HALIFAX REGIONAL MUNICIPALITY
ODOUR AND NOISE BASELINE STUDY
HALIFAX HARBOUR SOLUTIONS PROJECT

PROJECT NO. NSD13960-6024

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REPORT TO

HALIFAX REGIONAL MUNICIPALITY

ON

ODOUR AND NOISE BASELINE STUDY
HALIFAX HARBOUR SOLUTIONS PROJECT

JACQUES WHITFORD ENVIRONMENT LIMITED
3 SPECTACLE LAKE DRIVE
DARTMOUTH, NS B3B 1W8
TEL: 902-468-7777
FAX: 902-468-9009

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1.0 INTRODUCTION

Four sewage treatment plants (STPs) are proposed for the Halifax Harbour Solutions Project (HHSP). An environmental assessment is being undertaken for the HHSP, which includes a number of baseline studies. Halifax Regional Municipality (HRM) requested Jacques Whitford Environmental Limited (JWEL) to undertake a baseline study of current levels of noise and odour in the vicinity of the candidate STP-sites. JWEL carried out this program from 30th of June until the 25th of July, 2000.

The main objectives of the noise program were to:

- measure current noise levels at representative times of day;
- determine if there are local sources of noise during any part of the day that might cause existing noise levels to be of concern; and
- identify the sources contributing to local noise in order to distinguish from any future noise contribution from future STPs.

Similarly, the objectives of the odour program were to:

- measure current odour levels at representative times of day;
- determine if there are local sources of odour at the sites; and
- identify odour sources to be able to distinguish existing odours from odour generated by future STPs.

This report discusses the rationale for the program design and the results of the study.

2.0 SAMPLING LOCATION

The locations for the measurement program were selected to represent the areas adjacent to the candidate STP sites. The individual locations are shown in the maps in Appendix B, and are discussed below.

2.1 Dartmouth STP site

The Dartmouth site is at the southeast end of the Coast Guard property near the dead end of Boundary Street. Open parkland adjoins the site on three sides, with residential areas farther away. The property is significantly lower in elevation than the adjoining property. As it is on the shoreline, and exposed to the harbour, the wind is generally higher in speed than most urban areas of the city.

2.2 Halifax North STP site

The Halifax North site is between Barrington Street and Upper Water Street and Cornwallis Street. These roadways immediately bound the site on all sides. The properties to the east are the dockyards of the Department of National Defence. Across Barrington Street to the southwest is the Metro Turning Point (a men's shelter), the nearest residential structure to the site.

2.3 Halifax South STP site

The Halifax South site is very near the VIA railroad station and will occupy a building currently used by VIA. The surrounding land uses are primarily commercial. The Pier 21 national historic site is immediately across Terminal Road, the Westin Hotel is north of the site across the railroad tracks, and there is a large grocery store and shopping area across the tracks to the west of the site.

2.4 Herring Cove STP site

At the time of the program, the candidate site at Herring Cove had not been identified. Therefore the sampling program was carried out at a surrogate site in the area. Spot measurements in other parts of the community were made to provide some assurance that there were not major noise or odour sources in the area.

3.0 METHODOLOGY

3.1 Noise

Noise is unwanted sound. Sound pressure levels (SPL) are measured in decibels on the A-weighted scale, dBA, where the A-weighting scheme accounts for the sensitivities of the human ear over the audio spectrum. The quantity most often referenced in regulations is the L_{eq}, or the power-averaged level of noise over some interval. Intervals of one-hour are commonly used, but fail to reflect the contribution of short-term noises. In this program, L_{eq} was measured on 1 minute intervals, and one hour L_{eq} values are computed from the 1 minute values. In addition, L_{10} and L_{90} measurements were made. These are the sound pressure levels exceeded 10 and 90 percent of the time respectively, and are used to characterize the variability of the noise levels. In addition to the meter used for the baseline data, an additional meter was used by the field personnel to investigate individual sources that might be observed. The meters used in the work were a Bruel and Kjaer Model 2236, a Quest 1900 and a Quest Micro 15.

3.2 Odour

The characteristic odours of STPs, when there is an odour problem, are reduced sulphur compounds such as hydrogen sulphide (H_2S), known for its "rotten egg" smell. In general Total Reduced Sulphur (TRS) consists almost entirely of H_2S. Subsequently, guidelines referring to H_2S can be applied to TRS measurements. TRS levels can be measured directly with high sensitivity analyzers, such as those used by HRM at two existing STPs. For this study, the equivalent analyzer (JER 631-X) was used for the TRS measurement program. Other compounds are associated with odours, however the TRS substances are the dominant odourants at STPs. Odour panels are sometimes used to quantify the intensity of an odour, but are not useful for tracing sources in the field, and are useless if there is no perceptible odour. An odour panel is composed of 6 or more persons with "normal" sensory perception who smell samples that have been diluted with clean air. The level of dilution at which the odour is just perceptible to 50% of the panel is quantitatively the strength of the source in odour units. With care and strict adherence to protocols, the odour panel is a valuable means of characterizing odours, and in relating human responses to instrumental responses. Odour panels are very difficult for programs such as this, as they rely upon integrated samples of air with definite odour, which must be transported to laboratories for analysis. The instrumental method offered the potential for the operator to attempt to track odours to their source, and to quantify source levels of contaminants, even if the odour was not perceived by the human nose. In addition to the instruments, the scientist responsible for the equipment operation made notes on the sensory observations made during the work. Hourly averaged wind direction data for the sampling periods were obtained from Environment Canada's Shearwater weather station.

3.3 Schedule

The schedule of the program was designed to obtain measurements during representative time periods through the day, evening, and night. To avoid weather conditions that would invalidate the measurements, days with precipitation or high wind speeds were avoided, and the schedule postponed until better conditions prevailed. This constraint made it difficult to control the day of week for the measurements without undue delay to the work. But this factor was deemed to be much less important than obtaining representative diurnal measurements.

Table 3.1 illustrates the dates contributing to the measurement program.

Table 3.1 HRM Noise and TRS Measurement Program

Date	Start Dartmouth	Start HFX north	Start HFX south	Start Herring Cove
30/06/00	8:28	9:17	10:40	13:00
04/07/00	11:34	12:36	13:44	16:06
05/07/00	14:20	15:06	16:19	18:02
07/07/00	17:26	18:17	19:18	20:48
19/07/00	20:21	21:23	22:34	0:20
21/07/00	2:30	3:40	4:41	6:13
23/07/00	23:39	0:20	1:43	3:30
25/07/00	5:30	6:15	7:20	9:45

4.0 GUIDELINES AND DESIGN CRITERIA

4.1 Noise

The criteria with respect to noise are specified in section 4.3.3 of the HRM Request for Proposals (HRM, 2000), and are:

> *The noise level at the Sewage Treatment Plant property line shall not exceed:*
>
> a) 55 dBA L_{eq} (between 2300 hours and 0700 hours);
> b) 60 dBA L_{eq} (between 1900 hours and 2300 hours); and
> c) 65 dBA L_{eq} (between 0700 hours and 1900 hours).
>
> *Individual noise sources which are tonal in nature shall not exceed 45 dBA L_{eq} when measured at the Sewage Treatment Plant property line.*

The noise criteria are the same as those used as guidelines by the Province of Nova Scotia (NSDOE, Guideline for Environmental Noise Measurement and Assessment). It is worth noting that, while these limits from the Request for Proposals are applicable to the property line, the levels at some distance from the plant, to which persons would be exposed, would be lower.

In HRM noise is addressed by, By-Law Number N-2000 Respecting Noise. This By-Law does not include quantitative limits such as those promulgated in the Request for Proposals. Rather than quantitative limits, the By-Law incorporates general prohibitions of disturbance, and a schedule of specifically prohibited activities. The Prescribed Exemptions of Section 4 include:

- 4c, employees of the Municipality in reasonable execution of their duties; and
- 4i, municipal owned machinery or equipment when used in the normal course of providing municipal services.

As a general guide, the noise levels of various types of equipment are shown in Table 4.1.

Table 4.1 Construction Equipment Noise Level Summary

Equipment Type	L_{eq} (dBA) at 15 metres	Comments
Backhoe	59 – 82	Levels indicate range of idling to various operating tasks.
Bulldozer	68 – 99.1	Levels indicate range of idling to various operating tasks.
Compactor	81 – 91	Road preparation.
Compressor	67 – 82	Levels indicate range of idling to full operation.
Concrete batch plant	95	Loading Truck.

Equipment Type	L_{eq} (dBA) at 15 metres	Comments
Concrete mixer	67 – 68	
Concrete truck	69 – 79	
Crane	75 – 78	
Forklift	81	
Front-end loader	73 – 90	Levels indicate range of various operating tasks.
Excavator	85	
Grader	67 – 95	Levels indicate range of idling to various operating tasks.
Hydraulic Hammer	99 – 105	
Self-propelled roller	71 – 86	Levels indicate range of various operating tasks.
Scraper	72 – 91	Levels indicate range of idling to various operating tasks.
Hand tamper	85 – 88	
Trenchers	81 – 85	

table source: Construction-Site Noise: Specification and Control. January 1978. Kessler, F.M., P.D. Schomer, R.C. Chanaud, and E. Rosendahl

4.2 Odour

Odour is very difficult to regulate for a number of reasons. In the case of sewage odours, it is possible to use the TRS readings as a measure of odour potential, but it must be recognized that there may be substances other than H_2S and other reduced sulfur compounds present that lend additional characteristics to the overall odour.

TRS meters record data in terms of very small volumes of pollutant mass per unit volume of clean air, or parts per billion. The detection level of TRS compounds by human perception is typically low parts per billion (i.e. 1-20 ppb). The Ontario Ministry of Environment (OME) conducted extensive odour panel testing on a wider range of substances. Hydrogen sulphide, the major part of TRS in air near STPs has a 50% detection level of about 5.5 $\mu g/m^3$, or about 4 ppb. There is a variability in the normal population, and the detection level for the most sensitive 5% of the population is about 1.5 ppb, whereas the upper 5% level is about 20 ppb (Ontario Waste Management Conference, 1989). Detection of H_2S by the human nose at the sub-ppb level may occur, but the OME results suggest that this would be by a fraction of 1% of the population.

