To: Helis Oil & Gas, LLC
From: Kristjan Varnik, Tetra Tech
Subject: Noise Monitoring Report Update (July 26-August 1, 2016)
Date: August 2, 2016

Helis Oil & Gas, LLC has contracted Tetra Tech to provide environmental monitoring during exploration and development activities in St. Tammany Parish, Louisiana. This memo provides information on acoustic monitoring for the period between July 26th and August 2nd. Drilling activities were initiated on June 29th at 2:00 pm Central Daylight Time and continued throughout the monitoring period. *The acoustic monitoring stations did not detect any significant differences in noise levels during periods of active drilling compared with the pre-drilling baseline period.*

Noise monitoring was conducted at two discrete locations per permit requirements. Site 1 is at the intersection of Interstate 12 and LA Highway 1088 (Figure 1). Site 2 is at Lakeshore High School. (Figure 2). The monitoring stations were set up within the fenced-in air monitoring areas for safety, maintenance access, security and robustness. Traffic noise, local vehicle noise, air quality monitors and air conditioners were the dominant anthropogenic sound sources at Site 1. Ambient noise generated by air handling equipment was discernable at the monitoring sites evaluated at Site 2. To reduce the influence of near-by noise, the ground level acoustic monitoring station was positioned adjacent to the equipment shed to best shield unwanted noise from the air monitoring equipment and auxiliary equipment. However, extraneous noise effects related to the air quality monitoring station within the fenced in area were removed from the data analysis for the purposes of this assessment.

Figure 1. Acoustic monitoring at Site 1

Figure 2. Acoustic monitoring at Site 2

Measurements were taken with a Larson Davis 831 real-time sound level analyzer equipped with a PCB model 377B02 1/2" precision condenser microphone. This instrument has an operating range of 5 dB to 140 dB, and an overall frequency range of 8 to 20,000 Hz. It meets or exceeds all requirements in the American National Standards Institute (ANSI) standards for Type 1 sound level meters for quality and accuracy (precision). The sound meters are Larson Davis 831 Sound level meters connected to a portable PC with internet connectivity. Sound levels and equipment status are remotely monitored over the internet. The microphones and windscreens were tripod-mounted at an approximate height of 1.5 to 1.7 meters (4.9

to 5.6 feet) above grade away from effects of ground level noise and reflective surfaces. The calibration sheets of the equipment are included in Appendix A.

Summary of Sound Levels (July 26-August 2, 2016)

Sound levels remained below 60 dBA for most of the period. Local increases were due to nearby traffic, air conditioning equipment, air quality monitoring equipment, aircraft flyovers or natural sounds. At both sites, the air quality monitors were activate every 3 days for 12 hour periods. Sound levels were slightly elevated on July 26 thorough 28, and July 31, as short precipitation events occurred on these days, with nearby thunderstorms. The loudest sound measured, which occurred July 31, was a thunderstorm.

Site 1 – Intersection of I-12 and LA 1088

At Site 1, vehicles, an air conditioner, on-site activities and air quality monitoring stations were the nearby noise sources. Sound levels were slightly elevated on July 26 through 28, and July 31, as short precipitation events occurred on these days.

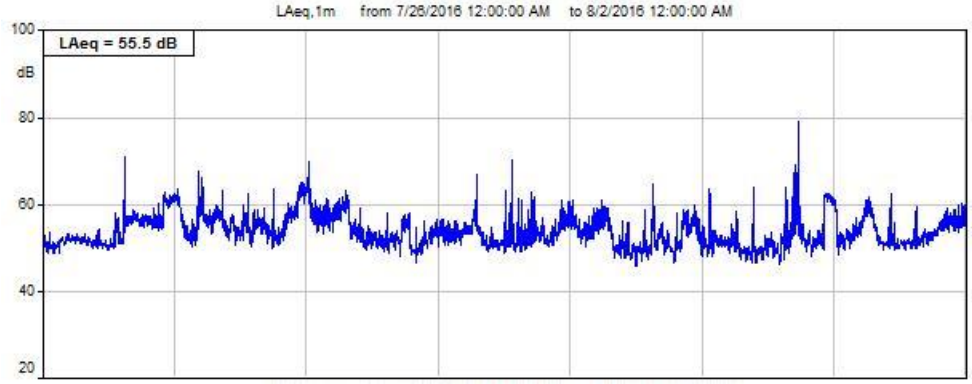


Figure 3. Measured Sound Levels at Site 1 (July 26 – August 2, 2016)

Site 2 – Lakeshore High School

Sound levels were generally below 60 dB during the monitoring period. Air quality monitors are responsible for the increase in sounds every 3 days. The sound monitoring station was located near a parking lot, so occasional nearby vehicle traffic increased the measured sound levels. Flyovers from aircraft were also detected. Sound levels were slightly elevated on July 26 through 28, and July 31, as short precipitation events occurred on these days.

