

NSP Phase 3 Thornwood Park Project  
Wilmette, Illinois

**VIBRATION  
MONITORING  
REPORT**

Mike Zika  
Berger Excavating  
1205 Garland Rd  
Wauconda, IL 60084

June 13, 2022

Cti



Construction  
Testing &  
Instrumentation

4262 Old Grand Ave  
Suite 102  
Chicago, IL 60031

June 13, 2022

Mike Zika  
Berger Excavating  
1205 Garland Rd  
Wauconda, IL 60084

RE: **Report:** - *Ground Vibration Monitoring for the Wilmette NSP Phase 3 Thornwood Park Project located in Wilmette, Illinois.*

Mr. Zika,

Construction Testing and Instrumentation, Inc. (CTI) have prepared this vibration monitoring report to evaluate vibrations during all construction activities. This report summarizes the results of ground vibration monitoring for three seismographs, all located around the surrounding project site (see attached location diagram). This summary report covers the monitoring period from **June 3, 2022 through June 13, 2022.**

The vibration equipment at the site are Geosonic seismographs that have the capacity to record peak particle velocity (PPV) and frequency (Hertz). The maximum allowable peak particle velocity is 0.50 inches per second (IPS), which is based upon the specifications established by the U.S Bureau of Mines (USBM) and a typical threshold for construction vibration monitoring. The seismographs are set to trigger whenever vibration levels exceed 0.003 in/s lowest (PPV) and continuously monitor vibrations during all construction activities.

All vibration recordings during this report period have been below the 0.50-inch per second threshold limit. The maximum PPV for the monitoring period are below.

June 3, 2022	<b>Southwest Corner of Park</b>	Unit #3734	V	0.310 (in/s)
June 7, 2022	<b>2345 Thornwood Avenue</b>	Unit #3733	V	0.228 (in/s)
June 8, 2022	<b>East Side of Park – Colgate St.</b>	Unit #3647	L	0.095 (in/s)


V- Vertical Vibration  
T- Transversal Vibration  
L- Longitudinal Vibration

Sincerely,

Daniel W. McCarthy  
Senior Instrumentation Engineer

# NSP Phase 3 Thornwood Park Seismograph Locations



 Seismograph Location

**SN:** 3734 v3.22  
**Date:** 06/03/2022 **Time:** 06:01:00  
**Event:** 2  
**Client:** BERGER  
**Operation:** CONSTRUCTION  
**Location:** THORNWOOD PARK  
**Distance:** 25.  
**Operator:** CTI INC  
**Comment:** SW CORNER OF PARK

**Continuous Monitor Recording  
Summary Data**

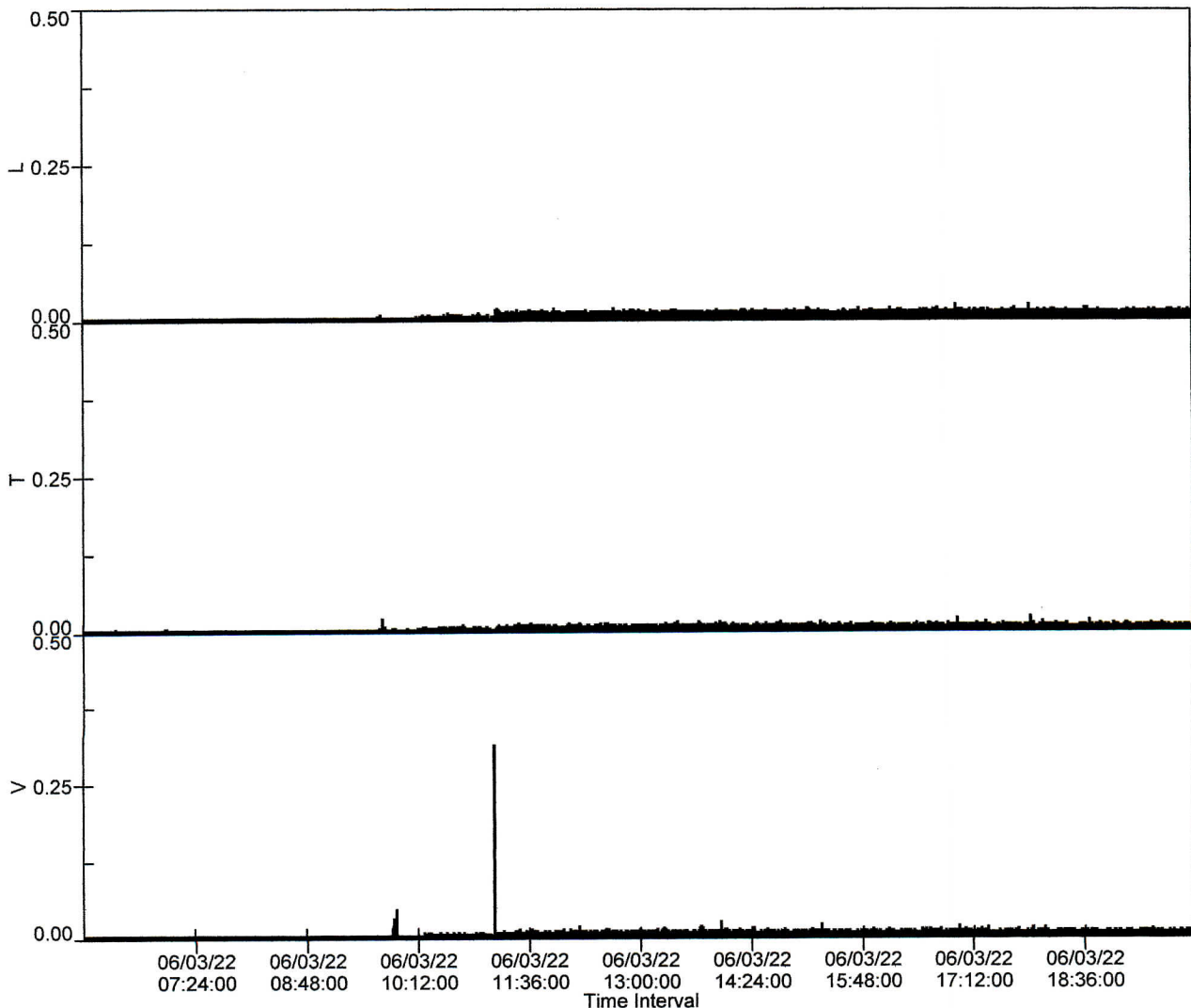
	L	T	V
<b>PPV (in/s)</b>	0.025	0.025	0.315
<b>FREQ (Hz)</b>	500.0	500.0	2.3
<b>Peak Air Pressure:</b> 106 db			
<b>Recording Time:</b> 838 minutes			
<b>Sample Size:</b> 1440			
<b>Interval Size:</b> 60 seconds			

**Additional Info:**

**Shaketable Calibrated:** 04/12/2022  
**By:** GeoSonics Inc.  
 359 Northgate Drive  
 Warrendale, PA 15086 U.S.A.  
 TEL: 724.934.2900 FAX: 724.934.2999

SN: 3734 Event: 2

Record Max PPV: 0.315 in/s Record Max DB: 106 db



**SN:** 3734 v3.22  
**Date:** 06/04/2022 **Time:** 06:01:00  
**Event:** 3  
**Client:** BERGER  
**Operation:** CONSTRUCTION  
**Location:** THORNWOOD PARK  
**Distance:** 25.  
**Operator:** CTI INC  
**Comment:** SW CORNER OF PARK

**Continuous Monitor Recording  
Summary Data**

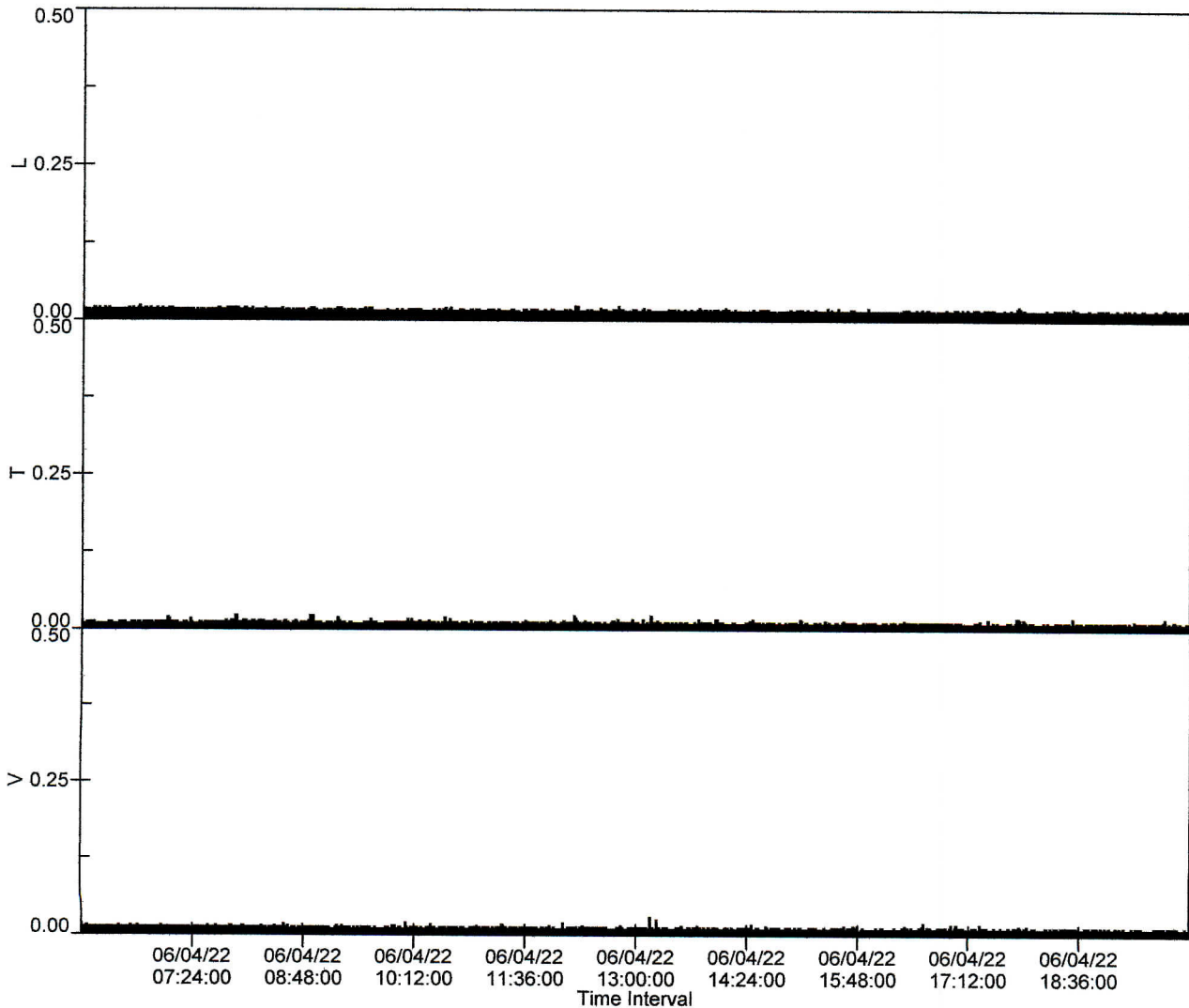
	L	T	V
<b>PPV (in/s)</b>	0.023	0.023	0.030
<b>FREQ (Hz)</b>	250.0	166.7	17.9
<b>Peak Air Pressure:</b>	103 db		
<b>Recording Time:</b>	838 minutes		
<b>Sample Size:</b>	1440		
<b>Interval Size:</b>	60 seconds		

**Additional Info:**

**Shaketable Calibrated:** 04/12/2022  
**By:** GeoSonics Inc.  
 359 Northgate Drive  
 Warrendale, PA 15086 U.S.A.  
 TEL: 724.934.2900 FAX: 724.934.2999

SN: 3734 Event: 3

Record Max PPV: 0.030 in/s Record Max DB: 103 db



**SN:** 3734 v3.22  
**Date:** 06/05/2022 **Time:** 06:01:00  
**Event:** 4  
**Client:** BERGER  
**Operation:** CONSTRUCTION  
**Location:** THORNWOOD PARK  
**Distance:** 25.  
**Operator:** CTI INC  
**Comment:** SW CORNER OF PARK

**Continuous Monitor Recording  
Summary Data**

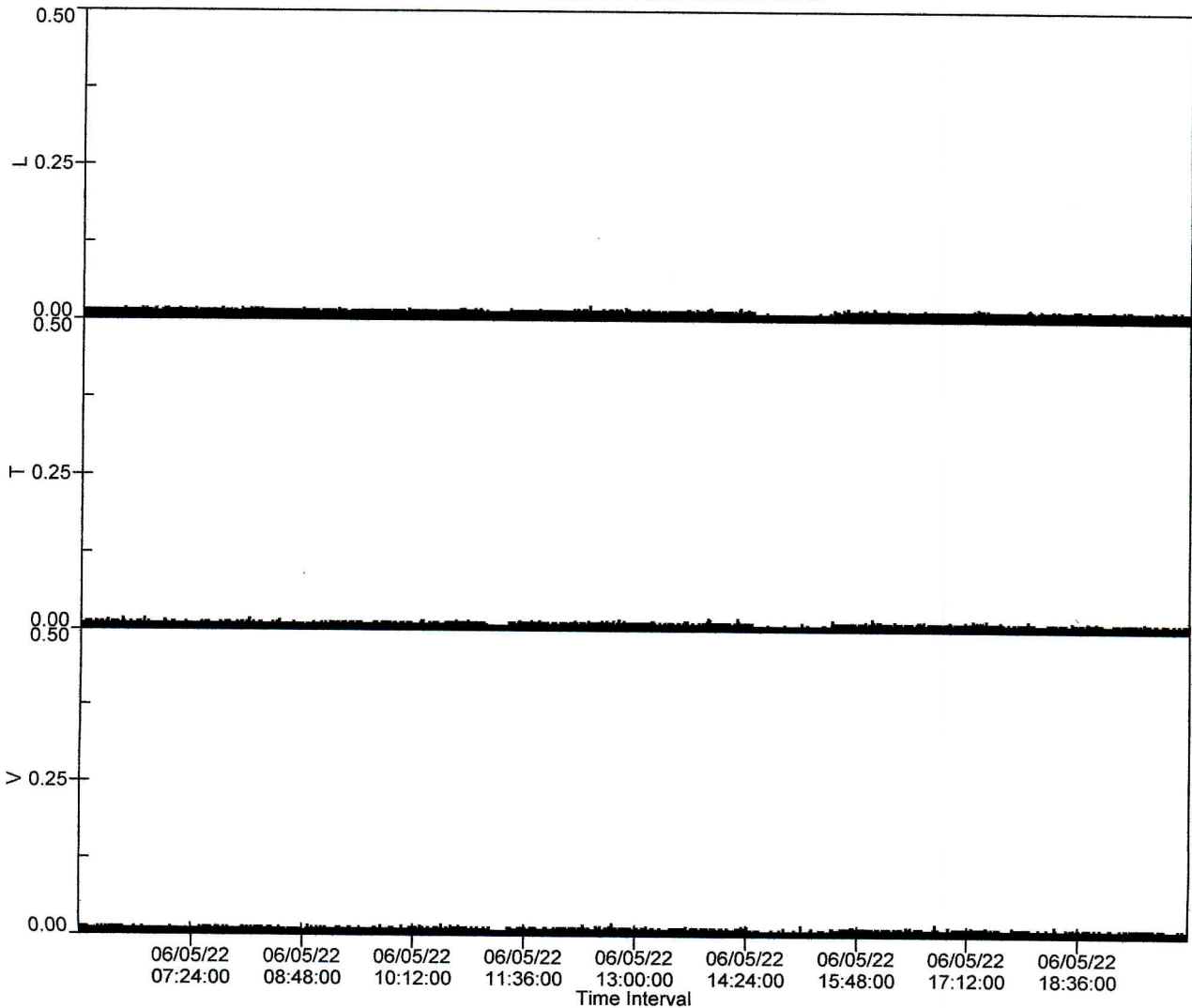
	L	T	V
<b>PPV (in/s)</b>	0.023	0.020	0.020
<b>FREQ (Hz)</b>	71.4	2.3	17.2
<b>Peak Air Pressure: 102 db</b>			
<b>Recording Time: 838 minutes</b>			
<b>Sample Size:</b>	1440		
<b>Interval Size:</b>	60 seconds		

**Additional Info:**

**Shaketable Calibrated:** 04/12/2022  
**By:** GeoSonics Inc.  
 359 Northgate Drive  
 Warrendale, PA 15086 U.S.A.  
 TEL: 724.934.2900 FAX: 724.934.2999

SN: 3734 Event: 4

Record Max PPV: 0.023 in/s Record Max DB: 102 db



**SN:** 3734 v3.22  
**Date:** 06/06/2022 **Time:** 06:01:00  
**Event:** 5  
**Client:** BERGER  
**Operation:** CONSTRUCTION  
**Location:** THORNWOOD PARK  
**Distance:** 25.  
**Operator:** CTI INC  
**Comment:** SW CORNER OF PARK

**Continuous Monitor Recording  
Summary Data**

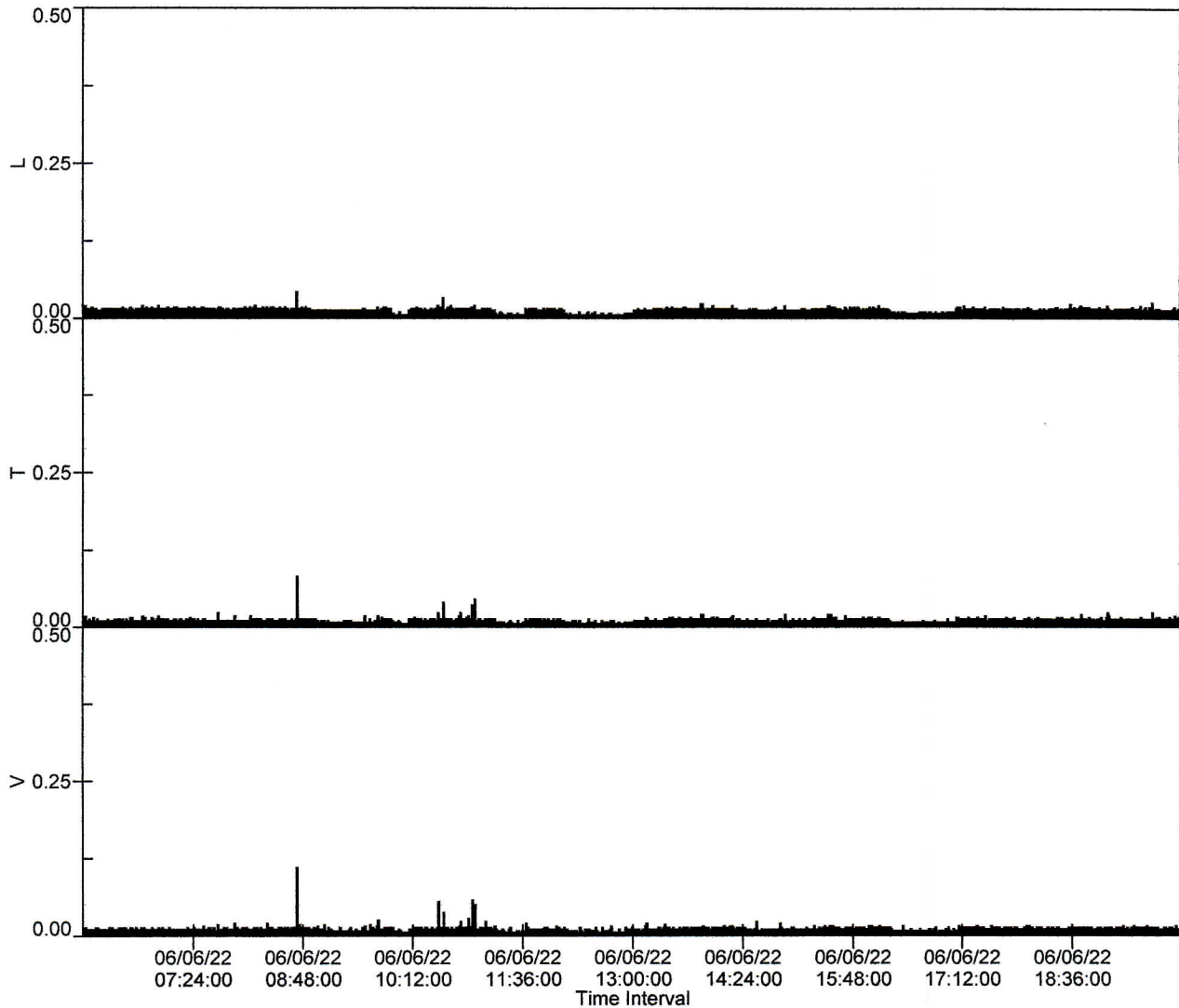
	<b>L</b>	<b>T</b>	<b>V</b>
<b>PPV (in/s)</b>	0.043	0.083	0.110
<b>FREQ (Hz)</b>	35.7	45.5	25.0
<b>Peak Air Pressure:</b>	104 db		
<b>Recording Time:</b>	838 minutes		
<b>Sample Size:</b>	1440		
<b>Interval Size:</b>	60 seconds		

