



RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:
Public Works Government Services Canada- Bid
Receiving / Réception des soumissions
189 Prince William Street
Room 405
Saint John
New Brunswick
E2L 2B9

SOLICITATION AMENDMENT

MODIFICATION DE L'INVITATION

The referenced document is hereby revised; unless otherwise indicated, all other terms and conditions of the Solicitation remain the same.

Ce document est par la présente révisé; sauf indication contraire, les modalités de l'invitation demeurent les mêmes.

Comments - Commentaires

Vendor/Firm Name and Address
Raison sociale et adresse du
fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution
Public Works Government Services Canada- Bid
Receiving / Réception des soumissions
189 Prince William Street
Room 405
Saint John
New Bruns
E2L 2B9

| | |
|---|--|
| Title - Sujet Water Treatment System | |
| Solicitation No. - N° de l'invitation 39903-170154/A | Amendment No. - N° modif. 002 |
| Client Reference No. - N° de référence du client 39903-170154 | Date 2016-07-29 |
| GETS Reference No. - N° de référence de SEAG PW-\$PWB-101-3913 | |
| File No. - N° de dossier PWB-6-39029 (101) | CCC No./N° CCC - FMS No./N° VME |
| Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2016-08-18 | |
| Time Zone Fuseau horaire Atlantic Daylight Saving Time ADT | |
| F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/> | |
| Address Enquiries to: - Adresser toutes questions à: Lomax, Sandra | Buyer Id - Id de l'acheteur pwb101 |
| Telephone No. - N° de téléphone (506) 636-4362 () | FAX No. - N° de FAX (506) 636-4376 |
| Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: | |

Instructions: See Herein

Instructions: Voir aux présentes

| | |
|--|--|
| Delivery Required - Livraison exigée | Delivery Offered - Livraison proposée |
| Vendor/Firm Name and Address Raison sociale et adresse du fournisseur/de l'entrepreneur | |
| Telephone No. - N° de téléphone Facsimile No. - N° de télécopieur | |
| Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie) | |
| Signature | Date |

La présente modification n° deux (2) à l'appel d'offres est émise pour inclure l'addenda n° deux (2) qui suit.

L'addenda suivant aux documents d'appel d'offres entre en vigueur immédiatement. Il fait partie intégrante du dossier d'appel d'offres.

Toutes les autres modalités demeurent inchangées.

Question -1

Pouvez-vous fournir des résultats d'analyse de l'eau potable?

Réponse- 1

Voir annexé les résultats d'analyse de l'eau potable. Une version française est disponible sur demande.

