

Appendix D

Baseline Particulate and Noise Monitoring Report



Baseline Particulate and Noise Monitoring

Nova Construction Quarry
Sporting Mountain Nova Scotia

Nova Construction Co. Ltd.

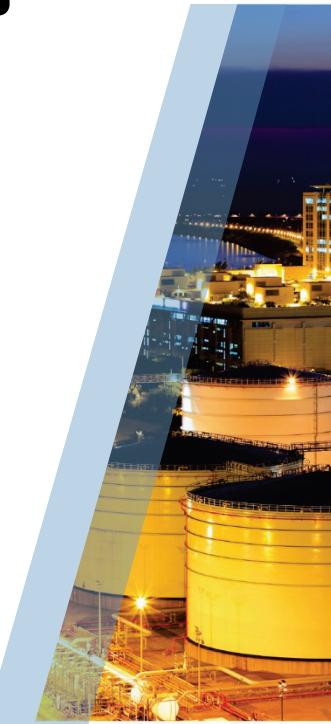




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1. Introduction

GHD Limited was retained by Nova Construction Co. Ltd. to conduct a baseline monitoring program for Total Suspended Particulates (TSP) and noise. The monitoring program was completed on the Nova Construction property and within the neighboring residential areas located northeast and south of the quarry. Particulate monitoring was conducted at three locations from August 20 through August 22, 2018, for a total of two days at each location. Noise monitoring was completed between August 20 and September 22, 2019 at the same or nearby locations.

1.1 Site Description

The Nova Construction Quarry (the Site) is located in Sporting Mountain, Cape Breton, Nova Scotia (See Site Location Map, Figure 1). The Site consists of a quarry used to extract rock aggregate, facilities for processing rock into crushed stone, and a small office and scale located near the southeast corner property boundary. The Site is bordered by forested land on all sides. Morrison Road, which runs along the eastern boundary of the Site, is used to transport product from the Site.

During the monitoring period, quarry operations were minimal. There was some movement of equipment from the site, but no blasting, and no crushing or loading of aggregate took place. Two additional quarries are located near the site on Morrison Road. Both were non-operational during the monitoring period.

2. Sampling Methodology

2.1 Particulate Monitoring

Particulate monitoring was conducted at three locations: the southeast corner of the quarry near the main gate (Quarry - 795 Morrison Road); at a private residence to the north of the quarry boundary (1329 Morrison Road); and at a private residence to the south of the quarry boundary (571 Morrison Road). Table 2.1 provides a description of the air monitoring locations. Site locations are also depicted on Figure 2. TSP sampling was conducted at the three locations from August 20 through August 22, 2019.

Table 2.1 Particulate Monitoring Locations

Sample Location ID	Description
A1	795 Morrison Road – Quarry. Monitoring conducted in southeast corner of quarry, near main gate.
A2	1329 Morrison Road – private residence located 1.7 km northeast of quarry. Monitoring conducted in front yard.
A3	571 Morrison Road – private residence located 1.5 km south of quarry. Monitoring conducted in front yard.

The monitoring program for TSP was carried out in accordance with USEPA CFR 40 Part 50 - Regulations for Ambient Particulate Sampling. Sampling equipment utilized by GHD consisted of three high volume (Hi-Vol) air samplers equipped with 8 inch x 10 inch glass fiber filters for sample



collection. The Hi-Vol sampler used at the Quarry was electrically powered by a gasoline generator located approximately 80 m away. The Hi-Vol samplers used at the private residences were electrically powered by connection to the power supplies at each location. The Hi-Vol samplers were calibrated according to the above referenced method as well as manufacturers' specifications.

Approximately 40 cubic feet per minute of ambient air was drawn through the Hi-Vol samplers over 24 hour sampling periods, trapping particulate on a pre-weighed glass fiber filter. After each 24-hour sampling event, filters were removed from the sampler, placed in an envelope and stored in a clean, dry area. A total of two samples were collected at A1 (795 Morrison Road - Quarry), A2 (1329 Morrison Road), and A3 (571 Morrison Road). Sampler flow calibration sheets and calculated flow rates are provided in Appendix A. Upon completion of the program, collected samples were shipped to Maxxam Analytics in Sydney, Nova Scotia for analysis in accordance with the SYD SOP 00172 as per the analytical report method. The laboratory results and certificates of analysis are provided in Appendix C.

2.2 Noise Monitoring

The three noise monitoring locations are in proximity to the air sampling locations. Table 2.2 provides a description of the noise monitoring locations. Site locations are also depicted on Figure 2. Monitoring was conducted between August 20 and 22, 2019.

Table 2.2 Noise Monitoring Locations

Monitoring Location ID	Description
N1	795 Morrison Road – Quarry. Monitoring conducted in central area of quarry.
N2	1329 Morrison Road – private residence located 1.7 km northeast of quarry. Monitoring conducted in back yard.
N3	571 Morrison Road – private residence located 1.5 km south of quarry. Monitoring conducted in back yard.

Noise is measured as sound pressure levels (SPL) in decibels (dB). This scale is "A" weighted to approximate the way the human ear hears. Noise measurements are therefore represented as dBA units. The noise meters were programmed to record continuous 5-minute sound level measurements taken with the detector in slow response using the A-weighting (dBA scale) and reported as average equivalent continuous level (L_{eq}) dBA readings at each of the three monitoring locations.

Sound level measurements at the Quarry and at 571 Morrison Road were collected using a Quest Sound Pro SE/DL sound level meter, equipped with data-logging capabilities. The device was calibrated at 114 decibels (dBA) before and after each measurement period using a Quest QC-10 Calibrator. A foam covering protected the microphone from adverse weather conditions and reduced sound disturbances caused by physical contact and wind turbulence.

Sound level measurements at 1329 Morrison Road were collected using a Larson Davis Sound Expert LxT sound level meter, equipped with data-logging capabilities. The device was calibrated at 114 decibels (dBA) before and after each measurement period using a Larson Davis Cal 200



calibrator. A foam covering protected the microphone from adverse weather conditions and reduced sound disturbances caused by physical contact and wind turbulence.

2.3 Deviation from Scope

USEPA CFR 40 Part 50 - Regulations for Ambient Particulate Sampling requires that each particulate sample be collected over a 24-hour period. The high-vol sampler located at the quarry was disconnected from its power supply for approximately 4.5 hours during the evening of August 20, 2019. Total Suspended Particulate calculations for this sample were adjusted to reflect this shortened sampling period. A second sample was collected during the subsequent 24-hour period with no deviation from method.

3. Results and Discussion

3.1 Weather Conditions

The weather throughout the particulate monitoring period was predominantly clear with some cloudy periods, and brief periods of rain occurring on the morning of August 22, 2019. Meteorological conditions were collected from Environment Canada's Port Hawkesbury weather station. Tabulated weather data is presented in Appendix B. Prominent wind direction for the monitoring period is depicted by the wind rose diagram labeled as Figure 3.

A brief summary of weather conditions during the air monitoring period is provided in Table 3.1.

Table 3.1 Summary of Weather Conditions During Monitoring

Date	Average Temperature	Wind Speed Range (km/hr)	Predominant Wind Direction for Monitoring Program
August 20, 2019	20.4°C	0-28 km/h	NNE
August 21, 2019	20.3°C	4-22 km/h	
August 22, 2019	21.8°C	4-26 km/h	

3.2 Total Suspended Particulate Monitoring

Total suspended particulates include dust, dirt, soot, smoke, and liquid droplets directly emitted into the air by sources such as factories, power plants, cars, construction activity, fires, and natural windblown dust. Particles formed in the atmosphere by condensation or the transformation of emitted gases such as SO₂ and Volatile Organic Compounds (VOCs) are also considered particulate matter.

Quarry activities such as blasting, on-site vehicle operations, crushing, and wind-borne particulate from waste rock piles can contribute to increased particulate levels. Based on Nova Scotia Air Quality Regulations, a significant adverse environmental effect with respect to total suspended particulate is one that would reduce air quality, such that the level of total suspended particulate matter exceeds 120 µg/m³ over a 24 hour averaging period or 70 µg/m³ over an annual averaging



period (Nova Scotia *Environment Act* Air Quality Regulations, Effective January 1, 2015, NS Reg 179/2014).

Table 3.2 Air Monitoring Summary

Date	A1 – Quarry 795 Morrison Road	A2 1329 Morrison Road	A3 – 571 Morrison Road
August 20 - 21, 2019	15.6 µg/m ³	17.7 µg/m ³	16.1 µg/m ³
August 21-22, 2019	23.0 µg/m ³	28.4 µg/m ³	14.6 µg/m ³

All calculated values were reported below the maximum permissible ground level concentration of 120 µg/m³ outlined in Schedule A of the Nova Scotia Air Quality Regulations. Total suspended particulate values measured at the three monitoring locations over the two-day period ranged from 14.6 µg/m³ to 28.4 µg/m³. Total suspended particulate measurements compared to applicable criteria are presented in Table 4 at the end of this report.

3.3 Noise Monitoring

Noise is defined as any unwanted sound which may be hazardous to health, interfere with speech and verbal communications, or is otherwise disturbing, irritating, or annoying. In general an increase in noise levels from 1 to 3 dBA will not be noticeable, 3 to 5 dBA will be noticeable by most people, 5 to 7 dBA will be easily heard, and an increase of 7 to 10 dBA will be considered by most to be twice as loud (USEPA Reference, 1974). Because the decibel scale is logarithmic, doubling of the number of noise sources will increase noise levels by 3 dBA. A tenfold increase in the number of noise sources will add 10 dBA to the noise level.

Quarry operations such as blasting, on site vehicle operations, and rock crushing can contribute to increased noise levels. As specified in the Noise Measurement and Assessment Guidelines (Nova Scotia Environment Pit and Quarry Guidelines, May 4, 1999, Revised August 20, 2003), L_{eq} values should be within limits shown in Table 3.2. The criteria is compared to the minimum and maximum values recorded.

Table 3. 3 Noise Monitoring Summary

Time Frame	Criteria (dBA)	dBA		
		N1	N2	N3
		Recorded Min - Max		
0700 - 1900	≤ 65	33.09 – 55.72	29.29 – 41.03	36.18 – 51.25
1900 - 2300	≤ 60	33.10 – 36.04	25.28 – 30.01	32.41 – 37.11
2300 - 0700	≤ 55	32.42 – 33.51	23.22 – 27.25	31.90 – 34.75

Average sound level values ranged from 23.22 dBA to 55.72 dBA at all locations. Average sound level values for each time interval were reported below the maximum permissible sound levels of the Noise Measurement and Assessment Guidelines.



The lowest sound levels were reported north of the quarry, at location N2 (1329 Morrison Road). The highest noise levels recorded during day time (07:00 – 19:00) hours were measured at location N1 (Quarry – 795 Morrison Road). The highest noise levels recorded during the evening (19:00 – 23:00) and overnight hours (23:00 – 07:00) were measured at location N3 (571 Morrison Road).

The sound level measurements compared to applicable criteria are presented in Table 5, at the end of this report.

4. Limitations

This report has been prepared and the work referred to in this report has been undertaken by GHD for Nova Construction Co. Ltd. Any use, reliance on, or decision made by any person other than Nova Construction Co. Ltd. based on this report is the sole responsibility of such other person. Nova Construction Co. Ltd. and GHD make no representation or warranty to any other person with regard to this report and the work referred to in this report and they accept no duty of care to any other person or any liability or responsibility whatsoever for any losses, expenses, damages, fines, penalties or other harm that may be suffered or incurred by any other person as a result of the use of, reliance on, any decision made or any action taken based on this report or the work referred to in this report.

The investigation undertaken by GHD with respect to this report and any conclusions or recommendations made in this report reflect GHD's judgement based on the site conditions observed at the time of the site inspection on the date(s) set out in this report and on information available at the time of preparation of this report. This report has been prepared for specific application to this Site and it is based, in part, upon visual observation of the Site, sub surface investigation at discrete locations and depths, and specific analysis of specific chemical parameters and materials during a specific time interval, all as described in this report.

It is also important to emphasize that an air and noise assessment is, in fact, a random sampling of a site and the comments included in this report are based on the results obtained at the monitoring locations only. The conditions confirmed at the sampling locations may vary at other locations. Conditions can also be significantly modified by construction activities on Site (i.e. excavation, dewatering and drainage, blasting, etc.).

Unless otherwise stated, the findings cannot be extended to previous or future site conditions, portions of the Site which were unavailable for direct investigation, or chemical parameters, materials or analysis which were not addressed. Substances other than those addressed by the investigation described in this report may exist within the Site, substances addressed by the investigation may exist in areas of the Site not investigated and concentrations of substances addressed which are different than those reported may exist in areas other than the locations from which samples were taken.

If Site conditions or applicable standards change or if any additional information becomes available at a future date, modifications to the findings, conclusions and recommendations in this report may be necessary. The recommendations made in this report are in accordance with our present



understanding of the project, the current site use, ground surface elevations and conditions, and are based on the work scope approved by the Client.

Other than by Nova Construction Co. Ltd., copying or distribution of this report or use of or reliance on the information contained herein in whole or in part, is not permitted without the express written permission of Nova Construction Co. Ltd.. Nothing in this report is intended to constitute or provide a legal opinion.

5. Closure

We trust this meets the requirements for baseline air and noise monitoring and sampling for the Nova Construction Quarry, located at 795 Morrison Roda, Sporting Mountain, Cape Breton, Nova Scotia.

All of which is respectfully submitted,

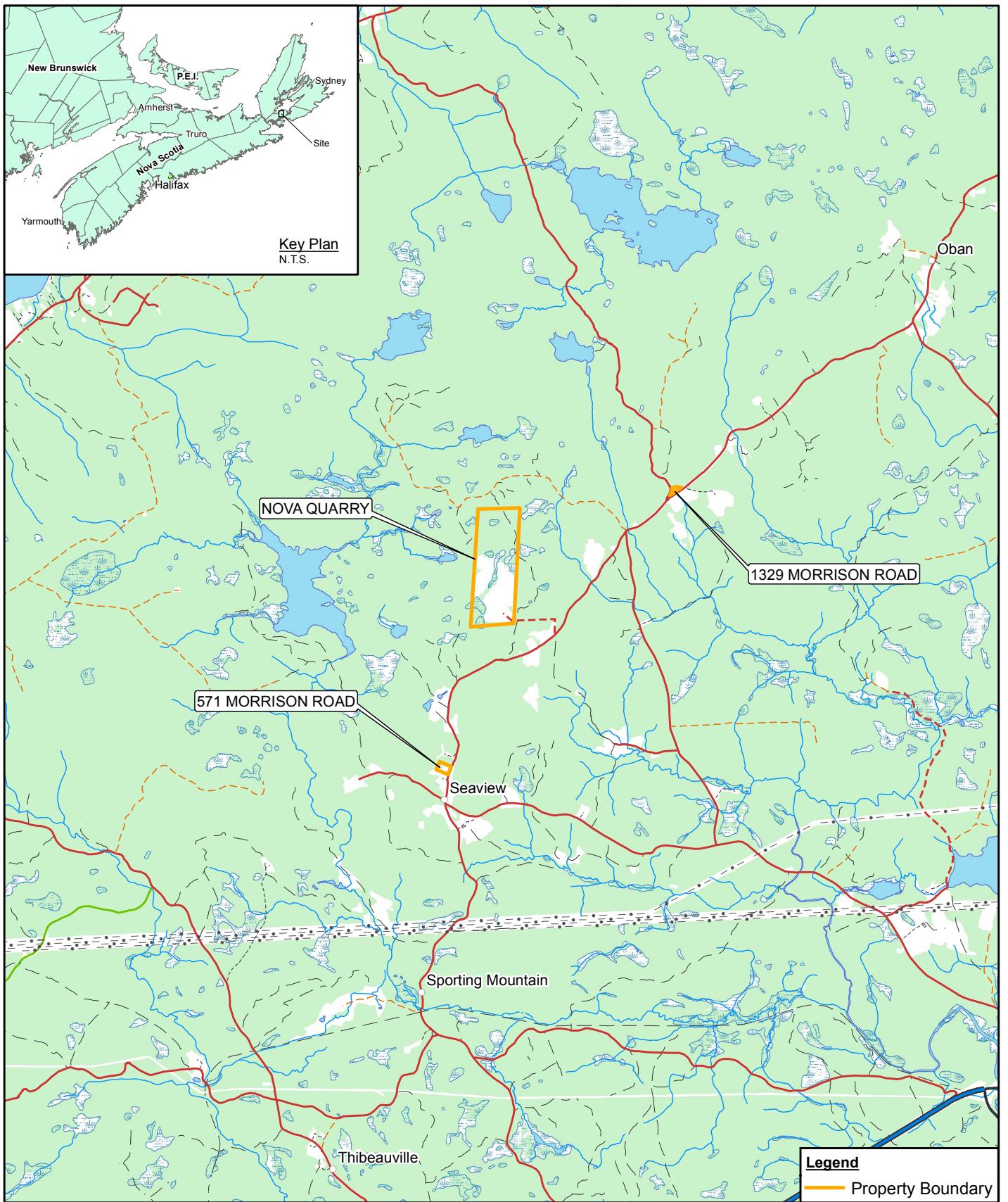
GHD

A handwritten signature in blue ink, appearing to read "Jeffrey Parks".

Jeffrey Parks, P.Geo., FGC

A handwritten signature in blue ink, appearing to read "Jessica Romo".

