 0 | | mg/L DO depletion | 12/12/18 | 12/17/18 | SM 5210 B |
| Biochemical Oxygen Demand | | 129 | 198 | 65%R | mg/L DO depletion | 12/12/18 | 12/17/18 | SM 5210 B |
| Biochemical Oxygen Demand | | 136 | 198 | 69%R | mg/L DO depletion | 12/12/18 | 12/17/18 | SM 5210 B |
| Biochemical Oxygen Demand | | 135 | 198 | 68%R, 2.3%RR | mg/L DO depletion | 12/12/18 | 12/17/18 | SM 5210 B |
| Ammonia-N | РВ | ND | 0 | | mg/L as N | 12/17/18 1400 | 12/17/18 1400 | SM 4500-NH3 G |
| Ammonia-N | LCS | 10.2 | 10 | 102%R | mg/L as N | 12/17/18 1400 | 12/17/18 1400 | SM 4500-NH3 G |
| Ammonia-N | LCS | 10.3 | 10 | 103%R, 1%RPD | mg/L as N | 12/17/18 1400 | 12/17/18 1400 | SM 4500-NH3 G |
| Ammonia-N | SID | 3.2 | | 0%RPD | mg/L as N | 12/17/18 1400 | 12/17/18 1400 | SM 4500-NH3 G |
| Ammonia-N | SIS | 12.7 | 10 | 95%R | mg/L as N | 12/17/18 1400 | 12/17/18 1400 | SM 4500-NH3 G |
| Total Kjeldahl Nitrogen | PB | ND | 0 | | mg/L as N | 12/18/18 0945 | 12/21/18 1000 | SM 4500-N C |
| Total Kjeldahl Nitrogen | LCS | 9.6 | 10 | 96%R | mg/L as N | 12/18/18 0945 | 12/21/18 1000 | SM 4500-N C |
| Total Kjeldahl Nitrogen | LCS | 9.9 | 10 | 99%R, 3%RPD | mg/L as N | 12/18/18 0945 | 12/21/18 1000 | SM 4500-N C |
| Nitrate plus nitrite-N | PB | ND | | | mg/L as N | 12/18/18 1200 | 12/18/18 1200 | SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCS | 1.0 | 1 | 100%R | mg/L as N | 12/18/18 1200 | 12/18/18 1200 | SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCSD | 1.0 | 4 | 100%R, 0%RPD | mg/L as N | 12/18/18 1200 | 12/18/18 1200 | SM 4500-NO3 F |
| Total phosphorus | PB | ND | 0 | ND | mg/L | 12/18/18 1150 | 12/18/18 1150 | SM 4500-P E |
| Total phosphorus | LCS | 0.5 | 4 | 100%R | mg/L | 12/17/18 1230 | 12/18/18 1150 | SM 4500-P E |
| Total phosphorus | LCSD | 0.5 | 1 | 102%R, 2%RPD | mg/L | 12/17/18 1230 | 12/18/18 1150 | SM 4500-P E |
| Total phosphorus | SID | 31.8 | | 3%RPD | mg/L | 12/17/18 1230 | 12/17/18 1230 | SM 4500-P E |
| Total phosphorus | SIS | 51.6 | 20 | 104%R | mg/L | 12/17/18 1230 | 12/17/18 1230 | SM 4500-P E |

SDG:

Notes:

31456

Piscataqua River

Sample ID: Matrix: NEW_004 Water

Sampled:

12/12/18 0711

Date of INIT/Method/Reference Parameter Result True Percent Units Date Value Recovery Prepared Analysis Oil and grease PB ND mg/L 12/13/18 1130 12/18/18 1300 EPA 1664A Oil and grease LCS 40 108%R 12/13/18 1130 12/18/18 1300 EPA 1664A 43 mg/L Oil and grease LCSD 40 12/13/18 1130 12/18/18 1300 EPA 1664A 42 105%R, 3%RR mg/L Oil and grease SIMS 40 12/13/18 1130 12/18/18 1300 EPA 1664A 44 108%R mg/L

SDG:

Notes:

ND = Not Detected

603-926-3345

Report No:

31456

Project:

Piscataqua River

Sample ID:

NEW_004DUP

Water

Matrix: Sampled:

12/12/18 0000

| Parameter | | Result | True Value | Percent Recovery | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|-------------------------|------|--------|---------------|---------------------|-----------|------------------|---------------------|-----------------------|
| Ammonia-N | РВ | ND | 0 | | mg/L as N | 12/17/18 1400 | 12/17/18 1400 | SM 4500-NH3 G |
| Ammonia-N | LCS | 10.2 | 10 | 102%R | mg/L as N | 12/17/18 1400 | 12/17/18 1400 | SM 4500-NH3 G |
| Ammonia-N | LCS | 10.3 | 10 | 103%R, 1%RPD | mg/L as N | 12/17/18 1400 | 12/17/18 1400 | SM 4500-NH3 G |
| Ammonia-N | SID | 3.2 | | 0%RPD | mg/L as N | 12/17/18 1400 | 12/17/18 1400 | SM 4500-NH3 G |
| Ammonia-N | S1S | 12.7 | 10 | 95%R | mg/L as N | 12/17/18 1400 | 12/17/18 1400 | SM 4500-NH3 G |
| Total Kjeldahl Nitrogen | PB | ND | 0 | | mg/L as N | 12/18/18 0945 | 12/21/18 1000 | SM 4500-N C |
| Total Kjeldahl Nitrogen | LCS | 9.6 | 10 | 96%R | mg/L as N | 12/18/18 0945 | 12/21/18 1000 | SM 4500-N C |
| Total Kjeldahl Nitrogen | LCS | 9.9 | 10 | 99%R, 3%RPD | mg/L as N | 12/18/18 0945 | 12/21/18 1000 | SM 4500-N C |
| Nitrate plus nitrite-N | РВ | ND | | | mg/L as N | 12/18/18 1200 | 12/18/18 1200 | SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCS | 1.0 | 1 | 100%R | mg/L as N | 12/18/18 1200 | 12/18/18 1200 | SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCSD | 1.0 | Я | 100%R, 0%RPD | mg/L as N | 12/18/18 1200 | 12/18/18 1200 | SM 4500-NO3 F |
| Total phosphorus | PB | ND | 0 | ND | mg/L | 12/18/18 1150 | 12/18/18 1150 | SM 4500-P E |
| Total phosphorus | LCS | 0.5 | 1 | 100%R | mg/L | 12/17/18 1230 | 12/18/18 1150 | SM 4500-P E |
| Total phosphorus | LCSD | 0.5 | 9 | 102%R, 2%RPD | mg/L | 12/17/18 1230 | 12/18/18 1150 | SM 4500-P E |
| Total phosphorus | S1D | 31.8 | | 3%RPD | mg/L | 12/17/18 1230 | 12/17/18 1230 | SM 4500-P E |
| Total phosphorus | SIS | 51.6 | 20 | 104%R | mg/L | 12/17/18 1230 | 12/17/18 1230 | SM 4500-P E |
| | | | | | | | | |

SDG:

Notes:

31456

Piscataqua River

Sample ID: Matrix:

RIVER_004 Water 12/12/18 Sampled:

| Parameter | | Result | True Value | Percent Recovery | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|---------------------------|------|--------|---------------|---------------------|-------------------|------------------|---------------------|-----------------------|
| Total Suspended Solids | PB | ND | 0 | ND | mg/L | 12/17/18 1425 | 12/21/18 0830 | SM 2540D |
| Total Suspended Solids | LCS | 10.1 | 10 | 102%R | mg/L | 12/17/18 1425 | 12/21/18 0830 | SM 2540D |
| Total Suspended Solids | LCSD | 9.6 | 10 | 100%R, 5%RPD | mg/L | 12/17/18 1425 | 12/21/18 0830 | SM 2540D |
| Total dissolved Solids | РВ | ND | 0 | ND | mg/L | 12/18/18 1510 | 12/20/18 1150 | SM 2540C |
| Total dissolved Solids | LCS | 478 | 500 | 96%R | mg/L | 12/18/18 1510 | 12/20/18 1150 | SM 2540C |
| Total dissolved Solids | LCSD | 516 | 500 | 103%R, 8%RPD | mg/L | 12/18/18 1510 | 12/20/18 1150 | SM 2540C |
| Total dissolved Solids | S1D | 21534 | | 2%RPD | mg/L | 12/18/18 1510 | 12/20/18 1150 | SM 2540C |
| Total dissolved Solids | SIS | 22375 | 250 | SNR | mg/L | 12/18/18 1510 | 12/20/18 1150 | SM 2540C |
| Biochemical Oxygen Demand | PBA | ND | 0 | | mg/L DO depletion | 12/12/18 | 12/17/18 | SM 5210 B |
| Biochemical Oxygen Demand | PBB | ND | 0 | | mg/L DO depletion | 12/12/18 | 12/17/18 | SM 5210 B |
| Biochemical Oxygen Demand | LCS | 129 | 198 | 65%R | mg/L DO depletion | 12/12/18 | 12/17/18 | SM 5210 B |
| Biochemical Oxygen Demand | LCSD | 136 | 198 | 69%R | mg/L DO depletion | 12/12/18 | 12/17/18 | SM 5210 B |
| Biochemical Oxygen Demand | LCST | 135 | 198 | 68%R, 2.3%RR | mg/L DO depletion | 12/12/18 | 12/17/18 | SM 5210 B |
| Ammonia-N | PB | ND | 0 | | mg/L as N | 12/17/18 1400 | 12/17/18 1400 | SM 4500-NH3 G |
| Ammonia-N | LCS | 10.2 | 10 | 102%R | mg/L as N | 12/17/18 1400 | 12/17/18 1400 | SM 4500-NH3 G |
| Ammonia-N | LCS | 10.3 | 10 | 103%R, 1%RPD | mg/L as N | 12/17/18 1400 | 12/17/18 1400 | SM 4500-NH3 G |
| Ammonia-N | S1D | 3.2 | | 0%RPD | mg/L as N | 12/17/18 1400 | 12/17/18 1400 | SM 4500-NH3 G |
| Ammonia-N | S1S | 12.7 | 10 | 95%R | mg/L as N | 12/17/18 1400 | 12/17/18 1400 | SM 4500-NH3 G |
| Total Kjeldahl Nitrogen | PB | ND | 0 | | mg/L as N | 12/18/18 0945 | 12/21/18 1000 | SM 4500-N C |
| Total Kjeldahl Nitrogen | LCS | 9.6 | 10 | 96%R | mg/L as N | 12/18/18 0945 | 12/21/18 1000 | SM 4500-N C |
| Total Kjeldahl Nitrogen | LCS | 9.9 | 10 | 99%R, 3%RPD | mg/L as N | 12/18/18 0945 | 12/21/18 1000 | SM 4500-N C |
| Nitrate plus nitrite-N | PB | ND | | | mg/L as N | 12/18/18 1200 | 12/18/18 1200 | SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCS | 1.0 | T | 100%R | mg/L as N | 12/18/18 1200 | 12/18/18 1200 | SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCSD | 1.0 | -1 | 100%R, 0%RPD | mg/L as N | 12/18/18 1200 | 12/18/18 1200 | SM 4500-NO3 F |
| Total phosphorus | PB | ND | 0 | ND | mg/L | 12/18/18 1150 | 12/18/18 1150 | SM 4500-P E |
| Total phosphorus | LCS | 0.5 | -1 | 100%R | mg/L | 12/17/18 1230 | 12/18/18 1150 | SM 4500-P E |
| Total phosphorus | LCSD | 0.5 | 1 | 102%R, 2%RPD | mg/L | 12/17/18 1230 | 12/18/18 1150 | SM 4500-P E |
| Total phosphorus | SID | 31.8 | | 3%RPD | mg/L | 12/17/18 1230 | 12/17/18 1230 | SM 4500-P E |
| Total phosphorus | 515 | 51.6 | 20 | 104%R | mg/L | 12/17/18 1230 | 12/17/18 1230 | SM 4500-P E |
| Oil and grease | РВ | ND | | | mg/L | 12/13/18 1130 | 12/18/18 1300 | EPA 1664A |
| Oil and grease | LCS | 43 | 40 | 108%R | mg/L | 12/13/18 1130 | 12/18/18 1300 | EPA 1664A |
| Oil and grease | LCSD | 42 | 40 | 105%R, 3%RR | mg/L | 12/13/18 1130 | 12/18/18 1300 | EPA 1664A |
| Oil and grease | SIMS | 44 | 40 | 108%R | mg/L | 12/13/18 1130 | 12/18/18 1300 | EPA 1664A |

SDG:

Notes:

31456

Piscataqua River

Sample ID: Matrix: Sampled:

RIVER_004DUP Water

12/12/18

| Parameter | | Result | True Value | Percent Recovery | Units | Date Prepared | Date of Analysis | INIT/Method/Reference |
|-------------------------|------|--------|---------------|---------------------|-----------|------------------|---------------------|-----------------------|
| Ammonia-N | PB | ND | Ō | | mg/L as N | 12/17/18 1400 | 12/17/18 1400 | SM 4500-NH3 G |
| Ammonia-N | LCS | 10.2 | 10 | 102%R | mg/L as N | 12/17/18 1400 | 12/17/18 1400 | SM 4500-NH3 G |
| Ammonia-N | LCS | 10.3 | 10 | 103%R, 1%RPD | mg/L as N | 12/17/18 1400 | 12/17/18 1400 | SM 4500-NH3 G |
| Ammonia-N | S1D | 3.2 | | 0%RPD | mg/L as N | 12/17/18 1400 | 12/17/18 1400 | SM 4500-NH3 G |
| Ammonia-N | S1S | 12.7 | 10 | 95%R | mg/L as N | 12/17/18 1400 | 12/17/18 1400 | SM 4500-NH3 G |
| Total Kjeldahl Nitrogen | PB | ND | 0 | | mg/L as N | 12/18/18 0945 | 12/21/18 1000 | SM 4500-N C |
| Total Kjeldahl Nitrogen | LCS | 9.6 | 10 | 96%R | mg/L as N | 12/18/18 0945 | 12/21/18 1000 | SM 4500-N C |
| Total Kjeldahl Nitrogen | LCS | 9.9 | 10 | 99%R, 3%RPD | mg/L as N | 12/18/18 0945 | 12/21/18 1000 | SM 4500-N C |
| Nitrate plus nitrite-N | РВ | ND | | | mg/L as N | 12/18/18 1200 | 12/18/18 1200 | SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCS | 1.0 | 1 | 100%R | mg/L as N | 12/18/18 1200 | 12/18/18 1200 | SM 4500-NO3 F |
| Nitrate plus nitrite-N | LCSD | 1.0 | 1 | 100%R, 0%RPD | mg/L as N | 12/18/18 1200 | 12/18/18 1200 | SM 4500-NO3 F |
| Total phosphorus | PB | ND | 0 | ND | mg/L | 12/18/18 1150 | 12/18/18 1150 | SM 4500-P E |
| Total phosphorus | LCS | 0.5 | 4 | 100%R | mg/L | 12/17/18 1230 | 12/18/18 1150 | SM 4500-P E |
| Total phosphorus | LCSD | 0.5 | 1 | 102%R, 2%RPD | mg/L | 12/17/18 1230 | 12/18/18 1150 | SM 4500-P E |
| Total phosphorus | S1D | 31.8 | | 3%RPD | mg/L | 12/17/18 1230 | 12/17/18 1230 | SM 4500-P E |
| Total phosphorus | S1S | 51.6 | 20 | 104%R | mg/L | 12/17/18 1230 | 12/17/18 1230 | SM 4500-P E |

SDG:

Notes:

Lab Number: PB121418A
Sample Designation: Laboratory Blank
Date Sampled: 12/14/18
Date Analyzed: 12/14/18
Matrix: Water

VOLATILE ORGANICS

Method Reference: EPA Method 624.

| | Concentration | Quantitation Limit |
|---------------------------|---------------|--|
| | (ug/L) | (ug/L) |
| acrolein | U | 10 |
| acrylonitrile | ŭ | 10 |
| dichlorodifluoromethane | ŭ | 2 |
| chloromethane | ŭ | 2 |
| vinyl chloride | ŭ | 2 |
| bromomethane | ŭ | 2 |
| chloroethane | ŭ | 2 |
| trichlorofluoromethane | ŭ | 2 2 2 |
| 1,1-dichloroethene | ŭ | 2 |
| methylene chloride | ŭ | 2 |
| trans-1,2-dichloroethene | ŭ | 2 |
| | Ü | 2 |
| 1,1-dichloroethane | ŭ | 2 |
| cis-1,2-dichloroethene | | 2 2 2 2 2 |
| chloroform | Ü | 2 |
| 1,1,1-trichloroethane | u | 2 |
| carbon tetrachloride | U | 2 |
| benzene | | 2 |
| 1,2-dichloroethane | U | 2 2 2 2 2 2 2 2 2 2 |
| trichloroethene | U | 2 |
| 1,2-dichloropropane | u | 2 |
| dibromomethane | U | 2 |
| bromodichloromethane | U | 2 |
| cis-1,3-dichloropropene | U | 2 |
| 2-chloroethylvinylether | U | 4 |
| toluene | U | 2 |
| trans-1,3-dichloropropene | υ | 2 |
| 1,1,2-trichloroethane | U | 2 2 2 2 2 2 |
| tetrachloroethene | U | 2 |
| 1,3-dichloropropane | U | 2 |
| dibromochloromethane | U | 2 |
| chlorobenzene | U | 2 |
| ethylbenzene | U | 2 |
| bromoform | U | 2 |
| 1,1,2,2-tetrachloroethane | U | 2 |
| 1,2-dichlorobenzene | U | 2 2 2 |
| 1,3-dichlorobenzene | U | 2 |
| 1,4-dichlorobenzene | U | 2 |
| SURROGATE STANDARDS | | Acceptance |
| | Recovery | Limits |
| 1,2-dichloroethane-d4 | 77 | 70 - 130 |
| toluene-d8 | 97 | 70 - 130 |
| 4-bromofluorobenzene | 98 | 70 - 130 |

U = Below quantitation limit

ESI EnviroSystems, Inc.

Lab Number: LCS121418W

Sample Designation: Laboratory Control Sample

Date Sampled: 12/14/18
Date Analyzed: 12/14/18
Matrix: Water

VOLATILE ORGANICS

Method Reference: EPA Method 624.

| | LCS | Amount | | | Acc | ceptance | |
|---------------------------|---------------|--------|----------|----|----------|----------|--|
| | Concentration | Added | Recovery | | Lim | nits | |
| | (ug/L) | (ug/L) | (%) | | (%) |) | |
| acrolein | 12 | 20 | 59 | NA | 1 | NA | |
| acrylonitrile | 13 | 20 | 64 | NA | 20 | NA | |
| dichlorodifluoromethane | 13 | 20 | 64 | NA | 4 | NA | |
| chloromethane | 15 | 20 | 73 | 1 | - | 273 | |
| vinyl chloride | 13 | 20 | 66 | 1 | 6-6 | 251 | |
| bromomethane | 14 | 20 | 69 | 1 | 3 | 242 | |
| chloroethane | 13 | 20 | 67 | 14 | Q | 230 | |
| trichlorofluoromethane | 14 | 20 | 71 | 17 | - | 181 | |
| 1,1-dichloroethene | 14 | 20 | 70 | 1 | - | 234 | |
| methylene chloride | 17 | 20 | 84 | 1 | - | 221 | |
| trans-1,2-dichloroethene | 14 | 20 | 72 | 54 | 2 | 156 | |
| 1,1-dichloroethane | 15 | 20 | 76 | 59 | 4 | 155 | |
| cis-1,2-dichloroethene | 15 | 20 | 77 | 4 | - | NA | |
| chloroform | 15 | 20 | 77 | 51 | - | 138 | |
| 1,1,1-trichloroethane | 16 | 20 | 78 | 52 | 12 | 162 | |
| carbon tetrachloride | 15 | 20 | 74 | 70 | - | 140 | |
| benzene | 16 | 20 | 79 | 37 | - | 151 | |
| 1,2-dichloroethane | 17 | 20 | 84 | 49 | - | 155 | |
| trichloroethene | 16 | 20 | 78 | 71 | - | 157 | |
| 1,2-dichloropropane | 16 | 20 | 81 | 1 | 4 | 210 | |
| dibromomethane | 16 | 20 | 82 | NA | - | NA | |
| bromodichloromethane | 18 | 20 | 88 | 35 | 4 | 155 | |
| cis-1,3-dichloropropene | 17 | 20 | 84 | 1 | - | 227 | |
| 2-chloroethylvinylether | 16 | 20 | 82 | 1 | 3-8 | 305 | |
| toluene | 16 | 20 | 78 | 47 | 2 | 150 | |
| trans-1,3-dichloropropene | 17 | 20 | 84 | 17 | 9 | 183 | |
| 1,1,2-trichloroethane | 16 | 20 | 81 | 52 | - | 150 | |
| tetrachloroethene | 15 | 20 | 76 | 64 | | 148 | |
| 1,3-dichloropropane | 15 | 20 | 75 | NA | (4) | NA | |
| dibromochloromethane | 18 | 20 | 88 | 53 | - | 149 | |
| chlorobenzene | 16 | 20 | 79 | 37 | | 160 | |
| ethylbenzene | 15 | 20 | 75 | 37 | - | 162 | |
| bromoform | 16 | 20 | 79 | 45 | - | 169 | |
| 1,1,2,2-tetrachloroethane | 15 | 20 | 73 | 46 | | 157 | |
| 1,2-dichlorobenzene | 16 | 20 | 80 | 18 | 15. | 190 | |
| 1,3-dichlorobenzene | 15 | 20 | 75 | 59 | , å . | 156 | |
| 1,4-dichlorobenzene | 15 | 20 | 76 | 18 | 100 | 190 | |

| SURROGATE STANDARDS | % Recovery | Acceptance Limits |
|----------------------|---------------|----------------------|
| dibromofluoromethane | 90 | 70 - 130 |
| toluene-d8 | 94 | 70 - 130 |
| 4-bromofluorobenzene | 103 | 70 - 130 |

U = Below quantitation limit

Lab Number: LCSD121418W

Sample Designation: Laboratory Control Sample Duplicate

Date Sampled: 12/14/18
Date Analyzed: 12/14/18
Matrix: Water

VOLATILE ORGANICS

Method Reference: EPA Method 624.

| | LCS | Amount | | | Ac | ceptance |
|---------------------------|---------------|------------|----------|----|---------------|----------|
| | Concentration | Added | Recovery | | Lit | nits |
| | (ug/L) | (ug/L) | (%) | | (% | 6) |
| acrolein | 11 | 20 | 57 | NA | | NA |
| acrylonitrile | 12 | 20 | 62 | NA | - | NA |
| dichlorodifluoromethane | 13 | 20 | 64 | NA | - | NA |
| chloromethane | 14 | 20 | 70 | 1 | - | 273 |
| vinyl chloride | 13 | 20 | 64 | 1 | - | 251 |
| bromomethane | 13 | 20 | 66 | 1 | $\frac{1}{2}$ | 242 |
| chloroethane | 13 | 20 | 65 | 14 | 4 | 230 |
| trichlorofluoromethane | 14 | 20 | 68 | 17 | 4 | 181 |
| 1,1-dichloroethene | 14 | 20 | 68 | 1 | - | 234 |
| methylene chloride | 15 | 20 | 76 | 1 | | 221 |
| trans-1,2-dichloroethene | 14 | 20 | 70 | 54 | Ġ. | 156 |
| 1,1-dichloroethane | 15 | 20 | 73 | 59 | 0 | 155 |
| cis-1,2-dichloroethene | 15 | 20 | 74 | NA | * | NA |
| chloroform | 15 | 20 | 73 | 51 | | 138 |
| 1,1,1-trichloroethane | 15 | 20 | 77 | 52 | | 162 |
| carbon tetrachloride | 14 | 20 | 70 | 70 | 9 | 140 |
| benzene | 16 | 20 | 78 | 37 | - | 151 |
| 1,2-dichloroethane | 16 | 20 | 81 | 49 | - | 155 |
| trichloroethene | 15 | 20 | 77 | 71 | - | 157 |
| 1,2-dichloropropane | 16 | 20 | 81 | 1 | - | 210 |
| dibromomethane | 16 | 20 | 78 | NA | - | NA |
| bromodichloromethane | 17 | 20 | 86 | 35 | - | 155 |
| cis-1,3-dichloropropene | 16 | 20 | 80 | 1 | - | 227 |
| 2-chloroethylvinylether | 14 | 20 | 69 | 1 | 14 | 305 |
| toluene | 15 | 20 | 77 | 47 | - | 150 |
| trans-1,3-dichloropropene | 16 | 20 | 80 | 17 | | 183 |
| 1,1,2-trichloroethane | 16 | 20 | 78 | 52 | | 150 |
| tetrachloroethene | 15 | 20 | 76 | 64 | - | 148 |
| 1,3-dichloropropane | 15 | 20 | 73 | NA | - | NA |
| dibromochloromethane | 17 | 20 | 84 | 53 | - | 149 |
| chlorobenzene | 15 | 20 | 76 | 37 | | 160 |
| ethylbenzene | 15 | 20 | 73 | 37 | | 162 |
| bromoform | 15 | 20 | 77 | 45 | - | 169 |
| 1,1,2,2-tetrachloroethane | 14 | 20 | 72 | 46 | - | 157 |
| 1,2-dichlorobenzene | 16 | 20 | 79 | 18 | 3 | 190 |
| 1,3-dichlorobenzene | 15 | 20 | 74 | 59 | 4 | 156 |
| 1,4-dichlorobenzene | 15 | 20 | 75 | 18 | - | 190 |
| SURROGATE STANDARDS | % | Acceptance | | | | |

| SURROGATE STANDARDS | % Recovery | Acceptance Limits |
|----------------------|---------------|----------------------|
| dibromofluoromethane | 86 | 70 - 130 |
| toluene-d8 | 94 | 70 - 130 |
| 4-bromofluorobenzene | 102 | 70 - 130 |

U = Below quantitation limit

31456-016S

Sample Designation:

PEASE_004 (Matrix Spike)

Date Sampled: Date Analyzed: Matrix: 12/12/18 0845 12/14/18 Water

VOLATILE ORGANICS

Method Reference: EPA Method 624.

| Metrica Reference. Li A Me | Sample | Matrix Spike | Amount | | Acceptance |
|----------------------------|-------------|------------------|--------|----------|--|
| | | n Concentration | Added | Recovery | Limits |
| | OUTOCHILLIO | ar boncentiation | 710000 | (%) | (%) |
| acrolein | u | 10 | 100 | NA | NA-NA |
| | Ü | Ü | 100 | NA | NA-NA |
| acrylonitrile | ü | | | | the same of the sa |
| dichlorodifluoromethane | | 12 | 20 | 60 | NA-NA |
| chloromethane | Ų | 13 | 20 | 65 | 1-273 |
| vinyl chloride | Ü | 12 | 20 | 60 | 1-251 |
| bromomethane | U | 15 | 20 | 75 | 1-242 |
| chloroethane | U | 13 | 20 | 65 | 14-230 |
| trichlorofluoromethane | U | 13 | 20 | 65 | 17-181 |
| 1,1-dichloroethene | U | 13 | 20 | 65 | 1-234 |
| methylene chloride | U | 14 | 20 | 70 | 1-221 |
| trans-1,2-dichloroethene | U | 13 | 20 | 65 | 54-156 |
| 1,1-dichloroethane | U | 14 | 20 | 70 | 59-155 |
| cis-1,2-dichloroethene | U | 14 | 20 | 70 | NA-NA |
| chloroform | 25 | 38 | 20 | 65 | 51-138 |
| 1,1,1-trichloroethane | U | 14 | 20 | 70 | 52-162 |
| carbon tetrachloride | U | 14 | 20 | 70 | 70-140 |
| benzene | U | 14 | 20 | 70 | 37-151 |
| 1,2-dichloroethane | U | 15 | 20 | 75 | 49-155 |
| trichloroethene | U | 15 | 20 | 75 | 71-157 |
| 1,2-dichloropropane | U | 15 | 20 | 75 | 1-210 |
| dibromomethane | U | 15 | 20 | 75 | NA-NA |
| bromodichloromethane | 14 | 29 | 20 | 75 | 35-155 |
| cis-1,3-dichloropropene | U | 15 | 20 | 75 | 1-227 |
| toluene | U | 14 | 20 | 70 | 47-150 |
| trans-1,3-dichloropropene | U | 15 | 20 | 75 | 17-183 |
| 1,1,2-trichloroethane | U | 15 | 20 | 75 | 52-150 |
| tetrachloroethene | U | 14 | 20 | 70 | 64-148 |
| 1,3-dichloropropane | U | 14 | 20 | 70 | NA-NA |
| dibromochloromethane | 6.6 | 23 | 20 | 82 | 53-149 |
| chlorobenzene | U | 14 | 20 | 70 | 37-160 |
| ethylbenzene | U | 13 | 20 | 65 | 37-162 |
| bromoform | Ü | 15 | 20 | 75 | 45-169 |
| 1,1,2,2-tetrachloroethane | U | 14 | 20 | 70 | 46-157 |
| 1,2-dichlorobenzene | U | 14 | 20 | 70 | 18-190 |
| 1,3-dichlorobenzene | Ū | 13 | 20 | 65 | 59-156 |
| 1,4-dichlorobenzene | U | 14 | 20 | 70 | 18-190 |
| 1,4-dichioropenzene | U | 14 | 20 | 70 | 18-15 |

| SURROGATE STANDARDS | % Recovery | % Recovery | Acceptance Limits |
|-----------------------|---------------|---------------|----------------------|
| 1,2-dichloroethane-d4 | 86.0 | 91.5 | 70 - 130 |
| toluene-d8 | 96.0 | 93.6 | 70 - 130 |
| 4-bromofluorobenzene | 98.0 | 103.2 | 70 - 130 |

U = Below quantitation limit

NC = Not calulated due to sample value being greater than five times the spike value.

Page of ES

PB177W

Sample Designation: Date Sampled:

Laboratory Blank 12/14/18 0930

Date Extracted:

12/14/18 0930

Date Analyzed: Matrix:

12/22/18 Water

SEMIVOLATILE ORGANICS Method Reference: EPA 625.

| | Concentration | Quantitation Limit | | Concentration | Quantitation Limit |
|-----------------------------|---------------|--------------------|------------------------------------|---------------|--------------------|
| | (ug/L) | (ug/L) | | (ug/L) | (ug/L) |
| N-nitrosodimethylamine | U | 5 | acenaphthene | U | 3 |
| phenol | U. | 3 | 2,4-dinitrophenol | U. | 10 |
| 2-chlorophenol | Ù | 3 | 4-nitrophenol | U | 10 |
| bis(2-chloroethyl)ether | U | 3 | fluorene | U | 3 |
| 1,3-dichlorobenzene | u | 3 | 4-chlorophenyl-phenylether | U | 3 |
| 1,4-dichlorobenzene | U | 3 | diethylphthalate | .0 | 3 |
| 1,2-dichlorobenzene | Ü | 5 | 4,6-dinitro-2-methylphenol | U | 10 |
| 2-methylphenol (m-cresol) | U | 3 | N-nitrosodiphenylamine | U | 5 |
| bis(2-chloroisopropyl)ether | U | 3 | 1,2-diphenylhydrazine (azobenzene) | U | 3 |
| hexachloroethane | U | 3 | 4-bromophenyl-phenylether | U | 3 |
| N-nitroso-di-n-propylamine | U | 5 | hexachlorobenzene | U | 3 |
| 4-methylphenol (p-cresol) | U | 3 | pentachlorophenol | U | 3 |
| nitrobenzene | U | 3 | phenanthrene | U | 3 |
| isophorone | U | 3 | anthracene | Ü | 3 |
| 2-nitrophenol | U | 3 | di-n-butylphthalate | 6.8, B | 3 |
| 2,4-dimethylphenol | Ü. | 3 | fluoranthene | U | 3 |
| bis(2-chloroethoxy)methane | U | 3 | benzidine | Ü | 40 |
| 2,4-dichlorophenol | u | 3 | pyrene | O | 3 |
| 1,2,4-trichlorobenzene | U | 5 | butylbenzylphthalate | U | 3 |
| naphthalene | U | 3 | benzo(a)anthracene | U | 3 |
| hexachloro-1,3-butadiene | Ü. | 3 | chrysene | Ü | 3 |
| 4-chloro-3-methylphenol | Ü | 3 | 3,3'-dichlorobenzidine | U | 20 |
| hexachlorocyclopentadiene | U | 5 | bis(2-ethylhexyl)phthalate | U | 3 |
| 2,4,5-trichlorophenol | U | 3 | di-n-octylphthalate | U | 3 |
| 2,4,6-trichlorophenol | U. | 3 | benzo(b)fluoranthene | U | 5 |
| 2-chloronaphthalene | U | 5 | benzo(k)fluoranthene | U | 5 |
| acenaphthylene | U | 3 | benzo(a)pyrene | U | 3 |
| dimethylphthalate | U | 3 | indeno(1,2,3-cd)pyrene | U | 3 |
| 2,6-dinitrotoluene | U | 3 | dibenzo(a,h)anthracene | U | 3 |
| 2,4-dinitrotoluene | U | 3 | benzo(g,h,i)perylene | U | 3 |

| SURROGATE | STANDARDS |
|-----------|-----------|
|-----------|-----------|

| SOUTHOUGHTE STANDARDS | | | | | |
|-----------------------|----------|---------------|------------------|----------|-------------------|
| | Recovery | Acceptance Li | mits | Recovery | Acceptance Limits |
| | (%) | (%) | | (%) | (%) |
| 2-fluorophenol | 40 | 25-175 | nitrobenzene-d5 | 52 | 22-178 |
| phenol-d5 | 37 | 24-176 | 2-fluorobiphenyl | 48 | 38-162 |
| 2.4.6-tribromophenol | 90 | 24-176 | terphenyl-d14 | -88 | 53-147 |

U = Below quantitation limit

B = di-n-butylpthalate was found in the blank at a concentration of 6.8 ug/L.

ESI Page of

LCS177W

Sample Designation:

Laboratory Control Sample

Date Sampled: Date Extracted: Date Analyzed: 12/14/18 0930 12/14/18 0930

12/22/18

Matrix:

Water

SEMIVOLATILE ORGANICS Method Reference: EPA 625.

| | Concentration | Added | Recovery | Limits | | Concentration | Added | Recovery | Limits |
|-----------------------------|---------------|--------|----------|--------|------------------------------|---------------|--------|----------|--------|
| | (ug/L) | (ug/L) | (%) | (%) | | (ug/L) | (ug/L) | (%) | (%) |
| N-nitrosodimethylamine | 38 | 100 | 38 | 30-150 | acenaphthene | 56 | 100 | 56 | 47-145 |
| phenol | 31 | 100 | 31 | 5-120 | 2,4-dinitrophenol | 44 | 100 | 44 | 1-191 |
| 2-chlorophenol | 54 | 100 | 54 | 23-134 | 4-nitrophenol | 35 | 100 | 35 | 1-132 |
| bis(2-chloroethyl)ether | 47 | 100 | 47 | 12-158 | fluorene | 59 | 100 | 59 | 59-121 |
| 1,3-dichlorobenzene | 53 | 100 | 53 | 30-150 | · 4-chlorophenyl-phenylether | 59 | 100 | 59 | 25-158 |
| 1,4-dichlorobenzene | 55 | 100 | 55 | 30-150 | diethylphthalate | 54 | 100 | 54 | 1-120 |
| 1,2-dichlorobenzene | 57 | 100 | 57 | 30-150 | 4,6-dinitro-2-methylphenol | 61 | 100 | 61 | 1-181 |
| 2-methylphenol (m-cresol) | NA. | NA | NA | 30-150 | N-nitrosodiphenylamine | 64 | 100 | 64 | 30-150 |
| bis(2-chloroisopropyl)ether | 69 | 100 | 69 | 36-166 | 1,2-diphenylhydrazine | NA | NA | NA | 30-150 |
| hexachloroethane | 60 | 100 | 60 | 40-120 | 4-bromophenyl-phenylether | 61 | 100 | 61 | 53-127 |
| N-nitroso-di-n-propylamine | 74 | 100 | 74 | 1-230 | hexachlorobenzene | 64 | 100 | 64 | 1-152 |
| 4-methylphenol (p-cresol) | NA: | NA | NA | 30-150 | pentachlorophenol | 73 | 100 | 73 | 14-176 |
| nitrobenzene | 59 | 100 | 59 | 35-180 | phenanthrene | 64 | 100 | 64 | 54-120 |
| isophorone | 57 | 100 | 57 | 21-196 | anthracene | 64 | 100 | 64 | 27-133 |
| 2-nitrophenol | 66 | 100 | 66 | 29-182 | di-n-butylphthalate | 74 | 100 | 74 | 1-120 |
| 2,4-dimethylphenol | 74 | 100 | 74 | 32-119 | fluoranthene | 72 | 100 | 72 | 26-137 |
| bis(2-chloroethoxy)methane | 68 | 100 | 68 | 33-184 | benzidine | NA | NA | NA | 30-150 |
| 2,4-dichlorophenol | 72 | 100 | 72 | 39-135 | pyrene | 75 | 100 | 75 | 52-120 |
| 1,2,4-trichlorobenzene | 48 | 100 | 48 | 44-142 | butylbenzylphthalate | 70 | 100 | 70 | 1-152 |
| naphthalene | 60 | 100 | 60 | 21-133 | benzo(a)anthracene | 74 | 100 | 74 | 33-143 |
| hexachloro-1,3-butadiene | 47 | 100 | 47 | 24-120 | chrysene | 72 | 100 | 72 | 17-168 |
| 4-chloro-3-methylphenol | 64 | 100 | 64 | 22-147 | 3,3'-dichlorobenzidine | NA | NA. | NA | 1-262 |
| hexachlorocyclopentadiene | 61 | 100 | 61 | 30-150 | bis(2-ethylhexyl)phthalate | 34 | 100 | 34 | 8-158 |
| 2,4,6-trichlorophenol | 66 | 100 | 66 | 37-144 | di-n-octylphthalate | 38 | 100 | 38 | 4-146 |
| 2-chloronaphthalene | 51 | 100 | 51, J2 | 60-120 | benzo(b)fluoranthene | 84 | 100 | 84 | 24-159 |
| acenaphthylene | 62 | 100 | 62 | 33-145 | benzo(k)fluoranthene | 78 | 100 | 78 | 11-162 |
| dimethylphthalate | 52 | 100 | 52 | 1-120 | benzo(a)pyrene | 75 | 100 | 75 | 17-163 |
| 2,6-dinitrotoluene | 58 | 100 | 58 | 50-158 | indeno(1,2,3-cd)pyrene | 82 | 100 | 82 | 1-171 |
| 2,4-dinitrotoluene | .59 | 100 | 59 | 39-139 | dibenzo(a,h)anthracene | 79 | 100 | 79 | 1-227 |
| | | | | | benzo(g,h,i)perylene | 86 | 100 | 86 | 1-219 |

SURROGATE STANDARDS

| | Recovery | Acceptance Limits | | Recovery | Acceptance Limits |
|----------------------|----------|-------------------|------------------|----------|-------------------|
| | (%) | (%) | | (%) | (%) |
| 2-fluorophenol | 37 | 25-175 | nitrobenzene-d5 | 59 | 22-178 |
| phenol-d5 | 34 | 24-176 | 2-fluorobiphenyl | 55 | 38-162 |
| 2,4,6-tribromophenol | 84 | 24-176 | terphenyl-d14 | 80 | 53-147 |

U = Below quantitation limit NA = Not Added

J2 = LCS %R below limit. No sample remaining.