The same OME study attempted to determine levels at which the population would complain, and would be annoyed. The 50% complaint level is about 14 ppb, and the annoyance level, 180 ppb. These levels are not as well defined, mathematically, showing the variability attributable to subjective response. Identification of the source lowers the critical level of complaint or annoyance. If a citizen detects an odour from a source that has been a problem, or that is suspected of causing personal harm, they are much more likely to complain and become annoyed. The approach adopted in Ontario was to use the 50% detection level as a standard, that is, one odour unit per cubic meter, measured on a 10 minute basis. Because of the variability of the population, this implies that at the detection level half of the population would detect the odour, about 20% might complain, and 5% might be annoyed.

The design criteria for the HRM STPs is:

> *Odour from the Sewage Treatment Plant shall not exceed the threshold of one (1) odour unit when measured at the Sewage Treatment Plant property line. Hydrogen sulphide levels and any Sewage Treatment Plant generated malodorous compound levels shall not exceed the minimum detectable level for humans at the Sewage Treatment Plant property line* (HRM, 2000).

Table 4.2 shows quantitative limits for H_2S concentrations in ambient air in some Canadian provinces.

Table 4.2 Canadian H_2S limits

Province	**Pollutant**	**1 hr** (µg/m3)		**24 hr** (µg/m3)	
P.E.I.	H_2S	15	(0.011ppm)	5	(0.004 ppm)
NB	H_2S	15	(0.011ppm)	5	(0.004 ppm)
NS	H_2S – Max tolerable	42	(0.03 ppm)	8	(0.006 ppm)
NS	H_2S – Max desirable	14	(0.01 ppm)	4	(0.003 ppm)
NF	H_2S – Acceptable level	28	(0.020 ppm)		
ON	H_2S	30	(0.022 ppm)		
AB	H_2S	14	(0.010 ppm)	4	(0.003 ppm)
HRM–STP[1]	H_2S	5.5	(0.004 ppm)		

[1] equivalent concentration to 1 odour unit

On the basis of the odour detection criterion and the OME report, the HRM limit is relatively strict and protective of the public. A comparison of United States and European States guidelines shows that 1 odour unit as proposed by HRM is one of the lowest odour limits for sewage treatment plants (Mahin et al., 2000). The criterion above is, as noted, applicable at the property line, therefore actual exposure of the public will be to levels generally much lower than the criterion value.

5.0 RESULTS OF THE MONITORING PROGRAM

5.1 Noise Summary

The average noise readings are shown in Table 5.1. Individual measurements have been aggregated to determine the baseline noise level for the three daytime periods as specified in the provincial guidelines and the STP Request for Proposals.

Table 5.1 Average Baseline Noise Readings at proposed STP sites

Site	Noise levels [dBA]		
	2300 to 0700 (night)	1900 to 2300 (evening)	0700 to 1900 (day)
Dartmouth	47.5	53.1	53.0
Halifax North	59.7	61.0	63.1
Halifax South	49.2	58.5	69.1
Herring Cove	39.2	39.5	44.8
RFP Noise Limit[1]	55	60	65

[1] Noise measured at property boundary.

The noise levels are shown in greater detail by time of day in Table 5.2 through Table 5.5.

Table 5.2 Noise Levels at the Dartmouth site

Date	Day	Start time	End time	L_{eq} [dBA]
30/06/2000	Friday	8:28	8:57	48.2
04/07/2000	Tuesday	11:34	12:05	54.6
05/07/2000	Wednesday	14:20	14:51	53.3
07/07/2000	Friday	17:26	17:56	53.6
19/07/2000	Wednesday	20:21	21:05	53.1
21/07/2000	Friday	2:30	2:55	46.6
23/07/2000	Sunday	23:39	0:09	48.8
25/07/2000	Tuesday	5:30	6:00	46.6

Table 5.3 Noise Levels at the Halifax North site

Date	Day	Start time	End time	L_{eq} [dbA]
30/06/2000	Friday	9:17	9:46	62.5
04/07/2000	Tuesday	12:36	12:50	62.6
05/07/2000	Wednesday	15:06	15:40	64.4
07/07/2000	Friday	18:17	18:49	62.3
19/07/2000	Wednesday	21:23	21:53	61.0
21/07/2000	Friday	3:40	4:13	57.7
24/07/2000	Monday	0:20	0:43	61.3
25/07/2000	Tuesday	6:15	6:43	60.1

Table 5.4 Noise Levels at the Halifax South site

Date	Day	Start time	End time	L_{eq} [dbA]
30/06/2000	Friday	10:40	11:10	58.3
04/07/2000	Tuesday	13:44	14:14	57.1
05/07/2000	Wednesday	16:19	16:57	74.1
07/07/2000	Friday	19:18	19:48	54.5
19/07/2000	Wednesday	22:34	23:05	60.4
21/07/2000	Friday	4:41	5:13	47.5
24/07/2000	Monday	1:43	2:15	50.4
25/07/2000	Tuesday	7:20	7:50	61.7

Table 5.5 Noise Levels at the Herring Cove Site

Date	Day	Start time	End time	L_{eq} [dBA]
30/06/2000[1]	Friday	13:00	13:27	42.4
04/07/2000	Tuesday	16:06	16:35	48.0
05/07/2000	Wednesday	18:02	18:33	44.8
07/07/2000	Friday	20:48	21:18	39.5
20/07/2000	Thursday	0:20	0:54	35.1
21/07/2000	Friday	6:13	6:59	42.3
24/07/2000	Monday	3:30	4:01	31.3
25/07/2000	Tuesday	9:45	10:18	39.7

[1] Sampling for this date was conducted near the Fiber Optical Cable Plant.

The nature of the noise level at each site is quite different, and the characteristics and individual sources are described below. Detailed noise measurements are presented in Appendix A.

Dartmouth

Noise levels at the Dartmouth site consist of background noises from the Coast Guard facility and some traffic noise from urban streets. The residential area has no distinct sources of noise. Sounds from the Coast Guard activities include idling marine vessel engines, occasional service vehicles and maintenance equipment. Minor noise contributions at this site come from ships in Halifax Harbour, and other industrial facilities north of the Coast Guard. The rail line between the residential area and the Dartmouth site is inactive, and does not contribute to the acoustic environment.

Halifax North

The noise regime at this site is dominated by traffic on Barrington Street. At all times of the day and night, the traffic is virtually the only identifiable source of noise.

Halifax South

Noise at this site is produced by a variety of sources, primarily from idling locomotives. The streets immediately adjacent are not heavily used. To the south, noises from diesel powered buses may be heard (backup signals mainly). The main noise source to the east is truck traffic on Terminal Road. The train station is the major noise source because of idling locomotives, which are observed daily.

Herring Cove

This village is very quiet during most of the day, with the major noise originating from traffic on the main coastal road (Herring Cove Rd.).

5.2 Odour Summary

The results of the odour measurement program are summarized in Table 5.6.

Table 5.6 Average Baseline TRS measurements at proposed STP site

	Average [ppm]	Maximum [ppm]	Minimum [ppm]
Dartmouth North	0.002	0.005	0
Halifax North	0.003	0.005	0
Halifax South	0.002	0.007	0
Herring Cove	0.001	0.003	0
RFP odour limit[1]	0.004[2]		

[1] Odour measured at property boundary

[2] 5.5.µg/m^3 at standard pressure and temperature

Odour at the STP sites and wind direction of the closest Environment Canada meteorological measurement station (Shearwater) is given. Generally accepted principles of noise measurement restrict activity to times with calm to moderate wind speeds, thus preventing wind noise on the microphone. These weather conditions are also most favourable for the detection and tracking of odours. Detailed odour measurements are presented in Appendix A.

Table 5.7 Odour Levels at the Dartmouth site

Date	Day	Start time	End time	TRS [ppm]	Wind direction[1]
30/06/2000	Friday	8:28	8:57	0.000	NNE
04/07/2000	Tuesday	11:34	12:05	0.001	S
05/07/2000	Wednesday	14:20	14:51	0.001	SW
07/07/2000	Friday	17:26	17:56	0.001	SE
19/07/2000	Wednesday	20:21	21:05	0.003	W
21/07/2000	Friday	2:30	2:55	0.004	Calm
23/07/2000	Sunday	23:39	0:09	0.004	W
25/07/2000	Tuesday	5:30	6:00	0.001	ENE

[1] at Shearwater

Table 5.8 Odour Levels at the Halifax North site

Date	Day	Start time	End time	TRS [ppm]	Wind direction[1]
30/06/2000	Friday	9:17	9:46	0.001	Calm
04/07/2000	Tuesday	12:36	12:50	0.002	S
05/07/2000	Wednesday	15:06	15:40	0.003	WSW
07/07/2000	Friday	18:17	18:49	0.003	SSE
19/07/2000	Wednesday	21:23	21:53	0.002	WSW
21/07/2000	Friday	3:40	4:13	0.003	Calm
24/07/2000	Monday	0:20	0:43	0.004	WSW
25/07/2000	Tuesday	6:15	6:43	0.002	ENE

[1] at Shearwater

Table 5.9 Odour Levels at the Halifax South site

Date	Day	Start time	End time	TRS [ppm]	Wind direction[1]
30/06/2000	Friday	10:40	11:10	0.001	S
04/07/2000	Tuesday	13:44	14:14	0.002	E
05/07/2000	Wednesday	16:19	16:57	0.003	W
07/07/2000	Friday	19:18	19:48	0.003	E
19/07/2000	Wednesday	22:34	23:05	0.001	WSW
21/07/2000	Friday	4:41	5:13	0.003	NW
24/07/2000	Monday	1:43	2:15	0.001	W
25/07/2000	Tuesday	7:20	7:50	0.001	ENE

[1] at Shearwater

Table 5.10 Odour Levels at the Herring Cove Site

Date	Day	Start time	End time	TRS [ppm]	Wind direction[2]
30/06/2000[1]	Friday	13:00	13:27	0.000	S
04/07/2000	Tuesday	16:06	16:35	0.002	SSW
05/07/2000	Wednesday	18:02	18:33	0.001	W
07/07/2000	Friday	20:48	21:18	0.001	E
20/07/2000	Thursday	0:20	0:54	0.000	W
21/07/2000	Friday	6:13	6:59	0.000	NW
24/07/2000	Monday	3:30	4:01	0.000	NW
25/07/2000	Tuesday	9:45	10:18	0.001	E

[1] Sampling for this date was conducted near the Fiber Optical Cable Plant.
[2] at Shearwater

Dartmouth

Odour detected at the Dartmouth site was very low. The general perceptible odour is of sea air. It was noted in conversation with one resident that there was, from time to time, objectionable odour from sewage on the shoreline during low tide.