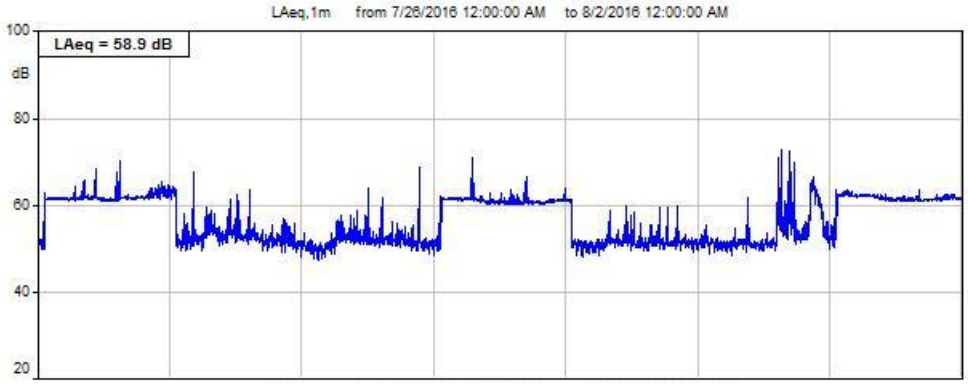


Figure 4. Measured Sound Levels at Site 2 (July 26 – August 2, 2016)

Appendix A

Measurement Equipment & NIST Laboratory Calibration Certifications

Helis Oil & Gas - Noise Monitoring

Calibration Certificate

Certificate Number 2015001436

Customer:
Hilton Garden Inn Covington/Mandeville
350 Holiday Square Boulevard
Covington, LA 70433, United States

Model Number	831	***Procedure Number***	D0001.8378	
Serial Number	0003847	***Technician***	Ron Harris	
Test Results	**Pass**	***Calibration Date***	16 Feb 2015	
Initial Condition	As Manufactured	***Calibration Due***		
Description	Larson Davis Model 831	***Temperature***	23.06 °C	± 0.01 °C
		Humidity	50.1 %RH	± 0.5 %RH
		Static Pressure	86.43 kPa	± 0.03 kPa

Evaluation Method Tested electrically using PRM831 S/N 036754 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 S1.11 (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 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 9001:2008.

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

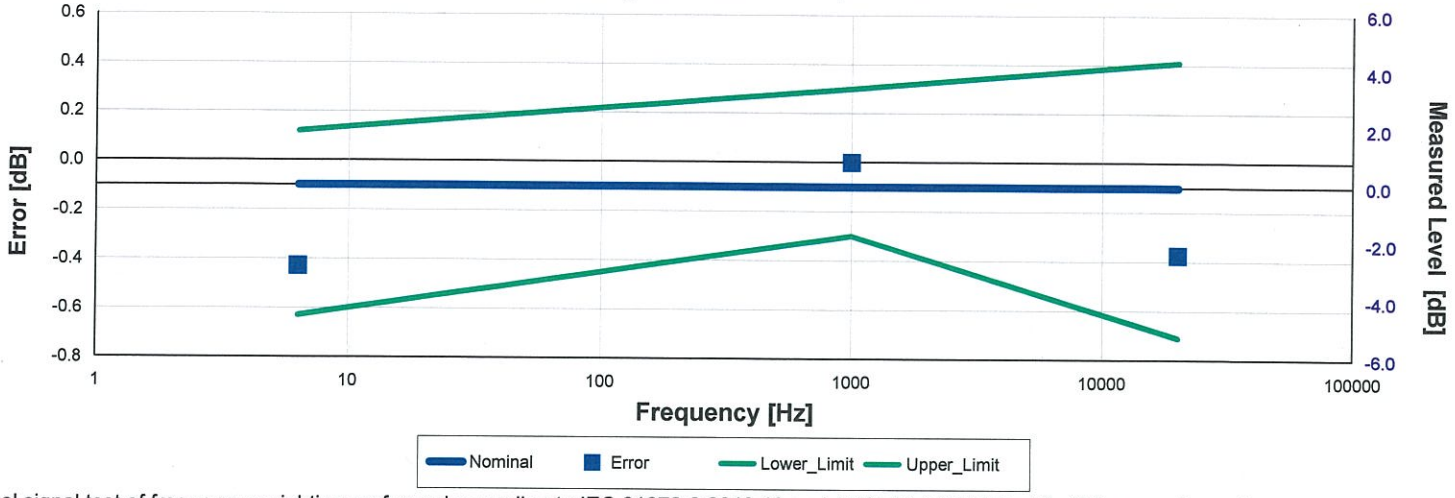
Description	Cal Date	Cal Due	Cal Standard
SRS DS360 Ultra Low Distortion Generator	02/06/2015	02/06/2016	006239
Hart Scientific 2626-S Humidity/Temperature Sensor	05/16/2014	05/16/2015	006943

Larson Davis, a division of PCB Piezotronics, Inc
1681 West 820 North
Provo, UT 84601, United States
716-684-0001

ACCREDITED Cert. #3622.01

LARSON DAVIS
A PCB PIEZOTRONICS DIV.

