DOCKETED	
Docket Number:	21-AFC-01
Project Title:	Pecho Energy Storage Center
TN #:	240712-36
Document Title:	Pecho Energy Center's Application for Certification-5 7A-5 7D
Description:	N/A
Filer:	Chester Hong
Organization:	Golder
Submitter Role:	Applicant Consultant
Submission Date:	11/23/2021 4:49:00 PM
Docketed Date:	11/23/2021

APPENDIX 5.7A

Solid Solutions Noise Reports

Calibration Certificate

Certificate Number 2020010459

Customer:

Golder Associates Inc
Suite 100
6925 Century Avenue
Mississauga, ON L5N 7K2, Canada

Model Number	831	***Procedure Number***	D0001.8378		
Serial Number	0001314	***Technician***	Eric Olson		
Test Results	**Pass**	***Calibration Date***	17 Sep 2020		
Initial Condition	AS RECEIVED same as shipped	***Calibration Due***	17 Sep 2021		
Description	Larson Davis Model 831 Class 1 Sound Level Meter Firmware Revision: 2.403	***Temperature***	23.71	°C	± 0.25 °C
		Humidity	52.1	%RH	± 2.0 %RH
		Static Pressure	86.6	kPa	± 0.13 kPa

Evaluation Method Tested electrically using Larson Davis PRM831 S/N 0480 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

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

Periodic tests were performed in accordance with precedures from IEC 61672-3:2013 / ANSI/ASA S1.4-2014/Part3.

Calibration Certificate

Certificate Number 2020010495

Customer:

Golder Associates Inc
Suite 100
6925 Century Avenue
Mississauga, ON L5N 7K2, Canada

Model Number	831	***Procedure Number***	D0001.8384		
Serial Number	0001314	***Technician***	Eric Olson		
Test Results	**Pass**	***Calibration Date***	17 Sep 2020		
Initial Condition	AS RECEIVED same as shipped	***Calibration Due***	17 Sep 2021		
Description	Larson Davis Model 831 Class 1 Sound Level Meter Firmware Revision: 2.403	***Temperature***	23.62	°C	± 0.25 °C
		Humidity	50.1	%RH	± 2.0 %RH
		Static Pressure	86.57	kPa	± 0.13 kPa

Evaluation Method

Tested with:

Larson Davis PRM831. S/N 0480
PCB 377B20. S/N 137680
Larson Davis CAL200. S/N 9079
Larson Davis CAL291. S/N 0108

Data reported in dB re 20 µPa.

Compliance Standards

Compliant to Manufacturer Specifications and the following standards when combined with Calibration Certificate from procedure D0001.8378:

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 S1.11 (R2009) Class 1
IEC 61260:2001 Class 1	ANSI S1.25 (R2007)
IEC 61672:2013 Class 1	ANSI S1.43 (R2007) Type 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 O, 2016-09-19

For 1/4" microphones, the Larson Davis ADP024 1/4" to 1/2" adaptor is used with the calibrators and the Larson Davis ADP043 1/4" to

Initial Assessment

Certificate Number 2020010505

Customer:
Golder Associates Inc
Suite 100
6925 Century Avenue
Mississauga, ON L5N 7K2, Canada

Model Number	CAL200	***Procedure Number***	D0001.8386		
Serial Number	4318	***Technician***	Scott Montgomery		
Test Results	**Pass**	***Calibration Date***	18 Sep 2020		
Initial Condition	As Received	***Calibration Due***	18 Sep 2021		
Description	Larson Davis CAL200 Acoustic Calibrator	***Temperature***	25	°C	± 0.3 °C
		Humidity	29	%RH	± 3 %RH
		Static Pressure	101.3	kPa	± 1 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 µPa.

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	08/04/2020	08/04/2021	001021
Larson Davis Model 2900 Real Time Analyzer	04/02/2020	04/02/2021	001051
Microphone Calibration System	03/03/2020	03/03/2021	005446
1/2" Preamplifier	08/27/2020	08/27/2021	006506
Larson Davis 1/2" Preamplifier 7-pin LEMO	08/06/2020	08/06/2021	006507
1/2 inch Microphone - RI - 200V	06/04/2020	06/04/2021	006510
Pressure Transducer	10/18/2019	10/18/2020	007204

Calibration Certificate

Certificate Number 2020010507

Customer:
Golder Associates Inc
Suite 100
6925 Century Avenue
Mississauga, ON L5N 7K2, Canada

Model Number	CAL200	***Procedure Number***	D0001.8386		
Serial Number	4318	***Technician***	Scott Montgomery		
Test Results	**Pass**	***Calibration Date***	18 Sep 2020		
Initial Condition	Adjusted	***Calibration Due***	18 Sep 2021		
Description	Larson Davis CAL200 Acoustic Calibrator	***Temperature***	25	°C	± 0.3 °C
		Humidity	29	%RH	± 3 %RH
		Static Pressure	100.9	kPa	± 1 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 µPa.

