

Appendix III



RESULTS OF RAINBOW TROUT SINGLE CONCENTRATION-100%

Client : 13210 The Bowra Group Inc., Contractor for Province of BC as MEMPR Representative, Job Number: C178457
****COD****

Client Project Name & Number: SP1 RAINBOW TROUT

Test Result:

96 hrs Mortality % 0 Statistical Method: Visual

Sample Name : SPD

Description: Light brown and clear Sample Number: AIF602-01
 Sample Collected: Oct 14, 2021 04:00 PM Sampling Method : Grab Site Collection: N/A
 Sample Collected By: CC Volume Received: 5 x ECO4 Avg Temp Arrival: 4 °C Storage: 2-6°C
 Sample Received: Oct 15, 2021 12:00 PM pH: 7.6 Dissolved Oxygen: 10.3 mg/L
 Analysis Start : Oct 16, 2021 11:30 AM Temperature : 15 °C Sample Conductance: 1016 µS/cm

Concentration	Temperature (°C)	Temperature (°C)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (mg/L)	pH	pH	Conductivity (uS/cm)	Mortality (#)	Mortality (%)	Atypical Behaviour (#)
% vol/vol	Initial	96 hrs	Initial	96 hrs	Initial	96 hrs	Initial	96 hrs	96 hrs	96 hrs
0	14	15	10.2	9.9	7.4	7.4	58	0	0	0
100	15	15	10.2	9.8	7.7	8.0	1016	0	0	0

Comments : All fish appeared and behaved normally during the test.

Culture/Control/Dilution Water

Hardness: 25 mg/L CaCO₃ Burnaby Municipal Dechlorinated Water Other parameters available on request.

Test Conditions

Test concentration : 0,100 (% vol/vol)
 Organisms per Vessel : 10 Test Temperature : 15 ± 1 °C Solution Depth : >15 cm
 Total # of Organisms Used : 20 Pre-aeration Time : 30 min. Rate of Aeration : 6.5±1 mL/min/L
 Test Volume : 18 L Vessel Volume : 20L Test pH Adjusted: No
 Loading Density : 0.4 g/L Photoperiod : 16:8 (light: dark)

Test Organism :

Rainbow Trout (*Oncorhynchus mykiss*) Source : Aqua Farm
 Culture Temperature : 15 ± 2 °C Weight (Mean) +- SD : 0.8 ± 0.1 g Length (Mean) +- SD : 4.54 ± 0.25 cm
 Culture Water Renewal : ≥ 1L/min/kg fish Weight (Range) : 0.6 – 1.0 g Length (Range) : 4.20 – 4.90 cm
 Culture Photoperiod : 16:8 (light: dark) % Mortality within 7 days : 0%
 Feeding rate and frequency : daily: 1-5% biomass of trout. Acclimation Time: >14 days

Reference chemical:

Zinc Test Date: Oct 06, 2021
 Test Endpoint 96 hrs LC50 (95% confidence interval) : 0.20 (0.14, 0.28)mg/L Statistical Method : Probit
 Historical Mean LC50 (warning limits) : 0.13 (0.06, 0.27) mg/L Concentration : 0,0.04,0.08,0.16,0.32,0.64 mg/L

Test Method

BV Labs' BBY2SOP-00004 is based on the latest versions of EPS 1/RM/9, EPS 1/RM/13, and EPS 1/RM/50.

Method Deviations : None.

Note: The results contained in this report refer only to the testing of the sample submitted. Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation, including the toxicity parameters reported herein. The conductivity, dissolved oxygen and pH data contained within the toxicity report are provided for information purposes and are not individually accredited parameters. This report may not be reproduced, except in its entirety, without the written approval of the laboratory.

Analyst : Michael Brassil

Kimberly Tamaki

Verified By : Kimberly Tamaki, Scientist, Ecotoxicology

Date: Oct 26, 2021 11:18 AM



RESULTS OF RAINBOW TROUT SINGLE CONCENTRATION-100%

Client : 13210 The Bowra Group Inc., Contractor for Province of BC as MEMPR Representative, Job Number: C178449
****COD****

Client Project Name & Number: SP4 RAINBOW TROUT

Test Result:

96 hrs Mortality % 0 Statistical Method: Visual

Sample Name : WD

Description: Clear and colourless Sample Number: AIF584-01
 Sample Collected: Oct 14, 2021 04:00 PM Sampling Method : Grab Site Collection: N/A
 Sample Collected By: CC Volume Received: 5 x ECO4 Avg Temp Arrival: 5 °C Storage: 2-6°C
 Sample Received: Oct 15, 2021 12:00 PM pH: 7.7 Dissolved Oxygen: 10.5 mg/L
 Analysis Start : Oct 16, 2021 11:50 AM Temperature : 15 °C Sample Conductance: 2058 µS/cm

Concentration	Temperature (°C)	Temperature (°C)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (mg/L)	pH	pH	Conductivity (uS/cm)	Mortality (#)	Mortality (%)	Atypical Behaviour (#)
% vol/vol	Initial	96 hrs	Initial	96 hrs	Initial	96 hrs	Initial	96 hrs	96 hrs	96 hrs
0	14	15	10.2	9.8	7.4	7.3	59	0	0	0
100	15	15	10.2	9.9	7.8	8.2	2055	0	0	0

Comments : All fish appeared and behaved normally during the test.

Culture/Control/Dilution Water

Hardness: 25 mg/L CaCO₃ Burnaby Municipal Dechlorinated Water Other parameters available on request.

Test Conditions

Test concentration : 0,100 (% vol/vol)
 Organisms per Vessel : 10 Test Temperature : 15 ± 1 °C Solution Depth : >15 cm
 Total # of Organisms Used : 20 Pre-aeration Time : 50 min. Rate of Aeration : 6.5±1 mL/min/L
 Test Volume : 18 L Vessel Volume : 20L Test pH Adjusted: No
 Loading Density : 0.4 g/L Photoperiod : 16:8 (light: dark)

Test Organism :

Rainbow Trout (*Oncorhynchus mykiss*) Source : Aqua Farm
 Culture Temperature : 15 ± 2 °C Weight (Mean) +- SD : 0.7 ± 0.2 g Length (Mean) +- SD : 4.41 ± 0.30 cm
 Culture Water Renewal : ≥ 1L/min/kg fish Weight (Range) : 0.5 – 0.9 g Length (Range) : 4.00 – 4.80 cm
 Culture Photoperiod : 16:8 (light: dark) % Mortality within 7 days : 0%
 Feeding rate and frequency : daily: 1-5% biomass of trout. Acclimation Time: >14 days

Reference chemical:

Zinc Test Date: Oct 06, 2021
 Test Endpoint 96 hrs LC50 (95% confidence interval) : 0.20 (0.14, 0.28)mg/L Statistical Method : Probit
 Historical Mean LC50 (warning limits) : 0.13 (0.06, 0.27) mg/L Concentration : 0,0.04,0.08,0.16,0.32,0.64 mg/L

Test Method

BV Labs' BBY2SOP-00004 is based on the latest versions of EPS 1/RM/9, EPS 1/RM/13, and EPS 1/RM/50.

Method Deviations : None.

Note: The results contained in this report refer only to the testing of the sample submitted. Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation, including the toxicity parameters reported herein. The conductivity, dissolved oxygen and pH data contained within the toxicity report are provided for information purposes and are not individually accredited parameters. This report may not be reproduced, except in its entirety, without the written approval of the laboratory.