Z-weight Filter Response

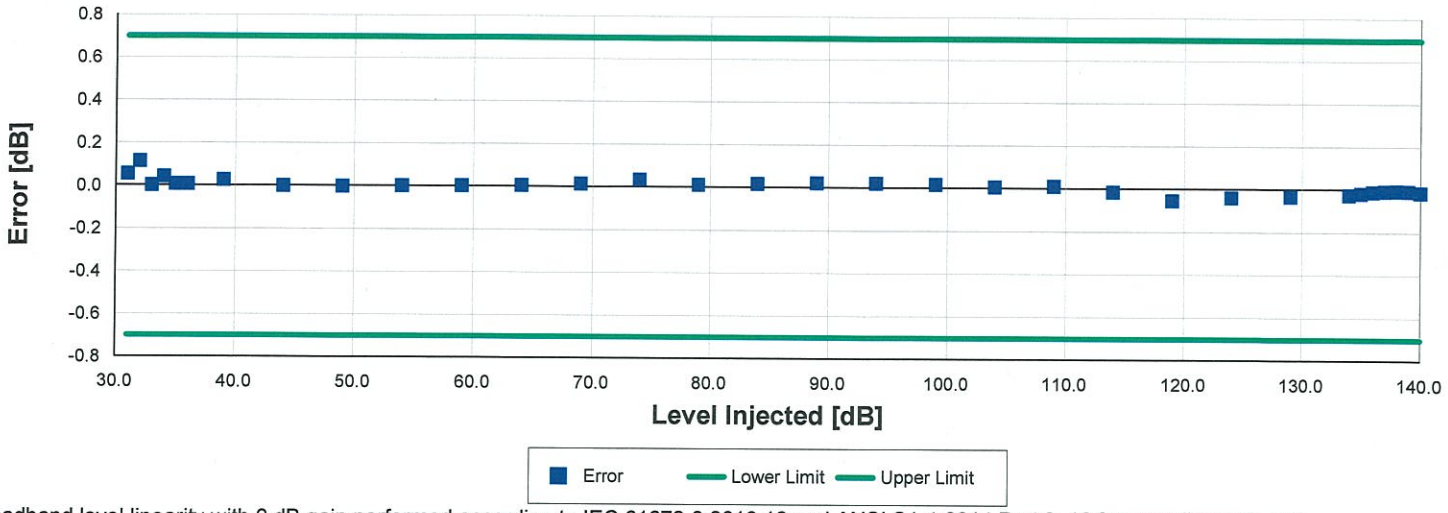


Electrical signal test of frequency weighting performed according to IEC 61672-3:2013 13 and ANSI S1.4-2014 Part 3: 13 for compliance to IEC 61672-1:2013 5.5; IEC 60651:2001 6.1 and 9.2.2; IEC 60804:2000 5; ANSI S1.4:1983 (R2006) 5.1 and 8.2.1; ANSI S1.4-2014 Part 1: 5.5

Frequency [Hz]	Test Result [dB]	Error [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
6.31	-0.43	-0.43	-0.63	0.12	0.10	Pass
1,000.00	0.00	0.00	-0.30	0.30	0.09	Pass
19,952.62	-0.37	-0.37	-0.71	0.41	0.09	Pass