Page of

LCSD177W

Sample Designation:

Laboratory Control Sample Duplicate

Date Sampled: Date Extracted: 12/14/18 0930 12/14/18 0930

Date Analyzed: 12/22/18 Matrix: Water

SEMIVOLATILE ORGANICS Method Reference: EPA 625.

| | Concentration | Added | Recovery | Limits | | Concentration | Added | Recovery | Limits |
|-----------------------------|---------------|--------|----------|--------|------------------------------|---------------|--------|----------|--------|
| | (ug/L) | (ug/L) | (%) | (%) | | (ug/L) | (ug/L) | (%) | (%) |
| N-nitrosodimethylamine | 39 | 100 | 39 | 30-150 | acenaphthene | 56 | 100 | 56 | 47-145 |
| phenol | 32 | 100 | 32 | 5-120 | 2,4-dinitrophenol | 51 | 100 | 51 | 1-191 |
| 2-chlorophenol | 59 | 100 | 59 | 23-134 | 4-nitrophenol | 36 | 100 | 36 | 1-132 |
| bis(2-chloroethyl)ether | 46 | 100 | 46 | 12-158 | fluorene | 59 | 100 | 59 | 59-121 |
| 1,3-dichlorobenzene | 53 | 100 | 53 | 30-150 | - 4-chlorophenyl-phenylether | 60 | 100 | 60 | 25-158 |
| 1,4-dichlorobenzene | 55 | 100 | 55 | 30-150 | diethylphthalate | 54 | 100 | 54 | 1-120 |
| 1,2-dichlorobenzene | 57 | 100 | 57 | 30-150 | 4,6-dinitro-2-methylphenol | 69 | 100 | 69 | 1-181 |
| 2-methylphenol (m-cresol) | NA. | NA. | NA | 30-150 | N-nitrosodiphenylamine | 63 | 100 | 63 | 30-150 |
| bis(2-chloroisopropyl)ether | 68 | 100 | 68 | 36-166 | 1,2-diphenylhydrazine | NA | NA | NA | 30-150 |
| hexachloroethane | 59 | 100 | 59 | 40-120 | 4-bromophenyl-phenylether | 61 | 100 | 61 | 53-127 |
| N-nitroso-di-n-propylamine | 70 | 100 | 70 | 1-230 | hexachlorobenzene | 65 | 100 | 65 | 1-152 |
| 4-methylphenol (p-cresol) | NA. | NA | NA | 30-150 | pentachlorophenol | 80 | 100 | 80 | 14-176 |
| nitrobenzene | 57 | 100 | 57 | 35-180 | phenanthrene | 64 | 100 | 64 | 54-120 |
| isophorone | 55 | 100 | 55 | 21-196 | anthracene | 64 | 100 | 64 | 27-133 |
| 2-nitrophenol | 75 | 100 | 75 | 29-182 | di-n-butylphthalate | 72 | 100 | 72 | 1-120 |
| 2,4-dimethylphenol | 64 | 100 | 64 | 32-119 | fluoranthene | 74 | 100 | 74 | 26-137 |
| bis(2-chloroethoxy)methane | 66 | 100 | 66 | 33-184 | benzidine | NA | NA. | NA | 30-150 |
| 2,4-dichlorophenol | 81 | 100 | 81 | 39-135 | pyrene | 76 | 100 | 76 | 52-120 |
| 1,2,4-trichlorobenzene | 46 | 100 | 46 | 44-142 | butylbenzylphthalate | 70 | 100 | 70 | 1-152 |
| naphthalene | 58 | 100 | 58 | 21-133 | benzo(a)anthracene | 74 | 100 | 74 | 33-143 |
| hexachloro-1,3-butadiene | 45 | 100 | 45 | 24-120 | chrysene | 72 | 100 | 72 | 17-168 |
| 4-chloro-3-methylphenol | 68 | 100 | 68 | 22-147 | 3,3'-dichlorobenzidine | NA | NA | NA | 1-262 |
| hexachlorocyclopentadiene | 59 | 100 | 59 | 30-150 | bis(2-ethylhexyl)phthalate | 35 | 100 | 35 | 8-158 |
| 2,4,6-trichlorophenol | 73 | 100 | 73 | 37-144 | di-n-octylphthalate | 41 | 100 | 41 | 4-146 |
| 2-chloronaphthalene | 51 | 100 | 51, J2 | 60-120 | benzo(b)fluoranthene | 88 | 100 | 88 | 24-159 |
| acenaphthylene | 62 | 100 | 62 | 33-145 | benzo(k)fluoranthene | 93 | 100 | 93 | 11-162 |
| dimethylphthalate | 51 | 100 | 51 | 1-120 | benzo(a)pyrene | 77 | 100 | 77 | 17-163 |
| 2,6-dinitrotoluene | 58 | 100 | 58 | 50-158 | indeno(1,2,3-cd)pyrene | 73 | 100 | 73 | 1-171 |
| 2,4-dinitrotoluene | 60 | 100 | 60 | 39-139 | dibenzo(a,h)anthracene | 67 | 100 | 67 | 1-227 |
| I'v Com Com Sign | | | | | benzo(g,h,i)perylene | 73 | 100 | 73 | 1-219 |

SURROGATE STANDARDS

| SALMASON SILVISIONS | | | | | |
|----------------------|----------|-------------------|------------------|----------|-------------------|
| | Recovery | Acceptance Limits | | Recovery | Acceptance Limits |
| | (%) | (%) | | (%) | (%) |
| 2-fluorophenol | 39 | 25-175 | nitrobenzene-d5 | 58 | 22-178 |
| phenol-d5 | 35 | 24-176 | 2-fluorobiphenyl | 53 | 38-162 |
| 2,4,6-tribromophenol | 94 | 24-176 | terphenyl-d14 | 80 | 53-147 |

U = Below quantitation limit

NA = Not Added

J2 = LCS %R below limit. No sample remaining.

Page of

ESI

Lab Number: 31456-058MS
Sample Designation: Matrix Spike
Date Sampled: 12/14/18 0930
Date Extracted: 12/14/18 0930
Date Analyzed: 12/21/18
Matrix: Water

SEMIVOLATILE ORGANICS Method Reference: EPA 625.

| | Concentration | Added | Recovery | Limits | | Concentration | Added | Recovery | Limits |
|-----------------------------|---------------|--------|----------|--------|------------------------------|---------------|--------|----------|--------|
| | (ug/L) | (ug/L) | (%) | (%) | | (ug/L) | (ug/L) | (%) | (%) |
| N-nitrosodimethylamine | 48 | 100 | 48 | 30-150 | acenaphthene | 59 | 100 | 59 | 47-145 |
| phenol | 48 | 100 | 48 | 5-120 | 2,4-dinitrophenol | 43 | 100 | 43 | 1-191 |
| 2-chlorophenol | 61 | 100 | 61 | 23-134 | 4-nitrophenol | 42 | 100 | 42 | 1-132 |
| bis(2-chloroethyl)ether | 49 | 100 | 49 | 12-158 | fluorene | 60 | 100 | 60 | 59-121 |
| 1,3-dichlorobenzene | 58 | 100 | 58 | 30-150 | · 4-chlorophenyl-phenylether | 61 | 100 | 61 | 25-158 |
| 1,4-dichlorobenzene | 61 | 100 | 61 | 30-150 | diethylphthalate | 55 | 100 | 55 | 1-120 |
| 1,2-dichlorobenzene | 63 | 100 | 63 | 30-150 | - 4,6-dinitro-2-methylphenol | 60 | 100 | 60 | 1-181 |
| 2-methylphenol (m-cresol) | NA | NA | NA | 30-150 | N-nitrosodiphenylamine | 66 | 100 | 66 | 30-150 |
| bis(2-chloroisopropyl)ether | 73 | 100 | 73 | 36-166 | 1,2-diphenylhydrazine | NA | NA | NA. | 30-150 |
| hexachloroethane | 64 | 100 | 64 | 40-120 | 4-bromophenyl-phenylether | 62 | 100 | 62 | 53-127 |
| N-nitroso-di-n-propylamine | 73 | 100 | 73 | 1-230 | hexachlorobenzene | 63 | 100 | 63 | 1-152 |
| 4-methylphenol (p-cresol) | NA | NA | NA | 30-150 | pentachlorophenol | 22 | 100 | 22 | 14-176 |
| nitrobenzene | 62 | 100 | 62 | 35-180 | phenanthrene | 64 | 100 | 64 | 54-120 |
| isophorone | 59 | 100 | 59 | 21-196 | anthracene | 65 | 100 | 65 | 27-133 |
| 2-nitrophenol | 68 | 100 | 68 | 29-182 | di-n-butylphthalate | 81 | 100 | 81 | 1-120 |
| 2,4-dimethylphenol | 62 | 100 | 62 | 32-119 | fluoranthene | 72 | 100 | 72 | 26-137 |
| bis(2-chloroethoxy)methane | 69 | 100 | 69 | 33-184 | benzidine | NA. | NA | NA | 30-150 |
| 2,4-dichlorophenol | 75 | 100 | 75 | 39-135 | pyrene | 70 | 100 | 70 | 52-120 |
| 1,2,4-trichlorobenzene | 49 | 100 | 49 | 44-142 | butylbenzylphthalate | 67 | 100 | 67 | 1-152 |
| naphthalene | 63 | 100 | 63 | 21-133 | benzo(a)anthracene | 70 | 100 | 70 | 33-143 |
| hexachloro-1,3-butadiene | 49 | 100 | 49 | 24-120 | chrysene | 68 | 100 | 68 | 17-168 |
| 4-chloro-3-methylphenol | 68 | 100 | 68 | 22-147 | 3,3'-dichlorobenzidine | NA | NA | NA | 1-262 |
| hexachlorocyclopentadiene | 45 | 100 | 45 | 30-150 | bis(2-ethylhexyl)phthalate | 34 | 100 | 34 | 8-158 |
| 2,4,6-trichlorophenol | 62 | 100 | 62 | 37-144 | di-n-octylphthalate | 37 | 100 | 37 | 4-146 |
| 2-chloronaphthalene | 54 | 100 | 54, J5 | 60-120 | benzo(b)fluoranthene | 80 | 100 | 80 | 24-159 |
| acenaphthylene | 66 | 100 | 66 | 33-145 | benzo(k)fluoranthene | 82 | 100 | 82 | 11-162 |
| dimethylphthalate | 58 | 100 | 58 | 1-120 | benzo(a)pyrene | 72 | 100 | 72 | 17-163 |
| 2,6-dinitrotoluene | 58 | 100 | 58 | 50-158 | indeno(1,2,3-cd)pyrene | 73 | 100 | 73 | 1-171 |
| 2,4-dinitrotoluene | 59 | 100 | 59 | 39-139 | dibenzo(a,h)anthracene | 68 | 100 | 68 | 1-227 |
| | | | | | benzo(g,h,i)perylene | 75 | 100 | 75 | 1-219 |

| SURROGATE STANDARDS | Recovery | Acceptance Limits | | Recovery | Acceptance Limits |
|----------------------|----------|-------------------|------------------|----------|-------------------|
| | (%) | (%) | | (%) | (%) |
| 2-fluorophenol | 47 | 25-175 | nitrobenzene-d5 | 62 | 22-178 |
| phenol-d5 | 56 | 24-176 | 2-fluorobiphenyl | 60 | 38-162 |
| 2,4,6-tribromophenol | 66 | 24-176 | terphenyl-d14 | 75 | 53-147 |

U = Below quantitation limit NA = Not Added J5 = MS %R below limit.

Page of ESI

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Hampton, NH 03842-0788 603-926-3345 fax 603-926-3521

www.envirosystems.com

SAMPLE RECEIPT AND CONDITION DOCUMENTATION

Page 1 of 3

STUDY NO:

31456

SDG No:

Underwood Engineers, Inc.

Project:

Piscataqua River

Delivered via:

Date and Time Received:

12/12/18 1200

Date and Time Logged into Lab:

12/12/18 1313

Received By:

JK

Logged into Lab by:

ELJ AM

Air bill / Way bill:

No Cooler on ice/packs: Yes Air bill included in folder if received? Custody Seals present?

Custody Seals intact?

NA NA NA

Cooler Blank Temp (C) at arrival: 8.7 Number of COC Pages: COC Serial Number(s):

COC Complete:

A1017011

Yes

Does the info on the COC match the samples? Were samples received within holding time?

Yes Yes Yes

Field ID complete: Yes Sampled Time: No Analysis request: Yes

Sampled Date: Yes

Were all samples properly labeled? Were proper sample containers used? Were samples received intact? (none broken or leaking)

Yes Yes Yes

COC Signed and dated: More all camples received? Yes

Were sample volumes sufficient for requested analysis? Were VOC vials free of headspace?

Vac

| Client notification/autho | | | pH Test strip ID number: | A-5086 |
|---------------------------|--------|----|--------------------------|--------|
| | 1.1.5 | | Allana allanak | Bottle |
| Field ID | Lab ID | Mx | Analysis Requested | |

| | | | | Bottle | Req'd | Verified |
|--------------|-----------|----|--------------------|-------------|--------|----------|
| Field ID | Lab ID | Mx | Analysis Requested | | Pres'n | Pres'n |
| PEASE_004 | 31456-001 | W | BOD | 500 P | 4C | Yes |
| PEASE_004 | 31456-002 | W | Enterococci | 100 Sterile | 4C | Yes |
| PEASE_004 | 31456-003 | W | FC | 100 Sterile | 4C | Yes |
| PEASE_004 | 31456-004 | W | TSS | 1000 P | 4C | Yes |
| PEASE_004 | 31456-005 | W | NH3 | 125 P | H2SO4 | Yes |
| PEASE_004DUP | 31456-006 | W | NH3 | 125 P | H2SO4 | Yes |
| PEASE_004 | 31456-008 | W | TKN,NO3+NO2,TN | 500 P | H2SO4 | Yes |
| PEASE_004DUP | 31456-009 | W | TKN,NO3+NO2,TN | 500 P | H2SO4 | Yes |
| PEASE_004 | 31456-010 | W | OG | 2x1000 G | H2SO4 | Yes |
| PEASE_004 | 31456-011 | W | TP | 250 P | H2SO4 | Yes |
| PEASE_004DUP | 31456-012 | W | TP | 250 P | H2SO4 | Yes |
| PEASE_004 | 31456-013 | W | TDS | 1000 P | 4C | Yes |
| PEASE_004 | 31456-014 | W | Turbidity | 250 P | 4C | Yes |
| PEASE_004 | 31456-015 | W | TPhen | 1000 G | H2SO4 | Yes |
| PEASE_004 | 31456-016 | W | VOC624 | 2x40 G | 4C | Yes |
| PEASE_004 | 31456-017 | W | HOLD VOC624 | 2x40 G | HCI | Yes |
| PEASE_004 | 31456-018 | W | ABN625 | 2x1000 G | 4C | Yes |
| NEW_004 | 31456-020 | W | BOD | 500 P | 4C | Yes |
| NEW_004 | 31456-021 | W | Enterococci | 100 Sterile | 4C | Yes |
| NEW_004 | 31456-022 | W | FC | 100 Sterile | 4C | Yes |
| NEW_004 | 31456-023 | W | TSS | 1000 P | 4C | Yes |

Notes and qualifications:

| COC |
|-----|
| |

SAMPLE RECEIPT AND CONDITION DOCUMENTATION

Page 2 of 3

STUDY NO: 31456

SDG No: Underwood Engineers, Inc.

Project: Piscataqua River

Delivered via: ESI

Date and Time Received: 12/12/18 1200 Date and Time Logged into Lab: 12/12/18 1313

Received By: JK Logged into Lab by: ELJ NM

Air bill / Way bill:

No Air bill included in folder if received?

NA
Cooler on ice/packs:

Yes Custody Seals present?

NA
Cooler Blank Temp (C) at arrival: 8.7

Custody Seals intact?

NA

Number of COC Pages: 6 COC Serial Number(s): A1017011

COC Complete: Yes Does the info on the COC match the samples? Yes

Sampled Date: Yes Were samples received within holding time? Yes
Field ID complete: Yes Were all samples properly labeled? Yes
Sampled Time: No Were proper sample containers used? Yes
Analysis request: Yes Were samples received intact? (none broken or leaking)

COC Signed and dated: Yes Were sample volumes sufficient for requested analysis? Yes Were all samples received? Yes Were VOC vials free of headspace? Yes Client notification/authorization: Required PH Test strip ID number: A-5086

| | | | | Bottle | Req'd | Verified |
|--------------|-----------|----|--------------------|-------------|--------|----------|
| Field ID | Lab ID | Mx | Analysis Requested | | Pres'n | Pres'n |
| NEW_004 | 31456-024 | W | NH3 | 125 P | H2SO4 | Yes |
| NEW_004DUP | 31456-025 | W | NH3 | 125 P | H2SO4 | Yes |
| NEW_004 | 31456-027 | W | TKN,NO3+NO2,TN | 500 P | H2SO4 | Yes |
| NEW_004DUP | 31456-028 | W | TKN,NO3+NO2,TN | 500 P | H2SO4 | Yes |
| NEW_004 | 31456-029 | W | OG | 2x1000 G | H2SO4 | Yes |
| NEW_004 | 31456-030 | W | TP | 250 P | H2SO4 | Yes |
| NEW_004DUP | 31456-031 | W | TP | 250 P | H2SO4 | Yes |
| NEW_004 | 31456-032 | W | TDS | 1000 P | 4C | Yes |
| NEW_004 | 31456-033 | W | Turbidity | 250 P | 4C | Yes |
| NEW_004 | 31456-034 | W | TPhen | 1000 G | H2SO4 | Yes |
| NEW_004 | 31456-035 | W | VOC624 | 2x40 G | 4C | Yes |
| NEW_004 | 31456-036 | W | HOLD VOC624 | 2x40 G | HCI | Yes |
| NEW_004 | 31456-037 | W | ABN625 | 2x1000 G | 4C | Yes |
| RIVER_004 | 31456-039 | W | BOD | 500 P | 4C | Yes |
| RIVER_004 | 31456-040 | W | Enterococci | 100 Sterile | 4C | Yes |
| RIVER_004 | 31456-041 | W | FC | 100 Sterile | 4C | Yes |
| RIVER_004 | 31456-042 | W | TSS | 1000 P | 4C | Yes |
| RIVER_004 | 31456-043 | W | NH3 | 125 P | H2SO4 | Yes |
| RIVER_003DUP | 31456-044 | W | NH3 | 125 P | H2SO4 | Yes |
| RIVER_003 | 31456-045 | W | TKN,NO3+NO2,TN | 500 P | H2SO4 | Yes |
| RIVER 003DUP | 31456-046 | W | TKN,NO3+NO2,TN | 500 P | H2SO4 | Yes |

Notes and qualifications:

| See COC | | | |
|---------|--|--|--|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

SAMPLE RECEIPT AND CONDITION DOCUMENTATION

Page 3 of 3

STUDY NO: 31456

SDG No: Underwood Engineers, Inc.

Project: Piscataqua River

Delivered via: ESI

12/12/18 1313 Date and Time Received: 12/12/18 1200 Date and Time Logged into Lab:

ELJ AM Received By: JK Logged into Lab by:

Air bill included in folder if received? NA Air bill / Way bill: No Cooler on ice/packs: Custody Seals present? Yes NA Cooler Blank Temp (C) at arrival: 8.7 Custody Seals intact? NA

Number of COC Pages: COC Serial Number(s): A1017011

COC Complete: Yes Does the info on the COC match the samples? Yes

Sampled Date: Yes Were samples received within holding time? Yes Field ID complete: Yes Were all samples properly labeled? Yes Sampled Time: No Were proper sample containers used? Yes Were samples received intact? (none broken or leaking) Analysis request: Yes Yes

COC Signed and dated: Yes Were sample volumes sufficient for requested analysis? Yes Were all samples received? Yes Were VOC vials free of headspace? Yes pH Test strip ID number: A-5086 Client notification/authorization: Required

| | | | | Bottle | Reg'd | Verified |
|--------------|-----------|----|--------------------|----------|--------|----------|
| Field ID | Lab ID | Mx | Analysis Requested | | Pres'n | Pres'n |
| RIVER_004 | 31456-047 | W | OG | 2x1000 G | H2SO4 | Yes |
| RIVER_004 | 31456-048 | W | TP | 250 P | H2SO4 | Yes |
| RIVER_003DUP | 31456-049 | W | TP | 250 P | H2SO4 | Yes |
| RIVER_004 | 31456-050 | W | TDS | 1000 P | 4C | Yes |
| RIVER_004 | 31456-051 | W | Turbidity | 250 P | 4C | Yes |
| RIVER_004 | 31456-052 | W | TPhen | 1000 G | H2SO4 | Yes |
| RIVER_004TB | 31456-053 | W | TPhen | 1000 G | H2SO4 | Yes |
| RIVER_004 | 31456-054 | W | VOC624 | 2x40 G | 4C | Yes |
| RIVER_004TB | 31456-055 | W | VOC624 | 2x40 G | 4C | Yes |
| RIVER_004 | 31456-056 | W | HOLD VOC624 | 2x40 G | HCI | Yes |
| RIVER_004TB | 31456-057 | W | HOLD VOC624 | 2x40 G | HCI | Yes |
| RIVER_004 | 31456-058 | W | ABN625 | 2x1000 G | 4C | Yes |
| RIVER_004TB | 31456-059 | W | ABN625 | 2x1000 G | 4C | Yes |
| | | | | | | |

Notes and qualifications:

| See COC | | |
|---------|--|--|
| | | |
| | | |
| | | |
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1 Lafayette Road Hampton, NH 03842 EnviroSystems, Inc. に S M

Voice: 603-926-3345 FAX: 603-926-3521

ESI Job No: 31454

11:00 1700 Date: 12-12-18 Time: Received at Lab By DK Duy Live (Coll Date: 1717) 18 Time: r Iller Analyses Requested and N=Not needed Special Instructions: TKN,NO3+NO2,TN TKN,NO3+NO2,TN 0001 Enterococci Task: BOD NH3 NH3 TRC TSS 90 S П 4 Piscataqua River L=Lab to do z Z z z z Z Z Z Z z z Z Steve Clifton W=Water S=Solid P0771 Matrix Water Water Water Water Water Water Water Water Water Water Water Water H2S04 Project Manager: Field Preser-vation H2S04 H2S04 H2S04 H2S04 H2S04 H2S04 Project Number: Received By: 5 40 5 40 4C Project Name: email: Type (P/G/T) CHAIN OF CUSTODY DOCUMENTATION م ۵ ۵. م <u>0</u> 0 ۵ ۵ ۵. O 0 Container Size (mL) 1000 8 1000 100 100 200 125 125 200 500 200 250 250 Date: 12/12/18Time: 11:06 Sampled Grab
By or composite
(GC) å Address: Portsmouth, NH 03801 3 0 Date://./_CTime: 0 0 C-8:45/ Address: 25 Vaughan Mall C 8.454 Contact: Steve Clifton Date Time Sampled Sampled 746 2/2/ S424 14% 1888/11/01 13/11-11/12 341 7 --12/0/8 sylate 1/2/- 1/6/ 17/11/11/11 2 . . Fax: Underwood Engineers, Inc. 006 PEASE 004DUP 603-436-6192 009 PEASE 004DUP 012 PEASE 004DUP Steve Clifton Steve Clifton NPDES
er Your Field ID;
(must agree with 004 PEASE 004 001 PEASE 004 002 PEASE 004 003 PEASE 004 005 PEASE 004 007 PEASE 004 008 PEASE 004 010 PEASE 004 011 PEASE 004 container) Relinquished By: Relinquished By: Protocol: NI Lab Number Invoice to: Report to: Comments Client: (assigned by lab) Voice: 48 of 76

306.8

COC Number: A1017011

Page Dec 2018 Sample Delivery Group No:

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to

EnviroSystems, Inc. 1 Lafayette Road Hampton, NH 03842 ESI

Voice: 603-926-3345 FAX: 603-926-3521

ESI JOD NO: 31456

| Contact: Steve Cifficon Address: 25 Vaughan Mell Project Names: Placed Cifficon Address: 25 Vaughan Mell Project Nameser: Steve Cifficon Address: Portemouth, NH 03901 Project Nameser: Steve Cifficon Project Nameser: Steve Cifficon Address: Portemouth, NH 03901 Project Nameser: Steve Cifficon | | | CH | CHAIN OF CUSTODY DOCUMENTATION | USTODY | DOC | JMENTA | NOIT | | | | |
|--|--------------|---------------------------|---------------|--------------------------------|----------|-----|-------------------------|-----------------|----------------------------|------------------------------|-------------------------------------|--------------------------------|
| Note | Client: | Underwood Engineers, Inc. | Contact: Ster | ve Clifton | | | | Project N | Vame: | Piscata | iqua River | |
| Project Manager: Steve Cition | Report to: | | Address: 25 \ | /aughan / | Mati | | | Project N | Vumber: | P0771 | | |
| Second Sampled Sampled Grab Continent Type Please Sampled Grap Continent Type Please Type T | Invoice to: | | Address: Pon | smouth, I | | _ | | Project N | /Janager: | Steve (| Slifton | |
| Field Date Time Sampled Graph Contrainer Field Matrix Field Field Matrix Field Matrix Field | Voice: | 603-436-6192 | Fax: | | | | | email: | | | | |
| Time Sampled | | JPDES | | | | | | | | | | |
| NSE 004 NSP 044 NSE 004 NSP 044 NSE 004 NSP 046 NSP | pe | | | | | | Contain Size (mL) | Type (P/G/T) | Field Preser- vation | Matrix S=Solid W=Water | Filter N=Not needed F=Done in field | |
| 15E 004 13/0/5 8.452 C 1 250 P 4C Waler N Turbidity 15E 004 13/0/6 8.454 C 2 40 G G 4C Waler N VOCE24 15E 004 13/0/6 8.454 C 2 40 G G 4C Waler N VOCE24 15E 004 13/0/6 8.454 C 2 40 G G 4C Waler N VOCE24 15E 004 13/0/6 8.454 C 2 1000 G 4C Waler N ABNE25 15E 004 13/0/6 8.454 C 1 1000 P 4C Waler N DOLH Temperature Conductivity 15E 004 13/0/6 8.454 C 1 1000 P 4C Waler N DOLH Temperature Conductivity 15E 004 13/0/6 8.454 C 1 1000 P 4C Waler N DOLH Temperature Conductivity 15E 005 13/0/6 8.454 C 1 1000 P 4C Waler N DOLH Temperature Conductivity 15E 005 13/0/6 8.454 Dale 2.3.47 Time: 17/0/6 8.456 Dale 2. | / 2 | 3 PEASE 004 | 14/11 | 1)) [| | | 1000 | ۵ | 40 | Water | z | TDS |
| 136 137 | 12 | 4 PEASE 004 | 4.8 states | 175 | S | | 250 | ۵ | 5 | Water | z | Turbidity |
| SE 004 DAM S.454 C 2 40 G G 4C Water N VOC624 SE 004 DAM S.454 C 2 40 G G HC Water N HOLD VOC624 SE 004 DAM S.454 C 2 1000 G 4C Water N DO.PH.Temperature.Conductivity SE 004 DAM S.454 C 1 1000 P 4C Water N DO.PH.Temperature.Conductivity SE 004 DAM S.454 S | 72 | 5 PEASE_004 | | 2. / | C | | 1000 | 9 | H2SO4 | Water | z | TPhen |
| SE 004 19/0/8 8 454 6 2 40 6 G HC Water N HOLD VOC624 | 12 | 6 PEASE_004 | 4:8 81/4/ci | 175 | 0 | 2 | 40 G | | 5 | Water | z | VOC624 |
| SE 004 12/12 12 12 1000 G 4C Water N ABN525 13 1000 P 4C Water N DO.PH.Temperature.Conductivit 14 1000 P 4C Water N DO.PH.Temperature.Conductivit 15 1000 P 4C Water N DO.PH.Temperature.Conductivit 15 1000 P 4C Water N DO.PH.Temperature.Conductivity 16 1000 P 4C Water N DO.PH.Temperature.Conductivity 16 1000 P 4C Water N DO.PH.Temperature.Conductivity 17 1000 P 4C Water N DO.PH.Temperature.Conductivity 18 1000 P 1000 | | 7 PEASE_004 | 48 8/c/c/ | 1/5 | 9 | 7 | 40 G | ø | Ę | Water | z | HOLD VOC624 |
| SE 004 DA S : 33 S S 1 1000 P 4C Water N DO, DH, Temperature, Conductivity | | 8 PEASE 004 | | * | U | 100 | 1000 | ø | å | Water | z | ABN625 |
| Lan M.S. Date: A.12 / Stime: 1200 Received By: D. M. L. Date; 17 Time: 17 Date: 22: 20. (A Time: 12): 20. (A Time: 17) Date: 22: 20. (A Time: 12): 20. (A Time: 17) Date: 17 [1] Time: 17 | 72 | 9 PEASE 004 | 4.8 8/4a | × × | 0 | 15 | 1000 | O. | 5 | Water | z | DO,pH,Temperature,Conductivity |
| Lan 12.5 Date: 12/12 / Stime: 1/00 Received By: Deceived By: Deceived By: Deceived By: Deceived at Lab By: Overgubles (2) 18 Time: 17 | | | | | | | | | | | | |
| Last Const. 200 Seceived By: Delet 200 Stime: 17.00 Received By: Delet 200 Stime: 17 Stime: | | | | - | | 3 = | | | | | | |
| Lan CLS Date: Date: 2/12/15/15/10 Received By: DLR Date: 17/12/18 Time: 17 | | | | | | | | | | | | |
| Lasi (Les Date: 2/13/15/150 Received By: D. R. Date; 2/13/15 Time: 17 | | (| | | | | | | | | | |
| 14 H Date: 17,00 Received at Lab By: Overelles (21/18 Time: | Relinquished | By Jan 128 | Date: | 12 | / STime: | 1 | | Received B | W.D. | K.K | 1. | 1 |
| | Relinquished | BIDAJER | Date | 2.4.4 | Time: | 1 | | Received a | (1) | repull | akely | |
| | Comments | | | | | | | | > | 0 | | 7.7 |

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COC Number: A1017011

Dec 2018 Sample Delivery Group No:

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1 Lafayette Road Hampton, NH 03842 EnviroSystems, Inc.