**Additional Info:**

**Shaketable Calibrated:** 04/12/2022  
**By:** GeoSonics Inc.  
 359 Northgate Drive  
 Warrendale, PA 15086 U.S.A.  
 TEL: 724.934.2900 FAX: 724.934.2999

SN: 3734 Event: 5

Record Max PPV: 0.110 in/s Record Max DB: 104 db



**SN:** 3734 v3.22  
**Date:** 06/08/2022 **Time:** 06:01:00  
**Event:** 7  
**Client:** BERGER  
**Operation:** CONSTRUCTION  
**Location:** THORNWOOD PARK  
**Distance:** 25.  
**Operator:** CTI INC  
**Comment:** SW CORNER OF PARK

**Continuous Monitor Recording  
Summary Data**

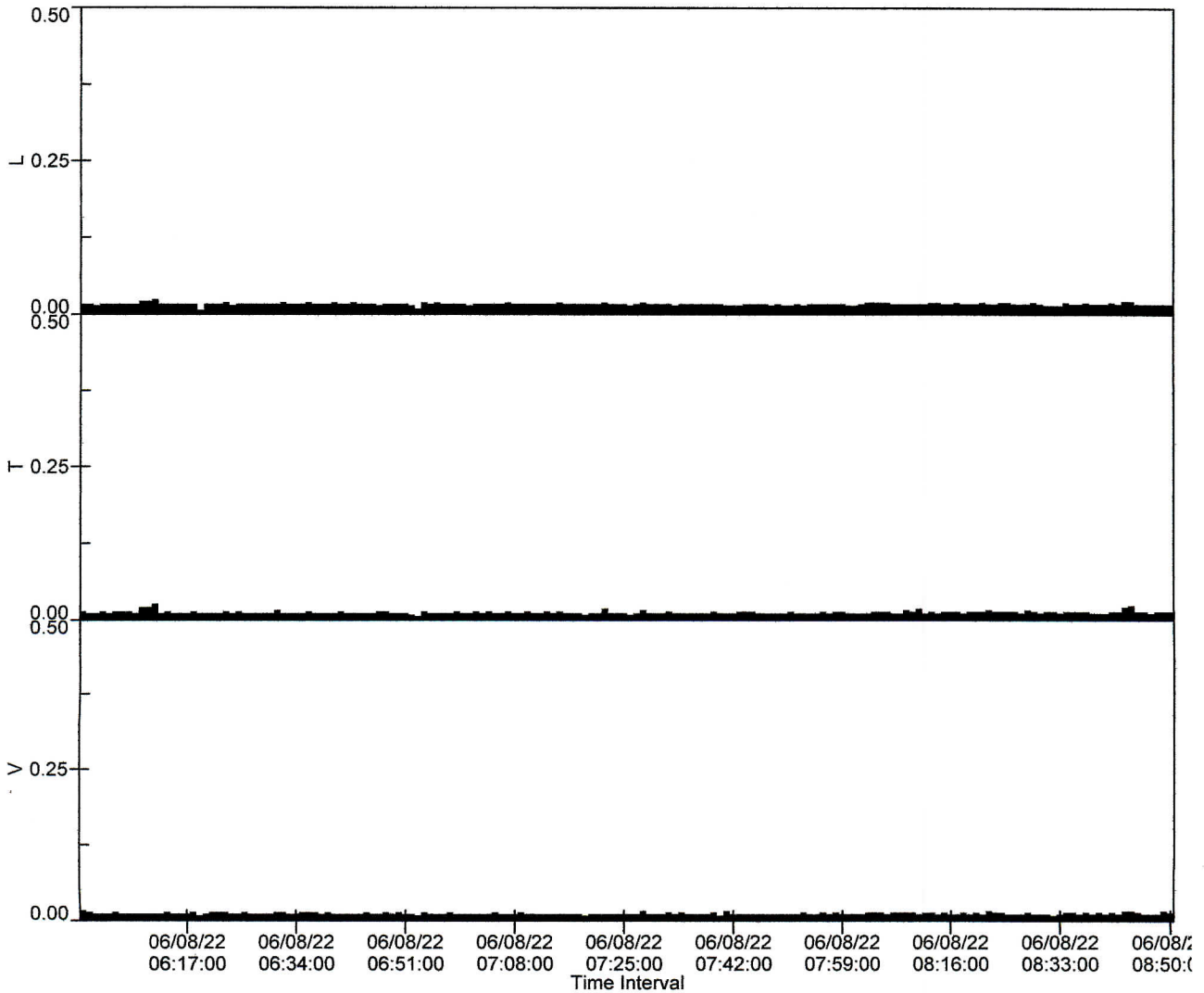
	L	T	V
<b>PPV (in/s)</b>	0.023	0.025	0.015
<b>FREQ (Hz)</b>	2.2	5.3	.3
<b>Peak Air Pressure:</b>	102 db		
<b>Recording Time:</b>	170 minutes		
<b>Sample Size:</b>	1440		
<b>Interval Size:</b>	60 seconds		

**Additional Info:**

**Shaketable Calibrated:** 04/12/2022  
**By:** GeoSonics Inc.  
 359 Northgate Drive  
 Warrendale, PA 15086 U.S.A.  
 TEL: 724.934.2900 FAX: 724.934.2999

SN: 3734 Event: 7

Record Max PPV: 0.025 in/s Record Max DB: 102 db





**SN:** 3734 v3.22  
**Date:** 06/08/2022 **Time:** 08:56:00  
**Event:** 8  
**Client:** BERGER  
**Operation:** CONSTRUCTION  
**Location:** THORNWOOD PARK  
**Distance:** 25.  
**Operator:** CTI INC  
**Comment:** SW CORNER OF PARK

**Continuous Monitor Recording  
Summary Data**

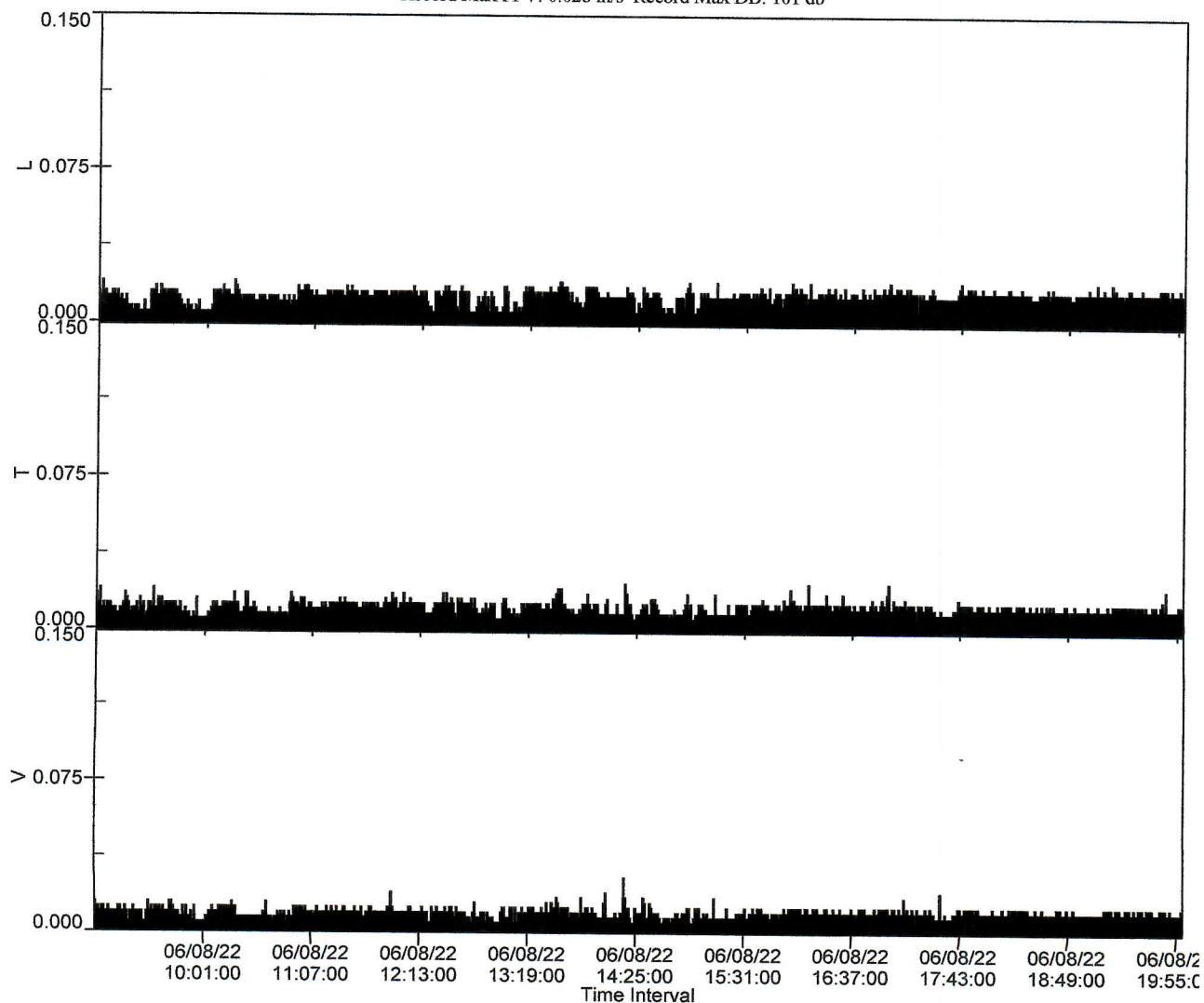
	L	T	V
<b>PPV (in/s)</b>	0.020	0.023	0.028
<b>FREQ (Hz)</b>	125.0	16.7	16.1
<b>Peak Air Pressure:</b>	101 db		
<b>Recording Time:</b>	663 minutes		
<b>Sample Size:</b>	1440		
<b>Interval Size:</b>	60 seconds		

**Additional Info:**

**Shaketable Calibrated:** 04/12/2022  
**By:** GeoSonics Inc.  
 359 Northgate Drive  
 Warrendale, PA 15086 U.S.A.  
 TEL: 724.934.2900 FAX: 724.934.2999

SN: 3734 Event: 8

Record Max PPV: 0.028 in/s Record Max DB: 101 db



**SN:** 3734 v3.22  
**Date:** 06/09/2022 **Time:** 06:01:00  
**Event:** 9  
**Client:** BERGER  
**Operation:** CONSTRUCTION  
**Location:** THORNWOOD PARK  
**Distance:** 25.  
**Operator:** CTI INC  
**Comment:** SW CORNER OF PARK

**Continuous Monitor Recording  
Summary Data**

	L	T	V
PPV (in/s)	0.028	0.023	0.028
FREQ (Hz)	21.7	12.8	14.7
Peak Air Pressure:	106 db		

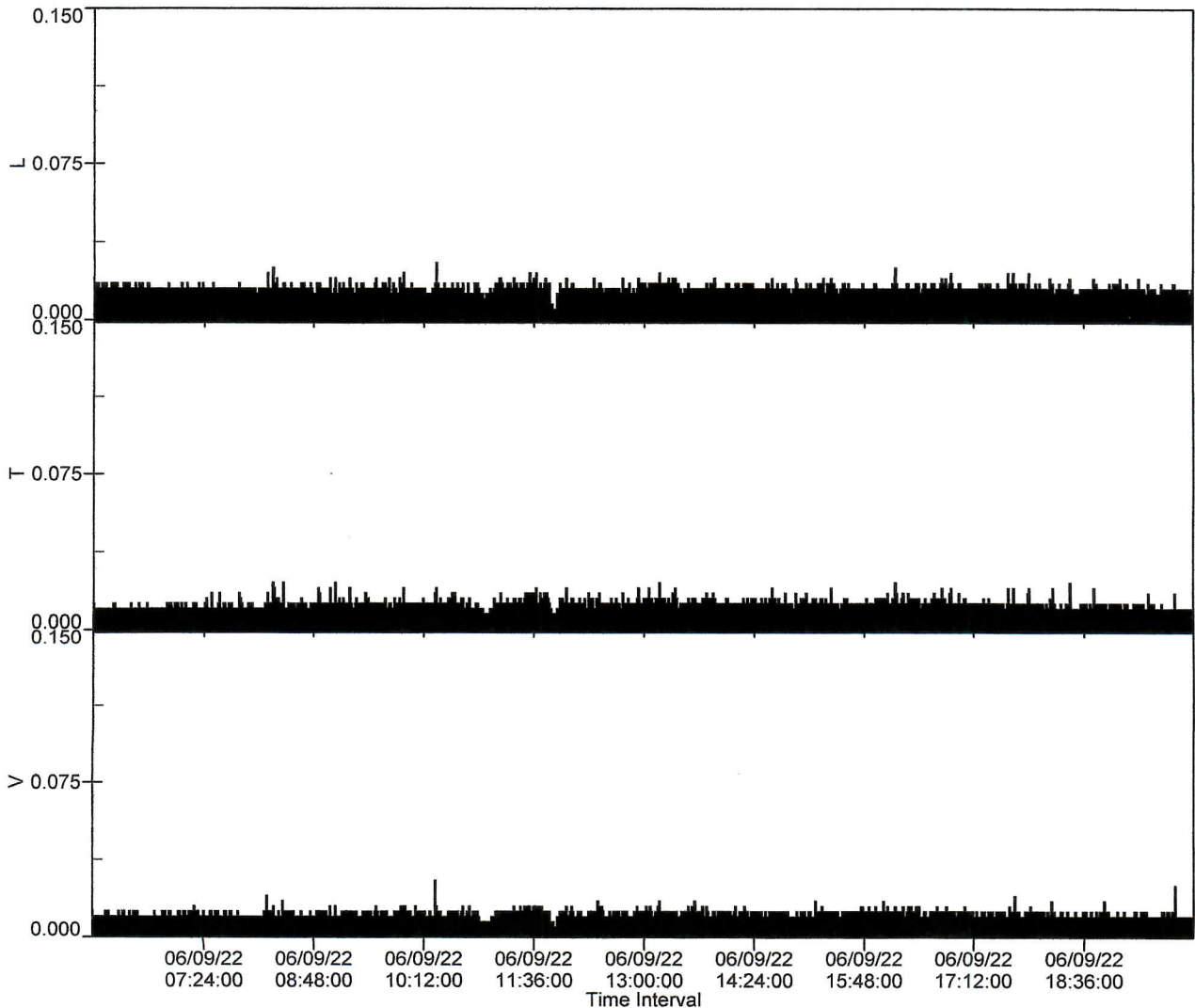
**Recording Time:** 838 minutes  
**Sample Size:** 1440  
**Interval Size:** 60 seconds

**Additional Info:**

**Shaketable Calibrated:** 04/12/2022  
**By:** GeoSonics Inc.  
 359 Northgate Drive  
 Warrendale, PA 15086 U.S.A.  
 TEL: 724.934.2900 FAX: 724.934.2999

SN: 3734 Event: 9

Record Max PPV: 0.028 in/s Record Max DB: 106 db



**SN:** 3734 v3.22  
**Date:** 06/10/2022 **Time:** 06:01:00  
**Event:** 10  
**Client:** BERGER  
**Operation:** CONSTRUCTION  
**Location:** THORNWOOD PARK  
**Distance:** 25.  
**Operator:** CTI INC  
**Comment:** SW CORNER OF PARK

**Continuous Monitor Recording  
Summary Data**

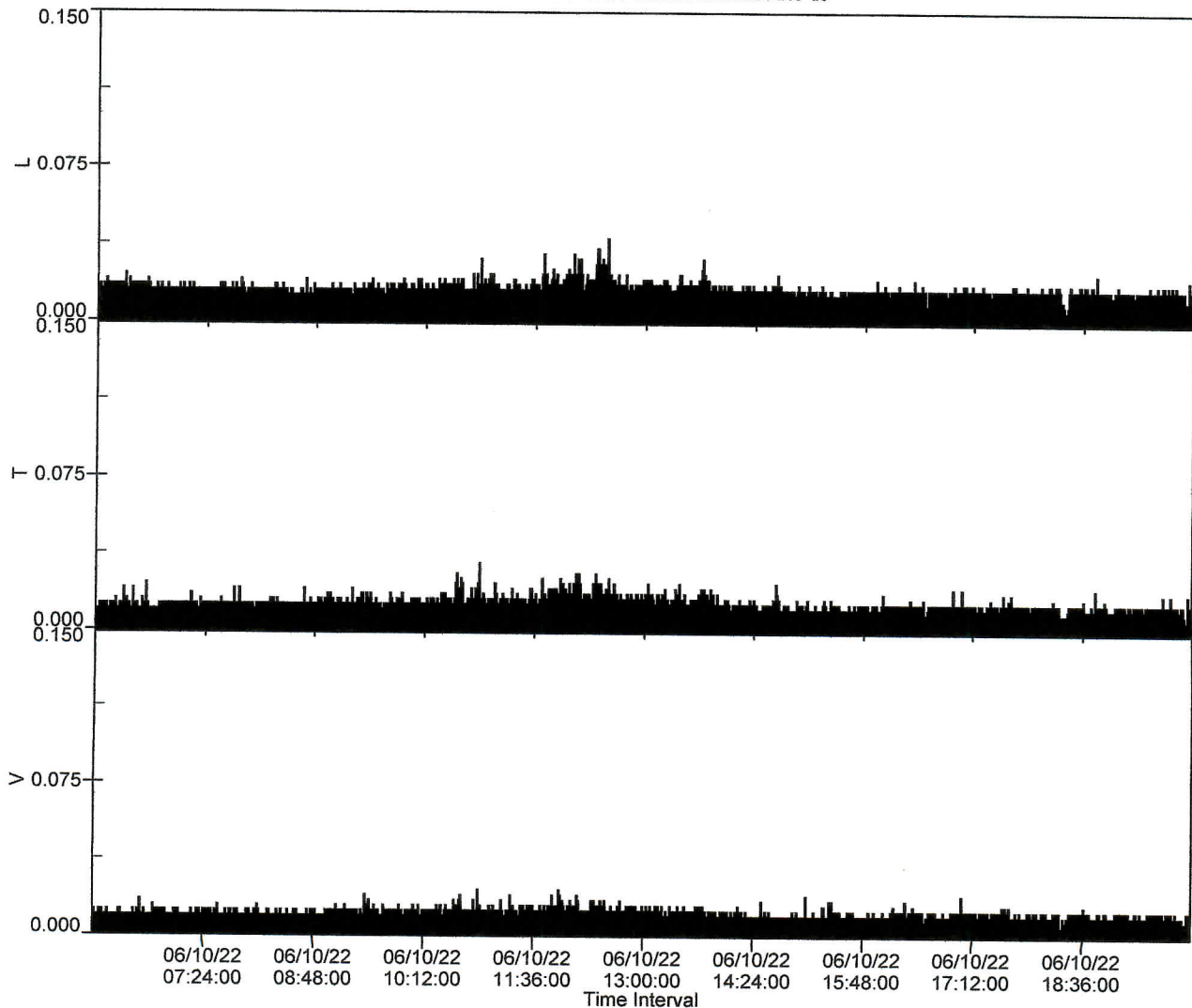
	L	T	V
<b>PPV (in/s)</b>	0.040	0.033	0.023
<b>FREQ (Hz)</b>	15.2	10.9	166.7
<b>Peak Air Pressure:</b>	105 db		
<b>Recording Time:</b>	838 minutes		
<b>Sample Size:</b>	1440		
<b>Interval Size:</b>	60 seconds		

