

NorskeCanada
Crofton Division
2002 Ambient Air Monitoring Report

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NorskeCanada Crofton Division
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1. General Mill History:

Table 1: Environmental Projects that have been completed at Crofton since 1990

Environmental Project	Completion Date
Counter current washing	1990
Deinked furnish handling facility	1992
No. 4 power boiler precipitator	1991
Secondary effluent treatment	1992
Kraft mill modernization	1991
Increase ECF pulp production	1994
Improve oil spill response capability	1995
Pick up and treat miscellaneous TRS sources	1995
Woodroom effluent pump station	1995
EoP for A and B bleach plants	1995
Filtration of R8 feed chemicals	1996
Complete foreshore leachate collection system	1996
Enclose UNOX inlet	1997
Hydroxyl system treatment plant for Swallowfield landfill	1997
West Air Station moved to Quamichan Lake	1998
Oxygen Bleaching on B Bleach plant	1998
ISO 14001 registered Environmental Management System	1999
UNOX stormwater collection engineering	2000
TRS Dilute NCG Collection Engineering and tie-ins	2000
Completion of UNOX stormwater collection project	2000
Installation of DNCG collection system	2001
Elimination of Filter Plant backwash	2001
Power Boiler Emissions improvement–Precipitator Upgrade	2001
Power Boiler Emissions improvement–Hog Presses	2002
Digester CNCG's backup treatment system installed	2003

2. Calendar 2002 Operating History:

Table 2: Kraft and Paper Mill Downtime

Kraft Mill Downs	Paper Mill Downs
January 1 – 3	January 1 – 3
October 5	

3. Emission Information:

Table 3: Average Stack Emission Volumes

Year	Emission Volume (m ³ /min.)					
	No. 3 RB	No. 3 Smelt	No. 4 RB	No. 4 Smelt	No. 4 PB	Kilns
1996	3,297	-	4,784	-	5,046	709
1997	3,277	-	4,578	-	4,949	774
1998	4,518	-	4,849	-	5,642	666
1999	3,656	-	5,200	-	5,089	681
2000	3,475	572	5,234	556	5,979	715
2001	3,813	559	5,055	581	5,580	691
2002	3,853	522	5,435	485	5,618	859

4. NCG Venting:

Table 4: Non-Condensable Gases (NCG) Venting as a percent of time

2002	Digesters - % Venting
Jan	4.4
Feb	6.2
Mar	2.6
Apr	6.2
May	16.2
Jun	13.0
Jul	4.6
Aug	1.1
Sep	3.2
Oct	4.3
Nov	2.1
Dec	5.2
Average	5.7

5. Ambient Total Reduced Sulfur (TRS) Data:

The ambient air data for this reporting period was obtained from the Ministry of Water, Land and Air Protection's archive data and report generators. The Ministry's polling system downloads and stores data from three air stations located in the North Cowichan region: Sub station (across Crofton Rd. from the mill), South station (5 km south of the mill up Escarpment Way), and the Lake Station (Deykin Rd on the shore of Quamichan Lake).