ESU

Voice: 603-926-3345 FAX: 603-926-3521

ESI JOD NO: 3456

100 Received at Lab By: \\ \(\mathcal{Up.21} \) \(\mathcal{Up.2} \) \(\ma Date: 10. 1 Time: Analyses Requested N=Not needed Special Instructions: TKN,NO3+NO2,TN TKN,NO3+NO2,TN 000 Enterococci Task: BOD SH2 NH3 TRC TSS 90 S 4 4 Piscataqua River L=Lab to do Filler z z z Z z z Z z z z z Z Steve Clifton W=Water P0771 S=Solid Matrix Water Water Water Water Water Water Water Water Water Water Water Water H2S04 Field Preser-vation H2S04 H2S04 H2S04 H2S04 Project Manager: H2S04 H2S04 Project Number: 4C 4C 4 40 40 Project Name: Received By: email: Type (P/G/T) CHAIN OF CUSTODY DOCUMENTATION ۵ 0 0. ۵. ۵ 1 ۵ ۵. O Δ. 9 Container Size (mL) 1000 1000 100 100 125 250 500 500 250 125 500 500 Date: 17/12/15/11me: 11:06> 12:08 S 10 Sampled Grab By or com-Address: Portsmouth, NH 03801 1 0 posite (G/C) 0 Date 2 1/2 Time: 3 0 Address: 25 Vaughan Mall 巴 Contact: Steve Clifton Date Time Sampled Sampled 3/12/18 7:11/H 34/15 MILLY SHOW 13/11-12/12 341. 241. 12/11/18/7:08/4 18/12/18 8:20 7 -74 -: 12/11-13/12 - 11/1 1 Fax: 1/6 Underwood Engineers, Inc. 603-436-6192 Steve Clifton Steve Clifton un 025 NEW 004DUP 028 NEW 004DUP 031 NEW 004DUP NPDES sr Your Field ID; (must agree with 023 NEW 004 024 NEW 004 030 NEW 004 020 NEW 004 021 NEW 004 022 NEW 004 026 NEW 004 027 NEW 004 029 NEW 004 container) Relinquished By: Relinquished By Protocol: N Lab Number Report to: invoice to: Comments: (assigned by lab) Client: Voice: 50 of 76

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COC Number: A1017011

Dec 2018 Sample Delivery Group No:

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EnviroSystems, Inc. 1 Lafayette Road Hampton, NH 03842

ESI

ESI Job No: 3/456

Voice: 603-926-3345 FAX: 603-926-3521

My Time: 17/12/18 Time: 1500 1200 DO.pH.Temperature,Conductivity Filter Analyses Requested N=Not needed Special Instructions: 0001 HOLD VOC624 Turbidity VOC624 ABN625 Task: TPhen TDS F=Done in field L=Lab to do Piscatagua River Z z z z z z z Steve Clifton Received at Lab By: Wayngha S=Solid W=Water P0771 Matrix Water Water Water Water Water Water Water H2S04 Field Preser-vation Project Manager: HC Project Number: 4 40 4 40 5 Project Name: Received By: email: Type (P/G/T) CHAIN OF CUSTODY DOCUMENTATION ۵ O O O 9 ۵ Container Size (mL) (40 G 40 G 1000 1000 1000 1000 250 Date: 12/15/18 Time: 11:06 Date J. H. J. Time: 100 Sampled Grab or com- No posite (GC) 10 10 Address: Portsmouth, NH 03801 0 0 C 0 ٨ Address: 25 Vaughan Mall 四日 Contact: Steve Clifton Noc. Skyloto 13/12/1/ 7:11/4 B Date Time Sampled Sampled 24/45 24h5 11117 5/151 17-40 13/12 7:114 17 9/81-1/61 いない Fax: Underwood Engineers, Inc. 603-436-6192 Steve Clifton Steve Clifton (must agree with container) Your Field ID: 035 NEW 004 033 NEW 004 034 NEW 004 036 NEW 004 032 NEW 004 037 NEW 004 038 NEW 004 NPDES Relinquished By: Relinquished By: Invoice to: Comments Report to: Lab Number Client: Protocol: (assigned by lab) Voice: 51 of 76

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COC Number: A1017011

Sample Delivery Group No:

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to (1

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Dec 2018

Voice: 603-926-3345 FAX: 603-926-3521

ESI JOB NO: 3 1454

Link (1001, Date: 12/12/18 Time: 1700 Date J. J. F Time: Filter Analyses Requested N=Not needed Special Instructions: TKN,NO3+NO2,TN TKN,NO3+NO2,TN 0001 Enterococci Task: BOD NH3 TDS TSS NH3 90 5 D 4 F=Done in field Piscataqua River L=Lab to do Z z z z z z z Z z z Steve Clifton S=Solid W=Water P0771 Matrix Water Water Water Water Water Water Water Water Water Water Water Water H2S04 H2S04 H2S04 H2S04 H2S04 H2S04 H2S04 Field Preser-vation Project Manager: Received at Lab By: Project Number: 4C Q4 40 4C 40 Project Name: Received By: email: Type (P/G/T) CHAIN OF CUSTODY DOCUMENTATION ۵. ۵. 9 ۵ ۵ a ۵ ۵ ۵ ۵. 0 9 Container Size (mL) 1000 1000 1000 Date 2-12-18 Time: 17:00 200 125 125 250 200 100 5 500 250 Date: 12/12/14/me: 11/4/ S 10 Sampled Grab
By or composite (G/C) Address: Portsmouth, NH 03801 Address: 25 Vaughan Mall Contact: Steve Clifton 50 Time Sampled (0, 2) 10 33 10 34 17:01 10:30 1201 10:30 103 500 53 から 81818 Date Fax: EnviroSystems, Inc. 1 Lafayette Road Hampton, NH 03842 Underwood Engineers, Inc. 044 RIVER 00\$DUP 046 RIVER 003DUP 049 RIVER 000 DUP 603-436-6192 Steve Clifton Steve Clifton NPDES er Your Field ID: (must agree with 045 RIVER 004 047 RIVER 004 042 RIVER 004 043 RIVER 004 048 RIVER 004 039 RIVER 004 040 RIVER 004 041 RIVER 004 050 RIVER 004 container) Relinquished By: Relinquished By: ES ES Protocol: NF Lab Number Comments: Invoice to: Report to: (assigned by lab) Client: Voice:

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Sample Delivery Group No:

Dec 2018

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COC Number: A1017011

EnviroSystems, Inc. 1 Lafayette Road Hampton, NH 03842 ESI

Voice: 603-926-3345 FAX: 603-926-3521

ESI JOD NO: 31454

Ling My Date: 17/12/18 Time: 1200 Date 7.7 Marime: Filter Analyses Requested N=Not needed Special Instructions: 0001 HOLD VOC624 HOLD VOC624 Turbidity VOC624 VOC624 Task: ABN625 ABN625 TPhen TPhen W=Water F=Done in field Piscataqua River z z z z z Z z Steve Clifton Z z Matrix S=Solid P0771 Water Water Water Water Water Water Water Water Water Received at Lab By: 7 994 H2S04 H2S04 Field Preser-vation Project Manager: Project Number: 40 덛 5 40 HC 4C 4C Received By: ()) Project Name: email: Type (P/G/T) CHAIN OF CUSTODY DOCUMENTATION ۵ O O O O O O Ø در Container Size (mL) (1000 40 G 1000 40 G 40 G 40 G 1000 1000 250 Date 24 18 Time: 12.00 Date 7 12.14 Time. 11.80 ô 10 6.1 Sampled Grab
By or composite (G/C) Address: Portsmouth, NH 03801 Address: 25 Vaughan Mall Contact: Steve Clifton Time 393 1024 かんつつ うい 1031 3 30 17/m/21 Date Sampled Fax: Underwood Engineers, Inc. 8/10/0 603-436-6192 Steve Clifton Steve Clifton 053 RIVER 004TB 057 RIVER 004TB CET RIVER 004TB 055 RIVER GOZTB NPDES : Your Field ID: (must agree with 054 RIVER 004 051 RIVER 004 052 RIVER 004 056 RIVER 004 056 RIVER C04 container) Relinquished By: Relinquished By: Protocol: NF Lab Number Invoice to: Comments: Report to: Voice: Client: (assigned by lab)

COC Number: A1017011

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Dec 2018

Sample Delivery Group No:

| ESI #: 3145() Col.D. | | Date: 12/12/19 | | | Initials: N | 11/ | |
|----------------------|-----------------|---|---|-------|--------------|--------------------------|--|
| | | | | | 14.50 | 7 | |
| | | Col.Dil.H ₂ 0: M-3355 Pipette Used: A-5025 | | | Positive lot | -335(1 :#: ECB113018A | |
| | | | | 1 | | | 2601301011 |
| Sample ID | Time Sampled | Time Filtered | mls filtered per 100 mls total vol. | Media | CFU's | Total w/ backround | Comments |
| start Blank | | 1456 | 100 | M-FC | 0 | 0 | |
| 022 | 110 | 1459 | | M-FC | 0 | 0 | 12 cm/10ml |
| | | 1502 | 10 | M-FC | 0 | 0 | LEGFU/100INL |
| | | 1505 | 10d | M-FC | Ó | 0 | |
| 1 | 1 | 1507 | -10050 | M-FC | Ŏ | Ŏ | spilled in cooler, not enough sample for 100 |
| 041 | 1033 | 1456 | @MW12112 | M-FC | 0 | 0 | Sample and the total |
| | F-14(2)-1 | 1459 | 10 | M-FC | 2 | 2 | 20/10×100=20 5000 |
| 1 | 1 | 1502 | 100 | M-FC | 20 | 20 | 20 CFU / 100 ML |
| 003 | 0845 | 1456 | | M-FC | 0 | 0 | 10 X1002 1 CFU 10ml |
| 1 | | 1459 | 10 | M-FC | Õ | 0 | TYTELE . |
| 1 | 1 | 1502 | 100 | M-FC | | | |
| Positive | | 1507 | 100 | M-FC | V | V | |
| End Blank | | 1507 | 100 | M-FC | 0 | 0 | |
| | | The II is the | | M-FC | | | |
| | | | | M-FC | | | |
| | | | | M-FC | | | |
| | | | | M-FC | | | |
| | | 1 | | M-FC | | | |
| | | | | M-FC | | | |
| | | | | M-FC | | | |
| | | | | M-FC | | | |
| | | | | M-FC | 1 | | |
| | | - | | M-FC | | | |
| | | | | M-FC | |] | |
| al a | | | | M-FC | | | |
| | | | | M-FC | | | |
| | | | | M-FC | | | |

MW

Counted:

Method 9222D

1445

12/13/18

Counted By:

MICROBIOLOGICAL ASSAY DATA SHEET Client: Underwood Engineers, Inc. Date: 12/12/19 Initials: MW ESI #: 31450 Col.Dil.H20: M-3355 M-El: M-3353 Date collected: 12/12/19 Pipette Used: A-5025 Positive lot #:EFB1/30/8A

| Sample ID | Time Sampled | Time Filtered | mls filtered per 100 mls total vol. | Media | CFU's | Total w/ backround | Comments |
|-------------------|-----------------|------------------|---|------------------|----------|-----------------------|-----------------------------|
| start Blank | | 1436 | 100 | M-EI | 0 | 0 | |
| 021 | 0711 | 1439 | V | M-EI | 1 | 1 | |
| | | 1442 | 10 | M-EI | 3 | 3 | |
| | | 1444 | 100 | M-EI | 2 | 2 | |
| J | 7 | 1444 | 100 | M-EI | 13 | ٦3 | 1 |
| 040 | 1033 | 1436 | | M-EI | 0 | 0 | TTY IN X 100= LACEN/COMP |
| | | 1439 | 10 | M-EI | 2 | 2 | |
| → | + | 1442 | 100 | M-El | | Tipe = - | 13/110 × 100= 12 CFU 100 ML |
| 002 | 0845 | 1436 | (| M-EI | 0 | 0 | |
| | | 1439 | 10 | M-EI | 5 | 5 | |
| 1 | 1 | 1442 | 100 | M-EI | 40 | 40 | 40 CFU 100ML |
| Positive. | | 1446 | 100 | M-EI | V | V | 40/100/100-40cfayou |
| End Blank | | 1446 | 100 | M-EI | 0 | 0 | |
| | | | 777 | M-EI | | | |
| | }- | | | M-EI | | | |
| | | | | M-EI | | | 1 |
| | | | | M-EI | | | |
|) — | | | | M-EI | | | |
| | | | | M-EI | | | |
| | | | | M-EI | li, | | |
| | | | | M-EI | | | |
| | | | | M-EI | | | |
| | | | | M-EI | | | |
| | | | | M-EI | | | |
| | | | | M-EI | | | |
| | | | 1 | M-EI | | | |
| | | 1 | | M-EI | | | |
| 1 | | | | M-EI | | | |
| | | | | M-EI | | | |
| M-El stored in In | cubator #309 | Temp: | 41.0 | 1449 | 12/12/19 | to 1440 | 12/13/18 |
| Method EPA 160 | 0 | Counte | d: | 1440 55 of 76 | 12/13/18 | Counted E | By: MW |

Sample Chlorine Check

CI Strips <u>A-5224</u> Date & Time 12/12/16 1425 Initial MW

| Sample | Resul | t . |
|--------|-------|------|
| 021 | 0.0 | mg/L |
| 040 | 0.0 | mg/L |
| 002 | 0,0 | mg/L |

Sample Chlorine Check

CI Strips 6-5224 Date & Time 12/12/18 1425 Initial MW

| Sample | Resu | ılt |
|--------|------|------|
| 022 | 0.0 | mg/L |
| 041 | 0.0 | mg/L |
| 003 | 0.0 | mg/L |

Microbiology Report Review Checklist

| STUDY #: 31456 | <u> </u> |
|---------------------------------|------------|
| CLIENT: Underwood Engineers, In | <u>.</u> . |
| PROJECT: | = |
| DATE IN: 12/12/18 | DATE DUE: |

| Analyst Data Review | Date | Initials | Comments |
|---|----------|----------|----------|
| Chains of Custody Complete | 12/13/19 | MW | |
| Sample Receipt Complete | | 7/ 2/4 | |
| Bench Sheets Complete (dates, times, initials, etc) | 1 | 1 | |

| Technical Report Review | Date | Initials | Comments |
|----------------------------|----------|----------|----------|
| Data Acceptability Review | 12/27/18 | UF | |
| Draft Report | V | U | |
| Final Report Reviewed | | | |
| QA Audit / Review Complete | | | |
| Report Printed to PDF | | | |
| Report scanned to archive | | | |
| Report Sent to Client | | | |
| Invoice Sent | | | |



ANALYTICAL REPORT

Lab Number:

L1851125

Client:

Enthalpy Analytical

1 Lafayette Road

PO Box 778

Hampton, NH 03843

ATTN:

Alexandra Mackinnon

Phone:

(603) 926-3345

Project Name:

31456

Project Number:

Not Specified

Report Date:

12/18/18

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019 508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com



Lab Number: L1851125 Report Date: 12/18/18

31456 Not Specified

Project Name: Project Number:

| Alpha Sample ID | Client ID | Matrix | Sample Location | Collection Date/Time | Receive Date |
|--------------------|-----------|--------|--------------------|-------------------------|--------------|
| L1851125-01 | 31456-015 | WATER | Not Specified | 12/12/18 00:00 | 12/12/18 |
| L1851125-02 | 31456-034 | WATER | Not Specified | 12/12/18 00:00 | 12/12/18 |
| L1851125-03 | 31456-053 | WATER | Not Specified | 12/12/18 10:21 | 12/12/18 |
| 11851125-04 | 31456-052 | WATER | Not Specified | 12/12/18 10:20 | 12/12/18 |

Serial No:12181819:15

Project Name: 31456 Lab Number: L1851125
Project Number: Not Specified Report Date: 12/18/18

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

Title: Technical Director/Representative

Date: 12/18/18



Amita Naik

INORGANICS & MISCELLANEOUS



Serial_No:12181819:15

Project Name: Lab Number: 31456 L1851125

Project Number: Not Specified Report Date: 12/18/18

SAMPLE RESULTS

Lab ID: L1851125-01 Date Collected: 12/12/18 00:00 Client ID: 31456-015 Date Received: 12/12/18 Not Specified Sample Location: Not Specified Field Prep:

Sample Depth: Matrix: Water

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|-----------------------|-----------------|-----------|-------|-------|-----|--------------------|------------------|------------------|----------------------|---------|
| General Chemistry - 1 | Westborough Lab | | | | | | | Name of | | |
| Phenolics, Total | ND | | mg/l | 0,030 | * | 1 | 12/17/18 06:15 | 12/18/18 05:16 | 4,420.1 | GD |



Serial_No:12181819:15

L1851125

Lab Number:

Project Name: 31456

Project Number: Not Specified Report Date: 12/18/18

SAMPLE RESULTS

Lab ID: L1851125-02 Date Collected: 12/12/18 00:00 Client ID: 31456-034 Date Received: 12/12/18

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water

Dilution Analytical Method Date Date Factor Prepared Analyzed Parameter Result Qualifier Units RL MDL Analyst General Chemistry - Westborough Lab Phenolics, Total ND mg/l 0.030 1 12/17/18 06:15 12/18/18 05:17 4,420.1 GD



L1851125

Lab Number: **Project Name:** 31456

Project Number: Not Specified Report Date: 12/18/18

SAMPLE RESULTS

Lab ID: L1851125-03 Date Collected: 12/12/18 10:21 Client ID: 31456-053 Date Received: 12/12/18 Not Specified Sample Location: Not Specified Field Prep:

Sample Depth: Matrix: Water

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|-----------------------|-----------------|-----------|-------|-------|-----|--------------------|------------------|------------------|----------------------|---------|
| General Chemistry - 1 | Westborough Lab |) | | | | | | | | |
| Phenolics, Total | ND | | mg/l | 0.030 | 100 | 1 | 12/17/18 06:15 | 12/18/18 05:19 | 4,420.1 | GD |



Project Name:

31456

Lab Number:

L1851125

Project Number: Not Specified

Report Date:

12/18/18

SAMPLE RESULTS

Lab ID:

L1851125-04

Client ID:

31456-052

Sample Location:

Not Specified

Date Collected:

12/12/18 10:20

Date Received:

12/12/18

Field Prep:

Not Specified

Sample Depth:

Matrix:

Water

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---------------------|-----------------|-----------|-------|-------|-----|--------------------|------------------|------------------|----------------------|---------|
| General Chemistry - | Westborough Lab |) | | | | | | | | |
| Phenolics, Total | ND | | mg/l | 0.030 | - | 1 | 12/17/18 06:15 | 12/18/18 05:20 | 4,420.1 | GD |



Project Name: 31456 Lab Number:

L1851125

Project Number: Not Specified

Report Date:

12/18/18

Method Blank Analysis Batch Quality Control

| Parameter | Result Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---------------------|-------------------------|-------------|---------|--------|--------------------|------------------|------------------|----------------------|---------|
| General Chemistry - | Westborough Lab for san | nple(s): 0° | 1-04 Ba | tch: W | G1190182-1 | ĺ | | | |
| Phenolics, Total | ND | mg/l | 0.030 | | 1 | 12/17/18 06:15 | 12/18/18 05:11 | 4,420.1 | GD |



Lab Control Sample Analysis Batch Quality Control

Not Specified

Project Number: Project Name:

31456

L1851125 Lab Number:

12/18/18 Report Date:

> "Recovery Limits Qual LCSD %Recovery Qual LCS %Recovery Parameter

General Chemistry - Westborough Lab Associated sample(s): 01-04 Batch: WG1190182-2

88

Phenolics, Total

70-130

RPD Limits

Qual

RPD

ALPHA

Matrix Spike Analysis Batch Quality Control

31456

Project Number: Project Name:

L1851125 Lab Number:

12/18/18 Report Date: 20

70-130

88

0.35

0.4

2

Phenolics, Total

RPD Qual Limits QC Sample: L1851048-01 Client ID: MS Sample Recovery Limits MSD F %Recovery Qual General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1190182-4 MSD Qual Found MS %Recovery MS MS Native Sample Not Specified Parameter

Lab Duplicate Analysis

Batch Quality Control

Not Specified

Project Number: Project Name:

31456

Lab Number:

L1851125

12/18/18 Report Date:

RPD Limits General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1190182-3 QC Sample: L1851048-01 Client ID: DUP Sample Qual RPD Duplicate Sample Units Native Sample Parameter

20

NC

l/gm

9

2

Phenolics, Total

ALPHA

*Values in parentheses indicate holding time in days

Page 13 of 18

Project Name: 31456

Project Number: Not Specified

Sample Receipt and Container Information

Serial_No:12181819:15 Lab Number: L1851125

Report Date: 12/18/18

YES

Were project specific reporting limits specified?

Cooler Information

Cooler Custody Seal

Absent

| м | Absent | | | | | | | | |
|-----------------------|-----------------------------|--------|---------|-------|------------|-------------|--------|-----------|-----------------|
| Container Information | rmation | | Initial | Final | Temp | | | Frozen | |
| Container ID | Container ID Container Type | Cooler | Η | Н | deg C Pres | Pres | Seal | Date/Time | Analysis(*) |
| L1851125-01A | Amber 950ml H2SO4 preserved | m | 8 | 0 | 4,8 | > | Absent | | TPHENOL-420(28) |
| L1851125-02A | Amber 950ml H2SO4 preserved | m | 0 | 42 | 4.8 | > | Absent | | TPHENOL-420(28) |
| L1851125-03A | Amber 950ml H2SO4 preserved | m | 42 | 8 | 8.4 | > | Absent | | TPHENOL-420(28) |
| L1851125-04A | Amber 950ml H2SO4 preserved | ø | 5 | 2 | 4.8 | > | Absent | | TPHENOL-420(28) |
| | | | | | | | | | |

Project Name: 31456 Lab Number: L1851125
Project Number: Not Specified Report Date: 12/18/18

GLOSSARY

Acronyms

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis

of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an
analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria, An EMPC is a worst-case

estimate of the concentration.

EPA - Environmental Protection Agency,

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of

analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of

analytes or a material containing known and verified amounts of analytes.

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any

adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for

which an independent estimate of target analyte concentration is available.

MSD - Matrix Spike Sample Duplicate; Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's

reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI · Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL

includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the
precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less

than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

values; almough the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the

associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample is toxicity derived by multiplying each dioxin and furan by its corresponding TEF

and then summing the resulting values.

 Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

 The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'. Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

Total: With respect to Organic analyses, a "Total' result is defined as the summation of results for individual isomers or Aroclors. If a "Total' result is requested, the results of its individual components will also be reported. This is applicable to "Total' results for methods 8260, 8081 and 8082.

Report Format: Data Usability Report



Project Name: 31456 Lab Number: L1851125
Project Number: Not Specified Report Date: 12/18/18

Data Qualifiers

- A Spectra identified as "Aldol Condensation Product".
- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations
 of the analyte.
- E Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
- H The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- The lower value for the two columns has been reported due to obvious interference.
- Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where
 the identification is based on a mass spectral library search.
- P The RPD between the results for the two columns exceeds the method-specified criteria.
- The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- Analytical results are from sample re-analysis.
- RE Analytical results are from sample re-extraction.
- S Analytical results are from modified screening analysis.
- J Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report



Project Name: 31456 Lab Number: L1851125
Project Number: Not Specified Report Date: 12/18/18

REFERENCES

4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised March 1983.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

 Δ LPHA

Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:17873 Revision 12

Published Date: 10/9/2018 4:58:19 PM Page 1 of 1

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624/624.1: m/p-xylene, o-xylene

EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: lodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-

Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

EPA 6860: SCM: Perchlorate

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene.

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water

EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; EPA 353.2: Nitrate-N, Nitrite-N; SM4500NO3-F: Nitrate-N, Nitrite-N; SM4500F-C, SM4500CN-CE,

EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B

EPA 332: Perchlorate: EPA 524,2: THMs and VOCs: EPA 504.1: EDB, DBCP.

Microbiology: SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D.

Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, EPA 350.1: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, EPA 351.1, SM4500NO3-F, EPA 353.2: Nitrate-N, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate. EPA 624.1: Volatile Halocarbons & Aromatics,

EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan II, Endosulfan II,

Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables), EPA 600/4-81-045: PCB-Oil.

Microbiology: SM9223B-Colllert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.

Mansfield Facility:

Drinking Water

EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn, EPA 200.8: Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn, EPA 245.1 Hg. EPA 522.

Non-Potable Water

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.

EPA 245.1 Hg.

SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

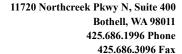
Document Type: Form

Pre-Qualtrax Document ID: 08-113

CHAIN OF CUSTODY RECORD

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| ENVIROS | ENVIROSYSTEMS, INCORPORATED | ORATED | | | | ESI | ESI Study Number: | mber: |
|--|--|-----------------|---------------------------------|----------------------|------------------------------------|---|--------------------|---|
| P.O. Box 778 | P.O. Box 778, Hampton, New Hampshire 03842 | 03842 | | | Customer Se | Customer Services: Phone # (603) 926-3345 Fax # (603) 926-3521 | -3345 | PAGE \ OF |
| cuent: Envir | EnviroSystems, Inc. | CATHERINE.S | CATHERINE. SASSO BENTHALPY, COM | YANHALPY | ¥9. | PROJECT NAME 3 1 VI 5 V | | P.O.# |
| ALEXANDEA. | REPORTTO: ALEX MACCIONICIO ALEXANDEA, MACCINNINDE ENTHALPY. COM | | P.O. B | P.O. Box 778 | | | | PHONE 403-926 -3345 |
| INVOICE TO: PLEET | PLEASE REFERENCE PO # | ADDRESS: | Hampt | Hampton, NH 03843 | 43 | | | SAMPLED BY: |
| Program Requirements: | □ NPDES | □ RCRA □ USACE | SACE □ EPA | D OTHER | 2 | | | |
| SAMPLE# | YOUR FIELD IDENTIFICATION (MUST AGREE WITH CONTAINER) | DATE SAMPLED | TIME SAMPLED | COMPOSITE AGRAB . | E-EFFLUENT D-DILUENT O-OTHER | CONTAINER | FIELD PRESERVED | ANALYSIS REQUESTED (SPECIAL INSTRUCTIONS, CAUTIONS, ETC.) |
| 51125-01 | 31456-015 | 81/21/21 | 0000 | | | 14 1000 ML G | H2SOY | TPACA BUY EPPA UZO I |
| 20 | 31456-034 | 12/11/18 | 0000 | | | NICODINI (9 | H2SO4 | TPhen by EPA 420.1 |
| g, | 31456-053 | 121418 | 1021 | | | IXICCO MLG | H2SO4 | TRIEN by EPA YEO.1 |
| ठ | 31456-052 | 12/11/18 | 1020 | | | 1x 1000 m/ (9) | HzSOH | TPHEN BY EPA UZC. |
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16 January 2019

Tim Puls Underwood Engineers 25 Vaughan Mall Portsmouth, NH 03801

RE: Trace Metals In Wastewater - WWTF

Amy Sodall.

Enclosed are the analytical results for samples received by Eurofins Frontier Global Sciences. All quality control measurements are within established control limits and there were no analytical difficulties encountered with the exception of those listed in the case narrative section of this report.

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

Sincerely,

Amy Goodall

Project Manager



Underwood Engineers Project: Trace Metals In Wastewater - WWTF

25 Vaughan Mall Project Number: Anti-Degradation - WWTF Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:53

ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|----------------------|---------------|--------|-----------------|-----------------|
| B182588 NEW_01_TM | 8L00520-01 | Water | 12-Dec-18 00:00 | 14-Dec-18 10:40 |
| B182590 NEW_02_TM | 8L00520-02 | Water | 12-Dec-18 00:00 | 14-Dec-18 10:40 |
| B182591 NEW_EB_TM | 8L00520-03 | Water | 11-Dec-18 07:05 | 14-Dec-18 10:40 |
| B182585 NEW_01_THg | 8L00520-06 | Water | 12-Dec-18 00:00 | 14-Dec-18 10:40 |
| B182582 NEW_02_THg | 8L00520-07 | Water | 12-Dec-18 00:00 | 14-Dec-18 10:40 |
| B182583 NEW_EB_THg | 8L00520-08 | Water | 11-Dec-18 07:05 | 14-Dec-18 10:40 |
| B182593 PEASE_01_TM | 8L00520-10 | Water | 12-Dec-18 00:00 | 14-Dec-18 10:40 |
| B182570 PEASE_02_TM | 8L00520-11 | Water | 12-Dec-18 00:00 | 14-Dec-18 10:40 |
| B182571 PEASE_EB_TM | 8L00520-12 | Water | 11-Dec-18 08:05 | 14-Dec-18 10:40 |
| B182579 PEASE_01_THg | 8L00520-15 | Water | 12-Dec-18 00:00 | 14-Dec-18 10:40 |
| B182581 PEASE_02_THg | 8L00520-16 | Water | 12-Dec-18 00:00 | 14-Dec-18 10:40 |
| B182580 PEASE_EB_THg | 8L00520-17 | Water | 11-Dec-18 08:05 | 14-Dec-18 10:40 |

Eurofins Frontier Global Sciences, LLC

Amy Sodall.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Underwood Engineers Project: Trace Metals In Wastewater - WWTF

25 Vaughan Mall Project Number: Anti-Degradation - WWTF Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:53

SAMPLE RECEIPT

Samples were received at Eurofins Frontier Global Sciences (EFGS) on 14-Dec-18 10:40. The samples were received intact, on-ice within two sealed coolers at

CoolerTemp C°Default Cooler10.4New Cooler 25.3

Samples were shipped to Eurofins Calscience in Garden Grove, CA for the EPA SM4500 Total CN analysis per the initial project setup.

The subcontract report is located after the notes and definitions section of the EFGS report.

SAMPLE PREPARATION AND ANALYSIS

Samples were prepared and analyzed for total mercury by flow injection atomic fluorescence spectrometry (FI-AFS) in accordance with EPA 1631E.

Samples were prepared and analyzed for total recoverable metals by inductively coupled plasma mass spectrometry (ICP-MS) in accordance with EPA 200.8 (EFGS-054).

ANALYTICAL AND QUALITY CONTROL ISSUES

Method blanks were prepared for every preparation to assess possible blank contribution from the sample preparation procedure. The method blanks were carried through the entire analytical procedure. All blanks fell within the established acceptance criteria with the exception of any items narrated above or flagged and described in the notes and definitions section of the report.

Liquid spikes, certified reference material (CRM) or a quality control samples (QCS) were prepared for every preparation as a measure of accuracy. All liquid spikes, CRMs and/or QCS samples fell within the established acceptance criteria with the exception of any items narrated above or flagged and described in the notes and definitions section of the report.

As an additional measure of the accuracy of the methods used and to check for matrix interference, matrix spikes (MS) and matrix spike duplicates (MSD) were digested and analyzed. All of the matrix spike recoveries fell within the established acceptance criteria with the exception of any items flagged and described in the notes and definitions section of the report.

A reasonable measure of the precision of the analytical methods is the relative percent difference (RPD) between a matrix spike recovery

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Underwood Engineers Project: Trace Metals In Wastewater - WWTF

25 Vaughan Mall Project Number: Anti-Degradation - WWTF Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:53

and a matrix spike duplicate recovery and between laboratory control sample recovery and laboratory control sample duplicate recoveries. All of the relative percent differences fell within established acceptance criteria with the exception of any items flagged and described in the notes and definitions section of the report.

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Amy Sodall.

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Problier Glabel Seignnes

EFGS Sample Receipt Checklist Revision 7; 9/15/2017

| Sample | Receipt Checklist | | y2 | /17 hz | | |
|--|--|--|---|-----------------------|--|--|
| | Date & Time Received: 1040 17-14 | -/ 8 _{Date} | e Labeled: 12 | 13/45 La | beled By: | Be |
| -WWTF | Received By: SMM | Lab | ء el Verified By | /: | 4 V> | |
| amples Arrived By: Shippi | ing Service Courier Hand | Other (| Specify: | | , |) |
| se Ice \Box Gel Ice \Box Dry Ice $12-14-18$ lers are received without coolan | Coolant Required: $(rac{raket}{V}/N)$ Temp | Blank Use ure in exc | ed: Ø N for ess of 6°C. | Cooler(s PM notif |): <u> </u> | #1 FZ1 |
| Y/N/NA Comment | TID: 1 (1134 748 CF: 44 3 | °C Dat | e/time: 17 =/ | 4-18 1 | 111/1 Rue | SMM |
| Y | | • | 1 | °C | w/ CF: | °C |
| 11 | | - 0 . [| Cooler 5: | °C | w/ CF: | °C |
| NIA | | | Cooler 6: | °C | w/ CF: | °C |
| Comments | Sample Condition/Integrity: | Y/N/NA | | Commer | nts | |
| | , , , , , , , , , , , , , , , , , , , | М. | | | | |
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| | , | | | | | |
| | | 3 | | | | |
| ional pages if needed): | Correct preservative used for requested analyses. | | 8 | L0052 | 20 | |
| | ACOUSTIAC -WWTF amples Arrived By: Shipp se Ice Gel Ice Dry Ice 1 12-14-18 Iers are received without coolan Y/N/NA Comment Y/N/NA Comment | Received By: Shipping Service Courier Hand see Ice Gel Ice Dry Ice Coolant Required: 6/N Temp 12-/4-/8 Iters are received without coolant or with thawed coolant and at a temperat Y/N/NA Comments TID: (4134786 CF: 40.3 Cooler 1: 10.1 °C w/CF Cooler 2: 4.4 °C w/CF Cooler 3: °C w/CF Cooler 3: °C w/CF Sample Condition/Integrity: Sample Containers intact/present: Sample labels are present and legible: Sample ID on container/bag matches COC: Correct sample containers used: Samples received within holding times: Sample volume sufficient for requested analyses: Correct preservative used for requested analyses: | Date & Time Received: OHO 12-14-18 Date MWTF | Date & Time Received: | Date & Time Received: OHO 17-IH-IB Date Labeled: 12-IH-IB Date Label | Date & Time Received: 12-14-18 Date Labeled: 12-15-18 Labeled By: WTF Received By: SMM Label Verified By: Shipping Service |

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Chain of Custody Record & Laboratory Analysis Request: Air, Water, Sediments, Plant and Animal Tissue,

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8260520

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|-----------------|-----------------------|---|---------|---------------------------------|------------|----------|----------|------------------|-----------------|--------------------------|----------------|-------------------|-------------------|---------------|------------------------|--|
| | t: UNDERWOOD E | | | ct: Tim Puls | | | | 1 | | | | \ n = h | /COC | Dogu | ested | EFGS PM: |
| | ess: 25 VAUGHAN | | | e: (603) 436 | | | ax: | 1 | | (6) | · L′ | | y5 C 5 | Requ | esteu | Date: |
| | TSMOUTH, NH 038 | | | l: tpuls@un | derwood | dengine | ers.com | 1 | | (%) | . | | | | | TAT (business days):20 (std) |
| | ect Name: Anti-Dec | radation - WWTF | | act/PO: | | | | 4 | | e e | | | | | | 15 10 5 4 3 2 24 hrs. |
| Repo | ort To: Tim Puls | | Invoic | e To: Client | | | | | | Other | | $\overline{}$ | | (THg) | | (For TAT < 10 days, contact PM. Surcharges apply for expedited TAT) |
| Addr | ess: 25 VAUGHAN | MALL, | Addre | ss: | | , | -/ | 1 | (Y/N) | | | Σ | | E | | Saturday delivery? Y |
| POR | TSMOUTH, NH 038 | 01 | | | | | | |) p | N Se | | .) s | ភូ | <u>\</u> | | (If yes, please contact PM) |
| Phor | ne: (603) 436-6192 | Fax: | Phone |) I | Fax: | | | | l e | l se l | | eta | Cn (TCn) | l C | | EDD MY IN |
| E-ma | ail: tpuls@underwo | odengineers.com | E-mail | i: | | | |] <u>B</u> | Filtered | Preserved: 3 HCl BrCl | 1 | Š | Ö | Σ | | QA ☒ Standard ☐ High |
| No. | Engraved Bottle ID | Sample ID | | # of Bottles | Matrix | Date | & Time | Sampled By | Field | Field P | | Total Metals (TM) | Total | Total Mercury | | Comments |
| \mathcal{I}_1 | B182588 | NEW_01_TM | 1 | 1 | ww | 12/11-1 | 2/1334 | | | | _ | X | | | | Total Metals include: Sb, As, |
| 2 | B182590 | NEW_02_TM |] | 1 | WW | 1: | | ì | Ĭ | C Millian Annua | | X | | | | Be, Cd, Cr, Cu, Fe, Pb, Ni, Se, |
| 3 | B182591 | NEW_EB_TM | 1 | 1 | RW | 12/11/1 | 8 7:05 | | | | | X | - | | | Ag, Tl, Zn |
| 4 | B182592 | NEW_MS_TM | 1 | 1 | WW | 13/11-1 | 2/12 24/ | | | e-reflection . | | X | | | | \neg |
| 5 | 008508 | NEW_01_TCr | า | 1 | WW | 11 | 11 | | | Noch | | | X | | | |
| 6 | B182585 | NEW_01_TH | 9 | 1 | WW | 11 | ŧf | | | | | | | X | | |
| 7 | B182582 | NEW_02_TH | 9 | 1 | WW | 11 | t i | | | -agreeki | | | | X | | |
| 8 | B182583 | NEW_EB_TH | 9 | 1 | RW | 12/11/18 | 7:05 | | Table 1 | , pai | | | | X | | |
| 9 | B182584 | NEW_MS_TH | g | 1 | ww | 12/11-12 | 1/12 3th | To be all to the | | " (Britishes, co. | | | | X | | |
| 10 | B182593 | PEASE_01_TN | 1 | 1 | WW | 11 | 1.7 | | | T-600- | | X | | | | |
| 11 | B182570 | PEASE_02_TN | 1 | 1 | WW | , (| +1 | V | V | program v. | | X | | | | |
| 12 | B182571 | PEASE_EB_TN | 1 | 1 | RW | 12/11/18 | 8:05 | UE | N | 1/2/2017/2001 | | X | | | | |
| | For Laborat | ory Use Only | | | ix Code | 5: | Relinqui | shed B | ار ا | | Recei | ve#1 | ву: \ | · | | Received By: |
| COC | Seal: N/A | Comments: | | FW: Fresh W. Ww: Waste | | | A | · / | 48_ | ~~~~~~ | _ < |) K | 5 | b | | SMM |
| Coole | er Temp: [U] Y | #1 | | SB: Sea and I SS: Soil and S | | Vater | Name: | Tin | n Per | 15 | Name | : 5 | 100 P | toe | <u> </u> | Name: Scan MCCOOC |
| Carri | er: US | | | TS: Plant and | Animal Ti | ssue | Organiza | ation: | UE | | Organ | | | | | Organization: <i>Ef65</i> |
| VTSR | :1040 | | | HC: Hydrocar TR: Trap | bons | | Date & | Time:/ | VP 1 | 114M | | | | | | 12-14-18 1040 |
| # of | Coolers: Z | | | OT: Other | | | Tracking | | | | 49 | | 837 | | | (1) |
| | ole Disposal: | | | | | | | By sigr | ing, yo | ou declai | | <u> </u> | | | | S' terms and conditions, and that |
| | turn (shipping fees | | | | | | | you au | horize | EFGS to | perfo | rm t | he sp | ecifie | ed analy | /ses. |
| | | 30 Days after reports s after report (stor | | ac may anal | w) | | | | | | Market Control | CHICAGO LIVE CO. | 200 | <u>)</u> | l. | |
| _ !\c | week | s arter report (Store | uge let | s may appi | y <i>)</i> | *** | | Custon | ier App | noval: _ | - M | n | (d) | W | Carrie Carrier Control | Date: /2/12/18 Page 6 of 45 |
| | | | | | | | | | | | | | | | | |

Chain of Custody Record & Laboratory Analysis Request: Air, Water, Sediments, Plant and Animal Tissue, Hydrocarbon & Other Samples