Jessica Romo, MREM



Source: Service Nova Scotia

0 500 1,000 1,500
Metres

Coordinate System:
NAD 1983 CSRS UTM Zone 20N



NOVA CONSTRUCTION
SEAVIEW, NOVA SCOTIA
BASELINE PARTICULATE AND NOISE
MONITORING

SITE LOCATION

11194492-01-04
Sep 20, 2019

FIGURE 1



Legend

- Property Boundary
- ▲ Noise Monitoring Location
- Particulate Monitoring Location

Source: Service Nova Scotia

0 50 100 150
Metres

Coordinate System:
NAD 1983 CSRS UTM Zone 20N



NOVA CONSTRUCTION
SEAVIEW, NOVA SCOTIA
BASELINE PARTICULATE AND NOISE MONITORING
**SITE PLAN WITH MONITORING STATIONS
NOVA QUARRY**

11194492-01-04
Sep 20, 2019

FIGURE 2



Legend

- Property Boundary
- ▲ Noise Monitoring Location
- Particulate Monitoring Location

Source: Service Nova Scotia

0 25 50 75
Metres

Coordinate System:
NAD 1983 CSRS UTM Zone 20N



NOVA CONSTRUCTION
SEAVIEW, NOVA SCOTIA
BASELINE PARTICULATE AND NOISE MONITORING
SITE PLAN WITH MONITORING STATIONS
1329 MORRISON ROAD

11194492-01-04
Sep 20, 2019

FIGURE 3



Legend

- Property Boundary
- ▲ Noise Monitoring Location
- Particulate Monitoring Location

Source: Service Nova Scotia

0 25 50 75
Metres

Coordinate System:
NAD 1983 CSRS UTM Zone 20N



NOVA CONSTRUCTION
SEAVIEW, NOVA SCOTIA
BASELINE PARTICULATE AND NOISE MONITORING
SITE PLAN WITH MONITORING STATIONS
571 MORRISON ROAD

11194492-01-04
Sep 20, 2019

FIGURE 4

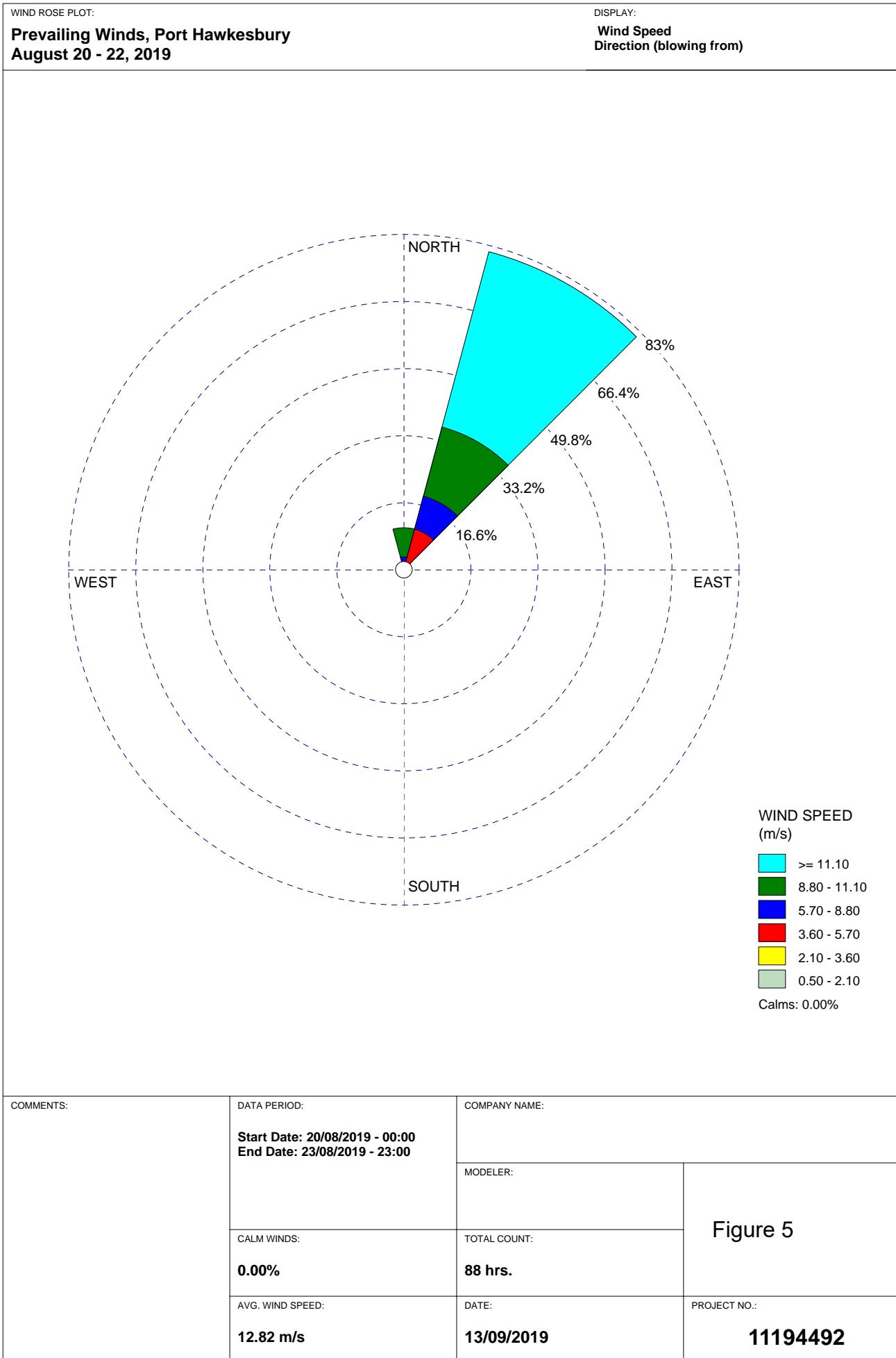


TABLE 4: CALCULATED PARTICULATE RESULTS

Nova Construction - 2019 Total Suspended Particulate and Noise Monitoring Program
Results for Total Suspended Particulate (TSP)

Sample ID	Sampler Used	Sample Date	Sample Time (min)	Flow (m ³ /min)	Flow (CFM)	Total Volume (m ³)	Total Suspended Particulate (TSP) (Total µg)	Total Suspended Particulate (TSP) (µg/m ³)	Nova Scotia Air Quality Regulation ¹ - 24 hour sample
A1 795 Morrison Road (Quarry)	GRAS-W00-02	Aug 20 - 21, 2019*	1257	1.119	39.53	1406.20	22000	15.6	120 µg/m ³
		Aug 21 - 22, 2019	1399	1.119	39.53	1565.06	36000	23.0	
A2 1329 Morrison Road	GRAS-W00-03	Aug 20 - 21, 2019	1450	1.129	39.89	1636.89	29000	17.7	120 µg/m ³
		Aug 21 - 22, 2019	1434	1.129	39.89	1618.82	46000	28.4	
A3 571 Morrison Road	GRAS-W00-01	Aug 20 - 21, 2019	1441	1.123	39.67	1617.75	26000	16.1	120 µg/m ³
		Aug 21 - 22, 2019	1440	1.093	38.61	1573.43	23000	14.6	
Blank		Aug 20 - 22, 2019	-	-	-	-	800	-	

Note:

¹ Nova Scotia Air Quality Regulations, Effective January 1, 2015

Exceeds applicable guidelines

TABLE 5: AVERAGE L_{eq} VALUES

Nova Construction - 2019 Total Suspended Particulate and Noise Monitoring Program
Results for Noise Monitoring

Location	Date	Time	Average L _{eq} Value	NSE Criteria ¹
N1: Quarry - 795 Morrison Road	20-Aug-19	12:00-12:59	50.43	
		13:00-13:59	53.46	
		14:00-14:59	52.57	
		15:00-15:59	55.72	0700-1900 ≤65 dBA
		16:00-16:59	53.79	
		17:00-17:59	50.74	
		18:00-18:59	41.86	
average			51.22	
		19:00-19:59	36.04	
		20:00-20:59	33.10	1900-2300 ≤60 dBA
		21:00-21:59	33.24	
		22:00-22:59	35.66	
average			34.51	
	21-Aug-19	23:00-23:59	32.68	
		0:00-0:59	32.58	
		01:00-01:59	32.42	
		02:00-02:59	32.69	2300-0700 ≤55 dBA
		03:00-03:59	32.82	
		04:00-04:59	33.51	
		05:00-05:59	32.67	
		06:00-06:59	32.47	
average			32.73	
		07:00-07:59	33.09	
		08:00-08:59	38.23	0700-1900 ≤65 dBA
		09:00-09:59	39.30	
		10:00-10:59	35.43	
		11:00-11:59	40.91	
		12:00-12:59	47.50	
average			39.08	
N2: 1329 Morrison Road	20-Aug-19	17:00-17:59	36.81	2300-0700 ≤55 dBA
		18:00-18:59	30.63	
average			33.72	
		19:00-19:59	28.74	
		20:00-20:59	29.33	1900-2300 ≤60 dBA
		21:00-21:59	30.01	
		22:00-22:59	25.28	
average			28.34	
	21-Aug-19	23:00-23:59	23.22	
		0:00-0:59	23.30	
		01:00-01:59	23.62	
		02:00-02:59	24.08	2300-0700 ≤55 dBA
		03:00-03:59	23.90	
		04:00-04:59	27.25	
		05:00-05:59	26.30	
		06:00-06:59	27.08	
average			24.84	
		07:00-07:59	31.02	
		08:00-08:59	29.63	
		09:00-09:59	29.29	
		10:00-10:59	29.64	
		11:00-11:59	31.50	
		12:00-12:59	36.65	0700-1900 ≤65 dBA
		13:00-13:59	40.08	
		14:00-14:59	41.03	
		15:00-15:59	40.33	
		16:00-16:59	37.21	
		17:00-17:59	33.73	
average			34.56	

TABLE 5: AVERAGE L_{eq} VALUES

Nova Construction - 2019 Total Suspended Particulate and Noise Monitoring Program
Results for Noise Monitoring

Location	Date	Time	Average L _{eq} Value	NSE Criteria ¹
N3: 571 Morrison Road		14:00-14:59	46.45	
		15:00-15:59	44.14	
		16:00-16:59	41.23	0700-1900 ≤65 dBA
		17:00-17:59	36.18	
		18:00-18:59	37.99	
average			41.20	
		19:00-19:59	37.11	
		20:00-20:59	33.95	1900-2300 ≤60 dBA
		21:00-21:59	32.63	
		22:00-22:59	32.41	
average			34.03	
	21-Sep-18	23:00-23:59	32.15	
		0:00-0:59	32.33	
		01:00-01:59	31.90	
		02:00-02:59	31.95	2300-0700 ≤55 dBA
		03:00-03:59	32.38	
		04:00-04:59	31.93	
		05:00-05:59	32.18	
		06:00-06:59	34.75	
average			32.45	
		07:00-07:59	37.09	
		08:00-08:59	41.36	0700-1900 ≤65 dBA
		09:00-09:59	37.64	
		10:00-10:59	37.95	
		11:00-11:59	46.33	
		12:00-12:59	51.25	
		13:00-13:59	48.93	
average			42.94	

Note 1 - Nova Scotia Environment - Pit and Quarry Guidelines May 4, 1999, revised August 20, 2003.

Appendices

Appendix A

Flow Calibration Sheets

GHD Limited
Ambient Air Monitoring Field Calibration Data
Hivol TSP Samplers

SITE INFORMATION

Location: 571 Morrison Road	Date: 20-Aug-19
Sampler S/N: GRAS-W00-01	Tech: D. Negus

METEOROLOGICAL CONDITIONS

Sampler Elevation (feet):	290	Corrected Pressure (mm Hg):	744
Daily Average Pressure (in Hg):	29.59	Temperature (deg K):	292
Daily Average Temperature (deg C):	19	Corrected Seasonal (mm Hg):	744
Seasonal Press. (in Hg):	29.59	Seasonal Temp. (deg K):	292
Seasonal Temp. (deg C):	19		

** Calibrated to standard temperature and pressure** Calibrated to standard temperature and pressure

CALIBRATION ORIFICE DATA

Make: Tisch Environmental	Qstd Slope: 1.58493
Model:	Qstd Intercept: -0.00610
Serial#: GRAS-W00-01	Date Certified: Nov 03,2005

CALIBRATION DATA

Plate or Test #	H2O (inches)	Qstd (m ³ /min)	Flow (CFM)	Difference from 40CFM MOE guideline)	Flow Adjustment Requir	
					YES	NO
1	3.20	1.123	39.67	-0.2%		
Avg.		1.123	39.67			
Comments:						
Calibrated on site						

Calculations

$$Q_{std} = 1/m[\sqrt{H_2O(P_{std}/P_{actual})(T_{std}/T_{actual})} - b]$$

Q_{std} = standard flow rate

m = calibrator Q_{std} slope

b = calibrator Q_{std} intercept

T_a = actual temperature during calibration (deg K)

P_a = actual pressure during calibration (mm Hg)

T_{std} = 293 deg K

P_{std} = 760 mm Hg

GHD Limited
Ambient Air Monitoring Field Calibration Data
Hivol TSP Samplers

SITE INFORMATION

Location: Nova Quarry - 795 Morrison Road	Date: 20-Aug-19
Sampler S/N: GRAS-W00-02	Tech: D. Negus

METEOROLOGICAL CONDITIONS

Sampler Elevation (feet):	498	Corrected Pressure (mm Hg):	739
Daily Average Pressure (in Hg):	29.59	Temperature (deg K):	292
Daily Average Temperature (deg C):	19	Corrected Seasonal (mm Hg):	739
Seasonal Press. (in Hg):	29.59	Seasonal Temp. (deg K):	292
Seasonal Temp. (deg C):	19		

** Calibrated to standard temperature and pressure** Calibrated to standard temperature and pressure

CALIBRATION ORIFICE DATA

Make:	General Metal Works	Qstd Slope:	1.58493
Model:		Qstd Intercept:	-0.00610
Serial#:	GRAS-W00-02	Date Certified:	Nov 03,2005

CALIBRATION DATA

Manometer Reading					Difference from 40CFM	Flow Adjustment Requir
Plate or Test #	H2O (inches)	Qstd (m ³ /min)	Flow (CFM)	(MOE guideline)		
1	3.20	1.119	39.53	-0.3%		<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
Avg.		1.119	39.53			
Comments:						
Calibrated on site						

Calculations

$$Q_{std} = 1/m[\text{Sqrt}(H_2O(P_a/P_{std})(T_{std}/T_a))-b]$$

Q_{std} = standard flow rate

m = calibrator Q_{std} slope

b = calibrator Q_{std} intercept

T_a = actual temperature during calibration (deg K)

P_a = actual pressure during calibration (mm Hg)

T_{std} = 293 deg K

P_{std} = 760 mm Hg

GHD Limited
Ambient Air Monitoring Field Calibration Data
Hivol TSP Samplers

SITE INFORMATION

Location: 1329 Morrison Road	Date: 20-Aug-19
Sampler S/N: GRAS-W00-02	Tech: D. Negus

METEOROLOGICAL CONDITIONS

Sampler Elevation (feet):	419	
Daily Average Pressure (in Hg):	29.59	Corrected Pressure (mm Hg): 741
Daily Average Temperature (deg C):	19	Temperature (deg K): 292
Seasonal Press. (in Hg):	29.59	Corrected Seasonal (mm Hg): 741
Seasonal Temp. (deg C):	19	Seasonal Temp. (deg K): 292

** Calibrated to standard temperature and pressure** Calibrated to standard temperature and pressure

CALIBRATION ORIFICE DATA

Make: Anderson Instruments Inc	Qstd Slope: 1.58493
Model:	Qstd Intercept: -0.00610
Serial#: GRAS-W00-02	Date Certified: Nov 03,2005

CALIBRATION DATA

Plate or Test #	H2O (inches)	Qstd (m ³ /min)	Flow (CFM)	Difference from 40CFM MOE guideline)	Flow Adjustment Requir	
					YES	NO
1	3.25	1.130	39.89	-0.1%		
Avg.		1.130	39.89			
Comments:						
Calibrated on site						

Calculations

$$Q_{std} = 1/m[\sqrt{H_2O(P_{std}/P_{actual})(T_{std}/T_{actual})} - b]$$

Q_{std} = standard flow rate

m = calibrator Q_{std} slope

b = calibrator Q_{std} intercept

T_a = actual temperature during calibration (deg K)

P_a = actual pressure during calibration (mm Hg)

T_{std} = 293 deg K

P_{std} = 760 mm Hg

Appendix B

Meteorological Data

Station Name PORT HAWKESBURY
 Province NOVA SCOTIA
 Current Station Oper NAV Canada
 Latitude 45.66
 Longitude -61.37
 Elevation 114.9
 Climate Identifier 8204495
 WMO Identifier 71041
 TC Identifier YPD

All times are specified in Local Standard Time (LST). Add 1 hour to adjust for Daylight Saving Time where and when it is observed.