Your P.O. #: PAID BY MC
Your C.O.C. #: 567255-01-01

Attention:Neevin Clow

Canadian Food Inspection Agency
93 Mt Edwards Rd
Charlottetown, PE
C1A 5T1

Report Date: 2016/07/05

Report #: R4053031

Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6D1808

Received: 2016/06/24, 11:18

Sample Matrix: Water
Samples Received: 1

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Reference |
|--------------------------------------|----------|-------------------|------------------|-------------------|----------------------|
| Carbonate, Bicarbonate and Hydroxide | 1 | N/A | 2016/06/30 | N/A | SM 22 4500-CO2 D |
| Alkalinity | 1 | N/A | 2016/07/04 | ATL SOP 00013 | EPA 310.2 R1974 m |
| Chloride | 1 | N/A | 2016/07/04 | ATL SOP 00014 | SM 22 4500-Cl- E m |
| Colour | 1 | N/A | 2016/07/04 | ATL SOP 00020 | SM 22 2120C m |
| Conductance - water | 1 | N/A | 2016/06/30 | ATL SOP 00004 | SM 22 2510B m |
| Hardness (calculated as CaCO3) | 1 | N/A | 2016/06/29 | ATL SOP 00048 | SM 22 2340 B |
| Metals Water Total MS | 1 | 2016/06/28 | 2016/06/29 | ATL SOP 00058 | EPA 6020A R1 m |
| Ion Balance (% Difference) | 1 | N/A | 2016/07/05 | | Auto Calc. |
| Anion and Cation Sum | 1 | N/A | 2016/06/30 | | Auto Calc. |
| Nitrogen Ammonia - water | 1 | N/A | 2016/06/30 | ATL SOP 00015 | EPA 350.1 R2 m |
| Nitrogen - Nitrate + Nitrite | 1 | N/A | 2016/07/05 | ATL SOP 00016 | USGS SOPINCF0452.2 m |
| Nitrogen - Nitrite | 1 | N/A | 2016/07/04 | ATL SOP 00017 | SM 22 4500-NO2- B m |
| Nitrogen - Nitrate (as N) | 1 | N/A | 2016/07/05 | ATL SOP 00018 | ASTM D3867 |
| pH (1) | 1 | N/A | 2016/06/30 | ATL SOP 00003 | SM 22 4500-H+ B m |
| Phosphorus - ortho | 1 | N/A | 2016/07/04 | ATL SOP 00021 | EPA 365.2 m |
| Sat. pH and Langelier Index (@ 20C) | 1 | N/A | 2016/07/05 | ATL SOP 00049 | Auto Calc. |
| Sat. pH and Langelier Index (@ 4C) | 1 | N/A | 2016/07/05 | ATL SOP 00049 | Auto Calc. |
| Reactive Silica | 1 | N/A | 2016/07/04 | ATL SOP 00022 | EPA 366.0 m |
| Sulphate | 1 | N/A | 2016/07/05 | ATL SOP 00023 | ASTMD516-11 m |
| Total Dissolved Solids (TDS calc) | 1 | N/A | 2016/07/05 | | Auto Calc. |
| Organic carbon - Total (TOC) (2) | 1 | N/A | 2016/06/29 | ATL SOP 00037 | SM 22 5310C m |
| Turbidity | 1 | N/A | 2016/06/29 | ATL SOP 00011 | EPA 180.1 R2 m |

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) The APHA Standard Method require pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the APHA Standard Method holding time.