Analyst : Michael Brassil

Kimberly Tamaki

Verified By : Kimberly Tamaki, Scientist, Ecotoxicology

Date: Oct 26, 2021 11:15 AM



Your Project #: MONTHLY-JAN SURFACE
Your C.O.C. #: 20220103

Attention: Kathleen Russell

Quinsam Coal Corporation
Campbell River
5800 ARGONAUT RD
Campbell River, BC
Canada V9W 5C5

Report Date: 2022/01/17
Report #: R3122659
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C200857

Received: 2022/01/07, 10:32

Sample Matrix: Water
Samples Received: 10

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Acidity pH 4.5 & pH 8.3 (as CaCO ₃)	9	N/A	2022/01/07	BBY6SOP-00037	SM 23 2310 B m
Acidity pH 4.5 & pH 8.3 (as CaCO ₃)	1	N/A	2022/01/14	BBY6SOP-00037	SM 23 2310 B m
Alkalinity @25C (pp, total), CO ₃ ,HCO ₃ ,OH	10	N/A	2022/01/08	BBY6SOP-00026	SM 23 2320 B m
Chloride/Sulphate by Auto Colourimetry	10	N/A	2022/01/10	BBY6SOP-00011 / BBY6SOP-00017	SM23-4500-Cl/SO ₄ -E m
Carbon (DOC) (1, 2)	4	N/A	2022/01/09	AB SOP-00087	MMCW 119 1996 m
Conductivity @25C	10	N/A	2022/01/08	BBY6SOP-00026	SM 23 2510 B m
Sulphide (as H ₂ S) (1)	3	N/A	2022/01/08		Auto Calc
Hardness Total (calculated as CaCO ₃) (3)	6	N/A	2022/01/11	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO ₃)	9	N/A	2022/01/10	BBY WI-00033	Auto Calc
Mercury (Dissolved) by CV (4)	9	2022/01/12	2022/01/12	AB SOP-00084	BCMOE BCLM Oct2013 m
Mercury (Total) by CV	4	2022/01/12	2022/01/12	AB SOP-00084	BCMOE BCLM Oct2013 m
Mercury (Total) by CV	2	2022/01/12	2022/01/13	AB SOP-00084	BCMOE BCLM Oct2013 m
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	9	N/A	2022/01/10	BBY WI-00033	Auto Calc
Elements by CRC ICPMS (dissolved) (4)	9	N/A	2022/01/07	BBY7SOP-00002	EPA 6020b R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total)	6	2022/01/07	2022/01/11	BBY WI-00033	Auto Calc
Elements by CRC ICPMS (total)	6	2022/01/10	2022/01/10	BBY7SOP-00003 / BBY7SOP-00002	EPA 6020b R2 m
Ammonia-N (Total)	6	N/A	2022/01/11	AB SOP-00007	SM 23 4500 NH ₃ A G m
Nitrate + Nitrite (N)	6	N/A	2022/01/07	BBY6SOP-00010	SM 23 4500-NO ₃ - I m
Nitrite (N) by CFA	6	N/A	2022/01/07	BBY6SOP-00010	SM 23 4500-NO ₃ - I m
Nitrogen - Nitrate (as N)	6	N/A	2022/01/12	BBY WI-00033	Auto Calc
Filter and HNO ₃ Preserve for Metals	9	N/A	2022/01/07	BBY7 WI-00004	SM 23 3030B m
pH @25°C (5)	10	N/A	2022/01/08	BBY6SOP-00026	SM 23 4500-H+ B m
Total Sulphide (1)	3	N/A	2022/01/08	AB SOP-00080	SM 23 4500 S ₂ -A D Fm
Phosphorus -P (Total, Dissolved) (1, 6)	3	2022/01/11	2022/01/12	AB SOP-00024	SM 23 4500-P A,B,F m
Total Phosphorus (1)	6	2022/01/11	2022/01/12	AB SOP-00024	SM 23 4500-P A,B,F m
Total Suspended Solids (NFR)	10	2022/01/10	2022/01/11	BBY6SOP-00034	SM 23 2540 D m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau



Your Project #: MONTHLY-JAN SURFACE
Your C.O.C. #: 20220103

Attention: Kathleen Russell

Quinsam Coal Corporation
Campbell River
5800 ARGONAUT RD
Campbell River, BC
Canada V9W 5C5

Report Date: 2022/01/17
Report #: R3122659
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C200857

Received: 2022/01/07, 10:32

Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

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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) This test was performed by Bureau Veritas Calgary, 4000 - 19 St. , Calgary, AB, T2E 6P8
- (2) DOC present in the sample should be considered as non-purgeable DOC. Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
- (3) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).
- (4) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
- (5) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Bureau Veritas Laboratories endeavours to analyze samples as soon as possible after receipt.
- (6) Dissolved Phosphorus > Total Phosphorus Imbalance: When applicable, Dissolved Phosphorus and Total Phosphorus results were reviewed and data quality meets acceptable levels unless otherwise noted.

Encryption Key

Diana Fausto
Customer Solutions Representative
17 Jan 2022 11:29:12

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Customer Solutions, Western Canada Customer Experience Team
Email: customersolutionswest@bureauveritas.com
Phone# (604) 734 7276

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BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



**BUREAU
VERITAS**

Bureau Veritas Job #: C200857

Report Date: 2022/01/17

Quinsam Coal Corporation

Client Project #: MONTHLY-JAN SURFACE

Sampler Initials: CC

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		AMT079		AMT080		AMT081		AMT082		
Sampling Date		2022/01/04		2022/01/04		2022/01/04		2022/01/04		
COC Number		20220103		20220103		20220103		20220103		
	UNITS	WD-4JAN22-P	QC Batch	WD-4JAN22-R	QC Batch	SPC-4JAN22-M	QC Batch	SPD-4JAN22-P	RDL	QC Batch

Calculated Parameters

Filter and HNO3 Preservation	N/A	FIELD	ONSITE	FIELD	ONSITE			FIELD		ONSITE
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Misc. Inorganics

Conductivity	uS/cm	1800	A468004	1800	A468004	150	A468004	550	2.0	A468004
pH	pH	8.23	A468001	8.21	A468001	7.03	A468001	7.39	N/A	A468001
Acidity (pH 4.5)	mg/L	<1.0	A469423	<1.0	A472061	<1.0	A469423	<1.0	1.0	A469423
Acidity (pH 8.3)	mg/L	3.9	A469423	8.3	A472061	1.5	A469423	4.6	1.0	A469423
Total Suspended Solids	mg/L	3.6	A467937	4.4	A467937	<1.0	A467937	3.6	1.0	A467937

Anions

Alkalinity (PP as CaCO3)	mg/L	<1.0	A468003	<1.0	A468003	<1.0	A468003	<1.0	1.0	A468003
Alkalinity (Total as CaCO3)	mg/L	460	A468003	450	A468003	22	A468003	72	1.0	A468003
Bicarbonate (HCO3)	mg/L	560	A468003	550	A468003	27	A468003	88	1.0	A468003
Carbonate (CO3)	mg/L	<1.0	A468003	<1.0	A468003	<1.0	A468003	<1.0	1.0	A468003
Hydroxide (OH)	mg/L	<1.0	A468003	<1.0	A468003	<1.0	A468003	<1.0	1.0	A468003
Dissolved Sulphate (SO4)	mg/L	470	A467630	550	A467630	53 (1)	A467630	250	10	A467630

RDL = Reportable Detection Limit

N/A = Not Applicable

(1) RDL raised due to sample matrix interference.