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	08/04/2020	08/04/2021	001021
Larson Davis Model 2900 Real Time Analyzer	04/02/2020	04/02/2021	001051
Microphone Calibration System	03/03/2020	03/03/2021	005446
1/2" Preamplifier	08/27/2020	08/27/2021	006506
Larson Davis 1/2" Preamplifier 7-pin LEMO	08/06/2020	08/06/2021	006507
1/2 inch Microphone - RI - 200V	06/04/2020	06/04/2021	006510
Pressure Transducer	10/18/2019	10/18/2020	007204

CERTIFICATE OF ENVIRONMENTAL TEST

Certificate # 2020-0924-01

Test Date:	22 Sep 2020		
Sound Level Meter:	831	**Serial #:**	0001314
Preamplifier Model:	PRM831	**Serial #:**	0480
Microphone Model:	N/A	**Serial #:**	N/A
Temperature Range:	-40° C to 70°C	**Humidity Range:**	50% to 95%

Calibrated Equipment used durring Test:

Type	Mfg.	Model	Serial	Trace #	Cal Due
Humidity Chamber	Thermotron	SE-1000L	36541	2019-1121-1	21 NOV 2020

ENVIROMENTAL CONDITIONS:

Temperature:	25 °C
Relative Humidity:	30 %
Barometric Pressure:	86 kPa

This "Certificate of Environmental Test" verifies that this system has been tested to the Larson Davis environmental specifications appropriate for the instrument. Copies of the test data are attached for customer review.

This calibration complies with the requirements of ISO 9001.

The results documented in this certificate relate only to the system that was verified and tested. Calibration interval assignment and adjustment is the responsibility of the end user. This certificate may not be reproduced, except in full, without the written approval of Larson Davis.

Eric Olson, Technician

Test preformed at: Larson Davis, a division of PCB Piezotronics, Inc
1681 West 820 North, Provo Utah 84601

Larson Davis, a division of PCB Piezotronics, Inc
Tel: 716 684-0001 www.LarsonDavis.com

Calibration Certificate

Certificate Number 2020001094

Customer:
Golder Associates Inc
6026 Northwest 1st Place
Gainesville, FL 32607, United States

Model Number	824	***Procedure Number***	D0001.8442		
Serial Number	A3106	***Technician***	Sean Childs		
Test Results	**Pass**	***Calibration Date***	23 Jan 2020		
Initial Condition	AS RECEIVED same as shipped	***Calibration Due***	23 Jan 2021		
Description	Larson Davis Model 824	***Temperature***	23.27	°C	± 0.01 °C
	Firmware Revision: 4.290	***Humidity***	53	%RH	± 0.5 %RH
		Static Pressure	86.98	kPa	± 0.03 kPa

Evaluation Method Tested electrically using Larson Davis PRM902 S/N 3275 and an ADP005 input adaptor substituted for the microphone.
Data reported in dB re 20 µPa assuming a microphone sensitivity of 44.5 mV/Pa.

Compliance Standards Compliant to Manufacturer Specifications and the following standards:

IEC 61672:2002 Class 1	ANSI S1.4-1983 Type 1
IEC 61260:2001 Class 1	ANSI S1.11-1986 Type 1D
IEC 60651:2001 Type 1	IEC 60804:2000 Type 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 17025:2005.
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 JCGM 100:2008 (ISO/IEC Guide 98-3:2008) Evaluation of measurement data - Guide to the expression of uncertainty in measurement. 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
Hart Scientific 2626-S Humidity/Temperature Sensor	07/18/2019	07/18/2020	006946
SRS DS360 Ultra Low Distortion Generator	03/04/2019	03/04/2020	007635

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

ilac-MRA A2LA ACCREDITED Cert. #3622.01

LARSON DAVIS A PCB PIEZOTRONICS DIV.

Calibration Certificate

Certificate Number 2020000951

Customer:
Golder Associates
6026 Northwest 1st Place
Gainesville, FL 32607, United States

Model Number	2560	***Procedure Number***	D0001.8387		
Serial Number	3424	***Technician***	Abraham Ortega		
Test Results	**Pass**	***Calibration Date***	21 Jan 2020		
Initial Condition	AS RECEIVED same as shipped	***Calibration Due***	21 Jan 2021		
Description	1/2 inch Microphone - RI - 200V	***Temperature***	23.1	°C	± 0.01 °C
		Humidity	30.5	%RH	± 0.5 %RH
		Static Pressure	101.50	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 17025:2005.
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	07/01/2019	07/01/2020	001230
Microphone Calibration System	08/27/2019	08/27/2020	001233
1/2" Preamplifier	12/17/2019	12/17/2020	001274
Agilent 34401A DMM	12/06/2019	12/06/2020	001329
Larson Davis CAL250 Acoustic Calibrator	12/23/2019	12/23/2020	003030
1/2" Preamplifier	04/12/2019	04/12/2020	006506
Larson Davis 1/2" Preamplifier 7-pin LEMO	07/08/2019	07/08/2020	006507
1/2 inch Microphone - RI - 200V	05/21/2019	05/21/2020	006510
1/2 inch Microphone - RI - 200V	08/06/2019	08/06/2020	006519
Larson Davis 1/2" Preamplifier 7-pin LEMO	07/08/2019	07/08/2020	006530
Larson Davis 1/2" Preamplifier 7-pin LEMO	08/14/2019	08/14/2020	006531

Calibration Certificate

Certificate Number 2020001093
Customer:
Golder Associates Inc
6026 Northwest 1st Place
Gainesville, FL 32607, United States