**Additional Info:**

**Shaketable Calibrated:** 04/12/2022  
**By:** GeoSonics Inc.  
 359 Northgate Drive  
 Warrendale, PA 15086 U.S.A.  
 TEL: 724.934.2900 FAX: 724.934.2999

SN: 3734 Event: 10

Record Max PPV: 0.040 in/s Record Max DB: 105 db



**SN:** 3734 v3.22  
**Date:** 06/11/2022 **Time:** 06:01:00  
**Event:** 11  
**Client:** BERGER  
**Operation:** CONSTRUCTION  
**Location:** THORNWOOD PARK  
**Distance:** 25.  
**Operator:** CTI INC  
**Comment:** SW CORNER OF PARK

**Continuous Monitor Recording  
Summary Data**

	L	T	V
<b>PPV (in/s)</b>	0.093	0.158	0.085
<b>FREQ (Hz)</b>	19.2	20.0	33.3
<b>Peak Air Pressure:</b>	104 db		

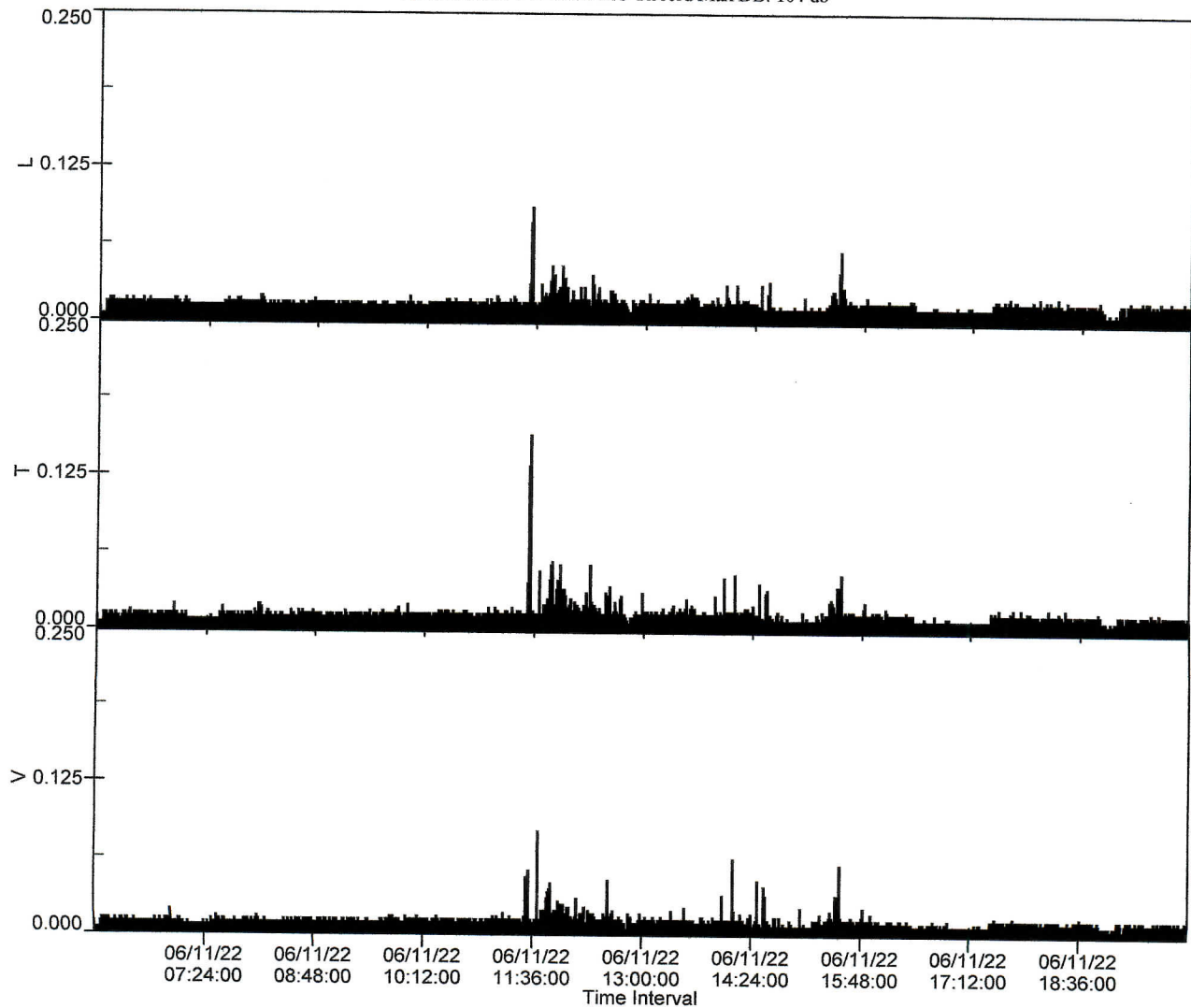
**Recording Time:** 838 minutes  
**Sample Size:** 1440  
**Interval Size:** 60 seconds

**Additional Info:**

**Shaketable Calibrated:** 04/12/2022  
**By:** GeoSonics Inc.  
 359 Northgate Drive  
 Warrendale, PA 15086 U.S.A.  
 TEL: 724.934.2900 FAX: 724.934.2999

SN: 3734 Event: 11

Record Max PPV: 0.158 in/s Record Max DB: 104 db



**SN:** 3734 v3.22  
**Date:** 06/12/2022 **Time:** 06:01:00  
**Event:** 12  
**Client:** BERGER  
**Operation:** CONSTRUCTION  
**Location:** THORNWOOD PARK  
**Distance:** 25.  
**Operator:** CTI INC  
**Comment:** SW CORNER OF PARK

**Continuous Monitor Recording  
Summary Data**

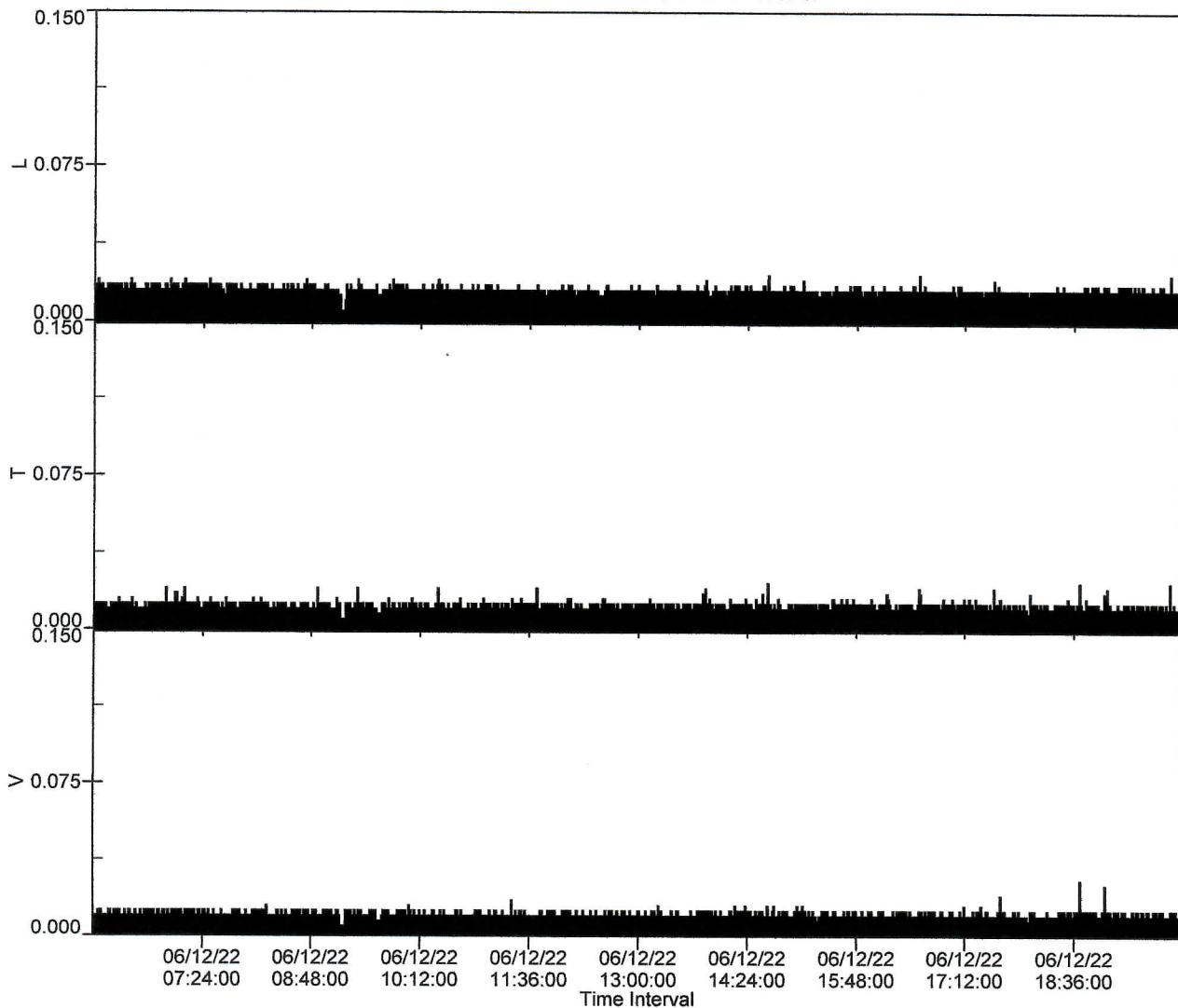
	L	T	V
<b>PPV (in/s)</b>	0.023	0.023	0.028
<b>FREQ (Hz)</b>	45.5	29.4	55.6
<b>Peak Air Pressure:</b>	102 db		
<b>Recording Time:</b>	838 minutes		
<b>Sample Size:</b>	1440		
<b>Interval Size:</b>	60 seconds		

**Additional Info:**

**Shaketable Calibrated:** 04/12/2022  
**By:** GeoSonics Inc.  
 359 Northgate Drive  
 Warrendale, PA 15086 U.S.A.  
 TEL: 724.934.2900 FAX: 724.934.2999

SN: 3734 Event: 12

Record Max PPV: 0.028 in/s Record Max DB: 102 db





**SN:** 3733 v3.22  
**Date:** 06/03/2022 **Time:** 06:01:00  
**Event:** 2  
**Client:** BERGER  
**Operation:** CONSTRUCTION  
**Location:** THORNWOOD PARK  
**Distance:** 25.  
**Operator:** CTI INC  
**Comment:** 2345 THORNWOOD

**Continuous Monitor Recording  
Summary Data**

	L	T	V
<b>PPV (in/s)</b>	0.075	0.050	0.043
<b>FREQ (Hz)</b>	250.0	17.2	17.9
<b>Peak Air Pressure:</b>	111 db		

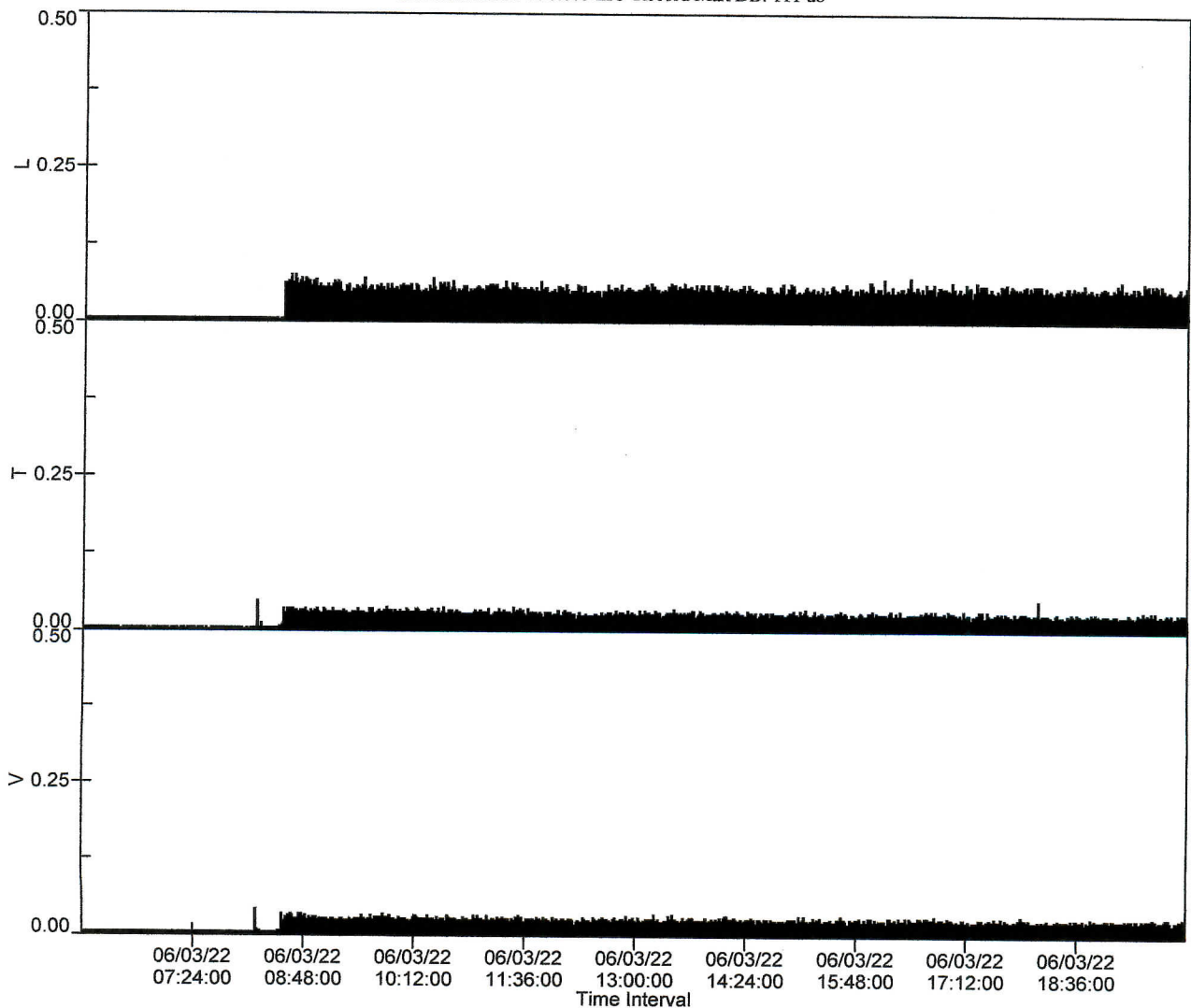
**Recording Time:** 838 minutes  
**Sample Size:** 1440  
**Interval Size:** 60 seconds

**Additional Info:**

**Shaketable Calibrated:** 12/28/2021  
**By:** GeoSonics Inc.  
 359 Northgate Drive  
 Warrendale, PA 15086 U.S.A.  
 TEL: 724.934.2900 FAX: 724.934.2999

SN: 3733 Event: 2

Record Max PPV: 0.075 in/s Record Max DB: 111 db



**SN:** 3733 v3.22  
**Date:** 06/04/2022 **Time:** 06:01:00  
**Event:** 3  
**Client:** BERGER  
**Operation:** CONSTRUCTION  
**Location:** THORNWOOD PARK  
**Distance:** 25.  
**Operator:** CTI INC  
**Comment:** 2345 THORNWOOD

**Continuous Monitor Recording**

**Summary Data**

	L	T	V
<b>PPV (in/s)</b>	0.093	0.088	0.078
<b>FREQ (Hz)</b>	31.3	31.3	29.4
<b>Peak Air Pressure:</b>	101 db		

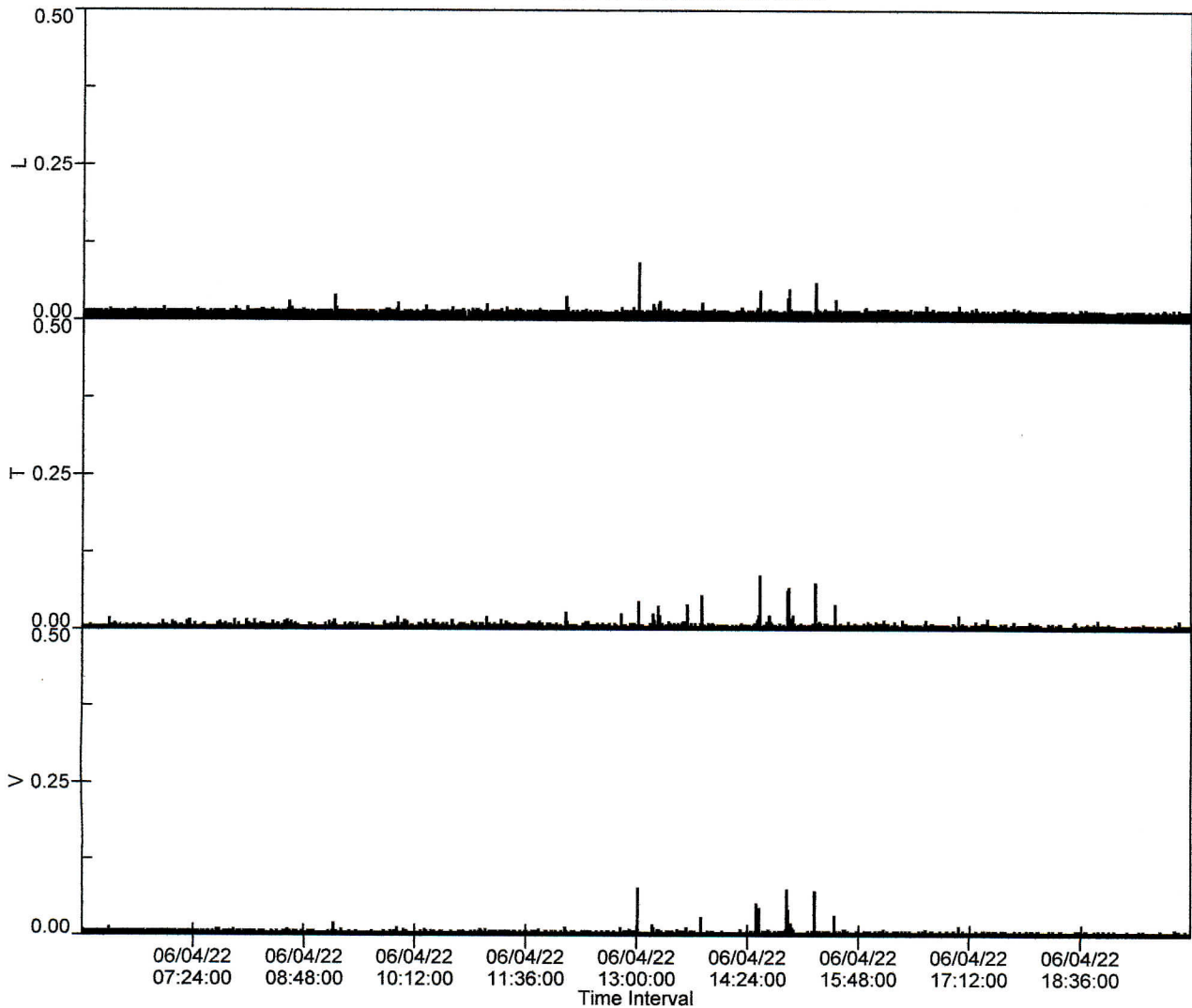
**Recording Time:** 838 minutes  
**Sample Size:** 1440  
**Interval Size:** 60 seconds

