



April 24, 2017

Wes Markus
Lafarge Canada Inc.
10511, 15th St. S.E.
Calgary, Alberta
T2H 2H5

Re: Noise and Particulate Monitoring for Lafarge – Stoney Trail #1

Dear Wes Markus;

Attached are results of the monitoring for the period March 2017 for noise, TSP and PM2.5 particulate. A B&K model 2236 meter was used for noise, and the Airmetrics Minivol model for particulate. Winds were measured with a R.M. Young Model 5103 anemometer. Precipitation was recorded with a Texas Instruments model TE25M rain gauge.

Data recovery for all parameter was 100% during the monitoring period.

There was no exceedance for the sound level.

There was no exceedance of the Alberta Air Quality Objective for PM2.5 and TSP.

Please call if there are any questions regarding the results.

Yours truly,

PROMET ENVIRONMENTAL GROUP LTD.

A handwritten signature in black ink, appearing to read "Bill Murray", written over a horizontal line.

Dr. William (Bill) Murray
President

WM/NO
Cc: Travis Coates
Enc.



MONTHLY REPORT SUMMARY

Stoney Trail #1
Name/Location

Lafarge Canada Inc.
Company

March 2017
Monitoring Period

Continuous Ambient Monitoring				
Parameter	% Time Operational	Average	Maximum	Number of Hours above Guideline
Sound dB A	100%	48	60	0
PM2.5 $\mu\text{g}/\text{m}^3$	100%	9.1	11.5	0
TSP $\mu\text{g}/\text{m}^3$	100%	22.8	36.0	0
Wind Speed km/h	100%	13	36	-
Precipitation mm	100%	-	1.2	-
Trailer Temperature	100%	-1	15	-

Sound level is analyzed only for wind speed less than 11 km/h and precipitation less than 3 mm/hour

COMMENTS:

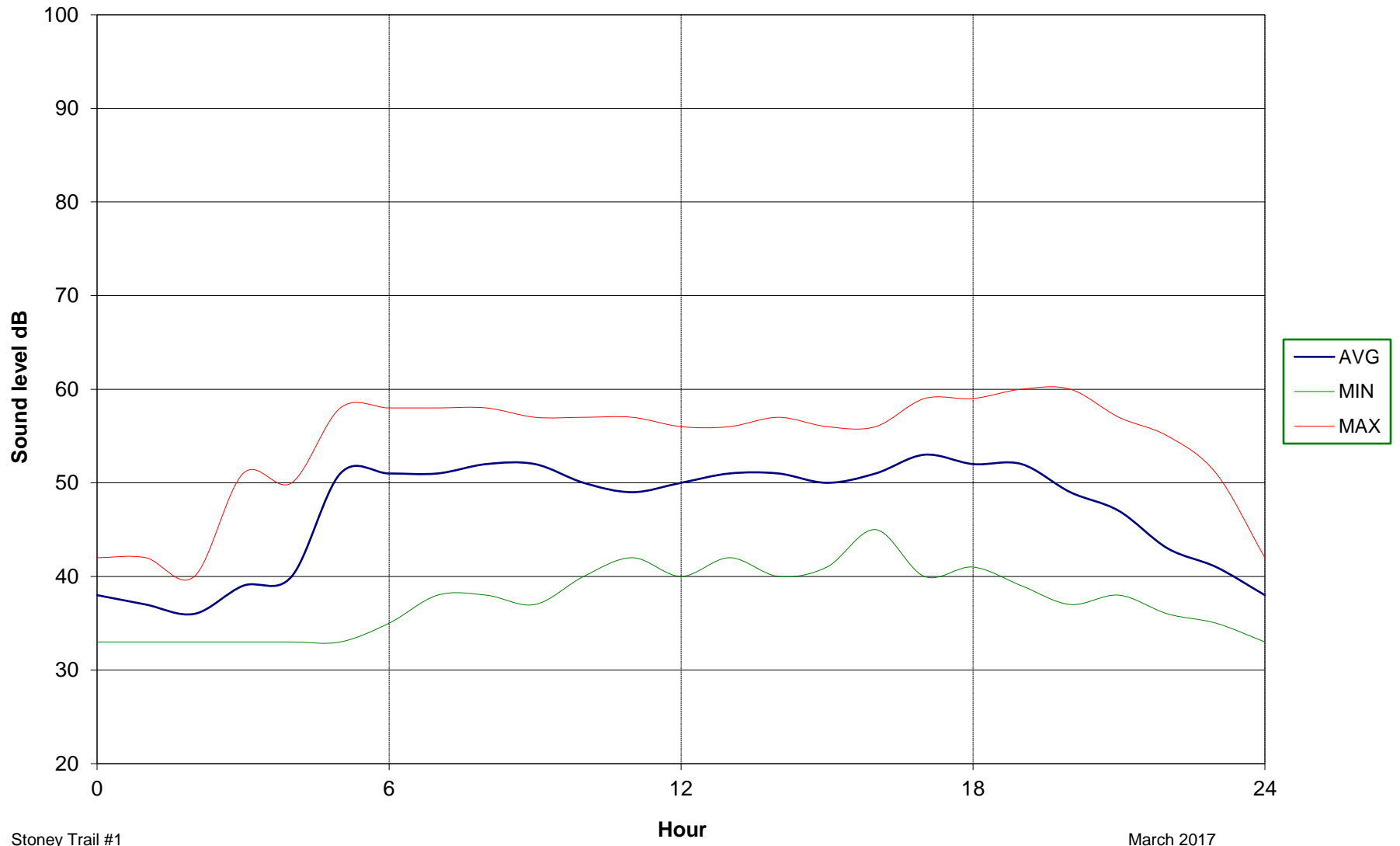
The regulation for industrial areas is 85 dB A any time.

