

**ASSESSMENT STUDY OF
WATER AND WASTEWATER SYSTEMS
AND ASSOCIATED
WATER MANAGEMENT PRACTICES
AT PETERS BAND**

**A
REPORT
TO
INDIAN AND NORTHERN AFFAIRS CANADA
BC REGION**

** NovaTec Consultants Inc.
*Environmental Engineers and Scientists***

Appendix C
Water Testing Results for
Peters Band

Page(s) 005823 to\à 005825

Is(are) under consultation

ENVIRONMENTAL
BACTERIOLOGY

Phone Number :

Printed :2001 NOV 28

Requisition :A1WW046057

Submitter Ref :

HEALTH CANADA (CHILLIWACK) - 995
45860 CHEAM AVE
CHILLIWACK BC V2P 1N6

Specimen Submitter

:995-HEALTH CANADA (CHILLIWACK)*

s.19(1)

Site Information

Code/Name :02R6272 - 02R6272
Site Desc :PETERS F.N. (AERATOR ON), BUD WEBB, HOPE
City/Area : Type :COM.W.S.
Source :Well

Specimen

Treatment:UNTREATED Ph Level: Free Chlorine Level: ppm
Nature :WATER Exams Req :Total Coliform

EHO :D. SWAREN :Fecal Coliform

Collected:2001 NOV 21
Received :2001 NOV 23

RESULTS

Reported on 2001 NOV 28

<u>Test</u>	<u>Result</u>	<u>Units</u>
1. Total Coliform (Membrane Filtration)	L1	TC Count/100ml
2. Fecal Coliform (Membrane Filtration)	L1	FC Count/100ml
L:LESS THAN		

For inquiries from medical personnel regarding laboratory results,
please contact the Central Inquiry Line at 604-660-5100.

Specimen was 48 hours in transit
Coliform test may NOT be valid if specimen was more than 30 hrs in transit

ENVIRONMENTAL
BACTERIOLOGY

Phone Number :

Printed :2001 NOV 27

Requisition :A1WW046065

Submitter Ref :

HEALTH CANADA (CHILLIWACK) - 995
45860 CHEAM AVE
CHILLIWACK BC V2P 1N6

Specimen Submitter

:995-HEALTH CANADA (CHILLIWACK)

Site Information

Code/Name :02R6280 - 02R6280

Site Desc :PETERS F.N., (KITCHEN), HOPE

City/Area : Type :COM.W.S.

Source :Well s.19(1)

Specimen

Treatment:UNTREATED

Ph Level:

Free Chlorine Level: ppm

Nature :WATER

Exams Req :Total Coliform

BHO :D. SWAREN

:Fecal Coliform

Collected:2001 NOV 21

Received :2001 NOV 23

RESULTS

Reported on 2001 NOV 27

<u>Test</u>	<u>Result</u>	<u>Units</u>
1. Total Coliform (Membrane Filtration)	L1	TC Count/100ml
2. Fecal Coliform (Membrane Filtration)	L1	FC Count/100ml
L:LESS THAN		

For inquiries from medical personnel regarding laboratory results,
please contact the Central Inquiry Line at 604-660-5100.

Specimen was 48 hours in transit
Coliform test may NOT be valid if specimen was more than 30 hrs in transit

B.C. Centre for
Disease Control
Society

BCCDC LABORATORY SERVICES
655 12th Avenue West
Vancouver, B.C. V5X 4R4

Fax: (604)660-6073

ENVIRONMENTAL
BACTERIOLOGY

Phone Number :

Printed : 2001 NOV 27

Requisition : A1WW046064

Submitter Ref :

HEALTH CANADA (CHILLIWACK) - 995
45860 CHEAM AVE
CHILLIWACK BC V2P 1N6

Specimen Submitter

: 995-HEALTH CANADA (CHILLIWACK)

Site Information

Code/Name : 02R6279 - 02R6279 s.19(1)
Site Desc : PETERS F.N., (HOSEBIB), HOPE
City/Area : Type : Private Supply
Source : Well

