DEPARTMENT OF ENVIRONMENT AND CONSERVATION

2010 AMBIENT AIR MONITORING REPORT

April 2011

Executive Summary

The air quality in communities across the province is generally considered to be good as the ambient air quality standards are rarely exceeded for the pollutants being measured. On occasion, communities in close proximity to an industrial operation may experience episodic decreases in the quality of the air; however, these episodes tend to be brief in nature and are rarely at levels that exceed the air quality standards. Elevated levels of air pollutants occur due to long-range transport from mainland Canada and the United States, but are also episodic in nature and rarely produce levels that exceed the ambient air quality standards. On a local level, emissions from sources such as vehicular traffic and woodstoves also impact the air quality in the province.

This report presents all the monitoring results from both the federal - provincial operated National Air Pollution Surveillance (NAPS) network as well as the stations operated by industrial facilities in the province. Both datasets undergo rigorous quality assurance procedure to ensure that the highest level of data confidence is achieved.

In 2010, most monitors indicated no exceedances of the ambient air quality standards. Those stations which indicated exceedances tended to be at an industrial property boundary and away from the community, though there were instances when a community based monitor indicated an exceedance of the air quality standard.

The report does not provide commentary into any trend identified in the data except in situations where there has been a technological change in the data collection system or there has been is change in the operating condition as in the case of industrial monitoring.

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1.0 Introduction

The air quality in Newfoundland and Labrador is monitored through a joint effort between the Department of Environment and Conservation, Environment Canada and the major industrial operations in the province. The Department operates several stations as part of the National Air Pollution Surveillance (NAPS) network, while industrial facilities are required to monitor their own emissions, with the Department auditing their operation on a regular basis.

In general the air quality in the province is good as indicated by the levels recorded at the various monitors; however in 2010 there were instances where an individual industry had emissions which approached or exceeded the associated ambient standard. There were also instances when elevated air pollutant levels were seen as a result of long range transport. Local emissions, such as those from vehicular traffic and woodstoves, also impact air quality on a routine basis.

This report provides summary information and trends from all air quality monitors in Newfoundland and Labrador in 2010. All data has gone through a data reduction and quality assurance process to account for any anomalous readings or system malfunctions.

In this report, Section 2 provides an overview of the monitoring network in the province, a description of the pollutants being measured and their associated standard. Section 3 provides results from the monitors in the NAPS network; Section 4 provides results from the monitoring of industrial emissions; while Section 5 provides the results for the mobile monitoring station operated by the Department of Environment and Conservation.

1.1 Definitions

The following definitions are used throughout this report:

AQHI	Air Quality Health Index
CO	Carbon Monoxide
IOCC	Iron Ore Company of Canada
NARL	North Atlantic Refining Limited
NAPS	National Air Pollution Surveillance
NO_2	Nitrogen Dioxide
NO_x	Oxides of Nitrogen
O_3	Ozone
$PM_{2.5}$	Particulate Matter less than or equal to 2.5 microns
PM_{10}	Particulate Matter less than or equal to 10 microns
SO_2	Sulphur Dioxide
TSP	Total Suspended Particulate
$\mu g/m^3$	Micrograms per cubic metre
Vale	Vale Newfoundland and Labrador

2.0 MONITORING NETWORK

Five pollutants are measured in the monitoring networks in the province. These criteria pollutants are sulphur dioxide (SO_2), oxides of nitrogen (NO_x), carbon monoxide (CO), particulate matter (PM) and ozone (O_3). Volatile organic compounds, (VOCs) are also measured periodically at the NAPS stations, but are not included in the report.

2.1 Pollutants

2.1.1 Oxides of Nitrogen (NO_x)

In a combustion process, NO_x is produced through 3 mechanisms, namely thermal NO_x, fuel NO_x and prompt NO_x. Thermal NO_x is the primary source of NO_x and is formed as a high temperature dissociation and subsequent reaction of nitrogen (N_2) and oxygen (O_2). It is produced in the hottest part of the flame and its formation increases exponentially with the flame temperature. The control of thermal NO_x is generally achieved through reducing the flame temperature, reducing the residence time, or by operating under fuel rich conditions. Fuel NO_x is formed by the reaction of nitrogen compounds chemically bound in liquid or solid fuels with oxygen in the combustion air. In the combustion of such fuels, fuel NO_x can account for up to 50% of the total NO_x emissions. Prompt NO_x is formed from the rapid reaction of atmospheric nitrogen with hydrocarbon radicals, and typically under partially fuel-rich conditions. It can be reduced through combustion staging or by operating under highly oxidizing combustion conditions.

NO_2 is the primary component of concern in NO_x emissions. Generally between 5% and 10% of the NO_x emitted from the combustion of fuel is emitted as NO_2. The remainder is emitted as NO, which is subsequently converted to NO_2 in reactions with various oxidants and oxygen as the plume is transported downwind from the source. The rate of NO_2 formation varies with time of day, season, temperature, wind speed, solar radiation and the availability of oxidants to help drive the chemical reactions.

NO_2 is a reddish brown gas with a pungent odour, which upon reaction with other atmospheric compounds, becomes a major contributor to smog, acid rain, inhalable particulates and reduced visibility. At significant levels and exposure, inhalation may result in irritation and burning to the skin and eyes, nose and throat. Prolonged exposure may result in permanent lung damage.

2.1.2 Particulate Matter (PM)

Particulate matter is the term for particles found in the air, including dust, dirt, soot, smoke, and liquid droplets, and can be large and dark enough to be seen with the naked eye or so small that they can only be detected with an electron microscope. Many manmade and natural sources emit particulate matter directly while others emit gaseous pollutants that react in the atmosphere to form particulate matter.

The size of the particulate has important health considerations. Particulate matter less than 10 microns in diameter (PM_{10}) poses a health concern because it can be inhaled into and accumulate in the respiratory system. Particulate matter less than 2.5 microns in diameter ($PM_{2.5}$) is believed to pose the greatest health risks as it can lodge deeply into the lungs; a $PM_{2.5}$ particle is approximately $1/30^{th}$ the average width of a human hair. Typically these smaller particles are suspended in the air for long periods of time. Total Suspended Particulate (TSP) is the term applied to any particle suspended in the atmosphere, but depending on the monitoring method, is typically limited to particulate matter less than 44 microns. Particulate larger than 10 microns is typically associated with a nuisance issue rather than a health issue.

2.1.3 Carbon Monoxide (CO)

Carbon monoxide is a colourless / odourless gas which reduces the delivery of oxygen to the body's organs. For those with heart disease, exposure to low doses can result in chest pain. For healthier people, exposure to higher levels affects the central nervous system.

Incomplete oxidation of fuel results in the formation of CO. In simplified terms, the generic stoichiometric combustion equation is:

$$HC + O_2 \rightarrow CO_2 + H_2O$$

However if sufficient oxygen (O_2) is not present to complete the combustion of the hydrocarbon fuel (HC), then the oxidation to carbon dioxide (CO_2) and water (H_2O) is not completed and hence CO is emitted.

2.1.4 Sulphur Dioxide (SO_2)

Levels of sulphur dioxide (SO_2) in ambient air are directly related to the concentration of sulphur in fuel and the quantity of fuel being combusted. Upon combustion, approximately 98% of the sulphur in the fuel will oxidize to form SO_2, with the remaining 2% producing sulphur trioxide (SO_3). The emitted SO_2 can also further oxidize to SO_3 and react with water to produce acid rain in the form of sulphuric acid (H_2SO_4).

Short-term exposures to SO_2, have shown adverse respiratory effects including bronchoconstriction and increased asthma symptoms.

2.1.5 Ozone (O_3)

Ground-level ozone is not directly emitted into the air, but rather is formed by chemical reactions between NO_x and volatile organic compounds (VOCs) in the presence of ultraviolet (UV) radiation. Ozone is a primary component of smog.

Breathing ozone can trigger a variety of health problems including chest pain, coughing, throat irritation, and congestion. It can also worsen bronchitis, emphysema, and asthma as well as reduce lung function and inflame the linings of the lungs, permanently scarring lung tissue under repeated exposure.

2.2 Ambient Air Standards

The maximum concentrations of air pollutants considered to be protective of the environment are defined in the *Air Pollution Control Regulations, 2004*. For the pollutants discussed in the report, the ambient air standards are detailed in Table 2.2.1.

TABLE 2.2.1 - AMBIENT AIR STANDARDS IN NEWFOUNDLAND AND LABRADOR

Pollutant	Averaging Period	Concentration ($\mu g/m^3$)
Carbon Monoxide (CO)	1-hour	35000
	8-hour	15000
Nitrogen Dioxide (NO_2)	1-hour	400
	24-hour	200
	1-year	100
Ozone	1-hour	160
	8-hour	87
Particulate Matter < 2.5 microns ($PM_{2.5}$)	24-hour	25
Particulate Matter < 10 microns (PM_{10})	24-hour	50
Total Particulate Matter (TPM)	24-hour	120
	1-year	60
Sulphur Dioxide (SO_2)	1-hour	900
	3-hour	600
	24-hour	300
	1-year	60

2.3 Monitoring in Newfoundland and Labrador

Table 2.3.1 provides the listing of monitoring stations in the province that measured pollutants during 2010.

TABLE 2.3.1 - POLLUTANT MONITORING IN NEWFOUNDLAND AND LABRADOR

		Pollutant						
Operator	**Station Location**	**SO_2**	**NO_x / NO_2**	**O_3**	**TSP**	**PM_{10}**	**$PM_{2.5}$**	**CO**
Environment and Conservation + Environment Canada (NAPS)	Water Street, St. John's	✓	✓	✓			✓	✓
	Old Placentia Road, Mount Pearl	✓	✓	✓			✓	✓
	Macpherson Avenue, Corner Brook	✓	✓	✓			✓	✓
	Scott Avenue, Grand Falls Windsor	✓	✓	✓			✓	✓
	Port aux Choix			✓				
Environment and Conservation	Buchans	✓	✓	✓	✓		✓	
NALCOR Energy	Butterpot Road	✓	✓				✓	
	Green Acres Road	✓	✓		✓		✓	
	Indian Pond Drive	✓	✓		✓		✓	
	Indian Pond Road	✓	✓		✓		✓	
	Lawrence Pond Road	✓	✓		✓		✓	
	Property Boundary				✓		✓	
	Little Bay Islands		✓					
North Atlantic Refining Limited	Come by Chance	✓					✓	
	First Street, Arnold's Cove	✓					✓	
	Sunnyside	✓				✓	✓	
	Property Boundary	✓					✓	

Operator	Station Location	Pollutant						
		SO_2	NO_x / NO_2	O_3	TSP	PM_{10}	$PM_{2.5}$	CO
Corner Brook Pulp and Paper	Main Street	✓			✓		✓	
	West Street				✓			
Wabush Mines	Bond Avenue	✓					✓	
	Shea Street				✓			
	Hydro Substation				✓	✓	✓	
Iron Ore Company of Canada	Tamarack Drive				✓			
	Vanier Avenue				✓			
	Bartlett Drive	✓			✓		✓	
	Property Boundary				✓			
Vale Newfoundland and Labrador Limited	Voisey's Bay Camp		✓				✓	
	Voisey's Bay Process Area		✓					
	Voisey's Bay Port				✓			
	Long Harbour Community Centre		✓				✓	
	Long Harbour Main Road		✓				✓	

2.4 Air Quality Health Index (AQHI)

The Air Quality Health Index (AQHI) is a scale designed to help an individual understand the air quality around you to what it means to your health. It is a numbered scaled from 1 to 10+ where the higher the number the greater the health risk associated with air quality. Specifically the AQHI health messages are defined in Table 2.4.1.

The AQHI is calculated on an hourly basis based on the relative risks of O_3, $PM_{2.5}$ and NO_2. Data for the calculation of AQHI is currently being collected at the NAPS stations and the hourly AQHI is published to the Environment Canada weather office website http://www.weatheroffice.gc.ca/forecast/canada/index_e.html?id=nl.

TABLE 2.4.1 - AQHI HEALTH MESSAGES

AQHI reading	Health Risk Level	Health Messages	
		General Population	At Risk Population
1-3	Low	Ideal air quality for outdoor activities.	Enjoy your usual outdoor activities.
4-6	Moderate	No need to modify your usual outdoor activities unless you experience symptoms such as coughing and throat irritation.	Consider reducing or rescheduling strenuous activities outdoors if you are experiencing symptoms.
7-10	High	Consider reducing or rescheduling strenuous activities outdoors if you experience symptoms such as coughing and throat irritation.	Reduce or reschedule strenuous activities outdoors. Children and the elderly should also take it easy.
10+	Very High	Reduce or reschedule strenuous activities outdoors, especially if you experience symptoms such as coughing and throat irritation.	Avoid strenuous activities outdoors. Children and the elderly should also avoid outdoor physical exertion.

2.5 Data Validity and Acceptability

All data monitored in both the NAPS network and the industrial monitoring network undergoes a data reduction and quality assurance procedure before being published. This procedure ensures that any anomalous readings or questionable data is not incorporated into the published dataset. Elements of this procedure account for:

- Routine calibration and auditing of the analyzers
- Zero correction of the baseline drift and noise
- Analyzer "Status Flag" activation
- Shelter temperature analysis
- Statistical rendering of outliers

In 2010, the department developed its Guidance Document on Ambient Air Monitoring (GD-PPD-065) which further prescribes monitoring requirements. The document is available at http://www.env.gov.nl.ca/env/env_protection/science/gd_ppd_065.pdf

3.0 National Air Pollution Surveillance Network (NAPS)

The NAPS network in the province is established to monitor the air quality in primarily urbanized settings and in neighbourhoods away from the influences of industrial operations. In 2010 there were four permanent sites operational with a complete suite monitoring (SO_2, $PM_{2.5}$ NO_x / NO_2, CO and O_3), and one which monitored O_3 only. The NAPS stations with a complete suite of monitoring provide the data necessary to calculate the AQHI.

The four permanent sites with the complete suite of monitoring were located in St. John's on Water Street, in Mt. Pearl on Old Placentia Road, in Grand Falls Windsor on Scott Avenue and in Corner Brook on Macpherson Avenue.

In 2010, the Grand Falls Windsor station, which had been previously an O_3 only station, was upgraded with a complete suite of monitoring.

The location which monitored O_3 only was Port aux Choix. The Port aux Choix station had previously been located in Ferolle Point, however due to logistical issues; the station was closed in November 2009 and moved to the new location.

A map identifying the location of the NAPS stations in Eastern Newfoundland is presented in Figures 3.0.1, while the location of the Grand Falls Windsor station is presented in Figure and 3.0.2. The location of the Corner Brook station is presented in Figure 3.0.3 while Figure 3.0.4 presents the location of the Port aux Choix Station.

FIGURE 3.0.1 - NAPS MONITORING NETWORK IN EASTERN NEWFOUNDLAND

FIGURE 3.0.2 - NAPS MONITORING STATION IN GRAND FALLS WINDSOR

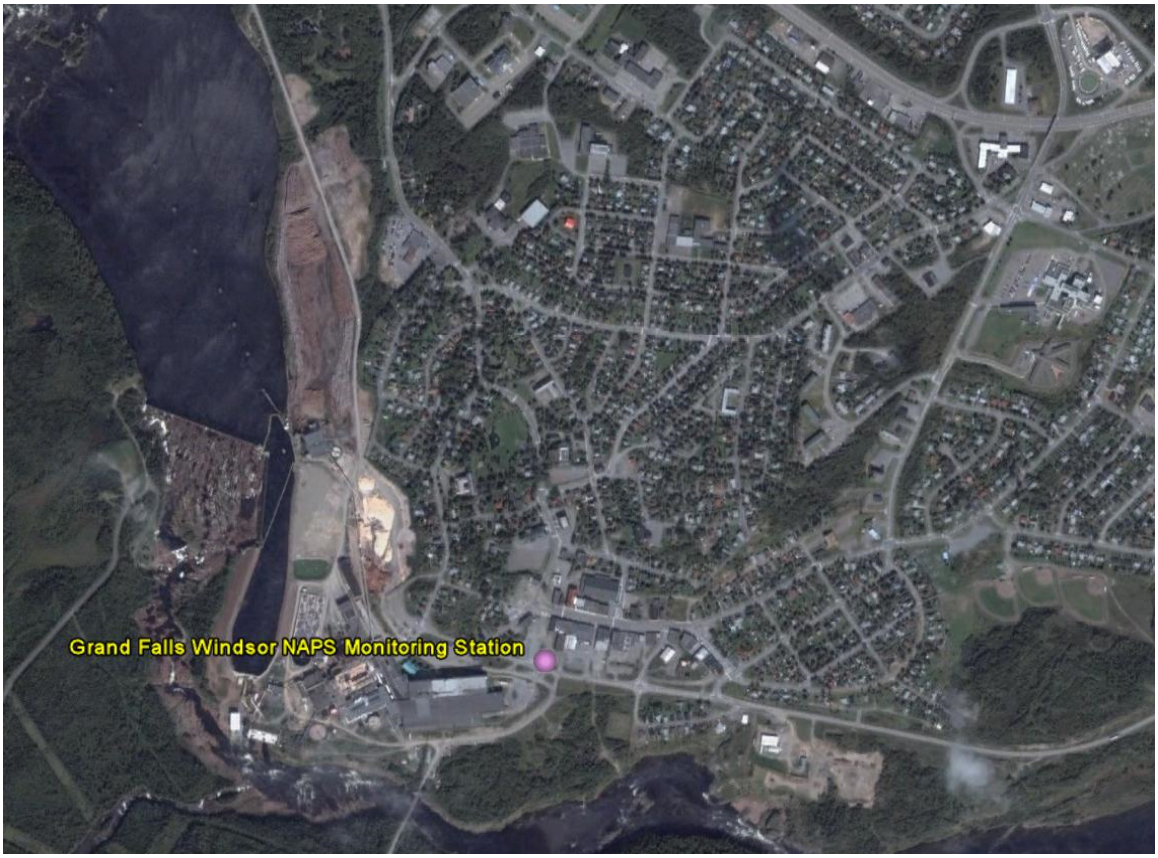


FIGURE 3.0.3 - NAPS MONITORING STATION IN CORNER BROOK

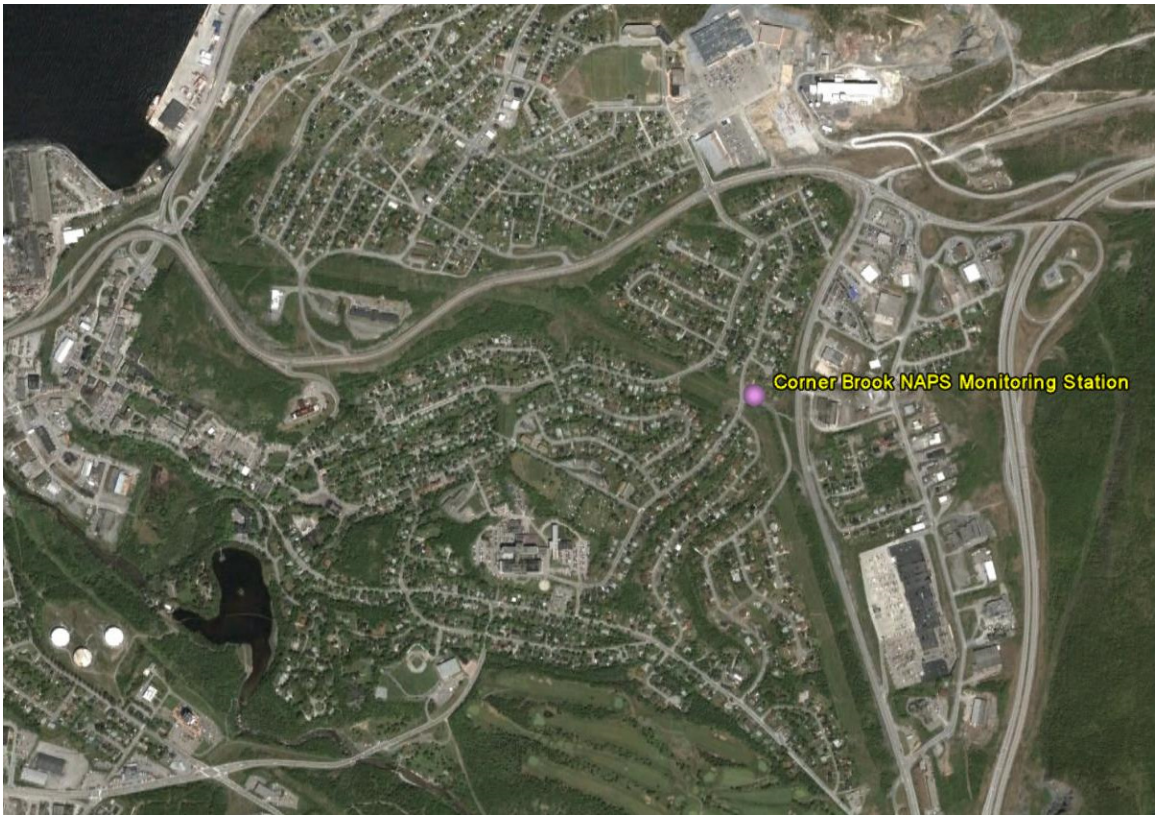
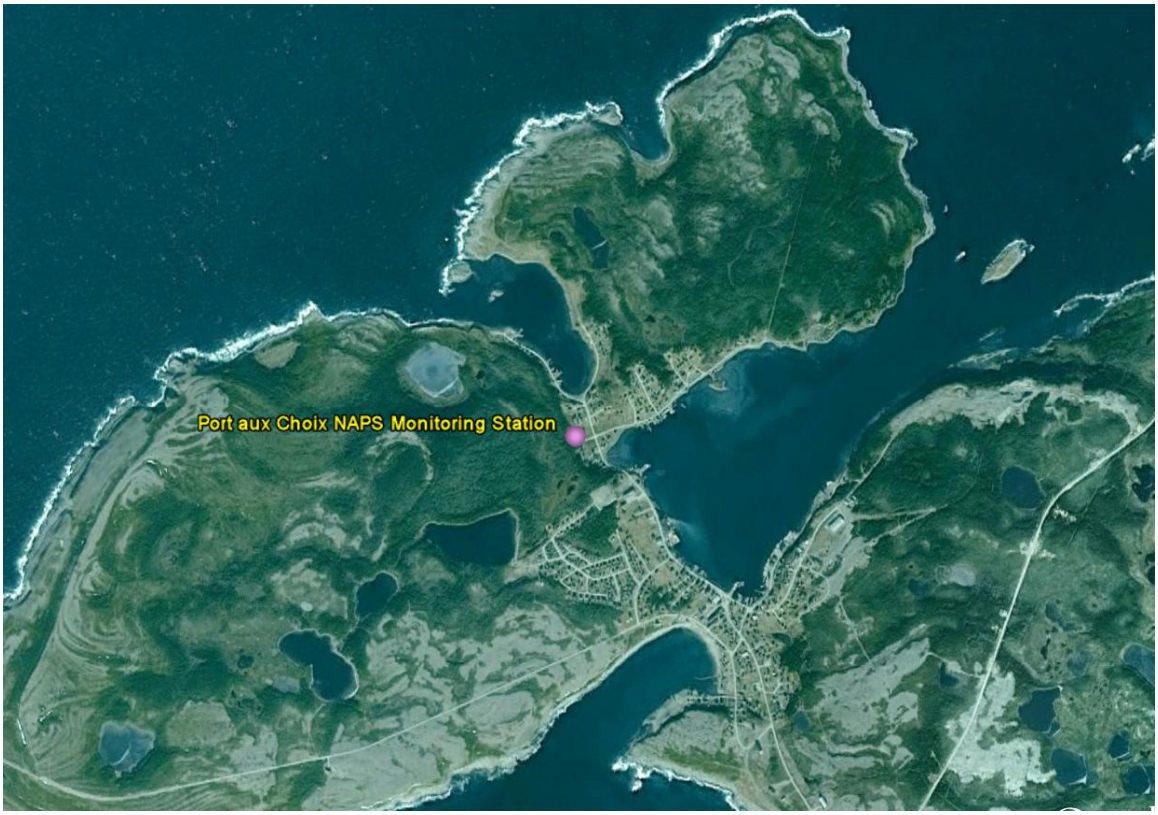


FIGURE 3.0.4 - NAPS MONITORING STATION IN PORT AUX CHOIX



3.1 St. John's

The St. John's NAPS monitoring station is located on Water Street near the convention centre and monitors the ambient levels of SO_2, NO_x / NO_2, CO, O_3 and $PM_{2.5}$ on a continuous basis. For all pollutants with the exception of O_3, the ambient air criteria were not exceeded on any occasion in 2010. For O_3, the 8-hour standard was exceeded twelve times between May and September.

Tables 3.1.1 through 3.1.5 present the summary information on the level of air contaminants measured at the St. John's NAPS station, while Figures 3.1.1 through 3.1.5 provide a graphical representation of the annual trend of each pollutant. Table 3.1.6 provides a summary of the AQHI in 2009 and 2010 while Figure 3.1.6 provides a graphical representation of the percentage of time the AQHI values were below a given level in 2010.

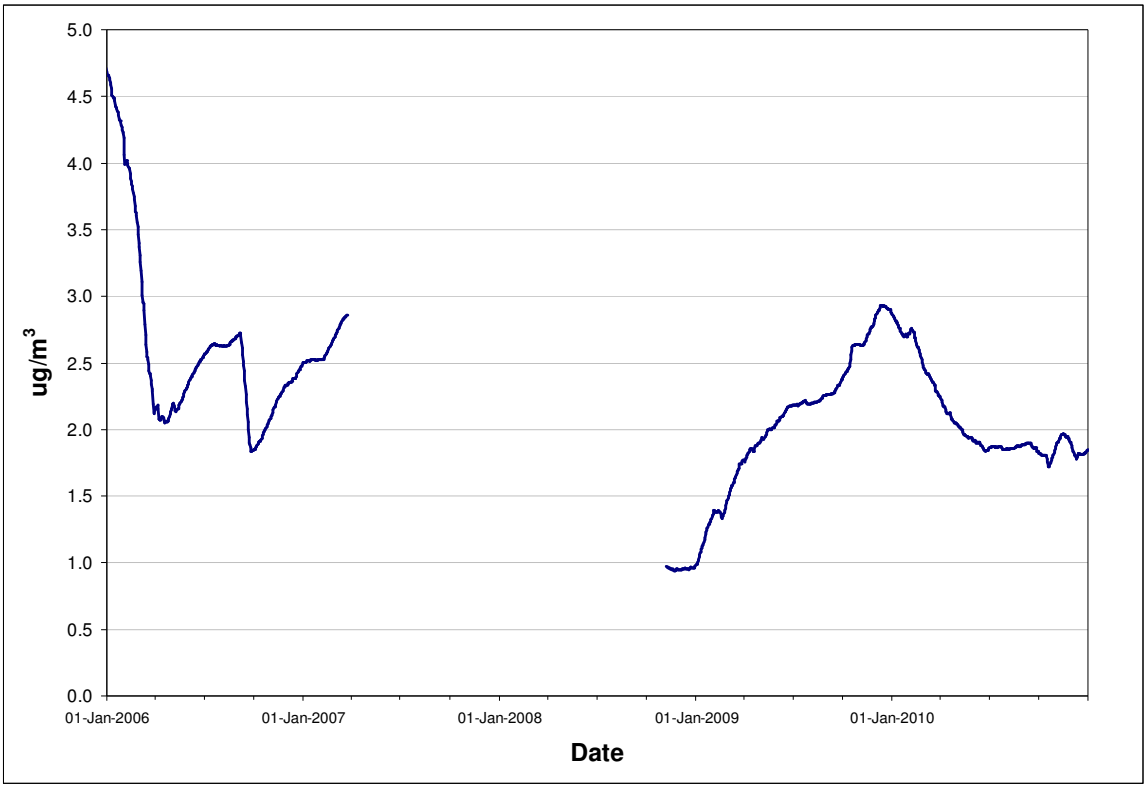
Of particular note, in 2008, the method of measuring $PM_{2.5}$ changed from Tapered Element Oscillating Microbalance (TEOM) technology to Beta Attenuation Monitor (BAM) technology. This resulted in a sharp increase in the $PM_{2.5}$ concentrations.

TABLE 3.1.1 - ST. JOHN'S NAPS SO_2 SUMMARY 2009 & 2010

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>900)	Regulatory Exceedances 3-Hour (>600)	Regulatory Exceedances 24-Hour (>300)
2009	January	737	99.1%	5.2	35.7	23.1	10.1	0	0	0
	February	660	98.2%	5.6	39.1	33.0	13.5	0	0	0
	March	739	99.3%	4.3	42.8	36.1	14.9	0	0	0
	April	707	98.2%	3.4	70.6	32.9	8.2	0	0	0
	May	738	99.2%	2.6	25.4	17.3	6.2	0	0	0
	June	659	91.5%	1.9	40.3	27.2	6.4	0	0	0
	July	733	98.5%	1.0	7.3	4.7	2.8	0	0	0
	August	730	98.1%	0.9	16.2	6.5	2.8	0	0	0
	September	717	99.6%	1.5	9.7	8.8	6.4	0	0	0
	October	377	50.7%	3.9	20.1	16.1	11.5	0	0	0
	November	709	98.5%	2.9	13.1	9.6	6.0	0	0	0
	December	738	99.2%	1.9	9.1	7.7	5.9	0	0	0
Annual		8244	94.1%	2.9	70.6	36.1	14.9	0	0	0
2010	January	670	90.1%	3.5	26.5	22.8	10.4	0	0	0
	February	573	85.3%	2.6	24.9	20.7	11.5	0	0	0
	March	740	99.5%	1.9	15.4	10.1	4.3	0	0	0
	April	693	96.3%	1.1	15.2	8.1	2.5	0	0	0
	May	741	99.6%	1.2	10.8	7.6	3.8	0	0	0
	June	716	99.4%	1.2	21.3	14.2	4.2	0	0	0
	July	741	99.6%	0.9	11.2	7.8	3.5	0	0	0
	August	740	99.5%	1.3	7.4	4.4	3.0	0	0	0
	September	719	99.9%	0.9	5.9	3.6	2.1	0	0	0
	October	741	99.6%	3.0	9.9	7.5	5.5	0	0	0
	November	719	99.9%	3.5	12.6	10.4	7.4	0	0	0
	December	744	100.0%	1.3	25.3	18.5	8.0	0	0	0
Annual		8537	97.5%	1.8	26.5	22.8	11.5	0	0	0

Observations in ug/m^3

FIGURE 3.1.1 - ST. JOHN'S NAPS ANNUAL SO_2 CONCENTRATIONS



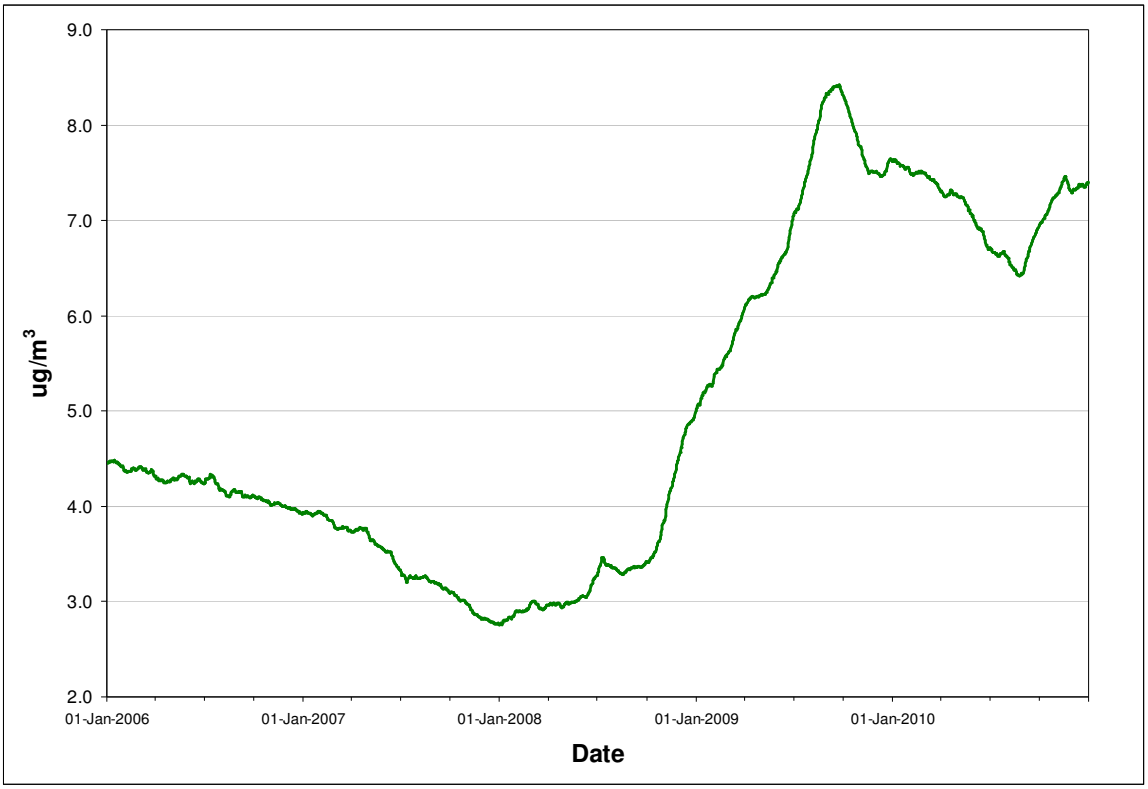
Rolling annual average of hourly concentrations

TABLE 3.1.2 - ST. JOHN'S NAPS $PM_{2.5}$ SUMMARY 2009 & 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2009	January	31	100.0%	7.6	16.6	0
	February	27	96.4%	8.0	15.3	0
	March	29	93.5%	8.2	12.8	0
	April	30	100.0%	6.6	10.0	0
	May	31	100.0%	8.8	20.3	0
	June	30	100.0%	11.8	18.9	0
	July	30	96.8%	10.6	16.6	0
	August	31	100.0%	11.1	21.5	0
	September	30	100.0%	3.7	10.4	0
	October	31	100.0%	1.8	5.6	0
	November	30	100.0%	5.0	13.1	0
	December	31	100.0%	8.4	19.5	0
Annual		361	98.9%	7.6	21.5	0
2010	January	27	87.1%	6.7	14.5	0
	February	22	78.6%	7.2	13.6	0
	March	29	93.5%	6.0	9.8	0
	April	30	100.0%	6.1	13.6	0
	May	30	96.8%	6.0	9.4	0
	June	30	100.0%	7.9	15.4	0
	July	31	100.0%	9.7	19.7	0
	August	31	100.0%	9.0	14.5	0
	September	30	100.0%	9.6	17.9	0
	October	30	96.8%	5.3	8.4	0
	November	30	100.0%	5.2	9.7	0
	December	26	83.9%	10.1	14.4	0
Annual		346	94.8%	7.4	19.7	0

Observations in ug/m^3

FIGURE 3.1.2 - ST. JOHN'S NAPS ANNUAL $PM_{2.5}$ CONCENTRATIONS



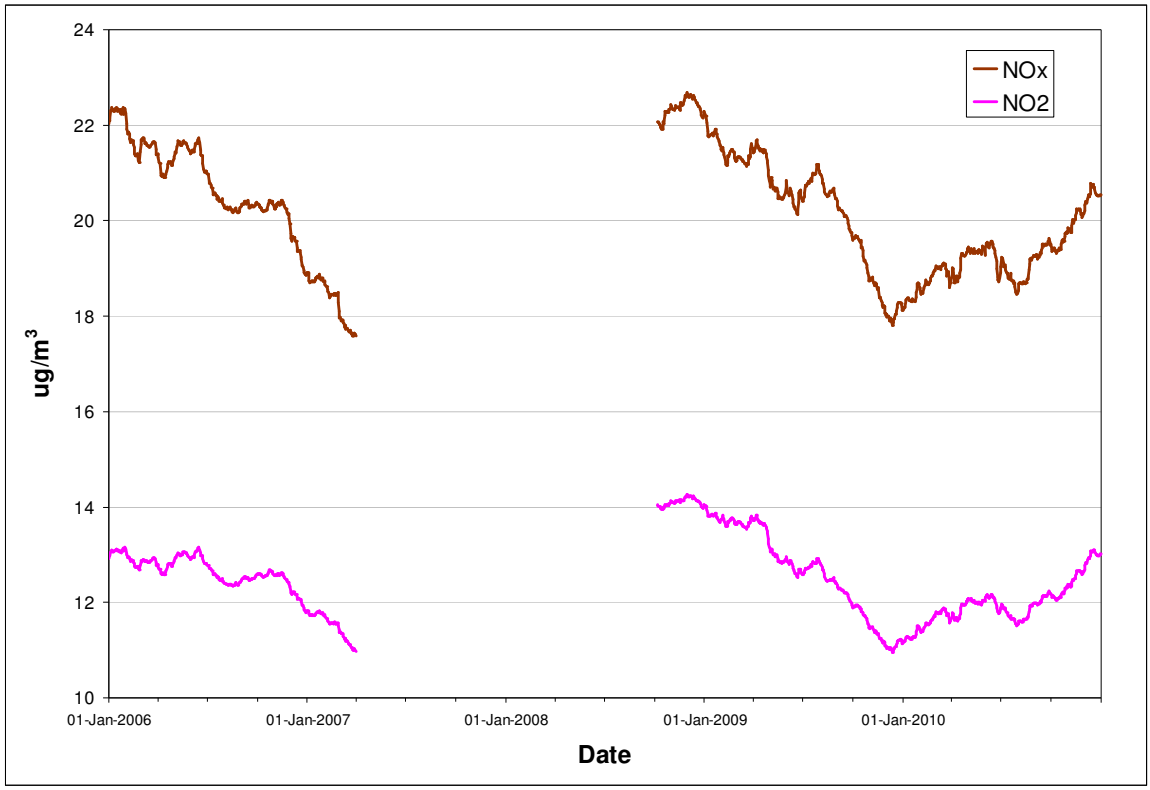
Rolling annual average of hourly concentrations

TABLE 3.1.3 - ST. JOHN'S NAPS NO_X / NO_2 SUMMARY 2009 & 2010

Year	Month	# Valid Hours	% Valid Hours	Average NO_x	Average NO_2	Maximums 1-Hour NO_x	Maximums 1-Hour NO_2	Maximums 24-Hour NO_x	Maximums 24-Hour NO_2	Exceedances 1-Hour (>400)	Exceedances 24-Hour (>200)
2009	January	725	97.4%	16.9	11.4	356.4	79.4	44.1	23.8	0	0
	February	660	98.2%	19.9	13.2	174.3	78.5	82.7	42.6	0	0
	March	739	99.3%	22.2	14.8	262.3	103.1	76.1	41.3	0	0
	April	707	98.2%	18.7	12.4	248.4	88.8	61.3	32.0	0	0
	May	738	99.2%	18.4	10.9	314.4	78.5	92.4	36.9	0	0
	June	669	92.9%	25.7	13.3	300.0	66.3	78.4	36.1	0	0
	July	722	97.0%	22.8	12.2	241.5	87.5	74.5	28.4	0	0
	August	730	98.1%	13.7	7.6	223.3	48.2	32.7	13.4	0	0
	September	716	99.4%	10.7	6.3	136.0	45.3	34.3	15.4	0	0
	October	740	99.5%	14.0	8.9	147.0	48.8	44.5	22.1	0	0
	November	713	99.0%	16.6	10.8	208.7	69.9	58.0	29.7	0	0
	December	738	99.2%	18.3	12.2	139.7	63.4	48.4	30.2	0	0
Annual		8597	98.1%	18.1	11.1	356.4	103.1	92.4	42.6	0	0
2010	January	670	90.1%	23.1	15.5	186.6	81.9	58.3	37.7	0	0
	February	668	99.4%	24.4	16.6	133.8	68.0	44.0	30.9	0	0
	March	740	99.5%	20.2	14.3	179.0	80.7	56.5	37.1	0	0
	April	717	99.6%	26.0	17.1	821.0	204.3	100.9	49.5	0	0
	May	741	99.6%	18.2	10.8	179.0	71.3	56.6	28.9	0	0
	June	718	99.7%	21.0	11.3	374.8	77.4	76.3	33.5	0	0
	July	741	99.6%	16.2	7.9	273.2	76.1	97.2	32.8	0	0
	August	740	99.5%	22.9	13.0	126.0	57.2	75.5	38.6	0	0
	September	719	99.9%	13.7	8.8	113.6	48.1	31.5	17.1	0	0
	October	741	99.6%	16.8	10.4	193.7	57.8	53.8	31.2	0	0
	November	719	99.9%	21.5	14.6	186.5	77.2	58.0	36.0	0	0
	December	744	100.0%	22.9	16.6	186.8	74.2	82.6	38.3	0	0
Annual		8658	98.8%	20.5	13.0	821.0	204.3	100.9	49.5	0	0

Observations in ug/m^3

FIGURE 3.1.3 - ST. JOHN'S NAPS ANNUAL NO_X / NO_2 CONCENTRATIONS



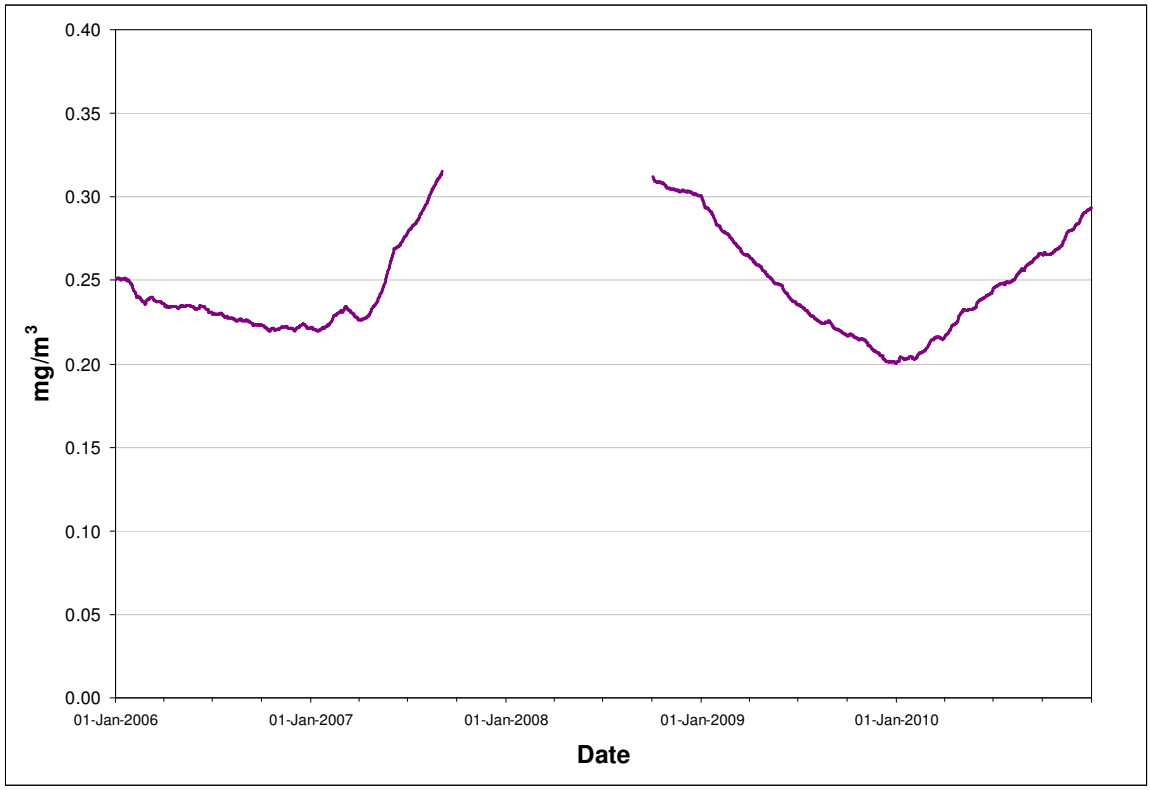
Rolling annual average of hourly concentrations

TABLE 3.1.4 - ST. JOHN'S NAPS CO SUMMARY 2009 & 2010

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 8-Hour	Regulatory Exceedances 1-Hour (>35)	Regulatory Exceedances 8-Hour (>15)
2009	January	737	99.1%	0.2	1.0	0.5	0	0
	February	659	98.1%	0.3	1.7	0.6	0	0
	March	739	99.3%	0.3	1.1	0.5	0	0
	April	707	98.2%	0.2	0.7	0.4	0	0
	May	732	98.4%	0.2	0.8	0.4	0	0
	June	669	92.9%	0.2	0.7	0.3	0	0
	July	732	98.4%	0.1	0.6	0.5	0	0
	August	730	98.1%	0.2	1.3	0.5	0	0
	September	604	83.9%	0.1	0.5	0.3	0	0
	October	0	0.0%					
	November	602	83.6%	0.2	0.8	0.6	0	0
	December	722	97.0%	0.2	1.1	0.8	0	0
Annual		7633	87.1%	0.2	1.7	0.8	0	0
2010	January	670	90.1%	0.3	1.7	0.9	0	0
	February	667	99.3%	0.3	1.0	0.7	0	0
	March	740	99.5%	0.3	0.8	0.5	0	0
	April	713	99.0%	0.4	1.3	0.8	0	0
	May	741	99.6%	0.3	4.2	1.7	0	0
	June	718	99.7%	0.3	0.8	0.5	0	0
	July	740	99.5%	0.2	0.9	0.6	0	0
	August	740	99.5%	0.3	1.0	0.9	0	0
	September	719	99.9%	0.2	0.8	0.5	0	0
	October	739	99.3%	0.3	1.1	0.9	0	0
	November	719	99.9%	0.3	1.1	0.8	0	0
	December	744	100.0%	0.4	1.3	0.9	0	0
Annual		8650	98.7%	0.3	4.2	1.7	0	0

Observations in mg/m^3

FIGURE 3.1.4 - ST. JOHN'S NAPS ANNUAL CO CONCENTRATIONS



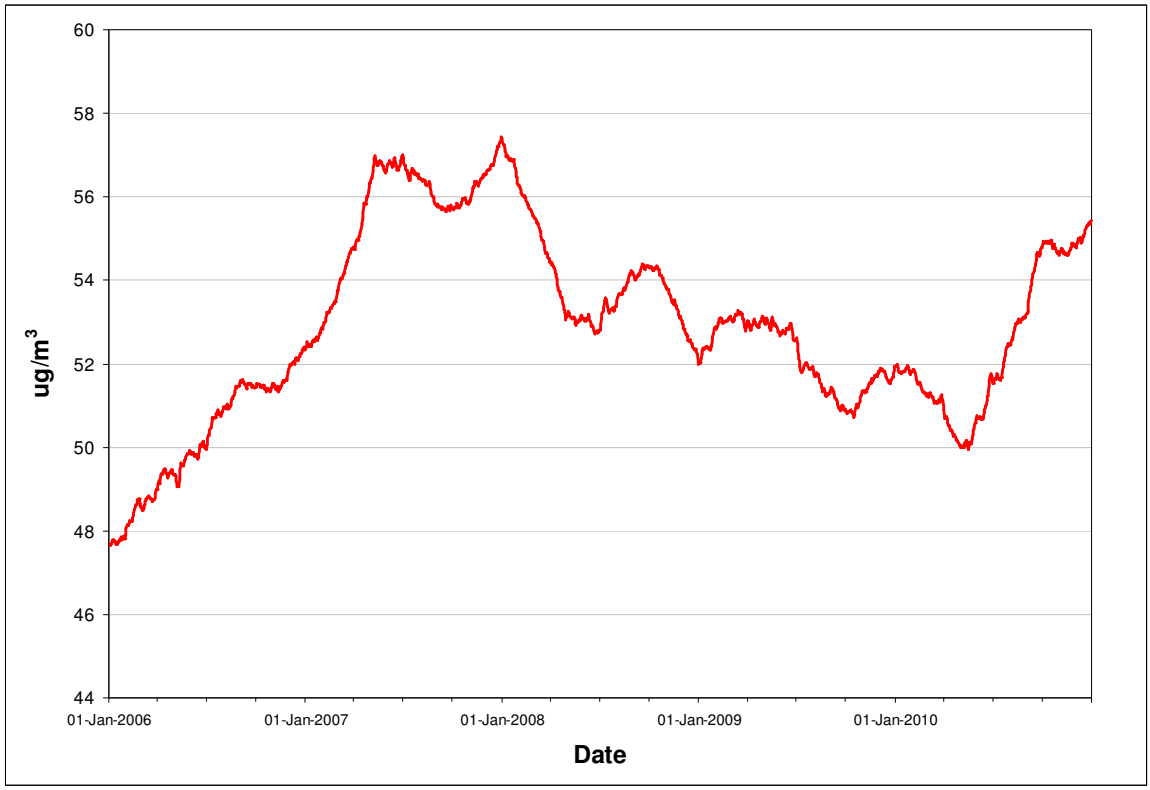
Rolling annual average of hourly concentrations

TABLE 3.1.5 - ST. JOHN'S NAPS O_3 SUMMARY 2009 & 2010

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 8-Hour	Regulatory Exceedances 1-Hour (>160)	Regulatory Exceedances 8-Hour (>87)
2009	January	738	99.2%	58.1	85.3	75.2	0	0
	February	660	98.2%	64.6	92.9	86.6	0	0
	March	733	98.5%	62.6	91.8	88.7	0	1
	April	707	98.2%	66.1	101.1	91.4	0	4
	May	732	98.4%	57.6	127.0	103.7	0	4
	June	659	91.5%	43.7	89.0	75.3	0	0
	July	732	98.4%	39.5	71.1	66.0	0	0
	August	730	98.1%	39.1	112.8	89.8	0	1
	September	715	99.3%	39.4	79.3	74.8	0	0
	October	717	96.4%	47.7	76.5	74.4	0	0
	November	436	60.6%	51.2	76.0	73.6	0	0
	December	738	99.2%	53.7	82.3	81.2	0	0
Annual		8297	94.7%	51.9	127.0	103.7	0	10
2010	January	670	90.1%	57.1	80.9	78.5	0	0
	February	667	99.3%	57.3	79.4	75.9	0	0
	March	740	99.5%	60.0	84.2	78.1	0	0
	April	716	99.4%	55.2	86.8	78.6	0	0
	May	739	99.3%	64.3	108.3	99.6	0	3
	June	718	99.7%	55.2	106.7	96.3	0	2
	July	741	99.6%	49.6	121.6	102.6	0	2
	August	740	99.5%	46.6	102.5	83.3	0	0
	September	719	99.9%	58.3	118.1	110.9	0	5
	October	741	99.6%	46.4	94.0	84.9	0	0
	November	718	99.7%	55.3	86.6	83.4	0	0
	December	744	100.0%	60.5	87.6	84.7	0	0
Annual		8653	98.8%	55.4	121.6	110.9	0	12

Observations in ug/m^3

FIGURE 3.1.5 - ST. JOHN'S NAPS ANNUAL O_3 CONCENTRATIONS

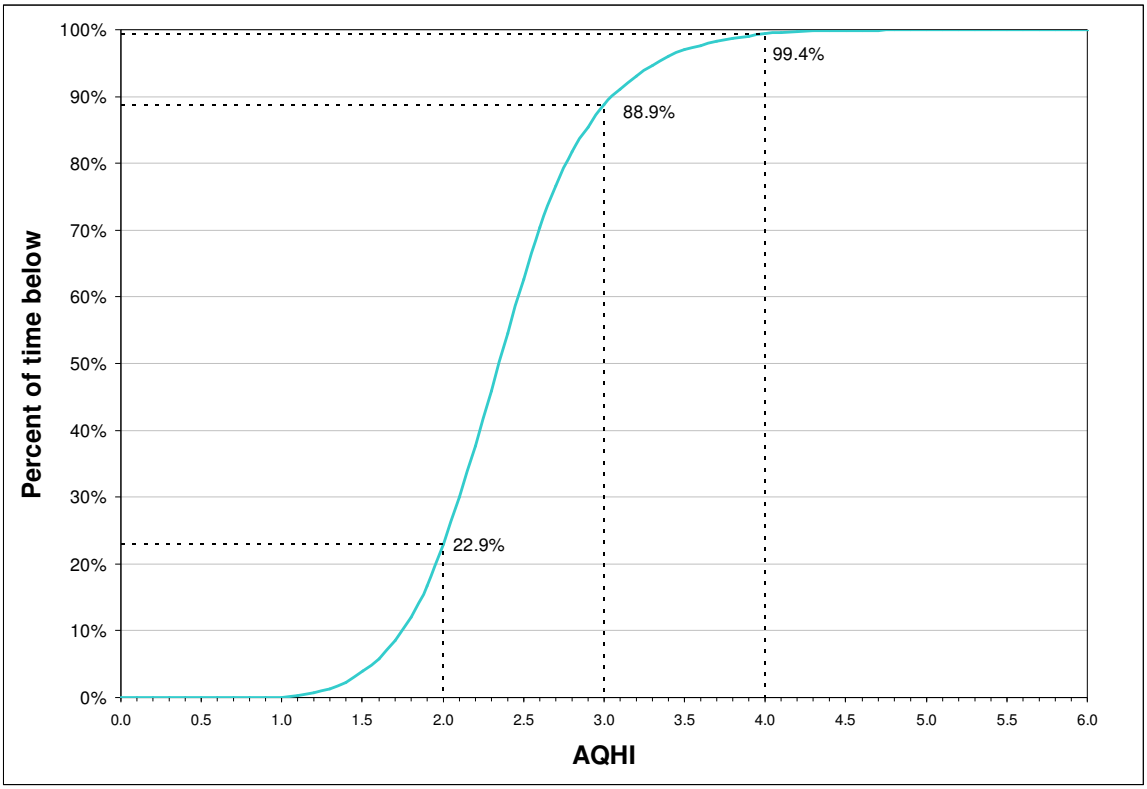


Rolling annual average of hourly concentrations

TABLE 3.1.6 - ST. JOHN'S NAPS AQHI SUMMARY 2009 & 2010

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour
2009	January	720	96.8%	2.4	6.4
	February	652	97.0%	2.7	3.8
	March	701	94.2%	2.7	5.6
	April	707	98.2%	2.6	4.4
	May	731	98.3%	2.4	5.1
	June	657	91.3%	2.3	5.3
	July	717	96.4%	2.1	4.8
	August	721	96.9%	1.9	4.7
	September	708	98.3%	1.5	2.5
	October	696	93.5%	1.7	2.8
	November	431	59.9%	2.2	4.0
	December	738	99.2%	2.4	4.6
Annual		8179	93.4%	2.2	6.4
2010	January	664	89.2%	2.5	4.3
	February	542	80.7%	2.6	4.2
	March	710	95.4%	2.5	4.7
	April	715	99.3%	2.5	10.0
	May	725	97.4%	2.4	4.2
	June	718	99.7%	2.3	5.0
	July	738	99.2%	2.1	5.0
	August	740	99.5%	2.2	3.7
	September	713	99.0%	2.4	4.2
	October	722	97.0%	1.9	3.8
	November	717	99.6%	2.4	4.5
	December	634	85.2%	2.8	4.6
Annual		8338	95.2%	2.4	10.0

FIGURE 3.1.6 - ST. JOHN'S NAPS AQHI FREQUENCY DISTRIBUTION 2010



e.g. 88.9% of the time the AQHI recorded was below 3.0

3.2 Mt. Pearl

The Mt. Pearl NAPS monitoring station is located on Old Placentia Road near Admiralty House and monitors the ambient levels of SO_2, NO_x / NO_2, CO, O_3 and $PM_{2.5}$ on a continuous basis. For all pollutants, with the exception of O_3, the ambient air criteria were not exceeded on any occasion in 2010. For O_3, the 8-hour ambient standard was exceeded on six occasions in 2010.