(2) TOC / DOC present in the sample should be considered as non-purgeable TOC / DOC.

Your P.O. #: PAID BY MC
Your C.O.C. #: 567255-01-01

Attention:Neevin Clow

Canadian Food Inspection Agency
93 Mt Edwards Rd
Charlottetown, PE
C1A 5T1

Report Date: 2016/07/05
Report #: R4053031
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6D1808

Received: 2016/06/24, 11:18

Encryption Key



Maxxam
05 Jul 2016 17:02:56 -03:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Avery Withrow, Project Manager

Email: AWithrow@maxxam.ca

Phone# (902)420-0203 Ext:233

=====

This report has been generated and distributed using a secure automated process.

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Job #: B6D1808
Report Date: 2016/07/05

Canadian Food Inspection Agency
Your P.O. #: PAID BY MC

RESULTS OF ANALYSES OF WATER

| | | | | |
|---|-------|---------------------|-------|----------|
| Maxxam ID | | CPK123 | | |
| Sampling Date | | 2016/06/23 11:30 | | |
| COC Number | | 567255-01-01 | | |
| | UNITS | BO-10 | RDL | QC Batch |
| Calculated Parameters | | | | |
| Anion Sum | me/L | 3.54 | N/A | 4556380 |
| Bicarb. Alkalinity (calc. as CaCO ₃) | mg/L | 130 | 1.0 | 4555846 |
| Calculated TDS | mg/L | 210 | 1.0 | 4556383 |
| Carb. Alkalinity (calc. as CaCO ₃) | mg/L | 1.1 | 1.0 | 4555846 |
| Cation Sum | me/L | 3.44 | N/A | 4556380 |
| Hardness (CaCO ₃) | mg/L | ND | 1.0 | 4556378 |
| Ion Balance (% Difference) | % | 1.43 | N/A | 4556379 |
| Langelier Index (@ 20C) | N/A | NC | | 4555851 |
| Langelier Index (@ 4C) | N/A | NC | | 4555852 |
| Nitrate (N) | mg/L | 3.5 | 0.050 | 4556381 |
| Saturation pH (@ 20C) | N/A | NC | | 4555851 |
| Saturation pH (@ 4C) | N/A | NC | | 4555852 |
| Inorganics | | | | |
| Total Alkalinity (Total as CaCO ₃) | mg/L | 140 | 25 | 4563674 |
| Dissolved Chloride (Cl) | mg/L | 14 | 1.0 | 4563678 |
| Colour | TCU | ND | 5.0 | 4563687 |
| Nitrate + Nitrite (N) | mg/L | 3.5 | 0.050 | 4563692 |
| Nitrite (N) | mg/L | ND | 0.010 | 4563695 |
| Nitrogen (Ammonia Nitrogen) | mg/L | ND | 0.050 | 4559813 |
| Total Organic Carbon (C) | mg/L | 0.73 | 0.50 | 4559378 |
| Orthophosphate (P) | mg/L | 0.047 | 0.010 | 4563689 |
| pH | pH | 7.96 | N/A | 4560781 |
| Reactive Silica (SiO ₂) | mg/L | 8.3 | 0.50 | 4563684 |
| Dissolved Sulphate (SO ₄) | mg/L | 8.6 | 2.0 | 4563682 |
| Turbidity | NTU | 0.21 | 0.10 | 4559037 |
| Conductivity | uS/cm | 340 | 1.0 | 4560783 |
| RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable ND = Not detected | | | | |