-- End of measurement results--

A-weighted Broadband Log Linearity: 8,000.00 Hz



Broadband level linearity with 0 dB gain 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
31.00	0.05	-0.70	0.70	0.09	Pass
32.00	0.11	-0.70	0.70	0.09	Pass
33.00	0.00	-0.70	0.70	0.09	Pass
34.00	0.04	-0.70	0.70	0.09	Pass
35.00	0.01	-0.70	0.70	0.09	Pass
36.00	0.01	-0.70	0.70	0.09	Pass
39.00	0.03	-0.70	0.70	0.09	Pass
44.00	0.00	-0.70	0.70	0.09	Pass
49.00	0.00	-0.70	0.70	0.09	Pass
54.00	0.00	-0.70	0.70	0.09	Pass
59.00	0.00	-0.70	0.70	0.09	Pass
64.00	0.01	-0.70	0.70	0.09	Pass
69.00	0.01	-0.70	0.70	0.09	Pass
74.00	0.03	-0.70	0.70	0.09	Pass
79.00	0.01	-0.70	0.70	0.09	Pass
84.00	0.02	-0.70	0.70	0.09	Pass
89.00	0.02	-0.70	0.70	0.09	Pass
94.00	0.02	-0.70	0.70	0.09	Pass
99.00	0.02	-0.70	0.70	0.09	Pass
104.00	0.01	-0.70	0.70	0.09	Pass
109.00	0.01	-0.70	0.70	0.09	Pass
114.00	-0.01	-0.70	0.70	0.09	Pass
119.00	-0.05	-0.70	0.70	0.09	Pass
124.00	-0.04	-0.70	0.70	0.09	Pass
129.00	-0.03	-0.70	0.70	0.09	Pass
134.00	-0.02	-0.70	0.70	0.09	Pass
135.00	-0.02	-0.70	0.70	0.09	Pass
136.00	-0.01	-0.70	0.70	0.09	Pass
137.00	-0.01	-0.70	0.70	0.09	Pass
138.00	-0.01	-0.70	0.70	0.09	Pass
139.00	-0.01	-0.70	0.70	0.09	Pass
140.00	-0.01	-0.70	0.70	0.09	Pass

-- End of measurement results--

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
137.00	40	Negative Pulse	135.91	134.55	136.55	0.09	Pass
		Positive Pulse	135.97	134.51	136.51	0.09	Pass
	30	Negative Pulse	135.06	134.55	136.55	0.09	Pass
		Positive Pulse	135.02	134.51	136.51	0.09	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	0.09	Pass
	5	OVLD	± 1.00	0.09	Pass
	10	OVLD	± 1.50	0.09	Pass
128.00	3	-0.09	± 0.50	0.10	Pass
	5	-0.07	± 1.00	0.09	Pass
	10	OVLD	± 1.50	0.09	Pass
118.00	3	-0.09	± 0.50	0.10	Pass
	5	-0.09	± 1.00	0.09	Pass
	10	-0.15	± 1.50	0.09	Pass
108.00	3	-0.09	± 0.50	0.13	Pass
	5	-0.09	± 1.00	0.09	Pass
	10	-0.23	± 1.50	0.09	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	0.09	Pass
	5	OVLD	± 1.00	0.09	Pass
	10	OVLD	± 1.50	0.09	Pass
128.00	3	-0.06	± 0.50	0.09	Pass
	5	-0.07	± 1.00	0.09	Pass
	10	OVLD	± 1.50	0.09	Pass
118.00	3	-0.08	± 0.50	0.10	Pass
	5	-0.06	± 1.00	0.09	Pass
	10	-0.12	± 1.50	0.09	Pass
108.00	3	-0.06	± 0.50	0.09	Pass
	5	-0.06	± 1.00	0.09	Pass
	10	-0.18	± 1.50	0.09	Pass

