Alberni-Clayoquot Regional District

BAMFIELD WATER COMMITTEE MEETING
MONDAY, JANUARY 18, 2016, 5:00 PM

Bamfield Volunteer Fire Department Hall, 352 Pachena Road, Bamfield, BC

AGENDA

PAGE #

1. CALL TO ORDER

Recognition of Traditional Territories.

2. APPROVAL OF AGENDA

(motion to approve, including late items required 2/3 majority vote)

3. REPORTS

a.	Financial Report - December 2015	
b.	GILT Breakdown - Federal Buildings	
c.	Update to Underwater Inspection - J. Mass (Verbal)	**2**
d.	Treatment Plant - Costing	**3**
e.	Future Water Tolls (Discussion)	
f.	Huu-ay-aht First Nations Interest in Water Treatment Plant Progress (Discussion)	**4**
g.	Turbidity Meter Cost Estimates	
h.	South Bamfield Road Subdivision - Status & Requirement to Proceed M. Irg (Verbal)	**5-21**
i.	2016 Budget - Capital/Operations	
j.	Watershed Update - Island Timberlands Meeting - A. McGifford (Verbal)	
k.	Water Contractor Renewal of Contract (Discussion)	**22-23**

THAT the Bamfield Water Advisory Committee receives Reports a-k.

4. LATE BUSINESS

(requires 2/3 majority vote)

5. ADJOURN

ALBERNI-CLAYOQUOT REGIONAL DISTRICT

Bamfield Water System

2015 Budget & YTD as of January 12, 2016

Revenue

	Budget 2015	YTD 2015
Grants in Lieu of Taxes	$ 500	$ -
Overdue interest	$ -	$ 537
Discounts taken	$ -	$ 70
Water connection fees	$ -	$ 50
Prior years surplus	$ 22,393	$ 22,393
Parcel Taxes	$ 55,549	$ 56,262
Conditional Federal transfer - Gas Tax	$ 426,672	$ -
Interest on Capital Reserve	$ -	$ 1,781
Sales of service	$ 110,000	$ 111,658
	$ 615,114	$ 192,750

Expenses

Operating Costs	**Budget 2015**	**YTD 2015**
2015 Capital contribution	$ -	57,330.11
ACRD Administration	$ 14,000	$ 14,000
ACRD Salaries	$ 23,000	$ 22,950
Engineering	$ 5,000	$ 2,367
Hydro	$ 4,000	$ 3,194
Insurance	$ 6,400	$ 3,178
Internet/computer	$ 150	$ 1,826
License & permits	$ 450	$ 369
Maintenance contractor	$ 39,000	$ 36,275
Office supplies	$ 400	$ 169
Propane	$ 1,000	$ 1,111
Propane tank rental	$ 300	$ 6,093
Repairs & maintenance	$ 10,000	$ 3,021
SCADA	$ 4,000	$ 1,475
Supplies	$ 25,000	$ 24,464
Telephone	$ 1,000	$ 943
Training	$ 500	$ 150
Travel	$ 700	$ 535
New Connection		$ 2,172
Water monitoring	$ 6,000	$ 5,230
Total Operating Costs	**$ 140,900**	**$ 186,852**

Capital Costs

Beginning Balance	215,980	215,980
Interest	2,200	1,781
Contributon from 2016 Parcel Tax	55,549	56,262
Gas Tax Contribution	426,672	-
Gas Tax expenditures	- 426,672	-
Misc work	- 40,000	
Water treatment pilot	-	5,541
Pumphouse upgrades	-	6,956
Reservoir Cleaning	-	5,886
Tower Road upgrade	-	1,481
Total Capital Costs	**233,729**	**254,159**

Federal Grant in Lieu of Taxes

	Amount per Area
Area A	5,431.14
Area C	4,571.20
Area D	1,373.36
Bam Fire/Parks	2,145.54
SL Fire/Parks	1,974.32
SL Multiplex	54.01
BWS	929.89
	16,479.46

	Area A Req	Area A %	Area A Fed GILT	Area C Req	Area C %	Area C Fed GILT	Area D Req	Area D %	Area D Fed GILT	Total Fed GILT
E911	9,766.00	5.08%	276.13	11,887.00	5.63%	257.20	42,485.00	6.54%	89.86	623.19
General	31,607.00	16.45%	893.68	38,421.00	18.19%	831.33	137,299.00	21.14%	290.39	2,015.41
Reg Parks	815.00	0.42%	23.04	986.00	0.47%	21.33	3,522.00	0.54%	7.45	51.83
Reg Plan	4,247.00	2.21%	120.08	5,166.00	2.45%	111.78	18,463.00	2.84%	39.05	270.91
Building	13,379.00	6.97%	378.29	16,316.00	7.72%	353.04	58,316.00	8.98%	123.34	854.67
EA Admin	4,808.00	2.50%	135.95	5,384.00	2.55%	116.50	20,862.00	3.21%	44.12	296.57
Rural Plan	25,138.00	13.09%	710.77	30,580.00	14.47%	661.67	109,276.00	16.83%	231.12	1,603.57
VIRL	40,218.00	20.94%	1,137.16	43,051.00	20.38%	931.52	167,717.00	25.83%	354.73	2,423.40
AV Emerg	-	0.00%	-	-	0.00%	-	25,980.00	4.00%	54.95	54.95
AVLF	60,000.00	31.24%	1,696.49	-	0.00%	-	-	0.00%	-	1,696.49
AVRA	-	0.00%	-	-	0.00%	-	10,919.00	1.68%	23.09	23.09
Custom Trans	-	0.00%	-	-	0.00%	-	48,594.00	7.48%	102.78	102.78
LBA		0.00%	-	39,701.00	18.79%	859.03	-	0.00%	-	859.03
WC Emerg	2,106.00	1.10%	59.55	2,198.00	1.04%	47.56	-	0.00%	-	107.11
WCLF	-	0.00%	-	17,573.00	8.32%	380.24	-	0.00%	-	380.24
SL Animal	-	0.00%	-	-	0.00%	-	1,251.00	0.19%	2.65	2.65
SL Noise		0.00%	-	-	0.00%	-	4,649.00	0.72%	9.83	9.83
	192,084.00	100.00%	5,431.14	211,263.00	100.00%	4,571.20	649,333.00	100.00%	1,373.36	11,375.70

