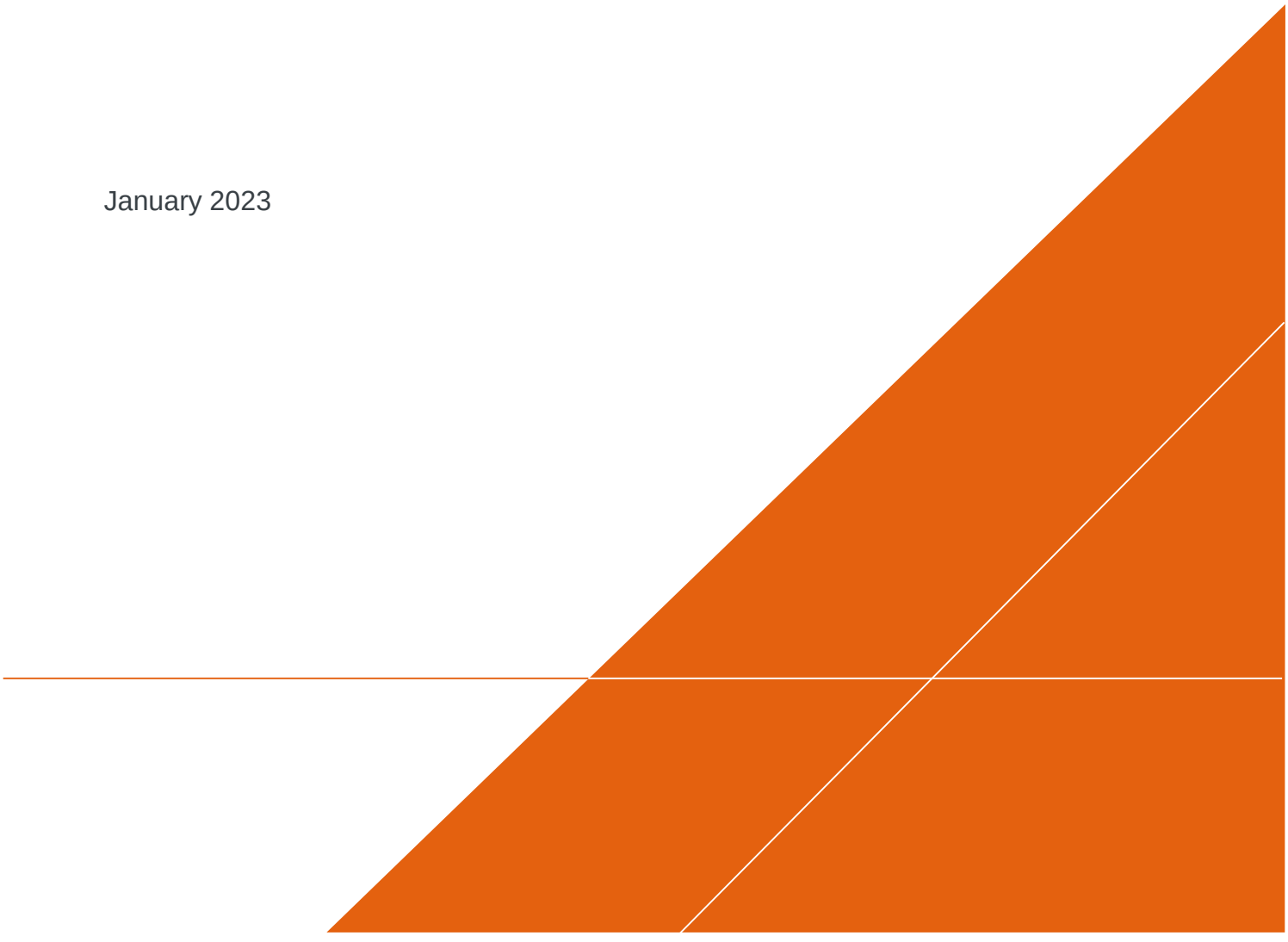
ARCADIS Design & Consultancy for natural and built assets

ACOUSTIC ASSESSMENT REPORT

Version 5.0

January 2023



Ontario

Ministry of the Environment, Conservation and Parks

Acoustic Assessment Report Check-List

Company Name

Northland Power Thorold Cogen GP Inc. / Thorold Cogen L.P.

Company Address

Unit Number	Street Number	Street Name	PO Box
12 Flr	30	St. Clair Ave West	

City/Town	Province	Postal Code
Toronto	Ontario	M4V 3A1

Location of Facility
90 Allanburg Road, Thorold, ON L2V 0A8

The attached Acoustic Assessment Report was prepared in accordance with the guidance in the ministry document "Information to be Submitted for Approval of Stationary Sources of Sound" (NPC-233) dated October 1995 and the minimum required information identified in the check-list on the reverse of this sheet has been submitted.

Company Contact

Company Contact
Northland Power

Last Name	First Name	Middle Initial
Mulvale	Jim	

Title	Telephone Number
Senior Director, Environment	416-662-1437

Signature	Date (yyyy/mm/dd)
	2023/02/01

Technical Contact

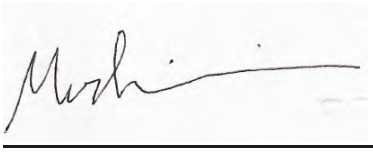
Technical Contact
Arcadis Canada Inc.

Last Name	First Name	Middle Initial
Lotfi Moghaddam	Parnia	

Representing	Telephone Number
Arcadis Canada Inc.	647-956-5435

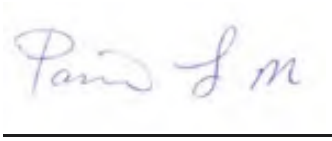
Signature	Date (yyyy/mm/dd)
	2023/02/01

	Required Information	Submitted	Explanation/Reference
1.0	**Introduction (Project Background and Overview)**	☑ Yes	Section 1
2.0	**Facility Description**		
	2.1 Operating hours of Facility and significant Noise Sources	☑ Yes	Section 2.2 and 3
	2.2 Site Plan identifying all significant Noise Sources	☑ Yes	Figure 2
3.0	**Noise Source Summary**		
	3.1 Noise Source Summary Table	☑ Yes	Table 1
	3.2 Source noise emissions specifications	☑ Yes	Table 1
	3.3 Source power/capacity ratings	☑ Yes	Table 1
	3.4 Noise control equipment description and acoustical specifications	☑ Yes	Appendix G
4.0	**Point of Reception Noise Impact Calculations**		
	4.1 Point of Reception Noise Impact Table	☑ Yes	Table 4, Table 5
	4.2 Point(s) of Reception (POR) list and description	☑ Yes	Table 2, Section 4
	4.3 Land-use Zoning Plan	☑ Yes	Appendix A
	4.4 Scaled Area Location Plan	☑ Yes	Figure 1
	4.5 Procedure used to assess noise impacts at each POR	☑ Yes	Section 7
	4.6 List of parameters/assumptions used in calculations	☑ Yes	Section 7
5.0	**Acoustic Assessment Summary**		
	5.1 Acoustic Assessment Summary Table	☑ Yes	Table 6
	5.2 Rationale for selecting applicable noise guideline limits	☑ Yes	Section 5, Appendix D
	5.3 Predictable Worst Case Impacts Operating Scenario	☑ Yes	Section 7
6.0	**Conclusions**		
	6.1 Statement of compliance with the selected noise performance limits	☑ Yes	Section 8
7.0	**Appendices (Provide details such as)**		
	Listing of Insignificant Noise Sources	☑ Yes	Appendix C
	Manufacturer's Noise Specifications	☑ Yes	Appendix B, Appendix G
	Calculations	☑ Yes	Appendix B, Appendix H
	Instrumentation	☑ Yes	Section 6, Appendix K
	Meteorology during Sound Level Measurements	☑ Yes	Section 6, Appendix L
	Raw Data from Measurements	☑ Yes	Appendix I
	Drawings (Facility / Equipment)	☐ Yes	



Farhad Mirhosseini P.Eng.

Noise and Vibration Engineer



Parnia Lotfi Moghaddam P.Eng.

Principal Engineer, Senior Noise and Vibration Lead

ACOUSTIC ASSESSMENT REPORT

Prepared for:

Northland Power Inc.

As Manager and Operating Agent for

Thorold Cogen L.P.

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Our Ref.:

30145969

Date:

January 2023

VERSION CONTROL

Revision No	Date Issued	Description	Reviewed by
1.0	August 2006	Original Report	
2.0	September 2019	Update to current MECP standards for modelling and reporting. Addition of new 500BHP Boiler	JS/TB
3.0	October 2019	Replaced the cold start up scenario with warm start up scenario (worst case), which includes the new 500BHP Boiler already running.	JS/TB
4.0	April 2020	Updated the acoustic assessment summary tables to show compliance with allocated sound level limits per Memorandum of Understanding signed by Northland Power and Abitibi-Consolidated Company of Canada (now Resolute FP Canada Inc.) in 2007; removed the 2006 background sound level measurement data; reassessed two GT ventilation fans for tonal content which involved conducting one-third octave band sound measurements at both fan outlets; updated the location of the two GT vent fan outlets and orientation; and revised the location of the receptor to the northwest of the Facility.	JS/PLM
5.0	January 2023	Update to include emissions from Hogger Vent in the noise analysis.	PLM

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APPENDICES

1 INTRODUCTION

Arcadis Canada Inc. (Arcadis) was retained by Northland Power to prepare an Acoustic Assessment Report (AAR) update in support of an application to amend an existing Environmental Compliance Approval (ECA) (Air & Noise) No. 8189-83LPJM, dated November 10, 2010, (Application) for the Thorold Generating Station located at 90 Allanburg Road in Thorold, Ontario (Facility) owned by Thorold Cogen L.P. (TCLP).

This AAR was prepared in accordance with guidance provided in the Ministry of Environment, Conservation and Parks (MECP) publications NPC-300 "Environmental Noise Guideline – Stationary and Transportation Sources – Approval and Planning" and NPC-233 "Information to be submitted for approval of stationary source of sound".

In 2022, TCLP was informed by MECP regarding noise complaints raised by the surrounding Noise Sensitive Areas (NSAs) across the canal to the west of the Facility. TCLP stated that the Facility's management visited the affected residential area and confirmed that noise from the Facility was audible. The noise was attributed to a hogger, a thermo-compressor pump that pulls non-condensable gas out of the turbine's system so that steam may flow freely in steam turbine and reach the condenser at the end. Arcadis understands that the hogger is meant to be used only at the start-up of the system, which may take a couple of hours, however the pump was operating continuously when the noise complaint was received due to the failure of another component in the system and a build-up of non-condensable gases. TCLP modified the steam cycle so that the hogger only runs during the start-up of the system. Further, TCLP mounted a silencer around the hogger vent to attenuate sound emissions.

The above-mentioned exhaust vent is not listed in the Facility's current ECA permit. TCLP was informed by MECP that an update to the AAR and Amendment to the existing ECA permit is required. Therefore, Arcadis conducted further analysis and updated the AAR below for submission to MECP.

The Facility is located near the intersection of Niagara Falls Road and Allanburg Road in an area with a mix of commercial, industrial, residential and transportation activities. Background sound levels in the vicinity of the Facility are attributable primarily to vehicular traffic, minor commercial operations, residential activities and occasional marine vessel traffic within the Welland Canal. For the purposes of this assessment, six (6) receptor locations have been identified as being representative of the noise sensitive points of reception (PORs) in the vicinity of the Facility, labelled POR1 to POR6. Sensitive receptors POR1, POR3, and POR4 are located to the south and east of the Facility; east of the Niagara Falls Road. Further, sensitive receptors POR2, POR5, and POR6 are situated to the west of the Facility; in close proximity to Beaverdams Road where earlier complaints were raised by residents. The closest POR, which is POR4, is located approximately 20 m from the Facility property line and approximately 190 m from the nearest façade of the Facility.

An aerial view of the site and the surrounding area is displayed in **Figure 1 – Aerial View of the Site Location**. A site layout plan showing the Facility arrangement and source locations is provided in **Figure 2 – Source Location Plan**. A land use zoning plan outlining the zoning designations for the site and surrounding properties is provided in **Appendix A**.

2 FACILITY DESCRIPTION

2.1 Process Description

The North American Industrial Classification (NAICS) code that applies to this Facility is 221112 – Fossil-Fuel Electric Power Generation.

The Facility is driven by a GE 7FA gas turbine generator (GTG). This GTG is nominally rated at 160 MW and is equipped with a heat recovery steam generator (HRSG). The Facility also includes a 95 MW steam generator (STG). The GTG, STG, HRSG, and their auxiliary equipment are to be located inside a building. In addition to these primary sources, other auxiliary pieces of equipment located inside the building include two auxiliary boilers and the proposed superheated boiler with boiler stack exhausts outside the GT building/or on the rooftop as shown in **Figure 2 – Source Location Plan**.

Outside of the building, there are a few noise sources, including the GT air intake and two vent fans located on the east façade of the GT building. There are also three transformers and an emergency generator set and exhaust located outside the east façade of the GT building.

2.2 Operation Schedule

The Facility is designed to operate 24 hours per day, 7 days per week, and up to 52 weeks per year. The worst-case 1-hour operating scenario was used for each of the daytime, evening and nighttime time periods.

2.3 Surrounding Area

The Facility is located on a lot that is zoned for *General Industrial* use. The lands to the east, west, north, and northeast of the Facility are also zoned for *General Industrial* use. The lands to the south are zoned as *Urban Living Area*. A zoning map has been included in **Appendix A** of this report.

3 NOISE SOURCE SUMMARY

The significant sources of noise were identified at the Facility via a series of site visits over the years, manufacturer specifications, and/or engineering calculations. The most significant sources include:

- Standby Generator (Sources E_Genset and E_Genset_Ex)
- GT Compartment Fan (Source GT_Comp_Fan)
- GT Air Intake (Source GT_In)
- HRSG Exhaust (Source HRSG_Ex)
- GTG Transformer (Source GT_Trans)
- Hogger Vent (Source HoggerVent)

Sound power levels of all sources are available in **Appendix B** and **Appendix H** of the report. Many of the noise sources have been subject to past Noise Abatement Action Plan (NAAP) and are already outfitted with noise mitigation. The performance was confirmed via a third-party acoustic audit completed in 2010. The insignificant noise sources are listed in **Appendix C**.

Noise emission from the hogger exhaust vent was measured before and after the installation of the permanent silencer. Details regarding the noise complaint investigation and field measurements are available in Section 6 of this report. The silencer acoustic data is provided by the manufacturer and a copy is available in **Appendix G**.

The sound power levels of the sources are summarized in **Table 1 – Noise Source Summary Table**. The locations of the noise sources are shown in **Figure 2 – Source Location Plan**. A list of insignificant noise sources is provided in **Appendix C**.

4 POINTS OF RECEPTION

A total of six (6) PORs have been identified as being representative of the noise sensitive PORs in the vicinity of the Facility (labelled POR1 through POR6 in **Figure 3** and **Figure 4.** Location of the existing sound barriers are shown with blue lines on **Figure 2** to **Figure 4**. The MECP has established sound level criteria both for outdoor location and plane of window location at a sensitive land use (where applicable) in NPC-300. As such, multiple points were evaluated for each POR where applicable. Outdoor points of reception are marked with "OLA" in **Table 2**, as the points with the predictable worst-case noise impacts must be considered. In majority of the cases, the outdoor living areas are located facing away from the Facility, are shielded by the residential structures and do not represent the worst-case outdoor locations. Only POR3 and POR5 are outdoor living areas facing the Facility, and as such were included in this AAR. During the site visit, it was noted that a water fountain operates near the façade receptor at POR2. Therefore, the noise measurement at the corresponding OLA (POR5) was conducted approximately fifty (50) meters away from the building façade, i.e., closer to the Facility, to minimize the noise contribution from the fountain. **Table 2 - Point of Reception Summary Table** summarizes the POR height and distance from the Facility.

Satisfying MECP noise guidelines at the selected critical points of reception will ensure all other points of reception are in compliance. **Table 4 - Point of Reception Noise Impact Summary Table – Daytime/Nighttime (Steady State)** and **Table 5 - Point of Reception Noise Impact Summary Table – Daytime/Nighttime (Start Up)** summarize the noise impact at the points of reception during steady state operations and during start up. **Table 4** also includes an evaluation of the emergency equipment.

5 ASSESSMENT CRITERIA (PERFORMANCE LIMITS)

The Facility is located in an area with a mix of commercial, industrial and residential activities. As such, the Facility and the nearest receptors are best defined as being located in a Class 2 Area. Publication NPC-300 defines a Class 2 Area as:

- An area with an acoustical environment that has qualities representatives of both Class 1 and Class 3 areas:
    - Sound levels characteristic of Class 1 during daytime (07:00 to 19:00 or to 23:00 hours); and
    - Low evening and night background sound levels defined by natural environment and infrequent human activity starting as early as 19:00 hours (19:00 or 23:00 to 07:00 hours).

In 2007, Northland Power Thorold Cogen GP Inc. and neighbouring Abitibi-Consolidated Company of Canada (now Resolute FP Canada Inc.) Facility had a signed "Memorandum of Understanding" regarding the allocation of sound level limits at the PORs. The memorandum was signed by both companies in order to ensure they jointly manage the site-wide noise assessment and mitigation, as mandated by the Ontario Ministry of Environment. The letter was executed April 2 and 3, 2007. A copy of the signed memorandum

is provided in **Appendix D**. Therefore, the Northland Power Thorold Cogeneration Facility must comply with their allocated limits for the affected receptors from the signed memorandum and not with the MECP exclusionary sound level limits for Class 2 Areas as defined in Publication NPC-300. A summary of the allocated sound level limits applied at each receptor for the Cogeneration Facility is provided in **Table 3 – Performance Limits Summary Table.**

Publication NPC-300 outlines that noise produced by emergency equipment operating in non-emergency situations (i.e., testing or maintenance) should be assessed independently of all other stationary sources of noise. The applicable sound level limits for an emergency equipment testing scenario are 5 dB higher than the sound level limits that are established for the other stationary sources at the Facility. As emergency equipment testing will only take place during daytime hours, the applicable sound level limit for this scenario is 55 dBA (50 dBA for daytime operations at Class 2 Areas plus 5 dB).

In addition, Arcadis collected a 20-minute sound level measurement from Beaverdams Road near the dwelling unit located at 72 Battle Street which could be representative of the ambient one-hour equivalent sound level. Details regarding the long-term (48-hr) field measurements at POR5 is provided in Section 6 of the report below.

6 NOISE COMPLAINT INVESTIGATIONS AND FIELD MEASUREMENTS

Arcadis investigated the noise complaint logged by the residents located to the west of the Facility across Welland Canal. The first round of measurements was conducted on August 31, 2022 when the hogger vent was mitigated using only a temporary acoustic enclosure and the Facility was pending to receive the permanent silencer from the supplier. Noise emissions from the hogger was measured twelve (12) metres away from the vent and the equivalent sound pressure level (Leq) was recorded as 80.6 dB. Traffic noise measurement was conducted for Beaverdams Road near 72 Battle Street during the same site visit and the measured Leq was 68.3 dBA showing a high contribution of traffic noise to the background noise level in the area.

The second site visit was conducted on September 2, 2022, when the temporary acoustic enclosure was removed from the hogger. The sound pressure level was measured at a five (5) metre distance from the hogger vent. The measured data provided input to establish the sound power related to the hogger vent in CadnaA analysis. A copy of the measured data in one-third octave band is available in **Appendix H**. The equivalent sound power level was calculated in CadnaA assuming a full sphere sound radiation at a distance of five (5) metres from the source.

Furthermore, continuous noise measurement was conducted at POR5 in proximity to 1443 Beaverdams Road, Thorold, as the closest noise sensitive receptor located to the west of the Facility. The measurement was performed for a duration of 48-hours from August 31, 2022 to September 2, 2022. A sample of the baseline noise measurement data is provided in **Appendix I**. The average Leq for the quietest 1-hour during daytime, evening time and nighttime was recorded as 49.3 dBA, 49.2 dBA and 43.4 dBA, respectively.

The last round of field measurements was conducted on October 24, 2022, when the permanent silencer was installed around the hogger vent. Arcadis was advised by the Facility that after the installation of the permanent silencer, the hogger may not be operated freely as before, as the silencer is imposing a slight backpressure on the system and only can be used during a start-up of the power plant. Therefore, this time Arcadis was not able to measure the sound pressure level close to the hogger vent during its operation (start-up having occurred in the overnight hours when Arcadis was not at site). Nevertheless, a noise

measurement for a duration of 48-hours was conducted at POR5 as the OLA for 1443 Beaverdams Road, Thorold. Sound data was recorded from approximately 1:00 PM on October 24, 2022, to 2:00 PM on October 26, 2022. The measurement established the noise level at POR5 after the installation of the permanent silencer. A copy of the noise level at POR5 during the hogger operation on October 25, 2022 is provided in **Appendix J**. A copy of the calibration certificates is provided in **Appendix K**. A copy of the meteorological data during the measurement periods is provided in **Appendix L**.

7 IMPACT ASSESSMENT

The noise impact calculations were performed using DataKustik CadnaA environmental noise prediction software. The calculations are based on established prediction methods: ISO 9613-2 “A Standard for Outdoor Noise Propagation” (Standard). The noise impact predictions assumed downwind propagation conditions as defined by the Standard. Also, the directivity of some exhaust stacks was considered based on the measurement data.

The predicted sound levels at the identified PORs are summarized in **Table 4 – Point of Reception Noise Impact Summary Table – Daytime/Nighttime (Steady State)** and **Table 5 – Point of Reception Noise Impact Summary Table – Daytime/Nighttime (Start Up)**.

Sample ISO calculations, including the considered parameters, are provided in **Appendix E**. Predicted sound level contours for daytime and nighttime operation are shown in **Figure 3 - Noise Contour Plot at 4.5 m – Steady State** and **Figure 4 - Noise Contour Plot at 4.5 m – Start-up**, respectively. The electronic modelling files are provided for exclusive use for review by the MECP in **Appendix F**.

The Acoustic Assessment Summary Table submitted in the previous report is shown in **Table 6**. The cumulative noise impacts at the latest identified PORs based on the updated analysis are summarized in **Table 7** of the report. For the ease of comparison, the receptor IDs shown in **Table 6** are matched with the corresponding receptor IDs in **Table 7**. Receptors POR5 and POR6 are added in the updated report, hence these are not shown in **Table 6**.

The results of the modelling demonstrate that the worst-case sound contribution of the Facility at the receptors located at the west side of the canal is 27.5 dBA at POR5 which is 11.5 dB lower than the allocated sound level limit of 39 dBA according to the Memorandum of Understanding. The results of the modelling demonstrate that the worst-case contribution of the Facility at the receptors located to the southeast, south, and further south of the Facility, POR1, POR4, and POR3 are 40.3 dBA, 41.1 dBA, and 39.1 dBA, respectively. These levels are below the evening/nighttime allocated sound level limits of 44 dBA, 44 dBA, and 42 dBA, respectively, according to the Memorandum of Understanding. Therefore, the results of the analysis indicate that the Facility is in compliance with the allocated sound level limits (performance limits), established in the Memorandum of Understanding.

Arcadis made a comparison between the noise level measured at POR5 during the hogger operation from 1:48 AM to 2:42 AM on October 25, 2022, and the noise measured during the exact same period on October 26, 2022, when the hogger was not in operation and the impact of other environmental noise sources was minimum. Analysis showed that the hourly sound contribution of the hogger is 37.8 dBA which is higher the CadnaA predicted noise level of 27.5 dBA at POR5.A comparison of **Table J.1 Noise Level at POR5 During the Hogger Operation on October 25, 2022** and **Table J.2 Noise Level at POR5 During the Same Time Period on October 26, When the Hogger Was Not in Operation**, of **Appendix J,** demonstrates that during the first period of the hogger operation on October 25, 2022 (1:48 AM to 2:42 AM), the one-hour equivalent sound level measured at POR5 for the combined operations of the Facility

and Abitibi-Consolidated Company of Canada (now Resolute FP Canada Inc.) is 44 dBA, which is 1 dBA below the MECP nighttime exclusion limit of 45 dBA for a Class 2 area. On the other hand, the one-hour equivalent sound level measured at POR5 during the third period of the hogger operation on October 25, 2022 (7:15 AM to 7:51 AM) is 51 dBA. If this sound level is compared to the one-hour equivalent sound level during the same period on the subsequent day in **Table J.2** (i.e.,48 dBA), the worst-case one-hour equivalent sound level contribution for the combined operations of the Facility and Abitibi-Consolidated Company of Canada (now Resolute FP Canada Inc.) will be 48 dBA which is 2 dB below the MECP daytime exclusion limit of 50 dBA for a Class 2 area. The second period of hogger operation on October 25, 2022 from 6:38 AM to 7:01 AM is very close to the daytime period and can be considered daytime since it ends at 7:01 AM and therefore the rush hour traffic contributes to the overall sound levels. Therefore, it is Arcadis' professional opinion that both the measured sound levels and the modelled sound levels demonstrate that the Facility is in compliance with the MECP daytime and nighttime exclusion limits for a Class 2 area.

8 CONCLUSIONS

The purpose of this AAR is to support an application for an updated ECA for the Facility to include the hogger vent and associated silencer. The updated report evaluated the impact of noise emissions from the hogger vent on the NSAs in proximity to the Facility.

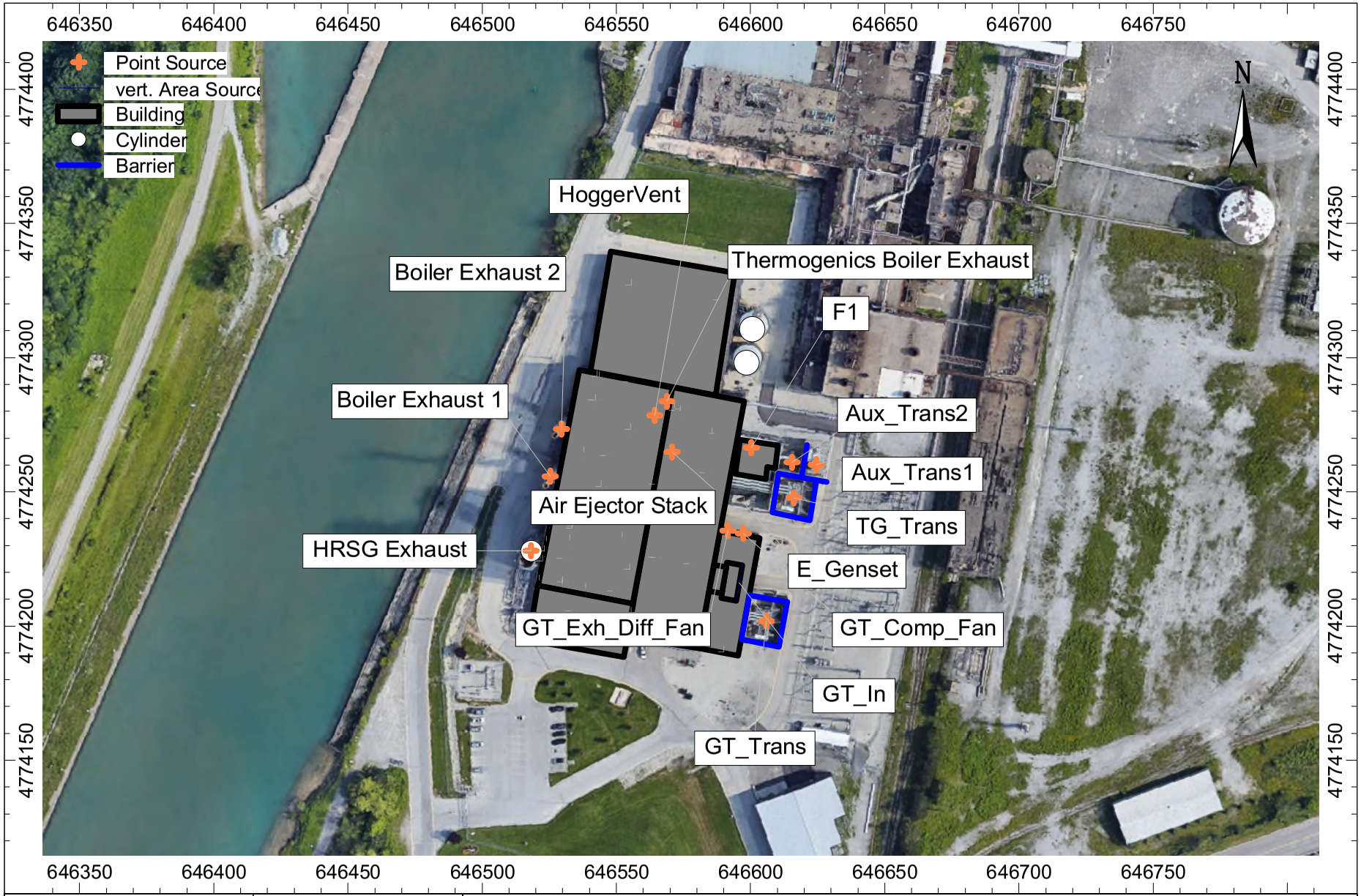
Sources of noise at the Facility were characterized through the collection of data collected for all sources. Sound levels from Facility operations at the nearest sensitive points of reception were calculated using the ISO 9613-2 Standard. The predicted sound levels were compared to the required performance limit established for each POR in accordance with NPC-300.

The results of the analysis indicate that the Facility is in compliance with the allocated sound level limits (performance limits), established in the Memorandum of Understanding.