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|---|---------------------------------------|--|----------|---------------------------------|-------------|------------------------|-------------|----------------------|---|-------------------|----------|-------------|--|
| _ | ient: UNDERWOOD E | , | | ct: Tim Puls | | | | | | Anal | VC00 | Requeste | EFGS PM; |
| | ddress: 25 VAUGHAN | • | | : (603) 436 | | Fax: | 1 | | (6) | Allai | yses | Requested | Date: |
| _ | ORTSMOUTH, NH 038 | | | | derwood | engineers.com | 4 | | (%) | | | | TAT (business days):20 (std) |
| | oject Name: Anti-Deg | gradation - WWTF | Contra | | | | _ | | e | | | | 15 10 5 4 3 2 24 hrs. |
| R | eport To: Tim Puls | | Invoic | e To: Client | | | | 2 | Other | | | (THg) | (For TAT < 10 days, contact PM. Surcharges apply for expedited TAT) |
| | ddress: 25 VAUGHAN | | Addre | ss: | | | 1 | \$ | ; ; ; | | = | | Saturday delivery? ☐ Y ☑N |
| | ORTSMOUTH, NH 038 | | <u> </u> | | | | |) p | P. Č | als (| Cn (TCn) | Mercury | (If yes, please contact PM) |
| - | none: (603) 436-6192 | | Phone | | Fax: | | (A) | tere | - Se | letc | l u | ler | EDD AY IN |
| E | mail: tpuls@underwo | odengineers.com | E-mail | · | 1 | Т | l e | in | 유 | 2 | 100 | 2 | QA ∕ဩ Standard □ High |
| N | o. Engraved Bottle ID | Sample ID | | # of Bottles | Matrix | Date & Time | Sampled By | Field Filtered (Y/N) | Field Preserved: HNO ₃ HCI BrCI | Total Metals (TM) | Total | Total | Comments |
| | B182589 | PEASE_MS_T | M | 1 | WW | 13/11-12/1274h | UE | 1/ | Mass | X | | | Total Metals include: Sb, As, |
| 4 | 008527 | PEASE_01_T | Cn | 1 | WW | it 11 | 1 | 1 | No Cit | | X | | Be, Cd, Cr, Cu, Fe, Pb, Ni, Se, |
| | B182579 | PEASE_01_Th | | 1 | ww | ,, 11 | | | | | | X | Ag, Tl, Zn |
| ┍ | B182581 | PEASE_02_Th | łg | 1 | ww | | | | | | | X | |
| | B182580 | PEASE_EB_T | łg | 1 | RW | 12/11/18 8:05 | V | V | jagerra. | | | X | |
| | B182578 | PEASE_MS_T | Нg | 1 | WW | 12/11-12/12 21/4, | UE | N | 6-848200 | | | X | |
| | 7 | | | | | | | | | | | | |
| | 3 | | | | | ** | | | | | | | |
| |) | | | | | | | | | | | | |
| 1 | 0 | | | | | | | | | | | | |
| 1 | 1 | | | | | | | | | | | | |
| 1 | 2 | | | | | | | | | | | | |
| | For Laborat | tory Use Only | | Matr | rix Codes | : Relinqu | ished By | /: | | Received | By: \ | l I | Received By: |
| O | DC Seal: NA | Comments: | .* | FW: Fresh W: WW: Waste N | | Tim | Pak | and the second | | 36) | بكر | 125 | SMM |
| C | ooler Temp: 10.4 | 771 | | SB: Sea and I | Brackish W | ^{/ater} Name: | Tim | Pul | 5 | | | 6 Josef & | |
| C | arrier: WS | 1 | | SS: Soil and S TS: Plant and | l Animal Ti | ssue Organiz | | UE | - | Organizat | ion: | UNIL | Organization: EFG5 |
| V | SR: 1140 | | | HC: Hydrocar TR: Trap | bons | Date & | | | | | | | 8 // Date & Time: 1040 (2-14-18 |
| # | of Coolers: 2 | | 1 | OT: Other | | | | | | 496 8 | | 8 | 1545 1 |
| | mple Disposal: | | | | | | By sign | ing, yoʻ | ı declar | e that yo | u agr | | EFGS' terms and conditions, and that |
| | Return (shipping fees | | _ | | | | you aut | horize I | EFGS to | perform | he sp | pecified ar | analyses. |
| | Standard Disposal – 3 Retain for week | 30 Days aπer repor s after report (stor | | es may appl | y) | | Custom | er Appr | oval: | hoù D | as | | Date: (2/12/18 |
| _ | | | | | | | ···· | 1.1 | | | - | | Page 7 of 45 |

SUBCONTRACT ORDER

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Eurofins Frontier Global Sciences, LLC

11720 North Creek Parkway North, Suite 400

Bothell, WA 98011

Phone: (425) 686-1996

Fax: (425) 686-3096

Amy Goodall Project Manager:

RECEIVING LABORATORY:

Eurofins Calscience, LLC

7440 Lincoln Way

Garden Grove, CA 92841

Phone:7148955494

Fax: x

Comments Analysis

Sample ID: 008508 NEW_01_TCn

Matrix: Water EFGS Lab ID: 8L00520-05 Sampled: 12-Dec-18 00:00 (GMT-05:00) Eastern Time (US &

Due: 16-Jan-19 19:00

Misc. Subcontract 1

EPA SM4500 CN E

Containers Supplied:

04_1000 ml HDPE Bottle

Sample ID: 008527 PEASE_01_TCn

Matrix: Water EFGS Lab ID: 8L00520-14

Sampled: 12-Dec-18 00:00 (GMT-05:00) Eastern Time (US &

Due: 16-Jan-19 19:00

Misc. Subcontract 1

EPA SM4500 CN E

Containers Supplied:

04_1000 ml HDPE Bottle

7 8cm 0500151621727

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Received By

Date

Date

Received By

Page 1 of 1



Underwood Engineers Project: Trace Metals In Wastewater - WWTF

25 Vaughan Mall Project Number: Anti-Degradation - WWTF Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:53

B182588 NEW_01_TM 8L00520-01

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|----------------------------------|-----------|--------------------|--------------------|-------------------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP2836 | Closed Ve | ssel Water | Oven Dig | gestion | | | | | | | |
| Antimony | 0.125 | 0.045 | 0.101 | μg/L | 5 | F812432 | 27-Dec-18 | 9A04007 | 03-Jan-19 | EPA 200.8 | R-05 |
| Arsenic | 0.70 | 0.10 | 0.30 | $\mu g\!/\!L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | |
| Beryllium | 0.004 | 0.004 | 0.061 | $\mu g\!/\!L$ | 1 | F812432 | 27-Dec-18 | 9A02014 | 31-Dec-18 | EPA 200.8 | J |
| Cadmium | 0.053 | 0.008 | 0.020 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | |
| Chromium | 0.26 | 0.02 | 0.10 | $\mu g \! / \! L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | |
| Copper | 5.94 | 0.02 | 0.10 | $\mu g\!/\!L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | |
| Iron | 159 | 1 | 10 | $\mu g\!/\!L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | |
| Lead | 0.820 | 0.005 | 0.040 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | |
| Nickel | 2.72 | 0.04 | 0.10 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | |
| Selenium | 1.20 | 0.44 | 0.61 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | |
| Silver | 2.75 | 0.002 | 0.020 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 9A02014 | 31-Dec-18 | EPA 200.8 | |
| Thallium | ND | 0.006 | 0.020 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | U |
| Zinc | 80.5 | 0.16 | 0.50 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | |

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Underwood Engineers Project: Trace Metals In Wastewater - WWTF

25 Vaughan Mall Project Number: Anti-Degradation - WWTF Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:53

B182590 NEW_02_TM 8L00520-02

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|-------------------------------|----------------|--------------------|--------------------|-----------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP2 | 836 Closed Ves | sel Water | r Oven Di | gestion | | | | | | | |
| Antimony | 0.135 | 0.045 | 0.101 | μg/L | 5 | F812432 | 27-Dec-18 | 9A04007 | 03-Jan-19 | EPA 200.8 | R-05 |
| Arsenic | 0.69 | 0.10 | 0.30 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | |
| Beryllium | 0.004 | 0.004 | 0.061 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 9A02014 | 01-Jan-19 | EPA 200.8 | J |
| Cadmium | 0.053 | 0.008 | 0.020 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | |
| Chromium | 0.32 | 0.02 | 0.10 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | |
| Copper | 6.08 | 0.02 | 0.10 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | |
| Iron | 159 | 1 | 10 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | |
| Lead | 0.828 | 0.005 | 0.040 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | |
| Nickel | 2.76 | 0.04 | 0.10 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | |
| Selenium | 1.06 | 0.44 | 0.61 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | |
| Silver | 2.79 | 0.002 | 0.020 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 9A02014 | 01-Jan-19 | EPA 200.8 | |
| Thallium | ND | 0.006 | 0.020 | μg/L | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | U |
| Zinc | 83.2 | 0.16 | 0.50 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | |

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Underwood Engineers Project: Trace Metals In Wastewater - WWTF

25 Vaughan Mall Project Number: Anti-Degradation - WWTF Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:53

B182591 NEW_EB_TM 8L00520-03

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|----------------------------------|-----------|--------------------|--------------------|-----------|----------|---------|-----------|----------|-----------|-----------|----------|
| Sample Preparation: EFGS SOP2836 | Closed Ve | ssel Water | Oven Di | gestion | | | | | | | |
| Antimony | ND | 0.009 | 0.020 | μg/L | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | QB-02, U |
| Arsenic | ND | 0.10 | 0.30 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | U |
| Beryllium | ND | 0.004 | 0.061 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | QM-12, U |
| Cadmium | ND | 0.008 | 0.020 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | U |
| Chromium | ND | 0.02 | 0.10 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | U |
| Copper | 0.04 | 0.02 | 0.10 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | J |
| Iron | ND | 1 | 10 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | U |
| Lead | ND | 0.005 | 0.040 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | U |
| Nickel | ND | 0.04 | 0.10 | μg/L | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | U |
| Selenium | ND | 0.44 | 0.61 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | U |
| Silver | ND | 0.002 | 0.020 | μg/L | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | U |
| Thallium | ND | 0.006 | 0.020 | μg/L | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | U |
| Zinc | 5.38 | 0.16 | 0.50 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | |

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Underwood Engineers Project: Trace Metals In Wastewater - WWTF

25 Vaughan Mall Project Number: Anti-Degradation - WWTF Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:53

B182585 NEW_01_THg 8L00520-06

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|---------------------------------|--------------|--------------------|--------------------|-------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP279 | 6 EPA 1631 (| Oxidation | 1 | | | | | | | | |
| Mercury | 6.82 | 0.08 | 0.50 | ng/L | 1 | F812497 | 17-Dec-18 | 8L31004 | 30-Dec-18 | EPA 1631E | |

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Underwood Engineers Project: Trace Metals In Wastewater - WWTF

25 Vaughan Mall Project Number: Anti-Degradation - WWTF Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:53

B182582 NEW_02_THg 8L00520-07

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|----------------------------------|----------|--------------------|--------------------|-------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP2796 | EPA 1631 | Oxidation | 1 | | | | | | | | |
| Mercury | 6.21 | 0.08 | 0.50 | ng/L | 1 | F812497 | 17-Dec-18 | 8L31004 | 30-Dec-18 | EPA 1631E | |

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Underwood Engineers Project: Trace Metals In Wastewater - WWTF

25 Vaughan Mall Project Number: Anti-Degradation - WWTF Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:53

B182583 NEW_EB_THg 8L00520-08

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|--------------------------------|---------------|--------------------|--------------------|-------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP27 | 96 EPA 1631 (| Oxidation | ı | | | | | | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | 1 | F812497 | 17-Dec-18 | 8L31004 | 30-Dec-18 | EPA 1631E | U |

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Underwood Engineers Project: Trace Metals In Wastewater - WWTF

25 Vaughan Mall Project Number: Anti-Degradation - WWTF Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:53

B182593 PEASE_01_TM 8L00520-10

| Analyte | Result | Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|------------------------------------|----------|------------|--------------------|-----------|----------|---------|-----------|----------|-----------|-----------|---------|
| Sample Preparation: EFGS SOP2836 (| Josed Ve | ssel Water | Oven Dig | gestion | | | | | | | |
| Antimony | 0.158 | 0.045 | 0.101 | μg/L | 5 | F812432 | 27-Dec-18 | 9A04007 | 04-Jan-19 | EPA 200.8 | R-05 |
| Arsenic | 3.15 | 0.10 | 0.30 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 9A02014 | 01-Jan-19 | EPA 200.8 | |
| Beryllium | ND | 0.020 | 0.303 | $\mu g/L$ | 5 | F812432 | 27-Dec-18 | 9A04007 | 04-Jan-19 | EPA 200.8 | U, R-05 |
| Cadmium | 0.052 | 0.008 | 0.020 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 9A02014 | 01-Jan-19 | EPA 200.8 | |
| Chromium | 0.49 | 0.02 | 0.10 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 9A02014 | 01-Jan-19 | EPA 200.8 | |
| Copper | 9.76 | 0.02 | 0.10 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 9A02014 | 01-Jan-19 | EPA 200.8 | |
| Iron | 215 | 1 | 10 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 9A02014 | 01-Jan-19 | EPA 200.8 | |
| Lead | 0.211 | 0.005 | 0.040 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 9A02014 | 01-Jan-19 | EPA 200.8 | |
| Nickel | 3.58 | 0.04 | 0.10 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 9A02014 | 01-Jan-19 | EPA 200.8 | |
| Selenium | 1.44 | 0.44 | 0.61 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 9A02014 | 01-Jan-19 | EPA 200.8 | |
| Silver | 0.019 | 0.002 | 0.020 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 9A02014 | 01-Jan-19 | EPA 200.8 | J |
| Thallium | ND | 0.006 | 0.020 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 9A02014 | 01-Jan-19 | EPA 200.8 | U |
| Zinc | 71.4 | 0.16 | 0.50 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 9A02014 | 01-Jan-19 | EPA 200.8 | |

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Underwood Engineers Project: Trace Metals In Wastewater - WWTF

25 Vaughan Mall Project Number: Anti-Degradation - WWTF Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:53

B182570 PEASE_02_TM 8L00520-11

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|------------------------------------|-----------|--------------------|--------------------|-------------------|----------|---------|-----------|----------|-----------|-----------|---------|
| Sample Preparation: EFGS SOP2836 (| Closed Ve | ssel Water | Oven Di | gestion | | | | | | | |
| Antimony | 0.161 | 0.045 | 0.101 | μg/L | 5 | F812432 | 27-Dec-18 | 9A04007 | 04-Jan-19 | EPA 200.8 | R-05 |
| Arsenic | 3.15 | 0.10 | 0.30 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 9A02014 | 01-Jan-19 | EPA 200.8 | |
| Beryllium | ND | 0.020 | 0.303 | $\mu \text{g}/L$ | 5 | F812432 | 27-Dec-18 | 9A04007 | 04-Jan-19 | EPA 200.8 | U, R-05 |
| Cadmium | 0.058 | 0.008 | 0.020 | $\mu g \! / \! L$ | 1 | F812432 | 27-Dec-18 | 9A02014 | 01-Jan-19 | EPA 200.8 | |
| Chromium | 0.48 | 0.02 | 0.10 | $\mu g \! / \! L$ | 1 | F812432 | 27-Dec-18 | 9A02014 | 01-Jan-19 | EPA 200.8 | |
| Copper | 9.88 | 0.02 | 0.10 | μg/L | 1 | F812432 | 27-Dec-18 | 9A02014 | 01-Jan-19 | EPA 200.8 | |
| Iron | 223 | 1 | 10 | $\mu g \! / \! L$ | 1 | F812432 | 27-Dec-18 | 9A02014 | 01-Jan-19 | EPA 200.8 | |
| Lead | 0.224 | 0.005 | 0.040 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 9A02014 | 01-Jan-19 | EPA 200.8 | |
| Nickel | 3.68 | 0.04 | 0.10 | μg/L | 1 | F812432 | 27-Dec-18 | 9A02014 | 01-Jan-19 | EPA 200.8 | |
| Selenium | 1.36 | 0.44 | 0.61 | μg/L | 1 | F812432 | 27-Dec-18 | 9A02014 | 01-Jan-19 | EPA 200.8 | |
| Silver | 0.021 | 0.002 | 0.020 | μg/L | 1 | F812432 | 27-Dec-18 | 9A02014 | 01-Jan-19 | EPA 200.8 | |
| Thallium | ND | 0.006 | 0.020 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 9A02014 | 01-Jan-19 | EPA 200.8 | U |
| Zinc | 72.1 | 0.16 | 0.50 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 9A02014 | 01-Jan-19 | EPA 200.8 | |

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Underwood Engineers Project: Trace Metals In Wastewater - WWTF

25 Vaughan Mall Project Number: Anti-Degradation - WWTF Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:53

B182571 PEASE_EB_TM 8L00520-12

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|----------------------------------|-----------|--------------------|--------------------|-----------|----------|---------|-----------|----------|-----------|-----------|----------|
| Sample Preparation: EFGS SOP2836 | Closed Ve | ssel Water | Oven Dig | gestion | | | | | | | |
| Antimony | ND | 0.009 | 0.020 | μg/L | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | U, QB-02 |
| Arsenic | ND | 0.10 | 0.30 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | U |
| Beryllium | ND | 0.004 | 0.061 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | U, QM-12 |
| Cadmium | ND | 0.008 | 0.020 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | U |
| Chromium | ND | 0.02 | 0.10 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | U |
| Copper | 0.02 | 0.02 | 0.10 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | J |
| Iron | ND | 1 | 10 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | U |
| Lead | ND | 0.005 | 0.040 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | U |
| Nickel | ND | 0.04 | 0.10 | μg/L | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | U |
| Selenium | ND | 0.44 | 0.61 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | U |
| Silver | ND | 0.002 | 0.020 | μg/L | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | U |
| Thallium | ND | 0.006 | 0.020 | μg/L | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | U |
| Zinc | 22.3 | 0.16 | 0.50 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | |

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Underwood Engineers Project: Trace Metals In Wastewater - WWTF

25 Vaughan Mall Project Number: Anti-Degradation - WWTF Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:53

B182579 PEASE_01_THg

8L00520-15

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|----------------------------------|----------|--------------------|--------------------|-------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP2796 | EPA 1631 | Oxidation | 1 | | | | | | | | |
| Mercury | 6.49 | 0.08 | 0.50 | ng/L | 1 | F812497 | 17-Dec-18 | 8L31004 | 30-Dec-18 | EPA 1631E | |

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Underwood Engineers Project: Trace Metals In Wastewater - WWTF

25 Vaughan Mall Project Number: Anti-Degradation - WWTF Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:53

B182581 PEASE_02_THg

8L00520-16

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|------------------------------------|----------|--------------------|--------------------|-------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP2796 l | EPA 1631 | Oxidation | 1 | | | | | | | | |
| Mercury | 9.61 | 0.08 | 0.50 | ng/L | 1 | F812496 | 17-Dec-18 | 8L31003 | 30-Dec-18 | EPA 1631E | |

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Underwood Engineers Project: Trace Metals In Wastewater - WWTF

25 Vaughan Mall Project Number: Anti-Degradation - WWTF Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:53

B182580 PEASE_EB_THg 8L00520-17

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|-------------------------------|----------------|--------------------|--------------------|-------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP2 | 796 EPA 1631 (| Oxidation | 1 | | | | | | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | 1 | F812496 | 17-Dec-18 | 8L31003 | 30-Dec-18 | EPA 1631E | U |

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Underwood Engineers Project: Trace Metals In Wastewater - WWTF

25 Vaughan Mall Project Number: Anti-Degradation - WWTF Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:53

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|--------------------------------|----------------|---|--------------------|-----------|----------------|------------------|-------------|----------------|------|--------------|--------|
| Batch F812432 - EFGS SOP2836 (| | | | Units | Level | Resuit | /0KEC | Lillins | KFD | Liiiit | inotes |
| Blank (F812432-BLK1) | 100000 (00001) | , | 2 igestion | | Prepared: 2 | 27-Dec-18 A | Analyzed: 2 | 9-Dec-18 | | | |
| Arsenic | ND | 0.10 | 0.30 | μg/L | | | | | | | |
| Silver | ND | 0.002 | 0.020 | $\mu g/L$ | | | | | | | |
| Blank (F812432-BLK2) | | | | | Prepared: 2 | 27-Dec-18 | Analyzed: 2 | 9-Dec-18 | | | |
| Arsenic | ND | 0.10 | 0.30 | μg/L | | | | | | | 1 |
| Silver | ND | 0.002 | 0.020 | $\mu g/L$ | | | | | | | |
| LCS (F812432-BS1) | | | | | Prepared: 2 | 27-Dec-18 A | Analyzed: 2 | 9-Dec-18 | | | |
| Arsenic | 50.24 | 0.50 | 1.50 | μg/L | 50.000 | | 100 | 85-115 | | | |
| Silver | 25.21 | 0.010 | 0.100 | $\mu g/L$ | 25.000 | | 101 | 85-115 | | | |
| LCS Dup (F812432-BSD1) | | | | | Prepared: 2 | 27-Dec-18 A | Analyzed: 2 | 9-Dec-18 | | | |
| Arsenic | 45.54 | 0.50 | 1.50 | μg/L | 50.000 | | 91.1 | 85-115 | 9.81 | 20 | |
| Silver | 25.54 | 0.010 | 0.100 | $\mu g/L$ | 25.000 | | 102 | 85-115 | 1.31 | 20 | |
| Matrix Spike (F812432-MS2) | | Source: | 8L00520-0 | 1 | Prepared: 2 | 27-Dec-18 | Analyzed: 2 | 9-Dec-18 | | | |
| Arsenic | 43.77 | 1.01 | 3.04 | μg/L | 50.000 | ND | 87.5 | 70-130 | | | |
| Silver | 26.78 | 0.020 | 0.202 | $\mu g/L$ | 25.000 | 3.003 | 95.1 | 70-130 | | | |
| Matrix Spike (F812432-MS3) | | Source: | 8L00520-1 | 0 | Prepared: 2 | 27-Dec-18 | Analyzed: 2 | 9-Dec-18 | | | |
| Arsenic | 46.64 | 1.01 | 3.04 | μg/L | 50.000 | 3.34 | 86.6 | 70-130 | | | |
| Silver | 23.95 | 0.020 | 0.202 | $\mu g/L$ | 25.000 | 0.022 | 95.7 | 70-130 | | | |
| Matrix Spike (F812432-MS5) | | Source: | 8L00520-0 | 1 | Prepared: 2 | 27-Dec-18 A | Analyzed: 2 | 9-Dec-18 | | | |
| Arsenic | 372.6 | 1.01 | 3.03 | μg/L | 410.00 | ND | 90.9 | 70-130 | | | A |
| Silver | 23.33 | 0.020 | 0.202 | $\mu g/L$ | 20.500 | 3.003 | 99.2 | 70-130 | | | A |
| Matrix Spike (F812432-MS6) | | Source: | 8L00520-1 | 0 | Prepared: 2 | 27-Dec-18 A | Analyzed: 2 | 9-Dec-18 | | | |
| Arsenic | 378.5 | 1.01 | 3.03 | μg/L | 410.00 | 3.34 | 91.5 | 70-130 | | | A |
| Silver | 20.16 | 0.020 | 0.202 | μg/L | 20.500 | 0.022 | 98.2 | 70-130 | | | A |

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Underwood Engineers Project: Trace Metals In Wastewater - WWTF

25 Vaughan Mall Project Number: Anti-Degradation - WWTF Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:53

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|----------------------------------|--------------------|--------------------|--------------------|---|---|------------------|-------------|----------------|-------|--------------|-------|
| Batch F812432 - EFGS SOP2836 Clo | sed Vessel V | Vater Oven | Digestion | | | | | | | | |
| Matrix Spike (F812432-MS7) | | Source: 8L00519-01 | | | Prepared: 2 | 27-Dec-18 A | Analyzed: 3 | | | | |
| Arsenic | 58.54 | 2.53 | 7.59 | μg/L | 50.000 | 2.59 | 112 | 70-130 | | | |
| Silver | 22.13 | 0.051 | 0.506 | $\mu g/L$ | 25.000 | ND | 88.5 | 70-130 | | | |
| Matrix Spike (F812432-MSA) | | Source: | 8L00519-0 | 1 | Prepared: 2 | 27-Dec-18 | Analyzed: 3 | | | | |
| Arsenic | 1161 | 2.52 | 7.57 | μg/L | 1025.0 | 2.59 | 113 | 70-130 | | | AS |
| Silver | 46.49 | 0.050 | 0.505 | $\mu g/L$ | 51.250 | ND | 90.7 | 70-130 | | | AS |
| Matrix Spike Dup (F812432-MSD2) | Source: 8L00520-01 | | | Prepared: 27-Dec-18 Analyzed: 29-Dec-18 | | | | | | | |
| Arsenic | 44.40 | 1.01 | 3.04 | μg/L | 50.000 | ND | 88.8 | 70-130 | 1.44 | 20 | |
| Silver | 26.99 | 0.020 | 0.202 | $\mu g/L$ | 25.000 | 3.003 | 95.9 | 70-130 | 0.763 | 20 | |
| Matrix Spike Dup (F812432-MSD3) | | Source: | 8L00520-10 | 0 | Prepared: 2 | 27-Dec-18 | Analyzed: 2 | | | | |
| Arsenic | 47.71 | 1.01 | 3.04 | μg/L | 50.000 | 3.34 | 88.7 | 70-130 | 2.26 | 20 | |
| Silver | 24.52 | 0.020 | 0.202 | $\mu g/L$ | 25.000 | 0.022 | 98.0 | 70-130 | 2.36 | 20 | |
| Matrix Spike Dup (F812432-MSD5) | | Source: 8L00520-01 | | | Prepared: 2 | 27-Dec-18 | Analyzed: 2 | | | | |
| Arsenic | 366.8 | 1.01 | 3.03 | μg/L | 410.00 | ND | 89.5 | 70-130 | 1.58 | 20 | AS |
| Silver | 23.24 | 0.020 | 0.202 | $\mu g/L$ | 20.500 | 3.003 | 98.7 | 70-130 | 0.394 | 20 | AS |
| Matrix Spike Dup (F812432-MSD6) | Source: | Source: 8L00520-10 | | | 27-Dec-18 | Analyzed: 2 | | | | | |
| Arsenic | 372.8 | 1.01 | 3.03 | μg/L | 410.00 | 3.34 | 90.1 | 70-130 | 1.52 | 20 | AS |
| Silver | 20.25 | 0.020 | 0.202 | $\mu g/L$ | 20.500 | 0.022 | 98.7 | 70-130 | 0.462 | 20 | AS |
| Matrix Spike Dup (F812432-MSD7) | | Source: 8L00519-01 | | | Prepared: 27-Dec-18 Analyzed: 31-Dec-18 | | | | | | |
| Arsenic | 58.24 | 2.53 | 7.59 | μg/L | 50.000 | 2.59 | 111 | 70-130 | 0.508 | 20 | |
| Silver | 21.85 | 0.051 | 0.506 | $\mu g/L$ | 25.000 | ND | 87.4 | 70-130 | 1.30 | 20 | |
| Matrix Spike Dup (F812432-MSDA) | | Source: | 8L00519-0 | 1 | Prepared: 2 | 27-Dec-18 | Analyzed: 3 | 1-Dec-18 | | | |
| Arsenic | 1156 | 2.52 | 7.57 | μg/L | 1025.0 | 2.59 | 113 | 70-130 | 0.404 | 20 | AS |
| Silver | 46.67 | 0.050 | 0.505 | $\mu g/L$ | 51.250 | ND | 91.1 | 70-130 | 0.382 | 20 | AS |

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Underwood Engineers Project: Trace Metals In Wastewater - WWTF

25 Vaughan Mall Project Number: Anti-Degradation - WWTF Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:53

Quality Control Data

| | | Detection | Reporting | | Spike | Source | | %REC | | RPD | |
|--------------------------------|---------------|-----------------------|-----------|------------|--------------------------------|-------------|-----------|--------|------|-------|-------|
| Analyte | Result | Limit | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | Notes |
| Batch F812496 - EFGS SOP2796 I | EPA 1631 Oxid | ation | | | | | | | | | |
| Blank (F812496-BLK1) | | | | | Prepared & | Analyzed: | 30-Dec-18 | | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | | | | | | | U |
| Blank (F812496-BLK2) | | | | | Prepared & Analyzed: 30-Dec-18 | | | | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | | | | | | | U |
| Blank (F812496-BLK3) | | | | | Prepared & Analyzed: 30-Dec-18 | | | | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | | | | | | | U |
| LCS (F812496-BS1) | | | | | Prepared & | Analyzed: | 30-Dec-18 | | | | |
| Mercury | 15.39 | 0.08 | 0.50 | ng/L | 14.688 | | 105 | 80-120 | | | |
| LCS Dup (F812496-BSD1) | | | | | Prepared & | : Analyzed: | 30-Dec-18 | | | | |
| Mercury | 15.23 | 0.08 | 0.50 | ng/L | 14.688 | | 104 | 80-120 | 1.03 | 24 | |
| Duplicate (F812496-DUP1) | | Source: 8K00927-41 | | | Prepared & Analyzed: 30-Dec-18 | | | | | | |
| Mercury | 0.93 | 0.09 | 0.52 | ng/L | | 1.14 | | | 20.5 | 24 | AD |
| Duplicate (F812496-DUP2) | | Source: | 8K00927-4 | 3K00927-41 | | Analyzed: | 30-Dec-18 | | | | |
| Mercury | 0.92 | 0.09 | 0.52 | ng/L | | 1.14 | | | 21.1 | 24 | AD |
| Matrix Spike (F812496-MS1) | | Source: | 8K00981-0 | 1RE1 | Prepared & | Analyzed: | 30-Dec-18 | | | | |
| Mercury | 26.04 | 0.08 | 0.50 | ng/L | 20.200 | 6.10 | 98.7 | 71-125 | | | AS |
| Matrix Spike (F812496-MS2) | | Source: | 8K00982-0 | 1RE1 | Prepared & | : Analyzed: | 30-Dec-18 | | | | |
| Mercury | 13.68 | 0.08 | 0.50 | ng/L | 10.100 | 3.82 | 97.7 | 71-125 | | | AS |
| Matrix Spike (F812496-MS3) | | Source: 8L00520-16RE1 | | | Prepared & | Analyzed: | 30-Dec-18 | | | | |
| Mercury | 28.63 | 0.08 | 0.50 | ng/L | 20.200 | 9.61 | 94.2 | 71-125 | | | AS |

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Underwood Engineers Project: Trace Metals In Wastewater - WWTF

25 Vaughan Mall Project Number: Anti-Degradation - WWTF Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:53

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------------------------------|-------------|--------------------|--------------------|-------|----------------|------------------|-----------|----------------|-------|--------------|----------|
| Batch F812496 - EFGS SOP2796 EP | A 1631 Oxid | ation | | | | | | | | | |
| Matrix Spike Dup (F812496-MSD1) | | Source | : 8K00981-0 | 1RE1 | Prepared & | : Analyzed: | 30-Dec-18 | | | | |
| Mercury | 25.81 | 0.08 | 0.50 | ng/L | 20.200 | 6.10 | 97.6 | 71-125 | 0.890 | 24 | AS |
| Matrix Spike Dup (F812496-MSD2) | | Source | : 8K00982-0 | 1RE1 | Prepared & | : Analyzed: | 30-Dec-18 | | | | |
| Mercury | 13.89 | 0.08 | 0.50 | ng/L | 10.100 | 3.82 | 99.7 | 71-125 | 1.49 | 24 | AS |
| Matrix Spike Dup (F812496-MSD3) | | Source | : 8L00520-1 | 6RE1 | Prepared & | : Analyzed: | 30-Dec-18 | | | | |
| Mercury | 28.06 | 0.08 | 0.50 | ng/L | 20.200 | 9.61 | 91.3 | 71-125 | 2.01 | 24 | AS |
| Batch F812497 - EFGS SOP2796 EP | A 1631 Oxid | lation | | | | | | | | | |
| Blank (F812497-BLK1) | | | | | Prepared & | Analyzed: | 30-Dec-18 | | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | | | | | | | Ţ |
| Blank (F812497-BLK2) | | | | | Prepared & | : Analyzed: | 30-Dec-18 | | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | - | | | | | | Ţ |
| Blank (F812497-BLK3) | | | | | Prepared & | : Analyzed: | 30-Dec-18 | | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | | | | | | | J |
| Blank (F812497-BLK4) | | | | | Prepared & | : Analyzed: | 30-Dec-18 | | | | |
| Mercury | ND | 0.09 | 0.52 | ng/L | | | | | | | U, QB-06 |
| LCS (F812497-BS1) | | | | | Prepared & | : Analyzed: | 30-Dec-18 | | | | |
| Mercury | 14.67 | 0.08 | 0.50 | ng/L | 14.688 | | 99.9 | 80-120 | | | |
| LCS Dup (F812497-BSD1) | | | | | Prepared & | Analyzed: | 30-Dec-18 | | | | |
| Mercury | 14.57 | 0.08 | 0.50 | ng/L | 14.688 | | 99.2 | 80-120 | 0.665 | 24 | |

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Underwood Engineers Project: Trace Metals In Wastewater - WWTF

25 Vaughan Mall Project Number: Anti-Degradation - WWTF Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:53

Quality Control Data

| | | Detection | Reporting | | Spike | Source | | %REC | | RPD | |
|---------------------------------|-------------|-----------|----------------------|-------|------------|-------------|-----------|--------|-------|-------|-------|
| Analyte | Result | Limit | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | Notes |
| Batch F812497 - EFGS SOP2796 EP | A 1631 Oxid | lation | | | | | | | | | |
| Duplicate (F812497-DUP1) | | Source | Source: 8L00059-14 P | | | Analyzed: | 30-Dec-18 | | | | |
| Mercury | 8.11 | 0.08 | 0.50 | ng/L | | 8.20 | | | 1.07 | 24 | AD |
| Matrix Spike (F812497-MS1) | | Source: | Source: 8L00519-09 | | | Analyzed: | 30-Dec-18 | | | | |
| Mercury | 2.82 | 0.08 | 0.50 | ng/L | 2.5250 | 0.59 | 88.5 | 71-125 | | | AS |
| Matrix Spike (F812497-MS2) | | Source: | 8L00520-0 | 6 | Prepared & | Analyzed: | 30-Dec-18 | 1 | | | |
| Mercury | 23.71 | 0.08 | 0.50 | ng/L | 20.200 | 6.82 | 83.6 | 71-125 | | | AS |
| Matrix Spike (F812497-MS3) | | Source | 8L00520-1 | 5 | Prepared & | Analyzed: | 30-Dec-18 | | | | |
| Mercury | 22.91 | 0.08 | 0.50 | ng/L | 20.200 | 6.49 | 81.3 | 71-125 | | | AS |
| Matrix Spike Dup (F812497-MSD1) | | Source | 8L00519-0 | 9 | Prepared & | Analyzed: | 30-Dec-18 | | | | |
| Mercury | 2.86 | 0.08 | 0.50 | ng/L | 2.5250 | 0.59 | 90.1 | 71-125 | 1.39 | 24 | AS |
| Matrix Spike Dup (F812497-MSD2) | | Source: | 8L00520-0 | 6 | Prepared & | Analyzed: | 30-Dec-18 | | | | |
| Mercury | 23.29 | 0.08 | 0.50 | ng/L | 20.200 | 6.82 | 81.5 | 71-125 | 1.78 | 24 | AS |
| Matrix Spike Dup (F812497-MSD3) | | Source: | 8L00520-1 | 5 | Prepared & | z Analyzed: | 30-Dec-18 | | | | |
| Mercury | 22.96 | 0.08 | 0.50 | ng/L | 20.200 | 6.49 | 81.5 | 71-125 | 0.217 | 24 | AS |

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Amy Sodall.