-- End of measurement results--

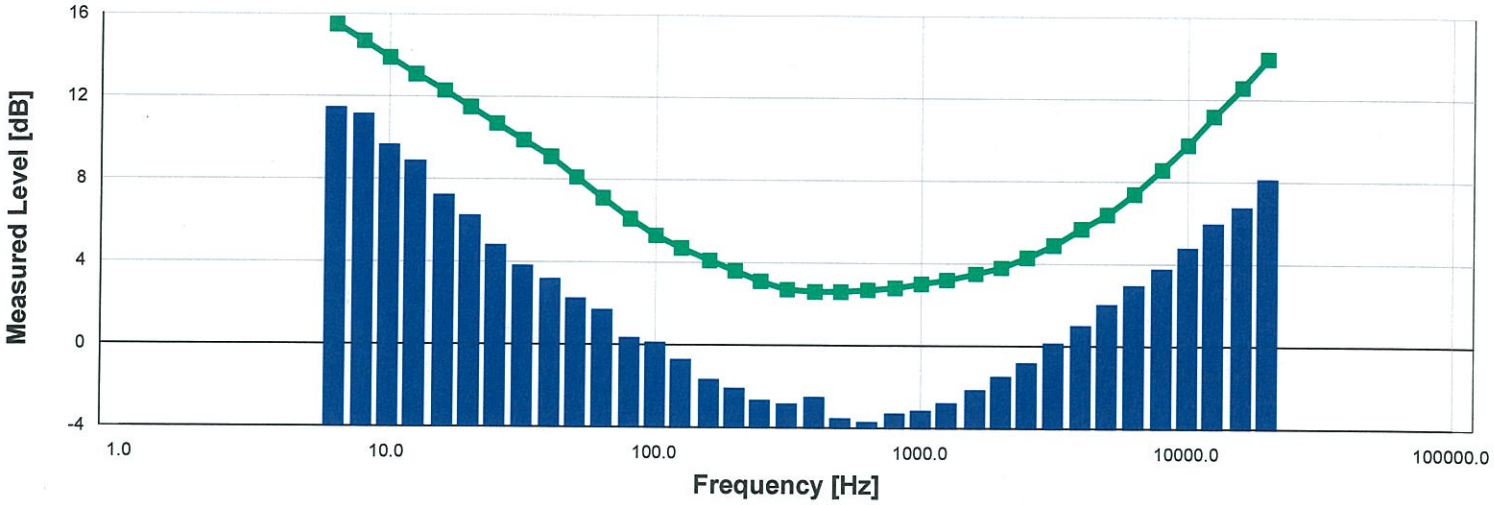
Gain

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
Normal Range	93.56	93.20	94.80	0.09	Pass
Low Range	93.57	93.46	93.66	0.09	Pass
20 dB Gain	93.57	93.46	93.66	0.09	Pass
20 dB Gain, Linearity	24.11	23.86	25.26	0.22	Pass

-- End of measurement results--

1/3-Octave Self-Generated Noise



The SLM is set to low range and 0 dB gain. 1/3-Octave self-generated noise measured according to IEC 61672-3:2013 11.2 and ANSI S1.4-2014 Part 3: 11.2

Frequency [Hz]	Test Result [dB]	Upper limit [dB]	Result
6.30	11.46	15.50	Pass
8.00	11.15	14.70	Pass
10.00	9.66	13.90	Pass
12.50	8.88	13.10	Pass
16.00	7.23	12.30	Pass
20.00	6.24	11.50	Pass
25.00	4.82	10.70	Pass
31.50	3.83	9.90	Pass
40.00	3.17	9.10	Pass
50.00	2.24	8.10	Pass
63.00	1.68	7.10	Pass
80.00	0.34	6.10	Pass
100.00	0.12	5.30	Pass
125.00	-0.70	4.70	Pass
160.00	-1.67	4.10	Pass
200.00	-2.09	3.60	Pass
250.00	-2.65	3.10	Pass
315.00	-2.83	2.70	Pass
400.00	-2.50	2.60	Pass
500.00	-3.52	2.60	Pass
630.00	-3.70	2.70	Pass
800.00	-3.28	2.80	Pass
1,000.00	-3.15	3.00	Pass
1,250.00	-2.77	3.20	Pass
1,600.00	-2.13	3.50	Pass
2,000.00	-1.48	3.80	Pass
2,500.00	-0.80	4.30	Pass
3,150.00	0.16	4.90	Pass
4,000.00	1.00	5.70	Pass
5,000.00	2.03	6.40	Pass
6,300.00	2.95	7.40	Pass
8,000.00	3.78	8.60	Pass
10,000.00	4.81	9.80	Pass
12,500.00	5.99	11.20	Pass
16,000.00	6.77	12.60	Pass

Frequency [Hz]	Test Result [dB]	Upper limit [dB]	Result
20,000.00	8.15	14.00	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	12.81	15.00	Pass
C-weight Noise Floor	14.59	17.30	Pass
Z-weight Noise Floor	22.73	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	137.51	137.20	138.80	0.09	Pass
THD	-72.49		-60.00	0.01	Pass
THD+N	-65.96		-60.00	0.01	Pass

-- End of measurement results--

-- End of Report--

Signatory: *Ron Harris*

Calibration Certificate

Certificate Number 2015001435

Customer:
Hilton Garden Inn Covington/Mandeville
350 Holiday Square Boulevard
Covington, LA 70433, United States

Model Number	831	***Procedure Number***	D0001.8378	
Serial Number	0003848	***Technician***	Ron Harris	
Test Results	**Pass**	***Calibration Date***	16 Feb 2015	
Initial Condition	As Manufactured	***Calibration Due***		
Description	Larson Davis Model 831	***Temperature***	23.07 °C	± 0.01 °C
		Humidity	49.5 %RH	± 0.5 %RH
		Static Pressure	86.43 kPa	± 0.03 kPa

Evaluation Method Tested electrically using PRM831 S/N 036755 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 S1.11 (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 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 9001:2008.