5.1 Incidences above A level - 24 hr. average of 2 ppb or greater

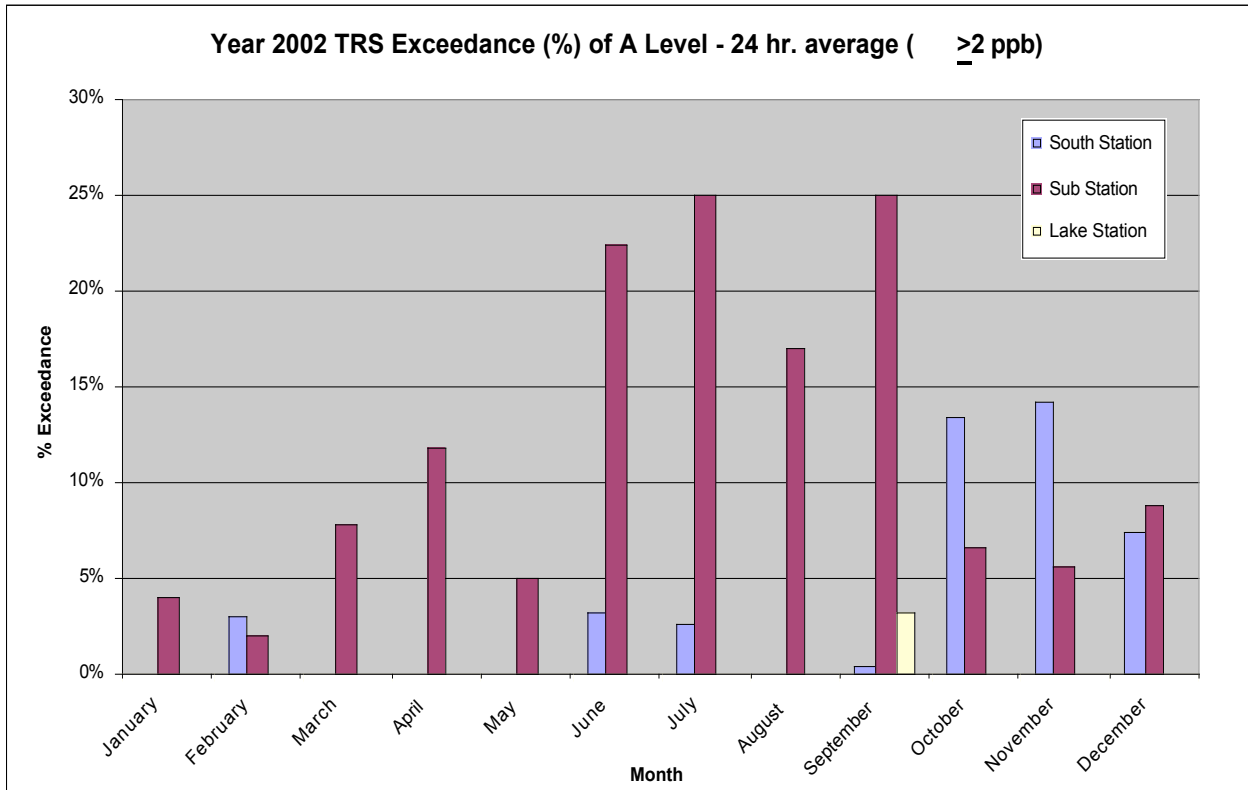
The % exceedance of A Level 24 hr. average decreased at both the Sub and the Lake Stations from last year (2001), from 20.0% down to 11.8% at the Sub Station and from 1.7% down to

0.3% at the Lake Station. The % exceedance of A level - 24 hr. average increased slightly at the South Station, from 3.4% in 2001 to 3.7% in 2002.

Table 5.1

Year 2002 TRS Exceedance (%) of A level - 24 hr. average (≥ 2 ppb)

Month	South Station	Sub Station	Lake Station
January	0.00%	4.00%	0.00%
February	3.00%	2.10%	0.00%
March	0.00%	7.80%	0.00%
April	0.00%	11.90%	0.00%
May	0.00%	5.10%	0.00%
June	3.30%	22.40%	0.00%
July	2.60%	25.10%	0.00%
August	0.00%	17.10%	0.00%
September	0.40%	25.00%	3.30%
October	13.40%	6.70%	0.00%
November	14.20%	5.70%	0.00%
December	7.50%	8.90%	0.00%
Year Average	3.7%	11.8%	0.3%