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Amy Goodall, Project Manager



Underwood Engineers Project: Trace Metals In Wastewater - WWTF

25 Vaughan Mall Project Number: Anti-Degradation - WWTF Reported: Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:53

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|------------------------------|-----------------|--------------------|--------------------|-----------|----------------|------------------|-------------|----------------|-----|--------------|----------|
| Batch F812432 - EFGS SOP2836 | Closed Vessel W | Vater Oven | Digestion | | | | | | | | |
| Blank (F812432-BLK1) | | | | | Prepared: 2 | 27-Dec-18 A | Analyzed: 2 | 9-Dec-18 | | | |
| Beryllium | ND | 0.004 | 0.060 | μg/L | | | | | | | QM-12, U |
| Chromium | ND | 0.02 | 0.10 | $\mu g/L$ | | | | | | | U |
| Iron | ND | 1 | 10 | $\mu g/L$ | | | | | | | U |
| Nickel | ND | 0.04 | 0.10 | $\mu g/L$ | | | | | | | U |
| Copper | ND | 0.02 | 0.10 | $\mu g/L$ | | | | | | | U |
| Zinc | 0.18 | 0.16 | 0.50 | $\mu g/L$ | | | | | | | j |
| Selenium | ND | 0.44 | 0.60 | $\mu g/L$ | | | | | | | U |
| Cadmium | ND | 0.008 | 0.020 | $\mu g/L$ | | | | | | | U |
| Antimony | 0.030 | 0.009 | 0.020 | $\mu g/L$ | | | | | | | QB-10 |
| Thallium | ND | 0.006 | 0.020 | $\mu g/L$ | | | | | | | U |
| Lead | ND | 0.005 | 0.040 | $\mu g/L$ | | | | | | | U |
| Blank (F812432-BLK2) | | | | | Prepared: 2 | 27-Dec-18 A | Analyzed: 2 | 9-Dec-18 | | | |
| Beryllium | ND | 0.004 | 0.060 | $\mu g/L$ | | | | | | | QM-12, U |
| Chromium | ND | 0.02 | 0.10 | $\mu g/L$ | | | | | | | U |
| Iron | ND | 1 | 10 | $\mu g/L$ | | | | | | | U |
| Nickel | ND | 0.04 | 0.10 | $\mu g/L$ | | | | | | | U |
| Copper | ND | 0.02 | 0.10 | $\mu g/L$ | | | | | | | U |
| Zinc | ND | 0.16 | 0.50 | $\mu g/L$ | | | | | | | U |
| Selenium | ND | 0.44 | 0.60 | $\mu g/L$ | | | | | | | U |
| Cadmium | ND | 0.008 | 0.020 | $\mu g/L$ | | | | | | | U |
| Antimony | ND | 0.009 | 0.020 | $\mu g/L$ | | | | | | | QB-02, U |
| Thallium | ND | 0.006 | 0.020 | $\mu g/L$ | | | | | | | U |
| Lead | ND | 0.005 | 0.040 | $\mu g/L$ | | | | | | | U |
| Blank (F812432-BLK3) | | | | | Prepared: 2 | 27-Dec-18 A | Analyzed: 3 | 1-Dec-18 | | | |
| Nickel | ND | 0.04 | 0.10 | μg/L | | | | | | | U |
| Antimony | 0.011 | 0.009 | 0.020 | μg/L | | | | | | | j |

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Underwood Engineers Project: Trace Metals In Wastewater - WWTF

25 Vaughan Mall Project Number: Anti-Degradation - WWTF Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:53

Quality Control Data

| Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|-------------|--|--|---|--|--|---|---|---|---|---|
| ed Vessel V | /ater Oven | Digestion | | | | | | | | |
| | | | | Prepared: 2 | 27-Dec-18 A | Analyzed: 2 | 9-Dec-18 | | | |
| 51.58 | 0.020 | 0.301 | μg/L | 40.010 | | 129 | 85-115 | | | QM-12 |
| 47.07 | 0.10 | 0.50 | μg/L | 49.990 | | 94.2 | 85-115 | | | |
| 1179 | 6 | 50 | μg/L | 1250.0 | | 94.3 | 85-115 | | | |
| 47.94 | 0.20 | 0.50 | $\mu g/L$ | 50.010 | | 95.9 | 85-115 | | | |
| 49.13 | 0.10 | 0.50 | $\mu g/L$ | 50.000 | | 98.3 | 85-115 | | | |
| 51.17 | 0.80 | 2.50 | $\mu g/L$ | 50.010 | | 102 | 85-115 | | | |
| 55.13 | 2.20 | 3.01 | $\mu g/L$ | 49.990 | | 110 | 85-115 | | | |
| 39.43 | 0.040 | 0.100 | $\mu g/L$ | 40.010 | | 98.6 | 85-115 | | | |
| 37.47 | 0.030 | 0.100 | $\mu g/L$ | 39.990 | | 93.7 | 85-115 | | | |
| 48.09 | 0.025 | 0.200 | $\mu g/L$ | 50.010 | | 96.2 | 85-115 | | | |
| | | | | Prepared: 2 | 27-Dec-18 A | Analyzed: 3 | 1-Dec-18 | | | |
| 47.48 | 0.20 | 0.50 | μg/L | 50.010 | | 94.9 | 85-115 | | | |
| 35.53 | 0.045 | 0.100 | $\mu g/L$ | 40.030 | | 88.8 | 85-115 | | | |
| | | | | Prepared: 2 | 27-Dec-18 A | Analyzed: 2 | 9-Dec-18 | | | |
| 39.74 | 0.020 | 0.301 | μg/L | 40.010 | | 99.3 | 85-115 | 25.9 | 20 | QR-06 |
| 54.93 | 0.10 | 0.50 | μg/L | 49.990 | | 110 | 85-115 | 15.4 | 20 | |
| 1313 | 6 | 50 | $\mu g/L$ | 1250.0 | | 105 | 85-115 | 10.8 | 20 | |
| 53.00 | 0.20 | 0.50 | $\mu g/L$ | 50.010 | | 106 | 85-115 | 10.0 | 20 | |
| 53.50 | 0.10 | 0.50 | $\mu g/L$ | 50.000 | | 107 | 85-115 | 8.53 | 20 | |
| 47.20 | 0.80 | 2.50 | $\mu g/L$ | 50.010 | | 94.4 | 85-115 | 8.07 | 20 | |
| 45.05 | 2.20 | 3.01 | $\mu g/L$ | 49.990 | | 90.1 | 85-115 | 20.1 | 20 | QR-06 |
| 36.72 | 0.040 | 0.100 | $\mu g/L$ | 40.010 | | 91.8 | 85-115 | 7.12 | 20 | |
| 40.64 | 0.030 | 0.100 | $\mu g/L$ | 39.990 | | 102 | 85-115 | 8.11 | 20 | |
| 53.35 | 0.025 | 0.200 | $\mu g/L$ | 50.010 | | 107 | 85-115 | 10.4 | 20 | |
| | | | | Prepared: 2 | 27-Dec-18 A | Analyzed: 3 | 1-Dec-18 | | | |
| 50.45 | 0.20 | 0.50 | μg/L | 50.010 | | 101 | 85-115 | 6.07 | 20 | |
| 36.98 | 0.045 | 0.100 | μg/L | 40.030 | | 92.4 | | 4.00 | 20 | |
| | 51.58 47.07 1179 47.94 49.13 51.17 55.13 39.43 37.47 48.09 47.48 35.53 39.74 54.93 1313 53.00 53.50 47.20 45.05 36.72 40.64 53.35 | Result Limit ed Vessel Water Oven 51.58 0.020 47.07 0.10 1179 6 47.94 0.20 49.13 0.10 51.17 0.80 55.13 2.20 39.43 0.040 37.47 0.030 48.09 0.025 47.48 0.20 35.53 0.045 39.74 0.020 54.93 0.10 1313 6 53.00 0.20 53.50 0.10 47.20 0.80 45.05 2.20 36.72 0.040 40.64 0.030 53.35 0.025 | Result Limit Limit cd Vessel Water Oven Digestion 51.58 0.020 0.301 47.07 0.10 0.50 1179 6 50 47.94 0.20 0.50 49.13 0.10 0.50 51.17 0.80 2.50 55.13 2.20 3.01 39.43 0.040 0.100 37.47 0.030 0.100 48.09 0.025 0.200 47.48 0.20 0.50 35.53 0.045 0.100 39.74 0.020 0.301 54.93 0.10 0.50 1313 6 50 53.50 0.10 0.50 47.20 0.80 2.50 45.05 2.20 3.01 36.72 0.040 0.100 40.64 0.030 0.100 53.35 0.025 0.200 | Result Limit Limit Units cd Vessel Water Oven Digestion 51.58 0.020 0.301 μg/L 47.07 0.10 0.50 μg/L 1179 6 50 μg/L 47.94 0.20 0.50 μg/L 49.13 0.10 0.50 μg/L 51.17 0.80 2.50 μg/L 55.13 2.20 3.01 μg/L 39.43 0.040 0.100 μg/L 37.47 0.030 0.100 μg/L 48.09 0.025 0.200 μg/L 35.53 0.045 0.100 μg/L 54.93 0.10 0.50 μg/L 53.00 0.20 0.50 μg/L 53.50 0.10 0.50 μg/L 47.20 0.80 2.50 μg/L 45.05 2.20 3.01 μg/L 45.05 2.20 3.01 μg/L | Result Limit Limit Units Level | Result Limit Limit Units Level Result | Prepared: 27-Dec-18 Analyzed: 3 Prepared: 27-Dec-18 Analyzed: 2 Prepared: 27-Dec-18 Analyzed: 3 Prepared: 27-Dec-18 Analyzed: 2 Prepared: 27-Dec-18 Analyzed: 3 Pre | Prepared: 27-Dec-18 Analyzed: 29-Dec-18 | Result Limit Limit Limit Units Level Result WREC Limits RPD | Result Limit Limit Limit Limit Limit Limit Level Result %REC Limits RPD Limit |

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Underwood Engineers Project: Trace Metals In Wastewater - WWTF

25 Vaughan Mall Project Number: Anti-Degradation - WWTF Reported: Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:53

Quality Control Data

| Matrix Spike (F812432-MS2) Source : 81.06520-1 Prepared: 27-Dec-18 Amilyzed: 29-Dec-18 | Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|----------------------------|-----------------|--------------------|--------------------|-----------|----------------|------------------|-------------|----------------|-----|--------------|-------|
| Matrix Spike (F812432-MS2) | | | | - | | | | | | | - | |
| Beryllium 38.36 0.040 0.607 μg/L 40.010 ND 95.9 70-130 Chromium 52.38 0.20 1.01 μg/L 429.90 0.26 104 70-130 Nickel 52.36 0.40 1.01 μg/L 250.00 2.72 99.3 70-130 Copper 55.29 0.20 1.01 μg/L 250.00 5.94 98.7 70-130 Sclenium 45.66 4.45 6.07 μg/L 49.90 ND 91.3 70-130 Sclenium 43.66 4.45 6.07 μg/L 49.90 ND 91.3 70-130 Cadmium 33.02 0.081 0.202 μg/L 40.01 ND 92.5 70-130 Ladi 1.91 0.051 0.405 μg/L 40.01 ND 92.7 70-130 Cadmium 40.70 0.061 0.202 μg/L 40.01 ND 102 70-130 Chromium | | Closed vessel v | | | 1 | Prepared: 2 | 7-Dec-18 / | Analyzed: 2 | 9-Dec-18 | | | |
| Chromium 52.38 0.20 1.01 µg/L 49.99 0.20 104 70-130 Iron 1371 11 10 µg/L 12500 159 97.0 70-130 Chicle 23.26 0.40 1.01 µg/L 150.00 2.92 70-130 Copper 55.29 0.20 1.01 µg/L 50.00 5.94 9.87 70-130 Zinc 103.8 1.62 5.66 µg/L 50.00 2.95 70-130 Clamium 33.02 0.81 0.202 µg/L 40.010 ND 21.3 70-130 Clamium 33.02 0.81 0.202 µg/L 40.010 ND 21.0 70-130 Tallium 40.52 0.061 0.202 µg/L 40.010 ND 102 70-130 Marrix Spike (F812432-MS) 7 7 10 µg/L 40.90 0.10 70-130 70-130 Paryllium 40.70 0. | | 38.36 | | | | | | | | | | |
| Part Part | ř | | | | | | | | | | | |
| Nickel | | | | | | | | | | | | |
| Copper | | | | | | | | | 70-130 | | | |
| Zinc | Copper | 55.29 | 0.20 | 1.01 | | 50.000 | 5.94 | 98.7 | 70-130 | | | |
| Scientim | Zinc | 103.8 | 1.62 | 5.06 | μg/L | 50.010 | 80.52 | 46.5 | 70-130 | | | QM-07 |
| Cadminum 33.02 0.081 0.202 μg/L 40.010 ND 82.5 70-130 Thallium 40.52 0.061 0.202 μg/L 39.990 ND 101 70-130 Lead 51.94 0.051 0.405 μg/L 50.010 0.820 102 70-130 Martix Spike (F812432-MS3) Source: 8L06520-10 Prepared: 27-Dec-18 Austyzed: 29-Dec-18 Beryllium 40.70 0.040 0.607 μg/L 40.010 ND 102 70-130 Chromium 53.63 0.20 1.01 μg/L 1250.0 227 97.6 70-130 Nickel 53.63 0.40 1.01 μg/L 50.010 4.09 99.1 70-130 Opper 60.50 0.20 1.01 μg/L 50.010 1.04 99.1 70-130 Clenium 44.23 4.45 6.07 μg/L 49.00 1.04 70-130 Clenium 34.14 0.081 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>ND</td> <td></td> <td></td> <td></td> <td></td> <td></td> | | | | | | | ND | | | | | |
| Natrix Spike (F812432-MS3) | Cadmium | 33.02 | 0.081 | 0.202 | μg/L | 40.010 | ND | 82.5 | 70-130 | | | |
| Matrix Spike (F812432-MS3) | Thallium | 40.52 | 0.061 | 0.202 | μg/L | 39.990 | ND | 101 | 70-130 | | | |
| Beryllium | Lead | 51.94 | 0.051 | 0.405 | μg/L | 50.010 | 0.820 | 102 | 70-130 | | | |
| Chromium | Matrix Spike (F812432-MS3) | | Source: | 8L00520-10 |) | Prepared: 2 | 27-Dec-18 A | Analyzed: 2 | 29-Dec-18 | | | |
| Fron | Beryllium | 40.70 | 0.040 | 0.607 | μg/L | 40.010 | ND | 102 | 70-130 | | | |
| Nickel 53.63 0.40 1.01 µg/L 50.010 4.09 99.1 70-130 Copper 60.50 0.20 1.01 µg/L 50.000 10.49 100 70-130 Zinc 104.9 1.62 5.06 µg/L 50.010 75.75 58.4 70-130 Selenium 44.23 4.45 6.07 µg/L 49.990 ND 88.5 70-130 Cadmium 34.14 0.081 0.202 µg/L 40.010 ND 85.3 70-130 Itallium 41.77 0.061 0.202 µg/L 39.990 ND 104 70-130 Matrix Spike (F812432-MS5) Source: 8L00520-01 Prepared: 27-Dec-18 Analyzed: 29-Dec-18 Beryllium 21.22 0.040 0.606 µg/L 20.500 ND 104 70-130 Analyzed: 29-Dec-18 Beryllium 21.22 0.040 0.606 µg/L 20.500 ND 104 70-130 Analyzed: 29-Dec-18 | Chromium | 53.05 | 0.20 | 1.01 | $\mu g/L$ | 49.990 | 0.49 | 105 | 70-130 | | | |
| Copper 60.50 0.20 1.01 µg/L 50.000 10.49 100 70-130 | Iron | 1447 | 11 | 101 | $\mu g/L$ | 1250.0 | 227 | 97.6 | 70-130 | | | |
| Zinc 104.9 1.62 5.06 μg/L 50.010 75.75 58.4 70-130 QM-C | Nickel | 53.63 | 0.40 | 1.01 | $\mu g/L$ | 50.010 | 4.09 | 99.1 | 70-130 | | | |
| Selenium | Copper | 60.50 | 0.20 | 1.01 | $\mu g/L$ | 50.000 | 10.49 | 100 | 70-130 | | | |
| Cadmium 34.14 0.081 0.202 µg/L 40.010 ND 85.3 70-130 Thallium 41.77 0.061 0.202 µg/L 39.990 ND 104 70-130 Lead 53.25 0.051 0.405 µg/L 50.010 0.245 106 70-130 Matrix Spike (F812432-MS5) Source: 8L00520-01 Prepared: 27-Dec-18 Analyzed: 29-Dec-18 Beryllium 21.22 0.040 0.606 µg/L 20.500 ND 104 70-130 A Chromium 438.8 0.20 1.01 µg/L 410.00 0.26 107 70-130 A Iron 2334 11 101 µg/L 205.00 159 106 70-130 A Nickel 519.4 0.40 1.01 µg/L 512.50 2.72 101 70-130 A Copper 520.4 0.20 1.01 µg/L 512.50 5.94 100 70-130 | Zinc | 104.9 | 1.62 | 5.06 | $\mu g/L$ | 50.010 | 75.75 | 58.4 | 70-130 | | | QM-07 |
| Thallium 41.77 0.061 0.202 µg/L 39.990 ND 104 70-130 Lead 53.25 0.051 0.405 µg/L 50.010 0.245 106 70-130 Matrix Spike (F812432-MS5) Source: 8L00520-01 Prepared: 27-Dec-18 Analyzed: 29-Dec-18 Beryllium 21.22 0.040 0.606 µg/L 20.500 ND 104 70-130 A Chromium 438.8 0.20 1.01 µg/L 410.00 0.26 107 70-130 A Iron 2334 11 101 µg/L 2050.0 159 106 70-130 A Nickel 519.4 0.40 1.01 µg/L 512.50 2.72 101 70-130 A Copper 520.4 0.20 1.01 µg/L 512.50 5.94 100 70-130 A Selenium 371.1 4.44 6.06 µg/L 410.00 ND 90.5 | Selenium | 44.23 | 4.45 | 6.07 | $\mu g/L$ | 49.990 | ND | 88.5 | 70-130 | | | |
| Lead 53.25 0.051 0.405 μg/L 50.010 0.245 106 70-130 Matrix Spike (F812432-MS5) Source: 8L.00520-01 Prepared: 27-Dec-18 Analyzed: 29-Dec-18 Beryllium 21.22 0.040 0.606 μg/L 20.500 ND 104 70-130 A Chromium 438.8 0.20 1.01 μg/L 410.00 0.26 107 70-130 A Iron 2334 11 101 μg/L 2050.0 159 106 70-130 A Nickel 519.4 0.40 1.01 μg/L 512.50 2.72 101 70-130 A Copper 520.4 0.20 1.01 μg/L 512.50 5.94 100 70-130 A Zinc 981.8 1.62 5.05 μg/L 1025.0 80.52 87.9 70-130 A Selenium 371.1 4.44 6.06 μg/L 41.000 ND | Cadmium | 34.14 | 0.081 | 0.202 | $\mu g/L$ | 40.010 | ND | 85.3 | 70-130 | | | |
| Matrix Spike (F812432-MS5) Source: 8L00520-01 Prepared: 27-Dec-18 Analyzed: 29-Dec-18 Beryllium 21.22 0.040 0.606 µg/L 20.500 ND 104 70-130 A Chromium 438.8 0.20 1.01 µg/L 410.00 0.26 107 70-130 A Iron 2334 11 101 µg/L 2050.0 159 106 70-130 A Nickel 519.4 0.40 1.01 µg/L 512.50 2.72 101 70-130 A Copper 520.4 0.20 1.01 µg/L 512.50 5.94 100 70-130 A Zinc 981.8 1.62 5.05 µg/L 1025.0 80.52 87.9 70-130 A Selenium 371.1 4.44 6.06 µg/L 410.00 ND 90.5 70-130 A Cadmium 35.97 0.081 0.202 µg/L 41.000 ND 87.7 | Thallium | 41.77 | 0.061 | 0.202 | $\mu g/L$ | 39.990 | ND | 104 | 70-130 | | | |
| Beryllium 21.22 0.040 0.606 μg/L 20.500 ND 104 70-130 A Chromium 438.8 0.20 1.01 μg/L 410.00 0.26 107 70-130 A Iron 2334 11 101 μg/L 2050.0 159 106 70-130 A Nickel 519.4 0.40 1.01 μg/L 512.50 2.72 101 70-130 A Copper 520.4 0.20 1.01 μg/L 512.50 5.94 100 70-130 A Zinc 981.8 1.62 5.05 μg/L 1025.0 80.52 87.9 70-130 A Selenium 371.1 4.44 6.06 μg/L 410.00 ND 90.5 70-130 A Cadmium 35.97 0.081 0.202 μg/L 41.000 ND 87.7 70-130 A Thallium 21.54 0.061 0.202 | Lead | 53.25 | 0.051 | 0.405 | $\mu g/L$ | 50.010 | 0.245 | 106 | 70-130 | | | |
| Chromium 438.8 0.20 1.01 μg/L 410.00 0.26 107 70-130 A Iron 2334 11 101 μg/L 2050.0 159 106 70-130 A Nickel 519.4 0.40 1.01 μg/L 512.50 2.72 101 70-130 A Copper 520.4 0.20 1.01 μg/L 512.50 5.94 100 70-130 A Zinc 981.8 1.62 5.05 μg/L 1025.0 80.52 87.9 70-130 A Selenium 371.1 4.44 6.06 μg/L 410.00 ND 90.5 70-130 A Cadmium 35.97 0.081 0.202 μg/L 41.000 ND 87.7 70-130 A Thallium 21.54 0.061 0.202 μg/L 20.500 ND 105 70-130 A | Matrix Spike (F812432-MS5) | | Source: | 8L00520-01 | 1 | Prepared: 2 | 27-Dec-18 A | Analyzed: 2 | 29-Dec-18 | | | |
| Iron 2334 11 101 μg/L 2050.0 159 106 70-130 A Nickel 519.4 0.40 1.01 μg/L 512.50 2.72 101 70-130 A Copper 520.4 0.20 1.01 μg/L 512.50 5.94 100 70-130 A Zinc 981.8 1.62 5.05 μg/L 1025.0 80.52 87.9 70-130 A Selenium 371.1 4.44 6.06 μg/L 410.00 ND 90.5 70-130 A Cadmium 35.97 0.081 0.202 μg/L 41.000 ND 87.7 70-130 A Thallium 21.54 0.061 0.202 μg/L 20.500 ND 105 70-130 A | Beryllium | 21.22 | 0.040 | 0.606 | $\mu g/L$ | 20.500 | ND | 104 | 70-130 | | | AS |
| Nickel 519.4 0.40 1.01 μg/L 512.50 2.72 101 70-130 A Copper 520.4 0.20 1.01 μg/L 512.50 5.94 100 70-130 A Zinc 981.8 1.62 5.05 μg/L 1025.0 80.52 87.9 70-130 A Selenium 371.1 4.44 6.06 μg/L 410.00 ND 90.5 70-130 A Cadmium 35.97 0.081 0.202 μg/L 41.000 ND 87.7 70-130 A Thallium 21.54 0.061 0.202 μg/L 20.500 ND 105 70-130 A | Chromium | 438.8 | 0.20 | 1.01 | $\mu g/L$ | 410.00 | 0.26 | 107 | 70-130 | | | AS |
| Copper 520.4 0.20 1.01 µg/L 512.50 5.94 100 70-130 A Zinc 981.8 1.62 5.05 µg/L 1025.0 80.52 87.9 70-130 A Selenium 371.1 4.44 6.06 µg/L 410.00 ND 90.5 70-130 A Cadmium 35.97 0.081 0.202 µg/L 41.000 ND 87.7 70-130 A Thallium 21.54 0.061 0.202 µg/L 20.500 ND 105 70-130 A | Iron | 2334 | 11 | 101 | $\mu g/L$ | 2050.0 | 159 | 106 | 70-130 | | | AS |
| Zinc 981.8 1.62 5.05 µg/L 1025.0 80.52 87.9 70-130 A Selenium 371.1 4.44 6.06 µg/L 410.00 ND 90.5 70-130 A Cadmium 35.97 0.081 0.202 µg/L 41.000 ND 87.7 70-130 A Thallium 21.54 0.061 0.202 µg/L 20.500 ND 105 70-130 A | Nickel | 519.4 | 0.40 | 1.01 | $\mu g/L$ | 512.50 | 2.72 | 101 | 70-130 | | | AS |
| Selenium 371.1 4.44 6.06 $\mu g/L$ 410.00 ND 90.5 70-130 A Cadmium 35.97 0.081 0.202 $\mu g/L$ 41.000 ND 87.7 70-130 A Thallium 21.54 0.061 0.202 $\mu g/L$ 20.500 ND 105 70-130 A | Copper | 520.4 | 0.20 | 1.01 | $\mu g/L$ | 512.50 | 5.94 | 100 | 70-130 | | | AS |
| Cadmium 35.97 0.081 0.202 µg/L 41.000 ND 87.7 70-130 A Thallium 21.54 0.061 0.202 µg/L 20.500 ND 105 70-130 A | Zinc | 981.8 | 1.62 | 5.05 | $\mu g/L$ | 1025.0 | 80.52 | 87.9 | 70-130 | | | AS |
| Thallium 21.54 0.061 0.202 µg/L 20.500 ND 105 70-130 | Selenium | 371.1 | 4.44 | 6.06 | $\mu g/L$ | 410.00 | ND | 90.5 | 70-130 | | | AS |
| | Cadmium | 35.97 | 0.081 | 0.202 | $\mu g/L$ | 41.000 | ND | 87.7 | 70-130 | | | AS |
| $Lead \hspace{1.5cm} 109.5 \hspace{0.5cm} 0.050 \hspace{0.5cm} 0.404 \hspace{0.5cm} \mu g/L \hspace{0.5cm} 102.50 \hspace{0.5cm} 0.820 \hspace{0.5cm} 106 \hspace{0.5cm} 70\text{-}130 \hspace{0.5cm} A$ | Thallium | 21.54 | 0.061 | 0.202 | $\mu g/L$ | 20.500 | ND | 105 | 70-130 | | | AS |
| | Lead | 109.5 | 0.050 | 0.404 | $\mu g/L$ | 102.50 | 0.820 | 106 | 70-130 | | | AS |

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Underwood Engineers Project: Trace Metals In Wastewater - WWTF

25 Vaughan Mall Project Number: Anti-Degradation - WWTF Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:53

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|----------------------------------|--------------|--------------------|--------------------|------------------|----------------|------------------|-------------|----------------|------|--------------|--------|
| | | | | Cints | Level | resure | , uree | Limits | IG D | Limit | 110003 |
| Batch F812432 - EFGS SOP2836 Clo | sed Vessel W | Vater Oven | Digestion | | | | | | | | |
| Matrix Spike (F812432-MS6) | | Source: | 8L00520-10 |) | Prepared: 2 | 27-Dec-18 A | Analyzed: 2 | 9-Dec-18 | | | |
| Beryllium | 21.51 | 0.040 | 0.606 | $\mu g/L$ | 20.500 | ND | 105 | 70-130 | | | AS |
| Chromium | 437.3 | 0.20 | 1.01 | $\mu g/L$ | 410.00 | 0.49 | 107 | 70-130 | | | AS |
| Iron | 2350 | 11 | 101 | $\mu g/L$ | 2050.0 | 227 | 104 | 70-130 | | | AS |
| Nickel | 516.1 | 0.40 | 1.01 | $\mu g/L$ | 512.50 | 4.09 | 99.9 | 70-130 | | | AS |
| Copper | 521.9 | 0.20 | 1.01 | $\mu g/L$ | 512.50 | 10.49 | 99.8 | 70-130 | | | AS |
| Zinc | 1004 | 1.62 | 5.05 | $\mu g/L$ | 1025.0 | 75.75 | 90.6 | 70-130 | | | AS |
| Selenium | 372.9 | 4.44 | 6.06 | $\mu g/L$ | 410.00 | ND | 91.0 | 70-130 | | | AS |
| Cadmium | 35.90 | 0.081 | 0.202 | $\mu g/L$ | 41.000 | ND | 87.6 | 70-130 | | | AS |
| Thallium | 21.94 | 0.061 | 0.202 | $\mu g/L$ | 20.500 | ND | 107 | 70-130 | | | AS |
| Lead | 109.7 | 0.050 | 0.404 | $\mu g/L$ | 102.50 | 0.245 | 107 | 70-130 | | | AS |
| Matrix Spike (F812432-MS7) | | Source: | 8L00519-01 | 1 | Prepared: 2 | 7-Dec-18 A | Analyzed: 3 | 1-Dec-18 | | | |
| Beryllium | 40.00 | 0.101 | 1.52 | μg/L | 40.010 | ND | 100 | 70-130 | | | |
| Chromium | 53.35 | 0.51 | 2.53 | $\mu g/L$ | 49.990 | 0.97 | 105 | 70-130 | | | |
| Iron | 1372 | 28 | 253 | $\mu g/L$ | 1250.0 | 105 | 101 | 70-130 | | | |
| Nickel | 47.91 | 1.01 | 2.53 | $\mu g/L$ | 50.010 | 1.83 | 92.1 | 70-130 | | | |
| Copper | 45.81 | 0.51 | 2.53 | $\mu g/L$ | 50.000 | 0.52 | 90.6 | 70-130 | | | |
| Zinc | 56.40 | 4.05 | 12.6 | $\mu g/L$ | 50.010 | 10.46 | 91.8 | 70-130 | | | |
| Selenium | 74.51 | 11.1 | 15.2 | $\mu g/L$ | 49.990 | 11.45 | 126 | 70-130 | | | |
| Cadmium | 40.61 | 0.202 | 0.506 | $\mu g/L$ | 40.010 | ND | 101 | 70-130 | | | |
| Thallium | 37.31 | 0.152 | 0.506 | $\mu g/L$ | 39.990 | ND | 93.3 | 70-130 | | | |
| Lead | 46.92 | 0.126 | 1.01 | $\mu \text{g}/L$ | 50.010 | 0.188 | 93.4 | 70-130 | | | |
| Matrix Spike (F812432-MS8) | | Source: | 8L00520-01 | 1 | Prepared: 2 | 27-Dec-18 A | Analyzed: 3 | 1-Dec-18 | | | |
| Antimony | 41.19 | 0.228 | 0.506 | μg/L | 40.030 | ND | 103 | 70-130 | | | |
| Matrix Spike (F812432-MS9) | | Source: | 8L00520-10 |) | Prepared: 2 | 27-Dec-18 A | Analyzed: 0 | 1-Jan-19 | | | |
| Antimony | 43.01 | 0.228 | 0.506 | μg/L | 40.030 | ND | 107 | 70-130 | | | |

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Underwood Engineers Project: Trace Metals In Wastewater - WWTF

25 Vaughan Mall Project Number: Anti-Degradation - WWTF Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:53

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|-----------------------------------|--------------|--------------------|--------------------|-----------|----------------|------------------|-------------|----------------|------|--------------|-------|
| Batch F812432 - EFGS SOP2836 Clos | sed Vessel V | Vater Oven | Digestion | | | | | | | | |
| Matrix Spike (F812432-MSA) | | Source: | 8L00519-0 | 1 | Prepared: 2 | 27-Dec-18 A | Analyzed: 3 | 1-Dec-18 | | | |
| Beryllium | 54.11 | 0.101 | 1.51 | μg/L | 51.250 | ND | 106 | 70-130 | | | AS |
| Chromium | 1088 | 0.50 | 2.52 | μg/L | 1025.0 | 0.97 | 106 | 70-130 | | | AS |
| Iron | 5313 | 28 | 252 | μg/L | 5125.0 | 105 | 102 | 70-130 | | | AS |
| Nickel | 1230 | 1.01 | 2.52 | $\mu g/L$ | 1281.2 | 1.83 | 95.8 | 70-130 | | | AS |
| Copper | 1179 | 0.50 | 2.52 | $\mu g/L$ | 1281.2 | 0.52 | 92.0 | 70-130 | | | AS |
| Zinc | 2735 | 4.04 | 12.6 | $\mu g/L$ | 2562.5 | 10.46 | 106 | 70-130 | | | AS |
| Selenium | 1301 | 11.1 | 15.1 | $\mu g/L$ | 1025.0 | 11.45 | 126 | 70-130 | | | AS |
| Cadmium | 106.8 | 0.202 | 0.505 | $\mu g/L$ | 102.50 | ND | 104 | 70-130 | | | AS |
| Antimony | 56.12 | 0.227 | 0.505 | $\mu g/L$ | 51.250 | ND | 109 | 70-130 | | | AS |
| Thallium | 47.29 | 0.151 | 0.505 | $\mu g/L$ | 51.250 | ND | 92.3 | 70-130 | | | AS |
| Lead | 241.4 | 0.126 | 1.01 | $\mu g/L$ | 256.25 | 0.188 | 94.1 | 70-130 | | | AS |
| Matrix Spike (F812432-MSB) | | Source: | 8L00520-0 | 1 | Prepared: 2 | 27-Dec-18 A | Analyzed: 0 | 1-Jan-19 | | | |
| Antimony | 53.48 | 0.227 | 0.505 | $\mu g/L$ | 51.250 | ND | 104 | 70-130 | | | AS |
| Matrix Spike (F812432-MSC) | | Source: | 8L00520-1 | 0 | Prepared: 2 | 27-Dec-18 A | Analyzed: 0 | 1-Jan-19 | | | |
| Antimony | 52.54 | 0.227 | 0.505 | $\mu g/L$ | 51.250 | ND | 103 | 70-130 | | | AS |
| Matrix Spike (F812432-MSD) | | Source: | 8L00519-0 | 1 | Prepared: 2 | 27-Dec-18 A | Analyzed: 0 | 3-Jan-19 | | | |
| Antimony | 40.68 | 0.455 | 1.01 | μg/L | 40.030 | ND | 102 | 70-130 | | | |
| Matrix Spike Dup (F812432-MSD2) | | Source: | 8L00520-0 | 1 | Prepared: 2 | 27-Dec-18 A | Analyzed: 2 | 9-Dec-18 | | | |
| Beryllium | 40.14 | 0.040 | 0.607 | μg/L | 40.010 | ND | 100 | 70-130 | 4.54 | 20 | |
| Chromium | 53.11 | 0.20 | 1.01 | $\mu g/L$ | 49.990 | 0.26 | 106 | 70-130 | 1.37 | 20 | |
| Iron | 1410 | 11 | 101 | $\mu g/L$ | 1250.0 | 159 | 100 | 70-130 | 2.79 | 20 | |
| Nickel | 53.66 | 0.40 | 1.01 | μg/L | 50.010 | 2.72 | 102 | 70-130 | 2.45 | 20 | |
| Copper | 56.34 | 0.20 | 1.01 | $\mu g/L$ | 50.000 | 5.94 | 101 | 70-130 | 1.89 | 20 | |
| Zinc | 105.8 | 1.62 | 5.06 | $\mu g/L$ | 50.010 | 80.52 | 50.6 | 70-130 | 1.98 | 20 | QM-07 |
| Selenium | 47.13 | 4.45 | 6.07 | $\mu g/L$ | 49.990 | ND | 94.3 | 70-130 | 3.18 | 20 | |
| Cadmium | 33.80 | 0.081 | 0.202 | $\mu g/L$ | 40.010 | ND | 84.5 | 70-130 | 2.32 | 20 | |
| Thallium | 41.46 | 0.061 | 0.202 | $\mu g/L$ | 39.990 | ND | 104 | 70-130 | 2.29 | 20 | |
| Lead | 53.58 | 0.051 | 0.405 | $\mu g/L$ | 50.010 | 0.820 | 105 | 70-130 | 3.11 | 20 | |

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Underwood Engineers Project: Trace Metals In Wastewater - WWTF

25 Vaughan Mall Project Number: Anti-Degradation - WWTF Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:53

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|----------------------------------|--------------|--------------------|--------------------|-----------|---|------------------|------------|----------------|--------|--------------|-------|
| Batch F812432 - EFGS SOP2836 Clo | sed Vessel V | Vater Oven | Digestion | | | | | | | | |
| Matrix Spike Dup (F812432-MSD3) | | Source: | 8L00520-10 |) | Prepared: 27-Dec-18 Analyzed: 29-Dec-18 | | | | | | |
| Beryllium | 41.71 | 0.040 | 0.607 | μg/L | 40.010 | ND | 104 | 70-130 | 2.46 | 20 | |
| Chromium | 53.68 | 0.20 | 1.01 | $\mu g/L$ | 49.990 | 0.49 | 106 | 70-130 | 1.17 | 20 | |
| Iron | 1481 | 11 | 101 | μg/L | 1250.0 | 227 | 100 | 70-130 | 2.36 | 20 | |
| Nickel | 55.42 | 0.40 | 1.01 | $\mu g/L$ | 50.010 | 4.09 | 103 | 70-130 | 3.29 | 20 | |
| Copper | 61.43 | 0.20 | 1.01 | $\mu g/L$ | 50.000 | 10.49 | 102 | 70-130 | 1.51 | 20 | |
| Zinc | 104.9 | 1.62 | 5.06 | μg/L | 50.010 | 75.75 | 58.3 | 70-130 | 0.0267 | 20 | QM-07 |
| Selenium | 45.61 | 4.45 | 6.07 | μg/L | 49.990 | ND | 91.2 | 70-130 | 3.07 | 20 | |
| Cadmium | 35.46 | 0.081 | 0.202 | μg/L | 40.010 | ND | 88.6 | 70-130 | 3.77 | 20 | |
| Thallium | 41.57 | 0.061 | 0.202 | μg/L | 39.990 | ND | 104 | 70-130 | 0.496 | 20 | |
| Lead | 53.26 | 0.051 | 0.405 | $\mu g/L$ | 50.010 | 0.245 | 106 | 70-130 | 0.0228 | 20 | |
| Matrix Spike Dup (F812432-MSD5) | | Source: | 8L00520-01 | 1 | Prepared: 2 | 27-Dec-18 A | nalyzed: 2 | 9-Dec-18 | | | |
| Beryllium | 20.99 | 0.040 | 0.606 | μg/L | 20.500 | ND | 102 | 70-130 | 1.10 | 20 | AS |
| Chromium | 434.2 | 0.20 | 1.01 | μg/L | 410.00 | 0.26 | 106 | 70-130 | 1.06 | 20 | AS |
| Iron | 2275 | 11 | 101 | $\mu g/L$ | 2050.0 | 159 | 103 | 70-130 | 2.53 | 20 | AS |
| Nickel | 515.8 | 0.40 | 1.01 | $\mu g/L$ | 512.50 | 2.72 | 100 | 70-130 | 0.694 | 20 | AS |
| Copper | 516.5 | 0.20 | 1.01 | μg/L | 512.50 | 5.94 | 99.6 | 70-130 | 0.751 | 20 | AS |
| Zinc | 975.8 | 1.62 | 5.05 | μg/L | 1025.0 | 80.52 | 87.3 | 70-130 | 0.614 | 20 | AS |
| Selenium | 362.9 | 4.44 | 6.06 | μg/L | 410.00 | ND | 88.5 | 70-130 | 2.24 | 20 | AS |
| Cadmium | 35.47 | 0.081 | 0.202 | μg/L | 41.000 | ND | 86.5 | 70-130 | 1.40 | 20 | AS |
| Thallium | 21.38 | 0.061 | 0.202 | μg/L | 20.500 | ND | 104 | 70-130 | 0.730 | 20 | AS |
| Lead | 109.1 | 0.050 | 0.404 | $\mu g/L$ | 102.50 | 0.820 | 106 | 70-130 | 0.313 | 20 | AS |
| Matrix Spike Dup (F812432-MSD6) | | Source: | 8L00520-10 |) | Prepared: 2 | 27-Dec-18 A | nalyzed: 2 | 9-Dec-18 | | | |
| Beryllium | 21.70 | 0.040 | 0.606 | μg/L | 20.500 | ND | 106 | 70-130 | 0.902 | 20 | AS |
| Chromium | 435.2 | 0.20 | 1.01 | μg/L | 410.00 | 0.49 | 106 | 70-130 | 0.490 | 20 | AS |
| Iron | 2340 | 11 | 101 | μg/L | 2050.0 | 227 | 103 | 70-130 | 0.411 | 20 | AS |
| Nickel | 514.6 | 0.40 | 1.01 | μg/L | 512.50 | 4.09 | 99.6 | 70-130 | 0.286 | 20 | AS |
| Copper | 516.7 | 0.20 | 1.01 | μg/L | 512.50 | 10.49 | 98.8 | 70-130 | 1.00 | 20 | AS |
| Zinc | 998.3 | 1.62 | 5.05 | μg/L | 1025.0 | 75.75 | 90.0 | 70-130 | 0.589 | 20 | AS |
| Selenium | 372.1 | 4.44 | 6.06 | μg/L | 410.00 | ND | 90.7 | 70-130 | 0.227 | 20 | AS |
| Cadmium | 35.75 | 0.081 | 0.202 | μg/L | 41.000 | ND | 87.2 | 70-130 | 0.434 | 20 | AS |
| Thallium | 21.74 | 0.061 | 0.202 | μg/L | 20.500 | ND | 106 | 70-130 | 0.910 | 20 | AS |
| Lead | 108.8 | 0.050 | 0.404 | μg/L | 102.50 | 0.245 | 106 | 70-130 | 0.832 | 20 | AS |