	Area A Req	Area A %	Area A Fed GILT	Area C Req	Area C %	Area C Fed GILT	Area D Req	Area D %	Area D Fed GILT	Total Fed GILT
Bam Parks	9,448.00	9.26%	198.77	-	-	-	-	0.00%	-	198.77
BVFD	92,535.00	90.74%	1,946.77	-	-	-	-	0.00%	-	1,946.77
SL Parks	-	0.00%	-	-	-	-	91,190.00	25.19%	497.35	497.35
SLVFD	-	0.00%	-	-	-	-	270,803.00	74.81%	1,476.97	1,476.97
	101,983.00	100.00%	2,145.54	0.00	0.00%	-	361,993.00	100.00%	1,974.32	4,119.86

SL Multiplex	54.01
BWS	929.89
	16,479.46

Bamfield Water system - Filtration Plant costs & Long term impacts
Initial upfront costs of a plant - PRELIMINARY O&M COST ESTIMATE - CLASS C (+/- 30%)

$	1,534,000.00	**Capital Cost**
$	32,300.00	**Annual operating cost**
$	23,600.00	**Capital replacement contribution for plant**
$	232.00	**Parcels for tax**

	No Grant	Use Gas Tax		Build Canada 2/3 grant
Grant funds	$ -	$ 426,672	*	$ 1,022,667
Cost to BWS	$ 1,534,000	$ 1,107,328		$ 511,333
	30 years, @ 3.5%	30 years, @ 3.5%		30 years, @ 3.5%
	26,845.00	19,378.24		8,948.33
	56,560.62	40,828.66		27,029.63
	83,405.62	60,206.90		35,977.96

**** Current Gas Tax Allocation - additional request will be considered from ACRD EA directors***

Operational Costs

Current operational costs	135,000.00	135,000.00		135,000.00
Additional operational costs	32,300.00	32,300.00		32,300.00
Current average water fee revenue	360.00	360.00		360.00
Increase required	161.50	161.50		161.50
Revenue per quarter required	130.38	130.38		130.38
Capital Costs				
Current Capital contribution	55,216.00	55,216.00		55,216.00 **
DAF plant capital contribution	23,600.00	23,600.00		23,600.00
Annual MFA payment	83,405.62	60,206.90		35,977.96
Current Parcel tax	238	238		238
Required parcel tax for MFA and replacement	699	599		495

***** If Build Canada funding is secured Gas tax will be reallocated to other capital needs***

If we factor a 2% increase per year for supplies - status quo

	1 year	5 year	10 year
Annual Water Tools	367.20	397.47	438.84
Capital Contribution	242.76	262.77	290.12
Cost per quarter	91.80	99.37	109.71

If we factor a 2% increase per year for supplies - No grant			
Annual Water Tools	531.93	575.78	635.71
Capital Contribution	713.22	772.01	852.36
Cost per quater with treatment plant	132.98	143.94	158.93

If we factor a 2% increase per year for supplies - Gas Tax used			
Capital Contribution	611.22	661.61	730.47

If we factor a 2% increase per year for supplies - Build Canada grant			
Capital Contribution	504.70	546.30	603.16

DELPRO AUTOMATION INC.

213 - 669 Ridley Place Delta, British Columbia V3M 6Y9
www.delpro.net T 604.517.5599 F 604.517.5598

QUOTATION

REF No. DVDQ6738

To: **Alberni-Clayoquot Regional District**
Dan Fredlund
3008 5th Ave
Port Alberni, BC V9Y 2E3

Phone: (250)723-9291
Email: daniel.fredlund@acrd.bc.ca

Date: Dec 22, 2015

Account Manager: Jamie Perkins

Prepared By: Jamie Perkins
jamiep@delpro.net

Expiration	Payment Terms	FCA	Delivery
Jan 21, 2016	NET 30 days	Burlington, ON	4-6 weeks

Line	Qty	Description	Unit Price	Ext. Price
1	1	**ABB** **4690 Series Turbidity Analyzer** **PN: 469011112211STD** Analyzer Type - Wall Mount (Gland Fittings) Voltage - 115 V AC Communications - Standard (1 Analogue Output) Sensor Type - Flow through system: ISO 7027 Compliant Sensor Range - 0 to 40 NTU with auto-clean Dry Secondary Standard - Low Range (<5 NTU) Sensor Cable Length - 1m	**$3,873.00**	**$3,873.00**

Total **$3,873.00**

Taxes Extra

DELIVERIES FOR THE ABOVE ITEMS ARE BASED ON THE CURRENT AVAILABILITY AND ARE SUBJECT TO PRIOR SALE. PRICES BASED UPON TOTAL PURCHASE

4690 Series
Turbidity systems

Accurate, reliable turbidity measurement

Flow-through turbidity design
— Fast response to process turbidity changes due to minimal sample residence time

Automatic sensor cleaning
— Reduces maintenance requirements
— Optimizes performance sensitivity

Secondary standards for calibration verification
— Accurate, repeatable, simple, safe
— Realize significant cost savings by reducing the use of primary standards

Reliable and accurate measurement
— Ultralow back scatter for accurate measurement of low turbidity values
— Automatic bubble rejection to compensate for erroneous readings due to degassing

4690 Series
Turbidity systems

ABB's 4690 range of turbidity systems

The measurement of turbidity is a critical measurement in drinking water as it is used to indicate water quality and filtration effectiveness (for example, whether disease-causing organisms are present).

ABB's 4690 Range of turbidity systems have been designed specifically for the measurement of turbidity throughout the potable water treatment process.

Whichever of the two measurement ranges you choose, low range (0 to 40 NTU) or higher range (0 to 400 NTU), you can benefit from reliable, accurate turbidity measurement with automatic optical cleaning and dry standard calibration verification.