Halifax North

Very little odour was noted at this site apart from the exhaust gases of vehicles on Barrington Street.

Halifax South

Odours in this area comprise the heavy diesel engine and creosote odours associated with railroad yards and diesel exhaust from the locomotives and the bus yard south of the site. Low levels of hydrogen sulphide were found, and one source appeared to be the sewer near the police station.

Herring Cove

There were very few possible sources of odour in the village of Herring Cove, due to the primarily residential nature of the area. Some odours of the sea are more pronounced in the vicinity of the wharf area, but nothing out of the character of a rural fishing village.

6.0 SUMMARY AND CONCLUSIONS

Odour

The baseline monitoring program results show that the four candidate sites for the sewage treatment plants have very little existing sources of odour. All odour levels at all sites were well below the Nova Scotian guidelines for H_2S. In general, measured odour levels were also below the more stringent requirements in the HRM Request for Proposal. The wind direction during the program was not a factor, as there was no evidence of odours entering the study areas from elsewhere. Occasionally, measured odour levels just exceeded the HRM limit at the Dartmouth, Halifax North and Halifax South baseline sites. There are no known existing odour problems, that would cause a cumulative adverse impact when combined with the new sewage treatment plants, or that would be mistaken for the impact of the new plants. Generally, odours that may result from sewer and biological processes are greatest in the summer. It is likely that measurements during other seasons would be similar to, or lower than, the measurements made in this study.

Noise

The existing ambient noise environment varies among the sites, but all are generally within the provincial guidelines of Nova Scotia. These guidelines have also been adopted as limits for the new sewage treatment facilities. Noise levels at the Herring Cove Site are well below the guidelines. Noise levels at the Dartmouth site are below the guidelines, however they are elevated compared to a rural area due to the impact of the Coast Guard and other harbour facilities. Noise levels at the Halifax south site depend in general on the number and location of idling VIA trains and levels of truck traffic. Depending on the location and number of the idling trains, noise level can exceed the guidelines. The Halifax north site has the overall highest levels of noise due to the significant amount of vehicle traffic. Noise level guidelines were currently exceeded at the Halifax North site at night (between 19:00 and 7:00 hours) and at the Halifax South site during the day (between 7:00 and 19:00) hours. It is not anticipated that the operation of the STP at these locations would worsen current guideline exceedences. There may be some seasonal influence due to additional tourist traffic in the downtown Halifax area, however the differences in noise readings would be very small. In conclusion, the noise impact of a new STP on any of the sites would be difficult, if not impossible, to measure if the plant is operated in accordance with the HRM Request for Proposals.

7.0 REFERENCES

Halifax Regional Municipality, For A Public-Private Partnership for a Sewage Treatment System for Halifax Harbour, Halifax Harbour Solutions, Request for Proposals, May 30, 2000

Nova Scotia Department of the Environment, Guideline for Environmental Noise Measurement and Assessment. 1989

Ontario Waste Management Conference 13 June 1989, The role of the odour impact model in standard setting in Ontario.

Tom Mahin, Richard Pope, and Charles McGinley, When is a smell a nuisance?, WE&T, May 2000.

APPENDIX A

MEASUREMENT DATA

30-Jun-00 Dartmouth				
Time	**L_{eq} [dBA]**	**L_{10} [dBA]**	**L_{90} [dBA]**	**ppm**
08:28	47.0	47.5	45.0	0.000
08:29	46.2	47.0	45.0	0.000
08:30	53.8	55.0	45.5	0.000
08:31	50.4	51.0	43.5	0.000
08:32	46.0	47.0	44.0	0.000
08:33	45.2	45.5	44.0	0.000
08:34	48.5	51.0	45.5	0.000
08:35	47.9	50.0	45.0	0.000
08:36	48.1	49.5	45.0	0.000
08:37	45.2	45.5	44.5	0.000
08:38	48.3	49.0	44.0	0.000
08:39	45.8	46.5	45.0	0.000
08:40	46.3	47.0	45.0	0.000
08:41	47.7	48.5	46.0	0.000
08:42	50.3	51.5	48.5	0.000
08:43	49.5	51.5	46.5	0.000
08:44	47.1	49.5	45.0	0.000
08:45	48.1	49.5	45.5	0.000
08:46	48.8	50.5	46.5	0.000
08:47	48.0	50.0	46.0	0.000
08:48	49.7	49.0	46.0	0.000
08:49	46.8	47.5	46.0	0.000
08:50	45.9	47.0	44.5	0.000
08:51	46.4	47.0	45.5	0.000
08:52	46.9	47.5	46.0	0.000
08:53	46.3	47.0	45.5	0.000
08:54	46.4	47.5	45.0	0.000
08:55	47.7	49.5	45.0	0.000
08:56	48.3	50.0	46.0	0.000
08:57	48.8	50.5	46.0	0.000

04-Jul-00 Dartmouth				
Time	**L_{eq} [dBA]**	**L_{10} [dBA]**	**L_{90} [dBA]**	**ppm**
11:34	63.5	63.0	53.5	0.000
11:35	51.5	52.5	49.5	0.000
11:36	50.7	51.5	49.5	0.000
11:37	62.1	67.0	50.5	0.000
11:38	58.3	61.0	52.5	0.000
11:39	59.8	62.0	56.5	0.000
11:40	55.7	58.0	52.0	0.000
11:41	51.4	52.0	50.0	0.000
11:42	51.6	52.5	50.5	0.001
11:43	51.5	52.5	50.0	0.004
11:44	50.4	51.0	49.5	0.002
11:45	50.7	51.5	49.0	0.000
11:46	50.6	51.5	49.5	0.000
11:47	50.7	51.5	49.5	0.000
11:48	51.6	52.5	50.0	0.000
11:49	51.1	52.5	49.5	0.001
11:50	50.6	51.0	49.5	0.000
11:51	50.4	51.0	49.0	0.000
11:52	50.7	51.5	49.5	0.000
11:53	50.5	51.5	49.0	0.002
11:54	54.7	56.5	48.5	0.001
11:55	50.5	51.0	48.5	0.000
11:56	50.8	51.5	48.5	0.000
11:57	51.5	54.0	49.0	0.000
11:58	51.6	52.0	49.0	0.000
11:59	50.0	50.0	48.5	0.000
12:00	50.3	51.0	49.0	0.000
12:01	49.5	50.0	48.0	0.001
12:02	49.8	50.5	48.0	0.001
12:03	49.5	50.5	48.0	0.003
12:04	49.4	50.5	48.0	0.001
12:05	50.1	50.5	48.0	0.000

05-Jul-00 Dartmouth				
Time	**L_{eq} [dBA]**	**L_{10} [dBA]**	**L_{90} [dBA]**	**ppm**
14:20	52.1	53.5	50.5	0.000
14:21	55.9	58.0	52.5	0.000
14:22	53.3	54.5	51.5	0.000
14:23	51.1	52.5	49.5	0.000
14:24	53.8	54.5	49.5	0.000
14:25	51.6	52.0	50.5	0.000
14:26	51.8	52.5	50.5	0.001
14:27	51.3	51.5	50.0	0.000
14:28	52.6	54.5	50.5	0.000
14:29	52.7	54.0	49.0	0.000
14:30	51.8	52.5	49.0	0.000
14:31	51.9	52.0	49.5	0.001
14:32	51.9	53.0	50.5	0.001
14:33	51.5	53.0	49.5	0.001
14:34	51.1	52.0	50.0	0.001
14:35	50.2	51.5	48.0	0.001
14:36	52.5	53.5	51.0	0.001
14:37	51.8	53.0	50.0	0.001
14:38	50.5	51.5	49.0	0.001
14:39	50.2	51.5	48.5	0.001
14:40	54.2	54.5	50.0	0.001
14:41	56.8	62.5	47.5	0.001
14:42	55.7	60.0	49.5	0.001
14:43	51.6	52.5	49.5	0.002
14:44	53.5	53.5	50.0	0.002
14:45	52.4	54.0	50.5	0.001
14:46	56.7	58.5	53.0	0.002
14:47	51.9	53.0	50.0	0.002
14:48	53.4	53.0	49.5	0.001
14:49	52.5	53.0	49.5	0.001
14:50	53.2	53.0	50.5	0.002
14:51	58.5	63.0	52.0	0.001

