MCCALL ENVIRONMENTAL

September 1, 2021

Pinnacle Pellet Inc.
1160 South Lakeside Dr.
Williams Lake, B.C.
V2J 6K9

Attention: **Mr. Bill Carson/Evangeline Saclamacis**

Reference: **Revision of Cyclofilter From November 20, 2020**

This letter is being added 'in front of' the revised report being issued for the November 2020 testing that took place at the Williams Lake facility.

An error was found in the mass emission calculation for the cyclofilter stack. This unit is the 'kg/hr' mass emission calc. It is not a permitted value and does not affect compliance or noncompliance. It is used for modeling purposes and for NPRI reporting.

Page 3 the 'Summary Tables' of the report has been replaced with a revised summary table for the stack. Also, page 28 the detailed Cyclofilter Average of Air Emissions has been replaced.

The remainder of the report has been left unchanged.

If you have any questions or concerns please feel free to contact us at your earliest convenience.

Sincerely,

MCCALL ENVIRONMENTAL

Matt McCall

PRINCE GEORGE
Prince George, B.C.
Tel: 250-564-9106
Fax: 250-503-0691
admin@mccallenvironmental.net
www.mccallenvironmental.net

Vernon
Vernon, B.C.
Tel: 250-542-5118
Fax: 250-503-0691
admin@mccallenvironmental.net
www.mccallenvironmental.net

Table Of Contents

December 17, 2020

Pinnacle Pellet Inc.
1160 South Lakeside Dr.
Williams Lake, B.C.
V2J 6K9

Attention: **Mr. Bill Carson**

Reference: **Parameters Tested –** Total Particulate & Cond. Organics
Test Date(s) – November 19-20, 2020
Permit – PA-17557
McCall File Number – ME2021-114

As requested our firm has performed a series of air emission tests at your facility in Williams Lake BC.

Testing Parameters

Dryer Stacks 1-4
- Total Particulate and Condensable Organics State of Oregon Method

Cyclofilter Stack
- Total Particulate and Condensable Organics State of Oregon Method

Key Personnel

- Report Generation: Danny Lawrence 250-542-5118
- Sr Field Tech: Danny Lawrence
- Field Tech: Dave Brandle and Nick Angus 250-564-9106
- Plant Personnel: Bill Carson 250-267-7580

All stacks have been examined for cyclonic flow and determined to be tested as laminar in nature.

Test results are summarized immediately following this cover letter.

Lab analysis for condensable organic fractions was carried out by Element Labs in Surrey, B.C. A copy of their report is included in the Appendix of this report.

If you have any questions or concerns please don't hesitate to contact us at your earliest convenience.

MCCALL ENVIRONMENTAL

Danny Lawrence

Danny Lawrence

Summary of Test Results

Dryer Results November 19, 2020

Total Particulate Average of Triplicate Tests

Parameter	Stack 1	Stack2	Stack 3	Stack 4	Average/ Total	Permit
Test Date	Nov 19/20	Nov 19/20	Nov 19/20	Nov 19/20	N/A	
Gas Temperature (°C)	25	32	32	47	34	
% Moisture	1.58	4.8	3.27	3.0	3.16	
Velocity (m/sec)	8.1	8.2	8.1	7.4	7.95	
ACFM	50,348	50,840	50,001	45,795	196,984	
Std. Dry Flow Rate (m^3/sec)	21.5	20.5	20.5	18	80.5	**90.00**
Tot Part. Dry Basis ref. Cond. (mg/m^3)	5.00	7.91	6.09	18.1	9.28	**15.00**
Front Half Particulate (mg/m^3)	3.0	5.89	2.0	10.9	5.45	
Back Half Condensables (mg/m^3)	1.9	2.0	4.1	7.2	2.83	
Mass Emission Rate (kg/hr)	0.39	0.58	0.45	1.17	2.29	

Cyclofilter Stack November 20, 2020

Particulate Results

Parameter	Test 1	Test 2	Test 3	Average	Permit
Start Time	8:23	9:38	10:55	N/A	
Stop Time	9:25	10:43	12:00	N/A	
Gas Temperature (°C)	25.9	32.6	33.5	30.7	
% Moisture	1.8	1.9	1.9	1.9	
Velocity (m/sec)	15.74	16.47	16.20	16.14	
ACFM	60815	63631	62618	62355	
Std. Dry Flow Rate (m^3/sec)	26.18	26.76	26.25	26.40	**34.00**
Oxygen in % (dry basis)	21.00	21.00	21.00	21.00	
Carbon Dioxide % (dry basis)	0.00	0.00	0.00	0.00	
Tot Part. Dry Basis ref. Cond. (mg/m^3)	2.16	2.87	3.21	2.74	**10.00**
Front Half Filterable Particulate (mg/m^3)	0.36	0.18	0.46	0.33	
Back Half Cond. Organics (mg/m3)	1.80	2.69	2.75	2.41	
Mass Emission Rate (kg/hr)	0.20	0.28	0.30	0.26	

MCCALL ENVIRONMENTAL

Pinnacle Pellet **Nov 19/20**
Dryer Stack 1 **Permit Number: RA-17557**
Williams Lake **AVERAGE OF AIR EMISSION TESTS 1 TO 3**

Gas Temperature:	78 ^{o}F	25 ^{o}C
Moisture Content (by volume):	1.58 %	
Average Stack Gas Velocity:	26.6 ft/sec	8.1 m/sec
Total Actual Gas Flow Rate:	50348 ACFM	
Dry Gas flow Rate at Reference Conditions:	45624 SCFM	21.5 m^3/sec
Total Particulate Concentration:		
Dry Basis Actual at Reference Conditions	0.002 gr/ft^3	5.00 mg/m^3
Front Half Particulate	0.001 gr/ft^3	3.0 mg/m^3
Back Half Condensibles	0.001 gr/ft^3	1.9 mg/m^3
Mass Emission Rate	0.85 lbs/hr	0.39 kg/hr

SUMMARY OF AIR EMISSION TESTS

TEST 1:

Gas Temperature:	74 ^{o}F	23 ^{o}C
Moisture Content (by volume):	1.5 %	
Average Stack Gas Velocity:	27.0 ft/sec	8.2 m/sec
Total Actual Gas Flow Rate:	51020 ACFM	
Dry Gas flow Rate at Reference Conditions:	46607 SCFM	22.0 m^3/sec
Total Particulate Concentration:		
Dry Basis Actual at Reference Conditions	.002 gr/ft^3	5.2 mg/m^3
Front Half Particulate	.001 gr/ft^3	3.3 mg/m^3
Back Half Condensibles	.001 gr/ft^3	1.9 mg/m^3
Mass Emission Rate	0.90 lbs/hr	0.41 kg/hr

TEST 2:

Gas Temperature:	78 ^{o}F	26 ^{o}C
Moisture Content (by volume):	1.7 %	
Average Stack Gas Velocity:	26.0 ft/sec	7.9 m/sec
Total Actual Gas Flow Rate:	49192 ACFM	
Dry Gas flow Rate at Reference Conditions:	44492 SCFM	21.0 m^3/sec
Total Particulate Concentration:		
Dry Basis Actual at Reference Conditions	.002 gr/ft^3	5.0 mg/m^3
Front Half Particulate	.001 gr/ft^3	3.0 mg/m^3
Back Half Condensibles	.001 gr/ft^3	2.0 mg/m^3
Mass Emission Rate	0.83 lbs/hr	0.38 kg/hr

TEST 3:

Gas Temperature:	81 ^{o}F	27 ^{o}C
Moisture Content (by volume):	1.6 %	
Average Stack Gas Velocity:	26.9 ft/sec	8.2 m/sec
Total Actual Gas Flow Rate:	50831 ACFM	
Dry Gas flow Rate at Reference Conditions:	45773 SCFM	21.6 m^3/sec
Total Particulate Concentration:		
Dry Basis Actual at Reference Conditions	.002 gr/ft^3	4.9 mg/m^3
Front Half Particulate	.001 gr/ft^3	2.9 mg/m^3
Back Half Condensibles	.001 gr/ft^3	2.0 mg/m^3
Mass Emission Rate	0.83 lbs/hr	0.38 kg/hr

DATA FOR TESTS 1 TO 3

Client:	**Pinnacle Pellet**		
Plant Location:	**Williams Lake**		
Process:	**Dryer Stack 1**		
Permit Number:	**RA-17557**		
Job Number:	**ME2021-114**		
Pollution Control Permit:	**15.0** **mg/m3**	22.5 **m3/sec**	
Number of Tests:	**3** **tests**		
Minutes per Point:	**2.5** **minutes**		

	TEST 1	TEST 2	TEST 3
Filter Number:	28	31	30
Date of Test:	Nov 19/20	Nov 19/20	Nov 19/20
Start Time:	9:06	10:20	11:35
Stop Time:	10:09	11:25	12:40
On-line Sampling Time:	60	60	60
Testing Personnel:	DL/DB	DL/DB	DL/DB
Sampler Model:	1013	1013	1013
Barometric Pressure("Hg):	28.05	28.05	28.05
Static Pressure("H_2O):	-0.05	-0.05	-0.05
%CO_2:	0.0	0.0	0.0
%O_2:	21.0	21.0	21.0
%CO:	0.0	0.0	0.0
%N_2:	79.0	79.0	79.0
Diameter of Nozzle(inches):	0.275	0.275	0.275
Meter Factor:	0.9922	0.9922	0.9922
Type-S Pitot Tube Coefficient:	0.83446	0.83446	0.83446
Cross Sectional Area of Stack(ft^2):	31.5	31.5	31.5
Impinger Condensate(g):	10	10	10
Weight of Moisture in Silica Gel(g):	2.0	3.0	2.0
Weight of Filter Particulate(g):	0.0001	0.0010	0.0001
Weight of Probe Washings(g):	0.0034	0.0020	0.0028
Weight of Impinger Content Organic(g):	0.0020	0.0020	0.0020
Total Weight of Particulate(g):	0.0055	0.0050	0.0049

MCCALL ENVIRONMENTAL

Sampling Data for - *TEST 1*

Nov 19/20

Pinnacle Pellet

Dryer Stack 1

Williams Lake

SAMPLE POINT	VELOCITY HEAD ("H_2O)	ORIFICE PRESSURE ("H_2O)	DRY GAS METER		STACK GAS TEMP (^oF)	GAS SAMPLE VOLUME (ft^3)	ISOKINETICS
			TEMP IN (^oF)	TEMP OUT (^oF)			
A-12	0.25	1.58	47	43	77	0.00	0.98
A-11	0.26	1.68	51	47	69	1.64	1.02
A-10	0.25	1.62	53	48	69	3.41	1.01
A-9	0.24	1.56	54	50	71	5.14	1.06
A-8	0.23	1.49	54	50	71	6.92	1.06
A-7	0.22	1.43	55	51	73	8.65	1.04
A-6	0.23	1.49	56	54	75	10.32	1.05
A-5	0.22	1.43	57	54	74	12.04	1.06
A-4	0.21	1.37	56	55	72	13.75	1.07
A-3	0.22	1.44	56	55	69	15.44	1.03
A-2	0.24	1.57	57	55	69	17.10	0.97
A-1	0.25	1.64	57	56	69	18.74	0.98
B-12	0.22	1.44	58	57	71	20.44	1.05
B-11	0.21	1.38	58	58	71	22.14	1.09
B-10	0.20	1.32	60	60	73	23.87	1.10
B-9	0.20	1.32	63	62	75	25.58	1.01
B-8	0.18	1.18	64	64	76	27.15	1.05
B-7	0.17	1.12	65	64	76	28.70	1.04
B-6	0.18	1.18	66	66	77	30.20	1.05
B-5	0.17	1.12	67	67	78	31.75	1.01
B-4	0.17	1.13	67	67	76	33.21	1.01
B-3	0.22	1.45	68	69	78	34.67	0.99
B-2	0.23	1.52	70	70	80	36.30	0.97
B-1	0.23	1.52	71	70	82	37.94	1.01
						39.63	

Sampling Data for - *TEST 2*
Pinnacle Pellet
Dryer Stack 1
Williams Lake

Nov 19/20

SAMPLE POINT	VELOCITY HEAD ("H_2O)	ORIFICE PRESSURE ("H_2O)	DRY GAS METER		STACK GAS TEMP (^oF)	GAS SAMPLE VOLUME (ft^3)	ISOKINETICS
			TEMP IN (^oF)	TEMP OUT (^oF)			
B-12	0.21	1.39	73	73	84	0.00	1.01
B-11	0.20	1.31	67	68	83	1.62	1.02
B-10	0.20	1.31	68	69	81	3.20	0.99
B-9	0.18	1.18	69	69	81	4.74	1.05
B-8	0.17	1.14	70	70	78	6.30	1.08
B-7	0.17	1.13	69	70	78	7.87	1.01
B-6	0.18	1.19	69	70	77	9.33	1.02
B-5	0.17	1.15	70	70	68	10.85	1.02
B-4	0.16	1.08	71	71	68	12.34	1.07
B-3	0.18	1.22	71	72	67	13.86	1.02
B-2	0.22	1.49	72	72	68	15.40	0.98
B-1	0.24	1.59	72	72	79	17.03	0.98
A-12	0.22	1.46	73	73	79	18.72	1.00
A-11	0.23	1.53	73	73	79	20.38	0.98
A-10	0.22	1.46	74	73	77	22.03	0.98
A-9	0.21	1.40	74	73	77	23.66	1.02
A-8	0.19	1.27	76	75	80	25.31	1.06
A-7	0.19	1.27	78	77	80	26.95	1.10
A-6	0.18	1.21	80	80	81	28.65	1.05
A-5	0.19	1.27	80	80	82	30.24	1.00
A-4	0.20	1.35	81	87	81	31.80	1.00
A-3	0.21	1.43	89	89	81	33.41	0.94
A-2	0.23	1.58	90	90	80	34.97	1.01
A-1	0.24	1.64	90	90	82	36.73	1.04
						38.58	