Legend

E Estimated
 M Missing
 NA Not Available

Date/Time	Year	Month	Day	Time	Temp (°C)	Dew Point	Rel Hum (%)	Rel Hum Fl	Wind Dir (1)	Wind Dir Fl	Wind Spd (1)	Wind Spd Fl	Visibility (km)	Visibility Fl	Stn Press (hPa)	Stn Press Fl	Hmdx	Hmdx Flag	Wind Chill	Weather	
8/1/2019 0:00	2019	8	1	0:00	21	18.7	87		25		9		16.1		100.19		28		NA		
8/1/2019 1:00	2019	8	1	1:00	20	18.9	93			M		4		16.1		100.15		27		NA	
8/1/2019 2:00	2019	8	1	2:00	18.9	18.3	96				22		5		16.1		100.13			NA	
8/1/2019 3:00	2019	8	1	3:00	19.1	18.5	96				26		8		16.1		100.13			NA	
8/1/2019 4:00	2019	8	1	4:00	18.9	18.2	96				20		5		16.1		100.1			NA	
8/1/2019 5:00	2019	8	1	5:00	18.3	17.8	97						0		16.1		100.09			NA	
8/1/2019 6:00	2019	8	1	6:00	20	18.5	91						0		16.1		100.09		26	NA	
8/1/2019 7:00	2019	8	1	7:00	21.8	19.1	85			M		4		16.1		100.11		29		NA	
8/1/2019 8:00	2019	8	1	8:00	23.7	19.6	77			M		5		16.1		100.09		31		NA	
8/1/2019 9:00	2019	8	1	9:00	25.6	20.8	74				16		9		16.1		100.08		34		NA
8/1/2019 10:00	2019	8	1	10:00	27.9	20.9	65				20		11		16.1		100.07		36		NA
8/1/2019 11:00	2019	8	1	11:00	26	20.5	71				29		15		16.1		100.09		34		NA
8/1/2019 12:00	2019	8	1	12:00	27	20.9	69				29		15		16.1		100.07		35		NA
8/1/2019 13:00	2019	8	1	13:00	23.8	21.3	85				31		13		16.1		100.06		32	Rain	
8/1/2019 14:00	2019	8	1	14:00	22.2	20.2	88				28		28		16.1		100.1		30	Thunderstorms, Rain	
8/1/2019 15:00	2019	8	1	15:00	19.8	19.3	97			M		4		4.8		100.17			Thunderstorms, Rain,Fog		
8/1/2019 16:00	2019	8	1	16:00	21	20.2	95				33		9		16.1		100.05		29	Rain	
8/1/2019 17:00	2019	8	1	17:00	22.3	21.1	93						0		16.1		100.08		31	NA	
8/1/2019 18:00	2019	8	1	18:00	21.8	20.5	92			M		4		16.1		100.07		30	NA		
8/1/2019 19:00	2019	8	1	19:00	21.1	20.1	94				29		8		16.1		100.08		29	NA	
8/1/2019 20:00	2019	8	1	20:00	20.1	19.6	97						0		16.1		100.11		27	NA	
8/1/2019 21:00	2019	8	1	21:00	19.7	19.2	97				31		5		16.1		100.14			NA	
8/1/2019 22:00	2019	8	1	22:00	19	18.7	98				32		5		16.1		100.13			NA	
8/1/2019 23:00	2019	8	1	23:00	19.4	19.1	98				34		8		12.9		100.11			NA	
8/2/2019 0:00	2019	8	2	0:00	18	17.7	98			M		4		11.3		100.11			NA		
8/2/2019 1:00	2019	8	2	1:00	16.4	16.2	99						0		0.4		100.1			Fog	
8/2/2019 2:00	2019	8	2	2:00	18.5	18.5	100				29		4		1.2		100.09			Fog	
8/2/2019 3:00	2019	8	2	3:00	18.4	18.4	100				34		5		4.8		100.08			Fog	
8/2/2019 4:00	2019	8	2	4:00	18.4	18.4	100			M		4		0.6		100.08			Fog		
8/2/2019 5:00	2019	8	2	5:00	17.5	17.4	100				32		4		6.4		100.11			Fog	
8/2/2019 6:00	2019	8	2	6:00	18.1	18.1	100				30		8		6.4		100.13			Fog	
8/2/2019 7:00	2019	8	2	7:00	19.2	18.7	97				30		9		16.1		100.17			NA	
8/2/2019 8:00	2019	8	2	8:00	20	18.7	92				30		9		16.1		100.21		27	NA	
8/2/2019 9:00	2019	8	2	9:00	21	18.4	85				28		9		16.1		100.23		27	NA	
8/2/2019 10:00	2019	8	2	10:00	22.8	17.9	74				28		11		16.1		100.25		29	NA	

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Legend

E Estimated
 M Missing
 NA Not Available

Date/Time	Year	Month	Day	Time	Temp (°C)	Dew Point	Rel Hum (%)	Rel Hum Fl	Wind Dir (1)	Wind Dir Fl	Wind Spd (1)	Wind Spd Fl	Visibility (km)	Visibility Fl	Stn Press (hPa)	Stn Press Fl	Hmdx	Flag	Wind Chill	Weather
8/2/2019 11:00	2019	8	2	11:00	23.6	15.7	61		31		13		14.5		100.24		28		NA	
8/2/2019 12:00	2019	8	2	12:00	24.6	15.2	55		29		13		16.1		100.22		29		NA	
8/2/2019 13:00	2019	8	2	13:00	24.7	12.7	47		28		17		16.1		100.18		27		NA	
8/2/2019 14:00	2019	8	2	14:00	24.8	13.4	49		31		17		16.1		100.18		28		NA	
8/2/2019 15:00	2019	8	2	15:00	25.3	12.3	44		30		11		16.1		100.17		28		NA	
8/2/2019 16:00	2019	8	2	16:00	25.3	13.8	48		30		11		16.1		100.15		29		NA	
8/2/2019 17:00	2019	8	2	17:00	24.9	14.3	51		30		9		16.1		100.13		28		NA	
8/2/2019 18:00	2019	8	2	18:00	24.1	14.1	53		29		8		16.1		100.13		28		NA	
8/2/2019 19:00	2019	8	2	19:00	20.6	16.7	78				0		16.1		100.15		26		NA	
8/2/2019 20:00	2019	8	2	20:00	17.7	14.8	83		16		4		16.1		100.16				NA	
8/2/2019 21:00	2019	8	2	21:00	20.6	13.2	62		22		8		16.1		100.2				NA	
8/2/2019 22:00	2019	8	2	22:00	20.8	11.8	56		27		13		16.1		100.22				NA	
8/2/2019 23:00	2019	8	2	23:00	21	11.1	53		34		9		16.1		100.22				NA	
8/3/2019 0:00	2019	8	3	0:00	20.6	10.3	51		27		17		16.1		100.19				NA	
8/3/2019 1:00	2019	8	3	1:00	19.6	9.8	53		27		18		16.1		100.18				NA	
8/3/2019 2:00	2019	8	3	2:00	18.5	10.1	58		28		13		16.1		100.19				NA	
8/3/2019 3:00	2019	8	3	3:00	17.5	10.9	65		27		15		16.1		100.19				NA	
8/3/2019 4:00	2019	8	3	4:00	18.1	10.8	62		28		15		16.1		100.18				NA	
8/3/2019 5:00	2019	8	3	5:00	17.1	11.3	68		27		11		16.1		100.19				NA	
8/3/2019 6:00	2019	8	3	6:00	18.3	12.1	67		27		9		16.1		100.2				NA	
8/3/2019 7:00	2019	8	3	7:00	20.1	13.2	64		28		9		16.1		100.21				NA	
8/3/2019 8:00	2019	8	3	8:00	21.1	13.2	60		28		13		16.1		100.21				NA	
8/3/2019 9:00	2019	8	3	9:00	23	14.7	59		27		13		16.1		100.2		27		NA	
8/3/2019 10:00	2019	8	3	10:00	24.6	14.9	54		29		11		16.1		100.2		29		NA	
8/3/2019 11:00	2019	8	3	11:00	26.3	15.8	52		29		11		16.1		100.15		31		NA	
8/3/2019 12:00	2019	8	3	12:00	27.3	14	43		27		8		16.1		100.09		31		NA	
8/3/2019 13:00	2019	8	3	13:00	27.7	14.3	43	M			11		16.1		100.04		31		NA	
8/3/2019 14:00	2019	8	3	14:00	27.9	14.5	43		26		15		16.1		99.97		32		NA	
8/3/2019 15:00	2019	8	3	15:00	27.6	15	46		32		9		16.1		99.93		32		NA	
8/3/2019 16:00	2019	8	3	16:00	27.3	14.7	45		24		9		16.1		99.9		31		NA	
8/3/2019 17:00	2019	8	3	17:00	26.3	13.8	45		21		17		16.1		99.9		30		NA	
8/3/2019 18:00	2019	8	3	18:00	24.9	14.1	51		20		11		16.1		99.89		28		NA	
8/3/2019 19:00	2019	8	3	19:00	22.2	13.1	56		21		11		16.1		99.88		25		NA	
8/3/2019 20:00	2019	8	3	20:00	20.9	13.5	62		21		9		16.1		99.88				NA	
8/3/2019 21:00	2019	8	3	21:00	20	13.8	67		16		9		16.1		99.91				NA	

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Legend

E	Estimated
M	Missing
NA	Not Available

Date/Time	Year	Month	Day	Time	Temp (°C)	Dew Point	Rel Hum (%)	Rel Hum Fl	Wind Dir (1)	Wind Dir Fl	Wind Spd (1)	Wind Spd F	Visibility (km)	Visibility Fl	Stn Press (hPa)	Stn Press Fl	Hmdx	Flag	Wind Chill	Weather
8/3/2019 22:00	2019	8	3	22:00	18	14	77		12		8		16.1		99.85				NA	
8/3/2019 23:00	2019	8	3	23:00	19	13.3	69		23		15		16.1		99.82				NA	
8/4/2019 0:00	2019	8	4	0:00	17.8	13.4	75		21		11		16.1		99.79				NA	
8/4/2019 1:00	2019	8	4	1:00	15.9	13	83				0		16.1		99.74				NA	
8/4/2019 2:00	2019	8	4	2:00	17.1	12.2	73		19		9		16.1		99.72				NA	
8/4/2019 3:00	2019	8	4	3:00	16.9	12.1	73		28		5		16.1		99.7				NA	
8/4/2019 4:00	2019	8	4	4:00	17.5	12.8	74		28		13		16.1		99.7				NA	
8/4/2019 5:00	2019	8	4	5:00	17.2	12.8	75		25		9		16.1		99.64				NA	
8/4/2019 6:00	2019	8	4	6:00	17.5	13.6	78		22		11		16.1		99.65				NA	
8/4/2019 7:00	2019	8	4	7:00	18	14.9	82		20		13		16.1		99.61				NA	
8/4/2019 8:00	2019	8	4	8:00	19.6	16.4	82		21		11		16.1		99.56				NA	
8/4/2019 9:00	2019	8	4	9:00	21.4	17.1	76		28		13		16.1		99.58		27		NA	
8/4/2019 10:00	2019	8	4	10:00	22.8	17.3	71		27		15		16.1		99.55		28		NA	
8/4/2019 11:00	2019	8	4	11:00	22.3	15.9	67		29		17		16.1		99.54		27		NA	
8/4/2019 12:00	2019	8	4	12:00	23.7	17.2	67		30		11		16.1		99.51		29		NA	
8/4/2019 13:00	2019	8	4	13:00	23	16.8	68		29		13		16.1		99.48		28		NA	
8/4/2019 14:00	2019	8	4	14:00	24.2	17.4	65		32		9		16.1		99.44		30		NA	
8/4/2019 15:00	2019	8	4	15:00	24.9	17.5	63		31		9		16.1		99.41		31		NA	
8/4/2019 16:00	2019	8	4	16:00	24.2	16.8	63		29		15		16.1		99.42		29		NA	
8/4/2019 17:00	2019	8	4	17:00	23.5	16.1	63		30		15		16.1		99.42		28		NA	
8/4/2019 18:00	2019	8	4	18:00	21.8	14.6	63		30		11		16.1		99.45		26		NA	
8/4/2019 19:00	2019	8	4	19:00	20.8	15.6	72			M		4		16.1		99.48		25	Rain	
8/4/2019 20:00	2019	8	4	20:00	18.1	17.3	95				0		16.1		99.52				NA	
8/4/2019 21:00	2019	8	4	21:00	18	16.4	90		2		8		16.1		99.52				NA	
8/4/2019 22:00	2019	8	4	22:00	17	15.9	93		1		5		16.1		99.51				NA	
8/4/2019 23:00	2019	8	4	23:00	15.7	14.9	95		1		8		16.1		99.5				NA	
8/5/2019 0:00	2019	8	5	0:00	13.6	13.3	98		3		4		16.1		99.47				NA	
8/5/2019 1:00	2019	8	5	1:00	13.5	13.4	99		32		8		16.1		99.41				NA	
8/5/2019 2:00	2019	8	5	2:00	13.6	13.4	99		24		4		16.1		99.44				NA	
8/5/2019 3:00	2019	8	5	3:00	15.3	15	98		29		9		16.1		99.41				NA	
8/5/2019 4:00	2019	8	5	4:00	15.1	14.3	95		28		11		16.1		99.42				NA	
8/5/2019 5:00	2019	8	5	5:00	14.4	13.8	96		27		11		16.1		99.45				NA	
8/5/2019 6:00	2019	8	5	6:00	15.2	13.6	90		27		9		16.1		99.46				NA	
8/5/2019 7:00	2019	8	5	7:00	16.5	14.4	87		27		9		16.1		99.5				NA	
8/5/2019 8:00	2019	8	5	8:00	17.6	14.5	82		31		11		16.1		99.5				NA	

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Legend

E Estimated
 M Missing
 NA Not Available

Date/Time	Year	Month	Day	Time	Temp (°C)	Dew Point	Rel Hum (%)	Rel Hum Fl	Wind Dir (1)	Wind Dir Fl	Wind Spd (1)	Wind Spd Fl	Visibility (km)	Visibility Fl	Stn Press (hPa)	Stn Press Fl	Hmdx	Flag	Wind Chill	Weather
8/5/2019 9:00	2019	8	5	9:00	19	14.9	77		29		17		16.1		99.5				NA	
8/5/2019 10:00	2019	8	5	10:00	20.6	13.1	62		29		18		16.1		99.5				NA	
8/5/2019 11:00	2019	8	5	11:00	20.9	14.2	65		29		24		16.1		99.47				NA	
8/5/2019 12:00	2019	8	5	12:00	21	13.9	64		29		26		16.1		99.48				NA	
8/5/2019 13:00	2019	8	5	13:00	21.4	14.3	64		29		30		16.1		99.51		25		NA	
8/5/2019 14:00	2019	8	5	14:00	21.6	12.6	56		29		28		16.1		99.51				NA	
8/5/2019 15:00	2019	8	5	15:00	21.8	12.4	55		30		24		16.1		99.54				NA	
8/5/2019 16:00	2019	8	5	16:00	19.8	14.1	69		31		24		16.1		99.59				NA	
8/5/2019 17:00	2019	8	5	17:00	20	13.2	65		32		18		16.1		99.61				NA	
8/5/2019 18:00	2019	8	5	18:00	19.4	13	66		30		18		16.1		99.65				NA	
8/5/2019 19:00	2019	8	5	19:00	18.4	13.5	73		31		11		16.1		99.73				NA	
8/5/2019 20:00	2019	8	5	20:00	16.8	12.8	77		32		9		16.1		99.79				NA	
8/5/2019 21:00	2019	8	5	21:00	15.9	12.3	79		33		8		16.1		99.82				NA	
8/5/2019 22:00	2019	8	5	22:00	12	11.3	95				0		16.1		99.87				NA	
8/5/2019 23:00	2019	8	5	23:00	12	10.8	92		11		4		16.1		99.89				NA	
8/6/2019 0:00	2019	8	6	0:00	10.4	9.3	93	M			4		16.1		99.92				NA	
8/6/2019 1:00	2019	8	6	1:00	13.9	12.3	90		25		11		16.1		99.91				NA	
8/6/2019 2:00	2019	8	6	2:00	10.6	10.1	97	M			4		16.1		99.93				NA	
8/6/2019 3:00	2019	8	6	3:00	10.5	10.4	99				0		16.1		99.94				NA	
8/6/2019 4:00	2019	8	6	4:00	10.2	10.1	99				0		16.1		99.95				NA	
8/6/2019 5:00	2019	8	6	5:00	10.2	10.1	99				0		16.1		100.01				NA	
8/6/2019 6:00	2019	8	6	6:00	12.2	12.1	99				0		16.1		100.06				NA	
8/6/2019 7:00	2019	8	6	7:00	17.7	13.3	75				0		16.1		100.08				NA	
8/6/2019 8:00	2019	8	6	8:00	19.9	14.5	71		26		4		16.1		100.13				NA	
8/6/2019 9:00	2019	8	6	9:00	21.6	14.4	63		26		8		16.1		100.1		25		NA	
8/6/2019 10:00	2019	8	6	10:00	23.2	14.1	56		29		8		16.1		100.12		27		NA	
8/6/2019 11:00	2019	8	6	11:00	23.9	12.2	47		30		9		16.1		100.13		26		NA	
8/6/2019 12:00	2019	8	6	12:00	24.3	13.3	50		31		13		16.1		100.15		27		NA	
8/6/2019 13:00	2019	8	6	13:00	25.2	13	46		29		13		16.1		100.1		28		NA	
8/6/2019 14:00	2019	8	6	14:00	25.3	12.9	46		29		11		16.1		100.08		28		NA	
8/6/2019 15:00	2019	8	6	15:00	25.8	11.1	39		29		15		16.1		100.07		28		NA	
8/6/2019 16:00	2019	8	6	16:00	25.7	12	42		32		9		16.1		100.06		28		NA	
8/6/2019 17:00	2019	8	6	17:00	25.1	11.6	42		31		8		16.1		100.06		27		NA	
8/6/2019 18:00	2019	8	6	18:00	24.4	11.5	44		22		5		16.1		100.05		26		NA	
8/6/2019 19:00	2019	8	6	19:00	22.1	12.5	54		16		11		16.1		100.08		25		NA	