The PM2.5 Standard is 30 $\mu\text{g}/\text{m}^3$ for the day.

The TSP Objective is 100 $\mu\text{g}/\text{m}^3$ for the day.

One 24 hour sample of PM2.5 and TSP is taken every 6th day following the federal NAPS schedule.

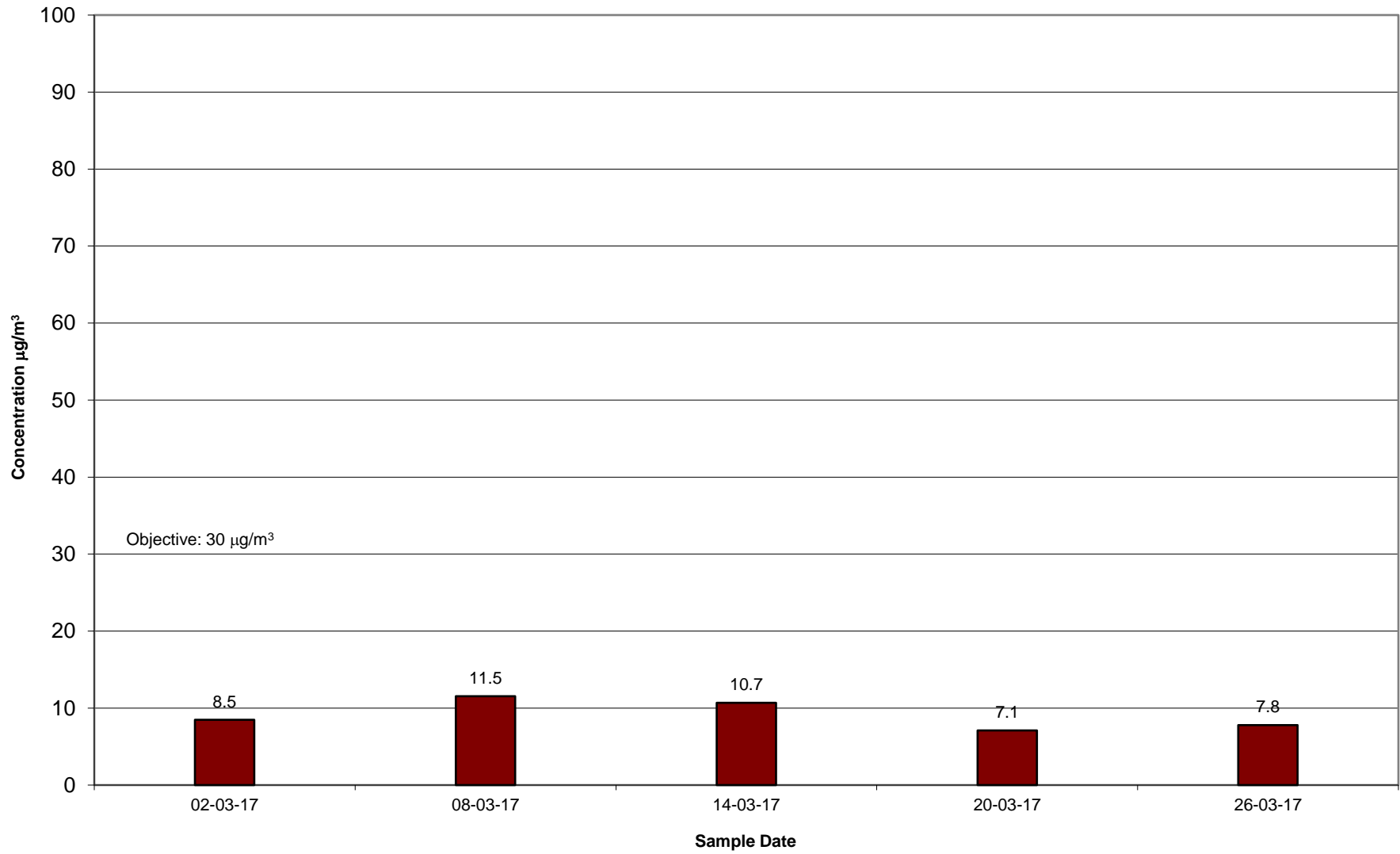
Sound Level by Hour of the Day



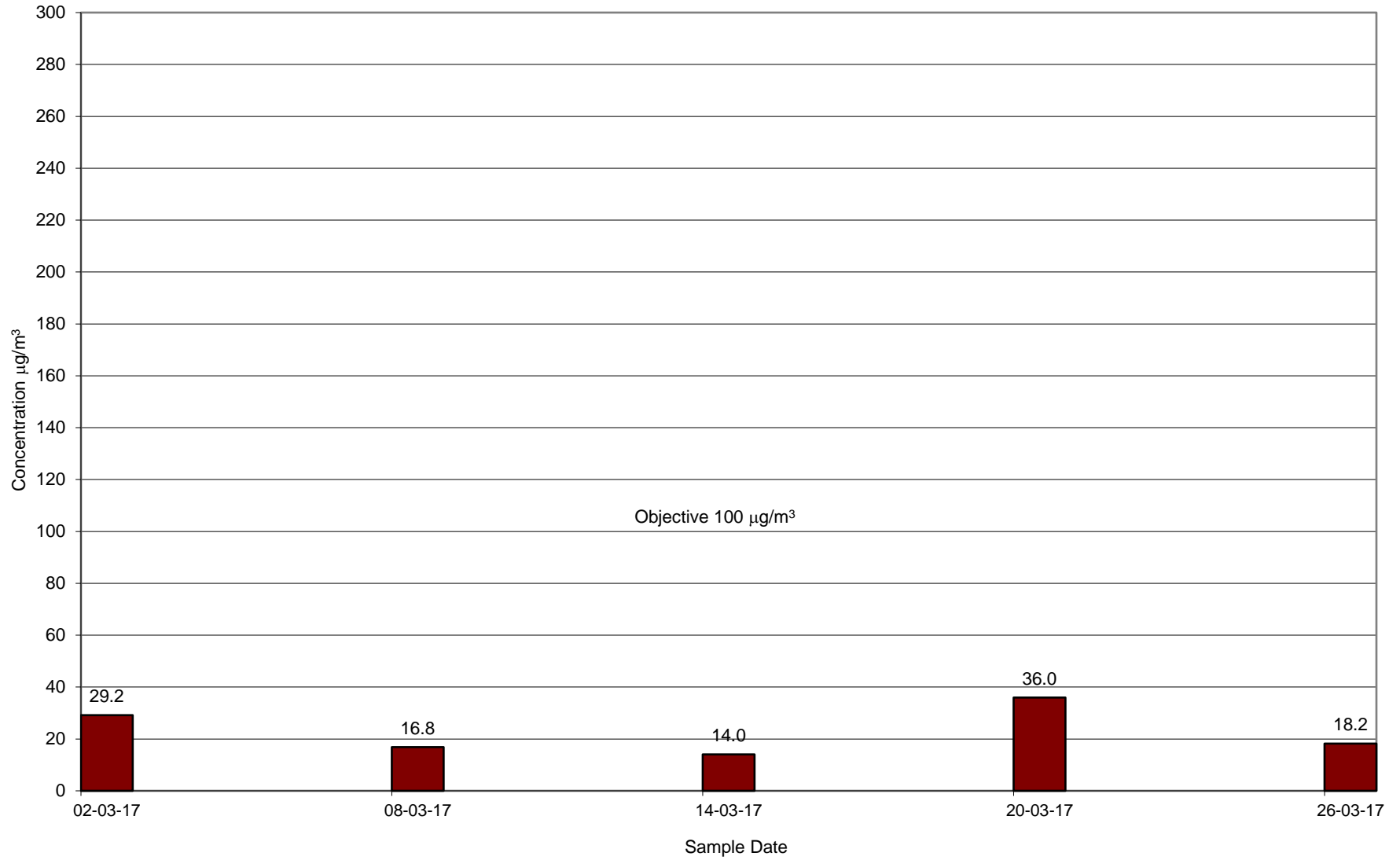
Stoney Trail #1

March 2017

PM2.5 at Lafarge Stoney Trail #1 March 2017

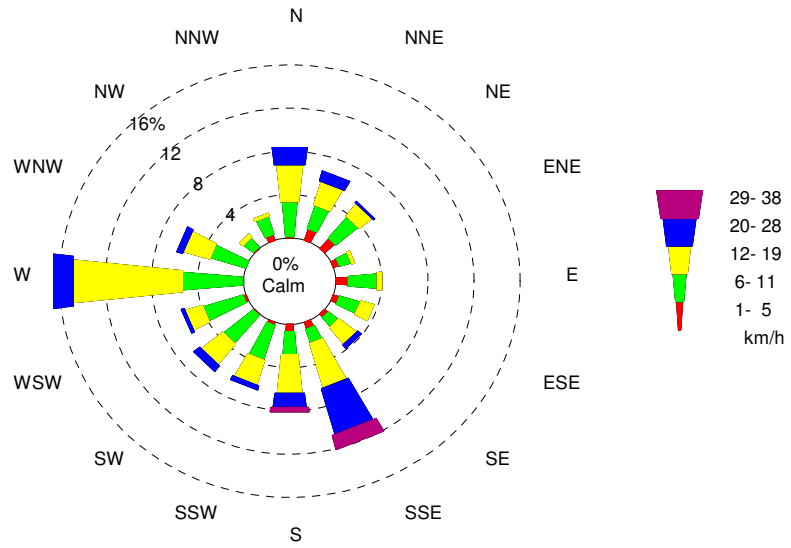


TSP at Lafarge Stoney Trail #1 March 2017



Wind rose for MAR 2017
Stoney Trail 1

Bar length is proportional to frequency of winds from its direction



ABSTRACT OF THE WIND
Lafarge Canada Inc.
Stoney Trail 1
STATION 620
MAR 2017

HOUR DAY	ALL TIMES ARE L.S.T.						SPEED [km/h]						ANEMOMETER HEIGHT 10 m						MEAN SPD	MAX VEL	PREV DIR	MISS OBS						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18					19	20	21	22	23	24