Sampling Data for - *TEST 3*
Pinnacle Pellet
Dryer Stack 1
Williams Lake

Nov 19/20

SAMPLE POINT	VELOCITY HEAD ("H_2O)	ORIFICE PRESSURE ("H_2O)	DRY GAS METER		STACK GAS TEMP (^oF)	GAS SAMPLE VOLUME (ft^3)	ISOKINETICS
			TEMP IN (^oF)	TEMP OUT (^oF)			
A-12	0.24	1.66	101	101	86	0.00	0.97
A-11	0.25	1.70	96	100	91	1.76	0.96
A-10	0.25	1.68	83	87	86	3.52	0.99
A-9	0.24	1.60	79	81	84	5.29	0.99
A-8	0.22	1.48	79	80	80	7.02	1.00
A-7	0.22	1.48	82	80	81	8.69	0.99
A-6	0.23	1.55	82	84	84	10.35	0.98
A-5	0.2	1.34	83	84	84	12.04	0.99
A-4	0.21	1.42	84	84	80	13.62	0.96
A-3	0.22	1.49	84	85	80	15.20	0.93
A-2	0.22	1.49	84	85	80	16.78	0.95
A-1	0.23	1.57	85	86	79	18.39	0.94
B-12	0.20	1.36	84	85	79	20.01	1.04
B-11	0.19	1.28	83	81	80	21.68	0.95
B-10	0.21	1.42	83	82	80	23.17	0.99
B-9	0.22	1.49	83	83	79	24.80	0.95
B-8	0.18	1.22	83	84	79	26.41	1.10
B-7	0.17	1.16	84	85	79	28.09	1.02
B-6	0.16	1.09	85	84	78	29.61	1.02
B-5	0.17	1.16	85	84	78	31.09	1.04
B-4	0.18	1.22	85	85	78	32.64	1.10
B-3	0.21	1.43	86	85	80	34.33	1.00
B-2	0.23	1.56	86	85	80	35.99	0.95
B-1	0.24	1.63	87	86	80	37.64	0.95
						39.33	

MCCALL ENVIRONMENTAL

Pinnacle Pellet
Dryer Stack 1
Pinnacle Pellet

Data for ***TEST 1***

OVERALL ISOKINETICS - TEST 1: 1.030

Delta P:	**0.216**	**"H_2O**	**Us avg:**	**26.99 ft/sec**
Delta H:	**1.416**		**ACFM:**	**51020 ft^3/min**
Tm avg:	**518.8**	**^oR**	**SDCFM:**	**46607 ft^3/min**
Ts avg:	**533.8**	**^oR**	**Vm std:**	**37.66 ft^3**
Bwo:	**0.015**		**Vm corr:**	**39.32 ft^3**
Md:	**28.84**		**Vm:**	**39.63 ft^3**
Ms:	**28.68**		**MF:**	**0.9922**
Pb:	**28.05**	**"Hg**	**PCON:**	**5.16 mg/m^3**
Pm:	**28.15**	**"Hg**	**ERAT:**	**0.41 kg/hr**
Ps:	**28.05**	**"Hg**		

Data for ***TEST 2***

OVERALL ISOKINETICS - TEST 2: 1.018

Delta P:	**0.199**	**"H_2O**	**Us avg:**	**26.03 ft/sec**
Delta H:	**1.335**		**ACFM:**	**49192 ft^3/min**
Tm avg:	**535.1**	**^oR**	**SDCFM:**	**44492 ft^3/min**
Ts avg:	**538.0**	**^oR**	**Vm std:**	**35.53 ft^3**
Bwo:	**0.017**		**Vm corr:**	**38.28 ft^3**
Md:	**28.84**		**Vm:**	**38.58 ft^3**
Ms:	**28.66**		**MF:**	**0.9922**
Pb:	**28.05**	**"Hg**	**PCON:**	**4.97 mg/m^3**
Pm:	**28.15**	**"Hg**	**ERAT:**	**0.38 kg/hr**
Ps:	**28.05**	**"Hg**		

Data for ***TEST 3***

OVERALL ISOKINETICS - TEST 3: 0.991

Delta P:	**0.211**	**"H_2O**	**Us avg:**	**26.89 ft/sec**
Delta H:	**1.437**		**ACFM:**	**50831 ft^3/min**
Tm avg:	**545.0**	**^oR**	**SDCFM:**	**45773 ft^3/min**
Ts avg:	**541.0**	**^oR**	**Vm std:**	**35.57 ft^3**
Bwo:	**0.016**		**Vm corr:**	**39.02 ft^3**
Md:	**28.84**		**Vm:**	**39.33 ft^3**
Ms:	**28.67**		**MF:**	**0.9922**
Pb:	**28.05**	**"Hg**	**PCON:**	**4.86 mg/m^3**
Pm:	**28.16**	**"Hg**	**ERAT:**	**0.38 kg/hr**
Ps:	**28.05**	**"Hg**		

MCCALL ENVIRONMENTAL

Pinnacle Pellet **Nov 19/20**
Dryer Stack 2 **Permit Number: RA-17557**
Williams Lake **AVERAGE OF AIR EMISSION TESTS 1 TO 3**

Gas Temperature:	90 ^{o}F	32 ^{o}C
Moisture Content (by volume):	4.80 %	
Average Stack Gas Velocity:	26.9 ft/sec	8.2 m/sec
Total Actual Gas Flow Rate:	50840 ACFM	
Dry Gas flow Rate at Reference Conditions:	43538 SCFM	20.5 m^3/sec
Total Particulate Concentration:		
Dry Basis Actual at Reference Conditions	0.003 gr/ft^3	7.91 mg/m^3
Front Half Particulate	0.003 gr/ft^3	5.9 mg/m^3
Back Half Condensibles	0.001 gr/ft^3	2.0 mg/m^3
Mass Emission Rate	1.29 lbs/hr	0.58 kg/hr

SUMMARY OF AIR EMISSION TESTS

TEST 1:

Gas Temperature:	88 ^{o}F	31 ^{o}C
Moisture Content (by volume):	5.6 %	
Average Stack Gas Velocity:	26.9 ft/sec	8.2 m/sec
Total Actual Gas Flow Rate:	50860 ACFM	
Dry Gas flow Rate at Reference Conditions:	43374 SCFM	20.5 m^3/sec
Total Particulate Concentration:		
Dry Basis Actual at Reference Conditions	.004 gr/ft^3	8.1 mg/m^3
Front Half Particulate	.003 gr/ft^3	6.0 mg/m^3
Back Half Condensibles	.001 gr/ft^3	2.0 mg/m^3
Mass Emission Rate	1.31 lbs/hr	0.59 kg/hr

TEST 2:

Gas Temperature:	92 ^{o}F	33 ^{o}C
Moisture Content (by volume):	4.6 %	
Average Stack Gas Velocity:	27.4 ft/sec	8.4 m/sec
Total Actual Gas Flow Rate:	51780 ACFM	
Dry Gas flow Rate at Reference Conditions:	44301 SCFM	20.9 m^3/sec
Total Particulate Concentration:		
Dry Basis Actual at Reference Conditions	.003 gr/ft^3	6.5 mg/m^3
Front Half Particulate	.002 gr/ft^3	4.5 mg/m^3
Back Half Condensibles	.001 gr/ft^3	2.0 mg/m^3
Mass Emission Rate	1.08 lbs/hr	0.49 kg/hr

TEST 3:

Gas Temperature:	91 ^{o}F	33 ^{o}C
Moisture Content (by volume):	4.2 %	
Average Stack Gas Velocity:	26.4 ft/sec	8.0 m/sec
Total Actual Gas Flow Rate:	49881 ACFM	
Dry Gas flow Rate at Reference Conditions:	42940 SCFM	20.3 m^3/sec
Total Particulate Concentration:		
Dry Basis Actual at Reference Conditions	.004 gr/ft^3	9.2 mg/m^3
Front Half Particulate	.003 gr/ft^3	7.1 mg/m^3
Back Half Condensibles	.001 gr/ft^3	2.1 mg/m^3
Mass Emission Rate	1.47 lbs/hr	0.67 kg/hr

DATA FOR TESTS 1 TO 3

Client:	**Pinnacle Pellet**		
Plant Location:	**Williams Lake**		
Process:	**Dryer Stack 2**		
Permit Number:	**RA-17557**		
Job Number:	**ME2021-114**		
Pollution Control Permit:	**15.0**	**mg/m3**	22.5 **m3/sec**
Number of Tests:	**3**	**tests**	
Minutes per Point:	**2.5**	**minutes**	

	TEST 1	TEST 2	TEST 3
Filter Number:	32	33	40
Date of Test:	Nov 19/20	Nov 19/20	Nov 19/20
Start Time:	12:45	2:00	3:15
Stop Time:	1:50	3:04	4:20
On-line Sampling Time:	60	60	60
Testing Personnel:	DL/DB	DL/DB	DL/DB
Sampler Model:	1013	1013	1013
Barometric Pressure("Hg):	28.05	28.05	28.05
Static Pressure("H_2O):	-0.08	-0.08	-0.08
%CO_2:	0.0	0.0	0.0
%O_2:	21.0	21.0	21.0
%CO:	0.0	0.0	0.0
%N_2:	79.0	79.0	79.0
Diameter of Nozzle(inches):	0.275	0.275	0.275
Meter Factor:	0.9922	0.9922	0.9922
Type-S Pitot Tube Coefficient:	0.83446	0.83446	0.83446
Cross Sectional Area of Stack(ft^2):	31.5	31.5	31.5
Impinger Condensate(g):	41	35	30
Weight of Moisture in Silica Gel(g):	3.0	2.0	2.0
Weight of Filter Particulate(g):	0.0002	0.0001	0.0001
Weight of Probe Washings(g):	0.0058	0.0045	0.0068
Weight of Impinger Content Organic(g):	0.0020	0.0020	0.0020
Total Weight of Particulate(g):	0.0080	0.0066	0.0089

Sampling Data for - *TEST 1*

Pinnacle Pellet

Dryer Stack 2

Williams Lake

Nov 19/20

SAMPLE POINT	VELOCITY HEAD ("H_2O)	ORIFICE PRESSURE ("H_2O)	DRY GAS METER		STACK GAS TEMP (^oF)	GAS SAMPLE VOLUME (ft^3)	ISOKINETICS
			TEMP IN (^oF)	TEMP OUT (^oF)			
A-12	0.19	1.29	96	95	91	0.00	1.02
A-11	0.18	1.22	71	81	96	1.56	1.06
A-10	0.18	1.16	76	89	98	3.08	1.05
A-9	0.16	1.04	70	69	89	4.60	1.10
A-8	0.17	1.10	71	68	91	6.08	1.05
A-7	0.19	1.23	71	66	88	7.53	1.00
A-6	0.21	1.36	70	68	88	9.00	0.98
A-5	0.22	1.44	71	69	85	10.51	0.99
A-4	0.24	1.57	70	70	85	12.08	0.98
A-3	0.23	1.51	72	71	84	13.70	1.01
A-2	0.23	1.52	73	73	84	15.34	1.03
A-1	0.23	1.52	74	74	84	17.01	1.04
B-12	0.26	1.72	75	75	85	18.70	0.96
B-11	0.26	1.73	78	78	85	20.36	1.00
B-10	0.25	1.66	78	77	84	22.11	1.00
B-9	0.22	1.46	78	78	86	23.83	1.09
B-8	0.20	1.33	79	79	86	25.58	1.04
B-7	0.17	1.13	80	80	87	27.18	1.07
B-6	0.18	1.20	81	81	88	28.70	1.01
B-5	0.18	1.20	81	81	87	30.17	1.03
B-4	0.19	1.27	82	82	88	31.68	1.06
B-3	0.19	1.26	82	82	90	33.27	1.06
B-2	0.21	1.39	83	82	90	34.86	1.04
B-1	0.22	1.46	83	82	91	36.50	1.03
						38.16	

MCCALL ENVIRONMENTAL

Sampling Data for - *TEST 2*

Pinnacle Pellet

Dryer Stack 2

Williams Lake

Nov 19/20

SAMPLE POINT	VELOCITY HEAD ("H_2O)	ORIFICE PRESSURE ("H_2O)	DRY GAS METER		STACK GAS TEMP (^oF)	GAS SAMPLE VOLUME (ft^3)	ISOKINETICS
			TEMP IN (^oF)	TEMP OUT (^oF)			
B-12	0.25	1.64	85	85	100	0.00	1.04
B-11	0.24	1.61	95	98	100	1.79	1.00
B-10	0.24	1.56	92	96	101	3.51	1.03
B-9	0.22	1.58	86	87	100	5.28	1.05
B-8	0.21	1.43	73	74	94	6.98	1.09
B-7	0.22	1.45	73	76	90	8.67	1.06
B-6	0.21	1.38	74	77	90	10.37	1.05
B-5	0.18	1.11	75	77	88	12.02	1.10
B-4	0.19	1.19	76	78	87	13.62	1.07
B-3	0.21	1.26	77	78	89	15.22	1.06
B-2	0.22	1.39	77	78	89	16.89	0.99
B-1	0.21	1.45	78	78	89	18.48	1.07
A-12	0.21	1.39	80	80	90	20.16	1.02
A-11	0.21	1.39	80	80	90	21.77	1.03
A-10	0.23	1.52	81	81	90	23.40	0.97
A-9	0.22	1.46	81	81	89	25.00	1.02
A-8	0.19	1.26	81	82	90	26.66	1.03
A-7	0.19	1.26	82	82	90	28.21	1.01
A-6	0.18	1.19	83	83	91	29.73	0.99
A-5	0.19	1.26	84	84	91	31.18	1.03
A-4	0.21	1.40	85	85	91	32.74	0.98
A-3	0.22	1.47	86	86	91	34.30	1.04
A-2	0.23	1.53	84	85	91	36.00	1.07
A-1	0.23	1.54	88	87	90	37.78	1.03
						39.50	