Specimen

Treatment : UNTREATED Ph Level: Free Chlorine Level: ppm
Nature : WATER Exams Req : Total Coliform
EHO : D. SWAREN : Fecal Coliform

Collected: 2001 NOV 21

Received : 2001 NOV 23

RESULTS

Reported on 2001 NOV 27

<u>Test</u>	<u>Result</u>	<u>Units</u>
1. Total Coliform (Membrane Filtration)	L1	TC Count/100ml
2. Fecal Coliform (Membrane Filtration)	L1	FC Count/100ml
L: LESS THAN		

For inquiries from medical personnel regarding laboratory results,
please contact the Central Inquiry Line at 604-660-5100.

Specimen was 48 hours in transit
Coliform test may NOT be valid if specimen was more than 30 hrs in transit

BCCDC LABORATORY SERVICES

The Province's centre of expertise in communicable disease control and provider of specialty health support services.

MEDIBET

005828

54

B.C. Centre for
Disease Control
Society

BCCDC LABORATORY SERVICES
655 12th Avenue West
Vancouver, B.C. V5X 4R4

Fax: (604)660-6073

ENVIRONMENTAL
BACTERIOLOGY

Phone Number :

Printed :2001 NOV 27

Requisition :A1WW046063

Submitter Ref :

HEALTH CANADA (CHILLIWACK) - 995
45860 CHEAM AVE
CHILLIWACK BC V2P 1N6

Specimen Submitter

:995-HEALTH CANADA (CHILLIWACK)

Site Information

Code/Name :02R6278 - 02R6278
Site Desc :PETERS F.N., BAND OFFICE, 16870 PETERS RD, HOPE
City/Area : Type :COM.W.S.
Source :Well

Specimen

Treatment:UNTREATED Ph Level: Free Chlorine Level: ppm
Nature :WATER Exams Req :Total Coliform

EHO :D. SWAREN :Fecal Coliform

Collected:2001 NOV 21

Received :2001 NOV 23

RESULTS

Reported on 2001 NOV 27

<u>Test</u>	<u>Result</u>	<u>Units</u>
1. Total Coliform (Membrane Filtration)	L1	TC Count/100ml
2. Fecal Coliform (Membrane Filtration)	L1	FC Count/100ml
L:LESS THAN		

For inquiries from medical personnel regarding laboratory results,
please contact the Central Inquiry Line at 604-660-5100.

Specimen was 48 hours in transit

Coliform test may NOT be valid if specimen was more than 30 hrs in transit

BCCDC LABORATORY SERVICES

The Province's centre of expertise in communicable disease control and provider of specialty health support services.

005829

MEDNET

TS

ENVIRONMENTAL
BACTERIOLOGY

Phone Number :

Printed : 2001 NOV 27

Requisition : A1WW046062

Submitter Ref :

HEALTH CANADA (CHILLIWACK) - 995
45860 CHEAM AVE
CHILLIWACK BC V2P 1N6

Specimen Submitter

: 995-HEALTH CANADA (CHILLIWACK)

s.19(1)

Site Information

Code/Name : 02R6277 - 02R6277

Site Desc : PETERS F.N., (KITCHEN), HOPE

City/Area : Type : Private Supply

Source : Well

Specimen

Treatment: UNTREATED

Ph Level:

Free Chlorine Level: ppm

Nature : WATER

Exams Req : Total Coliform

EHO : D. SWAREN

: Fecal Coliform

Collected: 2001 NOV 21

Received : 2001 NOV 23

RESULTS

Reported on 2001 NOV 27

<u>Test</u>	<u>Result</u>	<u>Units</u>
1. Total Coliform (Membrane Filtration)	L1	TC Count/100ml
2. Fecal Coliform (Membrane Filtration)	L1	FC Count/100ml
L: LESS THAN		

For inquiries from medical personnel regarding laboratory results,
please contact the Central Inquiry Line at 604-660-5100.