5.2 Incidences above A level - 1 hr. average of 5 ppb or greater

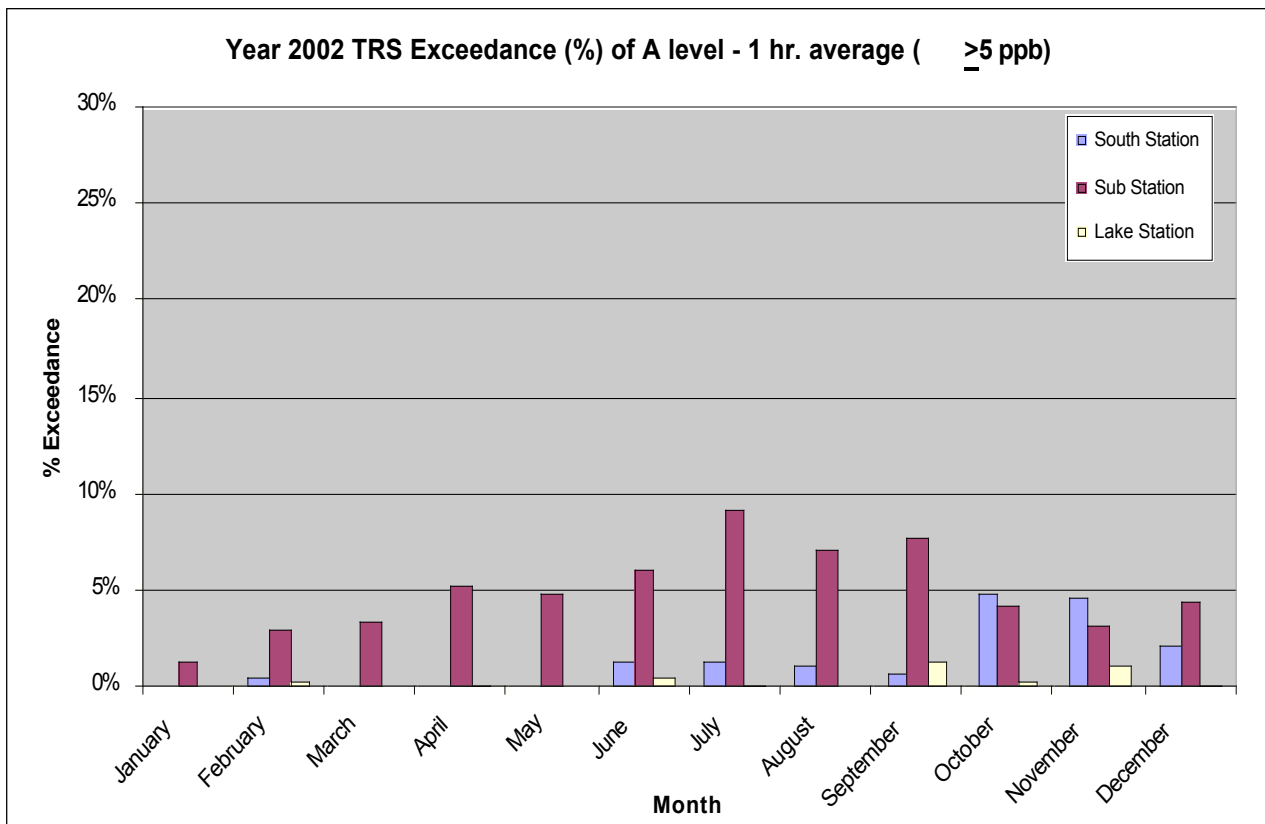
The % exceedance of A Level 1 hr. average decreased at both the Sub and the Lake Stations from last year (2001), from 8.0% down to 5.0% at the Sub Station and from 0.7% down to 0.3%

at the Lake Station. The % exceedance of A level - 1 hr. average remained similar at the South Station (1.3% in 2001 and 1.4% in 2002).

Table 5.2

Year 2002 TRS Exceedance (%) of A level - 1 hr. average (≥ 5 ppb)

Month	South Station	Sub Station	Lake Station
January	0.00%	1.40%	0.00%
February	0.50%	2.90%	0.30%
March	0.00%	3.40%	0.00%
April	0.00%	5.20%	0.10%
May	0.00%	4.90%	0.00%
June	1.30%	6.10%	0.40%
July	1.40%	9.20%	0.10%
August	1.10%	7.10%	0.00%
September	0.60%	7.70%	1.30%
October	4.90%	4.20%	0.30%
November	4.70%	3.20%	1.00%
December	2.10%	4.50%	0.10%
Year Average	1.4%	5.0%	0.3%



