Comprehensive Sound Surveys

EnCana Corporation
LSD 7-13-27-22 W4M
Rosebud Noise Monitoring

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Executive Summary

Patching Associates Acoustical Engineering Ltd. was requested by EnCana Corporation to perform noise surveys around the town of Rosebud, Alberta. These surveys determined the existing noise levels in the vicinity of the 7-13-27-22 W4M EnCana Compressor Station. Measurements were taken over approximately one month at nine sites in the vicinity of the compressor station. The goal of this noise study was to determine the sound levels in the vicinity of the town of Rosebud and the compressor station, to determine all major noise sources in the area, and assess the compliance of the compressor station with the requirements of the Alberta Energy and Utilities Board (AEUB).

The measured nighttime sound levels with the Permissible Sound Levels of the AEUB Directive are presented below for the residential sites where noise criteria exist. These sites are: the Ruckman residence (Site 2) 375 metres southwest, the Jessica Ernst residence (Site 5) 870 metres southeast, and the town of Rosebud represented by the Rob Webster residence (Site 6) 1250 metres east-southeast of the compressor station. The survey results contained large amounts of noise related to human activity and weather. Where these non-facility noise events could be confidently identified, they were isolated from the data set and the remaining sound level is called the residual sound level.

Results of Measurements, Nov/Dec 2004

Date (Nov/Dec 2004)	Nighttime Sound Levels L_{eq} (dBA)								
	Ruckman Residence			Ernst Residence			Webster Residence		
	Measured	Residual	Permissible	Measured	Residual	Permissible	Measured	Residual	Permissible
23-24	35.3	31.4	40	42.6	32.3	45	42.9	32.6	48
24-25	40.5	32.9	40	45.2	34.3	45	42.8	33.9	48
25-26	33.9	32.9	40	43.4	32.6	45	41.6	**35.2***	**48**
26-27	33.8	31.9	40	49.7	33.1	45	45.5	32.8	48
27-28	31.2	30.8	40	48.6	32.1	45	44.3	33.0	48
28-29	31.8	29.6	40	49.3	29.6	45	43.6	30.2	48
29-30	31.6	30.7	40	49.4	32.9	45	47.9	33.1	48
30-1	33.0	30.6	40	46.5	31.5	45	42.9	33.0	48
1-2	33.5	30.9	40	47.9	32.4	45	43.2	33.0	48
2-3	N/A	N/A	40	47.0	32.8	45	44.1	33.8	48
3-4	34.1	33.4	40	43.1	33.0	45	39.9	33.9	48
4-5	36.2	33.7	40	48.8	32.0	45	42.2	32.8	48
5-6	31.5	29.8	40	43.2	31.6	45	39.2	30.7	48
6-7	31.8	31.0	40	39.1	27.1	45	34.3	27.8	48
7-8	34.0	32.6	40	49.3	29.8	45	36.3	30.9	48
8-9	33.8	32.5	40	49.7	31.6	45	41.1	30.9	48
9-10	34.9	30.2	40	47.8	31.5	45	43.4	32.7	48
10-11	42.1	31.3	40	50.5	33.3	45	N/A	N/A	48
11-12	31.4	31.2	40	42.3	32.6	45	N/A	N/A	48
12-13	31.2	29.8	40	50.1	30.6	45	N/A	N/A	48
13-14	32.8	29.2	40	42.9	34.3	45	42.7	33.6	48
14-15	31.1	30.3	40	42.6	31.9	45	42.9	32.1	48
15-16	35.3	29.1	40	48.4	31.2	45	43.8	32.6	48
16-17	N/A	N/A	40	49.5	33.9	45	45.1	34.0	48
17-18	39.1	33.6	40	47.9	31.4	45	43.9	33.2	48
18-19	36.3	31.0	40	44.9	32.9	45	44.3	33.6	48
19-20	48.8	**36.1***	**40**	49.3	**34.5***	**45**	49.9	33.7	48

***Indicates Loudest Night**

The results above show that the facility is currently well within the AEUB Permissible Sound Level (PSL) at all of the sites where a sound level criteria exist (the directive specifies PSL's for residential locations only). The measurement results presented above contained a significant amount of contamination, from human animal and environmental activity not related to the facility operation. It was difficult to remove all the contamination; therefore the residual sound levels presented above are higher than the sound levels actually attributable to the facility.

The noise contribution from the facility was highly dependent on environmental conditions. When conditions were favourable for sound propagation, the facility was audible at the above sites, but still comfortably below the Permissible Sound Level. At the Ernst and Webster residences the nighttime facility sound contribution was insignificant when compared to the overall sound environment which was dominated by air, highway and rail traffic noise, as well as weather and animal noise.

Sound measurements were taken at a total of nine sites to get a detailed picture of the noise environment in and around Rosebud and the EnCana compressor station as well as to monitor the noise emissions from the compressor station.

The compressor station operated at or near full capacity throughout the noise survey and the noise emissions remained constant, except for a short period when the station was shut down so that ambient noise conditions could be assessed. The sound levels at all other sites were below 40 dBA during the nighttime period, when wind contamination was eliminated.

The sound levels in the vicinity of the EnCana compressor station in LSD 7-13-27-22 W4M are currently comfortably within the Alberta Energy and Utilities Board guidelines and no further noise attenuation is necessary to meet the Permissible Sound Level.

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Introduction

Patching Associates Acoustical Engineering Ltd (PAAE). was requested by EnCana Corporation to perform noise surveys around the town of Rosebud, Alberta. The results of these surveys will be used to determine the noise levels in the vicinity of the 7-13-27-22 W4M EnCana Compressor Station (the facility). Measurements were taken over approximately one month at nine sites in the vicinity of the compressor station. The goal of this noise study was to determine the sound levels in the vicinity of the town of Rosebud and the compressor station, to determine all major noise sources in the area, and assess the compliance of the compressor station with the requirements of the Alberta Energy and Utilities Board (AEUB).

Noise Criteria

The AEUB Directive permits specified cumulative sound levels attributable to energy industry facilities at designated receptor points. These allowable limits are dependent on the population density, proximity to heavily traveled transportation routes (motor vehicles, rail and aircraft) and other specified adjustments. The AEUB Directive permits the daytime sound level to be 10 dB above the nighttime sound level. The Permissible Sound Level is the limit that the sound emanating from a facility may not exceed over a specified period, as measured in the yard of the nearest, the most impacted, or the complainant's residence.

The Permissible Sound Levels (PSL), calculated in accordance with the AEUB directive for the Ruckman residence (Site 2) located 375 metres southwest of the EnCana facility are 40 dBA L_{eq} (nighttime) and 50 dBA L_{eq} (daytime). The PSL for the Ernst residence (Site 5) located 870 metres southeast of the EnCana compressor station is 45 dBA L_{eq} (nighttime) and 55 dBA L_{eq} (daytime). The PSL for the Webster residence (Site 6) located 1250 metres east-southeast of the EnCana compressor station is 48 dBA L_{eq} (nighttime) and 58 dBA L_{eq} (daytime). The Ruckman residence is the closest residence to the compressor station; it also has the most stringent noise criteria. The AEUB Permissible Sound Level calculations are shown in Appendix A.

All of the other sites measured do not have a specified PSL because they are either too close to a residence to be valid under AEUB guidelines (Site 9 is less than 2m from the residence and subject to sound reflections or contamination by sound emanating from the house itself) or are remote sites far from any residence (Sites 1, 3, 4, 7, 8).

The L_{eq} is the A-weighted equivalent-continuous sound level. This index is an energy average of the varying sound levels over a specified period of time. The use of this index permits the description of a varying sound level environment as a single number. As the L_{eq} is an "average" level, the measured sound level may exceed the criterion level for a short period, provided that the duration is limited. The L_{eq} value considers both the sound level and the length of time that the sound level occurs. Appendix B provides a detailed explanation of the L_{eq} index.

Methodology

The measurement methodology follows the procedures set forth in the AEUB Directive ID 99-8, and the accompanying supplement and guide G-38. The sound monitoring surveys were conducted with Brüel & Kjær Model 2236 Precision Integrating Sound Level Meters equipped with Brüel & Kjær 4188 microphones, and Brüel & Kjær Model 2238 Precision Integrating Sound Level Meters equipped with Brüel & Kjær 4189 microphones, and Brüel & Kjær Model 2260 Precision Integrating Sound Level Meters/Analysers equipped with Brüel & Kjær 4189 microphones. The microphones were mounted with windscreens to reduce the potential for wind-induced noise at the microphone, as required by the Directive. The sound level meters were calibrated at the beginning, end and throughout the surveys with a Brüel & Kjær Model 4231 Sound Level Calibrator. This equipment meets or exceeds the requirements of the Directive.

At Sites 1 and 5 the sound was measured in 1/3 Octave bands to measure the frequency distribution of the sound. At Sites 2, 5, and 6 the sounds were recorded with a Hi-Fi VCR on some nights. This allowed for noise source identification through later tape review. Using these frequency distributions and tape recordings, sound not related to the facility could be removed. On nights or sites that tape review or frequency analysis was not available, concurrent comparison of the sound levels at all sites was used to remove events not related to the facility.

Monitoring Locations

Measurements were taken at nine sites in and around Rosebud and the EnCana facility. All microphones were mounted 1.5 – 2.3 metres above the ground. Figure 1 below depicts the study area.

Figure 1: Map of Study Area

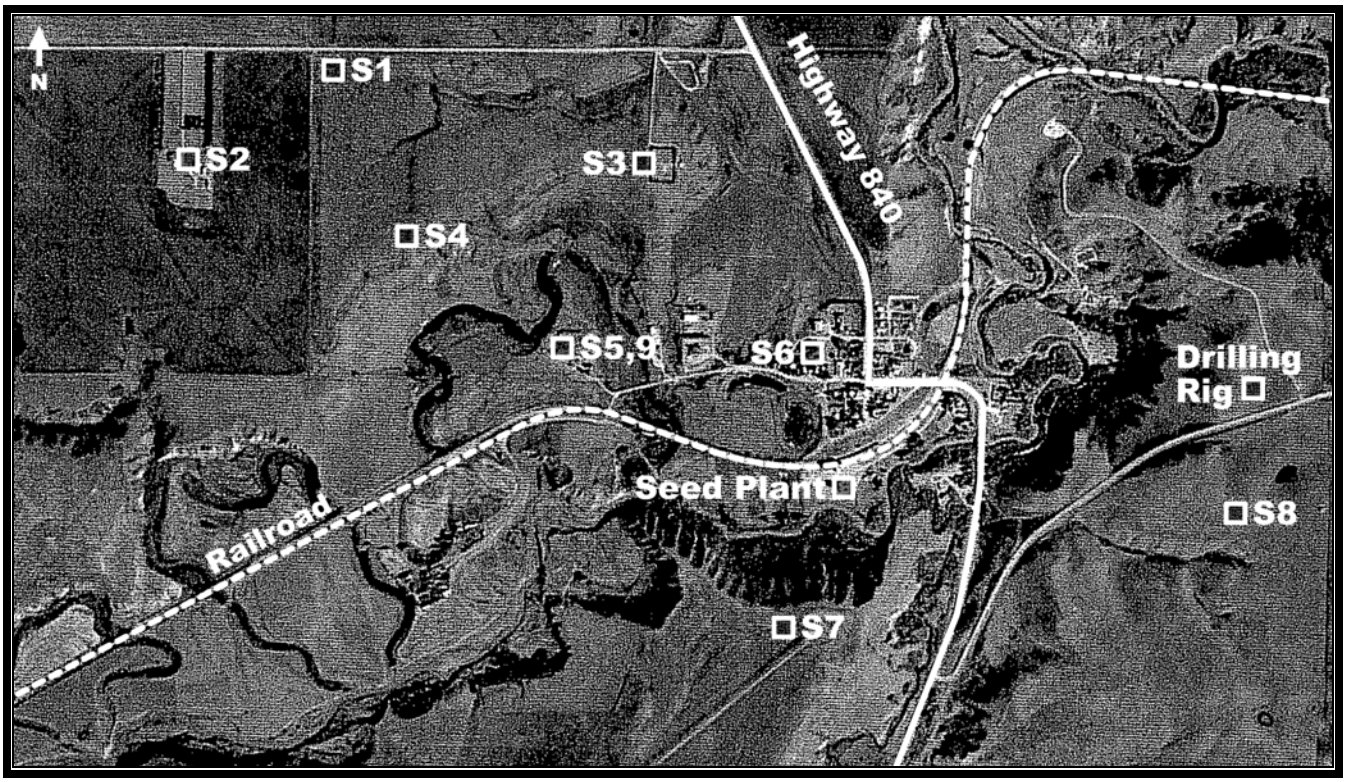


Table 1 below has a description of each measurement location.

Table 1:Monitoring Location Descriptions

Site #	Description / Comments
Site 1	Fence line of 7-13 compressor site ~40m SE of K-101 compressor. Meant to monitor noise emissions from compressor station. 1/3 Octave sound data measured.
Site 2	Ruckman Residence 375m SW of compressor station. North of Quonset in yard. Most critical measurement location.
Site 3	Microphone mounted on fence along the west side of the Rosebud cemetery. 740m E of compressor station. Long grass around microphone, 300m from Highway 840. Direct line of sight to compressor station.
Site 4	Microphone mounted on fence on valley shoulder, 420m SE of compressor station. Direct line of sight to compressor station.
Site 5	Ernst residence 870m SE of compressor station. Approximately 15m W of house. 1/3 Octave sound data recorded. No line of sight to compressor station.
Site 6	Webster residence 1250m ESE of compressor station. This site is on the edge of the Town of Rosebud closest to the facility. No line of sight to compressor station.
Site 7	Near EnCana well site in LSD 11-7-27-21 W4M. Close to valley shoulder in stubble field. 1640m SE of compressor station. Direct line of sight to compressor.
Site 8	Near EnCana well site in LSD 16-7-27-21 W4M. 2300m ESE of compressor station.
Site 9	On deck at Ernst residence (approximately 15m E of Site 5). Less than 2m from house wall. Measurement location does not meet the EUB criteria because it is too close to the building and there was potential for sound reflection.

Facility Operating Conditions

During the measurement period the EnCana compressor station was operating at or near full capacity. Appendix C shows the fuel gas consumption for the period between November 1 and January 14. Fuel gas consumption is directly proportional to the load on an engine. The facility was not operating on the night of December 15-16.

