Iqaluit

City of Iqaluit
IQALUIT WASTE WATER TREATMENT PLANT
NUNAVUT

EARTH TECH

No.	DATE	REVISION	APPR

DESIGN BY	DRAWN BY	PROJECT No.	DATE
EVS	EVS	75360	Oct-04
CKD BY	APPR BY	SHEET No.	REV
JH	MS	ISS-F2A	0

ITEM	XMITTER TAG No.	SERVICE	P & ID DWG. No.	XMITTER MODEL No.	SENSOR TAG No.	CABLE LENGTH	LINE SIZE (mm)	AREA CLASSIFICATION	PROCESS DATA MAX VELOCITY m/s	FLOWRATE MIN m3/d	FLOWRATE MAX m3/d	DENS. MIN kg/m3	AMB TEMP. Deg. C	ACCESSORIES	REV
1	FS-	BIOREACTOR 1 WAS	I3-02	DFS-II	FE-		100						10-20	Mounting Compound & Clamp Ring	0
2	FS-	BIOREACTOR 2 WAS	I3-02	DFS-II	FE-		100						10-20	Mounting Compound & Clamp Ring	0
3	FS-	SECONDARY CLARIFIERS RAS PUMP No.1	I3-03	DFS-II	FE-		150						10-20	Mounting Compound & Clamp Ring	0
4	FS-	SECONDARY CLARIFIERS RAS PUMP No.2	I3-03	DFS-II	FE-		150						10-20	Mounting Compound & Clamp Ring	0
5	FS-	SECONDARY CLARIFIERS RAS PUMP No.3	I3-03	DFS-II	FE-		150						10-20	Mounting Compound & Clamp Ring	0
6	FS-	TWAS PUMP No.1 INLET	I3-04	DFS-II	FE-		100						10-20	Mounting Compound & Clamp Ring	0
7	FS-	TWAS PUMP No.2 INLET	I3-04	DFS-II	FE-		100						10-20	Mounting Compound & Clamp Ring	0

Iqaluit

City of Iqaluit
IQALUIT WASTE WATER TREATMENT PLANT
NUNAVUT

THERMAL DISP FLOW TX

EARTH TECH

DESIGN BY	DRAWN BY	PROJECT No.	DATE
EVS	EVS	75360	OCT 2004
CHECKED BY	**APPROVED BY**	**SHEET No.**	**REV.**
JH	MS	ISSF3	O

	No.	DATE	REVISION	APPR	
		1	MANUFACTURER		Magnetrol
		2	MODEL NO.		TA1
		3	TYPE		Single Point Insertion Thermal Dispertion Mass Flowmtr
		4	SERVICE		Hot air from blowers
		5			
		6			
		7			
PROCESS DATA		8	FLUID		Process Air
		9	MAX FLOW		see page 2
		10	NORM FLOW		see page 2
		11	MIN FLOW		see page 2
		12	PRESS		~55kPa
		13	MAX TEMP		125 deg C
		14			
		15			
		16	SUPERCOMP FACTOR @ OP PRESS		
		17	MOL. WT / VAPOUR	GAS	
		18	VISCOSITY @ OP TEMP		
		19	STEAM QUALITY		
		20	SUPERHEAT		
		21	AMBIENT TEMP		10 - 20 Deg C
		22	AMBIENT RELATIVE HUMIDITY		80 - 100%
		23			
PROBE		24	TYPE / MODEL NO.		Insertion "hot tap" Retractable Probe
		25	MATERIAL		316 SS
		26	LENGTH		see page 2
		27	POWER		N/A
		28	PROBE COMPRESSION FITTING REQ'D?		N/A
		29	TEMP RANGE		-45 to 200 degC
		30	PIPE TYPE & LINING	PIPE SIZE	Guage class SS / see page 2
		31			
		32	XMITTER MODEL No.		TA1
		33	ENCLOSURE		NEMA 4X
		34	OUTPUT		4-20 mA Isolated
		35	POWER SUPPLY		120 VAC, 12 W
NOTES		36			
		37	TAGGING		Each flow switch to be c/w a SS tag number
		38			
		39	PROCUREMENT		Supply Transmitter, Probe, 'Hot Tap' Retractable Probe
		40			Low Pressure Mounting Assembly with Safety Cable
		41	ALTERNATES		
		42			