BUREAU
VERITAS

Bureau Veritas Job #: C200857

Report Date: 2022/01/17

Quinsam Coal Corporation

Client Project #: MONTHLY-JAN SURFACE

Sampler Initials: CC

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		AMT083			AMT084			AMT085		
Sampling Date		2022/01/04			2022/01/04			2022/01/04		
COC Number		20220103			20220103			20220103		
	UNITS	BCREFF-4JAN22-M	RDL	QC Batch	INF-4JAN22-M	RDL	QC Batch	2SI-4JAN22-M	RDL	QC Batch
ANIONS										
Nitrite (N)	mg/L	0.0059	0.0050	A466903	<0.0050	0.0050	A466903	<0.0050	0.0050	A466903
Calculated Parameters										
Filter and HNO3 Preservation	N/A	FIELD		ONSITE	FIELD		ONSITE	FIELD		ONSITE
Nitrate (N)	mg/L	<0.020	0.020	A466099	<0.020	0.020	A466099	0.064	0.020	A466099
Sulphide (as H2S)	mg/L	11	0.19	A465962	0.012	0.0020	A465962	0.025	0.0020	A465962
Misc. Inorganics										
Conductivity	uS/cm	1400	2.0	A468004	1500	2.0	A468004	1000	2.0	A468004
Dissolved Organic Carbon (C)	mg/L							1.6	0.50	A467014
pH	pH	7.94	N/A	A468001	7.95	N/A	A468001	8.05	N/A	A468001
Acidity (pH 4.5)	mg/L	<1.0	1.0	A469423	<1.0	1.0	A469423	<1.0	1.0	A469423
Acidity (pH 8.3)	mg/L	15.6	1.0	A469423	9.6	1.0	A469423	3.4	1.0	A469423
Total Suspended Solids	mg/L	<1.0	1.0	A467937	3.6	1.0	A467937	<1.0	1.0	A467937
Anions										
Alkalinity (PP as CaCO3)	mg/L	<1.0	1.0	A468003	<1.0	1.0	A468003	<1.0	1.0	A468003
Alkalinity (Total as CaCO3)	mg/L	270	1.0	A468003	250	1.0	A468003	170	1.0	A468003
Bicarbonate (HCO3)	mg/L	330	1.0	A468003	300	1.0	A468003	200	1.0	A468003
Carbonate (CO3)	mg/L	<1.0	1.0	A468003	<1.0	1.0	A468003	<1.0	1.0	A468003
Hydroxide (OH)	mg/L	<1.0	1.0	A468003	<1.0	1.0	A468003	<1.0	1.0	A468003
Total Sulphide	mg/L	10	0.18	A466837	0.012	0.0018	A466837	0.023	0.0018	A466837
Dissolved Sulphate (SO4)	mg/L	460	10	A467630	540	10	A467631	390	10	A467631
Nutrients										
Total Ammonia (N)	mg/L	0.024	0.015	A468728	0.058	0.015	A468728	<0.015	0.015	A468728
Dissolved Phosphorus (P)	mg/L							<0.0030	0.0030	A468732
Total Phosphorus (P)	mg/L	0.012	0.0030	A468704	<0.0030	0.0030	A468775	0.0034	0.0030	A468704
Nitrate plus Nitrite (N)	mg/L	<0.020	0.020	A466902	<0.020	0.020	A466902	0.064	0.020	A466902
RDL = Reportable Detection Limit										
N/A = Not Applicable										



RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		AMT086	AMT087			AMT088		
Sampling Date		2022/01/04	2022/01/04			2022/01/04		
COC Number		20220103	20220103			20220103		
	UNITS	2SC-4JAN22-M	3S-4JAN22-M	RDL	QC Batch	LLE-4JAN22-M	RDL	QC Batch
ANIONS								
Nitrite (N)	mg/L	<0.0050	<0.0050	0.0050	A466903	<0.0050	0.0050	A466903
Calculated Parameters								
Filter and HNO ₃ Preservation	N/A	FIELD	FIELD		ONSITE	FIELD		ONSITE
Nitrate (N)	mg/L	0.038	0.034	0.020	A466099	0.093	0.020	A466099
Misc. Inorganics								
Conductivity	uS/cm	1400	1400	2.0	A468004	180	2.0	A468004
Dissolved Organic Carbon (C)	mg/L	0.62	0.86	0.50	A467014	5.2	0.50	A466751
pH	pH	8.17	8.15	N/A	A468001	6.99	N/A	A468001
Acidity (pH 4.5)	mg/L	<1.0	<1.0	1.0	A469423	<1.0	1.0	A469423
Acidity (pH 8.3)	mg/L	2.5	2.5	1.0	A469423	1.4	1.0	A469423
Total Suspended Solids	mg/L	<1.0	<1.0	1.0	A467937	<1.0	1.0	A467937
Anions								
Alkalinity (PP as CaCO ₃)	mg/L	<1.0	<1.0	1.0	A468003	<1.0	1.0	A468003
Alkalinity (Total as CaCO ₃)	mg/L	200	180	1.0	A468003	26	1.0	A468003
Bicarbonate (HCO ₃)	mg/L	240	230	1.0	A468003	31	1.0	A468003
Carbonate (CO ₃)	mg/L	<1.0	<1.0	1.0	A468003	<1.0	1.0	A468003
Hydroxide (OH)	mg/L	<1.0	<1.0	1.0	A468003	<1.0	1.0	A468003
Dissolved Sulphate (SO ₄)	mg/L	660	650	10	A467631	62 (1)	10	A467631
Nutrients								
Total Ammonia (N)	mg/L	<0.015	<0.015	0.015	A468728	<0.015	0.015	A468728
Dissolved Phosphorus (P)	mg/L	<0.0030	<0.0030	0.0030	A468732			
Total Phosphorus (P)	mg/L	<0.0030	<0.0030	0.0030	A468775	0.0035	0.0030	A468775
Nitrate plus Nitrite (N)	mg/L	0.038	0.034	0.020	A466902	0.093	0.020	A466902
RDL = Reportable Detection Limit								
N/A = Not Applicable								
(1) RDL raised due to sample matrix interference.								



CCME DISSOLVED METALS IN WATER (WATER)

Bureau Veritas ID		AMT079	AMT080	AMT082		AMT083		
Sampling Date		2022/01/04	2022/01/04	2022/01/04		2022/01/04		
COC Number		20220103	20220103	20220103		20220103		
	UNITS	WD-4JAN22-P	WD-4JAN22-R	SPD-4JAN22-P	RDL	BCREFF-4JAN22-M	RDL	QC Batch

Calculated Parameters								
Dissolved Hardness (CaCO ₃)	mg/L	367	361	294	0.50	618	0.50	A466340

Elements								
Dissolved Mercury (Hg)	mg/L	<0.0000019	<0.0000019	<0.0000019	0.0000019	<0.000038 (1)	0.000038	A469367