Maxxam Job #: B6D1808
Report Date: 2016/07/05

Canadian Food Inspection Agency
Your P.O. #: PAID BY MC

ELEMENTS BY ICP/MS (WATER)

| | | | | |
|----------------------------------|--------------|---------------------|------------|-----------------|
| Maxxam ID | | CPK123 | | |
| Sampling Date | | 2016/06/23 11:30 | | |
| COC Number | | 567255-01-01 | | |
| | UNITS | BO-10 | RDL | QC Batch |
| Metals | | | | |
| Total Aluminum (Al) | ug/L | 8.2 | 5.0 | 4557313 |
| Total Antimony (Sb) | ug/L | ND | 1.0 | 4557313 |
| Total Arsenic (As) | ug/L | ND | 1.0 | 4557313 |
| Total Barium (Ba) | ug/L | ND | 1.0 | 4557313 |
| Total Beryllium (Be) | ug/L | ND | 1.0 | 4557313 |
| Total Bismuth (Bi) | ug/L | ND | 2.0 | 4557313 |
| Total Boron (B) | ug/L | ND | 50 | 4557313 |
| Total Cadmium (Cd) | ug/L | 0.13 | 0.010 | 4557313 |
| Total Calcium (Ca) | ug/L | ND | 100 | 4557313 |
| Total Chromium (Cr) | ug/L | ND | 1.0 | 4557313 |
| Total Cobalt (Co) | ug/L | ND | 0.40 | 4557313 |
| Total Copper (Cu) | ug/L | 120 | 2.0 | 4557313 |
| Total Iron (Fe) | ug/L | ND | 50 | 4557313 |
| Total Lead (Pb) | ug/L | 0.78 | 0.50 | 4557313 |
| Total Magnesium (Mg) | ug/L | ND | 100 | 4557313 |
| Total Manganese (Mn) | ug/L | ND | 2.0 | 4557313 |
| Total Molybdenum (Mo) | ug/L | ND | 2.0 | 4557313 |
| Total Nickel (Ni) | ug/L | ND | 2.0 | 4557313 |
| Total Phosphorus (P) | ug/L | ND | 100 | 4557313 |
| Total Potassium (K) | ug/L | 120 | 100 | 4557313 |
| Total Selenium (Se) | ug/L | ND | 1.0 | 4557313 |
| Total Silver (Ag) | ug/L | ND | 0.10 | 4557313 |
| Total Sodium (Na) | ug/L | 79000 | 100 | 4557313 |
| Total Strontium (Sr) | ug/L | ND | 2.0 | 4557313 |
| Total Thallium (Tl) | ug/L | ND | 0.10 | 4557313 |
| Total Tin (Sn) | ug/L | ND | 2.0 | 4557313 |
| Total Titanium (Ti) | ug/L | ND | 2.0 | 4557313 |
| Total Uranium (U) | ug/L | 0.32 | 0.10 | 4557313 |
| Total Vanadium (V) | ug/L | 4.1 | 2.0 | 4557313 |
| Total Zinc (Zn) | ug/L | 9.7 | 5.0 | 4557313 |
| RDL = Reportable Detection Limit | | | | |
| QC Batch = Quality Control Batch | | | | |
| ND = Not detected | | | | |

Maxxam Job #: B6D1808
Report Date: 2016/07/05

Canadian Food Inspection Agency
Your P.O. #: PAID BY MC

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

| | |
|-----------|-------|
| Package 1 | 5.3°C |
|-----------|-------|

Results relate only to the items tested.