Applications

Typical applications for the 4690 range of flow-through turbidity systems in potable water treatment include:

— **Raw water / source monitoring**
Provides an indication of the solids loading entering the treatment plant to enable adjustment of the coagulant dose.

— **Monitoring clarified water**
Clarifier supernatant turbidity measurement monitors clarifier efficiency to provide early warning of floc blanket break-up or incorrect coagulant dosing.

— **Filter backwashing control**
Monitors the filter backwash curve to minimize clean water usage.

— **Monitoring of filtered water**
Ensures correct operation of the filters and guards against turbidity breakthrough.

— **Monitoring of final drinking water quality**
Provides a final quality check after disinfection before distribution.

For higher turbidity applications or for turbidity measurement in open channels and tanks please refer to ABB's 4670 range of turbidity systems (data sheet DS/4670–EN).

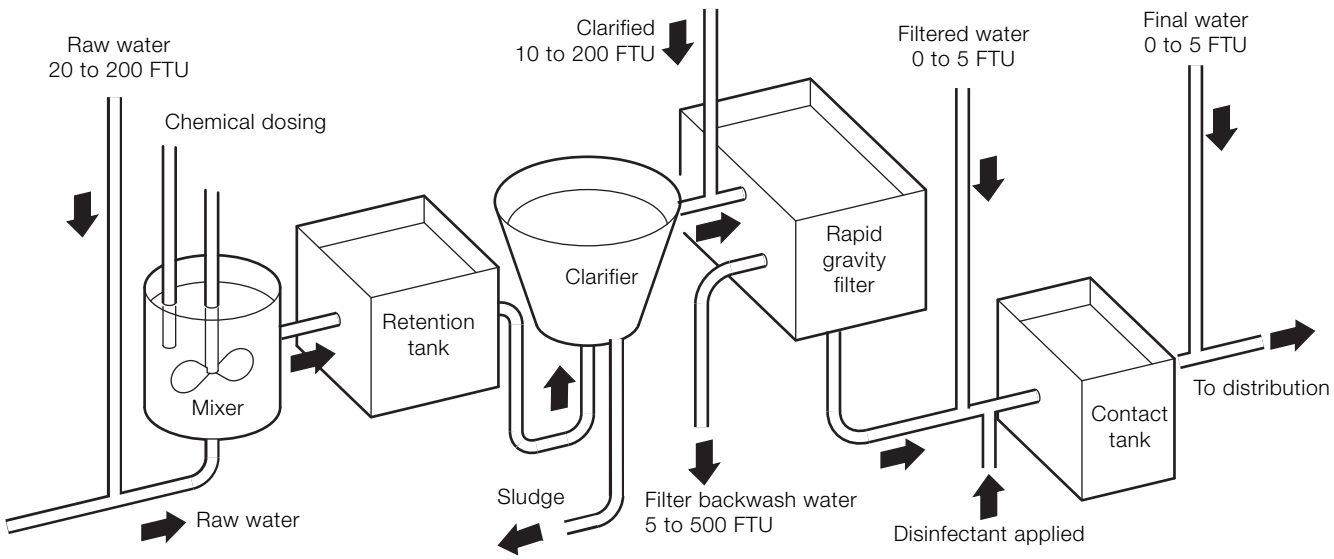


Fig. 1: Typical turbidity monitoring application

4690 turbidity system overview

Wall- / Pipe- or panel-mount analyzers available
- Ultra-stable electronics
- Flexible installation
- In-built bubble rejection software
- Easy-to-use

Auto-clean system
- Programmable automatic cleaning
- Reduces operator maintenance
- Ensures sensor accuracy and reliability

Dry Secondary Standards
- Simplifies routine instrument verification
- Eliminates chemical standard preparation errors
- Reduces cost-of-ownership

Sample Flow Cell
- Flow-through nephelometric design
- Minimal sample residence time provides fast response to turbidity changes for improved process control

Emitter & Receiver Assemblies
- ISO 7027 compliant

Integral Sample Feed and Drain Valves
- Simple installation
- Quick and easy calibration

4690 Series
Turbidity systems

Reliable measurement

ABB's 4690 range of turbidity systems have been designed for reliability, ease-of-use and maintenance simplicity.

Measurement technique

The 4690 range of turbidity sensors utilize a flow-through nephelometric design compliant to the ISO* 7027 standard.

Water flows continually through the sensor body. Light directed by the emitter assembly passes through the sample where it is scattered by any suspended particles present in the sample. This scattered light is detected by the sensor receiver assembly that is placed at a 90° angle to the incident beam.

The ultralow back scatter allows for very accurate readings as only light scattering due to turbidity is measured. This is especially important when measuring low turbidity values. Due to the short sample residence time in the flow cell the system is able to respond much faster than many competing systems.

* International Organization for Standardization

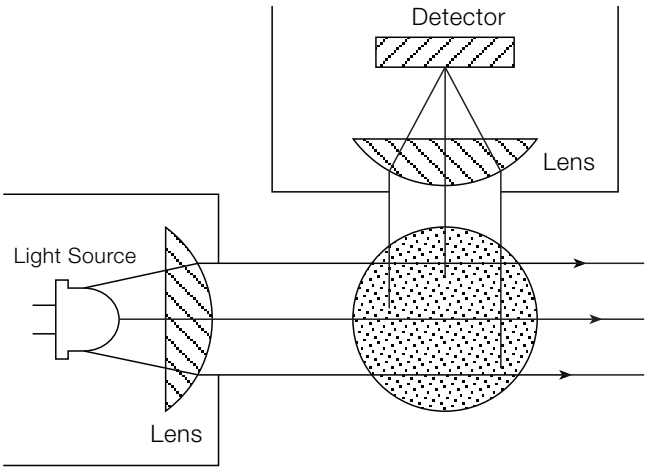


Fig. 2: Nephelometric turbidity monitor

Automatic cell cleaning

The 4690 range of turbidity sensors feature an auto-clean system. This feature consists of a mechanical wiper assembly that physically wipes clean the optical cell at user-programmable intervals from every 15 minutes up to every 24 hours.