Environmental Conditions

The hourly observation records of wind velocity and direction measured at the Drumheller weather station and reported by Environment Canada from November 23 – December 20, 2004 are presented in Appendix D. The Drumheller weather station is approximately 25 km from the study area. The weather conditions reported at the weather station may not match exactly what was experienced at the study area but are indicative of it.

Appendix D shows that the weather was quite variable throughout the measurements period. The tables in Appendix D highlight the times where favorable conditions existed for sound propagation to each of

Sites 2, 5, and 6. The tables in Appendix D also show times where the wind speed was high enough to potentially cause wind contamination in the microphone.

Results

The measured nighttime sound levels with the Permissible Sound Levels of the Alberta Energy and Utilities Board Directive are presented below for Sites 2, 5, and 6. The surveys contained large amounts of noise related to human activity, animals and weather. Where these non-facility noise events could be confidently identified, they were isolated from the data set and the remaining sound level is called the residual sound level.

Table 2: Results of Measurements, Nov/Dec 2004

Date (Nov/Dec 2004)	Nighttime Sound Levels L_{eq} (dBA)								
	Ruckman Residence			Ernst Residence			Webster Residence		
	Measured	Residual	Permissible	Measured	Residual	Permissible	Measured	Residual	Permissible
23-24	35.3	31.4	40	42.6	32.3	45	42.9	32.6	48
24-25	40.5	32.9	40	45.2	34.3	45	42.8	33.9	48
25-26	33.9	32.9	40	43.4	32.6	45	41.6	**35.2***	**48**
26-27	33.8	31.9	40	49.7	33.1	45	45.5	32.8	48
27-28	31.2	30.8	40	48.6	32.1	45	44.3	33.0	48
28-29	31.8	29.6	40	49.3	29.6	45	43.6	30.2	48
29-30	31.6	30.7	40	49.4	32.9	45	47.9	33.1	48
30-1	33.0	30.6	40	46.5	31.5	45	42.9	33.0	48
1-2	33.5	30.9	40	47.9	32.4	45	43.2	33.0	48
2-3	N/A	N/A	40	47.0	32.8	45	44.1	33.8	48
3-4	34.1	33.4	40	43.1	33.0	45	39.9	33.9	48
4-5	36.2	33.7	40	48.8	32.0	45	42.2	32.8	48
5-6	31.5	29.8	40	43.2	31.6	45	39.2	30.7	48
6-7	31.8	31.0	40	39.1	27.1	45	34.3	27.8	48
7-8	34.0	32.6	40	49.3	29.8	45	36.3	30.9	48
8-9	33.8	32.5	40	49.7	31.6	45	41.1	30.9	48
9-10	34.9	30.2	40	47.8	31.5	45	43.4	32.7	48
10-11	42.1	31.3	40	50.5	33.3	45	N/A	N/A	48
11-12	31.4	31.2	40	42.3	32.6	45	N/A	N/A	48
12-13	31.2	29.8	40	50.1	30.6	45	N/A	N/A	48
13-14	32.8	29.2	40	42.9	34.3	45	42.7	33.6	48
14-15	31.1	30.3	40	42.6	31.9	45	42.9	32.1	48
15-16	35.3	29.1	40	48.4	31.2	45	43.8	32.6	48
16-17	N/A	N/A	40	49.5	33.9	45	45.1	34.0	48
17-18	39.1	33.6	40	47.9	31.4	45	43.9	33.2	48
18-19	36.3	31.0	40	44.9	32.9	45	44.3	33.6	48
19-20	48.8	**36.1***	**40**	49.3	**34.5***	**45**	49.9	33.7	48

***Indicates Loudest Night**

The above table shows that the residual sound levels are well below the PSL for all nights measured. Table 2 also shows a large difference between the measured and residual sound levels at sites 5 and 6. This is because the sound measurements were dominated by sounds not attributable to the facility. These sounds included mainly short term events such as train passages, plane passages, vehicle passages, and dogs barking. Longer term wind events were also present at all sites and were removed through frequency analysis as well as concurrent examination of the sound levels at all nine sites. Figures 2-5 show the measured and residual L_{eq}'s for both the daytime and nighttime periods for all nine sites.

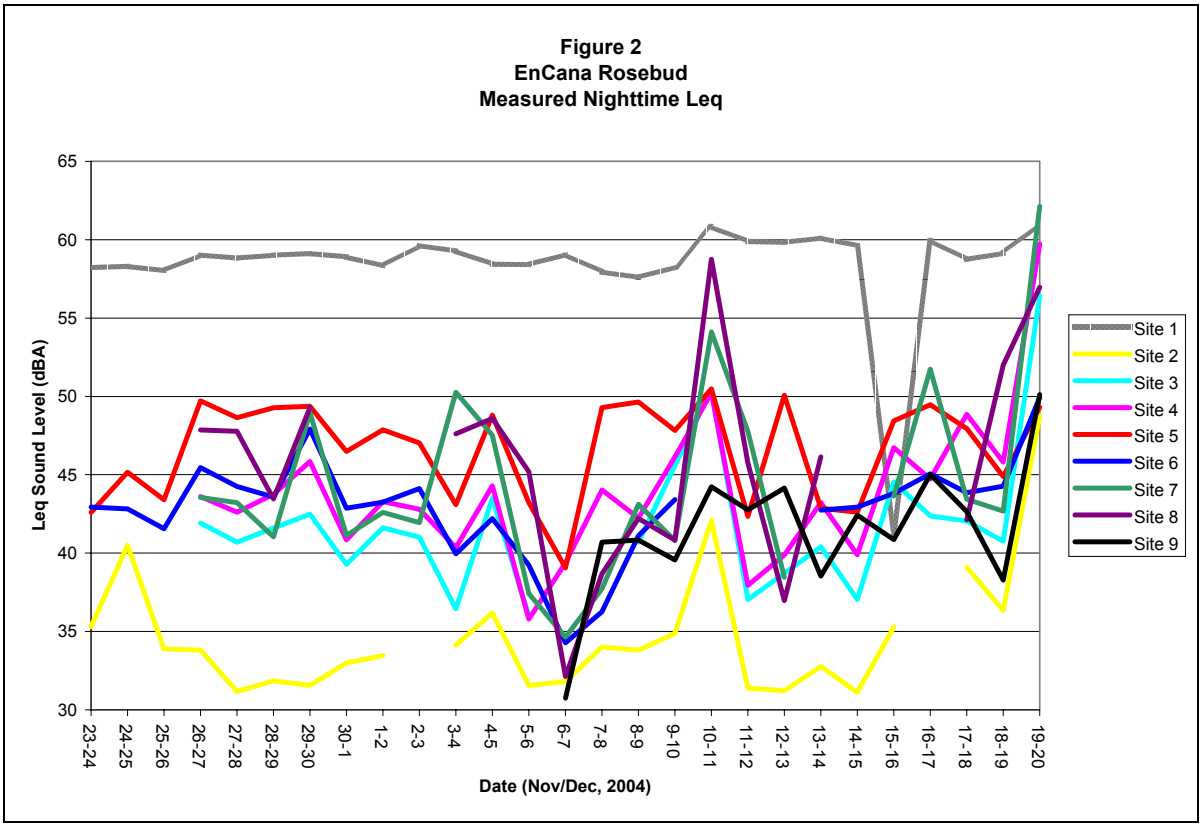


Figure 2
EnCana Rosebud
Measured Nighttime Leq
Leq Sound Level (dBA)
65
60
55
50
45
40
35
30
23-24
24-25
25-26
26-27
27-28
28-29
29-30
30-1
1-2
2-3
3-4
4-5
5-6
6-7
7-8
8-9
9-10
10-11
11-12
12-13
13-14
14-15
15-16
16-17
17-18
18-19
19-20
Date (Nov/Dec, 2004)
Site 1
Site 2
Site 3
Site 4
Site 5
Site 6
Site 7
Site 8
Site 9

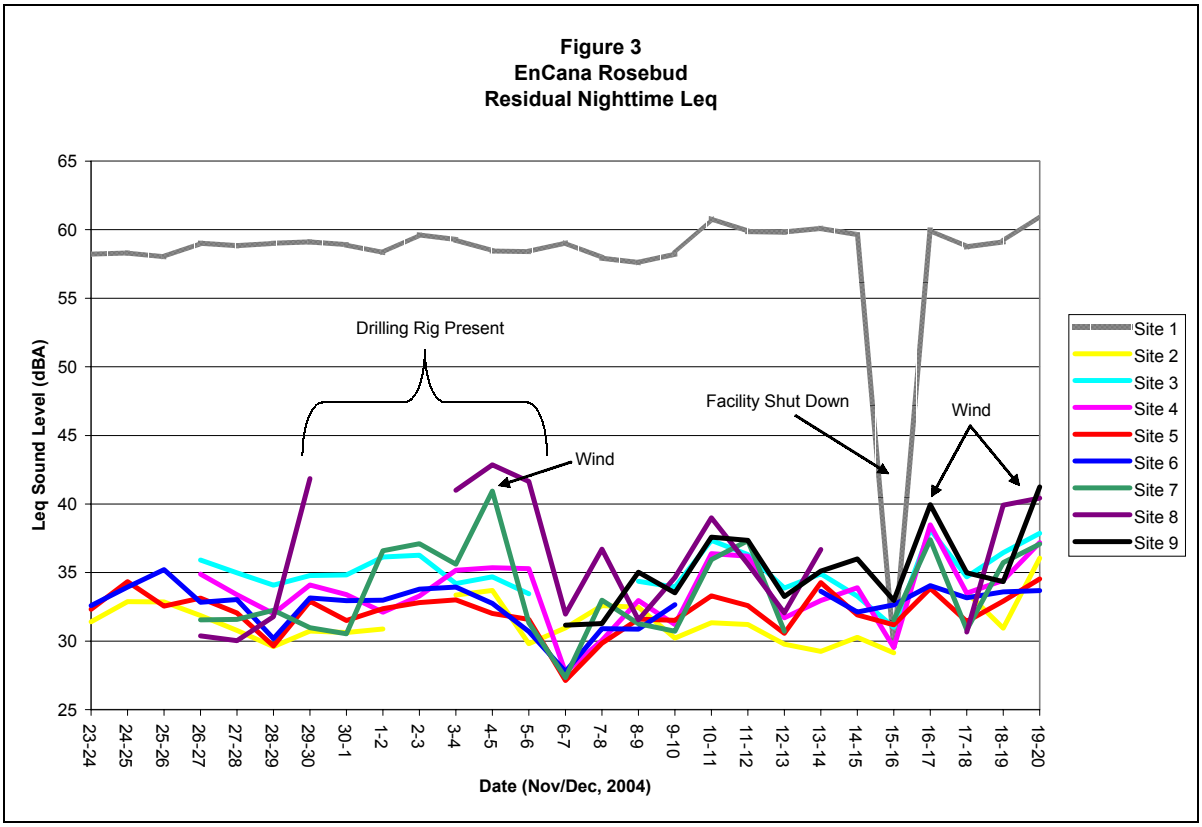


Figure 3
EnCana Rosebud
Residual Nighttime Leq
Leq Sound Level (dBA)
65
60
55
50
45
40
35
30
25
Drilling Rig Present
Wind
Facility Shut Down
Wind
23-24
24-25
25-26
26-27
27-28
28-29
29-30
30-1
1-2
2-3
3-4
4-5
5-6
6-7
7-8
8-9
9-10
10-11
11-12
12-13
13-14
14-15
15-16
16-17
17-18
18-19
19-20
Date (Nov/Dec, 2004)
Site 1
Site 2
Site 3
Site 4
Site 5
Site 6
Site 7
Site 8
Site 9

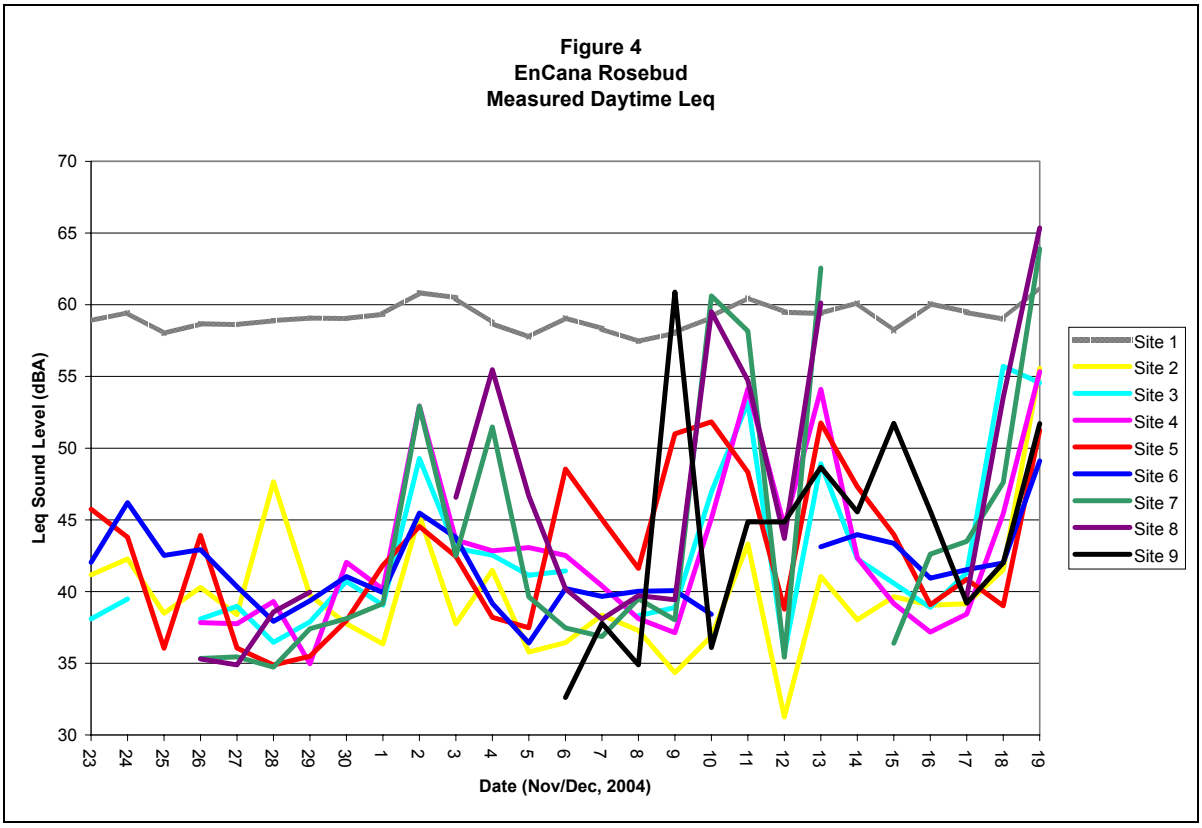


Figure 4
EnCana Rosebud
Measured Daytime Leq
Leq Sound Level (dBA)
70
65
60
55
50
45
40
35
30
23 24 25 26 27 28 29 30 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
Date (Nov/Dec, 2004)
Site 1
Site 2
Site 3
Site 4
Site 5
Site 6
Site 7
Site 8
Site 9