Specimen was 48 hours in transit
Coliform test may NOT be valid if specimen was more than 30 hrs in transit

B.C. Centre for
Disease Control
Society

BCCDC LABORATORY SERVICES
655 12th Avenue West
Vancouver, B.C. V5Z 4R4

Fax: (604)660-6073

ENVIRONMENTAL
BACTERIOLOGY

Phone Number :

Printed : 2001 NOV 27

Requisition : A1WW046061

Submitter Ref :

HEALTH CANADA (CHILLIWACK) - 995
45860 CHEAM AVE
CHILLIWACK BC V2P 1N6

Specimen Submitter

: 995-HEALTH CANADA (CHILLIWACK) *

s.19(1)

Site Information

Code/Name : 02R6276 - 02R6276

Site Desc : PETERS F.N., (KITCHEN), HOPE

City/Area : Type : COM.W.S.

Source : Well

Specimen

Treatment: UNTREATED

Nature : WATER

Ph Level:

Exams Req : Total Coliform

Free Chlorine Level: ppm

BHO : D. SWAREN

: Fecal Coliform

Collected: 2001 NOV 21

Received : 2001 NOV 23

RESULTS

Reported on 2001 NOV 27

<u>Test</u>	<u>Result</u>	<u>Units</u>
1. Total Coliform (Membrane Filtration)	L1	TC Count/100ml
2. Fecal Coliform (Membrane Filtration)	L1	FC Count/100ml
L: LESS THAN		

For inquiries from medical personnel regarding laboratory results,
please contact the Central Inquiry Line at 604-660-5100.

Specimen was 48 hours in transit
Coliform test may NOT be valid if specimen was more than 30 hrs in transit

BCCDC LABORATORY SERVICES

The Province's centre of expertise in communicable disease control and provider of specialty health support services.

MEDINBT

005831

ENVIRONMENTAL
BACTERIOLOGY

Phone Number :

Printed : 2001 NOV 27

Requisition : A1WW046059

Submitter Ref :

HEALTH CANADA (CHILLIWACK) - 995
45860 CHEAM AVE
CHILLIWACK BC V2P 1N6

Specimen Submitter

: 995-HEALTH CANADA (CHILLIWACK) *

Site Information

Code/Name : 02R6274 - 02R6274 s.19(1)
Site Desc : PETERS F.N., (HOSEBIB), HOPE
City/Area : Type : Private Supply
Source : Well

Specimen

Treatment: UNTREATED Ph Level: Free Chlorine Level: ppm
Nature : WATER Exams Req : Total Coliform

RHO : D. SWAREN : Fecal Coliform

Collected: 2001 NOV 21

Received: 2001 NOV 23

RESULTS

Reported on 2001 NOV 27

<u>Test</u>	<u>Result</u>	<u>Units</u>
1. Total Coliform (Membrane Filtration)	L1	TC Count/100ml
2. Fecal Coliform (Membrane Filtration)	L1	FC Count/100ml
L: LESS THAN		

For inquiries from medical personnel regarding laboratory results,
please contact the Central Inquiry Line at 604-660-5100.

Specimen was 48 hours in transit
Coliform test may NOT be valid if specimen was more than 30 hrs in transit

ENVIRONMENTAL
BACTERIOLOGY

Phone Number :

Printed : 2001 NOV 27

Requisition : AIWW046058

Submitter Ref :

HEALTH CANADA (CHILLIWACK) - 995
45860 CHEAM AVE
CHILLIWACK BC V2P 1N6

Specimen Submitter

: 995-HEALTH CANADA (CHILLIWACK) *

Site Information

Code/Name : 02R6273 - 02R6273

s.19(1)

Site Desc : PETERS F.N. (HOSEBIB), [REDACTED], HOPE

City/Area : Type : Private Supply

Source : Well

Specimen

Treatment: UNTREATED

Ph Level:

Free Chlorine Level: ppm

Nature : WATER

Exams Req : Total Coliform

AHO : D. SWAREN

: Fecal Coliform

Collected: 2001 NOV 21

Received : 2001 NOV 23

RESULTS

Reported on 2001 NOV 27

<u>Test</u>	<u>Result</u>	<u>Units</u>
1. Total Coliform (Membrane Filtration)	L1	TC Count/100ml
2. Fecal Coliform (Membrane Filtration)	L1	FC Count/100ml
L: LESS THAN		

For inquiries from medical personnel regarding laboratory results,
please contact the Central Inquiry Line at 604-660-5100.

Specimen was 48 hours in transit
Coliform test may NOT be valid if specimen was more than 30 hrs in transit

B.C. Centre for
Disease Control
Society

BCCDC LABORATORY SERVICES
655 12th Avenue West
Vancouver, B.C. V5Z 4R4

Fax: (604)660-6073

ENVIRONMENTAL
BACTERIOLOGY

Phone Number :

Printed : 2001 NOV 28

Requisition : A1WW046060

Submitter Ref :

HEALTH CANADA (CHILLIWACK) - 995
45860 CHEAM AVE
CHILLIWACK BC V2P 1N6

Specimen Submitter

: 995-HEALTH CANADA (CHILLIWACK) *

Site Information

Code/Name : 02R6275 - 02R6275 s.19(1)
Site Desc : PETERS F.N., (HOSEBIB), HOPE
City/Area : Type : Private Supply
Source : Well

Specimen

Treatment : UNTREATED Ph Level: Free Chlorine Level: ppm
Nature : WATER Exams Req : Total Coliform

PHO : D. SWAREN : Fecal Coliform

Collected: 2001 NOV 21

Received: 2001 NOV 23

RESULTS

Reported on 2001 NOV 28

<u>Test</u>	<u>Result</u>	<u>Units</u>
1. Total Coliform (Membrane Filtration)	1	TC Count/100ml
2. Fecal Coliform (Membrane Filtration)	L1	FC Count/100ml
L: LESS THAN		

For inquiries from medical personnel regarding laboratory results,
please contact the Central Inquiry Line at 604-660-5100.

Specimen was 48 hours in transit
Coliform test may NOT be valid if specimen was more than 30 hrs in transit

BCCDC LABORATORY SERVICES

The Province's centre of expertise in communicable disease control and provider of specialty health support services.

MEDINET

005834

87

Page(s) 005835 to\à 005840

Is(are) under consultation



ANALYTICAL SERVICES

23-Mar-01
Page 3 of 8

ANALYTICAL REPORT
Form 08058176

Client : HEALTH CANADA
Project : PETERS FN
Sampling site :
Submitted by : X STREET

s.19(1)

Policy ID : 11014620
Client ID :

Spaccode	Parameter	Unit	MDL	CDWG	
SULFATE 11211403	Sulfate	mg/L	1.0	< 500	9.5
METALS TOTAL					
Al-T0031	Aluminum	mg/L	0.02	—	< 0.02
As-TM531	Arsenic	mg/L	0.001	0.025	0.016
Ba-T0031	Barium	mg/L	0.001	1.0	0.023
B-T0031	Boron	mg/L	0.008	5.0	0.009
Cd-TM331	Cadmium	mg/L	0.0001	0.005	< 0.0001
Ca-T0031	Calcium	mg/L	0.05	—	27.9
Cr-T0031	Chromium	mg/L	0.002	0.05	< 0.002
Cu-T0031	Copper	mg/L	0.001	1.0	< 0.001
Fe-T0031	Iron	mg/L	0.005	0.3	0.056
Pb-TM531	Lead	mg/L	0.001	0.01	0.001
Mg-T0031	Magnesium	mg/L	0.05	—	4.90
Mn-T0031	Manganese	mg/L	0.001	0.05	0.079 ✓
Hg-T0310	Mercury	mg/L	0.00005	0.001	< 0.00005
K-T0031	Potassium	mg/L	0.4	—	0.7
Se-TM331	Selenium	mg/L	0.001	0.01	0.004
Na-T0031	Sodium	mg/L	0.010	200	2.02
U-TLLMS	Uranium	mg/L	0.00001	0.1	0.00047
Zn-T0031	Zinc	mg/L	0.002	5.0	0.011