MCCALL ENVIRONMENTAL

Sampling Data for - *TEST 3*

Pinnacle Pellet

Dryer Stack 2

Williams Lake

Nov 19/20

SAMPLE POINT	VELOCITY HEAD ("H_2O)	ORIFICE PRESSURE ("H_2O)	DRY GAS METER		STACK GAS TEMP (^oF)	GAS SAMPLE VOLUME (ft^3)	ISOKINETICS
			TEMP IN (^oF)	TEMP OUT (^oF)			
A-12	0.22	1.45	92	93	106	0.00	1.03
A-11	0.22	1.45	87	87	97	1.68	1.06
A-10	0.21	1.38	76	79	93	3.41	1.01
A-9	0.2	1.31	77	78	93	5.00	1.05
A-8	0.19	1.24	78	75	92	6.61	0.96
A-7	0.19	1.24	77	76	92	8.05	1.00
A-6	0.18	1.18	75	76	88	9.55	1.03
A-5	0.16	1.05	75	77	88	11.06	1.00
A-4	0.17	1.12	75	75	89	12.44	0.99
A-3	0.19	1.25	75	75	89	13.84	1.06
A-2	0.22	1.44	77	77	89	15.43	0.96
A-1	0.23	1.52	79	79	89	16.99	1.01
B-12	0.20	1.32	79	79	89	18.67	1.01
B-11	0.21	1.39	78	79	88	20.23	0.99
B-10	0.19	1.26	78	79	88	21.80	1.01
B-9	0.19	1.26	78	79	88	23.33	1.04
B-8	0.18	1.19	79	80	88	24.90	1.04
B-7	0.17	1.13	80	81	89	26.43	1.10
B-6	0.19	1.26	81	81	90	28.01	1.04
B-5	0.19	1.26	81	81	90	29.58	1.02
B-4	0.20	1.32	81	81	90	31.13	0.98
B-3	0.22	1.46	84	85	91	32.65	0.99
B-2	0.23	1.53	84	84	91	34.27	0.99
B-1	0.21	1.40	84	84	90	35.92	1.02
						37.55	

MCCALL ENVIRONMENTAL

Pinnacle Pellet
Dryer Stack 2
Pinnacle Pellet

Data for ***TEST 1***

OVERALL ISOKINETICS - TEST 1: 1.030

Delta P:	**0.206**	**"H_2O**	**Us avg:**	**26.91 ft/sec**
Delta H:	**1.365**		**ACFM:**	**50860 ft^3/min**
Tm avg:	**537.0**	**^oR**	**SDCFM:**	**43374 ft^3/min**
Ts avg:	**547.9**	**^oR**	**Vm std:**	**35.03 ft^3**
Bwo:	**0.056**		**Vm corr:**	**37.86 ft^3**
Md:	**28.84**		**Vm:**	**38.16 ft^3**
Ms:	**28.23**		**MF:**	**0.9922**
Pb:	**28.05**	**"Hg**	**PCON:**	**8.07 mg/m^3**
Pm:	**28.15**	**"Hg**	**ERAT:**	**0.59 kg/hr**
Ps:	**28.04**	**"Hg**		

Data for ***TEST 2***

OVERALL ISOKINETICS - TEST 2: 1.033

Delta P:	**0.213**	**"H_2O**	**Us avg:**	**27.40 ft/sec**
Delta H:	**1.405**		**ACFM:**	**51780 ft^3/min**
Tm avg:	**542.0**	**^oR**	**SDCFM:**	**44301 ft^3/min**
Ts avg:	**551.7**	**^oR**	**Vm std:**	**35.93 ft^3**
Bwo:	**0.046**		**Vm corr:**	**39.19 ft^3**
Md:	**28.84**		**Vm:**	**39.50 ft^3**
Ms:	**28.34**		**MF:**	**0.9922**
Pb:	**28.05**	**"Hg**	**PCON:**	**6.49 mg/m^3**
Pm:	**28.15**	**"Hg**	**ERAT:**	**0.49 kg/hr**
Ps:	**28.04**	**"Hg**		

Data for ***TEST 3***

OVERALL ISOKINETICS - TEST 3: 1.017

Delta P:	**0.198**	**"H_2O**	**Us avg:**	**26.39 ft/sec**
Delta H:	**1.309**		**ACFM:**	**49881 ft^3/min**
Tm avg:	**539.8**	**^oR**	**SDCFM:**	**42940 ft^3/min**
Ts avg:	**550.7**	**^oR**	**Vm std:**	**34.28 ft^3**
Bwo:	**0.042**		**Vm corr:**	**37.26 ft^3**
Md:	**28.84**		**Vm:**	**37.55 ft^3**
Ms:	**28.38**		**MF:**	**0.9922**
Pb:	**28.05**	**"Hg**	**PCON:**	**9.17 mg/m^3**
Pm:	**28.15**	**"Hg**	**ERAT:**	**0.67 kg/hr**
Ps:	**28.04**	**"Hg**		

MCCALL ENVIRONMENTAL

Pinnacle Pellet **Nov 19/20**
Dryer Stack 3 **Permit Number: RA-17557**
Williams Lake **AVERAGE OF AIR EMISSION TESTS 1 TO 3**

Gas Temperature:	90 ^{o}F	32 ^{o}C
Moisture Content (by volume):	3.27 %	
Average Stack Gas Velocity:	26.5 ft/sec	8.1 m/sec
Total Actual Gas Flow Rate:	50001 ACFM	
Dry Gas flow Rate at Reference Conditions:	43495 SCFM	20.5 m^3/sec
Total Particulate Concentration:		
Dry Basis Actual at Reference Conditions	0.003 gr/ft^3	6.09 mg/m^3
Front Half Particulate	0.001 gr/ft^3	2.0 mg/m^3
Back Half Condensibles	0.002 gr/ft^3	4.1 mg/m^3
Mass Emission Rate	0.99 lbs/hr	0.45 kg/hr

SUMMARY OF AIR EMISSION TESTS

TEST 1:

Gas Temperature:	91 ^{o}F	33 ^{o}C
Moisture Content (by volume):	2.4 %	
Average Stack Gas Velocity:	26.4 ft/sec	8.1 m/sec
Total Actual Gas Flow Rate:	49923 ACFM	
Dry Gas flow Rate at Reference Conditions:	43740 SCFM	20.6 m^3/sec
Total Particulate Concentration:		
Dry Basis Actual at Reference Conditions	.002 gr/ft^3	4.1 mg/m^3
Front Half Particulate	.001 gr/ft^3	2.6 mg/m^3
Back Half Condensibles	.001 gr/ft^3	1.5 mg/m^3
Mass Emission Rate	0.67 lbs/hr	0.31 kg/hr

TEST 2:

Gas Temperature:	91 ^{o}F	33 ^{o}C
Moisture Content (by volume):	3.2 %	
Average Stack Gas Velocity:	26.3 ft/sec	8.0 m/sec
Total Actual Gas Flow Rate:	49764 ACFM	
Dry Gas flow Rate at Reference Conditions:	43239 SCFM	20.4 m^3/sec
Total Particulate Concentration:		
Dry Basis Actual at Reference Conditions	.004 gr/ft^3	9.6 mg/m^3
Front Half Particulate	.001 gr/ft^3	2.0 mg/m^3
Back Half Condensibles	.003 gr/ft^3	7.6 mg/m^3
Mass Emission Rate	1.55 lbs/hr	0.70 kg/hr

TEST 3:

Gas Temperature:	88 ^{o}F	31 ^{o}C
Moisture Content (by volume):	4.2 %	
Average Stack Gas Velocity:	26.6 ft/sec	8.1 m/sec
Total Actual Gas Flow Rate:	50315 ACFM	
Dry Gas flow Rate at Reference Conditions:	43506 SCFM	20.5 m^3/sec
Total Particulate Concentration:		
Dry Basis Actual at Reference Conditions	.002 gr/ft^3	4.6 mg/m^3
Front Half Particulate	.001 gr/ft^3	1.6 mg/m^3
Back Half Condensibles	.001 gr/ft^3	3.0 mg/m^3
Mass Emission Rate	0.75 lbs/hr	0.34 kg/hr

DATA FOR TESTS 1 TO 3

Client:	**Pinnacle Pellet**		
Plant Location:	**Williams Lake**		
Process:	**Dryer Stack 3**		
Permit Number:	**RA-17557**		
Job Number:	**ME2021-114**		
Pollution Control Permit:	**15.0** **mg/m3**	22.5 **m3/sec**	
Number of Tests:	**3** **tests**		
Minutes per Point:	**2.5** **minutes**		

	TEST 1	TEST 2	TEST 3
Filter Number:	37	38	39
Date of Test:	Nov 19/20	Nov 19/20	Nov 19/20
Start Time:	12:39	1:53	3:02
Stop Time:	1:44	2:55	4:04
On-line Sampling Time:	60	60	60
Testing Personnel:	NA/OP	NA/OP	NA/OP
Sampler Model:	980	980	980
Barometric Pressure("Hg):	28.05	28.05	28.05
Static Pressure("H_2O):	-0.16	-0.16	-0.16
%CO_2:	0.0	0.0	0.0
%O_2:	21.0	21.0	21.0
%CO:	0.0	0.0	0.0
%N_2:	79.0	79.0	79.0
Diameter of Nozzle(inches):	0.320	0.320	0.320
Meter Factor:	0.9923	0.9923	0.9923
Type-S Pitot Tube Coefficient:	0.83365	0.83365	0.83365
Cross Sectional Area of Stack(ft^2):	31.5	31.5	31.5
Impinger Condensate(g):	20	30	40
Weight of Moisture in Silica Gel(g):	4.0	3.0	3.0
Weight of Filter Particulate(g):	0.0001	0.0001	0.0001
Weight of Probe Washings(g):	0.0032	0.0025	0.0020
Weight of Impinger Content Organic(g):	0.0020	0.0100	0.0040
Total Weight of Particulate(g):	0.0053	0.0126	0.0061

MCCALL ENVIRONMENTAL

Sampling Data for - *TEST 1* Nov 19/20

Pinnacle Pellet
Dryer Stack 3
Williams Lake

SAMPLE POINT	VELOCITY HEAD ("H_2O)	ORIFICE PRESSURE ("H_2O)	DRY GAS METER		STACK GAS TEMP (^oF)	GAS SAMPLE VOLUME (ft^3)	ISOKINETICS
			TEMP IN (^oF)	TEMP OUT (^oF)			
A-12	0.16	1.52	93	92	94	8.11	1.00
A-11	0.16	1.54	97	97	92	10.04	1.01
A-10	0.20	1.94	106	95	91	12.02	1.00
A-9	0.18	1.75	107	95	91	14.22	1.05
A-8	0.19	1.84	107	94	92	16.42	1.03
A-7	0.20	1.94	108	94	91	18.62	0.91
A-6	0.23	2.23	109	93	91	20.62	0.94
A-5	0.23	2.24	110	93	91	22.85	1.00
A-4	0.21	2.04	110	92	91	25.21	0.95
A-3	0.19	1.85	108	93	90	27.35	1.02
A-2	0.19	1.85	109	93	90	29.55	0.99
A-1	0.19	1.85	110	93	91	31.69	0.97
B-12	0.26	2.52	111	94	94	33.77	0.98
B-11	0.26	2.53	114	94	94	36.24	0.98
B-10	0.23	2.22	114	95	97	38.71	1.00
B-9	0.21	2.06	115	96	90	41.08	1.02
B-8	0.20	1.97	115	97	89	43.40	0.94
B-7	0.17	1.67	116	97	89	45.49	1.00
B-6	0.17	1.67	114	98	89	47.54	0.98
B-5	0.15	1.48	114	98	89	49.55	0.98
B-4	0.21	2.07	113	101	90	51.45	0.98
B-3	0.18	1.76	114	98	91	53.68	0.91
B-2	0.24	2.35	112	97	90	55.61	0.90
B-1	0.21	2.09	112	96	89	57.80	0.99
						60.06	

MCCALL ENVIRONMENTAL

Sampling Data for - *TEST 2* Nov 19/20

Pinnacle Pellet

Dryer Stack 3

Williams Lake

SAMPLE POINT	VELOCITY HEAD ("H_2O)	ORIFICE PRESSURE ("H_2O)	DRY GAS METER		STACK GAS TEMP (^oF)	GAS SAMPLE VOLUME (ft^3)	ISOKINETICS
			TEMP IN (^oF)	TEMP OUT (^oF)			
B-12	0.24	2.33	90	90	90	50.34	1.02
B-11	0.26	2.53	88	91	94	52.73	0.96
B-10	0.22	2.15	104	91	93	55.06	1.02
B-9	0.22	2.16	106	91	92	57.39	0.99
B-8	0.20	1.97	107	90	91	59.66	1.06
B-7	0.18	1.78	109	91	91	61.96	1.08
B-6	0.17	1.68	108	91	91	64.20	1.02
B-5	0.17	1.67	106	90	92	66.25	1.02
B-4	0.15	1.47	106	90	92	68.29	1.07
B-3	0.20	1.96	104	89	92	70.30	0.93
B-2	0.18	1.77	105	89	91	72.31	1.00
B-1	0.23	2.25	105	88	92	74.38	0.98
A-12	0.16	1.57	107	88	92	76.66	1.04
A-11	0.18	1.77	106	88	91	78.68	0.95
A-10	0.20	1.97	107	89	91	80.65	0.99
A-9	0.20	1.97	109	89	90	82.81	1.04
A-8	0.23	2.29	110	91	91	85.09	0.99
A-7	0.23	2.27	110	91	91	87.42	0.99
A-6	0.20	1.98	112	91	91	89.75	1.07
A-5	0.20	1.98	112	91	91	92.10	1.04
A-4	0.19	1.89	113	93	89	94.37	0.97
A-3	0.19	1.89	114	93	89	96.45	0.99
A-2	0.19	1.89	115	93	89	98.58	1.03
A-1	0.18	1.79	116	94	90	100.80	1.06
						103.03	