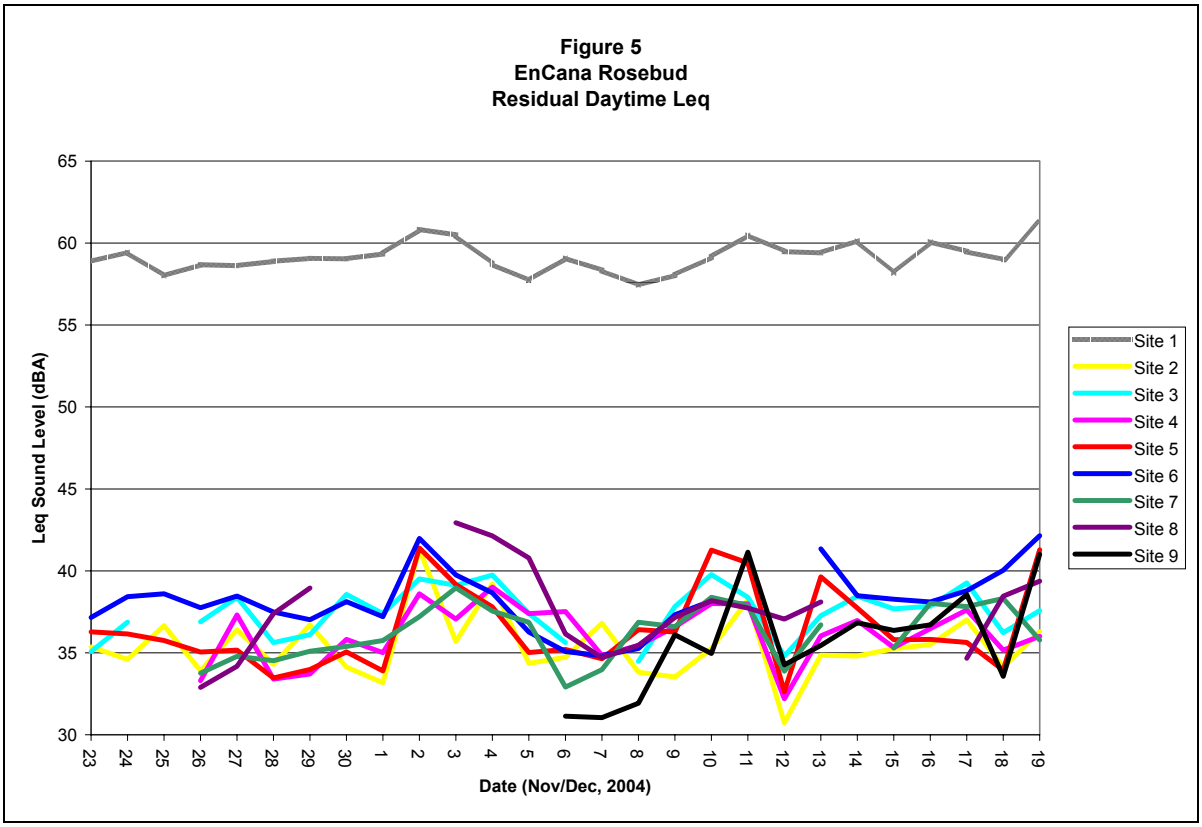


Figure 5
EnCana Rosebud
Residual Daytime Leq
Leq Sound Level (dBA)
65
60
55
50
45
40
35
30
23 24 25 26 27 28 29 30 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
Date (Nov/Dec, 2004)
Site 1
Site 2
Site 3
Site 4
Site 5
Site 6
Site 7
Site 8
Site 9

At all sites the measured sound levels were dominated by wind, vehicles, planes, trains, and other localized sound events. The train had less impact on the measured nighttime sound levels at Sites 1 and 2 than the other sites. It was difficult to totally remove all noise events not related to the facility operation so the residual sound level results shown in Figures 3 and 5 are higher than the actual sound levels attributable to the facility.

Appendix E contains graphs of the one-minute sound level results as well as a summary of the daytime and nighttime L_{eq} sound levels for each site.

The results from Site 1 show that the sound emissions from the facility were quite constant (except when the facility was shut down). The sound levels measurements taken at all the other sites were quite variable with sound spikes caused by short-term (unsustained) noise events in the area. As mentioned before these short term noise events were generally attributable to trains, vehicles, planes, and dogs.

The sound levels at these other sites attributable to the facility were highly dependent on environmental conditions. Generally, sound fluctuations caused by changes in weather conditions happen over the course of minutes or hours and not seconds. To study the general, sustained, background sound levels the L_{90} sound levels were used. Appendix B describes the L_{90} index as well as other statistical sound level identifiers.

The L_{90} sound level represents the sound level exceeded for 90% of one minute (i.e. 56 seconds). In this study the one-minute L_{90} index is a good representation of constant noise events lasting longer than one minute. Using this indicator, events like train, plane and vehicle passages are measured because they generally last longer than one minute. To remove these events a one-hour moving average was calculated. The result is a one-hour L_{90} (1-min) moving average. Appendix F contains graphs of the L_{90} moving average presented concurrently for each site. Each point plotted on the graph represents the linear average of the 1-minute L_{90} sound levels for the half hour before and the half hour after the point. Using this averaging method the individual, short-term noise events are “flattened” and the result is the general sustained background sound levels. These sound levels would be caused by sustained wind, facility operation, other sustained industry noise, and general activity hum.

The graphs in Appendix F are the best indication of the background sound levels in the study area. The sound level values shown in these graphs include the contribution from the facility as long as it was operating. The graphs show that the background sound level is well below 40 dBA at all the measurement locations around the compressor station except for when wind contaminated the measurements or when other localised noise events occurred.

The noise survey results indicate that the EnCana compressor station is comfortably in compliance with the AEUB’s Permissible sound level at Sites 2, 5 and 6; and well below 40 dBA at all sites around the compressor station. No further noise control is necessary to comply with the AEUB Permissible Sound Level.

Discussion

Site 1

The sound level results at Site 1 show that the sound emissions of the facility were constant and steady. During the measurement period the facility was operating at or near full capacity. The sound level results did not show significant changes in the sound emissions with different facility loading, including 100% load. This implies that any facility-related sound level changes experienced at other sites would be due to changes in the environmental sound propagation. The sound level results, and in field observations by PAAE, indicated that the sound levels attributable to the facility were highly dependent on environmental conditions.

Additional measurements taken near the facility indicate that the sound emissions were quite directional. The sound emissions from the north, east and south sides were approximately 8 dBA higher than from the west side. This means that sites to the east and south (Sites 3, 4, 5, 6, 7, and 8) could have higher sound levels than the site to the west (Site 2). The microphone at Site 1 was located southeast of the compressor station and represents the noise emissions directed towards Sites 3, 4, 5, 6, 7, and 8.

Site 2

This site was the closest to the compressor station and also had the most stringent PSL. The facility was audible at this location but the sound levels were comfortably below the PSL for all nights during the measurement period. Occasionally higher energy sound events occurred near Site 2. These events were likely in the Ruckman yard and on one occasion (early afternoon Nov. 28) the sound event increased the sound levels at Sites 3, 4, 5, 6, and 7. Site 2 was generally more sheltered from wind and less impacted by the train noise.

Site 3

Highway 840 had a large impact on the sound levels at Site 3. Site 3 was also surrounded by tall grass which increased the sound levels during low wind events. The facility was audible at this location but was well below 40 dBA during the nighttime.

Site 4

The facility was audible at this location but well below 40 dBA during the nighttime.

Site 5

The nighttime sound levels at Site 5 were heavily impacted by train passages. The nighttime L_{eq} sound levels attributable to the facility are insignificant when compared to the train L_{eq} sound levels. The facility is audible under certain environmental conditions and when there are no other noise sources like train passages, traffic, aircraft or seed plant operation.

The maximum one-minute sound level found by PAAE that could be attributable to the facility during the entire study was 38 dBA. The louder facility sound periods were generally short term and variable. They

were likely caused by slight changes in the wind above the valley shoulder coupled with a possible temperature inversion in the valley. The maximum facility sound levels measured are higher than what would exist under normal downwind conditions (without the possible effects of inversions or stratified cold air within the valley). The valley does increase the sound levels over what would exist under normal flat ground situations, likely because it is more prone to temperature inversions which can increase sound propagation close to the ground.

The sound levels at Site 5 are well below the PSL of 45 dBA L_{eq} nighttime.

Site 6

The facility was occasionally audible at Site 6. When the facility was audible at Site 5 it was generally audible at Site 6. The sound levels were well below the PSL of 48 dBA L_{eq} nighttime on all nights of the noise survey.

Site 7

The facility was occasionally audible at Site 7. Site 7 was sensitive to wind events as well as the Rosebud seed plant operation. The nighttime sound levels were well below 40 dBA when not contaminated by wind.

Site 8

The facility was not audible during any PAAE field visits. There was a drilling rig operating close to Site 8 from before November 29 to December 6 which dominated the sound level measurements. The seed plant was audible at Site 8. This site was very sensitive to wind contamination.

Site 9

Site 9 was set-up part way through the study to measure the sound levels on Jessica Ernst's deck. When the facility was audible and dominant the sound levels were generally higher at Site 9 than Site 5. This is expected because the microphone at Site 9 was close to the house wall and subject to sound reflections. This measurement location does not qualify for a valid EUB quality measurement because it is too close to the house. The sound levels measured at Site 9 do not represent the sound energy incident on the walls of the house because this location would be contaminated by the sound energy reflected from the house wall.

Seed Plant

The seed plant located on the south side of Rosebud emits slightly more sound energy than the EnCana compressor station. When the seed plant is operating it produces a tone in the 125 Hz 1/3 Octave band that is apparent at Sites 4, 5, 6, 7 and 8. There was no indication during the study that the seed plant operates at night, but if it did the seed plant would be dominant over the EnCana compressor station at Sites 4, 5, 6, and 7 depending on environmental conditions.

Ambient Noise Levels

On the night of December 15-16 the facility was not operating. Shutting the facility down had no effect on the measured nighttime L_{eq} sound levels. This is because the facility contribution is insignificant when compared to the overall area sound levels which are dominated by train, vehicle, and plane passages.

The sound levels attributable to the EnCana compressor station are audible at all sites except 8 during certain environmental conditions. Even when the EnCana facility is audible the sound levels are below 40 dBA when wind contamination is removed.

Conclusion

The noise levels at the Ruckman, Ernst, and Webster residences are currently well within the Alberta Energy and Utilities Board guidelines and no further noise attenuation is necessary to meet the Permissible Sound Level. The nighttime sound levels at all sites except for Site 1 are below 40 dBA when wind contamination is excluded.

APPENDIX A

AEUB Permissible Sound Level Calculation

EnCana Compressor Station (7-13-27-22 W4M)
AEUB Noise Control Directive
Permissible Sound Level Determination
For Residence: 375m southwest (Site 2)

Basic Night time Sound Level

Proximity to Transportation	Dwelling Unit Density per ¼ Section of Land: 1 - 8 Dwellings	9 - 160 Dwellings	>160 Dwellings	Night time	Daytime
Category 1	40	43	46		
Category 2	45	48	51		
Category 3	50	53	56	40	40
			Daytime Adjustment	N/A	10

Class A Adjustments

Class	Reason for Adjustment	Value (dBA L_{eq})
A1	Seasonal Adjustment (1 Nov - 31 Mar)	+5
A2	Absence of Both Tonal and Impulse/Impact Components	+5
A3	Ambient Monitoring Adjustment	-10 to +10
	Class Adjustment = Sum of A1, A2 and A3 (as applicable), but not to exceed a maximum of 10 dBA L_{eq}	

	Night time	Daytime
Total Class A Adjustments	0	0

Class B Adjustments

Class	Duration of Activity	Value (dBA L_{eq})
B1	1 day	+15
B2	1 week	+10
B3	< or = to 2 months	+5
B4	> 2 months	0
Class B Adjustment = one only of B1, B2, B3 or B4		

	Night time	Daytime
Class B Adjustment	0	0
PERMISSIBLE SOUND LEVEL (dBA)	**40**	**50**

EnCana Compressor Station (7-13-27-22 W4M)
AEUB Noise Control Directive
Permissible Sound Level Determination
For Residence: 870m southeast (Site 5)

Basic Night time Sound Level

Proximity to Transportation	Dwelling Unit Density per ¼ Section of Land: 1 - 8 Dwellings	9 - 160 Dwellings	>160 Dwellings	Night time	Daytime
Category 1	40	43	46		
Category 2	45	48	51		
Category 3	50	53	56	45	45
			Daytime Adjustment	N/A	10

Class A Adjustments

Class	Reason for Adjustment	Value (dBA L_{eq})
A1	Seasonal Adjustment (1 Nov - 31 Mar)	+5
A2	Absence of Both Tonal and Impulse/Impact Components	+5
A3	Ambient Monitoring Adjustment	-10 to +10
	Class Adjustment = Sum of A1, A2 and A3 (as applicable), but not to exceed a maximum of 10 dBA L_{eq}	

	Night time	Daytime
Total Class A Adjustments	0	0

Class B Adjustments

Class	Duration of Activity	Value (dBA L_{eq})
B1	1 day	+15
B2	1 week	+10
B3	< or = to 2 months	+5
B4	> 2 months	0
Class B Adjustment = one only of B1, B2, B3 or B4		

	Night time	Daytime
Class B Adjustment	0	0
PERMISSIBLE SOUND LEVEL (dBA)	**45**	**55**

EnCana Compressor Station (7-13-27-22 W4M)
AEUB Noise Control Directive
Permissible Sound Level Determination
For Town of Rosebud: 1250 m east-southeast (Site 6)

Basic Night time Sound Level

Proximity to Transportation	Dwelling Unit Density per ¼ Section of Land: 1 - 8 Dwellings	9 - 160 Dwellings	>160 Dwellings	Night time	Daytime
Category 1	40	43	46		
Category 2	45	48	51		
Category 3	50	53	56	48	48
			Daytime Adjustment	N/A	10

Class A Adjustments

Class	Reason for Adjustment	Value (dBA L_{eq})
A1	Seasonal Adjustment (1 Nov - 31 Mar)	+5
A2	Absence of Both Tonal and Impulse/Impact Components	+5
A3	Ambient Monitoring Adjustment	-10 to +10
	Class Adjustment = Sum of A1, A2 and A3 (as applicable), but not to exceed a maximum of 10 dBA L_{eq}	

	Night time	Daytime
Total Class A Adjustments	0	0

Class B Adjustments

Class	Duration of Activity	Value (dBA L_{eq})
B1	1 day	+15
B2	1 week	+10
B3	< or = to 2 months	+5
B4	> 2 months	0
Class B Adjustment = one only of B1, B2, B3 or B4		

	Night time	Daytime
Class B Adjustment	0	0
PERMISSIBLE SOUND LEVEL (dBA)	**48**	**58**

APPENDIX B

Explanation of Technical Details Regarding Sound Measurement and Analysis

Technical Details

Sound is the phenomena of vibrations transmitted through air, or other medium such as water or a building structure. The range of pressure amplitudes, intensities, and frequencies of the sound energy is very wide, and many specialized fields have developed using different ranges of these variables, such as room acoustics and medical ultrasound.