Matrix : Water
Sampled on: 01/03/13 16:00



RESULTS OF ANALYSIS - Water

File No. L5038

Sample ID	s.19(1)				
Sample Date	00 02 25	00 02 25	00 02 25	00 02 25	00 02 25
Sample Time	10:30	10:30	10:30	10:30	10:30
Physical Tests					
Colour (CU)	<5	<5	<5	<5	-
Conductivity (umhos/cm)	117	186	220	184	-
Total Dissolved Solids	70	98	131	94	-
Hardness CaCO3	45.2	89.9	107	90.3	-
pH	7.75	7.88	7.66	7.74	-
Turbidity (NTU)	0.6	0.6	0.3	0.2	-
Dissolved Anions					
Alkalinity-Total CaCO3	32	87	108	86	-
Chloride Cl	1.1	2.0	2.2	1.0	-
Fluoride F	0.11	<0.02	0.02	0.03	-
Sulphate SO4	19	8	8	7	-
Nutrients					
Nitrate Nitrogen N	0.3	0.3	0.4	0.3	-
Nitrite Nitrogen N	<0.1	<0.1	<0.1	<0.1	-
Total Metals					
Aluminum T-Al	0.013	<0.005	0.019	<0.005	0.173
Arsenic T-As	0.0013	0.0016	0.0005	0.0019	0.0023
Barium T-Ba	<0.001	0.025	0.030	0.025	0.027
Boron T-B	<0.05	<0.05	<0.05	<0.05	<0.05
Cadmium T-Cd	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Calcium T-Ca	16.4	28.7	35.1	28.7	39.0
Chromium T-Cr	<0.001	<0.001	0.001	<0.001	0.001
Copper T-Cu	0.014	0.009	0.005	0.013	0.002
Iron T-Fe	0.05	0.04	0.05	<0.03	0.15
Lead T-Pb	<0.001	<0.001	<0.001	<0.001	<0.001
Magnesium T-Mg	1.01	4.43	4.78	4.52	4.42
Manganese T-Mn	<0.001	<0.001	0.001	<0.001	0.011
Mercury T-Hg	<0.00005	<0.00005	<0.00005	<0.00005	0.00007
Potassium T-K	0.99	1.25	1.06	1.32	1.57
Selenium T-Se	<0.001	<0.001	<0.001	<0.001	<0.001
Sodium T-Na	2.78	1.99	1.97	1.88	3.12
Uranium T-U	0.00012	0.00006	0.00004	0.00008	0.00013
Zinc T-Zn	0.085	0.149	<0.005	0.010	0.067

Remarks regarding the analyses appear at the beginning of this report. Results are expressed as milligrams per litre except for pH, Colour (CU), Conductivity (umhos/cm), and Turbidity (NTU).
 < = Less than the detection limit indicated.



RESULTS OF ANALYSIS - Water

File No. L5038

Sample ID	s.19(1)				
Sample Date	00 02 25	00 02 25	00 02 25	00 02 25	00 02 25
Sample Time	10:30	10:30	10:30	10:30	10:30

Physical Tests

Colour	(CU)	<5	<5	<5	<5	<5
Conductivity	(umhos/cm)	165	184	200	94	183
Total Dissolved Solids		94	103	100	68	102
Hardness	CaCO3	76.9	88.9	95.4	30.8	84.5
pH		8.04	7.97	7.99	6.65	7.66
Turbidity	(NTU)	0.1	0.2	0.3	0.3	0.2