1	W	WSW	WSW	SW	WNW	W	W	W	WNW	WNW	NW	NW	NE	NE	NNE	NNE	NNE	NNE	NE	SW	SSW	SSW	SW			NNE	0	
2	SSW	SSW	SSW	SSW	SSW	SW	SW	WSW	SW	SW	SSW	SSW	S	S	S	S	S	SSW	SSW	SSW	SW	W	SSW	WSW			SSW	0
3	W	WSW	W	SW	WSW	WSW	SSW	SSE	SE	S	SSW	SW	SW	SW	SW	SW	SW	SW	SSW	SSW	S	N	N	N			SW	0
4	N	N	NNW	NNW	NNW	NNW	N	N	N	NNE	N	N	NNE	NNE	NNE	NNE	NE	NE	NE	NE	NE	NE	NE	NE			SVL	0
5	NE	ENE	E	E	SE	E	ENE	E	ESE	E	E	ENE	ESE	ESE	E	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE			E	0
6	SSE	SSW	SW	W	NNW	NNW	N	N	NNW	N	N	N	NNE	NNE	NNE	NNE	NE	NE	NE	N	N	NNW	NNW	NNW			N	0
7	N	NNW	N	N	N	N	N	N	N	N	N	N	NNE	NNE	NNE	ENE	ENE	E	E	E	ESE	ESE	ESE	ESE			N	0
8	ESE	ESE	ESE	E	ESE	E	ENE	NE	NE	NNE	NNE	NNE	NNE	NNE	NNE	NE	NE	NNE	NNE	NNE	NNE	NNE	NNE			NNE	0	
9	NNE	NE	NE	NE	NE	NE	E	ESE	ENE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE			ESE	0	
10	SSE	SSE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	E	ENE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE			SE	0	