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NA	Not Available

Date/Time	Year	Month	Day	Time	Temp (°C)	Dew Point	Rel Hum (%)	Rel Hum Fl	Wind Dir (1)	Wind Dir Fl	Wind Spd (1)	Wind Spd F	Visibility (km)	Visibility Fl	Stn Press (hPa)	Stn Press Fl	Hmdx	Flag	Wind Chill	Weather
8/6/2019 20:00	2019	8	6	20:00	21	11.5	54		20		9		16.1		100.15				NA	
8/6/2019 21:00	2019	8	6	21:00	20.5	11	54		21		9		16.1		100.2				NA	
8/6/2019 22:00	2019	8	6	22:00	19.3	10.7	57		24		13		16.1		100.2				NA	
8/6/2019 23:00	2019	8	6	23:00	16.9	10.8	67				0		16.1		100.21				NA	
8/7/2019 0:00	2019	8	7	0:00	17.9	10.2	60		24		11		16.1		100.19				NA	
8/7/2019 1:00	2019	8	7	1:00	13.2	10	81				0		16.1		100.16				NA	
8/7/2019 2:00	2019	8	7	2:00	12.1	10	87		8		5		16.1		100.15				NA	
8/7/2019 3:00	2019	8	7	3:00	11.8	10.4	91		5		8		16.1		100.14				NA	
8/7/2019 4:00	2019	8	7	4:00	11.3	10.3	93		5		5		16.1		100.12				NA	
8/7/2019 5:00	2019	8	7	5:00	13.8	12.9	95		6		8		16.1		100.09				NA	
8/7/2019 6:00	2019	8	7	6:00	14.2	14.1	99		6		8		0.2		100.11				Fog	
8/7/2019 7:00	2019	8	7	7:00	15.2	15.1	99		7		8		0.4		100.13				Fog	
8/7/2019 8:00	2019	8	7	8:00	17	16.1	94		9		9		16.1		100.11				NA	
8/7/2019 9:00	2019	8	7	9:00	19.1	16.4	84		9		15		16.1		100.09				NA	
8/7/2019 10:00	2019	8	7	10:00	20	16	77		11		13		16.1		100.08	25			NA	
8/7/2019 11:00	2019	8	7	11:00	21.4	13.8	62		14		18		16.1		100.04	25			NA	
8/7/2019 12:00	2019	8	7	12:00	21.9	13.9	60		15		18		16.1		100.04	25			NA	
8/7/2019 13:00	2019	8	7	13:00	21.6	14.8	65		15		22		16.1		100.05	25			NA	
8/7/2019 14:00	2019	8	7	14:00	21	15.5	71		14		15		16.1		100.04	25			NA	
8/7/2019 15:00	2019	8	7	15:00	22.3	15.8	66		12		13		16.1		100.06	27			NA	
8/7/2019 16:00	2019	8	7	16:00	21.7	11.6	52		14		22		16.1		100.07				NA	
8/7/2019 17:00	2019	8	7	17:00	21.1	12.6	58		14		15		16.1		100.07				NA	
8/7/2019 18:00	2019	8	7	18:00	19.8	13.4	66		15		11		16.1		100.11				NA	
8/7/2019 19:00	2019	8	7	19:00	18	13.6	75		13		9		16.1		100.12				NA	
8/7/2019 20:00	2019	8	7	20:00	16.4	13.5	83		12		9		16.1		100.13				NA	
8/7/2019 21:00	2019	8	7	21:00	15.2	13.6	90		13		8		16.1		100.15				NA	
8/7/2019 22:00	2019	8	7	22:00	12.7	11.9	95		M		4		16.1		100.21				NA	
8/7/2019 23:00	2019	8	7	23:00	12.4	12.3	99		M		4		12.9		100.21				NA	
8/8/2019 0:00	2019	8	8	0:00	11.6	11.3	98		8		4		16.1		100.19				NA	
8/8/2019 1:00	2019	8	8	1:00	11.3	11.2	99		34		8		16.1		100.22				NA	
8/8/2019 2:00	2019	8	8	2:00	10.7	10.6	99		M		4		2.8		100.23				Fog	
8/8/2019 3:00	2019	8	8	3:00	9.5	9.1	97		2		4		4		100.22				Fog	
8/8/2019 4:00	2019	8	8	4:00	9.5	9.4	99		3		5		1.2		100.22				Fog	
8/8/2019 5:00	2019	8	8	5:00	10.7	10.6	99		4		4		1		100.22				Fog	
8/8/2019 6:00	2019	8	8	6:00	12.5	12.4	99		8		5		16.1		100.23				NA	

Station Name PORT HAWKESBURY
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Legend

E Estimated
 M Missing
 NA Not Available

Date/Time	Year	Month	Day	Time	Temp (°C)	Dew Point	Rel Hum (%)	Wind Dir (1)	Wind Dir Fl	Wind Spd (1)	Wind Spd F	Visibility (km)	Visibility Fl	Stn Press (hPa)	Stn Press F	Hmdx	Flag	Wind Chill	Weather
8/8/2019 7:00	2019	8	8	7:00	16.1	15.3	95	M		4		16.1		100.25					NA
8/8/2019 8:00	2019	8	8	8:00	18.7	16.1	85		11		15		16.1		100.26				NA
8/8/2019 9:00	2019	8	8	9:00	19.8	15.4	76		13		18		16.1		100.26				NA
8/8/2019 10:00	2019	8	8	10:00	20.2	14.7	70		14		22		16.1		100.21				NA
8/8/2019 11:00	2019	8	8	11:00	20.9	15.2	70		13		21		16.1		100.17	25			NA
8/8/2019 12:00	2019	8	8	12:00	21.5	15.6	69		13		18		16.1		100.12	26			NA
8/8/2019 13:00	2019	8	8	13:00	21.7	12.9	57		13		28		16.1		100.06				NA
8/8/2019 14:00	2019	8	8	14:00	21.5	13.9	61		17		22		16.1		100.05	25			NA
8/8/2019 15:00	2019	8	8	15:00	21.1	15.1	68		12		26		16.1		100.01	25			NA
8/8/2019 16:00	2019	8	8	16:00	20	15	73		12		24		16.1		99.97				NA
8/8/2019 17:00	2019	8	8	17:00	18.6	15	80		12		22		16.1		99.94				NA
8/8/2019 18:00	2019	8	8	18:00	17.9	15	83		13		22		16.1		99.92				NA
8/8/2019 19:00	2019	8	8	19:00	17.3	15	86		13		22		6.4		99.94				Rain,Fog
8/8/2019 20:00	2019	8	8	20:00	17.4	15.5	88		13		17		16.1		99.91				NA
8/8/2019 21:00	2019	8	8	21:00	16.8	16.3	97		12		22		12.9		99.86				NA
8/8/2019 22:00	2019	8	8	22:00	16.9	16.6	98		13		21		8.1		99.79				Fog
8/8/2019 23:00	2019	8	8	23:00	17.1	16.8	98		12		18		6.4		99.71				Fog
8/9/2019 0:00	2019	8	9	0:00	17.3	17.1	99		13		26		6.4		99.63				Fog
8/9/2019 1:00	2019	8	9	1:00	17.4	17.1	98		12		22		8.1		99.51				Rain,Fog
8/9/2019 2:00	2019	8	9	2:00	17.5	17.3	99		11		24		12.9		99.4				Rain
8/9/2019 3:00	2019	8	9	3:00	17.6	17.3	98		11		26		3.2		99.33				Rain,Fog
8/9/2019 4:00	2019	8	9	4:00	17.7	17.5	99		12		21		6.4		99.26				Fog
8/9/2019 5:00	2019	8	9	5:00	18.1	17.9	99		12		17		16.1		99.21				NA
8/9/2019 6:00	2019	8	9	6:00	18.2	18	99		13		15		12.9		99.21				Rain
8/9/2019 7:00	2019	8	9	7:00	18.6	18.4	99		11		15		6.4		99.19				Fog
8/9/2019 8:00	2019	8	9	8:00	19.3	19.1	99		14		13		2.8		99.17				Fog
8/9/2019 9:00	2019	8	9	9:00	20.3	19.8	97		13		13		12.9		99.13	28			NA
8/9/2019 10:00	2019	8	9	10:00	22.9	20.3	85		19		17		16.1		99.11	31			NA
8/9/2019 11:00	2019	8	9	11:00	23.9	20.3	80		17		15		16.1		99.1	32			NA
8/9/2019 12:00	2019	8	9	12:00	24.2	20.2	78		17		17		16.1		99.08	32			NA
8/9/2019 13:00	2019	8	9	13:00	25	20.1	74		18		17		16.1		99.08	33			NA
8/9/2019 14:00	2019	8	9	14:00	24.9	19.9	73		19		18		16.1		99.04	32			NA
8/9/2019 15:00	2019	8	9	15:00	24.3	19.5	74		17		18		16.1		99.04	31			NA
8/9/2019 16:00	2019	8	9	16:00	24	19.6	76		20		17		16.1		99.05	31			NA
8/9/2019 17:00	2019	8	9	17:00	21.9	19.1	84		20		13		16.1		99.06	29			NA

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Legend

E	Estimated
M	Missing
NA	Not Available

Date/Time	Year	Month	Day	Time	Temp (°C)	Dew Point	Rel Hum (%)	Wind Dir (1)	Wind Dir Fl	Wind Spd (1)	Wind Spd F	Visibility (km)	Visibility Fl	Stn Press (hPa)	Stn Press Fl	Hmdx	Flag	Wind Chill	Weather
8/9/2019 18:00	2019	8	9	18:00	22	18.6	81	18		15		16.1		99.06		28			NA
8/9/2019 19:00	2019	8	9	19:00	20.7	18.1	85	17		13		16.1		99.1		27			NA
8/9/2019 20:00	2019	8	9	20:00	19.4	17.7	90	16		5		16.1		99.11					NA
8/9/2019 21:00	2019	8	9	21:00	18.9	17.4	91	17		5		16.1		99.14					NA
8/9/2019 22:00	2019	8	9	22:00	18.8	17	89	20		13		16.1		99.14					NA
8/9/2019 23:00	2019	8	9	23:00	17.6	16.8	95			0		16.1		99.17					NA
8/10/2019 0:00	2019	8	10	0:00	17.2	16.6	96	21		8		16.1		99.13					NA
8/10/2019 1:00	2019	8	10	1:00	17	16.7	98	23		5		14.5		99.13					NA
8/10/2019 2:00	2019	8	10	2:00	17.1	16.8	98	22		8		11.3		99.1					NA
8/10/2019 3:00	2019	8	10	3:00	17.2	17	99	20		5		6.4		99.12					Fog
8/10/2019 4:00	2019	8	10	4:00	15.8	15.7	99	12		5		6.4		99.12					Fog
8/10/2019 5:00	2019	8	10	5:00	15.3	15.2	99	11		4		0.2		99.15					Fog
8/10/2019 6:00	2019	8	10	6:00	15.5	15.5	100	9		4		0.2		99.17					Fog
8/10/2019 7:00	2019	8	10	7:00	16.9	16.9	100	12		5		0.6		99.2					Fog
8/10/2019 8:00	2019	8	10	8:00	17.4	17.4	100	14		5		1.2		99.19					Fog
8/10/2019 9:00	2019	8	10	9:00	18.9	18.1	95	13		8		4.8		99.14					Fog
8/10/2019 10:00	2019	8	10	10:00	22.2	18.5	79	16		11		16.1		99.13		29			NA
8/10/2019 11:00	2019	8	10	11:00	23.8	18.4	72	16		11		16.1		99.09		30			NA
8/10/2019 12:00	2019	8	10	12:00	24.3	17	63	19		13		16.1		99.07		30			NA
8/10/2019 13:00	2019	8	10	13:00	25	16.5	59	21		13		16.1		99.01		30			NA
8/10/2019 14:00	2019	8	10	14:00	25.3	16	56	25		13		16.1		98.99		30			NA
8/10/2019 15:00	2019	8	10	15:00	24.9	14	50	22		22		16.1		98.92		28			NA
8/10/2019 16:00	2019	8	10	16:00	23.6	15.5	60	22		24		16.1		98.96		28			NA
8/10/2019 17:00	2019	8	10	17:00	21.7	14.7	64	22		15		12.9		99.06		25			NA
8/10/2019 18:00	2019	8	10	18:00	21.5	14.8	65	21		17		16.1		99.07		25			NA
8/10/2019 19:00	2019	8	10	19:00	19.6	15	74	19		13		16.1		99.08					NA
8/10/2019 20:00	2019	8	10	20:00	18.3	14.6	79	21		15		16.1		99.17					NA
8/10/2019 21:00	2019	8	10	21:00	17.4	14.3	82	21		11		16.1		99.22					NA
8/10/2019 22:00	2019	8	10	22:00	16.5	14.7	89	18		11		16.1		99.2					NA
8/10/2019 23:00	2019	8	10	23:00	16.3	14.9	91	22		13		16.1		99.21					NA
8/11/2019 0:00	2019	8	11	0:00	15.6	14.7	94	19		5		16.1		99.2					NA
8/11/2019 1:00	2019	8	11	1:00	16	14.2	89	21		9		16.1		99.21					NA
8/11/2019 2:00	2019	8	11	2:00	15.4	14.6	95	18		8		16.1		99.23					NA
8/11/2019 3:00	2019	8	11	3:00	13.8	13.5	98			0		16.1		99.23					NA
8/11/2019 4:00	2019	8	11	4:00	14.9	14.4	97	13		5		16.1		99.22					NA

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Legend

E Estimated
 M Missing
 NA Not Available

Date/Time	Year	Month	Day	Time	Temp (°C)	Dew Point	Rel Hum (%)	Rel Hum Fl	Wind Dir (1)	Wind Dir Fl	Wind Spd (1)	Wind Spd Fl	Visibility (km)	Visibility Fl	Stn Press (hPa)	Stn Press Fl	Hmdx	Flag	Wind Chill	Weather
8/11/2019 5:00	2019	8	11	5:00	14.8	14.3	97		19		11		16.1		99.21				NA	
8/11/2019 6:00	2019	8	11	6:00	14.8	14.3	97		24		9		16.1		99.25				NA	
8/11/2019 7:00	2019	8	11	7:00	16.5	14.2	86		24		15		16.1		99.32				NA	
8/11/2019 8:00	2019	8	11	8:00	18.3	13.9	75		23		11		16.1		99.32				NA	
8/11/2019 9:00	2019	8	11	9:00	20.3	12.9	62		24		15		16.1		99.3				NA	
8/11/2019 10:00	2019	8	11	10:00	21	12.8	59		24		18		16.1		99.3				NA	
8/11/2019 11:00	2019	8	11	11:00	22.2	12.7	55		25		22		16.1		99.26		25		NA	
8/11/2019 12:00	2019	8	11	12:00	20.8	12.4	58		26		13		16.1		99.24				NA	
8/11/2019 13:00	2019	8	11	13:00	22.2	12.4	53		30		18		16.1		99.22		25		NA	
8/11/2019 14:00	2019	8	11	14:00	21.6	12.4	55		30		17		16.1		99.2				NA	
8/11/2019 15:00	2019	8	11	15:00	19.2	14.2	73		31		18		16.1		99.23				Rain	
8/11/2019 16:00	2019	8	11	16:00	21.1	11.9	55		30		15		16.1		99.2				NA	
8/11/2019 17:00	2019	8	11	17:00	19.1	12.9	67		29		21		16.1		99.22				NA	
8/11/2019 18:00	2019	8	11	18:00	17.7	13.9	78		29		9		16.1		99.24				Rain	
8/11/2019 19:00	2019	8	11	19:00	17.7	13.3	75		28		15		16.1		99.27				NA	
8/11/2019 20:00	2019	8	11	20:00	16.9	13.1	78		25		9		16.1		99.31				NA	
8/11/2019 21:00	2019	8	11	21:00	17.4	11.9	70		24		13		16.1		99.36				NA	
8/11/2019 22:00	2019	8	11	22:00	17.1	11.9	71		25		17		16.1		99.34				NA	
8/11/2019 23:00	2019	8	11	23:00	15.9	11.8	77		25		13		16.1		99.33				NA	
8/12/2019 0:00	2019	8	12	0:00	14.8	11.8	82		23		8		16.1		99.33				NA	
8/12/2019 1:00	2019	8	12	1:00	14.1	11.8	86		26		9		16.1		99.33				NA	
8/12/2019 2:00	2019	8	12	2:00	14.6	12.1	85		27		8		16.1		99.37				NA	
8/12/2019 3:00	2019	8	12	3:00	13.8	12.1	90		25		15		16.1		99.37				NA	
8/12/2019 4:00	2019	8	12	4:00	13.5	12.2	92		25		17		16.1		99.37				NA	
8/12/2019 5:00	2019	8	12	5:00	13.4	12.1	92		26		17		16.1		99.38				NA	
8/12/2019 6:00	2019	8	12	6:00	13.8	12.2	90		24		13		16.1		99.43				NA	
8/12/2019 7:00	2019	8	12	7:00	15.6	12.6	82		26		21		16.1		99.48				NA	
8/12/2019 8:00	2019	8	12	8:00	17.9	13.2	74		26		17		16.1		99.5				NA	
8/12/2019 9:00	2019	8	12	9:00	19.3	13	66		28		24		16.1		99.49				NA	
8/12/2019 10:00	2019	8	12	10:00	20.8	13.7	63		28		24		16.1		99.52				NA	
8/12/2019 11:00	2019	8	12	11:00	21.9	14.8	64		30		22		16.1		99.52		26		NA	
8/12/2019 12:00	2019	8	12	12:00	22.2	14	59		26		17		16.1		99.51		26		NA	
8/12/2019 13:00	2019	8	12	13:00	23	14.9	60		27		15		16.1		99.45		27		NA	
8/12/2019 14:00	2019	8	12	14:00	23.2	14.9	59		26		11		16.1		99.43		27		NA	
8/12/2019 15:00	2019	8	12	15:00	23.9	15	57		25		9		16.1		99.4		28		NA	

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E	Estimated
M	Missing
NA	Not Available