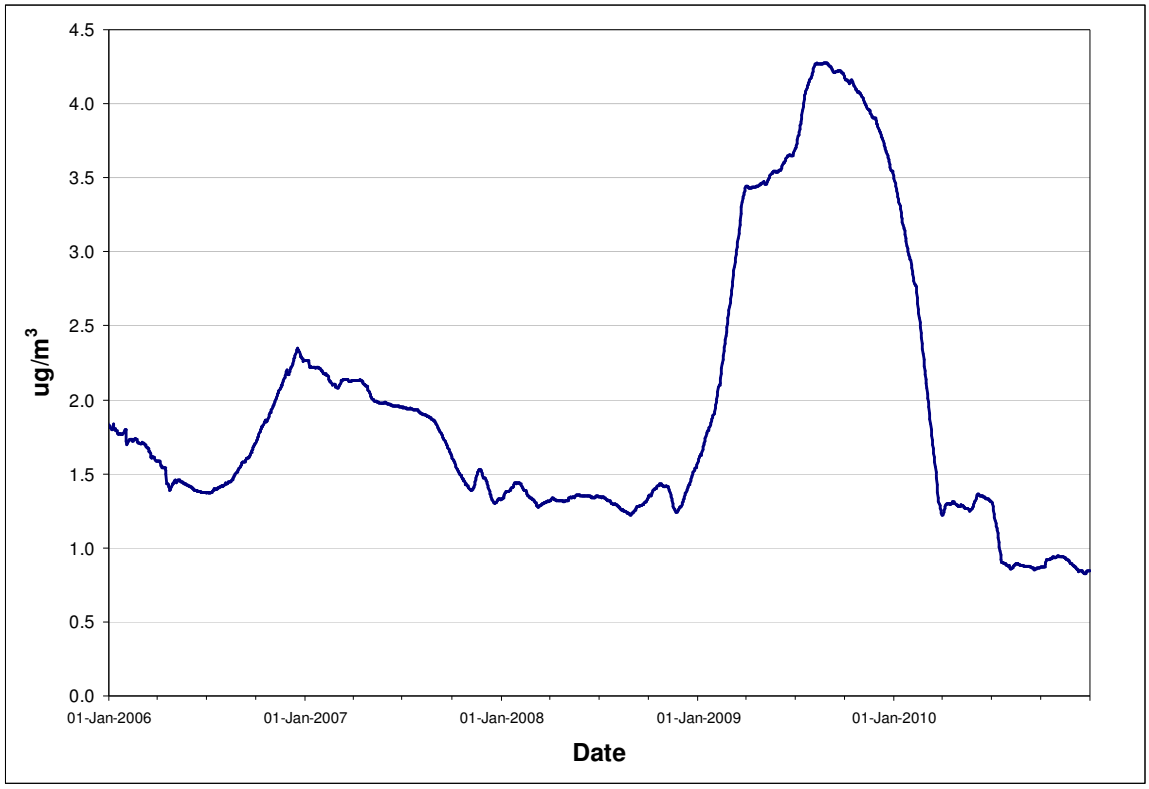
Tables 3.2.1 through 3.2.5 present the summary information on the level of air contaminants measured at the Mt. Pearl NAPS station, while Figures 3.2.1 through 3.2.5 provide a graphical representation of the annual trend of each pollutant. Table 3.2.6 provides a summary of the AQHI in 2009 and 2010 while Figure 3.2.6 provides a graphical representation of the percentage of time the AQHI values were below a given level in 2010.

TABLE 3.2.1 - MT. PEARL NAPS SO_2 SUMMARY 2009 & 2010

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>900)	Regulatory Exceedances 3-Hour (>600)	Regulatory Exceedances 24-Hour (>300)
2009	January	699	94.0%	6.8	29.6	16.8	9.8	0	0	0
	February	666	99.1%	10.1	32.4	25.4	13.7	0	0	0
	March	739	99.3%	10.9	38.5	30.4	16.7	0	0	0
	April	713	99.0%	0.8	7.9	5.5	2.8	0	0	0
	May	619	83.2%	1.4	10.6	6.9	2.9	0	0	0
	June	361	50.1%	0.7	5.1	3.1	1.7	0	0	0
	July	390	52.4%	8.0	14.0	12.4	10.3	0	0	0
	August	601	80.8%	0.9	12.6	9.5	5.4	0	0	0
	September	718	99.7%	0.5	3.9	3.1	1.8	0	0	0
	October	642	86.3%	0.4	3.7	2.1	1.5	0	0	0
	November	710	98.6%	0.9	14.6	10.3	3.7	0	0	0
	December	739	99.3%	0.9	4.6	3.5	2.2	0	0	0
Annual		7597	86.7%	3.5	38.5	30.4	16.7	0	0	0
2010	January	740	99.5%	0.8	6.4	3.9	2.2	0	0	0
	February	668	99.4%	1.1	9.9	7.1	4.1	0	0	0
	March	686	92.2%	1.1	12.9	7.4	3.5	0	0	0
	April	606	84.2%	1.4	10.4	7.5	4.9	0	0	0
	May	216	29.0%	2.5	6.3	5.9	4.6	0	0	0
	June	628	87.2%	1.0	5.5	5.2	3.9	0	0	0
	July	625	84.0%	0.3	1.4	1.2	0.8	0	0	0
	August	742	99.7%	0.8	3.9	2.4	2.0	0	0	0
	September	715	99.3%	0.4	8.4	2.7	1.9	0	0	0
	October	737	99.1%	1.2	7.2	7.0	6.2	0	0	0
	November	717	99.6%	0.3	5.8	2.9	0.8	0	0	0
	December	744	100.0%	0.5	8.7	6.2	1.9	0	0	0
Annual		7824	89.3%	0.8	12.9	7.5	6.2	0	0	0

Observations in ug/m^3

FIGURE 3.2.1 - MT. PEARL NAPS ANNUAL SO_2 CONCENTRATIONS



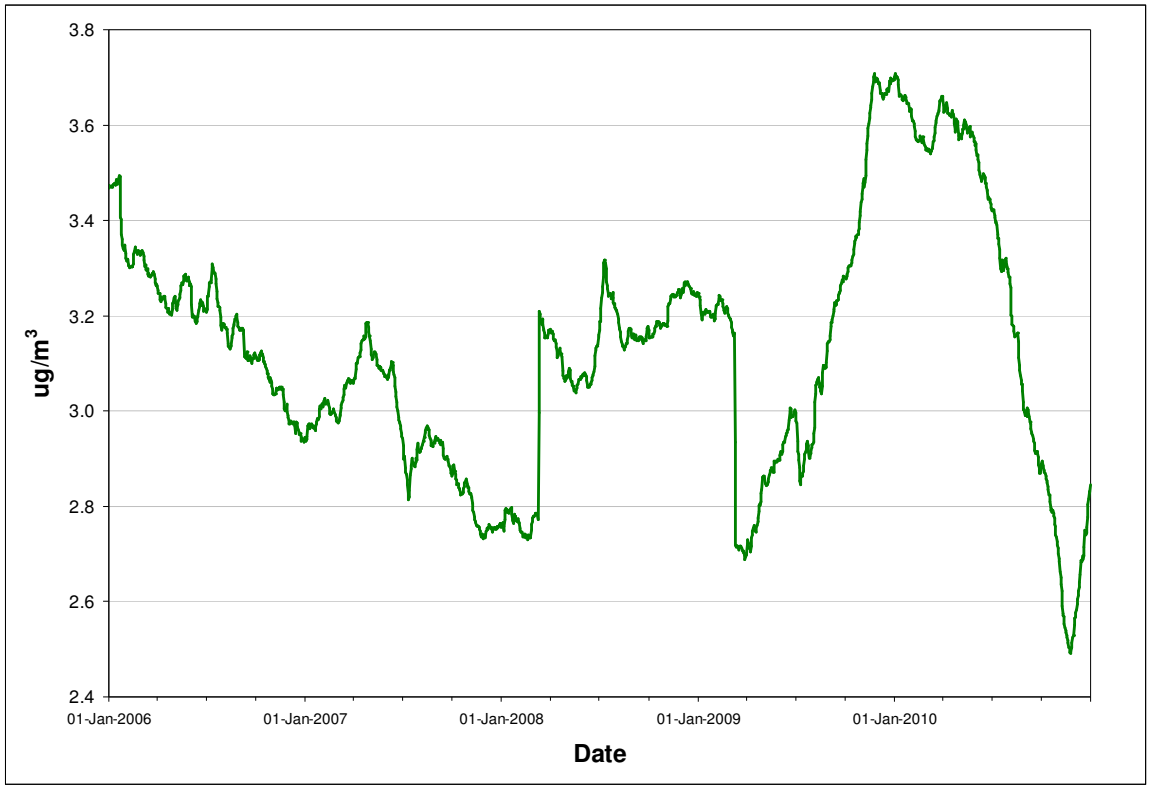
Rolling annual average of hourly concentrations

TABLE 3.2.2 - MT. PEARL NAPS $PM_{2.5}$ SUMMARY 2009 & 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2009	January	28	90.3%	3.0	8.7	0
	February	28	100.0%	3.1	7.7	0
	March	31	100.0%	2.6	6.1	0
	April	30	100.0%	4.7	11.5	0
	May	25	80.6%	2.8	12.1	0
	June	30	100.0%	3.5	7.8	0
	July	30	96.8%	3.5	8.4	0
	August	27	87.1%	5.1	20.3	0
	September	30	100.0%	3.8	8.3	0
	October	26	83.9%	3.7	7.0	0
	November	30	100.0%	5.5	12.1	0
	December	31	100.0%	2.9	9.3	0
Annual		346	94.8%	3.7	20.3	0
2010	January	31	100.0%	2.4	5.8	0
	February	28	100.0%	2.0	7.6	0
	March	27	87.1%	3.9	8.6	0
	April	25	83.3%	3.8	9.0	0
	May	31	100.0%	2.7	6.4	0
	June	25	83.3%	1.7	7.3	0
	July	27	87.1%	1.9	12.5	0
	August	30	96.8%	1.5	7.3	0
	September	29	96.7%	2.5	12.0	0
	October	31	100.0%	1.7	4.5	0
	November	30	100.0%	3.3	6.3	0
	December	31	100.0%	6.5	13.5	0
Annual		345	94.5%	2.8	13.5	0

Observations in ug/m^3

FIGURE 3.2.2 - MT. PEARL NAPS ANNUAL $PM_{2.5}$ CONCENTRATIONS



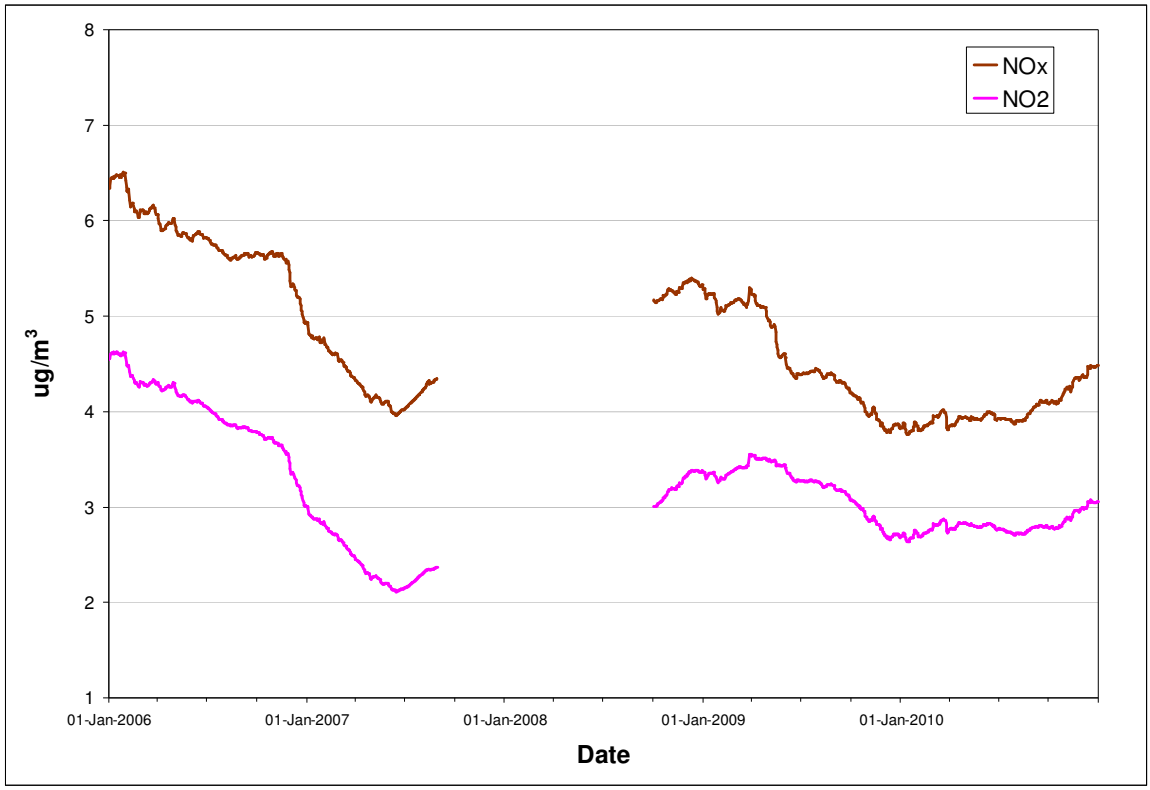
Rolling annual average of hourly concentrations

TABLE 3.2.3 - MT. PEARL NAPS NO_X / NO_2 SUMMARY 2009 & 2010

Year	Month	# Valid Hours	% Valid Hours	Average NO_x	Average NO_2	Maximums 1-Hour NO_x	Maximums 1-Hour NO_2	Maximums 24-Hour NO_x	Maximums 24-Hour NO_2	Exceedances 1-Hour (>400)	Exceedances 24-Hour (>200)
2009	January	683	91.8%	3.9	2.9	97.0	47.3	19.1	13.3	0	0
	February	667	99.3%	5.0	3.6	108.3	42.4	12.7	10.3	0	0
	March	739	99.3%	5.1	3.7	118.0	58.8	42.7	29.2	0	0
	April	713	99.0%	2.2	1.8	43.8	29.3	5.3	4.7	0	0
	May	619	83.2%	3.3	2.3	31.0	17.6	7.0	6.1	0	0
	June	707	98.2%	3.9	2.7	46.8	26.1	18.7	10.8	0	0
	July	716	96.2%	3.4	2.2	22.2	11.8	6.5	4.2	0	0
	August	718	96.5%	3.0	2.1	31.9	19.4	7.2	4.9	0	0
	September	718	99.7%	2.9	1.9	91.8	26.3	13.5	6.9	0	0
	October	642	86.3%	3.7	2.4	96.6	28.6	12.1	5.9	0	0
	November	711	98.8%	4.5	3.1	82.0	44.7	20.7	12.7	0	0
	December	739	99.3%	4.8	3.4	84.2	56.3	20.2	15.8	0	0
Annual		8372	95.6%	3.8	2.7	118.0	58.8	42.7	29.2	0	0
2010	January	740	99.5%	4.3	3.4	113.2	63.5	19.6	13.7	0	0
	February	669	99.6%	5.4	4.0	74.5	43.7	12.6	9.9	0	0
	March	686	92.2%	4.5	3.6	109.8	75.4	16.7	13.9	0	0
	April	606	84.2%	3.5	2.7	34.3	32.1	11.3	9.3	0	0
	May	741	99.6%	3.1	2.0	60.7	26.9	14.0	8.2	0	0
	June	628	87.2%	3.9	2.3	46.8	28.1	13.6	7.9	0	0
	July	740	99.5%	2.8	1.5	35.9	15.9	5.6	3.2	0	0
	August	742	99.7%	4.7	3.0	58.5	23.9	12.4	8.5	0	0
	September	674	93.6%	3.7	2.0	54.0	27.2	12.0	6.2	0	0
	October	714	96.0%	5.1	3.2	96.8	28.4	15.4	11.6	0	0
	November	717	99.6%	6.2	4.5	81.3	54.0	20.6	15.0	0	0
	December	744	100.0%	6.3	4.3	174.4	54.1	32.3	16.7	0	0
Annual		8401	95.9%	4.5	3.1	174.4	75.4	32.3	16.7	0	0

Observations in ug/m^3

FIGURE 3.2.3 - MT. PEARL NAPS ANNUAL NO_X / NO_2 CONCENTRATIONS



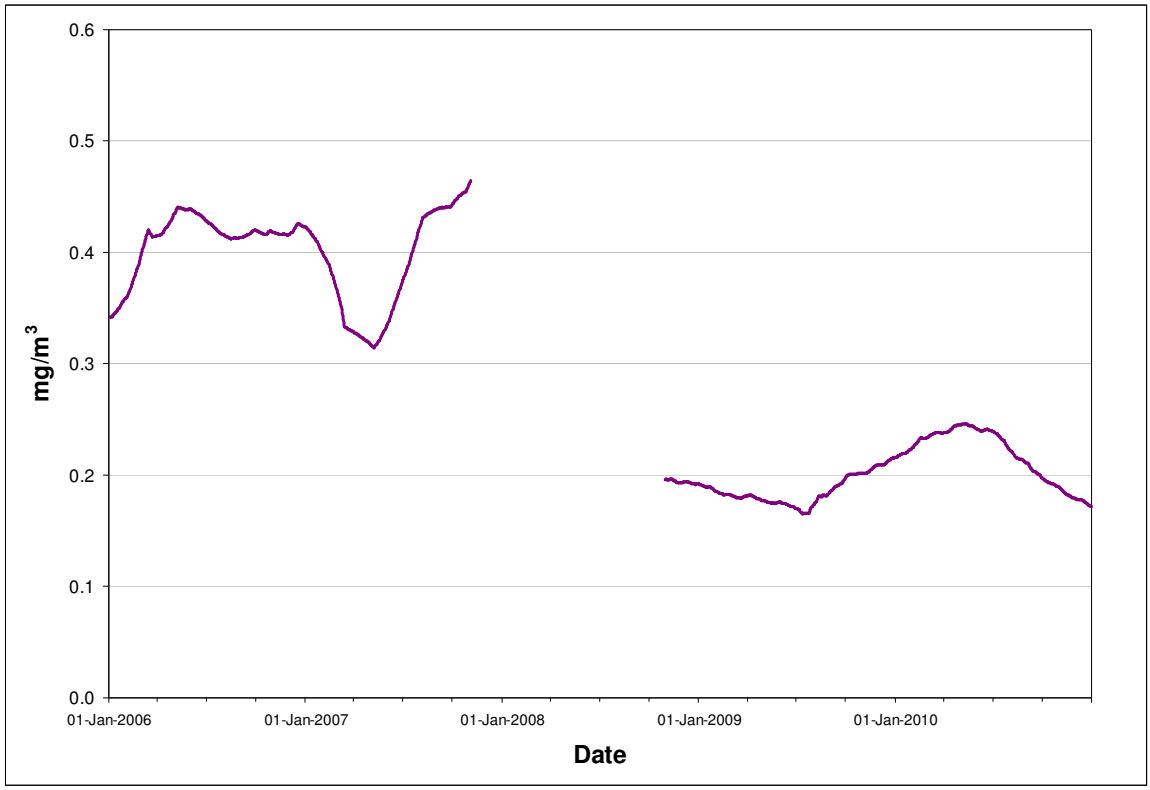
Rolling annual average of hourly concentrations

TABLE 3.2.4 - MT. PEARL NAPS CO SUMMARY 2009 & 2010

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 8-Hour	Regulatory Exceedances 1-Hour (>35)	Regulatory Exceedances 8-Hour (>15)
2009	January	688	92.5%	0.1	0.7	0.4	0	0
	February	619	92.1%	0.2	0.7	0.3	0	0
	March	739	99.3%	0.2	0.9	0.4	0	0
	April	713	99.0%	0.1	0.7	0.3	0	0
	May	619	83.2%	0.2	0.4	0.3	0	0
	June	707	98.2%	0.2	0.5	0.4	0	0
	July	718	96.5%	0.3	0.5	0.4	0	0
	August	718	96.5%	0.3	0.6	0.5	0	0
	September	718	99.7%	0.3	0.7	0.4	0	0
	October	642	86.3%					
	November	710	98.6%	0.3	0.7	0.5	0	0
	December	739	99.3%	0.3	1.2	0.6	0	0
Annual		8330	95.1%	0.2	1.2	0.6	0	0
2010	January	740	99.5%	0.2	0.9	0.6	0	0
	February	669	99.6%	0.3	1.2	0.6	0	0
	March	686	92.2%	0.2	0.4	0.3	0	0
	April	606	84.2%	0.2	0.5	0.3	0	0
	May	725	97.4%	0.1	0.4	0.3	0	0
	June	628	87.2%	0.1	0.3	0.2	0	0
	July	741	99.6%	0.1	0.3	0.3	0	0
	August	742	99.7%	0.2	0.5	0.4	0	0
	September	717	99.6%	0.1	0.3	0.3	0	0
	October	720	96.8%	0.1	0.4	0.3	0	0
	November	716	99.4%	0.1	0.6	0.3	0	0
	December	722	97.0%	0.2	2.4	0.7	0	0
Annual		8412	96.0%	0.2	2.4	0.7	0	0

Observations in mg/m^3

FIGURE 3.2.4 - MT. PEARL NAPS ANNUAL CO CONCENTRATIONS



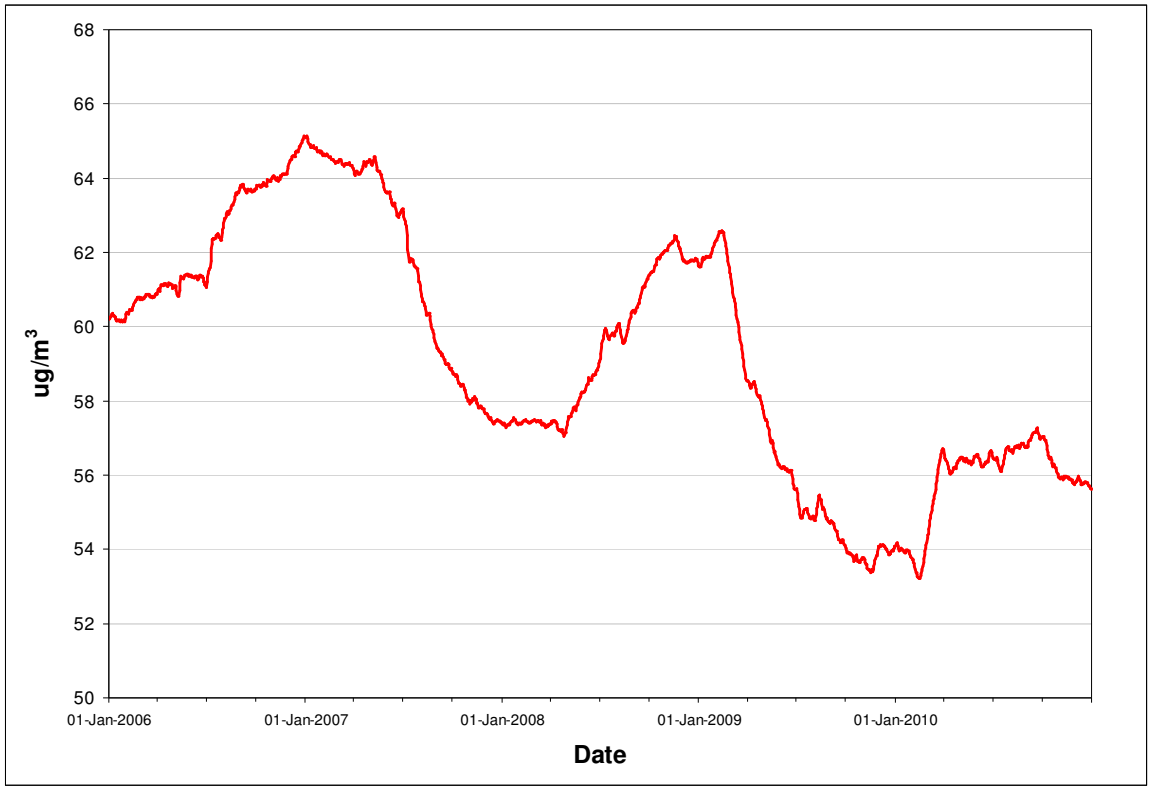
Rolling annual average of hourly concentrations

TABLE 3.2.5 - MT. PEARL NAPS O_3 SUMMARY 2009 & 2010

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 8-Hour	Regulatory Exceedances 1-Hour (>160)	Regulatory Exceedances 8-Hour (>87)
2009	January	704	94.6%	68.6	93.9	85.8	0	0
	February	653	97.2%	60.8	95.8	93.9	0	8
	March	709	95.3%	42.4	65.4	64.2	0	0
	April	716	99.4%	69.9	103.2	94.5	0	10
	May	619	83.2%	56.0	115.1	94.0	0	1
	June	707	98.2%	51.9	83.5	77.4	0	0
	July	736	98.9%	41.7	77.4	71.1	0	0
	August	731	98.3%	41.8	113.2	92.6	0	1
	September	716	99.4%	45.9	85.6	81.3	0	0
	October	642	86.3%	52.6	80.0	78.4	0	0
	November	710	98.6%	57.0	84.0	76.3	0	0
	December	739	99.3%	61.7	83.4	82.4	0	0
Annual		8382	95.7%	54.1	115.1	94.5	0	20
2010	January	740	99.5%	64.4	84.9	81.1	0	0
	February	670	99.7%	65.7	84.6	81.0	0	0
	March	685	92.1%	72.6	94.4	93.5	0	2
	April	596	82.8%	68.9	156.5	89.7	0	2
	May	716	96.2%	57.5	109.8	91.6	0	1
	June	628	87.2%	51.3	93.7	80.2	0	0
	July	741	99.6%	43.8	101.4	84.7	0	0
	August	741	99.6%	42.3	81.8	71.4	0	0
	September	717	99.6%	49.0	92.9	87.2	0	1
	October	737	99.1%	41.0	79.7	74.7	0	0
	November	717	99.6%	55.0	75.2	73.8	0	0
	December	603	81.0%	60.9	77.2	75.8	0	0
Annual		8291	94.6%	55.6	156.5	93.5	0	6

Observations in ug/m^3

FIGURE 3.2.5 - MT. PEARL NAPS ANNUAL O_3 CONCENTRATIONS

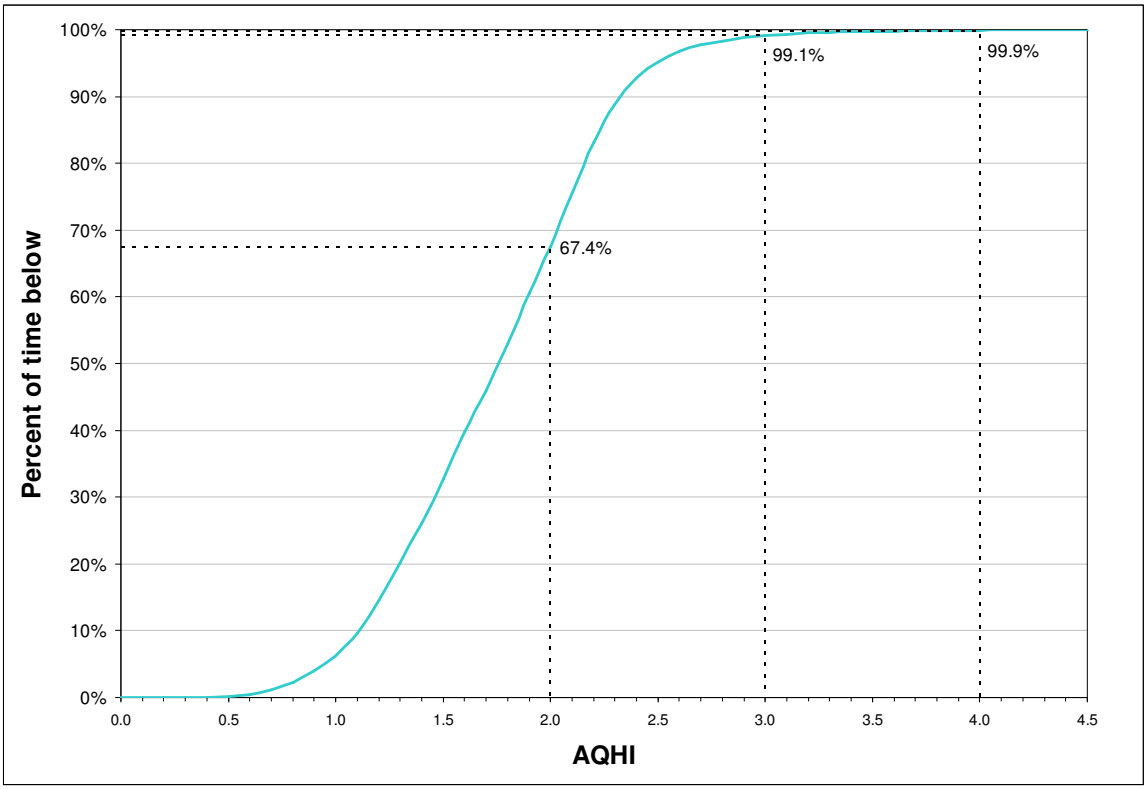


Rolling annual average of hourly concentrations

TABLE 3.2.6 - MT. PEARL NAPS AQHI SUMMARY 2009 & 2010

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour
2009	January	672	90.3%	2.1	2.9
	February	644	95.8%	1.9	3.0
	March	695	93.4%	1.3	2.1
	April	707	98.2%	2.1	3.6
	May	612	82.3%	1.7	4.0
	June	702	97.5%	1.7	3.6
	July	671	90.2%	1.3	2.6
	August	630	84.7%	1.4	4.3
	September	714	99.2%	1.5	2.7
	October	638	85.8%	1.7	4.1
	November	707	98.2%	1.9	3.6
	December	739	99.3%	1.9	3.4
Annual		8131	92.8%	1.7	4.3
2010	January	734	98.7%	2.0	3.5
	February	666	99.1%	2.0	3.3
	March	676	90.9%	2.3	4.3
	April	595	82.6%	2.1	4.3
	May	698	93.8%	1.7	4.0
	June	573	79.6%	1.5	3.0
	July	673	90.5%	1.3	3.2
	August	694	93.3%	1.3	3.1
	September	642	89.2%	1.5	3.7
	October	681	91.5%	1.3	3.9
	November	714	99.2%	1.8	3.4
	December	603	81.0%	2.1	3.7
Annual		7949	90.7%	1.7	4.3

FIGURE 3.2.6 - MT. PEARL NAPS AQHI FREQUENCY DISTRIBUTION 2010



e.g. 99.1% of the time the AQHI recorded was below 3.0

3.3 Grand Falls Windsor

The Grand Falls Windsor NAPS monitoring station is located on Scott Avenue and monitors the ambient levels of SO_2, NO_x / NO_2, CO, O_3 and $PM_{2.5}$ on a continuous basis. For all pollutants, with the exception of O_3, the ambient air criteria were not exceeded on any occasion in 2010. For O_3, the 8-hour ambient standard was exceeded on eight occasions in 2010.

Tables 3.3.1 through 3.3.5 present the summary information on the level of air contaminants measured at the Grand Falls Windsor NAPS station, while Figure 3.3.1 provides a graphical representation of the annual trend for O_3. Table 3.3.6 provides a summary of the AQHI in 2009 and 2010 while Figure 3.3.2 provides a graphical representation of the percentage of time the AQHI values were below a given level in 2010.

TABLE 3.3.1 - GRAND FALLS WINDSOR NAPS SO_2 SUMMARY 2010

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>900)	Regulatory Exceedances 3-Hour (>600)	Regulatory Exceedances 24-Hour (>300)
2010	January	0	0.0%							
	February	0	0.0%							
	March	469	63.0%	0.1	1.3	1.0	0.6	0	0	0
	April	698	96.9%	0.7	3.4	3.1	2.3	0	0	0
	May	740	99.5%	0.7	2.1	2.0	1.9	0	0	0
	June	718	99.7%	0.1	1.3	1.0	0.6	0	0	0
	July	740	99.5%	0.4	2.6	2.1	1.6	0	0	0
	August	737	99.1%	1.1	8.6	3.0	1.6	0	0	0
	September	719	99.9%	1.8	3.7	3.5	3.1	0	0	0
	October	743	99.9%	1.3	3.4	3.1	3.0	0	0	0
	November	718	99.7%	1.3	2.4	2.2	1.9	0	0	0
	December	742	99.7%	0.9	6.8	6.7	1.9	0	0	0
Annual		7024	80.2%	0.9	8.6	6.7	3.1	0	0	0

Observations in ug/m^3

TABLE 3.3.2 - GRAND FALLS WINDSOR NAPS $PM_{2.5}$ SUMMARY 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2010	January	0	0.0%			
	February	0	0.0%			
	March	0	0.0%			
	April	0	0.0%			
	May	5	16.1%	6.1	9.6	0
	June	30	100.0%	4.3	10.0	0
	July	29	93.5%	2.8	6.3	0
	August	20	64.5%	4.7	10.3	0
	September	28	93.3%	3.7	7.8	0
	October	16	51.6%	3.6	9.4	0
	November	26	86.7%	3.8	8.5	0
	December	0	0.0%			
Annual		154	42.2%	3.8	10.3	0

Observations in ug/m^3

TABLE 3.3.3 - GRAND FALLS WINDSOR NAPS NO_X / NO_2 SUMMARY 2010

Year	Month	# Valid Hours	% Valid Hours	Average NO_x	Average NO_2	Maximums 1-Hour NO_x	Maximums 1-Hour NO_2	Maximums 24-Hour NO_x	Maximums 24-Hour NO_2	Exceedances 1-Hour (>400)	Exceedances 24-Hour (>200)
2010	January	0	0.0%								
	February	0	0.0%								
	March	33	4.4%	4.1	3.4	18.1	12.0	5.4	4.4	0	0
	April	718	99.7%	2.5	1.7	149.7	55.3	14.8	6.4	0	0
	May	741	99.6%	8.0	2.4	120.3	53.8	39.2	15.0	0	0
	June	719	99.9%	2.4	1.4	75.4	36.5	13.7	6.3	0	0
	July	346	46.5%	2.4	1.3	37.2	17.3	5.8	3.4	0	0
	August	0	0.0%								
	September	203	28.2%	1.8	0.9	19.6	13.5	3.8	2.2	0	0
	October	743	99.9%	2.7	1.5	97.2	31.0	9.9	5.9	0	0
	November	719	99.9%	2.9	1.9	107.9	40.4	14.2	8.8	0	0
	December	743	99.9%	1.7	1.3	33.5	22.9	4.3	3.6	0	0
Annual		4965	56.7%	3.3	1.6	149.7	55.3	39.2	15.0	0	0

Observations in ug/m^3

TABLE 3.3.4 - GRAND FALLS WINDSOR NAPS CO SUMMARY 2010

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 8-Hour	Regulatory Exceedances 1-Hour (>35)	Regulatory Exceedances 8-Hour (>15)
2010	January	0	0.0%					
	February	0	0.0%					
	March	134	18.0%	0.5	0.7	0.7	0	0
	April	718	99.7%	0.5	0.9	0.7	0	0
	May	741	99.6%	0.3	0.8	0.7	0	0
	June	718	99.7%	0.2	0.2	0.2	0	0
	July	739	99.3%	0.2	0.6	0.5	0	0
	August	683	91.8%	0.1	0.5	0.3	0	0
	September	719	99.9%	0.1	0.6	0.4	0	0
	October	743	99.9%	0.2	0.6	0.4	0	0
	November	719	99.9%	0.5	0.9	0.7	0	0
	December	743	99.9%	0.4	1.0	0.5	0	0
Annual		6657	76.0%	0.3	1.0	0.7	0	0

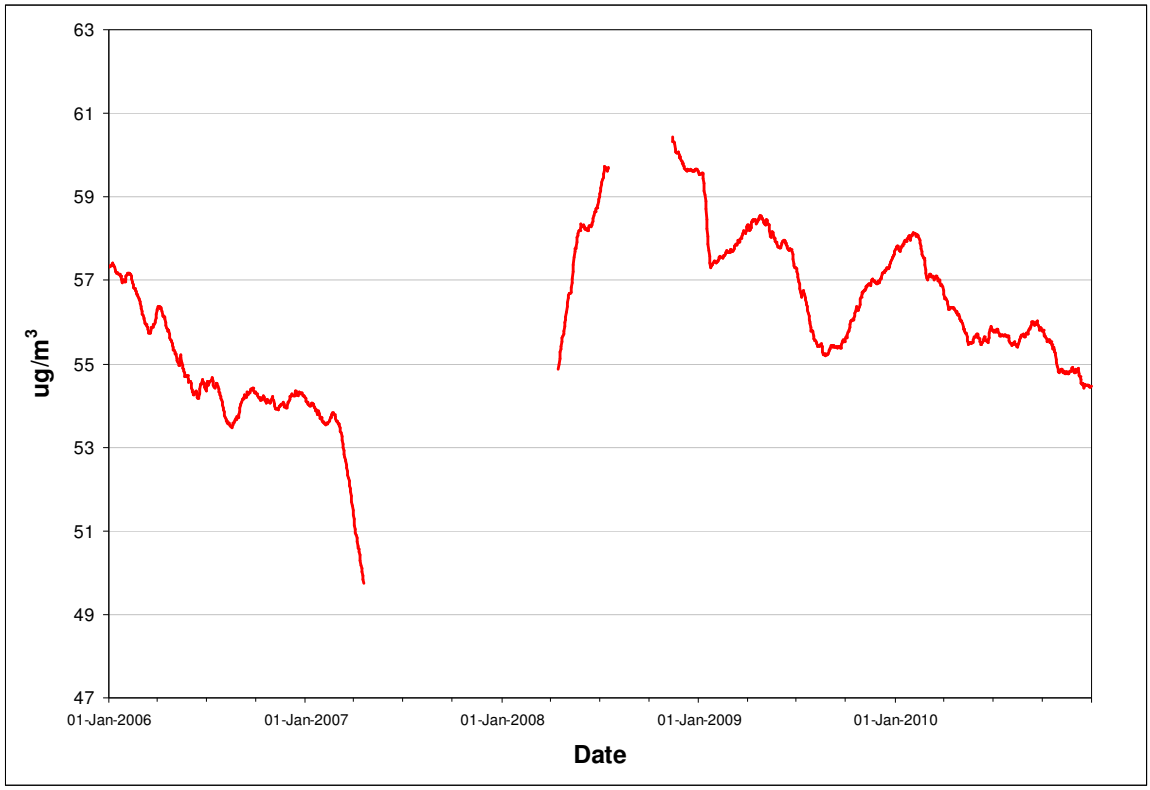
Observations in mg/m^3

TABLE 3.3.5 - GRAND FALLS WINDSOR NAPS O_3 SUMMARY 2009 & 2010

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 8-Hour	Regulatory Exceedances 1-Hour (>160)	Regulatory Exceedances 8-Hour (>87)
2009	January	742	99.7%	61.4	78.9	73.6	0	0
	February	666	99.1%	69.7	93.0	88.3	0	2
	March	744	100.0%	77.3	100.9	99.2	0	19
	April	713	99.0%	78.6	139.1	115.9	0	27
	May	742	99.7%	66.0	115.2	98.5	0	11
	June	718	99.7%	51.8	89.7	80.6	0	0
	July	735	98.8%	39.1	82.6	69.3	0	0
	August	742	99.7%	38.0	74.1	69.4	0	0
	September	720	100.0%	42.8	84.0	75.5	0	0
	October	744	100.0%	50.7	80.8	78.2	0	0
	November	716	99.4%	52.3	78.5	75.2	0	0
	December	743	99.9%	65.4	85.6	83.7	0	0
Annual		8725	99.6%	57.7	139.1	115.9	0	59
2010	January	744	100.0%	66.0	86.3	84.7	0	0
	February	672	100.0%	56.2	78.3	72.8	0	0
	March	738	99.2%	74.0	93.4	87.4	0	2
	April	718	99.7%	70.9	95.4	91.5	0	6
	May	741	99.6%	60.9	93.2	82.2	0	0
	June	718	99.7%	53.1	92.8	79.1	0	0
	July	740	99.5%	37.0	69.5	63.0	0	0
	August	738	99.2%	38.8	76.1	61.4	0	0
	September	719	99.9%	44.3	90.6	72.8	0	0
	October	743	99.9%	38.9	76.1	68.4	0	0
	November	718	99.7%	52.1	77.7	76.1	0	0
	December	743	99.9%	61.7	81.2	79.8	0	0
Annual		8732	99.7%	54.5	95.4	91.5	0	8

Observations in ug/m^3

FIGURE 3.3.1 - GRAND FALLS WINDSOR NAPS ANNUAL O_3 CONCENTRATIONS

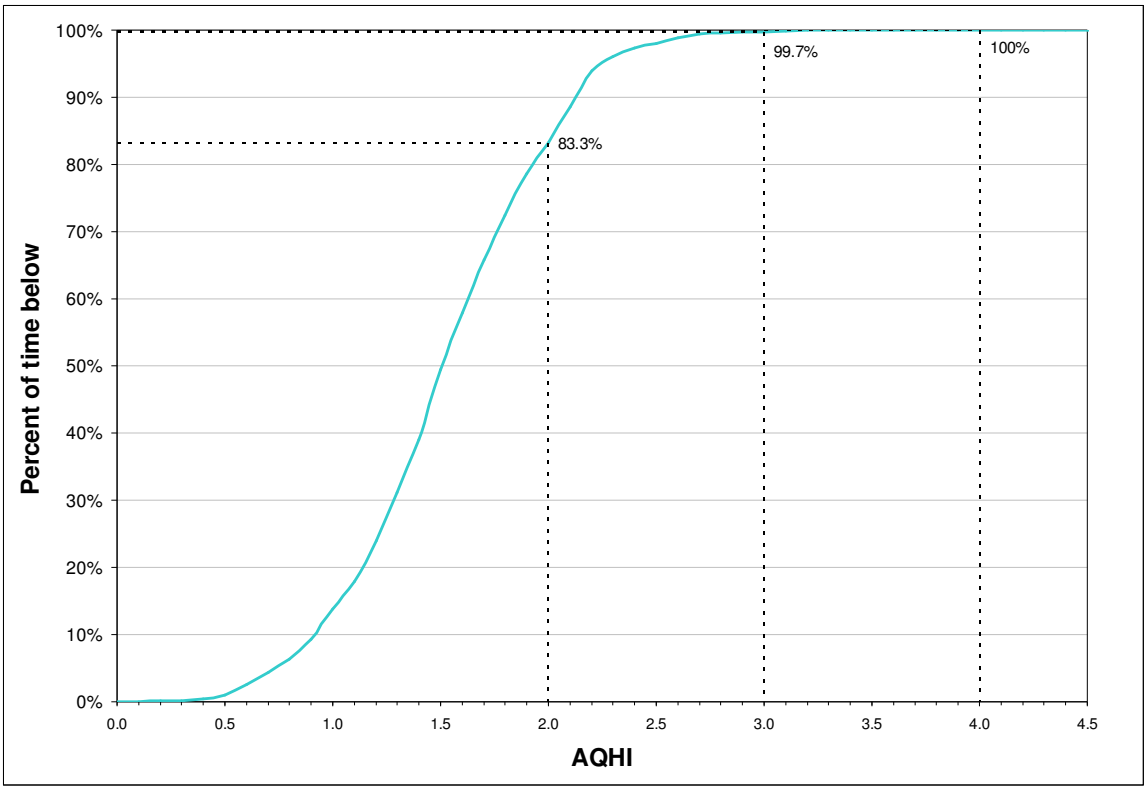


Rolling annual average of hourly concentrations

TABLE 3.3.6 - GRAND FALLS WINDSOR NAPS AQHI SUMMARY 2010

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour
2010	January	0	0.0%		
	February	0	0.0%		
	March	0	0.0%		
	April	0	0.0%		
	May	131	17.6%	2.1	3.0
	June	709	98.5%	1.7	3.1
	July	337	45.3%	1.2	2.0
	August	0	0.0%		
	September	165	22.9%	1.2	2.0
	October	392	52.7%	1.2	2.2
	November	628	87.2%	1.7	3.3
	December	0	0.0%		
Annual		2362	27.0%	1.5	3.3

FIGURE 3.3.2 - GRAND FALLS WINDSOR NAPS AQHI FREQUENCY DISTRIBUTION 2010



e.g. 99.7% of the time the AQHI recorded was below 3.0

3.4 Corner Brook

The Corner Brook NAPS monitoring station is located on Macpherson Avenue near Confederation Drive and monitors the ambient levels of SO_2, NO_x / NO_2, CO, O_3 and $PM_{2.5}$ on a continuous basis. The station was moved to its current location in 2009 after being located on Brook Street since 2001. For all pollutants, with the exception of O_3, the ambient air criteria were not exceeded on any occasion in 2010. The 8-hour O_3 standard was exceeded on two occasions in 2010.

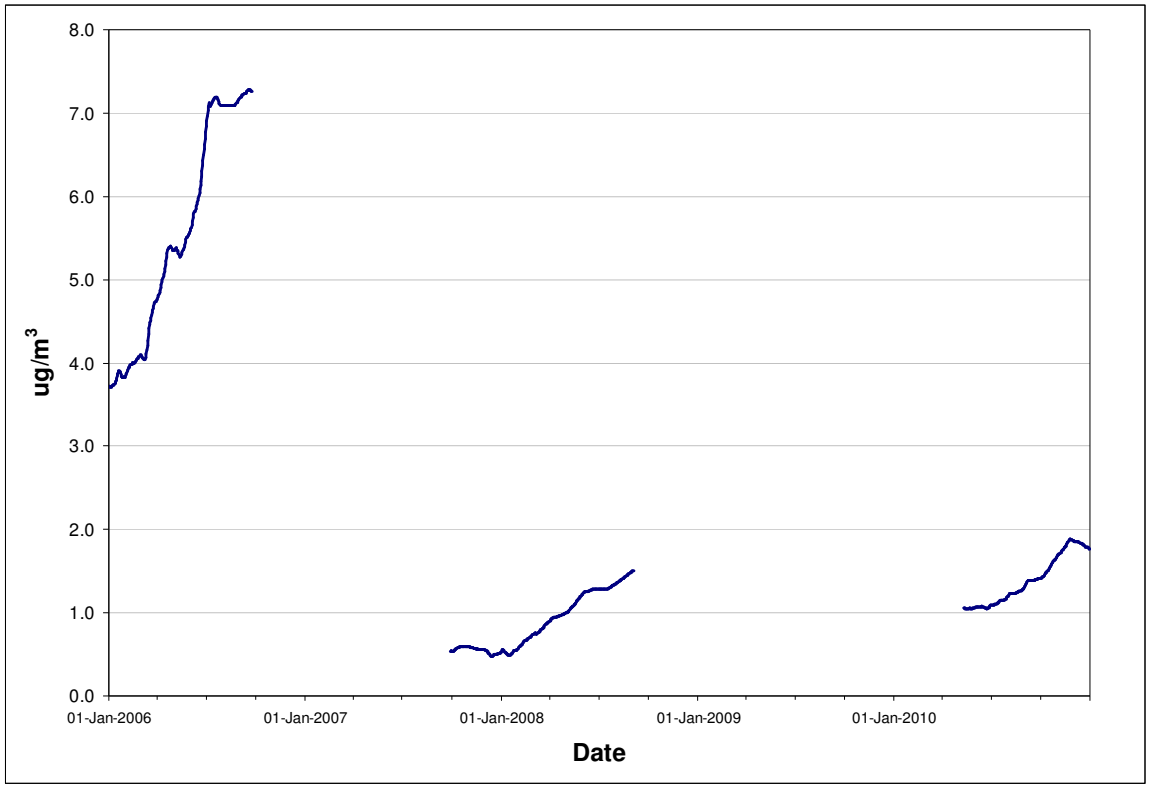
Tables 3.4.1 through 3.4.5 present the summary information on the level of air contaminants measured at the Corner Brook NAPS station, while Figures 3.4.1 through 3.3.5 provide a graphical representation of the annual trend of each pollutant. Table 3.4.6 provides a summary of the AQHI in 2009 and 2010 while Figure 3.3 provides a graphical representation of the percentage of time the AQHI values were below a given level in 2010.