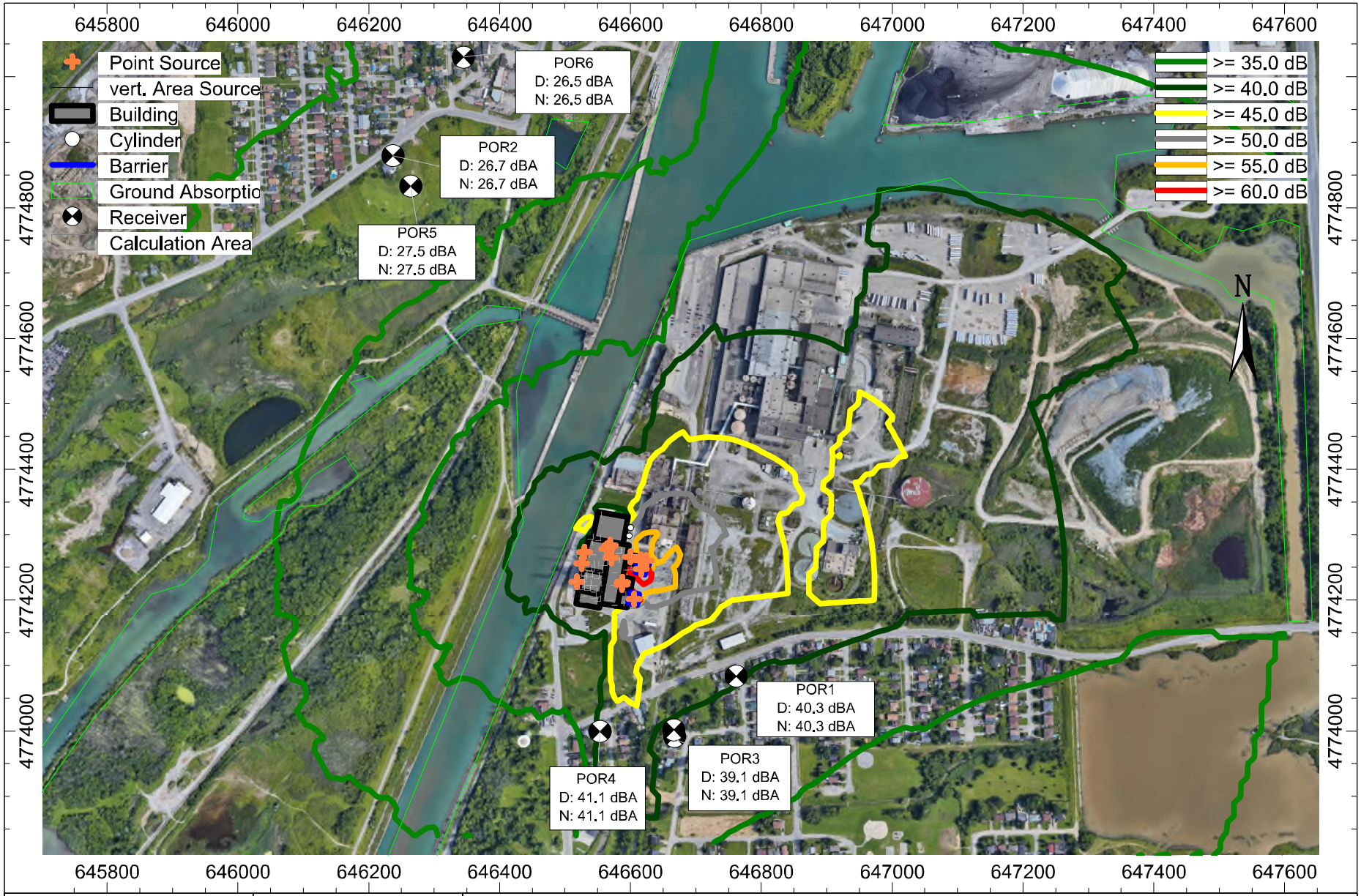
FIGURES

ARCADIS	Project No.: 30145969 Date: Jan 31, 2023 Prepared by: MH Reviewed by: PLM Revision: 1	**Project Name** Northland Power Thorold Cogeneration Station **Figure Title** Aerial View of the Site Location

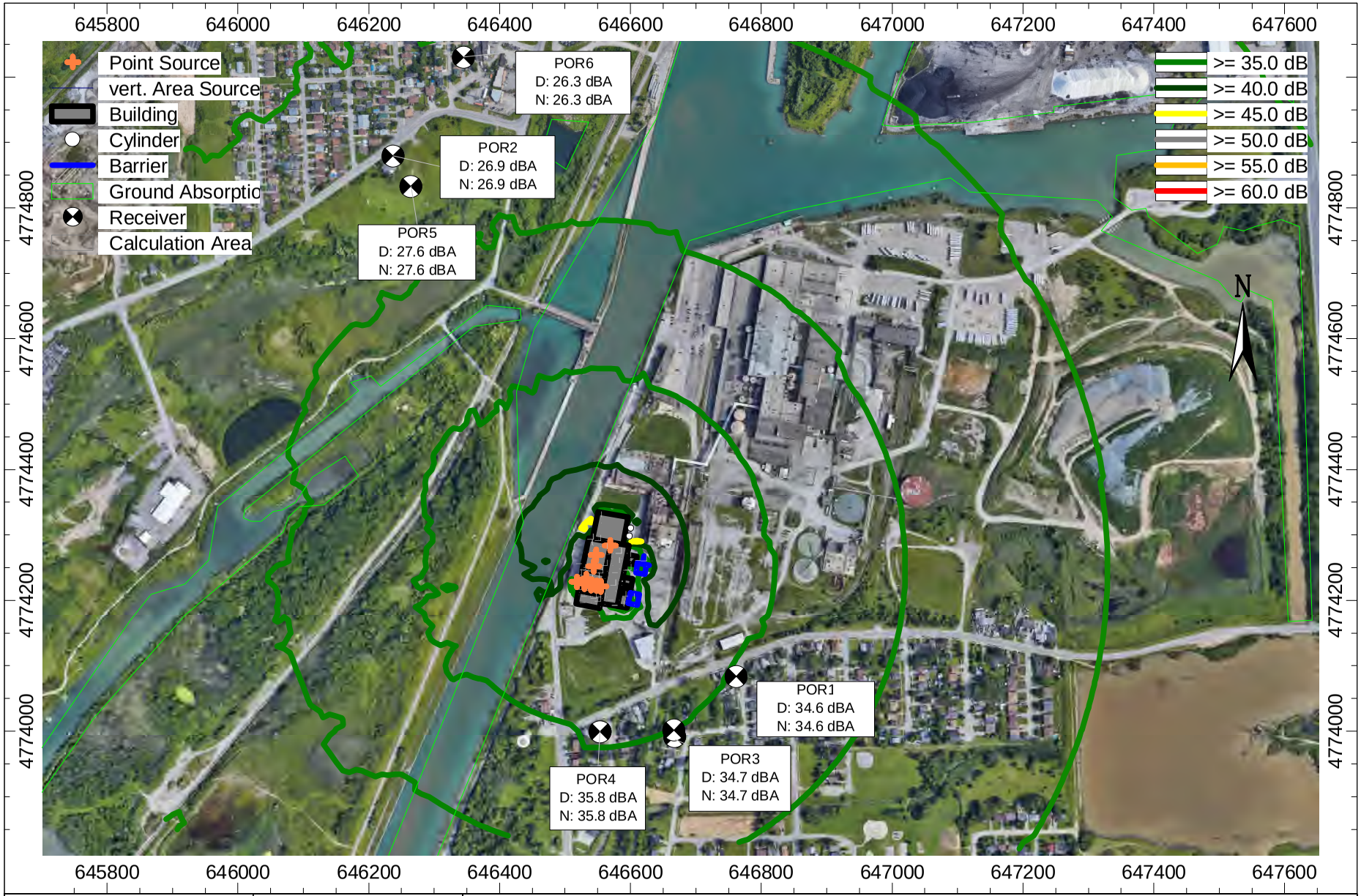
Figure 1



ARCADIS	Project No.: 30145969 Date: Jan 31, 2023 Prepared by: MH Reviewed by: PLM Revision: 1	**Project Name** Northland Power Thorold Cogeneration Station **Figure Title** Source Location Plan
		Figure 2



ARCADIS	Project No.: 30145969 Date: Jan 31, 2023	**Project Name** Northland Power Thorold Cogeneration Station	
	Prepared by: MH Reviewed by: PLM Revision: 1	**Figure Title** Noise Contour Plot at 4.5 m – Steady State	**Figure 3**



ARCADIS	Project No.: 30145969 Date: Jan 31, 2023	**Project Name** Northland Power Thorold Cogeneration Station
	Prepared by: MH Reviewed by: PLM Revision: 1	**Figure Title** Noise Contour Plot at 4.5 m – Warm Start up

Figure 4

TABLES

Table 1 - Noise Source Summary Table
Thorold Generating Station
Thorold, Ontario

Cadna A ID	Source Description	Source Type	Unattenuated Sound Power Level (1) (dBA)	Source Location (2)	Sound Characteristics (3)	Noise Control Measures (4)
HRSG_Ex	HRSG Exhaust	Point	94 dBA	O	S	S - Existing
Aux_Trans1	Aux Transformer 1 (15 MVA)	Point	82 dBA	O	S, T	B - Existing
GT_Trans	GTG Transformer (220 MVA)	Point	98 dBA	O	S, T	B - Existing
TG_Trans	STG Transformer (120 MVA)	Point	95 dBA	O	S, T	B - Existing
E_Genset	Standby Generator	Point	87 dBA	O	S, T	E - Existing
E_Genset_Ex	Standby Generator Exhaust	Point	105 dBA	O	S, T	S - Existing
Boiler_Ex1	Boiler Exhaust 1	Point	80 dBA	O	S	S - Existing
Boiler_Ex2	Boiler Exhaust 2	Point	80 dBA	O	S	S - Existing
Air_Ej_ST	Air Ejector Stack	Point	84 dBA	O	S	U
SAux_Boil_V1	Aux Boiler Startup Vent 1	Point	84 dBA	O	S	U
SAux_Boil_V2	Aux Boiler Startup Vent 2	Point	84 dBA	O	S	U
SBlow_V	Blowdown Vent	Point	83 dBA	O	S	S - Existing
F1	Rooftop Ventilation Fan - Electric 1	Point	82 dBA	O	S	U
GT_Comp_Fan	Gas Turbine Compartment Fan	Point	101 dBA	O	S	U
GT_Exh_Diff_Fan	GT Exhaust Diffuser Fan	Point	90 dBA	O	S	U
SHP_Sky_V	HP Sky Vent	Point	83 dBA	O	S	S - Existing
SHRH_Sky_V	HRH Sky Vent	Point	83 dBA	O	S	S - Existing
SIP_Sky_V	IP Sky Vent	Point	83 dBA	O	S	S - Existing
SLP_Sky_V	LP Sky Vent	Point	83 dBA	O	S	S - Existing
Aux_Trans2	Aux Transformer 2 (15 MVA)	Point	82 dBA	O	S, T	U
Boiler_HG500Exh	500BHP Boiler Exhaust	Point	88 dBA	O	S	U
S_HRSG_Ex	HRSG Exhaust	Point	93 dBA	O	S	U
GT_In	GTG Air Intake w/ Silencer	Vertical Area	86 dBA	O	S	S - Existing
HoggerVent	Hogger Vent	Point	126 dBA	O	S	S - Existing

Notes:

(1) Sound Power Level (PWL) in dBA calculated from sound pressure level and reference distance.

(2) Source Location:

- O - located/installed outside of building
- I - located/installed inside of building

(3) Sound Characteristics:

- S - Steady
- Q - Quasi Steady Impulsive
- I - Impulsive
- B - Buzzing
- T - Tonal
- C - Cyclic

(4) Noise Control Measures:

- S - silencer, acoustic louvre, muffler
- A - acoustic lining, plenum
- B - barrier, berm, screening
- L - lagging
- E - acoustic enclosure
- O - other
- U - uncontrolled
- AC - administrative control

Table 2 - Point of Reception Summary Table
Thorold Generating Station
Thorold, Ontario

Point of Reception ID[1]	Description	Receptor Height (m)	Approximate Receptor Location
POR1	Niagara Falls Road, Façade Receptor	4.5	110 m east of Facility
POR2	Beaverdams Road, Façade Receptor	4.5	535 m west of Facility
POR3	Beaver Street, Façade Receptor	4.5	68 m south of Facility
POR3, OLA	Beaver Street, OLA	1.5	76 m south of Facility
POR4	Niagara Falls Road, Façade Receptor	4.5	20 m south of Facility
POR5	Beaverdams Road, OLA	1.5	485 m west of Facility
POR6	Patricia Street, Façade Receptor	4.5	680 m west of Facility

Table 3 - Performance Limits Summary Table
Thorold Generating Station
Thorold, Ontario

Point of Reception ID	MOECC Designation	Allocated Sound Level Limit (dBA)		
		Daytime	Evening	Nighttime
POR1	Class 2	50	44	44
POR2	Class 2	50	39	39
POR3	Class 2	50	42	42
POR3, OLA	Class 2	50	42	-
POR4	Class 2	50	44	44
POR5	Class 2	50	39	-
POR6	Class 2	50	39	39

Table 4 - Point of Reception Noise Impact Summary Table - Daytime (Steady State)
Thorold Generating Station
Thorold, Ontario

Source ID	Source Name	Point of Reception POR1		Point of Reception POR2		Point of Reception POR3		Point of Reception POR3OLA		Point of Reception POR4		Point of Reception POR5		Point of Reception POR6	
		Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day
Air_Ej_ST	Air Ejector Stack	264	26	700	18	290	21	281	21	267	22	646	19	798	17
Aux_Trans1	Aux Transformer 1 (15 MVA)	223	27	730	3	272	14	262	15	271	6	677	3	819	16
Aux_Trans2	Aux Transformer 2 (15 MVA)	230	10	725	7	274	7	265	8	269	4	671	8	815	8
Boiler_Ex1	Boiler Exhaust 1	305	15	675	7	319	15	310	15	281	16	622	8	781	6
Boiler_Ex2	Boiler Exhaust 2	298	15	689	7	305	15	297	15	264	16	636	8	797	6
GT_Comp_Fan	Gas Turbine Compartment Fan	224	36	743	9	246	35	237	35	228	39	689	10	842	9
GT_Exh_Diff_Fan	Gas Turbine Exhaust Diffuser Fan	226	24	740	8	249	21	240	21	231	26	686	9	838	7
GT_In	GTG Air Intake w/ Silencer	212	34	756	4	235	33	226	33	221	28	702	4	854	5
GT_Trans	GTG Transformer (220 MVA)	219	27	737	11	261	25	251	26	256	20	683	12	828	12
HoggerVent	HoggerVent	278	12	684	13	305	11	296	11	280	12	631	15	783	13
HRSG_Ex	HRSG Exhaust	289	31	712	23	285	32	277	32	238	33	659	24	822	22
F1	Rooftop Ventilation Fan - Electric 1	244	17	712	0	283	23	273	23	271	5	659	1	805	1
TG_Trans	STG Transformer (120 MVA)	196	23	771	7	219	23	209	24	210	22	717	8	868	7
Boiler_SH500Exh	Superheated Boiler Exhaust	279	30	682	21	310	29	301	29	287	30	629	22	780	22
Total Level [dBA]			**40**		**27**		**39**		**40**		**41**		**28**		**27**

Emergency Equipment[1]

Source ID	Source Name	Point of Reception POR1		Point of Reception POR2		Point of Reception POR3		Point of Reception POR3OLA		Point of Reception POR4		Point of Reception POR5		Point of Reception POR6	
		Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day
E_Genset	Standby Generator	231	31	729	1	264	28	254	29	251	10	675	2	824	1
E_Genset_Ex	Standby Generator Exhaust	229	51	730	30	263	47	254	48	252	43	676	31	824	31
Total Level [dBA]			**51**		**30**		**47**		**48**		**43**		**31**		**31**

[1] It is assumed that the emergency equipment only operate during daytime and evening time.

Table 5 - Point of Reception Noise Impact Summary Table - Daytime (Warm Start-up)
Thorold Generating Station
Thorold, Ontario

Source ID	Source Name	Point of Reception POR1		Point of Reception POR2		Point of Reception POR3		Point of Reception POR3OLA		Point of Reception POR4		Point of Reception POR5		Point of Reception POR6	
		Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day
!!SAux_Boil_V1	Aux Boiler Startup Vent 1 (Warm start up)	284	14	685	16	303	6	294	7	271	5	631	17	787	17
!!SAux_Boil_V2	Aux Boiler Startup Vent 2 (Warm start up)	275	6	699	19	288	4	279	4	254	5	645	20	803	17
!!SBlow_V	Blowdown Vent (Warm start up)	275	20	712	15	278	24	269	25	236	26	659	16	821	14
!!SHP_Sky_V	HP Sky Vent (Warm start up)	251	25	732	13	258	25	249	25	225	26	678	14	836	14
!!SHRH_Sky_V	HRH Sky Vent (Warm start up)	257	25	728	15	262	25	253	25	226	26	675	16	834	14
!!SIP_Sky_V	IP Sky Vent (Warm start up)	264	25	724	13	266	25	258	25	227	26	670	13	831	14
!!SLP_Sky_V	LP Sky Vent (Warm start up)	274	22	717	15	273	25	265	25	230	26	664	16	826	14
!!Boiler_SH500Exh	Superheated Boiler Exhaust (Warm Start up)	279	30	682	21	310	29	301	29	287	30	629	22	780	22
Total Level [dBA]			**34**		**26**		**34**		**34**		**35**		**27**		**26**

Table 6 - Acoustic Assessment Summary Table, Based on the Previous Report

Thorold Generating Station

Thorold, Ontario

Point of Reception ID	Point of Reception Description	Time of Day	Verified by Acoustic Audit (Yes/No)	Steady State Sound Level at Point of Reception (dBA) (L_{eq})	Start-up Sound Level at Point of Reception (dBA) (L_{eq})	Performance Limit for Steady State (L_{eq}, dBA)	Performance Limit for Start up (L_{eq}, dBA)	Compliance with Performance Limits (Yes/No)
POR1	Niagara Falls Road Residence	Day	Yes	39	34	50	55	Yes
		Evening	Yes	39	34	44	--	Yes
		Night	Yes	39	34	44	--	Yes
POR2	Beaverdams Road Residence	Day	Yes	26	26	50	55	Yes
		Evening	Yes	26	26	39	--	Yes
		Night	Yes	26	34	39	--	Yes
POR2OLA	Beaverdams Road Residence - OLA	Day	Yes	26	26	50	55	Yes
		Evening	Yes	26	26	39	--	Yes
POR3	Beaver Street Residence	Day	Yes	38	34	50	55	Yes
		Evening	Yes	38	34	42	--	Yes
		Night	Yes	38	34	42	--	Yes
POR3OLA	Beaver Street Residence - OLA	Day	Yes	38	33	50	55	Yes
		Evening	Yes	38	33	42	--	Yes
POR4	Niagara Falls Road Residence	Day	Yes	40	35	50	55	Yes
		Evening	Yes	40	35	44	--	Yes
		Night	Yes	40	35	44	--	Yes

Table 7 - Acoustic Assessment Summary Table, Based on the Updated Analysis
Thorold Generating Station
Thorold, Ontario

Point of Reception ID	Point of Reception Description	Time of Day	Verified by Acoustic Audit (Yes/No)	Steady State Sound Level at Point of Reception (dBA) (L_{eq})	Start-up Sound Level at Point of Reception (dBA) (L_{eq})	Performance Limit for Steady State(Leq, dBA)	Performance Limit for Start up (Leq, dBA)	Compliance with Performance Limit (Yes/No)
POR1	Niagara Falls Road Residence	Day	Yes	40	34	50	55	Yes
		Evening	Yes	40	34	44		Yes
		Night	Yes	40	34	44		Yes
POR2	Beaverdams Road, Façade Receptor	Day	Yes	27	26	50	55	Yes
		Evening	Yes	27	26	39		Yes
		Night	Yes	27	26	39		Yes
POR3	Beaver Street, Façade Receptor	Day	Yes	39	34	50	55	Yes
		Evening	Yes	39	34	42		Yes
		Night	Yes	39	34	42		Yes
POR3, OLA	Beaver Street, OLA	Day	Yes	40	34	50	55	Yes
		Evening	Yes	40	34	42		Yes
POR4	Niagara Falls Road, Façade Receptor	Day	Yes	41	35	50	55	Yes
		Evening	Yes	41	35	44		Yes
		Night	Yes	41	35	44		Yes
POR5	Beaverdams Road, OLA	Day	Yes	28	27	50	55	Yes
		Evening	Yes	28	27	39		Yes
POR6	Patricia Street, Façade Receptor	Day	Yes	27	26	50	55	Yes
		Evening	Yes	27	26	39		Yes
		Night	Yes	27	26	39		Yes

APPENDIX A

Zoning Information

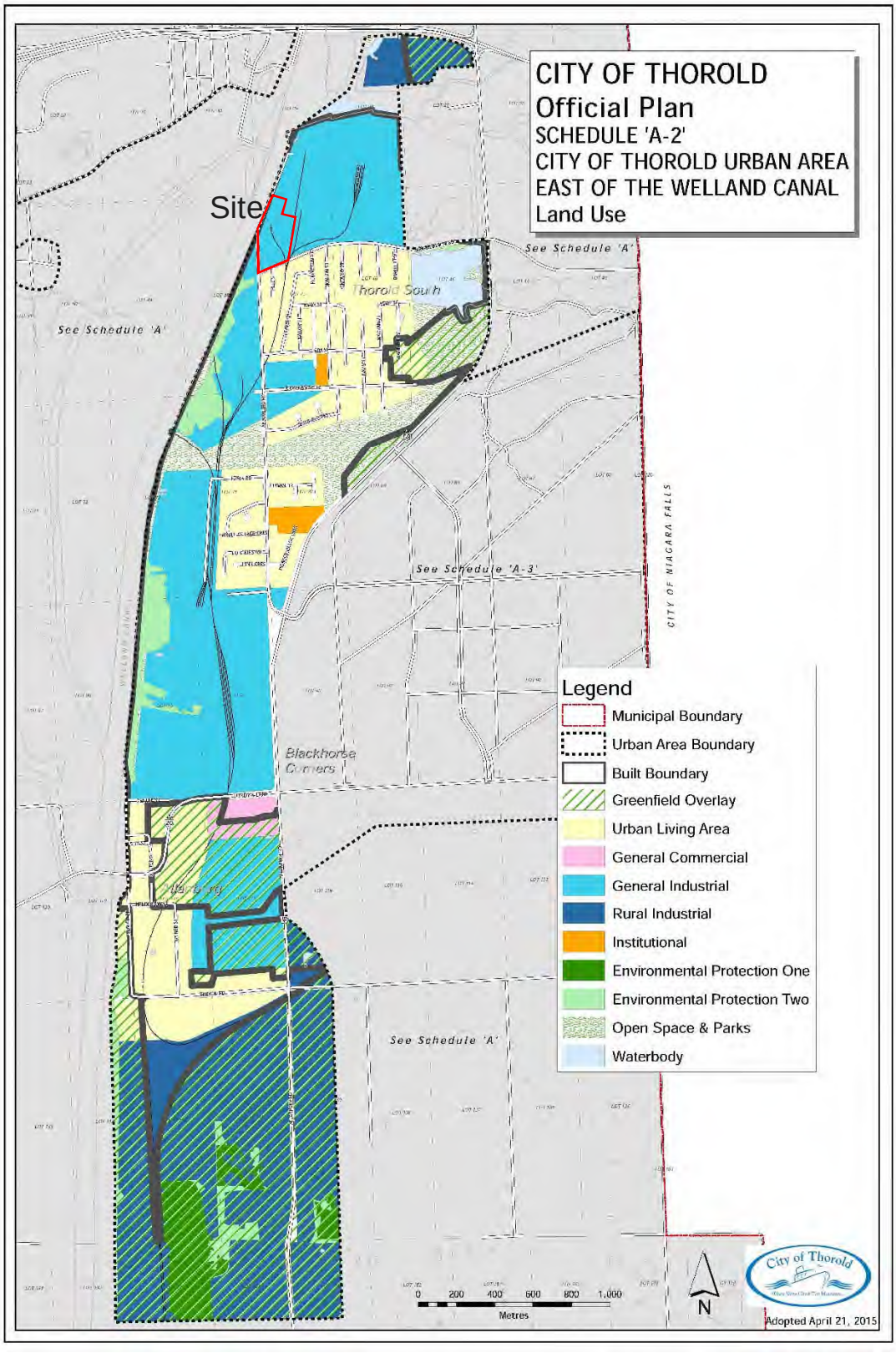


Figure 2 – Land Use Zoning Map

NORTHLAND POWER INC
90 ALLANBURG RD, THOROLD, ON

ARCADIS Design & Consultancy for natural and built assets

FIGURE
2

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APPENDIX B

Sound Power Levels

Table B.1 - Sound Power Levels
Thorold Generating Station
Thorold, Ontario

Source ID[1]	Source Description	Source Type	Sound Power Level (dB)									A	Lin	Comments
			31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz			
HRSG_Ex	HRSG Exhaust	Point	122	114	99	93	92	84	80	76	68	93.9	122.7	Steady State sound power level
Aux_Trans1	Aux Transformer 1 (15 MVA)	Point	77	80	72	77	77	72	66	61	54	77.4	84.6	
GT_Trans	GTG Transformer (220 MVA)	Point	93	96	98	93	93	87	82	77	71	93.4	102.3	
TG_Trans	STG Transformer (120 MVA)	Point	90	93	95	90	90	84	79	74	67	90.4	99.3	
E_Genset	Standby Generator	Point	62	70	77	77	76	78	77	71	64	82.4	84.5	
E_Genset_Ex	Standby Generator Exhaust	Point	138	134	140	136	128	124	118	108	100	132	144.2	
Boiler_Ex1	Boiler Exhaust 1	Point	75	76	76	76	76	74	73	72	71	80	84.2	
Boiler_Ex2	Boiler Exhaust 2	Point	75	76	76	76	76	74	73	72	71	80	84.2	
Air_Ej_ST	Air Ejector Stack	Point	87	87	86	84	82	78	75	72	69	84	92.9	
SAux_Boil_V1	Aux Boiler Startup Vent 1	Point	77	84	89	88	76	67	76	75	74	84	92.7	
SAux_Boil_V2	Aux Boiler Startup Vent 2	Point	77	84	89	88	76	67	76	75	74	84	92.7	
SBlow_V	Blowdown Vent	Point	85	93	90	86	75	68	76	73	74	83.2	95.8	
F1	Rooftop Ventilation Fan - Electric 1	Point	51	64	70	73	76	77	76	72	70	81.9	82.7	
GT_Comp_Fan	Gas Turbine Compartment Fan	Point	100	100	108	99	96	93	92	96	93	101.3	110.2	
GT_Exh_Diff_Fan	GT Exhaust Diffuser Fan	Point	94	89	85	80	72	68	67	62	55	91	110.0	
SHP_Sky_V	HP Sky Vent	Point	85	93	90	86	75	68	76	73	74	83.2	95.8	
SHRH_Sky_V	HRH Sky Vent	Point	85	93	90	86	75	68	76	73	74	83.2	95.8	
SIP_Sky_V	IP Sky Vent	Point	85	93	90	86	75	68	76	73	74	83.2	95.8	
SLP_Sky_V	LP Sky Vent	Point	85	93	90	86	75	68	76	73	74	83.2	95.8	
Boiler_HG500Exh	500BHP Boiler Exhaust	Point	93	92	91	89	86	83	80	77	75	88.5	98.3	
S_HRSG_Ex	HRSG Exhaust (Start up)	Point	85	89	91	91	90	88	86	82	76	93.2	97.7	Start-up sound power level
GT_In	GTG Air Intake w/ Silencer	Vertical Area	0	79	83	87	84	81	77	74	72	86.4	91.0	Including intake silencer

[1] Measured noise data for the hogger vent is available in Appendix H of the report.