Date/Time	Year	Month	Day	Time	Temp (°C)	Dew Point	Rel Hum (%)	Rel Hum Fl	Wind Dir (1)	Wind Dir Fl	Wind Spd (1)	Wind Spd Fl	Visibility (km)	Visibility Fl	Stn Press (hPa)	Stn Press Fl	Hmdx	Hmdx Flag	Wind Chill	Weather
8/12/2019 16:00	2019	8	12	16:00	24.7	16.1	58		24		11		16.1		99.4		29		NA	
8/12/2019 17:00	2019	8	12	17:00	23.6	16.1	62		27		15		16.1		99.4		28		NA	
8/12/2019 18:00	2019	8	12	18:00	22.9	15.6	63		26		15		16.1		99.41		27		NA	
8/12/2019 19:00	2019	8	12	19:00	22.4	14.5	61		26		18		16.1		99.46		26		NA	
8/12/2019 20:00	2019	8	12	20:00	22.1	14.6	62		27		24		16.1		99.52		26		NA	
8/12/2019 21:00	2019	8	12	21:00	19.7	16.6	82		29		15		16.1		99.56				NA	
8/12/2019 22:00	2019	8	12	22:00	19	16.5	85		20		5		16.1		99.53				NA	
8/12/2019 23:00	2019	8	12	23:00	18.9	15.8	82		26		9		16.1		99.52				NA	
8/13/2019 0:00	2019	8	13	0:00	19.3	15.6	79		26		15		16.1		99.52				NA	
8/13/2019 1:00	2019	8	13	1:00	17	16.2	95		31		13		16.1		99.52				Rain	
8/13/2019 2:00	2019	8	13	2:00	17	16	94		28		8		16.1		99.45				NA	
8/13/2019 3:00	2019	8	13	3:00	16.6	15.8	95		19		5		16.1		99.41				NA	
8/13/2019 4:00	2019	8	13	4:00	16.7	15.4	92		17		8		16.1		99.41				NA	
8/13/2019 5:00	2019	8	13	5:00	16.6	15.1	91		18		5		16.1		99.38				NA	
8/13/2019 6:00	2019	8	13	6:00	16.6	14.4	87		16		5		16.1		99.35				NA	
8/13/2019 7:00	2019	8	13	7:00	17.2	14.8	86		14		5		16.1		99.38				NA	
8/13/2019 8:00	2019	8	13	8:00	17	14.9	88		28		21		16.1		99.49				NA	
8/13/2019 9:00	2019	8	13	9:00	18.1	16.4	90		20		9		16.1		99.31				NA	
8/13/2019 10:00	2019	8	13	10:00	20.3	17	81		17		13		16.1		99.3		26		NA	
8/13/2019 11:00	2019	8	13	11:00	21.4	18.1	81		14		8		16.1		99.24		27		NA	
8/13/2019 12:00	2019	8	13	12:00	21.4	18.1	81		24		13		16.1		99.24		27		Rain	
8/13/2019 13:00	2019	8	13	13:00	21.6	18.6	83		22		5		16.1		99.19		28		NA	
8/13/2019 14:00	2019	8	13	14:00	22.6	18.7	78		20		11		16.1		99.16		29		NA	
8/13/2019 15:00	2019	8	13	15:00	22.5	18	75		18		5		16.1		99.15		29		NA	
8/13/2019 16:00	2019	8	13	16:00	22.2	19.1	82		26		8		16.1		99.16		29		NA	
8/13/2019 17:00	2019	8	13	17:00	22.2	19.5	85		24		9		16.1		99.19		29		NA	
8/13/2019 18:00	2019	8	13	18:00	22	18.9	82		25		15		11.3		99.24		29		NA	
8/13/2019 19:00	2019	8	13	19:00	19.1	16.4	84		31		11		16.1		99.34				NA	
8/13/2019 20:00	2019	8	13	20:00	17.5	15.9	90		27		4		16.1		99.4				NA	
8/13/2019 21:00	2019	8	13	21:00	15.6	15.1	97		29		4		16.1		99.48				NA	
8/13/2019 22:00	2019	8	13	22:00	14.1	13.8	98				0		16.1		99.52				NA	
8/13/2019 23:00	2019	8	13	23:00	14.4	13.8	96				0		16.1		99.56				NA	
8/14/2019 0:00	2019	8	14	0:00	14	13.7	98				0		16.1		99.55				NA	
8/14/2019 1:00	2019	8	14	1:00	12.9	12.8	99				0		0.8		99.53			Fog		
8/14/2019 2:00	2019	8	14	2:00	12.9	12.9	100		25		5		4.8		99.58			Fog		

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Legend

E	Estimated
M	Missing
NA	Not Available

Date/Time	Year	Month	Day	Time	Temp (°C)	Dew Point	Rel Hum (%)	Rel Hum Fl	Wind Dir (1)	Wind Dir Fl	Wind Spd (1)	Wind Spd Fl	Visibility (km)	Visibility Fl	Stn Press (hPa)	Stn Press Fl	Hmdx	Flag	Wind Chill	Weather
8/14/2019 3:00	2019	8	14	3:00	14.5	14.4	99		30		8		16.1		99.59				NA	
8/14/2019 4:00	2019	8	14	4:00	12.2	11.8	97		31		4		16.1		99.63				NA	
8/14/2019 5:00	2019	8	14	5:00	11.5	11.4	99		34		8		0.4		99.67				Fog	
8/14/2019 6:00	2019	8	14	6:00	12.3	12.2	99				0		11.3		99.72				NA	
8/14/2019 7:00	2019	8	14	7:00	17.2	15.7	91		31		5		16.1		99.78				NA	
8/14/2019 8:00	2019	8	14	8:00	18.9	15.5	81		29		11		16.1		99.83				NA	
8/14/2019 9:00	2019	8	14	9:00	20.1	13.6	66		29		15		16.1		99.86				NA	
8/14/2019 10:00	2019	8	14	10:00	20.8	12.7	59		30		11		16.1		99.84				NA	
8/14/2019 11:00	2019	8	14	11:00	21	14.2	65		29		15		16.1		99.85				NA	
8/14/2019 12:00	2019	8	14	12:00	21.4	13.4	60		27		15		16.1		99.83				NA	
8/14/2019 13:00	2019	8	14	13:00	21.6	13.9	61		28		17		16.1		99.82	25			NA	
8/14/2019 14:00	2019	8	14	14:00	21.9	13.2	57		28		15		16.1		99.81	25			NA	
8/14/2019 15:00	2019	8	14	15:00	22.6	9.5	43		34		13		16.1		99.78				NA	
8/14/2019 16:00	2019	8	14	16:00	23.2	9.7	42			M	4		16.1		99.79				NA	
8/14/2019 17:00	2019	8	14	17:00	21.6	13.8	61		29		15		16.1		99.8	25			NA	
8/14/2019 18:00	2019	8	14	18:00	20.6	13.5	63		29		13		16.1		99.84				NA	
8/14/2019 19:00	2019	8	14	19:00	18.6	13.6	72				0		16.1		99.88				NA	
8/14/2019 20:00	2019	8	14	20:00	15.1	13.5	90				0		16.1		99.9				NA	
8/14/2019 21:00	2019	8	14	21:00	12.6	11.8	95		35		4		16.1		99.96				NA	
8/14/2019 22:00	2019	8	14	22:00	12.9	11.7	92		1		8		16.1		99.97				NA	
8/14/2019 23:00	2019	8	14	23:00	12.1	10.9	92		2		8		16.1		99.98				NA	
8/15/2019 0:00	2019	8	15	0:00	12	11.2	95			1		9		16.1		99.99				NA
8/15/2019 1:00	2019	8	15	1:00	10.4	10	97		2		9		16.1		100				NA	
8/15/2019 2:00	2019	8	15	2:00	10.3	10	98		1		8		16.1		99.99				NA	
8/15/2019 3:00	2019	8	15	3:00	10.8	10.6	99		1		5		16.1		100.03				NA	
8/15/2019 4:00	2019	8	15	4:00	9.4	9.3	99		36		8		16.1		100.06				NA	
8/15/2019 5:00	2019	8	15	5:00	10.2	10.1	99				0		1		100.1				Fog	
8/15/2019 6:00	2019	8	15	6:00	13.1	13	100			1		9		16.1		100.14				NA
8/15/2019 7:00	2019	8	15	7:00	16.9	15	89				0		16.1		100.19				NA	
8/15/2019 8:00	2019	8	15	8:00	18.9	15.1	78				0		16.1		100.21				NA	
8/15/2019 9:00	2019	8	15	9:00	20.2	15	72			M	4		16.1		100.27				NA	
8/15/2019 10:00	2019	8	15	10:00	22.1	14	60		28		5		16.1		100.3	25			NA	
8/15/2019 11:00	2019	8	15	11:00	22.9	14.1	57		28		15		16.1		100.29	26			NA	
8/15/2019 12:00	2019	8	15	12:00	23.6	12.1	48		26		17		16.1		100.32	26			NA	
8/15/2019 13:00	2019	8	15	13:00	23.9	12.1	47		31		13		16.1		100.33	26			NA	

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Legend

E	Estimated
M	Missing
NA	Not Available

Date/Time	Year	Month	Day	Time	Temp (°C)	Dew Point	Rel Hum (%)	Rel Hum Fl	Wind Dir (1)	Wind Dir Fl	Wind Spd (1)	Wind Spd Fl	Visibility (km)	Visibility Fl	Stn Press (hPa)	Stn Press Fl	Hmdx	Hmdx Flag	Wind Chill	Weather
8/15/2019 14:00	2019	8	15	14:00	24.7	10.1	39		27		11		16.1		100.31		26		NA	
8/15/2019 15:00	2019	8	15	15:00	23.8	11.6	46		28		11		16.1		100.3		26		NA	
8/15/2019 16:00	2019	8	15	16:00	22.3	13.9	59		26		11		16.1		100.33		26		NA	
8/15/2019 17:00	2019	8	15	17:00	21.9	13.8	60		28		11		16.1		100.36		25		NA	
8/15/2019 18:00	2019	8	15	18:00	20.8	14.6	67		21		9		16.1		100.41		25		NA	
8/15/2019 19:00	2019	8	15	19:00	18.5	14.1	75		31		5		16.1		100.46				NA	
8/15/2019 20:00	2019	8	15	20:00	15.8	13.3	85		28		4		16.1		100.53				NA	
8/15/2019 21:00	2019	8	15	21:00	13.8	12.4	91				0		16.1		100.59				NA	
8/15/2019 22:00	2019	8	15	22:00	12.8	12	95		35		5		16.1		100.65				NA	
8/15/2019 23:00	2019	8	15	23:00	11.6	10.8	95		2		5		16.1		100.67				NA	
8/16/2019 0:00	2019	8	16	0:00	13.3	12.5	95		1		9		16.1		100.67				NA	
8/16/2019 1:00	2019	8	16	1:00	12.9	12.8	99		35		9		16.1		100.67				NA	
8/16/2019 2:00	2019	8	16	2:00	11.3	10.7	96		M		4		16.1		100.62				NA	
8/16/2019 3:00	2019	8	16	3:00	11.1	10.8	98		8		8		16.1		100.66				NA	
8/16/2019 4:00	2019	8	16	4:00	12	11.9	99		M		4		16.1		100.69				NA	
8/16/2019 5:00	2019	8	16	5:00	12.3	12.2	99		2		11		16.1		100.72				NA	
8/16/2019 6:00	2019	8	16	6:00	12.7	12.6	99		3		8		16.1		100.74				NA	
8/16/2019 7:00	2019	8	16	7:00	16.5	15.4	93		4		8		16.1		100.77				NA	
8/16/2019 8:00	2019	8	16	8:00	19.1	15.1	78		9		5		16.1		100.78				NA	
8/16/2019 9:00	2019	8	16	9:00	20.5	13.9	66		14		5		16.1		100.8				NA	
8/16/2019 10:00	2019	8	16	10:00	22.2	13.9	59		M		11		16.1		100.83		26		NA	
8/16/2019 11:00	2019	8	16	11:00	23.4	15.2	59		16		8		16.1		100.82		27		NA	
8/16/2019 12:00	2019	8	16	12:00	24	14.6	55		12		8		16.1		100.79		28		NA	
8/16/2019 13:00	2019	8	16	13:00	23.6	14.2	55		14		21		16.1		100.78		27		NA	
8/16/2019 14:00	2019	8	16	14:00	22.9	15.6	63		14		17		16.1		100.79		27		NA	
8/16/2019 15:00	2019	8	16	15:00	22.8	13.9	57		16		17		1.2		100.74		26		Haze	
8/16/2019 16:00	2019	8	16	16:00	22.3	13.7	58		15		15		16.1		100.68		25		NA	
8/16/2019 17:00	2019	8	16	17:00	22.3	12.8	54		17		13		16.1		100.69		25		NA	
8/16/2019 18:00	2019	8	16	18:00	21.1	12.3	57		17		11		16.1		100.69				NA	
8/16/2019 19:00	2019	8	16	19:00	19.3	11.9	62		17		13		16.1		100.71				NA	
8/16/2019 20:00	2019	8	16	20:00	15.7	12.1	79		12		8		16.1		100.75				NA	
8/16/2019 21:00	2019	8	16	21:00	14.6	11.8	83		11		8		16.1		100.75				NA	
8/16/2019 22:00	2019	8	16	22:00	13.8	12.2	90		12		8		16.1		100.74				NA	
8/16/2019 23:00	2019	8	16	23:00	13.1	12.6	97		12		5		16.1		100.76				NA	
8/17/2019 0:00	2019	8	17	0:00	12.2	11.9	98		6		5		16.1		100.76				NA	

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Legend

E	Estimated
M	Missing
NA	Not Available

Date/Time	Year	Month	Day	Time	Temp (°C)	Dew Point	Rel Hum (%)	Rel Hum Fl	Wind Dir (1)	Wind Dir Fl	Wind Spd (1)	Wind Spd F	Visibility (km)	Visibility Fl	Stn Press (hPa)	Stn Press Fl	Hmdx	Flag	Wind Chill	Weather
8/17/2019 1:00	2019	8	17	1:00	12.7	12.6	99		9		8		6.4		100.76				Fog	
8/17/2019 2:00	2019	8	17	2:00	12.4	11.9	97		9		9		16.1		100.75				NA	
8/17/2019 3:00	2019	8	17	3:00	10.8	10.5	98		6		5		16.1		100.76				NA	
8/17/2019 4:00	2019	8	17	4:00	12.3	12.2	99		5		5		8.1		100.73				Fog	
8/17/2019 5:00	2019	8	17	5:00	11.2	11.1	99		M		4		0.4		100.79				Fog	
8/17/2019 6:00	2019	8	17	6:00	12.9	12.9	100		4		5		0.2		100.79				Fog	
8/17/2019 7:00	2019	8	17	7:00	15.9	15.9	100		9		8		8.1		100.79				Fog	
8/17/2019 8:00	2019	8	17	8:00	18	16.9	93		14		8		16.1		100.83				NA	
8/17/2019 9:00	2019	8	17	9:00	19.6	16.2	81		13		9		16.1		100.82				NA	
8/17/2019 10:00	2019	8	17	10:00	21.3	14.7	65		13		9		16.1		100.81		25		NA	
8/17/2019 11:00	2019	8	17	11:00	22.8	13.7	56		12		9		12.9		100.8		26		NA	
8/17/2019 12:00	2019	8	17	12:00	23.7	14.5	56		16		11		16.1		100.77		27		NA	
8/17/2019 13:00	2019	8	17	13:00	24	15.8	60		12		18		1.2		100.75		28		Haze	
8/17/2019 14:00	2019	8	17	14:00	23.5	14	55		14		22		16.1		100.75		27		NA	
8/17/2019 15:00	2019	8	17	15:00	22.8	14.9	61		14		21		16.1		100.77		27		NA	
8/17/2019 16:00	2019	8	17	16:00	22.6	15.4	63		13		18		16.1		100.76		27		NA	
8/17/2019 17:00	2019	8	17	17:00	21.6	15.4	68		14		17		16.1		100.77		26		NA	
8/17/2019 18:00	2019	8	17	18:00	20.5	15.3	72		14		13		16.1		100.77		25		NA	
8/17/2019 19:00	2019	8	17	19:00	18.1	15.6	85		13		9		16.1		100.76				NA	
8/17/2019 20:00	2019	8	17	20:00	17.3	15.1	87		14		11		16.1		100.73				NA	
8/17/2019 21:00	2019	8	17	21:00	17.5	15.9	90		14		11		16.1		100.74				NA	
8/17/2019 22:00	2019	8	17	22:00	17.2	16.1	93		15		8		16.1		100.73				NA	
8/17/2019 23:00	2019	8	17	23:00	17	16	94		16		8		16.1		100.72				NA	
8/18/2019 0:00	2019	8	18	0:00	17	16	94		15		11		16.1		100.68				NA	
8/18/2019 1:00	2019	8	18	1:00	16.9	15.9	94		16		8		16.1		100.64				NA	
8/18/2019 2:00	2019	8	18	2:00	16.4	15.6	95		12		5		16.1		100.63				NA	
8/18/2019 3:00	2019	8	18	3:00	16.3	15.5	95		15		8		16.1		100.62				NA	
8/18/2019 4:00	2019	8	18	4:00	17.1	16.1	94		15		9		16.1		100.61				NA	
8/18/2019 5:00	2019	8	18	5:00	17.3	16.5	95		16		8		16.1		100.61				NA	
8/18/2019 6:00	2019	8	18	6:00	17.4	16.8	96		12		9		2.8		100.58				Fog	
8/18/2019 7:00	2019	8	18	7:00	18	17.2	95		14		8		12.9		100.6				NA	
8/18/2019 8:00	2019	8	18	8:00	18.5	17.9	96		15		5		16.1		100.61				NA	
8/18/2019 9:00	2019	8	18	9:00	19.2	18.1	93		13		11		16.1		100.6				NA	
8/18/2019 10:00	2019	8	18	10:00	18.8	18	95		12		13		12.9		100.55				NA	
8/18/2019 11:00	2019	8	18	11:00	19.1	18.6	97		13		11		8.1		100.52				Fog	