Maxxam Job #: B6D1808
Report Date: 2016/07/05

Canadian Food Inspection Agency
Your P.O. #: PAID BY MC

QUALITY ASSURANCE REPORT

| QA/QC | Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | UNITS | QC Limits |
|---------|-------|--------------|---------|-----------------------|---------------|-------|----------|-------|-----------|
| 4557313 | BAN | Matrix Spike | | Total Aluminum (Al) | 2016/06/29 | | 91 | % | 80 - 120 |
| | | | | Total Antimony (Sb) | 2016/06/29 | | 102 | % | 80 - 120 |
| | | | | Total Arsenic (As) | 2016/06/29 | | 95 | % | 80 - 120 |
| | | | | Total Barium (Ba) | 2016/06/29 | | NC | % | 80 - 120 |
| | | | | Total Beryllium (Be) | 2016/06/29 | | 107 | % | 80 - 120 |
| | | | | Total Bismuth (Bi) | 2016/06/29 | | 97 | % | 80 - 120 |
| | | | | Total Boron (B) | 2016/06/29 | | 103 | % | 80 - 120 |
| | | | | Total Cadmium (Cd) | 2016/06/29 | | 99 | % | 80 - 120 |
| | | | | Total Calcium (Ca) | 2016/06/29 | | NC | % | 80 - 120 |
| | | | | Total Chromium (Cr) | 2016/06/29 | | 96 | % | 80 - 120 |
| | | | | Total Cobalt (Co) | 2016/06/29 | | 97 | % | 80 - 120 |
| | | | | Total Copper (Cu) | 2016/06/29 | | 95 | % | 80 - 120 |
| | | | | Total Iron (Fe) | 2016/06/29 | | 100 | % | 80 - 120 |
| | | | | Total Lead (Pb) | 2016/06/29 | | 98 | % | 80 - 120 |
| | | | | Total Magnesium (Mg) | 2016/06/29 | | 100 | % | 80 - 120 |
| | | | | Total Manganese (Mn) | 2016/06/29 | | NC | % | 80 - 120 |
| | | | | Total Molybdenum (Mo) | 2016/06/29 | | 97 | % | 80 - 120 |
| | | | | Total Nickel (Ni) | 2016/06/29 | | 96 | % | 80 - 120 |
| | | | | Total Phosphorus (P) | 2016/06/29 | | 100 | % | 80 - 120 |
| | | | | Total Potassium (K) | 2016/06/29 | | 99 | % | 80 - 120 |
| | | | | Total Selenium (Se) | 2016/06/29 | | 93 | % | 80 - 120 |
| | | | | Total Silver (Ag) | 2016/06/29 | | 99 | % | 80 - 120 |
| | | | | Total Sodium (Na) | 2016/06/29 | | 97 | % | 80 - 120 |
| | | | | Total Strontium (Sr) | 2016/06/29 | | NC | % | 80 - 120 |
| | | | | Total Thallium (Tl) | 2016/06/29 | | 97 | % | 80 - 120 |
| | | | | Total Tin (Sn) | 2016/06/29 | | 100 | % | 80 - 120 |
| | | | | Total Titanium (Ti) | 2016/06/29 | | 100 | % | 80 - 120 |
| | | | | Total Uranium (U) | 2016/06/29 | | 104 | % | 80 - 120 |
| | | | | Total Vanadium (V) | 2016/06/29 | | 100 | % | 80 - 120 |
| | | | | Total Zinc (Zn) | 2016/06/29 | | 96 | % | 80 - 120 |
| 4557313 | BAN | Spiked Blank | | Total Aluminum (Al) | 2016/06/29 | | 98 | % | 80 - 120 |
| | | | | Total Antimony (Sb) | 2016/06/29 | | 97 | % | 80 - 120 |
| | | | | Total Arsenic (As) | 2016/06/29 | | 91 | % | 80 - 120 |
| | | | | Total Barium (Ba) | 2016/06/29 | | 95 | % | 80 - 120 |
| | | | | Total Beryllium (Be) | 2016/06/29 | | 103 | % | 80 - 120 |
| | | | | Total Bismuth (Bi) | 2016/06/29 | | 97 | % | 80 - 120 |
| | | | | Total Boron (B) | 2016/06/29 | | 100 | % | 80 - 120 |
| | | | | Total Cadmium (Cd) | 2016/06/29 | | 96 | % | 80 - 120 |
| | | | | Total Calcium (Ca) | 2016/06/29 | | 99 | % | 80 - 120 |
| | | | | Total Chromium (Cr) | 2016/06/29 | | 94 | % | 80 - 120 |
| | | | | Total Cobalt (Co) | 2016/06/29 | | 96 | % | 80 - 120 |
| | | | | Total Copper (Cu) | 2016/06/29 | | 94 | % | 80 - 120 |
| | | | | Total Iron (Fe) | 2016/06/29 | | 98 | % | 80 - 120 |
| | | | | Total Lead (Pb) | 2016/06/29 | | 97 | % | 80 - 120 |
| | | | | Total Magnesium (Mg) | 2016/06/29 | | 98 | % | 80 - 120 |
| | | | | Total Manganese (Mn) | 2016/06/29 | | 97 | % | 80 - 120 |
| | | | | Total Molybdenum (Mo) | 2016/06/29 | | 95 | % | 80 - 120 |
| | | | | Total Nickel (Ni) | 2016/06/29 | | 95 | % | 80 - 120 |
| | | | | Total Phosphorus (P) | 2016/06/29 | | 99 | % | 80 - 120 |
| | | | | Total Potassium (K) | 2016/06/29 | | 99 | % | 80 - 120 |
| | | | | Total Selenium (Se) | 2016/06/29 | | 91 | % | 80 - 120 |
| | | | | Total Silver (Ag) | 2016/06/29 | | 97 | % | 80 - 120 |
| | | | | Total Sodium (Na) | 2016/06/29 | | 95 | % | 80 - 120 |
| | | | | Total Strontium (Sr) | 2016/06/29 | | 97 | % | 80 - 120 |