Model Number	PRM902	***Procedure Number***	D0001.8383	
Serial Number	3275	***Technician***	Sean Childs	
Test Results	**Pass**	***Calibration Date***	23 Jan 2020	
Initial Condition	AS RECEIVED same as shipped	***Calibration Due***	23 Jan 2021	
Description	Larson Davis 1/2" Preamplifier 7-pin LEMO	***Temperature***	23.31 °C	± 0.01 °C
		Humidity	52.5 %RH	± 0.5 %RH
		Static Pressure	86.98 kPa	± 0.03 kPa

Evaluation Method Tested electrically using an 18.0 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

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 17025:2005.
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
Larson Davis Model 2900 Real Time Analyzer	01/10/2020	01/10/2021	003062
Hart Scientific 2626-S Humidity/Temperature Sensor	07/18/2019	07/18/2020	006946
Agilent 34401A DMM	07/11/2019	07/11/2020	007172
SRS DS360 Ultra Low Distortion Generator	03/04/2019	03/04/2020	007635

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LARSON DAVIS A PCB PIEZOTRONICS DIV.

Calibration Certificate

Certificate Number 2020001115

Customer:
Golder Associates Inc
6026 Northwest 1st Place
Gainesville, FL 32607, United States

Model Number	CAL200	***Procedure Number***	D0001.8386		
Serial Number	5636	***Technician***	Scott Montgomery		
Test Results	**Pass**	***Calibration Date***	23 Jan 2020		
Initial Condition	Adjusted	***Calibration Due***	23 Jan 2021		
Description	Larson Davis CAL200 Acoustic Calibrator	***Temperature***	24	°C	± 0.3 °C
		Humidity	29	%RH	± 3 %RH
		Static Pressure	101.2	kPa	± 1 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 µPa.

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 17025:2005.
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	08/15/2019	08/15/2020	001021
Larson Davis Model 2900 Real Time Analyzer	04/02/2019	04/02/2020	001051
Microphone Calibration System	03/04/2019	03/04/2020	005446
1/2" Preamplifier	09/17/2019	09/17/2020	006506
Larson Davis 1/2" Preamplifier 7-pin LEMO	08/06/2019	08/06/2020	006507
1/2 inch Microphone - RI - 200V	05/21/2019	05/21/2020	006510
Pressure Transducer	06/24/2019	06/24/2020	007310

APPENDIX 5.7B

Pecho Construction Noise Model Inputs/Noise Model Receptors

Pecho Construction Noise Model Inputs

Name	M.	ID	Result. PWL			Result. PWL"			Lw / Li			Correction			Sound Reduction		Attenuat	Operating Time			K0	Freq.	Direct.	Moving Pt. Src		
			Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night				Number		
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(m²)		(min)	(min)	(min)	(dB)	(Hz)		Day	Evening	Night
Turbine Hall			119	119	119	71.5	71.5	71.5	Lw	Turbine_Spheres		0	0	0				360	0	0	0		(none)			
Spheres			119	119	119	77.8	77.8	77.8	Lw	Turbine_Spheres		0	0	0				480	0	0	0		(none)			
Diesel Generators			113.4	113.4	113.4	58.9	58.9	58.9	Lw	GenSet		0	0	0				480	0	0	0		(none)			
Pickup Trucks			117.5	117.5	117.5	63	63	63	Lw	PickUps		0	0	0				240	0	0	0		(none)			
Civil Work			131.9	131.9	131.9	79.4	79.4	79.4	Lw	CivilCalc		0	0	0				240	0	0	0		(none)			
Cavern Const_1			120.3	120.3	120.3	83.6	83.6	83.6	Lw	CavernCalc_1		0	0	0				660	0	0	0		(none)			
Cavern Const_2			122.4	122.4	122.4	85.7	85.7	85.7	Lw	Cavern_2		0	0	0				240	0	0	0		(none)			