**Additional Info:**

**Shaketable Calibrated:** 12/28/2021  
**By:** GeoSonics Inc.  
 359 Northgate Drive  
 Warrendale, PA 15086 U.S.A.  
 TEL: 724.934.2900 FAX: 724.934.2999

SN: 3733 Event: 3

Record Max PPV: 0.093 in/s Record Max DB: 101 db





**SN:** 3733 v3.22  
**Date:** 06/05/2022 **Time:** 06:01:00  
**Event:** 4  
**Client:** BERGER  
**Operation:** CONSTRUCTION  
**Location:** THORNWOOD PARK  
**Distance:** 25.  
**Operator:** CTI INC  
**Comment:** 2345 THORNWOOD

**Continuous Monitor Recording  
Summary Data**

	L	T	V
<b>PPV (in/s)</b>	0.070	0.035	0.035
<b>FREQ (Hz)</b>	125.0	500.0	500.0
<b>Peak Air Pressure:</b>	112 db		

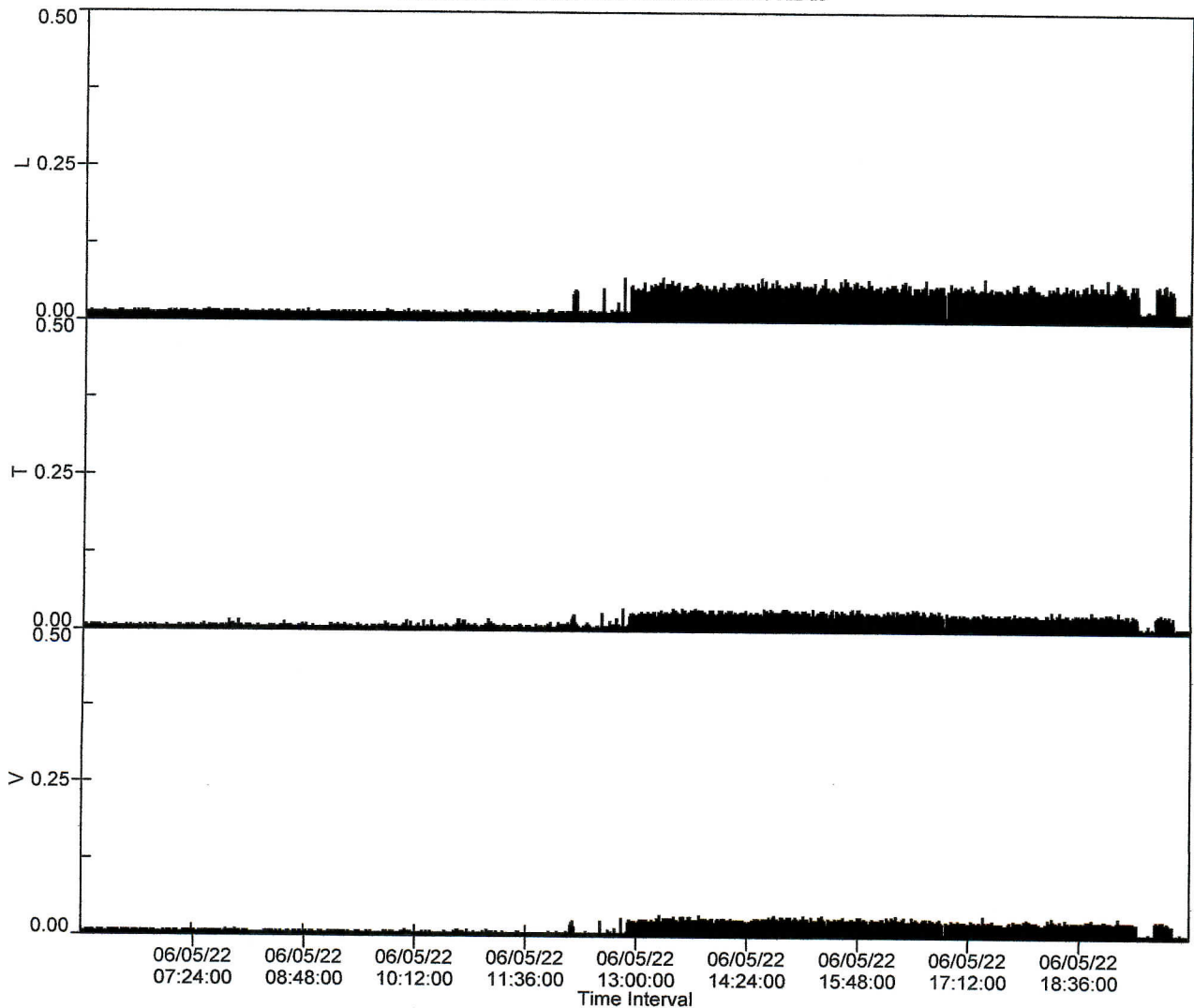
**Recording Time:** 838 minutes  
**Sample Size:** 1440  
**Interval Size:** 60 seconds

**Additional Info:**

**Shaketable Calibrated:** 12/28/2021  
**By:** GeoSonics Inc.  
 359 Northgate Drive  
 Warrendale, PA 15086 U.S.A.  
 TEL: 724.934.2900 FAX: 724.934.2999

SN: 3733 Event: 4

Record Max PPV: 0.070 in/s Record Max DB: 112 db



**SN:** 3733 v3.22  
**Date:** 06/06/2022 **Time:** 06:01:00  
**Event:** 5  
**Client:** BERGER  
**Operation:** CONSTRUCTION  
**Location:** THORNWOOD PARK  
**Distance:** 25.  
**Operator:** CTI INC  
**Comment:** 2345 THORNWOOD

**Continuous Monitor Recording**

**Summary Data**

	L	T	V
PPV (in/s)	0.093	0.110	0.135
FREQ (Hz)	25.0	26.3	26.3
Peak Air Pressure:	111 db		

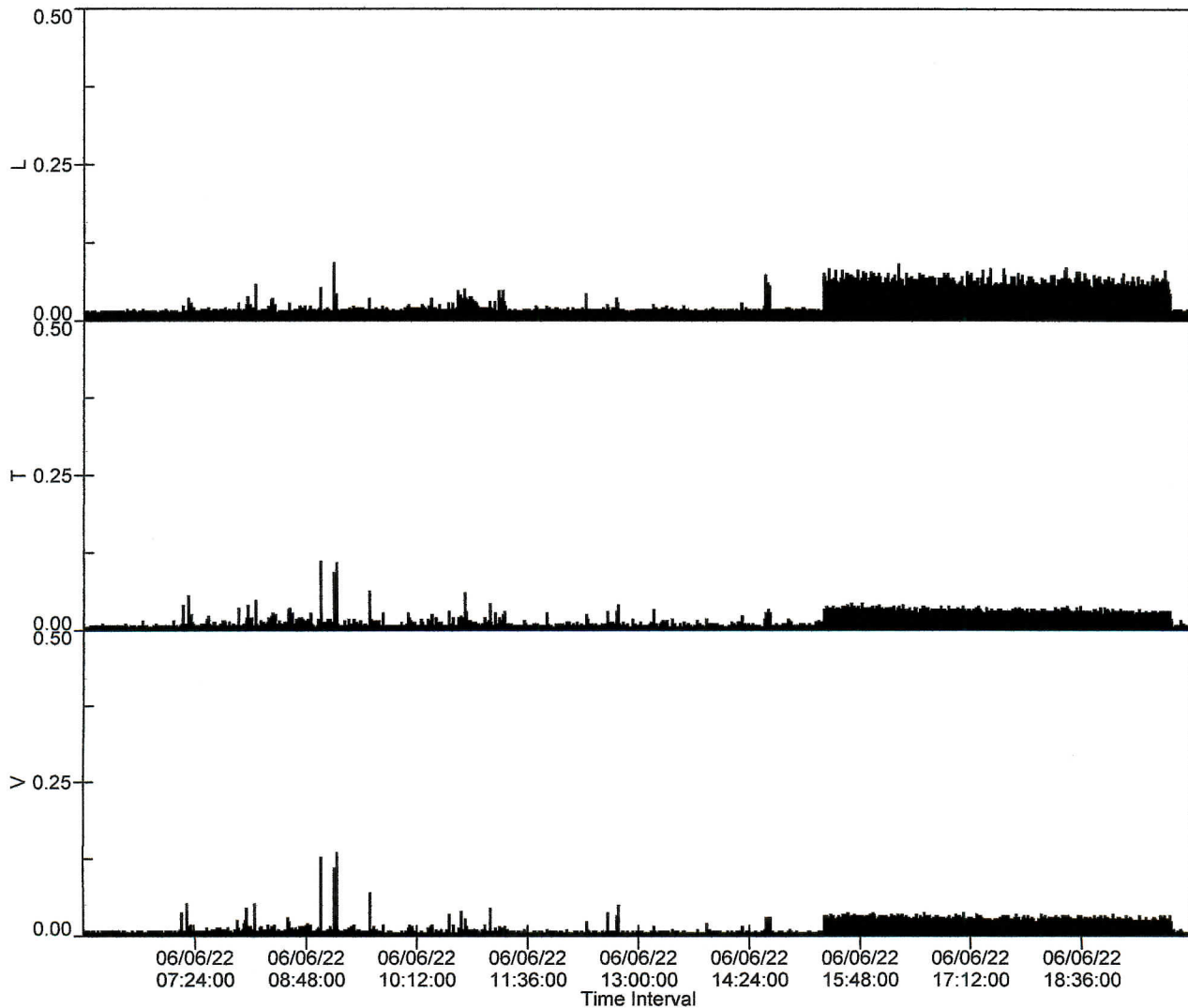
**Recording Time:** 838 minutes  
**Sample Size:** 1440  
**Interval Size:** 60 seconds

**Additional Info:**

**Shaketable Calibrated:** 12/28/2021  
**By:** GeoSonics Inc.  
 359 Northgate Drive  
 Warrendale, PA 15086 U.S.A.  
 TEL: 724.934.2900 FAX: 724.934.2999

SN: 3733 Event: 5

Record Max PPV: 0.135 in/s Record Max DB: 111 db



**SN:** 3733 v3.22  
**Date:** 06/07/2022 **Time:** 06:01:00  
**Event:** 6  
**Client:** BERGER  
**Operation:** CONSTRUCTION  
**Location:** THORNWOOD PARK  
**Distance:** 25.  
**Operator:** CTI INC  
**Comment:** 2345 THORNWOOD

**Continuous Monitor Recording  
Summary Data**

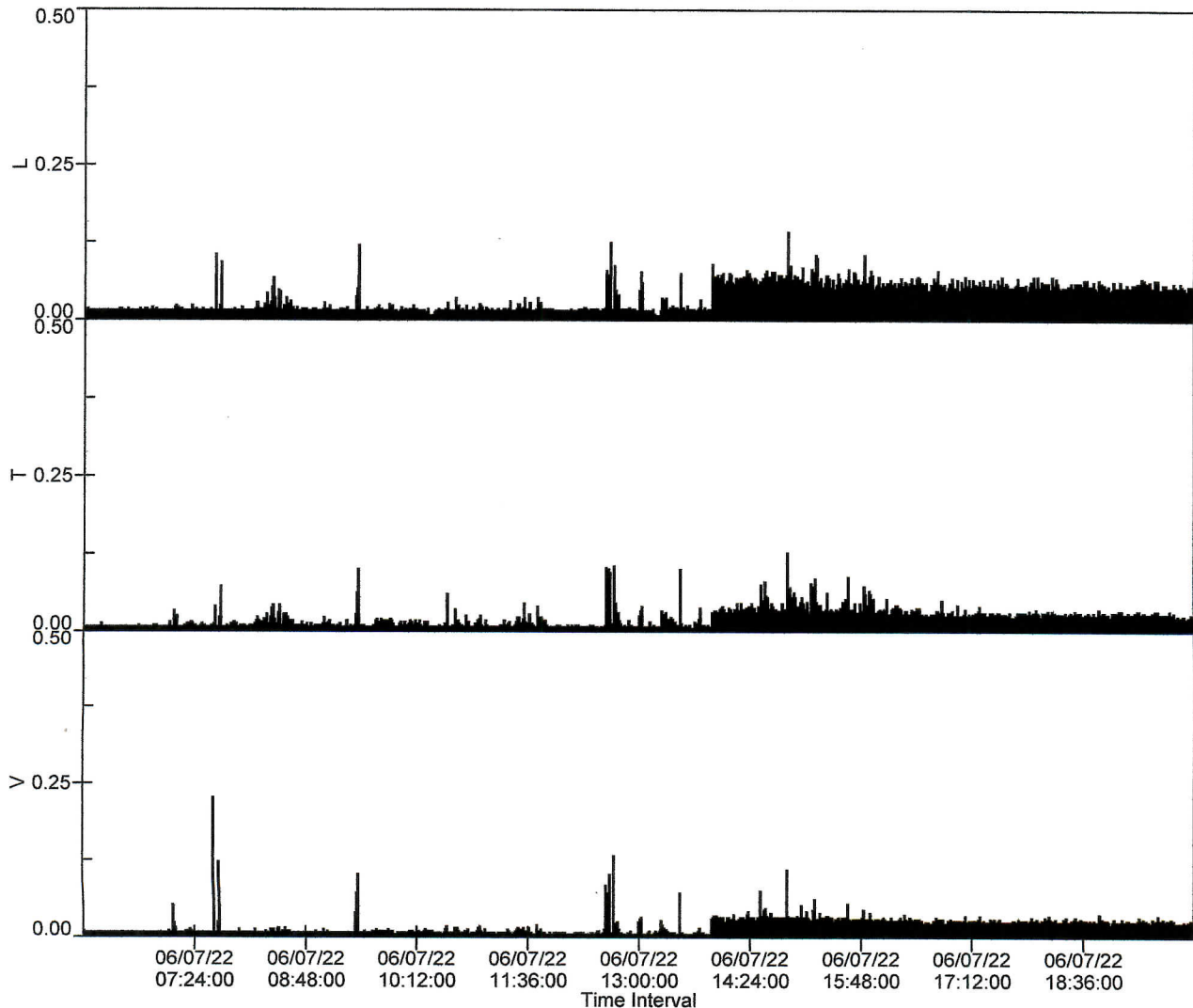
	L	T	V
<b>PPV (in/s)</b>	0.143	0.128	0.228
<b>FREQ (Hz)</b>	17.9	17.2	35.7
<b>Peak Air Pressure:</b>	112 db		
<b>Recording Time:</b>	838 minutes		
<b>Sample Size:</b>	1440		
<b>Interval Size:</b>	60 seconds		

**Additional Info:**

**Shaketable Calibrated:** 12/28/2021  
**By:** GeoSonics Inc.  
 359 Northgate Drive  
 Warrendale, PA 15086 U.S.A.  
 TEL: 724.934.2900 FAX: 724.934.2999

SN: 3733 Event: 6

Record Max PPV: 0.228 in/s Record Max DB: 112 db



**SN:** 3733 v3.22  
**Date:** 06/08/2022 **Time:** 06:01:00  
**Event:** 7  
**Client:** BERGER  
**Operation:** CONSTRUCTION  
**Location:** THORNWOOD PARK  
**Distance:** 25.  
**Operator:** CTI INC  
**Comment:** 2345 THORNWOOD

**Continuous Monitor Recording**

**Summary Data**

	L	T	V
<b>PPV (in/s)</b>	0.088	0.108	0.163
<b>FREQ (Hz)</b>	17.2	16.1	26.3
<b>Peak Air Pressure:</b>	105 db		

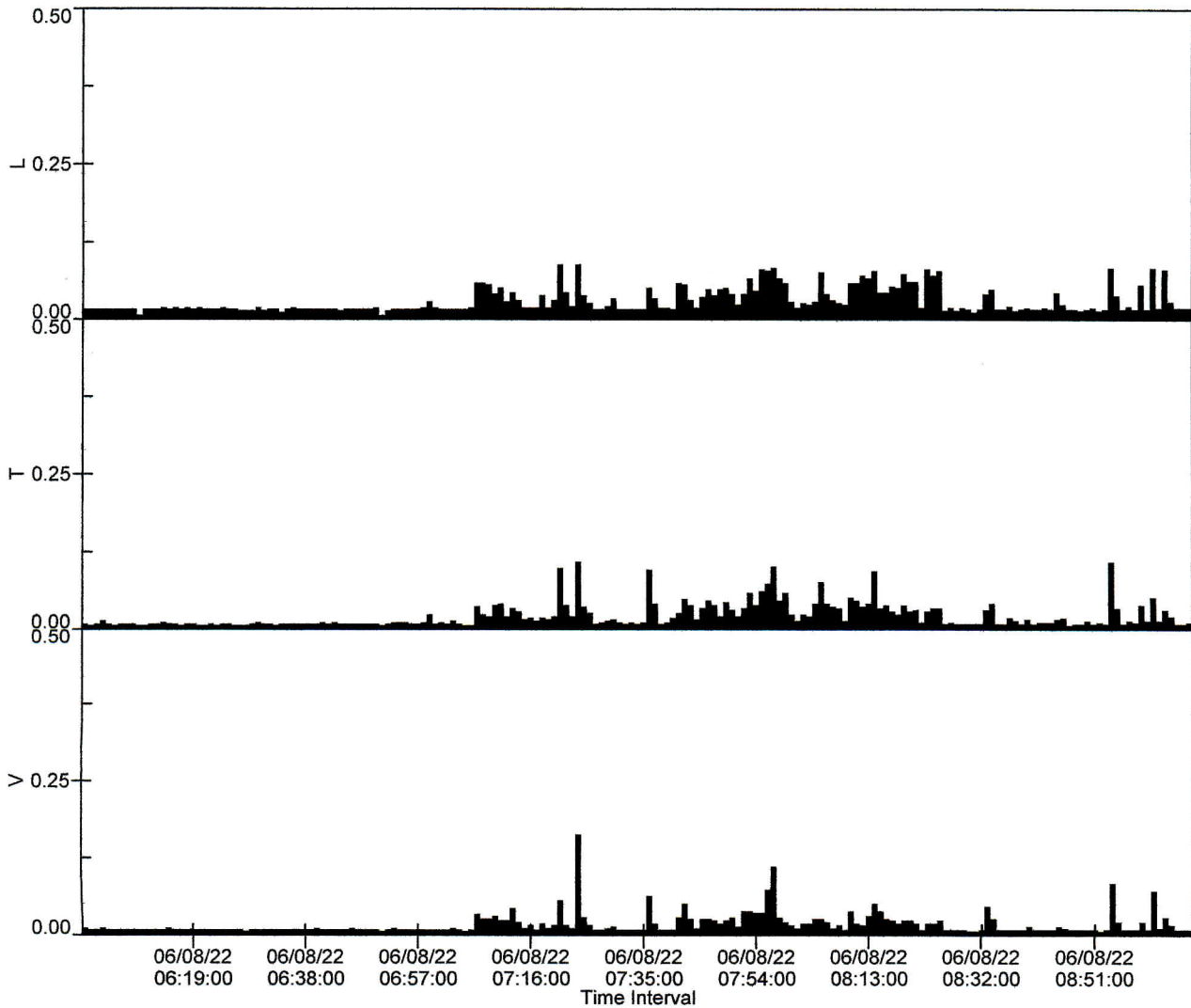
**Recording Time:** 187 minutes  
**Sample Size:** 1440  
**Interval Size:** 60 seconds