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Date/Time	Year	Month	Day	Time	Temp (°C)	Dew Point	Rel Hum (%)	Rel Hum Fl	Wind Dir (1)	Wind Dir Fl	Wind Spd (1)	Wind Spd F	Visibility (km)	Visibility Fl	Stn Press (hPa)	Stn Press Fl	Hmdx	Flag	Wind Chill	Weather
8/18/2019 12:00	2019	8	18	12:00	19.3	18.7	96		13		13		9.7		100.52				Fog	
8/18/2019 13:00	2019	8	18	13:00	19.3	18.9	97		14		13		8.1		100.52				Fog	
8/18/2019 14:00	2019	8	18	14:00	19.1	18.8	98		16		11		4.8		100.52				Fog	
8/18/2019 15:00	2019	8	18	15:00	18.8	18.6	99		14		13		9.7		100.45				Rain,Fog	
8/18/2019 16:00	2019	8	18	16:00	18.6	18.4	99		15		13		8.1		100.4				Rain,Fog	
8/18/2019 17:00	2019	8	18	17:00	18.6	18.3	98		16		13		16.1		100.42				NA	
8/18/2019 18:00	2019	8	18	18:00	18.4	18.1	98		14		9		16.1		100.46				NA	
8/18/2019 19:00	2019	8	18	19:00	18.4	18.2	99		13		9		8.1		100.43				Fog	
8/18/2019 20:00	2019	8	18	20:00	18.6	18.4	99		15		15		4.8		100.45				Fog	
8/18/2019 21:00	2019	8	18	21:00	18.6	18.4	99		16		11		2		100.43				Fog	
8/18/2019 22:00	2019	8	18	22:00	18.6	18.4	99		16		8		1		100.42				Fog	
8/18/2019 23:00	2019	8	18	23:00	18.6	18.6	100		15		5		1.6		100.41				Fog	
8/19/2019 0:00	2019	8	19	0:00	18.5	18.5	100		16		9		0.6		100.38				Fog	
8/19/2019 1:00	2019	8	19	1:00	18.5	18.5	100		16		8		1.6		100.36				Fog	
8/19/2019 2:00	2019	8	19	2:00	18.5	18.5	100			M	4		1.2		100.36				Fog	
8/19/2019 3:00	2019	8	19	3:00	18.5	18.5	100		11		4		0.6		100.35				Fog	
8/19/2019 4:00	2019	8	19	4:00	18.5	18.5	100				0		0.6		100.35				Fog	
8/19/2019 5:00	2019	8	19	5:00	18.2	18.2	100			M	4		0		100.37				Fog	
8/19/2019 6:00	2019	8	19	6:00	18.1	18.1	100				0		0.6		100.4				Fog	
8/19/2019 7:00	2019	8	19	7:00	18.4	18.4	100				0		0.2		100.47				Fog	
8/19/2019 8:00	2019	8	19	8:00	18.9	18.9	100				0		4		100.47				Fog	
8/19/2019 9:00	2019	8	19	9:00	20.6	19.3	92		12		9		16.1		100.44		28		NA	
8/19/2019 10:00	2019	8	19	10:00	21	19.4	90		10		8		16.1		100.42		28		NA	
8/19/2019 11:00	2019	8	19	11:00	22.3	19.5	84		14		13		16.1		100.39		29		NA	
8/19/2019 12:00	2019	8	19	12:00	23	19.1	78		17		13		16.1		100.36		30		NA	
8/19/2019 13:00	2019	8	19	13:00	22.9	19.7	82		12		9		16.1		100.34		30		NA	
8/19/2019 14:00	2019	8	19	14:00	21.6	20.4	93		15		13		11.3		100.3		30		Rain	
8/19/2019 15:00	2019	8	19	15:00	22.8	20.9	89		18		9		16.1		100.27		31		NA	
8/19/2019 16:00	2019	8	19	16:00	22.7	19.4	82		16		13		16.1		100.21		30		NA	
8/19/2019 17:00	2019	8	19	17:00	22.5	19	80		18		18		16.1		100.17		29		NA	
8/19/2019 18:00	2019	8	19	18:00	21.6	19.2	86		19		15		16.1		100.11		29		NA	
8/19/2019 19:00	2019	8	19	19:00	20.8	19.5	92		19		17		16.1		100.09		28		NA	
8/19/2019 20:00	2019	8	19	20:00	20.3	19.5	95		18		11		16.1		100.08		27		NA	
8/19/2019 21:00	2019	8	19	21:00	20.7	19.7	94		17		11		16.1		100.06		28		NA	
8/19/2019 22:00	2019	8	19	22:00	20.9	19.5	92		19		8		16.1		100.02		28		NA	

Station Name PORT HAWKESBURY
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Legend

E	Estimated
M	Missing
NA	Not Available

Date/Time	Year	Month	Day	Time	Temp (°C)	Dew Point	Rel Hum (%)	Rel Hum Fl	Wind Dir (1)	Wind Dir Fl	Wind Spd (1)	Wind Spd F	Visibility (km)	Visibility Fl	Stn Press (hPa)	Stn Press Fl	Hmdx	Flag	Wind Chill	Weather
8/19/2019 23:00	2019	8	19	23:00	20.5	19.2	92		20		8		16.1		99.98		27		NA	
8/20/2019 0:00	2019	8	20	0:00	20.8	19.6	93		23		11		16.1		99.93		28		NA	
8/20/2019 1:00	2019	8	20	1:00	20.9	19.7	93		23		13		16.1		99.9		28		NA	
8/20/2019 2:00	2019	8	20	2:00	21	19.8	93		27		9		16.1		99.89		28		NA	
8/20/2019 3:00	2019	8	20	3:00	20.6	19.5	93		23		9		16.1		99.85		28		NA	
8/20/2019 4:00	2019	8	20	4:00	20.9	19.6	92		24		18		16.1		99.83		28		NA	
8/20/2019 5:00	2019	8	20	5:00	21.3	19.8	91		24		13		16.1		99.85		29		NA	
8/20/2019 6:00	2019	8	20	6:00	21.3	19.8	91		23		9		16.1		99.87		29		NA	
8/20/2019 7:00	2019	8	20	7:00	21.8	20.2	90		21		11		16.1		99.85		30		NA	
8/20/2019 8:00	2019	8	20	8:00	23.1	20.9	87		25		9		16.1		99.86		31		NA	
8/20/2019 9:00	2019	8	20	9:00	24	21	83		28		18		16.1		99.87		32		NA	
8/20/2019 10:00	2019	8	20	10:00	22.9	20.7	87		30		21		16.1		99.9		31		NA	
8/20/2019 11:00	2019	8	20	11:00	21.9	20.2	90		29		21		16.1		99.94		30		NA	
8/20/2019 12:00	2019	8	20	12:00	22.1	19.8	86		30		22		16.1		99.95		30		NA	
8/20/2019 13:00	2019	8	20	13:00	23.5	19.7	79		29		21		16.1		99.96		31		NA	
8/20/2019 14:00	2019	8	20	14:00	23.3	19.1	77		30		28		16.1		99.99		30		NA	
8/20/2019 15:00	2019	8	20	15:00	23.1	15.5	62		33		21		16.1		100		27		NA	
8/20/2019 16:00	2019	8	20	16:00	22.7	15	61		30		15		16.1		99.99		27		NA	
8/20/2019 17:00	2019	8	20	17:00	22.1	11.3	50		31		17		16.1		100				NA	
8/20/2019 18:00	2019	8	20	18:00	20.9	13.5	62		28		11		16.1		100.09				NA	
8/20/2019 19:00	2019	8	20	19:00	18.4	13.9	75		31		8		16.1		100.12				NA	
8/20/2019 20:00	2019	8	20	20:00	14	12.8	93				0		16.1		100.15				NA	
8/20/2019 21:00	2019	8	20	21:00	12.9	12.1	95				0		16.1		100.23				NA	
8/20/2019 22:00	2019	8	20	22:00	13.3	13	98		15		4		16.1		100.22				NA	
8/20/2019 23:00	2019	8	20	23:00	12.1	11.6	97				0		16.1		100.23				NA	
8/21/2019 0:00	2019	8	21	0:00	12.6	12.4	99		21		4		16.1		100.24				NA	
8/21/2019 1:00	2019	8	21	1:00	11.8	10.3	91		25		4		16.1		100.24				NA	
8/21/2019 2:00	2019	8	21	2:00	12.6	10	84		23		5		16.1		100.23				NA	
8/21/2019 3:00	2019	8	21	3:00	14.5	10.7	78		25		8		16.1		100.24				NA	
8/21/2019 4:00	2019	8	21	4:00	16.1	11.9	76		25		11		16.1		100.26				NA	
8/21/2019 5:00	2019	8	21	5:00	14	11.2	83		24		9		16.1		100.32				NA	
8/21/2019 6:00	2019	8	21	6:00	15.5	12.1	80		24		5		16.1		100.36				NA	
8/21/2019 7:00	2019	8	21	7:00	19.2	14	72		27		8		16.1		100.4				NA	
8/21/2019 8:00	2019	8	21	8:00	22	14.3	61		23		5		16.1		100.39		26		NA	
8/21/2019 9:00	2019	8	21	9:00	24.6	15.9	58		24		9		16.1		100.37		29		NA	

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Legend

E Estimated
 M Missing
 NA Not Available

Date/Time	Year	Month	Day	Time	Temp (°C)	Dew Point	Rel Hum (%)	Rel Hum Fl	Wind Dir (1)	Wind Dir Fl	Wind Spd (1)	Wind Spd Fl	Visibility (km)	Visibility Fl	Stn Press (hPa)	Stn Press Fl	Hmdx	Hmdx Flag	Wind Chill	Weather
8/21/2019 10:00	2019	8	21	10:00	25.7	13.8	47		23		13		16.1		100.38		29		NA	
8/21/2019 11:00	2019	8	21	11:00	26.7	13.5	44		24		17		16.1		100.41		30		NA	
8/21/2019 12:00	2019	8	21	12:00	27.4	12.4	39		24		18		16.1		100.36		30		NA	
8/21/2019 13:00	2019	8	21	13:00	27.6	13.1	40		19		13		16.1		100.29		30		NA	
8/21/2019 14:00	2019	8	21	14:00	27.8	14.2	43		17		17		16.1		100.26		31		NA	
8/21/2019 15:00	2019	8	21	15:00	27.1	14.4	45		19		22		16.1		100.22		31		NA	
8/21/2019 16:00	2019	8	21	16:00	26.6	15	48		18		18		16.1		100.22		31		NA	
8/21/2019 17:00	2019	8	21	17:00	24.3	16	59		16		13		16.1		100.24		29		NA	
8/21/2019 18:00	2019	8	21	18:00	22.6	17.8	74		17		21		16.1		100.21		28		NA	
8/21/2019 19:00	2019	8	21	19:00	20	17.1	83		17		11		16.1		100.28		25		NA	
8/21/2019 20:00	2019	8	21	20:00	18.3	17	92		14		9		16.1		100.29				NA	
8/21/2019 21:00	2019	8	21	21:00	17.8	16.8	94		17		9		16.1		100.28				NA	
8/21/2019 22:00	2019	8	21	22:00	17	16.4	96		12		5		16.1		100.24				NA	
8/21/2019 23:00	2019	8	21	23:00	15.8	15.6	99		14		8		14.5		100.23				NA	
8/22/2019 0:00	2019	8	22	0:00	14.9	14.7	99		13		8		9.7		100.2				Fog	
8/22/2019 1:00	2019	8	22	1:00	17.5	16.9	96		16		8		16.1		100.14				NA	
8/22/2019 2:00	2019	8	22	2:00	17.9	17.3	96		14		11		16.1		100.09				NA	
8/22/2019 3:00	2019	8	22	3:00	17.6	17.1	97		14		9		16.1		100.06				NA	
8/22/2019 4:00	2019	8	22	4:00	18.1	17.3	95		14		11		16.1		100				NA	
8/22/2019 5:00	2019	8	22	5:00	18.3	17.7	96		11		11		16.1		99.94				Rain	
8/22/2019 6:00	2019	8	22	6:00	18.6	18	96		13		11		16.1		99.9				NA	
8/22/2019 7:00	2019	8	22	7:00	19	18.7	98		13		11		16.1		99.82				Rain	
8/22/2019 8:00	2019	8	22	8:00	20.1	19.9	99		15		13		4.8		99.74		28		Fog	
8/22/2019 9:00	2019	8	22	9:00	22	21	94		20		15		16.1		99.7		30		NA	
8/22/2019 10:00	2019	8	22	10:00	23.3	21.6	90		20		18		16.1		99.62		32		NA	
8/22/2019 11:00	2019	8	22	11:00	24	21.6	86		21		22		16.1		99.58		33		NA	
8/22/2019 12:00	2019	8	22	12:00	25.9	21.9	78		22		22		16.1		99.55		35		NA	
8/22/2019 13:00	2019	8	22	13:00	26.8	21.3	72		23		26		16.1		99.53		35		NA	
8/22/2019 14:00	2019	8	22	14:00	26.8	21.2	71		20		21		16.1		99.47		35		NA	
8/22/2019 15:00	2019	8	22	15:00	26.1	21.2	74		22		17		16.1		99.46		35		NA	
8/22/2019 16:00	2019	8	22	16:00	27	21	69		26		17		16.1		99.46		35		NA	
8/22/2019 17:00	2019	8	22	17:00	27.7	21.1	67		28		15		16.1		99.49		36		NA	
8/22/2019 18:00	2019	8	22	18:00	25.2	20.9	77		32		8		16.1		99.53		34		NA	
8/22/2019 19:00	2019	8	22	19:00	23.2	20.8	86		M		4		16.1		99.58		31		NA	
8/22/2019 20:00	2019	8	22	20:00	19.9	19.1	95		17		5		16.1		99.62				NA	

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Legend

E	Estimated
M	Missing
NA	Not Available

Date/Time	Year	Month	Day	Time	Temp (°C)	Dew Point	Rel Hum (%)	Rel Hum Fl	Wind Dir (1)	Wind Dir Fl	Wind Spd (1)	Wind Spd F	Visibility (km)	Visibility Fl	Stn Press (hPa)	Stn Press Fl	Hmdx	Hmdx Flag	Wind Chill	Weather
8/22/2019 21:00	2019	8	22	21:00	21.7	20.2	91		17		5		16.1		99.63		29		NA	
8/22/2019 22:00	2019	8	22	22:00	21.3	19.8	91		18		9		16.1		99.56		29		NA	
8/22/2019 23:00	2019	8	22	23:00	20.7	19	90		18		8		16.1		99.52		27		NA	
8/23/2019 0:00	2019	8	23	0:00	19.7	19.1	96		15		9		16.1		99.5				NA	
8/23/2019 1:00	2019	8	23	1:00	19.1	18.6	97				0		16.1		99.45				NA	
8/23/2019 2:00	2019	8	23	2:00	18.8	18.6	99			M	4		8.1		99.45				Fog	
8/23/2019 3:00	2019	8	23	3:00	18	17.8	99			M	4		9.7		99.44				Fog	
8/23/2019 4:00	2019	8	23	4:00	18.5	18.3	99				0		0.8		99.43				Fog	
8/23/2019 5:00	2019	8	23	5:00	19.2	18.9	98		27		15		16.1		99.44				NA	
8/23/2019 6:00	2019	8	23	6:00	20	18.7	92		25		21		16.1		99.44		27		NA	
8/23/2019 7:00	2019	8	23	7:00	21	18.9	88		23		15		16.1		99.53		28		NA	
8/23/2019 8:00	2019	8	23	8:00	22.9	19.7	82		25		15		16.1		99.53		30		NA	
8/23/2019 9:00	2019	8	23	9:00	22.9	19.8	82		30		17		16.1		99.52		30		NA	
8/23/2019 10:00	2019	8	23	10:00	23.5	19.7	79		30		15		16.1		99.53		31		NA	
8/23/2019 11:00	2019	8	23	11:00	22.4	19.2	82		30		17		16.1		99.52		29		NA	
8/23/2019 12:00	2019	8	23	12:00	23.1	19.7	81		29		13		16.1		99.47		30		NA	
8/23/2019 13:00	2019	8	23	13:00	22.5	19.2	81		30		11		16.1		99.45		29		NA	
8/23/2019 14:00	2019	8	23	14:00	23.3	19.5	79		29		13		16.1		99.42		30		NA	
8/23/2019 15:00	2019	8	23	15:00	22.5	18.1	76		31		13		16.1		99.44		29		NA	
8/23/2019 16:00	2019	8	23	16:00	22.3	16.7	70		29		18		16.1		99.47		27		NA	
8/23/2019 17:00	2019	8	23	17:00	21.2	17.1	77		32		8		16.1		99.49		27		NA	
8/23/2019 18:00	2019	8	23	18:00	21.6	16.5	73		30		5		16.1		99.52		27		NA	
8/23/2019 19:00	2019	8	23	19:00	19.9	17	83		24		5		16.1		99.57				NA	
8/23/2019 20:00	2019	8	23	20:00	18.5	15.6	83		23		9		16.1		99.63				NA	
8/23/2019 21:00	2019	8	23	21:00	18.9	13	68		27		11		16.1		99.68				NA	
8/23/2019 22:00	2019	8	23	22:00	18.7	12.8	68		29		8		16.1		99.65				NA	
8/23/2019 23:00	2019	8	23	23:00	18.5	12.8	69		26		18		16.1		99.65				NA	
8/24/2019 0:00	2019	8	24	0:00	18.3	12.4	68		26		21		16.1		99.67				NA	
8/24/2019 1:00	2019	8	24	1:00	17.6	12.9	74		28		15		16.1		99.68				NA	
8/24/2019 2:00	2019	8	24	2:00	16.8	13.8	82		28		11		16.1		99.68				NA	
8/24/2019 3:00	2019	8	24	3:00	16.3	13.6	84		27		15		16.1		99.71				NA	
8/24/2019 4:00	2019	8	24	4:00	17.1	12.5	74		29		11		16.1		99.76				NA	
8/24/2019 5:00	2019	8	24	5:00	15.5	13	85		29		9		16.1		99.84				NA	
8/24/2019 6:00	2019	8	24	6:00	16.9	13.7	81		30		13		16.1		99.89				NA	
8/24/2019 7:00	2019	8	24	7:00	18.2	14.8	80		30		11		16.1		99.97				NA	