Due to the wide range of intensities, which are perceived as sound, standard engineering units become inconvenient. Sound levels are commonly measured on a logarithmic scale, with the level (in decibels, or dB) being proportional to ten times the common logarithm of the sound energy or intensity. Normal human hearing covers a range of about twelve to fourteen orders of magnitude in energy, from the threshold of hearing to the threshold of pain. On the decibel scale, the threshold of hearing is set as zero, written as 0 dB, while the threshold of pain varies between 120 to 140 dB. The most usual measure of sound is the sound pressure level (SPL), with 0 dB SPL set at 2.0×10^{-5} N/m^2 (also written 20 μPa), which corresponds to a sound intensity of 10^{-12} Watts per square metre (or 1 picoWatt per square metre, written 1 pW/m^2).

Normal human hearing spans a frequency range from about 20 Hertz (Hz, or cycles per second) to about 20,000 Hz (written 20 KHz). However, the sensitivity of human hearing is not the same at all frequencies. To accommodate the variation in sensitivity, various frequency-weighting scales have been developed. The most common is the A-weighting scale, which is based on the sensitivity of human hearing at moderate levels; this scale reflects the low sensitivity to sounds of very high or very low frequencies. Sound levels measured on the A-weighted scale are written in A-weighted decibels, commonly shown as dBA or dB(A).

When sound is measured using the A-weighting scale, the reading is often called the "Noise level"; to confirm that human sensitivity and reactions are being addressed. A table of some common noise sources and their associated noise levels are shown in Table A1.

When the A-weighting scale is <u>not</u> used, the measurement is said to have a "linear" weighting, or to be unweighted, and may be called a "linear" level. As the linear reading is an accurate measurement of the physical (sound) pressure, the term "Sound Pressure Level", or SPL, is usually (but not universally) reserved for unweighted measurements.

Noise is usually defined as "unwanted sound", which indicates that it is not just the physical sound that is important, but also the human reaction to the sound that leads to the perception of sound as noise. It implies a judgment of the quality or quantity of sound experienced. As a human reaction to sound is involved, noise levels are usually given in A-weighted decibels (dBA). An alternate definition of noise is "sound made by somebody else", which emphasizes that the ability to control the level of the sound alters the perception of noise.

Table B1- Noise Levels of Familiar Sources

Source Or Environment	Noise Level (dBA)
High Pressure Steam Venting To Atmosphere (3m)	121
Steam Boiler (2m)	90-95
Drilling Rig (10m)	80-90
Pneumatic Drill (15m)	85
Pump Jack (10m)	68-72
Truck (15m)	65-70
Business Office	65
Conversational Speech (1m)	60
Light Auto Traffic (30m)	50
Living Room	40
Library	35
Soft Whisper (5m)	20-35

The single number A-weighted level is often inadequate for engineering purposes, although it does supply a good estimate of people's reaction to a noise environment. As noise sources, control measures, and materials differ in the frequency dependence of their noise responses or production, sound is measured with a narrower frequency bandwidth; the specific methodology varies with the application. For most work, the acoustic frequency range is divided into frequency bands where the centre frequency of each band is twice the frequency of the next lower band; these are called "Octave" bands, as their frequency relation is called an "Octave" in music, where the field of acoustics has its roots. For more detailed work, the octave bands, and certain standard octave and 1/3 octave bands have been specified by international agreements.

Where the noise at the receiver is steady, it is easy to assess the noise level. However, both the production of noise at the source and the transmission of noise can vary with time; most noise levels are not constant, either because of the motion of the noise source (as in traffic noise), because the noise source itself varies, or because the transmission of sound to the receiver location is not steady as over long distances. This is almost always the case for environmental noise studies. Several single number descriptors have been developed and are used to assess noise in these conditions.

The most common is the measurement of the "equivalent continuous" sound level, or L_{eq}, which is the level of a hypothetical source of a constant level which would give the same total sound energy as is measured during the sampling period. This is the "energy" average noise level. Typical sampling periods are one hour, nighttime (9 hours) or one day (24 hours); the sampling period used must be reported when using this unit.

The greatest value of the L_{eq} is that the contributions of different sources to the total noise level can be assessed, or in a case where a new noise source is to be added to an existing environment, the total noise level from new and old sources can be easily calculated. It is also sensitive to short term high noise levels.

Statistical noise levels are sometimes used to assess an unsteady noise environment. They indicate the levels that are exceeded a fixed percentage of the measurement time period measured. For example, the 10%-ile level, written L_{10}, is the levels exceeded 10% of the time; this level is a good measure of frequent noisy occurrences such as steady road traffic. The 90% level, L_{90}, is the level exceeded 90% of the time, and is the background level, or noise floor. A steady noise source will modify the background level, while an intermittent noise source such as road or rail traffic will affect the short-term levels only.

One disadvantage with the L_{eq} measure, when used alone, is that nearby loud sources (e.g. dogs barking, or birds singing) can confuse the assessment of the situation when it is the noise from a distant plant that is the concern. For this reason, the equivalent level and the statistical levels can be used together to better understand the noise environment. One such indication is the difference between the L_{eq} and the L_{90} levels. A large difference between the L_{eq} and L_{90}, greater than 10 dB, indicates the intrusion of short-term noise events on the general background level. A small difference, less than 5 dB, indicates a very steady noise environment. If the L_{eq} value exceeds the L_{10} value this indicates the presence of significant short-term loud events.

For most noise measurement, instruments are adjusted so that the time response of the instrument is similar to the response of the human ear; this is the “Fast” setting. Measurement with the “Fast” setting therefore assesses the sound environment according to the way humans would hear it and react to it. Where the noise level varies substantially and an average level is wanted without the complexity of and L_{eq} or statistical measurement, the “Slow” setting is used on the sound level meter. The “Slow” setting is also typically used in industrial settings where hearing damage is a concern. Where the noise level changes very rapidly, for example due to impacts or detonations, the “Fast” and “Slow” settings do not respond quickly enough to assess the maximum levels, and the “Impulse” meter setting us used.

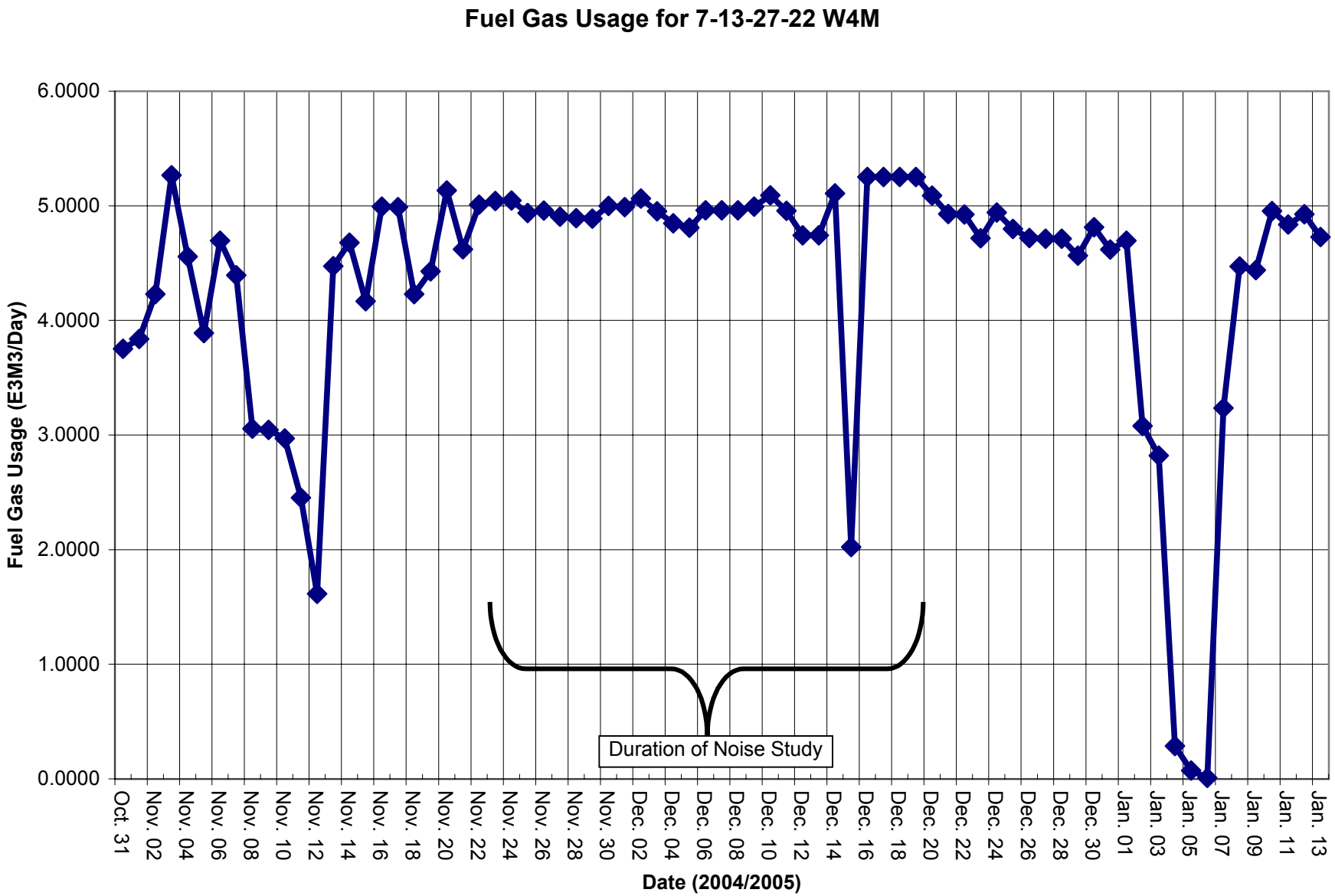
The Sound Power Level (abbreviated L_w, SWL or PWL) is the decibel equivalent of the total energy emitted from a source in the form of noise. The reference level for the sound power is 10^{-12} Watts, or 1 picoWatt (abbreviated pW). The sound power level is given by:

$$L_w, \text{SWL}, \text{PWL} = 10 \times \log_{10} (\text{Emitted Power} / 1 \text{ pW}) \text{ dB}$$

Therefore, a source emitting 1 Watt of power in the form of sound would have a sound power level of 120 dB. Sound power levels can be expressed in terms of frequency bands, an overall linear-weighted level or A-weighted, as is the case for sound pressure levels. However, sound power levels are inherent to the source of noise, whereas the sound pressure level is dependant on the source, but also on the distance from the source and other environmental factors.

APPENDIX C

Fuel Gas Consumptions Record
November 1, 2004 – January 14, 2005
EnCana Compressor Station
LSD 7-13-27-22 W4M


Fuel Gas Usage for 7-13-27-22 W4M
Fuel Gas Usage (E3M3/Day)
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0000
Duration of Noise Study
Oct. 31
Nov. 02
Nov. 04
Nov. 06
Nov. 08
Nov. 10
Nov. 12
Nov. 14
Nov. 16
Nov. 18
Nov. 20
Nov. 22
Nov. 24
Nov. 26
Nov. 28
Nov. 30
Dec. 02
Dec. 04
Dec. 06
Dec. 08
Dec. 10
Dec. 12
Dec. 14
Dec. 16
Dec. 18
Dec. 20
Dec. 22
Dec. 24
Dec. 26
Dec. 28
Dec. 30
Jan. 01
Jan. 03
Jan. 05
Jan. 07
Jan. 09
Jan. 11
Jan. 13
Date (2004/2005)

APPENDIX D

Weather Data for Drumheller

EnCana Rosebud
Job # 2004-1724
Drumheller Weather Data

= Favorable Sound Propagation to Site 5 and 6
= Favorable Sound Propagation to Site 2