APPENDIX C

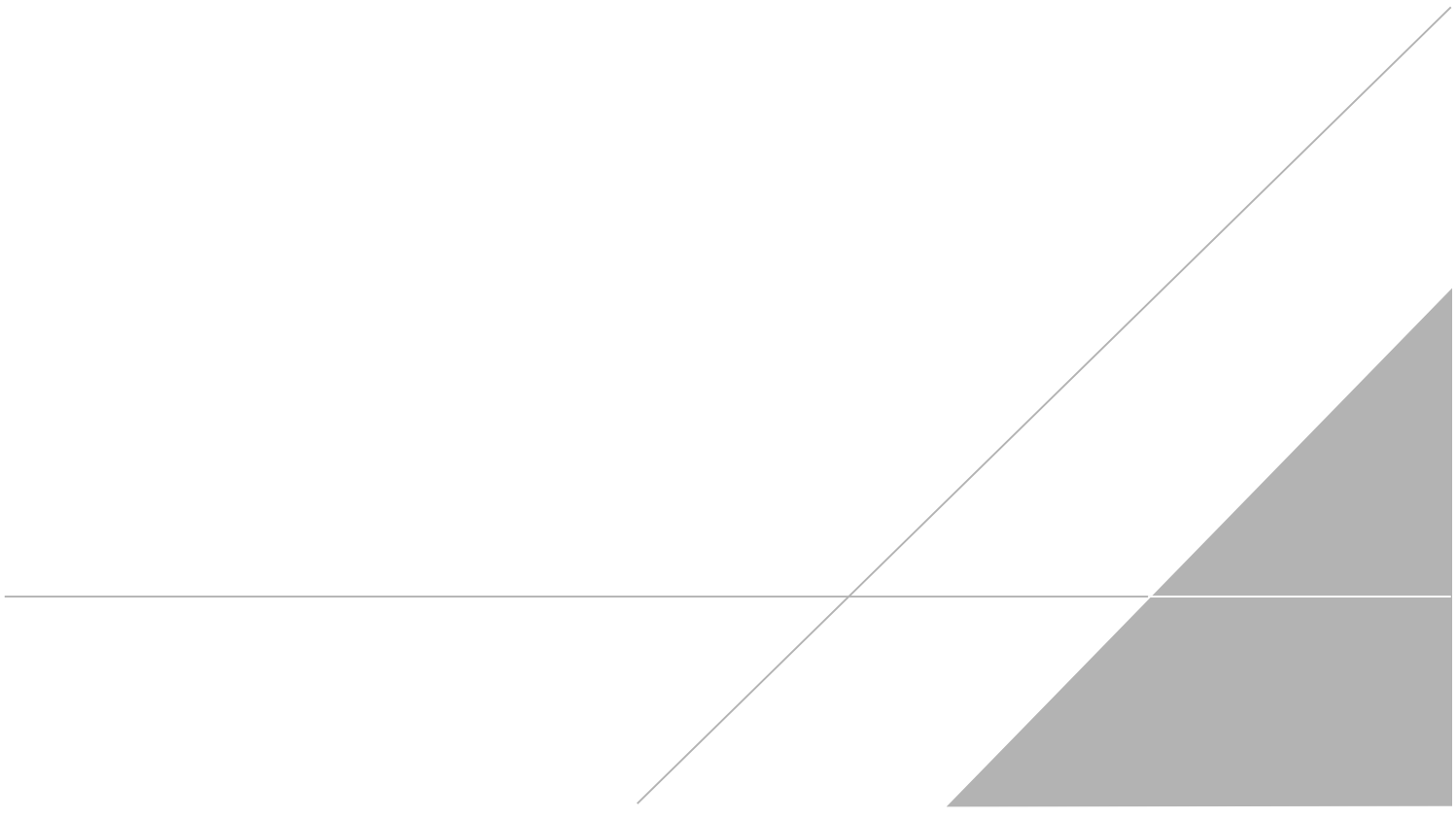
Insignificant Noise Sources

Table C.1 - Insignificant Noise Sources
Thorold Generating Station
Thorold, Ontario

Source ID	Source Description	Comment
Aux_Boil_M1_BO	ATCO Aux Boiler MUA 1 BO	Modelled partial levels below 10 dBA at all receptors
Aux_Boil_M2_BO	ATCO Aux Boiler MUA 2 BO	Modelled partial levels below 10 dBA at all receptors
Aux_Boil_M3_BO	ATCO Aux Boiler MUA 3 BO	Modelled partial levels below 10 dBA at all receptors
Aux_Boil_M4_BO	ATCO Aux Boiler MUA 4 BO	Modelled partial levels below 10 dBA at all receptors
Aux_Boil_MUA1	ATCO Aux Boiler MUA 1	Modelled partial levels below 10 dBA at all receptors
Aux_Boil_MUA2	ATCO Aux Boiler MUA 2	Modelled partial levels below 10 dBA at all receptors
Aux_Boil_MUA3	ATCO Aux Boiler MUA 3	Modelled partial levels below 10 dBA at all receptors
Aux_Boil_MUA4	ATCO Aux Boiler MUA 4	Modelled partial levels below 10 dBA at all receptors
Aux_Boil_F1	ATCO Aux Boiler Exhaust Fan 1	Modelled partial levels below 10 dBA at all receptors
Aux_Boil_F2	ATCO Aux Boiler Exhaust Fan 2	Modelled partial levels below 10 dBA at all receptors
CTG_R_Sil1	ATCO CTG Relief Silencer 1	Modelled partial levels below 10 dBA at all receptors
CTG_R_Sil2	ATCO CTG Relief Silencer 2	Modelled partial levels below 10 dBA at all receptors
HRSG_M1_BO	ATCO HRSG MUA - 1 BO	Modelled partial levels below 10 dBA at all receptors
HRSG_M3_BO	ATCO HRSG MUA - 3 BO	Modelled partial levels below 10 dBA at all receptors
HRSG_M5_BO	ATCO HRSG MUA - 5 BO	Modelled partial levels below 10 dBA at all receptors
HRSG_MUA1	ATCO HRSG MUA - 1	Modelled partial levels below 10 dBA at all receptors
HRSG_MUA3	ATCO HRSG MUA - 3	Modelled partial levels below 10 dBA at all receptors
HRSG_R_Sil1	ATCO HRSG Relief Silencer 01	Modelled partial levels below 10 dBA at all receptors
HRSG_R_Sil10	ATCO HRSG Relief Silencer 10	Modelled partial levels below 10 dBA at all receptors
HRSG_R_Sil11	ATCO HRSG Relief Silencer 11	Modelled partial levels below 10 dBA at all receptors
HRSG_R_Sil12	ATCO HRSG Relief Silencer 12	Modelled partial levels below 10 dBA at all receptors
HRSG_R_Sil13	ATCO HRSG Relief Silencer 13	Modelled partial levels below 10 dBA at all receptors
HRSG_R_Sil14	ATCO HRSG Relief Silencer 14	Modelled partial levels below 10 dBA at all receptors
HRSG_R_Sil2	ATCO HRSG Relief Silencer 02	Modelled partial levels below 10 dBA at all receptors
HRSG_R_Sil3	ATCO HRSG Relief Silencer 03	Modelled partial levels below 10 dBA at all receptors
HRSG_R_Sil4	ATCO HRSG Relief Silencer 04	Modelled partial levels below 10 dBA at all receptors
HRSG_R_Sil5	ATCO HRSG Relief Silencer 05	Modelled partial levels below 10 dBA at all receptors
HRSG_R_Sil6	ATCO HRSG Relief Silencer 06	Modelled partial levels below 10 dBA at all receptors
HRSG_R_Sil7	ATCO HRSG Relief Silencer 07	Modelled partial levels below 10 dBA at all receptors
HRSG_R_Sil8	ATCO HRSG Relief Silencer 08	Modelled partial levels below 10 dBA at all receptors
HRSG_R_Sil9	ATCO HRSG Relief Silencer 09	Modelled partial levels below 10 dBA at all receptors
ATCOSTG_R_Sil1	ATCO STG Relief Silencer 1	Modelled partial levels below 10 dBA at all receptors
ATCOSTG_R_Sil2	ATCO STG Relief Silencer 2	Modelled partial levels below 10 dBA at all receptors
Turb_M4_BO	ATCO Turbine MUA - 4 BO	Modelled partial levels below 10 dBA at all receptors
Turb_MUA1	ATCO Turbine MUA - 1	Modelled partial levels below 10 dBA at all receptors
Turb_MUA2	ATCO Turbine MUA - 2	Modelled partial levels below 10 dBA at all receptors
Turb_MUA3	ATCO Turbine MUA - 3	Modelled partial levels below 10 dBA at all receptors
Turb_MUA7	ATCO Turbine MUA - 7	Modelled partial levels below 10 dBA at all receptors
WTB_M1_BO	ATCO WTB MUA - 1 BO	Modelled partial levels below 10 dBA at all receptors
WTB_M2_BO	ATCO WTB MUA - 2 BO	Modelled partial levels below 10 dBA at all receptors
WTB_M3_BO	ATCO WTB MUA - 3 BO	Modelled partial levels below 10 dBA at all receptors
WTB_MUA2	ATCO WTB MUA - 2	Modelled partial levels below 10 dBA at all receptors
WTB_MUA3	ATCO WTB MUA - 3	Modelled partial levels below 10 dBA at all receptors
WTB_R_Hood	ATCO WTB Relief Hood	Modelled partial levels below 10 dBA at all receptors
WTB_R_Hood1	ATCO WTB Relief Hood 1	Modelled partial levels below 10 dBA at all receptors
WTB_R_Hood2	ATCO WTB Relief Hood 2	Modelled partial levels below 10 dBA at all receptors
WTB_RTU20	ATCO WTB RTU - 20 Ton	Modelled partial levels below 10 dBA at all receptors

APPENDIX D

Memorandum of Understanding



MEMORANDUM OF UNDERSTANDING
To Jointly Manage the Site-Wide Noise Assessment and Mitigation, as mandated by the Ontario Ministry of the Environment Between Abitibi-Consolidated Company of Canada and Thorold Cogen L.P

Recitals

Abitibi-Consolidated Company of Canada (ACCC) owns and operates a recycled newsprint mill (the "Mill") in Thorold, Ontario. The Mill has been present at this location (in various production modes and under various ownership groups) since 1913.

Thorold Cogen L.P., plans to build a cogeneration plant (the "Cogen") in Thorold adjacent the Mill. The Cogen plant will supply the Mill with electricity and steam and other services will be shared.

The Cogen will be built on land leased from the Mill, located at the south-west corner of the Mill's property.

Background

The ACCC Mill has been operational in its current location for many years, and as the City of Thorold has grown, residential areas have been developed in relatively close proximity to the south and west portions of the Mill property.

The Mill's Certificate of Approval (Air/Noise) required an Acoustic Audit Report be prepared and be submitted to the Ministry of Environment (MOE) by February 24, 2007. The Mill obtained an amendment to their Certificate of Approval (attached) which allows the preparation and submission of the Acoustic Audit Report to be deferred until not later than June 1, 2010. This deferral has been allowed, as several significant noise sources will be eliminated with the construction of the Cogen plant and the Mill's noise emissions will be in transition. If the Acoustic Audit Report demonstrates that the Mill is not in compliance with the MOE sound level limits, an Acoustic Assessment Report is to be prepared for the mill outlining a Noise Abatement Action Plan to be undertaken by ACCC. The Acoustic Assessment Report, and ensuing Noise Abatement Action Plan, are to be provided by ACCC to the MOE no later than 3 months following the completion of the Acoustic Audit Report.

It is anticipated that the Cogen will commence operation in the spring of 2010 and that it's Certificate of Approval (Air/Noise) would require an Acoustic Audit Report be prepared and submitted within 3 months of commercial operations.

Site-Wide Acoustic Audit

The MOE is now mandating that both the Cogen plant and the Mill (the "Combined Plants") be evaluated as a single site with respect to noise emissions. This is referred to as a Site-Wide Acoustic Audit, with both the Cogen and the Mill's site-wide noise emissions combined and assessed for compliance purposes.

Based on a meeting with the MOE on March 7, 2007 attended by Victor Low (MOE), Vic Schroter (MOE), Dino Gliosca (Northland Power), Jim Mulvale (Northland Power), Steve Titus (Aercoustic), Vince Gambino (Aercoustic), the noise targets that the Combined Plants will need to meet will be set as to being equal to the existing background noise levels (the "Sound Level Requirements"), ignoring the Combined Plants' contribution.

The purpose of this Memorandum of Understanding is to document the background noise levels and demonstrate how the noise emissions will be shared by both parties in order to satisfy the site-wide requirement. It is anticipated that each of the Cogen and the Mill will individually at their own expense need to implement noise mitigation measures to comply with the site-wide requirements.

Sound Level Limits

Based on noise assessment work conducted by Aercoustics, the most restrictive nighttime Sound Level Limits (per MOE NPC-205) for each receptor area are:

Table 1: Site-Wide Sound Level Limits

Receptor ID	Location	Site-Wide Sound Level Limit (dBA)
R01	Zone 1, Niagara Fall Rd - southeast	51
R02	Zone 3, homes west side of canal	45
R03	Zone 2, residential area further south	45
R04	Zone 1, Niagara Fall Rd - south	45

Based on noise data collected and interpreted by RWDI (not all areas considered by Aercoustics were examined by RWDI), the Mill's sound levels at certain receptors are estimated to be:

Table 2: Estimated Sound Levels from Mill

Location	Mill's Approximate Sound Level
Zone 1, Niagara Fall Rd - southeast	53 dBA
Zone 3, homes west side of canal	48 dBA

To achieve compliance with the Site-Wide Sound Level Limits outlined in Table 1, the sound level limits for each receptor location have been divided for each plant. The following table outlines the maximum sound level allowed at each receptor location from each plant [note: these are the most restrictive nighttime values]. This allocation of the sound level limits is based on the mitigated predictions for the Cogen Plant (prepared by Aercoustics), and the estimated sound levels of the Mill (collected by RWDI).

Table 3: Sound Level Limit Allocation

Receptor ID	Cogen Allocation	Mill Allocation
R01	44 dBA	50 dBA
R02	39 dBA	43 dBA
R03	42 dBA	42 dBA
R04	44 dBA	50 dBA

In order to achieve the Cogen allocation sound level limits, the Cogen plant will have to increase some of its noise mitigation measures, and these were outlined in the Upgraded Noise Controls for Site-Wide Assessment memo issued to the MOE on March 21,2007.

COMPLIANCE

Each of ACCC and Thorold Cogen shall be responsible for ensuring compliance with its individual certificate of approval (Air and Noise) and also agree to cooperate in a commercially reasonable manner to work to achieve compliance with the established Sound Level Limits, with respect to their Combined Plants' noise emissions.

ACCC and Thorold Cogen shall use commercially reasonable efforts to cooperate to work to achieve compliance consistent with the timelines detailed in the Mill's Certificate of Approval (Air/Noise), as amended, and the Cogen's Certificate of Approval (Air/Noise).

Rob Martin, General Manager
Abitibi-Consolidated Company
Of Canada

Date April 3, 2007

Sam Mantenuto, COO
Thorold Cogen L.P.

Date April 2, 2007

APPENDIX E

Sample Calculations from ISO 9613-2 Software

Receiver
Name: Niagara Falls Road Residence
ID: POR1
X: 646748.79 m
Y: 4774086.19 m
Z: 4.50 m

Point Sour ISO 9613 Name: ''G ID: ''GT_Comp_Fan''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
1	646597.4	4774234	5.1	0	DEN	A	101.3	0	0	0	0	57.5	2.6	-3	0	0	12.7	0	0	31.5
2	646597.4	4774234	5.1	1	DEN	A	101.3	0	0	0	0	58.1	2.7	-3	0	0	23.4	0	2	18
3	646597.4	4774234	5.1	1	DEN	A	101.3	0	0	0	0	59.8	3	-3	0	0	24.6	0	2	15

Point Sour ISO 9613 Name: ''G ID: ''GT_Exh_Diff_Fan''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
6	646591.6	4774236	5.1	0	DEN	A	99.7	0	0	0	0	57.7	1.1	-3	0	0	14.8	0	0	29.1
7	646591.6	4774236	5.1	1	DEN	A	99.7	0	0	0	0	57.9	1.1	-3	0	0	21.6	0	2	20.1
9	646591.6	4774236	5.1	1	DEN	A	99.7	0	0	0	0	59.6	1.3	-3	0	0	24.8	0	2	15

Point Sour ISO 9613 Name: ''G ID: ''GT_Trans''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
12	646616.1	4774248	2.5	0	DEN	A	98.4	0	0	0	0	57.4	0.7	-3	0	0	16.8	0	0	26.5
17	646616.1	4774248	2.5	1	DEN	A	98.4	0	0	0	0	58.9	0.8	-3.5	0	0	22.4	0	2	17.7
32	646616.1	4774248	2.5	1	DEN	A	98.4	0	0	0	0	60.4	0.9	-3.9	0	0	24.4	0	2	14.5

Point Sour ISO 9613 Name: ''S ID: ''TG_Trans''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
34	646605.9	4774202	2.5	0	DEN	A	95.4	0	0	0	0	56.3	0.6	-3	0	0	18.3	0	0	23.2
40	646605.9	4774202	2.5	1	DEN	A	95.4	0	0	0	0	58	0.7	-3.2	0	0	22.2	0	2	15.6

Point Sour ISO 9613 Name: ''Tl ID: ''Boiler_HG500Exh''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
43	646568.9	4774284	27.59	0	DEN	A	96.5	0	0	0	0	59.6	1.4	-3	0	0	0	0	0	38.6

Point Sour ISO 9613 Name: ''H ID: ''HRSG_Ex''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
46	646518.3	4774228	61.06	0	DEN	A	93.9	0	0	0	0	59.8	0.5	-3	0	0	4.8	0	0	31.7

Point Sour ISO 9613 Name: ''A ID: ''Air_Ej_ST''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
48	646570.7	4774265	24.61	0	DEN	A	84	0	0	0	0	59.1	1.3	-3	0	0	0	0	0	26.7

Point Sour ISO 9613 Name: ''A ID: ''Aux_Trans1''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
51	646624.6	4774260	2.5	0	DEN	A	82.4	0	0	0	0	57.6	0.7	-3.1	0	0	0	0	0	27.1
53	646624.6	4774260	2.5	1	DEN	A	82.4	0	0	0	0	59.4	0.9	-3.6	0	0	24.1	0	2	-0.4
55	646624.6	4774260	2.5	1	DEN	A	82.4	0	0	0	0	60.8	1	-4	0	0	24.8	0	2	-2.3

Point Sour ISO 9613 Name: ''A ID: ''Aux_Trans2"

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
59	646615.5	4774261	2.5	0	DEN	A	82.4	0	0	0	0	57.8	0.8	-3.1	0	0	20.2	0	0	6.7
61	646615.5	4774261	2.5	1	DEN	A	82.4	0	0	0	0	59.1	0.9	-3.5	0	0	16.7	0	2	7.2

Point Sour ISO 9613 Name: ''R ID: ''F1"

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
70	646600.2	4774266	9	0	DEN	A	81.9	0	0	0	0	58.4	2	-3	0	0	10.3	0	0	14.2
80	646600.2	4774266	9	1	DEN	A	81.9	0	0	0	0	58.7	2.1	-3	0	0	7.8	0	2	14.3

vert. Area ISO 9613 Name: ''G ID: ''GT_In''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
86	646595.8	4774216	14.55	0	DEN	A	64.7	11.3	0	3	0	57.1	1.1	-3	0	0	0	0	0	23.8
90	646596.7	4774221	14.55	1	DEN	A	64.7	4.4	0	3	0	57.9	1.1	-3	0	0	24.6	0	2	-10.6
92	646596.2	4774219	14.55	1	DEN	A	64.7	4.3	0	3	0	57.9	1.1	-3	0	0	24.6	0	2	-10.6
108	646595.7	4774216	14.55	1	DEN	A	64.7	5.3	0	3	0	57.8	1.1	-3	0	0	23.8	0	2	-8.8
124	646595.1	4774212	14.55	1	DEN	A	64.7	6.6	0	3	0	57.7	1.1	-3	0	0	23.7	0	2	-7.3
131	646594.7	4774210	14.55	1	DEN	A	64.7	-13	0	3	0	57.7	1.1	-3	0	0	0	0	2	-3.2
135	646596.4	4774220	14.55	1	DEN	A	64.7	7.8	0	3	0	59.6	1.3	-3	0	0	24.8	0	2	-9.3
137	646595.8	4774216	15.55	0	DEN	A	64.7	11.3	0	3	0	57.1	1.1	-3	0	0	0	0	0	23.8
145	646596.7	4774221	15.55	1	DEN	A	64.7	4.4	0	3	0	57.9	1.1	-3	0	0	24.4	0	2	-10.4
150	646596.2	4774219	15.55	1	DEN	A	64.7	4.3	0	3	0	57.9	1.1	-3	0	0	24.3	0	2	-10.4
157	646595.9	4774217	15.55	1	DEN	A	64.7	2.2	0	3	0	57.8	1.1	-3	0	0	23.5	0	2	-11.6
174	646595.6	4774215	15.55	1	DEN	A	64.7	2.3	0	3	0	57.8	1.1	-3	0	0	23.5	0	2	-11.4
182	646595.1	4774212	15.55	1	DEN	A	64.7	6.6	0	3	0	57.7	1.1	-3	0	0	23.3	0	2	-6.9
184	646594.7	4774210	15.55	1	DEN	A	64.7	-13	0	3	0	57.7	1.1	-3	0	0	0	0	2	-3.2
191	646596.4	4774220	15.55	1	DEN	A	64.7	7.8	0	3	0	59.6	1.3	-3	0	0	24.6	0	2	-9.1
195	646595.8	4774216	16.55	0	DEN	A	64.7	11.3	0	3	0	57.1	1.1	-3	0	0	0	0	0	23.8
211	646596.7	4774221	16.55	1	DEN	A	64.7	4.4	0	3	0	57.9	1.1	-3	0	0	24.1	0	2	-10.1
222	646596.2	4774219	16.55	1	DEN	A	64.7	4.3	0	3	0	57.9	1.1	-3	0	0	24.1	0	2	-10.1
225	646595.7	4774216	16.55	1	DEN	A	64.7	5.3	0	3	0	57.8	1.1	-3	0	0	22.9	0	2	-7.9
227	646595.1	4774212	16.55	1	DEN	A	64.7	6.6	0	3	0	57.7	1.1	-3	0	0	22.7	0	2	-6.4
232	646594.7	4774210	16.55	1	DEN	A	64.7	-13	0	3	0	57.7	1.1	-3	0	0	0	0	2	-3.2
236	646596.4	4774220	16.55	1	DEN	A	64.7	7.8	0	3	0	59.6	1.3	-3	0	0	24.4	0	2	-8.9
245	646595.8	4774216	13.55	0	DEN	A	64.7	11.3	0	3	0	57.1	1.1	-3	0	0	0	0	0	23.8
248	646596.7	4774221	13.55	1	DEN	A	64.7	4.4	0	3	0	57.9	1.1	-3	0	0	24.8	0	2	-10.7
255	646596.2	4774219	13.55	1	DEN	A	64.7	4.3	0	3	0	57.9	1.1	-3	0	0	24.7	0	2	-10.8
262	646595.7	4774216	13.55	1	DEN	A	64.7	5.3	0	3	0	57.8	1.1	-3	0	0	24	0	2	-9
269	646595.1	4774212	13.55	1	DEN	A	64.7	6.6	0	3	0	57.7	1.1	-3	0	0	23.9	0	2	-7.5
272	646594.7	4774210	13.55	1	DEN	A	64.7	-13	0	3	0	57.7	1.1	-3	0	0	0	0	2	-3.2
275	646596.4	4774220	13.55	1	DEN	A	64.7	7.8	0	3	0	59.6	1.3	-3	0	0	24.9	0	2	-9.4
281	646595.8	4774216	11.55	0	DEN	A	64.7	11.3	0	3	0	57.1	1.1	-3	0	0	0	0	0	23.8
284	646596.7	4774221	11.55	1	DEN	A	64.7	4.4	0	3	0	57.9	1.1	-3	0	0	24.9	0	2	-10.9
289	646596.2	4774219	11.55	1	DEN	A	64.7	4.3	0	3	0	57.9	1.1	-3	0	0	24.9	0	2	-10.9
295	646595.7	4774216	11.55	1	DEN	A	64.7	5.3	0	3	0	57.8	1.1	-3	0	0	24.3	0	2	-9.3
300	646595.1	4774212	11.55	1	DEN	A	64.7	6.6	0	3	0	57.7	1.1	-3	0	0	24.3	0	2	-7.9
303	646594.7	4774210	11.55	1	DEN	A	64.7	-13	0	3	0	57.7	1.1	-3	0	0	4.8	0	2	-7.9
307	646596.4	4774220	11.55	1	DEN	A	64.7	7.8	0	3	0	59.6	1.3	-3	0	0	25	0	2	-9.5
310	646595.8	4774216	10.55	0	DEN	A	64.7	11.3	0	3	0	57.1	1.1	-3	0	0	4.8	0	0	19
313	646596.7	4774221	10.55	1	DEN	A	64.7	4.4	0	3	0	57.9	1.1	-3	0	0	24.9	0	2	-10.9
319	646596.2	4774219	10.55	1	DEN	A	64.7	4.3	0	3	0	57.9	1.1	-3	0	0	24.9	0	2	-10.9

323	646595.7	4774216	10.55	1	DEN	A	64.7	5.3	0	3	0	57.8	1.1	-3	0	0	24.5	0	2	-9.5
327	646595.1	4774212	10.55	1	DEN	A	64.7	6.6	0	3	0	57.7	1.1	-3	0	0	24.4	0	2	-8
329	646594.7	4774210	10.55	1	DEN	A	64.7	-13	0	3	0	57.7	1.1	-3	0	0	4.8	0	2	-8
333	646596.4	4774220	10.55	1	DEN	A	64.7	7.8	0	3	0	59.6	1.3	-3	0	0	25	0	2	-9.5
336	646595.8	4774216	12.55	0	DEN	A	64.7	11.3	0	3	0	57.1	1.1	-3	0	0	0	0	0	23.8
340	646596.7	4774221	12.55	1	DEN	A	64.7	4.4	0	3	0	57.9	1.1	-3	0	0	24.9	0	2	-10.8
342	646596.2	4774219	12.55	1	DEN	A	64.7	4.3	0	3	0	57.9	1.1	-3	0	0	24.9	0	2	-10.9
344	646595.7	4774216	12.55	1	DEN	A	64.7	5.3	0	3	0	57.8	1.1	-3	0	0	24.2	0	2	-9.2
346	646595.1	4774212	12.55	1	DEN	A	64.7	6.6	0	3	0	57.7	1.1	-3	0	0	24.1	0	2	-7.7
349	646594.7	4774210	12.55	1	DEN	A	64.7	-13	0	3	0	57.7	1.1	-3	0	0	0	0	2	-3.2
352	646596.4	4774220	12.55	1	DEN	A	64.7	7.8	0	3	0	59.6	1.3	-3	0	0	24.9	0	2	-9.4
358	646595.8	4774216	19.55	0	DEN	A	64.7	11.3	0	3	0	57.1	1.1	-3	0	0	0	0	0	23.8
361	646596.7	4774221	19.55	1	DEN	A	64.7	4.4	0	3	0	57.9	1.2	-3	0	0	21	0	2	-6.9
366	646596.2	4774219	19.55	1	DEN	A	64.7	4.3	0	3	0	57.9	1.1	-3	0	0	20.8	0	2	-6.9
377	646595.7	4774216	19.55	1	DEN	A	64.7	5.3	0	3	0	57.8	1.1	-3	0	0	19.1	0	2	-4.2
379	646595.1	4774212	19.55	1	DEN	A	64.7	6.6	0	3	0	57.8	1.1	-3	0	0	19	0	2	-2.6
381	646594.7	4774210	19.55	1	DEN	A	64.7	-13	0	3	0	57.7	1.1	-3	0	0	0	0	2	-3.2
386	646596.4	4774220	19.55	1	DEN	A	64.7	7.8	0	3	0	59.6	1.3	-3	0	0	21.7	0	2	-6.2
390	646595.8	4774216	20.55	0	DEN	A	64.7	11.3	0	3	0	57.1	1.1	-3	0	0	0	0	0	23.8
394	646596.7	4774221	20.55	1	DEN	A	64.7	4.4	0	3	0	57.9	1.2	-3	0	0	16.8	0	2	-2.7
396	646596.2	4774219	20.55	1	DEN	A	64.7	4.3	0	3	0	57.9	1.1	-3	0	0	16.6	0	2	-2.7
398	646595.7	4774216	20.55	1	DEN	A	64.7	5.3	0	3	0	57.8	1.1	-3	0	0	15	0	2	0
401	646595.1	4774212	20.55	1	DEN	A	64.7	6.6	0	3	0	57.8	1.1	-3	0	0	14.9	0	2	1.5
403	646594.7	4774210	20.55	1	DEN	A	64.7	-13	0	3	0	57.7	1.1	-3	0	0	0	0	2	-3.2
408	646596.4	4774220	20.55	1	DEN	A	64.7	7.8	0	3	0	59.6	1.3	-3	0	0	18.3	0	2	-2.8
411	646595.8	4774216	17.55	0	DEN	A	64.7	11.3	0	3	0	57.1	1.1	-3	0	0	0	0	0	23.8
413	646596.7	4774221	17.55	1	DEN	A	64.7	4.4	0	3	0	57.9	1.2	-3	0	0	23.7	0	2	-9.6
418	646596.2	4774219	17.55	1	DEN	A	64.7	4.3	0	3	0	57.9	1.1	-3	0	0	23.6	0	2	-9.6
420	646595.7	4774216	17.55	1	DEN	A	64.7	5.3	0	3	0	57.8	1.1	-3	0	0	22.1	0	2	-7.2
422	646595.1	4774212	17.55	1	DEN	A	64.7	6.6	0	3	0	57.8	1.1	-3	0	0	22	0	2	-5.6
424	646594.7	4774210	17.55	1	DEN	A	64.7	-13	0	3	0	57.7	1.1	-3	0	0	0	0	2	-3.2
427	646596.4	4774220	17.55	1	DEN	A	64.7	7.8	0	3	0	59.6	1.3	-3	0	0	24	0	2	-8.6
432	646595.8	4774216	18.55	0	DEN	A	64.7	11.3	0	3	0	57.1	1.1	-3	0	0	0	0	0	23.8
434	646596.7	4774221	18.55	1	DEN	A	64.7	4.4	0	3	0	57.9	1.2	-3	0	0	22.7	0	2	-8.7
436	646596.2	4774219	18.55	1	DEN	A	64.7	4.3	0	3	0	57.9	1.1	-3	0	0	22.6	0	2	-8.6
439	646595.7	4774216	18.55	1	DEN	A	64.7	5.3	0	3	0	57.8	1.1	-3	0	0	21	0	2	-6.1
441	646595.1	4774212	18.55	1	DEN	A	64.7	6.6	0	3	0	57.8	1.1	-3	0	0	20.9	0	2	-4.5
445	646594.7	4774210	18.55	1	DEN	A	64.7	-13	0	3	0	57.7	1.1	-3	0	0	0	0	2	-3.2
448	646596.4	4774220	18.55	1	DEN	A	64.7	7.8	0	3	0	59.6	1.3	-3	0	0	23.2	0	2	-7.7

Point Sour ISO 9613 Name: ''B ID: ''Boiler_Ex1''

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
450	646525.4	4774256	61.06	0	DEN	A	80	0	0	0	0	60.1	2.6	-3	0	0	5	0	0	15.2

Point Sour ISO 9613 Name: ''B ID: ''Boiler_Ex2''

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
452	646529.6	4774274	61.06	0	DEN	A	80	0	0	0	0	60.4	2.6	-3	0	0	4.9	0	0	15.1