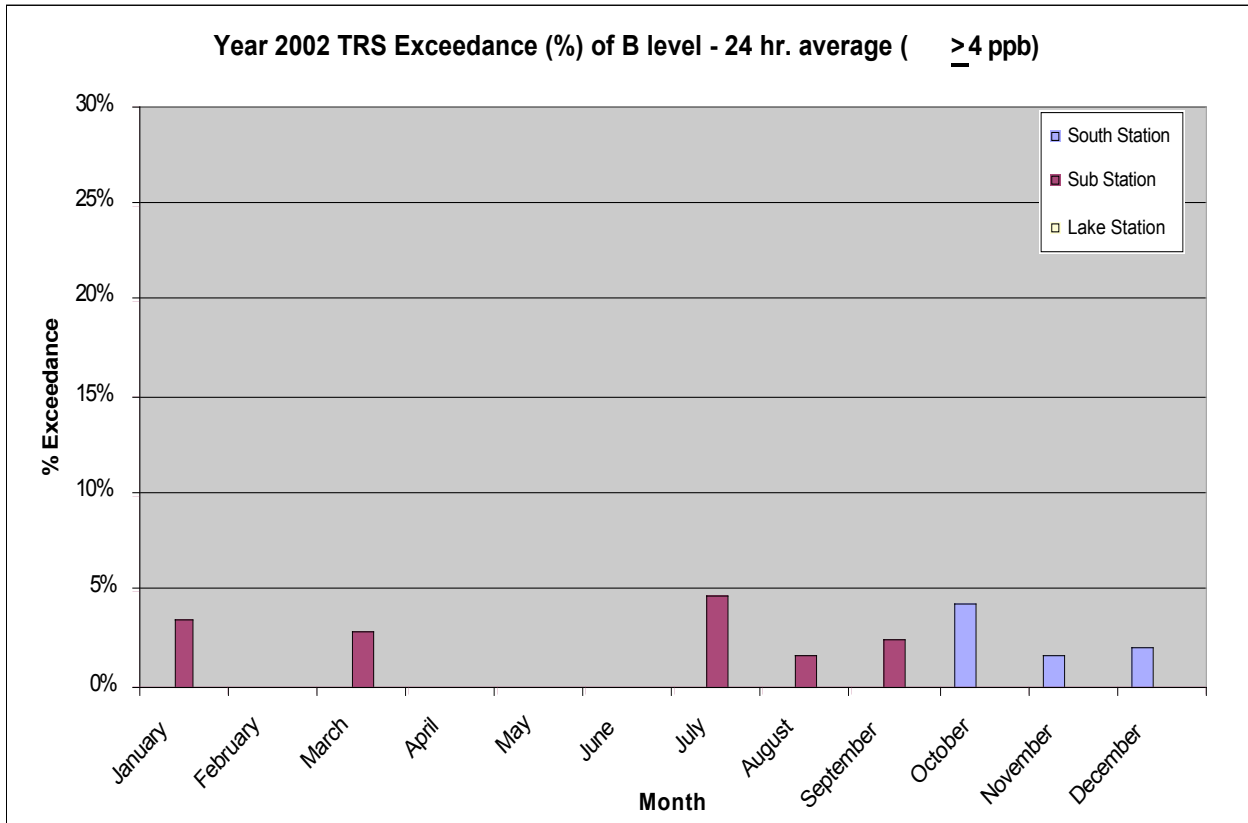
5.3 Incidences above B level - 24 hr. average of 4 ppb or greater

The % exceedance of B Level 24 hr. average decreased at both the Sub and the Lake Stations from last year (2001), from 5.7% down to 1.3% at the Sub Station and from 0.3% down to 0.0%

at the Lake Station. The % exceedance of B level - 24 hr. average increased slightly at the South Station, from 0.5% in 2001 to 0.7% in 2002.