Maxxam Job #: B6D1808
Report Date: 2016/07/05

Canadian Food Inspection Agency
Your P.O. #: PAID BY MC

QUALITY ASSURANCE REPORT(CONT'D)

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | UNITS | QC Limits |
|----------------|------|--------------|-----------------------|------------------|------------------|----------|-------|-----------|
| 4557313 | BAN | Method Blank | Total Thallium (Tl) | 2016/06/29 | | 96 | % | 80 - 120 |
| | | | Total Tin (Sn) | 2016/06/29 | | 98 | % | 80 - 120 |
| | | | Total Titanium (Ti) | 2016/06/29 | | 96 | % | 80 - 120 |
| | | | Total Uranium (U) | 2016/06/29 | | 100 | % | 80 - 120 |
| | | | Total Vanadium (V) | 2016/06/29 | | 97 | % | 80 - 120 |
| | | | Total Zinc (Zn) | 2016/06/29 | | 93 | % | 80 - 120 |
| | | | Total Aluminum (Al) | 2016/06/29 | ND, RDL=5.0 | | ug/L | |
| | | | Total Antimony (Sb) | 2016/06/29 | ND, RDL=1.0 | | ug/L | |
| | | | Total Arsenic (As) | 2016/06/29 | ND, RDL=1.0 | | ug/L | |
| | | | Total Barium (Ba) | 2016/06/29 | ND, RDL=1.0 | | ug/L | |
| | | | Total Beryllium (Be) | 2016/06/29 | ND, RDL=1.0 | | ug/L | |
| | | | Total Bismuth (Bi) | 2016/06/29 | ND, RDL=2.0 | | ug/L | |
| | | | Total Boron (B) | 2016/06/29 | ND, RDL=50 | | ug/L | |
| | | | Total Cadmium (Cd) | 2016/06/29 | ND, RDL=0.010 | | ug/L | |
| | | | Total Calcium (Ca) | 2016/06/29 | ND, RDL=100 | | ug/L | |
| | | | Total Chromium (Cr) | 2016/06/29 | ND, RDL=1.0 | | ug/L | |
| | | | Total Cobalt (Co) | 2016/06/29 | ND, RDL=0.40 | | ug/L | |
| | | | Total Copper (Cu) | 2016/06/29 | ND, RDL=2.0 | | ug/L | |
| | | | Total Iron (Fe) | 2016/06/29 | ND, RDL=50 | | ug/L | |
| | | | Total Lead (Pb) | 2016/06/29 | ND, RDL=0.50 | | ug/L | |
| | | | Total Magnesium (Mg) | 2016/06/29 | ND, RDL=100 | | ug/L | |
| | | | Total Manganese (Mn) | 2016/06/29 | ND, RDL=2.0 | | ug/L | |
| | | | Total Molybdenum (Mo) | 2016/06/29 | ND, RDL=2.0 | | ug/L | |
| | | | Total Nickel (Ni) | 2016/06/29 | ND, RDL=2.0 | | ug/L | |
| | | | Total Phosphorus (P) | 2016/06/29 | ND, RDL=100 | | ug/L | |
| | | | Total Potassium (K) | 2016/06/29 | ND, RDL=100 | | ug/L | |
| | | | Total Selenium (Se) | 2016/06/29 | ND, RDL=1.0 | | ug/L | |
| | | | Total Silver (Ag) | 2016/06/29 | ND, RDL=0.10 | | ug/L | |