The highly efficient automatic cleaning process overcomes the problem of optical fouling and ensures that performance can be maintained for long periods (up to 6 months) without the need for manual intervention.

Fig. 3: Auto-clean wiper unit

Automatic bubble rejection

Turbidity readings can be affected by short-term spikes, usually due to the effect of the sample degassing.
The 4690 analyzer has an automatic bubble rejection feature that, when enabled, applies a digital filter to the measured results removing any spurious high reading.

Optional external debubbler

Any bubbles present in the sample give false turbidity readings. For applications where bubbles are likely, it is recommended that the optional external debubbler assembly is used to supply a constant head of debubbled sample to the sensor.

Simple to calibrate

A key feature of the 4690 turbidity systems is the dry secondary calibration standard that simplifies routine instrument verification and removes the need for the use of chemical standards.

Both low- and high-range secondary standards are available so that the analyzer calibration can be verified at a level that is suited to the application. Each secondary standard is supplied factory-certified against a primary formazine standard.

Fig. 4: Dry secondary standard

The benefits of using ABB's Secondary Standards include:

— **Minimum analyzer downtime**
Simple and fast procedure to verify analyzer performance.

— **Low cost of ownership**
Reduce usage of consumable chemical standards and the time taken to prepare such standards.

— **Minimise employee's exposure to Formazine**
Formazin is highly toxic and a suspected carcinogen.

— **Repeatable and reliable**
Removes any chemical standard preparation errors.

— **Simple to use**
The secondary standard is simply inserted into the sensor assembly optical light path allowing the pre-calibrated opto-mechanical filter to divert a fixed quantity of light to the detector that corresponds to the calibrated turbidity value. Rotation of the dry standard blocks the light path enabling a zero turbidity calibration to be made.

Fig. 5: Dry standard calibration

Simple to maintain

The 4690 turbidity sensing systems are designed to be as maintenance-free as possible. The inherent product design and auto-clean feature minimize the amount of maintenance required to external cleaning of sample lines and periodic replacement of the wiper blade and light source.

The sensor features ABB's patented light replacement system, a unique feature that enables bulb replacement in the field in seconds. Each bulb is supplied fully protected in a patented assembly with integral light guide so you never come into direct contact with the bulb. This not only protects the bulb, ensuring maximum lamp life, but also makes replacement very simple and fast as it just clicks into place.

Fig. 6: Replacing the light source

Task	Recommended frequency
Visual checks – sample flow, leaks	Weekly
Calibration verification[1] with secondary standard[2] - as per regulatory guidelines	Monthly
Calibration[3] with primary standard[4] – as per regulatory guidelines	Quarterly
Replace wiper blade	Annually
Replace LED Light Source (ISO 7027)	Every 5 years

1. **Calibration Verification**
A procedure used to check whether or not the calibration of the analyzer is within certain limits.
2. **Secondary Standards**
Standards that the manufacturer (or an independent testing organization) has certified provide analyzer calibration results equivalent (within certain limits) to the results obtained when the instrument is calibrated with a primary standard.
3. **Calibration**
A procedure which checks or adjusts an analyzer's accuracy by comparison with a defined standard or reference.
4. **Primary Standards**
Turbidity standards that are traceable and equivalent to the reference turbidity standard, within statistical errors. Formazine is the most commonly acceptable form of primary standard. Primary standards are used to calibrate a turbidity meter directly or to calibrate a secondary standard.

4690 sensor specification

Range
Low range 0 to 40 NTU
High range 0 to 400 NTU

Measurement principle
90 ° scattered light measurement.
Compliant to ISO 7027

Maximum linearity
Typically <1.0 %

Accuracy[1, 2]
Low range version ±2 % of reading
High range version ±5 % of reading or 0.3 NTU

Repeatability[3]
0 to 200 NTU: <1 %
200 to 400 NTU: 2 %

Limit of Detection[4]
Low range version: 0.003 NTU
High range version: 0.3 NTU

Response time
T90 < 1 min at 1 l/min^{-1} (0.26 gall [US]/min^{-1})

Flow rate
0.5 to 1.5 l/min (0.13 to 0.39 gall [US]/min)

Integral wiper cleaning system
Programmable operational frequency every 0.25 hour, 0.5 hour, 0.75 hour or multiples of 1 hour up to 24 hours

Sample operating temperature
0 to 50 °C (32 to 122 °F)

Sample pressure
Up to 3 bar (43.5 psi)

Ambient operating temperature
0 to 50 °C (32 to 122 °F)

Ambient operating humidity
Up to 95 % RH

Wetted parts – materials used
Cell body unit
— Black POM (Polyoxymethylene) Copolymer
— Spectrosil 2000 fused silica
— Nitrile (O-ring)
— Epoxy preform (cured): Uni-forms 5034-00
— Polyamide 6
— Nickel plated brass
— Teflon

Wiper unit
— Black Polycarbonate, 10% Glass Fibre filled – Lexan 500R
— Stainless Steel (SS 316 S13/S11) w/ Chemical Black – MIL-C13924 class 4
— Silicone grease (WRC Approved): Unisilkon L 250 L
— 2-part Epoxy Adhesive (cured): DELO AD894
— EPDM (ethylene propylene diene Monomer) black

[1]Maximum measured error across full measurement range (typical, limited by uncertainty in Formazine standards).
[2]Tested in accordance with IEC 61298 Parts 1-4: Edition 2.0 2008-10.
[3]Tested in accordance with MCERTS: Performance Standards and Test Procedures for Continuous Water Monitoring Equipment. Version 3.1: Environment Agency 2010.
[4]Tested in accordance with BS ISO 15839: 2003.