MCCALL ENVIRONMENTAL

Sampling Data for - *TEST 3*
Pinnacle Pellet
Dryer Stack 3
Williams Lake

Nov 19/20

SAMPLE POINT	VELOCITY HEAD ("H_2O)	ORIFICE PRESSURE ("H_2O)	DRY GAS METER		STACK GAS TEMP (^oF)	GAS SAMPLE VOLUME (ft^3)	ISOKINETICS
			TEMP IN (^oF)	TEMP OUT (^oF)			
A-12	0.25	2.41	90	94	95	3.22	1.02
A-11	0.24	2.35	104	93	93	5.65	0.99
A-10	0.24	2.36	108	92	92	7.99	0.96
A-9	0.22	2.18	110	92	90	10.27	0.96
A-8	0.21	2.09	111	93	89	12.45	0.96
A-7	0.19	1.89	112	93	89	14.60	1.02
A-6	0.17	1.70	113	94	88	16.77	1.01
A-5	0.16	1.60	113	94	88	18.81	1.07
A-4	0.17	1.70	113	95	88	20.91	1.05
A-3	0.19	1.90	114	95	88	23.04	1.02
A-2	0.2	1.99	113	94	87	25.21	1.03
A-1	0.22	2.20	113	94	87	27.47	0.98
B-12	0.17	1.70	113	94	87	29.72	1.03
B-11	0.17	1.70	112	93	87	31.80	1.05
B-10	0.19	1.90	112	93	87	33.92	1.03
B-9	0.22	2.20	112	93	87	36.11	0.99
B-8	0.21	2.09	113	93	88	38.38	1.01
B-7	0.21	2.09	113	93	88	40.65	1.00
B-6	0.23	2.29	112	93	88	42.90	0.99
B-5	0.23	2.29	112	93	87	45.22	1.00
B-4	0.22	2.20	112	94	87	47.57	1.01
B-3	0.20	2.00	113	94	87	49.88	1.00
B-2	0.19	1.90	113	94	88	52.06	1.06
B-1	0.18	1.80	113	94	88	54.31	1.00
						56.38	

MCCALL ENVIRONMENTAL

Pinnacle Pellet
Dryer Stack 3
Pinnacle Pellet

Data for ***TEST 1***

OVERALL ISOKINETICS - TEST 1: 0.981

Delta P:	**0.200**	**"H_2O**	**Us avg:**	**26.41 ft/sec**
Delta H:	**1.958**		**ACFM:**	**49923 ft^3/min**
Tm avg:	**562.6**	**^oR**	**SDCFM:**	**43740 ft^3/min**
Ts avg:	**551.1**	**^oR**	**Vm std:**	**45.59 ft^3**
Bwo:	**0.024**		**Vm corr:**	**51.55 ft^3**
Md:	**28.84**		**Vm:**	**51.95 ft^3**
Ms:	**28.58**		**MF:**	**0.9923**
Pb:	**28.05**	**"Hg**	**PCON:**	**4.11 mg/m^3**
Pm:	**28.19**	**"Hg**	**ERAT:**	**0.31 kg/hr**
Ps:	**28.04**	**"Hg**		

Data for ***TEST 2***

OVERALL ISOKINETICS - TEST 2: 1.013

Delta P:	**0.198**	**"H_2O**	**Us avg:**	**26.33 ft/sec**
Delta H:	**1.958**		**ACFM:**	**49764 ft^3/min**
Tm avg:	**558.8**	**^oR**	**SDCFM:**	**43239 ft^3/min**
Ts avg:	**551.1**	**^oR**	**Vm std:**	**46.56 ft^3**
Bwo:	**0.032**		**Vm corr:**	**52.28 ft^3**
Md:	**28.84**		**Vm:**	**52.69 ft^3**
Ms:	**28.49**		**MF:**	**0.9923**
Pb:	**28.05**	**"Hg**	**PCON:**	**9.56 mg/m^3**
Pm:	**28.19**	**"Hg**	**ERAT:**	**0.70 kg/hr**
Ps:	**28.04**	**"Hg**		

Data for ***TEST 3***

OVERALL ISOKINETICS - TEST 3: 1.010

Delta P:	**0.203**	**"H_2O**	**Us avg:**	**26.62 ft/sec**
Delta H:	**2.022**		**ACFM:**	**50315 ft^3/min**
Tm avg:	**562.3**	**^oR**	**SDCFM:**	**43506 ft^3/min**
Ts avg:	**548.5**	**^oR**	**Vm std:**	**46.69 ft^3**
Bwo:	**0.042**		**Vm corr:**	**52.75 ft^3**
Md:	**28.84**		**Vm:**	**53.16 ft^3**
Ms:	**28.39**		**MF:**	**0.9923**
Pb:	**28.05**	**"Hg**	**PCON:**	**4.61 mg/m^3**
Pm:	**28.20**	**"Hg**	**ERAT:**	**0.34 kg/hr**
Ps:	**28.04**	**"Hg**		

MCCALL ENVIRONMENTAL

Pinnacle Pellet **Nov 19/20**
Dryer Stack 4 **Permit Number: RA-17557**
Williams Lake **AVERAGE OF AIR EMISSION TESTS 1 TO 3**

Gas Temperature:	116 ^{o}F	47 ^{o}C
Moisture Content (by volume):	3.00 %	
Average Stack Gas Velocity:	24.2 ft/sec	7.4 m/sec
Total Actual Gas Flow Rate:	45795 ACFM	
Dry Gas flow Rate at Reference Conditions:	38166 SCFM	18.0 m^3/sec
Total Particulate Concentration:		
Dry Basis Actual at Reference Conditions	0.008 gr/ft^3	18.10 mg/m^3
Front Half Particulate	0.005 gr/ft^3	10.9 mg/m^3
Back Half Condensibles	0.003 gr/ft^3	7.2 mg/m^3
Mass Emission Rate	2.58 lbs/hr	1.17 kg/hr

SUMMARY OF AIR EMISSION TESTS

TEST 1:

Gas Temperature:	117 ^{o}F	47 ^{o}C
Moisture Content (by volume):	2.4 %	
Average Stack Gas Velocity:	23.8 ft/sec	7.2 m/sec
Total Actual Gas Flow Rate:	44909 ACFM	
Dry Gas flow Rate at Reference Conditions:	37597 SCFM	17.7 m^3/sec
Total Particulate Concentration:		
Dry Basis Actual at Reference Conditions	.009 gr/ft^3	21.5 mg/m^3
Front Half Particulate	.005 gr/ft^3	11.0 mg/m^3
Back Half Condensibles	.005 gr/ft^3	10.5 mg/m^3
Mass Emission Rate	3.03 lbs/hr	1.38 kg/hr

TEST 2:

Gas Temperature:	119 ^{o}F	48 ^{o}C
Moisture Content (by volume):	3.4 %	
Average Stack Gas Velocity:	24.6 ft/sec	7.5 m/sec
Total Actual Gas Flow Rate:	46413 ACFM	
Dry Gas flow Rate at Reference Conditions:	38320 SCFM	18.1 m^3/sec
Total Particulate Concentration:		
Dry Basis Actual at Reference Conditions	.009 gr/ft^3	19.7 mg/m^3
Front Half Particulate	.005 gr/ft^3	12.1 mg/m^3
Back Half Condensibles	.003 gr/ft^3	7.6 mg/m^3
Mass Emission Rate	2.83 lbs/hr	1.28 kg/hr

TEST 3:

Gas Temperature:	112 ^{o}F	44 ^{o}C
Moisture Content (by volume):	3.2 %	
Average Stack Gas Velocity:	24.4 ft/sec	7.4 m/sec
Total Actual Gas Flow Rate:	46064 ACFM	
Dry Gas flow Rate at Reference Conditions:	38580 SCFM	18.2 m^3/sec
Total Particulate Concentration:		
Dry Basis Actual at Reference Conditions	.006 gr/ft^3	13.0 mg/m^3
Front Half Particulate	.004 gr/ft^3	9.6 mg/m^3
Back Half Condensibles	.001 gr/ft^3	3.4 mg/m^3
Mass Emission Rate	1.88 lbs/hr	0.85 kg/hr

DATA FOR TESTS 1 TO 3

Client:	**Pinnacle Pellet**		
Plant Location:	**Williams Lake**		
Process:	**Dryer Stack 4**		
Permit Number:	**RA-17557**		
Job Number:	**ME2021-114**		
Pollution Control Permit:	**15.0**	**mg/m3**	22.5 **m3/sec**
Number of Tests:	**3**	**tests**	
Minutes per Point:	**2.5**	**minutes**	

	TEST 1	TEST 2	TEST 3
Filter Number:	34	35	36
Date of Test:	Nov 19/20	Nov 19/20	Nov 19/20
Start Time:	9:09	10:25	11:40
Stop Time:	10:15	11:30	12:45
On-line Sampling Time:	60	60	60
Testing Personnel:	NA/OP	NA/OP	NA/OP
Sampler Model:	980	980	980
Barometric Pressure("Hg):	28.05	28.05	28.05
Static Pressure("H_2O):	-0.16	-0.16	-0.16
%CO_2:	0.0	0.0	0.0
%O_2:	21.0	21.0	21.0
%CO:	0.0	0.0	0.0
%N_2:	79.0	79.0	79.0
Diameter of Nozzle(inches):	0.320	0.320	0.320
Meter Factor:	0.9923	0.9923	0.9923
Type-S Pitot Tube Coefficient:	0.83365	0.83365	0.83365
Cross Sectional Area of Stack(ft^2):	31.5	31.5	31.5
Impinger Condensate(g):	18	28	26
Weight of Moisture in Silica Gel(g):	3.0	3.0	3.0
Weight of Filter Particulate(g):	0.0017	0.0014	0.0014
Weight of Probe Washings(g):	0.0108	0.0128	0.0098
Weight of Impinger Content Organic(g):	0.0120	0.0090	0.0040
Total Weight of Particulate(g):	0.0245	0.0232	0.0152

MCCALL ENVIRONMENTAL

Sampling Data for - *TEST 1* Nov 19/20

Pinnacle Pellet
Dryer Stack 4
Williams Lake

SAMPLE POINT	VELOCITY HEAD ("H_2O)	ORIFICE PRESSURE ("H_2O)	DRY GAS METER		STACK GAS TEMP (^oF)	GAS SAMPLE VOLUME (ft^3)	ISOKINETICS
			TEMP IN (^oF)	TEMP OUT (^oF)			
A-12	0.16	1.39	45	46	103	60.25	1.05
A-11	0.15	1.30	52	46	112	62.10	1.06
A-10	0.15	1.30	58	46	114	63.91	1.06
A-9	0.13	1.14	62	55	114	65.72	1.08
A-8	0.14	1.22	65	49	116	67.46	1.02
A-7	0.14	1.23	69	50	115	69.16	1.02
A-6	0.15	1.31	71	52	119	70.87	1.01
A-5	0.15	1.32	76	55	120	72.63	0.96
A-4	0.16	1.41	76	57	121	74.31	1.05
A-3	0.15	1.33	80	59	119	76.20	1.01
A-2	0.16	1.46	81	61	121	77.97	0.98
A-1	0.16	1.43	83	67	120	79.76	0.99
B-12	0.19	1.70	84	64	119	81.58	0.97
B-11	0.17	1.53	87	66	119	83.51	0.99
B-10	0.15	1.35	88	68	120	85.39	1.02
B-9	0.14	1.27	89	69	117	87.21	1.00
B-8	0.13	1.18	90	70	116	88.95	1.01
B-7	0.13	1.18	91	72	118	90.64	0.95
B-6	0.14	1.28	91	73	117	92.24	1.00
B-5	0.14	1.28	93	75	119	93.98	0.98
B-4	0.17	1.56	94	76	115	95.70	1.06
B-3	0.20	1.85	96	77	114	97.76	0.92
B-2	0.17	1.56	97	78	117	99.70	0.98
B-1	0.19	1.65	97	80	119	101.60	0.95
						103.55	

MCCALL ENVIRONMENTAL

Sampling Data for - *TEST 2* Nov 19/20

Pinnacle Pellet

Dryer Stack 4

Williams Lake

SAMPLE POINT	VELOCITY HEAD ("H_2O)	ORIFICE PRESSURE ("H_2O)	DRY GAS METER		STACK GAS TEMP (^oF)	GAS SAMPLE VOLUME (ft^3)	ISOKINETICS
			TEMP IN (^oF)	TEMP OUT (^oF)			
B-12	0.19	1.74	82	84	114	3.71	0.99
B-11	0.19	1.74	90	81	119	5.72	0.93
B-10	0.17	1.55	96	81	122	7.60	1.08
B-9	0.15	1.38	97	82	120	9.67	1.08
B-8	0.14	1.29	99	83	121	11.62	1.05
B-7	0.13	1.20	100	84	121	13.46	1.05
B-6	0.14	1.29	100	84	121	15.23	1.07
B-5	0.14	1.30	102	94	121	17.11	1.02
B-4	0.17	1.58	103	86	117	18.92	1.02
B-3	0.20	2.25	103	86	118	20.90	1.07
B-2	0.18	1.67	105	87	120	23.15	1.00
B-1	0.20	1.86	104	87	119	25.16	1.00
A-12	0.19	1.77	105	88	118	27.27	1.01
A-11	0.18	1.68	106	88	120	29.36	1.00
A-10	0.15	1.40	106	89	121	31.36	1.01
A-9	0.16	1.49	106	90	121	33.22	1.01
A-8	0.14	1.30	107	91	123	35.14	1.00
A-7	0.13	1.21	106	92	123	36.91	1.03
A-6	0.14	1.32	107	92	114	38.68	1.04
A-5	0.15	1.41	108	92	117	40.55	1.04
A-4	0.15	1.42	109	93	116	42.48	0.95
A-3	0.17	1.61	109	94	115	44.25	1.00
A-2	0.20	1.89	110	94	116	46.22	1.00
A-1	0.19	1.80	112	95	118	48.36	1.03
						50.52	