Pecho Construction Noise Model Receptors

Name	M.	ID	Level Lr		Limit. Value		Land Use			Height		Coordinates		
			Day	Night	Day	Night	Type	Auto	Noise Type			X	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)				(m)		(m)	(m)	(m)
24 Hour		RD-PECHO-71	69.2	-80.2	0	0		x	Total	2	r	700153.71	3914536.8	22
Site 1		RD-PECHO-71	63	-80.2	0	0		x	Total	2	r	699744.74	3914750.5	22
Site 2		RD-PECHO-71	43.8	-80.2	0	0		x	Total	2	r	699058.69	3915347.3	18.74
Site 3		RD-PECHO-71	48.3	-80.2	0	0		x	Total	2	r	701070.45	3914623.3	32
Site 4		RD-PECHO-71	51	-80.2	0	0		x	Total	2	r	699561.21	3915313.7	27.8
Site 6		RD-PECHO-71	48.5	-80.2	0	0		x	Total	2	r	699163.59	3913884.1	87.31
NSA01		RD-PECHO-04	60.2	-80.2	0	0		x	Total	2	r	700419.42	3914138.9	30.8
NSA02		RD-PECHO-03	56.9	-80.2	0	0		x	Total	2	r	700615.94	3914228.9	30.45
NSA03		RD-PECHO-01	54.4	-80.2	0	0		x	Total	2	r	700729.18	3914336.1	30.51
NSA04		RD-PECHO-02	49.1	-80.2	0	0		x	Total	2	r	700813.03	3914184.2	52.12
NSA05		RD-PECHO-05	49.4	-80.2	0	0		x	Total	2	r	700942.86	3914518.9	24.8
NSA06		RD-PECHO-06	49.1	-80.2	0	0		x	Total	2	r	700932.92	3914650.7	29.7
NSA07		RD-PECHO-07	42.9	-80.2	0	0		x	Total	2	r	701248.22	3914791.1	33.02
NSA08		RD-PECHO-08	40.2	-80.2	0	0		x	Total	2	r	701564.36	3914965.7	42
NSA09		RD-PECHO-09	38.4	-80.2	0	0		x	Total	2	r	701615.43	3915141.5	42
NSA10		RD-PECHO-10	39.7	-80.2	0	0		x	Total	2	r	701763.94	3915071.6	45.66
NSA11		RD-PECHO-79	35.7	-80.2	0	0		x	Total	2	r	701828.39	3915563	71.09
NSA12		WR-PECHO-08	48.4	-80.2	0	0		x	Total	2	r	699043.56	3914338.6	108.97
NSA13		RD-PECHO-21	32.6	-80.2	0	0		x	Total	2	r	698390.52	3914652.5	61.92
NSA14		RD-PECHO-22	33.7	-80.2	0	0		x	Total	2	r	698761.36	3914826.1	16.82
NSA15		RD-PECHO-23	44.7	-80.2	0	0		x	Total	2	r	698895.22	3915056	13.8
NSA16		RD-PECHO-24	42.1	-80.2	0	0		x	Total	2	r	698702.62	3915191.1	12
NSA17		RD-PECHO-27	39.8	-80.2	0	0		x	Total	2	r	698562.39	3915414.9	18.12
NSA18		RD-PECHO-25	43.5	-80.2	0	0		x	Total	2	r	698976.51	3915314.7	16.65
NSA19		RD-PECHO-26	44.9	-80.2	0	0		x	Total	2	r	699158.49	3915312	20.3
NSA20		RD-PECHO-74	50.2	-80.2	0	0		x	Total	2	r	699610.65	3915391.1	32.19
NSA21		RD-PECHO-73	43.6	-80.2	0	0		x	Total	2	r	699883.77	3915783.4	62
NSA22		RD-PECHO-72	37.1	-80.2	0	0		x	Total	2	r	699859.37	3915972.1	32
NSA23		RD-PECHO-71	41.1	-80.2	0	0		x	Total	2	r	699420.59	3915882.7	32