Date	Time	Temperature (°C)	Wind Speed (kph)	Wind Direction	Rel. Humidity (%)
November 23, 2004	0:00	-11.7	6	SE	88
	1:00	-11.4	4	SE	88
	2:00	-11.9	2	WSW	86
	3:00	-12.3	6	SSW	88
	4:00	-13	4	SE	88
	5:00	-12.9	7	WNW	87
	6:00	-12	0	Calm	88
	7:00	-11.5	9	ESE	88
	8:00	-11	9	SE	87
	9:00	-10	6	ESE	85
	10:00	-8.3	6	SE	82
	11:00	-4.3	4	SE	70
	12:00	-1	0	Calm	62
	13:00	0.9	2	SW	59
	14:00	2.6	4	ESE	53
	15:00	0.7	6	SE	58
	16:00	-0.8	4	SSE	59
	17:00	-4.6	4	SSE	74
	18:00	-5.3	11	SE	78
	19:00	-5.7	7	SE	79
	20:00	-5.8	9	SE	81
	21:00	-5.5	7	SE	79
	22:00	-6.6	9	SE	84
	23:00	-7.5	9	SE	87
November 24, 2004	0:00	-8.2	9	SE	90
	1:00	-8.1	4	ESE	92
	2:00	-7.7	7	SSE	90
	3:00	-7.8	11	SE	91
	4:00	-7.2	9	ESE	91
	5:00	-7	9	SE	90
	6:00	-6.7	13	SE	89
	7:00	-6.5	13	SE	86
	8:00	-6.3	11	SE	84
	9:00	-6	13	SE	82
	10:00	-5.3	11	SE	80
	11:00	-3.8	13	ESE	77
	12:00	-2.5	11	ESE	74
	13:00	-1.5	9	ESE	72
	14:00	-0.6	9	SE	69
	15:00	-0.3	9	ESE	70
	16:00	-0.5	9	ESE	71
	17:00	-0.6	9	ESE	73
	18:00	-0.7	7	ESE	72
	19:00	-1.1	4	ESE	75
	20:00	-1.3	2	SSE	75
	21:00	-1.9	2	SSE	78
	22:00	-3.9	0	Calm	81
	23:00	-3.2	4	S	82

EnCana Rosebud
Job # 2004-1724
Drumheller Weather Data

=Favorable Sound Propagation to Site 5 and 6
=Favorable Sound Propagation to Site 2

Date	Time	Temperature (°C)	Wind Speed (kph)	Wind Direction	Rel. Humidity (%)
November 25, 2004	0:00	-4.7	0	Calm	89
	1:00	-5.7	6	SSE	88
	2:00	-6.6	7	SE	91
	3:00	-6.6	7	SE	93
	4:00	-6	4	E	90
	5:00	-6.9	2	SW	91
	6:00	-7.4	0	Calm	93
	7:00	-7.6	4	WNW	92
	8:00	-6.5	7	W	90
	9:00	-5	6	SSE	95
	10:00	-4.4	4	SSE	93
	11:00	-2.7	0	Calm	89
	12:00	-0.1	2	N	80
	13:00	4.4	17	NW	53
	14:00	4.4	17	NW	47
	15:00	2.3	6	WNW	56
	16:00	0.2	2	SE	64
	17:00	-3.9	2	SE	81
	18:00	-7.1	6	ESE	88
	19:00	-7.2	2	SE	91
	20:00	-7.1	9	SE	86
	21:00	-8.4	13	SE	89
	22:00	-7.8	11	ESE	88
	23:00	-7.5	4	E	87
November 26, 2004	0:00	-8.4	4	ESE	90
	1:00	-8.1	0	Calm	91
	2:00	-9.4	6	WNW	92
	3:00	-9.3	6	NW	90
	4:00	-7.8	6	NW	88
	5:00	-8	4	SW	88
	6:00	-8.8	2	SSW	90
	7:00	-11.1	0	Calm	92
	8:00	-12.8	0	Calm	94
	9:00	-10.8	0	Calm	89
	10:00	-6.3	0	Calm	79
	11:00	-3.8	4	ESE	67
	12:00	-0.1	0	Calm	55
	13:00	2.5	2	E	48
	14:00	4.2	7	W	36
	15:00	3.9	7	SW	37
	16:00	0	4	S	50
	17:00	-3	7	SSE	59
	18:00	-5.2	9	ESE	72
	19:00	-6.4	6	SE	77
	20:00	-6.1	7	SE	70
	21:00	-9.1	0	Calm	80
	22:00	-9.7	9	SE	80
	23:00	-10.2	7	SE	79

EnCana Rosebud
Job # 2004-1724
Drumheller Weather Data

= Favorable Sound Propagation to Site 5 and 6
= Favorable Sound Propagation to Site 2

Date	Time	Temperature (°C)	Wind Speed (kph)	Wind Direction	Rel. Humidity (%)
November 27, 2004	0:00	-10.9	9	SE	80
	1:00	-12	9	SE	82
	2:00	-13.5	0	Calm	87
	3:00	-14	2	ESE	87
	4:00	-14.9	0	Calm	89
	5:00	-15.2	0	Calm	87
	6:00	-15.5	0	Calm	88
	7:00	-15.7	0	Calm	89
	8:00	-14.8	2	ESE	90
	9:00	-13.5	4	SE	87
	10:00	-11.5	4	ESE	84
	11:00	-9.8	2	E	82
	12:00	-8.2	0	Calm	77
	13:00	-6.5	2	NNW	76
	14:00	-4.5	0	Calm	76
	15:00	-3.8	0	Calm	77
	16:00	-3.8	0	Calm	79
	17:00	-4	0	Calm	82
	18:00	-4.6	2	NNW	87
	19:00	-6.2	4	ESE	90
	20:00	-6.9	0	Calm	93
	21:00	-8.3	2	NW	94
	22:00	-10.4	2	SE	91
	23:00	-12.1	4	ESE	95
November 28, 2004	0:00	-13.2	4	SE	93
	1:00	-14.3	4	SSE	93
	2:00	-14.1	2	SE	91
	3:00	-12.3	4	S	91
	4:00	-11.9	4	SE	89
	5:00	-13.3	4	ESE	89
	6:00	-14.8	0	Calm	89
	7:00	-15.6	0	Calm	89
	8:00	-14.6	0	Calm	91
	9:00	-13.4	0	Calm	86
	10:00	-10.1	0	Calm	79
	11:00	-7.5	0	Calm	80
	12:00	-3.2	2	SSE	69
	13:00	1.4	9	SSW	53
	14:00	1.7	19	SW	48
	15:00	1.3	13	SW	48
	16:00	-1	7	SSW	57
	17:00	-2.5	4	NNE	59
	18:00	-5.4	7	SE	71
	19:00	-4.3	6	ESE	67
	20:00	-4.4	6	SE	65
	21:00	-4.3	6	SSE	65
	22:00	-4	4	S	59
	23:00	-6.8	4	ESE	72

EnCana Rosebud
Job # 2004-1724
Drumheller Weather Data

= Favorable Sound Propagation to Site 5 and 6
= Favorable Sound Propagation to Site 2

Date	Time	Temperature (°C)	Wind Speed (kph)	Wind Direction	Rel. Humidity (%)
November 29, 2004	0:00	-7.8	7	ESE	77
	1:00	-9.5	9	SE	84
	2:00	-10.7	2	ESE	84
	3:00	-12	0	Calm	88
	4:00	-12.7	0	Calm	90
	5:00	-12.9	2	E	92
	6:00	-13.3	0	Calm	92
	7:00	-14.3	0	Calm	89
	8:00	-13.4	2	SE	93
	9:00	-13	2	ESE	91
	10:00	-10.3	6	SE	85
	11:00	-7.4	9	SE	78
	12:00	-3.8	7	ESE	68
	13:00	-1.9	7	SE	62
	14:00	-0.7	7	SE	59
	15:00	-1.7	13	SE	61
	16:00	-3.3	13	SE	67
	17:00	-4.9	9	SSE	73
	18:00	-5.7	4	SE	76
	19:00	-5.4	4	ESE	75
	20:00	-7.1	2	SSE	84
	21:00	-7.1	4	NNW	84
	22:00	-7.7	0	Calm	85
	23:00	-9.9	6	ESE	91
November 30, 2004	0:00	-11.4	0	Calm	89
	1:00	-12.1	0	Calm	91
	2:00	-12.8	0	Calm	92
	3:00	-12.8	0	Calm	91
	4:00	-12	0	Calm	91
	5:00	-10.6	2	ENE	90
	6:00	-9.6	2	NW	88
	7:00	-8.8	4	ENE	87
	8:00	-9.4	0	Calm	85
	9:00	-9.7	2	SE	86
	10:00	-6.3	2	NW	78
	11:00	-5.2	0	Calm	75
	12:00	-0.6	2	ESE	58
	13:00	3.1	0	Calm	46
	14:00	5.1	9	WNW	43
	15:00	5.5	13	NNW	43
	16:00	3.7	6	WNW	49
	17:00	1.6	0	Calm	58
	18:00	-0.5	6	SE	67
	19:00	-0.8	2	SE	71
	20:00	-1.3	2	ESE	72
	21:00	-1.9	4	SE	74
	22:00	-1.7	4	E	71
	23:00	-2.4	7	ESE	73

EnCana Rosebud
Job # 2004-1724
Drumheller Weather Data

= Favorable Sound Propagation to Site 5 and 6
= Favorable Sound Propagation to Site 2

Date	Time	Temperature (°C)	Wind Speed (kph)	Wind Direction	Rel. Humidity (%)
December 1, 2004	0:00	-2.3	4	S	72
	1:00	-3.1	2	SE	76
	2:00	-3.5	2	SE	77
	3:00	-5	0	Calm	81
	4:00	-5.5	0	Calm	84
	5:00	-7.4	0	Calm	88
	6:00	-6.9	2	ESE	90
	7:00	-6.2	0	Calm	88
	8:00	-4.6	4	SE	80
	9:00	-4.4	2	WNW	83
	10:00	-3.3	4	NW	80
	11:00	-0.3	2	E	66
	12:00	1	0	Calm	59
	13:00	3.1	2	WNW	53
	14:00	5.6	11	W	45
	15:00	4.9	9	WNW	48
	16:00	4.8	13	WNW	49
	17:00	3.9	7	W	52
	18:00	2.8	2	WNW	59
	19:00	0.3	2	W	71
	20:00	-1.1	2	ESE	73
	21:00	-0.4	2	NNE	70
	22:00	-0.2	6	ESE	68
	23:00	1.5	6	Calm	57
December 2, 2004	0:00	1.9	6	SW	52
	1:00	2.1	6	W	51
	2:00	0.8	6	E	56
	3:00	2.7	7	SSW	51
	4:00	0.4	6	ESE	62
	5:00	-0.9	6	SSE	67
	6:00	-2.9	7	SE	71
	7:00	-2.5	15	SE	70
	8:00	-1.7	6	SE	70
	9:00	5.1	6	NW	45
	10:00	7.4	13	NW	38
	11:00	9.1	19	W	33
	12:00	10.6	33	WNW	39
	13:00	9.3	33	NW	51
	14:00	8.5	20	WNW	58
	15:00	7.9	28	W	63
	16:00	6.5	19	WNW	69
	17:00	6.8	13	WNW	66
	18:00	7.5	24	WNW	66
	19:00	5.9	7	W	75
	20:00	4.6	4	WNW	80
	21:00	4.2	2	S	81
	22:00	5.6	6	S	69
	23:00	5.3	6	E	69

EnCana Rosebud
Job # 2004-1724
Drumheller Weather Data

=Favorable Sound Propagation to Site 5 and 6
=Favorable Sound Propagation to Site 2

Date	Time	Temperature (°C)	Wind Speed (kph)	Wind Direction	Rel. Humidity (%)
December 3, 2004	0:00	4.4	6	SE	65
	1:00	3.2	4	E	64
	2:00	4.1	4	WNW	56
	3:00	1.9	6	SE	65
	4:00	3	6	SSE	64
	5:00	4.5	2	W	58
	6:00	5.4	7	SSW	56
	7:00	7	4	E	50
	8:00	10.3	9	W	38
	9:00	7.7	11	SE	47
	10:00	6.5	4	SE	53
	11:00	12.8	24	WSW	33
	12:00	11	17	WSW	39
	13:00	11.6	9	W	37
	14:00	11.2	6	NNW	39
	15:00	10.5	2	NNW	39
	16:00	7.4	2	Calm	51
	17:00	6.6	2	W	51
	18:00	7.1	13	NNE	56
	19:00	5.3	0	Calm	62
	20:00	3.2	0	Calm	71
	21:00	2.1	4	SW	76
	22:00	2.7	6	NNW	69
	23:00	1.9	0	Calm	73
December 4, 2004	0:00	0.9	0	Calm	77
	1:00	1.2	0	Calm	76
	2:00	0.4	4	ESE	81
	3:00	0.1	0	Calm	84
	4:00	0.1	2	ESE	83
	5:00	1.4	7	WNW	76
	6:00	1.1	7	WNW	83
	7:00	0.7	0	Calm	85
	8:00	0.1	0	Calm	88
	9:00	0.3	0	Calm	88
	10:00	0.6	0	Calm	91
	11:00	0.9	2	W	92
	12:00	1.2	4	SW	92
	13:00	1.4	11	E	88
	14:00	-1.3	13	E	85
	15:00	-2.8	15	ESE	84
	16:00	-5	20	E	85
	17:00	-6.4	15	E	83
	18:00	-7	13	E	83
	19:00	-8	17	E	82
	20:00	-8.8	9	E	83
	21:00	-9.7	19	ESE	83
	22:00	-10	15	E	79
	23:00	-10.3	13	E	76

EnCana Rosebud
Job # 2004-1724
Drumheller Weather Data

=Favorable Sound Propagation to Site 5 and 6
=Favorable Sound Propagation to Site 2

Date	Time	Temperature (°C)	Wind Speed (kph)	Wind Direction	Rel. Humidity (%)
December 5, 2004	0:00	-10.8	17	E	77
	1:00	-10.9	15	E	76
	2:00	-11.4	11	E	84
	3:00	-11.5	9	ESE	82
	4:00	-11.5	11	E	77
	5:00	-11.3	6	E	75
	6:00	-11.3	11	E	77
	7:00	-11.2	11	ESE	75
	8:00	-11.2	11	ESE	81
	9:00	-11.2	11	ESE	84
	10:00	-10.8	9	ESE	85
	11:00	-10.3	2	NNW	86
	12:00	-10.2	7	W	86
	13:00	-10	9	NNW	83
	14:00	-10.5	13	NNW	81
	15:00	-11	11	NW	81
	16:00	-11.8	15	NW	80
	17:00	-12.2	15	NW	80
	18:00	-13.1	17	NW	78
	19:00	-13.2	19	NW	76
	20:00	-13.4	19	NW	74
	21:00	-13.7	13	WNW	75
	22:00	-14	15	WNW	77
	23:00	-15.8	7	WNW	80
December 6, 2004	0:00	-16.9	6	WNW	80
	1:00	-17.3	7	W	79
	2:00	-17.3	4	NW	80
	3:00	-17.5	4	WNW	80
	4:00	-17.2	4	WNW	80
	5:00	-19.4	0	Calm	83
	6:00	-19.6	4	WSW	83
	7:00	-19.1	4	W	83
	8:00	-19.9	2	SSW	82
	9:00	-20.8	4	NW	82
	10:00	-19.1	0	Calm	82
	11:00	-18.3	2	NNW	79
	12:00	-16.5	2	WNW	71
	13:00	-14.4	2	WSW	64
	14:00	-14	4	W	62
	15:00	-15.3	0	Calm	70
	16:00	-17.8	0	Calm	75
	17:00	-19.3	0	Calm	82
	18:00	-19.6	4	ESE	86
	19:00	-18.7	6	SE	81
	20:00	-18.5	7	SE	81
	21:00	-18.2	6	SE	79
	22:00	-17.7	7	ESE	80
	23:00	-16.9	11	SE	80