07-Jul-00 Dartmouth				
Time	**L_{eq} [dBA]**	**L_{10} [dBA]**	**L_{90} [dBA]**	**ppm**
17:26	52.5	53.5	51.0	0.000
17:27	52.1	53.5	50.5	0.000
17:28	64.2	69.0	53.0	0.000
17:29	60.0	55.5	50.5	0.000
17:30	52.6	53.5	50.5	0.001
17:31	51.3	52.5	49.5	0.000
17:32	52.8	53.5	50.5	0.000
17:33	51.8	52.5	50.5	0.000
17:34	51.8	53.0	49.5	0.001
17:35	50.8	53.0	45.5	0.001
17:36	46.0	47.5	43.5	0.001
17:37	48.3	49.5	45.0	0.001
17:38	45.3	46.0	44.0	0.000
17:39	44.3	45.5	42.5	0.001
17:40	47.7	49.5	44.0	0.001
17:41	48.8	49.0	46.5	0.001
17:42	49.3	50.5	46.5	0.001
17:43	49.7	51.0	48.0	0.001
17:44	48.9	50.5	46.5	0.001
17:45	49.9	51.0	48.5	0.001
17:46	53.8	57.0	49.0	0.002
17:47	50.2	51.5	48.0	0.002
17:48	51.6	53.0	48.5	0.000
17:49	50.5	52.0	48.0	0.002
17:50	53.0	53.5	47.5	0.002
17:51	50.8	52.5	49.0	0.002
17:52	50.0	51.0	48.0	0.001
17:53	49.2	50.0	47.5	0.001
17:54	49.0	50.0	47.5	0.002
17:55	49.8	51.0	48.0	0.004
17:56	53.9	57.5	48.0	0.003

19-Jul-00 Dartmouth				
Time	**L_{eq} [dBA]**	**L_{10} [dBA]**	**L_{90} [dBA]**	**ppm**
20:21	57.0	59.0	49.0	0.002
20:22	53.8	55.0	48.5	0.001
20:23	53.3	55.0	51.0	0.000
20:24	52.3	56.0	47.5	0.002
20:25	54.0	57.5	46.5	0.002
20:26	53.8	56.5	48.0	0.003
20:27	52.7	55.5	47.0	0.001
20:28	59.0	55.5	48.5	0.003
20:29	59.0	54.5	47.0	0.002
20:30	51.3	53.5	48.0	0.004
20:31	59.4	53.5	48.0	0.003
20:32	57.3	60.5	51.5	0.003
20:33	52.6	54.5	49.0	0.004
20:34	51.9	54.0	47.5	0.004
20:35	51.7	54.0	48.0	0.004
20:36	50.7	52.5	48.0	0.003
20:37	53.1	56.5	47.5	0.004
20:38	55.6	56.5	50.0	0.004
20:39	55.3	58.5	49.5	0.004
20:40	52.1	56.0	48.0	0.004
20:41	51.2	54.0	46.5	0.004
20:42	47.8	47.5	46.0	0.003
20:43	49.1	49.5	46.5	0.002
20:44	53.0	55.5	47.0	0.004
20:45	49.8	51.0	47.5	0.002
20:46	49.3	50.5	47.0	0.003
20:47	49.1	50.5	47.0	0.003
20:48	50.4	52.0	47.5	0.003
20:49	49.4	49.5	47.5	0.004
20:50	49.8	51.0	47.5	0.002
20:51	48.6	49.0	47.5	0.002
20:52	48.5	49.5	47.0	0.002
20:53	48.0	48.5	47.0	0.001
20:54	48.9	49.5	47.5	0.002
20:55	49.1	50.0	47.5	0.003
20:56	48.1	49.0	47.0	0.002
20:57	49.7	49.5	47.0	0.002
20:58	48.1	49.0	47.0	0.001

20:59	48.0	48.0	46.5	0.002
21:00	48.6	50.0	46.5	0.001
21:01	47.7	48.5	47.0	0.002
21:02	47.5	48.0	46.5	0.002
21:03	49.0	50.0	47.0	0.002
21:04	53.2	57.0	47.5	0.002
21:05	57.2	62.5	47.5	0.002

21-Jul-00 Dartmouth				
Time	**L_{eq} [dBA]**	**L_{10} [dBA]**	**L_{90} [dBA]**	**ppm**
2:30	45.8	47.0	45.0	0.000
2:31	45.5	46.0	44.5	0.004
2:32	45.6	46.5	44.5	0.004
2:33	46.0	47.0	45.0	0.004
2:34	45.6	46.5	44.5	0.004
2:35	45.4	46.0	44.5	0.004
2:36	45.7	46.5	44.5	0.004
2:37	45.8	46.5	45.0	0.004
2:38	45.4	46.0	44.5	0.004
2:39	45.9	46.5	45.0	0.004
2:40	45.8	46.5	45.0	0.004
2:41	46.0	46.5	45.0	0.004
2:42	46.2	47.0	45.0	0.004
2:43	46.5	47.5	45.5	0.004
2:44	46.3	47.0	45.0	0.004
2:45	46.4	47.0	45.5	0.004
2:46	46.1	47.0	45.0	0.004
2:47	46.6	48.0	45.0	0.000
2:48	45.5	46.0	44.5	0.000
2:49	45.4	46.0	44.5	0.000
2:50	44.9	45.5	44.0	0.000
2:51	45.3	46.0	44.0	0.000
2:52	45.5	46.0	44.5	0.000
2:53	45.0	45.5	44.0	0.000
2:54	45.1	46.0	44.0	0.000
2:55	54.1	59.5	44.0	0.000

23-Jul-00 Dartmouth				
Time	**L_{eq} [dBA]**	**L_{10} [dBA]**	**L_{90} [dBA]**	**ppm**
23:39	54.4	52.8	48.3	0.004
23:40	48.9	49.6	47.7	0.002
23:41	47.9	48.7	47.2	0.003
23:42	47.7	48.3	47.1	0.004
23:43	47.7	48.6	46.9	0.004
23:44	47.3	48.1	46.6	0.004
23:45	47.8	48.5	47.0	0.004
23:46	48.0	49.3	47.0	0.004
23:47	49.6	51.0	47.8	0.004
23:48	48.1	49.0	47.2	0.005
23:49	51.0	54.3	47.9	0.005
23:50	48.6	49.5	47.8	0.004
23:51	48.9	49.7	48.2	0.000
23:52	48.9	49.7	47.8	0.004
23:53	48.3	49.2	47.5	0.004
23:54	48.6	49.6	47.5	0.004
23:55	48.5	49.6	47.4	0.004
23:56	48.4	49.1	47.7	0.004
23:57	48.2	49.3	47.0	0.004
23:58	48.4	49.3	47.4	0.003
23:59	48.2	49.0	47.4	0.004
0:00	48.9	49.9	47.9	0.004
0:01	47.9	48.6	47.1	0.003
0:02	48.1	48.8	47.3	0.004
0:03	48.0	48.9	47.1	0.004
0:04	47.9	48.8	47.0	0.004
0:05	47.6	48.2	46.8	0.004
0:06	47.5	48.2	46.8	0.004
0:07	47.5	48.3	46.7	0.004
0:08	47.4	48.1	46.8	0.004
0:09	49.6	48.6	46.6	0.004

25-Jul-00 Dartmouth				
Time	**L_{eq} [dBA]**	**L_{10} [dBA]**	**L90 [dBA]**	**ppm**
5:30	40.9	42.0	39.5	0.000
5:31	41.3	42.0	39.5	0.000
5:32	41.5	43.0	39.5	0.000
5:33	40.6	41.0	39.5	0.001
5:34	40.8	41.0	40.0	0.000
5:35	42.6	46.0	39.5	0.001
5:36	41.1	42.0	39.0	0.001
5:37	40.5	41.0	39.5	0.001
5:38	41.1	41.5	40.0	0.000
5:39	41.2	41.5	40.0	0.001
5:40	41.0	41.5	40.0	0.001
5:41	41.4	42.0	40.0	0.002
5:42	41.4	41.5	40.5	0.000
5:43	40.8	41.0	40.0	0.001
5:44	40.8	41.0	40.0	0.002
5:45	46.1	41.5	40.0	0.001
5:46	41.3	42.0	39.5	0.001
5:47	41.3	42.0	40.0	0.001
5:48	41.4	42.0	40.5	0.002
5:49	41.7	42.0	40.5	0.001
5:50	42.0	42.5	41.0	0.001
5:51	42.1	42.5	41.0	0.001
5:52	41.6	42.0	40.5	0.001
5:53	42.0	42.5	41.0	0.001
5:54	41.5	42.0	40.5	0.001
5:55	42.1	42.5	41.0	0.000
5:56	42.1	42.5	41.0	0.001
5:57	42.4	43.0	41.5	0.001
5:58	42.7	43.0	42.0	0.001
5:59	44.0	43.5	42.0	0.001
6:00	59.8	63.0	52.5	0.001

30-Jun-00 Halifax North				
Time	**L_{eq} [dBA]**	**L_{10} [dBA]**	**L_{90} [dBA]**	**ppm**
9:17	63.2	66.5	55.5	0.000
9:18	63.6	67.5	57.5	0.002
9:19	61.0	64.0	56.0	0.001
9:20	63.2	65.5	58.0	0.000
9:21	63.9	66.5	55.5	0.001
9:22	60.4	62.5	57.0	0.001
9:23	62.4	64.5	58.5	0.000
9:24	63.9	67.0	55.0	0.001
9:25	60.8	64.0	54.5	0.001
9:26	64.1	68.5	55.5	0.001
9:27	63.1	68.0	54.5	0.001
9:28	64.6	67.0	58.5	0.002
9:29	60.7	63.5	56.0	0.002
9:30	60.4	63.5	55.5	0.002
9:31	64.6	67.5	59.5	0.002
9:32	62.3	65.0	56.5	0.003
9:33	63.4	67.0	54.5	0.004
9:34	60.8	63.5	57.5	0.003
9:35	62.8	66.5	57.0	0.002
9:36	62.7	65.5	57.0	0.000
9:37	61.0	64.5	55.0	0.001
9:38	62.0	65.0	57.0	0.000
9:39	64.1	67.0	58.5	0.001
9:40	62.5	67.0	56.0	0.001
9:41	58.2	61.5	54.0	0.002
9:42	63.2	66.5	55.0	0.001
9:43	59.5	62.5	55.0	0.002
9:44	61.6	64.0	57.0	0.002
9:45	61.4	64.0	55.5	0.002
9:46	61.0	64.0	55.5	0.002