TABLE 3.4.1 - CORNER BROOK NAPS SO_2 SUMMARY 2009 & 2010

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>900)	Regulatory Exceedances 3-Hour (>600)	Regulatory Exceedances 24-Hour (>300)
2009	January	0	0.0%							
	February	0	0.0%							
	March	0	0.0%							
	April	0	0.0%							
	May	0	0.0%							
	June	0	0.0%							
	July	58	7.8%	0.0	0.3	0.1	0.0	0	0	0
	August	744	100.0%	0.1	3.9	3.4	0.9	0	0	0
	September	713	99.0%	0.1	4.2	2.2	0.7	0	0	0
	October	690	92.7%	0.4	9.2	5.3	1.2	0	0	0
	November	718	99.7%	0.6	23.3	11.9	2.2	0	0	0
	December	741	99.6%	2.0	16.5	12.5	4.8	0	0	0
Annual		3664	41.8%	0.7	23.3	12.5	4.8	0	0	0
2010	January	663	89.1%	1.3	6.3	6.1	5.7	0	0	0
	February	627	93.3%	3.2	6.5	5.1	4.2	0	0	0
	March	738	99.2%	0.4	3.9	3.5	2.9	0	0	0
	April	660	91.7%	1.5	15.2	8.0	5.2	0	0	0
	May	742	99.7%	1.3	9.2	7.0	2.5	0	0	0
	June	714	99.2%	1.4	12.8	10.0	5.1	0	0	0
	July	552	74.2%	2.5	11.3	6.7	4.1	0	0	0
	August	736	98.9%	1.4	16.0	12.9	5.1	0	0	0
	September	715	99.3%	1.4	11.8	10.5	5.0	0	0	0
	October	741	99.6%	3.4	11.8	10.2	5.5	0	0	0
	November	710	98.6%	2.9	8.1	6.5	5.4	0	0	0
	December	740	99.5%	0.8	3.7	3.4	3.2	0	0	0
Annual		8338	95.2%	1.8	16.0	12.9	5.7	0	0	0

Observations in ug/m^3

FIGURE 3.4.1 - CORNER BROOK NAPS ANNUAL SO_2 CONCENTRATIONS



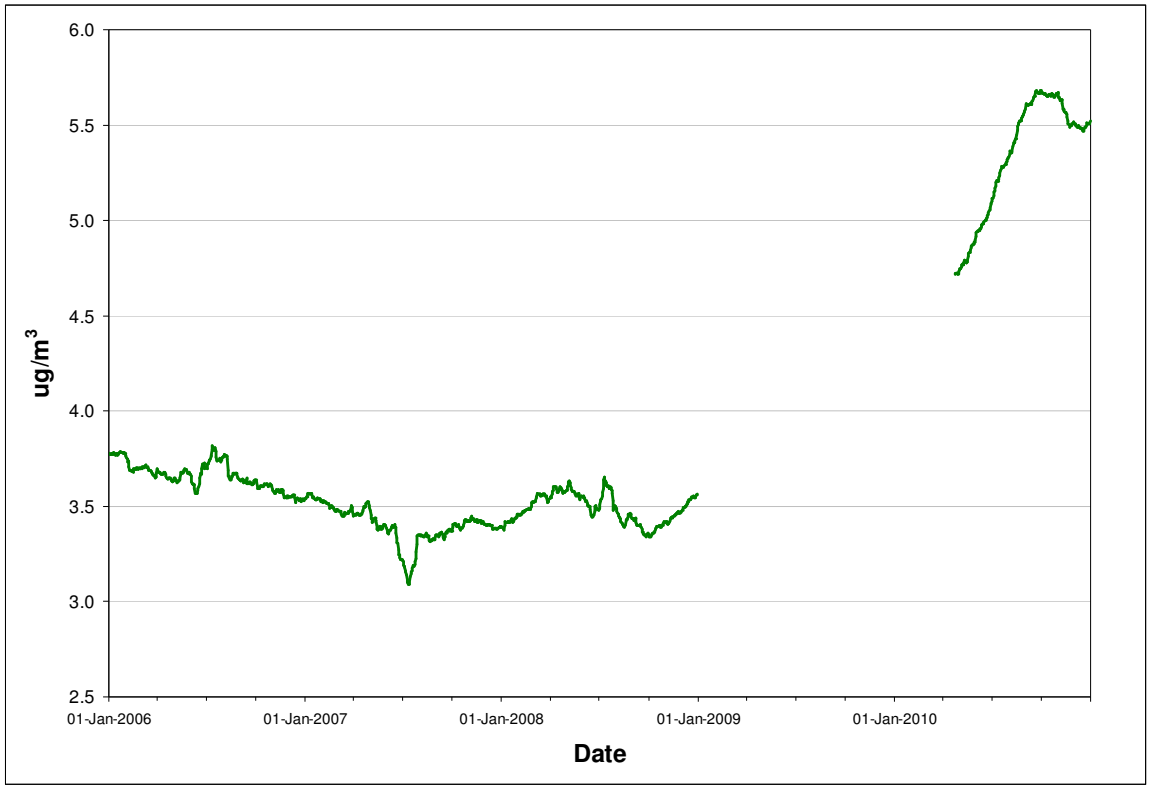
Rolling annual average of hourly concentrations

TABLE 3.4.2 - CORNER BROOK NAPS $PM_{2.5}$ SUMMARY 2009 & 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2009	January	0	0.0%			
	February	0	0.0%			
	March	0	0.0%			
	April	0	0.0%			
	May	0	0.0%			
	June	0	0.0%			
	July	15	48.4%	4.5	7.9	0
	August	31	100.0%	5.2	12.0	0
	September	30	100.0%	4.4	11.3	0
	October	31	100.0%	5.3	11.6	0
	November	27	90.0%	5.9	13.0	0
	December	26	83.9%	3.1	7.8	0
Annual		160	43.8%	4.8	13.0	0
2010	January	31	100.0%	3.9	10.0	0
	February	28	100.0%	3.8	7.5	0
	March	31	100.0%	5.5	10.5	0
	April	30	100.0%	5.4	9.3	0
	May	31	100.0%	6.5	10.6	0
	June	30	100.0%	7.1	12.0	0
	July	22	71.0%	8.3	11.6	0
	August	31	100.0%	8.0	13.3	0
	September	30	100.0%	5.6	12.1	0
	October	31	100.0%	5.1	8.4	0
	November	30	100.0%	4.1	6.3	0
	December	31	100.0%	3.6	5.9	0
Annual		356	97.5%	5.5	13.3	0

Observations in ug/m^3

FIGURE 3.4.2 - CORNER BROOK NAPS ANNUAL $PM_{2.5}$ CONCENTRATIONS



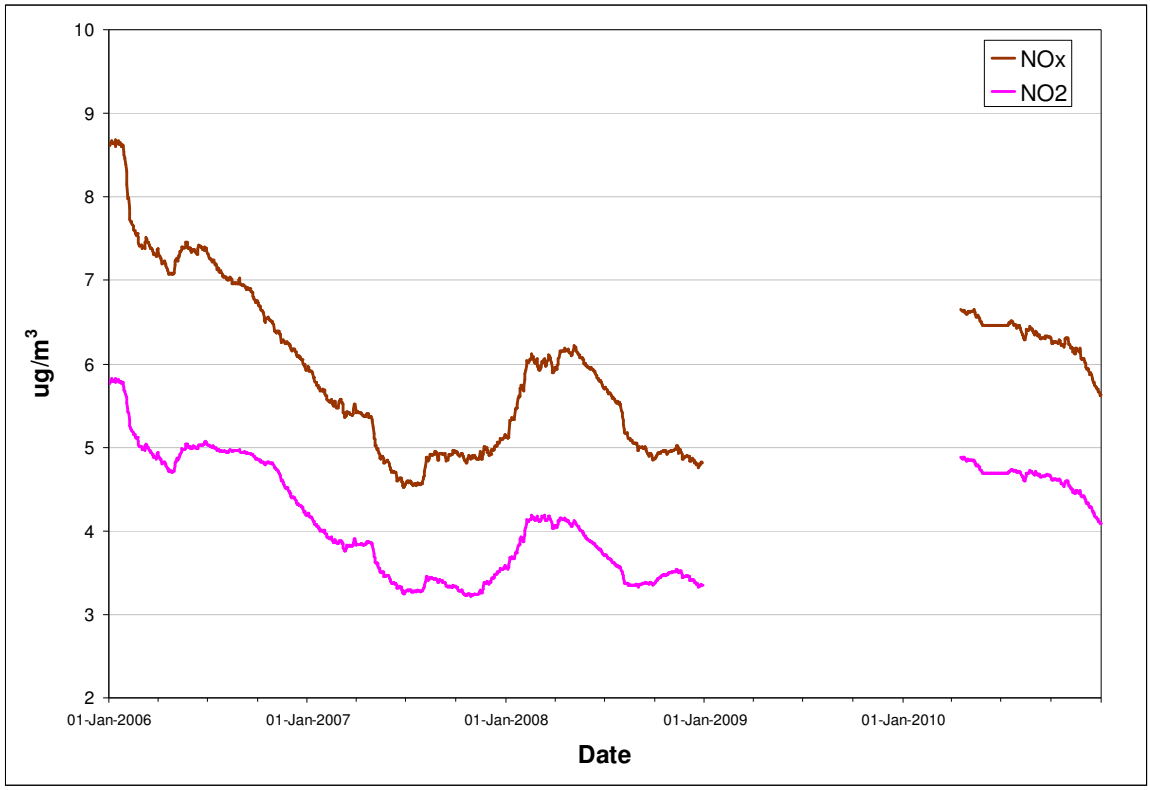
Rolling annual average of hourly concentrations

TABLE 3.4.3 - CORNER BROOK NAPS NO_X / NO_2 SUMMARY 2009 & 2010

Year	Month	# Valid Hours	% Valid Hours	Average NO_x	Average NO_2	Maximums 1-Hour NO_x	Maximums 1-Hour NO_2	Maximums 24-Hour NO_x	Maximums 24-Hour NO_2	Exceedances 1-Hour (>400)	Exceedances 24-Hour (>200)
2009	January	0	0.0%								
	February	0	0.0%								
	March	0	0.0%								
	April	0	0.0%								
	May	0	0.0%								
	June	0	0.0%								
	July	387	52.0%	6.3	3.9	49.5	26.5	16.0	8.5	0	0
	August	744	100.0%	6.8	4.6	61.1	31.0	15.0	9.4	0	0
	September	713	99.0%	4.9	3.4	45.5	23.7	11.3	7.5	0	0
	October	737	99.1%	5.7	3.9	75.6	38.5	17.9	10.2	0	0
	November	718	99.7%	8.0	6.0	98.7	44.2	37.6	23.9	0	0
	December	741	99.6%	7.2	5.6	76.0	42.7	20.1	15.4	0	0
Annual		4040	46.1%	6.5	4.6	98.7	44.2	37.6	23.9	0	0
2010	January	743	99.9%	8.6	6.6	123.0	55.8	37.9	27.6	0	0
	February	672	100.0%	8.8	7.0	116.6	59.4	20.8	15.6	0	0
	March	686	92.2%	4.3	3.2	103.6	51.9	21.5	14.4	0	0
	April	691	96.0%	5.3	3.8	64.7	42.3	12.0	9.9	0	0
	May	513	69.0%	4.4	2.5	66.0	39.3	15.0	8.6	0	0
	June	0	0.0%								
	July	188	25.3%	5.5	3.9	42.3	20.3	9.3	6.3	0	0
	August	606	81.5%	5.7	4.0	73.5	58.3	24.5	16.4	0	0
	September	713	99.0%	4.5	3.2	52.7	34.4	12.4	9.7	0	0
	October	741	99.6%	5.7	3.4	108.5	30.5	18.9	8.3	0	0
	November	696	96.7%	5.6	4.3	92.1	43.8	22.7	14.8	0	0
	December	740	99.5%	3.2	2.5	60.5	32.7	13.9	9.6	0	0
Annual		6989	79.8%	5.6	4.1	123.0	59.4	37.9	27.6	0	0

Observations in ug/m^3

FIGURE 3.4.3 - CORNER BROOK NAPS ANNUAL NO_X / NO_2 CONCENTRATIONS



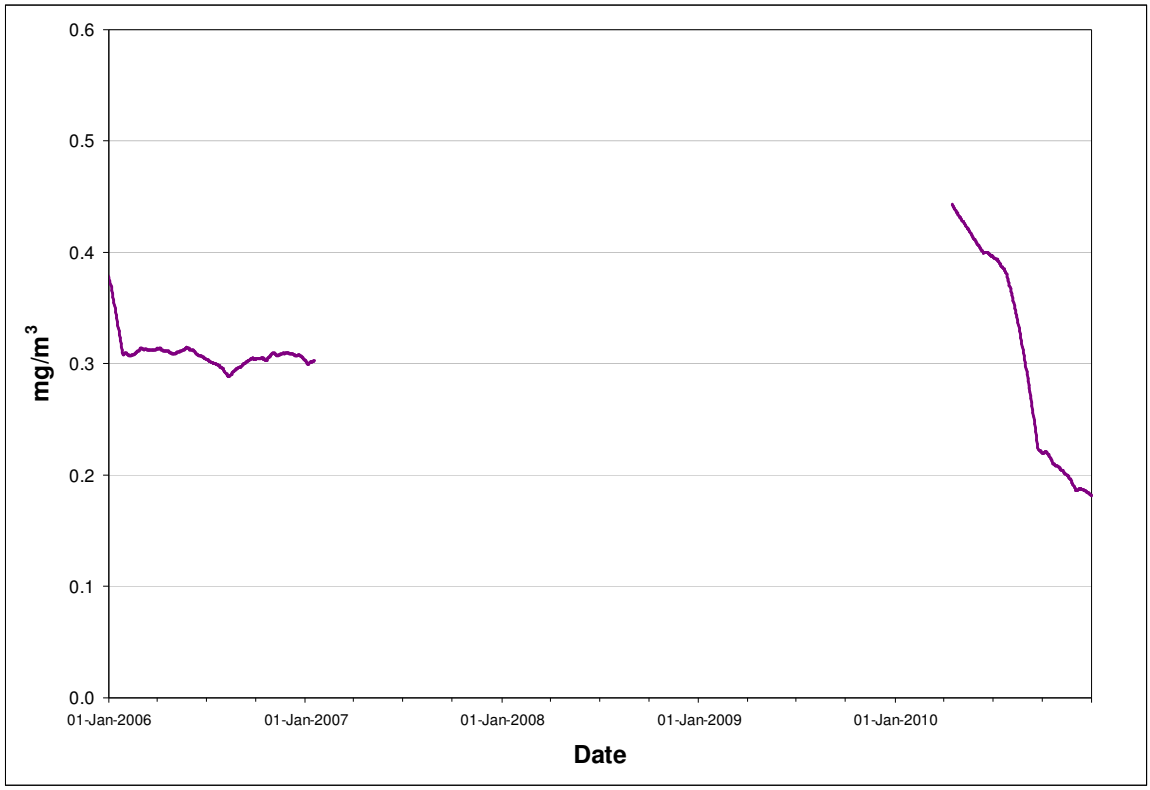
Rolling annual average of hourly concentrations

TABLE 3.4.4 - CORNER BROOK NAPS CO SUMMARY 2009 & 2010

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 8-Hour	Regulatory Exceedances 1-Hour (>35)	Regulatory Exceedances 8-Hour (>15)
2009	January	0	0.0%					
	February	0	0.0%					
	March	0	0.0%					
	April	0	0.0%					
	May	0	0.0%					
	June	0	0.0%					
	July	393	52.8%	0.6	0.9	0.9	0	0
	August	744	100.0%	1.0	1.3	1.2	0	0
	September	714	99.2%	1.0	1.5	1.5	0	0
	October	737	99.1%	0.3	0.7	0.6	0	0
	November	718	99.7%	0.3	1.0	0.7	0	0
	December	741	99.6%	0.2	0.7	0.6	0	0
Annual		4047	46.2%	0.6	1.5	1.5	0	0
2010	January	743	99.9%	0.3	1.1	0.6	0	0
	February	672	100.0%	0.2	0.6	0.5	0	0
	March	739	99.3%	0.2	0.8	0.4	0	0
	April	712	98.9%	0.2	0.5	0.4	0	0
	May	740	99.5%	0.2	0.3	0.3	0	0
	June	713	99.0%	0.3	2.5	1.2	0	0
	July	552	74.2%	0.2	0.7	0.6	0	0
	August	734	98.7%	0.1	1.7	0.3	0	0
	September	713	99.0%	0.1	0.2	0.2	0	0
	October	741	99.6%	0.1	0.5	0.2	0	0
	November	715	99.3%	0.1	0.6	0.2	0	0
	December	739	99.3%	0.1	0.7	0.4	0	0
Annual		8513	97.2%	0.2	2.5	1.2	0	0

Observations in mg/m^3

FIGURE 3.4.4 - CORNER BROOK NAPS ANNUAL CO CONCENTRATIONS



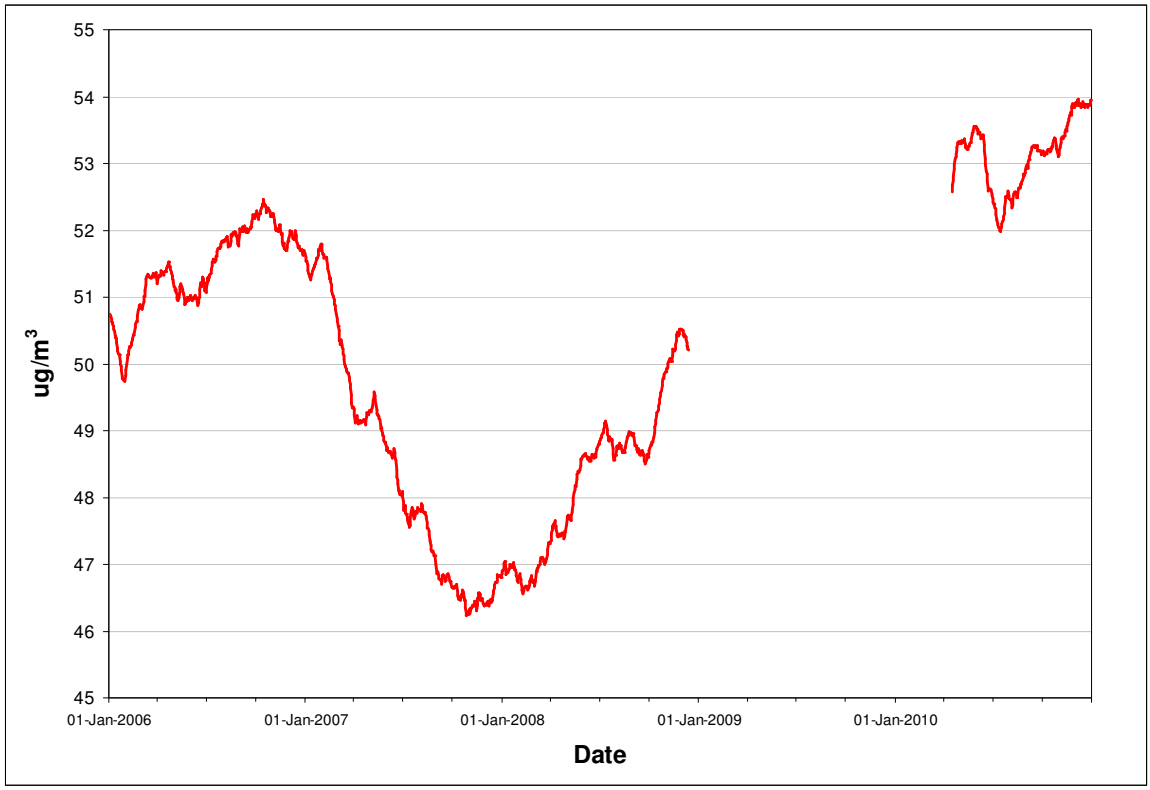
Rolling annual average of hourly concentrations

TABLE 3.4.5 - CORNER BROOK NAPS O_3 SUMMARY 2009 & 2010

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 8-Hour	Regulatory Exceedances 1-Hour (>160)	Regulatory Exceedances 8-Hour (>87)
2009	January	0	0.0%					
	February	0	0.0%					
	March	0	0.0%					
	April	0	0.0%					
	May	0	0.0%					
	June	0	0.0%					
	July	392	52.7%	35.6	76.9	57.8	0	0
	August	743	99.9%	36.6	117.1	110.8	0	1
	September	713	99.0%	39.3	98.9	85.1	0	0
	October	741	99.6%	44.0	71.4	67.5	0	0
	November	717	99.6%	50.0	77.7	72.1	0	0
	December	741	99.6%	60.3	79.7	79.1	0	0
Annual		4047	46.2%	45.0	117.1	110.8	0	1
2010	January	743	99.9%	60.7	85.3	83.5	0	0
	February	671	99.9%	65.2	89.1	82.4	0	0
	March	743	99.9%	68.8	88.5	87.3	0	1
	April	713	99.0%	65.3	92.4	87.0	0	1
	May	738	99.2%	55.7	93.4	81.6	0	0
	June	703	97.6%	41.2	89.1	79.8	0	0
	July	552	74.2%	40.5	96.5	75.1	0	0
	August	740	99.5%	40.9	82.4	71.2	0	0
	September	715	99.3%	41.9	87.7	67.0	0	0
	October	741	99.6%	43.7	80.8	76.1	0	0
	November	715	99.3%	59.0	85.3	83.5	0	0
	December	740	99.5%	61.5	81.8	80.4	0	0
Annual		8514	97.2%	54.0	96.5	87.3	0	2

Observations in ug/m^3

FIGURE 3.4.5 - CORNER BROOK NAPS ANNUAL O_3 CONCENTRATIONS

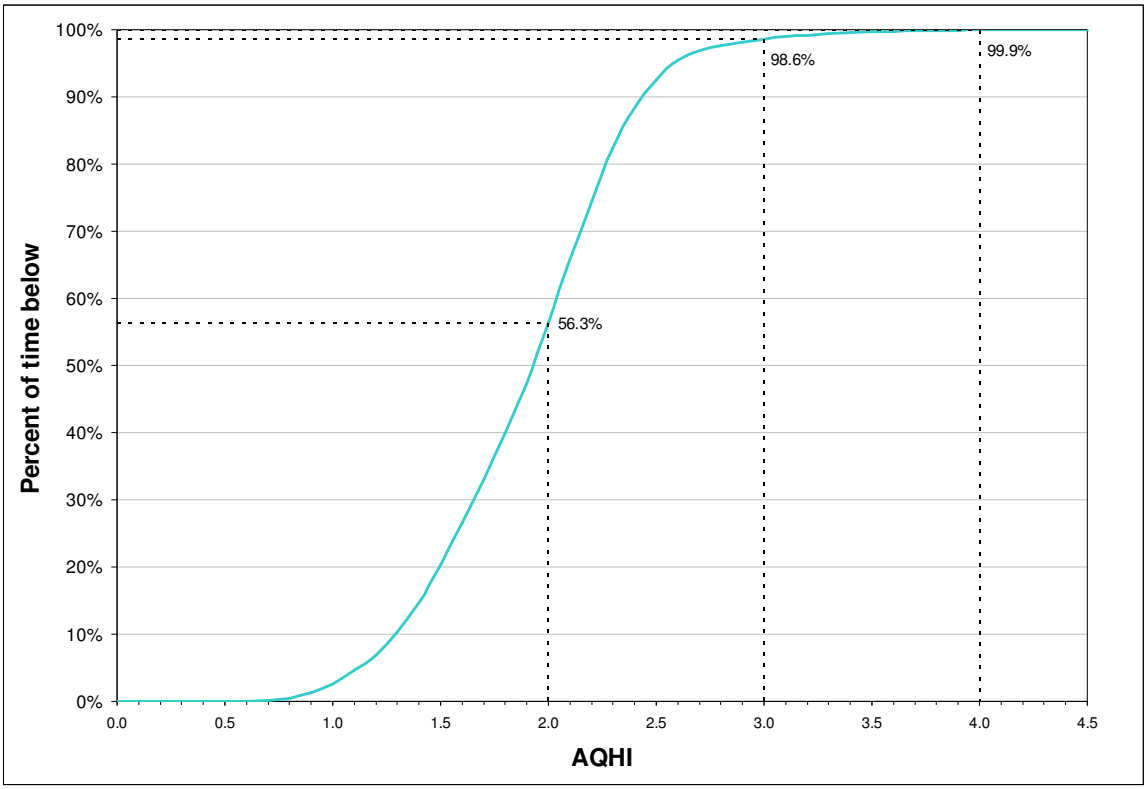


Rolling annual average of hourly concentrations

TABLE 3.4.6 - CORNER BROOK NAPS AQHI SUMMARY 2009 & 2010

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour
2009	January	0	0.0%		
	February	0	0.0%		
	March	0	0.0%		
	April	0	0.0%		
	May	0	0.0%		
	June	0	0.0%		
	July	374	50.3%	1.3	3.1
	August	727	97.7%	1.4	4.2
	September	705	97.9%	1.4	3.2
	October	737	99.1%	1.6	3.4
	November	672	93.3%	1.9	3.6
	December	633	85.1%	2.0	3.4
Annual		3848	43.9%	1.6	4.2
2010	January	736	98.9%	2.1	4.0
	February	666	99.1%	2.2	3.4
	March	686	92.2%	2.2	4.0
	April	689	95.7%	2.1	3.9
	May	512	68.8%	1.9	3.4
	June	0	0.0%		
	July	188	25.3%	1.7	3.2
	August	605	81.3%	1.6	4.5
	September	710	98.6%	1.5	3.1
	October	741	99.6%	1.5	2.9
	November	689	95.7%	1.9	3.0
	December	737	99.1%	1.9	3.3
Annual		6959	79.4%	1.9	4.5

FIGURE 3.4.6 - CORNER BROOK NAPS AQHI FREQUENCY DISTRIBUTION 2010



e.g. 98.6% of the time the AQHI recorded was below 3.0

3.5 Port aux Choix

The Port aux Choix NAPS monitoring station was relocated from the Ferolle Point location in 2010 due to logistical issue. The station monitors the ambient levels of O_3 on a continuous basis.

The ambient air standards for O_3 were not exceeded in 2010. Table 3.5.1 presents the summary information on the level of O_3 measured at the Port aux Choix NAPS station. A graphical representation of the annual trend of O_3 is not presented owing to the limited data.

TABLE 3.5.1 - PORT AUX CHOIX NAPS O_3 SUMMARY 2010

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 8-Hour	Regulatory Exceedances 1-Hour (>160)	Regulatory Exceedances 8-Hour (>87)
2010	January	0	0.0%					
	February	0	0.0%					
	March	0	0.0%					
	April	0	0.0%					
	May	0	0.0%					
	June	366	50.8%	52.0	80.4	78.0	0	0
	July	741	99.6%	44.7	96.1	81.7	0	0
	August	725	97.4%	45.8	102.0	86.3	0	0
	September	221	30.7%	43.8	58.9	56.2	0	0
	October	743	99.9%	47.5	78.5	75.8	0	0
	November	720	100.0%	57.2	74.6	73.3	0	0
	December	744	100.0%	63.2	80.4	75.3	0	0
Annual		4260	48.6%	51.3	102.0	86.3	0	0

4.0 Industrial Monitoring Network

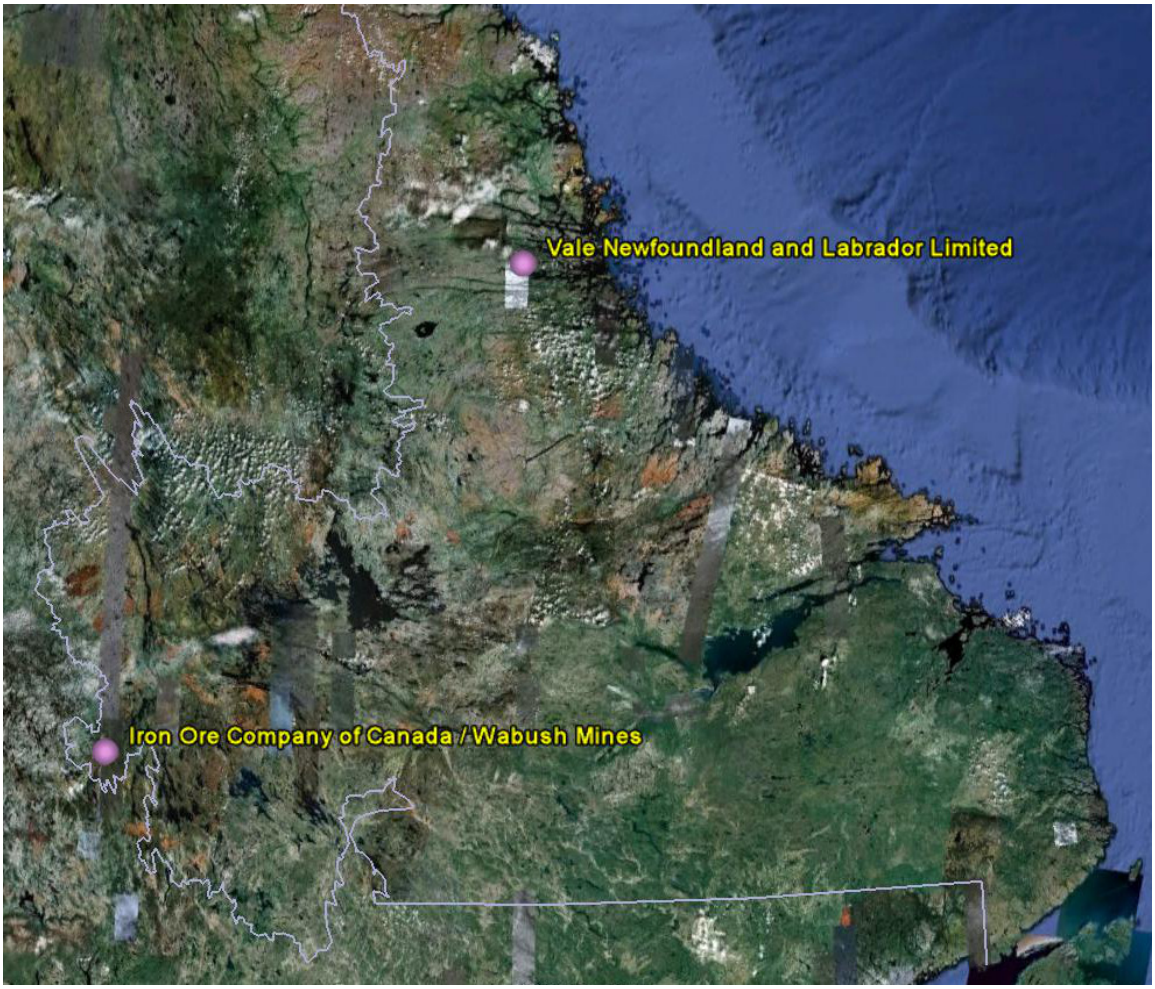
Industrial operations in the province are responsible for the monitoring of their emissions. The Department audits the operation of the industrial monitoring stations on a regular basis to ensure that the monitors are functioning according instrument specifications and to the standard operating procedures. If the audits indicate a monitor is not operating with the specifications, corrective actions are required by the industry and data may be invalidated.

On the island of Newfoundland, there were five monitoring networks operated by industry in 2010 and another three in Labrador. Figures 4.0.1 and 4.0.2 present the locations of these monitoring networks.

The subsequent sections of this report detail the summary statistics and the longer term trend of pollutants measured at each station with a given network.

FIGURE 4.0.1 - INDUSTRIAL MONITORING NETWORK IN NEWFOUNDLAND

FIGURE 4.0.2 - INDUSTRIAL MONITORING NETWORK IN LABRADOR



4.1 NALCOR

In 2010, NALCOR operated monitoring stations at 6 locations. These stations are installed to monitor the emissions from the Holyrood Thermal Generating Station and are located at Butterpot Road, Green Acres Road, Indian Pond Drive, Indian Pond Road, Lawrence Pond, and the NALCOR property boundary. Figure 4.1.1 indicates the location of these stations.

FIGURE 4.1.1 - NALCOR AMBIENT MONITORING STATIONS

4.1.1 Butterpot Road

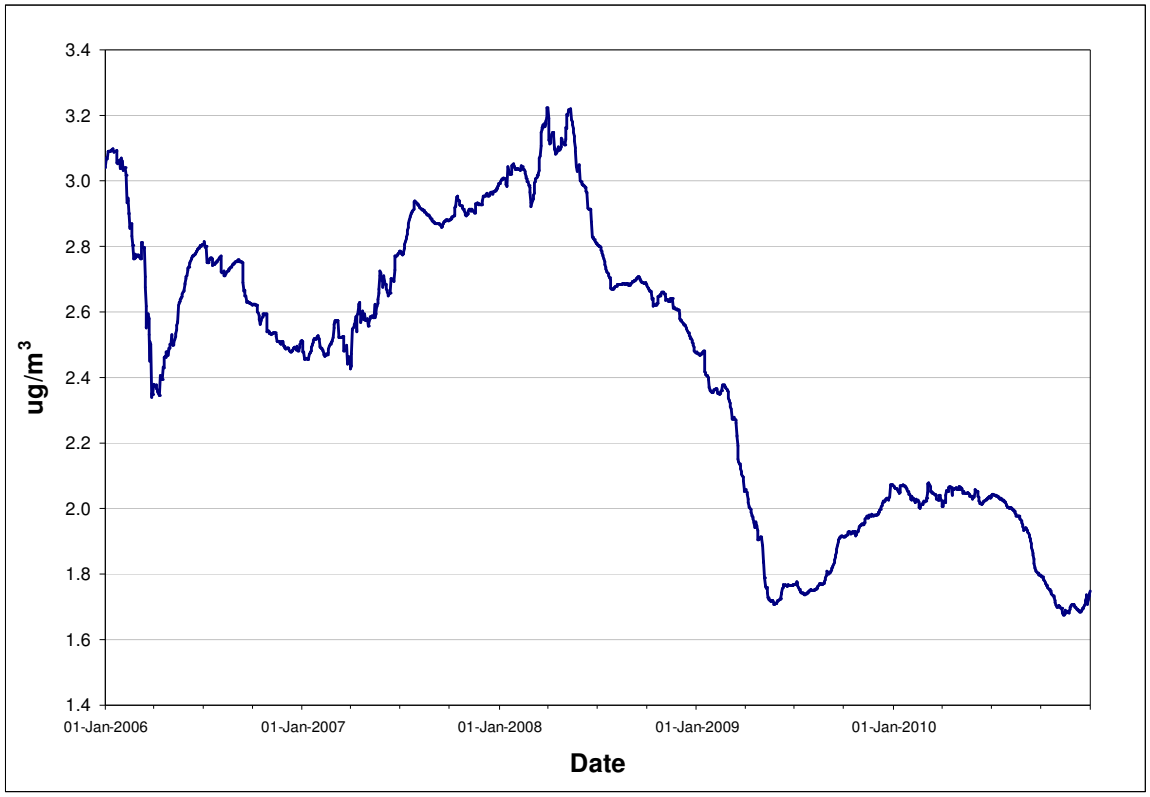
The Butterpot Road station monitors the ambient levels of SO_2, NO_x / NO_2 and $PM_{2.5}$ on a continuous basis. For all pollutants, the ambient air criteria were not exceeded on any occasion in 2010. Tables 4.1.1.1 through 4.1.1.4 provide summary information on the level of air contaminants measured at Butterpot Road, while Figures 4.1.1.1 through 4.1.1.4 provide a graphical representation of the annual trend of each pollutant.

TABLE 4.1.1.1 - BUTTERPOT ROAD SO_2 SUMMARY 2009 & 2010

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>900)	Regulatory Exceedances 3-Hour (>600)	Regulatory Exceedances 24-Hour (>300)
2009	January	699	94.0%	2.0	26.1	11.4	3.8	0	0	0
	February	638	94.9%	2.0	64.7	25.7	7.5	0	0	0
	March	713	95.8%	2.1	71.4	26.5	5.7	0	0	0
	April	686	95.3%	2.2	39.1	34.5	10.8	0	0	0
	May	681	91.5%	1.9	41.7	16.1	3.6	0	0	0
	June	690	95.8%	1.8	30.6	20.2	6.3	0	0	0
	July	711	95.6%	1.7	5.9	4.5	2.6	0	0	0
	August	706	94.9%	1.9	5.2	3.9	3.7	0	0	0
	September	657	91.3%	2.7	7.3	5.8	5.1	0	0	0
	October	713	95.8%	2.4	15.6	12.1	4.6	0	0	0
	November	666	92.5%	1.5	37.1	21.9	5.3	0	0	0
	December	688	92.5%	2.5	47.8	27.0	15.6	0	0	0
Annual		8248	94.2%	2.1	71.4	34.5	15.6	0	0	0
2010	January	713	95.8%	1.7	44.0	26.6	9.8	0	0	0
	February	614	91.4%	1.7	44.3	18.7	6.0	0	0	0
	March	713	95.8%	2.1	46.3	32.6	10.8	0	0	0
	April	689	95.7%	2.7	71.0	34.7	10.0	0	0	0
	May	666	89.5%	1.6	31.3	16.6	5.1	0	0	0
	June	665	92.4%	1.8	73.4	30.6	5.1	0	0	0
	July	711	95.6%	1.4	3.9	2.9	1.9	0	0	0
	August	707	95.0%	1.1	4.7	3.4	1.6	0	0	0
	September	684	95.0%	1.0	4.8	3.2	2.0	0	0	0
	October	707	95.0%	1.3	24.2	13.3	3.1	0	0	0
	November	683	94.9%	1.6	37.7	25.5	6.4	0	0	0
	December	710	95.4%	2.9	18.6	13.6	5.6	0	0	0
Annual		8262	94.3%	1.7	73.4	34.7	10.8	0	0	0

Observations in ug/m^3

FIGURE 4.1.1.1 - BUTTERPOT ROAD ANNUAL SO_2 CONCENTRATIONS



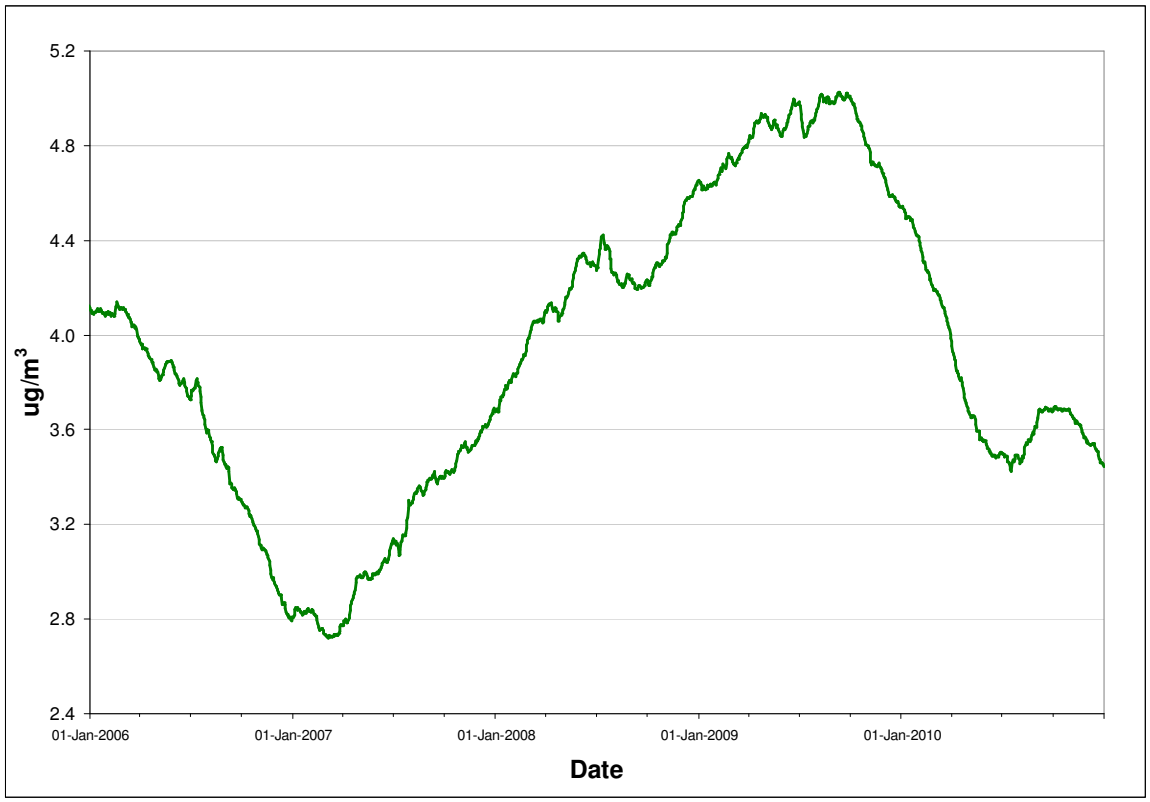
Rolling annual average of hourly concentrations

TABLE 4.1.1.2 - BUTTERPOT ROAD $PM_{2.5}$ SUMMARY 2009 & 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2009	January	30	96.8%	4.6	11.1	0
	February	28	100.0%	5.8	12.1	0
	March	31	100.0%	5.5	10.9	0
	April	30	100.0%	6.7	11.2	0
	May	31	100.0%	4.9	14.3	0
	June	24	80.0%	5.2	8.7	0
	July	31	100.0%	4.9	9.2	0
	August	31	100.0%	4.0	11.1	0
	September	30	100.0%	3.5	8.3	0
	October	31	100.0%	2.4	4.5	0
	November	30	100.0%	3.2	6.3	0
	December	31	100.0%	4.0	7.3	0
Annual		358	98.1%	4.5	14.3	0
2010	January	31	100.0%	3.2	6.5	0
	February	28	100.0%	2.8	7.2	0
	March	31	100.0%	3.2	5.8	0
	April	30	100.0%	3.2	7.5	0
	May	31	100.0%	3.3	6.1	0
	June	28	93.3%	4.3	8.4	0
	July	27	87.1%	4.8	15.2	0
	August	31	100.0%	5.7	13.3	0
	September	26	86.7%	4.3	14.8	0
	October	30	96.8%	2.3	6.9	0
	November	29	96.7%	1.6	4.8	0
	December	28	90.3%	2.8	8.1	0
Annual		350	95.9%	3.4	15.2	0

Observations in ug/m^3

FIGURE 4.1.1.2 - BUTTERPOT ROAD ANNUAL $PM_{2.5}$ CONCENTRATIONS



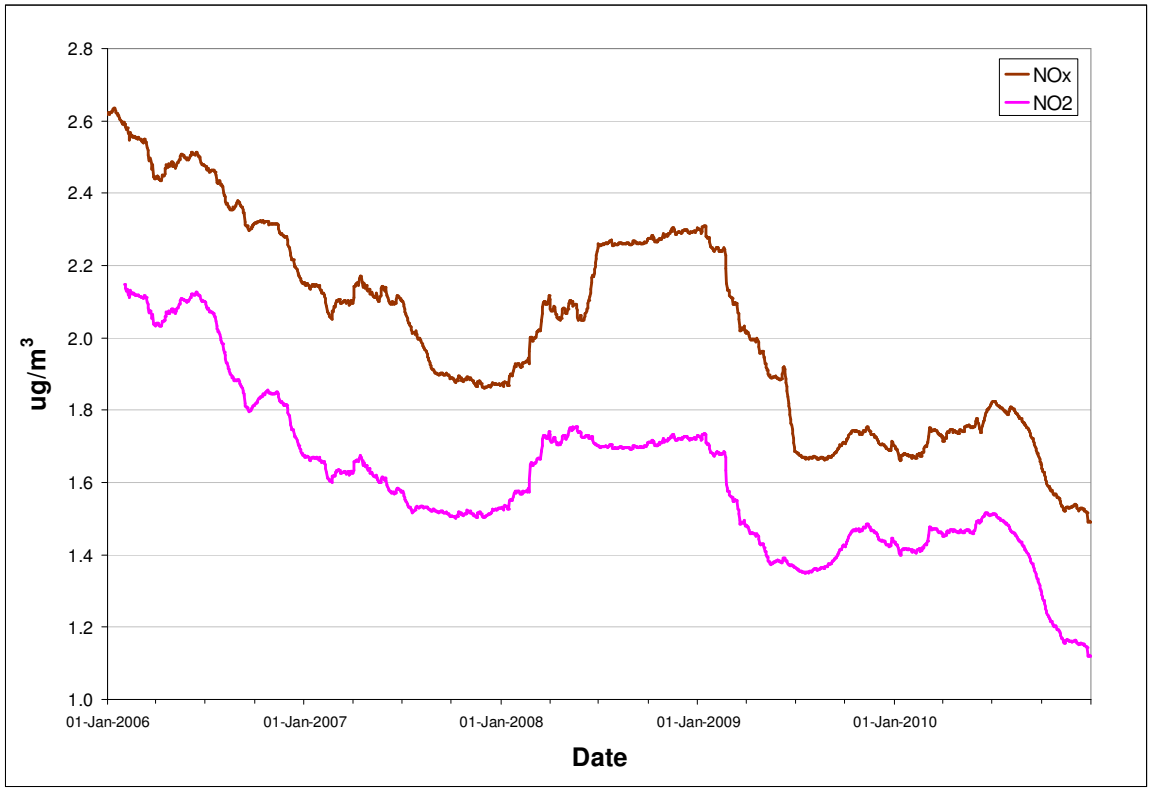
Rolling annual average of hourly concentrations

TABLE 4.1.1.3 - BUTTERPOT ROAD NO_X / NO_2 SUMMARY 2009 & 2010

Year	Month	# Valid Hours	% Valid Hours	Average NO_x	Average NO_2	Maximums 1-Hour NO_x	Maximums 1-Hour NO_2	Maximums 24-Hour NO_x	Maximums 24-Hour NO_2	Exceedances 1-Hour (>400)	Exceedances 24-Hour (>200)
2009	January	669	89.9%	1.7	1.4	16.2	15.8	6.4	5.9	0	0
	February	610	90.8%	1.4	1.2	31.5	25.7	3.7	3.0	0	0
	March	682	91.7%	1.8	1.4	32.5	22.2	4.0	3.2	0	0
	April	658	91.4%	1.5	1.2	27.3	18.4	5.2	3.9	0	0
	May	658	88.4%	1.3	1.1	13.8	9.5	2.0	1.9	0	0
	June	687	95.4%	2.0	1.0	20.6	13.4	6.9	3.0	0	0
	July	712	95.7%	1.3	1.1	7.2	5.6	2.6	2.1	0	0
	August	706	94.9%	1.5	1.4	20.5	20.3	2.7	2.6	0	0
	September	687	95.4%	2.2	2.1	19.6	19.2	3.0	2.8	0	0
	October	689	92.6%	2.4	2.3	12.0	11.8	3.6	3.5	0	0
	November	650	90.3%	1.7	1.5	14.8	13.7	4.2	3.6	0	0
	December	679	91.3%	1.7	1.4	30.3	25.0	10.0	8.9	0	0
Annual		8087	92.3%	1.7	1.4	32.5	25.7	10.0	8.9	0	0
2010	January	682	91.7%	1.4	1.2	39.3	35.4	6.8	6.0	0	0
	February	610	90.8%	1.8	1.4	34.8	32.6	5.4	4.7	0	0
	March	682	91.7%	2.1	1.8	32.2	28.9	10.1	9.4	0	0
	April	660	91.7%	1.6	1.2	33.9	22.2	6.0	4.3	0	0
	May	680	91.4%	1.6	1.3	23.4	12.9	5.3	3.5	0	0
	June	682	94.7%	2.6	1.4	29.6	19.2	4.8	3.1	0	0
	July	713	95.8%	0.9	0.8	5.0	4.6	1.9	1.6	0	0
	August	705	94.8%	1.2	0.6	12.1	6.4	4.0	1.2	0	0
	September	690	95.8%	0.9	0.7	7.9	4.3	1.5	1.2	0	0
	October	711	95.6%	1.3	1.0	10.6	9.2	3.2	2.8	0	0
	November	655	91.0%	1.5	1.1	19.5	12.6	3.8	3.2	0	0
	December	679	91.3%	1.1	0.9	20.7	19.9	3.0	2.4	0	0
Annual		8149	93.0%	1.5	1.1	39.3	35.4	10.1	9.4	0	0

Observations in ug/m^3

FIGURE 4.1.1.3 - BUTTERPOT ROAD ANNUAL NO_X / NO_2 CONCENTRATIONS



Rolling annual average of hourly concentrations

4.1.2 Green Acres Road

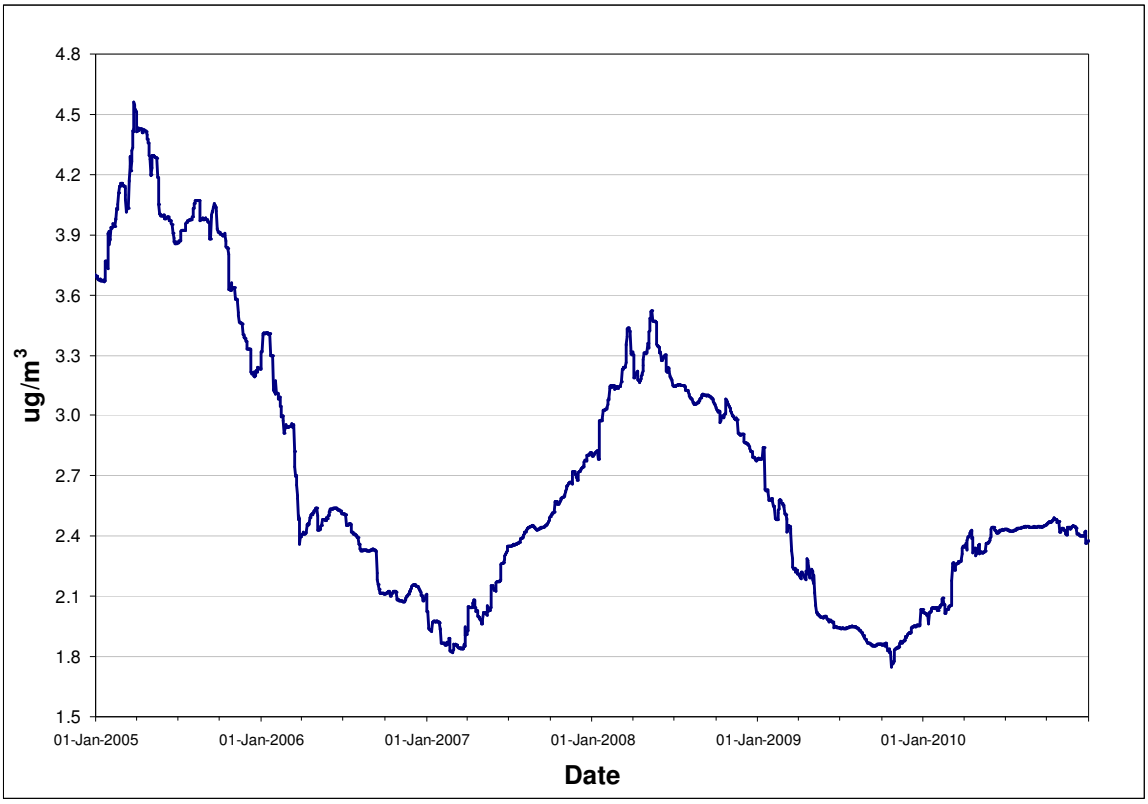
The Green Acres Road station monitors the ambient levels of SO_2, NO_x / NO_2, $PM_{2.5}$ on a continuous basis and TSP on a 1 day in 6 day cycle consistent with the NAPS defined schedule. For all pollutants, the ambient air criteria were not exceeded on any occasion in 2010. Tables 4.1.2.1 through 4.1.2.4 provide summary information on the level of air contaminants measured at Green Acres Road, while Figures 4.1.2.1 through 4.1.2.4 provide a graphical representation of the annual trend of each pollutant.