EnCana Rosebud
Job # 2004-1724
Drumheller Weather Data

=Favorable Sound Propagation to Site 5 and 6
=Favorable Sound Propagation to Site 2

Date	Time	Temperature (°C)	Wind Speed (kph)	Wind Direction	Rel. Humidity (%)
December 7, 2004	0:00	-17.8	13	SE	80
	1:00	-17.9	4	E	82
	2:00	-17.4	2	E	80
	3:00	-16.9	4	ESE	80
	4:00	-16.6	4	S	80
	5:00	-16.4	2	E	79
	6:00	-16.2	0	Calm	78
	7:00	-16	0	Calm	78
	8:00	-15.9	0	Calm	79
	9:00	-15.7	0	Calm	78
	10:00	-15.3	4	WNW	78
	11:00	-14.8	4	WNW	75
	12:00	-14.2	4	NNW	70
	13:00	-12.9	2	SSW	65
	14:00	-13.7	4	SSE	68
	15:00	-13.9	6	SE	72
	16:00	-14.8	11	ESE	76
	17:00	-15.7	11	SE	77
	18:00	-15.8	15	ESE	78
	19:00	-16.7	15	ESE	78
	20:00	-16.9	13	ESE	79
	21:00	-17.1	11	ESE	81
	22:00	-18	15	ESE	80
	23:00	-19.1	13	SE	82

EnCana Rosebud
Job # 2004-1724
Drumheller Weather Data

= Favorable Sound Propagation to Site 5 and 6
= Favorable Sound Propagation to Site 2

Date	Time	Temperature (°C)	Wind Speed (kph)	Wind Direction	Rel. Humidity (%)
December 8, 2004	0:00	-18.9	13	SE	81
	1:00	-18.6	15	SE	81
	2:00	-19.6	13	SE	82
	3:00	-20.2	11	SSE	82
	4:00	-20.1	15	SE	83
	5:00	-18.8	9	ESE	82
	6:00	-17.4	7	ESE	83
	7:00	-16.6	13	SE	83
	8:00	-15.7	19	ESE	87
	9:00	-15.3	11	ESE	85
	10:00	-14.5	15	ESE	83
	11:00	-13.4	13	SE	79
	12:00	-13.1	13	ESE	79
	13:00	-12.8	17	ESE	79
	14:00	-12.7	15	ESE	80
	15:00	-13	17	ESE	83
	16:00	-12.9	11	SE	81
	17:00	-13.2	6	SSE	82
	18:00	-12.9	11	ESE	79
	19:00	-12.8	4	SSE	79
	20:00	-12.6	4	ESE	80
	21:00	-12.4	0	Calm	80
	22:00	-12.2	0	Calm	81
	23:00	-11.9	2	N	80
December 9, 2004	0:00	-11.9	2	NNW	82
	1:00	-12.3	6	W	82
	2:00	-12.7	6	WNW	82
	3:00	-15	4	WNW	86
	4:00	-16.4	6	NW	85
	5:00	-17	4	W	86
	6:00	-18.5	4	SE	86
	7:00	-19.3	2	E	86
	8:00	-19.7	6	SE	84
	9:00	-18.7	4	SE	82
	10:00	-16.2	6	ESE	78
	11:00	-13.9	6	ESE	72
	12:00	-11	7	SE	70
	13:00	-8	9	SE	66
	14:00	-6.5	7	SE	64
	15:00	-6.9	11	SE	68
	16:00	-9.4	11	SE	77
	17:00	-10.8	11	SE	81
	18:00	-10.8	13	SE	82
	19:00	-11.3	7	SSE	82
	20:00	-12.2	4	SE	85
	21:00	-12.6	6	SE	87
	22:00	-11.9	0	Calm	85
	23:00	-11.6	0	Calm	85

EnCana Rosebud
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Drumheller Weather Data

=Favorable Sound Propagation to Site 5 and 6
=Favorable Sound Propagation to Site 2

Date	Time	Temperature (°C)	Wind Speed (kph)	Wind Direction	Rel. Humidity (%)
December 10, 2004	0:00	-11.5	2	E	86
	1:00	-11	2	Calm	87
	2:00	-10.2	2	ESE	86
	3:00	-8.6	4	SSE	84
	4:00	-9.1	2	S	87
	5:00	-9.3	0	Calm	87
	6:00	-10.4	2	NNW	89
	7:00	-10.3	0	Calm	92
	8:00	-9.5	0	Calm	91
	9:00	-7.8	2	E	88
	10:00	-5	9	SE	76
	11:00	-4.1	7	ESE	75
	12:00	-1.7	15	ESE	74
	13:00	-0.3	11	SSE	74
	14:00	0.3	9	SE	74
	15:00	0.5	15	ESE	76
	16:00	-1.2	19	SE	82
	17:00	-1.5	19	SE	84
	18:00	-1.5	17	SE	87
	19:00	-1.3	13	SE	90
	20:00	7.4	19	S	68
	21:00	7.4	20	S	67
	22:00	7.4	19	S	65
	23:00	7.8	15	S	63
December 11, 2004	0:00	4.4	4	W	75
	1:00	1.7	0	Calm	87
	2:00	3.8	9	SE	79
	3:00	3.9	7	SSE	78
	4:00	8.1	28	SW	65
	5:00	5.2	22	N	69
	6:00	3.8	7	WNW	76
	7:00	2.2	6	NW	87
	8:00	1.9	9	WNW	89
	9:00	1.6	20	WNW	94
	10:00	1.7	19	WNW	91
	11:00	2.7	17	NW	81
	12:00	2.9	19	NW	69
	13:00	3.2	22	NW	56
	14:00	2.7	19	WNW	62
	15:00	2.8	19	WNW	60
	16:00	1.9	26	WNW	61
	17:00	1	28	NW	65
	18:00	0	17	WNW	70
	19:00	-0.6	11	NNW	75
	20:00	-1.8	13	NW	79
	21:00	-3.6	4	NW	84
	22:00	-4.9	6	WNW	90
	23:00	-6.6	0	Calm	93

EnCana Rosebud
Job # 2004-1724
Drumheller Weather Data

= Favorable Sound Propagation to Site 5 and 6
= Favorable Sound Propagation to Site 2

Date	Time	Temperature (°C)	Wind Speed (kph)	Wind Direction	Rel. Humidity (%)
December 12, 2004	0:00	-7.2	7	WNW	95
	1:00	-8.1	0	Calm	95
	2:00	-7.8	4	WSW	94
	3:00	-8.5	2	NNW	92
	4:00	-9.6	0	Calm	93
	5:00	-10.4	0	Calm	93
	6:00	-6.6	7	W	83
	7:00	-5.1	9	W	72
	8:00	-7	2	NW	81
	9:00	-9	6	SE	85
	10:00	-7.3	7	SE	79
	11:00	-4.3	0	Calm	73
	12:00	-2	0	Calm	64
	13:00	0.4	4	SSE	55
	14:00	1.8	4	Calm	50
	15:00	3.4	0	Calm	50
	16:00	-1	4	NNW	67
	17:00	-3.1	4	WNW	74
	18:00	-4.9	6	SW	79
	19:00	-7.3	2	WNW	89
	20:00	-8.9	0	Calm	91
	21:00	-9.7	4	WNW	93
	22:00	-10.2	2	W	92
	23:00	-11	0	Calm	93
December 13, 2004	0:00	-12.5	0	Calm	92
	1:00	-13.2	0	Calm	92
	2:00	-13.6	0	Calm	92
	3:00	-13.5	0	Calm	92
	4:00	-14.1	0	Calm	91
	5:00	-14.3	4	ESE	91
	6:00	-14.3	6	SE	88
	7:00	-14.6	2	E	89
	8:00	-14.1	11	SE	87
	9:00	-13.7	6	ESE	88
	10:00	-11.4	9	ESE	84
	11:00	-8	11	ESE	82
	12:00	-4.6	19	ESE	74
	13:00	-1.9	11	SE	63
	14:00	-0.5	15	ESE	55
	15:00	-0.9	22	SE	57
	16:00	-1.8	15	ESE	63
	17:00	-2	13	ESE	68
	18:00	-0.4	13	E	59
	19:00	-0.2	7	E	57
	20:00	-0.5	19	SE	59
	21:00	-1.6	9	ESE	66
	22:00	-2	19	SE	69
	23:00	-3.2	15	SE	75

EnCana Rosebud
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Drumheller Weather Data

=Favorable Sound Propagation to Site 5 and 6
=Favorable Sound Propagation to Site 2

Date	Time	Temperature (°C)	Wind Speed (kph)	Wind Direction	Rel. Humidity (%)
December 14, 2004	0:00	-4.1	11	SE	80
	1:00	-4.3	15	SE	81
	2:00	-4.4	13	SE	81
	3:00	-5.4	15	ESE	85
	4:00	-5.8	17	SE	87
	5:00	-5.2	13	SE	86
	6:00	-5.5	17	SE	87
	7:00	-4.2	15	SE	85
	8:00	-5.2	11	SE	87
	9:00	-4.1	6	ESE	85
	10:00	-3.7	0	Calm	85
	11:00	-1.7	2	NW	79
	12:00	-0.3	4	WNW	77
	13:00	0.4	6	W	76
	14:00	0.8	4	WNW	75
	15:00	4.7	0	Calm	60
	16:00	0.7	2	W	77
	17:00	-1.5	0	Calm	88
	18:00	-2.9	0	Calm	94
	19:00	-4.7	0	Calm	95
	20:00	-4.8	0	Calm	96
	21:00	-5	0	Calm	96
	22:00	-4.9	0	Calm	96
	23:00	-3.9	2	ESE	96
December 15, 2004	0:00	-3.3	4	NW	94
	1:00	-3.8	0	Calm	94
	2:00	-3.8	6	SE	96
	3:00	-4.1	0	Calm	96
	4:00	-5.7	0	Calm	96
	5:00	-5.6	2	WSW	97
	6:00	-4	7	SW	96
	7:00	-4.8	2	S	93
	8:00	-6.6	0	Calm	94
	9:00	-6.5	0	Calm	95
	10:00	-3.1	0	Calm	85
	11:00	-0.1	6	WNW	75
	12:00	3.1	7	WNW	65
	13:00	5.6	6	NW	57
	14:00	6.2	7	WNW	56
	15:00	5.7	9	WNW	58
	16:00	3.5	4	W	66
	17:00	-0.6	2	SE	81
	18:00	-3.1	0	Calm	91
	19:00	-5.3	6	SE	92
	20:00	-5	6	SE	96
	21:00	-5.1	2	SE	94
	22:00	-6.2	9	SE	96
	23:00	-6.5	9	SE	93

EnCana Rosebud
Job # 2004-1724
Drumheller Weather Data

= Favorable Sound Propagation to Site 5 and 6
= Favorable Sound Propagation to Site 2

Date	Time	Temperature (°C)	Wind Speed (kph)	Wind Direction	Rel. Humidity (%)
December 16, 2004	0:00	-7.6	0	Calm	94
	1:00	-8.9	0	Calm	95
	2:00	-9.8	4	WNW	95
	3:00	-9.3	2	SSW	94
	4:00	-9.4	4	W	95
	5:00	-9.8	0	Calm	95
	6:00	-10.8	2	NW	93
	7:00	-11	2	WNW	92
	8:00	-11.2	0	Calm	92
	9:00	-10.6	4	SE	92
	10:00	-8.4	7	ESE	88
	11:00	-5.9	7	ESE	89
	12:00	-1.6	4	ESE	80
	13:00	0.2	7	ESE	75
	14:00	1.9	9	SE	72
	15:00	1.6	13	SE	76
	16:00	1.6	11	SE	75
	17:00	0.4	13	SE	80
	18:00	0.4	4	ESE	78
	19:00	1	4	SSW	77
	20:00	0.5	0	Calm	78
	21:00	0.8	2	W	82
	22:00	10.2	15	W	46
	23:00	8.1	11	WNW	53
December 17, 2004	0:00	8.7	19	WNW	47
	1:00	8.7	19	W	44
	2:00	6.3	6	NW	49
	3:00	1.9	2	ESE	68
	4:00	0.1	4	SSW	75
	5:00	0	4	S	76
	6:00	-1.6	4	SSE	82
	7:00	-4.2	2	ESE	88
	8:00	-5.1	2	SSW	89
	9:00	-4.5	4	SSW	91
	10:00	-2	0	Calm	80
	11:00	1.4	2	WSW	67
	12:00	3.2	4	ESE	60
	13:00	4.5	2	ESE	55
	14:00	6.4	2	NNE	49
	15:00	7.3	0	Calm	47
	16:00	3.1	4	SW	63
	17:00	0.5	0	Calm	69
	18:00	-1.9	2	SW	83
	19:00	-3.2	0	Calm	85
	20:00	-4.1	2	W	90
	21:00	-4.5	2	SSE	91
	22:00	-4.6	2	S	91
	23:00	-4.9	0	Calm	92

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=Favorable Sound Propagation to Site 5 and 6
=Favorable Sound Propagation to Site 2