04-Jul-00 Halifax North				
Time	**L_{eq} [dBA]**	**L_{10} [dBA]**	**L_{90} [dBA]**	**ppm**
12:36	60.3	63.0	56.5	0.000
12:37	62.5	65.5	57.5	0.001
12:38	62.4	65.0	56.5	0.002
12:39	61.4	64.0	56.5	0.001
12:40	63.8	67.0	54.5	0.003
12:41	65.2	66.0	57.0	0.002
12:42	62.9	66.0	56.0	0.002
12:43	63.0	66.0	57.0	0.001
12:44	64.9	67.0	56.0	0.001
12:45	61.3	63.5	57.5	0.003
12:46	60.2	63.0	54.5	0.002
12:47	61.1	64.0	55.5	0.002
12:48	61.3	64.5	56.5	0.004
12:49	62.4	64.5	57.0	0.004
12:50	63.2	67.5	57.0	0.004

05-Jul-00 Halifax North				
Time	**L_{eq} [dBA]**	**L_{10} [dBA]**	**L_{90} [dBA]**	**ppm**
15:06	61.2	63.0	57.0	0.002
15:07	61.1	63.5	56.5	0.001
15:08	63.7	67.0	56.5	0.002
15:09	63.3	66.0	57.5	0.003
15:10	63.4	65.5	60.0	0.004
15:11	67.4	70.0	61.0	0.003
15:12	64.5	66.5	62.0	0.003
15:13	66.4	70.0	59.5	0.003
15:14	61.3	64.0	57.0	0.003
15:15	64.9	67.0	61.5	0.003
15:16	63.0	65.0	59.0	0.003
15:17	62.2	64.5	57.5	0.003
15:18	63.7	66.0	60.5	0.003
15:19	62.7	64.5	59.0	0.003
15:20	64.1	67.0	59.0	0.003
15:21	64.5	67.5	56.5	0.003
15:22	64.9	66.5	59.5	0.003
15:23	66.1	69.5	59.5	0.003
15:24	62.6	64.5	59.0	0.003
15:25	63.1	65.0	59.0	0.003
15:26	61.7	65.0	55.5	0.003
15:27	61.7	64.0	58.0	0.003
15:28	63.0	64.5	60.0	0.003
15:29	64.9	67.0	62.0	0.003
15:30	63.3	65.5	60.0	0.003
15:31	63.8	67.0	59.0	0.003
15:32	64.4	66.0	58.5	0.003
15:33	64.5	66.5	57.0	0.003
15:34	66.3	68.0	59.5	0.003
15:35	64.6	68.5	59.0	0.003
15:36	64.1	65.5	61.0	0.004
15:37	67.5	71.0	63.0	0.003
15:38	63.1	65.0	58.0	0.003
15:39	65.7	67.5	61.0	0.003
15:40	67.9	70.0	57.5	0.003

07-Jul-00 Halifax North				
Time	**L_{eq} [dBA]**	**L_{10} [dBA]**	**L_{90} [dBA]**	**ppm**
18:17	62.1	65.0	55.5	0.002
18:18	62.7	66.5	55.5	0.004
18:19	58.9	62.0	53.5	0.004
18:20	62.8	65.0	56.0	0.003
18:21	64.2	68.5	55.5	0.002
18:22	59.7	63.5	54.0	0.003
18:23	60.1	62.5	54.5	0.003
18:24	60.5	63.5	54.5	0.004
18:25	63.8	67.0	56.5	0.004
18:26	62.7	65.5	56.5	0.003
18:27	60.1	64.0	55.0	0.004
18:28	61.8	65.5	56.0	0.003
18:29	60.1	63.5	55.5	0.003
18:30	61.8	65.5	54.5	0.004
18:31	62.0	64.0	54.5	0.004
18:32	62.9	67.0	54.5	0.004
18:33	62.6	64.5	59.5	0.004
18:34	61.0	64.0	56.0	0.004
18:35	60.2	63.0	54.5	0.004
18:36	61.7	64.5	55.5	0.003
18:37	60.7	65.0	54.0	0.003
18:38	67.7	67.5	57.0	0.003
18:39	60.6	64.5	54.0	0.003
18:40	63.0	66.0	53.5	0.004
18:41	63.5	66.0	54.5	0.004
18:42	63.0	66.5	56.5	0.004
18:43	62.2	65.5	55.5	0.003
18:44	59.6	63.0	53.5	0.003
18:45	61.6	64.5	56.0	0.004
18:46	62.5	65.5	54.0	0.003
18:47	64.3	69.0	52.5	0.004
18:48	59.1	61.5	53.5	0.004
18:49	61.6	64.5	56.0	0.004

19-Jul-00 Halifax North				
Time	**L_{eq} [dBA]**	**L_{10} [dBA]**	**L_{90} [dBA]**	**ppm**
21:23	64.4	66.5	56.5	0.001
21:24	62.9	66.5	57.0	0.002
21:25	60.5	62.5	56.0	0.001
21:26	63.6	65.5	57.0	0.002
21:27	62.1	65.0	54.5	0.003
21:28	63.5	67.5	53.5	0.002
21:29	60.3	64.0	52.5	0.001
21:30	61.7	64.5	54.5	0.002
21:31	61.0	63.5	56.5	0.002
21:32	60.5	62.5	56.0	0.004
21:33	60.9	63.5	57.0	0.002
21:34	59.5	61.5	55.0	0.002
21:35	61.2	63.5	55.5	0.001
21:36	59.9	62.5	54.0	0.002
21:37	58.2	61.5	53.0	0.002
21:38	62.6	66.5	52.5	0.002
21:39	59.6	62.0	54.0	0.003
21:40	60.3	63.0	54.5	0.003
21:41	59.2	62.5	55.0	0.002
21:42	60.8	64.5	54.0	0.003
21:43	61.0	63.0	57.0	0.003
21:44	60.4	62.5	55.0	0.002
21:45	56.7	60.0	52.5	0.002
21:46	61.0	63.5	53.0	0.002
21:47	60.7	63.5	52.5	0.003
21:48	59.8	63.0	52.5	0.003
21:49	59.2	62.0	51.0	0.002
21:50	60.3	63.0	54.5	0.003
21:51	59.8	62.5	56.0	0.003
21:52	60.0	62.5	55.0	0.003
21:53	59.5	63.5	51.0	0.000

21-Jul-00 Halifax North				
Time	**L_{eq} [dBA]**	**L_{10} [dBA]**	**L_{90} [dBA]**	**ppm**
3:40	56.7	61.0	50.0	0.003
3:41	50.8	52.0	49.0	0.003
3:42	53.5	57.5	49.0	0.003
3:43	59.6	65.0	49.0	0.003
3:44	55.0	59.5	49.0	0.004
3:45	54.7	59.0	48.5	0.004
3:46	55.0	60.5	48.5	0.004
3:47	57.4	61.5	49.5	0.004
3:48	56.4	61.5	49.5	0.003
3:49	61.7	66.5	49.0	0.003
3:50	58.1	61.0	52.0	0.003
3:51	53.9	58.0	49.0	0.004
3:52	55.8	59.0	49.5	0.000
3:53	54.5	57.0	50.0	0.000
3:54	59.0	63.5	50.5	0.000
3:55	58.4	63.5	49.0	0.000
3:56	56.8	62.5	49.0	0.000
3:57	52.3	55.0	49.5	0.000
3:58	59.1	62.5	53.5	0.000
3:59	56.6	61.0	50.5	0.000
4:00	59.6	61.5	55.5	0.000
4:01	56.9	60.5	50.0	0.000
4:02	59.6	63.0	51.5	0.000
4:03	60.2	63.0	54.0	0.000
4:04	57.3	61.5	50.5	0.000
4:05	56.2	60.0	49.5	0.000
4:06	58.0	63.5	48.5	0.000
4:07	60.2	64.0	51.0	0.000
4:08	59.4	63.0	51.5	0.000
4:09	56.9	60.0	49.0	0.000
4:10	58.6	63.0	50.0	0.000
4:11	58.6	61.5	51.0	0.000
4:12	59.4	61.5	54.0	0.000
4:13	56.0	59.5	49.0	0.000

24-Jul-00 Halifax North				
Time	**L_{eq} [dBA]**	**L_{10} [dBA]**	**L_{90} [dBA]**	**ppm**
0:20	63.6	65.8	54.3	0.005
0:21	60.6	63.5	52.8	0.004
0:22	60.0	63.9	52.4	0.004
0:23	60.3	63.8	51.8	0.004
0:24	62.4	64.2	56.3	0.004
0:25	64.7	67.9	56.8	0.004
0:26	60.7	63.1	56.7	0.003
0:27	60.9	63.6	55.2	0.004
0:28	61.4	64.2	54.0	0.003
0:29	58.4	61.8	50.1	0.003
0:30	62.3	65.0	58.6	0.004
0:31	62.5	65.9	56.7	0.004
0:32	61.2	63.8	56.1	0.004
0:33	60.0	63.0	53.5	0.003
0:34	60.4	63.6	54.0	0.004
0:35	61.7	64.8	55.6	0.003
0:36	59.8	64.0	52.2	0.003
0:37	57.4	62.2	49.8	0.003
0:38	61.5	64.3	55.7	0.003
0:39	60.8	64.2	51.9	0.003
0:40	61.1	64.4	53.7	0.003
0:41	60.9	64.1	51.6	0.003
0:42	60.3	64.1	54.5	0.003
0:43	61.3	64.0	52.8	0.000