Table 5.3
 Year 2002 TRS
 Exceedance (%) of B
 level - 24 hr. average
 (≥ 4 ppb)

Month	South Station	Sub Station	Lake Station
January	0.00%	3.60%	0.00%
February	0.00%	0.00%	0.00%
March	0.00%	3.00%	0.00%
April	0.00%	0.00%	0.00%
May	0.00%	0.00%	0.00%
June	0.00%	0.00%	0.00%
July	0.00%	4.80%	0.00%
August	0.00%	1.70%	0.00%
September	0.00%	2.60%	0.00%
October	4.40%	0.00%	0.00%
November	1.70%	0.00%	0.00%
December	2.20%	0.00%	0.00%
Year Average	0.7%	1.3%	0.0%



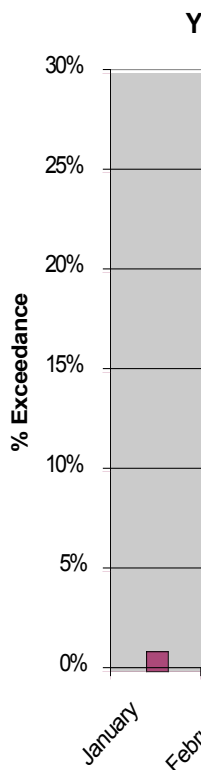
5.4 Incidences above B level - 1 hr. average of 20 ppb or greater

The % exceedance of B Level 1 hr. average in 2002 for all three air stations was very low and similar to the results in 2001 of 0.0% at the South Station, 0.7% at the Sub Station, and 0.0% at the Lake Station.

Table 5.4

Year 2002 TRS Exceedance (%) of B level - 1 hr. average (≥ 20 ppb)

Month	South Station	Sub Station	Lake Station
January	0.00%	1.00%	0.00%
February	0.00%	0.00%	0.00%
March	0.00%	0.40%	0.00%
April	0.00%	0.30%	0.00%
May	0.00%	0.10%	0.00%
June	0.10%	0.40%	0.00%
July	0.00%	0.10%	0.00%
August	0.00%	0.60%	0.00%
September	0.00%	1.20%	0.00%
October	0.10%	0.00%	0.00%
November	0.30%	0.30%	0.00%
December	0.00%	0.10%	0.00%
Year Average	0.0%	0.4%	0.0%

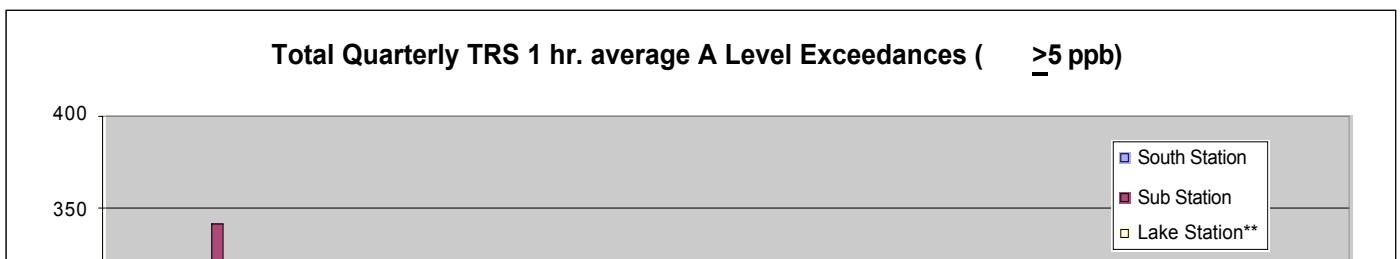


5.5 Quarterly 1 hr. A Level Exceedances (≥ 5 ppb)

Table 5.5

Total Quarterly TRS 1 hr. average A Level Exceedances (≥ 5 ppb)