**Additional Info:**

**Shaketable Calibrated:** 12/28/2021  
**By:** GeoSonics Inc.  
 359 Northgate Drive  
 Warrendale, PA 15086 U.S.A.  
 TEL: 724.934.2900 FAX: 724.934.2999

SN: 3733 Event: 7

Record Max PPV: 0.163 in/s Record Max DB: 105 db



**SN:** 3733 v3.22  
**Date:** 06/08/2022 **Time:** 09:13:00  
**Event:** 8  
**Client:** BERGER  
**Operation:** CONSTRUCTION  
**Location:** THORNWOOD PARK  
**Distance:** 25.  
**Operator:** CTI INC  
**Comment:** 2345 THORNWOOD

**Continuous Monitor Recording**

**Summary Data**

	L	T	V
<b>PPV (in/s)</b>	0.115	0.063	0.055
<b>FREQ (Hz)</b>	12.5	13.2	19.2
<b>Peak Air Pressure:</b>	108 db		

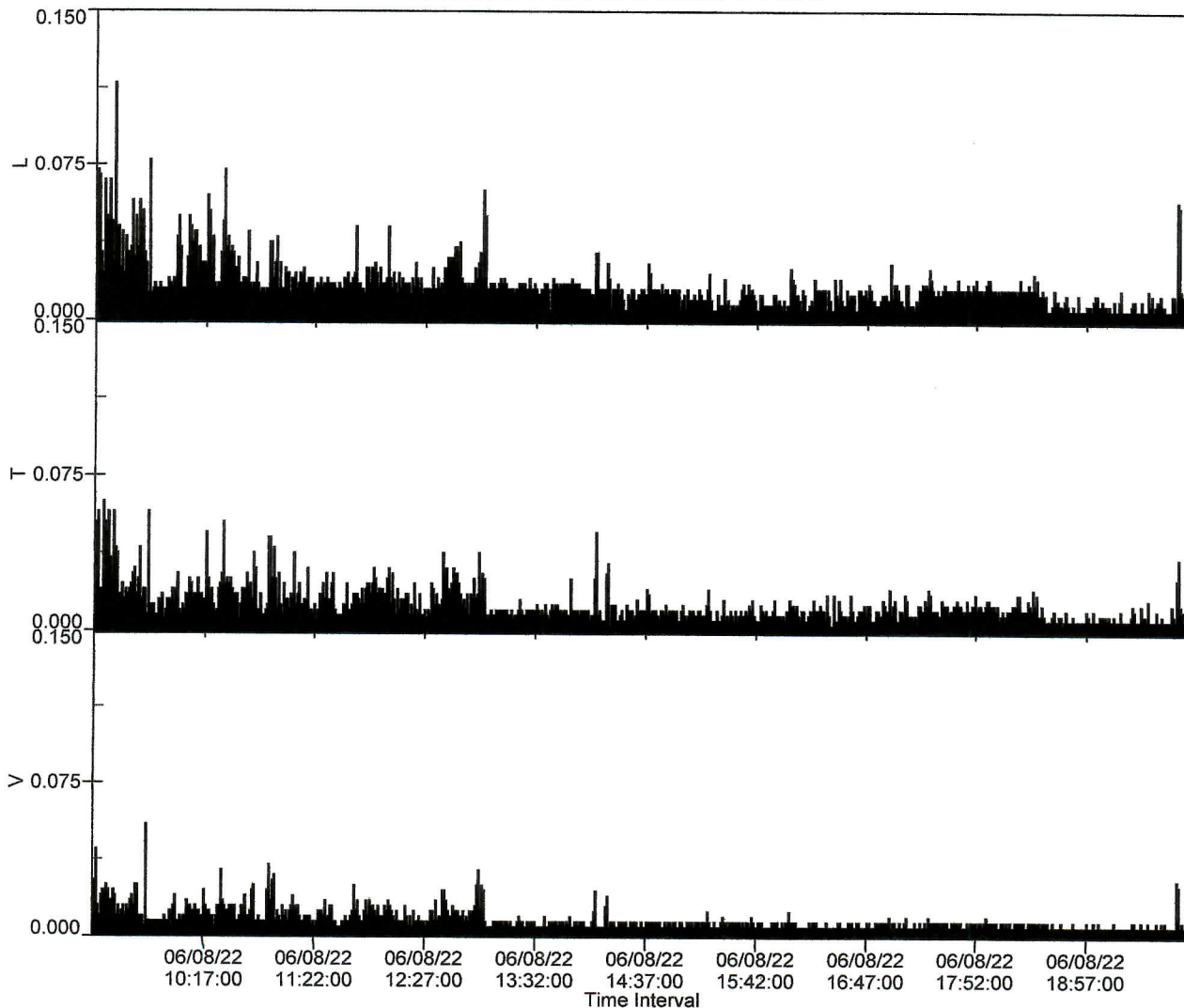
**Recording Time:** 646 minutes  
**Sample Size:** 1440  
**Interval Size:** 60 seconds

**Additional Info:**

**Shaketable Calibrated:** 12/28/2021  
**By:** GeoSonics Inc.  
 359 Northgate Drive  
 Warrendale, PA 15086 U.S.A.  
 TEL: 724.934.2900 FAX: 724.934.2999

SN: 3733 Event: 8

Record Max PPV: 0.115 in/s Record Max DB: 108 db



**SN:** 3733 v3.22  
**Date:** 06/09/2022 **Time:** 06:01:00  
**Event:** 9  
**Client:** BERGER  
**Operation:** CONSTRUCTION  
**Location:** THORNWOOD PARK  
**Distance:** 25.  
**Operator:** CTI INC  
**Comment:** 2345 THORNWOOD

**Continuous Monitor Recording  
Summary Data**

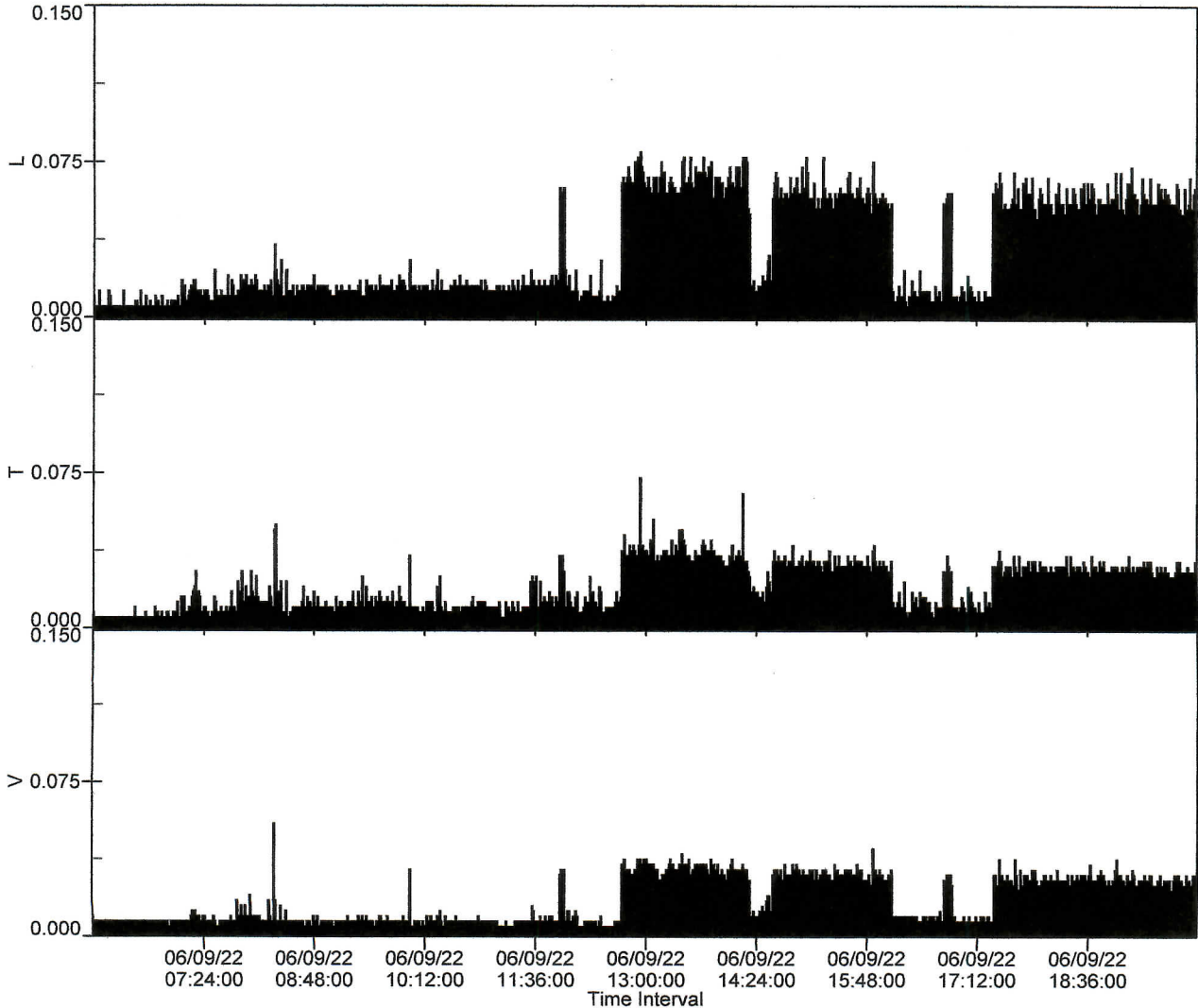
	L	T	V
<b>PPV (in/s)</b>	0.080	0.073	0.055
<b>FREQ (Hz)</b>	1.3	2.3	15.2
<b>Peak Air Pressure:</b>	112 db		
<b>Recording Time:</b>	838 minutes		
<b>Sample Size:</b>	1440		
<b>Interval Size:</b>	60 seconds		

**Additional Info:**

**Shaketable Calibrated:** 12/28/2021  
**By:** GeoSonics Inc.  
 359 Northgate Drive  
 Warrendale, PA 15086 U.S.A.  
 TEL: 724.934.2900 FAX: 724.934.2999

SN: 3733 Event: 9

Record Max PPV: 0.080 in/s Record Max DB: 112 db



**SN:** 3733 v3.22  
**Date:** 06/10/2022 **Time:** 06:01:00  
**Event:** 10  
**Client:** BERGER  
**Operation:** CONSTRUCTION  
**Location:** THORNWOOD PARK  
**Distance:** 25.  
**Operator:** CTI INC  
**Comment:** 2345 THORNWOOD

**Continuous Monitor Recording  
Summary Data**

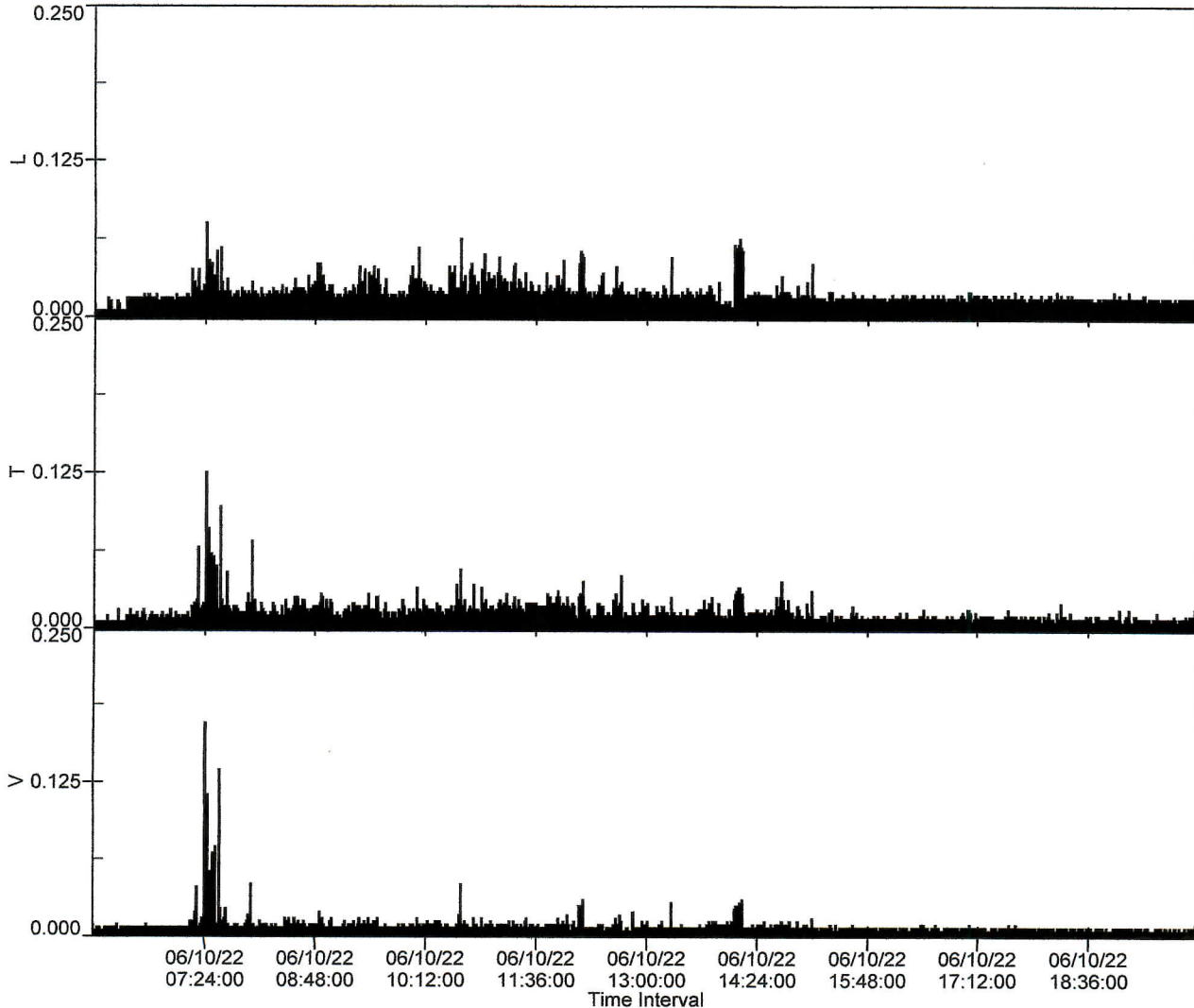
	L	T	V
<b>PPV (in/s)</b>	0.075	0.125	0.173
<b>FREQ (Hz)</b>	16.7	21.7	20.8
<b>Peak Air Pressure:</b>	110 db		
<b>Recording Time:</b>	838 minutes		
<b>Sample Size:</b>	1440		
<b>Interval Size:</b>	60 seconds		

**Additional Info:**

**Shaketable Calibrated:** 12/28/2021  
**By:** GeoSonics Inc.  
 359 Northgate Drive  
 Warrendale, PA 15086 U.S.A.  
 TEL: 724.934.2900 FAX: 724.934.2999

SN: 3733 Event: 10

Record Max PPV: 0.173 in/s Record Max DB: 110 db



**SN:** 3733 v3.22  
**Date:** 06/11/2022 **Time:** 06:01:00  
**Event:** 11  
**Client:** BERGER  
**Operation:** CONSTRUCTION  
**Location:** THORNWOOD PARK  
**Distance:** 25.  
**Operator:** CTI INC  
**Comment:** 2345 THORNWOOD

**Continuous Monitor Recording**

**Summary Data**

	L	T	V
PPV (in/s)	0.048	0.055	0.033
FREQ (Hz)	16.7	11.6	25.0
Peak Air Pressure:	86 db		

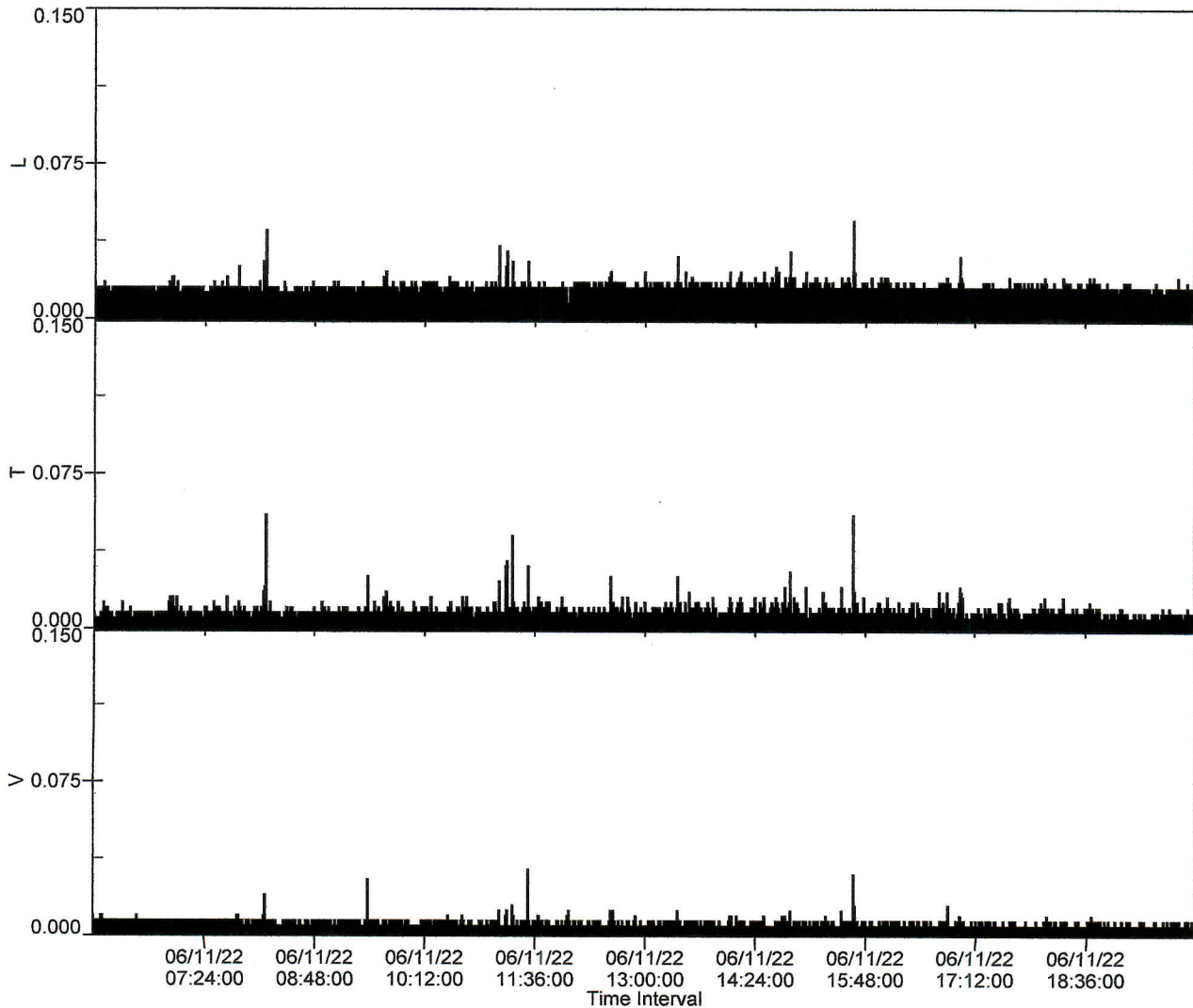
**Recording Time:** 838 minutes  
**Sample Size:** 1440  
**Interval Size:** 60 seconds

**Additional Info:**

**Shaketable Calibrated:** 12/28/2021  
**By:** GeoSonics Inc.  
 359 Northgate Drive  
 Warrendale, PA 15086 U.S.A.  
 TEL: 724.934.2900 FAX: 724.934.2999