Point Sour ISO 9613 Name: ''H ID: ''HoggerVent''

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
454	646564.3	4774279	20.99	0	DEN	A	77.8	0	0	0	0	59.5	0.3	-3	0	0	9.3	0	0	11.8

Receiver
Name: Patricia Street Residence
ID: POR7
X: 646344.92 m
Y: 4775030.00 m
Z: 4.50 m

Point Sour ISO 9613 Name: ''G ID: ''GT_Comp_Fan''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
4	646597.4	4774234	5.1	0	DEN	A	101.3	0	0	0	0	69.4	4.8	-5	0	0	20.2	0	0	11.8
5	646597.4	4774234	5.1	1	DEN	A	101.3	0	0	0	0	69.4	4.8	-5	0	0	21.6	0	2	8.4

Point Sour ISO 9613 Name: ''G ID: ''GT_Exh_Diff_Fan''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
8	646591.6	4774236	5.1	0	DEN	A	99.7	0	0	0	0	69.4	2.6	-5	0	0	22.5	0	0	10.2
11	646591.6	4774236	5.1	1	DEN	A	99.7	0	0	0	0	69.4	2.6	-5	0	0	24	0	2	6.6

Point Sour ISO 9613 Name: ''G ID: ''GT_Trans''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
15	646616.1	4774248	2.5	0	DEN	A	98.4	0	0	0	0	69.4	2.2	-5.2	0	0	20.1	0	0	12

Point Sour ISO 9613 Name: ''Tl ID: ''Boiler_HG500Exh''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
20	646568.9	4774284	27.59	0	DEN	A	96.5	0	0	0	0	68.8	2.9	-3	0	0	0	0	0	27.8
22	646568.9	4774284	27.59	1	DEN	A	96.5	0	0	0	0	69.7	3.1	-3	0	0	0	0	2	24.8

Point Sour ISO 9613 Name: ''S ID: ''TG_Trans''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
31	646605.9	4774202	2.5	0	DEN	A	95.4	0	0	0	0	69.8	2.2	-5.3	0	0	22.1	0	0	6.5

Point Sour ISO 9613 Name: ''H ID: ''HRSG_Ex''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
37	646518.3	4774228	61.06	0	DEN	A	93.9	0	0	0	0	69.3	1.2	-3	0	0	4.8	0	0	21.6

Point Sour ISO 9613 Name: ''A ID: ''Air_Ej_ST''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
44	646570.7	4774265	24.61	0	DEN	A	84	0	0	0	0	69	2.8	-3	0	0	0	0	0	15.1
49	646570.7	4774265	24.61	1	DEN	A	84	0	0	0	0	69.5	2.9	-3	0	0	0	0	2	12.6

Point Sour ISO 9613 Name: ''A ID: ''Aux_Trans2''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
57	646615.5	4774261	2.5	0	DEN	A	82.4	0	0	0	0	69.2	2.3	-5.2	0	0	9.1	0	0	6.9

Point Sour ISO 9613 Name: ''A ID: ''Aux_Trans1''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
60	646624.6	4774260	2.5	0	DEN	A	82.4	0	0	0	0	69.3	2.3	-5.2	0	0	0	0	0	16

Point Sour ISO 9613 Name: ''R ID: ''F1''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
62	646600.2	4774266	9	0	DEN	A	81.9	0	0	0	0	69.1	4.9	-4.5	0	0	21.1	0	0	-8.7

Point Sour ISO 9613 Name: ''B ID: ''Boiler_Ex2''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
67	646529.6	4774274	61.06	0	DEN	A	80	0	0	0	0	68.9	4.6	-3	0	0	4.8	0	0	4.7

Point Sour ISO 9613 Name: ''B ID: ''Boiler_Ex1''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
72	646525.4	4774256	61.06	0	DEN	A	80	0	0	0	0	69	4.7	-3	0	0	4.8	0	0	4.5

vert. Area ISO 9613 Name: ''G ID: ''GT_In''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
79	646595.9	4774216	13.55	0	DEN	A	64.7	11	0	3	0	69.6	3	-4.1	0	0	21.5	0	0	-11.3
97	646594.8	4774210	13.55	0	DEN	A	64.7	-1.2	0	3	0	69.7	3	-4.1	0	0	21.8	0	0	-24
99	646595.9	4774216	14.55	0	DEN	A	64.7	11	0	3	0	69.6	3	-4	0	0	21.5	0	0	-11.4
111	646594.8	4774210	14.55	0	DEN	A	64.7	-1.2	0	3	0	69.7	3	-4	0	0	21.7	0	0	-24
114	646595.9	4774216	15.55	0	DEN	A	64.7	11	0	3	0	69.6	3	-3.9	0	0	21.3	0	0	-11.4
116	646594.8	4774210	15.55	0	DEN	A	64.7	-1.2	0	3	0	69.7	3	-3.9	0	0	21.7	0	0	-24
120	646595.9	4774216	10.55	0	DEN	A	64.7	11	0	3	0	69.6	3	-4.4	0	0	23	0	0	-12.5
126	646594.8	4774210	10.55	0	DEN	A	64.7	-1.2	0	3	0	69.7	3	-4.4	0	0	23.1	0	0	-25
139	646595.9	4774216	11.55	0	DEN	A	64.7	11	0	3	0	69.6	3	-4.3	0	0	22.4	0	0	-12
151	646594.8	4774210	11.55	0	DEN	A	64.7	-1.2	0	3	0	69.7	3	-4.3	0	0	22.6	0	0	-24.5
165	646595.9	4774216	12.55	0	DEN	A	64.7	11	0	3	0	69.6	3	-4.2	0	0	21.6	0	0	-11.3
170	646594.8	4774210	12.55	0	DEN	A	64.7	-1.2	0	3	0	69.7	3	-4.2	0	0	21.9	0	0	-24
176	646595.9	4774216	19.55	0	DEN	A	64.7	11	0	3	0	69.6	3	-3.5	0	0	19.6	0	0	-10
193	646594.8	4774210	19.55	0	DEN	A	64.7	-1.2	0	3	0	69.7	3	-3.5	0	0	19.7	0	0	-22.5
197	646595.9	4774216	20.55	0	DEN	A	64.7	11	0	3	0	69.6	3	-3.4	0	0	15.2	0	0	-5.7
199	646594.8	4774210	20.55	0	DEN	A	64.7	-1.2	0	3	0	69.7	3	-3.4	0	0	15.6	0	0	-18.5
206	646595.9	4774216	18.55	0	DEN	A	64.7	11	0	3	0	69.6	3	-3.6	0	0	19.9	0	0	-10.2
213	646594.8	4774210	18.55	0	DEN	A	64.7	-1.2	0	3	0	69.7	3	-3.6	0	0	20.2	0	0	-22.8
216	646595.9	4774216	16.55	0	DEN	A	64.7	11	0	3	0	69.6	3	-3.8	0	0	21.1	0	0	-11.2
223	646594.8	4774210	16.55	0	DEN	A	64.7	-1.2	0	3	0	69.7	3	-3.8	0	0	21.4	0	0	-23.9
231	646595.9	4774216	17.55	0	DEN	A	64.7	11	0	3	0	69.6	3	-3.7	0	0	20.6	0	0	-10.9
243	646594.8	4774210	17.55	0	DEN	A	64.7	-1.2	0	3	0	69.7	3	-3.7	0	0	20.9	0	0	-23.5

Point Sour ISO 9613 Name: ''H ID: ''HoggerVent''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
254	646564.3	4774279	20.99	0	DEN	A	77.8	0	0	0	0	68.9	0.7	-3.1	0	0	0	0	0	11.3
256	646564.3	4774279	20.99	1	DEN	A	77.8	0	0	0	0	68.9	0.7	-3.1	0	0	0	0	2	9.2
263	646564.3	4774279	20.99	1	DEN	A	77.8	0	0	0	0	69.6	0.8	-3.3	0	0	0	0	2	8.7

Receiver
Name: Beaver Street Residence
ID: POR3
X: 646658.94 m
Y: 4773992.74 m
Z: 4.50 m

Point Sour ISO 9613 Name: "G ID: "GT_Comp_Fan"

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
89	646597.4	4774234	5.1	0	DEN	A	101.3	0	0	0	0	58.9	2.9	-3	0	0	19.6	0	0	22.9
96	646597.4	4774234	5.1	1	DEN	A	101.3	0	0	0	0	59.2	2.9	-3	0	0	22.7	0	2	17.5

Point Sour ISO 9613 Name: "G ID: "GT_Exh_Diff_Fan"

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
104	646591.6	4774236	5.1	0	DEN	A	99.7	0	0	0	0	59	1.2	-3	0	0	21.3	0	0	21.2
106	646591.6	4774236	5.1	1	DEN	A	99.7	0	0	0	0	59.1	1.2	-3	0	0	23.9	0	2	16.5
113	646591.6	4774236	5.1	1	DEN	A	99.7	0	0	0	0	60.3	1.3	-3	0	0	7.4	0	3.6	30.1

Point Sour ISO 9613 Name: "G ID: "GT_Trans"

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
119	646616.1	4774248	2.5	0	DEN	A	98.4	0	0	0	0	59.3	0.8	-3.6	0	0	17.5	0	0	24.3
121	646616.1	4774248	2.5	1	DEN	A	98.4	0	0	0	0	59.9	0.9	-3.7	0	0	23.9	0	2	15.4
123	646616.1	4774248	2.5	1	DEN	A	98.4	0	0	0	0	59.6	0.9	-3.7	0	0	22.8	0	8.5	10.2

Point Sour ISO 9613 Name: "S ID: "TG_Trans"

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
136	646605.9	4774202	2.5	0	DEN	A	95.4	0	0	0	0	57.7	0.7	-3.1	0	0	17.4	0	0	22.6

Point Sour ISO 9613 Name: "Tl ID: "Boiler_HG500Exh"

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
138	646568.9	4774284	27.59	0	DEN	A	96.5	0	0	0	0	60.7	1.5	-3	0	0	0	0	0	37.3

Point Sour ISO 9613 Name: "H ID: "HRSG_Ex"

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
141	646518.3	4774228	61.06	0	DEN	A	93.9	0	0	0	0	59.9	0.5	-3	0	0	4.8	0	0	31.6

Point Sour ISO 9613 Name: "A ID: "Air_Ej_ST"

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
143	646570.7	4774265	24.61	0	DEN	A	84	0	0	0	0	60.1	1.4	-3	0	0	4.8	0	0	20.7

Point Sour ISO 9613 Name: "A ID: "Aux_Trans1"

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
144	646624.6	4774260	2.5	0	DEN	A	82.4	0	0	0	0	59.6	0.9	-3.7	0	0	12.2	0	0	13.2
149	646624.6	4774260	2.5	1	DEN	A	82.4	0	0	0	0	60.4	1	-3.9	0	0	24.5	0	2.2	-1.8
152	646624.6	4774260	2.5	1	DEN	A	82.4	0	0	0	0	60.1	1	-3.8	0	0	24	0	6.5	-5.4

Point Sour ISO 9613 Name: "A ID: "Aux_Trans2"

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
155	646615.5	4774261	2.5	0	DEN	A	82.4	0	0	0	0	59.7	0.9	-3.7	0	0	20.7	0	0	4.8
162	646615.5	4774261	2.5	1	DEN	A	82.4	0	0	0	0	60.2	1	-3.8	0	0	24.5	0	2	-1.6

Point Sour ISO 9613 Name: "R ID: "F1"

Nr.	X (m)	Y (m)	Z (m)	Refl.		DEN	Freq. (Hz)	Lw dB(A)	l/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
168	646600.2	4774266	9		0	DEN	A	81.9	0	0	0	0	59.9	2.3	-3	0	0	2.9	0	0	19.8
172	646600.2	4774266	9		1	DEN	A	81.9	0	0	0	0	60.1	2.3	-3	0	0	7.1	0	2	13.4
178	646600.2	4774266	9		1	DEN	A	81.9	0	0	0	0	60.9	2.5	-3	0	0	25	0	2	-5.4

vert. Area ISO 9613 Name: ''G ID: ''GT_In''

Nr.	X (m)	Y (m)	Z (m)	Refl.		DEN	Freq. (Hz)	Lw dB(A)	l/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
185	646595.8	4774216	14.55		0	DEN	A	64.7	11.3	0	3	0	58.3	1.2	-3	0	0	0	0	0	22.4
189	646596.7	4774222	14.55		1	DEN	A	64.7	3.4	0	3	0	58.9	1.2	-3	0	0	24.1	0	2	-12.2
220	646595.6	4774215	14.55		1	DEN	A	64.7	10.5	0	3	0	58.7	1.2	-3	0	0	23.8	0	2	-4.5
230	646594.7	4774210	14.55		1	DEN	A	64.7	-13	0	3	0	58.5	1.2	-3	0	0	0	0	2	-4
233	646595.8	4774216	15.55		0	DEN	A	64.7	11.3	0	3	0	58.3	1.2	-3	0	0	0	0	0	22.4
239	646596.7	4774222	15.55		1	DEN	A	64.7	3	0	3	0	58.9	1.2	-3	0	0	23.9	0	2	-12.3
259	646595.7	4774215	15.55		1	DEN	A	64.7	10.6	0	3	0	58.7	1.2	-3	0	0	23.5	0	2	-4.1
266	646594.7	4774210	15.55		1	DEN	A	64.7	-13	0	3	0	58.5	1.2	-3	0	0	0	0	2	-4
282	646595.8	4774216	16.55		0	DEN	A	64.7	11.3	0	3	0	58.3	1.2	-3	0	0	0	0	0	22.4
285	646596.7	4774222	16.55		1	DEN	A	64.7	3.4	0	3	0	58.9	1.2	-3	0	0	23.5	0	2	-11.5
291	646595.6	4774215	16.55		1	DEN	A	64.7	10.5	0	3	0	58.7	1.2	-3	0	0	22.9	0	2	-3.6
305	646594.7	4774210	16.55		1	DEN	A	64.7	-13	0	3	0	58.5	1.2	-3	0	0	0	0	2	-4
309	646595.8	4774216	13.55		0	DEN	A	64.7	11.3	0	3	0	58.3	1.2	-3	0	0	0	0	0	22.5
312	646596.7	4774222	13.55		1	DEN	A	64.7	3.4	0	3	0	58.9	1.2	-3	0	0	24.3	0	2	-12.4
314	646595.6	4774215	13.55		1	DEN	A	64.7	10.5	0	3	0	58.7	1.2	-3	0	0	24	0	2	-4.7
321	646594.7	4774210	13.55		1	DEN	A	64.7	-13	0	3	0	58.5	1.2	-3	0	0	0	0	2	-4
328	646595.8	4774216	11.55		0	DEN	A	64.7	11.3	0	3	0	58.3	1.2	-3	0	0	0	0	0	22.5
335	646596.7	4774222	11.55		1	DEN	A	64.7	3.4	0	3	0	58.9	1.2	-3	0	0	24.6	0	2	-12.7
337	646595.6	4774215	11.55		1	DEN	A	64.7	10.5	0	3	0	58.6	1.2	-3	0	0	24.3	0	2	-5
339	646594.7	4774210	11.55		1	DEN	A	64.7	-13	0	3	0	58.5	1.2	-3	0	0	0	0	2	-4
345	646595.8	4774216	10.55		0	DEN	A	64.7	11.3	0	3	0	58.3	1.2	-3	0	0	4.8	0	0	17.7
350	646596.7	4774222	10.55		1	DEN	A	64.7	3.4	0	3	0	58.9	1.2	-3	0	0	24.8	0	2	-12.8
353	646595.6	4774215	10.55		1	DEN	A	64.7	10.5	0	3	0	58.6	1.2	-3	0	0	24.5	0	2	-5.2
356	646594.7	4774210	10.55		1	DEN	A	64.7	-13	0	3	0	58.5	1.2	-3	0	0	4.8	0	2	-8.8
362	646595.8	4774216	12.55		0	DEN	A	64.7	11.3	0	3	0	58.3	1.2	-3	0	0	0	0	0	22.5
368	646596.7	4774222	12.55		1	DEN	A	64.7	3.4	0	3	0	58.9	1.2	-3	0	0	24.5	0	2	-12.5
373	646595.6	4774215	12.55		1	DEN	A	64.7	10.5	0	3	0	58.7	1.2	-3	0	0	24.2	0	2	-4.9
375	646594.7	4774210	12.55		1	DEN	A	64.7	-13	0	3	0	58.5	1.2	-3	0	0	0	0	2	-4
380	646595.8	4774216	19.55		0	DEN	A	64.7	11.3	0	3	0	58.3	1.2	-3	0	0	0	0	0	22.4
383	646596.7	4774222	19.55		1	DEN	A	64.7	3.4	0	3	0	58.9	1.2	-3	0	0	19.8	0	2	-7.8
393	646595.6	4774215	19.55		1	DEN	A	64.7	10.5	0	3	0	58.7	1.2	-3	0	0	19.1	0	2	0.2
397	646594.7	4774210	19.55		1	DEN	A	64.7	-13	0	3	0	58.5	1.2	-3	0	0	0	0	2	-4
405	646595.8	4774216	20.55		0	DEN	A	64.7	11.3	0	3	0	58.3	1.2	-3	0	0	0	0	0	22.4
410	646596.7	4774222	20.55		1	DEN	A	64.7	3.4	0	3	0	58.9	1.2	-3	0	0	15.3	0	2	-3.3
417	646595.6	4774215	20.55		1	DEN	A	64.7	10.5	0	3	0	58.7	1.2	-3	0	0	14.9	0	2	4.4
419	646594.7	4774210	20.55		1	DEN	A	64.7	-13	0	3	0	58.5	1.2	-3	0	0	0	0	2	-4
425	646595.8	4774216	17.55		0	DEN	A	64.7	11.3	0	3	0	58.3	1.2	-3	0	0	0	0	0	22.4
429	646596.7	4774222	17.55		1	DEN	A	64.7	3.4	0	3	0	58.9	1.2	-3	0	0	22.8	0	2	-10.8
431	646595.6	4774215	17.55		1	DEN	A	64.7	10.5	0	3	0	58.7	1.2	-3	0	0	22.1	0	2	-2.9
433	646594.7	4774210	17.55		1	DEN	A	64.7	-13	0	3	0	58.5	1.2	-3	0	0	0	0	2	-4
438	646595.8	4774216	18.55		0	DEN	A	64.7	11.3	0	3	0	58.3	1.2	-3	0	0	0	0	0	22.4
442	646596.7	4774222	18.55		1	DEN	A	64.7	3.4	0	3	0	58.9	1.2	-3	0	0	21.7	0	2	-9.7
444	646595.6	4774215	18.55		1	DEN	A	64.7	10.5	0	3	0	58.7	1.2	-3	0	0	21	0	2	-1.7
447	646594.7	4774210	18.55		1	DEN	A	64.7	-13	0	3	0	58.5	1.2	-3	0	0	0	0	2	-4

Point Sour ISO 9613 Name: ''B ID: ''Boiler_Ex1''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
451	646525.4	4774256	61.06	0	DEN	A	80	0	0	0	0	60.6	2.7	-3	0	0	4.9	0	0	14.8

Point Sour ISO 9613 Name: "B ID: "Boiler_Ex2"

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
453	646529.6	4774274	61.06	0	DEN	A	80	0	0	0	0	60.9	2.7	-3	0	0	4.8	0	0	14.5

Point Sour ISO 9613 Name: "H ID: "HoggerVent"

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
455	646564.3	4774279	20.99	0	DEN	A	77.8	0	0	0	0	60.6	0.3	-3	0	0	9.1	0	0	10.9

Receiver
Name: Beaver Street Residence - OLA
ID: POR2
X: 646659.83 m
Y: 4773997.83 m
Z: 1.50 m

Point Sour ISO 9613 Name: "G ID: "GT_Comp_Fan"

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
10	646597.4	4774234	5.1	0	DEN	A	101.3	0	0	0	0	58.8	2.8	-3.6	0	0	19.6	0	0	23.7
13	646597.4	4774234	5.1	1	DEN	A	101.3	0	0	0	0	59.1	2.9	-3.7	0	0	22.7	0	1.1	19.2
16	646597.4	4774234	5.1	1	DEN	A	101.3	0	0	0	0	59.1	2.9	-3.6	0	0	23.6	0	2	17.5

Point Sour ISO 9613 Name: "G ID: "GT_Exh_Diff_Fan"

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
23	646591.6	4774236	5.1	0	DEN	A	99.7	0	0	0	0	58.9	1.2	-3.6	0	0	21.3	0	0	21.9
25	646591.6	4774236	5.1	1	DEN	A	99.7	0	0	0	0	59.2	1.2	-3.7	0	0	23.8	0	1.1	18.1
27	646591.6	4774236	5.1	1	DEN	A	99.7	0	0	0	0	59	1.2	-3.6	0	0	24	0	2	17.2
29	646591.6	4774236	5.1	1	DEN	A	99.7	0	0	0	0	60.1	1.3	-3.9	0	0	7.8	0	3.7	30.7

Point Sour ISO 9613 Name: "G ID: "GT_Trans"

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
36	646616.1	4774248	2.5	0	DEN	A	98.4	0	0	0	0	59.1	0.8	-4.6	0	0	17.6	0	0	25.4
42	646616.1	4774248	2.5	1	DEN	A	98.4	0	0	0	0	59.4	0.8	-4.6	0	0	18.4	0	1.1	23.2
45	646616.1	4774248	2.5	1	DEN	A	98.4	0	0	0	0	59.8	0.9	-4.7	0	0	24	0	2	16.5
64	646616.1	4774248	2.5	1	DEN	A	98.4	0	0	0	0	59.5	0.8	-4.6	0	0	22.9	0	8.4	11.4

Point Sour ISO 9613 Name: "S ID: "TG_Trans"

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
73	646605.9	4774202	2.5	0	DEN	A	95.4	0	0	0	0	57.5	0.7	-4.3	0	0	17.6	0	0	23.9
75	646605.9	4774202	2.5	1	DEN	A	95.4	0	0	0	0	57.9	0.7	-4.4	0	0	17.9	0	1.1	22.1

Point Sour ISO 9613 Name: "Tl ID: "Boiler_HG500Exh"

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
78	646568.9	4774284	27.59	0	DEN	A	96.5	0	0	0	0	60.6	1.5	-3	0	0	4.8	0	0	32.7
83	646568.9	4774284	27.59	1	DEN	A	96.5	0	0	0	0	60.8	1.5	-3	0	0	0	0	1	36.1

Point Sour ISO 9613 Name: ''H ID: ''HRSG_Ex''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
94	646518.3	4774228	61.06	0	DEN	A	93.9	0	0	0	0	59.8	0.5	-3	0	0	4.9	0	0	31.6
105	646518.3	4774228	61.06	1	DEN	A	93.9	0	0	0	0	60.1	0.5	-3	0	0	5.8	0	4.3	26.2

Point Sour ISO 9613 Name: ''A ID: ''Air_Ej_ST''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
109	646570.7	4774265	24.61	0	DEN	A	84	0	0	0	0	60	1.4	-3	0	0	4.8	0	0	20.9
125	646570.7	4774265	24.61	1	DEN	A	84	0	0	0	0	60.3	1.4	-3	0	0	4.8	0	1	19.5

Point Sour ISO 9613 Name: ''A ID: ''Aux_Trans1''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
128	646624.6	4774260	2.5	0	DEN	A	82.4	0	0	0	0	59.5	0.9	-4.6	0	0	12.2	0	0	14.5
134	646624.6	4774260	2.5	1	DEN	A	82.4	0	0	0	0	59.8	0.9	-4.7	0	0	19.3	0	1.1	5.9
146	646624.6	4774260	2.5	1	DEN	A	82.4	0	0	0	0	60.2	1	-4.8	0	0	24.5	0	2.2	-0.8
148	646624.6	4774260	2.5	1	DEN	A	82.4	0	0	0	0	59.9	0.9	-4.7	0	0	24.1	0	6.4	-4.3

Point Sour ISO 9613 Name: ''A ID: ''Aux_Trans2''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
156	646615.5	4774261	2.5	0	DEN	A	82.4	0	0	0	0	59.5	0.9	-4.7	0	0	20.7	0	0	5.9
158	646615.5	4774261	2.5	1	DEN	A	82.4	0	0	0	0	59.8	0.9	-4.7	0	0	23.8	0	1.3	1.2
167	646615.5	4774261	2.5	1	DEN	A	82.4	0	0	0	0	60.1	1	-4.7	0	0	24.6	0	2	-0.5

Point Sour ISO 9613 Name: ''R ID: ''F1''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
175	646600.2	4774266	9	0	DEN	A	81.9	0	0	0	0	59.8	2.3	-3	0	0	3	0	0	19.9
177	646600.2	4774266	9	1	DEN	A	81.9	0	0	0	0	60.1	2.3	-3	0	0	7	0	1	14.5
179	646600.2	4774266	9	1	DEN	A	81.9	0	0	0	0	59.9	2.3	-3	0	0	9.1	0	2	11.5
186	646600.2	4774266	9	1	DEN	A	81.9	0	0	0	0	60.7	2.5	-3	0	0	25	0	2	-5.3

vert. Area ISO 9613 Name: ''G ID: ''GT_In''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
192	646595.8	4774216	14.55	0	DEN	A	64.7	11.3	0	3	0	58.2	1.2	-3	0	0	0	0	0	22.6
194	646595.8	4774216	14.55	1	DEN	A	64.7	11.3	0	3	0	58.5	1.2	-3	0	0	0	0	1	21.2
200	646596.7	4774222	14.55	1	DEN	A	64.7	3.8	0	3	0	58.7	1.2	-3	0	0	24.2	0	2	-11.6
202	646595.6	4774215	14.55	1	DEN	A	64.7	10.4	0	3	0	58.5	1.2	-3	0	0	23.8	0	2	-4.4
204	646594.7	4774210	14.55	1	DEN	A	64.7	-13	0	3	0	58.3	1.2	-3	0	0	0	0	2	-3.8
208	646595.8	4774216	15.55	0	DEN	A	64.7	11.3	0	3	0	58.2	1.2	-3	0	0	0	0	0	22.6
210	646595.8	4774216	15.55	1	DEN	A	64.7	11.3	0	3	0	58.5	1.2	-3	0	0	0	0	1	21.2
217	646596.7	4774222	15.55	1	DEN	A	64.7	3.8	0	3	0	58.7	1.2	-3	0	0	23.9	0	2	-11.3
224	646595.6	4774215	15.55	1	DEN	A	64.7	10.4	0	3	0	58.5	1.2	-3	0	0	23.5	0	2	-4.1
226	646594.7	4774210	15.55	1	DEN	A	64.7	-13	0	3	0	58.3	1.2	-3	0	0	0	0	2	-3.8
229	646595.8	4774216	16.55	0	DEN	A	64.7	11.3	0	3	0	58.2	1.2	-3	0	0	0	0	0	22.6
235	646595.8	4774216	16.55	1	DEN	A	64.7	11.3	0	3	0	58.5	1.2	-3	0	0	0	0	1	21.2
238	646596.7	4774222	16.55	1	DEN	A	64.7	3.8	0	3	0	58.7	1.2	-3	0	0	23.5	0	2	-11
251	646595.6	4774215	16.55	1	DEN	A	64.7	10.4	0	3	0	58.5	1.2	-3	0	0	23	0	2	-3.6
253	646594.7	4774210	16.55	1	DEN	A	64.7	-13	0	3	0	58.3	1.2	-3	0	0	0	0	2	-3.8
265	646595.8	4774216	13.55	0	DEN	A	64.7	11.3	0	3	0	58.2	1.2	-3	0	0	0	0	0	22.6