MCCALL ENVIRONMENTAL

Sampling Data for - *TEST 3*
Pinnacle Pellet
Dryer Stack 4
Williams Lake

Nov 19/20

SAMPLE POINT	VELOCITY HEAD ("H_2O)	ORIFICE PRESSURE ("H_2O)	DRY GAS METER		STACK GAS TEMP (^oF)	GAS SAMPLE VOLUME (ft^3)	ISOKINETICS
			TEMP IN (^oF)	TEMP OUT (^oF)			
A-12	0.19	1.77	91	90	112	50.95	1.00
A-11	0.17	1.58	95	93	119	53.01	1.01
A-10	0.17	1.60	103	93	116	54.98	1.01
A-9	0.16	1.48	105	92	117	56.96	0.94
A-8	0.14	1.31	106	93	112	58.76	1.09
A-7	0.13	1.21	107	93	112	60.71	1.03
A-6	0.14	1.31	106	93	112	62.50	0.93
A-5	0.15	1.14	109	94	111	64.17	1.03
A-4	0.15	1.14	110	94	109	66.10	1.07
A-3	0.17	1.61	111	94	107	68.10	1.00
A-2	0.2	1.88	111	95	110	70.10	0.98
A-1	0.19	1.80	113	96	108	72.21	0.98
B-12	0.19	1.80	113	96	109	74.28	0.98
B-11	0.18	1.71	113	96	107	76.35	1.00
B-10	0.18	1.70	114	99	111	78.42	1.00
B-9	0.15	1.42	114	98	109	80.49	1.00
B-8	0.14	1.33	113	100	109	82.38	1.02
B-7	0.14	1.32	113	98	113	84.24	1.00
B-6	0.13	1.22	113	99	114	86.06	1.02
B-5	0.14	1.31	114	99	114	87.84	0.99
B-4	0.17	1.61	114	100	112	89.64	1.00
B-3	0.20	1.88	115	100	115	91.65	0.98
B-2	0.18	1.70	116	100	114	93.77	0.99
B-1	0.18	1.70	116	100	112	95.81	1.04
						97.96	

Pinnacle Pellet
Dryer Stack 4
Pinnacle Pellet

Data for ***TEST 1***

OVERALL ISOKINETICS - TEST 1: 1.006

Delta P:	**0.154**	**"H_2O**	**Us avg:**	**23.76 ft/sec**
Delta H:	**1.385**		**ACFM:**	**44909 ft^3/min**
Tm avg:	**531.4**	**^oR**	**SDCFM:**	**37597 ft^3/min**
Ts avg:	**576.8**	**^oR**	**Vm std:**	**40.17 ft^3**
Bwo:	**0.024**		**Vm corr:**	**42.97 ft^3**
Md:	**28.84**		**Vm:**	**43.30 ft^3**
Ms:	**28.58**		**MF:**	**0.9923**
Pb:	**28.05**	**"Hg**	**PCON:**	**21.54 mg/m^3**
Pm:	**28.15**	**"Hg**	**ERAT:**	**1.38 kg/hr**
Ps:	**28.04**	**"Hg**		

Data for ***TEST 2***

OVERALL ISOKINETICS - TEST 2: 1.020

Delta P:	**0.164**	**"H_2O**	**Us avg:**	**24.56 ft/sec**
Delta H:	**1.548**		**ACFM:**	**46413 ft^3/min**
Tm avg:	**555.6**	**^oR**	**SDCFM:**	**38320 ft^3/min**
Ts avg:	**579.0**	**^oR**	**Vm std:**	**41.55 ft^3**
Bwo:	**0.034**		**Vm corr:**	**46.45 ft^3**
Md:	**28.84**		**Vm:**	**46.81 ft^3**
Ms:	**28.47**		**MF:**	**0.9923**
Pb:	**28.05**	**"Hg**	**PCON:**	**19.72 mg/m^3**
Pm:	**28.16**	**"Hg**	**ERAT:**	**1.28 kg/hr**
Ps:	**28.04**	**"Hg**		

Data for ***TEST 3***

OVERALL ISOKINETICS - TEST 3: 1.004

Delta P:	**0.163**	**"H_2O**	**Us avg:**	**24.37 ft/sec**
Delta H:	**1.522**		**ACFM:**	**46064 ft^3/min**
Tm avg:	**562.9**	**^oR**	**SDCFM:**	**38580 ft^3/min**
Ts avg:	**571.8**	**^oR**	**Vm std:**	**41.18 ft^3**
Bwo:	**0.032**		**Vm corr:**	**46.65 ft^3**
Md:	**28.84**		**Vm:**	**47.01 ft^3**
Ms:	**28.49**		**MF:**	**0.9923**
Pb:	**28.05**	**"Hg**	**PCON:**	**13.03 mg/m^3**
Pm:	**28.16**	**"Hg**	**ERAT:**	**0.85 kg/hr**
Ps:	**28.04**	**"Hg**		

MCCALL ENVIRONMENTAL

Pinnacle Pellet **Nov 20/20**
Cyclofilter Baghouse Stack **Permit Number: RA-17557**
Williams Lake BC **AVERAGE OF AIR EMISSION TESTS 1 TO 3**

Gas Temperature:	87 ^{o} F	31 ^{o} C
Moisture Content (by volume):	1.85 %	
Average Stack Gas Velocity:	52.9 ft/sec	16.14 m/sec
Total Actual Gas Flow Rate:	62355 ACFM	
Dry Gas flow Rate at Reference Conditions:	55934 SCFM	26.40 m^3/sec
Total Particulate Concentration:		
Dry Basis Actual at Reference Conditions	0.001 gr/ft^3	2.7 mg/m^3
Front Half Particulate	0.000 gr/ft^3	0.3 mg/m^3
Back Half Condensibles	0.001 gr/ft^3	2.4 mg/m^3
Mass Emission Rate	0.58 lbs/hr	0.26 kg/hr

SUMMARY OF AIR EMISSION TESTS

TEST 1:

Gas Temperature:	79 ^{o} F	26 ^{o} C
Moisture Content (by volume):	1.8 %	
Average Stack Gas Velocity:	51.6 ft/sec	15.7 m/sec
Total Actual Gas Flow Rate:	60815 ACFM	
Dry Gas flow Rate at Reference Conditions:	55483 SCFM	26.2 m^3/sec
Total Particulate Concentration:		
Dry Basis Actual at Reference Conditions	.001 gr/ft^3	2.2 mg/m^3
Front Half Particulate	.000 gr/ft^3	.4 mg/m^3
Back Half Condensibles	.001 gr/ft^3	1.8 mg/m^3
Mass Emission Rate	0.45 lbs/hr	0.20 kg/hr

TEST 2:

Gas Temperature:	91 ^{o} F	33 ^{o} C
Moisture Content (by volume):	1.9 %	
Average Stack Gas Velocity:	54.0 ft/sec	16.5 m/sec
Total Actual Gas Flow Rate:	63631 ACFM	
Dry Gas flow Rate at Reference Conditions:	56703 SCFM	26.8 m^3/sec
Total Particulate Concentration:		
Dry Basis Actual at Reference Conditions	.001 gr/ft^3	2.9 mg/m^3
Front Half Particulate	.000 gr/ft^3	.2 mg/m^3
Back Half Condensibles	.001 gr/ft^3	2.7 mg/m^3
Mass Emission Rate	0.61 lbs/hr	0.28 kg/hr

TEST 3:

Gas Temperature:	92 ^{o} F	34 ^{o} C
Moisture Content (by volume):	1.9 %	
Average Stack Gas Velocity:	53.2 ft/sec	16.2 m/sec
Total Actual Gas Flow Rate:	62618 ACFM	
Dry Gas flow Rate at Reference Conditions:	55617 SCFM	26.2 m^3/sec
Total Particulate Concentration:		
Dry Basis Actual at Reference Conditions	.001 gr/ft^3	3.2 mg/m^3
Front Half Particulate	.000 gr/ft^3	.5 mg/m^3
Back Half Condensibles	.001 gr/ft^3	2.7 mg/m^3
Mass Emission Rate	0.67 lbs/hr	0.30 kg/hr

DATA FOR TESTS 1 TO 3

Client:	**Pinnacle Pellet**		
Plant Location:	**Williams Lake BC**		
Process:	**Cyclofilter Baghouse Stack**		
Permit Number:	**RA-17557**		
Job Number:	**ME2021-114**		
Pollution Control Permit:	**15.0** **mg/m3**	30	**m3/sec**
Number of Tests:	**3** **tests**		
Minutes per Point:	**2.5** **minutes**		

	TEST 1	TEST 2	TEST 3
Filter Number:	41	42	43
Date of Test:	Nov 20/20	Nov 20/20	Nov 20/20
Start Time:	8:23	9:38	10:55
Stop Time:	9:25	10:43	12:00
On-line Sampling Time:	60	60	60
Testing Personnel:	DL/OP	DL/OP	DL/OP
Sampler Model:	1013	1013	1013
Barometric Pressure("Hg):	28.35	28.35	28.35
Static Pressure("H_2O):	-0.10	-0.10	-0.10
%CO_2:	0.0	0.0	0.0
%O_2:	21.0	21.0	21.0
%CO:	0.0	0.0	0.0
%N_2:	79.0	79.0	79.0
Diameter of Nozzle(inches):	0.205	0.205	0.205
Meter Factor:	0.9922	0.9922	0.9922
Type-S Pitot Tube Coefficient:	0.84158	0.84158	0.84158
Cross Sectional Area of Stack(ft^2):	19.63	19.63	19.63
Impinger Condensate(g):	10	12	12
Weight of Moisture in Silica Gel(g):	5.0	4.0	4.0
Weight of Filter Particulate(g):	0.0001	0.0001	0.0001
Weight of Probe Washings(g):	0.0003	0.0001	0.0004
Weight of Impinger Content Organic(g):	0.0020	0.0030	0.0030
Total Weight of Particulate(g):	0.0024	0.0032	0.0035

Sampling Data for - *TEST 1*

Nov 20/20

Pinnacle Pellet
Cyclofilter Baghouse Stack
Williams Lake BC

SAMPLE POINT	VELOCITY HEAD ("H_2O)	ORIFICE PRESSURE ("H_2O)	DRY GAS METER		STACK GAS TEMP (^oF)	GAS SAMPLE VOLUME (ft^3)	ISOKINETICS
			TEMP IN (^oF)	TEMP OUT (^oF)			
A-12	0.65	1.25	33	33	81	0.00	1.01
A-11	0.70	1.35	37	37	83	1.48	1.01
A-10	0.65	1.27	37	37	79	3.03	1.02
A-9	0.55	1.07	38	39	80	4.54	1.04
A-8	0.50	0.98	38	38	79	5.96	1.02
A-7	0.55	1.08	40	40	80	7.28	0.99
A-6	0.60	1.18	40	40	79	8.64	1.04
A-5	0.70	1.37	41	41	80	10.12	0.99
A-4	0.75	1.47	42	41	80	11.65	1.02
A-3	0.85	1.67	38	41	76	13.28	1.00
A-2	1.40	2.76	40	39	77	14.98	0.94
A-1	1.30	2.56	40	40	75	17.03	1.02
B-12	1.00	1.98	44	39	76	19.17	1.05
B-11	0.95	1.88	45	42	76	21.11	1.02
B-10	1.00	1.99	48	43	78	22.96	1.00
B-9	0.80	1.59	47	46	77	24.83	1.04
B-8	0.65	1.30	51	46	79	26.57	1.01
B-7	0.50	1.00	50	50	78	28.09	1.02
B-6	0.50	1.00	52	51	80	29.45	1.03
B-5	0.55	1.11	51	50	76	30.83	0.98
B-4	0.65	1.31	55	51	79	32.20	1.01
B-3	0.80	1.61	54	53	78	33.74	0.99
B-2	1.25	2.53	57	55	80	35.42	0.98
B-1	1.30	2.63	58	57	79	37.50	1.00
						39.67	

MCCALL ENVIRONMENTAL

Sampling Data for - *TEST 2* Nov 20/20

Pinnacle Pellet

Cyclofilter Baghouse Stack

Williams Lake BC

SAMPLE POINT	VELOCITY HEAD ("H_2O)	ORIFICE PRESSURE ("H_2O)	DRY GAS METER		STACK GAS TEMP (^oF)	GAS SAMPLE VOLUME (ft^3)	ISOKINETICS
			TEMP IN (^oF)	TEMP OUT (^oF)			
A-12	1.10	2.23	69	68	91	0.00	1.00
A-11	1.00	2.03	67	66	88	2.02	1.02
A-10	0.95	1.94	69	67	87	3.97	1.01
A-9	0.95	1.94	69	67	86	5.86	0.98
A-8	0.90	1.85	72	71	88	7.70	0.97
A-7	0.70	1.44	71	70	87	9.49	1.03
A-6	0.65	1.34	75	73	88	11.16	1.03
A-5	0.60	1.24	74	75	88	12.78	1.01
A-4	0.50	1.03	77	76	90	14.31	1.00
A-3	0.60	1.24	76	75	89	15.69	0.98
A-2	1.25	2.59	80	79	91	17.18	1.03
A-1	1.40	2.90	79	78	90	19.43	0.95
B-12	0.60	1.25	83	81	91	21.64	1.03
B-11	0.75	1.55	82	81	93	23.22	0.99
B-10	0.70	1.46	86	85	93	24.90	1.00
B-9	0.70	1.45	85	84	94	26.56	0.98
B-8	0.55	1.15	87	86	95	28.18	1.01
B-7	0.60	1.25	87	87	93	29.67	0.97
B-6	0.65	1.36	89	88	94	31.16	0.98
B-5	0.75	1.57	89	88	93	32.73	0.96
B-4	0.80	1.68	90	90	94	34.39	1.00
B-3	0.90	1.89	90	90	94	36.18	0.97
B-2	1.40	2.96	91	91	91	38.01	0.95
B-1	1.45	3.07	91	91	90	40.26	1.00
						42.68	