Iqaluit

City of Iqaluit
IQALUIT WASTE WATER TREATMENT PLANT
NUNAVUT

EARTH TECH

No.	DATE	REVISION	APPR

DESIGN BY	DRAWN BY	PROJECT No.	DATE
EVS	EVS	75360	Oct-04
CKD BY	APPR BY	SHEET No.	REV
JH	MS	ISS-F3A	0

ITEM	XMITTER TAG No.	SERVICE	P & ID DWG. No.	XMITTER MODEL No.	SENSOR TAG No.	CABLE LENGTH	LINE SIZE (mm)	PROBE LENGTH	AREA CLASSIFICATION	PROCESS DATA MAX VELOCITY m / s	FLOWRATE MIN m3/d	FLOWRATE MAX m3/d	DENS. MIN kg/m3	AMB TEMP. Deg. C	ACCESSORIES	REV
1	FSL-	PROCESS AIR BLOWER No.1	I3-05	TA1	FS-		150		General Purpose					10-20	Retractable Probe Assembly	0
2	FSL-	PROCESS AIR BLOWER No.2	I3-05	TA1	FS-		150		General Purpose					10-20	Retractable Probe Assembly	0
3	FSL-	PROCESS AIR BLOWER No.3	I3-05	TA1	FS-		150		General Purpose					10-20	Retractable Probe Assembly	0
4	FSL-	PROCESS AIR BLOWER No.4	I3-05	TA1	FS-		200		General Purpose					10-20	Retractable Probe Assembly	0
5	FSL-	PROCESS AIR BLOWER No.5	I3-05	TA1	FS-		200		General Purpose					10-20	Retractable Probe Assembly	0
6	FSL-	PROCESS AIR BLOWER No.6	I3-05	TA1	FS-		200		General Purpose					10-20	Retractable Probe Assembly	0

Iqaluit

City of Iqaluit
IQALUIT WASTE WATER TREATMENT PLANT
NUNAVUT

ULTRASONIC LEVEL TX

EARTH TECH

DESIGN BY	DRAWN BY	PROJECT No.	DATE
EVS	EVS	75360	OCT 2004
CHECKED BY	APPROVED BY	SHEET No.	REV.
JH	MS	ISSL1	O

	No.	DATE	REVISION		APPR		
GENERAL	1		MANUFACTURER			SIEMENS MILLTRONICS	
	2		MODEL NO.			Multiranger 100	
	3		TYPE			Dual Channel Non-Contacting Ultrasonic	
	4						
	5						
	6		SERVICE			Waste Water	
	7		P & ID DRAWING NO.			see page 2	
	8		VESSEL MATERIAL			see page 2	
	9		AGITATION	(Y OR N)		se page 2	
	10		CABLE	TYPE	LENGTH	[redacted]	[redacted]
	11						
SENSOR	12		SENSOR TAG NO.			see page 2	
	13		MODEL NO.			Echomax XPS-10	
	14		STYLE/TYPE			Non - Contacting Ultrasonic	
	15		CONNECTION	TYPE	RATING	Threaded 1" NPT	
	16		MATERIAL	SENSOR	COATING	Chemically Resistant	
	17						
TRANSMITTER	18		TRANSMITTER TAG NO.			see page 2	
	19		OUTPUT SIGNAL			Dual 4-20 mA DC (750 OHM Max.)	
	20		REQUIRED SUPPLY VOLTAGE			120 VAC, 60 Hz	
	21		ENCLOSURE	RATING	MATERIAL	NEMA4X	Manufacturer's Std
	22		LOCAL DISPLAY			Digital Multi - Field Backlit LCD	
	23		AREA CLASSIFICATION			see page 2	
	24		ACCURACY			+ / - 0.25 % of FSD	
	25		AMBIENT TEMP RATING		(Deg. C)	-20 to +50	
	26		ADJ. SIGNAL DAMPENING			Continuous 100:1	
	27		ADJ. SPAN		(cm)		
	28		ALARM & CONTROL CONTACTS			4 - Form C, 5 Amp Non-Ind.	
	29						
PROCESS	30		FLUID	LOWER	UPPER	Waste Water	Air
	31		PRESS (kPa)	NORM	MAX	Atmospheric	
	32		TEMP (Deg. C)	MIN	MAX	-40	40
	33		SPECIFIC GRAVITY				
	34		VISCOSITY		(cp)		
	35		AMBIENT TEMP.		(Deg. C)	10	
	36		APPROVALS REQUIRED			CSA	
	37						
NOTES	38		ACCESSORIES			Customer Stainless Steel Tag, Programmer Unit	
	39						
	40		ALTERNATES				
	41		MOUNTING INSTRUCTIONS			Provide and Install Stainless Steel Mounting Bracket	
	42					for Sensor Element.	
	43						