267	646595.8	4774216	13.55	1	DEN	A	64.7	11.3	0	3	0	58.5	1.2	-3	0	0	0	0	1	21.2
270	646596.7	4774222	13.55	1	DEN	A	64.7	3.8	0	3	0	58.7	1.2	-3	0	0	24.4	0	2	-11.8
277	646595.6	4774215	13.55	1	DEN	A	64.7	10.4	0	3	0	58.5	1.2	-3	0	0	24	0	2	-4.6
286	646594.7	4774210	13.55	1	DEN	A	64.7	-13	0	3	0	58.3	1.2	-3	0	0	0	0	2	-3.8
290	646596.4	4774220	11.55	0	DEN	A	64.7	7.9	0	3	0	58.3	1.2	-3	0	0	4.8	0	0	14.4
292	646595.3	4774213	11.55	0	DEN	A	64.7	8.6	0	3	0	58	1.2	-3	0	0	0	0	0	20.1
297	646596.5	4774220	11.55	1	DEN	A	64.7	7	0	3	0	58.6	1.2	-3	0	0	4.8	0	1	12
301	646595.4	4774214	11.55	1	DEN	A	64.7	9.3	0	3	0	58.4	1.2	-3	0	0	0	0	1	19.3
304	646596.7	4774222	11.55	1	DEN	A	64.7	3.8	0	3	0	58.7	1.2	-3	0	0	24.7	0	2	-12.1
315	646595.6	4774215	11.55	1	DEN	A	64.7	10.4	0	3	0	58.5	1.2	-3	0	0	24.4	0	2	-5
317	646594.7	4774210	11.55	1	DEN	A	64.7	-13	0	3	0	58.3	1.2	-3	0	0	0	0	2	-3.8
322	646595.8	4774216	10.55	0	DEN	A	64.7	11.3	0	3	0	58.1	1.2	-3	0	0	4.9	0	0	17.8
325	646595.8	4774216	10.55	1	DEN	A	64.7	11.3	0	3	0	58.5	1.2	-3	0	0	4.8	0	1	16.4
330	646596.7	4774222	10.55	1	DEN	A	64.7	3.8	0	3	0	58.7	1.2	-3	0	0	24.8	0	2	-12.2
332	646595.6	4774215	10.55	1	DEN	A	64.7	10.4	0	3	0	58.5	1.2	-3	0	0	24.5	0	2	-5.1
343	646594.7	4774210	10.55	1	DEN	A	64.7	-13	0	3	0	58.3	1.2	-3	0	0	4.8	0	2	-8.6
348	646595.8	4774216	12.55	0	DEN	A	64.7	11.3	0	3	0	58.1	1.2	-3	0	0	0	0	0	22.6
351	646595.8	4774216	12.55	1	DEN	A	64.7	11.3	0	3	0	58.5	1.2	-3	0	0	0	0	1	21.2
355	646596.7	4774222	12.55	1	DEN	A	64.7	3.8	0	3	0	58.7	1.2	-3	0	0	24.5	0	2	-11.9
357	646595.6	4774215	12.55	1	DEN	A	64.7	10.4	0	3	0	58.5	1.2	-3	0	0	24.2	0	2	-4.8
359	646594.7	4774210	12.55	1	DEN	A	64.7	-13	0	3	0	58.3	1.2	-3	0	0	0	0	2	-3.8
363	646595.8	4774216	19.55	0	DEN	A	64.7	11.3	0	3	0	58.2	1.2	-3	0	0	0	0	0	22.6
365	646595.8	4774216	19.55	1	DEN	A	64.7	11.3	0	3	0	58.5	1.2	-3	0	0	0	0	1	21.2
370	646596.7	4774222	19.55	1	DEN	A	64.7	3.8	0	3	0	58.7	1.2	-3	0	0	19.9	0	2	-7.3
372	646595.6	4774215	19.55	1	DEN	A	64.7	10.4	0	3	0	58.5	1.2	-3	0	0	19.2	0	2	0.2
374	646594.7	4774210	19.55	1	DEN	A	64.7	-13	0	3	0	58.3	1.2	-3	0	0	0	0	2	-3.8
382	646595.8	4774216	20.55	0	DEN	A	64.7	11.3	0	3	0	58.2	1.2	-3	0	0	0	0	0	22.6
384	646595.8	4774216	20.55	1	DEN	A	64.7	11.3	0	3	0	58.5	1.2	-3	0	0	0	0	1	21.2
387	646596.7	4774222	20.55	1	DEN	A	64.7	3.8	0	3	0	58.7	1.2	-3	0	0	15.4	0	2	-2.8
389	646595.6	4774215	20.55	1	DEN	A	64.7	10.4	0	3	0	58.5	1.2	-3	0	0	15	0	2	4.4
391	646594.7	4774210	20.55	1	DEN	A	64.7	-13	0	3	0	58.3	1.2	-3	0	0	0	0	2	-3.8
395	646595.8	4774216	17.55	0	DEN	A	64.7	11.3	0	3	0	58.2	1.2	-3	0	0	0	0	0	22.6
399	646595.8	4774216	17.55	1	DEN	A	64.7	11.3	0	3	0	58.5	1.2	-3	0	0	0	0	1	21.2
402	646596.7	4774222	17.55	1	DEN	A	64.7	3.8	0	3	0	58.7	1.2	-3	0	0	22.8	0	2	-10.2
407	646595.6	4774215	17.55	1	DEN	A	64.7	10.4	0	3	0	58.5	1.2	-3	0	0	22.2	0	2	-2.8
415	646594.7	4774210	17.55	1	DEN	A	64.7	-13	0	3	0	58.3	1.2	-3	0	0	0	0	2	-3.8
421	646595.8	4774216	18.55	0	DEN	A	64.7	11.3	0	3	0	58.2	1.2	-3	0	0	0	0	0	22.6
423	646595.8	4774216	18.55	1	DEN	A	64.7	11.3	0	3	0	58.5	1.2	-3	0	0	0	0	1	21.2
426	646596.7	4774222	18.55	1	DEN	A	64.7	3.8	0	3	0	58.7	1.2	-3	0	0	21.8	0	2	-9.2
428	646595.6	4774215	18.55	1	DEN	A	64.7	10.4	0	3	0	58.5	1.2	-3	0	0	21.1	0	2	-1.7
430	646594.7	4774210	18.55	1	DEN	A	64.7	-13	0	3	0	58.3	1.2	-3	0	0	0	0	2	-3.8

Point Sour ISO 9613 Name: ''B ID: ''Boiler_Ex1''

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
435	646525.4	4774256	61.06	0	DEN	A	80	0	0	0	0	60.5	2.6	-3	0	0	5	0	0	14.8
437	646525.4	4774256	61.06	1	DEN	A	80	0	0	0	0	60.7	2.7	-3	0	0	5.6	0	1	13

Point Sour ISO 9613 Name: ''B ID: ''Boiler_Ex2''

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
440	646529.6	4774274	61.06	0	DEN	A	80	0	0	0	0	60.8	2.7	-3	0	0	4.9	0	0	14.5
443	646529.6	4774274	61.06	1	DEN	A	80	0	0	0	0	61.1	2.8	-3	0	0	5.4	0	1	12.7

Point Sour ISO 9613 Name: ''H ID: ''HoggerVent''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
446	646564.3	4774279	20.99	0	DEN	A	77.8	0	0	0	0	60.5	0.3	-3	0	0	10	0	0	10.1
449	646564.3	4774279	20.99	1	DEN	A	77.8	0	0	0	0	60.7	0.3	-3	0	0	9.8	0	1.1	9

Receiver
Name: Niagara Falls Road Residence
ID: POR4
X: 646548.87 m
Y: 4773996.84 m
Z: 4.50 m

Point Sour ISO 9613 Name: ''G ID: ''GT_Comp_Fan''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
14	646597.4	4774234	5.1	0	DEN	A	101.3	0	0	0	0	58.7	2.8	-3	0	0	21.6	0	0	21.2

Point Sour ISO 9613 Name: ''G ID: ''GT_Exh_Diff_Fan"

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
18	646591.6	4774236	5.1	0	DEN	A	99.7	0	0	0	0	58.7	1.2	-3	0	0	21.5	0	0	21.3

Point Sour ISO 9613 Name: ''G ID: ''GT_Trans''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
33	646616.1	4774248	2.5	0	DEN	A	98.4	0	0	0	0	59.3	0.8	-3.6	0	0	22.4	0	0	19.5

Point Sour ISO 9613 Name: ''S ID: ''TG_Trans''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
35	646605.9	4774202	2.5	0	DEN	A	95.4	0	0	0	0	57.6	0.7	-3	0	0	17.9	0	0	22.2

Point Sour ISO 9613 Name: ''Tl ID: ''Boiler_HG500Exh''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
47	646568.9	4774284	27.59	0	DEN	A	96.5	0	0	0	0	60.2	1.4	-3	0	0	4.8	0	0	33.1

Point Sour ISO 9613 Name: ''H ID: ''HRSG_Ex''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
56	646518.3	4774228	61.06	0	DEN	A	93.9	0	0	0	0	58.6	0.5	-3	0	0	5.2	0	0	32.7

Point Sour ISO 9613 Name: ''A ID: ''Air_Ej_ST''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
69	646570.7	4774265	24.61	0	DEN	A	84	0	0	0	0	59.6	1.3	-3	0	0	5	0	0	21.1
71	646570.7	4774265	24.61	1	DEN	A	84	0	0	0	0	59.6	1.3	-3	0	0	5.1	0	11.1	9.9

Point Sour ISO 9613 Name: ''A ID: ''Aux_Trans2"

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
74	646615.5	4774261	2.5	0	DEN	A	82.4	0	0	0	0	59.7	0.9	-3.7	0	0	23.6	0	0	1.8

Point Sour ISO 9613 Name: ''A ID: ''Aux_Trans1"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr

	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
77	646624.6	4774260	2.5	0	DEN	A	82.4	0	0	0	0	59.8	0.9	-3.7	0	0	20.6	0	0	4.8

Point Sour	ISO 9613	Name: "R	ID: "F1"																	
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
88	646600.2	4774266	9	0	DEN	A	81.9	0	0	0	0	59.8	2.3	-3	0	0	20.5	0	0	2.4

vert. Area	ISO 9613	Name: "G	ID: "GT_In"																	
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
93	646595.8	4774216	14.55	0	DEN	A	64.7	11.3	0	3	0	58	1.2	-3	0	0	5.2	0	0	17.6
98	646594.7	4774210	14.55	0	DEN	A	64.7	-12.7	0	3	0	57.8	1.1	-3	0	0	0	0	0	-0.9
101	646595.8	4774216	15.55	0	DEN	A	64.7	11.3	0	3	0	58	1.2	-3	0	0	5.2	0	0	17.6
103	646594.7	4774210	15.55	0	DEN	A	64.7	-12.7	0	3	0	57.8	1.1	-3	0	0	0	0	0	-0.9
110	646595.8	4774216	16.55	0	DEN	A	64.7	11.3	0	3	0	58	1.2	-3	0	0	5.2	0	0	17.6
112	646594.7	4774210	16.55	0	DEN	A	64.7	-12.7	0	3	0	57.8	1.1	-3	0	0	0	0	0	-0.9
115	646595.8	4774216	13.55	0	DEN	A	64.7	11.3	0	3	0	58	1.2	-3	0	0	5.2	0	0	17.6
117	646594.7	4774210	13.55	0	DEN	A	64.7	-12.7	0	3	0	57.8	1.1	-3	0	0	0	0	0	-0.9
122	646595.8	4774216	11.55	0	DEN	A	64.7	11.3	0	3	0	58	1.2	-3	0	0	5.2	0	0	17.6
129	646594.7	4774210	11.55	0	DEN	A	64.7	-12.7	0	3	0	57.8	1.1	-3	0	0	0	0	0	-0.9
154	646595.8	4774216	10.55	0	DEN	A	64.7	11.3	0	3	0	58	1.2	-3	0	0	16.2	0	0	6.6
183	646594.7	4774210	10.55	0	DEN	A	64.7	-12.7	0	3	0	57.8	1.1	-3	0	0	4.8	0	0	-5.7
187	646595.8	4774216	12.55	0	DEN	A	64.7	11.3	0	3	0	58	1.2	-3	0	0	5.2	0	0	17.6
198	646594.7	4774210	12.55	0	DEN	A	64.7	-12.7	0	3	0	57.8	1.1	-3	0	0	0	0	0	-0.9
203	646595.8	4774216	19.55	0	DEN	A	64.7	11.3	0	3	0	58	1.2	-3	0	0	5	0	0	17.7
205	646594.7	4774210	19.55	0	DEN	A	64.7	-12.7	0	3	0	57.8	1.1	-3	0	0	0	0	0	-0.9
219	646595.8	4774216	20.55	0	DEN	A	64.7	11.3	0	3	0	58	1.2	-3	0	0	4.5	0	0	18.3
221	646594.7	4774210	20.55	0	DEN	A	64.7	-12.7	0	3	0	57.8	1.1	-3	0	0	0	0	0	-0.9
237	646595.8	4774216	17.55	0	DEN	A	64.7	11.3	0	3	0	58	1.2	-3	0	0	5.1	0	0	17.6
244	646594.7	4774210	17.55	0	DEN	A	64.7	-12.7	0	3	0	57.8	1.1	-3	0	0	0	0	0	-0.9
249	646595.8	4774216	18.55	0	DEN	A	64.7	11.3	0	3	0	58	1.2	-3	0	0	5.1	0	0	17.6
261	646594.7	4774210	18.55	0	DEN	A	64.7	-12.7	0	3	0	57.8	1.1	-3	0	0	0	0	0	-0.9

Point Sour	ISO 9613	Name: "B	ID: "Boiler_Ex1"																	
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
274	646525.4	4774256	61.06	0	DEN	A	80	0	0	0	0	59.5	2.5	-3	0	0	5.3	0	0	15.8

Point Sour	ISO 9613	Name: "B	ID: "Boiler_Ex2"																	
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
279	646529.6	4774274	61.06	0	DEN	A	80	0	0	0	0	60	2.6	-3	0	0	5	0	0	15.4

Point Sour	ISO 9613	Name: "H	ID: "HoggerVent"																	
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
283	646564.3	4774279	20.99	0	DEN	A	77.8	0	0	0	0	60	0.3	-3	0	0	8.6	0	0	11.9

Receiver
Name: 1441 Beaverdam Road
ID: POR5
X: 646264.07 m
Y: 4774832.72 m
Z: 1.50 m

Point Sour ISO 9613 Name: ''G ID: ''GT_Comp_Fan''

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
19	646597.4	4774234	5.1	0	DEN	A	101.3	0	0	0	0	67.7	4.5	-5.1	0	0	22	0	0	12.3
26	646597.4	4774234	5.1	1	DEN	A	101.3	0	0	0	0	69	4.7	-5.3	0	0	22.7	0	8.9	1.2
39	646597.4	4774234	5.1	1	DEN	A	101.3	0	0	0	0	67.7	4.5	-5.1	0	0	23	0	2	9.2

Point Sour ISO 9613 Name: ''G ID: ''GT_Exh_Diff_Fan"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
50	646591.6	4774236	5.1	0	DEN	A	99.7	0	0	0	0	67.7	2.3	-5.1	0	0	23.2	0	0	11.6
52	646591.6	4774236	5.1	1	DEN	A	99.7	0	0	0	0	68.9	2.6	-5.2	0	0	24.2	0	7.6	1.6
54	646591.6	4774236	5.1	1	DEN	A	99.7	0	0	0	0	67.7	2.3	-5.1	0	0	24.3	0	2	8.5

Point Sour ISO 9613 Name: ''G ID: ''GT_Trans''

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
58	646616.1	4774248	2.5	0	DEN	A	98.4	0	0	0	0	67.7	1.9	-5.5	0	0	22.6	0	0	11.7
63	646616.1	4774248	2.5	1	DEN	A	98.4	0	0	0	0	69	2.1	-5.5	0	0	22.6	0	10	0.3

Point Sour ISO 9613 Name: ''Tl ID: ''Boiler_HG500Exh''

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
66	646568.9	4774284	27.59	0	DEN	A	96.5	0	0	0	0	67	2.5	-3	0	0	0	0	0	30.1
68	646568.9	4774284	27.59	1	DEN	A	96.5	0	0	0	0	68.3	2.8	-3	0	0	0	0	5.7	22.7

Point Sour ISO 9613 Name: ''S ID: ''TG_Trans''

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
76	646605.9	4774202	2.5	0	DEN	A	95.4	0	0	0	0	68.1	1.9	-5.5	0	0	23.3	0	0	7.6
82	646605.9	4774202	2.5	1	DEN	A	95.4	0	0	0	0	69.3	2.2	-5.6	0	0	23.5	0	9.2	-3.2

Point Sour ISO 9613 Name: ''H ID: ''HRSG_Ex''

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
85	646518.3	4774228	61.06	0	DEN	A	93.9	0	0	0	0	67.4	1	-3	0	0	4.8	0	0	23.7
87	646518.3	4774228	61.06	1	DEN	A	93.9	0	0	0	0	68.7	1.2	-3	0	0	4.8	0	11.8	10.5

Point Sour ISO 9613 Name: ''A ID: ''Air_Ej_ST''

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
100	646570.7	4774265	24.61	0	DEN	A	84	0	0	0	0	67.2	2.4	-3	0	0	0	0	0	17.4
118	646570.7	4774265	24.61	1	DEN	A	84	0	0	0	0	68.5	2.7	-3	0	0	0	0	6.1	9.6
127	646570.7	4774265	24.61	1	DEN	A	84	0	0	0	0	67.7	2.5	-3	0	0	0	0	2	14.7

Point Sour ISO 9613 Name: ''A ID: ''Aux_Trans2"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
130	646615.5	4774261	2.5	0	DEN	A	82.4	0	0	0	0	67.5	2	-5.5	0	0	11.1	0	0	7.2
132	646615.5	4774261	2.5	1	DEN	A	82.4	0	0	0	0	68.8	2.2	-5.5	0	0	11.9	0	9.5	-4.5

Point Sour ISO 9613 Name: ''A ID: ''Aux_Trans1"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)

140	646624.6	4774260	2.5	0	DEN	A	82.4	0	0	0	0	67.6	2	-5.5	0	0	18	0	0	0.2
147	646624.6	4774260	2.5	1	DEN	A	82.4	0	0	0	0	68.9	2.3	-5.5	0	0	22.4	0	9.1	-14.8

Point Sour ISO 9613 Name: "R ID: "F1"

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	l/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
159	646600.2	4774266	9	0	DEN	A	81.9	0	0	0	0	67.4	4.2	-4.6	0	0	23.8	0	0	-9
161	646600.2	4774266	9	1	DEN	A	81.9	0	0	0	0	68.7	4.7	-4.8	0	0	24.7	0	2.9	-14.3

Point Sour ISO 9613 Name: "B ID: "Boiler_Ex2"

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	l/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
163	646529.6	4774274	61.06	0	DEN	A	80	0	0	0	0	66.9	4.1	-3	0	0	4.8	0	0	7.3
173	646529.6	4774274	61.06	1	DEN	A	80	0	0	0	0	68.3	4.5	-3	0	0	4.8	0	4.1	1.4

Point Sour ISO 9613 Name: "B ID: "Boiler_Ex1"

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	l/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
181	646525.4	4774256	61.06	0	DEN	A	80	0	0	0	0	67.1	4.1	-3	0	0	4.8	0	0	7
188	646525.4	4774256	61.06	1	DEN	A	80	0	0	0	0	68.4	4.5	-3	0	0	4.8	0	4.1	1.2

vert. Area ISO 9613 Name: "G ID: "GT_In"

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	l/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
201	646596.2	4774218	13.55	0	DEN	A	64.7	9.6	0	3	0	67.9	2.6	-4.1	0	0	23	0	0	-12.2
209	646595.1	4774212	13.55	0	DEN	A	64.7	6.4	0	3	0	67.9	2.6	-4.1	0	0	23.2	0	0	-15.6
212	646596.2	4774218	13.55	1	DEN	A	64.7	9.6	0	3	0	69.1	2.9	-4.3	0	0	24.6	0	6.1	-21.2
214	646595.1	4774212	13.55	1	DEN	A	64.7	6.4	0	3	0	69.2	2.9	-4.3	0	0	24.6	0	6.1	-24.4
218	646596.2	4774218	14.55	0	DEN	A	64.7	9.6	0	3	0	67.9	2.6	-3.9	0	0	22.9	0	0	-12.2
234	646595.1	4774212	14.55	0	DEN	A	64.7	6.4	0	3	0	68	2.6	-3.9	0	0	23	0	0	-15.5
240	646596.2	4774218	14.55	1	DEN	A	64.7	9.6	0	3	0	69.1	2.9	-4.2	0	0	24.4	0	6.3	-21.3
242	646595.1	4774212	14.55	1	DEN	A	64.7	6.4	0	3	0	69.2	2.9	-4.2	0	0	24.4	0	6.3	-24.5
247	646596.2	4774218	15.55	0	DEN	A	64.7	9.6	0	3	0	67.9	2.6	-3.8	0	0	22.9	0	0	-12.3
250	646595.1	4774212	15.55	0	DEN	A	64.7	6.4	0	3	0	68	2.6	-3.8	0	0	23	0	0	-15.7
258	646596.2	4774218	15.55	1	DEN	A	64.7	9.6	0	3	0	69.1	2.9	-4.1	0	0	24.1	0	6.6	-21.4
260	646595.1	4774212	15.55	1	DEN	A	64.7	6.4	0	3	0	69.2	2.9	-4.1	0	0	24.1	0	6.6	-24.6
271	646596.2	4774218	10.55	0	DEN	A	64.7	9.6	0	3	0	67.9	2.6	-4.4	0	0	23.9	0	0	-12.7
276	646595.1	4774212	10.55	0	DEN	A	64.7	6.4	0	3	0	67.9	2.6	-4.5	0	0	23.9	0	0	-15.9
278	646596.2	4774218	10.55	1	DEN	A	64.7	9.6	0	3	0	69.1	2.9	-4.7	0	0	24.9	0	5.8	-20.8
280	646595.1	4774212	10.55	1	DEN	A	64.7	6.4	0	3	0	69.2	2.9	-4.7	0	0	24.9	0	5.8	-24
287	646596.2	4774218	11.55	0	DEN	A	64.7	9.6	0	3	0	67.9	2.6	-4.3	0	0	23.9	0	0	-12.8
294	646595.1	4774212	11.55	0	DEN	A	64.7	6.4	0	3	0	67.9	2.6	-4.3	0	0	23.9	0	0	-16
296	646596.2	4774218	11.55	1	DEN	A	64.7	9.6	0	3	0	69.1	2.9	-4.5	0	0	24.9	0	5.8	-20.9
298	646595.1	4774212	11.55	1	DEN	A	64.7	6.4	0	3	0	69.2	2.9	-4.6	0	0	24.9	0	5.8	-24.1
306	646596.2	4774218	12.55	0	DEN	A	64.7	9.6	0	3	0	67.9	2.6	-4.2	0	0	23.1	0	0	-12.2
316	646595.1	4774212	12.55	0	DEN	A	64.7	6.4	0	3	0	67.9	2.6	-4.2	0	0	23.3	0	0	-15.6
318	646596.2	4774218	12.55	1	DEN	A	64.7	9.6	0	3	0	69.1	2.9	-4.4	0	0	24.8	0	5.9	-21.1
320	646595.1	4774212	12.55	1	DEN	A	64.7	6.4	0	3	0	69.2	2.9	-4.4	0	0	24.8	0	5.9	-24.2
324	646596.2	4774218	19.55	0	DEN	A	64.7	9.6	0	3	0	67.9	2.6	-3.3	0	0	20	0	0	-10
326	646595.1	4774212	19.55	0	DEN	A	64.7	6.4	0	3	0	68	2.6	-3.3	0	0	20.1	0	0	-13.3
331	646596.2	4774218	19.55	1	DEN	A	64.7	9.6	0	3	0	69.1	2.9	-3.7	0	0	19.7	0	9.5	-20.3
334	646595.1	4774212	19.55	1	DEN	A	64.7	6.4	0	3	0	69.2	2.9	-3.7	0	0	19.8	0	9.5	-23.6
338	646596.6	4774221	20.55	0	DEN	A	64.7	6.2	0	3	0	67.9	2.6	-3.2	0	0	15.6	0	0	-9.1
341	646595.8	4774216	20.55	0	DEN	A	64.7	6.9	0	3	0	67.9	2.6	-3.2	0	0	15.8	0	0	-8.6
347	646595.1	4774212	20.55	0	DEN	A	64.7	6.4	0	3	0	68	2.6	-3.2	0	0	16	0	0	-9.3

354	646596.2	4774218	20.55	1	DEN	A	64.7	9.6	0	3	0	69.1	2.9	-3.5	0	0	15.4	0	9.3	-16
360	646595.1	4774212	20.55	1	DEN	A	64.7	6.4	0	3	0	69.2	2.9	-3.6	0	0	15.7	0	9.4	-19.5
364	646596.2	4774218	18.55	0	DEN	A	64.7	9.6	0	3	0	67.9	2.6	-3.4	0	0	22	0	0	-11.8
367	646595.1	4774212	18.55	0	DEN	A	64.7	6.4	0	3	0	68	2.6	-3.4	0	0	22	0	0	-15.1
369	646596.2	4774218	18.55	1	DEN	A	64.7	9.6	0	3	0	69.1	2.9	-3.8	0	0	21.7	0	9	-21.7
371	646595.1	4774212	18.55	1	DEN	A	64.7	6.4	0	3	0	69.2	2.9	-3.8	0	0	21.8	0	8.9	-24.9
376	646596.2	4774218	16.55	0	DEN	A	64.7	9.6	0	3	0	67.9	2.6	-3.7	0	0	22.6	0	0	-12.2
378	646595.1	4774212	16.55	0	DEN	A	64.7	6.4	0	3	0	68	2.6	-3.7	0	0	22.7	0	0	-15.5
385	646596.2	4774218	16.55	1	DEN	A	64.7	9.6	0	3	0	69.1	2.9	-4	0	0	23.7	0	7	-21.5
388	646595.1	4774212	16.55	1	DEN	A	64.7	6.4	0	3	0	69.2	2.9	-4	0	0	23.7	0	7	-24.7
392	646596.2	4774218	17.55	0	DEN	A	64.7	9.6	0	3	0	67.9	2.6	-3.5	0	0	22	0	0	-11.7
400	646595.1	4774212	17.55	0	DEN	A	64.7	6.4	0	3	0	68	2.6	-3.6	0	0	22.2	0	0	-15.1
404	646596.2	4774218	17.55	1	DEN	A	64.7	9.6	0	3	0	69.1	2.9	-3.9	0	0	22.9	0	7.8	-21.6
406	646595.1	4774212	17.55	1	DEN	A	64.7	6.4	0	3	0	69.2	2.9	-3.9	0	0	22.9	0	7.8	-24.8

Point Sour ISO 9613 Name: ''H ID: ''HoggerVent''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
409	646564.3	4774279	20.99	0	DEN	A	77.8	0	0	0	0	67	0.6	-3	0	0	0	0	0	13.2
412	646564.3	4774279	20.99	1	DEN	A	77.8	0	0	0	0	68.4	0.7	-3.3	0	0	0	0	39.8	-27.8
414	646564.3	4774279	20.99	1	DEN	A	77.8	0	0	0	0	67.1	0.6	-3	0	0	0	0	2	11.1
416	646564.3	4774279	20.99	1	DEN	A	77.8	0	0	0	0	67.8	0.7	-3.1	0	0	0	0	2	10.5

Receiver
Name: 1441 Beaverdam Road
ID: POR6
X: 646236.82 m
Y: 4774879.21 m
Z: 4.50 m

Point Sour ISO 9613 Name: ''G ID: ''GT_Comp_Fan''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
21	646597.4	4774234	5.1	0	DEN	A	101.3	0	0	0	0	68.4	4.6	-4.8	0	0	21.8	0	0	11.4
24	646597.4	4774234	5.1	1	DEN	A	101.3	0	0	0	0	68.4	4.6	-4.8	0	0	22.8	0	2	8.3

Point Sour ISO 9613 Name: ''G ID: ''GT_Exh_Diff_Fan''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
28	646591.6	4774236	5.1	0	DEN	A	99.7	0	0	0	0	68.3	2.4	-4.8	0	0	23.2	0	0	10.6
30	646591.6	4774236	5.1	1	DEN	A	99.7	0	0	0	0	68.3	2.4	-4.8	0	0	24.3	0	2	7.5

Point Sour ISO 9613 Name: ''G ID: ''GT_Trans''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
38	646616.1	4774248	2.5	0	DEN	A	98.4	0	0	0	0	68.3	2	-5.1	0	0	22.4	0	0	10.8

Point Sour ISO 9613 Name: ''Tl ID: ''Boiler_HG500Exh''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
41	646568.9	4774284	27.59	0	DEN	A	96.5	0	0	0	0	67.7	2.6	-3	0	0	0	0	0	29.2

Point Sour ISO 9613 Name: ''S ID: ''TG_Trans''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)

65	646605.9	4774202	2.5	0	DEN	A	95.4	0	0	0	0	68.7	2	-5.2	0	0	23.1	0	0	6.6						

Point Sour	ISO 9613	Name: ''H	ID: ''HRSG_Ex''																							
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr						
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)						
81	646518.3	4774228	61.06	0	DEN	A	93.9	0	0	0	0	68	1.1	-3	0	0	4.8	0	0	23						

Point Sour	ISO 9613	Name: ''A	ID: ''Air_Ej_ST''																							
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr						
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)						
84	646570.7	4774265	24.61	0	DEN	A	84	0	0	0	0	67.9	2.6	-3	0	0	0	0	0	16.5						
91	646570.7	4774265	24.61	1	DEN	A	84	0	0	0	0	68.4	2.7	-3	0	0	0	0	2	14						

Point Sour	ISO 9613	Name: ''A	ID: ''Aux_Trans2''																							
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr						
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)						
95	646615.5	4774261	2.5	0	DEN	A	82.4	0	0	0	0	68.2	2.1	-5.1	0	0	10.2	0	0	7						

Point Sour	ISO 9613	Name: ''A	ID: ''Aux_Trans1''																							
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr						
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)						
102	646624.6	4774260	2.5	0	DEN	A	82.4	0	0	0	0	68.3	2.1	-5.1	0	0	17.8	0	0	-0.8						

Point Sour	ISO 9613	Name: ''R	ID: ''F1''																							
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr						
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)						
107	646600.2	4774266	9	0	DEN	A	81.9	0	0	0	0	68.1	4.5	-4.3	0	0	23.8	0	0	-10.1						

Point Sour	ISO 9613	Name: ''B	ID: ''Boiler_Ex2''																							
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr						
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)						
133	646529.6	4774274	61.06	0	DEN	A	80	0	0	0	0	67.6	4.3	-3	0	0	4.8	0	0	6.4						