11	S	S	SSE	SSE	SSE	SSE	S	SSE	SSE	SSE	SSE	SSE	SSE	SE	ESE	E	E	E	E	E	E	E	E			SSE	0	
12	NE	NE	NNE	NNE	NNE	NNE	NNE	E	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE			SVL	0	
13	SSW	SW	SW	WSW	W	W	W	WNW	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W			W	0	
14	WNW	WNW	WNW	WSW	W	WSW	WSW	S	S	SSE	SSE	SSE	SSE	SSE	SSE	E	W	NW	S	E	E	NE				SSE	0	
15	WSW	WSW	SSE	WSW	S	S	ESE	SE	SSE	SSE	SSE	S	E	NNE	NNE	NNE	N	N	N	N	N	N	N			N	0	
16	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			N	0	
17	S	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	S	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE			SSE	0	
18	S	S	SSW	S	S	S	SSW	SSW	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW			SSW	0	
19	W	N	N	N	N	NNW	WNW	WSW	SW	SW	SSW	WSW	W	W	W	W	W	W	W	W	W	W	W			W	0	
20	W	W	WNW	WNW	N	N	NNE	NE	ENE	E	SE	SE	SSE	SSE	SSE	SE	SSE	SSE	SSE	SSE	SSE	SSE	SSE			SSE	0	