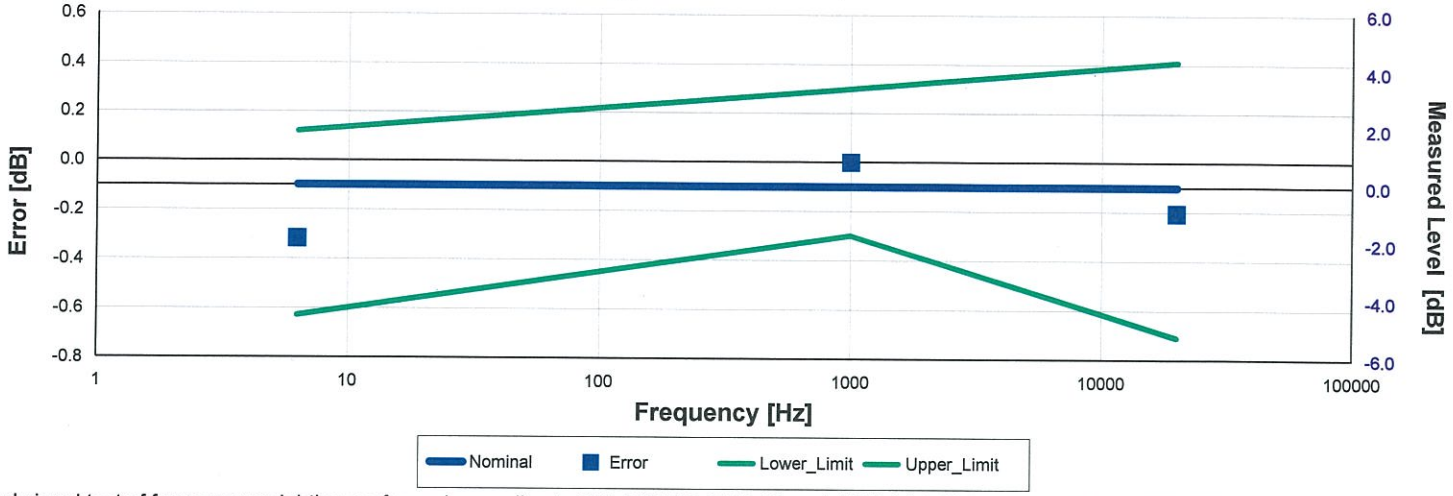
This calibration is a direct comparison of the unit under test to the listed reference standards and did not involve any sampling plans to complete. No allowance has been made for the instability of the test device due to use, time, etc. Such allowances would be made by the customer as needed.

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
Hart Scientific 2626-S Humidity/Temperature Sensor	05/16/2014	05/16/2015	006943
SRS DS360 Ultra Low Distortion Generator	11/13/2014	11/13/2015	007167

Z-weight Filter Response

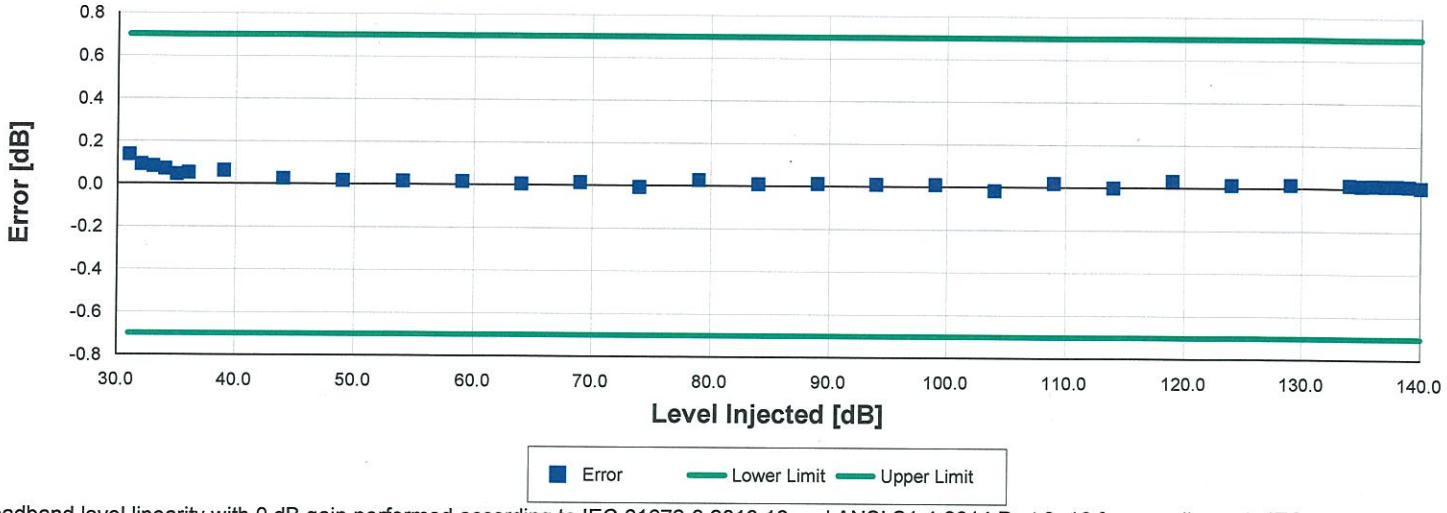


Electrical signal test of frequency weighting performed according to IEC 61672-3:2013 13 and ANSI S1.4-2014 Part 3: 13 for compliance to IEC 61672-1:2013 5.5; IEC 60651:2001 6.1 and 9.2.2; IEC 60804:2000 5; ANSI S1.4:1983 (R2006) 5.1 and 8.2.1; ANSI S1.4-2014 Part 1: 5.5