Iqaluit

City of Iqaluit
IQALUIT WASTE WATER TREATMENT PLANT
NUNAVUT

EARTH TECH

No.	DATE	REVISION	APPR

DESIGN BY	DRAWN BY	PROJECT No.	DATE
EVS	EVS	75360	Oct-04
CHECKED BY	**APPR BY**	**SHEET No.**	**REV**
JH	MS	ISS-L1A	0

ITEM	XMITTER TAG No.	SERVICE	P & ID DWG. No.	XMITTER MODEL No.	SENSOR TAG No.	SENSOR MODEL No.	PROCESS DATA: VESSEL MATERIAL	PROCESS DATA: AGITATION	PROCESS DATA: DIMENSIONS: VESSEL DEPTH	PROCESS DATA: DIMENSIONS: LIQUID DEPTH	AMB TEMP. Deg. C	ACCESSORIES	REV
1	LIT-	Raw Waste Water	I3-01	Microranger 100	LE-	XPS-10					10-20		0
2	LIT-	Prim'y effluent	I3-02	Microranger 100	LE-	XPS-10					10-20		0
3	LIT-	Prim'y effluent	I3-02	Microranger 100	LE-	XPS-10					10-20		0
4	LIT-	Waste Activeated Sludge	I3-03	Microranger 100	LE-	XPS-10					10-20		0
5	LIT-	Waste Activeated Sludge	I3-03	Microranger 100	LE-	XPS-10					10-20		0

Iqaluit

City of Iqaluit
IQALUIT WASTE WATER TREATMENT PLANT
NUNAVUT

GAUGE PRESSURE TX

EARTH TECH

DESIGN BY	DRAWN BY	PROJECT No.	DATE
EVS	EVS	75360	OCT 2004
CHECKED BY	APPROVED BY	SHEET No.	REV.
JH	MS	ISSP1	O

No.	DATE	REVISION	APPR
0	JAN 03	FOR TENDER	

PRESSELEMENT	1	MANUFACTURER		Endress + Hauser
	2	MODEL NO.		Cerebar PMC 41
	3	TYPE		Capacitive Pressure Transmitter Gauge
	4			
	5			
	6	TAG NO.		[redacted]
	7	TYPE		Diaphragm
	8	SERVICE		Blowers Delivery Air Pressure
	9	RANGE		[redacted]
	10	BODY MATERIAL		Aluminum
	11	WETTED PARTS MATERIAL		316 SS
	12	ABS PRESSURE COMPENSATION		
	13	STATIC HEAD COMPENSATION		
	14			
	15	OVER PRESSURE PROTECTION		Standard
	16	CONNECTION TYPE	SIZE	Threaded Insert / 1/2" - 14 NPT
	17	OUTPUT		4-20 mA
	18	SPAN ADJUST RANGE		100 %
	19	ZERO ADJUST RANGE		100 % of Span
	20	CALIBRATED RANGE		[redacted]
	21	ACCURACY		0.1 %
	22	SCALE		0 - 100 %
	23			
	24	POWER SUPPLY		24 VDC External
	25	ENCLOSURE		NEMA 4X
	26	AREA CLASSIFICATION		General Purpose
	27	REQUIRED APPROVALS		CSA
	28	MOUNTING		Bracket for 2" Pipe
	29	ACCESSORIES		Indicator - LCD Type
	30			
	31			
	32			
	33			
	34			
	35			
	36			
NOTES	37	TAGGING		Customer Stainless Steel Tag
	38			
	39	ACCESSORIES		Installation, Operation and Maintenance Manual
	40			Isolation/pressure relief valve
	41	ALTERNATES		
	42			
	43			

Iqaluit

City of Iqaluit
IQALUIT WASTE WATER TREATMENT PLANT
NUNAVUT

DIFF PRESSURE LEVEL TX

EARTH TECH

DESIGN BY	DRAWN BY	PROJECT No.	DATE
EVS	EVS	75360	OCT 2004
CHECKED BY	**APPROVED BY**	**SHEET No.**	**REV.**
JH	MS	ISSP2	O