Dissolved Metals by ICPMS								
Dissolved Aluminum (Al)	mg/L	<0.0030	<0.0030	0.0179	0.0030	0.0041	0.0030	A466460
Dissolved Antimony (Sb)	mg/L	<0.00050	<0.00050	<0.00050	0.00050	<0.00050	0.00050	A466460
Dissolved Arsenic (As)	mg/L	0.00122	0.00116	0.00098	0.00010	<0.00010	0.00010	A466460
Dissolved Barium (Ba)	mg/L	0.0176	0.0173	0.0119	0.0010	0.0259	0.0010	A466460
Dissolved Beryllium (Be)	mg/L	<0.00010	<0.00010	<0.00010	0.00010	<0.00010	0.00010	A466460
Dissolved Bismuth (Bi)	mg/L	<0.0010	<0.0010	<0.0010	0.0010	<0.0010	0.0010	A466460
Dissolved Boron (B)	mg/L	0.838	0.847	0.136	0.050	0.571	0.050	A466460
Dissolved Cadmium (Cd)	mg/L	<0.000010	<0.000010	0.000020	0.000010	<0.000010	0.000010	A466460
Dissolved Chromium (Cr)	mg/L	<0.0010	<0.0010	<0.0010	0.0010	<0.0010	0.0010	A466460
Dissolved Cobalt (Co)	mg/L	0.00030	0.00029	0.00108	0.00020	<0.00020	0.00020	A466460
Dissolved Copper (Cu)	mg/L	<0.00020	<0.00020	0.00036	0.00020	<0.00020	0.00020	A466460
Dissolved Iron (Fe)	mg/L	0.0121	0.0134	1.19	0.0050	0.0326	0.0050	A466460
Dissolved Lead (Pb)	mg/L	<0.00020	<0.00020	<0.00020	0.00020	<0.00020	0.00020	A466460
Dissolved Lithium (Li)	mg/L	0.0124	0.0121	0.0026	0.0020	0.0153	0.0020	A466460
Dissolved Manganese (Mn)	mg/L	0.211	0.210	0.386	0.0010	0.247	0.0010	A466460
Dissolved Molybdenum (Mo)	mg/L	<0.0010	<0.0010	<0.0010	0.0010	<0.0010	0.0010	A466460
Dissolved Nickel (Ni)	mg/L	<0.0010	<0.0010	<0.0010	0.0010	<0.0010	0.0010	A466460
Dissolved Selenium (Se)	mg/L	<0.00010	<0.00010	<0.00010	0.00010	0.00940	0.00010	A466460
Dissolved Silicon (Si)	mg/L	3.43	3.37	3.49	0.10	3.64	0.10	A466460
Dissolved Silver (Ag)	mg/L	<0.000020	<0.000020	<0.000020	0.000020	<0.000020	0.000020	A466460
Dissolved Strontium (Sr)	mg/L	1.23	1.18	0.553	0.0010	2.07	0.0010	A466460
Dissolved Thallium (Tl)	mg/L	<0.000010	<0.000010	<0.000010	0.000010	<0.000010	0.000010	A466460
Dissolved Tin (Sn)	mg/L	<0.0050	<0.0050	<0.0050	0.0050	<0.0050	0.0050	A466460
Dissolved Titanium (Ti)	mg/L	<0.0050	<0.0050	<0.0050	0.0050	<0.0050	0.0050	A466460
Dissolved Uranium (U)	mg/L	<0.00010	<0.00010	<0.00010	0.00010	<0.00010	0.00010	A466460
Dissolved Vanadium (V)	mg/L	<0.0050	<0.0050	<0.0050	0.0050	<0.0050	0.0050	A466460
Dissolved Zinc (Zn)	mg/L	<0.0050	<0.0050	<0.0050	0.0050	<0.0050	0.0050	A466460
Dissolved Zirconium (Zr)	mg/L	<0.00010	<0.00010	<0.00010	0.00010	<0.00010	0.00010	A466460

RDL = Reportable Detection Limit

(1) Detection limit raised based on sample volume used and sample matrix



BUREAU
VERITAS

Bureau Veritas Job #: C200857

Report Date: 2022/01/17

Quinsam Coal Corporation

Client Project #: MONTHLY-JAN SURFACE

Sampler Initials: CC

CCME DISSOLVED METALS IN WATER (WATER)

Bureau Veritas ID		AMT079	AMT080	AMT082		AMT083		
Sampling Date		2022/01/04	2022/01/04	2022/01/04		2022/01/04		
COC Number		20220103	20220103	20220103		20220103		
	UNITS	WD-4JAN22-P	WD-4JAN22-R	SPD-4JAN22-P	RDL	BCREFF-4JAN22-M	RDL	QC Batch
Dissolved Calcium (Ca)	mg/L	125	123	96.7	0.050	223	0.050	A466341
Dissolved Magnesium (Mg)	mg/L	13.3	13.1	12.9	0.050	14.5	0.050	A466341
Dissolved Potassium (K)	mg/L	3.73	3.66	0.872	0.050	1.70	0.050	A466341
Dissolved Sodium (Na)	mg/L	281	279	15.3	0.050	102	0.050	A466341
Dissolved Sulphur (S)	mg/L	184	179	84.9	3.0	234	3.0	A466341
RDL = Reportable Detection Limit								



BUREAU
VERITAS

Bureau Veritas Job #: C200857

Report Date: 2022/01/17

Quinsam Coal Corporation

Client Project #: MONTHLY-JAN SURFACE

Sampler Initials: CC

CCME DISSOLVED METALS IN WATER (WATER)

Bureau Veritas ID		AMT084	AMT085	AMT086	AMT087		
Sampling Date		2022/01/04	2022/01/04	2022/01/04	2022/01/04		
COC Number		20220103	20220103	20220103	20220103		
	UNITS	INF-4JAN22-M	2SI-4JAN22-M	2SC-4JAN22-M	3S-4JAN22-M	RDL	QC Batch
Calculated Parameters							
Dissolved Hardness (CaCO ₃)	mg/L	645	427	787	789	0.50	A466340
Elements							
Dissolved Mercury (Hg)	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	0.0000019	A469367
Dissolved Metals by ICPMS							
Dissolved Aluminum (Al)	mg/L	<0.0030	0.0049	<0.0030	<0.0030	0.0030	A466460
Dissolved Antimony (Sb)	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	A466460
Dissolved Arsenic (As)	mg/L	0.00237	0.00018	0.00029	0.00026	0.00010	A466460
Dissolved Barium (Ba)	mg/L	0.0200	0.0203	0.0127	0.0128	0.0010	A466460
Dissolved Beryllium (Be)	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	0.00010	A466460
Dissolved Bismuth (Bi)	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	A466460
Dissolved Boron (B)	mg/L	0.609	0.357	0.289	0.280	0.050	A466460
Dissolved Cadmium (Cd)	mg/L	<0.000010	<0.000010	<0.000010	0.000054	0.000010	A466460
Dissolved Chromium (Cr)	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	A466460
Dissolved Cobalt (Co)	mg/L	0.00072	0.00025	<0.00020	<0.00020	0.00020	A466460
Dissolved Copper (Cu)	mg/L	<0.00020	0.00023	<0.00020	0.00021	0.00020	A466460
Dissolved Iron (Fe)	mg/L	2.56	0.105	<0.0050	<0.0050	0.0050	A466460
Dissolved Lead (Pb)	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	0.00020	A466460
Dissolved Lithium (Li)	mg/L	0.0196	0.0078	0.0076	0.0074	0.0020	A466460
Dissolved Manganese (Mn)	mg/L	0.315	0.0870	0.0036	0.0043	0.0010	A466460
Dissolved Molybdenum (Mo)	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	A466460
Dissolved Nickel (Ni)	mg/L	0.0013	<0.0010	<0.0010	<0.0010	0.0010	A466460
Dissolved Selenium (Se)	mg/L	0.00016	<0.00010	0.00025	0.00024	0.00010	A466460
Dissolved Silicon (Si)	mg/L	3.35	3.86	2.61	2.64	0.10	A466460
Dissolved Silver (Ag)	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	0.000020	A466460
Dissolved Strontium (Sr)	mg/L	2.14	1.25	1.55	1.53	0.0010	A466460
Dissolved Thallium (Tl)	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	0.000010	A466460
Dissolved Tin (Sn)	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	A466460
Dissolved Titanium (Ti)	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	A466460
Dissolved Uranium (U)	mg/L	<0.00010	<0.00010	0.00024	0.00024	0.00010	A466460
Dissolved Vanadium (V)	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	A466460
Dissolved Zinc (Zn)	mg/L	<0.0050	<0.0050	<0.0050	0.0060	0.0050	A466460
Dissolved Zirconium (Zr)	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	0.00010	A466460
Dissolved Calcium (Ca)	mg/L	233	151	264	266	0.050	A466341
RDL = Reportable Detection Limit							