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Underwood Engineers Project: Trace Metals In Wastewater - WWTF

25 Vaughan MallProject Number: Anti-Degradation - WWTFReported:Portsmouth NH, 03801Project Manager: Tim Puls16-Jan-19 16:53

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|------------------------------------|------------|--------------------|--------------------|-----------|----------------|------------------|-------------|----------------|--------|--------------|-------|
| Batch F812432 - EFGS SOP2836 Close | d Vessel W | Vater Oven | Digestion | | | | | | | | |
| Matrix Spike Dup (F812432-MSD7) | | Source: | 8L00519-01 | l | Prepared: 2 | 27-Dec-18 A | | | | | |
| Beryllium | 40.34 | 0.101 | 1.52 | μg/L | 40.010 | ND | 101 | 70-130 | 0.846 | 20 | |
| Chromium | 52.05 | 0.51 | 2.53 | $\mu g/L$ | 49.990 | 0.97 | 102 | 70-130 | 2.47 | 20 | |
| Iron | 1353 | 28 | 253 | $\mu g/L$ | 1250.0 | 105 | 99.8 | 70-130 | 1.44 | 20 | |
| Nickel | 47.45 | 1.01 | 2.53 | $\mu g/L$ | 50.010 | 1.83 | 91.2 | 70-130 | 0.976 | 20 | |
| Copper | 45.16 | 0.51 | 2.53 | $\mu g/L$ | 50.000 | 0.52 | 89.3 | 70-130 | 1.41 | 20 | |
| Zinc | 54.29 | 4.05 | 12.6 | $\mu g/L$ | 50.010 | 10.46 | 87.6 | 70-130 | 3.81 | 20 | |
| Selenium | 74.55 | 11.1 | 15.2 | $\mu g/L$ | 49.990 | 11.45 | 126 | 70-130 | 0.0468 | 20 | |
| Cadmium | 40.00 | 0.202 | 0.506 | $\mu g/L$ | 40.010 | ND | 100 | 70-130 | 1.52 | 20 | |
| Thallium | 36.16 | 0.152 | 0.506 | $\mu g/L$ | 39.990 | ND | 90.4 | 70-130 | 3.12 | 20 | |
| Lead | 45.89 | 0.126 | 1.01 | $\mu g/L$ | 50.010 | 0.188 | 91.4 | 70-130 | 2.21 | 20 | |
| Matrix Spike Dup (F812432-MSD8) | | Source: | 8L00520-01 | 1 | Prepared: 2 | 27-Dec-18 A | Analyzed: 3 | 1-Dec-18 | | | |
| Antimony | 41.94 | 0.228 | 0.506 | $\mu g/L$ | 40.030 | ND | 105 | 70-130 | 1.80 | 20 | |
| Matrix Spike Dup (F812432-MSD9) | | Source: | 8L00520-10 |) | Prepared: 2 | 27-Dec-18 A | Analyzed: 0 | 1-Jan-19 | | | |
| Antimony | 43.78 | 0.228 | 0.506 | $\mu g/L$ | 40.030 | ND | 109 | 70-130 | 1.77 | 20 | |
| Matrix Spike Dup (F812432-MSDA) | | Source: | 8L00519-01 | 1 | Prepared: 2 | 27-Dec-18 A | analyzed: 3 | 1-Dec-18 | | | |
| Beryllium | 57.08 | 0.101 | 1.51 | μg/L | 51.250 | ND | 111 | 70-130 | 5.35 | 20 | AS |
| Chromium | 1081 | 0.50 | 2.52 | $\mu g/L$ | 1025.0 | 0.97 | 105 | 70-130 | 0.661 | 20 | AS |
| Iron | 5310 | 28 | 252 | $\mu g/L$ | 5125.0 | 105 | 102 | 70-130 | 0.0680 | 20 | AS |
| Nickel | 1213 | 1.01 | 2.52 | $\mu g/L$ | 1281.2 | 1.83 | 94.6 | 70-130 | 1.35 | 20 | AS |
| Copper | 1181 | 0.50 | 2.52 | $\mu g/L$ | 1281.2 | 0.52 | 92.1 | 70-130 | 0.110 | 20 | AS |
| Zinc | 2748 | 4.04 | 12.6 | $\mu g/L$ | 2562.5 | 10.46 | 107 | 70-130 | 0.478 | 20 | AS |
| Selenium | 1288 | 11.1 | 15.1 | $\mu g/L$ | 1025.0 | 11.45 | 125 | 70-130 | 0.992 | 20 | AS |
| Cadmium | 103.5 | 0.202 | 0.505 | $\mu g/L$ | 102.50 | ND | 101 | 70-130 | 3.12 | 20 | AS |
| Antimony | 55.26 | 0.227 | 0.505 | $\mu g/L$ | 51.250 | ND | 108 | 70-130 | 1.54 | 20 | AS |
| Thallium | 47.30 | 0.151 | 0.505 | $\mu g/L$ | 51.250 | ND | 92.3 | 70-130 | 0.0195 | 20 | AS |
| Lead | 239.3 | 0.126 | 1.01 | $\mu g/L$ | 256.25 | 0.188 | 93.3 | 70-130 | 0.875 | 20 | AS |

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Underwood Engineers Project: Trace Metals In Wastewater - WWTF

25 Vaughan Mall Project Number: Anti-Degradation - WWTF Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:53

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes | | | |
|---|--------|---|--------------------|-------|----------------|------------------|-------------|----------------|-------|--------------|-------|--|--|--|
| Satch F812432 - EFGS SOP2836 Closed Vessel Water Oven Digestion | | | | | | | | | | | | | | |
| Matrix Spike Dup (F812432-MSDB) | | Prepared: 27-Dec-18 Analyzed: 01-Jan-19 | | | | | | | | | | | | |
| Antimony | 53.79 | 0.227 | 0.505 | μg/L | 51.250 | ND | 105 | 70-130 | 0.585 | 20 | AS | | | |
| Matrix Spike Dup (F812432-MSDC) | | Source: | 8L00520-10 |) | Prepared: 2 | 27-Dec-18 A | Analyzed: 0 | | | | | | | |
| Antimony | 53.82 | 0.227 | 0.505 | μg/L | 51.250 | ND | 105 | 70-130 | 2.39 | 20 | AS | | | |
| Matrix Spike Dup (F812432-MSDD) | | Source: | Source: 8L00519-01 | | | 27-Dec-18 A | Analyzed: 0 | 3-Jan-19 | | | | | | |
| Antimony | 41.32 | 0.455 | 1.01 | μg/L | 40.030 | ND | 103 | 70-130 | 1.56 | 20 | | | | |

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Amy Sodall.

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Amy Goodall, Project Manager



Underwood Engineers Project: Trace Metals In Wastewater - WWTF

25 Vaughan Mall Project Number: Anti-Degradation - WWTF Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:53

Notes and Definitions

| U | Analyte was not detected and is reported as less than the LOD or as defined by the client. The LOD has been adjusted for any dilution or concentration of the sample. |
|-------|---|
| R-05 | The sample was diluted due to the presence of high levels of non-target analytes or particulates resulting in elevated reporting limits. |
| QR-06 | The RPD value for the LCS/LCSD was outside of acceptance limits. Batch QC acceptable based on MS/MSD, and where applicable, matrix duplicate RPD value(s) within control limits. |
| QM-12 | Continuing calibration verification (CCV) and/or blank spike/blank spike duplicate (BS/BSD) recoveries above upper control limits. All reported sample concentrations were below the reporting limit. |
| QM-07 | The spike recovery was outside control limits for the MS and/or MSD. The batch was accepted based on LCS and LCSD recoveries within control limits and, when analysis permits, acceptable AS/ASD. |
| QB-10 | The method blank and/or initial/continuing calibration blank contains analyte at a concentration above the MRL. Only report sample results greater than 10 times the contamination value (QB-01), or samples less than the MRL (QB-02). |
| QB-06 | The blank was preserved to 5% BrCl rather than 1% . The control limit for blanks preserved to greater than 1% BrCl is the preservation percentage multiplied by the MRL. |
| QB-02 | The method blank and/or initial/continuing calibration blank contains analyte at a concentration above the MRL. However, the sample concentrations are less than the MRL. |
| J | The result is an estimated concentration. |
| AS | This MS and/or MSD is an analytical spike and/or an analytical spike duplicate. |
| AD | This matrix duplicate is an analytical duplicate. |
| DET | Analyte DETECTED |
| ND | Analyte NOT DETECTED at or above the method detection limit if reported to the MDL or above the reporting limit if reported to the MRL. |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |

Eurofins Frontier Global Sciences, LLC

Amy Sodall.



Calscience



WORK ORDER NUMBER: 18-12-1711

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Eurofins Frontier Global Sciences, Inc.

Client Project Name: 8L00520

Attention: Amy Goodall

11720 North Creek Parkway North

Suite 4

Bothell, WA 98011-8244

agree

Approved for release on 01/06/2019 by:

Carla Hollowell Project Manager

ResultLink >

Email your PM >

Eurofins Calscience (Calscience) certifies that the test results provided in this report meet all NELAC Institute requirements for parameters for which accreditation is required or available. Any exceptions to NELAC Institute requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.



Contents

Client Project Name: 8L00520 Work Order Number: 18-12-1711

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Work Order Narrative

Work Order: 18-12-1711 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 12/19/18. They were assigned to Work Order 18-12-1711.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

DoD Projects:

The test results contained in this report are accredited under the laboratory's ISO/IEC 17025:2005 and DoD-ELAP accreditation issued by the ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation ADE-1864.





Sample Summary

Client: Eurofins Frontier Global Sciences, Inc.

11720 North Creek Parkway North, Suite 4

Bothell, WA 98011-8244

Work Order: Project Name:

PO Number:

Date/Time

Received:

Number of

Containers:

Amy Goodall Attn:

| Sample Identification | Lab Number | Collection Date and Time | Number of Containers | Matrix |
|-----------------------|--------------|--------------------------|-------------------------|---------|
| 008508 NEW_01_TCn | 18-12-1711-1 | 12/12/18 00:00 | 1 | Aqueous |
| 008527 PEASE_01_TCn | 18-12-1711-2 | 12/12/18 00:00 | 1 | Aqueous |



18-12-1711

12/19/18 11:00

8L00520

2





Analytical Report

Eurofins Frontier Global Sciences, Inc. 11720 North Creek Parkway North, Suite 4 Bothell, WA 98011-8244

Date Received: Work Order: Preparation: Method:

18-12-1711 N/A SM 4500-CN E

12/19/18

Units:

mg/L Page 1 of 1

Project: 8L00520

Date/Time Client Sample Number Lab Sample Date/Time Matrix Instrument Date QC Batch ID

| | Number ' | Collected | | Prepared | Analyzed |
|-------------------|----------------|-------------------|--------------|----------|-----------------------------|
| 008508 NEW_01_TCn | 18-12-1711-1-A | 12/12/18 00:00 | Aqueous UV 9 | 12/24/18 | 12/24/18 I1224CNL1 14:01 |
| <u>Parameter</u> | · | Result | <u>RL</u> | DF | Qualifiers |
| Cvanide, Total | | ND | 0.020 | 1.00 | |

| 008527 PEASE_01_TCn | 18-12-1711-2-A | 12/12/18 00:00 | Aqueous UV 9 | 12/24/18 | 12/24/18 I1224CNL1 14:01 |
|---------------------|----------------|-------------------|--------------|-----------|-----------------------------|
| Parameter | | Result | <u>RL</u> | <u>DF</u> | <u>Qualifiers</u> |
| Cyanide Total | | ND | 0.020 | 1.00 | |

| Method Blank | 099-05-061-4319 | N/A | Aqueous UV 9 | 12/24/18 | 12/24/18 14:01 | I1224CNL1 |
|------------------|-----------------|--------|--------------|-----------|-------------------|-------------|
| <u>Parameter</u> | | Result | <u>RL</u> | <u>DF</u> | Qualifi | <u>iers</u> |
| Cyanide, Total | | ND | 0.020 | 1.00 | | |



RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.





Quality Control - Spike/Spike Duplicate

Eurofins Frontier Global Sciences, Inc. Date Received: Work Order: 11720 North Creek Parkway North, Suite 4 18-12-1711 Preparation: Bothell, WA 98011-8244

> Method: SM 4500-CN E

Project: 8L00520 Page 1 of 1

| Quality Control Sample ID | Туре | | Matrix | Ins | strument | Date Prepared | Date Ana | lyzed | MS/MSD Bat | ch Number |
|---------------------------|-----------------|------------------------------|-------------|--------------------|--------------|---------------|----------|-------|------------|------------|
| 18-12-1739-6 | Sample | | Aqueous | : U\ | / 9 | 12/24/18 | 12/24/18 | 14:01 | I1224CHS1 | |
| 18-12-1739-6 | Matrix Spike | | Aqueous | ; U\ | / 9 | 12/24/18 | 12/24/18 | 14:01 | I1224CHS1 | |
| 18-12-1739-6 | Matrix Spike Du | uplicate | Aqueous | ; U\ | / 9 | 12/24/18 | 12/24/18 | 14:01 | I1224CHS1 | |
| Parameter | | <u>Spike</u> <u>Added</u> | MS Conc. | <u>MS</u> %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
| Cyanide, Total | ND | 0.2000 | 0.1856 | 93 | 0.1868 | 93 | 70-130 | 1 | 0-25 | |



12/19/18

N/A

RPD: Relative Percent Difference. CL: Control Limits





Project: 8L00520

Quality Control - LCS/LCSD

Eurofins Frontier Global Sciences, Inc. 11720 North Creek Parkway North, Suite 4 Bothell, WA 98011-8244 Date Received: Work Order: Preparation: 12/19/18 18-12-1711

N/A

Method: SM 4500-CN E

Page 1 of 1

| Quality Control Sample ID | Туре | Matr | rix | Instrument | Date Pre | pared Date | Analyzed | LCS/LCSD B | atch Number |
|---------------------------|----------------|-----------|--------------|------------|---------------|------------|------------|------------|-------------|
| 099-05-061-4319 | LCS | Aqu | eous | UV 9 | 12/24/18 | 12/2 | 4/18 14:01 | I1224CNL1 | |
| 099-05-061-4319 | LCSD | Aqu | eous | UV 9 | 12/24/18 | 12/2 | 4/18 14:01 | I1224CNL1 | |
| Parameter | Spike Added Lo | .CS Conc. | LCS %Rec. | LCSD Conc. | LCSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
| Cyanide, Total | 0.2000 0. | .1621 | 81 | 0.1640 | 82 | 80-120 | 1 | 0-20 | |





Glossary of Terms and Qualifiers

Work Order: 18-12-1711 Page 1 of 1

| Qualifiers | <u>Definition</u> |
|------------|--|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control. |
| 4 | The MS/MSD RPD was out of control due to suspected matrix interference. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| В | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| BV | Sample received after holding time expired. |
| CI | See case narrative. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| HDH | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected). |
| HDL | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected). |
| J | Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated. |
| JA | Analyte positively identified but quantitation is an estimate. |
| ME | LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean). |
| ND | Parameter not detected at the indicated reporting limit. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| Χ | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |
| | Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are |

are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

SUBCONTRACT ORDER

Eurofins Frontier Global Sciences, Inc.

8L00520

18-12-1711

Fax: (425) 686-3096 Phone: (425) 686-1996 Bothell, WA 98011 11720 North Creek Parkway North, Suite 400 Eurofins Frontier Global Sciences, LLC SENDING LABORATORY: Project Manager: Amy Goodall Phone:7148955494 Garden Grove, CA 92841 7440 Lincoln Way Eurofins Calscience, LLC RECEIVING LABORATORY:

Analysis

Comments

Sampled: 12-Dec-18 00:00 (GMT-05:00) Eastern Time (US & Sampled: 12-Dec-18 00:00 (GMT-05:00) Eastern Time (US & Sample ID: 008527 PEASE_01_TCn EFGS Lab ID: 8L00520-05 Sample ID: 008508 NEW_01_TCn EFGS Lab ID: 8L00520-14 04_1000 ml HDPE Bottle Misc. Subcontract 1 Containers Supplied: Misc. Subcontract 1 Containers Supplied: Matrix: Water Matrix: Water \ni 61 EPA SM4500 CN E EPA SM4500 CN E Due: 16-Jan-19 19:00 Due: 16-Jan-19 19:00

04_1000 ml HDPE Bottle

Received By

12/19/18 Date

100

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5 . . . 6

GLOBAL SCIENCES REEK PKWY N WA 98011-8244

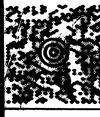
34 LBS

DWT: 24,13,14

POFINS CALSCIENCE, INC.

CA 92341





Return to Contents

TRACKING #: 12 86W 050 01 5166 1727 BAY AUR



BILLING:

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Calscience

SAMPLE RECEIPT CHECKLIST

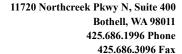
COOLER __ OF _

くやゴゴ

DATE: 12/19/2018

| y Man | Reviewed by: U41 | | Zn (CH ₃ CO ₂) ₂ + NaOH | x = Na2SO3+NaHSO4.H2O7 znna = | () |
|------------|----------------------------|--------------------------|---|---|--|
| y Upr | l/Checked by: | = Ziploc/Rese Labeled | Jar, $P = Plastic$, and $Z = Na2S2O3$, $p = H3PO4$, | Clear, $\mathbf{E} = \text{Envelope}$, $\mathbf{G} = \text{Glass}$, $\mathbf{J} = \text{Jar}$, \mathbf{P} $\mathbf{h} = \text{HCl}$, $\mathbf{n} = \text{HNO}_3$, $\mathbf{na} = \text{NaOH}$, $\mathbf{na_2} = \text{Na_2}$ | Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G Preservative: b = buffered, f = filtered, h = HCl, n = HNO ₃ , na |
| | | | | D PUF D | Air: ☐ Tedlar™ ☐ Canister ☐ Sorbent Tube |
| | | | _) □ TerraCores® (| J □ Sleeve () □ En | 4ozCGJ □ 8c |
| | | | (pH Z 12) | ☐ 1AGBs (O&C | 1AGB □ 1AGBna ₂ □ |
| w | s (pH2) | □ 500AG. | □ 500AGB | _2) 🗆 250PB 🗆 250Pl | ;~ |
| ına (pH9) | 3 □ 125PB znna (pH_ | 3B p □ 125PB | □ 125AGBh □ 125AGBp | □ VOAna₂ □ 100PJ □ 100PJna₂ □ 125AGB | /OAh |
| | | Lot Number | (Trip Blank Lot Number | | CONTAINER TYPE: |
| Þ | | | | | |
| , | | ر | ☐ Hydrogen Sulfide (Hach) | ☐ Ferrous Iron (SM 3500) ☐ Hy | SM 4500) |
| | | <i>-</i> | ☐ Dissolved Oxygen (SM 4500) | .175) | ☐ Volatile Organics ☐ Dissolved |
| Ø | | | | of headspace | (s) for certa |
| | Ø, | | | \supset | base preserved |
| | , | | | eceived for certain analyses | ☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals |
| | Ì | | iner | d on COC and/or sample conta | Proper preservation chemical(s) noted on COC and/or sample container |
| | ` | | Oxygen | ☐ Dissolved Sulfide ☐ Dissolved Oxygen | □ pH □ Residual Chlorine □ D |
| | | | holding time | yses received within 15-minute | Aqueous samples for certain analyses received within 15-minute holding |
| | | | | | Samples received within holding time |
| | Ì | | | requested | Sufficient volume/mass for analyses requested |
| | \B | | | sted | Proper containers for analyses requested |
| | Z, | | | od condition | Sample container(s) intact and in good condition |
| | Þ | | | with COC | Sample container label(s) consistent with COC |
| _ | | | | | Sampler's name indicated on COC . |
| | | ished time | d date No relinquished | 3. | quested |
| • | 73 | | containers | ☐ Matrix ☐ Number of | ☐ Sampling date ☐ Sampling time |
| | ₽ F | | | | COC document(s) received complete |
| | ď | | |) received with samples | |
| o N/A | Yes No | | | | SAMPLE CONDITION: |
| <i>I</i> : | Checked by: | □ N/A | 2 Not Present | ☐ Present but Not Intact | Sample(s) |
| PUDU . | Checked by: | □ N/A | □ Not Present | ☐ Present but Not Intact | Cooler Present and Intact |
| | | | | | CHISTORY SEAL: |
| " Udge | Checked by: UV | | | ~ , | Ambient Temperature: ☐ Air ☐ Filter |
| <u>.</u> | | | sport by courier | perature; placed on ice for tran | ☐ Sample(s) received at ambient temperature; placed on ice for transport by courier |
| | | ampling | ed on same day of s | criteria but received on ice/chilled on same day of sampling | ☐ Sample(s) outside temperature criteria |
| | <i>:</i> | | | criteria (PM/APM contacted by: | utsid |
| Na Sample | Blank | ှီ ဂို | oc (w/ CF): 3 · 6 | 6.0°C, not frozen except sediment/tissue) Temperature (w/o CF)i $3 \cdot 6$ °C (w/o | TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not front from the companies of the |
| | | | | | ינוראוי. |

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16 January 2019

Tim Puls Underwood Engineers 25 Vaughan Mall Portsmouth, NH 03801

RE: Trace Metals In Wastewater - River

Amy Sodall.

Enclosed are the analytical results for samples received by Eurofins Frontier Global Sciences. All quality control measurements are within established control limits and there were no analytical difficulties encountered with the exception of those listed in the case narrative section of this report.

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

Sincerely,

Amy Goodall

Project Manager



Underwood Engineers Project: Trace Metals In Wastewater - River

25 Vaughan Mall Project Number: Anti-Degradation - River Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:45

ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|---------------------------------|---------------|--------|-----------------|-----------------|
| B182586 River_01_TM | 8L00519-01 | Water | 12-Dec-18 10:30 | 14-Dec-18 10:40 |
| B182572 River_02_TM | 8L00519-02 | Water | 12-Dec-18 10:31 | 14-Dec-18 10:40 |
| B182573 River_EB_TM | 8L00519-03 | Water | 12-Dec-18 00:00 | 14-Dec-18 10:40 |
| D2889 River_01_DM Dissolved | 8L00519-05 | Water | 12-Dec-18 10:20 | 14-Dec-18 10:40 |
| D2886 River_02_DM Dissolved | 8L00519-06 | Water | 12-Dec-18 10:20 | 14-Dec-18 10:40 |
| D2887 River_EB_DM Dissolved | 8L00519-08 | Water | 12-Dec-18 00:00 | 14-Dec-18 10:40 |
| B182574 River_01_DHgf Dissolved | 8L00519-09 | Water | 12-Dec-18 10:26 | 14-Dec-18 10:40 |
| B182575 River_02_DHg Dissolved | 8L00519-10 | Water | 12-Dec-18 10:27 | 14-Dec-18 10:40 |
| B182576 River_EB_DHg Dissolved | 8L00519-11 | Water | 12-Dec-18 00:00 | 14-Dec-18 10:40 |

Eurofins Frontier Global Sciences, LLC

Amy Sodall.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Amy Goodall, Project Manager



Underwood Engineers Project: Trace Metals In Wastewater - River

25 Vaughan Mall Project Number: Anti-Degradation - River Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:45

SAMPLE RECEIPT

Samples were received at Eurofins Frontier Global Sciences (EFGS) on 14-Dec-18 10:40. The samples were received intact, on-ice within two sealed coolers at

CoolerTemp C°Default Cooler10.4New Cooler 25.3

Samples were shipped to Eurofins Calscience in Garden Grove, CA for the EPA SM4500 Total CN analysis per the initial project setup.

The subcontract report is located after the notes and definitions section of the EFGS report.

SAMPLE PREPARATION AND ANALYSIS

Samples were prepared and analyzed for total mercury by flow injection atomic fluorescence spectrometry (FI-AFS) in accordance with EPA 1631E.

Samples were prepared and analyzed for total recoverable metals by inductively coupled plasma mass spectrometry (ICP-MS) in accordance with EPA 200.8 (EFGS-054).

Samples were prepared and analyzed for total metals by preconcentration followed by analysis via inductively coupled plasma mass spectrometry (ICP-MS) in accordance with EPA 1640 Mod.

ANALYTICAL AND QUALITY CONTROL ISSUES

Method blanks were prepared for every preparation to assess possible blank contribution from the sample preparation procedure. The method blanks were carried through the entire analytical procedure. All blanks fell within the established acceptance criteria with the exception of any items narrated above or flagged and described in the notes and definitions section of the report.

Liquid spikes, certified reference material (CRM) or a quality control samples (QCS) were prepared for every preparation as a measure of accuracy. All liquid spikes, CRMs and/or QCS samples fell within the established acceptance criteria with the exception of any items narrated above or flagged and described in the notes and definitions section of the report.

As an additional measure of the accuracy of the methods used and to check for matrix interference, matrix spikes (MS) and matrix spike

Eurofins Frontier Global Sciences, LLC

Amy Sodall.



Underwood Engineers Project: Trace Metals In Wastewater - River

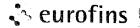
25 Vaughan Mall Project Number: Anti-Degradation - River Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:45

duplicates (MSD) were digested and analyzed. All of the matrix spike recoveries fell within the established acceptance criteria with the exception of any items flagged and described in the notes and definitions section of the report.

A reasonable measure of the precision of the analytical methods is the relative percent difference (RPD) between a matrix spike recovery and a matrix spike duplicate recovery and between laboratory control sample recovery and laboratory control sample duplicate recoveries. All of the relative percent differences fell within established acceptance criteria with the exception of any items flagged and described in the notes and definitions section of the report.

Eurofins Frontier Global Sciences, LLC

Amy Sodall.



Prentier Global Sciences

Sample Receipt Checklist

| Client: nder W | ved Eng | fALLYS, | inc | Date & Time R | eceived: <u>1040 1</u> 7 | -14-18 Da | te Labeled: | The Labeled B | y: Br |
|---|---|--------------------|-------------------|------------------------------|--|------------------|-----------------|----------------|-------------|
| Project: Anti-de | gradation | -WWT | | Received By:_ | SMM | Lal | oel Verified By | :_j\$ | |
| # of Coolers Received: | <u>2</u> sa | amples Arrived | By: Ship | ping Service | Courier Han | d Other | (Specify: | |) |
| Coolant: Mone/Ar Notify Project Manager | mbient 5 M N 5 M N if packages/cool | se Ice | Ice Dry Ice | e Coolant Ro | equired: ੴ/ N ed coolant and at a ten | Temp Blank Us | sed:ØN for 0 | Cooler(s): 10, | 1#1 FZN/ |
| Cooler Information: | | Y/N/NA | Commer | nts | TID: 14139780 CF | •41'3 °C Da | te/time: 17 -/4 | 4-18 With B. | "Cma |
| The coolers do not appear to | be tampered with: | Y | | Cooler 1: 0, °C w/ CF: (| | | Cooler 4: | °C w/ CF: | °C |
| Custody Seals are present and intact: | | | Cooler 2: 4, 9 °C | | | °C w/ CF: | °C | | |
| Custody seals signed: | | | | Cooler 3: °C | w/ CF: °C | | °C w/ cF: | °C | |
| Chain of Custody: Sample ID/Description: | Y/N/NA | Comment | S | Sample Conditio | n/Integrity: rs intact/present: | Y/N/NA | | Comments | |
| Date and time of collection: | - \ \ \ \ - \ \ | | | | present and legible: | - 3 | | | |
| Sampled by: | <u> </u> | | | | ntainer/bag matches COC: | | | | ** |
| Preservation type: | <u> </u> | | | Correct sample c | | - | | | |
| Requested analyses: | 4 | ······ | | Samples received | within holding times: | 1 3 | | | |
| Required signatures: | \(\sigma\) | | | Sample volume s | ufficient for requested ana | | | | |
| nternal COC required: | AVI | | | Correct preserva | tive used for requested ana | ılyses: 🔍 | | | |
| Anomalies/Non-conforma | nces (attach additi | ional pages if nee | eded): | | | | 8L | 00519 | |

Chain of Custody Record & Laboratory Analysis Request: Air, Water, Sediments, Plant and Animal Tissue, Hydrocarbon & Other Samples

& LOUS VI

11720 Northcreek Pkwy N, Suite 400 Bothell, WA 98011

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Phone: 425-686-1996 Fax: 425-686-3096

info@FrontierGS.com

Frontier Global Sciences

eurofins

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http://www.FrontierGS.com EFGS PM: Client: UNDERWOOD ENGINEERS, INC. Contact: Tim Puls Analyses Requested Date: Phone: (603) 436-6192 Fax: Address: 25 VAUGHAN MALL, 8 E-mail: tpuls@underwoodengineers.com TAT (business days) (20) (std) PORTSMOUTH, NH 03801 15 10 5 4 3 2 24 hrs. Other Project Name: Anti-Degradation - RIVER Contract/PO: Dissolved Metals (DM) (HC) (For TAT < 10 days, contact PM. Dissolved Hg (DHg) Invoice To: Client Report To: Tim Puls Surcharges apply for expedited TAT) Field Filtered (Y/N) Total Metals (TM) Preserved: 3 HCl BrCl Saturday delivery? ☐ Y ÆN Address: Address: 25 VAUGHAN MALL, Total Cyanide (If yes, please contact PM) PORTSMOUTH, NH 03801 Field Presen HNO₃ HCl Sampled By EDD ØY ON Phone: Phone: (603) 436-6192 Fax: Fax: Ø Standard □ High E-mail: tpuls@underwoodengineers.com IE-mail: # of Engraved Comments Matrix Date & Time Sample ID No. **Bottles** Bottle ID Total Metals include: Sb. Be, B182586 RIVER 01_TM 1 SB 1 Cr, Fe, Tl 1 SB RIVER 02 TM B182572 2 B182573 RIVER EB TM 1 RW X Dissolved Metals include: As. 3 Cd, Cu, Pb, Ni, Se, Ag, Zn × RIVER MS TM 1 SB B182587 4 X D2889 RIVER 01_DM 1 SB RW – Reagent Water D2886 RIVER 02_DM 1 SB × RIVER 58 DM 1 RW D2888 D2887 RIVER_MS_DM 1 SB RIVER_01_DHg 1 SB B182574 RIVER 02 DHq 1 SB B182575 10 RW B182576 RIVER EB DHq 1 11 SB B182577 RIVER MS DHg 1 12 Reliacushed BX: Received By: Received By: Matrix Codes: For Laboratory Use Only FW: Fresh Water SMM COC Seal: NA Comments: WW: Waste Water Name: Sega MICORO SB: Sea and Brackish Water Name: Cooler Temp: 5.3° L Name: #2 SS: Soil and Sediment Organization: F F65 Organization: Organization: Carrier: Uf(TS: Plant and Animal Tissue HC: Hydrocarbons Date & Time: 12/13/15 4:30 Date & Time: (a 40 12-14-10 Date & Time: VTSR: 10 40 TR: Trap OT: Other Tracking number: # of Coolers: 7_ By signing, you declare that you agree with EFGS' terms and conditions, and that Sample Disposal: you authorize EFGS to perform the specified analyses. □ Return (shipping fees may apply) Standard Disposal - 30 Days after report Date: Customer Approval: ☐ Retain for weeks after report (storage fees may apply)

Chain of Custody Record & Laboratory Analysis Request: Air, Water, Sediments, Plant and Animal Tissue, Hydrocarbon & Other Samples

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Bothell, WA 98011 Phone: 425-686-1996

11720 Northcreek Pkwy N, Suite 400

Fax: 425-686-3096

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Client: UNDERWOOD ENGINEERS, INC. Contact: Tim Puls EFGS PM: Analyses Requested Address: 25 VAUGHAN MALL, Phone: (603) 436-6192 Fax: Date: PORTSMOUTH, NH 03801 E-mail: tpuls@underwoodengineers.com TAT (business days):20 (std) Project Name: Anti-Degradation - RIVER Contract/PO: 15 10 5 4 3 2 24 hrs. Dissolved Metals (DM) (For TAT < 10 days, contact PM Cyanide (TCn) Report To: Tim Puls Invoice To: Client Dissolved Hg (DHg) Field Filtered (Y/N) Surcharges apply for expedited TAT) Address: 25 VAUGHAN MALL, Address: Field Preserved: HNO₃ HCl BrCl Saturday delivery? ☐ Y 💆 N (If yes, please contact PM) PORTSMOUTH, NH 03801 Total Metals Sampled By Phone: (603) 436-6192 Fax: Phone: Fax: EDD XY ON E-mail: tpuls@underwoodengineers.com QA ZStandard □ High E-mail: Total Date & Time Engraved # of Sample ID Matrix No. Comments **Bottle ID** Bottles 008545 RIVER 01 TCn 1 SB 10.25 Total Metals include: Sb, Be, Cr, Fe, Tl 008492 RIVER_TB_TCn 1 RW 3 Dissolved Metals include: As. Cd, Cu, Pb, Ni, Se, Ag, Zn 4 5 RW - Reagent Water 6 7 8 9 10 11 12 Matrix Codes: Relinquished By: For Laboratory Use Only Received By: Received By: FW: Fresh Water COC Seal: Comments: WW: Waste Water Cooler Temp: 53% SB: Sea and Brackish Water Name: Name: Sean MUCON Name: SS: Soil and Sediment Organization: EAGS Carrier: U.P. Organization: TS: Plant and Animal Tissue Organization: HC: Hydrocarbons Date & Time: VTSR: (//// Date & Time: 1/1/0/12/14 Date & Time: TR: Trap OT: Other SUSZ 4016 835 # of Coolers: 2_ Tracking number: Sample Disposal: By signing, you declare that you agree with EFGS' terms and conditions, and that you authorize EFGS to perform the specified analyses. □ Return (shipping fees may apply) ☑ Standard Disposal – 30 Days after report ☐ Retain for _____ weeks after report (storage fees may apply) Customer Approval: Date: Page 7 of 40

Chain of Custody Record & Laboratory Analysis Request: Air, Water, Sediments, Plant and Animal Tissue,

Hydrocarbon & Other Samples

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Page <u>1</u> of <u>2</u> http://www.FrontierGS.com EFGS PM: Client: UNDERWOOD ENGINEERS, INC. Contact: Tim Puls **Analyses Requested** Date: Phone: (603) 436-6192 Address: 25 VAUGHAN MALL, Fax: 8 E-mail: tpuls@underwoodengineers.com TAT (business days) (20) (std) PORTSMOUTH, NH 03801 15 10 5 4 3 2 24 hrs. Project Name: Anti-Degradation - RIVER Contract/PO: Other Dissolved Metals (DM) (For TAT < 10 days, contact PM. (HCL) Dissolved Hg (DHg) Invoice To: Client Report To: Tim Puls Surcharges apply for expedited TAT) Field Filtered (Y/N) Total Metals (TM) Field Preserved: HNO₃ HCI BrCI (Saturday delivery? Y 20N Address: 25 VAUGHAN MALL, Address: Cyanide (If yes, please contact PM) PORTSMOUTH, NH 03801 Sampled By EDD BY IN Phone: (603) 436-6192 Fax: Phone: Fax: 赵 Standard 口 High E-mail: tpuls@underwoodengineers.com IE-mail: Total # of Engraved Date & Time Comments Sample ID Matrix No. Bottle ID **Bottles** Total Metals include: Sb. Be. B182586 RIVER 01 TM 1 SB Cr, Fe, Tl B182572 1 SB \ 3 RIVER 02 TM B182573 RIVER EB TM 1 RW X Dissolved Metals include: As, Cd, Cu, Pb, Ni, Se, Ag, Zn B182587 RIVER MS TM 1 SB × D2889 RIVER 01 DM 1 SB X RW - Reagent Water D2886 RIVER 02 DM 1 SB D2888 RIVER 58 DM 1 RW × 4 D2887 SB RIVER ME DM 1 B182574 RIVER_01_DHg 1 SB 1 SB B182575 RIVER_02_DHg B182576 RIVER_EB_DHg 1 RW RIVER_MS_DHg B182577 1 SB For Laboratory Use Only Matrix Codes: Relinguished BV Received By: Received By: FW: Fresh Water COC Seal: A Comments: WW: Waste Water Steve Jones Name: 5440 Cooler Temp: /d W SB: Sea and Brackish Water # Name: Name: SS: Soil and Sediment Organization: F & 65 Carrier: uf(Organization: Organization: TS: Plant and Animal Tissue HC: Hydrocarbons 13/12 4:309 Date & Time: /JU/1/17-/4-4 Date & Time: VTSR: / UV O Date & Time: TR: Trap OT: Other Tracking number: ていらっしゅっぱん タ33 # of Coolers: 7 By signing, you declare that you agree with EFGS' terms and conditions, and that Sample Disposal: ☐ Return (shipping fees may apply) you authorize EFGS to perform the specified analyses. Standard Disposal - 30 Days after report weeks after report (storage fees may apply) □ Retain for Customer Approval: Date:

SUBCONTRACT ORDER

Eurofins Frontier Global Sciences, Inc.