TABLE 4.1.2.1 - GREEN ACRES ROAD SO_2 SUMMARY 2009 & 2010

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>900)	Regulatory Exceedances 3-Hour (>600)	Regulatory Exceedances 24-Hour (>300)
2009	January	709	95.3%	2.2	154.3	100.7	18.7	0	0	0
	February	644	95.8%	2.7	198.6	97.2	17.7	0	0	0
	March	710	95.4%	1.9	45.1	22.4	9.8	0	0	0
	April	688	95.6%	3.4	222.5	104.3	31.5	0	0	0
	May	713	95.8%	2.1	167.4	89.8	18.3	0	0	0
	June	685	95.1%	1.3	44.5	30.2	7.2	0	0	0
	July	713	95.8%	1.4	9.2	5.8	2.3	0	0	0
	August	711	95.6%	1.0	11.5	5.1	2.1	0	0	0
	September	679	94.3%	1.0	3.8	2.9	1.8	0	0	0
	October	709	95.3%	2.5	96.9	75.9	21.1	0	0	0
	November	690	95.8%	2.1	68.9	27.9	6.6	0	0	0
	December	710	95.4%	2.8	184.8	63.5	27.7	0	0	0
Annual		8361	95.4%	2.0	222.5	104.3	31.5	0	0	0
2010	January	712	95.7%	2.4	76.9	48.5	19.1	0	0	0
	February	624	92.9%	2.9	75.8	43.9	11.3	0	0	0
	March	705	94.8%	5.4	146.7	132.9	45.6	0	0	0
	April	690	95.8%	3.1	236.4	106.0	18.2	0	0	0
	May	713	95.8%	3.4	138.5	90.9	14.8	0	0	0
	June	683	94.9%	1.3	18.6	14.8	3.2	0	0	0
	July	708	95.2%	1.5	4.2	3.8	2.3	0	0	0
	August	713	95.8%	1.0	3.8	3.0	1.8	0	0	0
	September	684	95.0%	1.2	3.9	3.8	2.9	0	0	0
	October	713	95.8%	2.0	39.8	24.8	4.8	0	0	0
	November	690	95.8%	2.4	171.1	84.0	15.9	0	0	0
	December	703	94.5%	1.9	40.9	24.6	6.3	0	0	0
Annual		8338	95.2%	2.4	236.4	132.9	45.6	0	0	0

Observations in ug/m^3

FIGURE 4.1.2.1 - GREEN ACRES ROAD ANNUAL SO_2 CONCENTRATIONS



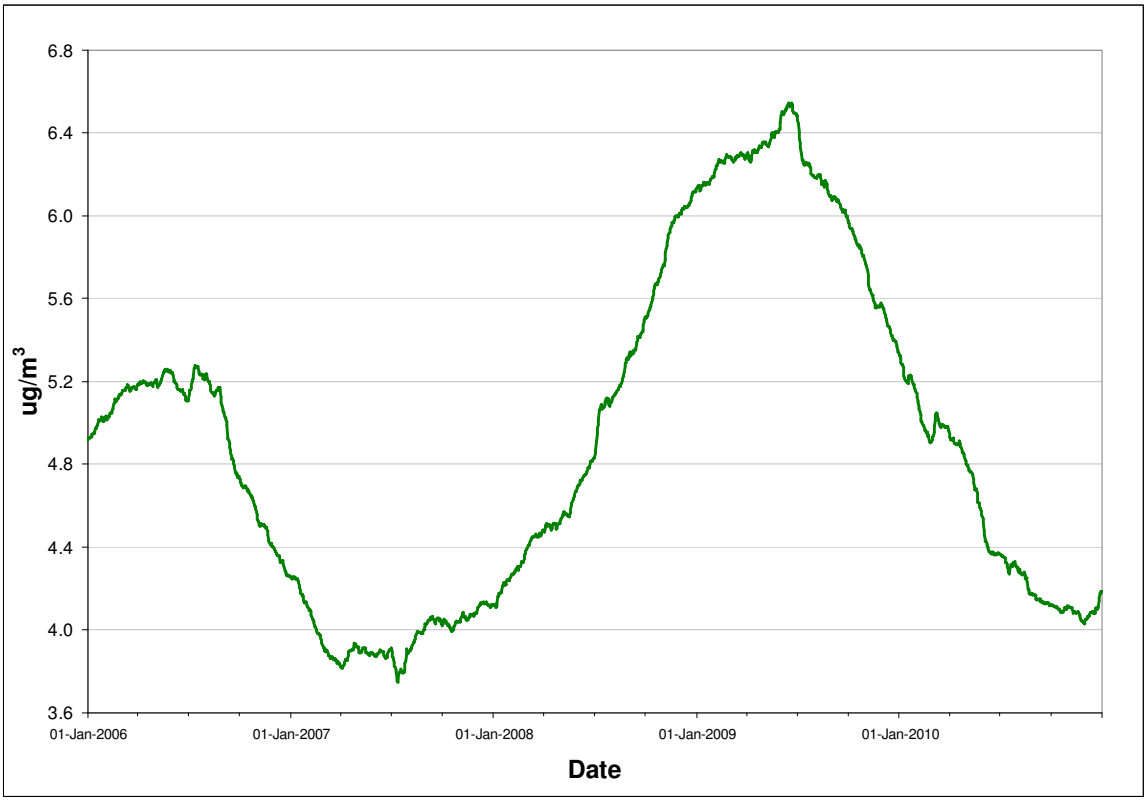
Rolling annual average of hourly concentrations

TABLE 4.1.2.2 - GREEN ACRES ROAD $PM_{2.5}$ SUMMARY 2009 & 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2009	January	19	61.3%	6.6	16.2	0
	February	28	100.0%	6.6	10.7	0
	March	31	100.0%	5.8	10.3	0
	April	30	100.0%	6.6	10.1	0
	May	30	96.8%	6.6	17.5	0
	June	25	83.3%	6.1	15.5	0
	July	31	100.0%	4.7	7.7	0
	August	31	100.0%	5.6	14.1	0
	September	30	100.0%	4.5	9.8	0
	October	25	80.6%	3.4	5.7	0
	November	23	76.7%	4.3	8.4	0
	December	31	100.0%	3.5	7.1	0
Annual		334	91.5%	5.3	17.5	0
2010	January	31	100.0%	4.0	18.3	0
	February	28	100.0%	3.6	9.3	0
	March	31	100.0%	6.4	16.1	0
	April	30	100.0%	4.9	9.6	0
	May	31	100.0%	3.4	6.2	0
	June	30	100.0%	3.8	9.3	0
	July	31	100.0%	3.9	15.2	0
	August	31	100.0%	4.1	9.1	0
	September	23	76.7%	3.8	8.0	0
	October	31	100.0%	3.5	5.2	0
	November	30	100.0%	3.2	6.4	0
	December	25	80.6%	5.6	12.1	0
Annual		352	96.4%	4.2	18.3	0

Observations in ug/m^3

FIGURE 4.1.2.2 - GREEN ACRES ROAD ANNUAL $PM_{2.5}$ CONCENTRATIONS



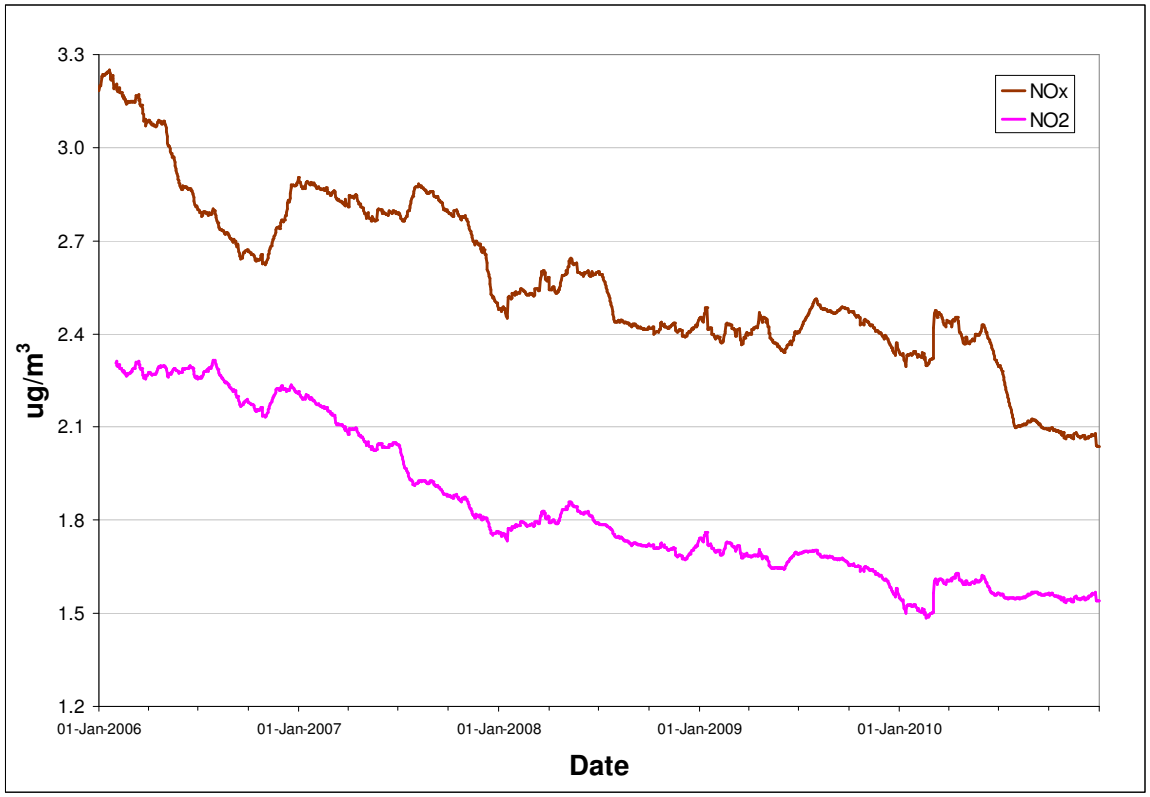
Rolling annual average of hourly concentrations

TABLE 4.1.2.3 - GREEN ACRES ROAD NO_X / NO_2 SUMMARY 2009 & 2010

Year	Month	# Valid Hours	% Valid Hours	Average NO_x	Average NO_2	Maximums 1-Hour NO_x	Maximums 1-Hour NO_2	Maximums 24-Hour NO_x	Maximums 24-Hour NO_2	Exceedances 1-Hour (>400)	Exceedances 24-Hour (>200)
2009	January	678	91.1%	2.4	1.8	60.8	33.0	8.3	7.3	0	0
	February	603	89.7%	2.5	1.9	102.4	54.8	10.0	5.8	0	0
	March	682	91.7%	2.5	1.5	27.8	16.9	5.6	4.8	0	0
	April	658	91.4%	3.0	1.8	90.8	47.8	15.1	9.0	0	0
	May	682	91.7%	1.7	1.4	61.6	34.7	7.6	4.3	0	0
	June	647	89.9%	3.0	2.0	34.7	14.0	5.5	4.7	0	0
	July	713	95.8%	4.2	1.3	28.5	8.1	5.7	1.9	0	0
	August	709	95.3%	1.3	1.1	8.4	6.7	3.3	2.3	0	0
	September	655	91.0%	1.7	1.1	10.2	6.6	2.4	1.6	0	0
	October	677	91.0%	2.0	1.7	35.6	23.7	7.7	5.5	0	0
	November	660	91.7%	1.7	1.4	18.1	12.4	4.1	3.3	0	0
	December	676	90.9%	2.1	1.7	67.7	31.8	17.3	12.3	0	0
Annual		8040	91.8%	2.3	1.6	102.4	54.8	17.3	12.3	0	0
2010	January	682	91.7%	2.4	1.5	56.3	34.3	13.2	9.0	0	0
	February	599	89.1%	2.2	1.6	52.2	37.1	7.6	5.8	0	0
	March	674	90.6%	4.0	2.8	117.3	65.1	38.3	23.8	0	0
	April	660	91.7%	2.1	1.6	109.8	41.4	9.6	5.2	0	0
	May	682	91.7%	2.4	1.7	77.7	39.1	9.8	7.0	0	0
	June	650	90.3%	1.3	1.3	22.6	16.1	3.3	3.1	0	0
	July	709	95.3%	2.0	1.1	39.6	19.2	4.0	1.6	0	0
	August	713	95.8%	1.7	1.3	12.7	7.5	2.3	1.9	0	0
	September	661	91.8%	1.3	1.0	8.4	4.5	2.3	1.7	0	0
	October	681	91.5%	1.6	1.3	13.2	12.3	4.0	3.7	0	0
	November	660	91.7%	1.8	1.6	61.3	38.8	7.4	5.2	0	0
	December	653	87.8%	1.8	1.6	34.1	24.6	3.5	2.8	0	0
Annual		8024	91.6%	2.0	1.5	117.3	65.1	38.3	23.8	0	0

Observations in ug/m^3

FIGURE 4.1.2.3 - GREEN ACRES ROAD ANNUAL NO_X / NO_2 CONCENTRATIONS



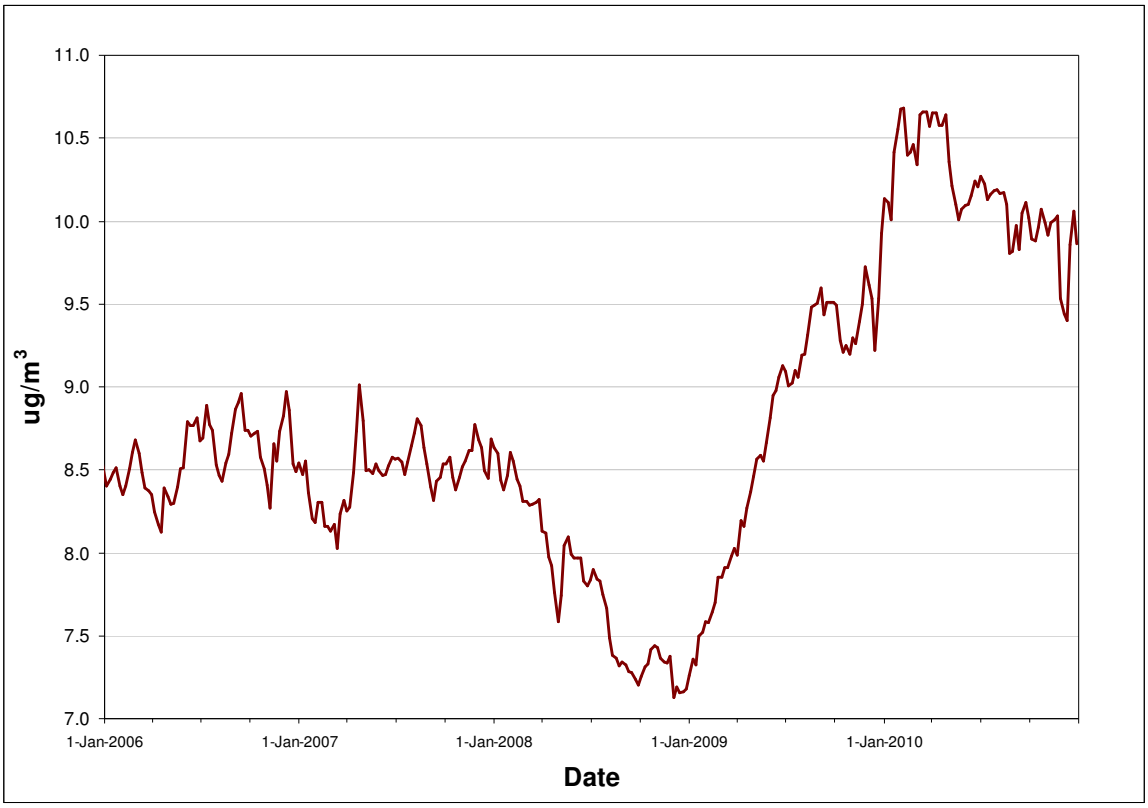
Rolling annual average of hourly concentrations

TABLE 4.1.2.4 - GREEN ACRES ROAD TSP SUMMARY 2009 & 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120 ug/m^3)
2009	January	6	100.0%	9.1	15.7	0
	February	4	100.0%	11.0	20.0	0
	March	5	100.0%	9.1	18.9	0
	April	5	100.0%	12.8	21.2	0
	May	6	100.0%	12.7	15.2	0
	June	5	100.0%	13.6	29.0	0
	July	5	100.0%	9.9	16.6	0
	August	5	100.0%	10.1	14.2	0
	September	5	100.0%	9.3	19.3	0
	October	5	100.0%	7.1	11.7	0
	November	5	100.0%	12.1	22.7	0
	December	4	80.0%	5.5	44.8	0
Annual		60	98.4%	10.0	44.8	0
2010	January	5	100.0%	18.6	66.2	0
	February	4	80.0%	7.2	12.8	0
	March	5	100.0%	13.0	21.4	0
	April	5	100.0%	10.8	12.7	0
	May	5	100.0%	7.3	14.2	0
	June	5	100.0%	17.5	39.8	0
	July	6	100.0%	9.8	19.7	0
	August	5	100.0%	6.4	14.1	0
	September	4	80.0%	11.4	27.5	0
	October	5	100.0%	7.9	13.6	0
	November	5	100.0%	5.5	18.7	0
	December	5	100.0%	8.1	13.1	0
Annual		59	96.7%	9.6	66.2	0

Observations in ug/m^3

FIGURE 4.1.2.4 - GREEN ACRES ROAD ANNUAL TSP CONCENTRATIONS



Rolling annual average of daily concentrations

4.1.3 Indian Pond Drive

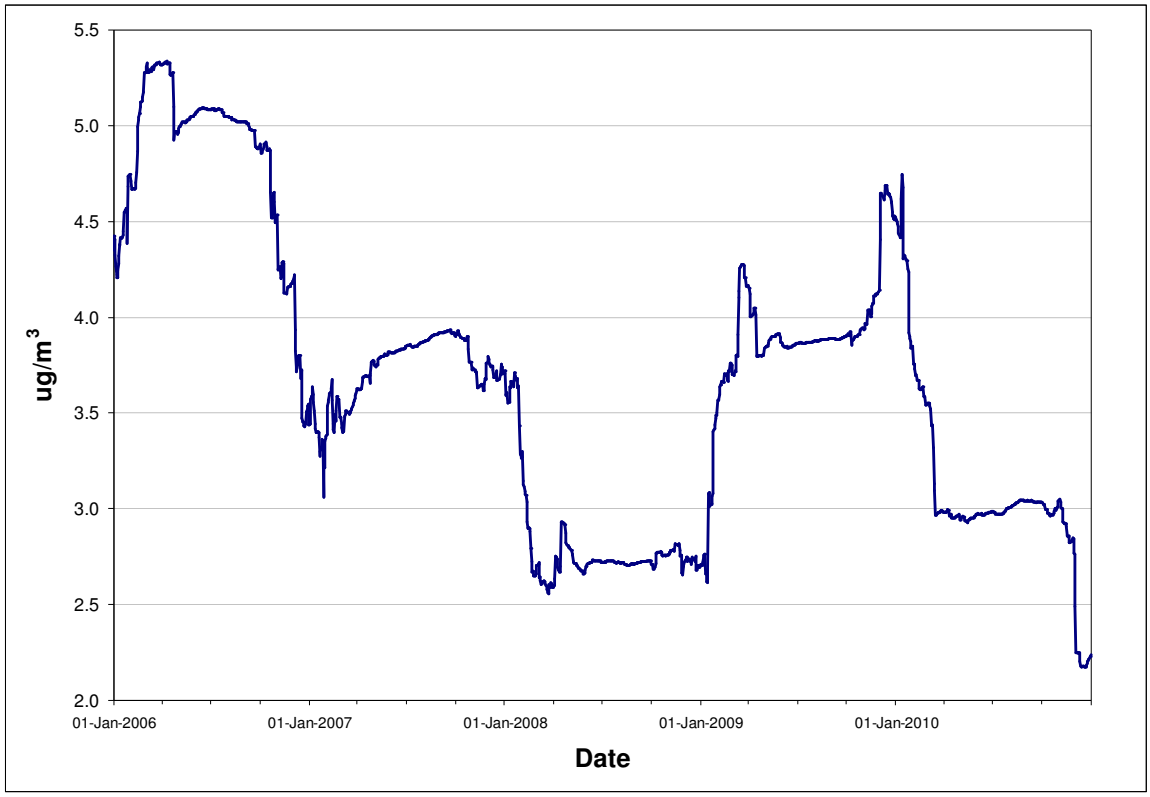
The Indian Pond Drive station monitors the ambient levels of SO_2, NO_x / NO_2, $PM_{2.5}$ on a continuous basis and TSP on a 1 day in 6 day cycle consistent with the NAPS defined schedule. For all pollutants, the ambient air criteria were not exceeded on any occasion in 2010. Tables 4.1.3.1 through 4.1.3.4 provide summary information on the level of air contaminants measured at Indian Pond Drive, while Figures 4.1.3.1 through 4.1.3.4 provide a graphical representation of the annual trend of each pollutant.

TABLE 4.1.3.1 - INDIAN POND DRIVE SO_2 SUMMARY 2009 & 2010

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>900)	Regulatory Exceedances 3-Hour (>600)	Regulatory Exceedances 24-Hour (>300)
2009	January	575	77.3%	16.4	272.7	227.2	138.4	0	0	0
	February	562	83.6%	6.5	145.6	109.1	35.7	0	0	0
	March	710	95.4%	8.3	294.9	232.5	68.6	0	0	0
	April	688	95.6%	2.4	44.4	32.3	12.0	0	0	0
	May	710	95.4%	1.5	33.9	15.6	5.7	0	0	0
	June	689	95.7%	1.5	29.7	20.4	4.7	0	0	0
	July	709	95.3%	1.3	17.8	8.1	2.5	0	0	0
	August	706	94.9%	1.1	14.9	5.6	1.5	0	0	0
	September	686	95.3%	1.2	6.7	3.6	1.9	0	0	0
	October	708	95.2%	2.7	96.4	35.8	9.2	0	0	0
	November	686	95.3%	5.3	139.0	116.1	29.4	0	0	0
	December	711	95.6%	8.7	224.7	202.1	99.3	0	0	0
Annual		8140	92.9%	4.5	294.9	232.5	138.4	0	0	0
2010	January	706	94.9%	6.3	151.1	118.8	78.8	0	0	0
	February	636	94.6%	2.3	26.9	15.0	5.6	0	0	0
	March	713	95.8%	1.6	16.1	6.3	3.9	0	0	0
	April	688	95.6%	1.9	43.4	19.1	4.2	0	0	0
	May	708	95.2%	1.8	38.8	28.4	5.1	0	0	0
	June	687	95.4%	1.6	14.0	7.3	2.5	0	0	0
	July	707	95.0%	1.5	5.1	4.1	2.8	0	0	0
	August	684	91.9%	1.5	5.8	4.0	2.0	0	0	0
	September	675	93.8%	1.1	4.0	3.8	2.9	0	0	0
	October	713	95.8%	2.8	47.9	31.8	12.4	0	0	0
	November	681	94.6%	2.0	23.6	10.5	4.6	0	0	0
	December	710	95.4%	2.5	46.5	27.5	10.1	0	0	0
Annual		8308	94.8%	2.2	151.1	118.8	78.8	0	0	0

Observations in ug/m^3

FIGURE 4.1.3.1 - INDIAN POND DRIVE ANNUAL SO_2 CONCENTRATIONS



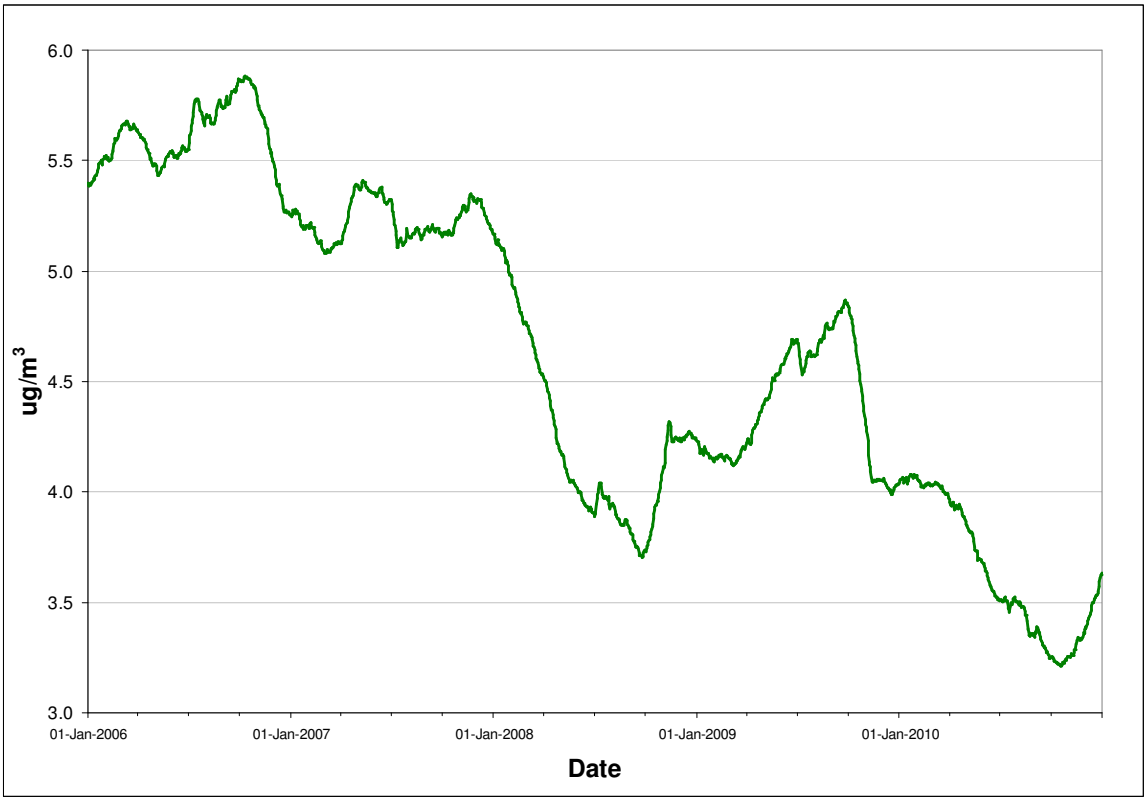
Rolling annual average of hourly concentrations

TABLE 4.1.3.2 - INDIAN POND DRIVE $PM_{2.5}$ SUMMARY 2009 & 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2009	January	30	96.8%	2.3	9.1	0
	February	26	92.9%	2.6	5.6	0
	March	26	83.9%	3.7	9.4	0
	April	30	100.0%	5.0	12.0	0
	May	31	100.0%	4.5	13.4	0
	June	26	86.7%	4.7	8.1	0
	July	31	100.0%	4.5	8.4	0
	August	30	96.8%	5.8	15.2	0
	September	30	100.0%	5.2	12.0	0
	October	31	100.0%	3.1	5.2	0
	November	30	100.0%	4.0	8.5	0
	December	31	100.0%	2.9	8.1	0
Annual		352	96.4%	4.0	15.2	0
2010	January	31	100.0%	2.8	5.8	0
	February	28	100.0%	2.2	5.3	0
	March	31	100.0%	3.1	6.4	0
	April	30	100.0%	3.8	8.8	0
	May	31	100.0%	2.3	5.7	0
	June	30	100.0%	2.6	6.6	0
	July	29	93.5%	4.5	14.2	0
	August	31	100.0%	4.0	10.4	0
	September	24	80.0%	4.1	16.2	0
	October	31	100.0%	3.1	6.6	0
	November	30	100.0%	5.2	14.1	0
	December	28	90.3%	6.3	11.7	0
Annual		354	97.0%	3.6	16.2	0

Observations in ug/m^3

FIGURE 4.1.3.2 - INDIAN POND DRIVE ANNUAL $PM_{2.5}$ CONCENTRATIONS



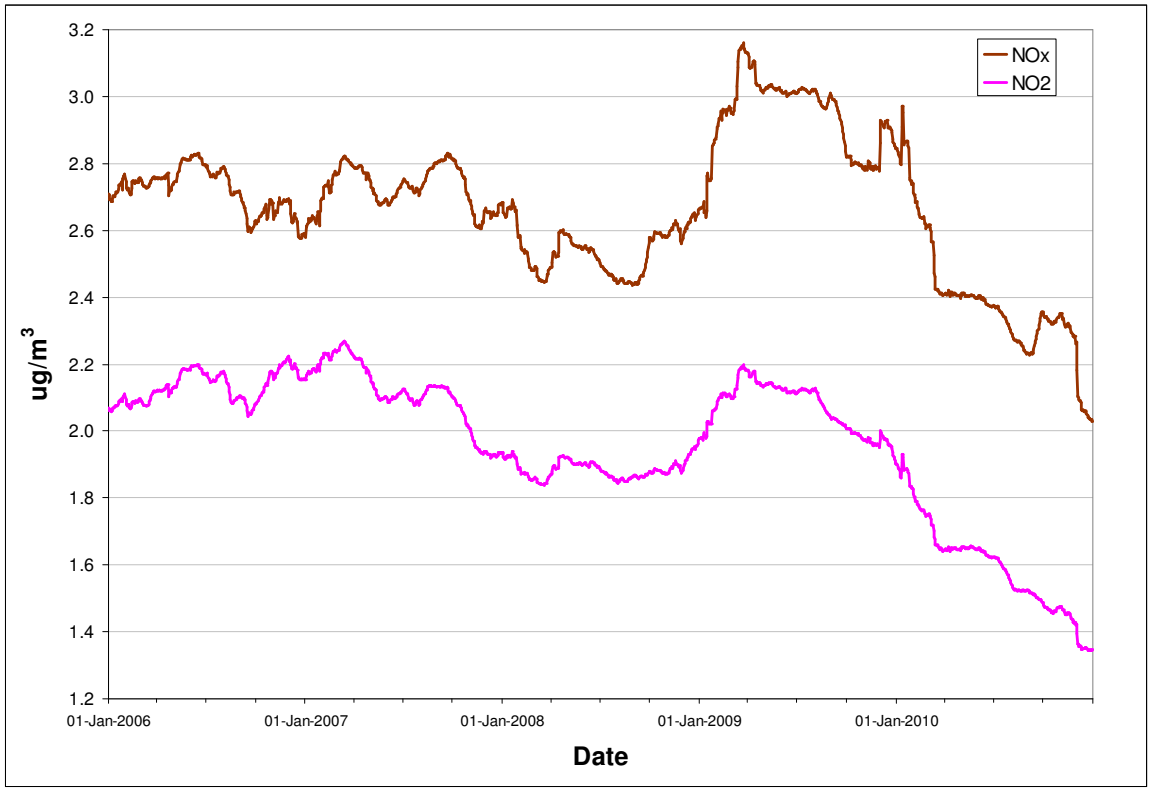
Rolling annual average of hourly concentrations

TABLE 4.1.3.3 - INDIAN POND DRIVE NO_X / NO_2 SUMMARY 2009 & 2010

				Average		Maximums 1-Hour		Maximums 24-Hour		Exceedances 1-Hour	Exceedances 24-Hour
Year	Month	# Valid Hours	% Valid Hours	NO_x	NO_2	NO_x	NO_2	NO_x	NO_2	(>400)	(>200)
2009	January	551	74.1%	6.0	3.5	73.2	29.0	38.6	15.7	0	0
	February	538	80.1%	3.5	2.3	44.3	20.1	13.1	7.2	0	0
	March	682	91.7%	4.0	2.5	92.2	31.0	21.4	8.8	0	0
	April	658	91.4%	1.8	1.4	17.0	9.2	5.0	3.0	0	0
	May	678	91.1%	1.5	1.2	11.9	6.5	2.6	1.8	0	0
	June	667	92.6%	1.9	1.6	18.2	12.9	3.7	2.9	0	0
	July	711	95.6%	2.0	1.7	15.3	10.9	3.4	3.0	0	0
	August	683	91.8%	2.6	1.4	15.2	9.7	5.5	3.1	0	0
	September	686	95.3%	2.2	1.5	10.1	7.1	3.6	2.4	0	0
	October	691	92.9%	2.1	1.6	32.1	8.9	3.8	2.7	0	0
	November	652	90.6%	3.0	2.1	40.4	17.6	9.1	4.7	0	0
	December	682	91.7%	4.4	2.4	74.8	26.5	33.8	12.7	0	0
Annual		7879	89.9%	2.8	1.9	92.2	31.0	38.6	15.7	0	0
2010	January	678	91.1%	4.2	2.3	75.9	32.4	44.0	18.7	0	0
	February	609	90.6%	1.6	1.2	15.1	9.5	2.9	2.3	0	0
	March	681	91.5%	1.6	1.3	11.1	8.0	3.6	3.3	0	0
	April	660	91.7%	1.6	1.4	28.9	18.6	4.7	4.0	0	0
	May	677	91.0%	1.5	1.2	19.7	17.6	4.7	3.7	0	0
	June	664	92.2%	1.6	1.3	15.6	14.8	3.5	3.0	0	0
	July	710	95.4%	1.2	1.0	11.8	7.6	3.3	2.5	0	0
	August	706	94.9%	1.7	1.1	14.5	5.2	4.1	1.5	0	0
	September	668	92.8%	3.7	1.1	9.6	4.9	6.1	2.0	0	0
	October	709	95.3%	2.0	1.5	20.0	14.1	5.1	4.5	0	0
	November	658	91.4%	1.9	1.4	13.6	11.0	4.3	3.4	0	0
	December	680	91.4%	1.7	1.5	19.6	10.0	3.7	3.0	0	0
Annual		8100	92.5%	2.0	1.3	75.9	32.4	44.0	18.7	0	0

Observations in ug/m^3

FIGURE 4.1.3.3 - INDIAN POND DRIVE ANNUAL NO_X / NO_2 CONCENTRATIONS



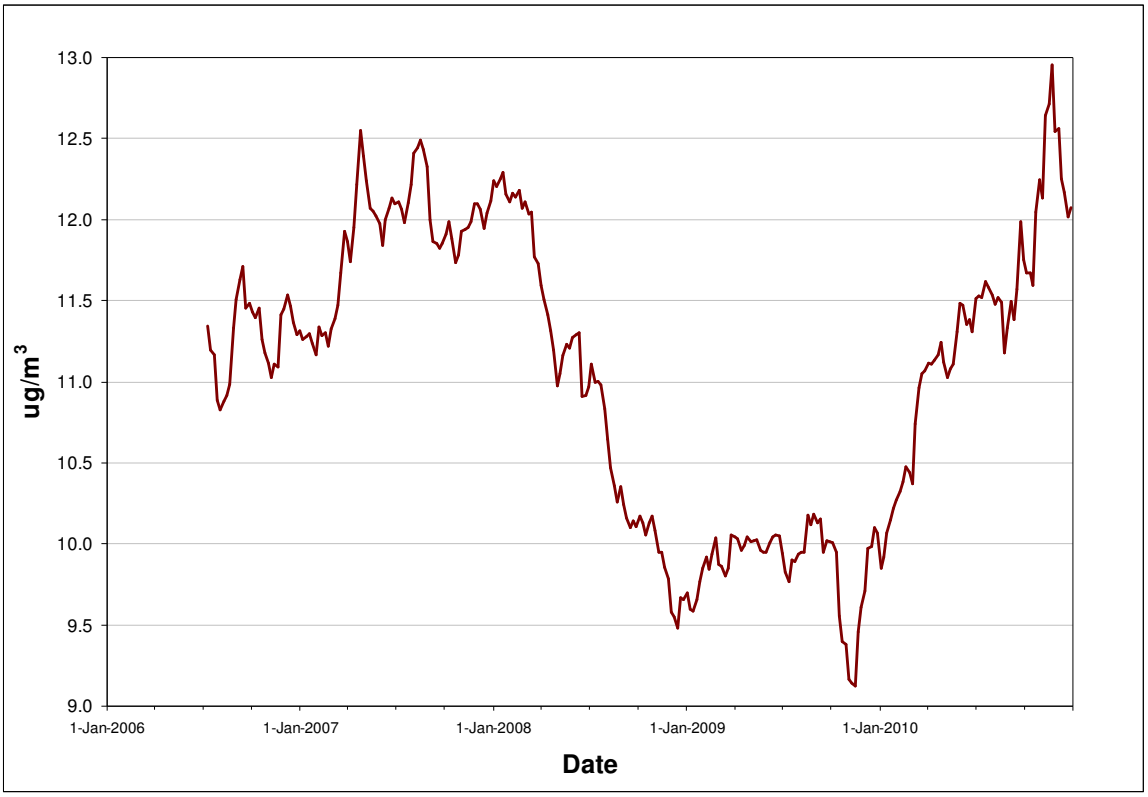
Rolling annual average of hourly concentrations

TABLE 4.1.3.4 - INDIAN POND DRIVE TSP SUMMARY 2009 & 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120 ug/m^3)
2009	January	6	100.0%	12.4	23.2	0
	February	3	75.0%	15.1	20.7	0
	March	5	100.0%	10.6	21.7	0
	April	5	100.0%	12.8	17.3	0
	May	4	66.7%	9.9	13.2	0
	June	5	100.0%	11.0	24.3	0
	July	5	100.0%	10.9	13.8	0
	August	5	100.0%	8.3	15.4	0
	September	5	100.0%	7.8	15.5	0
	October	5	100.0%	5.3	12.4	0
	November	5	100.0%	8.2	71.8	0
	December	5	100.0%	13.3	20.4	0
Annual		58	95.1%	10.0	71.8	0
2010	January	5	100.0%	13.9	23.1	0
	February	5	100.0%	17.7	30.8	0
	March	5	100.0%	23.6	51.5	0
	April	5	100.0%	14.6	18.1	0
	May	5	100.0%	11.5	21.7	0
	June	5	100.0%	14.5	29.5	0
	July	6	100.0%	11.1	21.5	0
	August	5	100.0%	6.2	11.5	0
	September	5	100.0%	12.0	32.0	0
	October	5	100.0%	9.3	13.0	0
	November	5	100.0%	11.4	23.2	0
	December	5	100.0%	7.8	15.8	0
Annual		61	100.0%	12.1	51.5	0

Observations in ug/m^3

FIGURE 4.1.3.4 - INDIAN POND DRIVE ANNUAL TSP CONCENTRATIONS



Rolling annual average of daily concentrations

4.1.4 Indian Pond Road

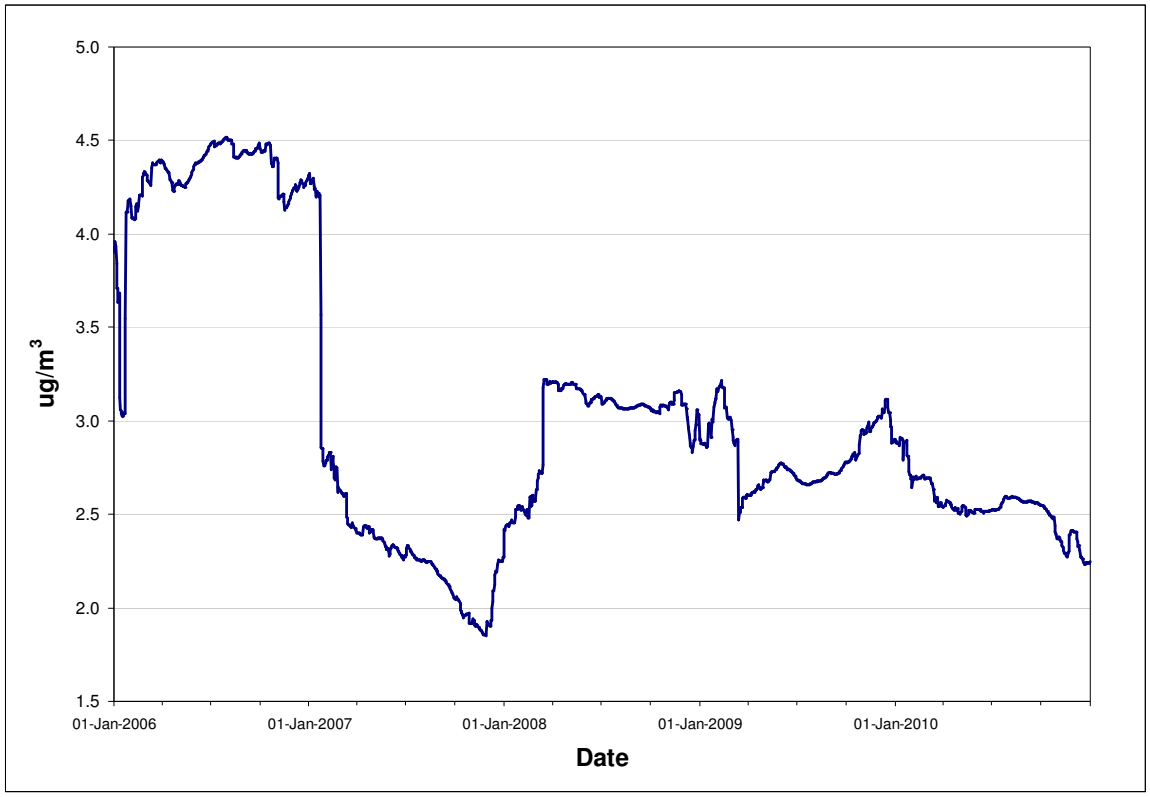
The Indian Pond Road station monitors the ambient levels of SO_2, NO_x / NO_2, $PM_{2.5}$ on a continuous basis and TSP on a 1 day in 6 day cycle consistent with the NAPS defined schedule. For all pollutants, the ambient air criteria were not exceeded on any occasion in 2010. Tables 4.1.4.1 through 4.1.4.4 provide summary information on the level of air contaminants measured at Indian Pond Road, while Figures 4.1.4.1 through 4.1.4.4 provide a graphical representation of the annual trend of each pollutant.

TABLE 4.1.4.1 - INDIAN POND ROAD SO_2 SUMMARY 2009 & 2010

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>900)	Regulatory Exceedances 3-Hour (>600)	Regulatory Exceedances 24-Hour (>300)
2009	January	698	93.8%	6.3	206.5	148.9	40.5	0	0	0
	February	643	95.7%	2.9	171.8	149.4	24.0	0	0	0
	March	713	95.8%	4.0	118.2	96.6	19.3	0	0	0
	April	683	94.9%	3.0	89.0	71.8	12.0	0	0	0
	May	712	95.7%	2.1	145.4	63.2	15.7	0	0	0
	June	690	95.8%	1.6	32.7	19.8	4.8	0	0	0
	July	705	94.8%	1.2	10.0	7.3	2.1	0	0	0
	August	713	95.8%	1.6	5.0	3.5	2.5	0	0	0
	September	687	95.4%	1.6	4.6	3.3	2.6	0	0	0
	October	704	94.6%	3.8	85.0	56.8	17.2	0	0	0
	November	690	95.8%	2.9	86.6	37.2	9.8	0	0	0
	December	712	95.7%	3.8	78.8	40.6	14.2	0	0	0
Annual		8350	95.3%	2.9	206.5	149.4	40.5	0	0	0
2010	January	706	94.9%	3.7	130.0	95.5	35.6	0	0	0
	February	638	94.9%	3.0	54.8	39.4	15.6	0	0	0
	March	713	95.8%	2.2	73.3	41.3	9.0	0	0	0
	April	684	95.0%	2.5	54.9	34.5	10.1	0	0	0
	May	713	95.8%	2.4	116.4	49.6	11.5	0	0	0
	June	686	95.3%	1.5	13.1	4.8	2.5	0	0	0
	July	692	93.0%	1.9	6.6	6.0	3.8	0	0	0
	August	713	95.8%	1.3	6.1	4.3	2.3	0	0	0
	September	686	95.3%	1.4	4.6	4.0	3.1	0	0	0
	October	707	95.0%	1.7	21.4	14.9	5.5	0	0	0
	November	689	95.7%	3.4	116.5	75.6	32.7	0	0	0
	December	710	95.4%	1.9	19.2	12.8	6.8	0	0	0
Annual		8337	95.2%	2.2	130.0	95.5	35.6	0	0	0

Observations in ug/m^3

FIGURE 4.1.4.1 - INDIAN POND ROAD ANNUAL SO_2 CONCENTRATIONS



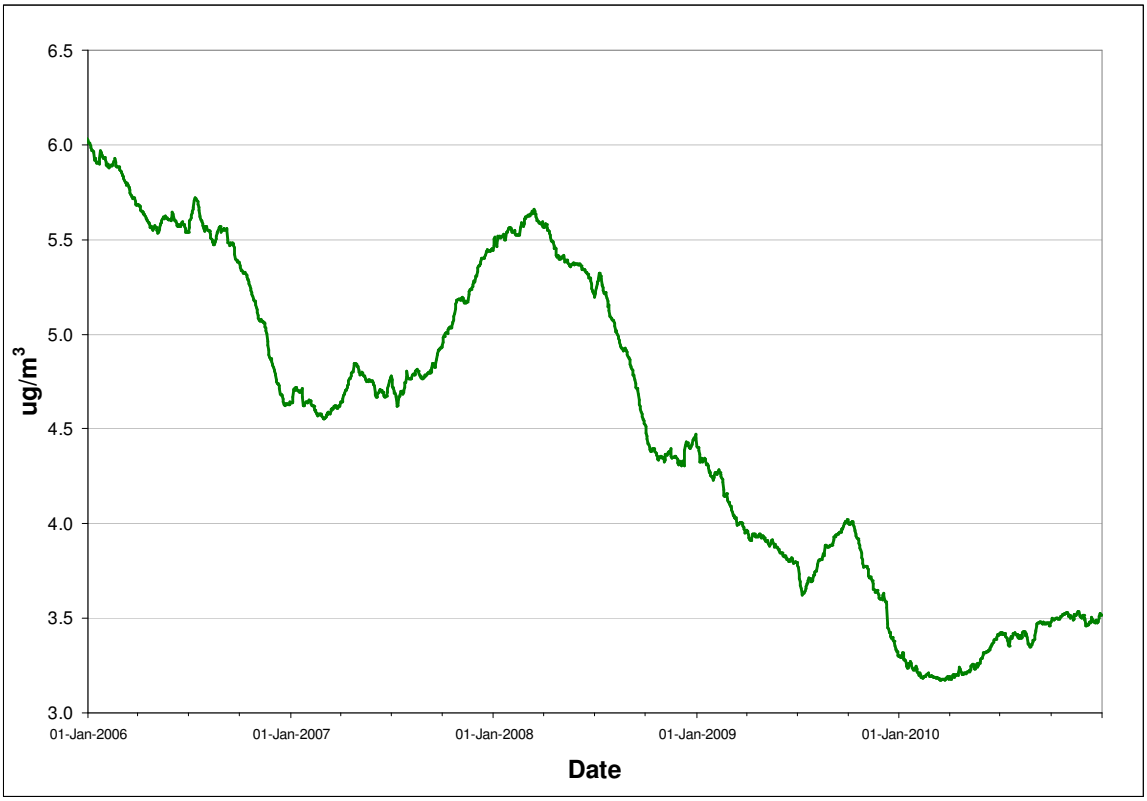
Rolling annual average of hourly concentrations

TABLE 4.1.4.2 - INDIAN POND ROAD $PM_{2.5}$ SUMMARY 2009 & 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2009	January	31	100.0%	3.9	11.8	0
	February	27	96.4%	3.6	7.5	0
	March	31	100.0%	3.1	6.8	0
	April	30	100.0%	3.8	7.7	0
	May	30	96.8%	2.4	10.9	0
	June	24	80.0%	2.2	4.5	0
	July	31	100.0%	4.0	7.2	0
	August	31	100.0%	4.1	14.2	0
	September	30	100.0%	3.7	8.1	0
	October	30	96.8%	1.8	5.4	0
	November	30	100.0%	3.4	9.1	0
	December	26	83.9%	3.3	15.0	0
Annual		351	96.2%	3.3	15.0	0
2010	January	29	93.5%	3.3	11.9	0
	February	28	100.0%	2.9	7.7	0
	March	26	83.9%	2.9	5.8	0
	April	30	100.0%	4.1	11.4	0
	May	31	100.0%	3.5	7.1	0
	June	30	100.0%	3.7	8.0	0
	July	31	100.0%	3.9	15.4	0
	August	31	100.0%	3.9	10.7	0
	September	26	86.7%	4.9	16.8	0
	October	31	100.0%	2.5	4.4	0
	November	30	100.0%	2.9	10.0	0
	December	31	100.0%	3.7	8.4	0
Annual		354	97.0%	3.5	16.8	0

Observations in ug/m^3

FIGURE 4.1.4.2 - INDIAN POND ROAD ANNUAL $PM_{2.5}$ CONCENTRATIONS



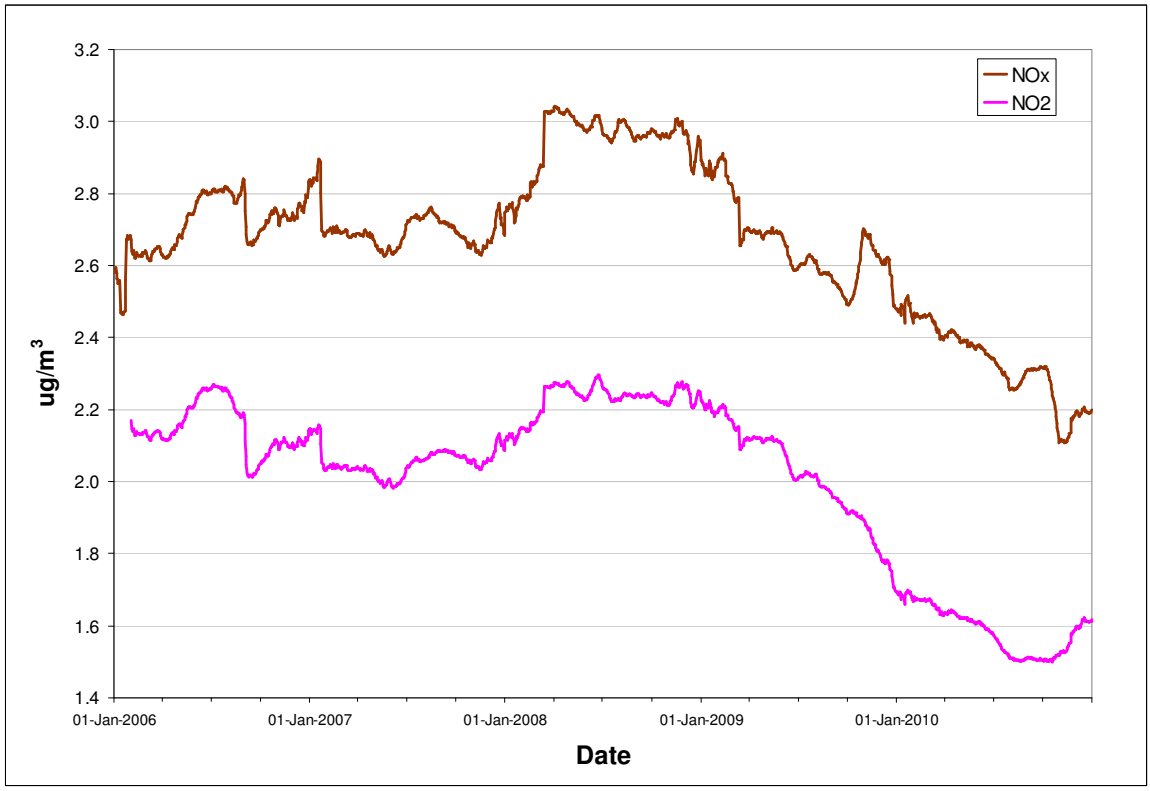
Rolling annual average of hourly concentrations

TABLE 4.1.4.3 - INDIAN POND ROAD NO_X / NO_2 SUMMARY 2009 & 2010

Year	Month	# Valid Hours	% Valid Hours	Average NO_x	Average NO_2	Maximums 1-Hour NO_x	Maximums 1-Hour NO_2	Maximums 24-Hour NO_x	Maximums 24-Hour NO_2	Exceedances 1-Hour (>400)	Exceedances 24-Hour (>200)
2009	January	675	90.7%	3.5	2.4	74.8	26.5	16.4	8.2	0	0
	February	616	91.7%	2.5	1.9	61.2	28.8	9.8	5.0	0	0
	March	682	91.7%	2.7	2.0	50.1	27.0	9.2	5.5	0	0
	April	654	90.8%	2.1	1.7	36.5	20.5	5.6	3.2	0	0
	May	682	91.7%	2.1	1.6	56.9	29.1	8.1	4.8	0	0
	June	658	91.4%	2.2	1.9	14.4	10.6	3.8	3.0	0	0
	July	639	85.9%	3.0	1.7	13.0	8.7	5.3	2.9	0	0
	August	677	91.0%	1.5	1.2	13.0	9.4	2.4	2.2	0	0
	September	687	95.4%	1.4	1.1	7.8	5.6	2.6	2.2	0	0
	October	682	91.7%	4.5	1.4	35.6	13.6	10.3	3.1	0	0
	November	660	91.7%	2.0	1.6	25.0	16.7	4.5	3.7	0	0
	December	680	91.4%	2.4	1.7	26.1	16.2	5.4	3.4	0	0
Annual		7992	91.2%	2.5	1.7	74.8	29.1	16.4	8.2	0	0
2010	January	676	90.9%	3.2	2.2	73.4	37.0	21.4	10.5	0	0
	February	614	91.4%	2.6	1.9	32.2	18.2	9.1	5.3	0	0
	March	682	91.7%	2.0	1.5	44.5	22.3	4.4	3.0	0	0
	April	655	91.0%	1.9	1.5	26.9	17.0	5.8	4.0	0	0
	May	682	91.7%	2.0	1.5	61.9	32.6	6.4	4.0	0	0
	June	682	94.7%	1.8	1.5	16.2	14.1	3.7	3.1	0	0
	July	676	90.9%	1.9	0.9	6.5	4.7	5.3	1.8	0	0
	August	713	95.8%	2.1	1.2	9.2	5.9	3.3	1.8	0	0
	September	686	95.3%	1.5	1.1	6.5	5.1	2.4	1.8	0	0
	October	708	95.2%	2.0	1.6	21.5	20.6	5.5	4.6	0	0
	November	689	95.7%	2.9	2.5	52.0	26.7	15.2	9.7	0	0
	December	672	90.3%	2.6	2.1	22.9	18.1	8.3	6.7	0	0
Annual		8135	92.9%	2.2	1.6	73.4	37.0	21.4	10.5	0	0

Observations in ug/m^3

FIGURE 4.1.4.3 - INDIAN POND ROAD ANNUAL NO_X / NO_2 CONCENTRATIONS



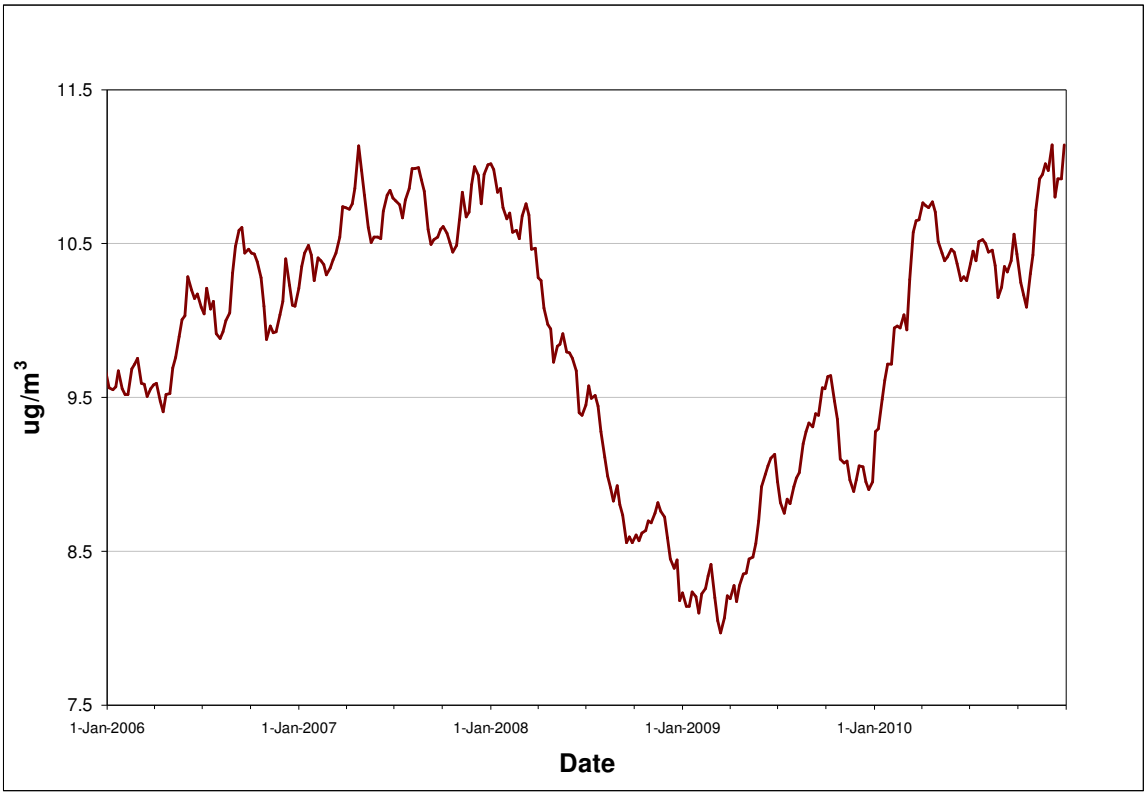
Rolling annual average of hourly concentrations

TABLE 4.1.4.4 - INDIAN POND ROAD TSP SUMMARY 2009 & 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120 ug/m^3)
2009	January	5	83.3%	7.0	14.5	0
	February	4	100.0%	13.2	17.4	0
	March	5	100.0%	7.2	16.9	0
	April	5	100.0%	12.7	16.3	0
	May	6	100.0%	13.8	21.5	0
	June	5	100.0%	10.3	23.5	0
	July	5	100.0%	8.9	10.6	0
	August	5	100.0%	10.0	13.9	0
	September	5	100.0%	10.5	17.3	0
	October	5	100.0%	5.5	20.5	0
	November	5	100.0%	7.8	10.8	0
	December	5	100.0%	6.9	19.8	0
Annual		60	98.4%	9.1	23.5	0
2010	January	5	100.0%	20.0	27.8	0
	February	3	60.0%	14.3	19.3	0
	March	5	100.0%	17.2	55.1	0
	April	5	100.0%	11.7	14.9	0
	May	5	100.0%	9.1	14.8	0
	June	5	100.0%	13.7	19.1	0
	July	6	100.0%	9.7	20.3	0
	August	5	100.0%	6.8	16.4	0
	September	5	100.0%	12.6	26.9	0
	October	5	100.0%	8.7	12.8	0
	November	5	100.0%	10.7	19.2	0
	December	5	100.0%	7.7	18.6	0
Annual		59	96.7%	11.2	55.1	0

Observations in ug/m^3

FIGURE 4.1.4.4 - INDIAN POND ROAD ANNUAL TSP CONCENTRATIONS



Rolling annual average of daily concentrations

4.1.5 Lawrence Pond Road

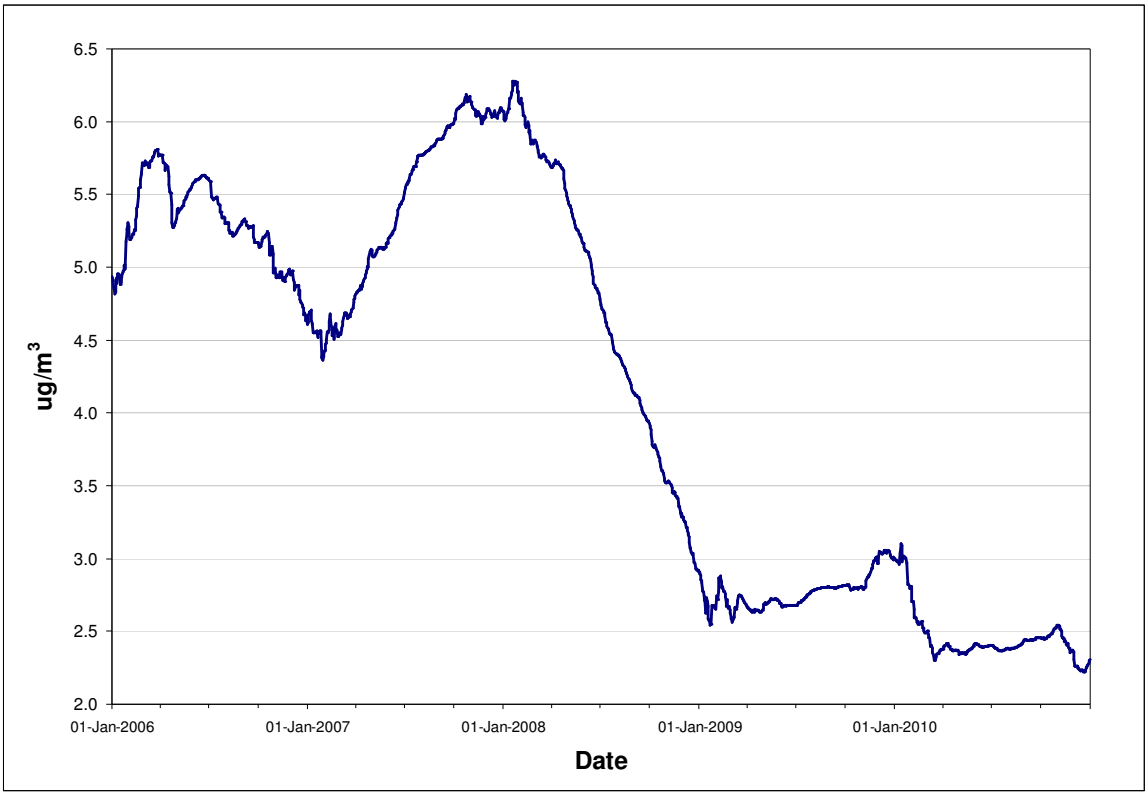
The Lawrence Pond Road station monitors the ambient levels of SO_2, NO_x / NO_2, $PM_{2.5}$ on a continuous basis and TSP on a 1 day in 6 day cycle consistent with the NAPS defined schedule. For all pollutants, the ambient air criteria were not exceeded on any occasion in 2010. Tables 4.1.5.1 through 4.1.5.4 provide summary information on the level of air contaminants measured at Lawrence Pond Road, while Figures 4.1.5.1 through 4.1.5.4 provide a graphical representation of the annual trend of each pollutant.