CCME DISSOLVED METALS IN WATER (WATER)

Bureau Veritas ID		AMT084	AMT085	AMT086	AMT087		
Sampling Date		2022/01/04	2022/01/04	2022/01/04	2022/01/04		
COC Number		20220103	20220103	20220103	20220103		
	UNITS	INF-4JAN22-M	2SI-4JAN22-M	2SC-4JAN22-M	3S-4JAN22-M	RDL	QC Batch
Dissolved Magnesium (Mg)	mg/L	15.1	12.1	30.9	30.4	0.050	A466341
Dissolved Potassium (K)	mg/L	1.85	1.04	2.15	2.13	0.050	A466341
Dissolved Sodium (Na)	mg/L	104	62.2	34.2	33.2	0.050	A466341
Dissolved Sulphur (S)	mg/L	209	134	225	223	3.0	A466341
RDL = Reportable Detection Limit							



CCME DISSOLVED METALS IN WATER (WATER)

Bureau Veritas ID		AMT088		
Sampling Date		2022/01/04		
COC Number		20220103		
	UNITS	LLE-4JAN22-M	RDL	QC Batch
Calculated Parameters				
Dissolved Hardness (CaCO ₃)	mg/L	70.4	0.50	A466340
Elements				
Dissolved Mercury (Hg)	mg/L	<0.0000019	0.0000019	A469367
Dissolved Metals by ICPMS				
Dissolved Aluminum (Al)	mg/L	0.0627	0.0030	A466460
Dissolved Antimony (Sb)	mg/L	<0.00050	0.00050	A466460
Dissolved Arsenic (As)	mg/L	0.00084	0.00010	A466460
Dissolved Barium (Ba)	mg/L	0.0073	0.0010	A466460
Dissolved Beryllium (Be)	mg/L	<0.00010	0.00010	A466460
Dissolved Bismuth (Bi)	mg/L	<0.0010	0.0010	A466460
Dissolved Boron (B)	mg/L	<0.050	0.050	A466460
Dissolved Cadmium (Cd)	mg/L	0.000127	0.000010	A468809
Dissolved Chromium (Cr)	mg/L	<0.0010	0.0010	A466460
Dissolved Cobalt (Co)	mg/L	<0.00020	0.00020	A466460
Dissolved Copper (Cu)	mg/L	0.00046	0.00020	A466460
Dissolved Iron (Fe)	mg/L	0.855	0.0050	A466460
Dissolved Lead (Pb)	mg/L	<0.00020	0.00020	A466460
Dissolved Lithium (Li)	mg/L	<0.0020	0.0020	A466460
Dissolved Manganese (Mn)	mg/L	0.0630	0.0010	A466460
Dissolved Molybdenum (Mo)	mg/L	<0.0010	0.0010	A466460
Dissolved Nickel (Ni)	mg/L	<0.0010	0.0010	A466460
Dissolved Selenium (Se)	mg/L	<0.00010	0.00010	A466460
Dissolved Silicon (Si)	mg/L	3.73	0.10	A466460
Dissolved Silver (Ag)	mg/L	<0.000020	0.000020	A466460
Dissolved Strontium (Sr)	mg/L	0.128	0.0010	A466460
Dissolved Thallium (Tl)	mg/L	<0.000010	0.000010	A466460
Dissolved Tin (Sn)	mg/L	<0.0050	0.0050	A466460
Dissolved Titanium (Ti)	mg/L	<0.0050	0.0050	A466460
Dissolved Uranium (U)	mg/L	<0.00010	0.00010	A466460
Dissolved Vanadium (V)	mg/L	<0.0050	0.0050	A466460
Dissolved Zinc (Zn)	mg/L	<0.0050	0.0050	A466460
Dissolved Zirconium (Zr)	mg/L	<0.00010	0.00010	A466460
Dissolved Calcium (Ca)	mg/L	22.6	0.050	A466341
RDL = Reportable Detection Limit				



CCME DISSOLVED METALS IN WATER (WATER)

Bureau Veritas ID		AMT088		
Sampling Date		2022/01/04		
COC Number		20220103		
	UNITS	LLE-4JAN22-M	RDL	QC Batch
Dissolved Magnesium (Mg)	mg/L	3.40	0.050	A466341
Dissolved Potassium (K)	mg/L	0.293	0.050	A466341
Dissolved Sodium (Na)	mg/L	5.68	0.050	A466341
Dissolved Sulphur (S)	mg/L	19.1	3.0	A466341
RDL = Reportable Detection Limit				



BUREAU
VERITAS

Bureau Veritas Job #: C200857

Report Date: 2022/01/17

Quinsam Coal Corporation

Client Project #: MONTHLY-JAN SURFACE

Sampler Initials: CC

CCME TOTAL METALS IN WATER (WATER)

Bureau Veritas ID		AMT083		AMT084	AMT085	AMT086		
Sampling Date		2022/01/04		2022/01/04	2022/01/04	2022/01/04		
COC Number		20220103		20220103	20220103	20220103		
	UNITS	BCREFF-4JAN22-M	RDL	INF-4JAN22-M	2SI-4JAN22-M	2SC-4JAN22-M	RDL	QC Batch

Calculated Parameters								
Total Hardness (CaCO ₃)	mg/L	615	0.50	631	414	791	0.50	A466100
Elements								
Total Mercury (Hg)	mg/L	<0.000038 (1)	0.000038	<0.0000019	<0.0000019	<0.0000019	0.0000019	A469244
Total Metals by ICPMS								
Total Aluminum (Al)	mg/L	0.0078	0.0030	<0.0030	0.0087	<0.0030	0.0030	A467226
Total Antimony (Sb)	mg/L	<0.00050	0.00050	<0.00050	<0.00050	<0.00050	0.00050	A467226
Total Arsenic (As)	mg/L	<0.00010	0.00010	0.00234	0.00019	0.00032	0.00010	A467226
Total Barium (Ba)	mg/L	0.0248	0.0010	0.0193	0.0197	0.0123	0.0010	A467226
Total Beryllium (Be)	mg/L	<0.00010	0.00010	<0.00010	<0.00010	<0.00010	0.00010	A467226
Total Bismuth (Bi)	mg/L	<0.0010	0.0010	<0.0010	<0.0010	<0.0010	0.0010	A467226
Total Boron (B)	mg/L	0.509	0.050	0.545	0.324	0.265	0.050	A467226
Total Cadmium (Cd)	mg/L	<0.000010	0.000010	<0.000010	<0.000010	<0.000010	0.000010	A467226
Total Chromium (Cr)	mg/L	<0.0010	0.0010	<0.0010	<0.0010	<0.0010	0.0010	A467226
Total Cobalt (Co)	mg/L	<0.00020	0.00020	0.00070	0.00025	<0.00020	0.00020	A467226
Total Copper (Cu)	mg/L	<0.00050	0.00050	<0.00050	<0.00050	<0.00050	0.00050	A467226
Total Iron (Fe)	mg/L	0.021	0.010	2.68	0.185	0.036	0.010	A467226
Total Lead (Pb)	mg/L	<0.00020	0.00020	<0.00020	<0.00020	<0.00020	0.00020	A467226
Total Lithium (Li)	mg/L	0.0130	0.0020	0.0160	0.0069	0.0066	0.0020	A467226
Total Manganese (Mn)	mg/L	0.243	0.0010	0.315	0.0853	0.0116	0.0010	A467226
Total Molybdenum (Mo)	mg/L	<0.0010	0.0010	<0.0010	<0.0010	<0.0010	0.0010	A467226
Total Nickel (Ni)	mg/L	<0.0010	0.0010	0.0012	<0.0010	<0.0010	0.0010	A467226
Total Selenium (Se)	mg/L	<0.00010	0.00010	<0.00010	<0.00010	0.00020	0.00010	A467226
Total Silicon (Si)	mg/L	3.43	0.10	3.00	3.65	2.48	0.10	A467226
Total Silver (Ag)	mg/L	<0.000020	0.000020	<0.000020	<0.000020	<0.000020	0.000020	A467226
Total Strontium (Sr)	mg/L	1.95	0.0010	1.98	1.18	1.45	0.0010	A467226
Total Thallium (Tl)	mg/L	<0.000010	0.000010	<0.000010	<0.000010	<0.000010	0.000010	A467226
Total Tin (Sn)	mg/L	<0.0050	0.0050	<0.0050	<0.0050	<0.0050	0.0050	A467226
Total Titanium (Ti)	mg/L	<0.0050	0.0050	<0.0050	<0.0050	<0.0050	0.0050	A467226
Total Uranium (U)	mg/L	<0.00010	0.00010	<0.00010	<0.00010	0.00022	0.00010	A467226
Total Vanadium (V)	mg/L	<0.0050	0.0050	<0.0050	<0.0050	<0.0050	0.0050	A467226
Total Zinc (Zn)	mg/L	<0.0050	0.0050	<0.0050	<0.0050	<0.0050	0.0050	A467226
Total Zirconium (Zr)	mg/L	<0.00010	0.00010	<0.00010	<0.00010	<0.00010	0.00010	A467226