MCCALL ENVIRONMENTAL

Sampling Data for - *TEST 3* Nov 20/20

Pinnacle Pellet

Cyclofilter Baghouse Stack

Williams Lake BC

SAMPLE POINT	VELOCITY HEAD ("H_2O)	ORIFICE PRESSURE ("H_2O)	DRY GAS METER		STACK GAS TEMP (^oF)	GAS SAMPLE VOLUME (ft^3)	ISOKINETICS
			TEMP IN (^oF)	TEMP OUT (^oF)			
A-12	0.60	1.25	88	90	97	0.00	1.01
A-11	0.70	1.47	86	90	92	1.55	0.99
A-10	0.70	1.47	86	88	89	3.20	0.99
A-9	0.60	1.26	86	89	89	4.86	0.99
A-8	0.50	1.05	86	86	89	6.39	0.98
A-7	0.50	1.06	87	87	87	7.77	0.96
A-6	0.65	1.38	89	89	88	9.13	0.95
A-5	0.70	1.48	90	90	90	10.67	0.98
A-4	0.70	1.48	90	91	90	12.31	0.98
A-3	0.90	1.90	91	91	91	13.96	1.02
A-2	1.25	2.64	92	92	91	15.90	0.98
A-1	1.50	3.19	93	94	92	18.10	0.96
B-12	0.65	1.38	95	95	92	20.45	1.06
B-11	0.95	2.01	95	96	94	22.18	0.95
B-10	1.10	2.33	94	95	93	24.04	0.98
B-9	1.00	2.13	97	97	94	26.11	1.01
B-8	0.90	1.91	97	97	94	28.15	1.00
B-7	0.75	1.59	98	98	96	30.07	1.02
B-6	0.55	1.17	96	97	94	31.85	1.07
B-5	0.60	1.27	96	97	95	33.45	0.94
B-4	0.55	1.17	96	97	95	34.92	0.99
B-3	0.75	1.59	97	98	95	36.41	0.98
B-2	1.30	2.76	97	97	94	38.13	0.99
B-1	1.40	2.98	98	98	95	40.40	0.98
						42.75	

Pinnacle Pellet
Cyclofilter Baghouse Stack
Pinnacle Pellet

Data for ***TEST 1***

OVERALL ISOKINETICS - TEST 1: 1.010

Delta P:	**0.777**	**"H_2O**	**Us avg:**	**51.63 ft/sec**
Delta H:	**1.581**		**ACFM:**	**60815 ft^3/min**
Tm avg:	**504.3**	**^oR**	**SDCFM:**	**55483 ft^3/min**
Ts avg:	**538.5**	**^oR**	**Vm std:**	**39.21 ft^3**
Bwo:	**0.018**		**Vm corr:**	**39.36 ft^3**
Md:	**28.84**		**Vm:**	**39.67 ft^3**
Ms:	**28.65**		**MF:**	**0.9922**
Pb:	**28.35**	**"Hg**	**PCON:**	**2.16 mg/m^3**
Pm:	**28.47**	**"Hg**	**ERAT:**	**0.20 kg/hr**
Ps:	**28.34**	**"Hg**		

Data for ***TEST 2***

OVERALL ISOKINETICS - TEST 2: 0.994

Delta P:	**0.831**	**"H_2O**	**Us avg:**	**54.02 ft/sec**
Delta H:	**1.767**		**ACFM:**	**63631 ft^3/min**
Tm avg:	**539.9**	**^oR**	**SDCFM:**	**56703 ft^3/min**
Ts avg:	**550.8**	**^oR**	**Vm std:**	**39.42 ft^3**
Bwo:	**0.019**		**Vm corr:**	**42.35 ft^3**
Md:	**28.84**		**Vm:**	**42.68 ft^3**
Ms:	**28.64**		**MF:**	**0.9922**
Pb:	**28.35**	**"Hg**	**PCON:**	**2.87 mg/m^3**
Pm:	**28.48**	**"Hg**	**ERAT:**	**0.28 kg/hr**
Ps:	**28.34**	**"Hg**		

Data for ***TEST 3***

OVERALL ISOKINETICS - TEST 3: 0.990

Delta P:	**0.802**	**"H_2O**	**Us avg:**	**53.17 ft/sec**
Delta H:	**1.747**		**ACFM:**	**62618 ft^3/min**
Tm avg:	**552.9**	**^oR**	**SDCFM:**	**55617 ft^3/min**
Ts avg:	**552.3**	**^oR**	**Vm std:**	**38.56 ft^3**
Bwo:	**0.019**		**Vm corr:**	**42.42 ft^3**
Md:	**28.84**		**Vm:**	**42.75 ft^3**
Ms:	**28.63**		**MF:**	**0.9922**
Pb:	**28.35**	**"Hg**	**PCON:**	**3.21 mg/m^3**
Pm:	**28.48**	**"Hg**	**ERAT:**	**0.30 kg/hr**
Ps:	**28.34**	**"Hg**		

Air Emission Monitoring Procedure

Particulate Sampling (Napp-Baldwin Model 31 Sampler)

Particulate sampling and gas velocity measurements were conducted using a Napp-Baldwin Model 31 stack sampler in accordance with the methods specified in EPA Method 5 (See Figure 1).

The air discharge was sampled isokinetically at the centroid of a series of equal area segments across the duct or stack. The stack gas velocity and temperature were recorded during the sample collection period with a calibrated pitot tube and thermocouple mounted on the sampling probe. The sample was delivered from the probe to a cyclone and a filter holder containing a 110mm Type A glass fiber filter. The gas sample was then drawn in through a series of four glass impingers which condensed and absorbed the water from the gas. A leakless vacuum pump carried the sampled gas through a dry gas test meter where the volume, temperature, and pressure were measured; and finally through a flow indicating orifice which allowed for the rapid adjustment to isokinetic sampling rates.

At the end of each test, the probe interior, cyclone and connecting tubing from the probe to the filter housing were rinsed with distilled water and acetone. These washings were evaporated to dryness and the resulting solids were weighed. The weight of the cyclone flask and the filter was used together with the weight of solids in the washings to calculate the particulate concentration. The moisture content of the stack gas was determined from the quantity of water condensed in the impingers and absorbed in the silica gel.

O_2, CO_2, CO (where applicable)

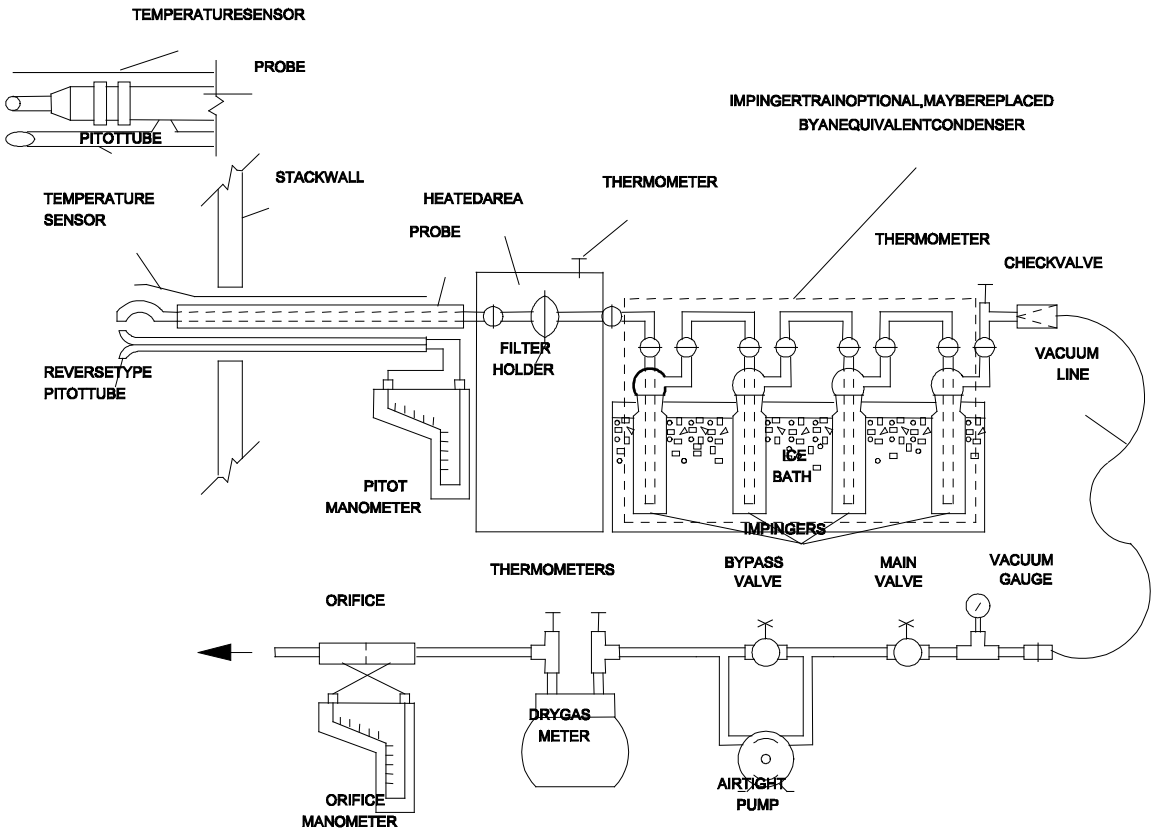
O_2, CO_2, and CO were found using either Fuji Analytical Analyzer by means of infrared and paramagnetic technology (EPA 3A) or by fyrite (EPA Method 3).

NOx (where applicable)

NOx was found using and API Model 252 NOx analyzer that utilizes chemiluminescent technology. Stack gas was Samples were taken over a minimum period of three hours.

VOC's (where applicable)

Hydrocarbons were measured in accordance with EPA method 25A. Samples were drawn in one hour test runs using a total hydrocarbon analyzer that utilizes Flame Ionization Technology.



EPA Method 5 Diagram- Figure 1

CALCULATIONS

Carry out calculations, retaining at least one extra decimal figure beyond that of the acquired data. Round off figures after the final calculation. Other forms of the equations may be used as long as they give equivalent results.

Nomenclature.

A_n = Cross-sectional area of nozzle, m^2 (ft^2).
B_{ws} = Water vapor in the gas stream, proportion by volume.
C_a = Acetone blank residue concentration, mg/g.
c_s = Concentration of particulate matter in stack gas, dry basis, corrected to standard conditions, g/dscm (g/dscf).
I = Percent of isokinetic sampling.
L_a = Maximum acceptable leakage rate for either a pretest leak check or for a leak check following a component change; equal to 0.00057 m^3/min (0.02 cfm) or 4 percent of the average sampling rate, whichever is less.
L_i = Individual leakage rate observed during the leak check conducted prior to the "i^{th}" component change (i = l, 2, 3...n), m^3/min (cfm).
L_p = Leakage rate observed during the post-test leak check, m^3/min (cfm).
m_a = Mass of residue of acetone after evaporation, mg.
m_n = Total amount of particulate matter collected, mg.
M_w = Molecular weight of water, l8.0 g/g-mole (l8.0 lb/lb-mole).
P_{bar} = Barometric pressure at the sampling site, mm Hg (in. Hg).
P_s = Absolute stack gas pressure, mm Hg (in. Hg).
P_{std} = Standard absolute pressure, 760 mm Hg (29.92 in. Hg).
R = Ideal gas constant, 0.06236 [(mmHg)(m^3)]/[(°K)(g-mole)] {2l.85 [(in. Hg)(ft^3)]/[(°R)(lb-mole)]}.
T_m = Absolute average DGM temperature (see Figure 5-2), °K (°R).
T_s = Absolute average stack gas temperature (see Figure 5-2), °K (°R).
T_{std} = Standard absolute temperature, 293°K (528°R).
V_a = Volume of acetone blank, ml.
V_{aw} = Volume of acetone used in wash, ml.
V_{lc} = Total volume liquid collected in impingers and silica gel (see Figure 5-3), ml.
V_m = Volume of gas sample as measured by dry gas meter, dcm (dcf).
$V_{m(std)}$ = Volume of gas sample measured by the dry gas meter, corrected to standard conditions, dscm (dscf).
$V_{w(std)}$ = Volume of water vapor in the gas sample, corrected to standard conditions, scm (scf).
v_s = Stack gas velocity, calculated by Method 2, Equation 2-9, using data obtained from Method 5, m/sec (ft/sec).
W_a = Weight of residue in acetone wash, mg.
Y = Dry gas meter calibration factor.
ΔH = Average pressure differential across the orifice meter (see Figure 5-2), mm H_20 (in. H_20).
ρ_a = Density of acetone, mg/ml (see label on bottle).
ρ_w = Density of water, 0.9982 g/ml (0.00220l lb/ml).
θ = Total sampling time, min.
θ_l = Sampling time interval, from the beginning of a run until the first component change, min.
θ_i = Sampling time interval, between two successive component changes, beginning with the interval between the first and second changes, min.
θ_p = Sampling time interval, from the final (n^{th}) component change until the end of the sampling run, min.
l3.6 = Specific gravity of mercury.
60 = Sec/min.
l00 = Conversion to percent.