4690 Series
Turbidity systems

4690 analyzer specification

General
Measured value
5-digit x 7-segment backlit LCD

Information
16-character, single line, dot matrix, backlit LCD

Units of measurement
All models: NTU and FNU
mg/l and ppm for high range models

Accuracy
±0.2 % of reading, ±1 digit

Linearity
±0.1 % FSD

Auto-clean timing (7998011, 7998012)
Programmable 15 min, 30 min, 45 min or 1 hour up to 24 hours in 1 hour increments

Environmental Data
Operating temperature limits
–20...55 °C (–4...131 °F)

Storage temperature limits
–25...55 °C (–13...131 °F)

Operating humidity limits
Up to 95 % RH non-condensing

Power Supply
Voltage requirements
100...130 V, 200...260 V, 50/60 Hz

Power consumption
< 6 VA AC

Error due to power supply variation
Less than 0.1 % for +6 % –20 % variation from nominal supply

Insulation
Mains to earth (line to ground) 2 kV RMS

Relay Outputs and Set Points
No. of relays
Two

Relay contacts
Single pole changeover
Rating 250 V AC 250 V DC max.
3 A AC, 3 A DC max.
Loading (non-inductive) 750 VA 30 W max.
(inductive) 750 VA 3 W max.

Insulation
2 kV RMS contacts to earth (ground)

No. of set points
Two

Set point adjustment
Programmable

Set point hysteresis
±1 % fixed

Local set point annunciation
Red LED

Retransmission

No. of retransmission signals

One fully isolated programmable 0...10 mA, 0...20 mA or 4...20 mA Optional second current output

Accuracy

±0.25 % FSD ±0.5 % reading

Resolution

0.1 % at 10 A, 0.05 % at 20 mA

Max. load resistance

750 Ω (20 A max.)

Mechanical Data

Model 4690 Wall- / Pipe-mount transmitter

Wall-mounting	
Protection	IP66 / NEMA4X
Dimensions	160 mm (6.30 in.) wide x 214 mm (8.43 in.) high x 68 mm (2.68 in.) deep
Weight	2 kg (4½ lb)

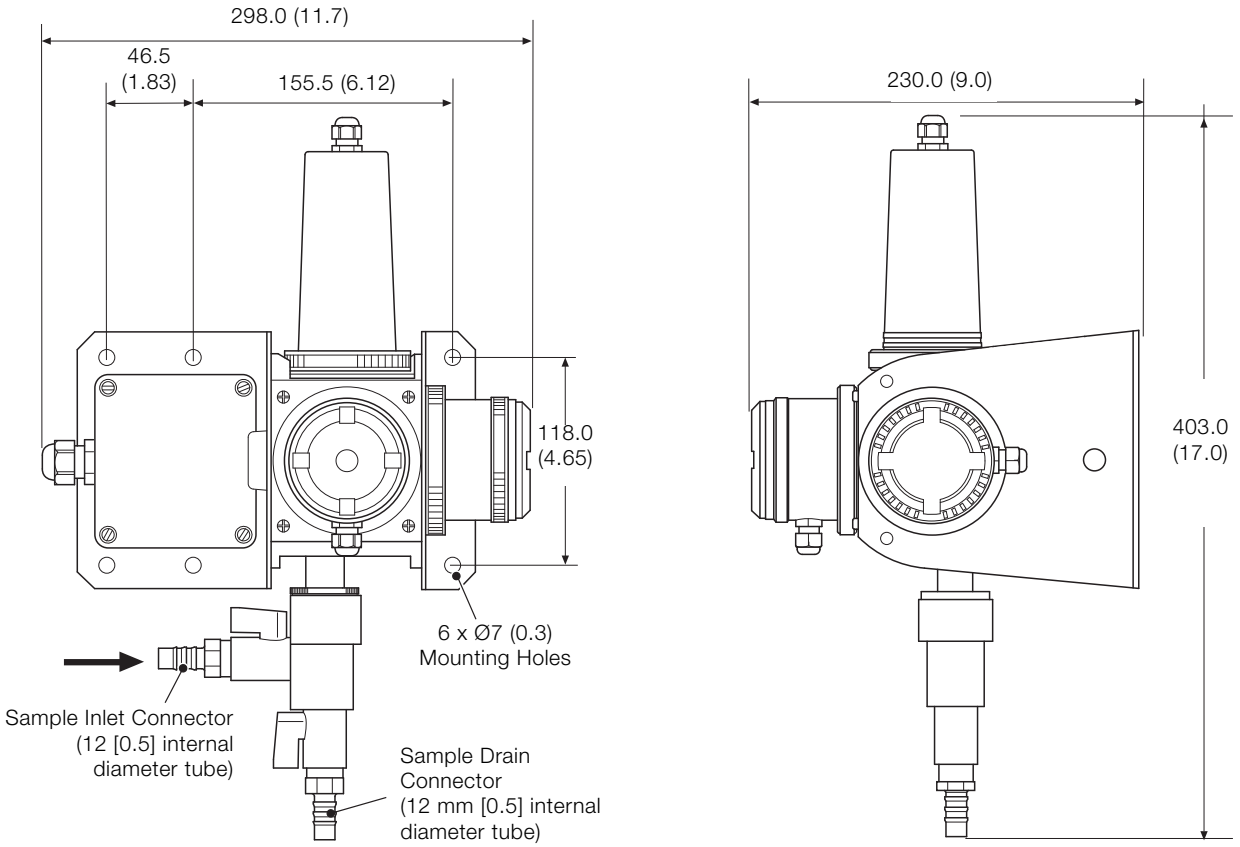
Model 4695 Panel-mount transmitter

Panel-mounting	(¼ DIN)
Protection	IP66 / NEMA4X front
Dimensions	96 mm (3.78 in.) wide x 96 mm (3.78 in.) high x 191 mm (7.52 in.) deep
Weight	1.5 kg (3¼ lb)
Panel cut-out:	$92^{+0.8}_{-0}$ mm x $92^{+0.8}_{-0}$ mm ($3.62^{+0.03}_{-0}$ in. x $3.62^{+0.03}_{-0}$ in.)