Maxxam Job #: B6D1808
Report Date: 2016/07/05

Canadian Food Inspection Agency
Your P.O. #: PAID BY MC

QUALITY ASSURANCE REPORT(CONT'D)

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | UNITS | QC Limits |
|----------------|------|--------------------------|--------------------------|------------------|-----------------|----------|-------|-----------|
| 4557313 | BAN | RPD | Total Sodium (Na) | 2016/06/29 | ND, RDL=100 | | ug/L | |
| | | | Total Strontium (Sr) | 2016/06/29 | ND, RDL=2.0 | | ug/L | |
| | | | Total Thallium (Tl) | 2016/06/29 | ND, RDL=0.10 | | ug/L | |
| | | | Total Tin (Sn) | 2016/06/29 | ND, RDL=2.0 | | ug/L | |
| | | | Total Titanium (Ti) | 2016/06/29 | ND, RDL=2.0 | | ug/L | |
| | | | Total Uranium (U) | 2016/06/29 | ND, RDL=0.10 | | ug/L | |
| | | | Total Vanadium (V) | 2016/06/29 | ND, RDL=2.0 | | ug/L | |
| | | | Total Zinc (Zn) | 2016/06/29 | ND, RDL=5.0 | | ug/L | |
| | | | Total Aluminum (Al) | 2016/06/29 | NC | | % | 20 |
| | | | Total Antimony (Sb) | 2016/06/29 | NC | | % | 20 |
| | | | Total Arsenic (As) | 2016/06/29 | NC | | % | 20 |
| | | | Total Barium (Ba) | 2016/06/29 | 1.2 | | % | 20 |
| | | | Total Beryllium (Be) | 2016/06/29 | NC | | % | 20 |
| | | | Total Bismuth (Bi) | 2016/06/29 | NC | | % | 20 |
| | | | Total Boron (B) | 2016/06/29 | NC | | % | 20 |
| | | | Total Cadmium (Cd) | 2016/06/29 | NC | | % | 20 |
| | | | Total Calcium (Ca) | 2016/06/29 | 2.6 | | % | 20 |
| | | | Total Chromium (Cr) | 2016/06/29 | NC | | % | 20 |
| | | | Total Cobalt (Co) | 2016/06/29 | NC | | % | 20 |
| | | | Total Copper (Cu) | 2016/06/29 | NC | | % | 20 |
| | | | Total Iron (Fe) | 2016/06/29 | 3.3 | | % | 20 |
| | | | Total Lead (Pb) | 2016/06/29 | NC | | % | 20 |
| | | | Total Magnesium (Mg) | 2016/06/29 | 2.3 | | % | 20 |
| | | | Total Manganese (Mn) | 2016/06/29 | 2.3 | | % | 20 |
| | | | Total Molybdenum (Mo) | 2016/06/29 | NC | | % | 20 |
| | | | Total Nickel (Ni) | 2016/06/29 | NC | | % | 20 |
| | | | Total Phosphorus (P) | 2016/06/29 | NC | | % | 20 |
| | | | Total Potassium (K) | 2016/06/29 | 2.6 | | % | 20 |
| | | | Total Selenium (Se) | 2016/06/29 | NC | | % | 20 |
| | | | Total Silver (Ag) | 2016/06/29 | NC | | % | 20 |
| | | | Total Sodium (Na) | 2016/06/29 | 2.7 | | % | 20 |
| | | | Total Strontium (Sr) | 2016/06/29 | 2.0 | | % | 20 |
| | | | Total Thallium (Tl) | 2016/06/29 | NC | | % | 20 |
| | | | Total Tin (Sn) | 2016/06/29 | NC | | % | 20 |
| | | | Total Titanium (Ti) | 2016/06/29 | NC | | % | 20 |
| | | | Total Uranium (U) | 2016/06/29 | 2.6 | | % | 20 |
| | | | Total Vanadium (V) | 2016/06/29 | NC | | % | 20 |
| | | | Total Zinc (Zn) | 2016/06/29 | NC | | % | 20 |
| 4559037 | KMC | QC Standard | Turbidity | 2016/06/29 | | 99 | % | 80 - 120 |
| 4559037 | KMC | Spiked Blank | Turbidity | 2016/06/29 | | 100 | % | 80 - 120 |
| 4559037 | KMC | Method Blank | Turbidity | 2016/06/29 | ND, RDL=0.10 | | NTU | |
| 4559037 | KMC | RPD | Turbidity | 2016/06/29 | 2.9 | | % | 20 |
| 4559378 | SMT | Matrix Spike [CPK123-01] | Total Organic Carbon (C) | 2016/06/29 | | 96 | % | 80 - 120 |
| 4559378 | SMT | Spiked Blank | Total Organic Carbon (C) | 2016/06/29 | | 94 | % | 80 - 120 |