APPENDIX 5.7C

Operational Noise Model Inputs

Pecho Operational Noise Model Inputs - Point Sources

Name	M.	ID	Result. PWL			Lw / Li			Correction			Sound Reduction		Attenuation	Operating Time			K0	Freq.	Direct.	Height		Coordinates		
			Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night						X	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(m²)		(min)	(min)	(min)	(dB)	(Hz)		(m)		(m)	(m)	(m)
Stack 1			85.5	85.5	85.5	Lw	HRSGStack2		0	0	0							0		Chimney (VDI	38.09	r	699784.16	3914444.5	58.09
Stack 2			85.5	85.5	85.5	Lw	HRSGStack2		0	0	0							0		Chimney (VDI	38.09	r	699857.17	3914407.2	58.09
Stack 3			85.5	85.5	85.5	Lw	HRSGStack2		0	0	0							0		Chimney (VDI	38.09	r	699930.15	3914369.8	58.09
Stack 4			85.5	85.5	85.5	Lw	HRSGStack2		0	0	0							0		Chimney (VDI	38.09	r	700003.18	3914332.3	58.09
Trasnformer 30/420 MVA 1			104.3	104.3	104.3	Lw	STGX1		0	0	0							0		(none)	3	r	699610.38	3914507	23
Trasnformer 30/420 MVA 2			104.3	104.3	104.3	Lw	STGX1		0	0	0							0		(none)	3	r	699617.13	3914483.5	23
Trasnformer 125 MVA 1			102.3	102.3	102.3	Lw	GTGX1		0	0	0							0		(none)	3	r	699808.95	3914505.3	23
Trasnformer 125 MVA 2			102.3	102.3	102.3	Lw	GTGX1		0	0	0							0		(none)	3	r	699828.54	3914495.2	23
Trasnformer 125 MVA 3			102.3	102.3	102.3	Lw	GTGX1		0	0	0							0		(none)	3	r	699882.01	3914467.5	23
Trasnformer 125 MVA 4			102.3	102.3	102.3	Lw	GTGX1		0	0	0							0		(none)	3	r	699901.86	3914457.7	23
Trasnformer 125 MVA 5			102.3	102.3	102.3	Lw	GTGX1		0	0	0							0		(none)	3	r	699954.8	3914430.4	23
Trasnformer 125 MVA 6			102.3	102.3	102.3	Lw	GTGX1		0	0	0							0		(none)	3	r	699975.18	3914419.8	23
Trasnformer 125 MVA 7			102.3	102.3	102.3	Lw	GTGX1		0	0	0							0		(none)	3	r	700027.58	3914393.1	23
Trasnformer 125 MVA 8			102.3	102.3	102.3	Lw	GTGX1		0	0	0							0		(none)	3	r	700047.7	3914383	23
Trasnformer 15/20 MVA			96.4	96.4	96.4	Lw	Transformer_10MW		0	0	0							0		(none)	2	r	699687.99	3914548.2	22
Trasnformer 15/20 MVA			96.4	96.4	96.4	Lw	Transformer_10MW		0	0	0							0		(none)	2	r	699699.9	3914552.2	22
Trasnformer 15/20 MVA			96.4	96.4	96.4	Lw	Transformer_10MW		0	0	0							0		(none)	2	r	699699.37	3914502.9	22
Trasnformer 15/20 MVA			96.4	96.4	96.4	Lw	Transformer_10MW		0	0	0							0		(none)	2	r	699712.61	3914506.6	22
Air Dryer			103.2	103.2	103.2	Lw	AirDryer		0	0	0							0		(none)	2	r	699877.18	3914273.2	22
Makeup Pump 1			102.8	102.8	102.8	Lw	CoolingCirc_pump		0	0	0							0		(none)	2	r	700110.64	3914246.7	22
Makeup Pump 2			102.8	102.8	102.8	Lw	CoolingCirc_pump		0	0	0							0		(none)	2	r	700113.28	3914253.1	22
Discharge Pump 1			102.8	102.8	102.8	Lw	CoolingCirc_pump		0	0	0							0		(none)	2	r	699913.71	3914296.5	22
Discharge Pump 2			102.8	102.8	102.8	Lw	CoolingCirc_pump		0	0	0							0		(none)	2	r	699910	3914298.6	22
Discharge Pump 3			102.8	102.8	102.8	Lw	CoolingCirc_pump		0	0	0							0		(none)	2	r	699906.3	3914299.1	22
Discharge Pump 4			102.8	102.8	102.8	Lw	CoolingCirc_pump		0	0	0							0		(none)	2	r	699903.65	3914301.2	22
Discharge Pump 1			106.8	106.8	106.8	Lw	ThermalCirc_pump		0	0	0							0		(none)	2	r	699900.48	3914302.8	22
Discharge Pump 2			106.8	106.8	106.8	Lw	ThermalCirc_pump		0	0	0							0		(none)	2	r	699897.83	3914304.4	22
Cold Thermal Fluid Pump 1			103.5	103.5	103.5	Lw	Pump_2000Hp		0	0	0							0		(none)	2	r	699935.94	3914283.8	22
Cold Thermal Fluid Pump 2			103.5	103.5	103.5	Lw	Pump_2000Hp		0	0	0							0		(none)	2	r	699931.71	3914285.9	22
Cold Thermal Fluid Pump 3			103.5	103.5	103.5	Lw	Pump_2000Hp		0	0	0							0		(none)	2	r	699927.47	3914288.5	22
Cold Thermal Fluid Pump 4			103.5	103.5	103.5	Lw	Pump_2000Hp		0	0	0							0		(none)	2	r	699923.77	3914290.6	22

Pecho Operational Noise Model Inputs - Line Sources

Name	M.	ID	Result. PWL			Result. PWL'			Lw / Li			Correction			Sound Reduction		Attenuation	Operating Time			K0	Freq.	Direct.	Moving Pt. Src			
			Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night				Number			Speed
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(m²)		(min)	(min)	(min)	(dB)	(Hz)		Day	Evening	Night	(km/h)
Exhaust Duct 1			94.5	94.5	94.5	84.4	84.4	84.4	Lw	New2		0	0	0							0		(none)				
Exhaust Duct 2			94.5	94.5	94.5	84.4	84.4	84.4	Lw	New2		0	0	0							0		(none)				
Exhaust Duct 3			94.5	94.5	94.5	84.4	84.4	84.4	Lw	New2		0	0	0							0		(none)				
Exhaust Duct 4			94.5	94.5	94.5	84.4	84.4	84.4	Lw	New2		0	0	0							0		(none)				

Pecho Operational Noise Model Inputs - Horizontal Area Sources

Name	M.	ID	Result. PWL			Result. PWL"			Lw / Li			Correction			Sound Reduction		Attenuation	Operating Time			K0	Freq.	Direct.	Moving Pt. Src			
			Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night				Number			
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(m²)		(min)	(min)	(min)	(dB)	(Hz)		Day	Evening	Night	
Turbine Hall Roof			96.9	96.9	96.9	59.1	59.1	59.1	Lw"	TurbHall_r		0	0	0			R28				0		(none)				
Cooler Medium			105.2	105.2	105.2	69.9	69.9	69.9	Lw	CoolerMedium		0	0	0							0		(none)				
Thermal Cooler_1			102.2	102.2	102.2	73.6	73.6	73.6	Lw	ThermalCoolers		0	0	0							0		(none)				
Thermal Cooler_2			102.2	102.2	102.2	73.6	73.6	73.6	Lw	ThermalCoolers		0	0	0							0		(none)				
Thermal Cooler_3			102.2	102.2	102.2	73.6	73.6	73.6	Lw	ThermalCoolers		0	0	0							0		(none)				
Thermal Cooler_4			102.2	102.2	102.2	73.6	73.6	73.6	Lw	ThermalCoolers		0	0	0							0		(none)				