Point Sour	ISO 9613	Name: ''B	ID: ''Boiler_Ex1''																							
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr						
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)						
142	646525.4	4774256	61.06	0	DEN	A	80	0	0	0	0	67.8	4.3	-3	0	0	4.8	0	0	6.1						

vert. Area	ISO 9613	Name: ''G	ID: ''GT_In''																							
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr						
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)						
153	646596.2	4774218	13.55	0	DEN	A	64.7	9.6	0	3	0	68.5	2.8	-3.8	0	0	23	0	0	-13.2						
160	646595.1	4774212	13.55	0	DEN	A	64.7	6.5	0	3	0	68.6	2.8	-3.9	0	0	23.1	0	0	-16.5						
164	646596.2	4774218	14.55	0	DEN	A	64.7	9.6	0	3	0	68.5	2.8	-3.7	0	0	22.8	0	0	-13.2						
166	646595.1	4774212	14.55	0	DEN	A	64.7	6.5	0	3	0	68.6	2.8	-3.7	0	0	23	0	0	-16.4						
169	646596.2	4774218	15.55	0	DEN	A	64.7	9.6	0	3	0	68.5	2.8	-3.6	0	0	22.8	0	0	-13.3						
171	646595.1	4774212	15.55	0	DEN	A	64.7	6.5	0	3	0	68.6	2.8	-3.6	0	0	23	0	0	-16.6						
180	646596.2	4774218	10.55	0	DEN	A	64.7	9.6	0	3	0	68.5	2.8	-4.2	0	0	23.8	0	0	-13.7						
190	646595.1	4774212	10.55	0	DEN	A	64.7	6.5	0	3	0	68.6	2.8	-4.2	0	0	23.9	0	0	-16.9						
196	646596.2	4774218	11.55	0	DEN	A	64.7	9.6	0	3	0	68.5	2.8	-4.1	0	0	23.7	0	0	-13.7						
207	646595.1	4774212	11.55	0	DEN	A	64.7	6.3	0	3	0	68.6	2.8	-4.1	0	0	23.7	0	0	-17						
215	646594.7	4774210	11.55	0	DEN	A	64.7	-6.9	0	3	0	68.6	2.8	-4.1	0	0	23.7	0	0	-30.3						
228	646596.2	4774218	12.55	0	DEN	A	64.7	9.6	0	3	0	68.5	2.8	-4	0	0	23.1	0	0	-13.2						
241	646595.1	4774212	12.55	0	DEN	A	64.7	6.5	0	3	0	68.6	2.8	-4	0	0	23.2	0	0	-16.5						
246	646596.2	4774218	19.55	0	DEN	A	64.7	9.6	0	3	0	68.5	2.8	-3.1	0	0	19.8	0	0	-10.7						

252	646595.1	4774212	19.55	0	DEN	A	64.7	6.5	0	3	0	68.6	2.8	-3.1	0	0	19.9	0	0	-14
257	646596.2	4774218	20.55	0	DEN	A	64.7	9.6	0	3	0	68.5	2.8	-3	0	0	15.5	0	0	-6.5
264	646595.1	4774212	20.55	0	DEN	A	64.7	6.5	0	3	0	68.6	2.8	-3	0	0	15.8	0	0	-10
268	646596.2	4774218	18.55	0	DEN	A	64.7	9.6	0	3	0	68.5	2.8	-3.2	0	0	21.8	0	0	-12.6
273	646595.1	4774212	18.55	0	DEN	A	64.7	6.5	0	3	0	68.6	2.8	-3.3	0	0	21.9	0	0	-15.8
288	646596.2	4774218	16.55	0	DEN	A	64.7	9.6	0	3	0	68.5	2.8	-3.5	0	0	22.5	0	0	-13.1
293	646595.1	4774212	16.55	0	DEN	A	64.7	6.5	0	3	0	68.6	2.8	-3.5	0	0	22.7	0	0	-16.4
299	646596.2	4774218	17.55	0	DEN	A	64.7	9.6	0	3	0	68.5	2.8	-3.4	0	0	21.9	0	0	-12.6
302	646595.1	4774212	17.55	0	DEN	A	64.7	6.5	0	3	0	68.6	2.8	-3.4	0	0	22.1	0	0	-15.9

Point Sour ISO 9613 Name: ''H ID: ''HoggerVent''

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	l/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
308	646564.3	4774279	20.99	0	DEN	A	77.8	0	0	0	0	67.7	0.6	-3	0	0	0	0	0	12.5
311	646564.3	4774279	20.99	1	DEN	A	77.8	0	0	0	0	67.8	0.7	-3	0	0	0	0	2	10.4

APPENDIX F

Electronic Modelling Files

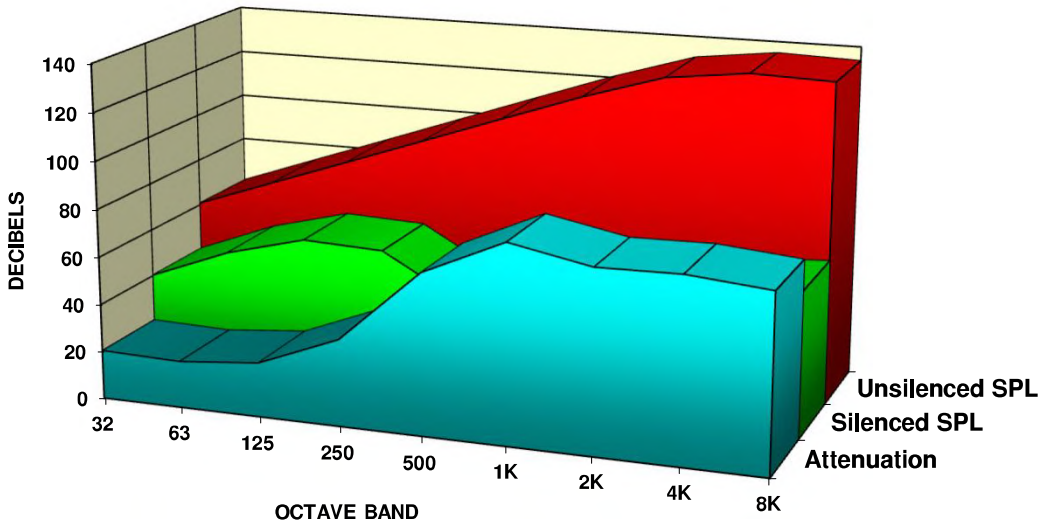
APPENDIX G

Silencer Acoustic Data

Date Jun 22, 2022
Customer -
Project -
Customer Ref / Tag -
Drawing -
Model EVO 24-119-165

IMI FLUID KINETICS

Silencer Acoustic Data



Performance at 3.0 Feet [0.9M] Horizontal from the Silencer Exit*

Octave Band	32	63	125	250	500	1K	2K	4K	8K	A WT
Unsilenced SPL	60.8	72.8	84.7	96.8	108.8	120.7	131.1	135.2	134.2	139.1
Centerline Correction	-2.5	-2.5	-2.5	-2.5	-2.5	-2.5	-2.5	-2.5	-2.5	
Directivity Correction	0.0	0.0	-1.1	-1.8	-4.3	-5.5	-9.3	-16.0	-18.2	
Air Attenuation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	
Silencer Attenuation	-20.5	-19.5	-22.7	-36.1	-67.0	-82.4	-75.8	-76.4	-73.4	
Silenced SPL	40.3	53.3	62.1	60.7	41.8	38.3	55.4	58.9	60.8	64.1
Silencer Regenerated Noise	18.7	16.7	12.9	9.6	5.9	3.1	1.4	0.5	0.2	9.9
Combined Noise Level	**40.3**	**53.3**	**62.1**	**60.7**	**41.8**	**38.3**	**55.4**	**58.9**	**60.8**	**64.1**

* Decibels re: 20 micronewton/sq meter

Silencer Component Summary **

Component	Thickness	Material Specification
Shell	0.250 Inches [6.4 mm]	Carbon Steel
Head	0.250 Inches [6.4 mm]	Carbon Steel
Inlet Nozzle (Diffuser)	0.365 Inches [9.3 mm]	Chrome Moly - Gr 11
Core Support Webs	0.375 Inches [9.5 mm]	Carbon Steel
Core Bulkheads	0.250 Inches [6.4 mm]	Carbon Steel
Acoustic Core Facing	0.075 Inches [1.9 mm]	Carbon Steel
Acoustic Core Acoustic Fill	11.000 Lb/Ft3 [176 Kg/M3]	Glass Fiber Blanket
Inlet Head Acoustic Fill	30.000 Lb/Ft3 [480 Kg/M3]	Scoria

** Materials and thicknesses may be customized to suit customers specifications. Consult with our Product Specialists.

Version: 6.6.13

APPENDIX H

Field Measurement Data for Hogger Vent

Table H.1 Field Measurement Data for Hogger Vent
Thorold Generating Station
Thorold, Ontario

Source ID	Source Description	Source Type	1/1 Octave Band Sound Pressure Level (dB)									Total A-Weighted Sound Power Level	Total Linear Sound Power Level	Comments
			31.5	63	125	250	500	1000	2000	4000	8000			
HoggerVent	Hogger Vent	Point	70.2	77.3	83.8	96.7	100.3	97	90.2	90.1	88.8	126.4	128.7	

APPENDIX I

Sample of Baseline Noise Measurement Data at POR5

Table I.1 Sample of Baseline Noise Measurment Data at POR5
31-Aug-22
15:00 to 18:00

Date	Time	LAeq
2022-08-31	15:00:00	55.9
2022-08-31	15:01:00	56.0
2022-08-31	15:02:00	58.9
2022-08-31	15:03:00	56.7
2022-08-31	15:04:00	56.0
2022-08-31	15:05:00	56.9
2022-08-31	15:06:00	54.8
2022-08-31	15:07:00	54.9
2022-08-31	15:08:00	54.7
2022-08-31	15:09:00	55.2
2022-08-31	15:10:00	55.3
2022-08-31	15:11:00	55.4
2022-08-31	15:12:00	55.7
2022-08-31	15:13:00	55.5
2022-08-31	15:14:00	55.6
2022-08-31	15:15:00	56.0
2022-08-31	15:16:00	57.2
2022-08-31	15:17:00	53.7
2022-08-31	15:18:00	56.1
2022-08-31	15:19:00	54.9
2022-08-31	15:20:00	54.0
2022-08-31	15:21:00	56.1
2022-08-31	15:22:00	55.8
2022-08-31	15:23:00	53.4
2022-08-31	15:24:00	53.0
2022-08-31	15:25:00	52.7
2022-08-31	15:26:00	53.9
2022-08-31	15:27:00	58.4
2022-08-31	15:28:00	56.3
2022-08-31	15:29:00	55.8
2022-08-31	15:30:00	55.5
2022-08-31	15:31:00	56.6
2022-08-31	15:32:00	56.7
2022-08-31	15:33:00	56.9
2022-08-31	15:34:00	56.6
2022-08-31	15:35:00	56.1
2022-08-31	15:36:00	56.1
2022-08-31	15:37:00	56.2
2022-08-31	15:38:00	57.0
2022-08-31	15:39:00	56.4
2022-08-31	15:40:00	55.7
2022-08-31	15:41:00	55.1
2022-08-31	15:42:00	55.8
2022-08-31	15:43:00	54.7
2022-08-31	15:44:00	56.5
2022-08-31	15:45:00	55.8
2022-08-31	15:46:00	55.9
2022-08-31	15:47:00	56.2
2022-08-31	15:48:00	54.0
2022-08-31	15:49:00	54.3
2022-08-31	15:50:00	55.3
2022-08-31	15:51:00	54.6
2022-08-31	15:52:00	55.3
2022-08-31	15:53:00	55.1
2022-08-31	15:54:00	54.8
2022-08-31	15:55:00	57.2
2022-08-31	15:56:00	53.3
2022-08-31	15:57:00	52.9
2022-08-31	15:58:00	53.7
2022-08-31	15:59:00	55.5
2022-08-31	16:00:00	55.1
2022-08-31	16:01:00	54.5
2022-08-31	16:02:00	55.4
2022-08-31	16:03:00	52.5
2022-08-31	16:04:00	55.9
2022-08-31	16:05:00	56.6
2022-08-31	16:06:00	55.3
2022-08-31	16:07:00	52.8
2022-08-31	16:08:00	53.0
2022-08-31	16:09:00	54.4
2022-08-31	16:10:00	52.1
2022-08-31	16:11:00	53.2
2022-08-31	16:12:00	54.4
2022-08-31	16:13:00	54.0
2022-08-31	16:14:00	54.8
2022-08-31	16:15:00	53.5

2022-08-31	16:16:00	54.6
2022-08-31	16:17:00	56.5
2022-08-31	16:18:00	53.7
2022-08-31	16:19:00	56.4
2022-08-31	16:20:00	55.1
2022-08-31	16:21:00	55.0
2022-08-31	16:22:00	54.5
2022-08-31	16:23:00	54.4
2022-08-31	16:24:00	53.8
2022-08-31	16:25:00	53.3
2022-08-31	16:26:00	55.7
2022-08-31	16:27:00	54.9
2022-08-31	16:28:00	54.0
2022-08-31	16:29:00	55.9
2022-08-31	16:30:00	59.7
2022-08-31	16:31:00	56.1
2022-08-31	16:32:00	56.5
2022-08-31	16:33:00	55.0
2022-08-31	16:34:00	56.0
2022-08-31	16:35:00	55.3
2022-08-31	16:36:00	53.9
2022-08-31	16:37:00	55.2
2022-08-31	16:38:00	54.8
2022-08-31	16:39:00	56.0
2022-08-31	16:40:00	55.5
2022-08-31	16:41:00	58.2
2022-08-31	16:42:00	56.0
2022-08-31	16:43:00	53.9
2022-08-31	16:44:00	53.2
2022-08-31	16:45:00	54.2
2022-08-31	16:46:00	56.8
2022-08-31	16:47:00	61.3
2022-08-31	16:48:00	56.4
2022-08-31	16:49:00	53.7
2022-08-31	16:50:00	55.6
2022-08-31	16:51:00	53.8
2022-08-31	16:52:00	56.4
2022-08-31	16:53:00	56.4
2022-08-31	16:54:00	57.8
2022-08-31	16:55:00	54.8
2022-08-31	16:56:00	55.8
2022-08-31	16:57:00	55.3
2022-08-31	16:58:00	54.6
2022-08-31	16:59:00	55.7
2022-08-31	17:00:00	53.2
2022-08-31	17:01:00	55.7
2022-08-31	17:02:00	56.4
2022-08-31	17:03:00	55.9
2022-08-31	17:04:00	57.6
2022-08-31	17:05:00	53.3
2022-08-31	17:06:00	53.9
2022-08-31	17:07:00	53.1
2022-08-31	17:08:00	53.8
2022-08-31	17:09:00	57.1
2022-08-31	17:10:00	54.1
2022-08-31	17:11:00	55.5
2022-08-31	17:12:00	53.2
2022-08-31	17:13:00	54.7
2022-08-31	17:14:00	54.1
2022-08-31	17:15:00	54.7
2022-08-31	17:16:00	53.7
2022-08-31	17:17:00	53.3
2022-08-31	17:18:00	54.3
2022-08-31	17:19:00	54.8
2022-08-31	17:20:00	54.9
2022-08-31	17:21:00	54.8
2022-08-31	17:22:00	54.1
2022-08-31	17:23:00	56.4
2022-08-31	17:24:00	55.9
2022-08-31	17:25:00	57.4
2022-08-31	17:26:00	55.0
2022-08-31	17:27:00	55.4
2022-08-31	17:28:00	53.7
2022-08-31	17:29:00	56.1
2022-08-31	17:30:00	55.5
2022-08-31	17:31:00	57.0
2022-08-31	17:32:00	53.9
2022-08-31	17:33:00	55.0
2022-08-31	17:34:00	56.4
2022-08-31	17:35:00	55.1
2022-08-31	17:36:00	54.9

2022-08-31	17:37:00	53.4
2022-08-31	17:38:00	53.1
2022-08-31	17:39:00	54.7
2022-08-31	17:40:00	53.3
2022-08-31	17:41:00	56.2
2022-08-31	17:42:00	54.1
2022-08-31	17:43:00	54.8
2022-08-31	17:44:00	54.0
2022-08-31	17:45:00	53.3
2022-08-31	17:46:00	55.1
2022-08-31	17:47:00	52.5
2022-08-31	17:48:00	52.9
2022-08-31	17:49:00	54.6
2022-08-31	17:50:00	54.4
2022-08-31	17:51:00	61.2
2022-08-31	17:52:00	53.4
2022-08-31	17:53:00	54.2
2022-08-31	17:54:00	53.9
2022-08-31	17:55:00	53.4
2022-08-31	17:56:00	53.9
2022-08-31	17:57:00	51.5
2022-08-31	17:58:00	54.5
2022-08-31	17:59:00	52.9
2022-08-31	18:00:00	51.8

APPENDIX J

Comparison Between the Noise Level at POR5 With/Without the Hogger Operation

Table J.1 Noise Level at POR5 During the Hogger Operation on October 25, 2022

Date	Time	L_{eq} (operation period) dBA	L_{eq} (1 hr) dBA
25-Oct-22	1:48 AM to 2:42 AM	44.5	44
	6:38 AM to 7:01 AM	53.2	49
	7:15 AM to 7:51 AM	53.3	51.1

Table J.2 Noise Level at POR5 During the Same Time Period on October 26, When the Hogger Was Not in Operation

Date	Time	L_{eq} (operation period) dBA	L_{eq} (1 hr) dBA
26-Oct-22	1:48 AM to 2:42 AM	43.3	42.8
	6:38 AM to 7:01 AM	50.2	46
	7:15 AM to 7:51 AM	50.3	48

APPENDIX K

Calibration Certificates

Calibration Certificate

Certificate Number 2022003592

Customer:
The Modal Shop
10310 AeroHub Boulevard
Cincinnati, OH 45215, United States

Model Number	831		***Procedure Number***	D0001.8378	
Serial Number	0002984		***Technician***	Jacob Cannon	
Test Results	**Pass**		***Calibration Date***	21 Mar 2022	
Initial Condition	AS RECEIVED same as shipped		***Calibration Due***		
Description	Larson Davis Model 831 Class 1 Sound Level Meter Firmware Revision: 2.403		***Temperature***	23.69 °C	± 0.25 °C
			Humidity	50.8 %RH	± 2.0 %RH
			Static Pressure	86.72 kPa	± 0.13 kPa

Evaluation Method Tested electrically using Larson Davis PRM831 S/N 029590 and a 12.0 pF capacitor to simulate microphone capacitance. Data reported in dB re 20 µPa assuming a microphone sensitivity of 50.0 mV/Pa.

Compliance Standards Compliant to Manufacturer Specifications and the following standards when combined with Calibration Certificate from procedure D0001.8384:

IEC 60651:2001 Type 1	ANSI S1.4-2014 Class 1
IEC 60804:2000 Type 1	ANSI S1.4 (R2006) Type 1
IEC 61252:2002	ANSI S1.25 (R2007)
IEC 61672:2013 Class 1	ANSI S1.43 (R2007) Type 1
IEC 61260:2001 Class 1	ANSI S1.11 (R2009) Class 1

Issuing lab certifies that the instrument described above meets or exceeds all specifications as stated in the referenced procedure (unless otherwise noted). It has been calibrated using measurement standards traceable to the International System of Units (SI) through the National Institute of Standards and Technology (NIST), or other national measurement institutes, and meets the requirements of ISO/IEC 17025:2017. **Test points marked with a ‡ in the uncertainties column do not fall within this laboratory's scope of accreditation.**

The quality system is registered to ISO 9001:2015

This calibration is a direct comparison of the unit under test to the listed reference standards and did not involve any sampling plans to complete. No allowance has been made for the instability of the test device due to use, time, etc. Such allowances would be made by the customer as needed.

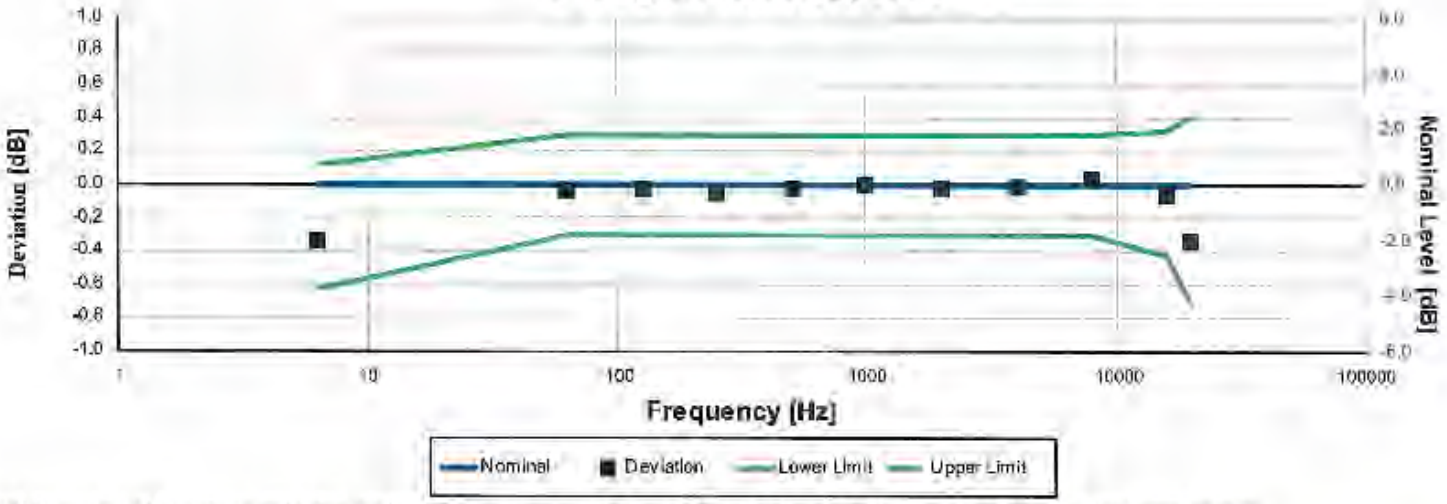
The uncertainties were computed in accordance with the ISO Guide to the Expression of Uncertainty in Measurement (GUM). A coverage factor of approximately 2 sigma (k=2) has been applied to the standard uncertainty to express the expanded uncertainty at approximately 95% confidence level.

Correction data from Larson Davis Model 831 Sound Level Meter Manual, I831.01 Rev S, 2019-09-10

Calibration Check Frequency: 1000 Hz; Reference Sound Pressure Level: 114 dB re 20 µPa; Reference Range: 0 dB gain

Standards Used			
Description	**Cal Date**	**Cal Due**	**Cal Standard**
Hart Scientific 2626-H Temperature Probe	2021-02-04	2022-08-04	006767
SRS DS360 Ultra Low Distortion Generator	2021-04-13	2022-04-13	007635

Z-weight Filter Response

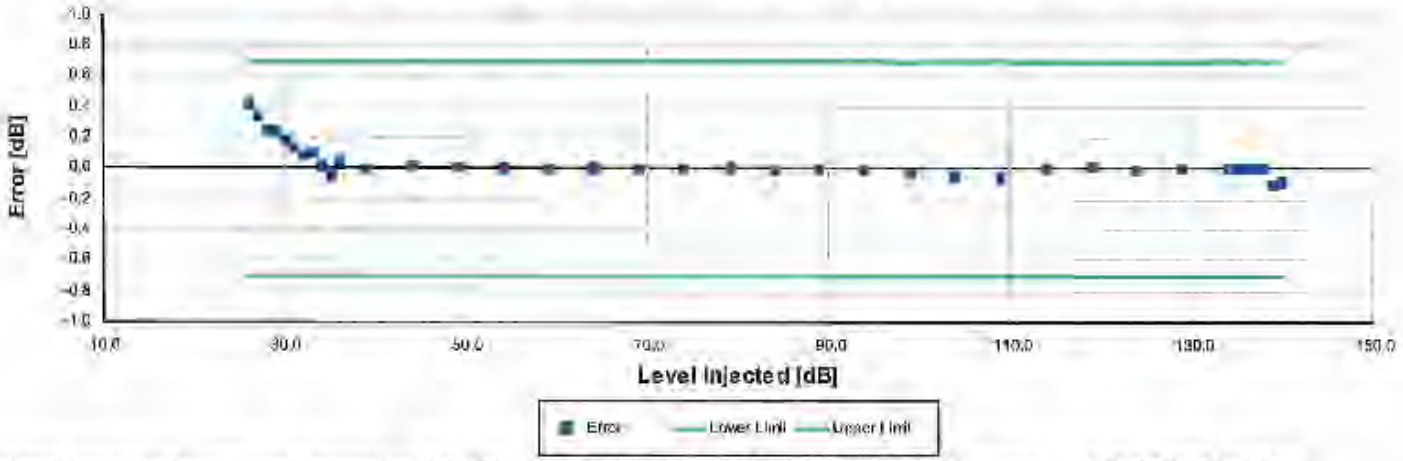


Electrical signal test of frequency weighting performed according to IEC 61672-3:2013 13 and ANSI S1.4-2014 Part 3: 13 for compliance to IEC 61672-1:2013 5.5; IEC 60651:2001 8.1 and 9.2.2; IEC 60804:2000 5; ANSI S1.4:1983 (R2006) 5.1 and 8.2.1; ANSI S1.4-2014 Part 1: 5.5

Frequency [Hz]	Test Result [dB]	Deviation [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
6.31	-0.34	-0.34	-0.63	0.12	0.15	Pass
63.10	-0.03	-0.03	-0.30	0.30	0.15	Pass
125.89	-0.03	-0.03	-0.30	0.30	0.15	Pass
251.19	-0.05	-0.05	-0.30	0.30	0.15	Pass
501.19	-0.02	-0.02	-0.30	0.30	0.15	Pass
1,000.00	0.00	0.00	-0.30	0.30	0.15	Pass
1,995.26	-0.03	-0.03	-0.30	0.30	0.15	Pass
3,981.07	-0.01	-0.01	-0.30	0.30	0.15	Pass
7,943.28	0.04	0.04	-0.30	0.30	0.15	Pass
15,848.93	-0.06	-0.06	-0.42	0.32	0.15	Pass
19,952.62	-0.34	-0.34	-0.71	0.41	0.15	Pass

-- End of measurement results--

A-weighted 0 dB Gain Broadband Log Linearity: 8,000.00 Hz



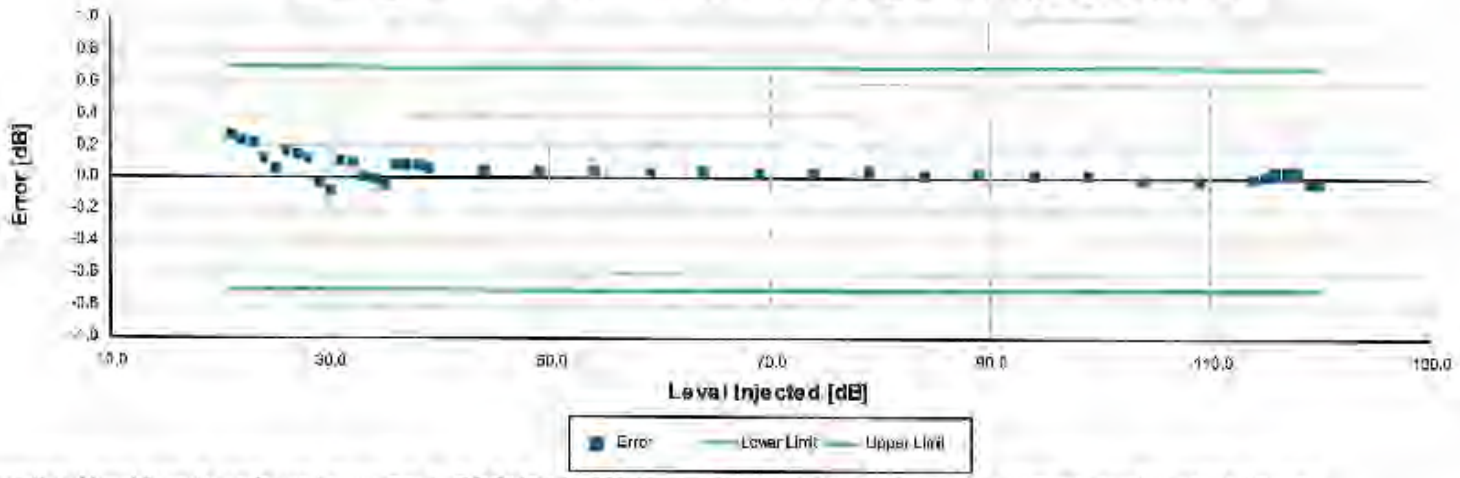
Broadband level linearity performed according to IEC 61672-3:2013 16 and ANSI S1.4-2014 Part 3: 16 for compliance to IEC 61672-1:2013 5.6, IEC 60804:2000 6.2, IEC 61252:2002 8, ANSI S1.4 (R2006) 6.9, ANSI S1.4-2014 Part 1: 5.6, ANSI S1.43 (R2007) 6.2

Level [dB]	Error [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
26.00	0.42	-0.70	0.70	0.16	Pass
27.00	0.34	-0.70	0.70	0.16	Pass
28.00	0.26	-0.70	0.70	0.16	Pass
29.00	0.24	-0.70	0.70	0.16	Pass
30.00	0.18	-0.70	0.70	0.16	Pass
31.00	0.14	-0.70	0.70	0.16	Pass
32.00	0.09	-0.70	0.70	0.16	Pass
33.00	0.10	-0.70	0.70	0.16	Pass
34.00	0.02	-0.70	0.70	0.16	Pass
35.00	-0.05	-0.70	0.70	0.16	Pass
36.00	0.04	-0.70	0.70	0.16	Pass
39.00	0.00	-0.70	0.70	0.16	Pass
44.00	0.02	-0.70	0.70	0.16	Pass
49.00	0.01	-0.70	0.70	0.16	Pass
54.00	0.00	-0.70	0.70	0.16	Pass
59.00	0.00	-0.70	0.70	0.16	Pass
64.00	0.01	-0.70	0.70	0.16	Pass
69.00	0.00	-0.70	0.70	0.16	Pass
74.00	0.00	-0.70	0.70	0.16	Pass
79.00	0.01	-0.70	0.70	0.16	Pass
84.00	-0.01	-0.70	0.70	0.16	Pass
89.00	0.00	-0.70	0.70	0.16	Pass
94.00	-0.02	-0.70	0.70	0.16	Pass
99.00	-0.02	-0.70	0.70	0.16	Pass
104.00	-0.05	-0.70	0.70	0.15	Pass
109.00	-0.06	-0.70	0.70	0.15	Pass
114.00	0.00	-0.70	0.70	0.15	Pass
119.00	0.01	-0.70	0.70	0.15	Pass
124.00	-0.01	-0.70	0.70	0.15	Pass
129.00	0.00	-0.70	0.70	0.15	Pass
134.00	-0.01	-0.70	0.70	0.15	Pass
135.00	-0.01	-0.70	0.70	0.15	Pass
136.00	0.00	-0.70	0.70	0.15	Pass
137.00	0.00	-0.70	0.70	0.15	Pass
138.00	0.00	-0.70	0.70	0.15	Pass
139.00	-0.11	-0.70	0.70	0.15	Pass