Date	Time	Temperature (°C)	Wind Speed (kph)	Wind Direction	Rel. Humidity (%)
December 18, 2004	0:00	-5.5	0	Calm	93
	1:00	-6.1	0	Calm	93
	2:00	-6.2	0	Calm	94
	3:00	-7.4	6	SE	95
	4:00	-6	7	SSE	90
	5:00	-7	0	Calm	91
	6:00	-7.6	0	Calm	92
	7:00	-7.6	6	SE	93
	8:00	-7.5	4	SE	88
	9:00	-6.9	7	SE	88
	10:00	-6.1	9	SE	89
	11:00	-2.7	11	SE	83
	12:00	-0.3	13	SE	71
	13:00	0.6	20	SE	67
	14:00	0.3	15	SE	68
	15:00	-0.2	19	ESE	72
	16:00	-0.7	15	SE	75
	17:00	-1	15	SE	78
	18:00	-1.3	17	SE	80
	19:00	-2.3	17	SE	84
	20:00	-3.3	15	SE	86
	21:00	-3.2	15	SE	85
	22:00	-2.9	13	SE	85
	23:00	-2.7	11	SE	85
December 19, 2004	0:00	-3.4	13	ESE	87
	1:00	-4	17	SE	90
	2:00	-4.2	15	SE	90
	3:00	-4.5	13	ESE	91
	4:00	-4.5	11	ESE	91
	5:00	-3.9	6	SE	91
	6:00	-1.1	6	SE	84
	7:00	2	13	ESE	76
	8:00	11.7	28	SW	41
	9:00	10.4	28	SSW	45
	10:00	10.1	13	SSW	50
	11:00	10.9	17	S	52
	12:00	14	19	S	44
	13:00	14.9	9	SW	41
	14:00	14.9	35	W	36
	15:00	7.5	44	NW	58
	16:00	4.6	15	WNW	69
	17:00	4.7	7	NW	66
	18:00	4.1	4	W	68
	19:00	4	13	WNW	71
	20:00	3.3	13	W	70
	21:00	3.1	20	W	55
	22:00	2.7	13	WNW	48
	23:00	2	13	WNW	52

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Job # 2004-1724
Drumheller Weather Data

	=Favorable Sound Propagation to Site 5 and 6
	=Favorable Sound Propagation to Site 2

Date	Time	Temperature (°C)	Wind Speed (kph)	Wind Direction	Rel. Humidity (%)
December 20, 2004	0:00	2.6	13	W	51
	1:00	3.8	19	W	41
	2:00	4.3	19	WNW	33
	3:00	3.6	19	WNW	39
	4:00	3.6	19	WNW	41
	5:00	4.3	37	WNW	37
	6:00	-0.3	44	NNW	82
	7:00	-2.5	30	NNW	87
	8:00	-5.9	26	NNW	78
	9:00	-7.3	19	NW	75
	10:00	-8	20	NW	73
	11:00	-7.5	20	NW	73
	12:00	-7.4	19	NNW	73
	13:00	-8	24	NNW	71
	14:00	-7.6	19	NNW	68
	15:00	-8.3	11	NNW	71
	16:00	-9	11	NNW	73
	17:00	-9.5	9	NNW	77
	18:00	-9.4	7	NW	78
	19:00	-9.9	9	NNW	81
	20:00	-10.5	9	NNW	81
	21:00	-10.8	9	NNW	79
	22:00	-11	7	NNW	81
	23:00	-12	4	NE	83

EnCana Rosebud
Job # 2004-1724
Drumheller Weather Data

= Potential Wind Contamination

Date	Time	Temperature (°C)	Wind Speed (kph)	Wind Direction	Rel. Humidity (%)
November 23, 2004	0:00	-11.7	6	SE	88
	1:00	-11.4	4	SE	88
	2:00	-11.9	2	WSW	86
	3:00	-12.3	6	SSW	88
	4:00	-13	4	SE	88
	5:00	-12.9	7	WNW	87
	6:00	-12	0	Calm	88
	7:00	-11.5	9	ESE	88
	8:00	-11	9	SE	87
	9:00	-10	6	ESE	85
	10:00	-8.3	6	SE	82
	11:00	-4.3	4	SE	70
	12:00	-1	0	Calm	62
	13:00	0.9	2	SW	59
	14:00	2.6	4	ESE	53
	15:00	0.7	6	SE	58
	16:00	-0.8	4	SSE	59
	17:00	-4.6	4	SSE	74
	18:00	-5.3	11	SE	78
	19:00	-5.7	7	SE	79
	20:00	-5.8	9	SE	81
	21:00	-5.5	7	SE	79
	22:00	-6.6	9	SE	84
	23:00	-7.5	9	SE	87
November 24, 2004	0:00	-8.2	9	SE	90
	1:00	-8.1	4	ESE	92
	2:00	-7.7	7	SSE	90
	3:00	-7.8	11	SE	91
	4:00	-7.2	9	ESE	91
	5:00	-7	9	SE	90
	6:00	-6.7	13	SE	89
	7:00	-6.5	13	SE	86
	8:00	-6.3	11	SE	84
	9:00	-6	13	SE	82
	10:00	-5.3	11	SE	80
	11:00	-3.8	13	ESE	77
	12:00	-2.5	11	ESE	74
	13:00	-1.5	9	ESE	72
	14:00	-0.6	9	SE	69
	15:00	-0.3	9	ESE	70
	16:00	-0.5	9	ESE	71
	17:00	-0.6	9	ESE	73
	18:00	-0.7	7	ESE	72
	19:00	-1.1	4	ESE	75
	20:00	-1.3	2	SSE	75
	21:00	-1.9	2	SSE	78
	22:00	-3.9	0	Calm	81
	23:00	-3.2	4	S	82

EnCana Rosebud
Job # 2004-1724
Drumheller Weather Data

= Potential Wind Contamination

Date	Time	Temperature (°C)	Wind Speed (kph)	Wind Direction	Rel. Humidity (%)
November 25, 2004	0:00	-4.7	0	Calm	89
	1:00	-5.7	6	SSE	88
	2:00	-6.6	7	SE	91
	3:00	-6.6	7	SE	93
	4:00	-6	4	E	90
	5:00	-6.9	2	SW	91
	6:00	-7.4	0	Calm	93
	7:00	-7.6	4	WNW	92
	8:00	-6.5	7	W	90
	9:00	-5	6	SSE	95
	10:00	-4.4	4	SSE	93
	11:00	-2.7	0	Calm	89
	12:00	-0.1	2	N	80
	13:00	4.4	17	NW	53
	14:00	4.4	17	NW	47
	15:00	2.3	6	WNW	56
	16:00	0.2	2	SE	64
	17:00	-3.9	2	SE	81
	18:00	-7.1	6	ESE	88
	19:00	-7.2	2	SE	91
	20:00	-7.1	9	SE	86
	21:00	-8.4	13	SE	89
	22:00	-7.8	11	ESE	88
	23:00	-7.5	4	E	87
November 26, 2004	0:00	-8.4	4	ESE	90
	1:00	-8.1	0	Calm	91
	2:00	-9.4	6	WNW	92
	3:00	-9.3	6	NW	90
	4:00	-7.8	6	NW	88
	5:00	-8	4	SW	88
	6:00	-8.8	2	SSW	90
	7:00	-11.1	0	Calm	92
	8:00	-12.8	0	Calm	94
	9:00	-10.8	0	Calm	89
	10:00	-6.3	0	Calm	79
	11:00	-3.8	4	ESE	67
	12:00	-0.1	0	Calm	55
	13:00	2.5	2	E	48
	14:00	4.2	7	W	36
	15:00	3.9	7	SW	37
	16:00	0	4	S	50
	17:00	-3	7	SSE	59
	18:00	-5.2	9	ESE	72
	19:00	-6.4	6	SE	77
	20:00	-6.1	7	SE	70
	21:00	-9.1	0	Calm	80
	22:00	-9.7	9	SE	80
	23:00	-10.2	7	SE	79

EnCana Rosebud
Job # 2004-1724
Drumheller Weather Data

= Potential Wind Contamination

Date	Time	Temperature (°C)	Wind Speed (kph)	Wind Direction	Rel. Humidity (%)
November 27, 2004	0:00	-10.9	9	SE	80
	1:00	-12	9	SE	82
	2:00	-13.5	0	Calm	87
	3:00	-14	2	ESE	87
	4:00	-14.9	0	Calm	89
	5:00	-15.2	0	Calm	87
	6:00	-15.5	0	Calm	88
	7:00	-15.7	0	Calm	89
	8:00	-14.8	2	ESE	90
	9:00	-13.5	4	SE	87
	10:00	-11.5	4	ESE	84
	11:00	-9.8	2	E	82
	12:00	-8.2	0	Calm	77
	13:00	-6.5	2	NNW	76
	14:00	-4.5	0	Calm	76
	15:00	-3.8	0	Calm	77
	16:00	-3.8	0	Calm	79
	17:00	-4	0	Calm	82
	18:00	-4.6	2	NNW	87
	19:00	-6.2	4	ESE	90
	20:00	-6.9	0	Calm	93
	21:00	-8.3	2	NW	94
	22:00	-10.4	2	SE	91
	23:00	-12.1	4	ESE	95
November 28, 2004	0:00	-13.2	4	SE	93
	1:00	-14.3	4	SSE	93
	2:00	-14.1	2	SE	91
	3:00	-12.3	4	S	91
	4:00	-11.9	4	SE	89
	5:00	-13.3	4	ESE	89
	6:00	-14.8	0	Calm	89
	7:00	-15.6	0	Calm	89
	8:00	-14.6	0	Calm	91
	9:00	-13.4	0	Calm	86
	10:00	-10.1	0	Calm	79
	11:00	-7.5	0	Calm	80
	12:00	-3.2	2	SSE	69
	13:00	1.4	9	SSW	53
	14:00	1.7	19	SW	48
	15:00	1.3	13	SW	48
	16:00	-1	7	SSW	57
	17:00	-2.5	4	NNE	59
	18:00	-5.4	7	SE	71
	19:00	-4.3	6	ESE	67
	20:00	-4.4	6	SE	65
	21:00	-4.3	6	SSE	65
	22:00	-4	4	S	59
	23:00	-6.8	4	ESE	72

EnCana Rosebud
Job # 2004-1724
Drumheller Weather Data

= Potential Wind Contamination

Date	Time	Temperature (°C)	Wind Speed (kph)	Wind Direction	Rel. Humidity (%)
November 29, 2004	0:00	-7.8	7	ESE	77
	1:00	-9.5	9	SE	84
	2:00	-10.7	2	ESE	84
	3:00	-12	0	Calm	88
	4:00	-12.7	0	Calm	90
	5:00	-12.9	2	E	92
	6:00	-13.3	0	Calm	92
	7:00	-14.3	0	Calm	89
	8:00	-13.4	2	SE	93
	9:00	-13	2	ESE	91
	10:00	-10.3	6	SE	85
	11:00	-7.4	9	SE	78
	12:00	-3.8	7	ESE	68
	13:00	-1.9	7	SE	62
	14:00	-0.7	7	SE	59
	15:00	-1.7	13	SE	61
	16:00	-3.3	13	SE	67
	17:00	-4.9	9	SSE	73
	18:00	-5.7	4	SE	76
	19:00	-5.4	4	ESE	75
	20:00	-7.1	2	SSE	84
	21:00	-7.1	4	NNW	84
	22:00	-7.7	0	Calm	85
	23:00	-9.9	6	ESE	91
November 30, 2004	0:00	-11.4	0	Calm	89
	1:00	-12.1	0	Calm	91
	2:00	-12.8	0	Calm	92
	3:00	-12.8	0	Calm	91
	4:00	-12	0	Calm	91
	5:00	-10.6	2	ENE	90
	6:00	-9.6	2	NW	88
	7:00	-8.8	4	ENE	87
	8:00	-9.4	0	Calm	85
	9:00	-9.7	2	SE	86
	10:00	-6.3	2	NW	78
	11:00	-5.2	0	Calm	75
	12:00	-0.6	2	ESE	58
	13:00	3.1	0	Calm	46
	14:00	5.1	9	WNW	43
	15:00	5.5	13	NNW	43
	16:00	3.7	6	WNW	49
	17:00	1.6	0	Calm	58
	18:00	-0.5	6	SE	67
	19:00	-0.8	2	SE	71
	20:00	-1.3	2	ESE	72
	21:00	-1.9	4	SE	74
	22:00	-1.7	4	E	71
	23:00	-2.4	7	ESE	73

EnCana Rosebud
Job # 2004-1724
Drumheller Weather Data

= Potential Wind Contamination

Date	Time	Temperature (°C)	Wind Speed (kph)	Wind Direction	Rel. Humidity (%)
December 1, 2004	0:00	-2.3	4	S	72
	1:00	-3.1	2	SE	76
	2:00	-3.5	2	SE	77
	3:00	-5	0	Calm	81
	4:00	-5.5	0	Calm	84
	5:00	-7.4	0	Calm	88
	6:00	-6.9	2	ESE	90
	7:00	-6.2	0	Calm	88
	8:00	-4.6	4	SE	80
	9:00	-4.4	2	WNW	83
	10:00	-3.3	4	NW	80
	11:00	-0.3	2	E	66
	12:00	1	0	Calm	59
	13:00	3.1	2	WNW	53
	14:00	5.6	11	W	45
	15:00	4.9	9	WNW	48
	16:00	4.8	13	WNW	49
	17:00	3.9	7	W	52
	18:00	2.8	2	WNW	59
	19:00	0.3	2	W	71
	20:00	-1.1	2	ESE	73
	21:00	-0.4	2	NNE	70
	22:00	-0.2	6	ESE	68
	23:00	1.5	6	Calm	57
December 2, 2004	0:00	1.9	6	SW	52
	1:00	2.1	6	W	51
	2:00	0.8	6	E	56
	3:00	2.7	7	SSW	51
	4:00	0.4	6	ESE	62
	5:00	-0.9	6	SSE	67
	6:00	-2.9	7	SE	71
	7:00	-2.5	15	SE	70
	8:00	-1.7	6	SE	70
	9:00	5.1	6	NW	45
	10:00	7.4	13	NW	38
	11:00	9.1	19	W	33
	12:00	10.6	33	WNW	39
	13:00	9.3	33	NW	51
	14:00	8.5	20	WNW	58
	15:00	7.9	28	W	63
	16:00	6.5	19	WNW	69
	17:00	6.8	13	WNW	66
	18:00	7.5	24	WNW	66
	19:00	5.9	7	W	75
	20:00	4.6	4	WNW	80
	21:00	4.2	2	S	81
	22:00	5.6	6	S	69
	23:00	5.3	6	E	69