Frequency [Hz]	Test Result [dB]	Error [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
6.31	-0.32	-0.32	-0.63	0.12	0.09	Pass
1,000.00	0.00	0.00	-0.30	0.30	0.09	Pass
19,952.62	-0.20	-0.20	-0.71	0.41	0.09	Pass

-- End of measurement results--

A-weighted Broadband Log Linearity: 8,000.00 Hz



Broadband level linearity with 0 dB gain 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
31.00	0.14	-0.70	0.70	0.09	Pass
32.00	0.09	-0.70	0.70	0.09	Pass
33.00	0.08	-0.70	0.70	0.09	Pass
34.00	0.07	-0.70	0.70	0.09	Pass
35.00	0.04	-0.70	0.70	0.09	Pass
36.00	0.05	-0.70	0.70	0.09	Pass
39.00	0.06	-0.70	0.70	0.09	Pass
44.00	0.03	-0.70	0.70	0.09	Pass
49.00	0.02	-0.70	0.70	0.09	Pass
54.00	0.02	-0.70	0.70	0.09	Pass
59.00	0.02	-0.70	0.70	0.09	Pass
64.00	0.00	-0.70	0.70	0.09	Pass
69.00	0.01	-0.70	0.70	0.09	Pass
74.00	-0.01	-0.70	0.70	0.09	Pass
79.00	0.03	-0.70	0.70	0.09	Pass
84.00	0.01	-0.70	0.70	0.09	Pass
89.00	0.01	-0.70	0.70	0.09	Pass
94.00	0.01	-0.70	0.70	0.09	Pass
99.00	0.01	-0.70	0.70	0.09	Pass
104.00	-0.02	-0.70	0.70	0.09	Pass
109.00	0.02	-0.70	0.70	0.09	Pass
114.00	0.00	-0.70	0.70	0.09	Pass
119.00	0.03	-0.70	0.70	0.09	Pass
124.00	0.02	-0.70	0.70	0.09	Pass
129.00	0.02	-0.70	0.70	0.09	Pass
134.00	0.02	-0.70	0.70	0.09	Pass
135.00	0.01	-0.70	0.70	0.09	Pass
136.00	0.02	-0.70	0.70	0.09	Pass
137.00	0.01	-0.70	0.70	0.09	Pass
138.00	0.01	-0.70	0.70	0.09	Pass
139.00	0.01	-0.70	0.70	0.09	Pass
140.00	0.01	-0.70	0.70	0.09	Pass

-- End of measurement results--

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
137.00	40	Negative Pulse	136.02	134.51	136.51	0.09	Pass
		Positive Pulse	136.02	134.51	136.51	0.09	Pass
	30	Negative Pulse	135.06	134.51	136.51	0.09	Pass
		Positive Pulse	135.07	134.51	136.51	0.09	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	0.09	Pass
	5	OVLD	± 1.00	0.09	Pass
	10	OVLD	± 1.50	0.09	Pass
128.00	3	-0.13	± 0.50	0.10	Pass
	5	-0.12	± 1.00	0.09	Pass
	10	OVLD	± 1.50	0.09	Pass
118.00	3	-0.13	± 0.50	0.10	Pass
	5	-0.12	± 1.00	0.09	Pass
	10	-0.16	± 1.50	0.09	Pass
108.00	3	-0.13	± 0.50	0.13	Pass
	5	-0.12	± 1.00	0.09	Pass
	10	-0.26	± 1.50	0.09	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	0.09	Pass
	5	OVLD	± 1.00	0.09	Pass
	10	OVLD	± 1.50	0.09	Pass
128.00	3	-0.12	± 0.50	0.09	Pass
	5	-0.12	± 1.00	0.09	Pass
	10	OVLD	± 1.50	0.09	Pass
118.00	3	-0.12	± 0.50	0.09	Pass
	5	-0.12	± 1.00	0.09	Pass
	10	-0.16	± 1.50	0.09	Pass
108.00	3	-0.12	± 0.50	0.09	Pass
	5	-0.12	± 1.00	0.09	Pass
	10	-0.26	± 1.50	0.09	Pass