Level [dB]	Error [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
140.00	-0.09	-0.70	0.70	0.15	Pass

-- End of measurement results--

A-weighted 20 dB Gain Broadband Log Linearity: 8,000.00 Hz



Broadband level linearity performed according to IEC 61672-3:2013 16 and ANSI S1.4-2014 Part 3: 16 for compliance to IEC 61672-1:2013 5.6, IEC 60804:2000 6.2, IEC 61252:2002 8, ANSI S1.4 (R2006) 6.9, ANSI S1.4-2014 Part 1: 5.6, ANSI S1.43 (R2007) 6.2

Level [dB]	Error [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
21.00	0.27	-0.70	0.70	0.16	Pass
22.00	0.24	-0.70	0.70	0.16	Pass
23.00	0.23	-0.70	0.70	0.16	Pass
24.00	0.12	-0.70	0.70	0.16	Pass
25.00	0.06	-0.70	0.70	0.16	Pass
26.00	0.17	-0.70	0.70	0.16	Pass
27.00	0.14	-0.70	0.70	0.16	Pass
28.00	0.13	-0.70	0.70	0.16	Pass
29.00	-0.03	-0.70	0.70	0.16	Pass
30.00	-0.08	-0.70	0.70	0.16	Pass
31.00	0.11	-0.70	0.70	0.16	Pass
32.00	0.09	-0.70	0.70	0.16	Pass
33.00	0.01	-0.70	0.70	0.16	Pass
34.00	0.00	-0.70	0.70	0.16	Pass
35.00	-0.04	-0.70	0.70	0.16	Pass
36.00	0.09	-0.70	0.70	0.16	Pass
37.00	0.09	-0.70	0.70	0.16	Pass
38.00	0.08	-0.70	0.70	0.16	Pass
39.00	0.06	-0.70	0.70	0.16	Pass
44.00	0.05	-0.70	0.70	0.16	Pass
49.00	0.05	-0.70	0.70	0.16	Pass
54.00	0.05	-0.70	0.70	0.16	Pass
59.00	0.04	-0.70	0.70	0.16	Pass
64.00	0.05	-0.70	0.70	0.16	Pass
69.00	0.04	-0.70	0.70	0.16	Pass
74.00	0.04	-0.70	0.70	0.16	Pass
79.00	0.05	-0.70	0.70	0.16	Pass
84.00	0.03	-0.70	0.70	0.16	Pass
89.00	0.03	-0.70	0.70	0.16	Pass
94.00	0.02	-0.70	0.70	0.16	Pass
99.00	0.02	-0.70	0.70	0.16	Pass
104.00	-0.01	-0.70	0.70	0.15	Pass
109.00	-0.01	-0.70	0.70	0.15	Pass
114.00	0.00	-0.70	0.70	0.15	Pass
115.00	0.01	-0.70	0.70	0.15	Pass
116.00	0.04	-0.70	0.70	0.15	Pass

Level [dB]	Error [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
117.00	0.05	-0.70	0.70	0.15	Pass
118.00	0.05	-0.70	0.70	0.15	Pass
119.00	-0.02	-0.70	0.70	0.15	Pass
120.00	-0.02	-0.70	0.70	0.15	Pass

-- End of measurement results--

Peak Rise Time

Peak rise time performed according to IEC 60651:2001 9.4.4 and ANSI S1.4:1983 (R2006) 8.4.4

Amplitude [dB]	Duration [µs]		Test Result [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
139.00	40	Negative Pulse	135.91	134.44	136.44	0.15	Pass
		Positive Pulse	135.91	134.42	136.42	0.15	Pass
	30	Negative Pulse	134.96	134.44	136.44	0.15	Pass
		Positive Pulse	134.96	134.42	136.42	0.15	Pass

-- End of measurement results--

Positive Pulse Crest Factor

200 µs pulse tests at 2.0, 12.0, 22.0, 32.0 dB below Overload Limit

Crest Factor measured according to IEC 60651:2001 9.4.2 and ANSI S1.4:1983 (R2006) 8.4.2

Amplitude [dB]	Crest Factor	Test Result [dB]	Limits [dB]	Expanded Uncertainty [dB]	Result
138.00	3	OVLD	± 0.50	0.15 ‡	Pass
	5	OVLD	± 1.00	0.15 ‡	Pass
	10	OVLD	± 1.50	0.15 ‡	Pass
128.00	3	-0.17	± 0.50	0.15 ‡	Pass
	5	-0.14	± 1.00	0.15 ‡	Pass
	10	OVLD	± 1.50	0.15 ‡	Pass
118.00	3	-0.15	± 0.50	0.15 ‡	Pass
	5	-0.15	± 1.00	0.15 ‡	Pass
	10	-0.18	± 1.50	0.15 ‡	Pass
108.00	3	-0.21	± 0.50	0.18 ‡	Pass
	5	-0.17	± 1.00	0.15 ‡	Pass
	10	-0.27	± 1.50	0.15 ‡	Pass

-- End of measurement results--

Negative Pulse Crest Factor

200 µs pulse tests at 2.0, 12.0, 22.0, 32.0 dB below Overload Limit

Crest Factor measured according to IEC 60651:2001 9.4.2 and ANSI S1.4-1983 (R2006) 8.4.2

Amplitude [dB]	Crest Factor	Test Result [dB]	Limits [dB]	Expanded Uncertainty [dB]	Result
138.00	3	OVLD	± 0.50	0.15 ‡	Pass
	5	OVLD	± 1.00	0.15 ‡	Pass
	10	OVLD	± 1.50	0.15 ‡	Pass
128.00	3	-0.16	± 0.50	0.15 ‡	Pass
	5	-0.13	± 1.00	0.15 ‡	Pass
	10	OVLD	± 1.50	0.15 ‡	Pass
118.00	3	-0.15	± 0.50	0.15 ‡	Pass
	5	-0.14	± 1.00	0.15 ‡	Pass
	10	-0.18	± 1.50	0.15 ‡	Pass
108.00	3	-0.20	± 0.50	0.15 ‡	Pass
	5	-0.14	± 1.00	0.15 ‡	Pass
	10	-0.26	± 1.50	0.15 ‡	Pass

-- End of measurement results--

Gain

Gain measured according to IEC 61672-3:2013 17.3 and 17.4 and ANSI S1.4-2014 Part 3: 17.3 and 17.4

Measurement	Test Result [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
0 dB Gain	94.03	93.91	94.11	0.16	Pass
0 dB Gain, Linearity	29.16	28.31	29.71	0.16	Pass
20 dB Gain	94.03	93.91	94.11	0.15	Pass
20 dB Gain, Linearity	24.15	23.31	24.71	0.16	Pass
OBA Low Range	94.01	93.91	94.11	0.15	Pass
OBA Normal Range	94.01	93.20	94.80	0.15	Pass

-- End of measurement results--

Broadband Noise Floor

Self-generated noise measured according to IEC 61672-3:2013 11.2 and ANSI S1.4-2014 Part 3: 11.2

Measurement	Test Result [dB]	Upper limit [dB]	Result
A-weight Noise Floor	7.24	15.00	Pass
C-weight Noise Floor	12.13	17.30	Pass
Z-weight Noise Floor	21.16	24.50	Pass

-- End of measurement results--

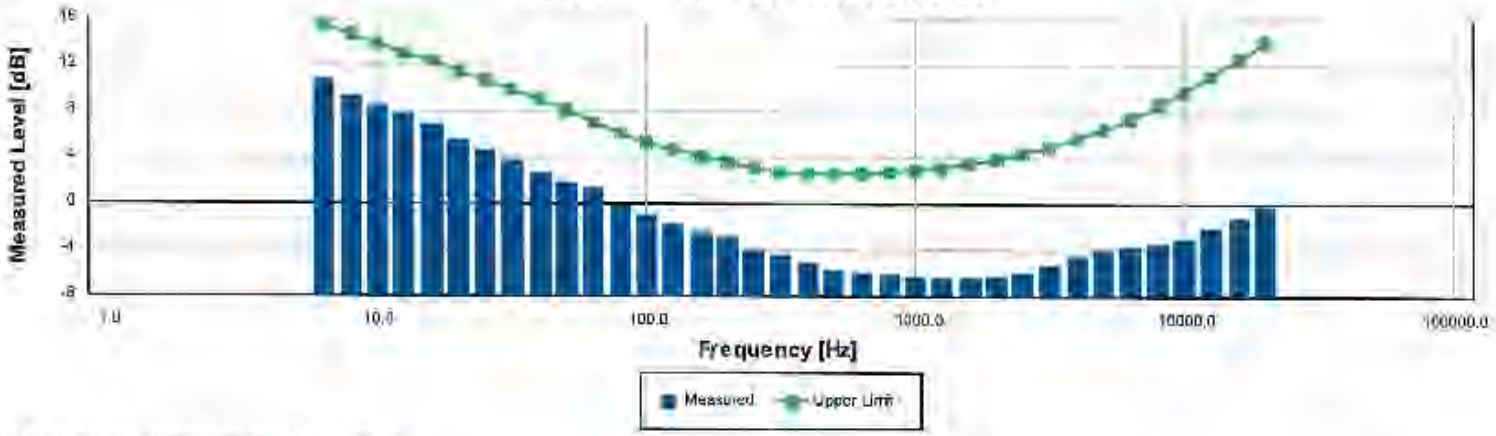
Total Harmonic Distortion

Measured using 1/3-Octave filters

Measurement	Test Result [dB]	Lower Limit [dB]	Upper Limit [dB]	Expanded Uncertainty [dB]	Result
10 Hz Signal	137.54	137.20	138.80	0.15	Pass
THD	-73.91		-60.00	0.00 ‡	Pass
THD+N	-66.22		-60.00	0.00 ‡	Pass

-- End of measurement results--

1/3-Octave Self-Generated Noise



The SLM is set to low range and 20 dB gain.

Frequency [Hz]	Test Result [dB]	Upper limit [dB]	Result
6.30	10.83	15.50	Pass
8.00	9.46	14.70	Pass
10.00	8.58	13.90	Pass
12.50	7.75	13.10	Pass
16.00	7.04	12.30	Pass
20.00	5.57	11.50	Pass
25.00	4.70	10.70	Pass
31.50	3.91	9.90	Pass
40.00	2.57	9.10	Pass
50.00	1.97	8.10	Pass
63.00	1.42	7.10	Pass
80.00	-0.09	6.10	Pass
100.00	-0.83	5.30	Pass
125.00	-1.73	4.70	Pass
160.00	-2.35	4.10	Pass
200.00	-2.82	3.60	Pass
250.00	-3.95	3.10	Pass
315.00	-4.31	2.70	Pass
400.00	-4.99	2.60	Pass
500.00	-5.75	2.60	Pass
630.00	-5.99	2.70	Pass
800.00	-6.09	2.80	Pass
1,000.00	-6.33	3.00	Pass
1,250.00	-6.47	3.20	Pass
1,600.00	-6.44	3.50	Pass
2,000.00	-6.24	3.80	Pass
2,500.00	-5.83	4.30	Pass
3,150.00	-5.21	4.90	Pass
4,000.00	-4.49	5.70	Pass
5,000.00	-3.98	6.40	Pass
6,300.00	-3.72	7.40	Pass
8,000.00	-3.42	8.60	Pass
10,000.00	-2.91	9.80	Pass
12,500.00	-2.10	11.20	Pass
16,000.00	-1.23	12.60	Pass
20,000.00	-0.11	14.00	Pass

-- End of measurement results--

-- End of Report--

Signatory: Jacob Cannon

LARSON DAVIS - A PCB PIEZOTRONICS DIV.
1681 West 820 North
Provo, UT 84601, United States
716-684-0001

ACCREDITED Cert. #3822.01

LARSON DAVIS
A PCB DIVISION

Calibration Certificate

Certificate Number 2022004560

Customer:
The Modal Shop
10310 Aerohub Boulevard
Cincinnati, OH 45215, United States

Model Number	377B02	***Procedure Number***	D0001.8387		
Serial Number	311808	***Technician***	Ashlee Butterfield		
Test Results	**Pass**	***Calibration Date***	8 Apr 2022		
Initial Condition	AS RECEIVED same as shipped	***Calibration Due***			
Description	1/2 inch Microphone - FF - 0V	***Temperature***	24.4	°C	± 0.01 °C
		Humidity	36.9	%RH	± 0.5 %RH
		Static Pressure	101.42	kPa	± 0.03 kPa

Evaluation Method Tested electrically using an electrostatic actuator.

Compliance Standards Compliant to Manufacturer Specifications.

Issuing lab certifies that the instrument described above meets or exceeds all specifications as stated in the referenced procedure (unless otherwise noted). It has been calibrated using measurement standards traceable to the SI through the National Institute of Standards and Technology (NIST), or other national measurement institutes, and meets the requirements of ISO/IEC 17025:2017. **Test points marked with a ‡ do not fall within this laboratory's scope of accreditation.**

The quality system is registered to ISO 9001:2015.

This calibration is a direct comparison of the unit under test to the listed reference standards and did not involve any sampling plans to complete. No allowance has been made for the instability of the test device due to use, time, etc. Such allowances would be made by the customer as needed.

The uncertainties were computed in accordance with the ISO Guide to the Expression of Uncertainty in Measurement (GUM). A coverage factor of approximately 2 sigma (k=2) has been applied to the standard uncertainty to express the expanded uncertainty at approximately 95% confidence level.

Standards Used

Description	Cal Date	Cal Due	Cal Standard
Larson Davis Model 2900 Real Time Analyzer	07/01/2021	07/01/2022	001230
Microphone Calibration System	08/24/2021	08/24/2022	001233
1/2" Preamplifier	12/17/2021	12/17/2022	001274
Agilent 34401A DMM	12/07/2021	12/08/2022	001329
Larson Davis CAL250 Acoustic Calibrator	11/08/2021	11/08/2022	003030
Larson Davis 1/2" Preamplifier 7-pin LEMO	07/13/2021	07/13/2022	006507
1/2 inch Microphone - RI - 200V	09/18/2021	09/18/2022	006510
1/2 inch Microphone - RI - 200V	07/20/2021	07/20/2022	006519
Larson Davis 1/2" Preamplifier 7-pin LEMO	07/13/2021	07/13/2022	006530
Larson Davis 1/2" Preamplifier 7-pin LEMO	07/26/2021	07/26/2022	006531
Hart Scientific 2626-H Temperature Probe	02/04/2021	08/04/2022	006767
1/2" Preamplifier	03/24/2022	03/24/2023	PCB0000548

Sensitivity

Measurement	Test Result [mV/Pa]	Lower limit [mV/Pa]	Upper limit [mV/Pa]	Expanded Uncertainty [mV/Pa]	Result
Open Circuit Sensitivity	51.59	42.17	59.56	1.20	Pass

-- End of measurement results--

Capacitance

Measurement	Test Result [pF]				
Capacitance	13.00				‡

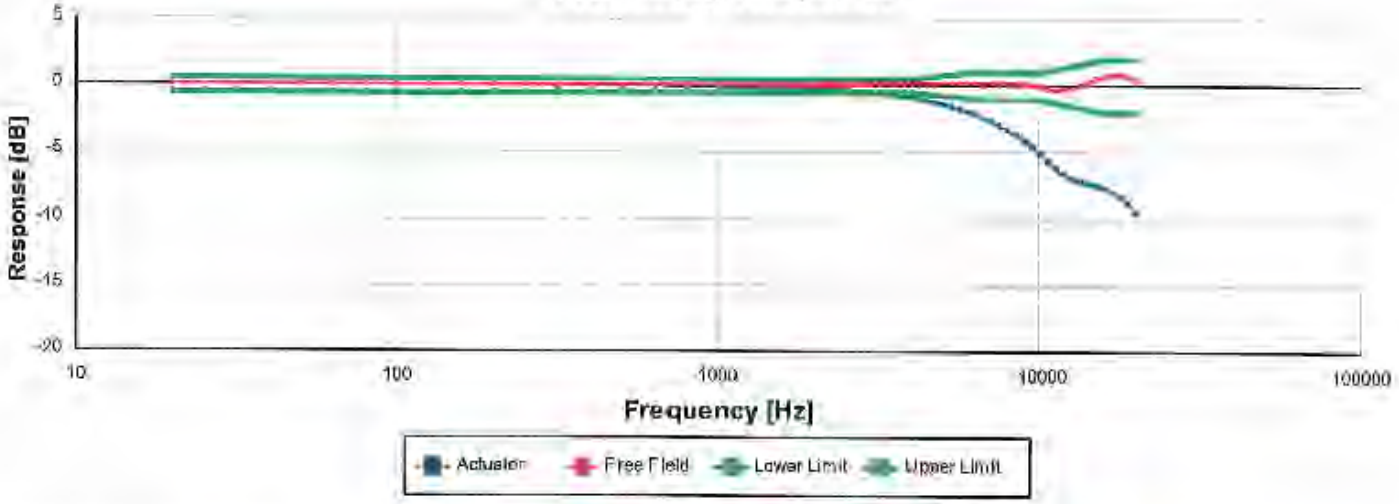
-- End of measurement results--

Lower Limiting Frequency

Measurement	Test Result [Hz]	Lower limit [Hz]	Upper limit [Hz]	Result
-3 dB Frequency	2.00	1.00	2.40	Pass ‡

-- End of measurement results--

Frequency Response



Data is normalized for 0 dB @ 251.19 Hz

Frequency [Hz]	Actuator [dB]	Free Field [dB]	Lower limit [dB]	Upper limit [dB]	Result
19.95	0.02	0.02	-0.50	0.50	Pass ‡
25.12	0.02	0.02	-0.50	0.50	Pass ‡
31.62	0.04	0.04	-0.50	0.50	Pass ‡
39.81	0.03	0.03	-0.50	0.50	Pass ‡
50.12	0.03	0.03	-0.50	0.50	Pass ‡
63.10	0.03	0.03	-0.50	0.50	Pass ‡
79.43	0.02	0.02	-0.50	0.50	Pass ‡
100.00	0.02	0.02	-0.50	0.50	Pass ‡
125.89	0.02	0.02	-0.50	0.50	Pass ‡
158.49	0.01	0.01	-0.50	0.50	Pass ‡
199.53	0.00	0.00	-0.50	0.50	Pass ‡
251.19	0.00	0.00	-0.50	0.50	Pass ‡
316.23	-0.01	0.00	-0.50	0.50	Pass ‡
398.11	-0.02	-0.02	-0.50	0.50	Pass ‡
501.19	-0.03	0.01	-0.50	0.50	Pass ‡
630.96	-0.03	0.01	-0.50	0.50	Pass ‡
794.33	-0.05	0.04	-0.50	0.50	Pass ‡
1,000.00	-0.08	0.04	-0.50	0.50	Pass ‡
1,059.25	-0.08	0.05	-0.50	0.50	Pass ‡
1,122.02	-0.09	0.05	-0.50	0.50	Pass ‡
1,188.50	-0.10	0.05	-0.50	0.50	Pass ‡
1,258.93	-0.11	0.05	-0.50	0.50	Pass ‡
1,333.52	-0.12	0.06	-0.50	0.50	Pass ‡
1,412.54	-0.14	0.05	-0.50	0.50	Pass ‡
1,496.24	-0.15	0.05	-0.50	0.50	Pass ‡
1,584.89	-0.17	0.04	-0.50	0.50	Pass ‡
1,678.80	-0.18	0.05	-0.50	0.50	Pass ‡
1,778.28	-0.20	0.05	-0.50	0.50	Pass ‡
1,883.65	-0.22	0.06	-0.50	0.50	Pass ‡
1,995.26	-0.25	0.06	-0.50	0.50	Pass ‡
2,113.49	-0.27	0.07	-0.50	0.50	Pass ‡
2,238.72	-0.30	0.07	-0.50	0.50	Pass ‡
2,371.37	-0.33	0.08	-0.50	0.50	Pass ‡
2,511.89	-0.37	0.09	-0.50	0.50	Pass ‡
2,660.73	-0.41	0.10	-0.50	0.50	Pass ‡
2,818.38	-0.46	0.10	-0.50	0.50	Pass ‡
2,985.38	-0.52	0.10	-0.50	0.50	Pass ‡
3,162.28	-0.57	0.11	-0.50	0.50	Pass ‡
3,349.65	-0.64	0.10	-0.50	0.50	Pass ‡
3,548.13	-0.71	0.11	-0.50	0.50	Pass ‡
3,758.37	-0.80	0.10	-0.50	0.50	Pass ‡
3,981.07	-0.89	0.11	-0.50	0.50	Pass ‡
4,216.97	-0.99	0.12	-0.56	0.56	Pass ‡
4,466.84	-1.11	0.12	-0.63	0.63	Pass ‡
4,731.51	-1.24	0.13	-0.69	0.69	Pass ‡
5,011.87	-1.38	0.15	-0.75	0.75	Pass ‡
5,308.84	-1.54	0.16	-0.81	0.81	Pass ‡
5,623.41	-1.72	0.16	-0.88	0.88	Pass ‡
5,956.62	-1.92	0.15	-0.94	0.94	Pass ‡
6,309.57	-2.14	0.15	-1.00	1.00	Pass ‡
6,683.44	-2.38	0.14	-1.00	1.00	Pass ‡

Frequency [Hz]	Actuator [dB]	Free Field [dB]	Lower limit [dB]	Upper limit [dB]	Result
7,079.46	-2.63	0.15	-1.00	1.00	Pass ‡
7,498.94	-2.94	0.13	-1.00	1.00	Pass ‡
7,943.28	-3.26	0.13	-1.00	1.00	Pass ‡
8,413.95	-3.61	0.12	-1.00	1.00	Pass ‡
8,912.51	-4.04	0.07	-1.00	1.00	Pass ‡
9,440.61	-4.51	0.01	-1.00	1.00	Pass ‡
10,000.00	-4.99	-0.04	-1.00	1.00	Pass ‡
10,592.54	-5.61	-0.21	-1.13	1.13	Pass ‡
11,220.19	-6.12	-0.26	-1.25	1.25	Pass ‡
11,885.02	-6.53	-0.21	-1.38	1.38	Pass ‡
12,589.25	-6.92	-0.15	-1.50	1.50	Pass ‡
13,335.21	-7.14	0.05	-1.63	1.63	Pass ‡
14,125.38	-7.31	0.28	-1.75	1.75	Pass ‡
14,962.36	-7.44	0.53	-1.88	1.88	Pass ‡
15,848.93	-7.65	0.70	-2.00	2.00	Pass ‡
16,788.04	-7.92	0.80	-2.00	2.00	Pass ‡
17,782.80	-8.29	0.82	-2.00	2.00	Pass ‡
18,836.49	-8.77	0.74	-2.00	2.00	Pass ‡
19,952.62	-9.54	0.39	-2.00	2.00	Pass ‡

-- End of measurement results--

Signatory: *Ashlee Butterfield*

LARSON DAVIS - A PCB PIEZOTRONICS DIV.
1681 West 820 North
Provo, UT 84601, United States
716-684-0001

Calibration Certificate

Certificate Number 2022005689

Customer:
The Modal Shop
10510 Aerohub Boulevard
Cincinnati, OH 45215, United States

Model Number	CAL200	***Procedure Number***	D0001.8386		
Serial Number	20099	***Technician***	Scott Montgomery		
Test Results	**Pass**	***Calibration Date***	2 May 2022		
Initial Condition	As Manufactured	***Calibration Due***			
Description	Larson Davis CAL200 Acoustic Calibrator	***Temperature***	24	°C	± 0.3 °C
		Humidity	31	%RH	± 3 %RH
		Static Pressure	101.1	kPa	± * kPa

Evaluation Method The data is aquired by the insert voltage calibration method using the reference microphone's open circuit sensitivity. Data reported in dB re 20 uPa

Compliance Standards Compliant to Manufacturer Specifications per D0001.8190 and the following standards:
IEC 60942:2017 ANSI S1.40-2006

Issuing lab certifies that the instrument described above meets or exceeds all specifications as stated in the referenced procedure (unless otherwise noted). It has been calibrated using measurement standards traceable to the SI through the National Institute of Standards and Technology (NIST), or other national measurement institutes, and meets the requirements of ISO/IEC 17025:2017. **Test points marked with a ‡ in the uncertainties column do not fall within this laboratory's scope of accreditation.**

The quality system is registered to ISO 9001:2015.

This calibration is a direct comparison of the unit under test to the listed reference standards and did not involve any sampling plans to complete. No allowance has been made for the instability of the test device due to use, time, etc. Such allowances would be made by the customer as needed.

The uncertainties were computed in accordance with the ISO Guide to the Expression of Uncertainty in Measurement (GUM). A coverage factor of approximately 2 sigma (k=2) has been applied to the standard uncertainty to express the expanded uncertainty at approximately 95% confidence level.

Standards Used

Description	Cal Date	Cal Due	Cal Standard
Agilent 34401A DMM	08/06/2021	08/06/2022	001021
Larson Davis Model 2900 Real Time Analyzer	03/31/2022	03/31/2023	001051
Microphone Calibration System	02/23/2022	02/23/2023	005446
1/2" Preamplifier	08/26/2021	08/26/2022	006506
Larson Davis 1/2" Preamplifier 7-pin LEMO	08/09/2021	08/09/2022	006507
1/2 inch Microphone - RI - 200V	09/23/2021	09/23/2022	006511
Hart Scientific 2626-H Temperature Probe	02/04/2021	08/04/2022	006767
Pressure Sensor	03/15/2022	12/14/2022	PCB0087008

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1681 West 820 North
Provo, UT 84601, United States
716-684-0001

ACCREDITED Cal 3023.01

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Output Level

Nominal Level [dB]	Pressure [kPa]	Test Result [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
114	100.7	114.02	113.80	114.20	0.14	Pass
94	101.1	94.02	93.80	94.20	0.15	Pass

-- End of measurement results--

Frequency

Nominal Level [dB]	Pressure [kPa]	Test Result [Hz]	Lower limit [Hz]	Upper limit [Hz]	Expanded Uncertainty [Hz]	Result
114	100.7	1,000.26	993.00	1,007.00	0.20	Pass
94	101.1	1,000.29	993.00	1,007.00	0.20	Pass

-- End of measurement results--

Total Harmonic Distortion + Noise (THD+N)

Nominal Level [dB]	Pressure [kPa]	Test Result [%]	Lower limit [%]	Upper limit [%]	Expanded Uncertainty [%]	Result
114	100.7	0.37	0.00	2.00	0.25 ‡	Pass
94	101.1	0.39	0.00	2.00	0.25 ‡	Pass

-- End of measurement results--

Level Change Over Pressure

Tested at: 114 dB, 24 °C, 34 %RH

Nominal Pressure [kPa]	Pressure [kPa]	Test Result [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
108.0	107.6	-0.02	-0.25	0.25	0.04 ‡	Pass
101.3	101.0	0.00	-0.25	0.25	0.04 ‡	Pass
92.0	92.1	0.02	-0.25	0.25	0.04 ‡	Pass
83.0	83.2	0.01	-0.25	0.25	0.04 ‡	Pass
74.0	74.0	-0.03	-0.25	0.25	0.04 ‡	Pass
65.0	65.1	-0.13	-0.25	0.25	0.04 ‡	Pass

-- End of measurement results--

Frequency Change Over Pressure

Tested at: 114 dB, 24 °C, 34 %RH

Nominal Pressure [kPa]	Pressure [kPa]	Test Result [Hz]	Lower limit [Hz]	Upper limit [Hz]	Expanded Uncertainty [Hz]	Result
108.0	107.6	0.00	-7.00	7.00	0.20 ‡	Pass
101.3	101.0	0.00	-7.00	7.00	0.20 ‡	Pass
92.0	92.1	-0.01	-7.00	7.00	0.20 ‡	Pass
83.0	83.2	-0.01	-7.00	7.00	0.20 ‡	Pass
74.0	74.0	-0.02	-7.00	7.00	0.20 ‡	Pass
65.0	65.1	-0.03	-7.00	7.00	0.20 ‡	Pass

-- End of measurement results--

Certificate Number 2022005689

Total Harmonic Distortion + Noise (THD+N) Over Pressure

Tested at: 114 dB, 24 °C, 34 %RH

Nominal Pressure [kPa]	Pressure [kPa]	Test Result [%]	Lower limit [%]	Upper limit [%]	Expanded Uncertainty [%]	Result
108.0	107.6	0.35	0.00	2.00	0.25 ‡	Pass
101.3	101.0	0.36	0.00	2.00	0.25 ‡	Pass
92.0	92.1	0.37	0.00	2.00	0.25 ‡	Pass
83.0	83.2	0.39	0.00	2.00	0.25 ‡	Pass
74.0	74.0	0.41	0.00	2.00	0.25 ‡	Pass
65.0	65.1	0.43	0.00	2.00	0.25 ‡	Pass

-- End of measurement results--

Signatory: Scott Montgomery

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Provo, UT 84601, United States
716-684-0001

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Cert. #3822.01

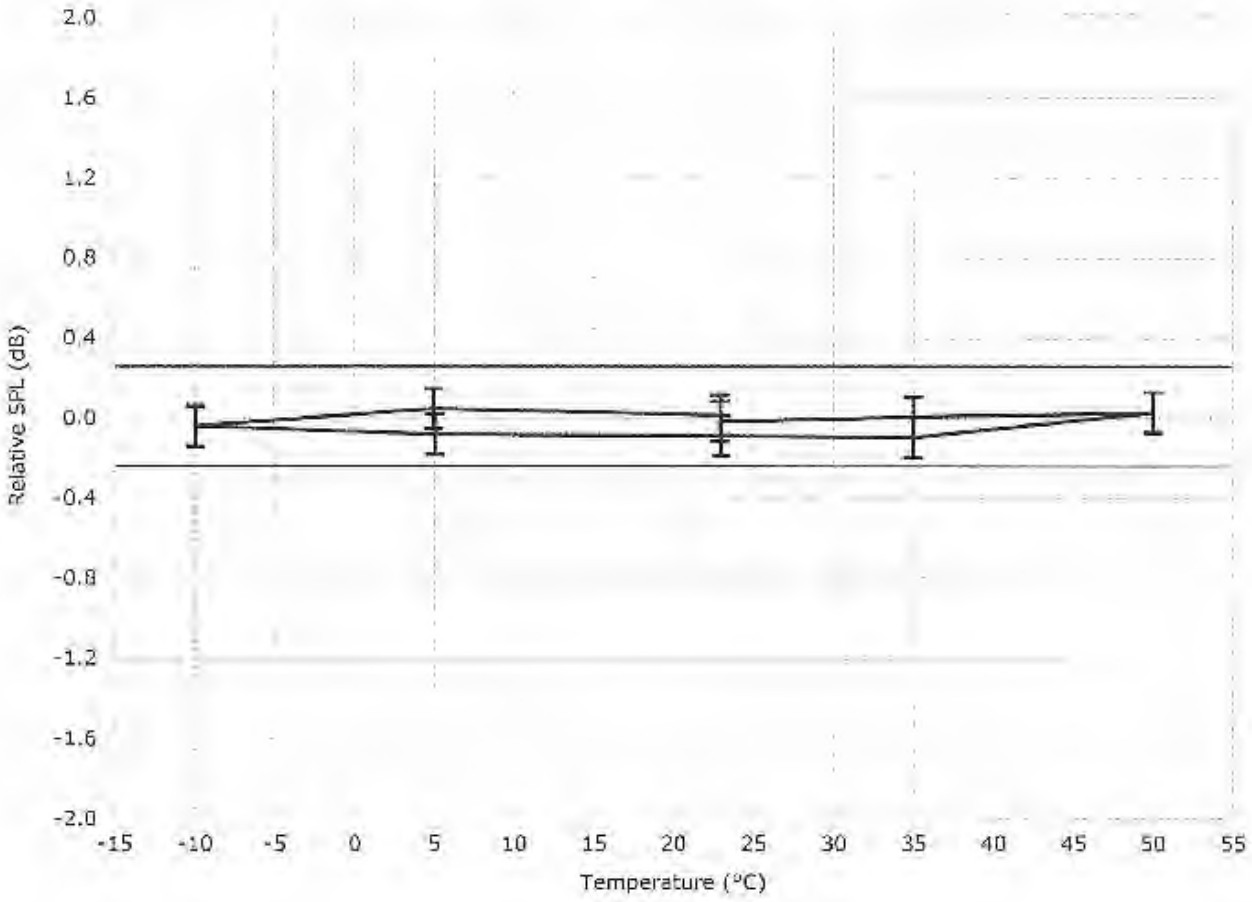
LARSON DAVIS
A PCB DIVISION

Model CAL200 Relative SPL vs. Temperature

Larson Davis Model CAL200 Serial Number: 20099

Model CAL200 Relative SPL vs. Temperature at 50% RH.
A 2559 Mic (SN: 2980) with a PRM901 Preamp (SN: 0205), station 24 was used to check the levels.