Average Dry Gas Meter Temperature and Average Orifice Pressure Drop.

Dry Gas Volume. Correct the sample volume measured by the dry gas meter to standard conditions (20°C, 760 mm Hg or 68°F, 29.92 in. Hg) by using Equation 5-l.

$$V_{m(std)} = V_m Y \left(\frac{T_{std}}{T_m} \right) \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{P_{std}} \right] \qquad \text{Eq. 5-1}$$

$$= K_1 V_m Y \frac{P_{bar} + \left(\frac{\Delta H}{13.6} \right)}{T_m}$$

where:

K_l = 0.3858 °K/mm Hg for metric units,

= l7.64 °R/in. Hg for English units.

NOTE: Equation 5-l can be used as written unless leakage rate observed during any of the mandatory leak checks (i.e., the post-test leak check or leak checks conducted prior to component changes) exceeds L_a. If L_p or L_i exceeds L_a, Equation 5-l must be modified as follows:

(a) Case I. No component changes made during sampling run. In this case, replace V_m in Equation 5-l with the expression:

$$[V_m - (L_p - L_a)\,\theta]$$

(b) Case II. One or more component changes made during the sampling run. In this case, replace V_m in Equation 5-l by the expression:

$$\left[V_m - (L_1 - L_a)\theta_1 - \sum_{i=2}^{n} (L_i - L_a)\theta_i - (L_p - L_a)\theta_p \right]$$

and substitute only for those leakage rates (L_i or L_p) which exceed L_a.

Volume of Water Vapor.

$$V_{w(std)} = \frac{V_{lc}\,\rho_w\,R\,T_{std}}{M_w\,P_{std}} = K_2\,V_{lc} \qquad \text{Eq. 5-2}$$

where:

K_2 = 0.00l333 m^3/ml for metric units,

= 0.04707 ft^3/ml for English units.

Moisture Content.

$$B_{ws} = \frac{V_{w(std)}}{V_{m(std)} + V_{w(std)}} \qquad \text{Eq. 5-3}$$

Acetone Blank Concentration.

$$C_a = \frac{m_a}{V_a \rho_a} \qquad \text{Eq. 5-4}$$

Acetone Wash Blank.

$$W_a = C_a V_{aw} \rho_a \qquad \text{Eq. 5-5}$$

Total Particulate Weight. Determine the total particulate matter catch from the sum of the weights obtained from Containers l and 2 less the acetone blank (see Figure 5-3).

Particulate Concentration.

$$C_s = (0.001 g/mg)(m_n / V_{m(std)}) \qquad \text{Eq. 5-6}$$

Conversion Factors:

From	To	Multiply by
scf	m^3	0.02832
g/ft^3	gr/ft^3	l5.43
g/ft^3	lb/ft^3	2.205×10^{-3}
g/ft^3	g/m^3	35.3l

Isokinetic Variation.

Calculation from Raw Data.

$$I = \frac{100 T_s \left[K_3 V_{1c} + (V_m Y / T_m)(P_{bar} + \Delta H/13.6)\right]}{60\theta V_s P_s A_n} \qquad \text{Eq. 5-7}$$

where:

K_3 = 0.003454 [(mm Hg)(m^3)]/[(ml)(°K)] for metric units,

= 0.002669 [(in. Hg)(ft^3)]/[(ml)(°R)] for English units.

Calculation from Intermediate Values.

$$I = \frac{100\, T_s\, V_{m(std)}\, P_{std}}{60\, T_{std}\, v_s\, \theta\, A_n\, P_s\, (1 - B_{ws})} = \frac{K_4\, T_s\, V_{m(std)}}{P_s\, v_s\, A_n\, \theta (1 - B_{ws})} \qquad \text{Eq.5-8}$$

where:

K_4 = 4.320 for metric units,

= 0.09450 for English units.

Acceptable Results. If 90 percent ≤ I ≤ ll0 percent, the results are acceptable. If the PM results are low in comparison to the standard, and "I" is over 110 percent or less than 90 percent, the Administrator may opt to accept the results. Citation 4 in the Bibliography may be used to make acceptability judgments. If "I" is judged to unacceptable, reject the results, and repeat the test.

Average Stack Gas Velocity.

$$v_s = K_p\, C_p\, (\sqrt{\Delta p})_{avg} \sqrt{\frac{T_{s(avg)}}{P_s\, M_s}}$$

Average Stack Gas Dry Volumetric Flow Rate.

$$Q_{sd} = 3{,}600(1 - B_{ws})\, v_s\, A\, \frac{T_{std}}{T_{s(avg)}}\, \frac{P_s}{P_{std}}$$

where:

A	=	Cross-sectional area of stack, m^2 (ft^2).
B_{ws}	=	Water vapor in the gas stream (from Method 5 or Reference Method 4), proportion by volume.
C_p	=	Pitot tube coefficient, dimensionless.
K_p	=	Pitot tube constant,
M_d	=	Molecular weight of stack gas, dry basis (see Section 3.6), g/gmole (lb/lb-mole).
M_s	=	Molecular weight of stack gas, wet basis, g/g-mole (lb/lb-mole).

$$= M_d\, (1 - B_{ws}) + 18.0\, B_{ws} \qquad \text{Eq. 2-5}$$

P_{bar}	=	Barometric pressure at measurement site, mm Hg (in. Hg).
P_g	=	Stack static pressure, mm Hg (in. Hg).
P_s	=	Absolute stack pressure, mm Hg (in. Hg),

$$= P_{bar} + P_g$$

P_{std}	=	Standard absolute pressure, 760 mm Hg (29.92 in. Hg).
Q_{sd}	=	Dry volumetric stack gas flow rate corrected to standard conditions, dsm^3/hr (dscf/hr).
t_s	=	Stack temperature, □C (□F).
T_s	=	Absolute stack temperature, □K (□R).

CALIBRATION CERTIFICATE
DRY GAS METER

DATE: 03-Jul-20

CONSOLE MANUF.: NAPP/MILLENNIUM MODEL 32

CONSOLE I.D.: MU 1013

PARAMETER SUMMARY	RUN #1	RUN #2	RUN #3
Ta = Ambient (WTM) Temperature (oF.)	65.0	65.0	65.0
P=Pres. Differential at WTM ("Hg)	0.0662	0.1361	0.1913
Pb= Atmospheric Pressure ("Hg)	27.90	27.90	27.90
Pv= Vapour Pressure Water at Temp. Ta ("Hg)	0.6220	0.6220	0.6220
H=Pres. Differential at Orifice	1.0	2.0	3.0
Ti= Dry Test Meter Inlet Temp. (oF.)	70.0	68.0	74.0
To= Dry Test Meter Outlet Temp. (oF.)	67.0	64.0	73.0
Ri= Initial Dry Test volume (ft3)	0.00	0.00	0.00
Rf= Final Dry Test Volume (ft3)	4.91	4.84	4.89
Vi= Initial Wet Test Volume (ft3)	0.0	0.0	0.0
Vf= Final Wet Test Volume (ft3)	5.000	5.000	5.000
Pw= Pb - (^P/13.59) "Hg	27.8338	27.7639	27.7087
Pd= Pb + (^H/13.59) "Hg	27.9736	28.0472	28.1208
Tw= Ta +460 (oR.)	525.0	525.0	525.0
Td= [(Ti + To)/2] + 460 (oR.)	528.5	526.0	533.5
Bw= Pv/Pb ("Hg)	0.0223	0.0223	0.0223
WET TEST METER FACTOR (WTMF)	0.9922	0.9922	0.9922
ated Y Value)(WTMF)	0.9895	0.9939	0.9932

Y (MEAN)(WTMF) = 0.9922

N.R. MCCALL & ASSOCIATES LTD.

Calibrating Technician Signature:

ORIFICE METER CALIBRATION

DATE: 03-Jul-20

CONSOLE I.D. MU 1013

	RUN 1	RUN 2	RUN 3
MD= mol. wt. dry air	28.967	28.967	28.967
Pb=bar. pressure "Hg	27.9	27.9	27.9
Y=gas meter factor	0.9895	0.9895	0.9939
Delta H=	0.5	1	1.5
Ri=int. gas meter vol.	0	0	0
Rf=final gas meter vol.	1.88	2.76	3.37
min. samp	5	5	5
Qm=Y(Rf-Ri)/^T(FT3/MIN)	0.372052	0.546204	0.6698886
To=meter outlet Temp (oF)	70	69	69
Tm=meter out temp. (oR)	530	529	529
Pm=Pb + ^H	27.936792	27.9735835	28.0103753
SQRT(Tm/Pm*H/Md)	0.5722462	0.80798263	0.98892246
Ko=orifice const.	0.6501607	0.67600958	0.67739244

Ko MEAN = 0.6678542

Ko*4*144= 384.68405

McCALL ENVIRONMENTAL LTD.

Calibrating Technician Signature:

ORIFICE METER CALIBRATION

DATE: 03-Jul-20

CONSOLE I.D. MU 1013

	RUN 4	RUN 5	RUN 6
MD= mol. wt. dry air	28.967	28.967	28.967
Pb=bar. pressure "Hg	27.9	27.9	27.9
Y=gas meter factor	0.9939	0.9932	0.9932
Delta H=	2	2.5	3
Ri=int. gas meter vol.	0	0	0
Rf=final gas meter vol.	3.88	4.31	4.76
min. samp	5	5	5
Qm=Y(Rf-Ri)/^T(FT3/MIN)	0.7712664	0.8561384	0.9455264
To=meter outlet Temp (oF)	71.5	73	75
Tm=meter out temp. (oR)	531.5	533	535
Pm=Pb + ^H	28.047167	28.0839588	28.1207506
SQRT(Tm/Pm*H/Md)	1.1438534	1.27983118	1.40369355
Ko=orifice const.	0.6742703	0.66894635	0.67359888

Ko MEAN = 0.6722718

Ko*4*144= 387.22858

McCALL ENVIRONMENTAL LTD.

Calibrating Technician Signature:

CALIBRATION CERTIFICATE
DRY GAS METER

DATE: July 14/2020

CONSOLE MANUF.: NAPP MODEL 31

CONSOLE I.D.: C-980

PARAMETER SUMMARY	RUN #1	RUN #2	RUN #3
Ta = Ambient (WTM) Temperature (oF.)	66.2	66.2	66.2
P=Pres. Differential at WTM ("Hg)	0.0735	0.1545	0.2207
Pb= Atmospheric Pressure ("Hg)	28.30	28.30	28.30
Pv= Vapour Pressure Water at Temp. Ta ("Hg)	0.6440	0.6440	0.6440
H=Pres. Differential at Orifice	1.0	2.0	3.0
Ti= Dry Test Meter Inlet Temp. (oF.)	85.0	84.0	94.0
To= Dry Test Meter Outlet Temp. (oF.)	73.0	71.0	74.0
Ri= Initial Dry Test volume (ft3)	92.40	85.97	98.42
Rf= Final Dry Test Volume (ft3)	97.38	90.90	103.40
Vi= Initial Wet Test Volume (ft3)	0.0	0.0	0.0
Vf= Final Wet Test Volume (ft3)	5.000	5.000	5.000
Pw= Pb - (^P/13.59) "Hg	28.2265	28.1455	28.0793
Pd= Pb + (^H/13.59) "Hg	28.3736	28.4472	28.5208
Tw= Ta +460 (oR.)	526.2	526.2	526.2
Td= [(Ti + To)/2] + 460 (oR.)	539.0	537.5	544.0
Bw= Pv/Pb ("Hg)	0.0228	0.0228	0.0228
WET TEST METER FACTOR (WTMF)	0.9922	0.9922	0.9922
ated Y Value)(WTMF)	0.9920	0.9939	0.9909

Y (MEAN)(WTMF) = 0.9923

N.R. MCCALL & ASSOCIATES LTD.

Calibrating Technician Signature:

ORIFICE METER CALIBRATION

DATE: July14/2020

CONSOLE I.D. C-980

	RUN 1	RUN 2	RUN 3
MD= mol. wt. dry air	28.967	28.967	28.967
Pb=bar. pressure "Hg	28.3	28.3	28.3
Y=gas meter factor	0.9920	0.9920	0.9939
Delta H=	0.5	1	1.5
Ri=int. gas meter vol.	6.2	8.8	12.3
Rf=final gas meter vol.	8.39	11.85	16.01
min. samp	5	5	5
Qm=Y(Rf-Ri)/^T(FT3/MIN)	0.434496	0.60512	0.7374738
To=meter outlet Temp (oF)	68	70	80
Tm=meter out temp. (oR)	528	530	540
Pm=Pb + ^H	28.336792	28.3735835	28.4103753
SQRT(Tm/Pm*H/Md)	0.5671199	0.80302503	0.99209272
Ko=orifice const.	0.7661449	0.75355061	0.74335169

Ko MEAN = 0.7543491

Ko*4*144= 434.50506

McCALL ENVIRONMENTAL LTD.

Calibrating Technician Signature:

ORIFICE METER CALIBRATION

DATE: July14/2020

CONSOLE I.D. C-980

	RUN 4	RUN 5	RUN 6
MD= mol. wt. dry air	28.967	28.967	28.967
Pb=bar. pressure "Hg	28.3	28.3	28.3
Y=gas meter factor	0.9939	0.9909	0.9909
Delta H=	2	2.5	3
Ri=int. gas meter vol.	16.4	21	26.2
Rf=final gas meter vol.	20.64	25.68	31.35
min. samp	5	5	5
Qm=Y(Rf-Ri)/^T(FT3/MIN)	0.8428272	0.9274824	1.020627
Tm=meter out temp. (oF)	76	78	80
Tm=meter out temp. (oR.)	536	538	540
Pm=Pb + ^H	28.447167	28.483959	28.520751
SQRT(Tm/Pm*H/Md)	1.140581	1.2767598	1.4003135
Ko=orifice const.	0.7389455	0.7264345	0.7288561

Ko MEAN = 0.731412

Ko*4*144= 421.29333

McCALL ENVIRONMENTAL LTD.