TABLE 4.1.5.1 - LAWRENCE POND ROAD SO_2 SUMMARY 2009 & 2010

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>900)	Regulatory Exceedances 3-Hour (>600)	Regulatory Exceedances 24-Hour (>300)
2009	January	665	89.4%	6.6	157.0	79.1	47.1	0	0	0
	February	644	95.8%	7.1	126.3	95.6	42.2	0	0	0
	March	707	95.0%	3.6	94.7	65.8	23.8	0	0	0
	April	686	95.3%	2.3	35.9	27.7	9.8	0	0	0
	May	711	95.6%	1.8	93.3	38.6	8.6	0	0	0
	June	683	94.9%	1.3	29.6	11.7	3.2	0	0	0
	July	710	95.4%	1.9	11.3	5.6	2.9	0	0	0
	August	713	95.8%	1.4	8.2	4.7	1.9	0	0	0
	September	688	95.6%	1.0	36.1	3.0	3.3	0	0	0
	October	703	94.5%	1.6	40.5	17.2	5.2	0	0	0
	November	687	95.4%	4.5	73.7	52.6	14.1	0	0	0
	December	710	95.4%	3.3	61.2	38.5	20.0	0	0	0
Annual		8307	94.8%	3.0	157.0	95.6	47.1	0	0	0
2010	January	712	95.7%	4.1	94.1	74.3	38.3	0	0	0
	February	642	95.5%	3.0	49.5	37.0	9.8	0	0	0
	March	708	95.2%	2.3	45.6	18.8	10.2	0	0	0
	April	690	95.8%	2.0	45.6	20.7	7.2	0	0	0
	May	713	95.8%	2.5	27.2	20.2	5.8	0	0	0
	June	685	95.1%	1.2	8.5	5.9	2.0	0	0	0
	July	709	95.3%	1.6	4.2	3.8	3.4	0	0	0
	August	711	95.6%	2.1	7.4	5.8	3.7	0	0	0
	September	669	92.9%	1.2	5.0	4.7	3.8	0	0	0
	October	713	95.8%	2.6	27.4	19.8	7.0	0	0	0
	November	689	95.7%	2.3	25.9	19.0	5.8	0	0	0
	December	702	94.4%	2.7	50.8	42.0	13.6	0	0	0
Annual		8343	95.2%	2.3	94.1	74.3	38.3	0	0	0

Observations in ug/m^3

FIGURE 4.1.5.1 - LAWRENCE POND ROAD ANNUAL SO_2 CONCENTRATIONS



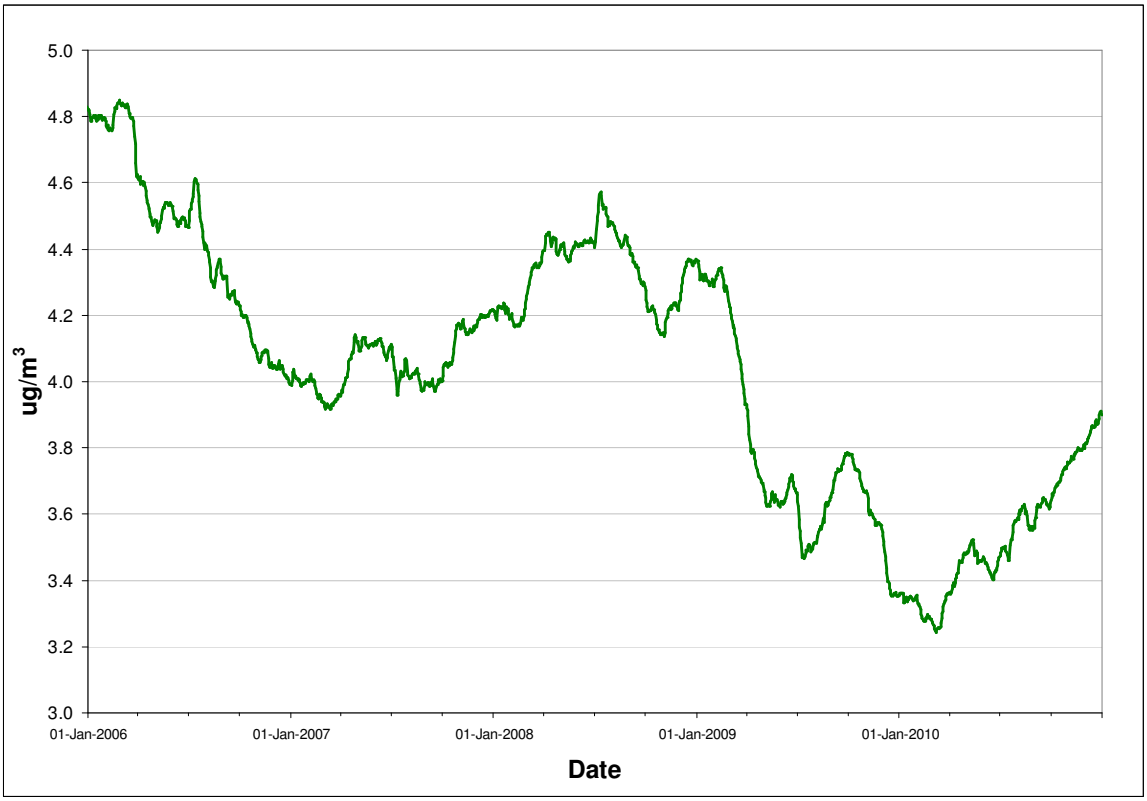
Rolling annual average of hourly concentrations

TABLE 4.1.5.2 - LAWRENCE POND ROAD $PM_{2.5}$ SUMMARY 2009 & 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2009	January	30	96.8%	2.9	9.4	0
	February	21	75.0%	3.8	8.2	0
	March	29	93.5%	2.6	8.4	0
	April	30	100.0%	2.5	6.8	0
	May	28	90.3%	3.4	13.3	0
	June	25	83.3%	4.4	6.5	0
	July	31	100.0%	3.5	7.5	0
	August	31	100.0%	4.9	14.5	0
	September	30	100.0%	4.5	9.4	0
	October	31	100.0%	2.1	4.3	0
	November	30	100.0%	3.0	6.8	0
	December	31	100.0%	2.9	6.8	0
Annual		347	95.1%	3.4	14.5	0
2010	January	31	100.0%	2.8	6.5	0
	February	28	100.0%	2.8	6.5	0
	March	31	100.0%	3.6	6.8	0
	April	30	100.0%	3.9	9.5	0
	May	31	100.0%	3.3	5.5	0
	June	28	93.3%	4.3	8.5	0
	July	31	100.0%	4.9	15.8	0
	August	31	100.0%	4.6	9.7	0
	September	23	76.7%	5.9	16.0	0
	October	31	100.0%	3.5	6.1	0
	November	30	100.0%	3.5	6.5	0
	December	31	100.0%	4.1	8.5	0
Annual		356	97.5%	3.9	16.0	0

Observations in ug/m^3

FIGURE 4.1.5.2 - LAWRENCE POND ROAD ANNUAL $PM_{2.5}$ CONCENTRATIONS



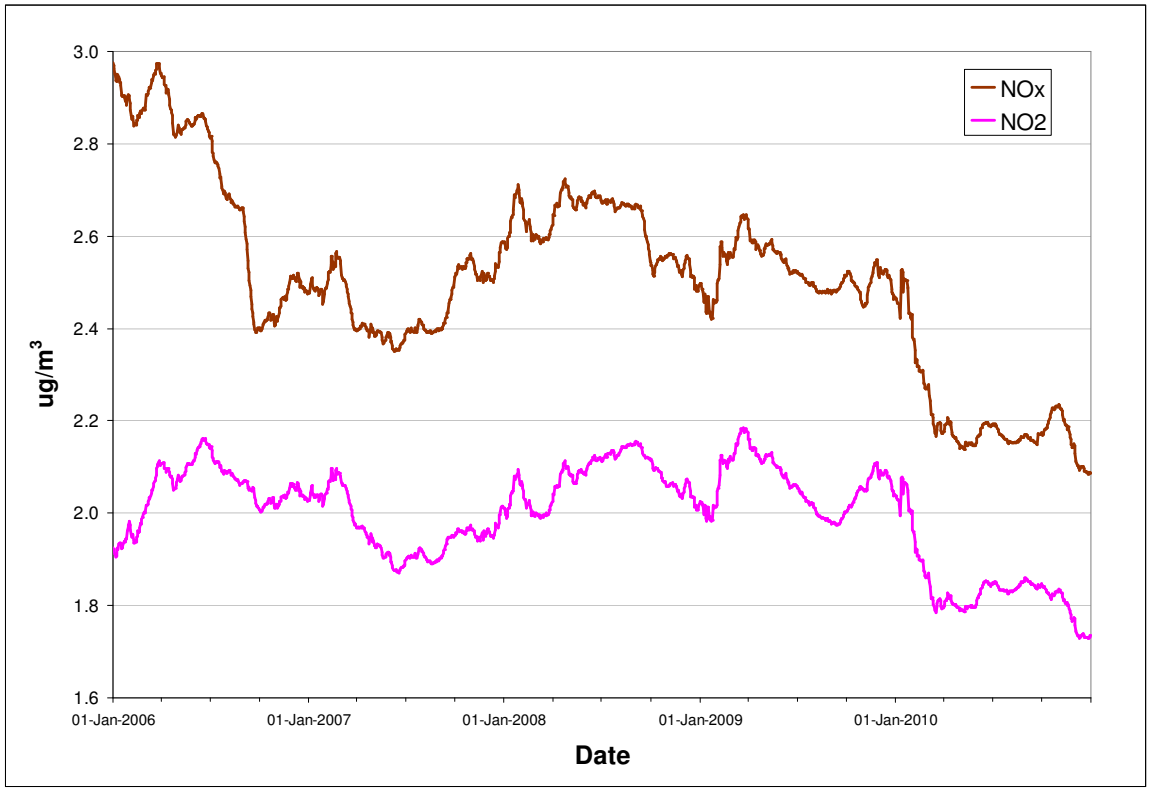
Rolling annual average of hourly concentrations

TABLE 4.1.5.3 - LAWRENCE POND ROAD NO_X / NO_2 SUMMARY 2009 & 2010

Year	Month	# Valid Hours	% Valid Hours	Average NO_x	Average NO_2	Maximums 1-Hour NO_x	Maximums 1-Hour NO_2	Maximums 24-Hour NO_x	Maximums 24-Hour NO_2	Exceedances 1-Hour (>400)	Exceedances 24-Hour (>200)
2009	January	636	85.5%	3.6	3.2	66.6	49.0	19.6	14.7	0	0
	February	615	91.5%	4.0	3.5	52.1	44.1	18.5	15.3	0	0
	March	679	91.3%	3.0	2.5	39.8	31.0	11.4	9.3	0	0
	April	657	91.3%	2.0	1.6	55.8	25.6	5.4	4.8	0	0
	May	682	91.7%	1.8	1.4	37.3	22.0	4.1	2.8	0	0
	June	663	92.1%	1.8	1.6	30.9	19.7	3.6	3.4	0	0
	July	710	95.4%	1.8	1.4	12.3	10.7	2.7	2.3	0	0
	August	713	95.8%	1.7	1.3	7.4	6.8	2.6	2.1	0	0
	September	680	94.4%	2.3	1.9	28.7	13.9	3.3	2.7	0	0
	October	127	17.1%	1.6	1.4	11.3	10.3	2.0	1.6	0	0
	November	657	91.3%	3.0	2.5	26.6	24.3	6.5	5.5	0	0
	December	677	91.0%	2.4	2.0	23.7	23.1	8.3	6.9	0	0
Annual		7496	85.6%	2.5	2.0	66.6	49.0	19.6	15.3	0	0
2010	January	682	91.7%	3.2	2.7	65.9	50.5	28.1	22.4	0	0
	February	614	91.4%	2.1	1.7	32.9	30.2	6.0	4.6	0	0
	March	677	91.0%	2.0	1.7	28.8	22.0	6.0	5.7	0	0
	April	660	91.7%	1.7	1.5	24.7	22.0	5.0	4.2	0	0
	May	682	91.7%	1.9	1.5	30.3	17.2	6.5	4.6	0	0
	June	665	92.4%	2.3	2.1	15.6	14.6	5.3	4.8	0	0
	July	710	95.4%	1.4	1.2	7.0	6.7	2.5	2.2	0	0
	August	713	95.8%	1.9	1.7	7.2	6.2	3.4	3.0	0	0
	September	652	90.6%	2.4	1.8	52.9	19.6	9.3	4.5	0	0
	October	655	88.0%	2.8	1.5	14.5	13.9	4.4	4.0	0	0
	November	660	91.7%	1.9	1.7	57.8	17.8	4.6	3.3	0	0
	December	673	90.5%	1.7	1.6	26.3	20.7	5.6	5.2	0	0
Annual		8043	91.8%	2.1	1.7	65.9	50.5	28.1	22.4	0	0

Observations in ug/m^3

FIGURE 4.1.5.3 - LAWRENCE POND ROAD ANNUAL NO_X / NO_2 CONCENTRATIONS



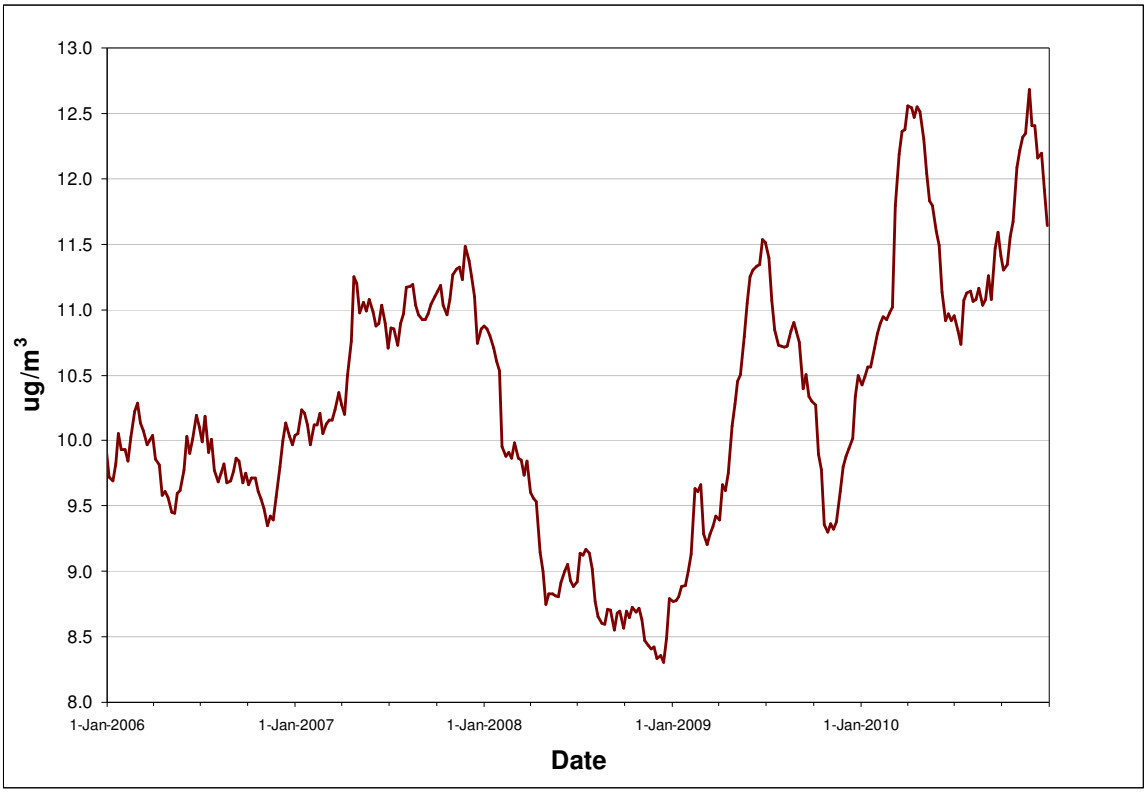
Rolling annual average of hourly concentrations

TABLE 4.1.5.4 - LAWRENCE POND ROAD TSP SUMMARY 2009 & 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120 ug/m^3)
2009	January	6	100.0%	8.6	11.1	0
	February	4	100.0%	11.5	16.7	0
	March	5	100.0%	6.1	16.1	0
	April	5	100.0%	12.3	17.8	0
	May	6	100.0%	21.5	28.3	0
	June	5	100.0%	20.0	49.0	0
	July	5	100.0%	8.7	11.4	0
	August	5	100.0%	9.5	15.1	0
	September	5	100.0%	8.2	20.5	0
	October	5	100.0%	3.0	8.9	0
	November	5	100.0%	10.2	26.3	0
	December	5	100.0%	19.8	44.6	0
Annual		61	100.0%	10.3	49.0	0
2010	January	5	100.0%	15.7	22.4	0
	February	4	80.0%	12.2	14.9	0
	March	5	100.0%	31.0	55.4	0
	April	5	100.0%	12.2	17.5	0
	May	5	100.0%	7.5	17.0	0
	June	5	100.0%	11.5	25.4	0
	July	6	100.0%	12.9	33.9	0
	August	5	100.0%	8.1	13.2	0
	September	5	100.0%	11.9	35.4	0
	October	5	100.0%	7.9	11.4	0
	November	5	100.0%	10.8	31.1	0
	December	4	80.0%	6.2	11.1	0
Annual		59	96.7%	11.4	55.4	0

Observations in ug/m^3

FIGURE 4.1.5.4 - LAWRENCE POND ROAD ANNUAL TSP CONCENTRATIONS



Rolling annual average of daily concentrations

4.1.6 NALCOR Property Boundary

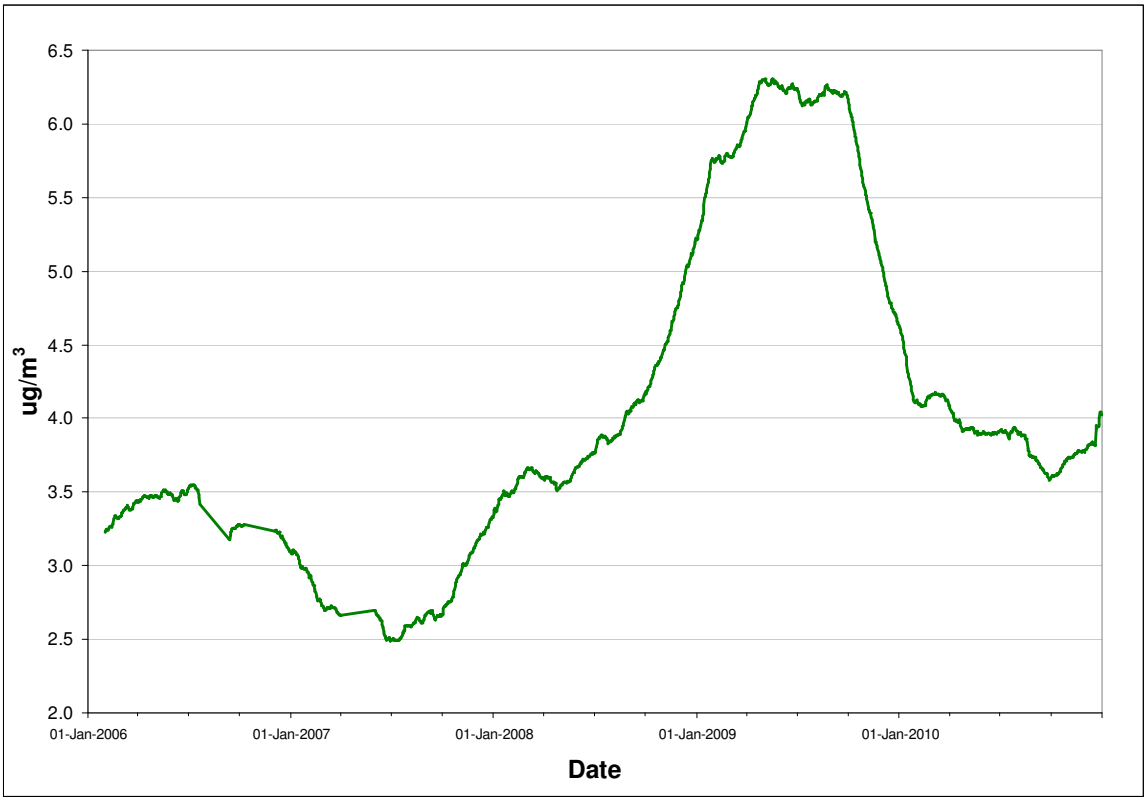
The NALCOR Property Boundary station monitors the ambient levels of $PM_{2.5}$ on a continuous basis and TSP on a 1 day in 6 day cycle consistent with the NAPS defined schedule. For TSP, the ambient air criteria were not exceeded on any occasion in 2010, however for $PM_{2.5}$, there was one daily exceedance on Dec 21st. Tables 4.1.6.1 through 4.1.6.2 provide summary information on the level of air contaminants measured at NALCOR Property Boundary, while Figures 4.1.6.1 through 4.1.6.2 provide a graphical representation of the annual trend of each pollutant.

TABLE 4.1.6.1 - NALCOR BOUNDARY $PM_{2.5}$ SUMMARY 2009 & 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2009	January	29	93.5%	9.9	22.6	0
	February	27	96.4%	4.2	8.9	0
	March	31	100.0%	5.2	10.9	0
	April	30	100.0%	6.9	12.0	0
	May	31	100.0%	3.2	11.7	0
	June	26	86.7%	3.4	6.6	0
	July	31	100.0%	4.5	8.8	0
	August	31	100.0%	6.0	19.0	0
	September	30	100.0%	4.6	10.5	0
	October	31	100.0%	1.4	4.6	0
	November	30	100.0%	2.5	5.4	0
	December	31	100.0%	3.9	8.9	0
Annual		358	98.1%	4.6	22.6	0
2010	January	31	100.0%	3.7	7.1	0
	February	28	100.0%	4.7	12.4	0
	March	31	100.0%	4.4	7.2	0
	April	30	100.0%	5.0	10.6	0
	May	31	100.0%	2.9	5.8	0
	June	30	100.0%	3.6	8.1	0
	July	31	100.0%	4.5	15.5	0
	August	28	90.3%	4.0	11.0	0
	September	24	80.0%	2.7	6.5	0
	October	31	100.0%	2.9	6.5	0
	November	30	100.0%	2.9	6.9	0
	December	31	100.0%	6.8	40.8	1
Annual		356	97.5%	4.0	40.8	1

Observations in ug/m^3

FIGURE 4.1.6.1 - NALCOR BOUNDARY ANNUAL $PM_{2.5}$ CONCENTRATIONS



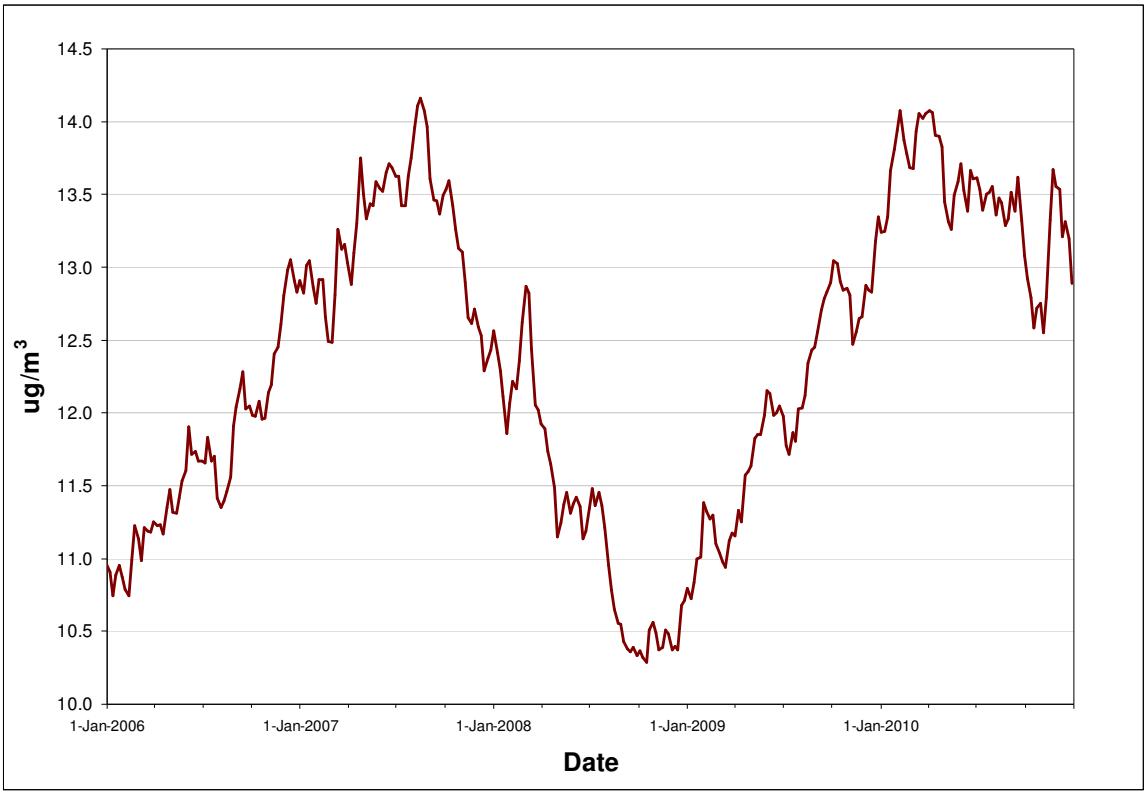
Rolling annual average of hourly concentrations

TABLE 4.1.6.2 - NALCOR BOUNDARY TSP SUMMARY 2009 & 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120 ug/m^3)
2009	January	5	83.3%	14.5	17.0	0
	February	2	50.0%	16.0	20.7	0
	March	4	80.0%	14.7	23.7	0
	April	5	100.0%	17.3	25.6	0
	May	5	83.3%	15.0	19.9	0
	June	5	100.0%	11.4	20.2	0
	July	5	100.0%	11.2	17.9	0
	August	4	80.0%	10.2	14.4	0
	September	5	100.0%	14.3	19.8	0
	October	5	100.0%	13.0	25.2	0
	November	5	100.0%	6.8	17.8	0
	December	5	100.0%	19.6	51.5	0
Annual		55	90.2%	13.1	51.5	0
2010	January	5	100.0%	24.7	62.6	0
	February	4	80.0%	13.6	28.5	0
	March	5	100.0%	20.0	38.9	0
	April	4	80.0%	13.6	18.8	0
	May	5	100.0%	11.6	40.8	0
	June	5	100.0%	14.7	33.7	0
	July	6	100.0%	9.3	21.8	0
	August	5	100.0%	9.4	18.0	0
	September	5	100.0%	10.5	34.8	0
	October	5	100.0%	9.1	14.0	0
	November	5	100.0%	16.7	30.6	0
	December	5	100.0%	8.2	12.9	0
Annual		59	96.7%	12.6	62.6	0

Observations in ug/m^3

FIGURE 4.1.6.2 - NALCOR BOUNDARY ANNUAL TSP CONCENTRATIONS

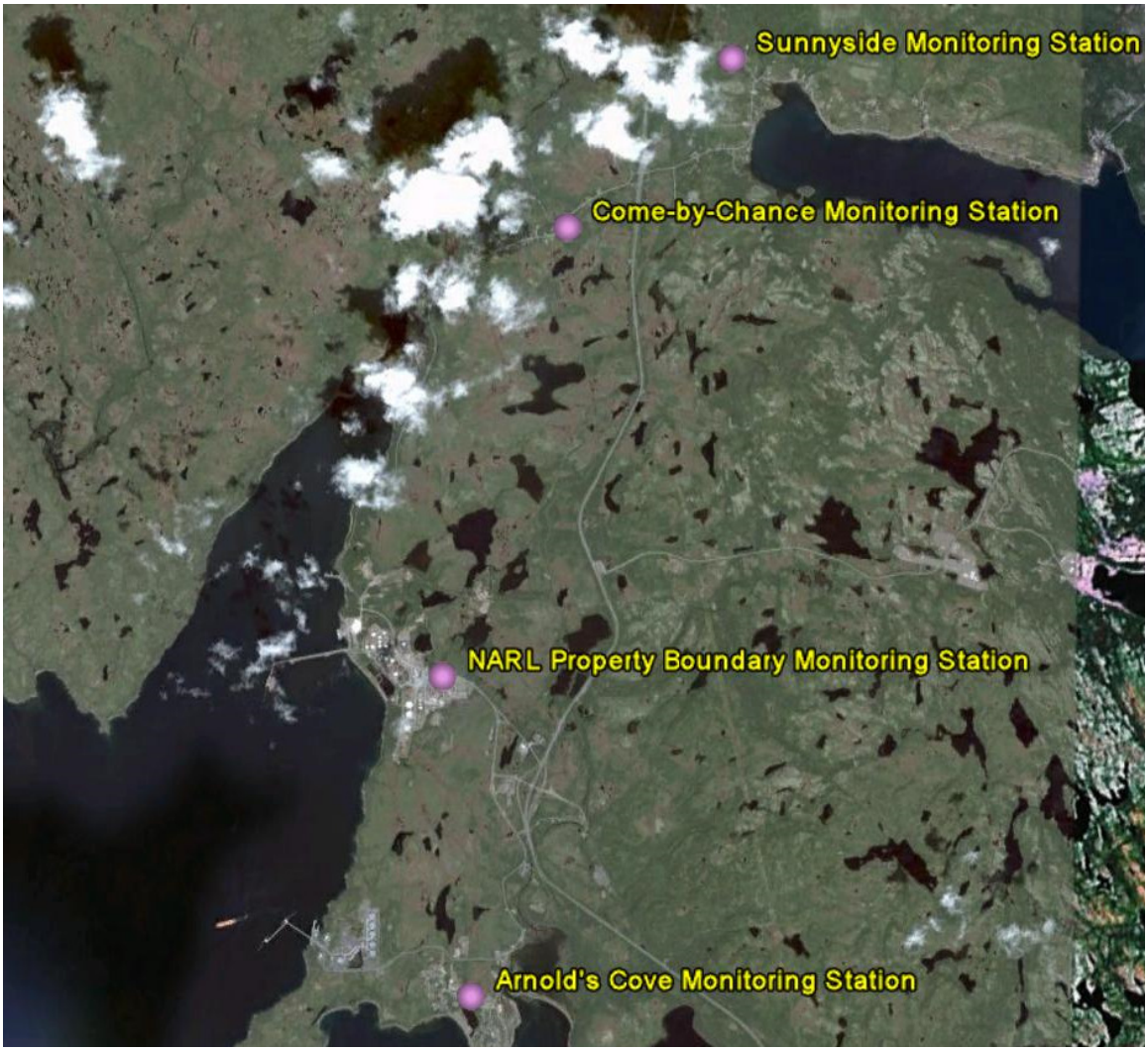


Rolling annual average of daily concentrations

4.2 North Atlantic Refining Limited

In 2010, North Atlantic Refining Limited (NARL) operated monitoring stations at four locations. These stations are installed to monitor the emissions from North Atlantic's refinery in Come-by-Chance and are located at Arnold's Cove, Come-by-Chance, Sunnyside and the NARL property boundary. The locations of these monitoring stations are identified in Figure 4.2.1.

FIGURE 4.2.1 - NARL AMBIENT MONITORING STATIONS



4.2.1 Arnold's Cove

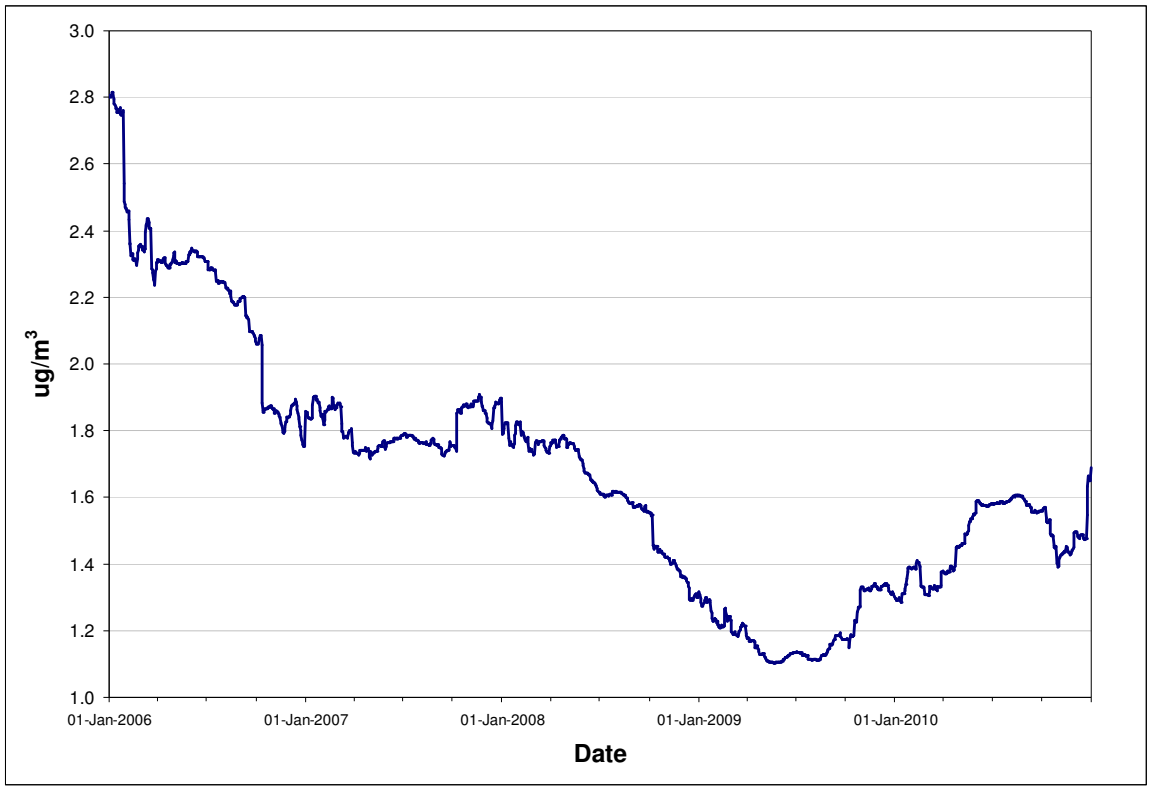
The Arnold's Cove station monitors the ambient levels of SO_2 and $PM_{2.5}$ on a continuous basis and is located near Tricentia Academy School. For both pollutants, the ambient air criteria were not exceeded on any occasion in 2010. Tables 4.2.1.1 through 4.2.1.2 provide summary information on the level of air contaminants measured at Arnold's Cove, while Figures 4.2.1.1 through 4.2.1.2 provide a graphical representation of the annual trend of each pollutant.

TABLE 4.2.1.1 - ARNOLD'S COVE SO_2 SUMMARY 2009 & 2010

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>900)	Regulatory Exceedances 3-Hour (>600)	Regulatory Exceedances 24-Hour (>300)
2009	January	709	95.3%	1.7	34.9	20.8	4.9	0	0	0
	February	639	95.1%	2.2	137.5	116.4	19.9	0	0	0
	March	706	94.9%	1.3	16.1	12.1	5.5	0	0	0
	April	685	95.1%	0.9	25.5	10.0	2.6	0	0	0
	May	706	94.9%	0.5	13.8	5.6	1.6	0	0	0
	June	685	95.1%	0.8	11.8	5.7	1.9	0	0	0
	July	709	95.3%	0.5	13.4	6.3	1.4	0	0	0
	August	706	94.9%	0.9	19.2	12.6	3.6	0	0	0
	September	683	94.9%	1.2	91.0	37.1	5.5	0	0	0
	October	709	95.3%	3.1	66.9	51.7	17.3	0	0	0
	November	684	95.0%	1.1	20.8	11.0	4.2	0	0	0
	December	709	95.3%	1.5	79.2	27.2	5.0	0	0	0
Annual		8330	95.1%	1.3	137.5	116.4	19.9	0	0	0
2010	January	710	95.4%	2.7	74.0	44.5	9.3	0	0	0
	February	638	94.9%	1.2	28.4	18.6	7.2	0	0	0
	March	707	95.0%	2.1	79.7	43.6	15.8	0	0	0
	April	685	95.1%	1.8	55.4	45.9	19.4	0	0	0
	May	709	95.3%	1.7	57.2	51.4	10.0	0	0	0
	June	666	92.5%	1.1	58.9	38.8	12.8	0	0	0
	July	694	93.3%	0.5	11.0	8.4	2.1	0	0	0
	August	709	95.3%	0.9	24.7	16.5	3.4	0	0	0
	September	684	95.0%	0.9	18.8	9.1	2.2	0	0	0
	October	691	92.9%	1.1	32.0	10.6	3.5	0	0	0
	November	685	95.1%	2.3	94.0	39.9	16.1	0	0	0
	December	696	93.5%	3.8	131.5	95.7	31.7	0	0	0
Annual		8274	94.5%	1.7	131.5	95.7	31.7	0	0	0

Observations in ug/m^3

FIGURE 4.2.1.1 - ARNOLD'S COVE ANNUAL SO_2 CONCENTRATIONS



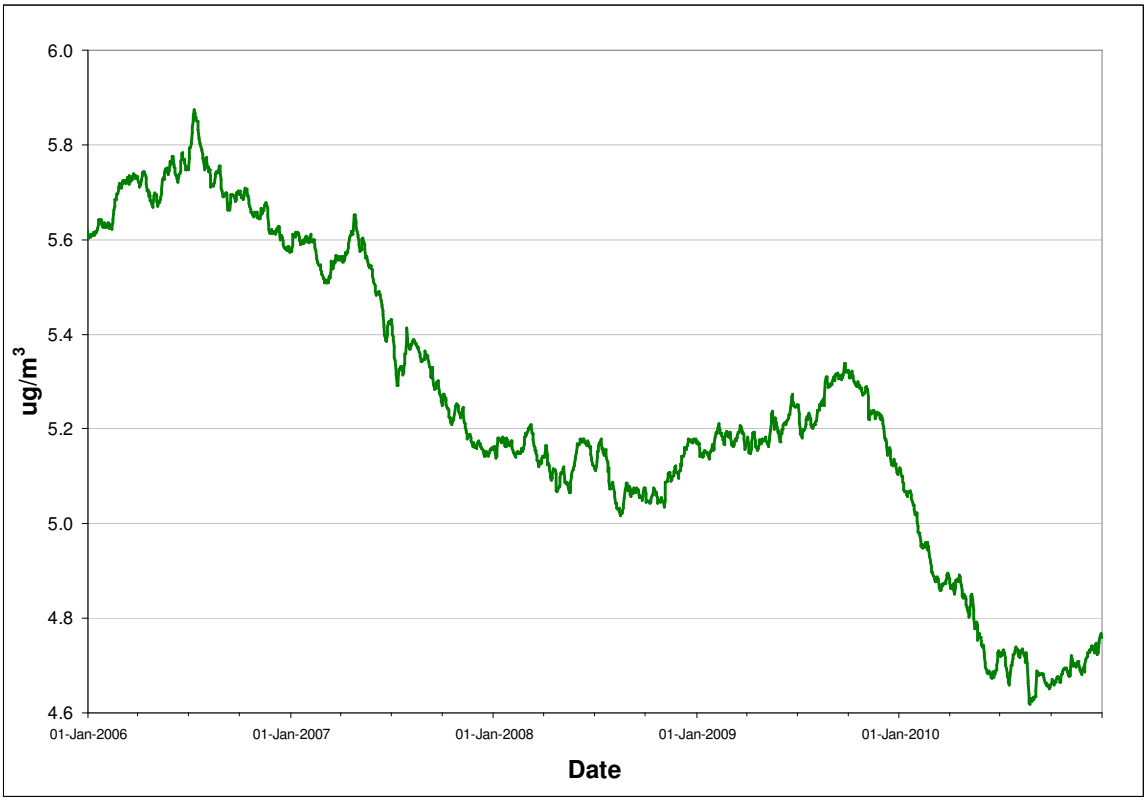
Rolling annual average of hourly concentrations

TABLE 4.2.1.2 - ARNOLD'S COVE $PM_{2.5}$ SUMMARY 2009 & 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2009	January	31	100.0%	5.4	7.7	0
	February	26	92.9%	5.7	10.4	0
	March	31	100.0%	5.0	8.8	0
	April	28	93.3%	5.6	9.9	0
	May	31	100.0%	5.3	15.5	0
	June	30	100.0%	4.8	9.3	0
	July	31	100.0%	5.2	9.0	0
	August	29	93.5%	6.4	15.3	0
	September	13	43.3%	5.1	8.7	0
	October	31	100.0%	4.0	6.0	0
	November	30	100.0%	4.7	8.3	0
	December	31	100.0%	4.4	10.8	0
Annual		342	93.7%	5.1	15.5	0
2010	January	31	100.0%	4.4	7.6	0
	February	28	100.0%	4.1	9.5	0
	March	31	100.0%	4.9	8.5	0
	April	30	100.0%	5.0	11.4	0
	May	31	100.0%	4.2	8.3	0
	June	30	100.0%	4.7	11.8	0
	July	30	96.8%	5.3	11.7	0
	August	31	100.0%	5.1	8.7	0
	September	25	83.3%	5.3	17.2	0
	October	31	100.0%	4.3	6.3	0
	November	30	100.0%	4.7	11.4	0
	December	31	100.0%	5.3	10.9	0
Annual		359	98.4%	4.8	17.2	0

Observations in ug/m^3

FIGURE 4.2.1.2 - ARNOLD'S COVE ANNUAL $PM_{2.5}$ CONCENTRATIONS



Rolling annual average of hourly concentrations

4.2.2 Come by Chance

The Come by Chance station, located near the medical clinic, monitors the ambient levels of SO_2 and $PM_{2.5}$ on a continuous basis. For all pollutants, the ambient air criteria were not exceeded on any occasion in 2010. Tables 4.2.2.1 through 4.2.2.2 provide summary information on the level of air contaminants measured at Come by Chance, while Figures 4.2.2.1 through 4.2.2.2 provide a graphical representation of the annual trend of each pollutant.

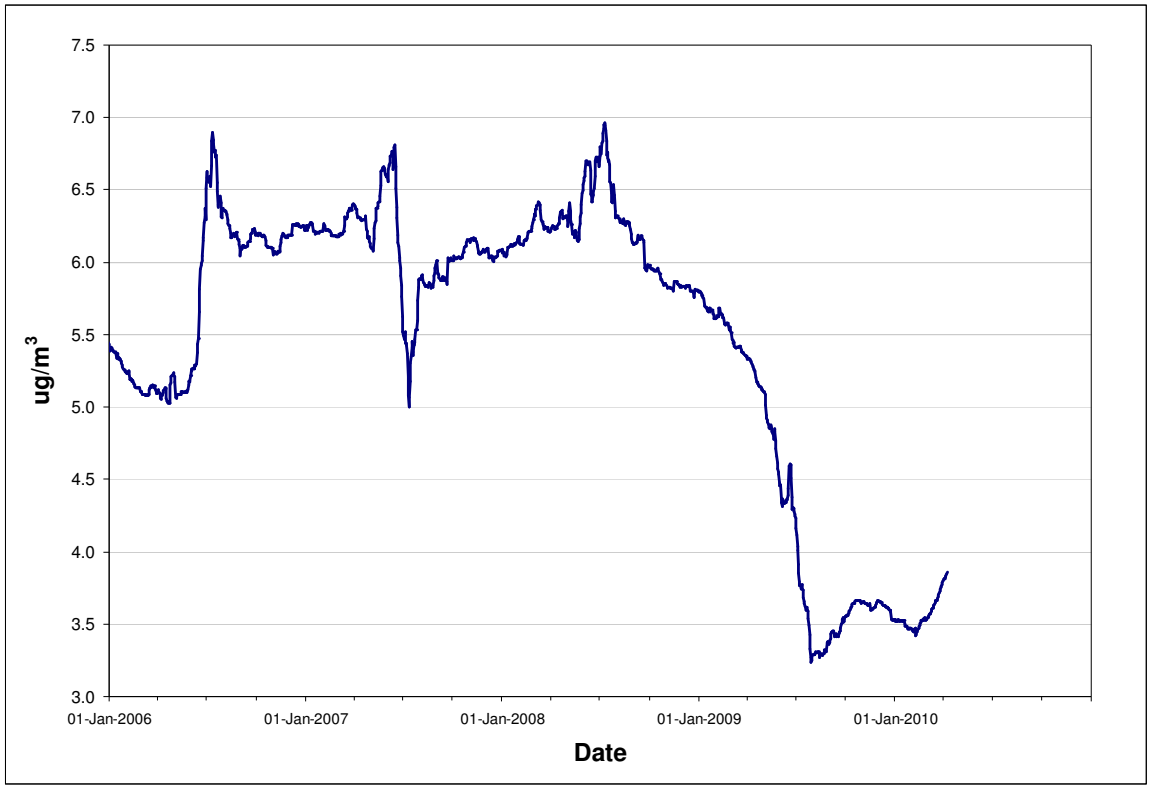
Due to successive audit failures of the SO_2 analyzer, 3788 hours of data were invalidated from this monitoring location in 2010.