Test Date: 25 Mar 2022 11:51:52 AM



0.1dB expanded uncertainty at ~95% confidence level (k=2)

Sequence File: CAL200.SEQ

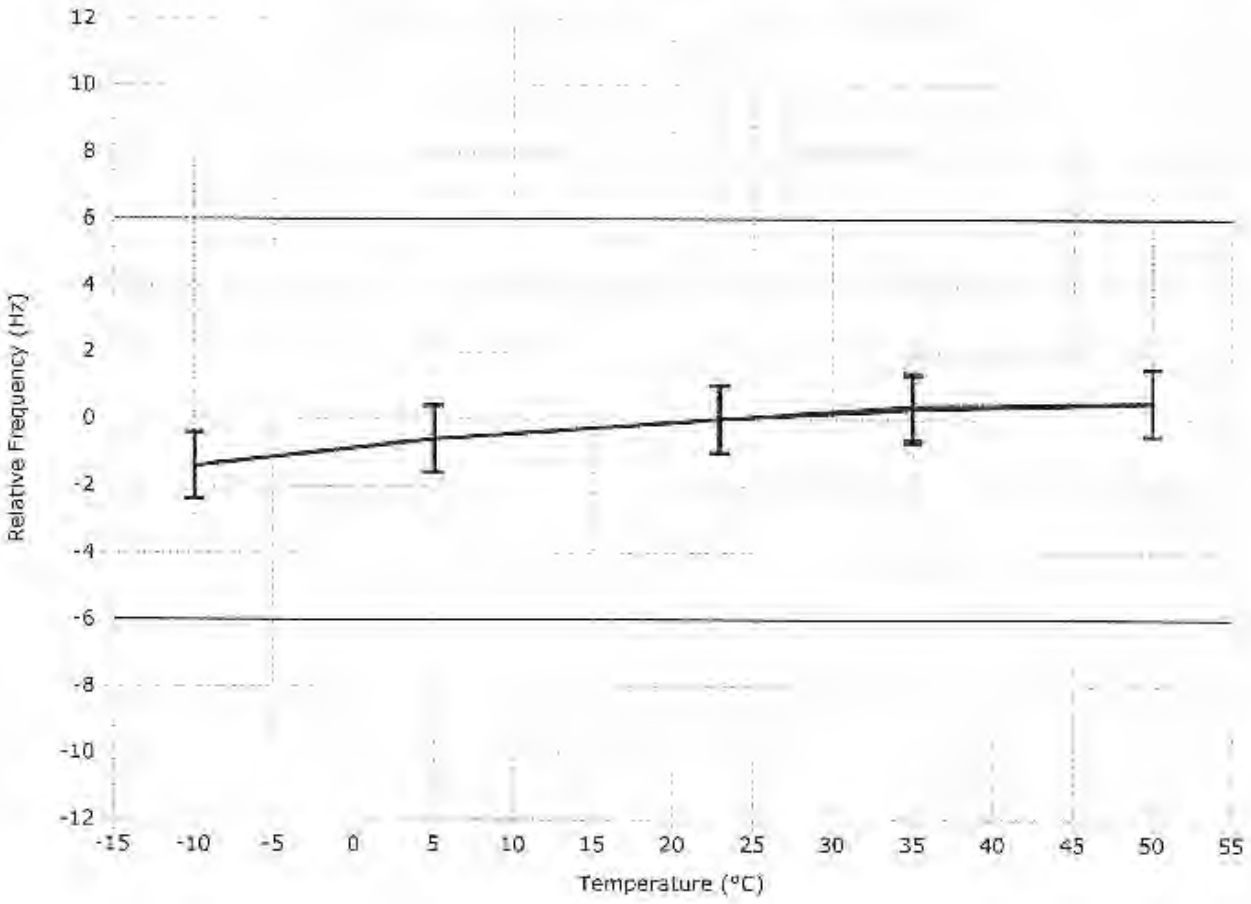
Test Location: Larson Davis, a division of PCB Piezotronics, Inc.
1681 West 820 North, Provo, Utah 84601
Tel: 716 684-0001 www.LarsonDavis.com

Model CAL200 Relative Frequency vs. Temperature

Larson Davis Model CAL200 Serial Number: 20099

Model CAL200 Relative Frequency vs. Temperature at 50% RH.
A 2559 Mic (SN: 2980) with a PRM901 Preamp (SN: 0205), station 24 was used to check the levels.

Test Date: 25 Mar 2022 11:51:52 AM



1.0 Hz expanded uncertainty at ~95% confidence level (k=2)

Sequence File: CAL200.SEQ

Test Location: Larson Davis, a division of PCB Piezotronics, Inc.
1681 West 820 North, Provo, Utah 84601
Tel: 716 684-0001 www.LarsonDavis.com

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Delta, BC V3M 6G4

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1.800.561.8187

Calibration Certificate

Customer: *Arcadis Canada Inc*

Certificate: C548419-00-02

Unit Identification

Manufacturer: **Larson Davis**
Model: **CAL200**
Description: **Precision Acoustic Calibrator**
Serial: **8817**
Unit ID: **NA**

Calibration Date

Calibration Date: **3-Jan-2023**
Due Date: **3-Jan-2024**

Calibration Conditions

Temperature: **20.5°C**
Humidity: **28.72 %**
Barometric Pressure: **N/A**

General Information

Remark:**N/A**

Standards Used

Unit ID	Manufacturer	Model	Cal Date	Due Date
INV127	Agilent	34401A	16-Jun-2022	16-Jun-2023
INV148	Brüel & Kjær	4188/2671	13-Dec-2022	13-Dec-2023
INV149	Brüel & Kjær	4228	13-Dec-2022	13-Dec-2023
INV150	Brüel & Kjær	Nexus 2693-OS4	12-Dec-2022	12-Dec-2023

The calibration was performed using measurement standards traceable to the National Measurement Institute Standards (NMIS) part of the National Research Council of Canada (NRC) or the National Institute of Standards and Technology (NIST), or to accepted instrinsic standards or measurement, or is derived by ratio type self-calibration techniques. Measurement uncertainties given in this report are based on a coverage factor of k=2 corresponding to a confidence level of approximately 95%.

Calibrated by: ***M. Srougi-Nguyen***

Approved by:

M INSTRUMENTS INC

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Test Results
Procedure: **Larson Davis CAL200 /Nexus** Rev: **2**
Data Type: **As Found** Results: **Pass**

Test Description	True Value	Reading	Lower Limit	Upper Limit	Test Status	Exp Uncert
---- MEASUREMENT RESULTS ----						
94dB LEVEL TEST						
94.00 dB		94.08 dB	93.80 dB	94.20 dB	Pass	1.2e-001 dB
114dB LEVEL TEST						
114.00 dB		113.80 dB	113.80 dB	114.20 dB	Pass	1.3e-001 dB
FREQUENCY TEST						
1000 Hz		1000 Hz	990 Hz	1010 Hz	Pass	5.8e-001 Hz

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1.800.561.8187

Calibration Certificate

Customer: *Arcadis Canada Inc*

Certificate: C548419-00-01

Unit Identification

Manufacturer: **Larson Davis**
Model: **831**
Description: **Sound Level Meter**
Serial: **0001783**
Unit ID: **N/A**

Calibration Date

Calibration Date: **3-Jan-2023**
Due Date: **3-Jan-2024**

Calibration Conditions

Temperature: **21.51°C**
Humidity: **43.85 %**
Barometric Pressure: **N/A**

General Information

Remark:**N/A**

Standards Used

Unit ID	Manufacturer	Model	Cal Date	Due Date
INV105	IET Labs Inc	1986	25-Oct-2022	25-Oct-2023

The calibration was performed using measurement standards traceable to the National Measurement Institute Standards (NMIS) part of the National Research Council of Canada (NRC) or the National Institute of Standards and Technology (NIST), or to accepted instrinsic standards or measurement, or is derived by ratio type self-calibration techniques. Measurement uncertainties given in this report are based on a coverage factor of k=2 corresponding to a confidence level of approximately 95%.

Calibrated by: ***V. Laramee***

Approved by:

ITM INSTRUMENTS INC

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information@itm.com
1.800.561.8187

Test Results
Procedure: **Sound Level Meter (Type 1) Res_0.1 band A,C** Rev: **1**
Data Type: **As Found** Results: **Pass**

Test Description	True Value	Reading	Lower Limit	Upper Limit	Test Status	Exp Uncert
--- FREQUENCY-WEIGHTING CHARATERISTICS ---						
CALIBRATION LEVEL = 114.0dB						
---------- A-WEIGHTING ----------						
97.9 dBA @ 125 Hz		98.4 dBA	96.9 dBA	98.9 dBA	Pass	2.6e-001 dBA
105.4 dBA @ 250 Hz		105.8 dBA	104.4 dBA	106.4 dBA	Pass	2.6e-001 dBA
110.8 dBA @ 500 Hz		111.1 dBA	109.8 dBA	111.8 dBA	Pass	2.6e-001 dBA
114.0 dBA @ 1 kHz		114.4 dBA	113.0 dBA	115.0 dBA	Pass	2.6e-001 dBA
115.2 dBA @ 2 kHz		115.6 dBA	114.2 dBA	116.2 dBA	Pass	2.6e-001 dBA
115.0 dBA @ 4 kHz		116.0 dBA	114.0 dBA	116.0 dBA	Pass	5.0e-001 dBA
---------- C-WEIGHTING ----------						
113.8 dBC @ 125 Hz		114.1 dBC	112.8 dBC	114.8 dBC	Pass	2.6e-001 dBC
114.0 dBC @ 250 Hz		114.1 dBC	113.0 dBC	115.0 dBC	Pass	2.6e-001 dBC
114.0 dBC @ 500 Hz		114.0 dBC	113.0 dBC	115.0 dBC	Pass	2.6e-001 dBC
114.0 dBC @ 1 kHz		114.3 dBC	113.0 dBC	115.0 dBC	Pass	2.6e-001 dBC
113.8 dBC @ 2 kHz		114.3 dBC	112.8 dBC	114.8 dBC	Pass	2.6e-001 dBC
113.2 dBC @ 4 kHz		114.2 dBC	112.2 dBC	114.2 dBC	Pass	5.0e-001 dBC

APPENDIX L

Meteorological Data

Hourly Data Report for August 31, 2022

If selected Local Standard Time (LST), add 1 hour to adjust for Daylight Saving Time where and when it is observed.

PORT WELLER (AUT)
ONTARIO
Current Station Operator: ECCC - MSC

Latitude:	43°15'00.000" N
Longitude:	79°13'00.000" W
Elevation:	79.00 m
Climate ID:	6136699
WMO ID:	71432
TC ID:	WWZ

TIME LST	Temp °C	Dew Point °C	Rel Hum %	Precip. Amount mm	Wind Dir 10's deg	Wind Spd km/h	Visibility km	Stn Press kPa	Hmdx	Wind Chill	Weather
00:00	20.9	17.2	80	0.0	29	29		100.01	26		NA
01:00	20.3	16.4	78	0.0	28	29		100.01	25		NA
02:00	20.2	15.6	75	0.0	29	34		100.00	25		NA
03:00	20.2	15.4	74	0.0	28	32		100.01			NA
04:00	18.9	16.6	86	0.0	23	2		100.04			NA
05:00	19.0	15.7	81	0.0	25	10		100.05			NA
06:00	19.1	15.8	81	0.0	24	4		100.09			NA
07:00	20.3	15.6	74	0.0	24	3		100.11	25		NA
08:00	21.6	15.6	68	0.0	24	6		100.12	26		NA
09:00	22.9	15.8	65	0.0	24	7		100.11	27		NA
10:00	23.7	16.3	63	0.0	25	17		100.11	29		NA
11:00	25.6	16.5	57	0.0	24	7		100.08	31		NA
12:00	26.7	17.4	57	0.0	24	7		100.03	32		NA
13:00	27.1	16.3	52	0.0	26	31		99.99	32		NA
14:00	26.8	17.2	56	0.0	26	30		99.96	32		NA
15:00	25.6	16.0	55	0.0	26	24		99.91	30		NA
16:00	26.3	15.9	53	0.0	26	39		99.89	31		NA
17:00	25.6	15.6	54	0.0	26	37		99.88	30		NA
18:00	24.9	16.2	59	0.0	26	37		99.87	30		NA
19:00	24.0	16.4	62	0.0	24	7		99.89	29		NA
20:00	23.2	17.9	72	0.0	22	10		99.91	29		NA
21:00	23.3	17.6	71	0.0	26	30		99.99	29		NA
22:00	22.0	17.0	73	0.0	31	38		100.07	27		NA

TIME LST	Temp °C	Dew Point °C	Rel Hum %	Precip. Amount mm	Wind Dir 10's deg	Wind Spd km/h	Visibility km	Stn Press kPa	Hmdx	Wind Chill	Weather
23:00	20.7	15.0	69	0.0	30	37		100.13	**25**		NA

Legend

- E = Estimated
- M = Missing
- NA = Not Available*
- [empty] = Indicates an unobserved value

Date modified:

2022-12-01

Hourly Data Report for September 01, 2022

If selected Local Standard Time (LST), add 1 hour to adjust for Daylight Saving Time where and when it is observed.

PORT WELLER (AUT)
ONTARIO
Current Station Operator: ECCC - MSC

Latitude:	43°15'00.000" N
Longitude:	79°13'00.000" W
Elevation:	79.00 m
Climate ID:	6136699
WMO ID:	71432
TC ID:	WWZ

TIME LST	Temp °C	Dew Point °C	Rel Hum %	Precip. Amount mm	Wind Dir 10's deg	Wind Spd km/h	Visibility km	Stn Press kPa	Hmdx	Wind Chill	Weather
00:00	19.9	14.1	69	0.0	30	39		100.19			NA
01:00	19.1	12.9	68	0.0	30	45		100.28			NA
02:00	18.2	12.0	67	0.0	29	41		100.36			NA
03:00	17.5	12.0	70	0.0	29	37		100.41			NA
04:00	17.1	11.8	71	0.0	30	31		100.47			NA
05:00	16.6	11.5	72	0.0	32	25		100.53			NA
06:00	16.5	11.4	72	0.0	32	20		100.63			NA
07:00	18.0	11.8	67	0.0	34	20		100.72			NA
08:00	18.0	10.0	59	0.0	36	14		100.79			NA
09:00	17.9	8.4	54	0.0	2	9		100.84			NA
10:00	18.0	8.4	53	0.0	5	8		100.87			NA
11:00	19.2	9.1	52	0.0	35	4		100.90			NA
12:00	20.6	10.2	51	0.0	31	7		100.88			NA
13:00	19.7	9.4	51	0.0	35	6		100.88			NA
14:00	20.4	10.6	54	0.0	4	4		100.86			NA
15:00	21.5	11.4	53	0.0	5	5		100.81			NA
16:00	24.0	12.9	50	0.0	22	4		100.78	27		NA
17:00	23.2	13.3	54	0.0	20	10		100.81	26		NA
18:00	21.8	13.2	58	0.0	19	13		100.82	25		NA
19:00	21.0	13.9	64	0.0	18	12		100.83			NA
20:00	20.2	13.9	67	0.0	18	9		100.86			NA
21:00	19.8	14.7	72	0.0	19	8		100.87			NA
22:00	19.9	15.5	76	0.0	22	4		100.88			NA

TIME LST	Temp °C	Dew Point °C	Rel Hum %	Precip. Amount mm	Wind Dir 10's deg	Wind Spd km/h	Visibility km	Stn Press kPa	Hmdx	Wind Chill	Weather
23:00	20.0	16.0	77	0.0	22	4		100.90	**25**		NA

Legend

- E = Estimated
- M = Missing
- NA = Not Available*
- [empty] = Indicates an unobserved value

Date modified:

2022-12-01

Hourly Data Report for September 02, 2022

If selected Local Standard Time (LST), add 1 hour to adjust for Daylight Saving Time where and when it is observed.

PORT WELLER (AUT)
ONTARIO
Current Station Operator: ECCC - MSC

Latitude:	43°15'00.000" N
Longitude:	79°13'00.000" W
Elevation:	79.00 m
Climate ID:	6136699
WMO ID:	71432
TC ID:	WWZ

TIME LST	Temp °C	Dew Point °C	Rel Hum %	Precip. Amount mm	Wind Dir 10's deg	Wind Spd km/h	Visibility km	Stn Press kPa	Hmdx	Wind Chill	Weather
00:00	19.2	15.5	79	0.0	20	6		100.93			NA
01:00	19.3	16.0	81	0.0	20	5		100.94			NA
02:00	18.4	14.7	79	0.0	20	4		100.95			NA
03:00	18.3	14.6	79	0.0	20	7		100.97			NA
04:00	17.8	14.5	81	0.0	18	10		101.05			NA
05:00	18.3	14.7	80	0.0	18	9		101.10			NA
06:00	18.5	15.7	84	0.0	17	8		101.16			NA
07:00	20.4	17.4	83	0.0	17	15		101.22	26		NA
08:00	22.4	17.7	75	0.0	17	13		101.23	28		NA
09:00	24.4	17.9	67	0.0	19	8		101.26	30		NA
10:00	26.1	16.6	56	0.0	20	7		101.27	31		NA
11:00	26.9	15.1	48	0.0	19	7		101.25	31		NA
12:00	27.7	16.3	50	0.0	24	4		101.24	33		NA
13:00	27.2	14.1	45	0.0	15	16		101.20	31		NA
14:00	24.5	20.2	77	0.0	5	15		101.18	32		NA
15:00	24.0	20.2	79	0.0	4	19		101.14	32		NA
16:00	23.7	20.6	83	0.0	6	20		101.12	32		NA
17:00	23.7	20.6	83	0.0	5	17		101.14	32		NA
18:00	23.3	20.7	85	0.0	5	15		101.14	31		NA
19:00	23.1	21.1	89	0.0	6	11		101.11	32		NA
20:00	22.9	21.2	90	0.0	9	6		101.12	31		NA
21:00	21.9	20.4	92	0.0	14	4		101.09	30		NA
22:00	22.3	16.6	70	0.0	14	9		101.05	27		NA

TIME LST	Temp °C	Dew Point °C	Rel Hum %	Precip. Amount mm	Wind Dir 10's deg	Wind Spd km/h	Visibility km	Stn Press kPa	Hmdx	Wind Chill	Weather
23:00	22.9	16.0	65	0.0	15	14		101.04	**28**		NA

Legend

- E = Estimated
- M = Missing
- NA = Not Available*
- [empty] = Indicates an unobserved value

Date modified:

2022-12-01

Hourly Data Report for October 24, 2022

If selected Local Standard Time (LST), add 1 hour to adjust for Daylight Saving Time where and when it is observed.

PORT WELLER (AUT)
ONTARIO
Current Station Operator: ECCC - MSC

Latitude:	43°15'00.000" N
Longitude:	79°13'00.000" W
Elevation:	79.00 m
Climate ID:	6136699
WMO ID:	71432
TC ID:	WWZ

TIME LST	Temp °C	Dew Point °C	Rel Hum %	Precip. Amount mm	Wind Dir 10's deg	Wind Spd km/h	Visibility km	Stn Press kPa	Hmdx	Wind Chill	Weather
00:00	9.0	8.5	96	0.0	24	4		101.27			NA
01:00	8.7	8.2	97	0.0	25	4		101.24			NA
02:00	8.6	8.0	96	0.0	0	1		101.25			NA
03:00	8.6	8.0	96	0.0	19	1		101.25			NA
04:00	8.4	8.1	98	0.0	26	7		101.32			NA
05:00	8.4	8.0	98	0.0	23	4		101.34			NA
06:00	7.8	7.3	97	0.0	15	6		101.35			NA
07:00	7.6	7.0	96	0.0	16	4		101.35			NA
08:00	9.8	8.6	92	0.0	18	4		101.36			NA
09:00	12.3	9.7	84	0.0		0		101.35			NA
10:00	12.4	9.5	83	0.0	32	5		101.34			NA
11:00	11.3	9.1	86	0.0	36	8		101.30			NA
12:00	10.7	8.5	86	0.0	35	14		101.24			NA
13:00	11.3	9.6	89	0.0	36	9		101.14			NA
14:00	11.8	10.0	89	0.0	2	8		101.08			NA
15:00	12.4	10.6	89	0.0	5	12		101.01			NA
16:00	12.5	10.6	88	0.0	1	6		101.04			NA
17:00	12.0	11.0	94	0.0	4	8		100.98			NA
18:00	12.4	11.3	93	0.0	6	12		100.98			NA
19:00	12.5	10.9	90	0.0	6	12		100.95			NA
20:00	11.3	10.2	93	0.0	22	4		100.87			NA
21:00	10.4	9.9	97	0.0	22	7		100.85			NA
22:00	10.3	9.9	97	0.0	19	4		100.79			NA

TIME LST	Temp °C	Dew Point °C	Rel Hum %	Precip. Amount mm	Wind Dir 10's deg	Wind Spd km/h	Visibility km	Stn Press kPa	Hmdx	Wind Chill	Weather
23:00	10.0	9.6	98	0.0	25	4		100.77			NA

Legend

- E = Estimated
- M = Missing
- NA = Not Available*
- [empty] = Indicates an unobserved value

Date modified:

2022-12-01

Hourly Data Report for October 25, 2022

If selected Local Standard Time (LST), add 1 hour to adjust for Daylight Saving Time where and when it is observed.

PORT WELLER (AUT)
ONTARIO
Current Station Operator: ECCC - MSC

Latitude:	43°15'00.000" N
Longitude:	79°13'00.000" W
Elevation:	79.00 m
Climate ID:	6136699
WMO ID:	71432
TC ID:	WWZ

TIME LST	Temp °C	Dew Point °C	Rel Hum %	Precip. Amount mm	Wind Dir 10's deg	Wind Spd km/h	Visibility km	Stn Press kPa	Hmdx	Wind Chill	Weather
00:00	10.0	9.7	98	0.0	24	3		100.74			NA
01:00	9.9	9.4	97	0.0	23	5		100.73			NA
02:00	9.7	9.1	95	0.0	14	9		100.64			NA
03:00	9.2	8.6	96	0.0	24	2		100.62			NA
04:00	9.0	8.6	97	0.0	26	9		100.62			NA
05:00	9.6	9.3	98	0.0	24	3		100.66			NA
06:00	9.2	9.0	98	0.0	25	3		100.66			NA
07:00	9.1	8.9	98	0.0	20	2		100.62			NA
08:00	9.6	9.3	99	0.0	13	4		100.65			NA
09:00	10.3	10.1	98	0.0	0	1		100.63			NA
10:00	10.5	9.4	93	0.0	33	3		100.58			NA
11:00	11.7	9.9	89	0.0	28	4		100.54			NA
12:00	13.5	10.5	82	0.0	31	6		100.47			NA
13:00	12.6	10.7	88	0.0	2	6		100.38			NA
14:00	13.5	12.2	92	0.0	5	14		100.28			NA
15:00	13.3	12.2	93	0.0	5	17		100.21			NA
16:00	13.0	12.1	94	0.0	6	13		100.17			NA
17:00	13.4	12.3	93	0.0	7	19		100.12			NA
18:00	12.4	11.3	93	0.0	14	3		100.12			NA
19:00	11.4	10.9	97	0.0	21	9		100.07			NA
20:00	10.8	10.4	97	0.0	22	8		100.01			NA
21:00	10.7	10.4	98	0.0	23	5		100.00			NA
22:00	10.4	10.1	98	0.0	23	3		99.96			NA

TIME LST	Temp °C	Dew Point °C	Rel Hum %	Precip. Amount mm	Wind Dir 10's deg	Wind Spd km/h	Visibility km	Stn Press kPa	Hmdx	Wind Chill	Weather
23:00	10.3	9.9	98	0.0	21	2		99.92			NA

Legend

- E = Estimated
- M = Missing
- NA = Not Available*
- [empty] = Indicates an unobserved value

Date modified:

2022-12-01

Hourly Data Report for October 26, 2022

If selected Local Standard Time (LST), add 1 hour to adjust for Daylight Saving Time where and when it is observed.

PORT WELLER (AUT)
ONTARIO
Current Station Operator: ECCC - MSC

Latitude:	43°15'00.000" N
Longitude:	79°13'00.000" W
Elevation:	79.00 m
Climate ID:	6136699
WMO ID:	71432
TC ID:	WWZ

TIME LST	Temp °C	Dew Point °C	Rel Hum %	Precip. Amount mm	Wind Dir 10's deg	Wind Spd km/h	Visibility km	Stn Press kPa	Hmdx	Wind Chill	Weather
00:00	10.7	10.4	98	0.0	12	4		99.81			NA
01:00	15.9	10.8	72	0.0	16	15		99.75			NA
02:00	15.6	10.6	72	0.0	15	11		99.71			NA
03:00	15.4	10.5	73	0.0	18	6		99.66			NA
04:00	15.2	10.4	73	0.0	17	6		99.62			NA
05:00	15.0	10.4	74	0.0	16	2		99.63			NA
06:00	14.2	10.4	78	0.0	16	4		99.60			NA
07:00	13.1	10.5	84	0.0	16	9		99.52			NA
08:00	13.6	10.3	80	0.0	9	6		99.51			NA
09:00	16.1	10.4	69	0.0	18	9		99.55			NA
10:00	16.8	10.5	66	0.0	19	13		99.55			NA
11:00	14.8	12.0	83	0.0	19	16		99.52			NA
12:00	14.2	12.9	92	0.7	18	16		99.52			NA
13:00	14.1	12.8	92	1.9	19	16		99.48			NA
14:00	13.9	12.9	94	3.2	19	17		99.48			NA
15:00	14.0	12.9	93	1.3	19	14		99.49			NA
16:00	14.0	12.8	92	0.0	21	13		99.54			NA
17:00	14.0	12.5	90	0.2	19	14		99.52			NA
18:00	14.0	12.1	88	0.0	20	17		99.67			NA
19:00	11.2	9.7	90	0.0	27	36		99.90			NA
20:00	10.9	9.1	89	0.0	27	33		100.04			NA
21:00	10.6	8.4	86	0.0	27	39		100.23			NA
22:00	10.2	8.0	86	0.0	28	39		100.41			NA

TIME LST	Temp °C	Dew Point °C	Rel Hum %	Precip. Amount mm	Wind Dir 10's deg	Wind Spd km/h	Visibility km	Stn Press kPa	Hmdx	Wind Chill	Weather
23:00	9.8	7.7	87	0.0	28	36		100.54			NA

Legend

- E = Estimated
- M = Missing
- NA = Not Available*
- [empty] = Indicates an unobserved value

Date modified:

2022-12-01

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