25-Jul-00 Halifax North				
Time	**L_{eq} [dBA]**	**L_{10} [dBA]**	**L_{90} [dBA]**	**ppm**
6:15	59.0	63.0	50.5	0.001
6:16	59.9	63.0	50.5	0.001
6:17	54.7	57.0	52.0	0.002
6:18	51.8	52.5	50.0	0.001
6:19	55.6	59.0	50.5	0.002
6:20	61.5	67.0	50.5	0.003
6:21	59.6	62.0	53.5	0.002
6:22	61.0	63.5	53.0	0.002
6:23	61.7	66.0	50.5	0.003
6:24	57.7	61.0	50.5	0.003
6:25	63.4	68.0	50.0	0.002
6:26	57.9	62.0	53.0	0.002
6:27	60.6	64.5	51.0	0.002
6:28	58.7	62.5	53.0	0.001
6:29	60.6	65.5	53.5	0.001
6:30	59.6	62.5	51.5	0.001
6:31	62.8	67.5	55.0	0.002
6:32	58.0	61.0	54.0	0.003
6:33	60.1	64.0	53.0	0.003
6:34	54.9	57.0	52.5	0.002
6:35	56.4	59.5	52.5	0.001
6:36	63.4	66.5	53.0	0.001
6:37	63.0	67.5	53.5	0.002
6:38	60.7	64.0	54.5	0.001
6:39	58.0	61.5	54.0	0.001
6:40	61.3	65.0	56.0	0.002
6:41	57.2	61.5	52.0	0.001
6:42	60.3	65.5	52.0	0.001
6:43	61.5	65.5	51.5	0.000

30-Jun-00 Halifax South				
Time	**L_{eq} [dBA]**	**L_{10} [dBA]**	**L_{90} [dBA]**	**ppm**
10:40	59.1	60.5	57.5	0.001
10:41	58.0	58.5	57.0	0.000
10:42	58.1	59.0	57.0	0.000
10:43	57.9	59.0	56.5	0.000
10:44	59.1	60.5	57.0	0.000
10:45	58.2	59.5	56.5	0.000
10:46	58.2	59.5	56.5	0.003
10:47	60.5	62.5	58.0	0.002
10:48	58.9	60.5	57.5	0.004
10:49	58.9	60.0	57.5	0.002
10:50	57.1	58.0	51.0	0.001
10:51	59.9	63.0	52.0	0.001
10:52	52.9	56.0	49.0	0.000
10:53	52.4	54.5	49.0	0.000
10:54	57.6	61.0	49.5	0.002
10:55	54.1	56.5	49.0	0.002
10:56	56.4	57.0	55.0	0.000
10:57	55.8	57.5	53.0	0.000
10:58	59.5	62.5	53.5	0.000
10:59	60.1	62.0	57.5	0.000
11:00	57.5	58.0	56.5	0.000
11:01	59.1	60.5	57.0	0.002
11:02	59.1	61.0	57.0	0.000
11:03	59.0	61.0	57.0	0.000
11:04	59.1	61.0	57.0	0.001
11:05	60.4	61.0	57.5	0.001
11:06	58.4	59.0	57.5	0.003
11:07	59.1	60.0	57.5	0.003
11:08	58.3	58.5	57.5	0.002
11:09	59.4	60.0	58.0	0.001
11:10	50.4	58.0	37.5	0.000

04-Jul-00 Halifax South				
Time	**L_{eq} [dBA]**	**L_{10} [dBA]**	**L_{90} [dBA]**	**ppm**
13:44	55.7	57.5	53.0	0.001
13:45	54.5	55.0	53.0	0.001
13:46	54.3	56.0	52.5	0.001
13:47	55.0	57.0	52.0	0.002
13:48	53.7	54.5	52.0	0.002
13:49	53.3	54.0	52.5	0.002
13:50	53.2	53.5	52.0	0.002
13:51	53.8	55.0	52.5	0.003
13:52	54.7	56.0	53.0	0.003
13:53	62.3	66.0	57.5	0.002
13:54	60.2	62.5	55.0	0.003
13:55	55.7	57.0	54.0	0.003
13:56	55.1	56.0	53.5	0.002
13:57	55.5	56.0	54.0	0.003
13:58	55.7	57.0	54.5	0.002
13:59	55.9	57.0	54.0	0.002
14:00	56.7	58.0	54.5	0.003
14:01	55.3	56.0	54.0	0.002
14:02	55.2	56.0	54.0	0.002
14:03	55.2	56.5	53.5	0.002
14:04	55.3	56.0	54.0	0.002
14:05	55.2	56.0	54.0	0.002
14:06	64.5	70.0	55.0	0.002
14:07	55.5	56.5	54.0	0.002
14:08	55.5	56.5	54.0	0.002
14:09	54.9	55.5	54.0	0.002
14:10	55.5	57.0	53.5	0.003
14:11	55.6	56.5	54.0	0.003
14:12	56.8	58.0	55.5	0.003
14:13	55.7	56.5	54.0	0.003
14:14	61.9	64.5	55.0	0.003

05-Jul-00 Halifax South				
Time	**L_{eq} [dBA]**	**L_{10} [dBA]**	**L_{90} [dBA]**	**ppm**
16:19	76.4	74.5	73.5	0.001
16:20	74.2	74.5	69.0	0.001
16:21	75.6	71.0	69.0	0.003
16:22	74.0	71.0	69.0	0.002
16:23	72.2	70.5	68.5	0.003
16:24	74.4	71.0	68.5	0.003
16:25	75.7	70.5	69.0	0.003
16:26	72.6	70.5	68.5	0.003
16:27	72.4	70.5	69.0	0.003
16:28	74.9	71.0	69.5	0.003
16:29	72.7	70.5	69.0	0.003
16:30	76.1	70.5	68.5	0.003
16:31	73.1	70.5	68.5	0.003
16:32	72.8	70.5	69.0	0.003
16:33	74.0	70.5	69.0	0.003
16:34	73.1	72.5	69.0	0.004
16:35	75.5	71.5	69.0	0.003
16:36	73.3	71.0	69.0	0.003
16:37	72.7	70.5	69.0	0.003
16:38	74.2	71.0	69.0	0.003
16:39	75.5	70.5	69.0	0.003
16:40	72.4	71.0	69.0	0.003
16:41	72.9	70.5	68.5	0.003
16:42	73.7	71.0	68.5	0.003
16:43	73.4	70.5	69.0	0.003
16:44	75.3	70.5	69.0	0.003
16:45	73.1	70.5	69.0	0.003
16:46	73.2	70.5	69.0	0.003
16:47	75.1	71.0	69.0	0.003
16:48	75.3	71.0	69.0	0.003
16:49	72.6	70.5	68.5	0.003
16:50	73.3	71.0	69.0	0.002
16:51	74.1	70.5	69.0	0.002
16:52	73.1	70.5	69.0	0.003
16:53	75.5	70.5	69.0	0.002
16:54	73.2	71.5	69.0	0.003
16:55	73.4	71.0	68.5	0.002
16:56	74.7	71.0	69.0	0.002
16:57	72.8	70.5	54.0	0.002

07-Jul-00 Halifax South				
Time	**L_{eq} [dBA]**	**L_{10} [dBA]**	**L_{90} [dBA]**	**ppm**
19:18	53.0	54.0	51.5	0.002
19:19	55.7	58.5	51.5	0.002
19:20	55.9	59.0	52.0	0.002
19:21	54.2	55.0	52.5	0.002
19:22	54.6	57.0	52.5	0.002
19:23	55.7	59.0	52.5	0.002
19:24	55.1	56.0	53.5	0.002
19:25	54.8	55.5	53.5	0.003
19:26	53.4	54.5	51.5	0.003
19:27	54.8	56.5	52.5	0.004
19:28	54.5	57.5	50.5	0.003
19:29	52.7	53.0	51.5	0.003
19:30	53.8	55.5	52.0	0.004
19:31	53.4	54.0	52.0	0.003
19:32	54.6	56.0	52.0	0.003
19:33	55.9	59.0	51.0	0.003
19:34	54.7	58.0	50.5	0.003
19:35	53.8	54.5	52.5	0.004
19:36	56.4	58.5	53.5	0.004
19:37	54.6	56.5	52.0	0.004
19:38	53.7	54.0	52.5	0.003
19:39	52.3	53.0	51.0	0.003
19:40	53.9	54.5	52.5	0.003
19:41	55.7	57.5	53.5	0.003
19:42	52.9	54.5	50.5	0.005
19:43	53.2	54.0	52.0	0.005
19:44	52.4	53.0	51.0	0.007
19:45	52.9	53.5	51.0	0.003
19:46	52.9	53.0	51.5	0.004
19:47	53.4	54.0	51.5	0.003
19:48	58.2	57.0	50.5	0.004

19-Jul-00 Halifax South				
Time	**L_{eq} [dBA]**	**L_{10} [dBA]**	**L_{90} [dBA]**	**ppm**
22:34	60.2	61.0	58.5	0.002
22:35	60.8	61.5	60.0	0.001
22:36	60.6	61.5	59.0	0.001
22:37	60.4	61.0	59.0	0.002
22:38	60.3	61.0	59.0	0.002
22:39	60.6	61.0	59.5	0.001
22:40	60.3	61.0	59.0	0.002
22:41	60.3	61.0	59.0	0.001
22:42	60.6	61.5	59.5	0.002
22:43	60.3	61.0	59.0	0.001
22:44	60.4	61.0	59.5	0.001
22:45	60.3	61.0	59.0	0.001
22:46	60.7	61.5	59.5	0.003
22:47	60.6	61.5	59.0	0.002
22:48	60.3	61.0	59.5	0.001
22:49	60.2	61.0	59.0	0.001
22:50	60.5	61.0	59.5	0.001
22:51	60.5	61.5	59.0	0.001
22:52	60.6	61.0	59.5	0.002
22:53	60.3	61.0	59.0	0.001
22:54	60.9	61.5	59.5	0.002
22:55	60.7	61.5	59.5	0.001
22:56	60.3	61.0	59.0	0.002
22:57	60.1	60.5	59.0	0.001
22:58	60.5	61.0	59.5	0.000
22:59	60.6	61.5	59.0	0.002
23:00	60.5	61.0	59.5	0.001
23:01	60.4	61.0	59.5	0.002
23:02	60.7	61.0	59.5	0.001
23:03	60.3	61.0	59.5	0.001
23:04	60.5	61.0	59.0	0.001
23:05	59.2	61.0	51.5	