8L00519

SENDING LABORATORY:

Eurofins Frontier Global Sciences, LLC

11720 North Creek Parkway North, Suite 400

Bothell, WA 98011

Phone: (425) 686-1996

Fax: (425) 686-3096

Amy Goodall Project Manager:

RECEIVING LABORATORY:

Eurofins Calscience, LLC

7440 Lincoln Way

Garden Grove, CA 92841

Phone:7148955494

Fax: x

Analysis

Sample ID: 008545 River_01_TCn

Comments

EFGS Lab ID: 8L00519-13

Matrix: Water

Sampled: 12-Dec-18 10:25 (GMT-05:00) Eastern Time (US &

Due: 16-Jan-19 19:00

Misc. Subcontract 1

EPA SM4500 CN E

Containers Supplied:

04_1000 ml HDPE Bottle

Sample ID: 008492 River_TB_TCn

Matrix: Water EFGS Lab ID: 8L00519-14

Sampled: 12-Dec-18 10:25 (GMT-05:00) Eastern Time (US &

Due: 16-Jan-19 19:00

Misc. Subcontract 1

EPA SM4500 CN E

Containers Supplied:

04_1000 ml HDPE Bottle

860 0500151661727

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Received By

Date

Date

Received By

Page 1 of 1



Underwood Engineers Project: Trace Metals In Wastewater - River

25 Vaughan Mall Project Number: Anti-Degradation - River Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:45

B182586 River_01_TM 8L00519-01

| Analyte Sample Preparation: EFGS SOP2836 | Result Closed Ve | Limit | Reporting Limit Oven Di | Units gestion | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|--|------------------|-------|--------------------------|------------------|----------|---------|-----------|----------|-----------|-----------|---------|
| Antimony | ND | 0.227 | 0.505 | μg/L | 25 | F812432 | 27-Dec-18 | 9A04007 | 03-Jan-19 | EPA 200.8 | U, R-05 |
| Beryllium | ND | 0.101 | 1.51 | $\mu g/L$ | 25 | F812432 | 27-Dec-18 | 9A04007 | 03-Jan-19 | EPA 200.8 | U, R-05 |
| Chromium | 0.93 | 0.20 | 1.01 | μg/L | 10 | F812432 | 27-Dec-18 | 9A02014 | 31-Dec-18 | EPA 200.8 | R-05, J |
| Iron | 145 | 11 | 101 | μg/L | 10 | F812432 | 27-Dec-18 | 9A02014 | 31-Dec-18 | EPA 200.8 | R-05 |
| Thallium | ND | 0.061 | 0.202 | $\mu g/L$ | 10 | F812432 | 27-Dec-18 | 9A02014 | 31-Dec-18 | EPA 200.8 | U, R-05 |

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Underwood Engineers Project: Trace Metals In Wastewater - River

25 Vaughan Mall Project Number: Anti-Degradation - River Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:45

B182572 River_02_TM 8L00519-02

| Analyte Sample Preparation: EFGS SOP2836 | Result Closed Ves | Limit | Reporting Limit Oven Di | Units gestion | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|---|--------------------|-------|-------------------------|------------------|----------|---------|-----------|----------|-----------|-----------|---------|
| Antimony | ND | 0.227 | 0.505 | μg/L | 25 | F812432 | 27-Dec-18 | 9A04007 | 03-Jan-19 | EPA 200.8 | U, R-05 |
| Beryllium | ND | 0.040 | 0.606 | $\mu g/L$ | 10 | F812432 | 27-Dec-18 | 9A02014 | 01-Jan-19 | EPA 200.8 | U, R-05 |
| Chromium | 0.37 | 0.20 | 1.01 | μg/L | 10 | F812432 | 27-Dec-18 | 9A02014 | 01-Jan-19 | EPA 200.8 | R-05, J |
| Iron | 154 | 11 | 101 | μg/L | 10 | F812432 | 27-Dec-18 | 9A02014 | 01-Jan-19 | EPA 200.8 | R-05 |
| Thallium | ND | 0.061 | 0.202 | $\mu g/L$ | 10 | F812432 | 27-Dec-18 | 9A02014 | 01-Jan-19 | EPA 200.8 | U, R-05 |

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Underwood Engineers Project: Trace Metals In Wastewater - River

25 Vaughan Mall Project Number: Anti-Degradation - River Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:45

B182573 River_EB_TM 8L00519-03

| Analyte Sample Preparation: EFGS SOP2836 | Result Closed Ve | Limit | Reporting Limit Oven Di | Units gestion | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|---|------------------|-------|-------------------------|------------------|----------|---------|-----------|----------|-----------|-----------|----------|
| Antimony | ND | 0.009 | 0.020 | μg/L | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | U, QB-02 |
| Beryllium | ND | 0.004 | 0.061 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | U, QM-12 |
| Chromium | ND | 0.02 | 0.10 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | U |
| Iron | ND | 1 | 10 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | U |
| Thallium | ND | 0.006 | 0.020 | $\mu g/L$ | 1 | F812432 | 27-Dec-18 | 8L28010 | 29-Dec-18 | EPA 200.8 | U |

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Underwood Engineers Project: Trace Metals In Wastewater - River

25 Vaughan Mall Project Number: Anti-Degradation - River Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:45

D2889 River_01_DM Dissolved 8L00519-05

| Analyte Sample Preparation: EFGS SOP | Result | Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|---------------------------------------|--------|-------|-----------------|----------------|----------|---------|-----------|----------|-----------|---------------|-------|
| Arsenic | 0.85 | 0.04 | 0.38 | μg/L | 5 | F812487 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | |
| Cadmium | 0.040 | 0.020 | 0.100 | μg/L | 5 | F812487 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | J |
| Copper | 0.44 | 0.08 | 0.25 | μg/L | 5 | F812487 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | |
| Lead | 0.030 | 0.020 | 0.100 | μg/L | 5 | F812487 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | J |
| Nickel | 0.54 | - | 0.25 | μg/L | 5 | F812487 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | |
| Selenium | ND | 0.16 | 1.50 | $\mu g/L$ | 5 | F812487 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 Mod. | U |
| Silver | 0.03 | 0.01 | 0.10 | $\mu g \! / L$ | 5 | F812487 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | J |
| Zinc | 1.80 | 0.14 | 0.50 | $\mu g/L$ | 5 | F812487 | 02-Jan-19 | 9A07016 | 07-Jan-19 | EPA 1640 | |

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Underwood Engineers Project: Trace Metals In Wastewater - River

25 Vaughan Mall Project Number: Anti-Degradation - River Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:45

D2886 River_02_DM Dissolved 8L00519-06

| Analyte Sample Preparation: EFGS SO | Result | Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|-------------------------------------|---------------|---------------|-----------------|--------------|----------|---------|-----------|----------|-----------|---------------|-------|
| Arsenic | | | | a/I | 5 | F812487 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | |
| Cadmium | 0.96 0.053 | 0.04 0.020 | 0.38 0.100 | μg/L μg/L | 5 | F812487 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | J |
| Copper | 0.55 | 0.08 | 0.25 | μg/L | 5 | F812487 | 02-Jan-19 | 9A08016 | 08-Jan-19 | EPA 1640 | |
| Lead | 0.045 | 0.020 | 0.100 | $\mu g/L$ | 5 | F812487 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | J |
| Nickel | 0.65 | - | 0.25 | $\mu g/L$ | 5 | F812487 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | |
| Selenium | ND | 0.16 | 1.50 | $\mu g/L$ | 5 | F812487 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 Mod. | U |
| Silver | 0.04 | 0.01 | 0.10 | $\mu g/L$ | 5 | F812487 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | J |
| Zinc | 1.90 | 0.14 | 0.50 | $\mu g/L$ | 5 | F812487 | 02-Jan-19 | 9A07016 | 07-Jan-19 | EPA 1640 | |

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Amy Sodall.



Underwood Engineers Project: Trace Metals In Wastewater - River

25 Vaughan Mall Project Number: Anti-Degradation - River Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:45

D2887 River_EB_DM Dissolved 8L00519-08

| Analyte Sample Preparation: EFGS SOP28 | Result 20 Reductive | Limit | Reporting Limit tion | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|---|---------------------|-------|----------------------|-----------|----------|---------|-----------|----------|-----------|---------------|----------|
| Arsenic | ND | 0.04 | 0.38 | μg/L | 5 | F812487 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | U |
| Cadmium | 0.020 | 0.020 | 0.100 | μg/L | 5 | F812487 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | J |
| Copper | ND | 0.08 | 0.25 | μg/L | 5 | F812487 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | U |
| Lead | ND | 0.020 | 0.100 | μg/L | 5 | F812487 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | U |
| Nickel | ND | - | 0.25 | μg/L | 5 | F812487 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | U |
| Selenium | ND | 0.16 | 1.50 | μg/L | 5 | F812487 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 Mod. | U |
| Silver | 0.03 | 0.01 | 0.10 | $\mu g/L$ | 5 | F812487 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | J |
| Zinc | 0.31 | 0.14 | 0.50 | $\mu g/L$ | 5 | F812487 | 02-Jan-19 | 9A04012 | 04-Jan-19 | EPA 1640 | QB-02, J |

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Amy Sodall.



Underwood Engineers Project: Trace Metals In Wastewater - River

25 Vaughan Mall Project Number: Anti-Degradation - River Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:45

B182574 River_01_DHgf Dissolved 8L00519-09

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|---------------------------------|--------------|--------------------|--------------------|-------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP279 | 6 EPA 1631 (| Oxidation | ı | | | | | | | | |
| Mercury | 0.59 | 0.08 | 0.50 | ng/L | 1 | F812497 | 17-Dec-18 | 8L31004 | 30-Dec-18 | EPA 1631E | |

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Underwood Engineers Project: Trace Metals In Wastewater - River

25 Vaughan MallProject Number: Anti-Degradation - RiverReported:Portsmouth NH, 03801Project Manager: Tim Puls16-Jan-19 16:45

B182575 River_02_DHg Dissolved 8L00519-10

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|---------------------------------|---------------|--------------------|--------------------|-------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP279 | 06 EPA 1631 C | Oxidation | ı | | | | | | | | |
| Mercury | 0.59 | 0.08 | 0.50 | ng/L | 1 | F812497 | 17-Dec-18 | 8L31004 | 30-Dec-18 | EPA 1631E | |

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Amy Sodall.



Underwood Engineers Project: Trace Metals In Wastewater - River

25 Vaughan Mall Project Number: Anti-Degradation - River Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:45

B182576 River_EB_DHg Dissolved 8L00519-11

| Analyte | Result | Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Sequence | Analyzed | Method | Notes |
|-------------------------------|----------------|--------------------|--------------------|-------|----------|---------|-----------|----------|-----------|-----------|-------|
| Sample Preparation: EFGS SOP2 | 796 EPA 1631 (| Oxidation | 1 | | | | | | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | 1 | F812497 | 17-Dec-18 | 8L31004 | 30-Dec-18 | EPA 1631E | U |

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Amy Sodall.

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Amy Goodall, Project Manager



RPD

Underwood Engineers Project: Trace Metals In Wastewater - River

Detection Reporting

25 Vaughan Mall Project Number: Anti-Degradation - River Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:45

Quality Control Data

Spike

Source

%REC

| | | Detection | Reporting | | Spike | Source | | %KEC | | KPD | |
|-----------------------------|------------------|-----------|-----------|-----------|-------------|-------------|-------------|----------|-----|-------|----------|
| Analyte | Result | Limit | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | Notes |
| Batch F812487 - EFGS SOP282 | 0 Reductive Prec | ipitation | | | | | | | | | |
| Blank (F812487-BLK1) | | | | | Prepared: (| 02-Jan-19 A | nalyzed: 04 | 1-Jan-19 | | | |
| Nickel | ND | - | 0.25 | μg/L | | | | | | | |
| Copper | ND | 0.08 | 0.25 | $\mu g/L$ | | | | | | | |
| Zinc | 0.27 | 0.14 | 0.50 | $\mu g/L$ | | | | | | | J, QB-0 |
| Arsenic | ND | 0.04 | 0.38 | $\mu g/L$ | | | | | | | |
| Selenium | ND | 0.16 | 1.50 | $\mu g/L$ | | | | | | | |
| Silver | 0.02 | 0.01 | 0.10 | $\mu g/L$ | | | | | | | |
| Cadmium | 0.020 | 0.020 | 0.100 | $\mu g/L$ | | | | | | | |
| Lead | ND | 0.020 | 0.100 | $\mu g/L$ | | | | | | | |
| Blank (F812487-BLK2) | | | | | Prepared: (| 02-Jan-19 A | nalyzed: 04 | 1-Jan-19 | | | |
| Nickel | ND | - | 0.25 | μg/L | | | | | | | |
| Copper | 0.19 | 0.08 | 0.25 | $\mu g/L$ | | | | | | | |
| Zinc | 0.51 | 0.14 | 0.50 | $\mu g/L$ | | | | | | | QB-1 |
| Arsenic | ND | 0.04 | 0.38 | $\mu g/L$ | | | | | | | |
| Selenium | ND | 0.16 | 1.50 | $\mu g/L$ | | | | | | | |
| Silver | 0.03 | 0.01 | 0.10 | $\mu g/L$ | | | | | | | |
| Cadmium | ND | 0.020 | 0.100 | $\mu g/L$ | | | | | | | |
| Lead | ND | 0.020 | 0.100 | $\mu g/L$ | | | | | | | |
| Blank (F812487-BLK3) | | | | | Prepared: (| 02-Jan-19 A | nalyzed: 07 | 7-Jan-19 | | | |
| Zinc | 0.27 | 0.14 | 0.50 | μg/L | | | | | | | |
| LCS (F812487-BS1) | | | | | Prepared: (| 02-Jan-19 A | nalyzed: 04 | 1-Jan-19 | | | |
| Nickel | 9.95 | - | 1.25 | μg/L | 12.502 | | 79.6 | 71-130 | | | |
| Silver | 6.61 | 0.05 | 0.50 | $\mu g/L$ | 6.2500 | | 106 | 30-151 | | | |
| Cadmium | 9.197 | 0.101 | 0.500 | $\mu g/L$ | 10.002 | | 91.9 | 73-105 | | | |
| LCS (F812487-BS2) | | | | | Prepared: (|)2-Jan-19 A | nalyzed: 04 | 1-Jan-19 | | | |
| Copper | 11.65 | 0.08 | 0.25 | μg/L | 12.500 | <u> </u> | 93.2 | 77-109 | | | <u> </u> |
| Zinc | 10.45 | 0.14 | 0.50 | $\mu g/L$ | 12.502 | | 83.6 | 75-95 | | | QB-0 |
| Arsenic | 10.73 | 0.04 | 0.38 | $\mu g/L$ | 12.500 | | 85.8 | 58-110 | | | |
| Selenium | 10.83 | 0.16 | 1.50 | $\mu g/L$ | 12.498 | | 86.7 | 70-120 | | | |
| Lead | 11.13 | 0.020 | 0.100 | μg/L | 12.502 | | 89.0 | 62-129 | | | |

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Underwood Engineers Project: Trace Metals In Wastewater - River

25 Vaughan Mall Project Number: Anti-Degradation - River Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:45

Quality Control Data

| | | Detection | Reporting | | Spike | Source | a/PEC | %REC | 222 | RPD | |
|------------------------------|----------------|-----------|------------|-----------|-------------|-------------|------------|----------|------|-------|-------|
| Analyte | Result | Limit | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | Notes |
| Batch F812487 - EFGS SOP2820 | Reductive Prec | ipitation | | | | | | | | | |
| LCS Dup (F812487-BSD1) | | | | | Prepared: 0 |)2-Jan-19 A | nalyzed: 0 | 4-Jan-19 | | | |
| Nickel | 11.68 | - | 1.25 | $\mu g/L$ | 12.502 | | 93.5 | 71-130 | 16.0 | 20 | |
| Silver | 6.22 | 0.05 | 0.50 | $\mu g/L$ | 6.2500 | | 99.6 | 30-151 | 6.04 | 20 | |
| Cadmium | 8.938 | 0.101 | 0.500 | $\mu g/L$ | 10.002 | | 89.4 | 73-105 | 2.86 | 20 | |
| LCS Dup (F812487-BSD2) | | | | | Prepared: 0 |)2-Jan-19 A | nalyzed: 0 | 4-Jan-19 | | | |
| Copper | 12.21 | 0.08 | 0.25 | $\mu g/L$ | 12.500 | | 97.7 | 77-109 | 4.67 | 20 | |
| Zinc | 11.23 | 0.14 | 0.50 | $\mu g/L$ | 12.502 | | 89.8 | 75-95 | 7.22 | 20 | QB-0 |
| Arsenic | 9.69 | 0.04 | 0.38 | $\mu g/L$ | 12.500 | | 77.6 | 58-110 | 10.1 | 20 | |
| Selenium | 11.17 | 0.16 | 1.50 | $\mu g/L$ | 12.498 | | 89.4 | 70-120 | 3.04 | 25 | |
| Lead | 11.59 | 0.020 | 0.100 | $\mu g/L$ | 12.502 | | 92.7 | 62-129 | 4.04 | 20 | |
| Matrix Spike (F812487-MS1) | | Source: | 8L00425-0 | 3 | Prepared: 0 |)2-Jan-19 A | nalyzed: 0 | 4-Jan-19 | | | |
| Silver | 4.55 | 0.05 | 0.50 | μg/L | 6.2500 | ND | 72.8 | 30-151 | | | |
| Cadmium | 9.008 | 0.101 | 0.500 | $\mu g/L$ | 10.002 | ND | 90.1 | 73-105 | | | |
| Matrix Spike (F812487-MS2) | | Source: | 8L00519-0 | 5 | Prepared: 0 |)2-Jan-19 A | nalyzed: 0 | 4-Jan-19 | | | |
| Silver | 5.80 | 0.05 | 0.50 | μg/L | 6.2500 | ND | 92.8 | 30-151 | | | |
| Cadmium | 9.598 | 0.101 | 0.500 | $\mu g/L$ | 10.002 | ND | 96.0 | 73-105 | | | |
| Matrix Spike (F812487-MS3) | | Source: | 8L00425-03 | 3 | Prepared: 0 |)2-Jan-19 A | nalyzed: 0 | 4-Jan-19 | | | |
| Nickel | 6.29 | - | 0.25 | μg/L | 12.502 | 0.30 | 47.9 | 71-130 | | | QM-0 |
| Copper | 11.80 | 0.08 | 0.25 | $\mu g/L$ | 12.500 | 1.10 | 85.6 | 77-109 | | | |
| Zinc | 10.69 | 0.14 | 0.50 | $\mu g/L$ | 12.502 | 0.62 | 80.5 | 75-95 | | | QB-0 |
| Arsenic | 11.74 | 0.04 | 0.38 | μg/L | 12.500 | 1.59 | 81.2 | 58-110 | | | |
| Selenium | 9.46 | 0.16 | 1.50 | $\mu g/L$ | 12.498 | ND | 75.7 | 42-131 | | | |
| Lead | 11.47 | 0.020 | 0.100 | $\mu g/L$ | 12.502 | ND | 91.7 | 62-129 | | | |
| Matrix Spike (F812487-MS4) | | Source: | 8L00519-0 | 5 | Prepared: 0 |)2-Jan-19 A | nalyzed: 0 | 4-Jan-19 | | | |
| Nickel | 11.36 | - | 0.25 | μg/L | 12.502 | 0.54 | 86.5 | 71-130 | | | |
| Copper | 12.20 | 0.08 | 0.25 | $\mu g/L$ | 12.500 | 0.44 | 94.0 | 77-109 | | | |
| Zinc | 13.47 | 0.14 | 0.50 | $\mu g/L$ | 12.502 | 1.64 | 94.6 | 75-95 | | | QB-0 |
| Arsenic | 12.37 | 0.04 | 0.38 | $\mu g/L$ | 12.500 | 0.85 | 92.2 | 58-110 | | | |
| Selenium | 10.16 | 0.16 | 1.50 | $\mu g/L$ | 12.498 | ND | 81.3 | 42-131 | | | |
| Lead | 12.23 | 0.020 | 0.100 | μg/L | 12.502 | 0.030 | 97.6 | 62-129 | | | |

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Underwood Engineers Project: Trace Metals In Wastewater - River

25 Vaughan Mall Project Number: Anti-Degradation - River Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:45

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|----------------------------------|--------------|--------------------|--------------------|-----------|----------------|------------------|------------|----------------|-------|--------------|-----------------|
| Batch F812487 - EFGS SOP2820 Rec | luctive Prec | ipitation | | | | | | | | | |
| Matrix Spike Dup (F812487-MSD1) | | Source: | 8L00425-0 | 3 | Prepared: 0 |)2-Jan-19 A | nalyzed: 0 | 4-Jan-19 | | | |
| Silver | 4.28 | 0.05 | 0.50 | μg/L | 6.2500 | ND | 68.4 | 30-151 | 6.26 | 20 | |
| Cadmium | 7.595 | 0.101 | 0.500 | $\mu g/L$ | 10.002 | ND | 75.9 | 73-105 | 17.0 | 20 | |
| Matrix Spike Dup (F812487-MSD2) | | Source: | 8L00519-0 | 5 | Prepared: 0 |)2-Jan-19 A | nalyzed: 0 | 4-Jan-19 | | | |
| Silver | 5.29 | 0.05 | 0.50 | μg/L | 6.2500 | ND | 84.6 | 30-151 | 9.24 | 20 | |
| Cadmium | 9.570 | 0.101 | 0.500 | $\mu g/L$ | 10.002 | ND | 95.7 | 73-105 | 0.297 | 20 | |
| Matrix Spike Dup (F812487-MSD3) | | Source: | 8L00425-0 | 3 | Prepared: 0 |)2-Jan-19 A | nalyzed: 0 | 4-Jan-19 | | | |
| Nickel | 5.04 | - | 0.25 | μg/L | 12.502 | 0.30 | 37.9 | 71-130 | 22.0 | 20 | QM-05, QR-08 |
| Copper | 10.05 | 0.08 | 0.25 | $\mu g/L$ | 12.500 | 1.10 | 71.6 | 77-109 | 16.1 | 20 | QM-05 |
| Zinc | 9.49 | 0.14 | 0.50 | $\mu g/L$ | 12.502 | 0.62 | 71.0 | 75-95 | 11.9 | 20 | QB-01, QM-05 |
| Arsenic | 11.69 | 0.04 | 0.38 | $\mu g/L$ | 12.500 | 1.59 | 80.8 | 58-110 | 0.428 | 20 | |
| Selenium | 9.69 | 0.16 | 1.50 | $\mu g/L$ | 12.498 | ND | 77.5 | 42-131 | 2.42 | 25 | |
| Lead | 11.76 | 0.020 | 0.100 | $\mu g/L$ | 12.502 | ND | 94.0 | 62-129 | 2.48 | 20 | |
| Matrix Spike Dup (F812487-MSD4) | | Source: | 8L00519-0 | 5 | Prepared: 0 |)2-Jan-19 A | nalyzed: 0 | 4-Jan-19 | | | |
| Nickel | 10.88 | - | 0.25 | μg/L | 12.502 | 0.54 | 82.7 | 71-130 | 4.27 | 20 | |
| Copper | 11.64 | 0.08 | 0.25 | μg/L | 12.500 | 0.44 | 89.6 | 77-109 | 4.65 | 20 | |
| Zinc | 12.81 | 0.14 | 0.50 | $\mu g/L$ | 12.502 | 1.64 | 89.4 | 75-95 | 5.02 | 20 | QB-01 |
| Arsenic | 11.86 | 0.04 | 0.38 | $\mu g/L$ | 12.500 | 0.85 | 88.0 | 58-110 | 4.25 | 20 | |
| Selenium | 9.69 | 0.16 | 1.50 | $\mu g/L$ | 12.498 | ND | 77.5 | 42-131 | 4.75 | 25 | |
| Lead | 11.79 | 0.020 | 0.100 | $\mu g/L$ | 12.502 | 0.030 | 94.0 | 62-129 | 3.68 | 20 | |
| Batch F812497 - EFGS SOP2796 EPA | A 1631 Oxid | ation | | | | | | | | | |
| Blank (F812497-BLK1) | | | | | Prepared & | : Analyzed: | 30-Dec-18 | | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | | | | | | | U |

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Underwood Engineers Project: Trace Metals In Wastewater - River

25 Vaughan Mall Project Number: Anti-Degradation - River Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:45

Quality Control Data

| | | Detection | Reporting | | Spike | Source | | %REC | | RPD | |
|---------------------------------|-------------|-----------|------------|-------|------------|-----------|-----------|--------|-------|-------|----------|
| Analyte | Result | Limit | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | Notes |
| Batch F812497 - EFGS SOP2796 EP | A 1631 Oxid | ation | | | | | | | | | |
| Blank (F812497-BLK2) | | | | | Prepared & | Analyzed: | 30-Dec-18 | | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | | | | | | | U |
| Blank (F812497-BLK3) | | | | | Prepared & | Analyzed: | 30-Dec-18 | | | | |
| Mercury | ND | 0.08 | 0.50 | ng/L | | | | | | | U |
| Blank (F812497-BLK4) | | | | | Prepared & | Analyzed: | 30-Dec-18 | | | | |
| Mercury | ND | 0.09 | 0.52 | ng/L | | | | | | | U, QB-06 |
| LCS (F812497-BS1) | | | | | Prepared & | Analyzed: | 30-Dec-18 | | | | |
| Mercury | 14.67 | 0.08 | 0.50 | ng/L | 14.688 | | 99.9 | 80-120 | | | |
| LCS Dup (F812497-BSD1) | | | | | Prepared & | Analyzed: | 30-Dec-18 | | | | |
| Mercury | 14.57 | 0.08 | 0.50 | ng/L | 14.688 | | 99.2 | 80-120 | 0.665 | 24 | |
| Duplicate (F812497-DUP1) | | Source: | 8L00059-14 | 1 | Prepared & | Analyzed: | 30-Dec-18 | | | | |
| Mercury | 8.11 | 0.08 | 0.50 | ng/L | | 8.20 | | | 1.07 | 24 | AD |
| Matrix Spike (F812497-MS1) | | Source: | 8L00519-09 |) | Prepared & | Analyzed: | 30-Dec-18 | | | | |
| Mercury | 2.82 | 0.08 | 0.50 | ng/L | 2.5250 | 0.59 | 88.5 | 71-125 | | | AS |
| Matrix Spike (F812497-MS2) | | Source: | 8L00520-00 | 5 | Prepared & | Analyzed: | 30-Dec-18 | | | | |
| Mercury | 23.71 | 0.08 | 0.50 | ng/L | 20.200 | 6.82 | 83.6 | 71-125 | | | AS |
| Matrix Spike (F812497-MS3) | | Source: | 8L00520-15 | 5 | Prepared & | Analyzed: | 30-Dec-18 | | | | |
| Mercury | 22.91 | 0.08 | 0.50 | ng/L | 20.200 | 6.49 | 81.3 | 71-125 | | | AS |
| Matrix Spike Dup (F812497-MSD1) | | Source: | 8L00519-09 |) | Prepared & | Analyzed: | 30-Dec-18 | | | | |
| Mercury | 2.86 | 0.08 | 0.50 | ng/L | 2.5250 | 0.59 | 90.1 | 71-125 | 1.39 | 24 | AS |

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Amy Sodall.

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Amy Goodall, Project Manager



Underwood Engineers Project: Trace Metals In Wastewater - River

25 Vaughan Mall Project Number: Anti-Degradation - River Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:45

Quality Control Data

| | | Detection | Reporting | | Spike | Source | | %REC | | RPD | |
|---------------------------------|-------------|-----------|------------|-------|------------|------------|-------------|--------|-------|-------|-------|
| Analyte | Result | Limit | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | Notes |
| Batch F812497 - EFGS SOP2796 EP | A 1631 Oxid | lation | | | | | | | | | |
| Matrix Spike Dup (F812497-MSD2) | | Source: | 8L00520-0 | 6 | Prepared & | k Analyzed | : 30-Dec-18 | | | | |
| Mercury | 23.29 | 0.08 | 0.50 | ng/L | 20.200 | 6.82 | 81.5 | 71-125 | 1.78 | 24 | AS |
| Matrix Spike Dup (F812497-MSD3) | | Source: | 8L00520-15 | 5 | Prepared & | t Analyzed | : 30-Dec-18 | | | | |
| Mercury | 22.96 | 0.08 | 0.50 | ng/L | 20.200 | 6.49 | 81.5 | 71-125 | 0.217 | 24 | AS |

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Amy Goodall, Project Manager

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Underwood Engineers Project: Trace Metals In Wastewater - River

25 Vaughan Mall Project Number: Anti-Degradation - River Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:45

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|-------------------------------------|-----------------|--------------------|--------------------|-----------|----------------|------------------|-------------|----------------|------|--------------|----------|
| | | | | Omts | Level | Result | 70KEC | Limits | КГБ | Eiiiit | 110103 |
| Batch F812432 - EFGS SOP2836 | Closed Vessel V | ater Oven | Digestion | | | | | | | | |
| Blank (F812432-BLK1) | | | | | Prepared: 2 | 27-Dec-18 A | Analyzed: 2 | 9-Dec-18 | | | |
| Beryllium | ND | 0.004 | 0.060 | $\mu g/L$ | | | | | | | U, QM-12 |
| Chromium | ND | 0.02 | 0.10 | $\mu g/L$ | | | | | | | U |
| Iron | ND | 1 | 10 | $\mu g/L$ | | | | | | | U |
| Antimony | 0.030 | 0.009 | 0.020 | $\mu g/L$ | | | | | | | QB-10 |
| Thallium | ND | 0.006 | 0.020 | $\mu g/L$ | | | | | | | U |
| Blank (F812432-BLK2) | | | | | Prepared: 2 | 27-Dec-18 A | Analyzed: 2 | 9-Dec-18 | | | |
| Beryllium | ND | 0.004 | 0.060 | $\mu g/L$ | | | | | | | U, QM-12 |
| Chromium | ND | 0.02 | 0.10 | $\mu g/L$ | | | | | | | U |
| Iron | ND | 1 | 10 | $\mu g/L$ | | | | | | | U |
| Antimony | ND | 0.009 | 0.020 | $\mu g/L$ | | | | | | | U, QB-02 |
| Thallium | ND | 0.006 | 0.020 | $\mu g/L$ | | | | | | | U |
| Blank (F812432-BLK3) | | | | | Prepared: 2 | 27-Dec-18 A | Analyzed: 3 | 1-Dec-18 | | | |
| Antimony | 0.011 | 0.009 | 0.020 | $\mu g/L$ | | | | | | | J |
| LCS (F812432-BS1) | | | | | Prepared: 2 | 27-Dec-18 A | Analyzed: 2 | 9-Dec-18 | | | |
| Beryllium | 51.58 | 0.020 | 0.301 | μg/L | 40.010 | | 129 | 85-115 | | | QM-12 |
| Chromium | 47.07 | 0.10 | 0.50 | $\mu g/L$ | 49.990 | | 94.2 | 85-115 | | | |
| Iron | 1179 | 6 | 50 | $\mu g/L$ | 1250.0 | | 94.3 | 85-115 | | | |
| Thallium | 37.47 | 0.030 | 0.100 | $\mu g/L$ | 39.990 | | 93.7 | 85-115 | | | |
| LCS (F812432-BS3) | | | | | Prepared: 2 | 27-Dec-18 A | Analyzed: 3 | 1-Dec-18 | | | |
| Antimony | 35.53 | 0.045 | 0.100 | μg/L | 40.030 | | 88.8 | 85-115 | | | |
| LCS Dup (F812432-BSD1) | | | | | Prepared: 2 | 27-Dec-18 A | Analyzed: 2 | 9-Dec-18 | | | |
| Beryllium | 39.74 | 0.020 | 0.301 | μg/L | 40.010 | | 99.3 | 85-115 | 25.9 | 20 | QR-06 |
| Chromium | 54.93 | 0.10 | 0.50 | $\mu g/L$ | 49.990 | | 110 | 85-115 | 15.4 | 20 | |
| Iron | 1313 | 6 | 50 | $\mu g/L$ | 1250.0 | | 105 | 85-115 | 10.8 | 20 | |
| Thallium | 40.64 | 0.030 | 0.100 | $\mu g/L$ | 39.990 | | 102 | 85-115 | 8.11 | 20 | |
| | | | | | | | | | | | |

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Underwood Engineers Project: Trace Metals In Wastewater - River

25 Vaughan MallProject Number: Anti-Degradation - RiverReported:Portsmouth NH, 03801Project Manager: Tim Puls16-Jan-19 16:45

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|------------------------------------|------------|--------------------|--------------------------|--------------|----------------|------------------|-------------|----------------|------|--------------|-------|
| Batch F812432 - EFGS SOP2836 Close | d Vessel V | Vater Oven | Digestion | | | | | | | | |
| LCS Dup (F812432-BSD3) | | | 9 · · · · · · · · | | Prepared: 2 | 27-Dec-18 | Analyzed: 3 | 1-Dec-18 | | | |
| Antimony | 36.98 | 0.045 | 0.100 | μg/L | 40.030 | | 92.4 | 85-115 | 4.00 | 20 | |
| Matrix Spike (F812432-MS2) | | Source | 8L00520-0 | 1 | Prepared: 2 | 7 Dec 18 / | analwzed: 2 | 0 Dec 18 | | | |
| Beryllium | 38.36 | 0.040 | 0.607 | μg/L | 40.010 | ND | 95.9 | 70-130 | | | |
| Chromium | 52.38 | 0.20 | 1.01 | μg/L μg/L | 49.990 | 0.26 | 104 | 70-130 | | | |
| Iron | 1371 | 11 | 101 | μg/L | 1250.0 | 159 | 97.0 | 70-130 | | | |
| Thallium | 40.52 | 0.061 | 0.202 | μg/L | 39.990 | ND | 101 | 70-130 | | | |
| Matrix Spike (F812432-MS3) | | Source | 8L00520-10 | n | Prepared: 2 | 7-Dec-18 / | Analyzed: 2 | 9-Dec-18 | | | |
| Beryllium | 40.70 | 0.040 | 0.607 | μg/L | 40.010 | ND | 102 | 70-130 | | | |
| Chromium | 53.05 | 0.20 | 1.01 | μg/L μg/L | 49.990 | 0.49 | 105 | 70-130 | | | |
| Iron | 1447 | 11 | 101 | μg/L μg/L | 1250.0 | 227 | 97.6 | 70-130 | | | |
| Thallium | 41.77 | 0.061 | 0.202 | μg/L | 39.990 | ND | 104 | 70-130 | | | |
| Matrix Spike (F812432-MS5) | | Source: | 8L00520-0 | 1 | Prepared: 2 | 27-Dec-18 A | Analyzed: 2 | 9-Dec-18 | | | |
| Beryllium | 21.22 | 0.040 | 0.606 | μg/L | 20.500 | ND | 104 | 70-130 | | | AS |
| Chromium | 438.8 | 0.20 | 1.01 | μg/L | 410.00 | 0.26 | 107 | 70-130 | | | AS |
| Iron | 2334 | 11 | 101 | μg/L | 2050.0 | 159 | 106 | 70-130 | | | AS |
| Thallium | 21.54 | 0.061 | 0.202 | μg/L | 20.500 | ND | 105 | 70-130 | | | AS |
| Matrix Spike (F812432-MS6) | | Source: | 8L00520-10 | 0 | Prepared: 2 | .7-Dec-18 A | Analyzed: 2 | 9-Dec-18 | | | |
| Beryllium | 21.51 | 0.040 | 0.606 | μg/L | 20.500 | ND | 105 | 70-130 | | | AS |
| Chromium | 437.3 | 0.20 | 1.01 | μg/L | 410.00 | 0.49 | 107 | 70-130 | | | AS |
| Iron | 2350 | 11 | 101 | μg/L | 2050.0 | 227 | 104 | 70-130 | | | AS |
| Thallium | 21.94 | 0.061 | 0.202 | $\mu g/L$ | 20.500 | ND | 107 | 70-130 | | | AS |
| Matrix Spike (F812432-MS7) | | Source: | 8L00519-0 | 1 | Prepared: 2 | 27-Dec-18 A | Analyzed: 3 | 1-Dec-18 | | | |
| Beryllium | 40.00 | 0.101 | 1.52 | μg/L | 40.010 | ND | 100 | 70-130 | | | |
| Chromium | 53.35 | 0.51 | 2.53 | $\mu g/L$ | 49.990 | 0.97 | 105 | 70-130 | | | |
| Iron | 1372 | 28 | 253 | $\mu g/L$ | 1250.0 | 105 | 101 | 70-130 | | | |
| Thallium | 37.31 | 0.152 | 0.506 | $\mu g/L$ | 39.990 | ND | 93.3 | 70-130 | | | |