TABLE 4.2.2.1 - COME BY CHANCE SO_2 SUMMARY 2009 & 2010

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>900)	Regulatory Exceedances 3-Hour (>600)	Regulatory Exceedances 24-Hour (>300)
2009	January	710	95.4%	1.3	102.1	42.0	9.2	0	0	0
	February	640	95.2%	2.3	89.2	59.5	22.1	0	0	0
	March	708	95.2%	0.9	58.6	21.4	5.3	0	0	0
	April	685	95.1%	1.0	22.8	14.2	4.5	0	0	0
	May	706	94.9%	4.8	199.9	155.0	32.7	0	0	0
	June	680	94.4%	10.7	203.8	182.4	64.6	0	0	0
	July	707	95.0%	6.4	121.9	81.0	28.0	0	0	0
	August	703	94.5%	4.8	153.5	115.0	20.0	0	0	0
	September	683	94.9%	5.2	66.4	40.3	15.8	0	0	0
	October	430	57.8%	1.3	13.5	9.5	4.8	0	0	0
	November	680	94.4%	1.9	50.3	20.9	11.8	0	0	0
	December	709	95.3%	0.8	35.7	20.0	5.9	0	0	0
Annual		8041	91.8%	3.5	203.8	182.4	64.6	0	0	0
2010	January	709	95.3%	0.6	11.1	5.3	3.4	0	0	0
	February	78	11.6%	0.0	0.0	0.0	0.0	0	0	0
	March	0	0.0%							
	April	0	0.0%							
	May	0	0.0%							
	June	0	0.0%							
	July	442	59.4%	8.4	99.3	73.2	19.3	0	0	0
	August	707	95.0%	4.8	181.1	115.2	29.3	0	0	0
	September	680	94.4%	2.9	55.2	23.5	8.8	0	0	0
	October	698	93.8%	4.3	78.1	64.2	31.7	0	0	0
	November	685	95.1%	2.6	147.1	77.7	23.5	0	0	0
	December	706	94.9%	1.3	19.4	7.9	2.8	0	0	0
Annual		4705	53.7%	3.2	181.1	115.2	31.7	0	0	0

Observations in ug/m^3

FIGURE 4.2.2.1 - COME BY CHANCE ANNUAL SO_2 CONCENTRATIONS



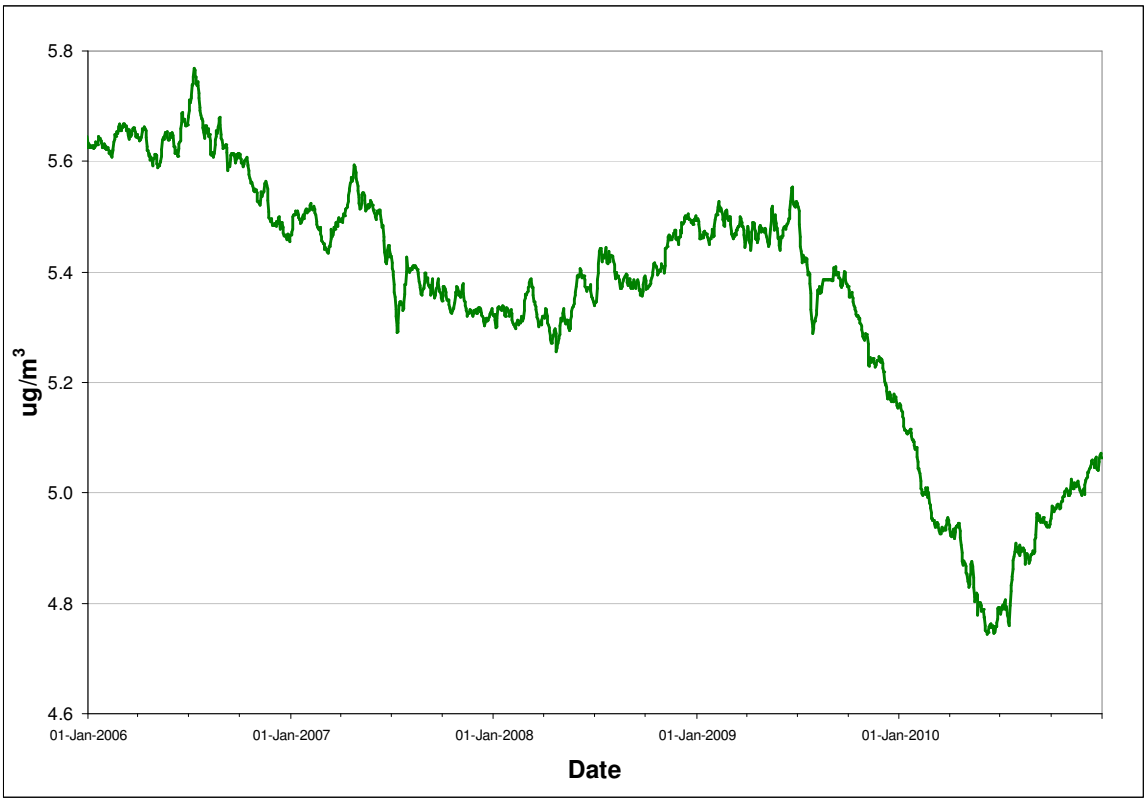
Rolling annual average of hourly concentrations

TABLE 4.2.2.2 - COME BY CHANCE $PM_{2.5}$ SUMMARY 2009 & 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2009	January	31	100.0%	5.0	7.5	0
	February	28	100.0%	5.7	10.7	0
	March	31	100.0%	5.0	9.3	0
	April	30	100.0%	6.0	10.1	0
	May	30	96.8%	5.5	16.6	0
	June	30	100.0%	5.6	10.4	0
	July	31	100.0%	5.7	11.3	0
	August	16	51.6%	6.5	13.1	0
	September	29	96.7%	5.0	9.3	0
	October	31	100.0%	3.8	6.4	0
	November	30	100.0%	4.5	7.8	0
	December	31	100.0%	4.3	10.5	0
Annual		348	95.3%	5.2	16.6	0
2010	January	31	100.0%	4.2	7.2	0
	February	28	100.0%	4.1	9.2	0
	March	31	100.0%	4.9	8.8	0
	April	30	100.0%	5.1	9.9	0
	May	31	100.0%	4.6	10.5	0
	June	30	100.0%	5.6	14.2	0
	July	31	100.0%	7.0	15.1	0
	August	31	100.0%	5.6	11.5	0
	September	28	93.3%	5.8	15.5	0
	October	29	93.5%	4.3	8.1	0
	November	30	100.0%	4.5	8.0	0
	December	31	100.0%	5.1	11.0	0
Annual		361	98.9%	5.1	15.5	0

Observations in ug/m^3

FIGURE 4.2.2.2 - COME BY CHANCE ANNUAL $PM_{2.5}$ CONCENTRATIONS



Rolling annual average of hourly concentrations

4.2.3 Sunnyside

The Sunnyside station monitors the ambient levels of SO_2, $PM_{2.5}$ and PM_{10} on a continuous basis. For all pollutants, the ambient air criteria were not exceeded on any occasion in 2010. Tables 4.2.3.1 through 4.2.3.3 provide summary information on the level of air contaminants measured at Sunnyside, while Figures 4.2.3.1 through 4.2.3.3 provide a graphical representation of the annual trend of each pollutant.

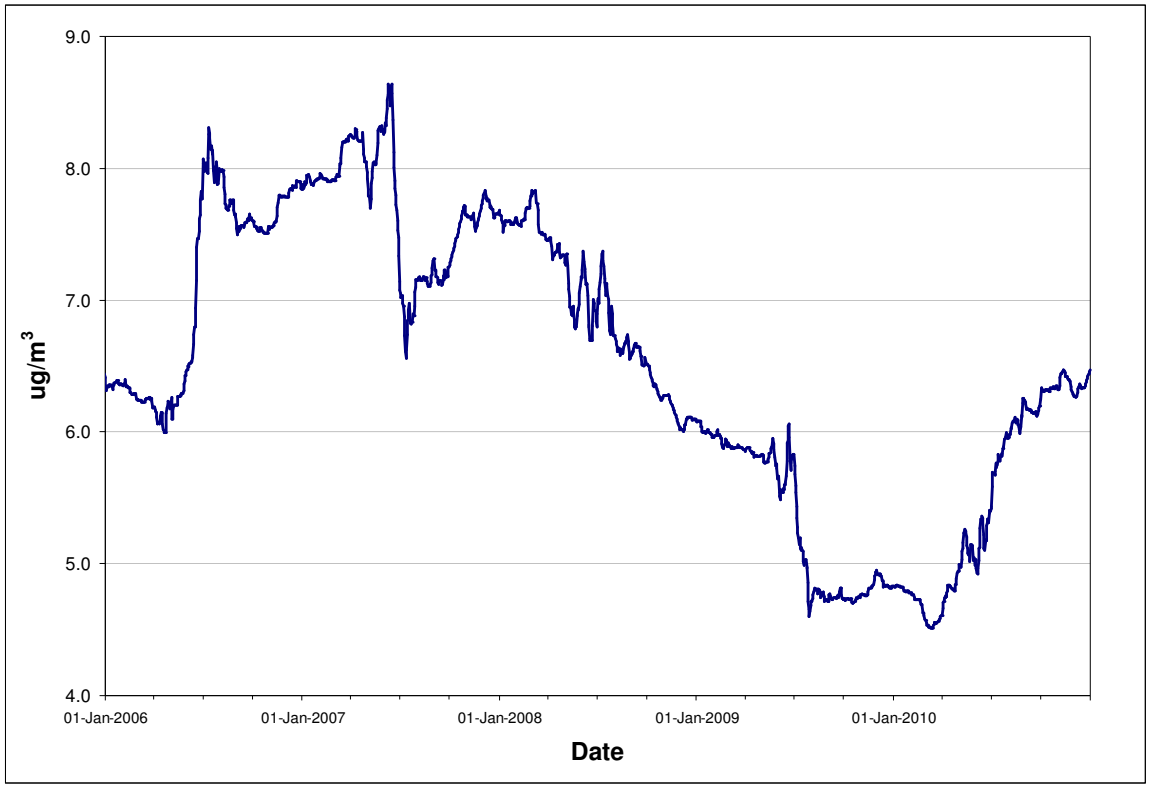
Due to successive audit failures in 2009 and 2010, the first 180 days of data from the PM_{10} analyzer were invalidated.

TABLE 4.2.3.1 - SUNNYSIDE SO_2 SUMMARY 2009 & 2010

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>900)	Regulatory Exceedances 3-Hour (>600)	Regulatory Exceedances 24-Hour (>300)
2009	January	709	95.3%	1.8	78.7	33.6	7.1	0	0	0
	February	639	95.1%	3.5	52.7	41.1	18.4	0	0	0
	March	708	95.2%	1.8	51.2	38.5	8.2	0	0	0
	April	684	95.0%	2.5	22.7	14.2	6.8	0	0	0
	May	708	95.2%	8.1	166.0	146.0	35.4	0	0	0
	June	684	95.0%	13.3	192.6	147.6	49.9	0	0	0
	July	691	92.9%	8.0	147.9	67.3	29.1	0	0	0
	August	706	94.9%	5.1	92.3	62.3	18.6	0	0	0
	September	682	94.7%	4.8	81.6	63.2	24.2	0	0	0
	October	702	94.4%	3.1	50.0	13.7	6.4	0	0	0
	November	683	94.9%	4.3	82.2	45.9	14.8	0	0	0
	December	709	95.3%	1.7	44.1	35.5	7.9	0	0	0
Annual		8305	94.8%	4.8	192.6	147.6	49.9	0	0	0
2010	January	710	95.4%	1.2	21.6	10.9	4.8	0	0	0
	February	638	94.9%	0.8	6.5	4.5	1.4	0	0	0
	March	711	95.6%	2.2	81.6	43.4	11.3	0	0	0
	April	685	95.1%	6.6	110.6	80.2	24.6	0	0	0
	May	707	95.0%	9.2	188.9	130.6	36.6	0	0	0
	June	685	95.1%	17.7	180.8	143.6	64.4	0	0	0
	July	709	95.3%	14.6	154.7	137.5	57.7	0	0	0
	August	707	95.0%	8.3	251.8	147.5	39.5	0	0	0
	September	546	75.8%	3.9	111.1	54.2	13.9	0	0	0
	October	704	94.6%	4.7	93.5	71.3	33.5	0	0	0
	November	683	94.9%	3.6	152.1	71.4	25.0	0	0	0
	December	480	64.5%	2.6	60.8	22.8	10.0	0	0	0
Annual		7965	90.9%	6.5	251.8	147.5	64.4	0	0	0

Observations in ug/m^3

FIGURE 4.2.3.1 - SUNNYSIDE ANNUAL SO_2 CONCENTRATIONS



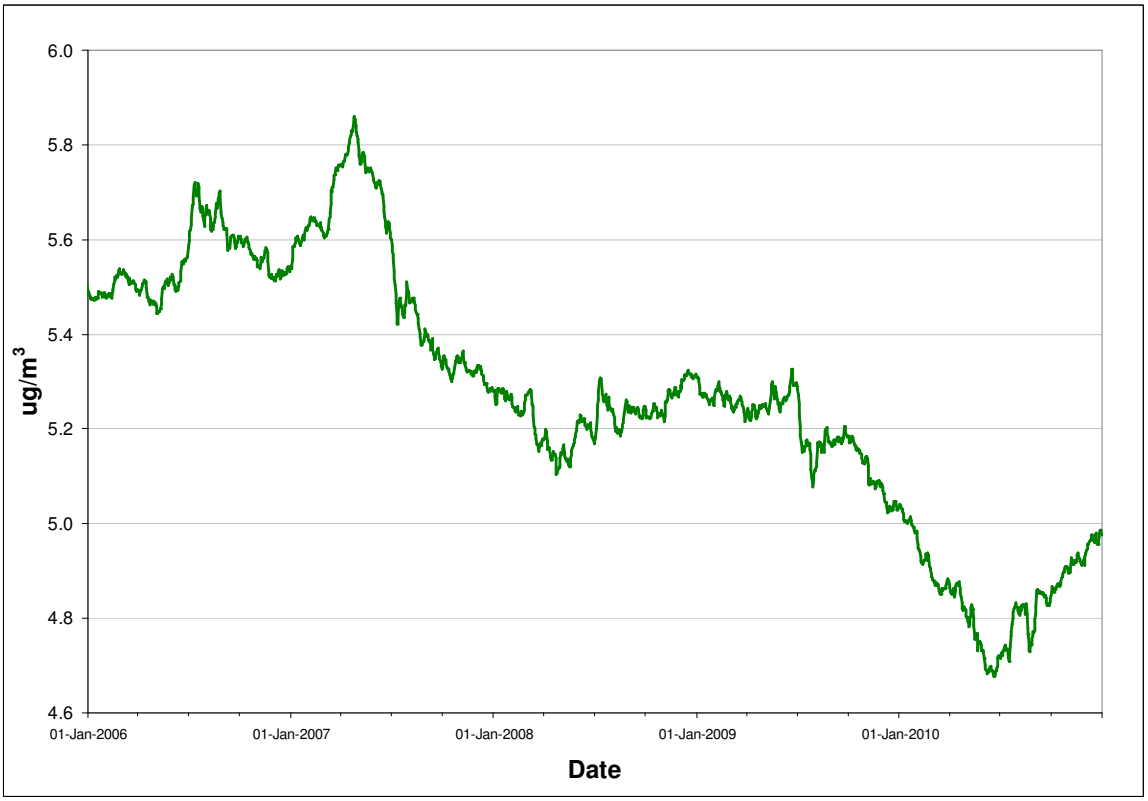
Rolling annual average of hourly concentrations

TABLE 4.2.3.2 - SUNNYSIDE $PM_{2.5}$ SUMMARY 2009 & 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2009	January	31	100.0%	4.7	6.8	0
	February	28	100.0%	5.2	10.5	0
	March	31	100.0%	4.8	8.8	0
	April	30	100.0%	5.6	9.5	0
	May	31	100.0%	5.3	15.9	0
	June	30	100.0%	5.2	9.7	0
	July	31	100.0%	5.8	10.4	0
	August	31	100.0%	6.4	17.5	0
	September	17	56.7%	4.9	9.0	0
	October	31	100.0%	3.7	5.8	0
	November	30	100.0%	4.4	8.3	0
	December	31	100.0%	4.4	10.8	0
Annual		352	96.4%	5.0	17.5	0
2010	January	31	100.0%	4.1	7.4	0
	February	28	100.0%	4.0	9.5	0
	March	31	100.0%	4.7	8.9	0
	April	30	100.0%	4.9	10.2	0
	May	31	100.0%	4.3	9.9	0
	June	30	100.0%	5.1	13.4	0
	July	30	96.8%	7.1	15.4	0
	August	31	100.0%	5.7	13.9	0
	September	26	86.7%	5.9	15.2	0
	October	31	100.0%	4.4	7.1	0
	November	30	100.0%	4.4	8.6	0
	December	31	100.0%	5.2	10.9	0
Annual		360	98.6%	5.0	15.4	0

Observations in ug/m^3

FIGURE 4.2.3.2 - SUNNYSIDE ANNUAL $PM_{2.5}$ CONCENTRATIONS



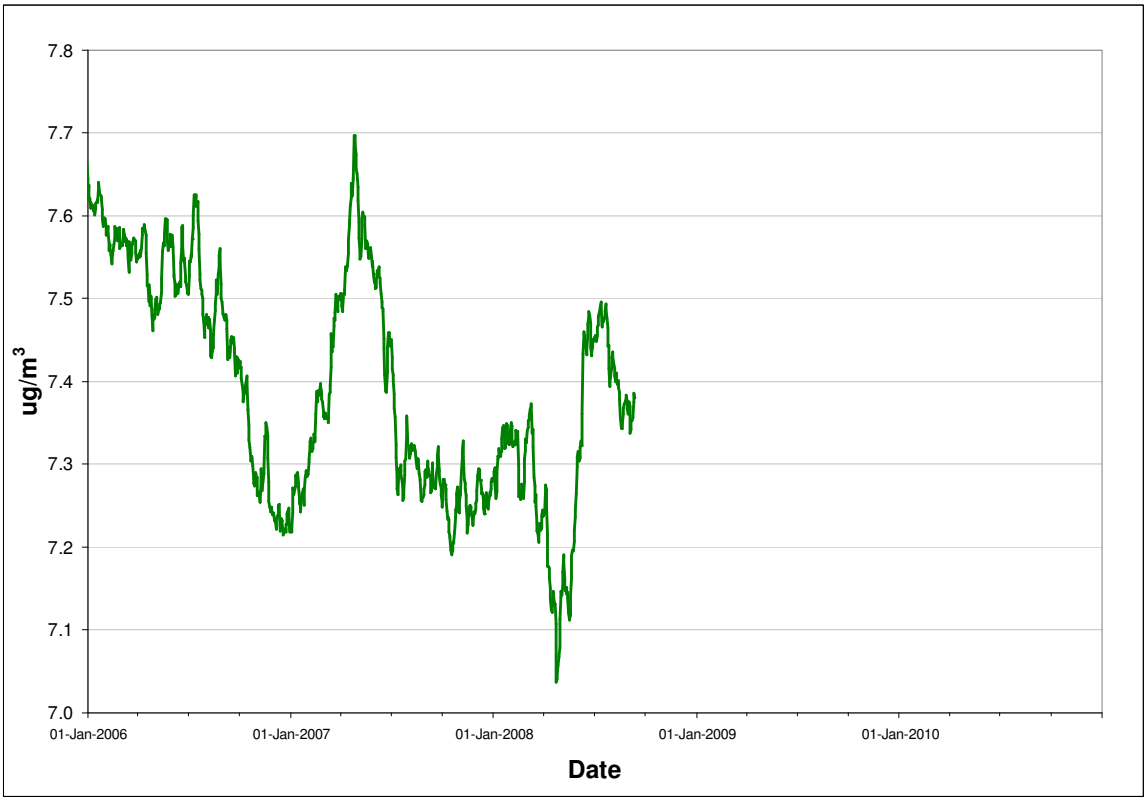
Rolling annual average of hourly concentrations

TABLE 4.2.3.3 - SUNNYSIDE PM_{10} SUMMARY 2009 & 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>50 µg/m^3)
2009	January	0	0.0%			
	February	0	0.0%			
	March	0	0.0%			
	April	0	0.0%			
	May	6	19.4%	5.1	9.4	0
	June	30	100.0%	7.7	22.3	0
	July	31	100.0%	6.8	16.4	0
	August	31	100.0%	7.3	16.7	0
	September	14	46.7%	6.5	10.9	0
	October	0	0.0%			
	November	0	0.0%			
	December	0	0.0%			
Annual		112	30.7%	7.0	22.3	0
2010	January	0	0.0%			
	February	0	0.0%			
	March	0	0.0%			
	April	0	0.0%			
	May	0	0.0%			
	June	1	3.3%	6.7	6.7	0
	July	31	100.0%	7.9	15.3	0
	August	31	100.0%	7.1	12.8	0
	September	26	86.7%	8.7	26.8	0
	October	31	100.0%	6.2	9.0	0
	November	30	100.0%	6.5	16.2	0
	December	31	100.0%	8.7	23.8	0
Annual		181	49.6%	7.5	26.8	0

Observations in ug/m^3

FIGURE 4.2.3.3 - SUNNYSIDE ANNUAL PM_{10} CONCENTRATIONS



Rolling annual average of hourly concentrations

4.2.4 NARL Property Boundary

The NARL Property Boundary station monitors the ambient levels of SO_2 and $PM_{2.5}$. Given its proximity to the process area of NARL, this station routinely records ambient levels of SO_2 and $PM_{2.5}$ in excess of the standards. In 2010, the 1-hour SO_2 standard was exceeded sixty six times the 3-hour standard one hundred and seven times and the 24-hour standard thirty five times. For $PM_{2.5}$, the standard was exceeded one hundred and thirty two times in 2010.

Due to the nature of the $PM_{2.5}$ monitoring equipment at this location, numerous days of data are invalidated each year due to the volatilization of hydrocarbons from the collected particulate. Consequently the $PM_{2.5}$ data from this station routinely does not achieve established annual data acceptability criteria.

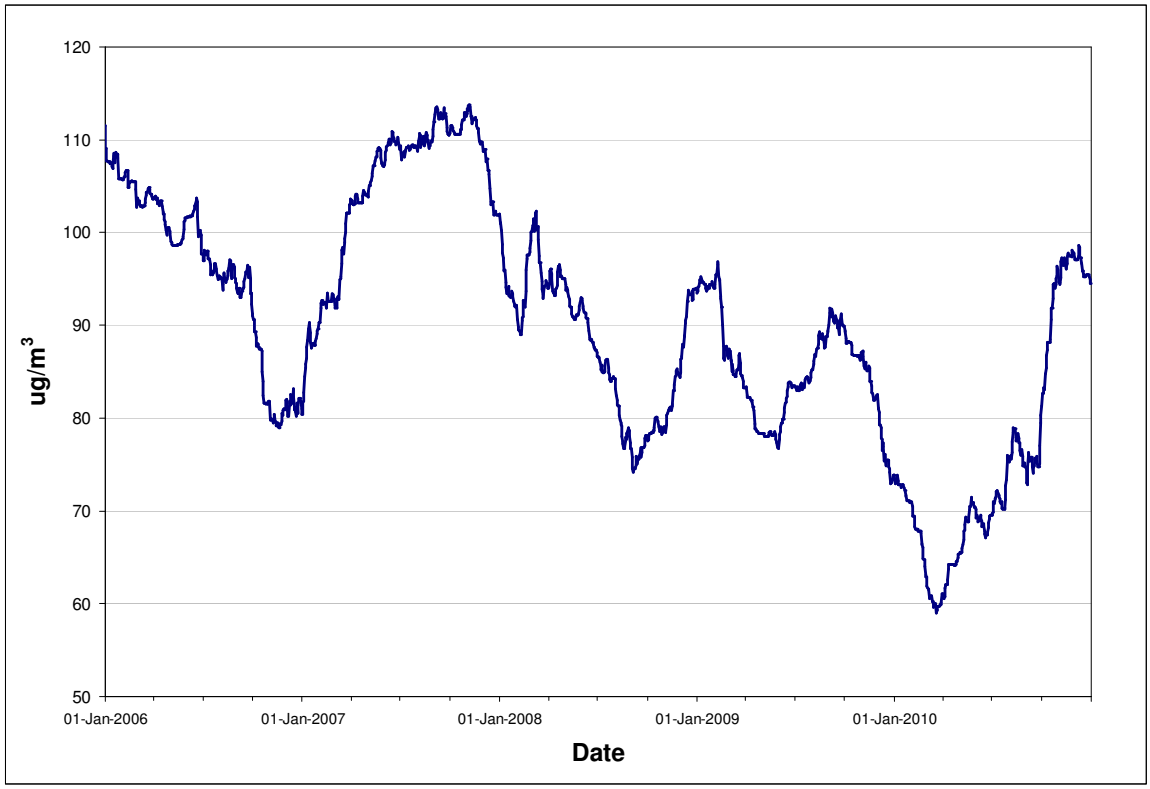
Tables 4.2.4.1 through 4.2.4.2 provide summary information on the level of air contaminants measured at NARL Property Boundary, while Figures 4.2.4.1 through 4.2.4.2 provide a graphical representation of the annual trend of each pollutant.

TABLE 4.2.4.1 - NARL BOUNDARY SO_2 SUMMARY 2009 & 2010

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>900)	Regulatory Exceedances 3-Hour (>600)	Regulatory Exceedances 24-Hour (>300)
2009	January	710	95.4%	69.9	882.2	579.6	231.2	0	0	0
	February	640	95.2%	102.1	987.9	636.6	431.8	1	1	5
	March	708	95.2%	68.8	681.5	649.7	374.2	0	2	3
	April	686	95.3%	15.9	411.0	366.3	221.5	0	0	0
	May	708	95.2%	35.2	592.6	447.9	202.4	0	0	0
	June	682	94.7%	102.1	802.8	739.7	339.6	0	2	1
	July	710	95.4%	88.1	703.3	562.8	337.3	0	0	1
	August	709	95.3%	129.5	802.1	759.1	436.4	0	8	2
	September	685	95.1%	129.4	872.3	647.0	580.1	0	4	4
	October	711	95.6%	24.4	452.7	409.0	265.0	0	0	0
	November	673	93.5%	64.7	597.4	525.7	439.5	0	0	1
	December	710	95.4%	59.6	1204.6	924.6	400.2	7	4	1
Annual		8332	95.1%	73.9	1204.6	924.6	580.1	8	21	18
2010	January	710	95.4%	35.5	679.5	652.6	288.4	0	2	0
	February	639	95.1%	0.5	15.0	6.7	2.1	0	0	0
	March	710	95.4%	44.9	721.4	422.7	329.9	0	0	1
	April	686	95.3%	67.6	878.6	526.3	416.3	0	0	2
	May	710	95.4%	94.6	1203.6	785.7	369.5	2	4	4
	June	684	95.0%	91.4	779.3	731.4	325.7	0	4	1
	July	524	70.4%	190.4	1246.7	1049.2	661.0	7	15	5
	August	688	92.5%	120.7	1147.1	1039.1	482.8	19	13	2
	September	685	95.1%	194.2	1157.8	985.3	833.9	18	30	8
	October	704	94.6%	204.5	1164.8	929.2	792.3	19	30	10
	November	686	95.3%	86.5	1424.6	845.9	611.8	1	8	1
	December	690	92.7%	21.3	689.1	625.2	376.1	0	1	1
Annual		8116	92.6%	94.5	1424.6	1049.2	833.9	66	107	35

Observations in ug/m^3

FIGURE 4.2.4.1 - NARL BOUNDARY ANNUAL SO_2 CONCENTRATIONS



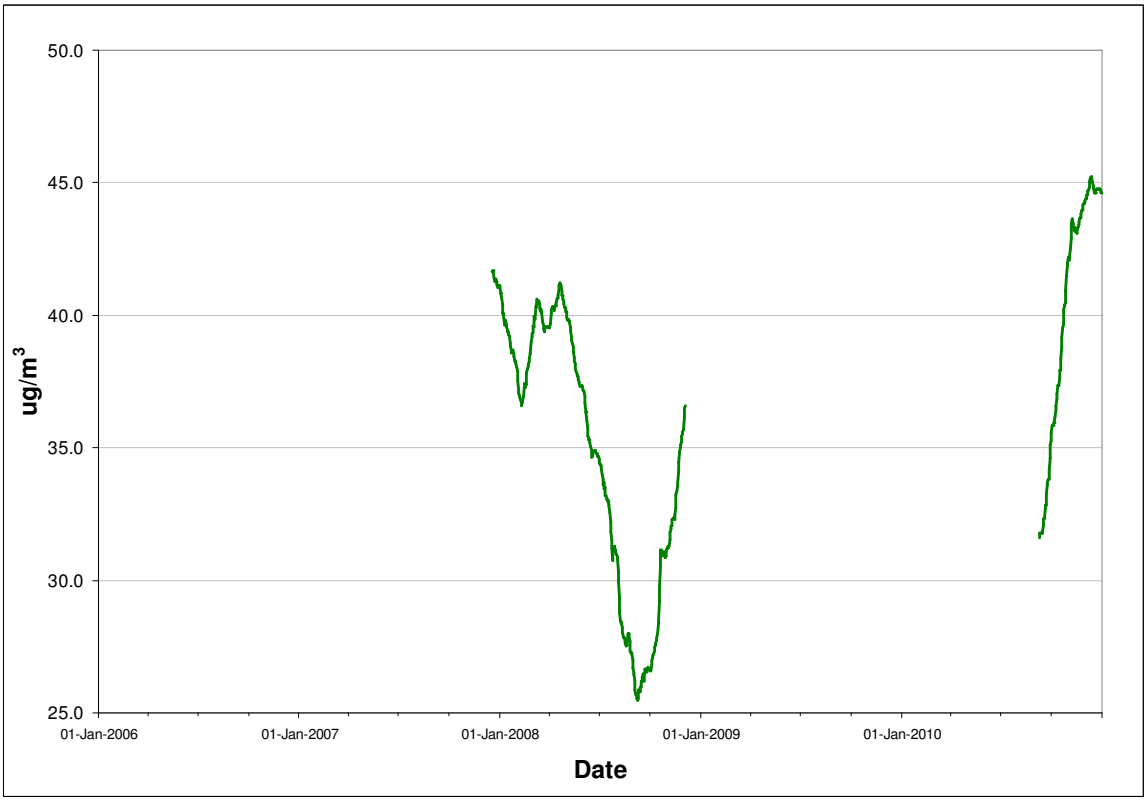
Rolling annual average of hourly concentrations

TABLE 4.2.4.2 - NARL BOUNDARY $PM_{2.5}$ SUMMARY 2009 & 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2009	January	20	64.5%	24.7	67.6	9
	February	20	71.4%	37.0	135.3	8
	March	22	71.0%	36.9	213.1	9
	April	24	80.0%	14.4	49.2	2
	May	18	58.1%	9.4	22.8	0
	June	0	0.0%			
	July	0	0.0%			
	August	0	0.0%			
	September	0	0.0%			
	October	15	48.4%	9.5	47.0	2
	November	22	73.3%	17.4	73.8	5
	December	29	93.5%	12.5	74.9	4
Annual		170	46.6%	20.3	213.1	39
2010	January	27	87.1%	13.3	65.1	4
	February	28	100.0%	4.2	8.3	0
	March	31	100.0%	11.5	47.5	3
	April	26	86.7%	16.4	66.6	6
	May	22	71.0%	25.7	60.3	10
	June	22	73.3%	36.3	72.1	15
	July	25	80.6%	92.0	161.9	22
	August	20	64.5%	114.2	183.9	19
	September	21	70.0%	98.0	181.2	20
	October	21	67.7%	113.9	171.7	21
	November	21	70.0%	45.2	198.5	10
	December	24	77.4%	10.1	74.8	2
Annual		288	78.9%	44.6	198.5	132

Observations in ug/m^3

FIGURE 4.2.4.2 - NARL BOUNDARY ANNUAL $PM_{2.5}$ CONCENTRATIONS



Rolling annual average of hourly concentrations

4.3 Iron Ore Company of Canada

In 2010, the Iron Ore Company of Canada (IOCC) operated monitoring stations at four locations. These stations are installed to monitor the emissions from IOCC's concentrating and pelletizing operation in Labrador City and are located at Bartlett Drive, Tamarack Drive, Vanier Avenue and the IOCC property boundary. The locations of these monitoring stations are identified in Figure 4.3.1.

In late 2010, IOCC began a major revamp of their monitoring network to include the monitoring of more pollutants on a continuous basis. The revamp also included the introduction of several new station locations as well as the moving of others. As a result, this will be the last report on monitoring at the historical locations. The 2011 report will reflect the revamped network.

FIGURE 4.3.1 - IRON ORE COMPANY AMBIENT MONITORING STATIONS

4.3.1 Bartlett Drive

The Bartlett Drive monitoring station is located at A. P. Low School and measured SO_2 and $PM_{2.5}$ on a continuous basis and TSP on a one day in six day cycle in 2010. The station had previously measured $PM_{2.5}$ and PM_{10} on a one day in six day cycle, however, this analyzer was decommissioned in late 2009.

The SO_2 analyzer is located in an area where the room temperature is not readily controlled and as such, the room temperature regularly exceeds or drops below the acceptable operating range of the analyzer. To that end, large portions of data have been invalidated and are consequently not presented in this report.

The continuous $PM_{2.5}$ did not record any exceedances of the ambient standard in 2010, while the TSP monitors recorded eight exceedances of the standard.

In December, 2010 due to the revamping of the monitoring network, the continuous $PM_{2.5}$ and SO_2 monitor were decommissioned from this site.

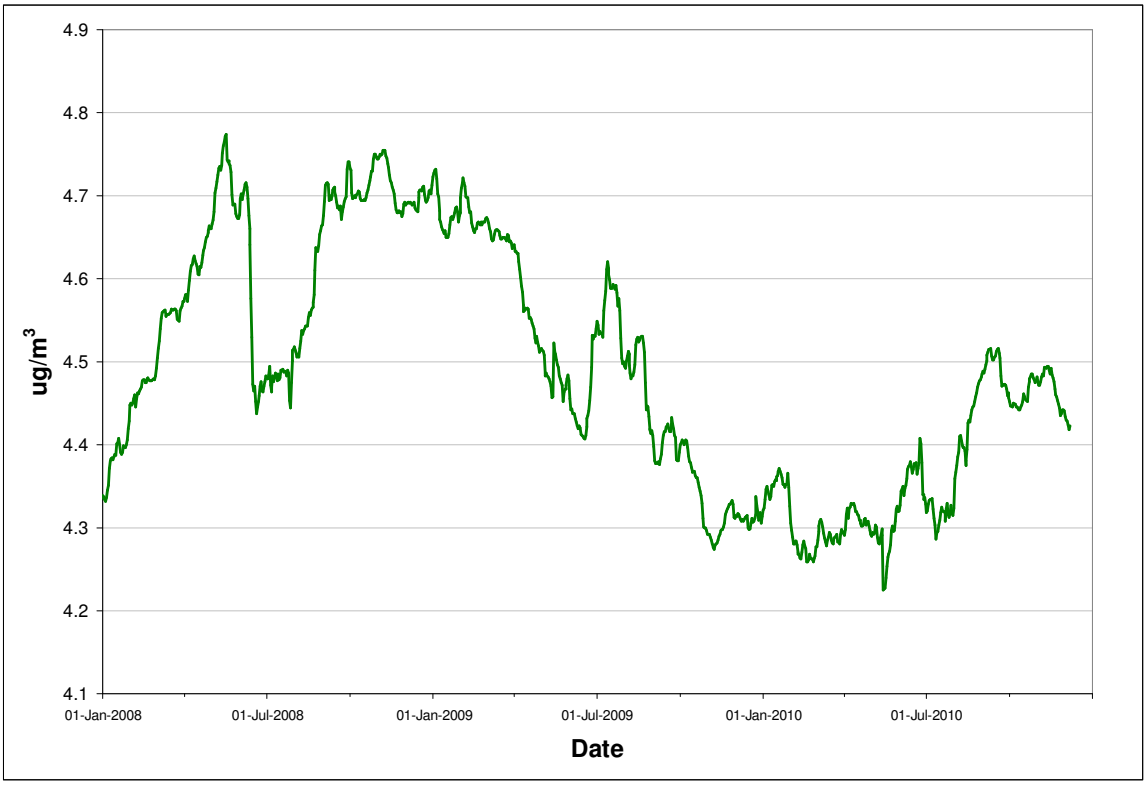
Tables 4.3.1.1 through 4.3.1.2 provide summary information of air contaminants measured at Bartlett Drive, while Figures 4.3.1.1 through 4.3.1.2 provide a graphical representation of the annual trend of the measured pollutants. An SO_2 table and graph are not provided due to the quantity of invalidated data.

TABLE 4.3.1.1 - BARTLETT DRIVE $PM_{2.5}$ SUMMARY 2009 & 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 ug/m^3)
2009	January	31	100.0%	4.6	10.5	0
	February	28	100.0%	4.1	8.0	0
	March	31	100.0%	4.1	6.3	0
	April	30	100.0%	4.3	7.1	0
	May	31	100.0%	4.6	27.0	1
	June	30	100.0%	5.3	15.8	0
	July	29	93.5%	5.2	12.8	0
	August	31	100.0%	4.0	12.2	0
	September	29	96.7%	3.9	8.7	0
	October	31	100.0%	2.8	5.1	0
	November	26	86.7%	3.8	5.8	0
	December	23	74.2%	5.1	11.7	0
Annual		350	95.9%	4.3	27.0	1
2010	January	31	100.0%	4.5	9.0	0
	February	28	100.0%	3.8	8.9	0
	March	31	100.0%	4.3	7.0	0
	April	30	100.0%	4.3	10.9	0
	May	31	100.0%	4.9	9.0	0
	June	30	100.0%	5.4	20.6	0
	July	31	100.0%	5.1	10.3	0
	August	20	64.5%	6.6	15.2	0
	September	13	43.3%	2.5	3.9	0
	October	31	100.0%	3.1	7.8	0
	November	30	100.0%	3.5	6.8	0
	December	5	83.3%	2.6	3.8	0
Annual		311	85.2%	4.4	20.6	0

Observations in ug/m^3

FIGURE 4.3.1.1 - BARTLETT DRIVE ANNUAL $PM_{2.5}$ CONCENTRATIONS



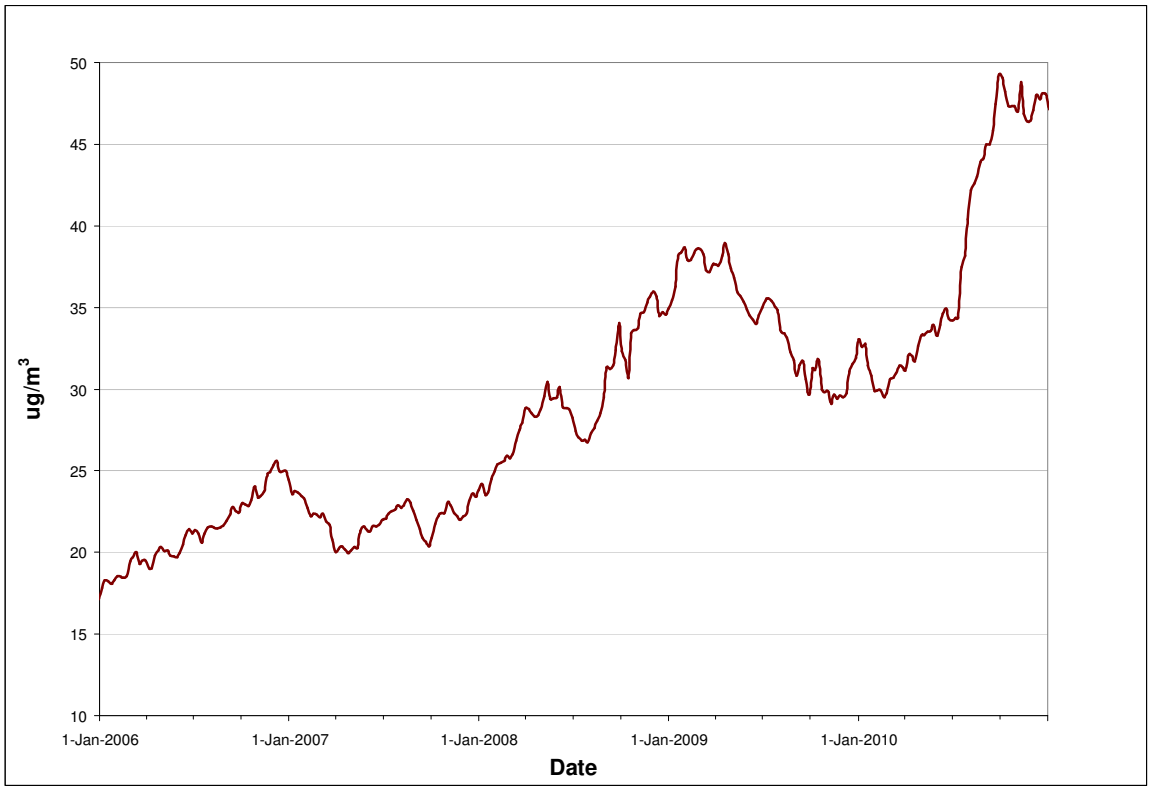
Rolling annual average of hourly concentrations

TABLE 4.3.1.2 - BARTLETT DRIVE TSP SUMMARY 2009 & 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120 ug/m^3)
2009	January	5	83.3%	46.3	162.3	1
	February	3	75.0%	36.4	69.5	0
	March	3	60.0%	20.7	24.1	0
	April	4	80.0%	53.4	213.5	1
	May	6	100.0%	48.8	80.4	0
	June	5	100.0%	47.9	99.8	0
	July	4	80.0%	25.8	52.7	0
	August	5	100.0%	19.1	33.4	0
	September	4	80.0%	8.2	16.7	0
	October	5	100.0%	40.0	59.8	0
	November	5	100.0%	33.7	48.4	0
	December	5	100.0%	30.9	70.0	0
Annual		54	88.5%	31.9	213.5	2
2010	January	5	100.0%	27.6	137.9	1
	February	4	80.0%	25.6	89.1	0
	March	4	80.0%	47.4	138.9	1
	April	5	100.0%	75.2	126.0	1
	May	5	100.0%	82.7	144.5	1
	June	5	100.0%	53.4	221.9	1
	July	6	100.0%	139.5	1996.0	3
	August	2	40.0%	70.2	113.4	0
	September	2	40.0%	28.1	64.6	0
	October	3	60.0%	17.6	33.3	0
	November	4	80.0%	24.7	101.8	0
	December	4	80.0%	42.0	99.8	0
Annual		49	80.3%	48.1	1996.0	8

Observations in ug/m^3

FIGURE 4.3.1.2 - BARTLETT DRIVE ANNUAL TSP CONCENTRATIONS



Rolling annual average of daily concentrations

4.3.2 Tamarack Drive

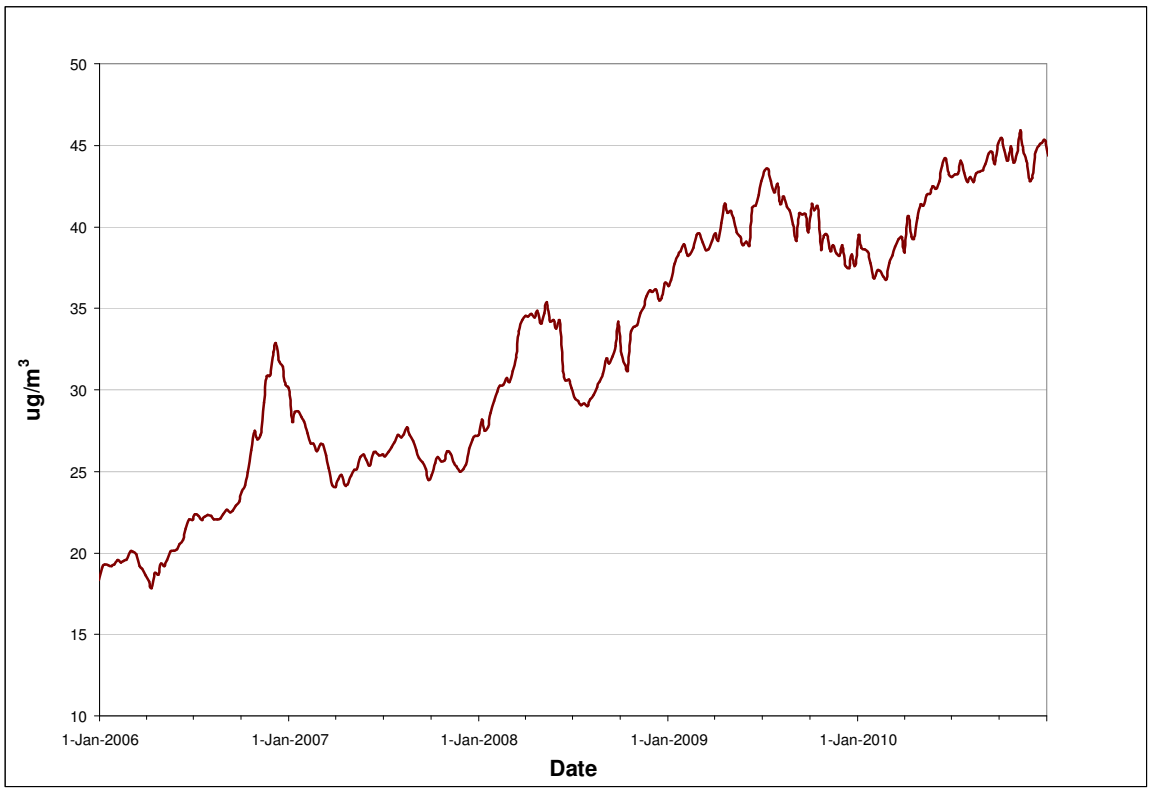
The Tamarack Drive monitoring station measures TSP on a one day in six day cycle. In 2010 there were eight exceedances of the TSP standard. Table 4.3.2.1 provides summary information of air contaminants measured at Tamarack Drive, while Figure 4.3.2.1 provides a graphical representation of the annual trend of TSP.

TABLE 4.3.2.1 - TAMARACK DRIVE TSP SUMMARY 2009 & 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120 ug/m^3)
2009	January	3	50.0%	27.6	53.0	0
	February	3	75.0%	39.5	63.0	0
	March	3	60.0%	23.8	40.0	0
	April	5	100.0%	61.4	368.2	2
	May	6	100.0%	66.0	120.7	1
	June	4	80.0%	58.6	134.0	1
	July	5	100.0%	47.3	80.4	0
	August	4	80.0%	30.6	62.3	0
	September	3	60.0%	21.5	39.1	0
	October	4	80.0%	37.8	138.3	1
	November	3	60.0%	30.9	61.4	0
	December	5	100.0%	18.6	63.9	0
Annual		48	78.7%	37.6	368.2	5
2010	January	5	100.0%	30.7	120.9	1
	February	4	80.0%	30.3	51.9	0
	March	5	100.0%	57.1	139.4	1
	April	5	100.0%	84.6	171.4	2
	May	5	100.0%	115.4	160.3	3
	June	5	100.0%	64.2	131.8	1
	July	6	100.0%	44.2	78.3	0
	August	5	100.0%	39.4	47.7	0
	September	5	100.0%	43.2	103.4	0
	October	5	100.0%	29.2	119.7	0
	November	5	100.0%	25.9	94.6	0
	December	5	100.0%	36.4	82.4	0
Annual		60	98.4%	45.3	171.4	8

Observations in ug/m^3

FIGURE 4.3.2.1 - TAMARACK DRIVE ANNUAL TSP CONCENTRATIONS



Rolling annual average of daily concentrations

4.3.3 Vanier Avenue

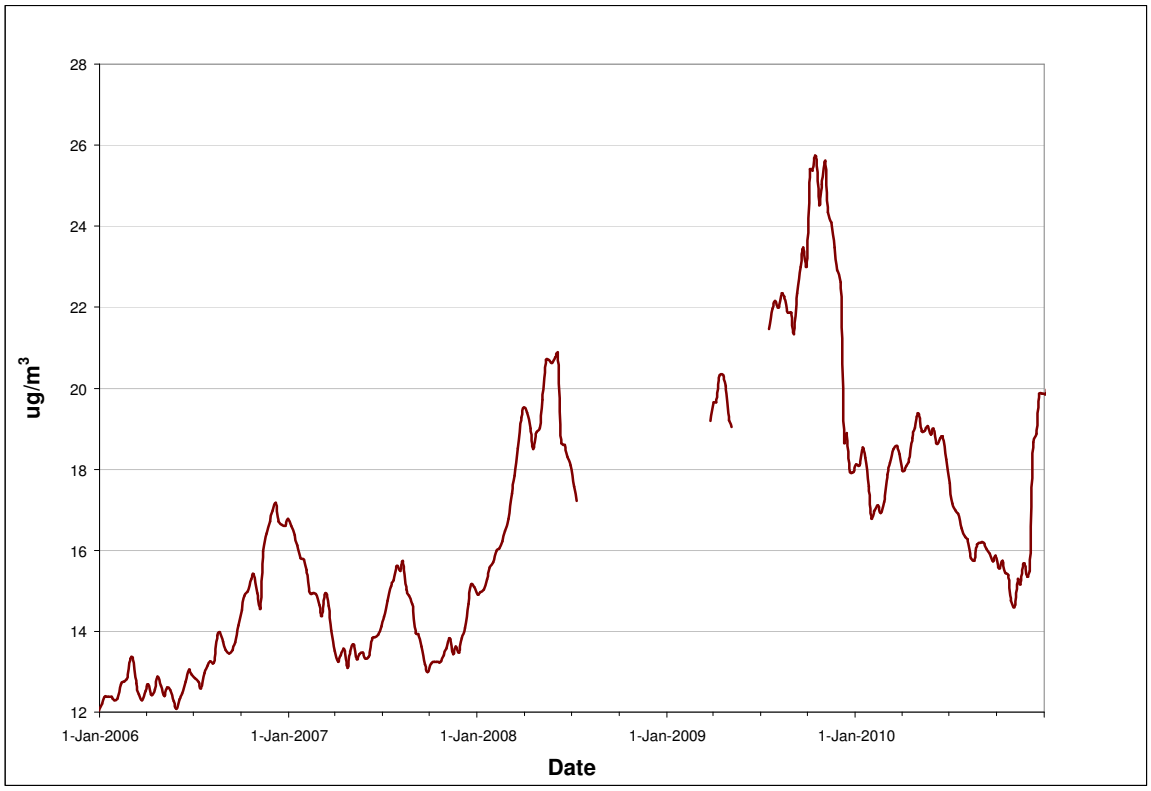
The Vanier Avenue monitoring station is located at the Labrador Mall and measures TSP on a one day in six day cycle. In 2010 there was one exceedance of the TSP standard. Table 4.3.3.1 provides summary information of air contaminants measured at Vanier Avenue, while Figure 4.3.3.1 provides a graphical representation of the annual trend of TSP.

TABLE 4.3.3.1 - VANIER AVENUE TSP SUMMARY 2009 & 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120 ug/m^3)
2009	January	5	83.3%	14.2	64.9	0
	February	4	100.0%	12.0	28.1	0
	March	3	60.0%	12.4	35.4	0
	April	3	60.0%	48.5	93.3	0
	May	2	33.3%	65.0	89.6	0
	June	4	80.0%	88.9	117.0	0
	July	5	100.0%	38.5	64.2	0
	August	4	80.0%	33.4	58.4	0
	September	5	100.0%	19.3	47.5	0
	October	5	100.0%	26.4	80.1	0
	November	5	100.0%	9.5	38.4	0
	December	4	80.0%	0.6	10.3	0
Annual		49	80.3%	17.9	117.0	0
2010	January	4	80.0%	7.6	21.6	0
	February	4	80.0%	12.9	39.2	0
	March	5	100.0%	27.5	113.5	0
	April	5	100.0%	47.3	121.1	1
	May	4	80.0%	30.8	50.8	0
	June	5	100.0%	32.8	62.4	0
	July	5	83.3%	15.9	19.5	0
	August	5	100.0%	26.0	65.0	0
	September	5	100.0%	15.5	28.9	0
	October	3	60.0%	10.0	16.8	0
	November	5	100.0%	14.6	45.7	0
	December	0	0.0%			
Annual		50	82.0%	19.9	121.1	1

Observations in ug/m^3

FIGURE 4.3.3.1 - VANIER AVENUE ANNUAL TSP CONCENTRATIONS



Rolling annual average of daily concentrations

4.3.4 IOCC Property Boundary

The IOCC Property Boundary monitoring station is located on IOCC property in close proximity to the guardhouse at the entrance to IOCC, and measures TSP on a one day in six day cycle. As part of the revamping of the IOCC monitoring network, the station was closed in November 2010.

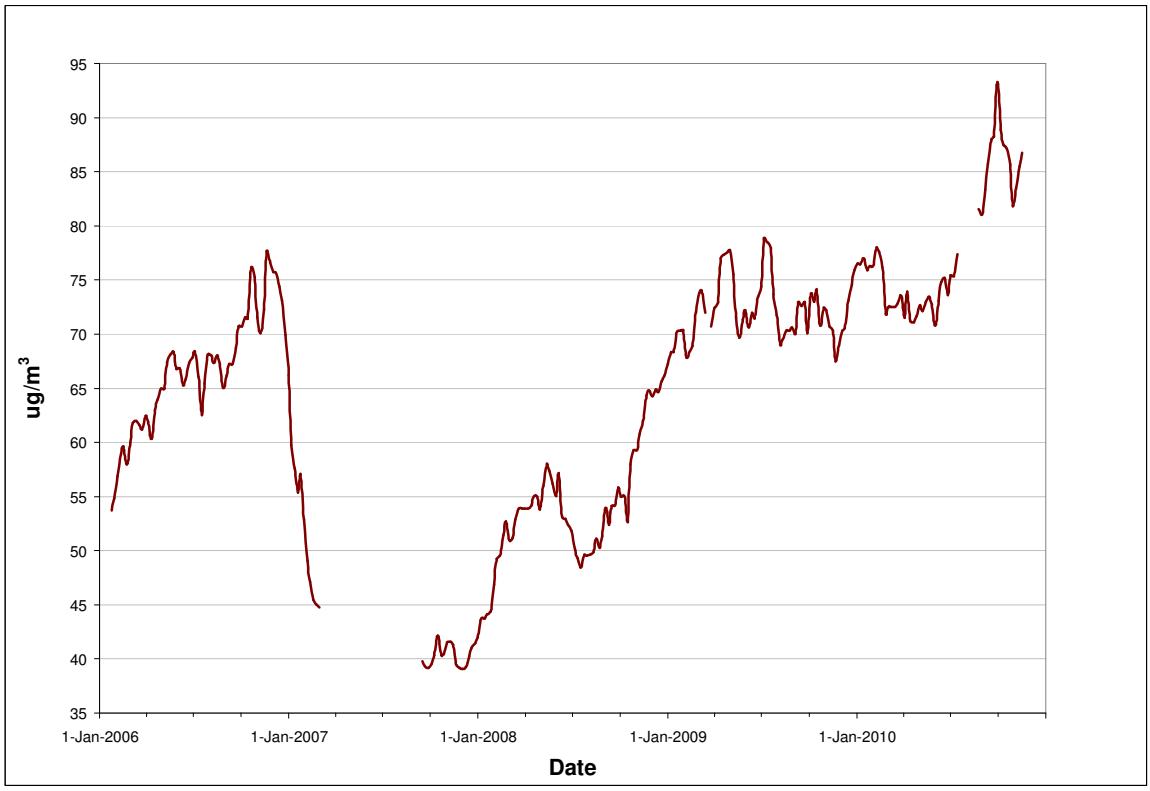
In 2010 there were thirteen exceedances of the TSP standard. Table 4.3.4.1 provides summary information of air contaminants measured at the IOCC Property Boundary, while Figure 4.3.4.1 provides a graphical representation of the annual trend of TSP.