21-Jul-00 Halifax South				
Time	**L_{eq} [dBA]**	**L_{10} [dBA]**	**L_{90} [dBA]**	**ppm**
04:41	50.1	54.0	46.0	0.005
04:42	45.9	47.0	44.5	0.004
04:43	45.3	45.5	44.5	0.004
04:44	46.0	47.5	45.0	0.003
04:45	45.6	46.0	45.0	0.004
04:46	44.9	45.0	44.0	0.004
04:47	49.7	52.5	44.5	0.003
04:48	49.8	54.5	45.0	0.004
04:49	46.9	49.5	44.5	0.004
04:50	45.3	46.0	44.5	0.003
04:51	46.6	47.5	45.0	0.003
04:52	45.9	48.0	44.0	0.003
04:53	46.3	48.0	44.5	0.004
04:54	47.3	50.0	45.0	0.004
04:55	45.1	46.0	44.0	0.003
04:56	45.1	45.5	44.5	0.003
04:57	51.9	55.0	46.0	0.003
04:58	46.3	47.5	44.5	0.003
04:59	45.2	45.5	44.5	0.003
05:00	46.7	49.0	44.5	0.003
05:01	45.8	47.0	44.5	0.003
05:02	45.6	46.5	44.5	0.003
05:03	45.3	46.0	44.5	0.003
05:04	45.1	45.5	44.5	0.003
05:05	47.5	49.0	45.0	0.004
05:06	48.9	51.0	46.0	0.003
05:07	52.8	57.5	46.0	0.003
05:08	49.1	52.5	45.0	0.003
05:09	45.9	47.0	44.5	0.003
05:10	45.4	46.0	44.5	0.003
05:11	45.4	46.0	44.5	0.003
05:12	46.1	48.0	44.5	0.003
05:13	48.9	52.5	44.5	0.003

24-Jul-00 Halifax South				
Time	**L_{eq} [dBA]**	**L_{10} [dBA]**	**L_{90} [dBA]**	**ppm**
01:43	49.8	52.1	46.6	0.003
01:44	47.7	48.5	46.9	0.002
01:45	46.9	47.6	46.3	0.002
01:46	47.2	48.0	46.4	0.002
01:47	47.1	48.1	46.0	0.002
01:48	47.1	47.7	46.4	0.003
01:49	47.4	48.6	46.0	0.001
01:50	58.3	62.5	47.5	0.002
01:51	55.9	62.2	46.6	0.002
01:52	47.4	48.1	46.4	0.002
01:53	48.0	49.3	46.8	0.001
01:54	47.5	48.5	46.6	0.001
01:55	46.8	47.6	46.0	0.001
01:56	47.2	48.1	46.2	0.001
01:57	46.5	47.4	45.6	0.001
01:58	46.9	47.9	46.0	0.001
01:59	47.6	48.5	46.4	0.001
02:00	51.2	53.4	47.4	0.002
02:01	57.9	60.6	53.2	0.001
02:02	48.8	52.0	46.4	0.001
02:03	47.3	48.3	46.4	0.001
02:04	46.6	48.2	45.0	0.001
02:05	46.6	47.2	46.0	0.001
02:06	47.1	48.1	46.1	0.001
02:07	47.1	48.3	45.6	0.001
02:08	47.3	47.8	46.6	0.001
02:09	47.6	48.3	47.0	0.001
02:10	48.0	49.2	46.8	0.001
02:11	47.7	48.3	47.0	0.001
02:12	50.0	51.2	48.2	0.002
02:13	51.5	54.5	48.8	0.001
02:14	51.1	55.2	47.1	0.001
02:15	47.9	48.7	47.1	0.002

25-Jul-00 Halifax South				
Time	**L_{eq} [dBA]**	**L_{10} [dBA]**	**L_{90} [dBA]**	**ppm**
07:20	66.2	67.0	64.0	0.001
07:21	64.9	66.5	63.5	0.000
07:22	67.1	67.5	66.5	0.000
07:23	66.4	67.0	65.5	0.001
07:24	64.5	65.5	63.0	0.000
07:25	66.1	67.0	63.5	0.001
07:26	67.0	67.5	66.5	0.000
07:27	67.5	68.0	64.0	0.001
07:28	67.2	68.0	64.0	0.001
07:29	61.0	63.0	57.5	0.001
07:30	52.4	54.0	50.5	0.001
07:31	51.7	52.0	50.5	0.000
07:32	58.3	59.5	52.0	0.001
07:33	57.1	57.0	50.0	0.000
07:34	50.1	50.5	49.0	0.000
07:35	50.2	51.5	48.5	0.000
07:36	50.4	51.5	48.0	0.000
07:37	51.2	51.5	50.5	0.000
07:38	51.9	53.0	50.0	0.001
07:39	52.6	53.5	51.5	0.000
07:40	52.1	52.5	51.0	0.000
07:41	53.5	56.0	50.5	0.001
07:42	58.5	61.5	51.5	0.001
07:43	52.5	54.0	51.0	0.001
07:44	51.5	52.0	50.5	0.001
07:45	54.5	59.0	50.5	0.001
07:46	55.3	58.5	50.5	0.001
07:47	50.9	51.5	50.0	0.001
07:48	51.6	52.0	50.5	0.000
07:49	52.2	52.5	50.5	0.001
07:50	55.8	59.0	47.5	

30-Jun-00 Herring Cove				
Time	**L_{eq} [dBA]**	**L_{10} [dBA]**	**L_{90} [dBA]**	**ppm**
13:00	35.7	38.0	32.5	0.000
13:01	36.5	38.0	33.0	0.000
13:02	39.4	42.5	36.0	0.000
13:03	43.6	46.5	34.5	0.000
13:04	37.0	39.0	33.0	0.000
13:05	37.9	40.0	33.0	0.000
13:06	46.0	50.0	35.0	0.000
13:07	43.5	45.5	35.5	0.000
13:08	42.8	45.5	37.0	0.000
13:09	48.4	50.0	39.5	0.000
13:10	44.7	47.5	33.5	0.000
13:11	38.9	41.5	33.5	0.000
13:12	38.2	40.0	34.5	0.000
13:13	41.2	44.0	35.5	0.000
13:14	47.4	53.5	34.5	0.000
13:15	39.7	43.0	33.5	0.000
13:16	40.8	43.0	37.0	0.000
13:17	39.1	41.0	35.0	0.000
13:18	40.2	43.0	34.5	0.000
13:19	45.1	47.5	36.5	0.000
13:20	42.3	47.0	35.0	0.000
13:21	44.2	48.5	36.5	0.000
13:22	41.2	43.5	36.0	0.000
13:23	40.1	42.5	36.5	0.000
13:24	41.8	44.5	36.5	0.000
13:25	38.2	40.0	35.5	0.000
13:26	40.0	42.0	36.5	0.000
13:27	39.0	40.5	35.5	0.000

04-Jul-00 Herring Cove				
Time	**L_{eq} [dBA]**	**L_{10} [dBA]**	**L_{90} [dBA]**	**ppm**
16:06	48.1	50.0	44.5	0.001
16:07	52.3	55.5	48.5	0.001
16:08	52.3	55.0	47.5	0.001
16:09	48.1	49.5	46.5	0.003
16:10	48.4	51.5	43.0	0.001
16:11	48.6	49.5	44.5	0.002
16:12	48.8	51.0	45.5	0.003
16:13	46.4	48.0	44.5	0.003
16:14	43.7	44.5	42.0	0.002
16:15	44.1	46.0	41.5	0.003
16:16	47.0	49.0	44.0	0.002
16:17	49.5	51.5	46.5	0.003
16:18	47.3	49.5	43.5	0.001
16:19	49.0	52.0	42.5	0.003
16:20	46.8	49.0	42.5	0.002
16:21	44.2	45.5	42.5	0.002
16:22	44.5	46.0	41.0	0.003
16:23	46.3	48.5	43.0	0.002
16:24	46.5	50.0	42.0	0.002
16:25	42.9	43.5	42.0	0.002
16:26	42.4	43.5	40.5	0.002
16:27	46.3	49.5	43.0	0.002
16:28	48.9	52.0	41.5	0.002
16:29	48.1	51.0	44.0	0.002
16:30	48.6	50.5	44.0	0.002
16:31	45.3	48.5	41.0	0.002
16:32	50.2	54.0	43.5	0.002
16:33	49.4	52.5	43.5	0.002
16:34	48.5	50.5	45.0	0.002
16:35	47.2	52.5	40.0	0.002

05-Jul-00 Herring Cove				
Time	**L_{eq} [dBA]**	**L_{10} [dBA]**	**L_{90} [dBA]**	**ppm**
18:02	46.4	48.0	43.5	0.000
18:03	44.1	46.0	41.5	0.001
18:04	42.8	43.5	39.0	0.001
18:05	42.6	43.5	39.0	0.000
18:06	46.6	48.5	43.5	0.000
18:07	46.1	48.0	43.0	0.000
18:08	47.3	49.0	43.0	0.000
18:09	49.7	53.5	42.0	0.001
18:10	47.2	49.5	41.5	0.001
18:11	47.9	51.0	43.0	0.001
18:12	47.8	49.5	44.0	0.002
18:13	45.9	48.5	41.5	0.002
18:14	44.6	47.0	41.5	0.001
18:15	42.5	44.5	40.5	0.000
18:16	47.8	50.5	40.5	0.001
18:17	48.4	51.5	43.5	0.000
18:18	42.1	43.5	40.0	0.000
18:19	44.5	46.5	42.0	0.001
18:20	44.4	46.0	42.5	0.000
18:21	44.7	45.5	42.0	0.001
18:22	47.6	49.5	42.5	0.000
18:23	42.9	45.5	38.0	0.001
18:24	43.0	45.0	38.0	0.000
18:25	42.9	44.5	41.0	0.002
18:26	40.0	41.0	37.5	0.002
18:27	39.2	40.5	35.5	0.001
18:28	42.5	45.0	35.5	0.001
18:29	42.4	43.5	40.0	0.001
18:30	42.4	45.5	39.0	0.000
18:31	43.6	45.5	39.0	0.000
18:32	43.0	44.5	41.0	0.000
18:33	43.7	45.5	40.5	0.000