SN: 3733 Event: 11

Record Max PPV: 0.055 in/s Record Max DB: 86 db





**SN:** 3733 v3.22  
**Date:** 06/12/2022 **Time:** 06:01:00  
**Event:** 12  
**Client:** BERGER  
**Operation:** CONSTRUCTION  
**Location:** THORNWOOD PARK  
**Distance:** 25.  
**Operator:** CTI INC  
**Comment:** 2345 THORNWOOD

**Continuous Monitor Recording**

**Summary Data**

	L	T	V
<b>PPV (in/s)</b>	0.068	0.028	0.028
<b>FREQ (Hz)</b>	71.4	500.0	250.0
<b>Peak Air Pressure:</b>	106 db		

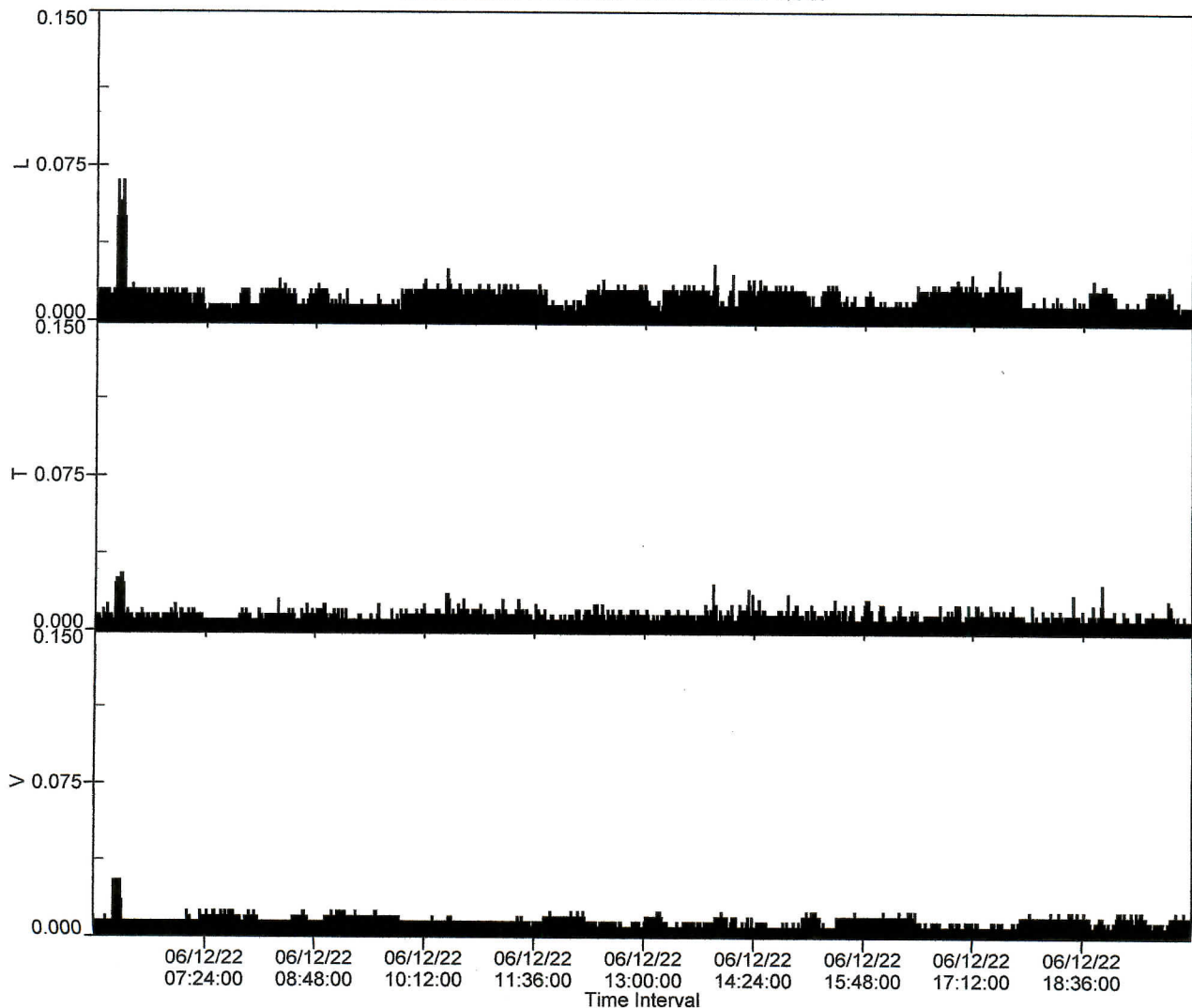
**Recording Time:** 838 minutes  
**Sample Size:** 1440  
**Interval Size:** 60 seconds

**Additional Info:**

**Shaketable Calibrated:** 12/28/2021  
**By:** GeoSonics Inc.  
 359 Northgate Drive  
 Warrendale, PA 15086 U.S.A.  
 TEL: 724.934.2900 FAX: 724.934.2999

SN: 3733 Event: 12

Record Max PPV: 0.068 in/s Record Max DB: 106 db



**SN:** 3733 v3.22  
**Date:** 06/13/2022 **Time:** 06:01:00  
**Event:** 13  
**Client:** BERGER  
**Operation:** CONSTRUCTION  
**Location:** THORNWOOD PARK  
**Distance:** 25.  
**Operator:** CTI INC  
**Comment:** 2345 THORNWOOD

**Continuous Monitor Recording**

**Summary Data**

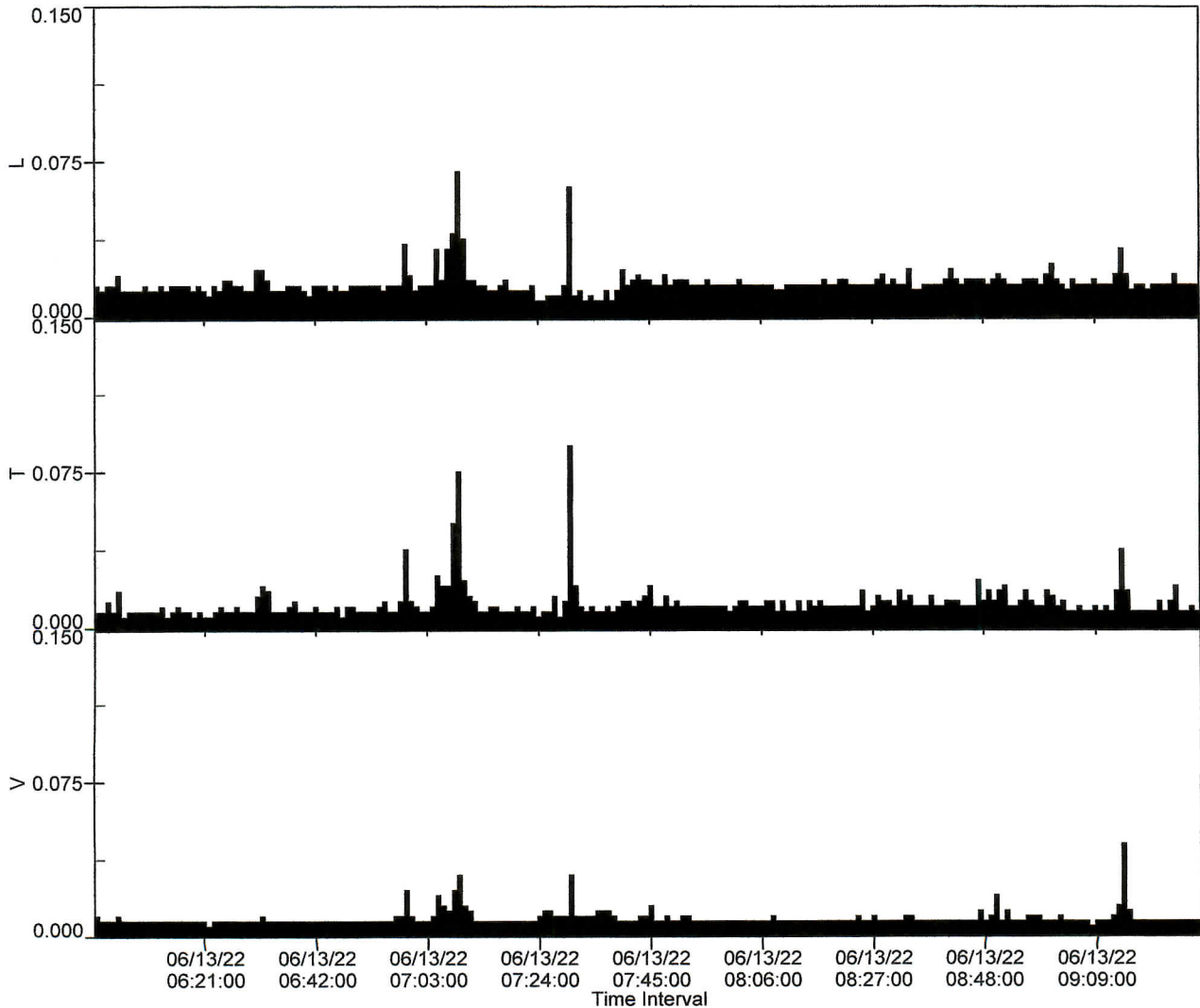
	L	T	V
<b>PPV (in/s)</b>	0.070	0.088	0.045
<b>FREQ (Hz)</b>	17.2	14.3	25.0
<b>Peak Air Pressure:</b>	84 db		
<b>Recording Time:</b>	208 minutes		
<b>Sample Size:</b>	1440		
<b>Interval Size:</b>	60 seconds		

**Additional Info:**

**Shaketable Calibrated:** 12/28/2021  
**By:** GeoSonics Inc.  
 359 Northgate Drive  
 Warrendale, PA 15086 U.S.A.  
 TEL: 724.934.2900 FAX: 724.934.2999

SN: 3733 Event: 13

Record Max PPV: 0.088 in/s Record Max DB: 84 db





**SN:** 3647 v2.75  
**Date:** 06/03/2022 **Time:** 08:57:00  
**Event:** 2  
**Client:** BERGER  
**Operation:** CONSTRUCTION  
**Location:** THORNWOOD PARK  
**Distance:** 25.  
**Operator:** CTI INC  
**Comment:** E SIDE COLGATE ST

**Continuous Monitor Recording**

**Summary Data**

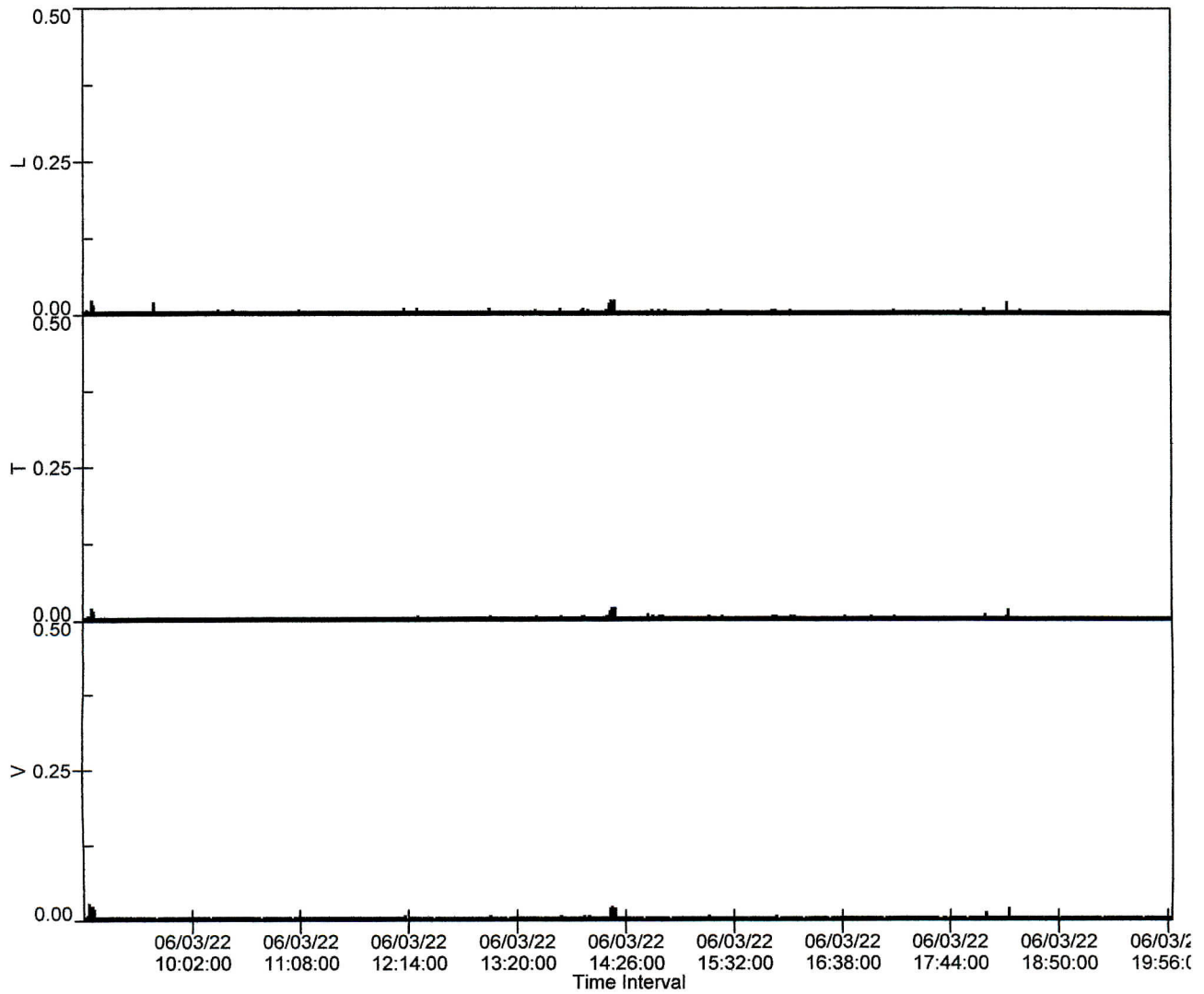
	L	T	V
<b>PPV (in/s)</b>	0.023	0.020	0.028
<b>FREQ (Hz)</b>	250.0	250.0	100.0
<b>Peak Air Pressure:</b>	105 db		
<b>Recording Time:</b>	662 minutes		
<b>Sample Size:</b>	1440		
<b>Interval Size:</b>	60 seconds		

**Additional Info:**

**Shaketable Calibrated:** 03/22/2022  
**By:** GeoSonics Inc.  
 359 Northgate Drive  
 Warrendale, PA 15086 U.S.A.  
 TEL: 724.934.2900 FAX: 724.934.2999

SN: 3647 Event: 2

Record Max PPV: 0.028 in/s Record Max DB: 105 db



**SN:** 3647 v2.75  
**Date:** 06/04/2022 **Time:** 06:01:00  
**Event:** 3  
**Client:** BERGER  
**Operation:** CONSTRUCTION  
**Location:** THORNWOOD PARK  
**Distance:** 25.  
**Operator:** CTI INC  
**Comment:** E SIDE COLGATE ST

**Continuous Monitor Recording**

**Summary Data**

	L	T	V
<b>PPV (in/s)</b>	0.018	0.018	0.013
<b>FREQ (Hz)</b>	18.5	17.2	31.3
<b>Peak Air Pressure:</b>	78 db		

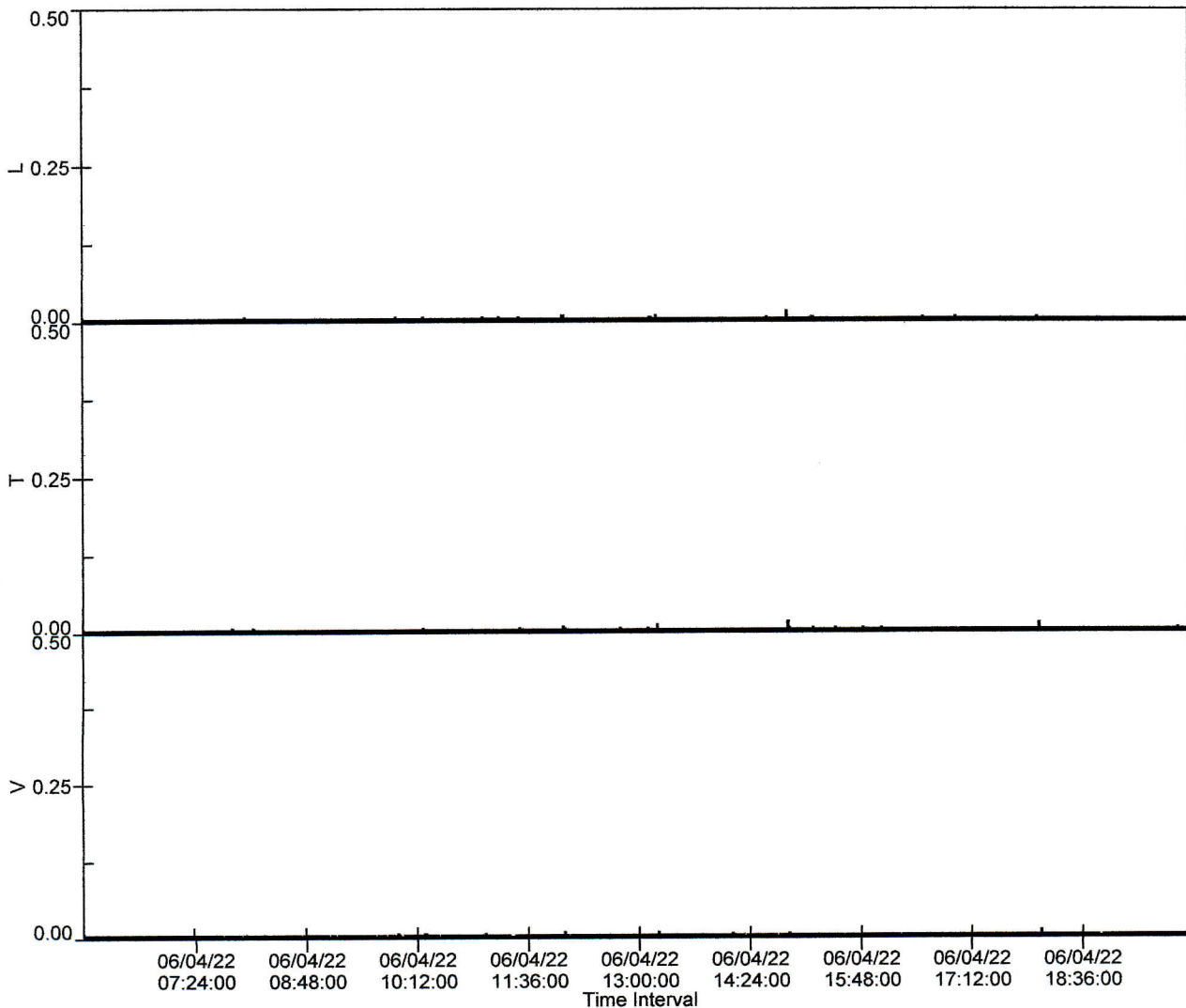
**Recording Time:** 838 minutes  
**Sample Size:** 1440  
**Interval Size:** 60 seconds

**Additional Info:**

**Shaketable Calibrated:** 03/22/2022  
**By:** GeoSonics Inc.  
 359 Northgate Drive  
 Warrendale, PA 15086 U.S.A.  
 TEL: 724.934.2900 FAX: 724.934.2999

SN: 3647 Event: 3

Record Max PPV: 0.018 in/s Record Max DB: 78 db



**SN:** 3647 v2.75  
**Date:** 06/05/2022 **Time:** 06:01:00  
**Event:** 4  
**Client:** BERGER  
**Operation:** CONSTRUCTION  
**Location:** THORNWOOD PARK  
**Distance:** 25.  
**Operator:** CTI INC  
**Comment:** E SIDE COLGATE ST