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QUALITY ASSURANCE REPORT(CONT'D)

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | UNITS | QC Limits |
|----------------|------|--------------|-----------------------------------|------------------|------------------|----------|-------|-----------|
| 4559378 | SMT | Method Blank | Total Organic Carbon (C) | 2016/06/29 | ND, RDL=0.50 | | mg/L | |
| 4559378 | SMT | RPD | Total Organic Carbon (C) | 2016/06/29 | 2.7 | | % | 20 |
| 4559813 | NRG | Matrix Spike | Nitrogen (Ammonia Nitrogen) | 2016/06/30 | | 97 | % | 80 - 120 |
| 4559813 | NRG | Spiked Blank | Nitrogen (Ammonia Nitrogen) | 2016/06/29 | | 102 | % | 80 - 120 |
| 4559813 | NRG | Method Blank | Nitrogen (Ammonia Nitrogen) | 2016/06/29 | ND, RDL=0.050 | | mg/L | |
| 4559813 | NRG | RPD | Nitrogen (Ammonia Nitrogen) | 2016/06/30 | NC | | % | 20 |
| 4560781 | JMV | QC Standard | pH | 2016/06/30 | | 100 | % | 97 - 103 |
| 4560781 | JMV | RPD | pH | 2016/06/30 | 2.1 | | % | N/A |
| 4560783 | JMV | Spiked Blank | Conductivity | 2016/06/30 | | 105 | % | 80 - 120 |
| 4560783 | JMV | Method Blank | Conductivity | 2016/06/30 | 1.4, RDL=1.0 | | uS/cm | |
| 4560783 | JMV | RPD | Conductivity | 2016/06/30 | 0.86 | | % | 25 |
| 4563674 | NRG | Matrix Spike | Total Alkalinity (Total as CaCO3) | 2016/07/04 | | NC | % | 80 - 120 |
| 4563674 | NRG | Spiked Blank | Total Alkalinity (Total as CaCO3) | 2016/07/04 | | 103 | % | 80 - 120 |
| 4563674 | NRG | Method Blank | Total Alkalinity (Total as CaCO3) | 2016/07/04 | ND, RDL=5.0 | | mg/L | |
| 4563674 | NRG | RPD | Total Alkalinity (Total as CaCO3) | 2016/07/04 | 0.55 | | % | 25 |
| 4563678 | MCN | Matrix Spike | Dissolved Chloride (Cl) | 2016/07/04 | | 102 | % | 80 - 120 |
| 4563678 | MCN | QC Standard | Dissolved Chloride (Cl) | 2016/07/04 | | 107 | % | 80 - 120 |
| 4563678 | MCN | Spiked Blank | Dissolved Chloride (Cl) | 2016/07/04 | | 103 | % | 80 - 120 |
| 4563678 | MCN | Method Blank | Dissolved Chloride (Cl) | 2016/07/04 | ND, RDL=1.0 | | mg/L | |
| 4563678 | MCN | RPD | Dissolved Chloride (Cl) | 2016/07/04 | NC | | % | 25 |
| 4563682 | MCN | Matrix Spike | Dissolved Sulphate (SO4) | 2016/07/05 | | 97 | % | 80 - 120 |
| 4563682 | MCN | Spiked Blank | Dissolved Sulphate (SO4) | 2016/07/05 | | 102 | % | 80 - 120 |
| 4563682 | MCN | Method Blank | Dissolved Sulphate (SO4) | 2016/07/05 | ND, RDL=2.0 | | mg/L | |
| 4563682 | MCN | RPD | Dissolved Sulphate (SO4) | 2016/07/05 | NC | | % | 25 |
| 4563684 | NRG | Matrix Spike | Reactive Silica (SiO2) | 2016/07/04 | | NC | % | 80 - 120 |
| 4563684 | NRG | Spiked Blank | Reactive Silica (SiO2) | 2016/07/04 | | 102 | % | 80 - 120 |
| 4563684 | NRG | Method Blank | Reactive Silica (SiO2) | 2016/07/04 | ND, RDL=0.50 | | mg/L | |
| 4563684 | NRG | RPD | Reactive Silica (SiO2) | 2016/07/04 | 1.2 | | % | 25 |
| 4563687 | MCN | Spiked Blank | Colour | 2016/07/04 | | 100 | % | 80 - 120 |
| 4563687 | MCN | Method Blank | Colour | 2016/07/04 | ND, RDL=5.0 | | TCU | |
| 4563687 | MCN | RPD | Colour | 2016/07/04 | NC | | % | 20 |
| 4563689 | MCN | Matrix Spike | Orthophosphate (P) | 2016/07/04 | | NC | % | 80 - 120 |
| 4563689 | MCN | Spiked Blank | Orthophosphate (P) | 2016/07/04 | | 100 | % | 80 - 120 |
| 4563689 | MCN | Method Blank | Orthophosphate (P) | 2016/07/04 | ND, RDL=0.010 | | mg/L | |
| 4563689 | MCN | RPD | Orthophosphate (P) | 2016/07/04 | 2.9 | | % | 25 |
| 4563692 | MCN | Matrix Spike | Nitrate + Nitrite (N) | 2016/07/05 | | 113 | % | 80 - 120 |
| 4563692 | MCN | Spiked Blank | Nitrate + Nitrite (N) | 2016/07/05 | | 111 | % | 80 - 120 |
| 4563692 | MCN | Method Blank | Nitrate + Nitrite (N) | 2016/07/05 | ND, RDL=0.050 | | mg/L | |
| 4563692 | MCN | RPD | Nitrate + Nitrite (N) | 2016/07/05 | NC | | % | 25 |
| 4563695 | MCN | Matrix Spike | Nitrite (N) | 2016/07/04 | | 90 | % | 80 - 120 |
| 4563695 | MCN | Spiked Blank | Nitrite (N) | 2016/07/04 | | 102 | % | 80 - 120 |
| 4563695 | MCN | Method Blank | Nitrite (N) | 2016/07/04 | ND, RDL=0.010 | | mg/L | |

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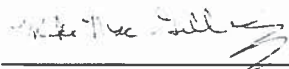
| QA/QC | | | Date | | Value | Recovery | UNITS | QC Limits |
|--|------|---------|-------------|------------|-------|----------|-------|-----------|
| Batch | Init | QC Type | Parameter | Analyzed | | | | |
| 4563695 | MCN | RPD | Nitrite (N) | 2016/07/04 | NC | | % | 25 |
| <p>N/A = Not Applicable</p> <p>Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.</p> <p>Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.</p> <p>QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.</p> <p>Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.</p> <p>Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.</p> <p>NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).</p> <p>NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).</p> | | | | | | | | |

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VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Mike MacGillivray, Scientific Specialist (Inorganics)

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