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Underwood Engineers Project: Trace Metals In Wastewater - River

25 Vaughan Mall Project Number: Anti-Degradation - River Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:45

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|-----------------------------------|--------------|--------------------|--------------------|-----------|----------------|------------------|-------------|----------------|-------|--------------|--------|
| Maryte | Result | Lillit | Liiiit | Omis | Level | Result | /OKEC | Lillits | Ki D | Liiiit | TVOICS |
| Batch F812432 - EFGS SOP2836 Clos | sed Vessel W | Vater Oven | Digestion | | | | | | | | |
| Matrix Spike (F812432-MS8) | | Source: | 8L00520-01 | 1 | Prepared: 2 | 27-Dec-18 A | Analyzed: 3 | 1-Dec-18 | | | |
| Antimony | 41.19 | 0.228 | 0.506 | μg/L | 40.030 | ND | 103 | 70-130 | | | |
| Matrix Spike (F812432-MS9) | | Source: | 8L00520-10 |) | Prepared: 2 | 27-Dec-18 A | Analyzed: 0 | 1-Jan-19 | | | |
| Antimony | 43.01 | 0.228 | 0.506 | μg/L | 40.030 | ND | 107 | 70-130 | | | |
| Matrix Spike (F812432-MSA) | | Source: | 8L00519-01 | l | Prepared: 2 | 27-Dec-18 A | Analyzed: 3 | 1-Dec-18 | | | |
| Beryllium | 54.11 | 0.101 | 1.51 | μg/L | 51.250 | ND | 106 | 70-130 | | | AS |
| Chromium | 1088 | 0.50 | 2.52 | $\mu g/L$ | 1025.0 | 0.97 | 106 | 70-130 | | | AS |
| Iron | 5313 | 28 | 252 | $\mu g/L$ | 5125.0 | 105 | 102 | 70-130 | | | AS |
| Antimony | 56.12 | 0.227 | 0.505 | $\mu g/L$ | 51.250 | ND | 109 | 70-130 | | | AS |
| Thallium | 47.29 | 0.151 | 0.505 | $\mu g/L$ | 51.250 | ND | 92.3 | 70-130 | | | AS |
| Matrix Spike (F812432-MSB) | | Source: | 8L00520-01 | l | Prepared: 2 | 27-Dec-18 A | Analyzed: 0 | 1-Jan-19 | | | |
| Antimony | 53.48 | 0.227 | 0.505 | $\mu g/L$ | 51.250 | ND | 104 | 70-130 | | | AS |
| Matrix Spike (F812432-MSC) | | Source: | 8L00520-10 |) | Prepared: 2 | 27-Dec-18 A | Analyzed: 0 | 1-Jan-19 | | | |
| Antimony | 52.54 | 0.227 | 0.505 | μg/L | 51.250 | ND | 103 | 70-130 | | | AS |
| Matrix Spike (F812432-MSD) | | Source: | 8L00519-01 | l | Prepared: 2 | 27-Dec-18 A | Analyzed: 0 | 3-Jan-19 | | | |
| Antimony | 40.68 | 0.455 | 1.01 | μg/L | 40.030 | ND | 102 | 70-130 | | | |
| Matrix Spike Dup (F812432-MSD2) | | Source: | 8L00520-01 | l | Prepared: 2 | 27-Dec-18 A | Analyzed: 2 | 9-Dec-18 | | | |
| Beryllium | 40.14 | 0.040 | 0.607 | μg/L | 40.010 | ND | 100 | 70-130 | 4.54 | 20 | |
| Chromium | 53.11 | 0.20 | 1.01 | $\mu g/L$ | 49.990 | 0.26 | 106 | 70-130 | 1.37 | 20 | |
| Iron | 1410 | 11 | 101 | $\mu g/L$ | 1250.0 | 159 | 100 | 70-130 | 2.79 | 20 | |
| Thallium | 41.46 | 0.061 | 0.202 | $\mu g/L$ | 39.990 | ND | 104 | 70-130 | 2.29 | 20 | |
| Matrix Spike Dup (F812432-MSD3) | | Source: | 8L00520-10 |) | Prepared: 2 | 27-Dec-18 A | Analyzed: 2 | 9-Dec-18 | | | |
| Beryllium | 41.71 | 0.040 | 0.607 | μg/L | 40.010 | ND | 104 | 70-130 | 2.46 | 20 | |
| Chromium | 53.68 | 0.20 | 1.01 | $\mu g/L$ | 49.990 | 0.49 | 106 | 70-130 | 1.17 | 20 | |
| Iron | 1481 | 11 | 101 | $\mu g/L$ | 1250.0 | 227 | 100 | 70-130 | 2.36 | 20 | |
| Thallium | 41.57 | 0.061 | 0.202 | $\mu g/L$ | 39.990 | ND | 104 | 70-130 | 0.496 | 20 | |

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Underwood Engineers Project: Trace Metals In Wastewater - River

25 Vaughan Mall Project Number: Anti-Degradation - River Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:45

Quality Control Data

| Batch F812432-EFGS SOP2836 Closed Vessel Water Over Digestion Matrix Spike Dup (F812432-MSDS) Source: 8Li08520-01 Prepared: 27-Dec-18 Analyzed: 29-Dec-18 Very Color of | Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|--|----------------------------------|--------------|--------------------|--------------------|-----------|----------------|------------------|-------------|----------------|--------|--------------|-------|
| Beryllium | Batch F812432 - EFGS SOP2836 Clo | sed Vessel V | Vater Oven | Digestion | | | | | | | | |
| Chromium 434.2 0.20 1.01 µg/L 410.00 0.26 106 70-130 1.06 20 Iron 2275 11 101 µg/L 20500 159 103 70-130 2.53 20 Matrix Spike Dup (F812432-MSD6) Source: 8L/0520-10 Prepared: 27-Dec-18 Abstract: 29-Dec-18 Beryllium 21.70 0.040 0.606 µg/L 20.500 ND 106 70-130 0.902 20 Chromium 435.2 0.20 1.01 µg/L 410.00 0.49 106 70-130 0.902 20 Chromium 435.2 0.20 1.01 µg/L 20.500 ND 106 70-130 0.902 20 Chromium 23.04 11 101 µg/L 20.500 ND 106 70-130 0.902 20 Beryllium 40.34 0.101 1.52 µg/L 20.500 ND 101 70-130 0.846 20 | Matrix Spike Dup (F812432-MSD5) | | Source: | 8L00520-01 | 1 | Prepared: 2 | .7-Dec-18 A | Analyzed: 2 | 9-Dec-18 | | | |
| Property | Beryllium | 20.99 | 0.040 | 0.606 | μg/L | 20.500 | ND | 102 | 70-130 | 1.10 | 20 | AS |
| Tallium | Chromium | 434.2 | 0.20 | 1.01 | $\mu g/L$ | 410.00 | 0.26 | 106 | 70-130 | 1.06 | 20 | AS |
| Matrix Spike Dup (F812432-MSD6) Source: 8L00520-10 Prepared: 27-Dec-18 Analyzed: 29-Dec-18 Beryllium 21.70 0.040 0.606 µg/L 20.500 ND 106 70-130 0.902 20 Chromium 435.2 0.20 1.01 µg/L 20.500 ND 106 70-130 0.490 20 Iron 2340 11 101 µg/L 20.500 ND 106 70-130 0.411 20 Hallium 21.74 0.061 0.202 µg/L 20.500 ND 106 70-130 0.910 20 Matrix Spike Dup (F812432-MSD7) Source: 8L00519-01 Prepared: 27-Dec-18 Analyzed: 31-Dec-18 Beryllium 40.34 0.101 1.52 µg/L 40.010 ND 101 70-130 0.846 20 Matrix Spike Dup (F812432-MSD7) Source: 8L00520-10 prepared: 27-Dec-18 Analyzed: 31-Dec-18 3.14 20 Matrix Spike Dup (F812432-MSD9) 41.94 0.228 0.506 | Iron | 2275 | 11 | 101 | $\mu g/L$ | 2050.0 | 159 | 103 | 70-130 | 2.53 | 20 | AS |
| Beryllium | Thallium | 21.38 | 0.061 | 0.202 | $\mu g/L$ | 20.500 | ND | 104 | 70-130 | 0.730 | 20 | AS |
| Chromium 435.2 0.20 1.01 µg/L 410.00 0.49 106 70-130 0.490 20 Iron 2340 11 101 µg/L 2050.0 227 103 70-130 0.411 20 Hallium 21.74 0.061 0.202 µg/L 20.500 ND 106 70-130 0.910 20 Matrix Spike Dup (F812432-MSD7) Source: 8L00519-01 Prepared: 27-Dec-18 AmJyzed: 31-Dec-18 Beryllium 40.34 0.101 1.52 µg/L 40.010 ND 101 70-130 0.846 20 Chromium 52.05 0.51 2.53 µg/L 49.990 0.97 102 70-130 2.47 20 Iron 1353 28 253 µg/L 1250.0 105 99.8 70-130 1.44 20 Matrix Spike Dup (F812432-MSD8) Source: 8L00520-01 Prepared: 27-Dec-18 AmJyzed: 31-Dec-18 Antimony 43.78 0.228 0.506< | Matrix Spike Dup (F812432-MSD6) | | Source: | 8L00520-10 | 0 | Prepared: 2 | 27-Dec-18 A | Analyzed: 2 | 9-Dec-18 | | | |
| Tron 2340 11 101 101 101 101 106 70-130 0.411 20 101 1 | Beryllium | 21.70 | 0.040 | 0.606 | μg/L | 20.500 | ND | 106 | 70-130 | 0.902 | 20 | AS |
| Tabilium 21.74 0.061 0.202 μg/L 20.500 ND 106 70-130 0.910 20 | Chromium | 435.2 | 0.20 | 1.01 | $\mu g/L$ | 410.00 | 0.49 | 106 | 70-130 | 0.490 | 20 | AS |
| Matrix Spike Dup (F812432-MSD7) Source: 8L00519-01 Prepared: 27-Dec-18 Analyzed: 31-Dec-18 | Iron | 2340 | 11 | 101 | $\mu g/L$ | 2050.0 | 227 | 103 | 70-130 | 0.411 | 20 | AS |
| Beryllium | Thallium | 21.74 | 0.061 | 0.202 | $\mu g/L$ | 20.500 | ND | 106 | 70-130 | 0.910 | 20 | AS |
| Chromium S2.05 O.51 2.53 μg/L 49.990 O.97 102 70-130 2.47 20 | Matrix Spike Dup (F812432-MSD7) | | Source: | 8L00519-01 | 1 | Prepared: 2 | .7-Dec-18 A | Analyzed: 3 | 1-Dec-18 | | | |
| From 1353 28 253 μg/L 1250.0 105 99.8 70-130 1.44 20 | Beryllium | 40.34 | 0.101 | 1.52 | μg/L | 40.010 | ND | 101 | 70-130 | 0.846 | 20 | |
| Thallium 36.16 0.152 0.506 μg/L 39.990 ND 90.4 70-130 3.12 20 Matrix Spike Dup (F812432-MSD8) Source: 8L00520-01 Prepared: 27-Dec-18 Analyzed: 31-Dec-18 Antimony 41.94 0.228 0.506 μg/L 40.030 ND 105 70-130 1.80 20 Matrix Spike Dup (F812432-MSD9) Source: 8L00520-10 Prepared: 27-Dec-18 Analyzed: 01-Jan-19 Antimony 43.78 0.228 0.506 μg/L 40.030 ND 109 70-130 1.77 20 Matrix Spike Dup (F812432-MSDA) Prepared: 27-Dec-18 Analyzed: 31-Dec-18 Beryllium Source: 8L00519-01 Prepared: 27-Dec-18 Analyzed: 31-Dec-18 Beryllium 57.08 0.101 1.51 μg/L 51.250 ND 111 70-130 5.35 20 Chromium 1081 0.50 2.52 μg/L 1025.0 0.97 105 70-130 0.661 20 Iron 5310 28 252 μg/L 5125.0 105 102 70-130 0.0680 20 Antimony 55.26 0.227 0.505 μg/L 51.250 ND 108 70-130 1.54 20 | Chromium | 52.05 | 0.51 | 2.53 | $\mu g/L$ | 49.990 | 0.97 | 102 | 70-130 | 2.47 | 20 | |
| Matrix Spike Dup (F812432-MSD8) Source: 8L00520-01 Prepared: 27-Dec-18 Analyzed: 31-Dec-18 Antimony 41.94 0.228 0.506 μg/L 40.030 ND 105 70-130 1.80 20 Matrix Spike Dup (F812432-MSD9) Source: 8L00520-10 Prepared: 27-Dec-18 Analyzed: 01-Jan-19 Antimony 43.78 0.228 0.506 μg/L 40.030 ND 109 70-130 1.77 20 Matrix Spike Dup (F812432-MSDA) Source: 8L00519-01 Prepared: 27-Dec-18 Analyzed: 31-Dec-18 Beryllium 57.08 0.101 1.51 μg/L 51.250 ND 111 70-130 5.35 20 Chromium 1081 0.50 2.52 μg/L 1025.0 0.97 105 70-130 0.661 20 Iron 5310 28 252 μg/L 51.250 ND 108 70-130 0.0680 20 Antimony 55.26 0.227 0.505 μg/L 51.250 ND 108 70-130 1.54 </td <td>Iron</td> <td>1353</td> <td>28</td> <td>253</td> <td>$\mu g/L$</td> <td>1250.0</td> <td>105</td> <td>99.8</td> <td>70-130</td> <td>1.44</td> <td>20</td> <td></td> | Iron | 1353 | 28 | 253 | $\mu g/L$ | 1250.0 | 105 | 99.8 | 70-130 | 1.44 | 20 | |
| Antimony 41.94 0.228 0.506 μg/L 40.030 ND 105 70-130 1.80 20 Matrix Spike Dup (F812432-MSD9) Source: 8L00520-10 Prepared: 27-Dec-18 Analyzed: 01-Jan-19 Antimony 43.78 0.228 0.506 μg/L 40.030 ND 109 70-130 1.77 20 Matrix Spike Dup (F812432-MSDA) Source: 8L00519-01 Prepared: 27-Dec-18 Analyzed: 31-Dec-18 Beryllium 57.08 0.101 1.51 μg/L 51.250 ND 111 70-130 5.35 20 Chromium 1081 0.50 2.52 μg/L 1025.0 0.97 105 70-130 0.661 20 Iron 5310 28 252 μg/L 5125.0 105 102 70-130 0.0680 20 Antimony 55.26 0.227 0.505 μg/L 51.250 ND 108 70-130 1.54 20 | Thallium | 36.16 | 0.152 | 0.506 | $\mu g/L$ | 39.990 | ND | 90.4 | 70-130 | 3.12 | 20 | |
| Matrix Spike Dup (F812432-MSD9) Source: 8L00520-10 Prepared: 27-Dec-18 Analyzed: 01-Jan-19 Antimony 43.78 0.228 0.506 μg/L 40.030 ND 109 70-130 1.77 20 Matrix Spike Dup (F812432-MSDA) Source: 8L00519-01 Prepared: 27-Dec-18 Analyzed: 31-Dec-18 Beryllium 57.08 0.101 1.51 μg/L 51.250 ND 111 70-130 5.35 20 Chromium 1081 0.50 2.52 μg/L 1025.0 0.97 105 70-130 0.661 20 Iron 5310 28 252 μg/L 5125.0 105 102 70-130 0.0680 20 Antimony 55.26 0.227 0.505 μg/L 51.250 ND 108 70-130 1.54 20 | Matrix Spike Dup (F812432-MSD8) | | Source: | 8L00520-01 | 1 | Prepared: 2 | 27-Dec-18 A | Analyzed: 3 | 1-Dec-18 | | | |
| Antimony 43.78 0.228 0.506 μg/L 40.030 ND 109 70-130 1.77 20 Matrix Spike Dup (F812432-MSDA) Source: 8L00519-01 Prepared: 27-Dec-18 Analyzed: 31-Dec-18 Beryllium 57.08 0.101 1.51 μg/L 51.250 ND 111 70-130 5.35 20 Chromium 1081 0.50 2.52 μg/L 1025.0 0.97 105 70-130 0.661 20 Iron 5310 28 252 μg/L 5125.0 105 102 70-130 0.0680 20 Antimony 55.26 0.227 0.505 μg/L 51.250 ND 108 70-130 1.54 20 | Antimony | 41.94 | 0.228 | 0.506 | μg/L | 40.030 | ND | 105 | 70-130 | 1.80 | 20 | |
| Matrix Spike Dup (F812432-MSDA) Source: 8L00519-01 Prepared: 27-Dec-18 Analyzed: 31-Dec-18 Beryllium 57.08 0.101 1.51 μg/L 51.250 ND 111 70-130 5.35 20 Chromium 1081 0.50 2.52 μg/L 1025.0 0.97 105 70-130 0.661 20 Iron 5310 28 252 μg/L 5125.0 105 102 70-130 0.0680 20 Antimony 55.26 0.227 0.505 μg/L 51.250 ND 108 70-130 1.54 20 | Matrix Spike Dup (F812432-MSD9) | | Source: | 8L00520-10 | 0 | Prepared: 2 | 27-Dec-18 A | Analyzed: 0 | 1-Jan-19 | | | |
| Beryllium 57.08 0.101 1.51 μg/L 51.250 ND 111 70-130 5.35 20 Chromium 1081 0.50 2.52 μg/L 1025.0 0.97 105 70-130 0.661 20 Iron 5310 28 252 μg/L 5125.0 105 102 70-130 0.0680 20 Antimony 55.26 0.227 0.505 μg/L 51.250 ND 108 70-130 1.54 20 | Antimony | 43.78 | 0.228 | 0.506 | μg/L | 40.030 | ND | 109 | 70-130 | 1.77 | 20 | |
| $ \begin{array}{cccccccccccccccccccccccccccccccccccc$ | Matrix Spike Dup (F812432-MSDA) | | Source: | 8L00519-01 | 1 | Prepared: 2 | 27-Dec-18 A | Analyzed: 3 | 1-Dec-18 | | | |
| $ \begin{array}{cccccccccccccccccccccccccccccccccccc$ | Beryllium | 57.08 | 0.101 | 1.51 | μg/L | 51.250 | ND | 111 | 70-130 | 5.35 | 20 | AS |
| Antimony 55.26 0.227 0.505 µg/L 51.250 ND 108 70-130 1.54 20 | Chromium | 1081 | 0.50 | 2.52 | $\mu g/L$ | 1025.0 | 0.97 | 105 | 70-130 | 0.661 | 20 | AS |
| 12 | Iron | 5310 | 28 | 252 | $\mu g/L$ | 5125.0 | 105 | 102 | 70-130 | 0.0680 | 20 | AS |
| Thallium 47.30 0.151 0.505 $\mu g/L$ 51.250 ND 92.3 70-130 0.0195 20 | Antimony | 55.26 | 0.227 | 0.505 | $\mu g/L$ | 51.250 | ND | 108 | 70-130 | 1.54 | 20 | AS |
| | Thallium | 47.30 | 0.151 | 0.505 | $\mu g/L$ | 51.250 | ND | 92.3 | 70-130 | 0.0195 | 20 | AS |

Eurofins Frontier Global Sciences, LLC

Amy Sodall.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Amy Goodall, Project Manager



Underwood Engineers Project: Trace Metals In Wastewater - River

25 Vaughan Mall Project Number: Anti-Degradation - River Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:45

Quality Control Data

| Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|----------------------------------|--------------|--------------------|--------------------|-------|----------------|------------------|-------------|----------------|-------|--------------|-------|
| Batch F812432 - EFGS SOP2836 Clo | sed Vessel V | Vater Oven | Digestion | | | | | | | | |
| Matrix Spike Dup (F812432-MSDB) | | Source: | 8L00520-0 | 1 | Prepared: 2 | 27-Dec-18 | Analyzed: 0 | 1-Jan-19 | | | |
| Antimony | 53.79 | 0.227 | 0.505 | μg/L | 51.250 | ND | 105 | 70-130 | 0.585 | 20 | AS |
| Matrix Spike Dup (F812432-MSDC) | | Source: | 8L00520-10 |) | Prepared: 2 | 27-Dec-18 | Analyzed: 0 | 1-Jan-19 | | | |
| Antimony | 53.82 | 0.227 | 0.505 | μg/L | 51.250 | ND | 105 | 70-130 | 2.39 | 20 | AS |
| Matrix Spike Dup (F812432-MSDD) | | Source: | 8L00519-0 | 1 | Prepared: 2 | 27-Dec-18 A | Analyzed: 0 | 3-Jan-19 | | | |
| Antimony | 41.32 | 0.455 | 1.01 | μg/L | 40.030 | ND | 103 | 70-130 | 1.56 | 20 | |

Eurofins Frontier Global Sciences, LLC

Amy Sodall.

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Amy Goodall, Project Manager



Underwood Engineers Project: Trace Metals In Wastewater - River

25 Vaughan Mall Project Number: Anti-Degradation - River Reported:
Portsmouth NH, 03801 Project Manager: Tim Puls 16-Jan-19 16:45

Notes and Definitions

| U | Analyte was not detected and is reported as less than the LOD or as defined by the client. The LOD has been adjusted for any dilution or concentration of the sample. |
|-------|---|
| R-05 | The sample was diluted due to the presence of high levels of non-target analytes or particulates resulting in elevated reporting limits. |
| QR-08 | The RPD value for the MS/MSD was outside of acceptance limits. Batch QC acceptable based on matrix duplicate and/or LCS/LCSD RPD values within control limits. |
| QR-06 | The RPD value for the LCS/LCSD was outside of acceptance limits. Batch QC acceptable based on MS/MSD, and where applicable, matrix duplicate RPD value(s) within control limits. |
| QM-12 | Continuing calibration verification (CCV) and/or blank spike/blank spike duplicate (BS/BSD) recoveries above upper control limits. All reported sample concentrations were below the reporting limit. |
| QM-05 | The spike recovery was outside acceptance limits for the MS/MSD and or AS/ASD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable. |
| QB-10 | The method blank and/or initial/continuing calibration blank contains analyte at a concentration above the MRL. Only report sample results greater than 10 times the contamination value (QB-01), or samples less than the MRL (QB-02). |
| QB-06 | The blank was preserved to 5% BrCl rather than 1%. The control limit for blanks preserved to greater than 1% BrCl is the preservation percentage multiplied by the MRL. |
| QB-02 | The method blank and/or initial/continuing calibration blank contains analyte at a concentration above the MRL. However, the sample concentrations are less than the MRL. |
| QB-01 | The method blank and/or initial/continuing calibration blank contains analyte at a concentration above the MRL. However, the blank concentration(s) are less than 10% of the sample result. |
| J | The result is an estimated concentration. |
| AS | This MS and/or MSD is an analytical spike and/or an analytical spike duplicate. |
| AD | This matrix duplicate is an analytical duplicate. |
| DET | Analyte DETECTED |
| ND | Analyte NOT DETECTED at or above the method detection limit if reported to the MDL or above the reporting limit if reported to the MRL. |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| | |

Eurofins Frontier Global Sciences, LLC

RPD

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Amy Sodall.

Relative Percent Difference



Calscience



WORK ORDER NUMBER: 18-12-1710

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Eurofins Frontier Global Sciences, Inc.

Client Project Name: 8L00519

Attention: Amy Goodall

11720 North Creek Parkway North

Suite 4

Bothell, WA 98011-8244

agres

Approved for release on 01/06/2019 by:

Carla Hollowell Project Manager

ResultLink >

Email your PM >

Eurofins Calscience (Calscience) certifies that the test results provided in this report meet all NELAC Institute requirements for parameters for which accreditation is required or available. Any exceptions to NELAC Institute requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.



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Work Order Narrative

Work Order: 18-12-1710 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 12/19/18. They were assigned to Work Order 18-12-1710.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

DoD Projects:

The test results contained in this report are accredited under the laboratory's ISO/IEC 17025:2005 and DoD-ELAP accreditation issued by the ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation ADE-1864.





Sample Summary

Client: Eurofins Frontier Global Sciences, Inc.

11720 North Creek Parkway North, Suite 4

Bothell, WA 98011-8244

Work Order: 18-12-1710 Project Name: 8L00519

PO Number:

Date/Time 12/19/18 11:00

Received:

2 Number of

Containers:

Amy Goodall Attn:

| Sample Identification | Lab Number | Collection Date and Time | Number of Containers | Matrix |
|-----------------------|--------------|--------------------------|----------------------|---------|
| 008545 River_01_TCn | 18-12-1710-1 | 12/12/18 10:25 | 1 | Aqueous |
| 008492 River_TB_TCn | 18-12-1710-2 | 12/12/18 10:25 | 1 | Aqueous |







Analytical Report

Eurofins Frontier Global Sciences, Inc. 11720 North Creek Parkway North, Suite 4 Bothell, WA 98011-8244

Work Order: Preparation: Method:

Date Received:

18-12-1710 N/A

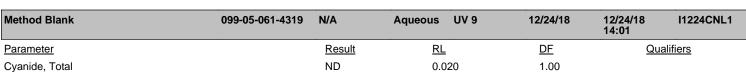
12/19/18

Units:

SM 4500-CN E mg/L

Project: 8L00519 Page 1 of 1

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|----------------------|----------------------|------------------------|-----------|------------|------------------|-----------------------|-------------|
| 008545 River_01_TCn | 18-12-1710-1-A | 12/12/18 10:25 | Aqueous | UV 9 | 12/24/18 | 12/24/18 14:01 | I1224CNL1 |
| Parameter | | Result | <u>RL</u> | | <u>DF</u> | Qua | alifiers |
| Cyanide, Total | | ND | 0.0 | 20 | 1.00 | | |
| 008492 River_TB_TCn | 18-12-1710-2-A | 12/12/18 10:25 | Aqueous | UV 9 | 12/24/18 | 12/24/18 14:01 | I1224CNL1 |
| Parameter | | Result | <u>RL</u> | | <u>DF</u> | Qua | alifiers |
| | | | | | | | |
| Cyanide, Total | | ND | 0.0 | 20 | 1.00 | | |





RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.





Quality Control - Spike/Spike Duplicate

Eurofins Frontier Global Sciences, Inc. Date Received: 12/19/18 Work Order: 11720 North Creek Parkway North, Suite 4 18-12-1710 Preparation: Bothell, WA 98011-8244

Method: SM 4500-CN E

Project: 8L00519 Page 1 of 1

| Quality Control Sample ID | Туре | | Matrix | Ins | strument | Date Prepared | Date Ana | lyzed | MS/MSD Bat | ch Number |
|---------------------------|-----------------|------------------------------|-------------|--------------------|--------------|---------------|----------|-------|------------|------------|
| 18-12-1739-6 | Sample | | Aqueous | : U\ | / 9 | 12/24/18 | 12/24/18 | 14:01 | I1224CHS1 | |
| 18-12-1739-6 | Matrix Spike | | Aqueous | ; U\ | / 9 | 12/24/18 | 12/24/18 | 14:01 | I1224CHS1 | |
| 18-12-1739-6 | Matrix Spike Du | uplicate | Aqueous | ; U\ | / 9 | 12/24/18 | 12/24/18 | 14:01 | I1224CHS1 | |
| Parameter | | <u>Spike</u> <u>Added</u> | MS Conc. | <u>MS</u> %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
| Cyanide, Total | ND | 0.2000 | 0.1856 | 93 | 0.1868 | 93 | 70-130 | 1 | 0-25 | |



N/A

RPD: Relative Percent Difference. CL: Control Limits





Quality Control - LCS/LCSD

Eurofins Frontier Global Sciences, Inc. 11720 North Creek Parkway North, Suite 4 Bothell, WA 98011-8244 Date Received: Work Order: Preparation: Method:

18-12-1710 N/A

SM 4500-CN E

12/19/18

Project: 8L00519 Page 1 of 1

| Quality Control Sample ID | Туре | Mat | rix | Instrument | Date Prep | pared Date | Analyzed | LCS/LCSD Ba | atch Number |
|---------------------------|-------------|-----------|--------------|------------|---------------|------------|------------|-------------|-------------|
| 099-05-061-4319 | LCS | Aqı | ieous | UV 9 | 12/24/18 | 12/2 | 4/18 14:01 | I1224CNL1 | |
| 099-05-061-4319 | LCSD | Aqı | ieous | UV 9 | 12/24/18 | 12/2 | 4/18 14:01 | I1224CNL1 | |
| Parameter | Spike Added | LCS Conc. | LCS %Rec. | LCSD Conc. | LCSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
| Cyanide, Total | 0.2000 | 0.1621 | 81 | 0.1640 | 82 | 80-120 | 1 | 0-20 | |

RPD: Relative Percent Difference. CL: Control Limits



Glossary of Terms and Qualifiers

Work Order: 18-12-1710 Page 1 of 1

| Qualifiers | <u>Definition</u> |
|------------|--|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control. |
| 4 | The MS/MSD RPD was out of control due to suspected matrix interference. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| В | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| BV | Sample received after holding time expired. |
| CI | See case narrative. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| HDH | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected). |
| HDL | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected). |
| J | Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated. |
| JA | Analyte positively identified but quantitation is an estimate. |
| ME | LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean). |
| ND | Parameter not detected at the indicated reporting limit. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| Χ | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

SUBCONTRACT ORDER

Eurofins Frontier Global Sciences, Inc.

8L00519

SENDING LABORATORY:

Eurofins Frontier Global Sciences, LLC

11720 North Creek Parkway North, Suite 400

Bothell, WA 98011

Fax: (425) 686-3096 Phone: (425) 686-1996

Project Manager: Amy Goodall

RECEIVING LABORATORY:

7440 Lincoln Way Eurofins Calscience, LLC

Garden Grove, CA 92841

Phone:7148955494

Analysis Comments

Sample ID: 008545 River_01_TCn

EFGS Lab ID: 8L00519-13

_}

Matrix: Water

Sampled: 12-Dec-18 10:25 (GMT-05:00) Eastern Time (US &

Due: 16-Jan-19 19:00

Misc. Subcontract 1

04_1000 ml HDPE Bottle

Containers Supplied:

Sample ID: 008492 River_TB_TCn

4

Matrix: Water

EFGS Lab ID: 8L00519-14

Sampled: 12-Dec-18 10:25 (GMT-05:00) Eastern Time (US &

Due: 16-Jan-19 19:00

Misc. Subcontract 1

04_1000 ml HDPE Bottle Containers Supplied:

Received By

Received By

Date

Daile Daile 1100

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IEH GLOBAL SCIENCES IEH GLOBAL SCIENCES IL WA 98011-8244

34 LBS

DWT: 24,13,14

AMPLE BECEIVING 711) 895 – 5494 UROFINS CALSCIENCE, INC.

ARDEN GROVE CA 92841





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TRACKING #: 1Z 86W 050 01 5166 1727 DAY



BILLING:

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CLIENT:

EFGS

WORK ORDER NUMBER: 18-12- 1710

Calscience

SAMPLE RECEIPT CHECKLIST

| Checked by: Ud/ | Checker | Amhient Temperature: Air Filter |
|-------------------|---------|--|
| : Ĉ | | ☐ Sample(s) received at ambient temperature; placed on ice for transport by courier |
| | | ☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling |
| | | ☐ Sample(s) outside temperature criteria (PM/APM contacted by:) |
| □ Blank 12 Sample | □ Blank | Thermometer ID: SC6 (CF: 0.0°C); Temperature (w/o CF): 3 · 6 _ °C (w/ CF): 3 · 6 _ °C; |
| \ | | TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue) |

| Reviewed by: 4 94 | ed by: | Review | | $_1 = Zn (CH_3CO_2)_2 + NaOH$ | x = Na2SO3+NaHSO4.H2O, znna = | $\mathbf{s} = H_2SO_4$, $\mathbf{u} = \text{ultra-pure}$, |
|-------------------|---------------|----------------|--------------------------------------|--|---|---|
| Man | ed by: | 1/Check | O ₄ , Labeled/Checked by: | $a_2 = Na_2S_2O_3, p = H_3P_0$ | = HCl , $n = HNO_3$, $na = NaOH$, n | Preservative: $\mathbf{b} = \text{buffered}$, $\mathbf{f} = \text{filtered}$, $\mathbf{h} = \text{HCl}$, $\mathbf{n} = \text{HNO}_3$, $\mathbf{na} = \text{NaOH}$, $\mathbf{na}_2 = \text{Na}_2\text{S}_2\text{O}_3$, $\mathbf{p} = \text{H}_3\text{PO}_4$, |
| | 3ag | ealable t | Z = Ziploc/Resealable Bag | = Glass, J = Jar, P = Plastic, and Z = | | Container: $A = Amber$, $B = Bottle$, $C = Clear$, $E = Envelope$, G |
| | | |); 0 0 | Other Matrix () | PUF D | 11 |
| | | | |) □ TerraCores® (_ | ☐ Sleeve () ☐ EnC | 4ozCGJ □ 8ozCGJ □ 16oz(|
| | | | | Ø1PBna (pH ≥ 12) □ | ☐ 1AGBs (O&G) ☐ 1PB | □ 1AGBna₂ □ 1AGBs (pH_ |
| 500PB | _2) 🗆 500PB | J s (pH |)AGJ □ 500AGJs (pH_ | _2) 🗆 500AGB 🗆 500AGJ | 2) 🗆 250PB 🗆 250PBn (pH_ | |
| ☐ 125PBznna (pH9) | 5PBznna | | AGBp 🗆 125PB | □ 125AGB □ 125AGBh □ 125AGBp | □ VOAna₂ □ 100PJ □ 100PJna₂ □ 125AG | Aqueous: ☐ VOA ☐ VOAh ☐ VOAna ₂ |
| | | 7. | (Trip Blank Lot Number: | (Trip Blan | | CONTAINER TYPE: |
| ď | | | | | | Tedlar™ bag(s) free of condensation |
| | | | ach) | □ Hydrogen Sulfide (Hach) | 500) _. | Carbon Dioxide (SM 4500) |
| | | | 00) | ☐ Dissolved Oxygen (SM 4500) | -175) | ☐ Volatile Organics ☐ Dissolved Gases |
| Ħ | | | | | of headspace | Container(s) for certain analysis free of headspace |
| _ | | B | | | ithin acceptable range | Acid/base preserved samples - pH within acceptable range |
| | | _ | | | als Dissolved Metals | □ Volatile Organics □ Total Metals |
| | | | | | received for certain analyses | Unpreserved aqueous sample(s) received for certain analyses |
| | | Ø | | ıtainer | d on COC and/or sample cor | Proper preservation chemical(s) noted on COC and/or sample container |
| Þ | | | | d Oxygen | ☐ Dissolved Sulfide ☐ Dissolved Oxygen | □ pH □ Residual Chlorine □ D |
| | | | | te holding time | yses received within 15-minu | Aqueous samples for certain analyses received within 15-minute holding time |
| | | Ø | | | | Samples received within holding time |
| | | `Q | | | requested | Sufficient volume/mass for analyses requested |
| | | Ø | | | sted | Proper containers for analyses requested |
| | | | | | od condition | Sample container(s) intact and in good condition |
| | | \ \ | | | with COC | Sample container label(s) consistent with COC |
| Ŋ | | . 🗆 | | | | Sampler's name indicated on COC . |
| | | | □ No relinquished time | | □ Not relinquished □ No relinquished date | □ No analysis requested □ Not represented □ |
| | | | | containers | ne ☐ Matrix ☐ Number of containers | ☐ Sampling date ☐ Sampling time |
| | | ø | | | | COC document(s) received complete |
| | | 7 | | |) received with samples | Chain-of-Custody (COC) document(s) received with samples |
| N/A | N o | Yes | | | | SAMPLE CONDITION: |
| NON | Checked by: _ | Check | □ N/A | Not Present | ☐ Present but Not Intact | Sample(s) |
| NOPA. | Checked by: | Check | □ N/A | ☐ Not Present | ☐ Present but Not Intact | Cooler Present and Intact |
| | | | | | | CUSTODY SEAL: |
| | | | | | | |

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