**Continuous Monitor Recording  
Summary Data**

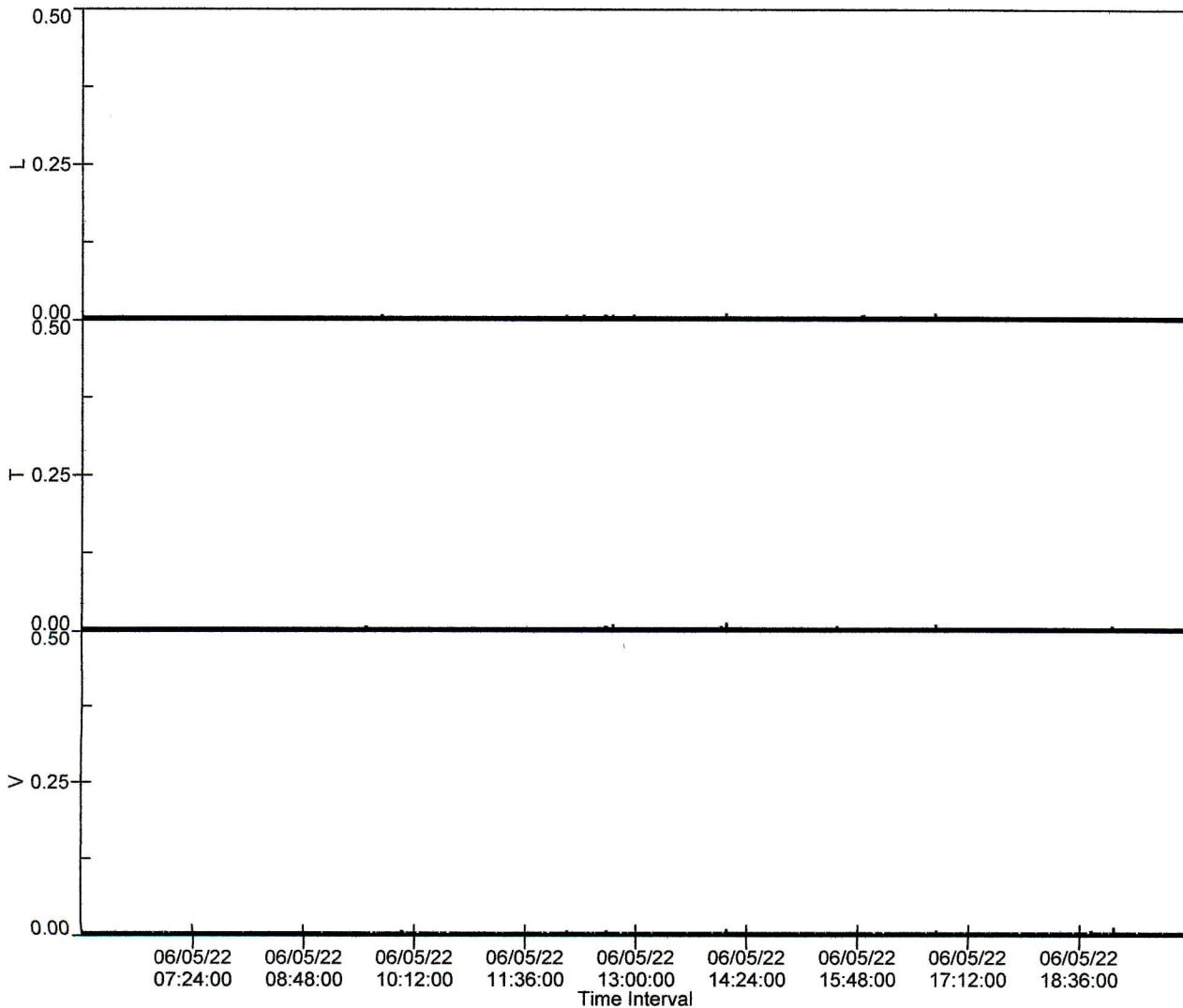
	L	T	V
<b>PPV (in/s)</b>	0.010	0.013	0.013
<b>FREQ (Hz)</b>	100.0	35.7	100.0
<b>Peak Air Pressure:</b>	78 db		
<b>Recording Time:</b>	838 minutes		
<b>Sample Size:</b>	1440		
<b>Interval Size:</b>	60 seconds		

**Additional Info:**

**Shaketable Calibrated:** 03/22/2022  
**By:** GeoSonics Inc.  
 359 Northgate Drive  
 Warrendale, PA 15086 U.S.A.  
 TEL: 724.934.2900 FAX: 724.934.2999

SN: 3647 Event: 4

Record Max PPV: 0.013 in/s Record Max DB: 78 db



**SN:** 3647 v2.75  
**Date:** 06/06/2022 **Time:** 06:01:00  
**Event:** 5  
**Client:** BERGER  
**Operation:** CONSTRUCTION  
**Location:** THORNWOOD PARK  
**Distance:** 25.  
**Operator:** CTI INC  
**Comment:** E SIDE COLGATE ST

**Continuous Monitor Recording**

**Summary Data**

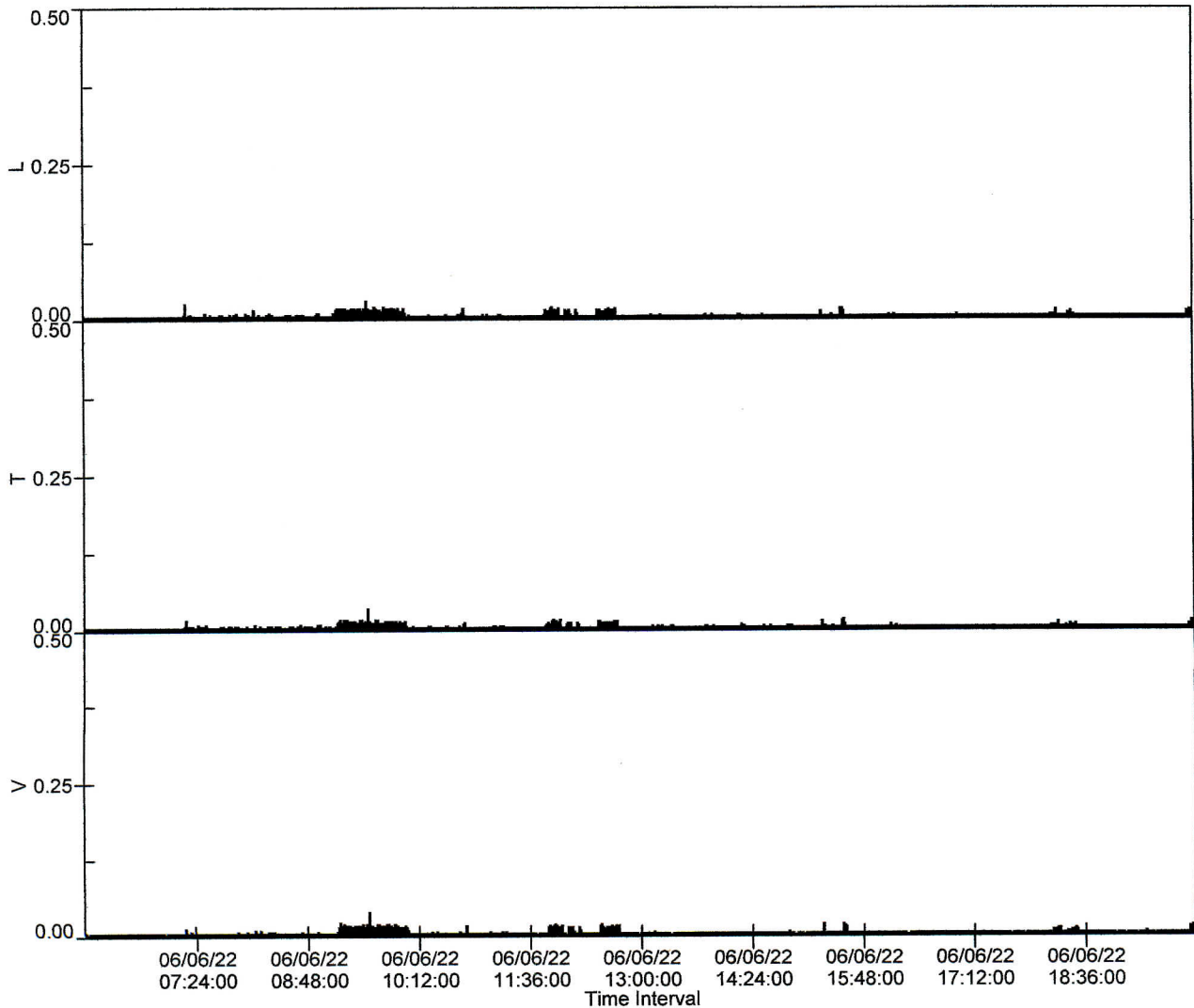
	L	T	V
<b>PPV (in/s)</b>	0.030	0.035	0.040
<b>FREQ (Hz)</b>	16.7	12.2	13.2
<b>Peak Air Pressure:</b>	104 db		
<b>Recording Time:</b>	838 minutes		
<b>Sample Size:</b>	1440		
<b>Interval Size:</b>	60 seconds		

**Additional Info:**

**Shaketable Calibrated:** 03/22/2022  
**By:** GeoSonics Inc.  
 359 Northgate Drive  
 Warrendale, PA 15086 U.S.A.  
 TEL: 724.934.2900 FAX: 724.934.2999

SN: 3647 Event: 5

Record Max PPV: 0.040 in/s Record Max DB: 104 db



**SN:** 3647 v2.75  
**Date:** 06/07/2022 **Time:** 06:01:00  
**Event:** 6  
**Client:** BERGER  
**Operation:** CONSTRUCTION  
**Location:** THORNWOOD PARK  
**Distance:** 25.  
**Operator:** CTI INC  
**Comment:** E SIDE COLGATE ST

**Continuous Monitor Recording**

**Summary Data**

	L	T	V
<b>PPV (in/s)</b>	0.063	0.048	0.058
<b>FREQ (Hz)</b>	71.4	50.0	38.5
<b>Peak Air Pressure:</b>	104 db		

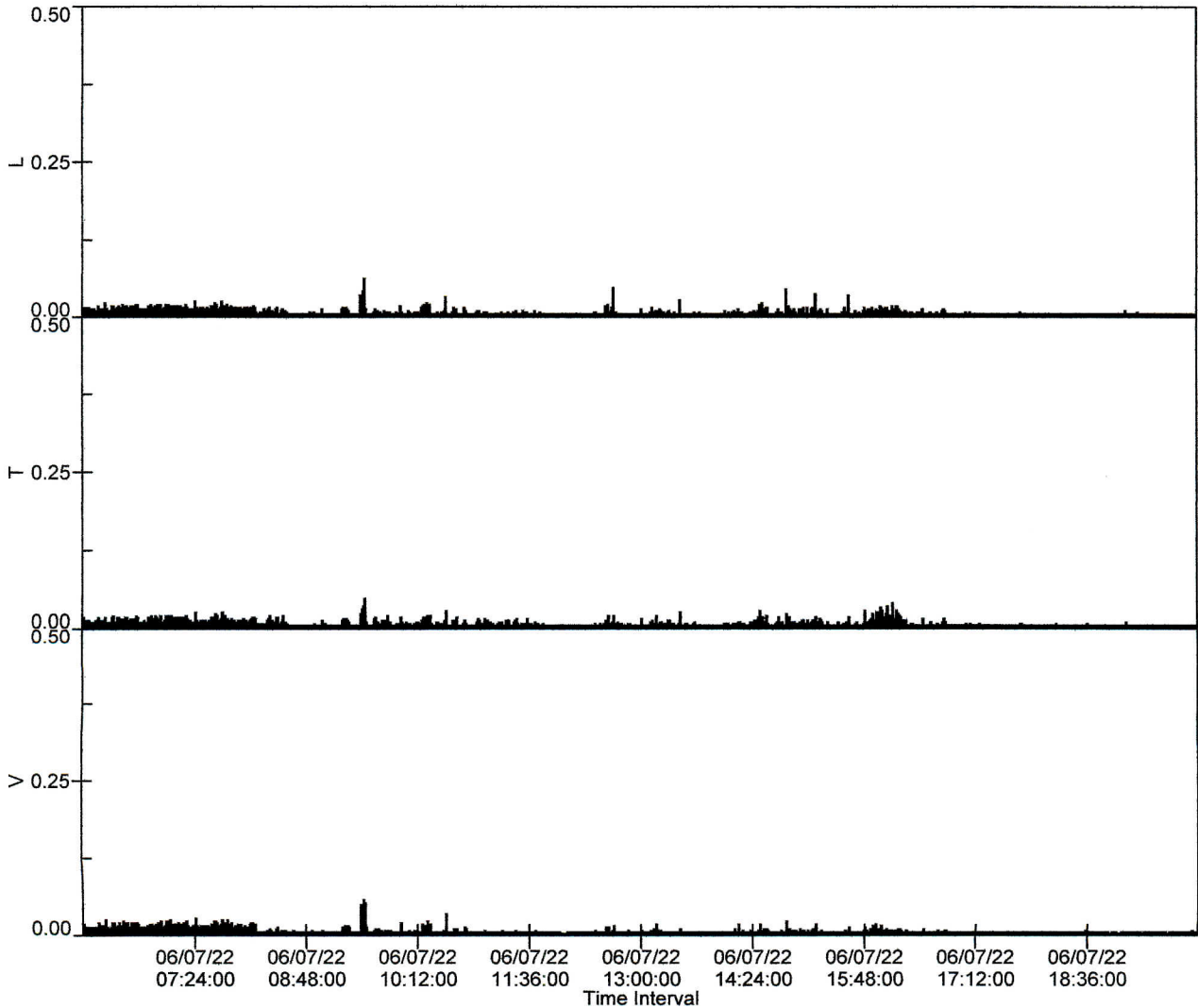
**Recording Time:** 838 minutes  
**Sample Size:** 1440  
**Interval Size:** 60 seconds

**Additional Info:**

**Shaketable Calibrated:** 03/22/2022  
**By:** GeoSonics Inc.  
 359 Northgate Drive  
 Warrendale, PA 15086 U.S.A.  
 TEL: 724.934.2900 FAX: 724.934.2999

SN: 3647 Event: 6

Record Max PPV: 0.063 in/s Record Max DB: 104 db





**SN:** 3647 v2.75  
**Date:** 06/08/2022 **Time:** 06:01:00  
**Event:** 7  
**Client:** BERGER  
**Operation:** CONSTRUCTION  
**Location:** THORNWOOD PARK  
**Distance:** 25.  
**Operator:** CTI INC  
**Comment:** E SIDE COLGATE ST

**Continuous Monitor Recording  
Summary Data**

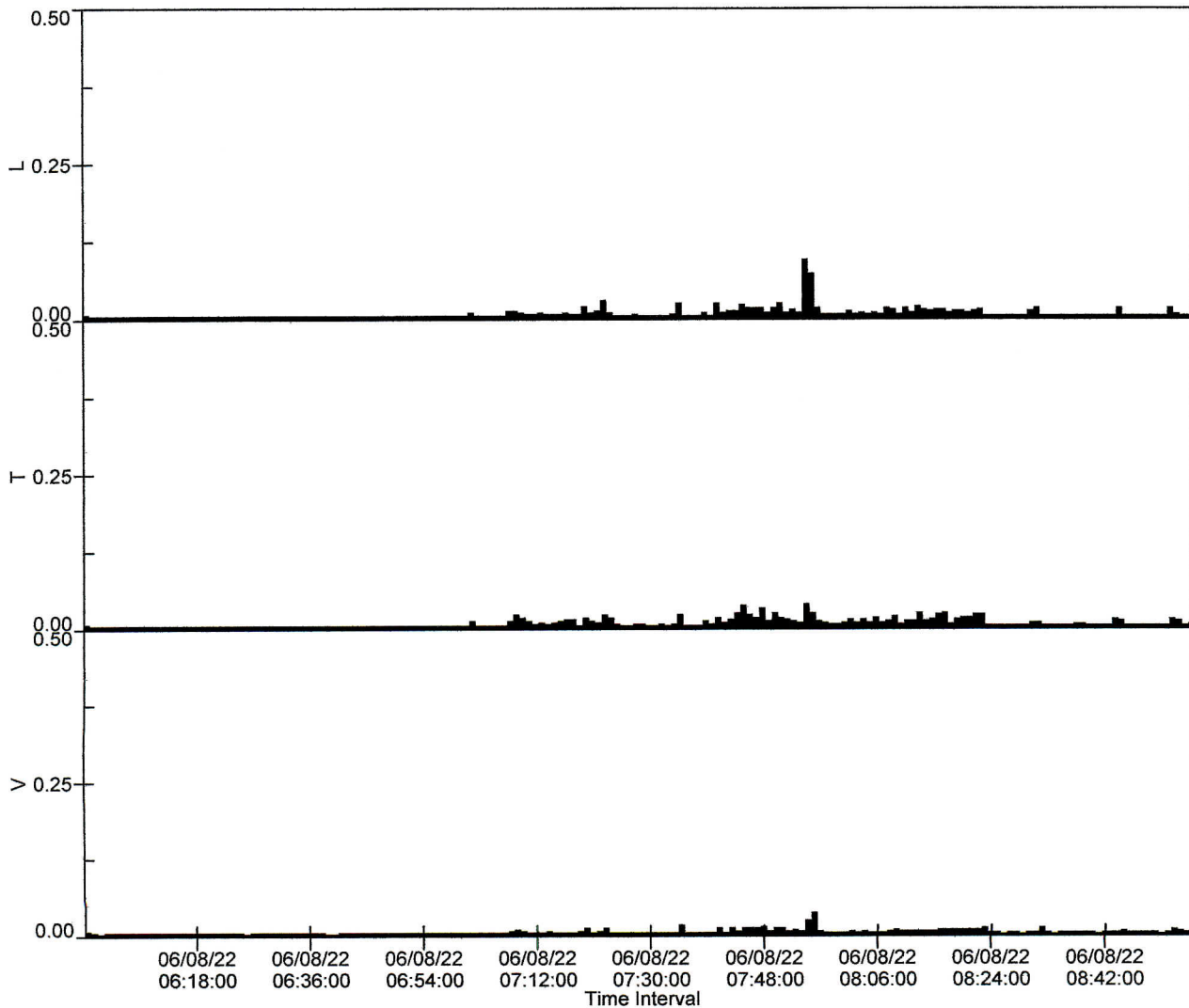
	L	T	V
<b>PPV (in/s)</b>	0.095	0.040	0.038
<b>FREQ (Hz)</b>	14.3	11.9	15.6
<b>Peak Air Pressure:</b>	79 db		
<b>Recording Time:</b>	176 minutes		
<b>Sample Size:</b>	1440		
<b>Interval Size:</b>	60 seconds		

**Additional Info:**

**Shaketable Calibrated:** 03/22/2022  
**By:** GeoSonics Inc.  
 359 Northgate Drive  
 Warrendale, PA 15086 U.S.A.  
 TEL: 724.934.2900 FAX: 724.934.2999

SN: 3647 Event: 7

Record Max PPV: 0.095 in/s Record Max DB: 79 db



**SN:** 3647 v2.75  
**Date:** 06/08/2022 **Time:** 09:06:00  
**Event:** 9  
**Client:** BERGER  
**Operation:** CONSTRUCTION  
**Location:** THORNWOOD PARK  
**Distance:** 25.  
**Operator:** CTI INC  
**Comment:** E SIDE COLGATE ST

**Continuous Monitor Recording**

**Summary Data**

	L	T	V
<b>PPV (in/s)</b>	0.065	0.085	0.043
<b>FREQ (Hz)</b>	16.7	10.6	500.0
<b>Peak Air Pressure: 110 db</b>			