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Legend

E	Estimated
M	Missing
NA	Not Available

Date/Time	Year	Month	Day	Time	Temp (°C)	Dew Point	Rel Hum (%)	Rel Hum Fl	Wind Dir (1)	Wind Dir Fl	Wind Spd (1)	Wind Spd F	Visibility (km)	Visibility Fl	Stn Press (hPa)	Stn Press Fl	Hmdx	Flag	Wind Chill	Weather
8/24/2019 8:00	2019	8	24	8:00	18	14.2	78		33		9		16.1		100.03				NA	
8/24/2019 9:00	2019	8	24	9:00	17.6	14.9	84		35		9		16.1		100.09				Rain	
8/24/2019 10:00	2019	8	24	10:00	20	14.4	70		34		13		16.1		100.14				NA	
8/24/2019 11:00	2019	8	24	11:00	21.3	14.1	63		34		17		16.1		100.2		25		NA	
8/24/2019 12:00	2019	8	24	12:00	19.8	14.3	70		36		18		16.1		100.27				NA	
8/24/2019 13:00	2019	8	24	13:00	20.4	12.7	61		1		18		16.1		100.35				NA	
8/24/2019 14:00	2019	8	24	14:00	20.5	11.9	57		1		18		16.1		100.43				NA	
8/24/2019 15:00	2019	8	24	15:00	19	11.5	61		35		17		16.1		100.52				NA	
8/24/2019 16:00	2019	8	24	16:00	18.4	10.6	60		2		11		16.1		100.6				NA	
8/24/2019 17:00	2019	8	24	17:00	16.6	9.4	62		36		18		16.1		100.69				NA	
8/24/2019 18:00	2019	8	24	18:00	14.9	9	67		3		11		16.1		100.84				NA	
8/24/2019 19:00	2019	8	24	19:00	12.2	8.3	77		33		8		16.1		100.92				NA	
8/24/2019 20:00	2019	8	24	20:00	10.9	7.6	80		34		9		16.1		101.03				NA	
8/24/2019 21:00	2019	8	24	21:00	10.7	7.2	79		35		9		16.1		101.12				NA	
8/24/2019 22:00	2019	8	24	22:00	8.4	6.9	91		18		5		16.1		101.18				NA	
8/24/2019 23:00	2019	8	24	23:00	6.7	5	89	M			4		16.1		101.24				NA	
8/25/2019 0:00	2019	8	25	0:00	6.1	5.2	94	M			4		16.1		101.28				NA	
8/25/2019 1:00	2019	8	25	1:00	7.3	5.7	90				0		16.1		101.26				NA	
8/25/2019 2:00	2019	8	25	2:00	8.3	5.8	84		2		9		16.1		101.23				NA	
8/25/2019 3:00	2019	8	25	3:00	7.6	5.8	88		3		9		16.1		101.26				NA	
8/25/2019 4:00	2019	8	25	4:00	8.4	6.4	87		2		9		16.1		101.3				NA	
8/25/2019 5:00	2019	8	25	5:00	8.6	6.7	88		2		9		16.1		101.34				NA	
8/25/2019 6:00	2019	8	25	6:00	9.5	7.5	87		3		9		16.1		101.37				NA	
8/25/2019 7:00	2019	8	25	7:00	12.6	9.3	80		3		8		16.1		101.43				NA	
8/25/2019 8:00	2019	8	25	8:00	15.2	11.1	76		5		11		16.1		101.46				NA	
8/25/2019 9:00	2019	8	25	9:00	17.3	12.3	72		6		11		16.1		101.49				NA	
8/25/2019 10:00	2019	8	25	10:00	19.1	12	63		8		17		16.1		101.51				NA	
8/25/2019 11:00	2019	8	25	11:00	18.6	12	65		10		17		16.1		101.5				NA	
8/25/2019 12:00	2019	8	25	12:00	19.3	12.2	63		12		17		16.1		101.5				NA	
8/25/2019 13:00	2019	8	25	13:00	19.1	12.8	67		16		13		16.1		101.49				NA	
8/25/2019 14:00	2019	8	25	14:00	18.9	12.2	65		17		13		16.1		101.45				NA	
8/25/2019 15:00	2019	8	25	15:00	19.2	12.2	64		16		15		16.1		101.41				NA	
8/25/2019 16:00	2019	8	25	16:00	18.7	12.4	66		17		11		16.1		101.41				NA	
8/25/2019 17:00	2019	8	25	17:00	17.4	11.8	69		13		9		14.5		101.38				NA	
8/25/2019 18:00	2019	8	25	18:00	16.2	10.8	70		12		11		16.1		101.39				NA	

Station Name PORT HAWKESBURY
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Legend

E	Estimated
M	Missing
NA	Not Available

Date/Time	Year	Month	Day	Time	Temp (°C)	Dew Point	Rel Hum (%)	Rel Hum Fl	Wind Dir (1)	Wind Dir Fl	Wind Spd (1)	Wind Spd F	Visibility (km)	Visibility Fl	Stn Press (hPa)	Stn Press Fl	Hmdx	Flag	Wind Chill	Weather
8/25/2019 19:00	2019	8	25	19:00	14.2	10.3	77		11		11		16.1		101.4				NA	
8/25/2019 20:00	2019	8	25	20:00	12.4	9.8	84		10		9		16.1		101.44				NA	
8/25/2019 21:00	2019	8	25	21:00	11.2	9.3	88		10		9		16.1		101.44				NA	
8/25/2019 22:00	2019	8	25	22:00	10.4	9.1	92		9		9		16.1		101.45				NA	
8/25/2019 23:00	2019	8	25	23:00	8.1	7.7	97		5		9		16.1		101.39				NA	
8/26/2019 0:00	2019	8	26	0:00	8	7	93		5		5		16.1		101.4				NA	
8/26/2019 1:00	2019	8	26	1:00	7.5	7.1	98		4		9		16.1		101.37				NA	
8/26/2019 2:00	2019	8	26	2:00	8.1	7.4	95		4		9		16.1		101.35				NA	
8/26/2019 3:00	2019	8	26	3:00	7.2	6.9	98		4		11		16.1		101.33				NA	
8/26/2019 4:00	2019	8	26	4:00	8.8	8.1	95		2		8		16.1		101.28				NA	
8/26/2019 5:00	2019	8	26	5:00	9	8.7	98		5		13		16.1		101.2				NA	
8/26/2019 6:00	2019	8	26	6:00	9.5	8.9	96		5		13		16.1		101.19				NA	
8/26/2019 7:00	2019	8	26	7:00	10.6	9.7	94		5		13		16.1		101.24				NA	
8/26/2019 8:00	2019	8	26	8:00	11.5	10.4	93		7		8		16.1		101.26				NA	
8/26/2019 9:00	2019	8	26	9:00	12.7	11.2	91		3		9		16.1		101.22				NA	
8/26/2019 10:00	2019	8	26	10:00	14.5	12	85		6		9		16.1		101.17				NA	
8/26/2019 11:00	2019	8	26	11:00	16.9	11.7	71		8		18		16.1		101.18				NA	
8/26/2019 12:00	2019	8	26	12:00	17.1	11.3	69		9		17		16.1		101.11				NA	
8/26/2019 13:00	2019	8	26	13:00	17.6	12	70		7		15		16.1		101.01				NA	
8/26/2019 14:00	2019	8	26	14:00	17.6	10.5	63		8		18		16.1		100.95				NA	
8/26/2019 15:00	2019	8	26	15:00	16.3	10.2	67		7		13		16.1		100.84				NA	
8/26/2019 16:00	2019	8	26	16:00	15.7	11.4	75		6		5		16.1		100.8				NA	
8/26/2019 17:00	2019	8	26	17:00	15.4	11	75		4		13		16.1		100.68				NA	
8/26/2019 18:00	2019	8	26	18:00	13.1	12.3	95		5		5		4.8		100.72				Moderate Rain,Fog	
8/26/2019 19:00	2019	8	26	19:00	12.9	12.1	95		36		8		16.1		100.64				NA	
8/26/2019 20:00	2019	8	26	20:00	13.4	12	91		1		5		16.1		100.56				NA	
8/26/2019 21:00	2019	8	26	21:00	13.2	11.8	91		1		5		16.1		100.47				NA	
8/26/2019 22:00	2019	8	26	22:00	13	11.6	91		35		8		16.1		100.49				Rain	
8/26/2019 23:00	2019	8	26	23:00	12.7	11.3	91		33		11		16.1		100.33				Rain	
8/27/2019 0:00	2019	8	27	0:00	12.2	10.8	91		1		13		16.1		100.14				Moderate Rain	
8/27/2019 1:00	2019	8	27	1:00	11.5	10.7	95		34		13		6.4		100.09				Moderate Rain,Fog	
8/27/2019 2:00	2019	8	27	2:00	11.5	11	97		34		11		6.4		100.02				Rain,Fog	
8/27/2019 3:00	2019	8	27	3:00	11.4	10.8	96		34		17		11.3		99.88				Rain	
8/27/2019 4:00	2019	8	27	4:00	11	10.4	96		34		15		6.4		99.79				Moderate Rain,Fog	
8/27/2019 5:00	2019	8	27	5:00	10.9	10.1	95		36		22		11.3		99.69				Moderate Rain	

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Legend

E Estimated
 M Missing
 NA Not Available

Date/Time	Year	Month	Day	Time	Temp (°C)	Dew Point	Rel Hum (%)	Wind Dir (1)	Wind Dir Fl	Wind Spd (1)	Wind Spd F	Visibility (km)	Visibility Fl	Stn Press (hPa)	Stn Press F	Hmdx	Flag	Wind Chill	Weather
8/27/2019 6:00	2019	8	27	6:00	10.8	10	95	36		24		16.1		99.64				Rain	
8/27/2019 7:00	2019	8	27	7:00	10.9	10.1	95	36		24		9.7		99.55				Moderate Rain,Fog	
8/27/2019 8:00	2019	8	27	8:00	11.2	10.3	94	35		21		6.4		99.43				Rain,Fog	
8/27/2019 9:00	2019	8	27	9:00	11.9	11	94	33		21		9.7		99.42				Rain,Fog	
8/27/2019 10:00	2019	8	27	10:00	12.4	11.7	95	33		26		11.3		99.35				Rain	
8/27/2019 11:00	2019	8	27	11:00	13	12.2	95	31		22		16.1		99.39				NA	
8/27/2019 12:00	2019	8	27	12:00	13.2	12.7	97	30		32		8.1		99.37				Rain,Fog	
8/27/2019 13:00	2019	8	27	13:00	13.1	12.6	97	30		30		6.4		99.38				Moderate Rain,Fog	
8/27/2019 14:00	2019	8	27	14:00	13.8	13.5	98	29		39		2.8		99.35				Moderate Rain,Fog	
8/27/2019 15:00	2019	8	27	15:00	13.8	13.3	97	31		34		4.8		99.37				Rain,Fog	
8/27/2019 16:00	2019	8	27	16:00	14.4	14.1	98	30		26		2.8		99.41				Rain,Fog	
8/27/2019 17:00	2019	8	27	17:00	14.7	13.5	93	28		35		16.1		99.4				NA	
8/27/2019 18:00	2019	8	27	18:00	15.8	14.2	90	28		35		16.1		99.4				NA	
8/27/2019 19:00	2019	8	27	19:00	17	12.8	76	28		41		16.1		99.47				NA	
8/27/2019 20:00	2019	8	27	20:00	17.1	13.1	77	29		39		16.1		99.53				NA	
8/27/2019 21:00	2019	8	27	21:00	16.9	13.5	80	30		24		16.1		99.58				NA	
8/27/2019 22:00	2019	8	27	22:00	17	13.2	78	28		26		16.1		99.64				NA	
8/27/2019 23:00	2019	8	27	23:00	16.6	14.1	85	29		15		16.1		99.68				NA	
8/28/2019 0:00	2019	8	28	0:00	16	13.7	86	26		13		16.1		99.68				NA	
8/28/2019 1:00	2019	8	28	1:00	16	13.7	86	27		15		16.1		99.68				NA	
8/28/2019 2:00	2019	8	28	2:00	15.9	13.5	85	27		17		16.1		99.7				NA	
8/28/2019 3:00	2019	8	28	3:00	15.3	13.5	89	29		17		16.1		99.72				NA	
8/28/2019 4:00	2019	8	28	4:00	15.6	14	90	27		9		16.1		99.75				NA	
8/28/2019 5:00	2019	8	28	5:00	15.5	14.3	92	27		15		16.1		99.79				NA	
8/28/2019 6:00	2019	8	28	6:00	16	15.1	94	28		21		16.1		99.85				NA	
8/28/2019 7:00	2019	8	28	7:00	16.5	14.9	90	27		21		16.1		99.93				NA	
8/28/2019 8:00	2019	8	28	8:00	18.4	15.6	84	28		21		16.1		99.95				NA	
8/28/2019 9:00	2019	8	28	9:00	19.6	15.7	78	29		30		16.1		99.96				NA	
8/28/2019 10:00	2019	8	28	10:00	20.4	16.2	77	29		34		16.1		99.99		25		NA	
8/28/2019 11:00	2019	8	28	11:00	20.9	15.6	71	29		30		16.1		99.99		25		NA	
8/28/2019 12:00	2019	8	28	12:00	21.3	15.5	69	32		22		16.1		100		26		NA	
8/28/2019 13:00	2019	8	28	13:00	21.3	16.4	73	29		24		16.1		100.05		26		NA	
8/28/2019 14:00	2019	8	28	14:00	21.9	14.9	64	30		21		16.1		100.08		26		NA	
8/28/2019 15:00	2019	8	28	15:00	22.3	15.4	64	28		22		16.1		100.08		27		NA	
8/28/2019 16:00	2019	8	28	16:00	22.5	15.1	63	28		18		16.1		100.08		27		NA	

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Legend

E Estimated
 M Missing
 NA Not Available

Date/Time	Year	Month	Day	Time	Temp (°C)	Dew Point	Rel Hum (%)	Rel Hum Fl	Wind Dir (1)	Wind Dir Fl	Wind Spd (1)	Wind Spd Fl	Visibility (km)	Visibility Fl	Stn Press (hPa)	Stn Press Fl	Hmdx	Hmdx Flag	Wind Chill	Weather
8/28/2019 17:00	2019	8	28	17:00	21.9	15.2	65		28		11		16.1		100.14		26		NA	
8/28/2019 18:00	2019	8	28	18:00	20	16.2	78		M		4		16.1		100.17		25		NA	
8/28/2019 19:00	2019	8	28	19:00	16.8	15.5	92				0		16.1		100.23				NA	
8/28/2019 20:00	2019	8	28	20:00	14.3	14	98		1		8		16.1		100.26				NA	
8/28/2019 21:00	2019	8	28	21:00	13.1	12.6	97		4		8		16.1		100.3				NA	
8/28/2019 22:00	2019	8	28	22:00	12.9	12.1	95				0		16.1		100.32				NA	
8/28/2019 23:00	2019	8	28	23:00	12.9	12.6	98		7		9		16.1		100.32				NA	
8/29/2019 0:00	2019	8	29	0:00	12.5	12	97		4		8		16.1		100.36				NA	
8/29/2019 1:00	2019	8	29	1:00	12.8	12.7	99		3		8		16.1		100.32				NA	
8/29/2019 2:00	2019	8	29	2:00	14	13.9	99		4		9		16.1		100.31				NA	
8/29/2019 3:00	2019	8	29	3:00	13.6	13.2	98		7		8		16.1		100.29				NA	
8/29/2019 4:00	2019	8	29	4:00	12.6	12.3	98		7		8		16.1		100.32				NA	
8/29/2019 5:00	2019	8	29	5:00	12.8	12.7	99		5		11		16.1		100.34				NA	
8/29/2019 6:00	2019	8	29	6:00	13	12.9	99		7		9		16.1		100.41				NA	
8/29/2019 7:00	2019	8	29	7:00	14.4	14.1	98		5		11		4		100.39				Fog	
8/29/2019 8:00	2019	8	29	8:00	17.1	16.1	94		8		17		16.1		100.37				NA	
8/29/2019 9:00	2019	8	29	9:00	19.8	16.3	80		12		21		16.1		100.39				NA	
8/29/2019 10:00	2019	8	29	10:00	20.7	17.2	80		12		18		16.1		100.4		26		NA	
8/29/2019 11:00	2019	8	29	11:00	22	15.7	67		14		18		16.1		100.35		26		NA	
8/29/2019 12:00	2019	8	29	12:00	22.6	15.1	62		13		18		16.1		100.3		27		NA	
8/29/2019 13:00	2019	8	29	13:00	21.9	13.6	59		13		26		16.1		100.27		25		NA	
8/29/2019 14:00	2019	8	29	14:00	22.2	14.6	62		14		24		16.1		100.26		26		NA	
8/29/2019 15:00	2019	8	29	15:00	20.6	14.8	69		14		22		16.1		100.23				NA	
8/29/2019 16:00	2019	8	29	16:00	20.1	16	77		14		15		16.1		100.23		25		NA	
8/29/2019 17:00	2019	8	29	17:00	18.6	14.4	76		13		21		16.1		100.19				NA	
8/29/2019 18:00	2019	8	29	18:00	18.4	15.7	84		12		21		16.1		100.13				NA	
8/29/2019 19:00	2019	8	29	19:00	17.6	16.3	92		12		18		11.3		100.14				Rain	
8/29/2019 20:00	2019	8	29	20:00	17.7	17.5	99		11		17		6.4		100.14				Rain,Fog	
8/29/2019 21:00	2019	8	29	21:00	18.7	18.5	99		14		13		1.6		100.07				Rain,Fog	
8/29/2019 22:00	2019	8	29	22:00	19	18.8	99		14		18		0.6		100.01				Rain,Fog	
8/29/2019 23:00	2019	8	29	23:00	19.1	19.1	100		14		17		0.6		99.96				Rain,Fog	
8/30/2019 0:00	2019	8	30	0:00	19.6	19.6	100		14		17		0.6		99.82				Rain,Fog	
8/30/2019 1:00	2019	8	30	1:00	19.6	19.6	100		13		30		0.4		99.63				Rain,Fog	
8/30/2019 2:00	2019	8	30	2:00	20.6	20.6	100		15		32		3.2		99.52		29		Rain,Fog	
8/30/2019 3:00	2019	8	30	3:00	20.8	20.6	99		18		30		3.2		99.52		29		Rain,Fog	