Pecho Operational Noise Model Inputs - Vertical Area Sources

Name	M.	ID	Result. PWL			Result. PWL"			Lw / Li			Correction			Sound Reduction		Attenuation	Operating Time			K0	Freq.	Direct.
			Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night			
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(m²)		(min)	(min)	(min)	(dB)	(Hz)	
TrubHall South			90.5	90.5	90.5	51.2	51.2	51.2	Lw"	TurbHall_s		0	0	0			R29				3		(none)
TrubHall North			87.5	87.5	87.5	50.6	50.6	50.6	Lw"	TurbHall_n		0	0	0			R29				3		(none)
TrubHall West			77.1	77.1	77.1	52.2	52.2	52.2	Lw"	TurbHall_w		0	0	0			R29				3		(none)
TrubHall West2			74.4	74.4	74.4	52.2	52.2	52.2	Lw"	TurbHall_w		0	0	0			R29				3		(none)
Turbine Hall Door		TRANSMISSIONROUT	94.9	94.9	94.9	78.3	78.3	78.3	Lw"	TurbHall_w		0	0	0			R26				3		(none)
Air Inlet 1		TRANSMISSIONROUT	100.2	100.2	100.2	83.6	83.6	83.6	Lw	GT_Inlet		0	0	0							3		(none)
Air Inlet 2		TRANSMISSIONROUT	100.2	100.2	100.2	83.6	83.6	83.6	Lw	GT_Inlet		0	0	0							3		(none)
Air Inlet 3		TRANSMISSIONROUT	100.2	100.2	100.2	83.6	83.6	83.6	Lw	GT_Inlet		0	0	0							3		(none)
Air Inlet 4		TRANSMISSIONROUT	100.2	100.2	100.2	83.6	83.6	83.6	Lw	GT_Inlet		0	0	0							3		(none)

Sychronous Motor (50 MW) and Generator (100 MW) Sound Power Calculations
If power of motor is greater than 300 kW (i.e., greater than 402 hp) use this section

Motor power [kW]	100000	** input the motor power rating in kW that was provided by client/vendor/supplier
Motor RPM	3600	** input the motor RPM - if unknown, enter 1800
Motor power [kW]	100000	
Adjustment [dB]	3	** for motors between 300 and 750 kW subtract 3 dB; for motors above 4000 kW add 3 dB - see section 11.14.2 in (Bies and Hansen 2003)

Octave-Band Frequency	31.5	63	125	250	500	1000	2000	4000	8000		Total	
Raw PWL 1800 or 3600 RPM [dB]	94	96	98	98	98	98	98	95	88		106.2153	** see Table 11.25 from (Bies and Hansen 2003)
Raw PWL 1200 RPM [dB]	88	90	92	93	93	93	98	88	81		102.11336	** see Table 11.25 from (Bies and Hansen 2003)
Raw PWL 900 RPM [dB]	88	90	92	93	93	96	96	88	81		102.02089	** see Table 11.25 from (Bies and Hansen 2003)
Raw PWL <720 RPM [dB]	88	90	92	93	93	98	92	83	75		101.85599	** see Table 11.25 from (Bies and Hansen 2003)
Motor PWL [dB]	97	99	101	101	101	101	101	98	91		109.2	
A-weights [dB]	-39.4	-26.2	-16.1	-8.6	-3.2	0	1.2	1	-1.1			** see Table 3.1 from (Bies and Hansen 2003)
Motor PWL [dBA]	57.6	72.8	84.9	92.4	97.8	101	102.2	99	89.9		106.6	** these values can be used directly in a computer model or in indoor-outdoor calculation

Referece: Bies, D.A., and C.H. Hansen [2003]. Engineering Noise Control 3 rd Ed. Spon Press: New York, NY.

Cooling Medium Cooler - Propeller-Type Cooling Tower Sound Power Calculations, 40 Horse Power

	Fan 1	Fan 2	Fan 3	Fan 4	
Fan Horse Power	40	40	40		** input the horse power that was provided by client/vendor/supplier
Motor PWL [dB]	96.6	96.6	96.6		
Motor PWL [dBA]	87.6	87.6	87.6		

Octave-Band Frequency	31.5	63	125	250	500	1000	2000	4000	8000		Total	
Frequency Adjustment	-8	-5	-5	-8	-11	-15	-18	-21	-29			** see Table 7 from (Guyer, 2013)
Raw PWL Fan 1 [dB]	88.6	91.6	91.6	88.6	85.6	81.6	78.6	75.6	67.6		97.0	
Raw PWL Fan 2 [dB]	88.6	91.6	91.6	88.6	85.6	81.6	78.6	75.6	67.6		97.0	
Raw PWL Fan 3 [dB]	88.6	91.6	91.6	88.6	85.6	81.6	78.6	75.6	67.6		97.0	
Thermal PWL [dB]	93.4	96.4	96.4	93.4	90.4	86.4	83.4	80.4	72.4		101.8	
A-weights [dB]	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1			
Motor PWL [dBA]	52.2	68.4	78.5	83.0	85.4	84.6	82.8	79.6	69.5		92.6	** these values can be used directly in a computer model or in indoor-outdoor calculation

Reference: Guyer, J. Paul [2013]. An Introduciton to Sound Level Data for Mechancal and Electrical Equipment. Continuing Education and Development, Inc.: Stony Point, NY.