RDL = Reportable Detection Limit

(1) Detection limit raised based on sample volume used and sample matrix



BUREAU
VERITAS

Bureau Veritas Job #: C200857

Report Date: 2022/01/17

Quinsam Coal Corporation

Client Project #: MONTHLY-JAN SURFACE

Sampler Initials: CC

CCME TOTAL METALS IN WATER (WATER)

Bureau Veritas ID		AMT083		AMT084	AMT085	AMT086		
Sampling Date		2022/01/04		2022/01/04	2022/01/04	2022/01/04		
COC Number		20220103		20220103	20220103	20220103		
	UNITS	BCREFF-4JAN22-M	RDL	INF-4JAN22-M	2SI-4JAN22-M	2SC-4JAN22-M	RDL	QC Batch
Total Calcium (Ca)	mg/L	222	0.050	228	146	266	0.050	A466429
Total Magnesium (Mg)	mg/L	14.4	0.050	14.7	11.9	30.9	0.050	A466429
Total Potassium (K)	mg/L	1.67	0.050	1.84	1.02	2.13	0.050	A466429
Total Sodium (Na)	mg/L	103	0.050	104	62.3	35.1	0.050	A466429
Total Sulphur (S)	mg/L	182	3.0	200	130	217	3.0	A466429
RDL = Reportable Detection Limit								



CCME TOTAL METALS IN WATER (WATER)

Bureau Veritas ID		AMT087	AMT088		
Sampling Date		2022/01/04	2022/01/04		
COC Number		20220103	20220103		
	UNITS	3S-4JAN22-M	LLE-4JAN22-M	RDL	QC Batch
Calculated Parameters					
Total Hardness (CaCO ₃)	mg/L	793	66.6	0.50	A466100
Elements					
Total Mercury (Hg)	mg/L	<0.0000019	0.0000023	0.0000019	A469744
Total Metals by ICPMS					
Total Aluminum (Al)	mg/L	0.0044	0.131	0.0030	A467226
Total Antimony (Sb)	mg/L	<0.00050	<0.00050	0.00050	A467226
Total Arsenic (As)	mg/L	0.00029	0.00093	0.00010	A467226
Total Barium (Ba)	mg/L	0.0135	0.0071	0.0010	A467226
Total Beryllium (Be)	mg/L	<0.00010	<0.00010	0.00010	A467226
Total Bismuth (Bi)	mg/L	<0.0010	<0.0010	0.0010	A467226
Total Boron (B)	mg/L	0.262	<0.050	0.050	A467226
Total Cadmium (Cd)	mg/L	0.000070	<0.000010	0.000010	A467226
Total Chromium (Cr)	mg/L	<0.0010	<0.0010	0.0010	A467226
Total Cobalt (Co)	mg/L	<0.00020	<0.00020	0.00020	A467226
Total Copper (Cu)	mg/L	<0.00050	0.00054	0.00050	A467226
Total Iron (Fe)	mg/L	0.032	0.899	0.010	A467226
Total Lead (Pb)	mg/L	<0.00020	<0.00020	0.00020	A467226
Total Lithium (Li)	mg/L	0.0062	<0.0020	0.0020	A467226
Total Manganese (Mn)	mg/L	0.0085	0.0616	0.0010	A467226
Total Molybdenum (Mo)	mg/L	<0.0010	<0.0010	0.0010	A467226
Total Nickel (Ni)	mg/L	<0.0010	<0.0010	0.0010	A467226
Total Selenium (Se)	mg/L	0.00021	<0.00010	0.00010	A467226
Total Silicon (Si)	mg/L	2.40	3.30	0.10	A467226
Total Silver (Ag)	mg/L	<0.000020	<0.000020	0.000020	A467226
Total Strontium (Sr)	mg/L	1.45	0.121	0.0010	A467226
Total Thallium (Tl)	mg/L	<0.000010	<0.000010	0.000010	A467226
Total Tin (Sn)	mg/L	<0.0050	<0.0050	0.0050	A467226
Total Titanium (Ti)	mg/L	<0.0050	<0.0050	0.0050	A467226
Total Uranium (U)	mg/L	0.00022	<0.00010	0.00010	A467226
Total Vanadium (V)	mg/L	<0.0050	<0.0050	0.0050	A467226
Total Zinc (Zn)	mg/L	0.0062	<0.0050	0.0050	A467226
Total Zirconium (Zr)	mg/L	<0.00010	<0.00010	0.00010	A467226
Total Calcium (Ca)	mg/L	266	21.3	0.050	A466429
RDL = Reportable Detection Limit					



CCME TOTAL METALS IN WATER (WATER)

Bureau Veritas ID		AMT087	AMT088		
Sampling Date		2022/01/04	2022/01/04		
COC Number		20220103	20220103		
	UNITS	3S-4JAN22-M	LLE-4JAN22-M	RDL	QC Batch
Total Magnesium (Mg)	mg/L	31.4	3.26	0.050	A466429
Total Potassium (K)	mg/L	2.19	0.282	0.050	A466429
Total Sodium (Na)	mg/L	34.3	5.68	0.050	A466429
Total Sulphur (S)	mg/L	221	18.2	3.0	A466429
RDL = Reportable Detection Limit					



GENERAL COMMENTS

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

Package 1	-5.0°C
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Sample AMT088, Elements by CRC ICPMS (dissolved): Test repeated.

Results relate only to the items tested.