21	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	S	S	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE			SSE	0	
22	WSW	W	W	WNW	NNW	W	NNW	W	WSW	WSW	W	W	W	W	W	W	W	W	W	W	W	W	W			W	0	
23	SW	W	WNW	W	WNW	W	WNW	W	WNW	W	WNW	WNW	WNW	WNW	NNE	NE	NE	NNE	ENE	ENE	SSW	SW				WNW	0	
24	SSW	SSW	SSW	SSW	SSE	S	SSW	S	S	S	SSE	SE	SSE	NW	NW	NW	W	WNW	W	WNW	W	WNW	W			SSW	0	
25	WNW	W	W	W	W	W	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW			W	0	
26	W	W	W	WNW	WNW	NW	NW	WNW	WNW	W	SW	S	SSE	SSE	SSE	SSE	SE	SE	SSE	S	SW	WSW	WSW			SSE	0	
27	WSW	WSW	WNW	W	WNW	WNW	WNW	WNW	WNW	WNW	NW	SW	NE	NE	SW	S	E	ESE	SE	S	SSW	SSW	W			WNW	0	
28	W	W	W	W	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SSW	S	S	W	W	W	W	W	W	W	W			W	0	
29	W	WSW	W	WNW	W	W	W	W	WSW	WSW	SSW	SSE	S	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE			W	0	
30	W	W	W	W	WNW	WNW	NW	N	N	N	N	N	NNE	N	N	N	N	N	N	N	N	N	N			N	0	
31	NNW	NNW	NNW	WSW	WSW	WSW	SW	SW	S	S	S	SSW	SW	W	W	WSW	W	W	WSW	W	W	WNW	WSW			W	0	