Thermal Fluid Cooler - Propeller-Type Cooling Tower Sound Power Calculations, 40 Horse Power

	Fan 1	Fan 2	Fan 3	Fan 4	
Fan Horse Power	40	40			** input the horse power that was provided by client/vendor/supplier
Motor PWL [dB]	96.6	96.6			
Motor PWL [dBA]	87.6	87.6			

Octave-Band Frequency	31.5	63	125	250	500	1000	2000	4000	8000		Total	
Frequency Adjustment	-8	-5	-5	-8	-11	-15	-18	-21	-29			** see Table 7 from (Guyer, 2013)
Raw PWL Fan 1 [dB]	88.6	91.6	91.6	88.6	85.6	81.6	78.6	75.6	67.6		97.0	
Raw PWL Fan 2 [dB]	88.6	91.6	91.6	88.6	85.6	81.6	78.6	75.6	67.6		97.0	
Thermal PWL [dB]	91.6	94.6	94.6	91.6	88.6	84.6	81.6	78.6	70.6		100.0	
A-weights [dB]	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1			
Motor PWL [dBA]	52.2	68.4	78.5	83.0	85.4	84.6	82.8	79.6	69.5		90.8	** these values can be used directly in a computer model or in indoor-outdoor calculation

Source: Guyer, 2013 Guyer, J. Paul [2013]. An Introduciton to Sound Level Data for Mechancal and Electrical Equipment. Continuing Education and Development, Inc.: Stony Point, NY.

Pecho Operational Noise Model Sound Reduction Indicies

Name	ID	Oktave Spectrum (dB)										Source	
		31.5	63	125	250	500	1000	2000	4000	8000	Rw		
steel sheet with trapezoidal corrugations mineral fiber 120 mm	R28			15	20	28	37	43	40		32	VDI 2571	
steel sheet with double-trapezoidal corrugations mineral fiber190 mm	R29			20	29	43	48	56	57		41	VDI 2571	
steel sheet with trapezoidal corrugations 45 mm	R26			14	16	20	25	29	23		25	VDI 2571	

Pecho Operational Noise Model Receptors

Name	M.	ID	Level Lr Day (dBA)	Night (dBA)	Limit. Value Day (dBA)	Night (dBA)	Land Use Type	Auto	Height Noise Type	(m)		Coordinates X (m)	Y (m)	Z (m)
24 Hour		RD-PECHO-71	49.5	49.5	0	0		x	Total	2	r	700154	3914537	22
Site 1		RD-PECHO-71	47.1	47.1	0	0		x	Total	2	r	699745	3914750	22
Site 2		RD-PECHO-71	32.2	32.2	0	0		x	Total	2	r	699059	3915347	18.74
Site 3		RD-PECHO-71	31.8	31.8	0	0		x	Total	2	r	701070	3914623	32
Site 4		RD-PECHO-71	35.9	35.9	0	0		x	Total	2	r	699561	3915314	27.8
Site 6		RD-PECHO-71	37.7	37.7	0	0		x	Total	2	r	699164	3913884	87.31
NSA01		RD-PECHO-04	42.2	42.2	0	0		x	Total	2	r	700419	3914139	30.8
NSA02		RD-PECHO-03	38.7	38.7	0	0		x	Total	2	r	700616	3914229	30.45
NSA03		RD-PECHO-01	37.3	37.3	0	0		x	Total	2	r	700729	3914336	30.51
NSA04		RD-PECHO-02	36.2	36.2	0	0		x	Total	2	r	700813	3914184	52.12
NSA05		RD-PECHO-05	33.5	33.5	0	0		x	Total	2	r	700943	3914519	24.8
NSA06		RD-PECHO-06	33.4	33.4	0	0		x	Total	2	r	700933	3914651	29.7
NSA07		RD-PECHO-07	30	30	0	0		x	Total	2	r	701248	3914791	33.02
NSA08		RD-PECHO-08	28	28	0	0		x	Total	2	r	701564	3914966	42
NSA09		RD-PECHO-09	26.8	26.8	0	0		x	Total	2	r	701615	3915142	42
NSA10		RD-PECHO-10	27	27	0	0		x	Total	2	r	701764	3915072	45.66
NSA11		RD-PECHO-79	25.4	25.4	0	0		x	Total	2	r	701828	3915563	71.09
NSA12		WR-PECHO-08	38.3	38.3	0	0		x	Total	2	r	699044	3914339	108.97
NSA13		RD-PECHO-21	23.6	23.6	0	0		x	Total	2	r	698391	3914652	61.92
NSA14		RD-PECHO-22	20.1	20.1	0	0		x	Total	2	r	698761	3914826	16.82
NSA15		RD-PECHO-23	32.9	32.9	0	0		x	Total	2	r	698895	3915056	13.8
NSA16		RD-PECHO-24	31.2	31.2	0	0		x	Total	2	r	698703	3915191	12
NSA17		RD-PECHO-27	29.4	29.4	0	0		x	Total	2	r	698562	3915415	18.12
NSA18		RD-PECHO-25	31.7	31.7	0	0		x	Total	2	r	698977	3915315	16.65
NSA19		RD-PECHO-26	33.2	33.2	0	0		x	Total	2	r	699158	3915312	20.3
NSA20		RD-PECHO-74	35.5	35.5	0	0		x	Total	2	r	699611	3915391	32.19
NSA21		RD-PECHO-73	32.2	32.2	0	0		x	Total	2	r	699884	3915783	62
NSA22		RD-PECHO-72	25.7	25.7	0	0		x	Total	2	r	699859	3915972	32
NSA23		RD-PECHO-71	29.6	29.6	0	0		x	Total	2	r	699421	3915883	32