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E	Estimated
M	Missing
NA	Not Available

Date/Time	Year	Month	Day	Time	Temp (°C)	Dew Point	Rel Hum (%)	Rel Hum Fl	Wind Dir (1)	Wind Dir Fl	Wind Spd (1)	Wind Spd Fl	Visibility (km)	Visibility Fl	Stn Press (hPa)	Stn Press Fl	Hmdx	Flag	Wind Chill	Weather
8/30/2019 4:00	2019	8	30	4:00	21.2	20.9	98		21		18		16.1		99.58		30		NA	
8/30/2019 5:00	2019	8	30	5:00	20.5	20.1	97		18		8		16.1		99.61		28		NA	
8/30/2019 6:00	2019	8	30	6:00	20.3	20	98		22		5		16.1		99.69		28		NA	
8/30/2019 7:00	2019	8	30	7:00	20.3	19.8	97		25		9		16.1		99.72		28		NA	
8/30/2019 8:00	2019	8	30	8:00	21.3	20.1	93		21		5		16.1		99.74		29		NA	
8/30/2019 9:00	2019	8	30	9:00	21.6	20.6	94		21		8		16.1		99.81		30		NA	
8/30/2019 10:00	2019	8	30	10:00	21.8	20.6	93		29		11		16.1		99.84		30		NA	
8/30/2019 11:00	2019	8	30	11:00	21.7	19.7	88		30		15		16.1		99.86		29		NA	
8/30/2019 12:00	2019	8	30	12:00	20.5	18.3	87		30		22		16.1		99.89		27		NA	
8/30/2019 13:00	2019	8	30	13:00	22.1	18.7	81		28		21		16.1		99.89		29		NA	
8/30/2019 14:00	2019	8	30	14:00	22.4	18.9	80		29		15		16.1		99.89		29		NA	
8/30/2019 15:00	2019	8	30	15:00	22.8	18.6	77		30		11		16.1		99.89		29		NA	
8/30/2019 16:00	2019	8	30	16:00	23.7	17.8	69		29		9		16.1		99.89		30		NA	
8/30/2019 17:00	2019	8	30	17:00	23.7	16.1	62		29		9		16.1		99.91		28		NA	
8/30/2019 18:00	2019	8	30	18:00	22.6	16.2	67			M	4		16.1		99.93		27		NA	
8/30/2019 19:00	2019	8	30	19:00	18	16	88		11		5		16.1		99.95				NA	
8/30/2019 20:00	2019	8	30	20:00	15.3	14.7	96		11		4		16.1		99.99				NA	
8/30/2019 21:00	2019	8	30	21:00	15.4	13.9	91		14		4		16.1		100.01				NA	
8/30/2019 22:00	2019	8	30	22:00	19.2	15.7	80		23		13		16.1		100.02				NA	
8/30/2019 23:00	2019	8	30	23:00	18.8	16.1	84		25		15		16.1		100.02				NA	
8/31/2019 0:00	2019	8	31	0:00	17.7	16.1	90		28		8		16.1		100.04				NA	
8/31/2019 1:00	2019	8	31	1:00	17	15.8	93		27		13		16.1		100.04				NA	
8/31/2019 2:00	2019	8	31	2:00	17.8	14.7	82		22		13		16.1		100.02				NA	
8/31/2019 3:00	2019	8	31	3:00	17.1	14.2	83		27		13		16.1		100.04				NA	
8/31/2019 4:00	2019	8	31	4:00	16.9	13.9	82		27		15		16.1		100.07				NA	
8/31/2019 5:00	2019	8	31	5:00	14.1	12.7	91			M	4		16.1		100.1				NA	
8/31/2019 6:00	2019	8	31	6:00	15.6	14	90		26		9		16.1		100.18				NA	
8/31/2019 7:00	2019	8	31	7:00	17.4	14.7	84		29		8		16.1		100.18				NA	
8/31/2019 8:00	2019	8	31	8:00	19.1	15.5	79		28		15		16.1		100.19				NA	
8/31/2019 9:00	2019	8	31	9:00	20.2	15.8	75		29		17		16.1		100.21		25		NA	
8/31/2019 10:00	2019	8	31	10:00	20.9	15.5	71		30		13		16.1		100.2		25		NA	
8/31/2019 11:00	2019	8	31	11:00	22	15.7	67		30		18		16.1		100.19		26		NA	
8/31/2019 12:00	2019	8	31	12:00	20.7	14.8	69		32		22		16.1		100.22		25		NA	
8/31/2019 13:00	2019	8	31	13:00	22	13	56		30		30		16.1		100.23		25		NA	
8/31/2019 14:00	2019	8	31	14:00	21.7	11.5	52		31		26		16.1		100.21				NA	

Station Name PORT HAWKESBURY
 Province NOVA SCOTIA
 Current Station Oper NAV Canada
 Latitude 45.66
 Longitude -61.37
 Elevation 114.9
 Climate Identifier 8204495
 WMO Identifier 71041
 TC Identifier YPD

All times are specified in Local Standard Time (LST). Add 1 hour to adjust for Daylight Saving Time where and when it is observed.

Legend

E Estimated
 M Missing
 NA Not Available

Date/Time	Year	Month	Day	Time	Temp (°C)	Dew Point	Rel Hum (%)	Wind Dir (1)	Wind Dir Fl	Wind Spd (1)	Wind Spd F	Visibility (km)	Visibility Fl	Stn Press (hPa)	Stn Press F	Hmdx	Flag	Wind Chill	Weather
8/31/2019 15:00	2019	8	31	15:00	21.4	12.3	56	31		18		16.1		100.25				NA	
8/31/2019 16:00	2019	8	31	16:00	21.1	12.3	57	31		22		16.1		100.28				NA	
8/31/2019 17:00	2019	8	31	17:00	20.1	13.5	65	28		15		16.1		100.31				NA	
8/31/2019 18:00	2019	8	31	18:00	18.7	14	74	26		8		16.1		100.35				NA	
8/31/2019 19:00	2019	8	31	19:00	17	13.4	79	28		5		16.1		100.41				NA	
8/31/2019 20:00	2019	8	31	20:00	16.6	13.4	81	30		11		16.1		100.47				NA	
8/31/2019 21:00	2019	8	31	21:00	16.2	13.1	82		M		4		16.1		100.53			NA	
8/31/2019 22:00	2019	8	31	22:00	15	12.8	87	28		8		16.1		100.57				NA	
8/31/2019 23:00	2019	8	31	23:00	14.2	12.2	88	28		4		16.1		100.59				NA	

Appendix C

Analytical Certificates



BUREAU
VERITAS

Attention: Dawn Negus

GHD Limited
120 Western Parkway
Bedford, NS
CANADA B4B 0V2

Your P.O. #: 73516887
Your Project #: 11194492-01-04
Site Location: NOVA QUARRY, SPORTING MOUNTAIN
Your C.O.C. #: n/a

Report Date: 2019/09/03
Report #: R5864769
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9N7076

Received: 2019/08/26, 10:15

Sample Matrix: Filter
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Particulate Matter in Air (1)	7	N/A	2019/08/30	SYD SOP 00172	EPA40 CFR Ch.1,50-Bm

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by BV Labs Sydney



BUREAU
VERITAS

Attention: Dawn Negus

GHD Limited
120 Western Parkway
Bedford, NS
CANADA B4B 0V2

Your P.O. #: 73516887
Your Project #: 11194492-01-04
Site Location: NOVA QUARRY, SPORTING MOUNTAIN
Your C.O.C. #: n/a

Report Date: 2019/09/03
Report #: R5864769
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9N7076

Received: 2019/08/26, 10:15

Encryption Key



Bureau Veritas Laboratories

03 Sep 2019 15:59:38

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Heather Macumber, Senior Project Manager

Email: Heather.MACUMBER@bvlabs.com

Phone# (902)420-0203 Ext:226

=====
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Total Cover Pages : 2
Page 2 of 6



BUREAU
VERITAS

BV Labs Job #: B9N7076

Report Date: 2019/09/03

GHD Limited

Client Project #: 11194492-01-04

Site Location: NOVA QUARRY, SPORTING MOUNTAIN

Your P.O. #: 73516887

Sampler Initials: DN

RESULTS OF ANALYSES OF FILTER

BV Labs ID		KPP935	KPP936	KPP937	KPP938			
Sampling Date		2019/08/21 13:17	2019/08/22 12:38	2019/08/21 13:40	2019/08/22 13:37			
COC Number		n/a	n/a	n/a	n/a			
	UNITS	35941 QUARRY-795 MORRISON ROAD	35945 QUARRY-795 MORRISON ROAD	35943 571 MORRISON ROAD (GRENIER)	35946 571 MORRISON ROAD (GRENIER)	RDL	MDL	QC Batch

Inorganics

Total Suspended Particulate	mg	22	36	26	23	0.50	N/A	6299800
-----------------------------	----	----	----	----	----	------	-----	---------

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

N/A = Not Applicable

BV Labs ID		KPP939	KPP940	KPP941			
Sampling Date		2019/08/21 12:52	2019/08/22 12:55	2019/08/22 12:00			
COC Number		n/a	n/a	n/a			
	UNITS	35942 1329 MORSSION ROAD (MACPHAIL)	35944 1329 MORSSION ROAD (MACPHAIL)	35947 BLANK	RDL	MDL	QC Batch

Inorganics

Total Suspended Particulate	mg	29	46	1.2	0.50	N/A	6299800
-----------------------------	----	----	----	-----	------	-----	---------

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

N/A = Not Applicable



BUREAU
VERITAS

BV Labs Job #: B9N7076

Report Date: 2019/09/03

GHD Limited

Client Project #: 11194492-01-04

Site Location: NOVA QUARRY, SPORTING MOUNTAIN

Your P.O. #: 73516887

Sampler Initials: DN

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	19.0°C
-----------	--------

Results relate only to the items tested.



BUREAU
VERITAS

BV Labs Job #: B9N7076

Report Date: 2019/09/03

GHD Limited

Client Project #: 11194492-01-04

Site Location: NOVA QUARRY, SPORTING MOUNTAIN

Your P.O. #: 73516887

Sampler Initials: DN

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

M. Mombourquette

Michelle Mombourquette, Laboratory Manager

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200 Bluewater Road, Suite 105, Bedford, Nova Scotia B4B 1G9 Tel: 902-420-0203 Fax: 902-420-8612 Toll Free: 1-800-565-7227
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 465 George Street, Unit G, Sydney, NS B1P 1K5 Tel: 902-567-1255 Fax: 902-539-6504 Toll Free: 1-888-535-7770

www.bvlabs.com E-mail: customerservicebedford@bvlabs.com

ATL FCD 00149 / 24

Page _ 1 of 1

Invoice Information				Report Information (If differs from invoice)				Project Information (where applicable)				COC #:		Turnaround Time (TAT) Required				
Company Name: GHD Limited				Company Name: Dawn Negus				Quotation #: 73516887						<input checked="" type="checkbox"/> Regular TAT (5 business days) Most analyses				
Contact Name: Dawn Negus				Address: 120 Western Parkway Bedford NS Postal Code: B4B 042				P.O. #: 11194492-01-04						PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS				
Address: 120 Western Parkway Bedford NS Postal Code: B4B 042				Phone: _____ Fax: _____				Site Location: Nova Quarry, Sporting Mountain						IF RUSH please specify date (Surcharges will be applied)				
Phone: 902-468-1248 Fax: _____				Email: dawn.negus@ghd.com				Site #: DN/JR						DATE REQUIRED:				
Laboratory Use Only								Analysis Requested										
CUSTODY SEAL		COOLER TEMPERATURES		COOLER TEMPERATURES										Regulatory Requirements (Specify)				
Present	Intact	19,19,19																
COOLING MEDIA PRESENT Y / N								SAMPLES MUST BE KEPT COOL (<10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS										
SAMPLE IDENTIFICATION				DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	RCAP-MS (Total Metals) Well / Surface water	RCAP-MS (Dissolved Metals) Ground waters	Metals (Water)	Metals (Soil)	RBGA Hydrocarbons (BTX, CE-C2)	Hydrocarbons Soil (Portable), NS Fuel Oil Spill Policy Low level BTX <5- \leq C2	Total Coliform/E. coli (Presence/Absence)	TSP	Comments
1	Quarry - 795 Morrison Road	21/08/2019	13:17	Air	1					Total Digest (Default Method) for well water & surface water	Dissolved for ground water	Mercury (CIRCLE) TOTAL / DISSOLVED	Metals & Mercury Default Acid extractable (Available) Digest	NB Portable Water BTX, VPH, Low level T.E.H	PAHs (Default for water/soil)	Total Coliform/E. coli (Count)	HOLD- DO NOT ANALYZE	
2	Quarry - 795 Morrison Road	22/08/2019	12:38	Air	1					for well water & surface water	Mercury (CIRCLE) TOTAL / DISSOLVED	Metals Total Digest -for Ocean sediments (HNO3/HF/HClO4)	Mercury Low level by Cold Vapour AA	PAHs (FWAL/CCME Sediment)	PCBs	VOCs		
3	571 Morrison Road (Grenier)	21/08/2019	13:40	Air	1					for well water & surface water	Metals Total Digest -for Ocean sediments (HNO3/HF/HClO4)	Hot Water Soluble Boron (Required for CCME Agricultural/ Landfill)	Hot Water Soluble Boron (Required for CCME Agricultural/ Landfill)	PCBs				
4	571 Morrison Road (Grenier)	22/08/2019	13:37	Air	1					for well water & surface water	Metals Total Digest -for Ocean sediments (HNO3/HF/HClO4)	Hot Water Soluble Boron (Required for CCME Agricultural/ Landfill)	Hot Water Soluble Boron (Required for CCME Agricultural/ Landfill)	PCBs				
5	1329 Morrison Road (MacPhail)	21/08/2019	12:52	Air	1					for well water & surface water	Metals Total Digest -for Ocean sediments (HNO3/HF/HClO4)	Hot Water Soluble Boron (Required for CCME Agricultural/ Landfill)	Hot Water Soluble Boron (Required for CCME Agricultural/ Landfill)	PCBs				
6	1329 Morrison Road (MacPhail)	22/08/2019	12:55	Air	1					for well water & surface water	Metals Total Digest -for Ocean sediments (HNO3/HF/HClO4)	Hot Water Soluble Boron (Required for CCME Agricultural/ Landfill)	Hot Water Soluble Boron (Required for CCME Agricultural/ Landfill)	PCBs				
7	Blank	22/08/2019	12:00	Air	1					for well water & surface water	Metals Total Digest -for Ocean sediments (HNO3/HF/HClO4)	Hot Water Soluble Boron (Required for CCME Agricultural/ Landfill)	Hot Water Soluble Boron (Required for CCME Agricultural/ Landfill)	PCBs				
8										for well water & surface water	Metals Total Digest -for Ocean sediments (HNO3/HF/HClO4)	Hot Water Soluble Boron (Required for CCME Agricultural/ Landfill)	Hot Water Soluble Boron (Required for CCME Agricultural/ Landfill)	PCBs				
9										for well water & surface water	Metals Total Digest -for Ocean sediments (HNO3/HF/HClO4)	Hot Water Soluble Boron (Required for CCME Agricultural/ Landfill)	Hot Water Soluble Boron (Required for CCME Agricultural/ Landfill)	PCBs				
10										for well water & surface water	Metals Total Digest -for Ocean sediments (HNO3/HF/HClO4)	Hot Water Soluble Boron (Required for CCME Agricultural/ Landfill)	Hot Water Soluble Boron (Required for CCME Agricultural/ Landfill)	PCBs				
RELINQUISHED BY: (Signature/Print)				DATE: (YYYY/MM/DD)		TIME: (HH:MM)	RECEIVED BY: (Signature/Print)				DATE: (YYYY/MM/DD)		TIME: (HH:MM)	BV JOB #				
DAWN NEGUS				AUG 26/19		10:15	E.Bowles							B9N7076				

Unless otherwise agreed to in writing, work submitted on this Chain of Custody is subject to Bureau Veritas Laboratories' standard Terms and Conditions. Signing of this Chain of Custody document is acknowledgment and acceptance of our terms which are available for viewing at <http://www.bvlabs.com/terms-and-conditions>

White: Maxxam

Pink: Client



about GHD

GHD is one of the world's leading professional services companies operating in the global markets of water, energy and resources, environment, property and buildings, and transportation. We provide engineering, environmental, and construction services to private and public sector clients.

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