MEAN
SPEED 12 12 11 11 11 10 10 11 12 13 13 15 16 17 18 17 17 16 14 12 12 12 11 11 13 36 W 0
NOTE: Missing data represented by M; no clear prevailing direction represented by SVL; calm winds represented by CALM
WS UPTIME 100 % WD UPTIME 100 %

Date of Last Calibration 060221 Make and Model of Instrument: RM Young5103

FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION
Lafarge Canada Inc.
Stoney Trail 1
STATION 620
MAR 2017

SPEED [km/h]	WIND DIRECTION														TOTAL	PCT											
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW			NW	NNW									
< .5																										0	0
1- 5	1	8	9	4	8	4	3	5	5	2	1	2	1	0	1	4	58	8								4	40
6- 11	24	17	19	8	19	14	8	10	16	25	25	27	39	24	8	13	296	40								8	8
12- 19	26	17	11	2	3	9	15	32	27	18	18	12	71	18	3	2	284	38								2	13
20- 28	12	7	1	0	0	0	3	33	10	3	5	2	13	4	0	0	93	13								0	13
29- 38	0	0	0	0	0	0	0	10	3	0	0	0	0	0	0	0	13	2								0	2
TOTAL	63	49	40	14	30	27	29	90	61	48	49	43	124	46	12	19	744	100									
PERCENT	8	7	5	2	4	4	4	12	8	6	7	6	17	6	2	3											
AVERAGE	14	12	9	7	8	10	13	19	15	12	12	11	14	12	10	8	13										