Overall dimensions

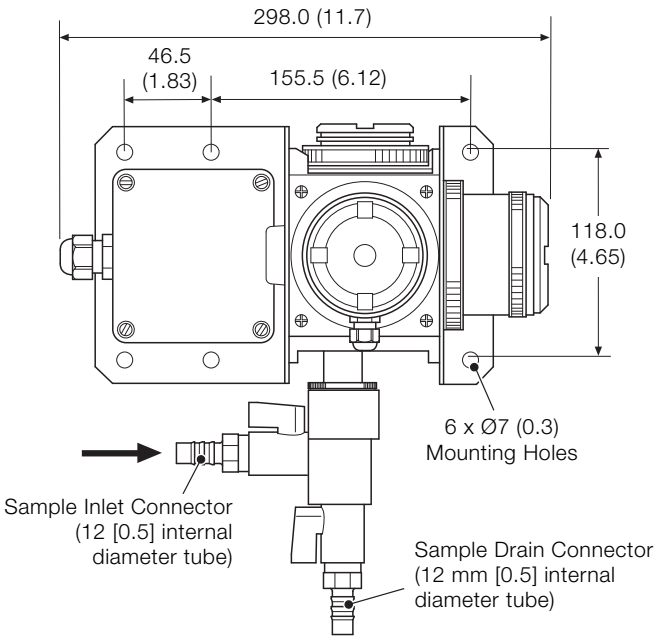
4690 turbidity sensor (with optional wiper unit)

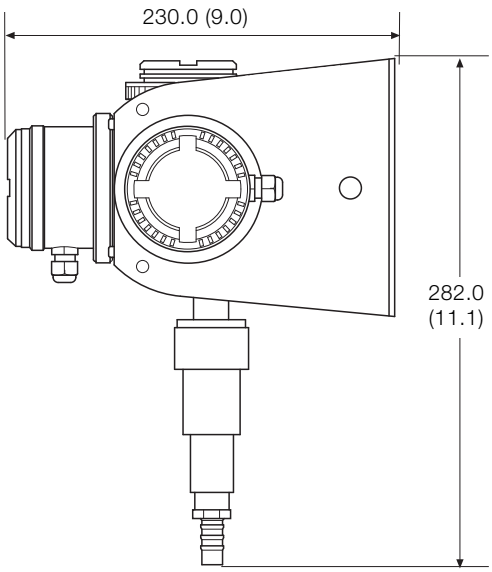
Dimensions in mm (in.)



4690 turbidity sensor (without optional wiper unit)

Dimensions in mm (in.)

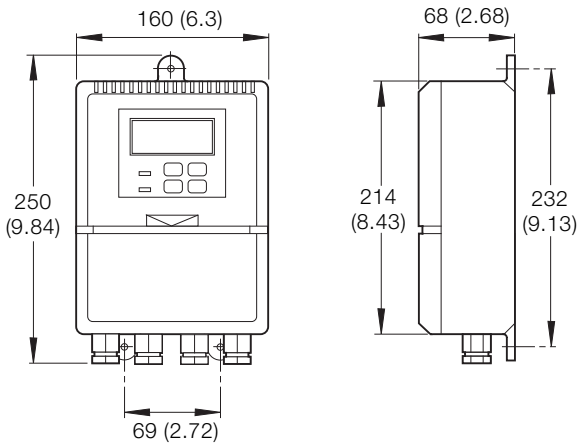




4690 Series
Turbidity systems

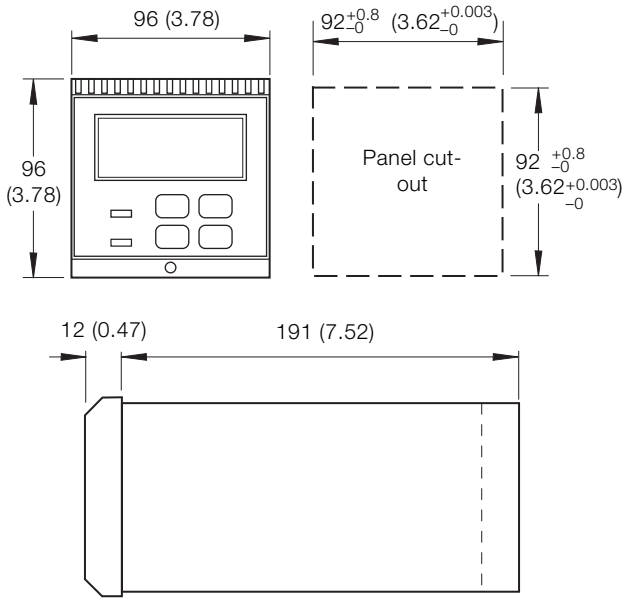
4690 wall- / pipe-mount analyzer

Dimensions in mm (in.)



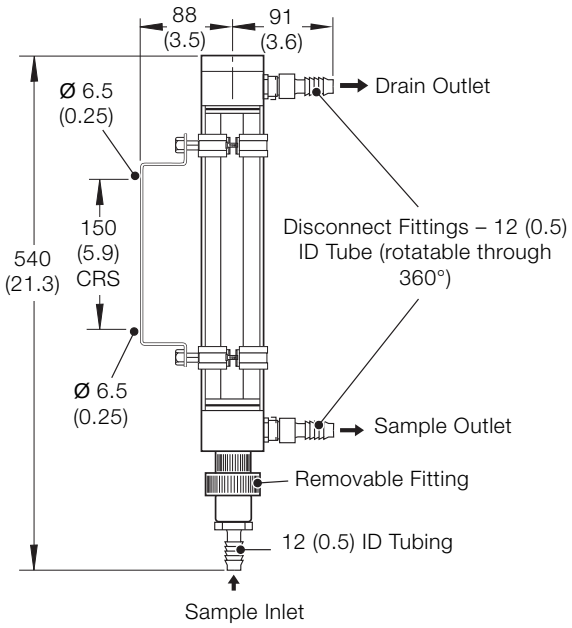
4695 panel-mount analyzer

Dimensions in mm (in.)