APPENDIX 5.7D

Hourly Weather Data – 25 Hour Noise Monitoring

Appendix 5.7D Hourly Weather Data - 25 Hour Noise Monitoring

Device Name	**WEATHER - 2189720**
Device Model	**5500L**
Serial Number	**2189720**

FORMATTED DATE-TIME	Direction, True North (°)	Wind Speed (mph)	Crosswind Speed (mph)	Headwind Speed (mph)	Temperature (°F)	Wind Chill (°F)	Relative Humidity (%)	Heat Stress Index (°F)	Dew Point (°F)	Psychro Wet Bulb Temperature (°F)	Station Pressure (inHg)	Barometric Pressure (in Hg)	Altitude (ft)	Density Altitude (ft)	Direction Mag (°)
7/10/2021 12:00	261	8.6	8.5	-1.3	66.6	66.2	75.9	66.2	58.8	61.5	29.93	29.93	-19	699	261
7/10/2021 13:00	249	7.6	7.1	-2.7	66.6	66.4	76	66.2	58.8	61.5	29.93	29.93	-13	706	249
7/10/2021 14:00	253	12.6	12	-3.7	66.1	64.8	75.7	65.5	58.2	61.2	29.93	29.93	-16	665	252
7/10/2021 15:00	252	7.5	7.1	-2.3	66.5	66.2	75.3	66	58.4	61.3	29.91	29.91	3	713	252
7/10/2021 16:00	251	7.1	6.7	-2.3	65.4	64.9	75.1	64.6	57.3	60.4	29.9	29.9	20	651	250
7/10/2021 17:00	259	7.7	7.5	-1.5	66.8	66.6	75.1	66.6	58.7	61.5	29.88	29.88	36	775	258
7/10/2021 18:00	238	6.7	5.7	-3.6	66.5	66.4	75.2	66	58.4	61.3	29.87	29.87	41	763	238
7/10/2021 19:00	251	5.1	4.8	-1.7	64	63.9	74.5	63	55.7	59	29.86	29.86	50	586	251
7/10/2021 20:00	243	6.3	5.6	-2.9	61.9	61	73.5	61	53.4	56.6	29.87	29.87	43	431	242
7/10/2021 21:00	224	5.2	3.6	-3.7	59.5	58.4	72.4	58.5	50.7	54.3	29.88	29.88	30	239	224
7/10/2021 22:00	255	2.4	2.4	-0.6	58.6	58.4	71.6	57.6	49.4	53.4	29.9	29.9	16	158	255
7/10/2021 23:00	237	0	0	0	58.1	57.9	71	56.8	48.7	52.7	29.91	29.91	8	108	236
7/11/2021 0:00	241	1.6	1.4	-0.8	57.8	57.7	70.8	56.7	48.3	52.5	29.92	29.91	2	72	241
7/11/2021 1:00	240	0	0	0	57.3	57.2	70.6	56.1	47.8	52	29.91	29.91	7	51	239
7/11/2021 2:00	243	0	0	0	57.6	57.5	70.8	56.5	48.2	52.3	29.91	29.91	3	70	243
7/11/2021 3:00	240	0	0	0	58.3	58.3	71.3	57.4	49.1	53	29.91	29.91	7	120	239
7/11/2021 4:00	241	0	0	0	58.1	58.1	71.8	57.2	49.1	52.9	29.9	29.9	15	115	240
7/11/2021 5:00	241	0	0	0	57	57	72.1	56.1	48.1	52.1	29.9	29.9	15	44	240
7/11/2021 6:00	241	0	0	0	56.2	56.1	71.9	55.2	47.3	51.2	29.9	29.9	20	-13	240
7/11/2021 7:00	240	0	0	0	55.8	55.7	71.9	54.9	46.9	50.9	29.91	29.91	8	-51	240
7/11/2021 8:00	241	0	0	0	59.4	59.3	73.9	58.5	51.1	54.7	29.92	29.92	-5	196	241
7/11/2021 9:00	264	0	0	0	70.7	70.7	76.2	71.8	62.9	65.5	29.91	29.91	2	1019	264
7/11/2021 10:00	249	6.8	6.4	-2.4	64.2	63.7	78.7	63.7	57.5	60.1	29.92	29.92	-7	548	249
7/11/2021 11:00	256	9.5	9.2	-2.3	68.4	68.2	80.2	68.9	62.1	64.2	29.91	29.91	8	870	256
7/11/2021 12:00	243	9.6	8.5	-4.4	68.1	67.8	79.6	68.4	61.6	63.9	29.9	29.9	16	858	242
7/11/2021 13:00	260	6.9	6.8	-1.2	68.6	68.5	78.9	69.1	61.8	64	29.89	29.88	25	904	260
7/11/2021 14:00	240	6.3	5.5	-3.2	67.9	67.8	77.9	68	60.7	63.3	29.88	29.88	33	856	239