TRAILER TEMPERATURE
Lafarge Canada Inc.
Stoney Trail 1
STATION 620
MAR 2017

Day	Hour																								Avg
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1	-10	-10	-10	-10	-9	-8	-7	-7	-6	-5	-2	2	5	4	1	0	-1	-2	-5	-7	-7	-7	-7	-5	
2	-8	-9	-8	-8	-9	-9	-9	-10	-8	-6	-2	1	2	2	1	1	2	3	2	0	-1	-2	-3	-3	
3	-3	-3	-2	-2	-2	-1	-2	-3	-2	2	5	8	10	10	10	10	10	9	6	3	1	0	-2	-3	
4	-4	-5	-6	-7	-7	-8	-8	-7	-6	-5	-5	-4	-3	-2	-3	-3	-4	-6	-7	-8	-9	-10	-10	-6	
5	-11	-11	-11	-11	-11	-11	-11	-11	-11	-10	-9	-8	-7	-6	-5	-5	-6	-8	-9	-9	-10	-10	-10	-9	
6	-11	-11	-11	-11	-12	-12	-13	-13	-12	-10	-6	-3	-3	-1	-1	-1	-2	-4	-7	-11	-13	-14	-14	-9	
7	-14	-12	-12	-14	-14	-15	-15	-15	-14	-12	-9	-6	-4	-4	-3	-2	-2	-4	-7	-9	-9	-9	-10	-9	
8	-12	-12	-13	-13	-13	-14	-14	-14	-14	-13	-12	-11	-9	-7	-7	-7	-7	-9	-12	-14	-15	-16	-17	-12	
9	-18	-18	-18	-18	-18	-19	-19	-20	-17	-14	-10	-8	-7	-7	-7	-8	-10	-13	-14	-16	-16	-16	-17	-14	
10	-17	-17	-17	-17	-17	-18	-18	-18	-17	-16	-15	-13	-11	-9	-8	-7	-6	-7	-10	-14	-17	-18	-19	-14	
11	-19	-18	-18	-18	-18	-18	-18	-17	-17	-15	-14	-13	-11	-9	-9	-9	-11	-12	-13	-14	-14	-15	-15	-15	
12	-15	-15	-15	-15	-16	-17	-18	-17	-15	-10	-5	-3	-3	-3	-4	-5	-6	-7	-9	-11	-12	-13	-14	-11	
13	-14	-14	-14	-13	-10	-6	-3	-1	1	3	5	8	9	9	10	10	9	8	7	6	7	6	5	4	
14	3	2	2	2	2	2	2	2	3	4	6	6	7	9	9	10	11	12	9	8	6	5	4	6	
15	3	4	5	5	5	4	3	3	5	10	12	13	14	14	11	8	6	6	4	3	1	0	0	-1	
16	-1	-2	-1	-1	-1	-1	-1	-1	0	1	2	4	6	9	10	10	10	7	5	2	1	0	0	2	
17	0	-1	-1	-2	-3	-4	-4	-4	-2	-1	0	2	3	4	5	6	6	6	5	3	3	2	1	1	
18	1	0	0	0	-1	-1	0	1	4	7	10	13	14	15	15	14	13	11	9	7	5	3	2	7	
19	2	1	-1	-2	-3	-4	-5	-5	-2	1	4	4	5	5	5	6	6	4	1	0	-1	-2	-2	1	
20	-4	-4	-4	-4	-5	-6	-7	-6	-4	-3	-2	-1	0	1	2	2	2	2	1	-1	-1	-2	-3	-2	
21	-3	-3	-4	-4	-4	-4	-4	-4	-4	-2	-1	-1	1	3	4	4	5	5	4	4	3	2	2	0	
22	1	1	3	4	4	3	3	3	4	5	8	11	13	13	14	15	15	14	12	9	6	5	4	3	
23	2	1	0	1	1	1	1	2	5	8	10	11	11	10	9	8	7	6	6	3	1	-1	-2	4	
24	-1	-1	-1	-2	-2	-2	-2	-2	-1	0	3	5	7	10	12	14	14	12	10	8	6	5	5	4	
25	3	3	2	2	2	1	1	3	5	6	7	9	11	12	13	13	12	11	10	6	5	4	3	2	
26	1	0	0	-1	-1	-1	-2	-1	1	6	9	11	12	11	11	11	10	10	9	7	5	4	4	3	
27	3	2	2	2	2	2	1	1	3	8	11	14	15	15	14	14	13	11	10	8	5	4	2	1	
28	1	0	0	0	0	0	0	2	5	8	9	8	8	9	11	12	12	11	9	7	6	4	3	2	
29	2	1	0	1	1	1	1	2	4	6	8	10	11	12	12	12	11	11	9	8	6	4	3	2	
30	1	1	1	1	2	2	3	5	5	7	10	12	12	11	12	11	10	8	6	5	4	3	2	2	
31	1	0	0	0	-1	-2	-2	0	3	5	7	9	11	12	14	14	15	15	13	11	8	8	8	7	
AVG	-5	-5	-5	-5	-5	-5	-5	-5	-3	-1	1	3	4	5	5	5	5	4	2	0	-1	-2	-3	-4	
MAX	3	4	5	5	5	4	3	5	5	10	12	14	15	15	15	15	15	15	13	11	8	8	8	8	
MIN	-19	-18	-18	-18	-18	-19	-19	-20	-17	-16	-15	-13	-11	-9	-9	-9	-11	-13	-14	-16	-17	-18	-19	-19	

Percent of time operational: 100
 Monthly Average: -1 Monthly Maximum: 15 M - missing data
 Monthly Minimum: -20