Dissolved Anions

Alkalinity-Total		CaCO3	74	87	92	21	85
Chloride	Cl		1.9	2.0	1.4	3.5	1.3
Fluoride	F		0.05	0.07	<0.02	<0.02	0.03
Sulphate	SO4		8	9	8	11	8

Nutrients

Nitrate Nitrogen	N	0.1	0.2	0.3	0.8	0.3
Nitrite Nitrogen	N	<0.1	<0.1	<0.1	<0.1	<0.1

Total Metals

Aluminum	T-Al	<0.005	<0.005	0.013	<0.005	<0.005
Arsenic	T-As	0.0035	0.0018	0.0008	0.0001	0.0010
Barium	T-Ba	0.021	0.023	0.026	0.011	0.023
Boron	T-B	<0.05	<0.05	<0.05	<0.05	<0.05
Cadmium	T-Cd	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Calcium	T-Ca	24.2	28.8	32.1	9.80	26.9
Chromium	T-Cr	<0.001	<0.001	<0.001	<0.001	<0.001
Copper	T-Cu	0.002	0.015	0.005	0.064	0.035
Iron	T-Fe	<0.03	<0.03	0.03	0.03	0.03
Lead	T-Pb	<0.001	<0.001	<0.001	0.001	<0.001
Magnesium	T-Mg	4.00	4.15	3.73	1.54	4.19
Manganese	T-Mn	<0.001	<0.001	<0.001	0.002	<0.001
Mercury	T-Hg	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Potassium	T-K	1.34	1.29	1.01	1.84	1.13
Selenium	T-Se	<0.001	<0.001	<0.001	<0.001	<0.001
Sodium	T-Na	1.80	2.01	1.85	3.78	2.09
Uranium	T-U	0.00011	0.00007	0.00006	<0.00001	0.00005
Zinc	T-Zn	0.015	0.056	0.008	0.008	0.113

Remarks regarding the analyses appear at the beginning of this report.
 Results are expressed as milligrams per litre except for pH, Colour (CU),
 Conductivity (umhos/cm), and Turbidity (NTU).
 < = Less than the detection limit indicated.



Appendix 1 - QUALITY CONTROL - Replicates

File No. L5038

Water

s.19(1)

00 02 25 QC #
10:30 189977

Physical Tests

Colour	(CU)	<5	<5
Conductivity	(umhos/cm)	184	183
Hardness	CaCO3	90.3	89.3
pH		7.74	7.73
Turbidity	(NTU)	0.2	0.2

Dissolved Anions

Alkalinity-Total		CaCO3	86	90
Chloride	Cl		1.0	1.0
Fluoride	F		0.03	0.02
Sulphate	SO4		7	8

Nutrients

Nitrate Nitrogen		N	0.3	0.3
Nitrite Nitrogen		N	<0.1	<0.1

Total Metals

Aluminum	T-Al	<0.005	<0.005
Arsenic	T-As	0.0019	0.0018
Barium	T-Ba	0.025	0.025
Boron	T-B	<0.05	<0.05
Cadmium	T-Cd	<0.0002	<0.0002
Calcium	T-Ca	28.7	28.5
Chromium	T-Cr	<0.001	<0.001
Copper	T-Cu	0.013	0.013
Iron	T-Fe	<0.03	<0.03
Lead	T-Pb	<0.001	<0.001
Magnesium	T-Mg	4.52	4.37
Manganese	T-Mn	<0.001	<0.001
Potassium	T-K	1.32	1.30
Selenium	T-Se	<0.001	<0.001
Sodium	T-Na	1.86	1.84
Uranium	T-U	0.00008	0.00008
Zinc	T-Zn	0.010	0.010

Remarks regarding the analyses appear at the beginning of this report.
 Results are expressed as milligrams per litre except for pH, Colour (CU),
 Conductivity (umhos/cm), and Turbidity (NTU).
 < = Less than the detection limit indicated.

Page(s) 005845 to\à 005847

Is(are) under consultation