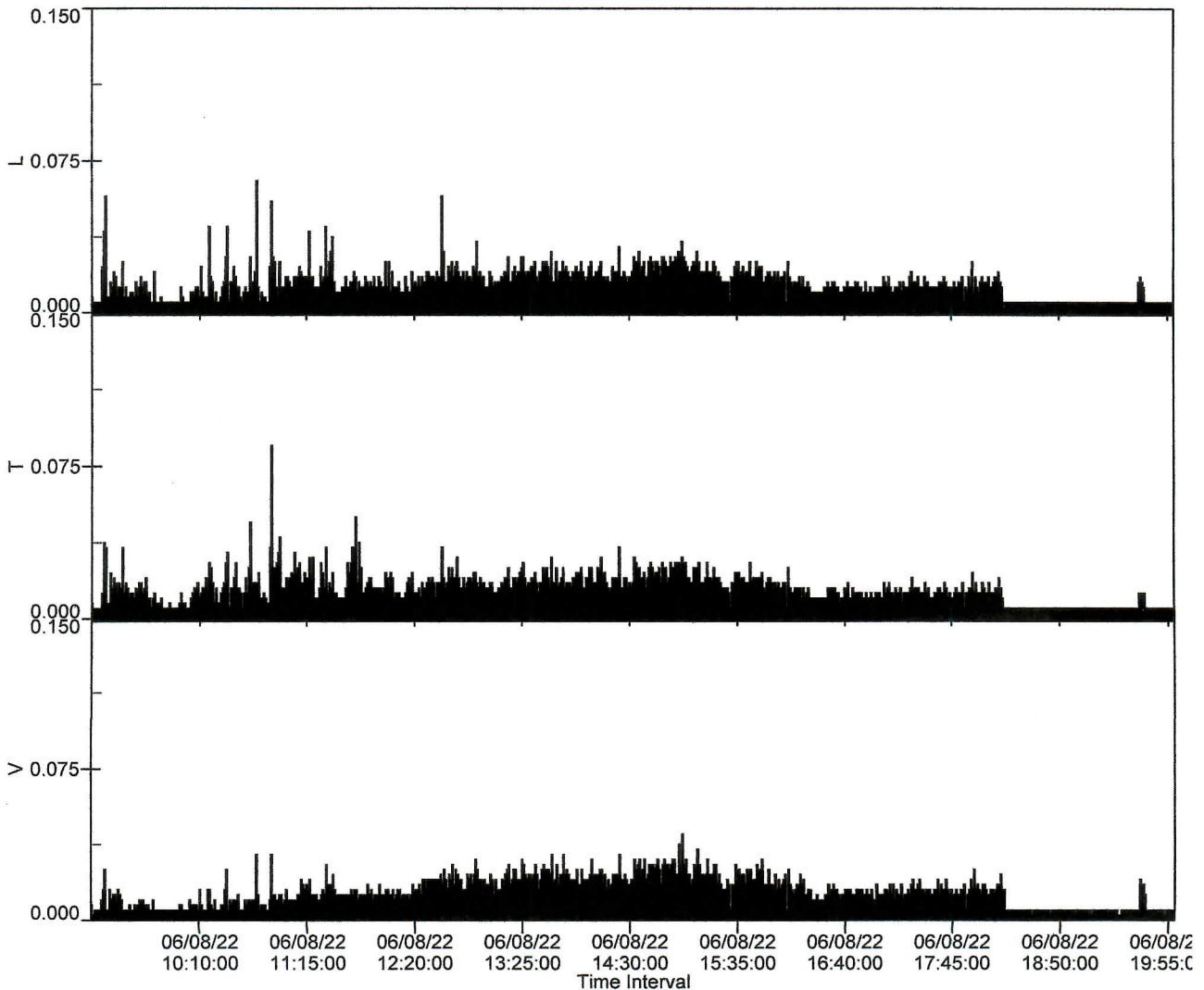
**Recording Time:** 653 minutes  
**Sample Size:** 1440  
**Interval Size:** 60 seconds

**Additional Info:**

**Shaketable Calibrated:** 03/22/2022  
**By:** GeoSonics Inc.  
 359 Northgate Drive  
 Warrendale, PA 15086 U.S.A.  
 TEL: 724.934.2900 FAX: 724.934.2999

SN: 3647 Event: 9

Record Max PPV: 0.085 in/s Record Max DB: 110 db



**SN:** 3647 v2.75  
**Date:** 06/09/2022 **Time:** 06:01:00  
**Event:** 10  
**Client:** BERGER  
**Operation:** CONSTRUCTION  
**Location:** THORNWOOD PARK  
**Distance:** 25.  
**Operator:** CTI INC  
**Comment:** E SIDE COLGATE ST

**Continuous Monitor Recording**

**Summary Data**

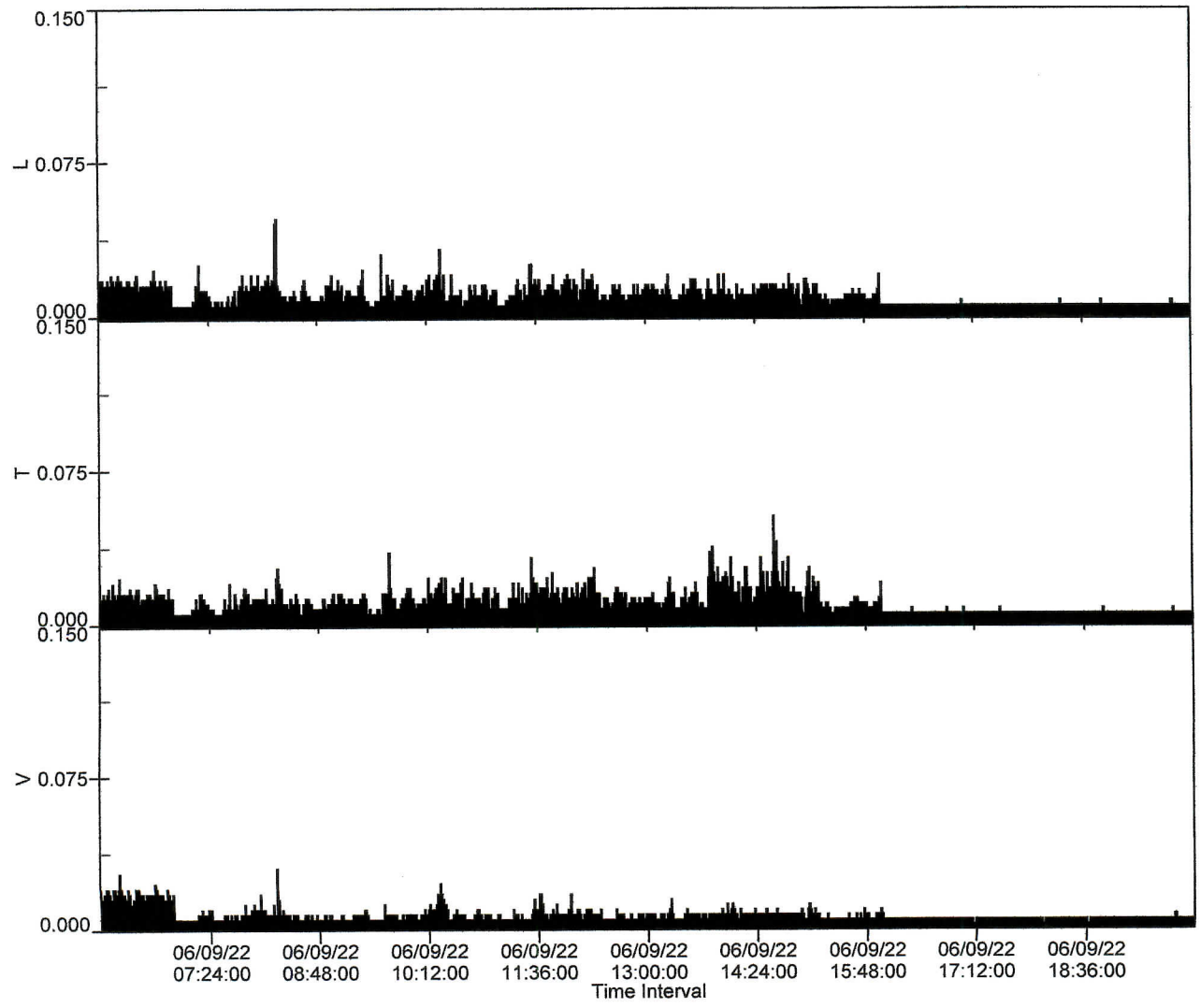
	L	T	V
<b>PPV (in/s)</b>	0.048	0.053	0.030
<b>FREQ (Hz)</b>	12.5	9.3	11.1
<b>Peak Air Pressure:</b>	105 db		
<b>Recording Time:</b>	838 minutes		
<b>Sample Size:</b>	1440		
<b>Interval Size:</b>	60 seconds		

**Additional Info:**

**Shaketable Calibrated:** 03/22/2022  
**By:** GeoSonics Inc.  
 359 Northgate Drive  
 Warrendale, PA 15086 U.S.A.  
 TEL: 724.934.2900 FAX: 724.934.2999

SN: 3647 Event: 10

Record Max PPV: 0.053 in/s Record Max DB: 105 db



**SN:** 3647 v2.75  
**Date:** 06/10/2022 **Time:** 06:01:00  
**Event:** 11  
**Client:** BERGER  
**Operation:** CONSTRUCTION  
**Location:** THORNWOOD PARK  
**Distance:** 25.  
**Operator:** CTI INC  
**Comment:** E SIDE COLGATE ST

**Continuous Monitor Recording**

**Summary Data**

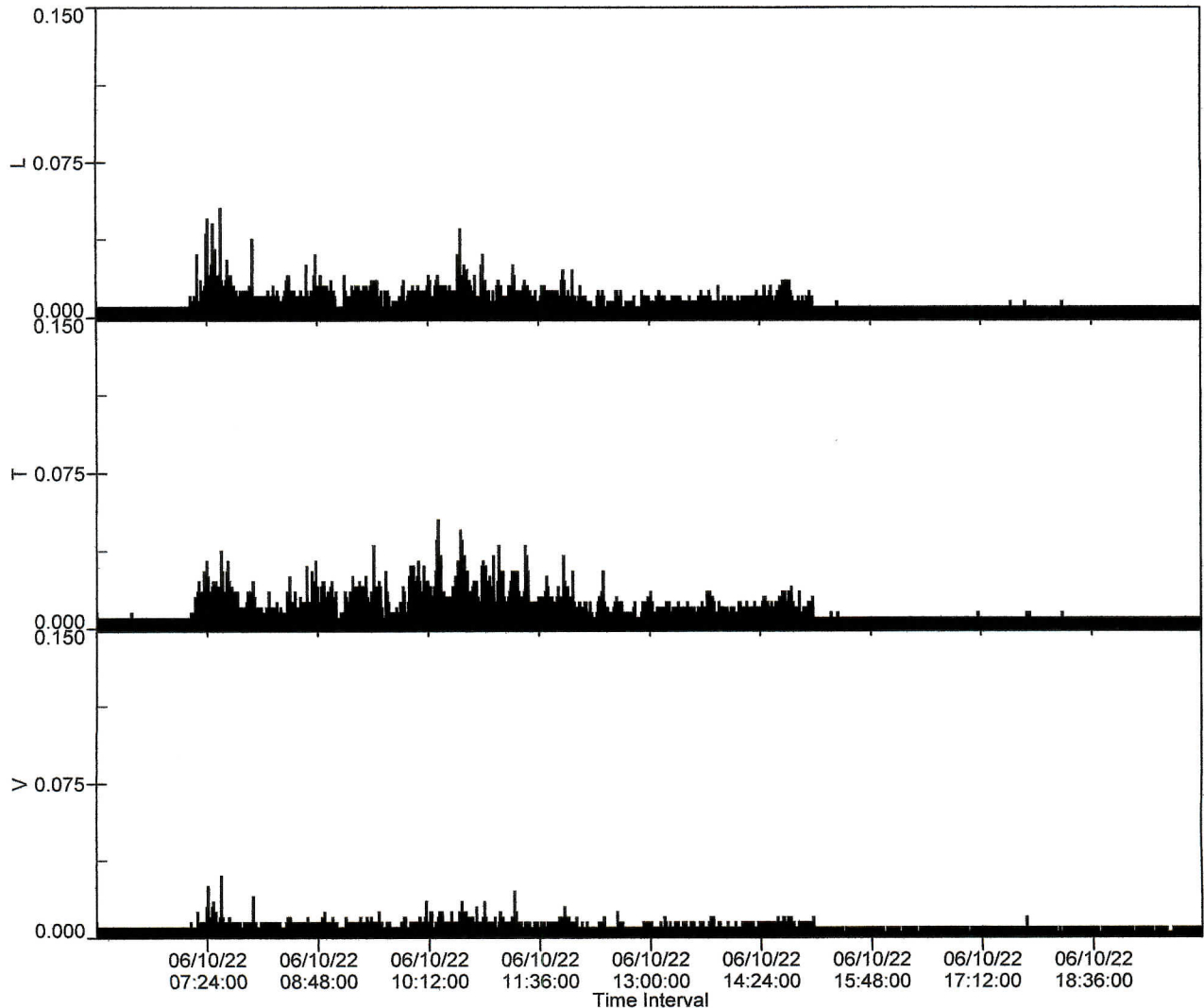
	L	T	V
<b>PPV (in/s)</b>	0.053	0.053	0.030
<b>FREQ (Hz)</b>	14.7	9.1	14.3
<b>Peak Air Pressure:</b>	78 db		
<b>Recording Time:</b>	838 minutes		
<b>Sample Size:</b>	1440		
<b>Interval Size:</b>	60 seconds		

**Additional Info:**

**Shaketable Calibrated:** 03/22/2022  
**By:** GeoSonics Inc.  
 359 Northgate Drive  
 Warrendale, PA 15086 U.S.A.  
 TEL: 724.934.2900 FAX: 724.934.2999

SN: 3647 Event: 11

Record Max PPV: 0.053 in/s Record Max DB: 78 db



**SN:** 3647 v2.75  
**Date:** 06/12/2022 **Time:** 06:01:00  
**Event:** 13  
**Client:** BERGER  
**Operation:** CONSTRUCTION  
**Location:** THORNWOOD PARK  
**Distance:** 25.  
**Operator:** CTI INC  
**Comment:** E SIDE COLGATE ST

**Continuous Monitor Recording**

**Summary Data**

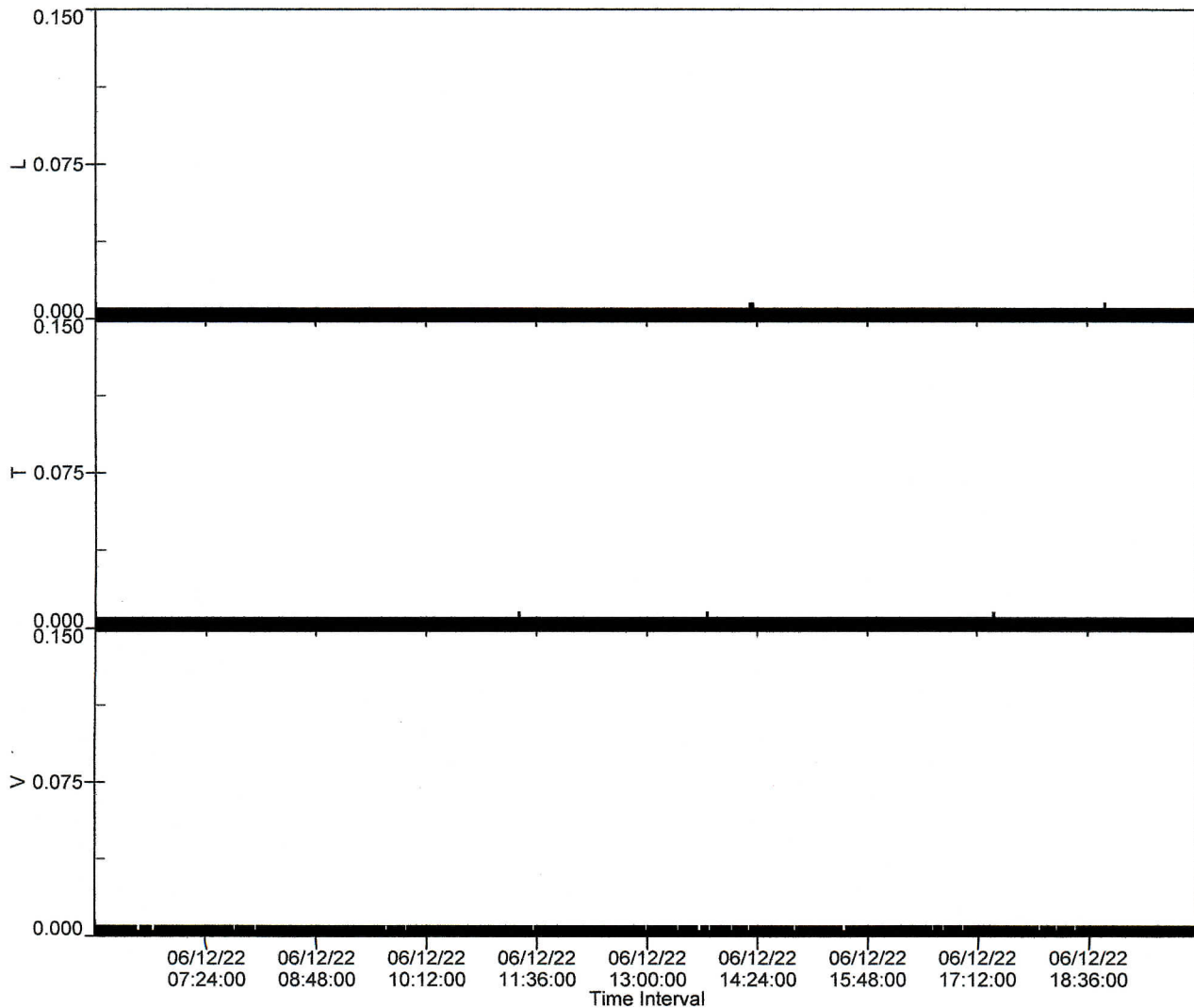
	L	T	V
<b>PPV (in/s)</b>	0.008	0.008	0.008
<b>FREQ (Hz)</b>	.3	2.0	.4
<b>Peak Air Pressure: 78 db</b>			
<b>Recording Time: 838 minutes</b>			
<b>Sample Size: 1440</b>			
<b>Interval Size: 60 seconds</b>			

**Additional Info:**

**Shaketable Calibrated:** 03/22/2022  
**By:** GeoSonics Inc.  
 359 Northgate Drive  
 Warrendale, PA 15086 U.S.A.  
 TEL: 724.934.2900 FAX: 724.934.2999

SN: 3647 Event: 13

Record Max PPV: 0.008 in/s Record Max DB: 78 db



**SN:** 3647 v2.75  
**Date:** 06/13/2022 **Time:** 06:01:00  
**Event:** 14  
**Client:** BERGER  
**Operation:** CONSTRUCTION  
**Location:** THORNWOOD PARK  
**Distance:** 25.  
**Operator:** CTI INC  
**Comment:** E SIDE COLGATE ST

**Continuous Monitor Recording**

**Summary Data**

	L	T	V
<b>PPV (in/s)</b>	0.048	0.035	0.028
<b>FREQ (Hz)</b>	10.4	11.6	9.1
<b>Peak Air Pressure:</b>	78 db		

**Recording Time:** 225 minutes  
**Sample Size:** 1440  
**Interval Size:** 60 seconds

**Additional Info:**

**Shaketable Calibrated:** 03/22/2022  
**By:** GeoSonics Inc.  
 359 Northgate Drive  
 Warrendale, PA 15086 U.S.A.  
 TEL: 724.934.2900 FAX: 724.934.2999

SN: 3647 Event: 14

Record Max PPV: 0.048 in/s Record Max DB: 78 db