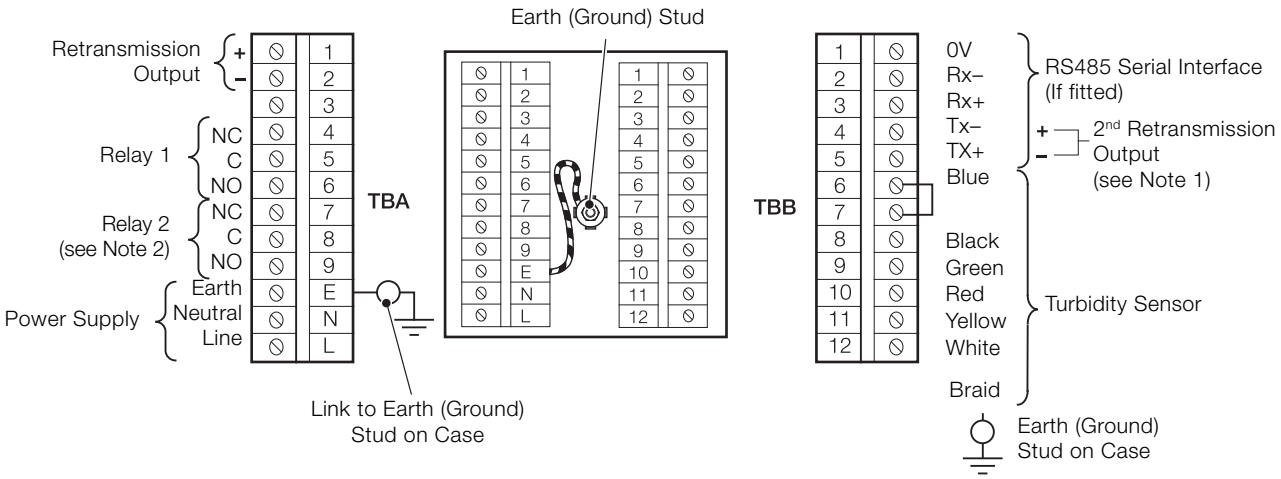
Optional de-bubbler assembly

Dimensions in mm (in.)