TABLE 4.3.4.1 - IOCC BOUNDARY TSP SUMMARY 2009 & 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120 ug/m^3)
2009	January	2	33.3%	62.1	74.8	0
	February	4	100.0%	103.8	250.0	2
	March	2	40.0%	105.5	172.7	1
	April	4	80.0%	205.0	938.1	3
	May	6	100.0%	75.6	209.0	1
	June	5	100.0%	80.4	164.2	2
	July	5	100.0%	35.9	225.2	1
	August	4	80.0%	57.5	119.4	0
	September	5	100.0%	41.3	127.7	1
	October	3	60.0%	321.4	392.5	3
	November	5	100.0%	45.3	156.9	1
	December	3	60.0%	86.1	195.7	1
Annual		48	78.7%	75.9	938.1	16
2010	January	4	80.0%	73.1	108.7	0
	February	1	20.0%	15.9	15.9	0
	March	3	60.0%	134.6	269.6	1
	April	5	100.0%	128.9	378.0	3
	May	2	40.0%	106.5	133.4	1
	June	5	100.0%	100.3	590.5	1
	July	5	83.3%	93.4	207.7	2
	August	5	100.0%	52.7	69.3	0
	September	5	100.0%	150.5	469.2	4
	October	5	100.0%	55.8	106.9	0
	November	1	20.0%	150.2	150.2	1
	December	0				
Annual		41	67.2%	88.9	590.5	13

Observations in ug/m^3

FIGURE 4.3.4.1 - IOCC BOUNDARY ANNUAL TSP CONCENTRATIONS



Rolling annual average of daily concentrations

4.4 Wabush Mines

In 2010, Wabush Mines operated monitoring stations at three locations in and around Wabush. These stations are installed to monitor the emissions from Wabush Mines' iron ore mine and concentrator facility and are located on Bond Street, Shea Street and near the NALCOR substation to the north of the town. The locations of these monitoring stations are identified in Figure 4.4.1.

FIGURE 4.4.1 - WABUSH MINES AMBIENT MONITORING STATIONS

4.4.1 Bond Street

The Bond Street monitoring station is located near the Provincial Building and measures SO_2 and $PM_{2.5}$ on a continuous basis. For all pollutants, the ambient air criteria were not exceeded on any occasion in 2010.

The SO_2 analyzer has been sporadically malfunctioning for a number of years resulting in baseline drifting. Various repairs over this timeframe resulted in periods of validated

data; however large periods of data have also been invalidated. The last repair occurred in September 2010 and the analyzer was operating within acceptable parameters until the end of 2010.

Tables 4.4.1.1 and 4.4.1.2 provide summary information of air contaminants measured at Bond Street, while Figure 4.4.1.1 provides a graphical representation of the annual trend of $PM_{2.5}$. An SO_2 graph is not provided due to the quantity of invalidated data.

TABLE 4.4.1.1 - BOND STREET SO_2 SUMMARY 2009 & 2010

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>900)	Regulatory Exceedances 3-Hour (>600)	Regulatory Exceedances 24-Hour (>300)
2009	January	708	95.2%	4.2	42.4	32.1	13.8	0	0	0
	February	631	93.9%	3.5	59.2	20.9	7.7	0	0	0
	March	706	94.9%	2.6	25.7	16.4	5.3	0	0	0
	April	684	95.0%	2.6	28.8	19.2	6.6	0	0	0
	May	565	75.9%	1.6	7.7	4.6	2.1	0	0	0
	June	0	0.0%							
	July	0	0.0%							
	August	311	41.8%	2.0	23.2	12.9	5.7	0	0	0
	September	558	77.5%	3.2	23.9	15.9	7.0	0	0	0
	October	0	0.0%							
	November	0	0.0%							
	December	0	0.0%							
Annual		4163	47.5%	2.9	59.2	32.1	13.8	0	0	0
2010	January	0	0.0%							
	February	0	0.0%							
	March	0	0.0%							
	April	0	0.0%							
	May	0	0.0%							
	June	0	0.0%							
	July	0	0.0%							
	August	0	0.0%							
	September	166	23.1%	2.7	20.6	8.8	4.8	0	0	0
	October	712	95.7%	1.4	11.0	7.4	2.7	0	0	0
	November	688	95.6%	2.1	23.3	15.4	5.0	0	0	0
	December	707	95.0%	1.4	14.8	3.8	2.9	0	0	0
Annual		2273	25.9%	1.7	23.3	15.4	5.0	0	0	0

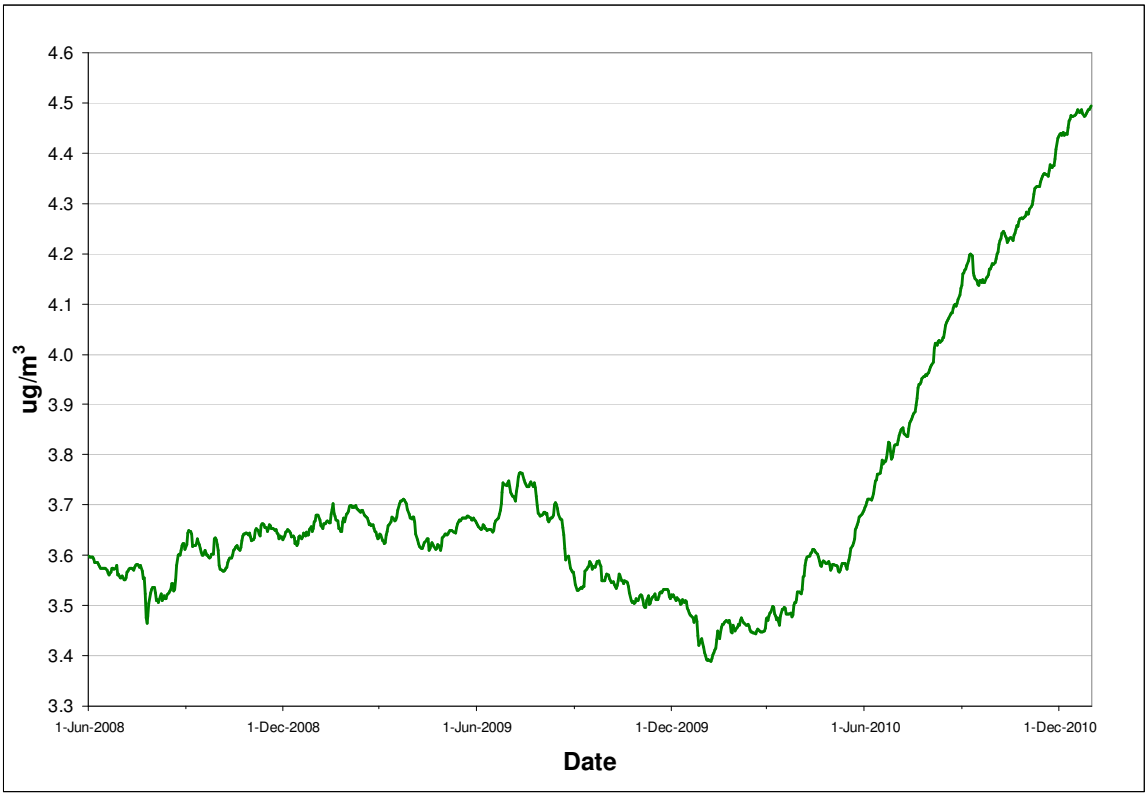
Observations in ug/m^3

TABLE 4.4.1.1 - BOND STREET $PM_{2.5}$ SUMMARY 2009 & 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2009	January	31	100.0%	4.4	10.6	0
	February	23	82.1%	3.2	5.5	0
	March	31	100.0%	4.0	8.0	0
	April	30	100.0%	3.6	7.2	0
	May	31	100.0%	3.5	9.1	0
	June	30	100.0%	3.6	9.4	0
	July	27	87.1%	3.6	10.1	0
	August	31	100.0%	3.2	9.0	0
	September	28	93.3%	3.3	14.4	0
	October	31	100.0%	2.6	7.4	0
	November	30	100.0%	3.0	5.9	0
	December	31	100.0%	3.0	7.4	0
Annual		354	97.0%	3.4	14.4	0
2010	January	31	100.0%	4.8	9.1	0
	February	28	100.0%	3.5	12.4	0
	March	31	100.0%	4.6	11.5	0
	April	30	100.0%	4.1	11.0	0
	May	31	100.0%	4.9	9.3	0
	June	30	100.0%	5.2	17.5	0
	July	31	100.0%	5.3	11.8	0
	August	31	100.0%	5.2	12.4	0
	September	30	100.0%	3.9	11.0	0
	October	31	100.0%	3.8	6.2	0
	November	30	100.0%	4.8	10.0	0
	December	31	100.0%	3.7	7.5	0
Annual		365	100.0%	4.5	17.5	0

Observations in ug/m^3

FIGURE 4.4.1.1 - BOND STREET ANNUAL $PM_{2.5}$ CONCENTRATIONS



Rolling annual average of hourly concentrations

4.4.2 Shea Street

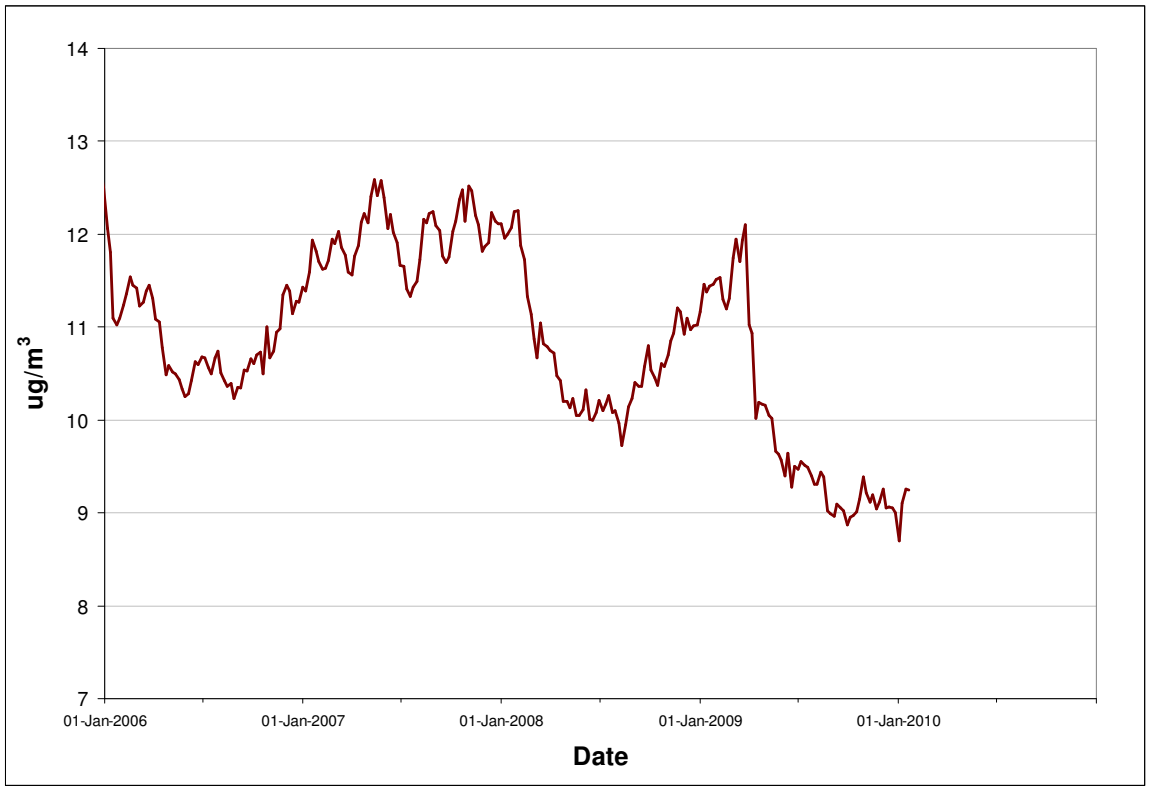
The Shea Street station monitors the ambient levels of TSP on a 1 day in 6 day cycle. There were no exceedances of the ambient air criteria in 2010. Table 4.4.2.1 provides summary information on the level of air contaminants measured at Shea Street, while Figure 4.4.2.1 provides a graphical representation of the annual trend in TSP. Due to calibration errors in early 2010, a number of samples were invalidated from January through April.

TABLE 4.4.2.1 - SHEA STREET TSP SUMMARY 2009 & 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120 ug/m^3)
2009	January	5	83.3%	12.4	33.5	0
	February	3	75.0%	2.5	3.7	0
	March	5	100.0%	15.2	22.6	0
	April	5	100.0%	1.9	60.5	0
	May	6	100.0%	10.3	40.1	0
	June	5	100.0%	12.9	46.1	0
	July	3	60.0%	11.1	12.5	0
	August	5	100.0%	12.2	22.2	0
	September	5	100.0%	10.4	19.8	0
	October	5	100.0%	13.2	24.3	0
	November	0	0.0%			
	December	0	0.0%			
Annual		47	77.0%	9.0	60.5	0
2010	January	2	40.0%	23.0	80.6	0
	February	0	0.0%			
	March	0	0.0%			
	April	2	40.0%	32.5	97.5	0
	May	5	100.0%	17.2	21.3	0
	June	5	100.0%	37.1	72.9	0
	July	6	100.0%	10.2	27.7	0
	August	3	60.0%	5.8	17.8	0
	September	4	80.0%	13.2	21.3	0
	October	5	100.0%	7.4	14.7	0
	November	5	100.0%	7.2	33.4	0
	December	5	100.0%	3.6	7.9	0
Annual		42	68.9%	11.2	97.5	0

Observations in ug/m^3

FIGURE 4.4.2.1 - SHEA STREET ANNUAL TSP CONCENTRATIONS



Rolling annual average of daily concentrations

4.4.3 Substation

The Substation monitoring station is located near the NALCOR substation to the north of the town of Wabush. The station monitors the ambient levels of TSP, PM_{10} and $PM_{2.5}$ on a 1 day in 6 day cycle. There were no exceedances of the ambient air criteria for TSP and PM_{10} in 2010, however there was one exceedances of the $PM_{2.5}$ standard.

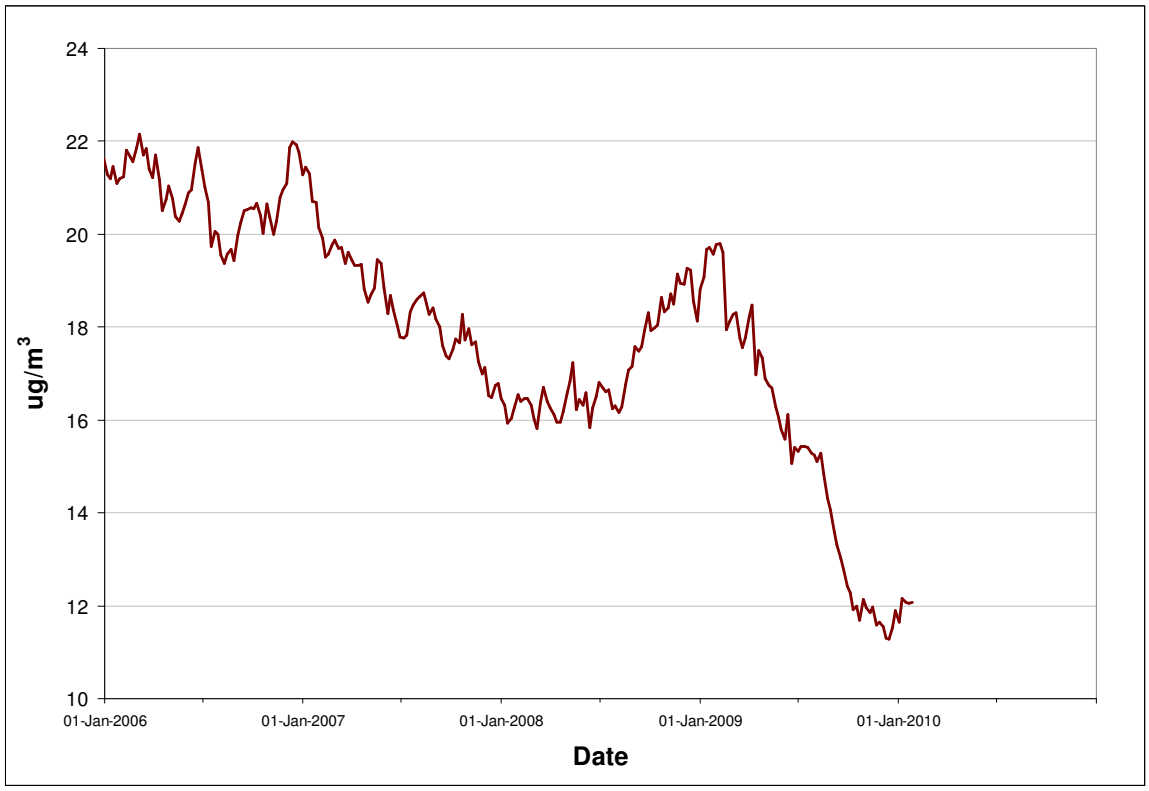
Tables 4.4.3.1 through 4.4.3.3 provide summary information on the level of air contaminants measured at the Substation, while Figures 4.4.3.1 through 4.4.3.3 provide a graphical representation of the annual trend of each air contaminant. Due to calibration errors in early 2010, a number of TSP samples were invalidated from January through April.

TABLE 4.4.3.1 - SUBSTATION TSP SUMMARY 2009 & 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120 ug/m^3)
2009	January	5	83.3%	19.6	43.3	0
	February	4	100.0%	3.5	20.0	0
	March	5	100.0%	13.3	17.7	0
	April	5	100.0%	9.6	96.7	0
	May	6	100.0%	13.4	60.5	0
	June	5	100.0%	20.3	105.4	0
	July	3	60.0%	17.0	23.0	0
	August	5	100.0%	14.1	48.2	0
	September	5	100.0%	6.6	9.0	0
	October	5	100.0%	13.4	48.0	0
	November	0	0.0%			
	December	0	0.0%			
Annual		48	78.7%	11.9	105.4	0
2010	January	2	40.0%	38.9	95.0	0
	February	0	0.0%			
	March	0	0.0%			
	April	1	20.0%	34.2	34.2	0
	May	5	100.0%	36.5	103.2	0
	June	5	100.0%	13.9	32.7	0
	July	6	100.0%	17.1	28.8	0
	August	5	100.0%	23.3	38.6	0
	September	5	100.0%	16.4	49.6	0
	October	5	100.0%	21.3	36.8	0
	November	5	100.0%	15.5	45.2	0
	December	5	100.0%	3.7	65.0	0
Annual		44	72.1%	16.9	103.2	0

Observations in ug/m^3

FIGURE 4.4.3.1 - SUBSTATION ANNUAL TSP CONCENTRATIONS



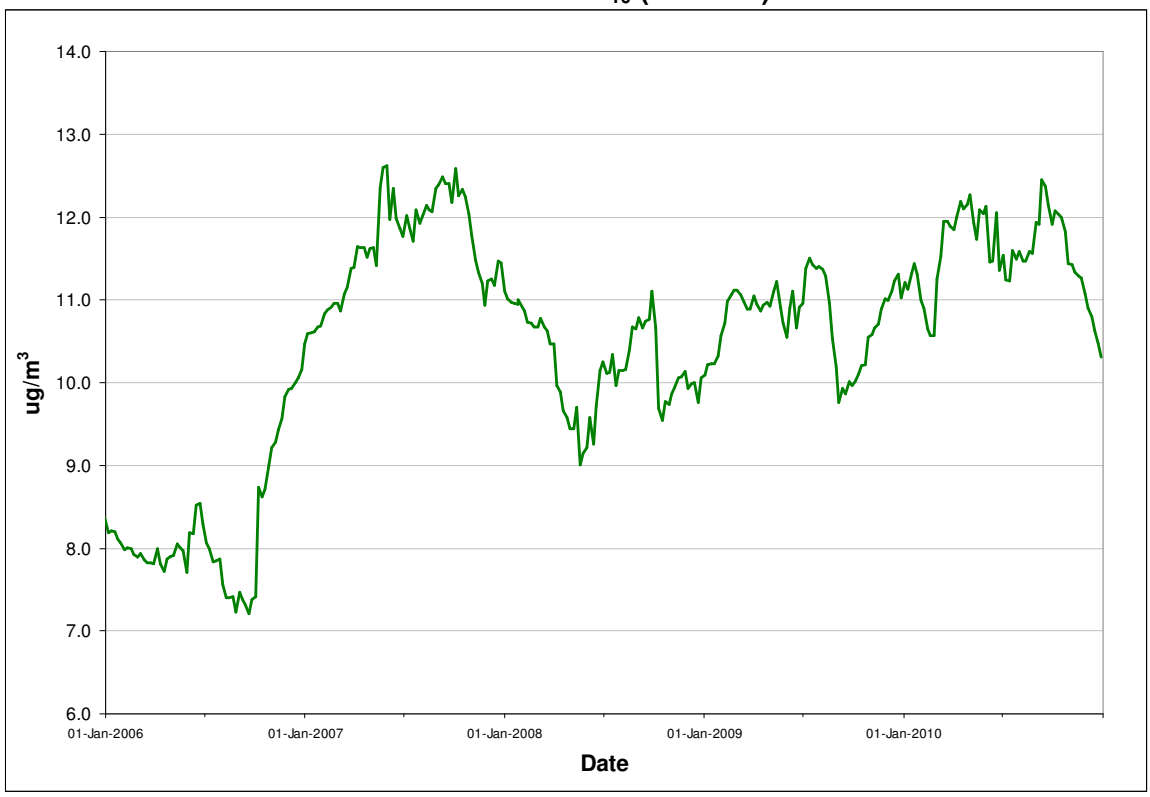
Rolling annual average of daily concentrations

TABLE 4.4.3.2 - SUBSTATION PM_{10} (DICHOT) SUMMARY 2009 & 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>50 ug/m^3)
2009	January	5	83.3%	6.7	19.7	0
	February	4	100.0%	9.4	16.6	0
	March	5	100.0%	2.6	5.7	0
	April	5	100.0%	6.1	13.6	0
	May	6	100.0%	13.6	29.3	0
	June	5	100.0%	24.9	44.0	0
	July	3	60.0%	21.3	35.1	0
	August	5	100.0%	6.1	8.8	0
	September	4	80.0%	11.7	21.0	0
	October	5	100.0%	11.2	22.7	0
	November	0	0.0%			
	December	0	0.0%			
Annual		47	77.0%	11.0	44.0	0
2010	January	5	100.0%	7.7	11.2	0
	February	5	100.0%	4.3	5.1	0
	March	5	100.0%	15.3	33.6	0
	April	5	100.0%	8.6	12.6	0
	May	5	100.0%	14.5	22.2	0
	June	5	100.0%	16.2	32.7	0
	July	6	100.0%	18.7	28.8	0
	August	5	100.0%	9.7	21.4	0
	September	5	100.0%	11.6	45.7	0
	October	5	100.0%	6.3	11.9	0
	November	5	100.0%	7.4	11.0	0
	December	5	100.0%	1.7	5.2	0
Annual		61	100.0%	10.3	45.7	0

Observations in ug/m^3

FIGURE 4.4.3.2 - SUBSTATION ANNUAL PM_{10} (DICHOT) CONCENTRATIONS



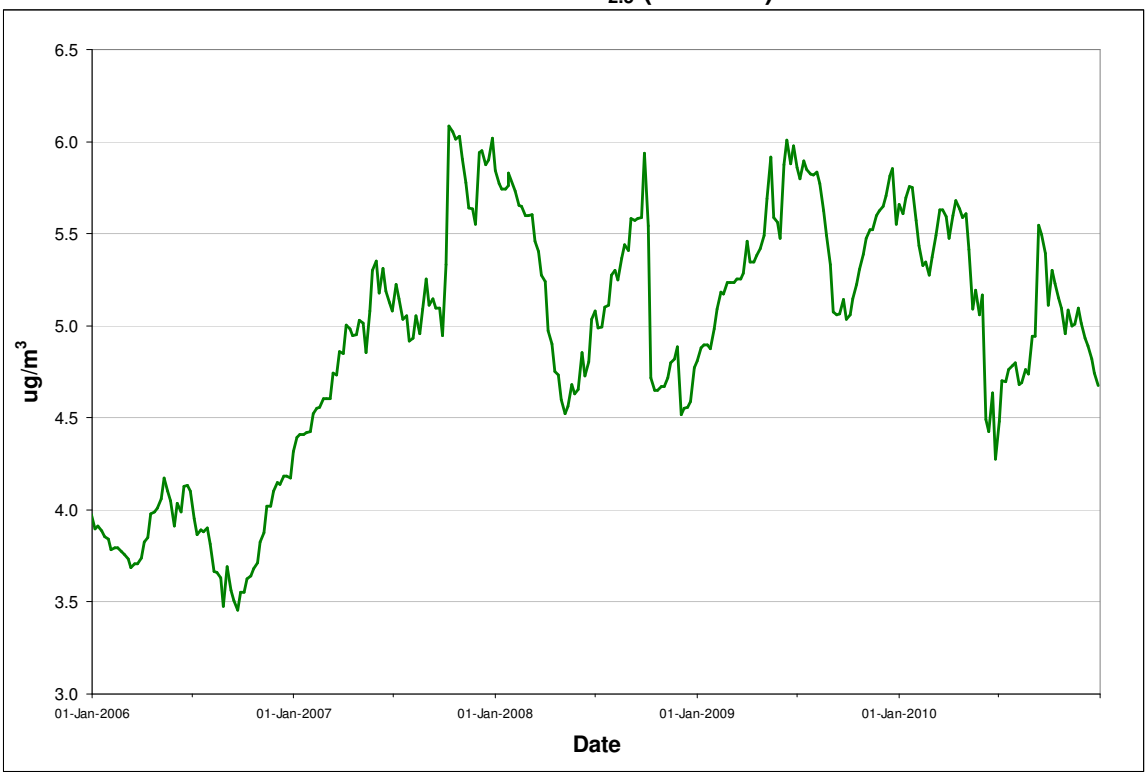
Rolling annual average of daily concentrations

TABLE 4.4.3.3 - SUBSTATION $PM_{2.5}$ (DICHOT) SUMMARY 2009 & 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 ug/m^3)
2009	January	5	83.3%	3.2	10.8	0
	February	4	100.0%	4.4	6.9	0
	March	5	100.0%	1.0	2.1	0
	April	5	100.0%	4.0	11.0	0
	May	6	100.0%	8.3	17.9	0
	June	5	100.0%	13.2	36.1	1
	July	3	60.0%	6.4	9.7	0
	August	5	100.0%	3.3	6.4	0
	September	4	80.0%	6.2	15.1	0
	October	5	100.0%	5.3	8.8	0
	November	0	0.0%			
	December	0	0.0%			
Annual		47	77.0%	11.0	36.1	1
2010	January	5	100.0%	4.0	7.7	0
	February	5	100.0%	1.1	2.2	0
	March	5	100.0%	4.1	8.3	0
	April	5	100.0%	3.9	6.5	0
	May	5	100.0%	4.8	9.1	0
	June	5	100.0%	5.7	11.0	0
	July	6	100.0%	9.0	11.0	0
	August	5	100.0%	4.7	11.2	0
	September	5	100.0%	7.6	36.1	1
	October	5	100.0%	3.7	11.5	0
	November	5	100.0%	5.6	11.8	0
	December	5	100.0%	0.9	2.6	0
Annual		61	100.0%	10.3	36.1	1

Observations in ug/m^3

FIGURE 4.4.3.3 - SUBSTATION ANNUAL $PM_{2.5}$ (DICHOT) CONCENTRATIONS

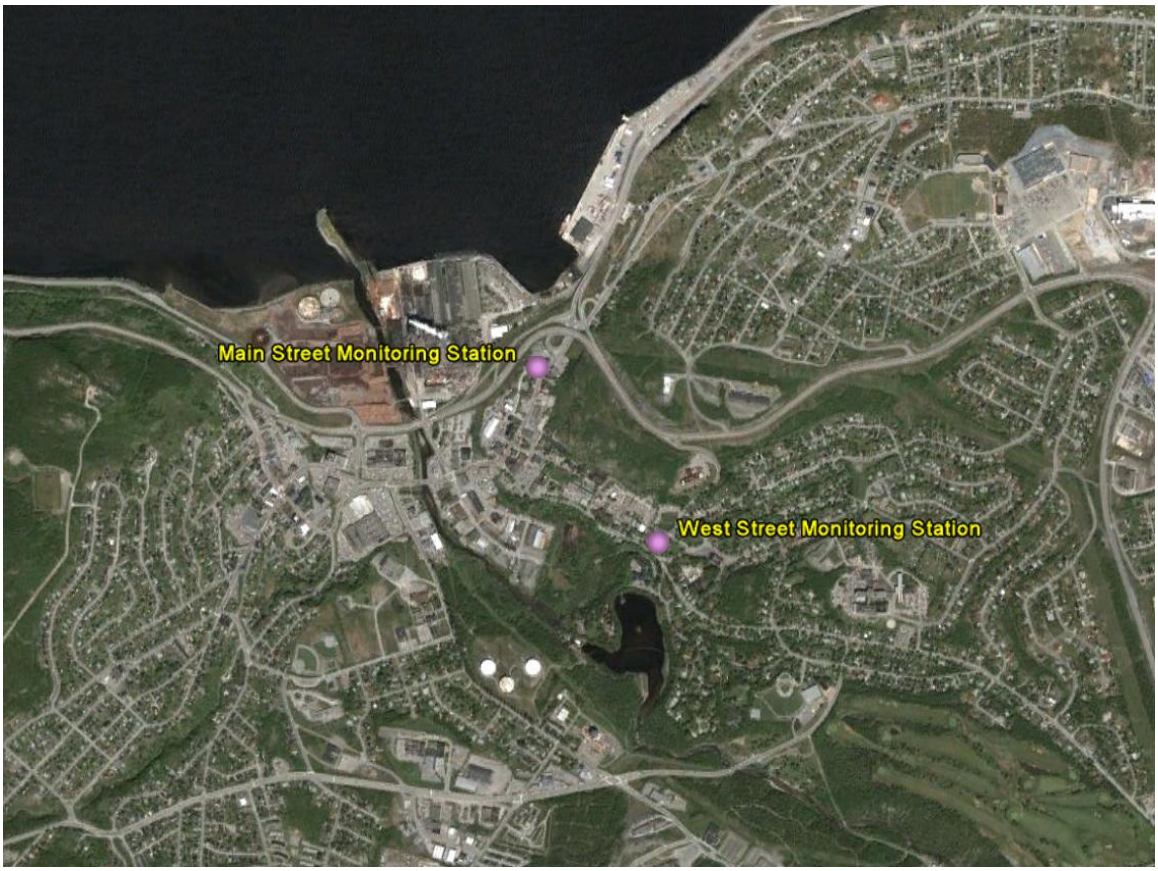


Rolling annual average of daily concentrations

4.5 Corner Brook Pulp and Paper

In 2010, Corner Brook Pulp and Paper operated monitoring stations at two locations in Corner Brook. These stations are installed to monitor the emissions from Corner Brook Pulp and Paper's paper mill operation and are located on Main Street and West Street. The locations of these monitoring stations are identified in Figure 4.5.1.

FIGURE 4.5.1 - CORNER BROOK PULP & PAPER AMBIENT MONITORING STATIONS



4.5.1 Main Street

The Main Street monitoring station is located at Hotel Corner Brook. The station monitors ambient levels of SO_2 and $PM_{2.5}$ on a continuous basis and TSP on a 1 day in 6 day cycle. For all pollutants, the ambient air criteria were not exceeded on any occasion in 2010.

Due to data interferences with an analog data recording system, the SO_2 data in early 2010 was invalidated. In February 2010, Corner Brook Pulp and Paper switched from an

analog recording system to a digital system which eliminated the data inferences and resolved the data integrity issues.

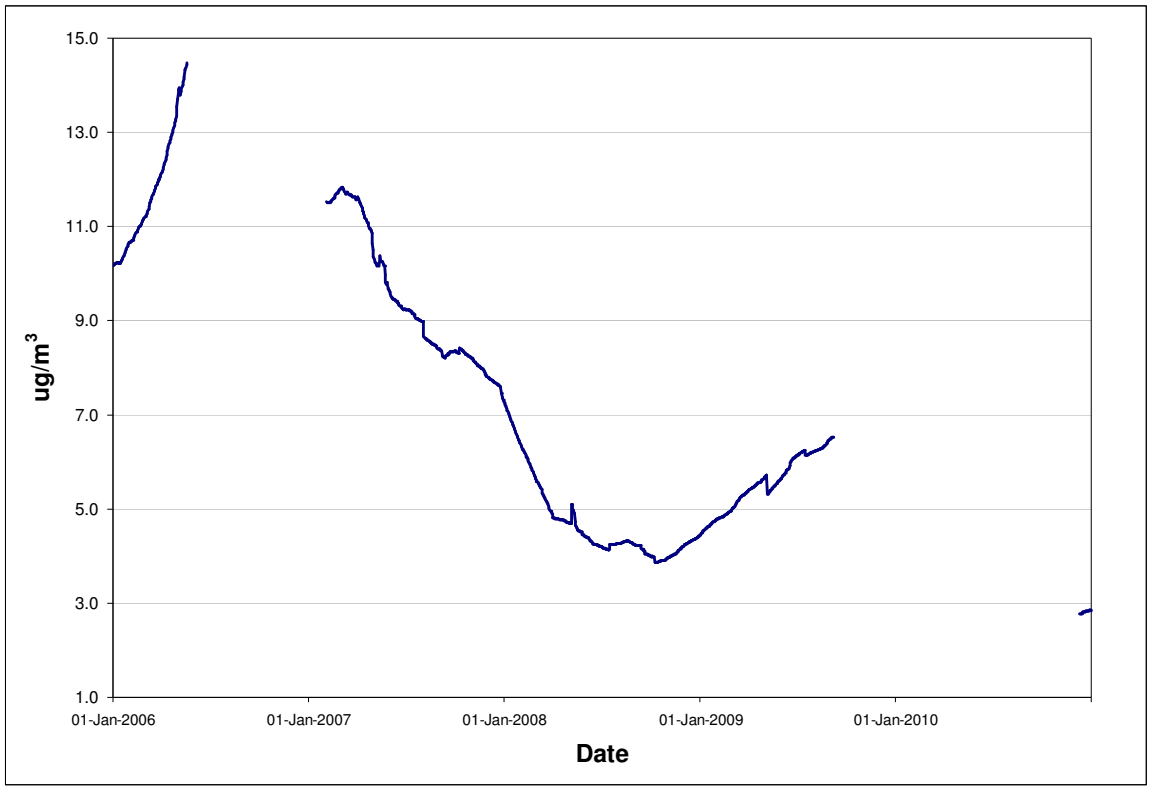
Tables 4.5.1.1 through 4.5.1.3 provide summary information on the level of air contaminants measured at the Main Street Station, while Figures 4.5.1.1 through 4.5.1.3 provide a graphical representation of the annual trend of each pollutant.

TABLE 4.5.1.1 - MAIN STREET SO_2 SUMMARY 2009 & 2010

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>900)	Regulatory Exceedances 3-Hour (>600)	Regulatory Exceedances 24-Hour (>300)
2009	January	711	95.6%	7.2	17.5	11.7	8.9	0	0	0
	February	642	95.5%	6.0	14.0	10.5	7.5	0	0	0
	March	709	95.3%	7.7	69.9	38.5	12.8	0	0	0
	April	689	95.7%	7.1	38.4	21.0	9.6	0	0	0
	May	707	95.0%	7.5	38.4	17.5	9.6	0	0	0
	June	518	71.9%	10.6	219.8	79.1	25.6	0	0	0
	July	0	0.0%							
	August	0	0.0%							
	September	0	0.0%							
	October	0	0.0%							
	November	0	0.0%							
	December	0	0.0%							
Annual		3976	45.4%	7.5	219.8	79.1	25.6	0	0	0
2010	January	0	0.0%							
	February	131	19.5%	1.3	2.6	2.3	1.8	0	0	0
	March	713	95.8%	2.1	4.3	4.2	3.0	0	0	0
	April	691	96.0%	1.8	4.0	3.9	3.5	0	0	0
	May	708	95.2%	2.3	26.7	12.7	4.3	0	0	0
	June	653	90.7%	2.8	18.0	15.2	6.4	0	0	0
	July	708	95.2%	4.3	45.3	23.6	10.8	0	0	0
	August	684	91.9%	2.4	45.9	32.3	9.9	0	0	0
	September	647	89.9%	1.9	16.0	4.5	3.5	0	0	0
	October	714	96.0%	4.1	10.1	9.7	8.7	0	0	0
	November	695	96.5%	3.6	42.4	34.8	12.0	0	0	0
	December	714	96.0%	3.3	15.7	12.7	6.9	0	0	0
Annual		7058	80.6%	2.8	45.9	34.8	12.0	0	0	0

Observations in ug/m^3

FIGURE 4.5.1.1 - MAIN STREET ANNUAL SO_2 CONCENTRATIONS



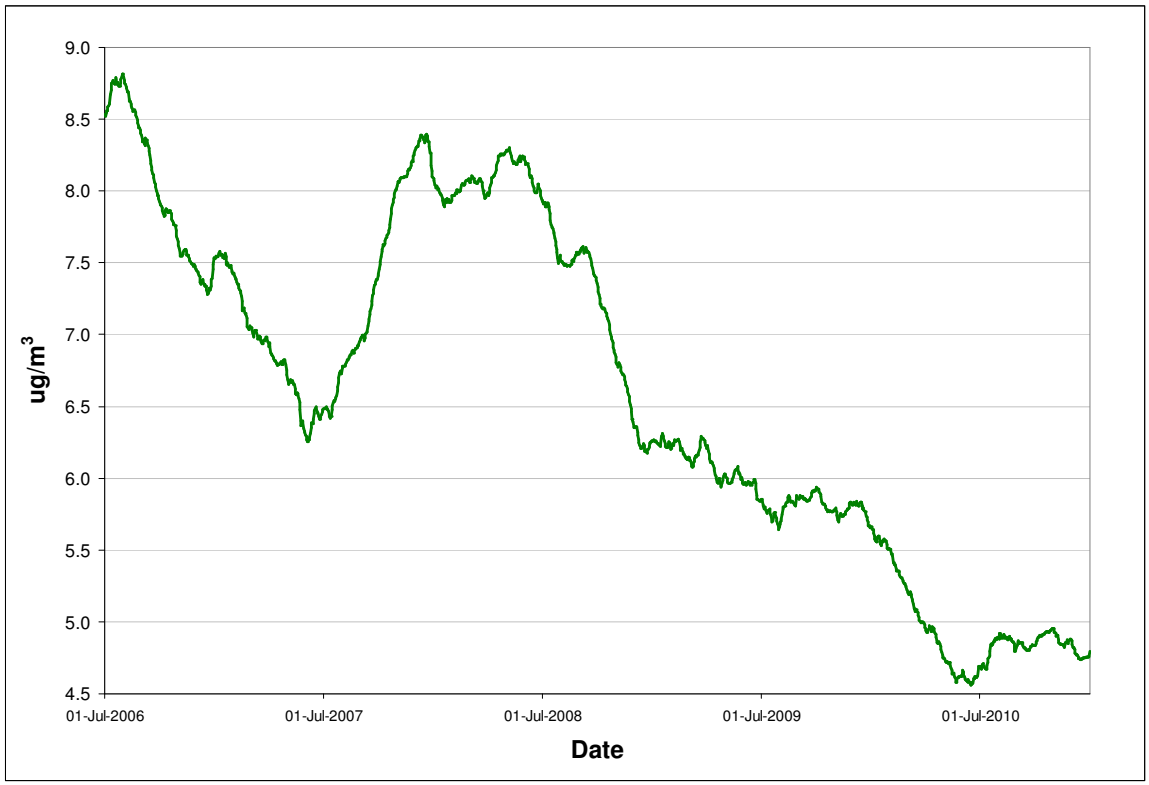
Rolling annual average of hourly concentrations

TABLE 4.5.1.2 - MAIN STREET $PM_{2.5}$ SUMMARY 2009 & 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2009	January	31	100.0%	6.3	20.9	0
	February	26	92.9%	6.3	18.7	0
	March	25	80.6%	7.9	15.8	0
	April	30	100.0%	6.5	14.6	0
	May	31	100.0%	6.2	12.4	0
	June	23	76.7%	4.8	11.0	0
	July	31	100.0%	7.4	15.9	0
	August	31	100.0%	7.7	24.4	0
	September	30	100.0%	5.1	11.2	0
	October	31	100.0%	2.1	5.9	0
	November	30	100.0%	4.5	14.4	0
	December	31	100.0%	3.5	10.8	0
Annual		350	95.9%	5.7	24.4	0
2010	January	31	100.0%	4.6	16.1	0
	February	25	89.3%	2.6	7.2	0
	March	31	100.0%	4.2	9.3	0
	April	30	100.0%	4.0	11.3	0
	May	31	100.0%	4.7	13.0	0
	June	28	93.3%	5.7	19.4	0
	July	31	100.0%	9.6	19.3	0
	August	29	93.5%	7.1	16.3	0
	September	30	100.0%	5.2	16.2	0
	October	31	100.0%	3.5	6.8	0
	November	30	100.0%	3.6	13.7	0
	December	31	100.0%	2.6	13.2	0
Annual		358	98.1%	4.8	19.4	0

Observations in ug/m^3

FIGURE 4.5.1.2 - MAIN STREET ANNUAL $PM_{2.5}$ CONCENTRATIONS



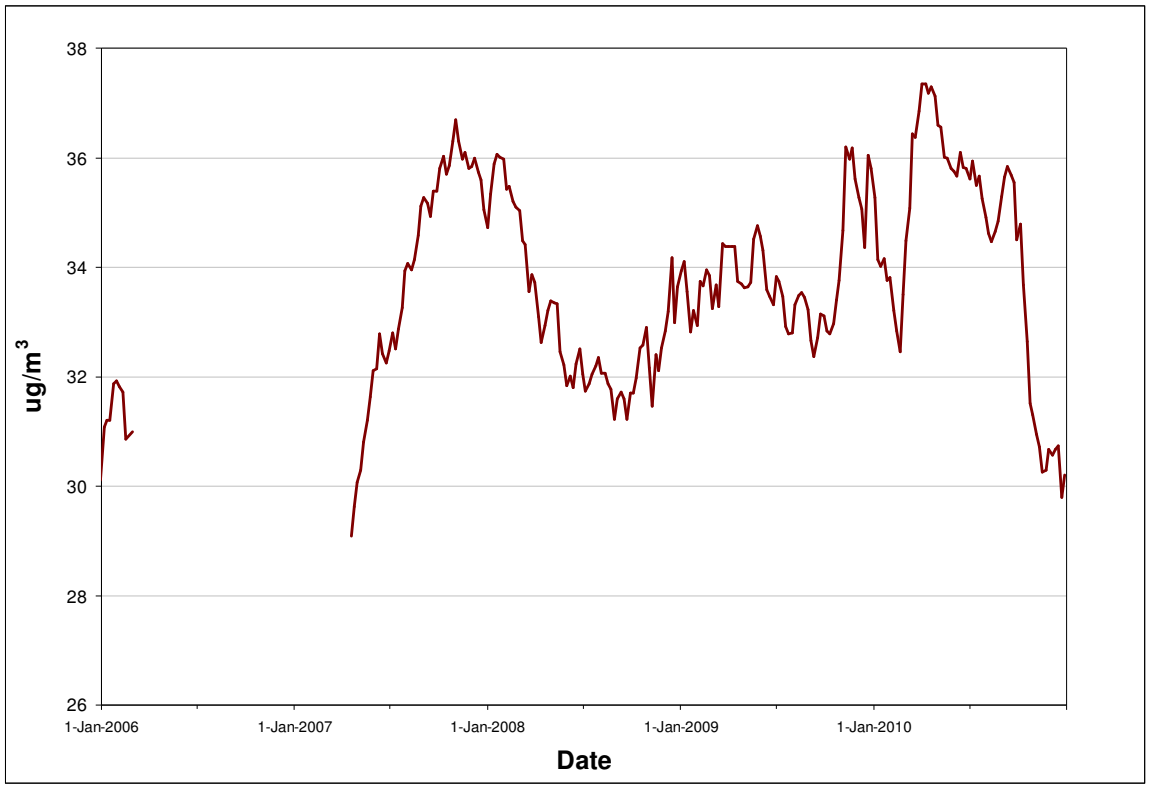
Rolling annual average of hourly concentrations

TABLE 4.5.1.3 - MAIN STREET TSP SUMMARY 2009 & 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120 ug/m^3)
2009	January	6	100.0%	17.5	38.5	0
	February	4	100.0%	24.6	49.7	0
	March	4	80.0%	24.5	82.5	0
	April	3	60.0%	66.3	98.1	0
	May	6	100.0%	51.2	78.3	0
	June	5	100.0%	42.2	62.5	0
	July	5	100.0%	39.5	55.0	0
	August	5	100.0%	35.1	61.5	0
	September	5	100.0%	37.1	56.0	0
	October	5	100.0%	46.3	76.2	0
	November	5	100.0%	46.9	76.6	0
	December	5	100.0%	31.3	55.1	0
Annual		58	95.1%	35.8	98.1	0
2010	January	5	100.0%	8.9	14.0	0
	February	5	100.0%	20.8	111.4	0
	March	5	100.0%	80.0	118.0	0
	April	3	60.0%	76.9	83.7	0
	May	5	100.0%	37.6	44.2	0
	June	4	80.0%	36.0	46.7	0
	July	6	100.0%	33.5	50.8	0
	August	5	100.0%	39.6	48.2	0
	September	2	40.0%	21.4	45.2	0
	October	5	100.0%	15.9	41.7	0
	November	4	80.0%	39.5	51.0	0
	December	5	100.0%	26.5	66.4	0
Annual		54	88.5%	30.2	118.0	0

Observations in ug/m^3

FIGURE 4.5.1.3 - MAIN STREET ANNUAL TSP CONCENTRATIONS



Rolling annual average of daily concentrations

4.5.2 West Street

The West Street monitoring station is located at the Western Star building. The station monitors ambient levels TSP on a 1 day in 6 day cycle. The ambient air criterion was not exceeded on any occasion in 2010.

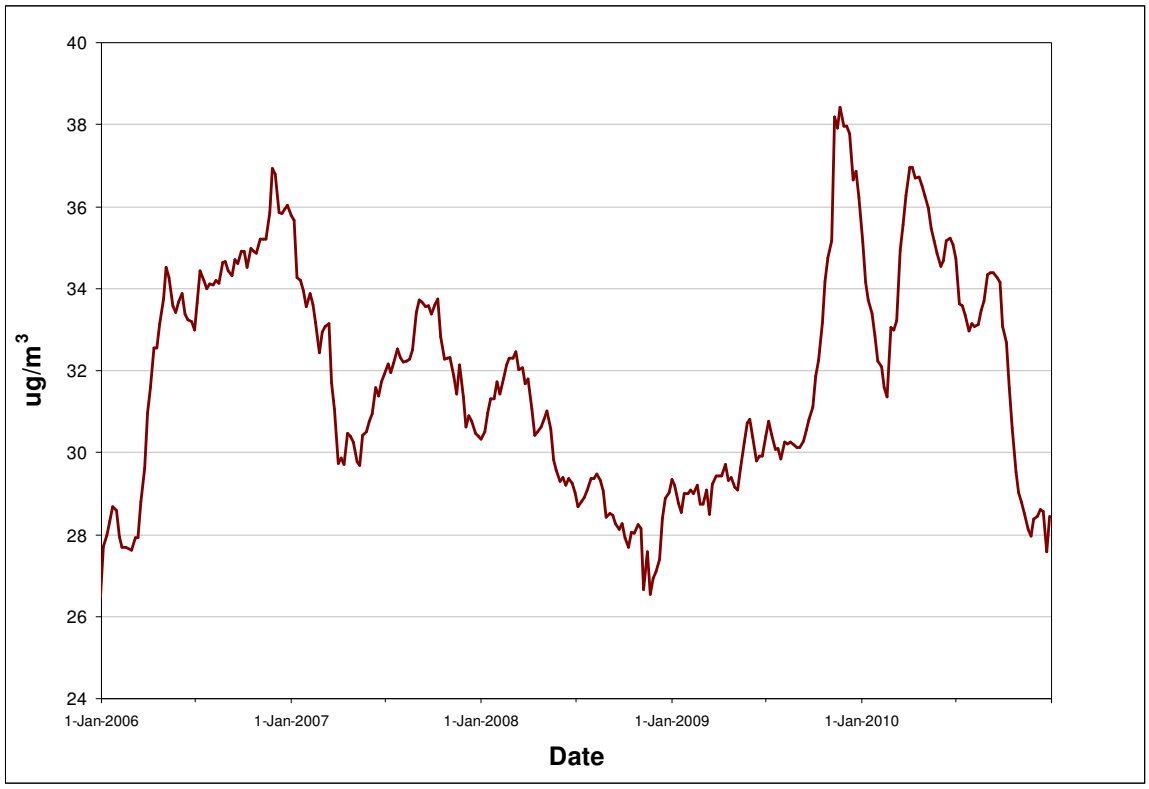
Tables 4.5.2.1 provides summary information on the level of air contaminants measured at the West Street Station, while Figure 4.5.2.1 provides a graphical representation of the annual trend.

TABLE 4.5.2.1 - WEST STREET TSP SUMMARY 2009 & 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120 ug/m^3)
2009	January	5	83.3%	18.8	32.2	0
	February	4	100.0%	13.7	20.6	0
	March	3	60.0%	25.0	59.0	0
	April	3	60.0%	76.9	109.6	0
	May	6	100.0%	67.7	98.5	0
	June	5	100.0%	38.4	57.8	0
	July	5	100.0%	38.8	56.9	0
	August	5	100.0%	33.7	53.1	0
	September	5	100.0%	40.2	50.1	0
	October	5	100.0%	60.8	84.9	0
	November	5	100.0%	43.9	72.5	0
	December	4	80.0%	21.5	49.0	0
Annual		55	90.2%	36.2	109.6	0
2010	January	5	100.0%	6.4	12.7	0
	February	5	100.0%	17.6	115.4	0
	March	5	100.0%	81.6	114.2	0
	April	3	60.0%	88.2	113.0	0
	May	5	100.0%	41.6	45.0	0
	June	5	100.0%	40.5	53.2	0
	July	5	83.3%	22.5	43.7	0
	August	5	100.0%	50.6	78.0	0
	September	2	40.0%	18.4	37.9	0
	October	5	100.0%	14.8	33.9	0
	November	4	80.0%	36.2	48.3	0
	December	5	100.0%	23.2	52.5	0
Annual		54	88.5%	28.4	115.4	0

Observations in ug/m^3

FIGURE 4.5.2.1 - WEST STREET ANNUAL TSP CONCENTRATIONS



Rolling annual average of daily concentrations

4.6 Vale Newfoundland and Labrador Limited - Voisey's Bay

In 2010, Vale Newfoundland and Labrador Limited (Vale) operated monitoring stations at three locations at its Voisey's Bay mine site. These stations are installed to monitor the emissions from Vale's mining operation and port activities and are located at the Accommodation unit, the Crusher and the concentrate storage facility near the Port. The locations of these monitoring stations are identified in Figure 4.6.1.