Calibrating Technician Signature:

Calibration Certificate for S-Type Pitot Tube

Date: 8-Jan-20 *Barometric Pressure ("Hg):* 29.78

Pitot I.D.: **200** *Wind Tunnel Temperature (^{O}F):* 70.0

Nozzle: 0.250

Wind Velocity (ft/sec)	*Ref.Pitot ("H_2O)*	*S-Type Pitot ("H_2O)*	*Pitot Factor*
17.53	0.06982	0.10114	0.82249
41.78	0.39667	0.56684	0.82817
50.67	0.58346	0.81271	0.83883
60.32	0.82699	1.14880	0.83997
86.08	1.68407	2.38761	0.83144
101.99	2.36401	3.27573	0.84102

Average= 0.83365

Note: The new pitot tip should be installed so that the serial number engraved is aligned directly into the gas stream.

Calibrating Technician Signature:

Calibration Certificate for S-Type Pitot Tube

Date: Jan 13/20 *Barometric Pressure ("Hg):* 28.25

Pitot I.D.: **242** *Wind Tunnel Temperature (^{O}F):* 71.0

Nozzle: 0.250

Wind Velocity (ft/sec)	*Ref.Pitot ("H_2O)*	*S-Type Pitot ("H_2O)*	*Pitot Factor*
13.07	0.03676	0.05091	0.84120
19.56	0.08230	0.11495	0.83765
42.21	0.38343	0.53104	0.84123
64.61	0.89820	1.20776	0.85375
84.98	1.55395	2.11982	0.84763
106.66	2.44808	3.49980	0.82799

Average= 0.84158

Note: The new pitot tip should be installed so that the serial number engraved is aligned directly into the gas stream.

Calibration Certificate for S-Type Pitot Tube

Date: Jan 13/20 *Barometric Pressure ("Hg):* 28.25

Pitot I.D.: **248** *Wind Tunnel Temperature (^{O}F):* 71.0

Nozzle: .

Wind Velocity (ft/sec)	*Ref.Pitot ("H_2O)*	*S-Type Pitot ("H_2O)*	*Pitot Factor*
12.83	0.03545	0.04995	0.83396
20.47	0.09017	0.12459	0.84223
41.56	0.37165	0.53192	0.82753
64.49	0.89496	1.25108	0.83732
83.83	1.51225	2.12472	0.83521
106.66	2.44834	3.47904	0.83050

Average= 0.83446

Note: The new pitot tip should be installed so that the serial number engraved is aligned directly into the gas stream.

Element
#104, 19575-55 A Ave.
Surrey, British Columbia
V3S 8P8, Canada

T: +1 (604) 514-3322
F: +1 (604) 514-3323
E: info.vancouver@element.com
W: www.element.com

Report Transmission Cover Page

Bill To: McCall Environmental
6733 Buchanan Road
Coldstream, BC, Canada
V1B 3C5
Attn: Accounts Payable
Sampled By:
Company: McCall Environmental

Project ID: Pinnacle Pellet
Project Name: Dryer Stacks
Project Location: Williams Lake
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1460931**
Control Number:
Date Received: Nov 24, 2020
Date Reported: Nov 30, 2020
Report Number: 2574638

Contact	Company	Address
Accounts Payable	**McCall Environmental**	6733 Buchanan Road Coldstream, BC V1B 3C5 Phone: (250) 542-5118 Fax: Email: invoicing@mccallenvironmental.net

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Contact	Company	Address
Dan Lawrence	**McCall Environmental**	6733 Buchanan Road Coldstream, BC V1B 3C5 Phone: (250) 542-5118 Fax: Email: dan.w.lawrence@outlook.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report
Email - Multiple Reports By Agreement	PDF	COA
Email - Multiple Reports By Agreement	PDF	COR

Contact	Company	Address
Matt McCall	**McCall Environmental**	6733 Buchanan Road Coldstream, BC V1B 3C5 Phone: (250) 542-5118 Fax: Email: matt@mccallenvironmental.net

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report
Email - Multiple Reports By Agreement	PDF	COA

Notes To Clients:

Element
#104, 19575-55 A Ave.
Surrey, British Columbia
V3S 8P8, Canada

T: +1 (604) 514-3322
F: +1 (604) 514-3323
E: info.vancouver@element.com
W: www.element.com

Analytical Report

Bill To: McCall Environmental
6733 Buchanan Road
Coldstream, BC, Canada
V1B 3C5
Attn: Accounts Payable
Sampled By:
Company: McCall Environmental

Project ID: Pinnacle Pellet
Project Name: Dryer Stacks
Project Location: Williams Lake
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1460931**
Control Number:
Date Received: Nov 24, 2020
Date Reported: Nov 30, 2020
Report Number: 2574638

Reference Number	1460931-1	1460931-2	1460931-3
Sample Date	Nov 19, 2020	Nov 19, 2020	Nov 19, 2020
Sample Time	NA	NA	NA
Sample Location			
Sample Description	Dryer Stack 1 / Test 1	Dryer Stack 1 / Test 2	Dryer Stack 1 / Test 3
Matrix	Water	Water	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents						
Oil and Grease	Total	mg/sample	<2	<2	<2	2
Volume	Sample volume	mL	310	300	310	
pH adjustment	required prior to O&G extraction		Yes	Yes	Yes	

Element
#104, 19575-55 A Ave.
Surrey, British Columbia
V3S 8P8, Canada

T: +1 (604) 514-3322
F: +1 (604) 514-3323
E: info.vancouver@element.com
W: www.element.com

Analytical Report

Bill To: McCall Environmental
6733 Buchanan Road
Coldstream, BC, Canada
V1B 3C5
Attn: Accounts Payable
Sampled By:
Company: McCall Environmental

Project ID: Pinnacle Pellet
Project Name: Dryer Stacks
Project Location: Williams Lake
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1460931**
Control Number:
Date Received: Nov 24, 2020
Date Reported: Nov 30, 2020
Report Number: 2574638

Reference Number	1460931-4	1460931-5	1460931-6
Sample Date	Nov 19, 2020	Nov 19, 2020	Nov 19, 2020
Sample Time	NA	NA	NA
Sample Location			
Sample Description	Dryer Stack 2 / Test 1	Dryer Stack 2 / Test 2	Dryer Stack 2 / Test 3
Matrix	Water	Water	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents						
Oil and Grease	Total	mg/sample	<2	<2	<2	2
Volume	Sample volume	mL	340	340	350	
pH adjustment	required prior to O&G extraction		Yes	Yes	Yes	

Element
#104, 19575-55 A Ave.
Surrey, British Columbia
V3S 8P8, Canada

T: +1 (604) 514-3322
F: +1 (604) 514-3323
E: info.vancouver@element.com
W: www.element.com

Analytical Report

Bill To: McCall Environmental
6733 Buchanan Road
Coldstream, BC, Canada
V1B 3C5
Attn: Accounts Payable
Sampled By:
Company: McCall Environmental

Project ID: Pinnacle Pellet
Project Name: Dryer Stacks
Project Location: Williams Lake
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1460931**
Control Number:
Date Received: Nov 24, 2020
Date Reported: Nov 30, 2020
Report Number: 2574638

Reference Number	1460931-7	1460931-8	1460931-9
Sample Date	Nov 19, 2020	Nov 19, 2020	Nov 19, 2020
Sample Time	NA	NA	NA
Sample Location			
Sample Description	Dryer Stack 3 - Filter 37 / Test 1	Dryer Stack 3 - Filter 38 / Test 2	Dryer Stack 3 - Filter 39 / Test 3
Matrix	Water	Water	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents						
Oil and Grease	Total	mg/sample	2	10	4	2
Volume	Sample volume	mL	340	340	340	
pH adjustment	required prior to O&G extraction		Yes	Yes	Yes	

Element
#104, 19575-55 A Ave.
Surrey, British Columbia
V3S 8P8, Canada

T: +1 (604) 514-3322
F: +1 (604) 514-3323
E: info.vancouver@element.com
W: www.element.com

Analytical Report

Bill To: McCall Environmental
6733 Buchanan Road
Coldstream, BC, Canada
V1B 3C5
Attn: Accounts Payable
Sampled By:
Company: McCall Environmental

Project ID: Pinnacle Pellet
Project Name: Dryer Stacks
Project Location: Williams Lake
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1460931**
Control Number:
Date Received: Nov 24, 2020
Date Reported: Nov 30, 2020
Report Number: 2574638

Reference Number	1460931-10	1460931-11	1460931-12
Sample Date	Nov 19, 2020	Nov 19, 2020	Nov 19, 2020
Sample Time	NA	NA	NA
Sample Location			
Sample Description	Dryer Stack 4 - Filter 34 / Test 1	Dryer Stack 4 - Filter 35 / Test 2	Dryer Stack 4 - Filter 36 / Test 3
Matrix	Water	Water	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents						
Oil and Grease	Total	mg/sample	12	9	4	2
Volume	Sample volume	mL	320	320	320	
pH adjustment	required prior to O&G extraction		Yes	Yes	Yes	

Element
#104, 19575-55 A Ave.
Surrey, British Columbia
V3S 8P8, Canada

T: +1 (604) 514-3322
F: +1 (604) 514-3323
E: info.vancouver@element.com
W: www.element.com

Analytical Report

Bill To: McCall Environmental
6733 Buchanan Road
Coldstream, BC, Canada
V1B 3C5
Attn: Accounts Payable
Sampled By:
Company: McCall Environmental

Project ID: Pinnacle Pellet
Project Name: Dryer Stacks
Project Location: Williams Lake
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1460931**
Control Number:
Date Received: Nov 24, 2020
Date Reported: Nov 30, 2020
Report Number: 2574638

Reference Number	1460931-13	1460931-14	1460931-15
Sample Date	Nov 20, 2020	Nov 20, 2020	Nov 20, 2020
Sample Time	NA	NA	NA
Sample Location			
Sample Description	Cyclo Filter - Filter 41 / Test 1	Cyclo Filter - Filter 42 / Test 2	Cyclo Filter / Test 3
Matrix	Water	Water	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents						
Oil and Grease	Total	mg/sample	<2	3	3	2
Volume	Sample volume	mL	310	310	310	
pH adjustment	required prior to O&G extraction		Yes	Yes	Yes	

Approved by:

Max Hewitt
Operations Manager

Data have been validated by Analytical Quality Control and Element's Integrated Data Validation System (IDVS).
Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

Element
#104, 19575-55 A Ave.
Surrey, British Columbia
V3S 8P8, Canada

T: +1 (604) 514-3322
F: +1 (604) 514-3323
E: info.vancouver@element.com
W: www.element.com

Methodology and Notes

Bill To: McCall Environmental
6733 Buchanan Road
Coldstream, BC, Canada
V1B 3C5
Attn: Accounts Payable
Sampled By:
Company: McCall Environmental

Project ID: Pinnacle Pellet
Project Name: Dryer Stacks
Project Location: Williams Lake
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1460931**
Control Number:
Date Received: Nov 24, 2020
Date Reported: Nov 30, 2020
Report Number: 2574638

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Oil and Grease in water (VAN)	BCELM	*	Oil & Grease in Water - Direct Hexane Extraction, Oil & Grease	Nov 27, 2020	Element Vancouver

** Reference Method Modified*

References

BCELM B.C. Environmental Laboratory Manual

Please direct any inquiries regarding this report to our Client Services group.
Results relate only to samples as submitted.

Pinnacle.
RENEWABLE ENERGY INC.
PRINCE GEORGE | VANCOUVER

Pinnacle Renewable Energy Inc.
Williams Lake

Daily production rate November 19th	16.5 MT/hr
Daily production rate November 20th	14.9 MT/hr
Average for the previous calendar month	23.1 MT/hr
90th percentile production rate	26.0 MT/hr
Average Dryer Fan 1 exit gas temperature	30.3 °C
Average Dryer Fan 2 exit gas temperature	31.0 °C
Average Dryer Fan 3 exit gas temperature	31.6 °C
Average Dryer Fan 4 exit gas temperature	28.6 °C

Average Cyclofilter exit gas temperature, [°C]	Included in Stack Test
Volumetric emission flow rates, [m^3/hour]	Included in Stack Test
TPM, [mg/m^3]	Included in Stack Test
PM, [mg/m^3]	Included in Stack Test

BCIT

This is to verify that

Matthew McCall

has successfully completed

a course of study in

Source Testing for Particulates

(35 hours)

Endorsed by
The B.C. Ministry of Environment

Dated at Burnaby, British Columbia, Canada
December 14, 1990

DEAN

REGISTRAR

BRITISH COLUMBIA INSTITUTE OF TECHNOLOGY

North Carolina State University

Environmental Programs

This certificate awarded to

Danny Lawrence

for satisfactory completion of course and examination for

SI: 414 Quality Assurance for Source Emission Measurements

Inez F. VanArsdall
Manager

Christine E. Murphy
Registrar

May 22, 2000
Date Completed

3.5 CEUs

Awarded under EPA Assistance Agreement CT - 825724

Environmental Programs
Industrial Extension Service
College of Engineering
North Carolina State University

MOUNT ROYAL COLLEGE

Faculty of Continuing Education and Extension

David Brandle

has successfully completed

The program of studies and is awarded the certificate in

STACK SAMPLING

May 3 – May 7, 2004

May, 2004
Date

Donna Spaulding
Dean
Faculty of Continuing Education and Extension