BUREAU
VERITAS

Bureau Veritas Job #: C200857

Report Date: 2022/01/17

QUALITY ASSURANCE REPORT

Quinsam Coal Corporation
Client Project #: MONTHLY-JAN SURFACE
Sampler Initials: CC

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
A466460	Dissolved Aluminum (Al)	2022/01/07	99	80 - 120	105	80 - 120	<0.0030	mg/L	NC	20		
A466460	Dissolved Antimony (Sb)	2022/01/07	101	80 - 120	105	80 - 120	<0.00050	mg/L	NC	20		
A466460	Dissolved Arsenic (As)	2022/01/07	112	80 - 120	106	80 - 120	<0.00010	mg/L	4.7	20		
A466460	Dissolved Barium (Ba)	2022/01/07	100	80 - 120	105	80 - 120	<0.0010	mg/L	1.6	20		
A466460	Dissolved Beryllium (Be)	2022/01/07	94	80 - 120	109	80 - 120	<0.00010	mg/L	NC	20		
A466460	Dissolved Bismuth (Bi)	2022/01/07	92	80 - 120	103	80 - 120	<0.0010	mg/L	NC	20		
A466460	Dissolved Boron (B)	2022/01/07	NC	80 - 120	105	80 - 120	<0.050	mg/L	0.28	20		
A466460	Dissolved Cadmium (Cd)	2022/01/07	94	80 - 120	106	80 - 120	<0.000010	mg/L	NC	20		
A466460	Dissolved Chromium (Cr)	2022/01/07	93	80 - 120	105	80 - 120	<0.0010	mg/L	NC	20		
A466460	Dissolved Cobalt (Co)	2022/01/07	89	80 - 120	105	80 - 120	<0.00020	mg/L	2.2	20		
A466460	Dissolved Copper (Cu)	2022/01/07	81	80 - 120	102	80 - 120	<0.00020	mg/L	NC	20		
A466460	Dissolved Iron (Fe)	2022/01/07	92	80 - 120	107	80 - 120	<0.0050	mg/L	4.9	20		
A466460	Dissolved Lead (Pb)	2022/01/07	99	80 - 120	105	80 - 120	<0.00020	mg/L	NC	20		
A466460	Dissolved Lithium (Li)	2022/01/07	95	80 - 120	103	80 - 120	<0.0020	mg/L	3.4	20		
A466460	Dissolved Manganese (Mn)	2022/01/07	NC	80 - 120	107	80 - 120	<0.0010	mg/L	1.7	20		
A466460	Dissolved Molybdenum (Mo)	2022/01/07	115	80 - 120	107	80 - 120	<0.0010	mg/L	NC	20		
A466460	Dissolved Nickel (Ni)	2022/01/07	85	80 - 120	104	80 - 120	<0.0010	mg/L	NC	20		
A466460	Dissolved Selenium (Se)	2022/01/07	115	80 - 120	104	80 - 120	<0.00010	mg/L	NC	20		
A466460	Dissolved Silicon (Si)	2022/01/07	111	80 - 120	112	80 - 120	<0.10	mg/L	2.2	20		
A466460	Dissolved Silver (Ag)	2022/01/07	88	80 - 120	104	80 - 120	<0.000020	mg/L	NC	20		
A466460	Dissolved Strontium (Sr)	2022/01/07	NC	80 - 120	104	80 - 120	<0.0010	mg/L	4.2	20		
A466460	Dissolved Thallium (Tl)	2022/01/07	97	80 - 120	103	80 - 120	<0.000010	mg/L	NC	20		
A466460	Dissolved Tin (Sn)	2022/01/07	100	80 - 120	106	80 - 120	<0.0050	mg/L	NC	20		
A466460	Dissolved Titanium (Ti)	2022/01/07	109	80 - 120	110	80 - 120	<0.0050	mg/L	NC	20		
A466460	Dissolved Uranium (U)	2022/01/07	110	80 - 120	110	80 - 120	<0.00010	mg/L	NC	20		
A466460	Dissolved Vanadium (V)	2022/01/07	102	80 - 120	107	80 - 120	<0.0050	mg/L	NC	20		
A466460	Dissolved Zinc (Zn)	2022/01/07	87	80 - 120	109	80 - 120	<0.0050	mg/L	NC	20		
A466460	Dissolved Zirconium (Zr)	2022/01/07	116	80 - 120	105	80 - 120	<0.00010	mg/L	NC	20		
A466751	Dissolved Organic Carbon (C)	2022/01/09	129 (1)	80 - 120	119	80 - 120	<0.50	mg/L	11	20		
A466837	Total Sulphide	2022/01/08	99	80 - 120	85	80 - 120	<0.0018	mg/L	15	20		
A466902	Nitrate plus Nitrite (N)	2022/01/07	105	80 - 120	105	80 - 120	<0.020	mg/L	NC	25		
A466903	Nitrite (N)	2022/01/07	104	80 - 120	101	80 - 120	<0.0050	mg/L	NC	20		

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QUALITY ASSURANCE REPORT(CONT'D)

Quinsam Coal Corporation
Client Project #: MONTHLY-JAN SURFACE
Sampler Initials: CC

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
A467014	Dissolved Organic Carbon (C)	2022/01/09	123 (1)	80 - 120	120	80 - 120	<0.50	mg/L	5.4	20		
A467226	Total Aluminum (Al)	2022/01/10	NC	80 - 120	104	80 - 120	<0.0030	mg/L	0.87	20		
A467226	Total Antimony (Sb)	2022/01/10	109	80 - 120	105	80 - 120	<0.00050	mg/L				
A467226	Total Arsenic (As)	2022/01/10	113	80 - 120	104	80 - 120	<0.00010	mg/L	0.17	20		
A467226	Total Barium (Ba)	2022/01/10	108	80 - 120	104	80 - 120	<0.0010	mg/L				
A467226	Total Beryllium (Be)	2022/01/10	95	80 - 120	102	80 - 120	<0.00010	mg/L				
A467226	Total Bismuth (Bi)	2022/01/10	100	80 - 120	101	80 - 120	<0.0010	mg/L				
A467226	Total Boron (B)	2022/01/10	94	80 - 120	105	80 - 120	<0.050	mg/L	NC	20		
A467226	Total Cadmium (Cd)	2022/01/10	104	80 - 120	106	80 - 120	<0.000010	mg/L	4.6	20		
A467226	Total Chromium (Cr)	2022/01/10	97	80 - 120	100	80 - 120	<0.0010	mg/L	0.80	20		
A467226	Total Cobalt (Co)	2022/01/10	100	80 - 120	106	80 - 120	<0.00020	mg/L	1.5	20		
A467226	Total Copper (Cu)	2022/01/10	88	80 - 120	100	80 - 120	<0.00050	mg/L	1.2	20		
A467226	Total Iron (Fe)	2022/01/10	NC	80 - 120	107	80 - 120	<0.010	mg/L	0.74	20		
A467226	Total Lead (Pb)	2022/01/10	108	80 - 120	103	80 - 120	<0.00020	mg/L	2.3	20		
A467226	Total Lithium (Li)	2022/01/10	99	80 - 120	101	80 - 120	<0.0020	mg/L				
A467226	Total Manganese (Mn)	2022/01/10	NC	80 - 120	103	80 - 120	<0.0010	mg/L	0.92	20		
A467226	Total Molybdenum (Mo)	2022/01/10	NC	80 - 120	108	80 - 120	<0.0010	mg/L	0.67	20		
A467226	Total Nickel (Ni)	2022/01/10	91	80 - 120	102	80 - 120	<0.0010	mg/L	3.5	20		
A467226	Total Selenium (Se)	2022/01/10	117	80 - 120	104	80 - 120	<0.00010	mg/L	1.1	20		
A467226	Total Silicon (Si)	2022/01/10	122 (1)	80 - 120	108	80 - 120	<0.10	mg/L				
A467226	Total Silver (Ag)	2022/01/10	100	80 - 120	104	80 - 120	<0.000020	mg/L	NC	20		
A467226	Total Strontium (Sr)	2022/01/10	NC	80 - 120	104	80 - 120	<0.0010	mg/L				
A467226	Total Thallium (Tl)	2022/01/10	106	80 - 120	101	80 - 120	<0.000010	mg/L				
A467226	Total Tin (Sn)	2022/01/10	108	80 - 120	105	80 - 120	<0.0050	mg/L				
A467226	Total Titanium (Ti)	2022/01/10	113	80 - 120	108	80 - 120	<0.0050	mg/L				
A467226	Total Uranium (U)	2022/01/10	114	80 - 120	104	80 - 120	<0.00010	mg/L				
A467226	Total Vanadium (V)	2022/01/10	106	80 - 120	102	80 - 120	<0.0050	mg/L				
A467226	Total Zinc (Zn)	2022/01/10	NC	80 - 120	105	80 - 120	<0.0050	mg/L	1.3	20		
A467226	Total Zirconium (Zr)	2022/01/10	116	80 - 120	104	80 - 120	<0.00010	mg/L				
A467630	Dissolved Sulphate (SO4)	2022/01/10			105	80 - 120	<1.0	mg/L				
A467631	Dissolved Sulphate (SO4)	2022/01/10	107	80 - 120	107	80 - 120	<1.0	mg/L				
A467937	Total Suspended Solids	2022/01/11	105	80 - 120	95	80 - 120	<1.0	mg/L	0	20		