	No.	DATE	REVISION	APPR		
PRESSURE TRANSMITTER	1		MANUFACTURER		Endress + Hauser	
	2		MODEL NO.		Deltabar S PMD 70	
	3		TYPE		Capacitive Differential Pressure Gauge	
	4					
	5					
	6		TAG NO.		LIT-	
	7		TYPE		Diaphragm	
	8		SERVICE		Fine Bubble Diffuser Level	
	9		RANGE		[redacted]	
	10		BODY MATERIAL		Carbon Steel, Cadmium Plated	
	11		WETTED PARTS MATERIAL		316 SS	
	12		ABS PRESSURE COMPENSATION		No	
	13		STATIC HEAD COMPENSATION		No	
	14					
	15		OVER PRESSURE PROTECTION		Standard	
	16		CONNECTION TYPE	SIZE	Threaded Insert	1/4" - 18 NPT
	17		OUTPUT		4-20 mA	
	18		SPAN ADJUST RANGE		100 %	
	19		ZERO ADJUST RANGE		100 % of Span	
	20		CALIBRATED RANGE		[redacted]	
	21		ACCURACY		0.1 %	
	22		SCALE		0 - 100 %	
	23					
	24		POWER SUPPLY		24 VDC External	
	25		ENCLOSURE		NEMA 4X	
	26		AREA CLASSIFICATION		General Purpose	
	27		REQUIRED APPROVALS		CSA	
	28		MOUNTING		Bracket for 2" Pipe	
	29		ACCESSORIES		Indicator - LCD Type	
	30					
	31					
	32					
	33					
	34					
	35					
	36					
NOTES	37		TAGGING		Stainless Steel Identification Tag	
	38					
	39		ACCESSORIES		Installation, Operation and Maintenance Manual	
	40				5 port manifold	
	41		ALTERNATES		Rosemount, ABB	
	42					
	43					

Iqaluit

City of Iqaluit
IQALUIT WASTE WATER TREATMENT PLANT
NUNAVUT

PRESSURE SWITCH

EARTH TECH

DESIGN BY	DRAWN BY	PROJECT No.	DATE
EVS	EVS	75360	OCT 2004
CHECKED BY	**APPROVED BY**	**SHEET No.**	**REV.**
JH	MS	ISSP3	O

	No.	DATE	REVISION			APPR	
PRESS ELEMENT	1		MANUFACTURER				United Electric
	2		MODEL No.				J6 series - see page 2 for detail
	3		TYPE				Stainless steel bellows & 1/4" NPTF pressure connection
	4						
	5						
	6		TAG No.				see page 2
	7		ACTUATION				Rising Line Pressure
	8		SWITCH MOUNTING				1/4" NPT Female w separate isolation valve
	9						
	10		CONNECTION	TYPE		SIZE	NPTF 1/4" Female
	11		OVER-RANGE PROTECT				see page 2
	12		VACUUM PROTECTION				
	13		DIAPHRAGM				316L Welded Stainless Steel Bellows
	14		SNUBBER				
	15						
	16						
	17						
	18						
	19						
	20						
SWITCH	21						
	22		TYPE				Mechanical
	23		CONTACTS	QTY		FORM	1off SPDT
	24		ACTION (Proc)	INCR		DECR	Open on Increasing Pressure
	25		RATING				120VAC, 60Hz, 15A
	26						
	27		DIFFERENTIAL	FIXED		ADJ	Fixed
	28		ADJUSTMENT	INT		EXT	Internal
	29		SETPOINT				see page 2
	30		ENCLOSURE				NEMA 4X
	31		MANUAL RESET				No
	32		AREA CLASSIFICATION				see page 2
	33		APPROVALS REQUIRED				CSA
	34						
	35						
NOTES	36		TAGGING				Each flow switch to be c/w a SS tag number
	37						
	38		ALTERNATES				Asco
	39						
	40						
	41						
	42						

Iqaluit

City of Iqaluit
IQALUIT WASTE WATER TREATMENT PLANT
NUNAVUT

EARTH TECH

No.	DATE	REVISION	APPR

DESIGN BY	DRAWN BY	PROJECT No.	DATE
EVS	EVS	75360	Oct-04
CKD BY	APPR BY	SHEET No.	REV
JH	MS	ISS-P3A	0

ITEM	TAG No.	SERVICE	P & ID DWG. No.	SWITCH MODEL No.	OVER PRESSRE PROTECTION kPa	SETPOINT RISING kPa	AREA CLASSIFICATION	PROCESS DATA				AMB TEMP. Deg. C	ACCESSORIES	REV
1	PSH-	BIOREACTOR 1 WAS PUMP DISCHARGE	I3-02	J6-???								10-20	Supply with isolation valve	0
2	PSH-	BIOREACTOR 2 WAS PUMP DISCHARGE	I3-02	J6-???								10-20	Supply with isolation valve	0
3	PSH-	TWAS PUMP No.1 DISCHARGE	I3-04	J6-???								10-20	Supply with isolation valve	0
4	PSH-	TWAS PUMP No.2 DISCHARGE	I3-04	J6-???								10-20	Supply with isolation valve	0