-- End of measurement results--

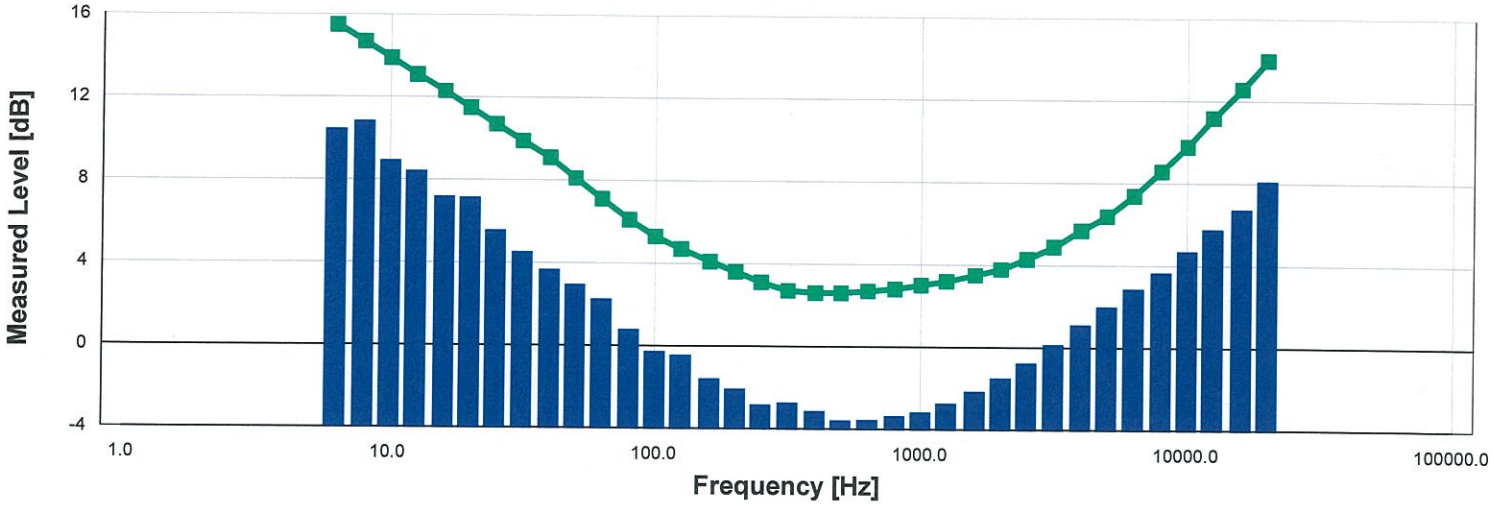
Gain

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
Normal Range	93.59	93.20	94.80	0.09	Pass
Low Range	93.60	93.49	93.69	0.09	Pass
20 dB Gain	93.59	93.49	93.69	0.09	Pass
20 dB Gain, Linearity	24.24	23.89	25.29	0.29	Pass

-- End of measurement results--

1/3-Octave Self-Generated Noise



The SLM is set to low range and 0 dB gain. 1/3-Octave self-generated noise measured according to IEC 61672-3:2013 11.2 and ANSI S1.4-2014 Part 3: 11.2

Frequency [Hz]	Test Result [dB]	Upper limit [dB]	Result
6.30	10.46	15.50	Pass
8.00	10.85	14.70	Pass
10.00	8.94	13.90	Pass
12.50	8.42	13.10	Pass
16.00	7.20	12.30	Pass
20.00	7.14	11.50	Pass
25.00	5.56	10.70	Pass
31.50	4.52	9.90	Pass
40.00	3.67	9.10	Pass
50.00	2.95	8.10	Pass
63.00	2.25	7.10	Pass
80.00	0.80	6.10	Pass
100.00	-0.26	5.30	Pass
125.00	-0.43	4.70	Pass
160.00	-1.58	4.10	Pass
200.00	-2.07	3.60	Pass
250.00	-2.83	3.10	Pass
315.00	-2.73	2.70	Pass
400.00	-3.13	2.60	Pass
500.00	-3.58	2.60	Pass
630.00	-3.54	2.70	Pass
800.00	-3.34	2.80	Pass
1,000.00	-3.15	3.00	Pass
1,250.00	-2.72	3.20	Pass
1,600.00	-2.14	3.50	Pass
2,000.00	-1.49	3.80	Pass
2,500.00	-0.75	4.30	Pass
3,150.00	0.15	4.90	Pass
4,000.00	1.12	5.70	Pass
5,000.00	2.00	6.40	Pass
6,300.00	2.87	7.40	Pass
8,000.00	3.68	8.60	Pass
10,000.00	4.71	9.80	Pass
12,500.00	5.77	11.20	Pass
16,000.00	6.75	12.60	Pass

Frequency [Hz]	Test Result [dB]	Upper limit [dB]	Result
20,000.00	8.13	14.00	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	12.75	15.00	Pass
C-weight Noise Floor	14.68	17.30	Pass
Z-weight Noise Floor	23.05	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	137.53	137.20	138.80	0.09	Pass
THD	-74.36		-60.00	0.01	Pass
THD+N	-66.78		-60.00	0.01	Pass

-- End of measurement results--

-- End of Report--

Signatory: *Ron Harris*

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