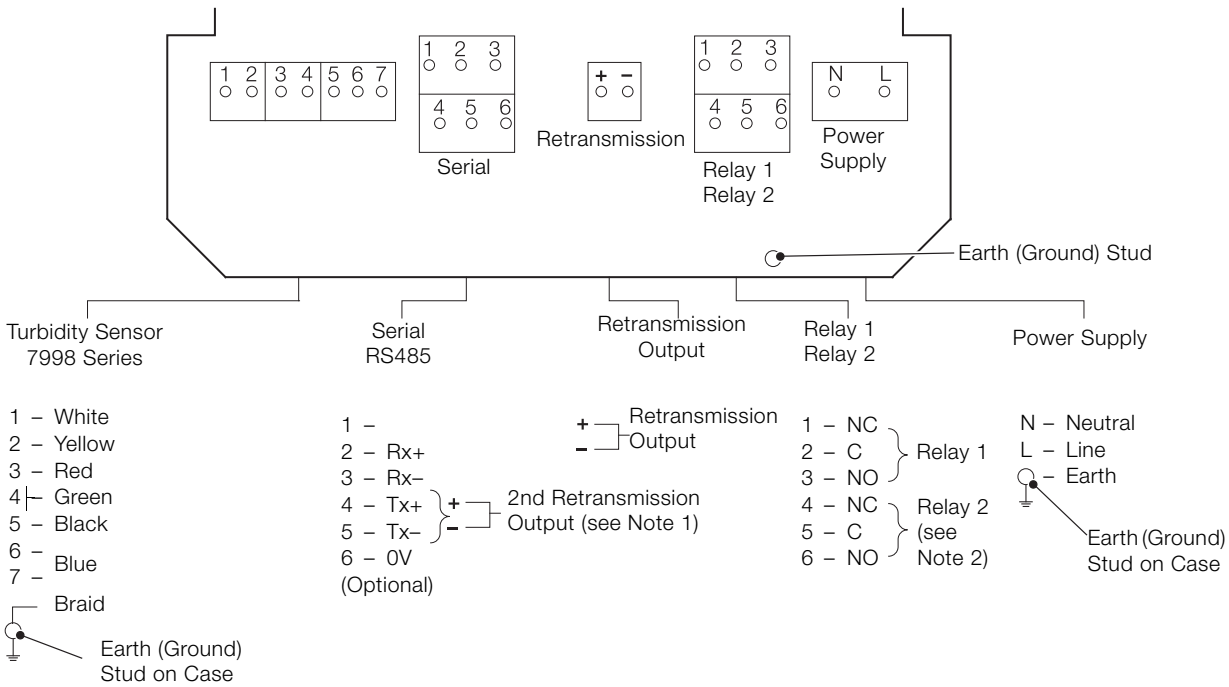


Electrical connections

Panel-mount analyzer connections



Wall- / Pipe-mount analyzer connections



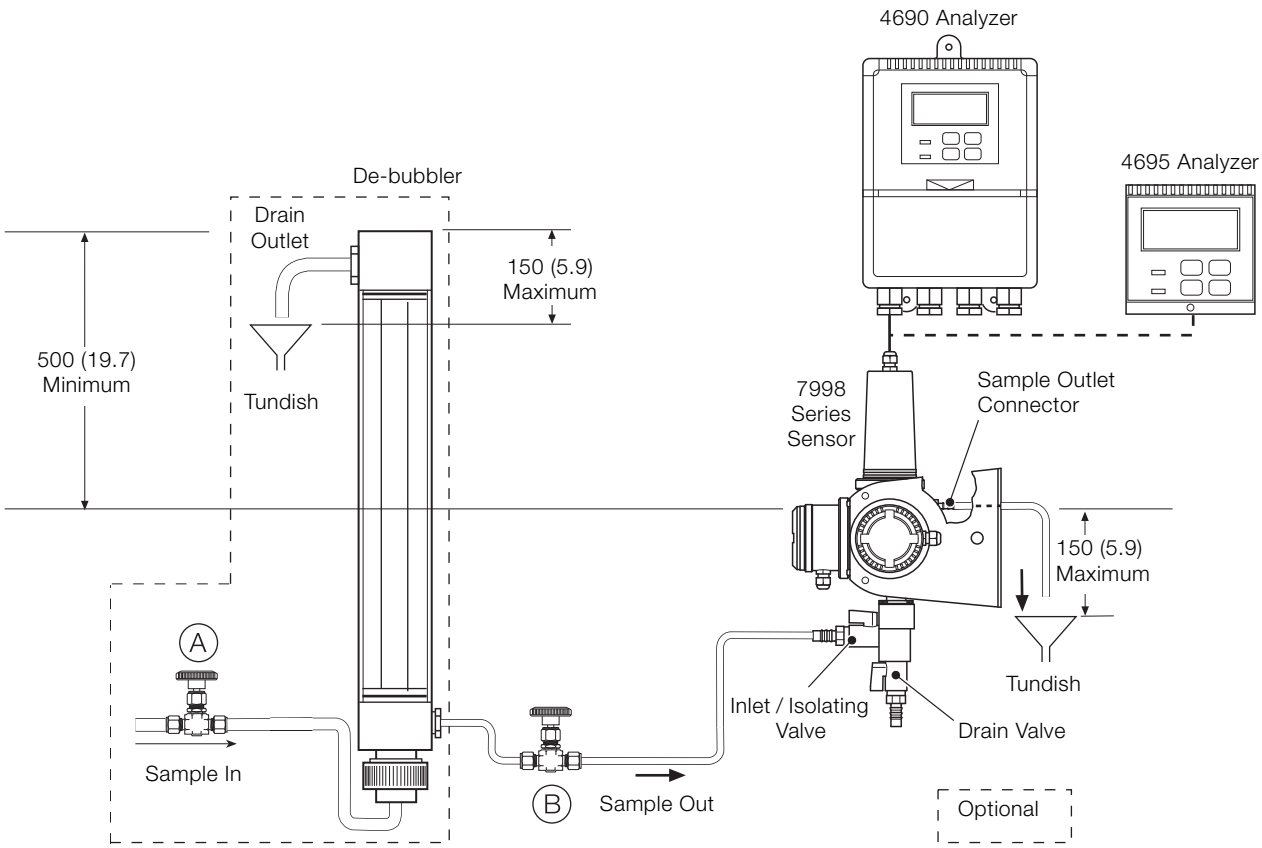
Note.

1. A second retransmission output is available if the RS485 serial communications facility is not used.
2. If 'Test Cleaner' is selected during analyzer configuration, Relay 2 becomes 'Failed Wiper Alarm' relay.

Typical system installation schematic

With optional de-bubbler

Dimensions in mm (in)



Ordering information

Turbidity system	4690/	X	X	X	X	X	X	X	X
Transmitter type									
Wall-/ Pipe-mount (gland fittings)		1							
Wall- / Pipe-mount (conduit)		2							
Panel-mount		5							
Voltage									
115 V AC			1						
230 V AC			2						
Communications and IO									
Standard (1 analog output)				1					
Additional analog output				2					
Modbus				3					
Sensor type									
Flow-through system (ISO 7027 compliant)					1				
Sensor range									
0 … 40 NTU (without auto-clean)						1			
0 … 40 NTU						2			
0 … 400 NTU						3			
Secondary dry calibration									
Not included							0		
Low range (<5 NTU)							2		
High range (50 … 100 NTU)							3		
Sensor cable length									
No sensor cable supplied								0	
1 m (3.3 ft)								1	
5 m (16.4 ft)								2	
10 m (32.8 ft)								3	
Manual									
English									1

Accessories

Description	Part number
De-bubbler assembly	7997 500
Dry standard HIGH (for ISO infrared LED version)	7998 048
Dry standard LOW (for ISO infrared LED version)	7998 047

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MEMORANDUM

To: Bamfield Water Committee

From: Andrew McGifford CPA, CGA, Acting Manager of Finance/Manager of Environmental Services

Date: January 15, 2016

Subject: 2016 Budget Projects

2015 Capital

In the 2015 Capital Budget there was $40,000 allocated to various works in the water system.

The follow projects were undertaken:

The MOTI had planned the repair of the culvert on Tower Road and the ACRD was able to take advantage of these works to complete the Tower Road upgrade for approximately $1,500 plus a day of the Leadhand water technician's time. The estimated cost of this upgrade was $20,000.

The pilot project had some cost that continued into the 2015 year in the amount of $5,541. The Pumphouse required approximately $7,000 in upgrades, the reservoir was cleaned for $5,886.

2016 Capital

Since the 2013 Bamfield Water System study was undertaken in 2013 many of the items identified by Koers have been completed. The final items on the list are the Water system Operation and Maintenance Plan (O&M) which was estimated at $15,000 and the Treatment plant.

The O&M plan costs will consist of staff, contractor and engineer time and we should try and formalize our plan. Currently the ACRD is starting the asset management plan and these plans should tie into that financial process. We need to plan on allocating money towards the 2016 or 2017 capital plan, Koers has recommended $15,000 for this process.

Other small capital items include:

1) Replacement of the water meters in an organized fashion – lifetime of a meter is 10 – 15 years. Would we look at completing 10 per year?
2) Backup power at rechlorination station
3) Red & White Valve replacement – plan
4) Communications and power during outages – between reservoirs and the pumphouse improve back up power and communications.
5) The chlorine shed – structure improvements.

The capital budget should be set for these various items.

Operations 2016

The 2015 budget has ended up very close the plan, costs continue to rise and the rate increase should be reviewed in the near future. The amount that the other water systems within ACRD are charged quarterly is $155 per quarter in Beaver Creek and $181.25 in Millstream. Beaver Creek has a maximum of 108 cubic meters before overages, and Millstream is not metered.

Submitted by: _____

Andrew McGifford, Acting Manager of Finance