Year	Quarter	South Station	West Station	Sub Station	Lake Station
1996	Q1	4	3	125	NA
	Q2	0	7	73	NA
	Q3	100	16	344	NA
	Q4	23	8	102	NA
1997	Q1	23	4	52	NA
	Q2	15	19	91	NA
	Q3	8	2	24	NA
	Q4	0	2	0	NA
1998	Q1	0	NA	0	NA
	Q2	2	NA	43	NA
	Q3	61	NA	224	NA
	Q4	18	NA	86	NA
1999	Q1	6	NA	31	10
	Q2	21	NA	110	4
	Q3	90	NA	125	15
	Q4	112	NA	83	74
2000	Q1	39	NA	58	22
	Q2	8	NA	191	10
	Q3	58	NA	255	11
	Q4	18	NA	180	8
2001	Q1	69	NA	278	28
	Q2	26	NA	224	24
	Q3	8	NA	118	6
	Q4	6	NA	45	0
2002	Q1	3	NA	53	2
	Q2	9	NA	113	4
	Q3	22	NA	169	10
	Q4	82	NA	84	10



5.6 TRS Monthly Averages (ug/m3)

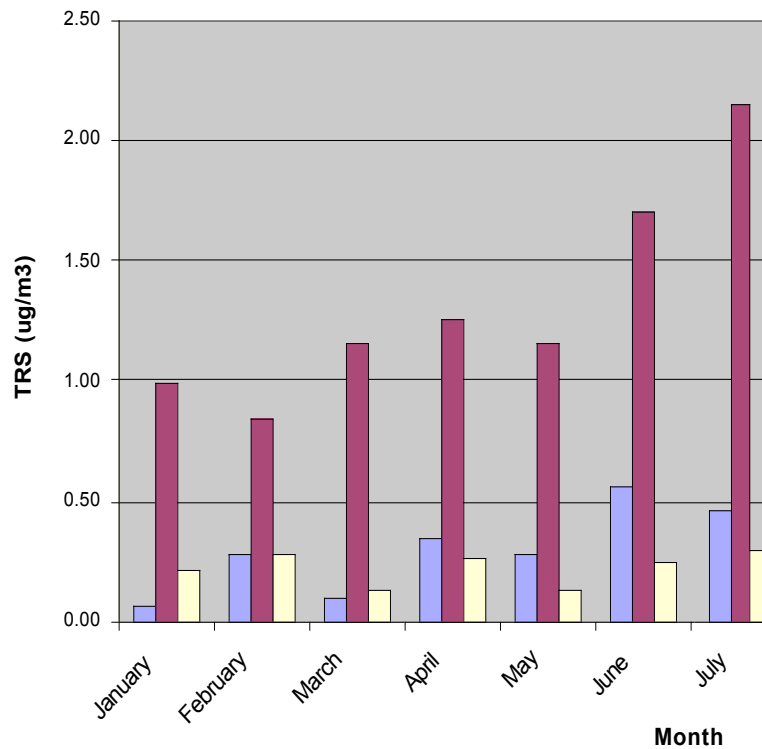
The average TRS at all three air stations decreased from 2001 to 2002, from 0.54 ug/m³ to 0.52 ug/m³ at the South Station, from 1.73 ug/m³ to 1.33 ug/m³ at the Sub Station, and from 0.41 ug/m³ to 0.32 ug/m³ at the Lake Station.

Table 5.6

Year 2002 TRS Monthly Averages (ug/m3)

Month	South Station	Sub Station	Lake Station
January	0.07	0.99	0.22
February	0.29	0.85	0.28
March	0.10	1.17	0.13
April	0.35	1.26	0.27
May	0.29	1.17	0.14
June	0.56	1.71	0.25
July	0.46	2.16	0.31
August	0.62	1.69	0.38
September	0.50	2.06	0.53
October	1.10	1.05	0.56
November	1.21	0.79	0.56
December	0.64	1.03	0.22
Year Average (ug/m3)	0.52	1.33	0.32