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QUALITY ASSURANCE REPORT(CONT'D)

Quinsam Coal Corporation
Client Project #: MONTHLY-JAN SURFACE
Sampler Initials: CC

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
A468001	pH	2022/01/08			101	97 - 103			0.54	N/A		
A468003	Alkalinity (PP as CaCO ₃)	2022/01/08					<1.0	mg/L	NC	20		
A468003	Alkalinity (Total as CaCO ₃)	2022/01/08	NC	80 - 120	94	80 - 120	<1.0	mg/L	1.4	20		
A468003	Bicarbonate (HCO ₃)	2022/01/08					<1.0	mg/L	1.4	20		
A468003	Carbonate (CO ₃)	2022/01/08					<1.0	mg/L	NC	20		
A468003	Hydroxide (OH)	2022/01/08					<1.0	mg/L	NC	20		
A468004	Conductivity	2022/01/08			99	80 - 120	<2.0	uS/cm	0.56	10		
A468704	Total Phosphorus (P)	2022/01/13	NC	80 - 120	99	80 - 120	<0.0030	mg/L	5.0	20	104	N/A
A468728	Total Ammonia (N)	2022/01/11	189 (1)	80 - 120	102	80 - 120	<0.015	mg/L	4.3	20		
A468732	Dissolved Phosphorus (P)	2022/01/12	96	80 - 120	98	80 - 120	<0.0030	mg/L	NC	20	92	80 - 120
A468775	Total Phosphorus (P)	2022/01/13	NC	80 - 120	94	80 - 120	<0.0030	mg/L	1.8	20	92	N/A
A468809	Dissolved Cadmium (Cd)	2022/01/11			102	80 - 120	<0.000010	mg/L				
A469244	Total Mercury (Hg)	2022/01/12	120	80 - 120	103	80 - 120	<0.0000019	mg/L	NC	20		
A469367	Dissolved Mercury (Hg)	2022/01/12	110	80 - 120	116	80 - 120	<0.0000019	mg/L	NC	20		
A469423	Acidity (pH 4.5)	2022/01/07					<1.0	mg/L				
A469423	Acidity (pH 8.3)	2022/01/07			104	80 - 120	<1.0	mg/L				
A469744	Total Mercury (Hg)	2022/01/13	116	80 - 120	111	80 - 120	<0.0000019	mg/L	15	20		
A472061	Acidity (pH 4.5)	2022/01/14					<1.0	mg/L	NC	20		
A472061	Acidity (pH 8.3)	2022/01/14			106	80 - 120	<1.0	mg/L	7.7	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

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.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

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 (absolute difference <= 2x RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



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Quinsam Coal Corporation

Client Project #: MONTHLY-JAN SURFACE

Sampler Initials: CC

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

David Huang, M.Sc., P.Chem., QP, Scientific Services Manager

Sze Yeung Fock, B.Sc., Scientific Specialist



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Automated Statchk

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



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CHAIN-OF CUSTODY RECORD AND ANALYSIS REQUEST

1 OF 1 1

LAB USE ONLY
MAXIMUM JOB #

COMPANY NAME: #13210 - QCC Care of Bowra Group		COC No: 20220103	
CLIENT PROJECT NAME: Monthly- Jan Surface		TEL: (250)286-3224 ext 225	
E-MAIL: kathleen.russell@quinsam.com		FAX: (250)286-9727	
SAMPLER NAME (PRINT): CC / KR		REPORT CONTACT: Kathleen Russell	LAB CONTACT: Diana Cruz

SAMPLE IDENTIFICATION	MAXXAM LAB #	EMS ID	DATE/TIME SAMPLED	SAMPLE TYPE	# CONTAINERS	pH/Cond	TSS	Sulphate	Alkalinity & Acidity	Total Phosphorus	Diss. Phosphorus	Nitrate and Nitrite	Ammonia (as N)	Total Oil & Grease	Total Metals CCME LL Hg and Cd	Diss. Metals CCME LL Cd & Hg	Dissolved Organic Carbon	Low Level Hg-T	Low Level Hg-D	BOD	Sulphide
	(LAB USE ONLY)	dd/mm/yy	GRAB/COMP																		
	Please use COC for all sample ID and data																				
WD-4Jan22-P		E207409 (MW)	4-Jan-22	GRAB	3	X	X	X	X							X			X		
WD-4Jan22-R		E207409 (MW)	4-Jan-22	GRAB	3	X	X	X	X							X			X		
SPC-4Jan22-M		E217014 (WW)	4-Jan-22	GRAB	1	X	X	X	X												
SPD-4Jan22-P		E218582 (WW)	4-Jan-22	GRAB	3	X	X	X	X							X			X		
BCREFF-4Jan22-M			4-Jan-22	GRAB	8	X	X	X	X	X		X	X		X	X		X	X	X	
INF-4Jan22-M			4-Jan-22	GRAB	8	X	X	X	X	X		X	X		X	X		X	X	X	
2SI-4Jan22-M			4-Jan-22	GRAB	9	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
2SC-4Jan22-M			4-Jan-22	GRAB	8	X	X	X	X	X	X	X	X		X	X	X	X	X		
3S-4Jan22-M		E217015 (WW)	4-Jan-22	GRAB	8	X	X	X	X	X	X	X	X		X	X	X	X	X		
LLE-4Jan22-M		E292130 (WW)	4-Jan-22	GRAB	7	X	X	X	X	X		X	X		X	X	X	X	X		
				Total	58							X	X		X	X		X	X		

TAT (Turnaround Time) LESS THAN 5 DAY TAT MUST HAVE PRIOR APPROVAL	PO NUMBER: B15006.1	SPECIAL DETECTION LIMITS / CONTAMINANT TYPE: EMS upload required.
* Some exceptions apply - please contact laboratory	ACCOUNTING: John McC	SPECIAL REPORTING OR BILLING INSTRUCTIONS: dm@quinsam.com
STANDARD 5 BUSINESS DAYS	RELINQUISH DATE: 5-Jan-22	TIME: 4:00pm
RUSH 3 BUSINESS DAYS	RELINQUISH DATE: 5-Jan-22	TIME:
RUSH 2 BUSINESS DAYS	RELINQUISH DATE: 5-Jan-22	TIME:
URGENT 1 BUSINESS DAY	RELINQUISH DATE: 5-Jan-22	TIME:
OTHER BUSINESS DAYS	RELINQUISH DATE: 5-Jan-22	TIME:

# JARS USED: -5, -5, -5	ARRIVAL TEMPERATURE °C:
RECEIVED BY: <i>AP Roney Lanyon</i>	2022/01/07 10:32
RECEIVED BY:	
RECEIVED BY LABORATORY:	

**CUSTODY
RECORD**



C200857_COC