07-Jul-00 Herring Cove				
Time	**L_{eq} [dBA]**	**L_{10} [dBA]**	**L_{90} [dBA]**	**ppm**
20:48	32.5	34.0		0.000
20:49	39.0	44.0		0.001
20:50		31.5		0.000
20:51	35.7	36.5		0.001
20:52	31.6	34.0		0.000
20:53		32.0		0.001
20:54		32.5		0.001
20:55	43.9	49.0		0.000
20:56	33.5	37.0		0.000
20:57	32.5	36.5		0.000
20:58	36.1	37.0		0.001
20:59	30.3	31.5		0.001
21:00	39.3	40.5		0.001
21:01		32.5		0.001
21:02	47.1	51.5	30.5	0.001
21:03	49.0	55.0	30.0	0.000
21:04	32.9	33.5	31.5	0.002
21:05	34.3	36.5	31.5	0.001
21:06	34.5	34.5	31.0	0.001
21:07	33.4	35.5	30.0	0.001
21:08	39.4	40.0	31.0	0.000
21:09	39.6	43.0	31.0	0.001
21:10	34.0	36.0	30.0	0.001
21:11	36.6	38.0	30.5	0.001
21:12	38.7	39.0	30.5	0.001
21:13	33.7	35.5	31.5	0.000
21:14	33.5	35.5	30.5	0.001
21:15	31.2	33.0		0.001
21:16	34.6	36.0	30.5	0.000
21:17	33.9	36.5	31.5	0.001
21:18	33.6	34.5	31.5	0.000

19-Jul-00 Herring Cove				
Time	**L_{eq} [dBA]**	**L_{10} [dBA]**	**L_{90} [dBA]**	**ppm**
00:20	35.7	37.0	33.5	0.000
00:21	35.1	36.0	32.5	0.000
00:22	35.1	36.5	32.0	0.000
00:23	37.0	39.0	34.0	0.000
00:24	37.1	39.0	34.5	0.000
00:25	35.5	36.5	32.5	0.000
00:26	37.2	40.0	33.5	0.000
00:27	38.3	41.5	33.0	0.000
00:28	35.5	37.5	32.0	0.000
00:29	33.5	35.0	31.0	0.000
00:30	33.7	35.0	31.5	0.000
00:31	34.2	35.5	32.0	0.000
00:32	32.9	34.5	30.5	0.000
00:33	34.2	37.0	31.0	0.000
00:34	33.7	34.5	32.0	0.000
00:35	34.2	36.0	32.0	0.000
00:36	32.9	35.0	30.5	0.000
00:37	33.2	34.0	31.0	0.000
00:38	34.5	35.5	33.0	0.000
00:39	35.5	37.5	32.0	0.000
00:40	35.1	37.0	32.0	0.000
00:41	34.9	36.5	32.5	0.000
00:42	34.3	35.5	32.5	0.000
00:43	34.5	36.0	32.0	0.000
00:44	33.3	34.5	31.5	0.000
00:45	33.9	35.0	31.5	0.000
00:46	34.5	35.5	33.0	0.000
00:47	36.1	37.5	33.0	0.000
00:48	35.2	37.0	33.0	0.000
00:49	34.7	36.5	32.5	0.000
00:50	35.9	38.0	32.0	0.000
00:51	34.7	37.0	31.5	0.000
00:52	37.1	40.0	33.0	0.000
00:53	33.8	34.5	32.5	0.000
00:54	33.5	34.5	31.5	0.000

21-Jul-00 Herring Cove				
Time	**L_{eq} [dBA]**	**L_{10} [dBA]**	**L_{90} [dBA]**	**ppm**
06:13	36.7	38.5	32.5	0.000
06:14	39.2	43.0	33.0	0.000
06:15	37.8	40.5	34.0	0.000
06:16	36.4	38.5	32.5	0.000
06:17	37.2	39.5	32.0	0.000
06:18	43.1	46.0	38.0	0.000
06:19	44.8	49.0	35.0	0.000
06:20	45.1	51.0	32.5	0.000
06:21	44.9	51.0	32.0	0.000
06:22	45.8	51.5	34.5	0.000
06:23	40.8	42.5	37.0	0.000
06:24	40.3	42.5	37.5	0.000
06:25	36.9	38.0	35.5	0.000
06:26	37.9	39.5	35.5	0.000
06:27	38.7	41.0	36.0	0.000
06:28	36.9	39.0	33.5	0.000
06:29	38.2	40.5	34.5	0.000
06:30	44.3	48.0	38.0	0.000
06:31	46.7	49.0	37.5	0.000
06:32	41.9	44.5	35.5	0.000
06:33	35.1	37.0	32.0	0.000
06:34	39.4	41.0	37.0	0.000
06:35	44.6	50.5	35.5	0.000
06:36	52.7	57.5	35.0	0.000
06:37	49.8	55.0	36.5	0.000
06:38	39.7	41.0	37.0	0.000
06:39	41.9	46.0	37.5	0.000
06:40	39.9	43.0	34.0	0.000
06:41	38.9	40.0	33.5	0.000
06:42	37.4	37.5	31.5	0.000
06:43	38.9	40.5	36.0	0.000
06:44	36.5	38.5	33.5	0.000
06:45	36.5	38.5	33.5	0.000
06:46	36.1	37.5	33.5	0.000
06:47	38.9	41.5	36.0	0.000
06:48	38.6	40.5	35.0	0.000
06:49	38.3	40.5	34.0	0.000
06:50	40.3	43.0	34.5	0.000

06:51	38.2	40.5	35.0	0.000
06:52	35.1	36.5	33.5	0.000
06:53	40.5	42.5	35.5	0.000
06:54	40.0	42.5	36.0	0.000
06:55	37.5	39.0	35.0	0.000
06:56	36.5	39.0	33.5	0.000
06:57	36.0	37.5	34.0	0.000
06:58	37.1	39.0	34.0	0.000
06:59	37.8	39.5	34.5	0.000

24-Jul-00 Herring Cove				
Time	**L_{eq} [dBA]**	**L_{10} [dBA]**	**L_{90} [dBA]**	**ppm**
03:30	39.3	41.9	29.7	0.000
03:31	29.1	30.1	28.0	0.000
03:32	29.4	30.6	27.7	0.000
03:33	30.2	31.2	28.9	0.000
03:34	30.8	33.2	28.9	0.000
03:35	29.7	31.1	27.8	0.000
03:36	30.3	31.9	28.9	0.000
03:37	30.2	31.3	28.9	0.000
03:38	29.7	30.8	28.2	0.000
03:39	31.5	33.0	29.7	0.000
03:40	29.6	30.2	27.9	0.000
03:41	29.8	31.3	28.0	0.000
03:42	29.3	30.1	27.8	0.000
03:43	29.6	30.6	28.0	0.000
03:44	30.3	32.0	28.9	0.000
03:45	31.9	34.0	28.5	0.000
03:46	31.4	33.2	29.7	0.000
03:47	29.8	31.2	28.4	0.000
03:48	31.0	32.8	28.6	0.000
03:49	30.0	31.9	28.1	0.000
03:50	30.5	31.7	28.0	0.000
03:51	30.1	31.3	28.1	0.000
03:52	31.9	34.3	28.4	0.000
03:53	29.6	31.0	27.7	0.000
03:54	29.4	30.6	27.9	0.000
03:55	29.8	31.2	28.2	0.000
03:56	29.5	30.7	27.8	0.000
03:57	29.1	30.6	27.2	0.000
03:58	29.5	30.9	27.4	0.000
03:59	30.1	31.3	28.2	0.000
04:00	29.1	30.2	27.9	0.000
04:01	35.1	35.9	27.5	0.000

25-Jul-00 Herring Cove				
Time	**L_{eq} [dBA]**	**L_{10} [dBA]**	**L_{90} [dBA]**	**ppm**
09:45	42.8	44.5	38.0	0.001
09:46	41.2	41.0	37.0	0.002
09:47	43.5	45.5	36.0	0.001
09:48	37.0	38.0	35.0	0.001
09:49	38.0	39.0	36.5	0.001
09:50	39.3	41.0	36.0	0.001
09:51	39.3	40.5	37.5	0.001
09:52	37.5	39.0	35.0	0.001
09:53	37.0	39.5	33.5	0.001
09:54	38.1	40.0	34.0	0.001
09:55	36.8	39.5	33.5	0.001
09:56	35.4	37.5	33.0	0.001
09:57	39.0	41.5	34.5	0.001
09:58	39.7	41.5	36.5	0.001
09:59	39.1	41.0	35.0	0.002
10:00	36.4	38.0	33.5	0.002
10:01	39.7	40.0	34.5	0.002
10:02	43.7	48.5	34.5	0.001
10:03	39.6	40.5	36.0	0.001
10:04	38.0	39.0	36.5	0.001
10:05	37.9	39.5	35.5	0.001
10:06	39.1	40.5	36.0	0.001
10:07	41.8	46.0	35.5	0.002
10:08	39.2	42.5	35.0	0.001
10:09	38.1	41.0	34.0	0.001
10:10	39.2	43.5	33.5	0.002
10:11	39.3	43.0	34.5	0.001
10:12	41.2	44.5	37.5	0.002
10:13	41.1	44.5	37.0	0.002
10:14	40.5	44.0	36.0	0.002
10:15	40.5	44.5	35.0	0.001
10:16	39.8	43.0	35.0	0.002
10:17	39.4	44.0	33.5	0.001
10:18	37.7	39.5	34.0	0.002

APPENDIX B

MAPS OF SAMPLE LOCATIONS