Year 2002 TRS Monthly Average



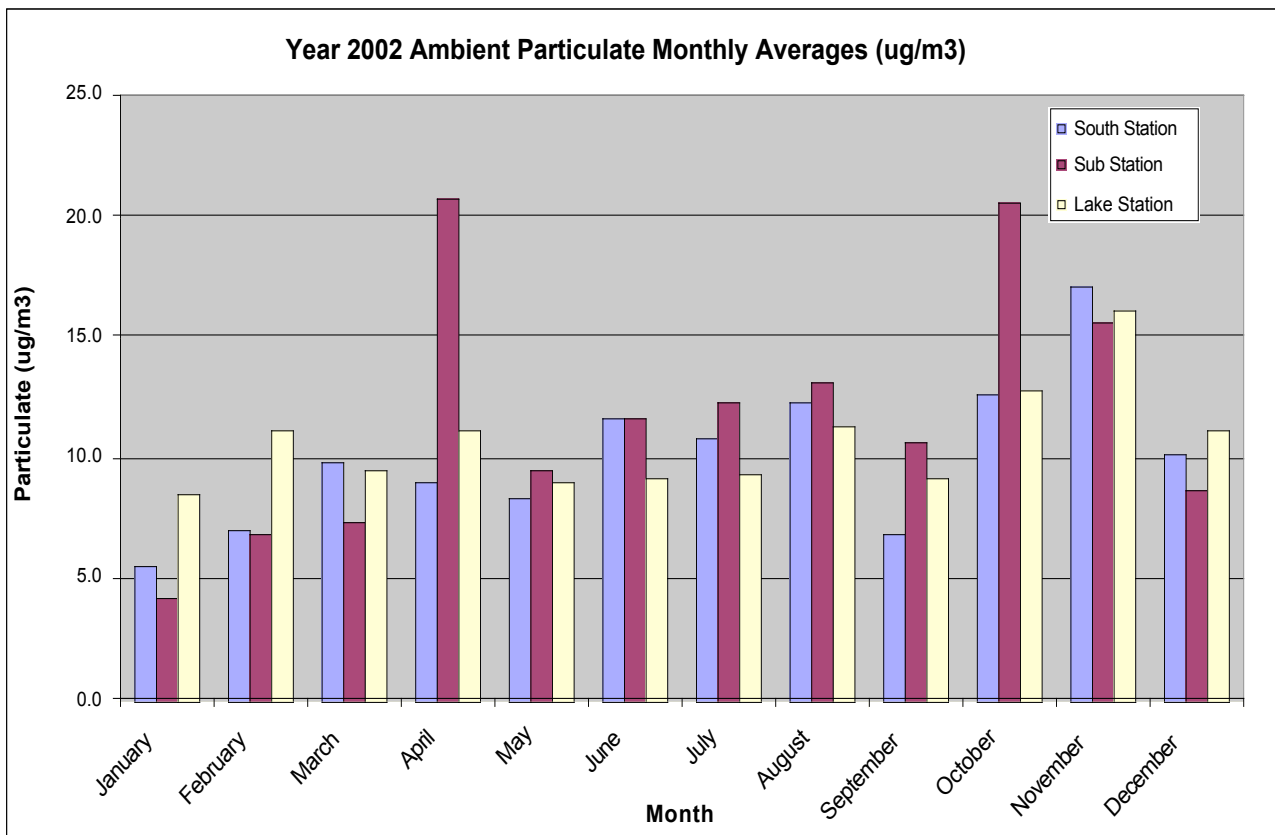
6. Ambient Particulate Monthly Averages (µg/m3)- PM10

The average particulate increased slightly at both the Sub and the Lake Stations from last year (2001), from 9.74 ug/m3 to 11.8 ug/m3 at the Sub Station and from 10.6 ug/m3 to 10.7 ug/m3 at the Lake Station. The average particulate decreased at the South Station from 10.6 ug/m3 in 2001 to 10.1 ug/m3 in 2002.