FIGURE 4.6.1 - VALE / VOISEY'S BAY AMBIENT MONITORING STATIONS

4.6.1 Accommodation Unit

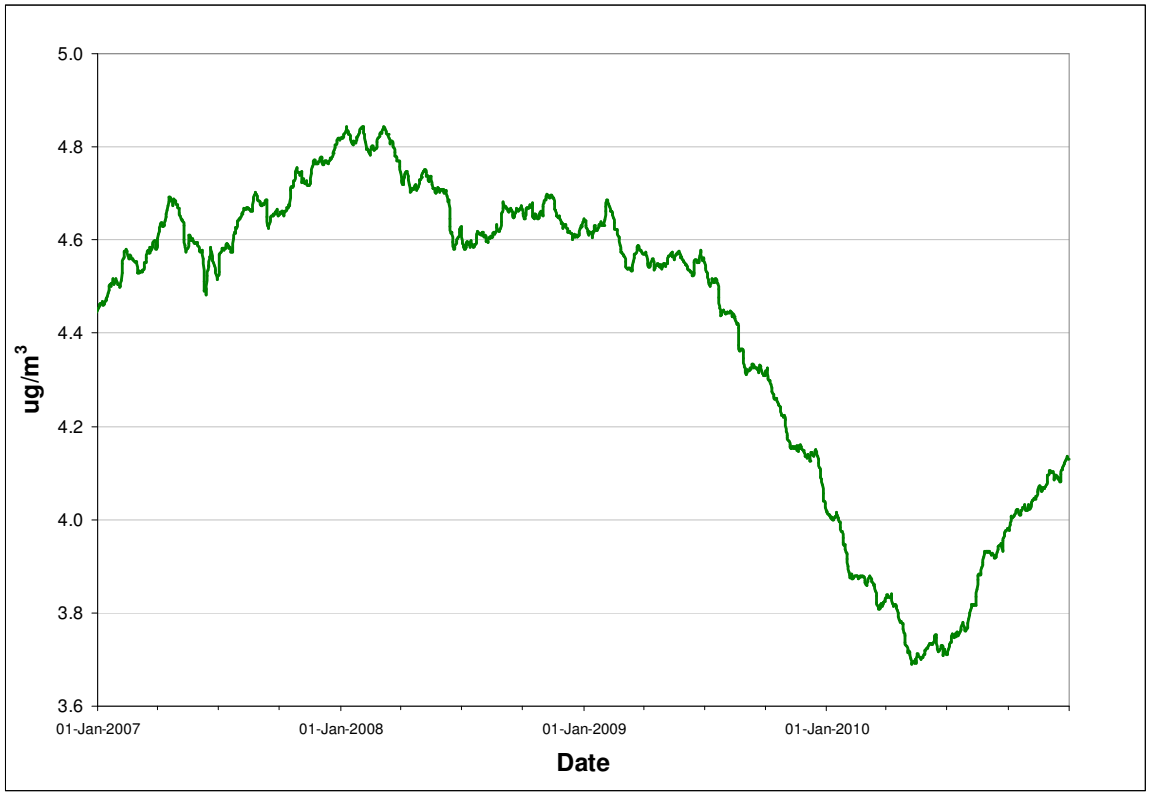
The Accommodation Unit station monitors the ambient levels of $PM_{2.5}$ and NO_x / NO_2 on a continuous basis. For all pollutants, the ambient air criteria were not exceeded on any occasion in 2010. Tables 4.6.1.1 through 4.6.1.2 provide summary information on the level of air contaminants measured at the Accommodation Unit, while Figures 4.6.1.1 through 4.6.1.2 provide a graphical representation of the annual trend of each pollutant.

TABLE 4.6.1.1 - ACCOMMODATION UNIT $PM_{2.5}$ SUMMARY 2009 & 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 ug/m^3)
2009	January	30	96.8%	5.2	8.2	0
	February	28	100.0%	4.4	11.3	0
	March	30	96.8%	4.8	8.2	0
	April	30	100.0%	4.8	6.8	0
	May	31	100.0%	4.0	6.4	0
	June	30	100.0%	3.9	11.8	0
	July	31	100.0%	3.6	7.1	0
	August	31	100.0%	3.3	5.1	0
	September	30	100.0%	3.7	7.9	0
	October	31	100.0%	3.3	5.3	0
	November	30	100.0%	3.6	6.0	0
	December	31	100.0%	3.7	9.4	0
Annual		363	99.5%	4.0	11.8	0
2010	January	31	100.0%	4.1	7.6	0
	February	28	100.0%	3.6	5.8	0
	March	31	100.0%	4.4	6.4	0
	April	30	100.0%	3.6	6.4	0
	May	31	100.0%	4.0	10.6	0
	June	30	100.0%	3.7	8.7	0
	July	31	100.0%	4.3	7.7	0
	August	31	100.0%	5.2	10.3	0
	September	30	100.0%	4.3	10.1	0
	October	31	100.0%	3.9	8.5	0
	November	30	100.0%	4.3	7.3	0
	December	18	58.1%	4.2	8.2	0
Annual		352	96.4%	4.1	10.6	0

Observations in ug/m^3

FIGURE 4.6.1.1 - ACCOMMODATION UNIT ANNUAL $PM_{2.5}$ CONCENTRATIONS



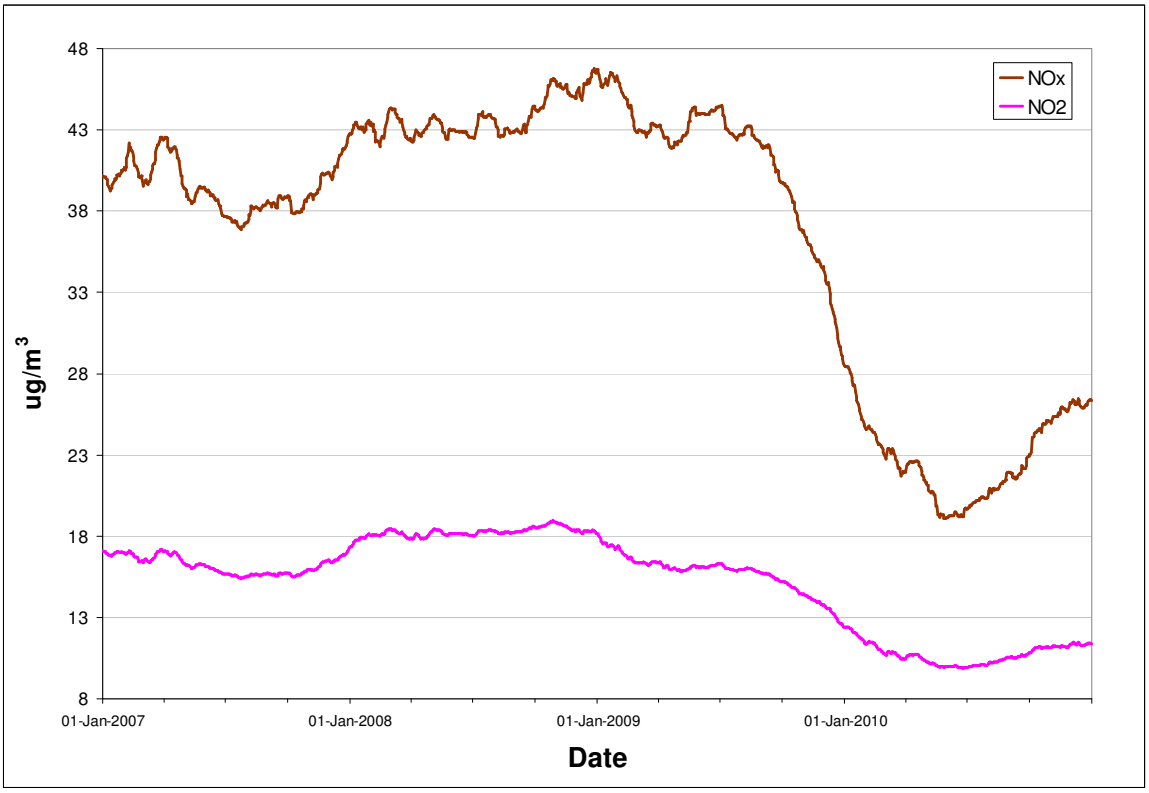
Rolling annual average of hourly concentrations

TABLE 4.6.1.2 - ACCOMMODATION UNIT NO_X / NO_2 SUMMARY 2009 & 2010

Year	Month	# Valid Hours	% Valid Hours	Average NO_x	Average NO_2	Maximums 1-Hour NO_x	Maximums 1-Hour NO_2	Maximums 24-Hour NO_x	Maximums 24-Hour NO_2	Exceedances 1-Hour (>400)	Exceedances 24-Hour (>200)
2009	January	654	87.9%	77.1	29.2	510.0	99.0	170.4	54.5	0	0
	February	620	92.3%	36.3	17.3	338.9	67.4	68.5	33.0	0	0
	March	677	91.0%	48.8	19.9	427.0	83.4	131.2	38.0	0	0
	April	662	91.9%	24.7	11.5	589.2	90.5	100.3	28.0	0	0
	May	684	91.9%	35.4	10.0	484.0	79.6	224.5	33.2	0	0
	June	609	84.6%	11.3	6.7	255.8	52.7	49.5	19.5	0	0
	July	601	80.8%	6.4	4.9	127.4	35.9	22.1	10.0	0	0
	August	684	91.9%	15.2	6.1	194.2	31.1	85.6	19.4	0	0
	September	662	91.9%	22.9	9.4	220.9	56.0	79.4	31.9	0	0
	October	684	91.9%	12.3	7.0	140.6	42.5	59.6	25.2	0	0
	November	664	92.2%	21.1	11.6	277.9	60.8	56.9	23.0	0	0
	December	676	90.9%	28.3	14.8	299.4	63.2	104.0	34.4	0	0
Annual		7877	89.9%	28.5	12.4	589.2	99.0	224.5	54.5	0	0
2010	January	684	91.9%	30.5	16.6	288.8	72.7	62.2	31.3	0	0
	February	618	92.0%	15.9	9.4	187.0	75.2	62.0	30.6	0	0
	March	677	91.0%	36.0	16.2	441.0	80.9	146.4	44.0	0	0
	April	662	91.9%	17.0	9.7	449.8	88.1	123.1	46.6	0	0
	May	673	90.5%	10.7	6.2	345.1	61.9	61.9	19.2	0	0
	June	659	91.5%	17.7	6.1	646.4	50.4	189.5	26.3	0	0
	July	682	91.7%	16.7	7.5	199.2	96.8	42.6	19.6	0	0
	August	685	92.1%	33.2	11.9	644.0	59.5	142.8	27.4	0	0
	September	660	91.7%	35.2	12.1	514.3	64.6	188.4	37.8	0	0
	October	684	91.9%	37.0	11.4	581.5	62.5	326.6	48.3	0	0
	November	617	85.7%	35.8	14.1	492.5	68.4	135.8	45.4	0	0
	December	681	91.5%	29.7	15.2	376.3	76.9	95.2	35.6	0	0
Annual		7982	91.1%	26.3	11.4	646.4	96.8	326.6	48.3	0	0

Observations in ug/m^3

FIGURE 4.6.1.2 - ACCOMMODATION UNIT ANNUAL NO_X / NO_2 CONCENTRATIONS



Rolling annual average of hourly concentrations

4.6.2 Crusher Site

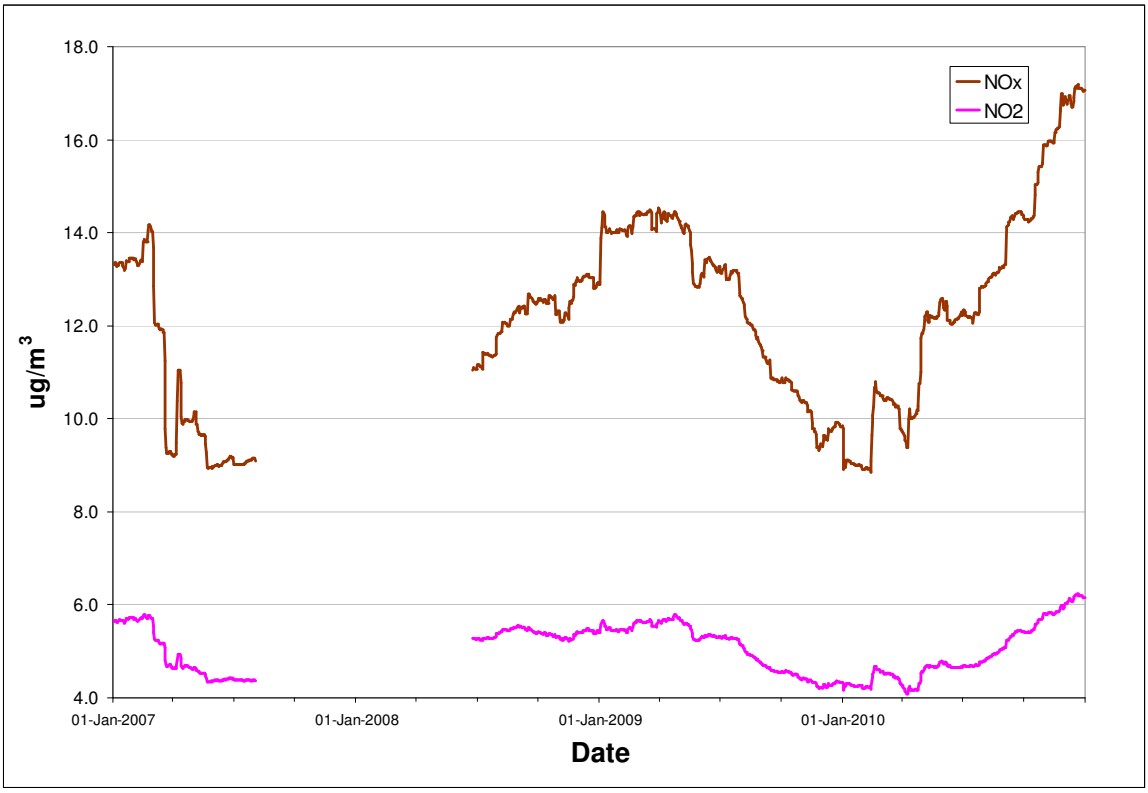
The Crusher Site station monitors the ambient levels of NO_x / NO_2 on a continuous basis. The ambient air criteria were not exceeded on any occasion in 2010. Table 4.6.2.1 provides summary information on the level of air contaminants measured at the Crusher Site, while Figure 4.6.2.1 provides a graphical representation of the annual trend.

TABLE 4.6.2.1 - CRUSHER SITE NO_X / NO_2 SUMMARY 2009 & 2010

Year	Month	# Valid Hours	% Valid Hours	Average NO_x	Average NO_2	Maximums 1-Hour NO_x	Maximums 1-Hour NO_2	Maximums 24-Hour NO_x	Maximums 24-Hour NO_2	Exceedances 1-Hour (>400)	Exceedances 24-Hour (>200)
2009	January	631	84.8%	22.1	5.8	600.2	88.4	321.6	57.0	0	0
	February	618	92.0%	10.0	5.4	430.8	68.7	73.3	23.1	0	0
	March	656	88.2%	12.0	6.1	431.0	70.5	146.7	34.6	0	0
	April	637	88.5%	13.0	7.5	236.4	67.2	66.8	21.0	0	0
	May	618	83.1%	7.1	3.3	175.5	62.3	75.5	14.1	0	0
	June	631	87.6%	17.8	6.3	287.1	39.4	105.3	20.8	0	0
	July	440	59.1%	11.7	4.3	148.4	33.8	43.2	11.0	0	0
	August	685	92.1%	4.2	2.0	106.3	28.7	20.9	6.1	0	0
	September	625	86.8%	3.3	1.6	127.5	37.3	46.6	13.7	0	0
	October	698	93.8%	3.8	2.1	131.8	34.8	25.1	8.0	0	0
	November	676	93.9%	5.5	3.4	206.4	60.8	64.1	21.9	0	0
	December	679	91.3%	9.4	4.3	287.8	70.2	52.6	19.6	0	0
Annual		7594	86.7%	9.8	4.3	600.2	88.4	321.6	57.0	0	0
2010	January	685	92.1%	10.9	4.5	264.0	70.3	143.9	42.1	0	0
	February	618	92.0%	29.6	9.8	371.1	75.0	197.3	50.3	0	0
	March	677	91.0%	3.2	2.5	180.4	41.4	22.7	10.3	0	0
	April	564	78.3%	41.8	12.1	534.3	78.8	251.3	54.6	0	0
	May	540	72.6%	16.9	6.2	306.0	63.6	92.4	23.6	0	0
	June	263	36.5%	15.1	5.2	299.3	45.7	65.2	16.2	0	0
	July	684	91.9%	18.7	5.8	400.8	45.1	173.7	24.6	0	0
	August	682	91.7%	8.5	4.8	73.7	29.8	20.4	10.4	0	0
	September	663	92.1%	16.5	6.0	582.2	70.0	246.6	40.3	0	0
	October	685	92.1%	20.0	6.1	497.5	92.3	144.3	30.7	0	0
	November	639	88.8%	15.3	4.8	905.7	109.2	115.6	26.6	0	0
	December	681	91.5%	12.2	6.6	364.9	77.7	74.6	19.9	0	0
Annual		7381	84.3%	17.1	6.2	905.7	109.2	251.3	54.6	0	0

Observations in ug/m^3

FIGURE 4.6.2.1 - CRUSHER SITE ANNUAL NO_X / NO_2 CONCENTRATIONS



Rolling annual average of hourly concentrations

4.6.3 Port Site

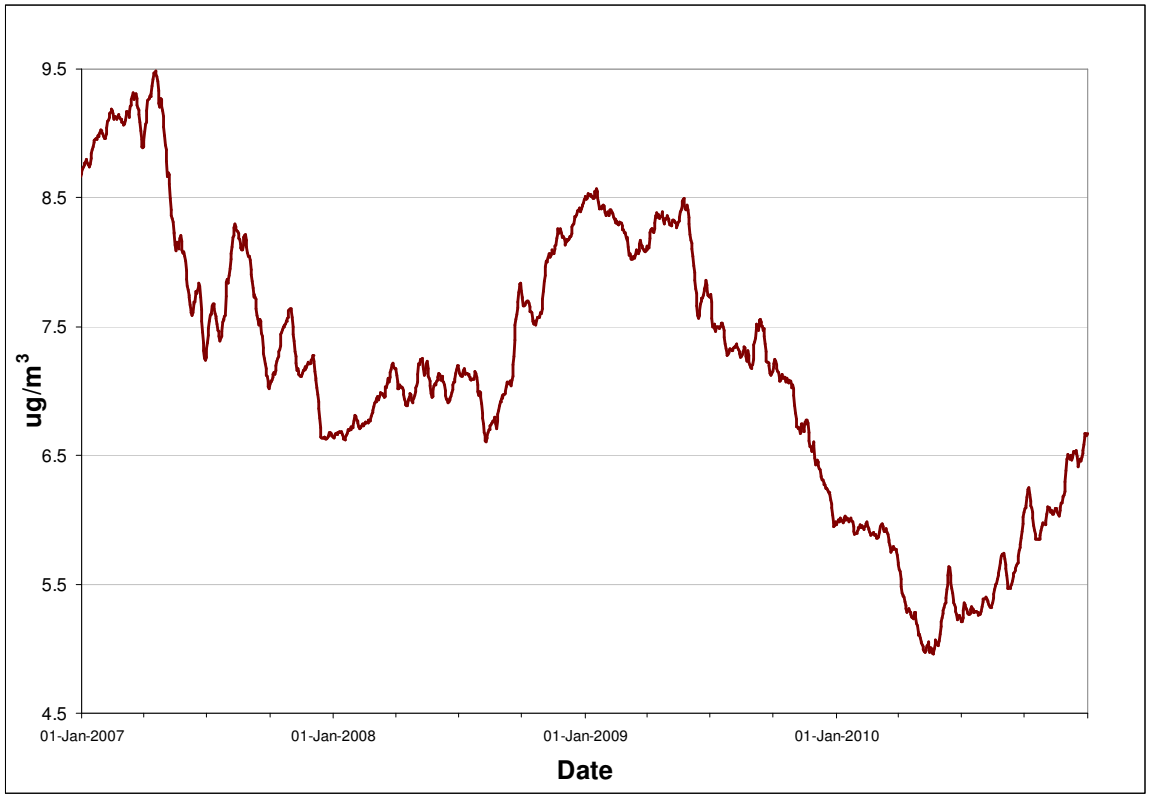
The Port Site station monitors the ambient levels of TSP on a continuous basis. The ambient air criterion was exceeded on four occasions in 2010. Table 4.6.3.1 provides summary information on the level of air contaminants measured at the Port Site, while Figure 4.6.3.1 provides a graphical representation of the annual trend.

TABLE 4.6.3.1 - PORT SITE TSP SUMMARY 2009 & 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120ug/m^3)
2009	January	31	100.0%	4.7	28.1	0
	February	28	100.0%	4.4	12.9	0
	March	31	100.0%	11.5	83.6	0
	April	29	96.7%	11.8	74.8	0
	May	31	100.0%	5.7	79.4	0
	June	30	100.0%	3.5	103.3	0
	July	24	77.4%	5.6	30.7	0
	August	5	16.1%	8.0	16.8	0
	September	19	63.3%	12.7	185.0	1
	October	0	0.0%			
	November	26	86.7%	5.7	44.1	0
	December	31	100.0%	3.2	38.7	0
Annual		285	78.1%	6.7	185.0	1
2010	January	31	100.0%	4.3	13.9	0
	February	28	100.0%	4.0	10.3	0
	March	31	100.0%	8.6	32.8	0
	April	30	100.0%	4.3	43.0	0
	May	31	100.0%	5.8	51.9	0
	June	28	93.3%	4.1	18.1	0
	July	31	100.0%	6.7	39.7	0
	August	31	100.0%	11.9	67.8	0
	September	30	100.0%	17.5	141.4	2
	October	31	100.0%	5.1	226.7	1
	November	18	60.0%	21.0	207.6	1
	December	30	96.8%	5.3	94.5	0
Annual		350	95.9%	7.8	226.7	4

Observations in ug/m^3

FIGURE 4.6.3.1 - PORT SITE ANNUAL TSP CONCENTRATIONS

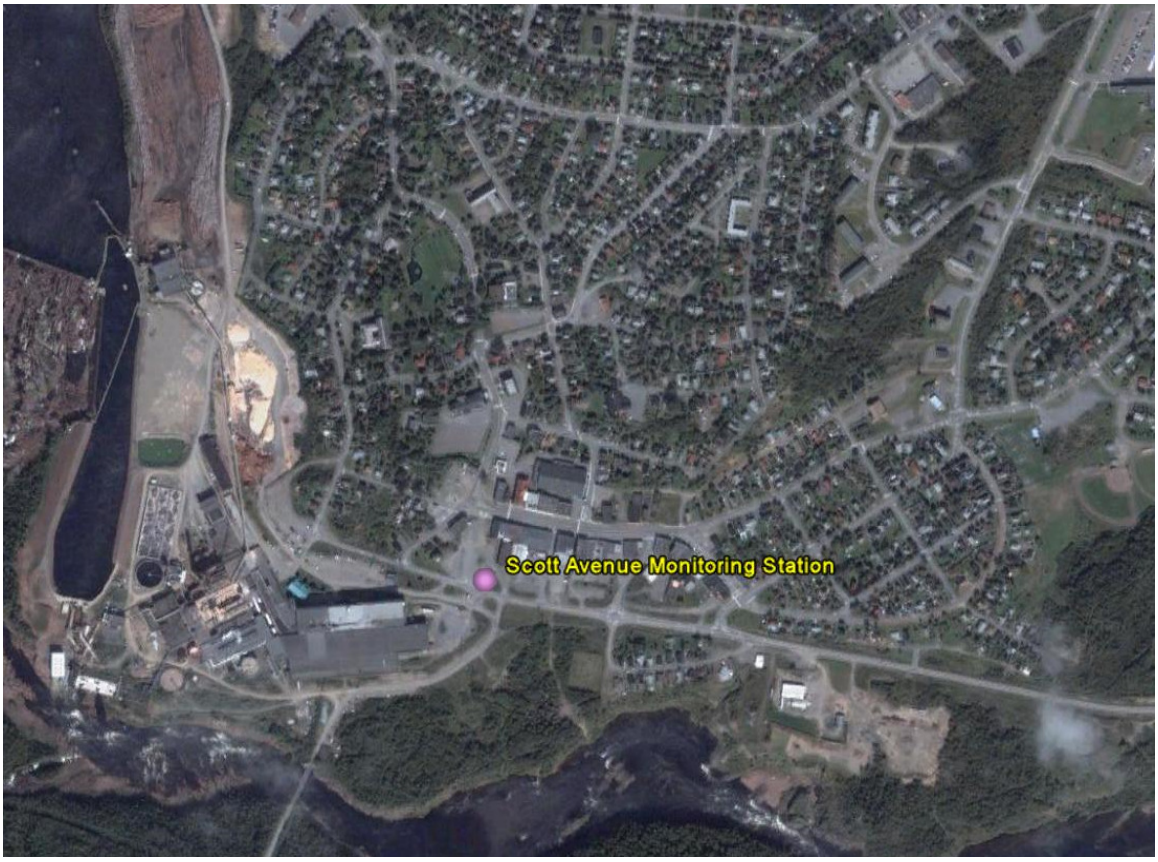


Rolling annual average of hourly concentrations

4.7 Abitibi - Consolidated Grand Falls Windsor

On February 12, 2009 Abitibi Consolidated closed the pulp and paper mill in Grand Falls Windsor, however, the monitoring station remained operational until March 2, 2010. The location of the monitoring station is identified in Figure 4.7.1.

FIGURE 4.7.1 - ABITIBI - CONSOLIDATED AMBIENT MONITORING STATION



4.7.1 Scott Avenue

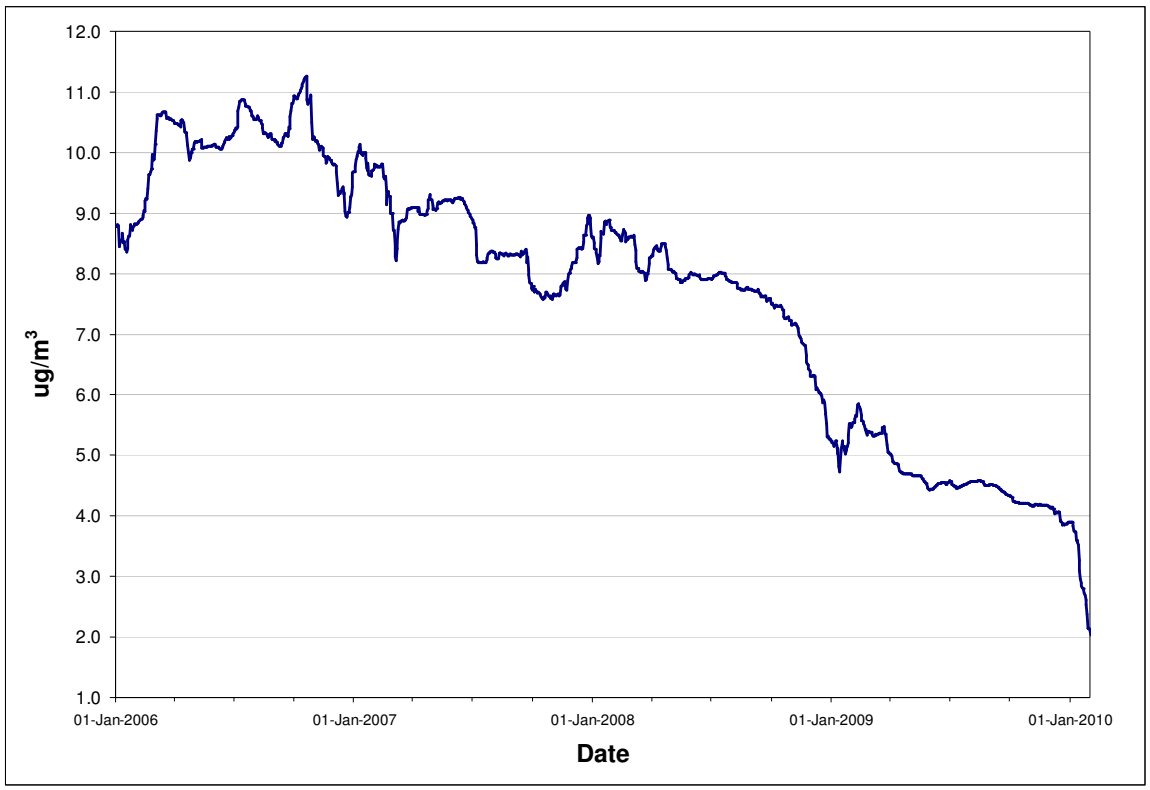
The Scott Avenue station monitored the ambient levels of SO_2, $PM_{2.5}$ and TSP on a continuous basis. The ambient air criteria were not exceeded on any occasion in 2010. Tables 4.7.1.1 through 4.7.1.3 provide summary information on the level of air contaminants measured at the Scott Avenue site, while Figures 4.7.1.1 through 4.7.1.3 provide a graphical representation of the annual trend.

TABLE 4.7.1.1 - SCOTT AVENUE SO_2 SUMMARY 2009 & 2010

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>900)	Regulatory Exceedances 3-Hour (>600)	Regulatory Exceedances 24-Hour (>300)
2009	January	676	90.9%	19.1	279.0	143.1	78.2	0	0	0
	February	637	94.8%	8.1	123.9	114.6	56.2	0	0	0
	March	713	95.8%	4.2	118.7	71.1	36.9	0	0	0
	April	690	95.8%	0.4	2.9	2.3	0.8	0	0	0
	May	705	94.8%	0.8	3.5	2.1	1.5	0	0	0
	June	272	37.8%	0.9	5.5	4.2	1.5	0	0	0
	July	677	91.0%	2.8	4.2	4.2	4.0	0	0	0
	August	714	96.0%	1.6	4.1	3.3	2.7	0	0	0
	September	691	96.0%	1.4	2.8	2.8	2.4	0	0	0
	October	714	96.0%	1.5	2.7	2.6	2.1	0	0	0
	November	483	67.1%	0.6	4.4	2.7	1.3	0	0	0
	December	122	16.4%	1.2	3.6	3.5	3.4	0	0	0
Annual		7094	81.0%	3.9	279.0	143.1	78.2	0	0	0
2010	January	714	96.0%	0.7	2.0	1.6	1.1	0	0	0
	February	645	96.0%	0.4	3.3	1.3	0.7	0	0	0
	March	30	4.0%	0.5	0.6	0.6	0.5	0	0	0
	April	0	0.0%					0	0	0
	May	0	0.0%					0	0	0
	June	0	0.0%					0	0	0
	July	0	0.0%					0	0	0
	August	0	0.0%					0	0	0
	September	0	0.0%					0	0	0
	October	0	0.0%					0	0	0
	November	0	0.0%					0	0	0
	December	0	0.0%					0	0	0
Annual		1389	15.9%	0.6	3.3	1.6	1.1	0	0	0

Observations in ug/m^3

FIGURE 4.7.1.1 - SCOTT AVENUE ANNUAL SO_2 CONCENTRATIONS



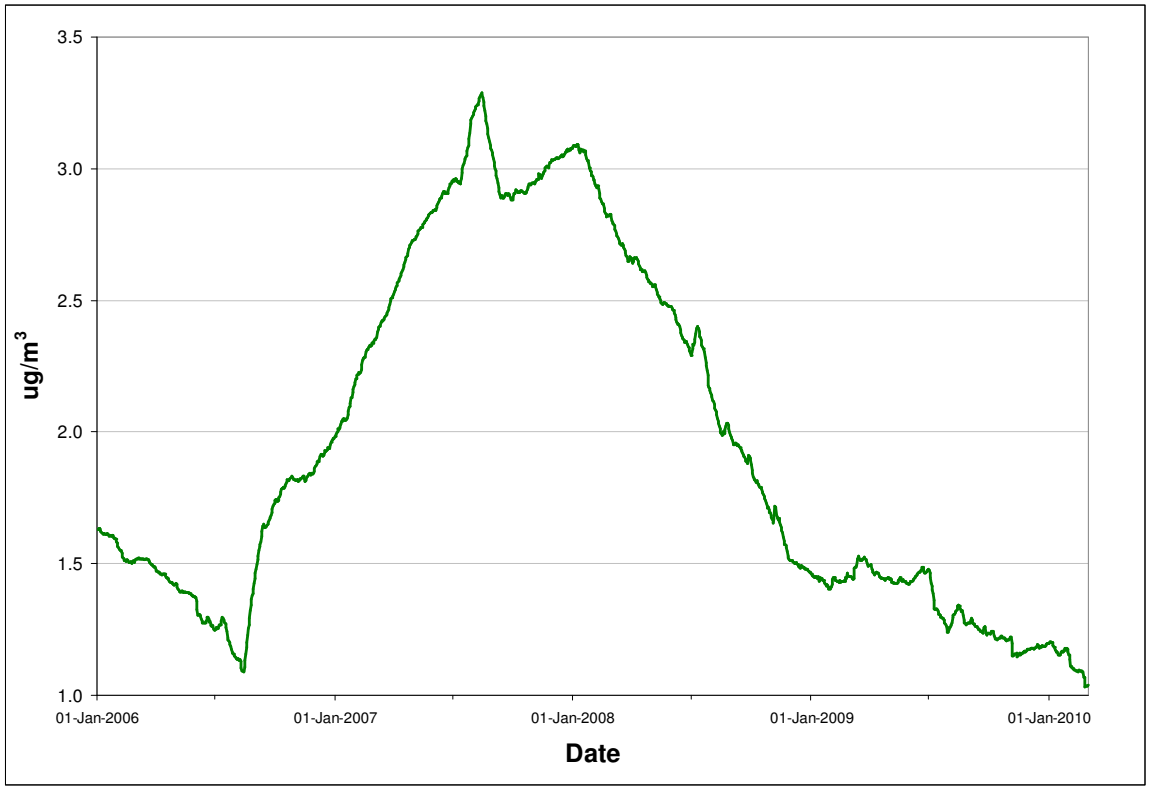
Rolling annual average of hourly concentrations

TABLE 4.7.1.2 - SCOTT AVENUE $PM_{2.5}$ SUMMARY 2009 & 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2009	January	31	100.0%	1.2	4.0	0
	February	28	100.0%	1.8	10.1	0
	March	31	100.0%	1.8	14.0	0
	April	30	100.0%	0.9	2.8	0
	May	30	96.8%	0.7	3.3	0
	June	12	40.0%	1.3	3.1	0
	July	29	93.5%	0.9	4.6	0
	August	18	58.1%	1.9	6.7	0
	September	30	100.0%	1.0	5.0	0
	October	31	100.0%	0.7	4.5	0
	November	0	0.0%	0.0	0.0	0
	December	1	3.2%	1.2	1.2	0
Annual		271	74.2%	1.2	14.0	0
2010	January	31	100.0%	0.8	5.6	0
	February	28	100.0%	0.7	3.5	0
	March	1	3.2%	0.1	0.1	0
	April	0	0.0%			
	May	0	0.0%			
	June	0	0.0%			
	July	0	0.0%			
	August	0	0.0%			
	September	0	0.0%			
	October	0	0.0%			
	November	0	0.0%			
	December	0	0.0%			
Annual		60	16.4%	0.7	5.6	0

Observations in ug/m^3

FIGURE 4.7.1.2 - SCOTT AVENUE ANNUAL $PM_{2.5}$ CONCENTRATIONS



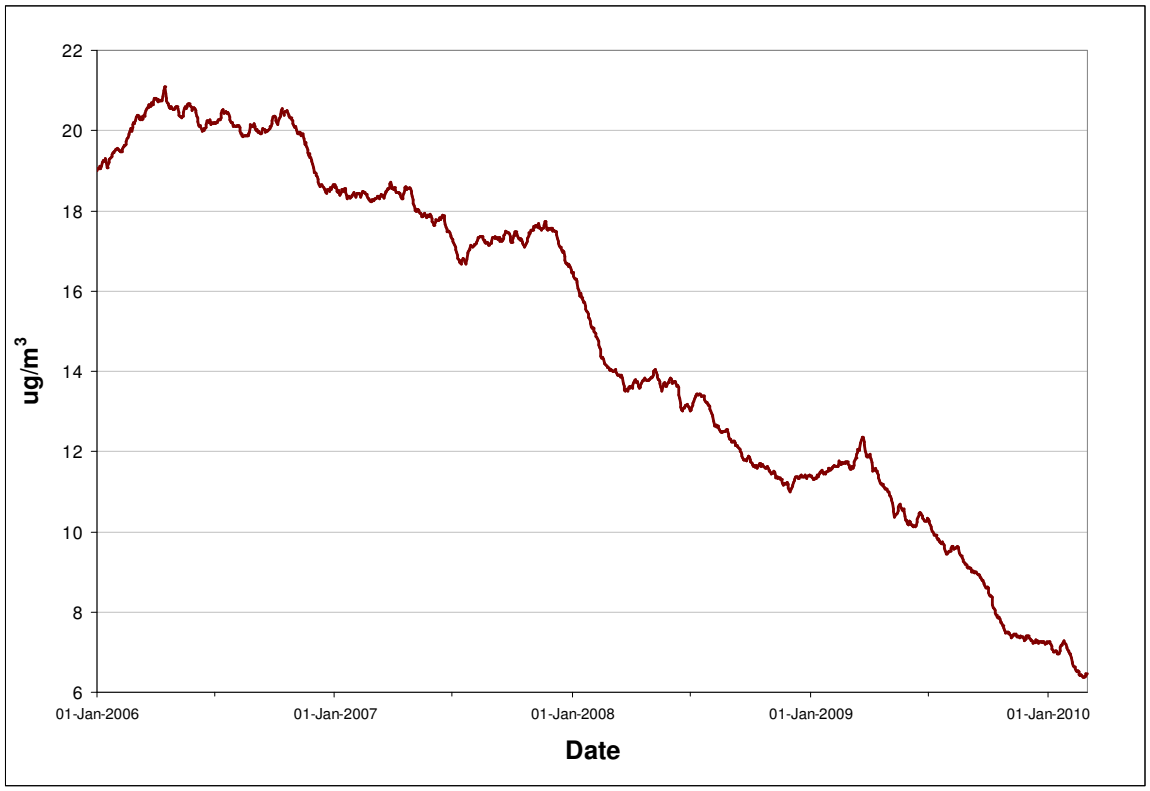
Rolling annual average of hourly concentrations

TABLE 4.7.1.3 - SCOTT AVENUE TSP SUMMARY 2009 & 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120 µg/m^3)
2009	January	29	93.5%	6.6	26.3	0
	February	24	85.7%	6.5	27.9	0
	March	29	93.5%	15.2	114.1	0
	April	30	100.0%	8.9	45.6	0
	May	29	93.5%	6.0	48.1	0
	June	0	0.0%	0.0	0.0	0
	July	25	80.6%	9.6	26.5	0
	August	31	100.0%	7.8	20.1	0
	September	30	100.0%	7.1	16.1	0
	October	31	100.0%	3.1	14.4	0
	November	0	0.0%	0.0	0.0	0
	December	1	3.2%	18.9	18.9	0
Annual		259	71.0%	7.9	114.1	0
2010	January	31	100.0%	5.3	64.6	0
	February	28	100.0%	2.9	38.6	0
	March	1	3.2%	5.1	5.1	0
	April	0	0.0%			
	May	0	0.0%			
	June	0	0.0%			
	July	0	0.0%			
	August	0	0.0%			
	September	0	0.0%			
	October	0	0.0%			
	November	0	0.0%			
	December	0	0.0%			
Annual		60	16.4%	4.1	64.6	0

Observations in ug/m^3

FIGURE 4.7.1.3 - SCOTT AVENUE ANNUAL TSP CONCENTRATIONS



Rolling annual average of hourly concentrations

4.8 Vale Newfoundland and Labrador - Long Harbour

In 2009, Vale Newfoundland and Labrador (Vale) began the installation of a monitoring network in the Long Harbour / Mt. Arlington Heights area to monitor the emissions from the Hydromet Nickel Processing facility currently being constructed by Vale. The network monitors levels of NO_x / NO_2 as well as $PM_{2.5}$. By the end of 2010, two of the three stations were operational. The location of these stations is shown in Figure 4.8.1.

FIGURE 4.8.1 - VALE / LONG HARBOUR AMBIENT MONITORING STATIONS

4.8.1 Community Centre (AM1)

The Community Centre (AM1) station was the first station installed in the area and monitors the ambient levels of $PM_{2.5}$ and NO_x / NO_2 on a continuous basis. The ambient air criteria were not exceeded on any occasion in 2010. Tables 4.8.1.1 and 4.8.1.2 provide summary information on the level of air contaminants measured at the Community Centre (AM1) site. Due to the limited data, no graphical representation of the annual trend is provided.

The NO_x / NO_2 monitor experienced prolonged episodes of baseline shifting in 2010, resulting in most of the data being invalidated for the year. The issue is being investigated.

TABLE 4.8.1.1 - COMMUNITY CENTRE (AM1) $PM_{2.5}$ SUMMARY 2009 & 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2009	January	0				
	February	0				
	March	0				
	April	0				
	May	0				
	June	0				
	July	0				
	August	0				
	September	0				
	October	30	96.8%	2.0	3.5	0
	November	30	100.0%	4.3	8.7	0
	December	31	100.0%	4.0	8.2	0
Annual		91	98.9%	3.4	8.7	0
2010	January	31	100.0%	3.9	7.3	0
	February	28	100.0%	3.3	8.4	0
	March	31	100.0%	3.7	8.2	0
	April	30	100.0%	3.8	10.5	0
	May	31	100.0%	3.5	10.4	0
	June	29	96.7%	3.5	9.8	0
	July	31	100.0%	4.9	15.3	0
	August	31	100.0%	4.2	8.6	0
	September	28	93.3%	5.1	20.5	0
	October	31	100.0%	2.4	5.9	0
	November	30	100.0%	2.9	5.2	0
	December	31	100.0%	8.0	13.9	0
Annual		362	99.2%	4.1	20.5	0

Observations in ug/m^3

TABLE 4.8.1.2 - COMMUNITY CENTRE (AM1) NO_X / NO_2 SUMMARY 2009 & 2010

Year	Month	# Valid Hours	% Valid Hours	Average NO_x	Average NO_2	Maximums 1-Hour NO_x	Maximums 1-Hour NO_2	Maximums 24-Hour NO_x	Maximums 24-Hour NO_2	Exceedances 1-Hour (>400)	Exceedances 24-Hour (>200)
2009	January	0									
	February	0									
	March	0									
	April	0									
	May	0									
	June	0									
	July	0									
	August	0									
	September	7	29.2%	12.0	4.3	32.2	7.7	0.0	0.0	0	0
	October	712	95.7%	17.1	7.4	45.3	17.8	30.0	11.8	0	0
	November	680	94.4%	17.3	8.9	62.4	26.2	35.6	13.2	0	0
	December	711	95.6%	9.0	6.0	42.4	21.5	19.5	11.6	0	0
Annual		2110	95.2%	14.4	7.4	62.4	26.2	35.6	13.2	0	0
2010	January	712	95.7%	10.3	7.2	57.8	35.5	19.8	12.6	0	0
	February	638	94.9%	13.0	7.9	60.2	26.1	28.6	13.8	0	0
	March	0									
	April	0									
	May	0									
	June	0									
	July	0									
	August	0									
	September	0									
	October	0									
	November	0									
	December	0									
Annual		1350	15.4%	11.6	7.5	60.2	35.5	28.6	13.8	0	0

Observations in ug/m^3

4.8.2 Main Road (AM2)

The Main Road (AM2) station was installed in April 2010 and monitors the ambient levels of $PM_{2.5}$ and NO_x / NO_2 on a continuous basis. The ambient air criteria were not exceeded on any occasion in 2010. Tables 4.8.2.1 and 4.8.2.2 provide summary information on the level of air contaminants measured at the Main Road (AM2) site. Due to the limited data, no graphical representation of the annual trend is provided.

TABLE 4.8.2.1 - MAIN ROAD (AM2) $PM_{2.5}$ SUMMARY 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2010	January	0				
	February	0				
	March	0				
	April	8	88.9%	2.0	3.6	0
	May	31	100.0%	2.4	6.9	0
	June	30	100.0%	4.2	11.9	0
	July	31	100.0%	3.6	15.5	0
	August	31	100.0%	3.4	8.3	0
	September	28	93.3%	4.1	21.6	0
	October	31	100.0%	2.3	4.4	0
	November	30	100.0%	2.5	6.3	0
	December	31	100.0%	4.8	9.2	0
Annual		251	68.8%	3.4	21.6	0

Observations in ug/m^3

TABLE 4.8.2.2 - MAIN ROAD (AM2) NO_X / NO_2 SUMMARY 2010

Year	Month	# Valid Hours	% Valid Hours	Average NO_x	Average NO_2	Maximums 1-Hour NO_x	Maximums 1-Hour NO_2	Maximums 24-Hour NO_x	Maximums 24-Hour NO_2	Exceedances 1-Hour (>400)	Exceedances 24-Hour (>200)
2010	January	0									
	February	0									
	March	0									
	April	198	91.7%	9.6	4.0	52.9	13.0	16.9	5.7	0	0
	May	711	95.6%	10.5	3.6	69.1	16.6	29.5	9.0	0	0
	June	683	94.9%	9.2	3.2	47.3	9.8	16.6	5.0	0	0
	July	714	96.0%	11.3	3.2	27.7	7.8	17.1	6.3	0	0
	August	712	95.7%	10.6	3.2	46.6	12.1	19.0	7.2	0	0
	September	663	92.1%	14.9	5.0	100.9	30.4	67.1	16.9	0	0
	October	714	96.0%	11.4	6.6	70.5	32.4	22.9	13.0	0	0
	November	687	95.4%	12.7	9.0	74.2	39.0	27.2	20.2	0	0
	December	712	95.7%	8.8	6.5	63.5	42.5	28.8	20.9	0	0
Annual		5794	66.1%	11.1	5.0	100.9	42.5	67.1	20.9	0	0

Observations in ug/m^3

4.9 NALCOR - Little Bay Islands

In 2010, NALCOR began monitoring the levels of NO_x / NO_2 in the community of Little Bay Islands. The monitor is situated in an area to measure emissions from the NALCOR diesel generating plant in the community. The location of the station is shown in Figure 4.9.1.

FIGURE 4.9.1 - NALCOR LITTLE BAY ISLANDS AMBIENT MONITORING STATION

4.9.1 Little Bay Islands

The Little Bay Islands station monitors the ambient levels of NO_x / NO_2 on a continuous basis. The ambient air criteria were not exceeded on any occasion in 2010. Table 4.9.1.1 provides summary information on the level of air contaminants measured at the Little Bay Islands site. Due to the limited data, no graphical representation of the annual trend is provided.

TABLE 4.9.1.1 - LITTLE BAY ISLANDS NO_X / NO_2 SUMMARY 2010

Year	Month	# Valid Hours	% Valid Hours	Average NO_x	Average NO_2	Maximums 1-Hour NO_x	Maximums 1-Hour NO_2	Maximums 24-Hour NO_x	Maximums 24-Hour NO_2	Exceedances 1-Hour (>400)	Exceedances 24-Hour (>200)
2010	January	0									
	February	71	10.6%	2.3	2.4	6.6	5.8	2.7	2.8	0	0
	March	657	88.3%	17.0	9.2	229.0	61.1	81.3	29.0	0	0
	April	690	95.8%	44.4	17.1	338.5	81.0	109.4	39.7	0	0
	May	713	95.8%	36.9	11.6	682.7	87.5	151.2	33.6	0	0
	June	690	95.8%	39.3	13.6	561.8	112.2	112.0	29.8	0	0
	July	675	90.7%	40.1	11.9	468.8	56.5	112.5	23.5	0	0
	August	588	79.0%	37.7	12.4	377.6	65.7	99.6	24.7	0	0
	September	679	94.3%	24.8	8.9	361.6	57.5	57.0	21.5	0	0
	October	711	95.6%	21.4	8.7	247.6	39.8	67.3	19.0	0	0
	November	690	95.8%	17.5	8.7	207.2	53.1	67.3	24.5	0	0
	December	712	95.7%	21.0	8.7	171.8	47.9	90.5	32.0	0	0
Annual		6876	78.5%	29.6	11.0	682.7	112.2	151.2	39.7	0	0

Observations in ug/m^3

5.0 Department of Environment and Conservation

In mid-year 2010, the Department of Environment and Conservation positioned its mobile air monitoring station at Buchans to begin monitoring the levels of SO_2, $PM_{2.5}$ NO_x / NO_2, O_3 and TSP in the community of Buchans. The station is situated in an area to measure emissions from the remediation work that was ongoing at the former Buchans mining operation. The location of the station is shown in Figure 5.0.1.

FIGURE 5.0.1 - DOEC TEMPORARY BUCHANS AMBIENT MONITORING STATION

5.1 Buchans

The Buchans station monitors the ambient levels of complete suite monitoring SO_2, $PM_{2.5}$ NO_x / NO_2, O_3 and TSP on a continuous basis. The ambient air criteria were not exceeded on any occasion in 2010. Tables 5.1.1 through 5.1.5 provide summary information on the level of each air contaminant measured at the Buchans site. Due to the limited data, no graphical representation of the annual trend is provided.

Table 5.1.6 provides a summary of the AQHI in 2010.

TABLE 5.1.1 - BUCHANS SO_2 SUMMARY 2010

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 3-Hour	Maximum 24-Hour	Regulatory Exceedances 1-Hour (>900)	Regulatory Exceedances 3-Hour (>600)	Regulatory Exceedances 24-Hour (>300)
2010	January	0								
	February	0								
	March	0								
	April	0								
	May	0								
	June	0								
	July	544	73.1%	5.1	10.2	8.5	7.8	0	0	0
	August	688	92.5%	3.0	7.2	4.9	4.1	0	0	0
	September	687	95.4%	2.3	6.4	5.1	4.2	0	0	0
	October	606	81.5%	2.9	5.6	5.2	4.7	0	0	0
	November	528	73.3%	3.4	6.5	6.4	5.8	0	0	0
	December	361	48.5%	4.6	9.0	8.5	8.0	0	0	0
Annual		3414	39.0%	3.4	10.2	8.5	8.0	0	0	0

Observations in ug/m^3

TABLE 5.1.2 - BUCHANS $PM_{2.5}$ SUMMARY 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>25 µg/m^3)
2010	January	0				
	February	0				
	March	0				
	April	0				
	May	0				
	June	17	56.7%	3.2	9.2	0
	July	6	19.4%	3.9	7.6	0
	August	17	54.8%	2.7	6.7	0
	September	30	100.0%	2.7	11.7	0
	October	27	87.1%	2.7	12.9	0
	November	26	86.7%	2.4	5.9	0
	December	14	45.2%	3.2	6.4	0
Annual		137	37.5%	2.8	12.9	0

Observations in ug/m^3

TABLE 5.1.3 - BUCHANS NO_X / NO_2 SUMMARY 2010

Year	Month	# Valid Hours	% Valid Hours	Average NO_x	Average NO_2	Maximums 1-Hour NO_x	Maximums 1-Hour NO_2	Maximums 24-Hour NO_x	Maximums 24-Hour NO_2	Exceedances 1-Hour (>400)	Exceedances 24-Hour (>200)
2010	January	0									
	February	0									
	March	0									
	April	0									
	May	0									
	June	0									
	July	0									
	August	0									
	September	537	74.6%	5.6	3.4	148.5	107.0	15.3	10.2	0	0
	October	660	88.7%	4.8	2.9	136.4	84.3	20.2	11.1	0	0
	November	637	88.5%	3.0	1.8	92.6	57.4	9.1	5.2	0	0
	December	361	48.5%	1.5	1.0	9.5	5.7	3.2	1.6	0	0
Annual		2195	25.1%	3.9	2.4	148.5	107.0	20.2	11.1	0	0

Observations in ug/m^3

TABLE 5.1.4 - BUCHANS O_3 SUMMARY 2010

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour	Maximum 8-Hour	Regulatory Exceedances 1-Hour (>160)	Regulatory Exceedances 8-Hour (>87)
2010	January	0						
	February	0						
	March	0						
	April	0						
	May	0						
	June	0						
	July	0						
	August	0						
	September	535	74.3%	40.1	74.1	63.5	0	0
	October	658	88.4%	38.9	68.9	66.2	0	0
	November	635	88.2%	54.8	72.7	70.3	0	0
	December	361	48.5%	63.2	76.2	73.9	0	0
Annual		2189	25.0%	47.8	76.2	73.9	0	0

Observations in ug/m^3

TABLE 5.1.5 - BUCHANS TSP SUMMARY 2010

Year	Month	# Valid Days	% Valid Days	Average	Maximum 24-Hour	Regulatory Exceedances (>120 µg/m^3)
2010	January	0				
	February	0				
	March	0				
	April	0				
	May	0				
	June	14	46.7%	5.5	14.8	0
	July	31	100.0%	6.3	14.5	0
	August	20	64.5%	14.7	40.3	0
	September	30	100.0%	14.5	53.5	0
	October	27	87.1%	7.8	34.2	0
	November	25	83.3%	10.4	26.8	0
	December	14	45.2%	6.5	16.3	0
Annual		161	44.1%	9.7	53.5	0

Observations in ug/m^3

TABLE 5.1.6 - BUCHANS AQHI SUMMARY 2010

Year	Month	# Valid Hours	% Valid Hours	Average	Maximum 1-Hour
2010	January				
	February				
	March				
	April				
	May				
	June				
	July				
	August				
	September	532	73.9%	1.3	5.9
	October	654	87.9%	1.3	4.7
	November	632	87.8%	1.6	3.9
	December	361	48.5%	1.9	2.8
Annual		2179	24.9%	1.5	5.9