Table 6.1

Year 2002 Ambient Particulate Monthly Averages (ug/m3)

Month	South Station	Sub Station	Lake Station
January	5.6	4.3	8.6
February	7.0	6.9	11.2
March	9.9	7.4	9.6
April	9.0	20.8	11.2
May	8.4	9.6	9.1
June	11.7	11.7	9.1
July	10.9	12.3	9.3
August	12.3	13.2	11.3
September	7.0	10.8	9.2
October	12.7	20.6	12.8
November	17.2	15.6	16.2
December	10.2	8.8	11.1
Year Average (ug/m3)	10.1	11.8	10.7



7. Complaints from the Public

The total number of community complaints in 2002 was 106; 83 for particulate fallout, 17 odour, 3 noise, 1 fallout/noise/odour, and 1 noise/dust and 1 ash which were not attributed to the mill.

Month	Description	Date	Number	Event Type
Feb-02	6 complaints - black & white ash	14-Feb-02	6	fallout
Mar-02	1 complaint (unfounded) - black soot on car	12-Mar-02	1	fallout
Apr-02	Black "ash" on deck - Maple Bay - tests revealed that it was plastic from neighbourhood burning	19-Apr-01	1	ash
	Odour - The Garth in Maple Bay	24-Apr-02	1	odour
May-02	Dirt bikes/4x4's accessing area around Duncan water tank - noise, dust, damaging fence	13-May-02	1	noise/dust
	Grey ash on vehicle	24-May-02	1	fallout
Jun-02	Odour - Off Bell McKinnon Rd (CNCG's venting)	10-Jun-02	1	odour
	Odour - Crofton (CNCG's venting)	13-Jun-02	1	odour
Jul-02	Odour - Crofton (CNCG's venting)	2-Jul-02	1	odour
	Odour - Crofton (CNCG's venting)	10-Jul-02	1	odour
	Odour - Bell McKinnon Rd - no evidence to support mill as the cause	26-Jul-02	1	odour
	Odour - Crofton	29-Jul-02	1	odour
	White ash in Crofton	31-Jul-02	1	fallout
Aug-02	White ash in Crofton	12-Aug-02	1	fallout
	White ash in Crofton	12-Aug-02	1	fallout
	White ash in Crofton	14-Aug-02	1	fallout
	Odour - Crofton (not supported by mill data)	14-Aug-02	1	odour
	Odour - Crofton	19-Aug-02	1	odour
	Black oily stack (#4Rec shutdown problem)	20-Aug-02	1	fallout/odour/noise
	Odour - Escarpment Way	22-Aug-02	1	odour
	White ash (saltcake) in Crofton	23-Aug-02	1	fallout
Sep-02	White ash (saltcake) in Crofton	23-Aug-02	1	fallout
	Odour - Maple Bay	12-Sep-02	1	odour
	Odour - Maple Bay - CNCG venting	13-Sep-02	1	odour
	Odour/haze - Maple Bay	25-Sep-02	1	odour
	Odour/haze - Maple Bay	25-Sep-02	1	odour
	White ash in Crofton	25-Sep-02	1	fallout
	Black ash - Crofton	27-Sep-02	1	fallout
	Black ash - Crofton	28-Sep-02	1	fallout
	Black ash - Crofton	30-Sep-02	1	fallout
	Odour - Escarpment Way	27-Sep-02	1	odour
	Noise from filterplant - Crofton	26-Sep-02	1	noise
	Black ash - Crofton	28-Sep-02	1	fallout
	Black ash - Chemainus Rd	28-Sep-02	1	fallout
Oct-02	Black ash - Crofton - 17 complaints	11-Oct-02	17	fallout
	White ash - main mill parking lot	20-Oct-02	1	fallout
	White ash on vehicle - not as shiny on top now	20-Oct-02	1	fallout
	White ash - south gate & trailer park - Recovery	21-Oct-02	1	fallout
Nov-02	Saltcake fallout - Recovery #3	1-Nov-02	6	fallout
	Black ash - Chemainus Rd - not supported by mill data	7-Nov-02	1	fallout
	Odour - Maple Bay	8-Nov-02	1	odour
	Noise - Westholme	22-Nov-02	1	noise
Dec-02	Odour - Crofton	1-Dec-02	1	odour
	Noise - Crofton (beeping from crane on ship)	6-Dec-02	1	noise
	Fallout - kiln	10-Dec-02	36	fallout