EnCana Rosebud
Job # 2004-1724
Drumheller Weather Data

= Potential Wind Contamination

Date	Time	Temperature (°C)	Wind Speed (kph)	Wind Direction	Rel. Humidity (%)
December 3, 2004	0:00	4.4	6	SE	65
	1:00	3.2	4	E	64
	2:00	4.1	4	WNW	56
	3:00	1.9	6	SE	65
	4:00	3	6	SSE	64
	5:00	4.5	2	W	58
	6:00	5.4	7	SSW	56
	7:00	7	4	E	50
	8:00	10.3	9	W	38
	9:00	7.7	11	SE	47
	10:00	6.5	4	SE	53
	11:00	12.8	24	WSW	33
	12:00	11	17	WSW	39
	13:00	11.6	9	W	37
	14:00	11.2	6	NNW	39
	15:00	10.5	2	NNW	39
	16:00	7.4	2	Calm	51
	17:00	6.6	2	W	51
	18:00	7.1	13	NNE	56
	19:00	5.3	0	Calm	62
	20:00	3.2	0	Calm	71
	21:00	2.1	4	SW	76
	22:00	2.7	6	NNW	69
	23:00	1.9	0	Calm	73
December 4, 2004	0:00	0.9	0	Calm	77
	1:00	1.2	0	Calm	76
	2:00	0.4	4	ESE	81
	3:00	0.1	0	Calm	84
	4:00	0.1	2	ESE	83
	5:00	1.4	7	WNW	76
	6:00	1.1	7	WNW	83
	7:00	0.7	0	Calm	85
	8:00	0.1	0	Calm	88
	9:00	0.3	0	Calm	88
	10:00	0.6	0	Calm	91
	11:00	0.9	2	W	92
	12:00	1.2	4	SW	92
	13:00	1.4	11	E	88
	14:00	-1.3	13	E	85
	15:00	-2.8	15	ESE	84
	16:00	-5	20	E	85
	17:00	-6.4	15	E	83
	18:00	-7	13	E	83
	19:00	-8	17	E	82
	20:00	-8.8	9	E	83
	21:00	-9.7	19	ESE	83
	22:00	-10	15	E	79
	23:00	-10.3	13	E	76

EnCana Rosebud
Job # 2004-1724
Drumheller Weather Data

= Potential Wind Contamination

Date	Time	Temperature (°C)	Wind Speed (kph)	Wind Direction	Rel. Humidity (%)
December 5, 2004	0:00	-10.8	17	E	77
	1:00	-10.9	15	E	76
	2:00	-11.4	11	E	84
	3:00	-11.5	9	ESE	82
	4:00	-11.5	11	E	77
	5:00	-11.3	6	E	75
	6:00	-11.3	11	E	77
	7:00	-11.2	11	ESE	75
	8:00	-11.2	11	ESE	81
	9:00	-11.2	11	ESE	84
	10:00	-10.8	9	ESE	85
	11:00	-10.3	2	NNW	86
	12:00	-10.2	7	W	86
	13:00	-10	9	NNW	83
	14:00	-10.5	13	NNW	81
	15:00	-11	11	NW	81
	16:00	-11.8	15	NW	80
	17:00	-12.2	15	NW	80
	18:00	-13.1	17	NW	78
	19:00	-13.2	19	NW	76
	20:00	-13.4	19	NW	74
	21:00	-13.7	13	WNW	75
	22:00	-14	15	WNW	77
	23:00	-15.8	7	WNW	80
December 6, 2004	0:00	-16.9	6	WNW	80
	1:00	-17.3	7	W	79
	2:00	-17.3	4	NW	80
	3:00	-17.5	4	WNW	80
	4:00	-17.2	4	WNW	80
	5:00	-19.4	0	Calm	83
	6:00	-19.6	4	WSW	83
	7:00	-19.1	4	W	83
	8:00	-19.9	2	SSW	82
	9:00	-20.8	4	NW	82
	10:00	-19.1	0	Calm	82
	11:00	-18.3	2	NNW	79
	12:00	-16.5	2	WNW	71
	13:00	-14.4	2	WSW	64
	14:00	-14	4	W	62
	15:00	-15.3	0	Calm	70
	16:00	-17.8	0	Calm	75
	17:00	-19.3	0	Calm	82
	18:00	-19.6	4	ESE	86
	19:00	-18.7	6	SE	81
	20:00	-18.5	7	SE	81
	21:00	-18.2	6	SE	79
	22:00	-17.7	7	ESE	80
	23:00	-16.9	11	SE	80

EnCana Rosebud
Job # 2004-1724
Drumheller Weather Data

= Potential Wind Contamination

Date	Time	Temperature (°C)	Wind Speed (kph)	Wind Direction	Rel. Humidity (%)
December 7, 2004	0:00	-17.8	13	SE	80
	1:00	-17.9	4	E	82
	2:00	-17.4	2	E	80
	3:00	-16.9	4	ESE	80
	4:00	-16.6	4	S	80
	5:00	-16.4	2	E	79
	6:00	-16.2	0	Calm	78
	7:00	-16	0	Calm	78
	8:00	-15.9	0	Calm	79
	9:00	-15.7	0	Calm	78
	10:00	-15.3	4	WNW	78
	11:00	-14.8	4	WNW	75
	12:00	-14.2	4	NNW	70
	13:00	-12.9	2	SSW	65
	14:00	-13.7	4	SSE	68
	15:00	-13.9	6	SE	72
	16:00	-14.8	11	ESE	76
	17:00	-15.7	11	SE	77
	18:00	-15.8	15	ESE	78
	19:00	-16.7	15	ESE	78
	20:00	-16.9	13	ESE	79
	21:00	-17.1	11	ESE	81
	22:00	-18	15	ESE	80
	23:00	-19.1	13	SE	82

EnCana Rosebud
Job # 2004-1724
Drumheller Weather Data

= Potential Wind Contamination

Date	Time	Temperature (°C)	Wind Speed (kph)	Wind Direction	Rel. Humidity (%)
December 8, 2004	0:00	-18.9	13	SE	81
	1:00	-18.6	15	SE	81
	2:00	-19.6	13	SE	82
	3:00	-20.2	11	SSE	82
	4:00	-20.1	15	SE	83
	5:00	-18.8	9	ESE	82
	6:00	-17.4	7	ESE	83
	7:00	-16.6	13	SE	83
	8:00	-15.7	19	ESE	87
	9:00	-15.3	11	ESE	85
	10:00	-14.5	15	ESE	83
	11:00	-13.4	13	SE	79
	12:00	-13.1	13	ESE	79
	13:00	-12.8	17	ESE	79
	14:00	-12.7	15	ESE	80
	15:00	-13	17	ESE	83
	16:00	-12.9	11	SE	81
	17:00	-13.2	6	SSE	82
	18:00	-12.9	11	ESE	79
	19:00	-12.8	4	SSE	79
	20:00	-12.6	4	ESE	80
	21:00	-12.4	0	Calm	80
	22:00	-12.2	0	Calm	81
	23:00	-11.9	2	N	80
December 9, 2004	0:00	-11.9	2	NNW	82
	1:00	-12.3	6	W	82
	2:00	-12.7	6	WNW	82
	3:00	-15	4	WNW	86
	4:00	-16.4	6	NW	85
	5:00	-17	4	W	86
	6:00	-18.5	4	SE	86
	7:00	-19.3	2	E	86
	8:00	-19.7	6	SE	84
	9:00	-18.7	4	SE	82
	10:00	-16.2	6	ESE	78
	11:00	-13.9	6	ESE	72
	12:00	-11	7	SE	70
	13:00	-8	9	SE	66
	14:00	-6.5	7	SE	64
	15:00	-6.9	11	SE	68
	16:00	-9.4	11	SE	77
	17:00	-10.8	11	SE	81
	18:00	-10.8	13	SE	82
	19:00	-11.3	7	SSE	82
	20:00	-12.2	4	SE	85
	21:00	-12.6	6	SE	87
	22:00	-11.9	0	Calm	85
	23:00	-11.6	0	Calm	85

EnCana Rosebud
Job # 2004-1724
Drumheller Weather Data

= Potential Wind Contamination

Date	Time	Temperature (°C)	Wind Speed (kph)	Wind Direction	Rel. Humidity (%)
December 10, 2004	0:00	-11.5	2	E	86
	1:00	-11	2	Calm	87
	2:00	-10.2	2	ESE	86
	3:00	-8.6	4	SSE	84
	4:00	-9.1	2	S	87
	5:00	-9.3	0	Calm	87
	6:00	-10.4	2	NNW	89
	7:00	-10.3	0	Calm	92
	8:00	-9.5	0	Calm	91
	9:00	-7.8	2	E	88
	10:00	-5	9	SE	76
	11:00	-4.1	7	ESE	75
	12:00	-1.7	15	ESE	74
	13:00	-0.3	11	SSE	74
	14:00	0.3	9	SE	74
	15:00	0.5	15	ESE	76
	16:00	-1.2	19	SE	82
	17:00	-1.5	19	SE	84
	18:00	-1.5	17	SE	87
	19:00	-1.3	13	SE	90
	20:00	7.4	19	S	68
	21:00	7.4	20	S	67
	22:00	7.4	19	S	65
	23:00	7.8	15	S	63
December 11, 2004	0:00	4.4	4	W	75
	1:00	1.7	0	Calm	87
	2:00	3.8	9	SE	79
	3:00	3.9	7	SSE	78
	4:00	8.1	28	SW	65
	5:00	5.2	22	N	69
	6:00	3.8	7	WNW	76
	7:00	2.2	6	NW	87
	8:00	1.9	9	WNW	89
	9:00	1.6	20	WNW	94
	10:00	1.7	19	WNW	91
	11:00	2.7	17	NW	81
	12:00	2.9	19	NW	69
	13:00	3.2	22	NW	56
	14:00	2.7	19	WNW	62
	15:00	2.8	19	WNW	60
	16:00	1.9	26	WNW	61
	17:00	1	28	NW	65
	18:00	0	17	WNW	70
	19:00	-0.6	11	NNW	75
	20:00	-1.8	13	NW	79
	21:00	-3.6	4	NW	84
	22:00	-4.9	6	WNW	90
	23:00	-6.6	0	Calm	93

EnCana Rosebud
Job # 2004-1724
Drumheller Weather Data

= Potential Wind Contamination

Date	Time	Temperature (°C)	Wind Speed (kph)	Wind Direction	Rel. Humidity (%)
December 12, 2004	0:00	-7.2	7	WNW	95
	1:00	-8.1	0	Calm	95
	2:00	-7.8	4	WSW	94
	3:00	-8.5	2	NNW	92
	4:00	-9.6	0	Calm	93
	5:00	-10.4	0	Calm	93
	6:00	-6.6	7	W	83
	7:00	-5.1	9	W	72
	8:00	-7	2	NW	81
	9:00	-9	6	SE	85
	10:00	-7.3	7	SE	79
	11:00	-4.3	0	Calm	73
	12:00	-2	0	Calm	64
	13:00	0.4	4	SSE	55
	14:00	1.8	4	Calm	50
	15:00	3.4	0	Calm	50
	16:00	-1	4	NNW	67
	17:00	-3.1	4	WNW	74
	18:00	-4.9	6	SW	79
	19:00	-7.3	2	WNW	89
	20:00	-8.9	0	Calm	91
	21:00	-9.7	4	WNW	93
	22:00	-10.2	2	W	92
	23:00	-11	0	Calm	93
December 13, 2004	0:00	-12.5	0	Calm	92
	1:00	-13.2	0	Calm	92
	2:00	-13.6	0	Calm	92
	3:00	-13.5	0	Calm	92
	4:00	-14.1	0	Calm	91
	5:00	-14.3	4	ESE	91
	6:00	-14.3	6	SE	88
	7:00	-14.6	2	E	89
	8:00	-14.1	11	SE	87
	9:00	-13.7	6	ESE	88
	10:00	-11.4	9	ESE	84
	11:00	-8	11	ESE	82
	12:00	-4.6	19	ESE	74
	13:00	-1.9	11	SE	63
	14:00	-0.5	15	ESE	55
	15:00	-0.9	22	SE	57
	16:00	-1.8	15	ESE	63
	17:00	-2	13	ESE	68
	18:00	-0.4	13	E	59
	19:00	-0.2	7	E	57
	20:00	-0.5	19	SE	59
	21:00	-1.6	9	ESE	66
	22:00	-2	19	SE	69
	23:00	-3.2	15	SE	75

EnCana Rosebud
Job # 2004-1724
Drumheller Weather Data

[redacted] = Potential Wind Contamination

Date	Time	Temperature (°C)	Wind Speed (kph)	Wind Direction	Rel. Humidity (%)
December 14, 2004	0:00	-4.1	11	SE	80
	1:00	-4.3	15	SE	81
	2:00	-4.4	13	SE	81
	3:00	-5.4	15	ESE	85
	4:00	-5.8	17	SE	87
	5:00	-5.2	13	SE	86
	6:00	-5.5	17	SE	87
	7:00	-4.2	15	SE	85
	8:00	-5.2	11	SE	87
	9:00	-4.1	6	ESE	85
	10:00	-3.7	0	Calm	85
	11:00	-1.7	2	NW	79
	12:00	-0.3	4	WNW	77
	13:00	0.4	6	W	76
	14:00	0.8	4	WNW	75
	15:00	4.7	0	Calm	60
	16:00	0.7	2	W	77
	17:00	-1.5	0	Calm	88
	18:00	-2.9	0	Calm	94
	19:00	-4.7	0	Calm	95
	20:00	-4.8	0	Calm	96
	21:00	-5	0	Calm	96
	22:00	-4.9	0	Calm	96
	23:00	-3.9	2	ESE	96
December 15, 2004	0:00	-3.3	4	NW	94
	1:00	-3.8	0	Calm	94
	2:00	-3.8	6	SE	96
	3:00	-4.1	0	Calm	96
	4:00	-5.7	0	Calm	96
	5:00	-5.6	2	WSW	97
	6:00	-4	7	SW	96
	7:00	-4.8	2	S	93
	8:00	-6.6	0	Calm	94
	9:00	-6.5	0	Calm	95
	10:00	-3.1	0	Calm	85
	11:00	-0.1	6	WNW	75
	12:00	3.1	7	WNW	65
	13:00	5.6	6	NW	57
	14:00	6.2	7	WNW	56
	15:00	5.7	9	WNW	58
	16:00	3.5	4	W	66
	17:00	-0.6	2	SE	81
	18:00	-3.1	0	Calm	91
	19:00	-5.3	6	SE	92
	20:00	-5	6	SE	96
	21:00	-5.1	2	SE	94
	22:00	-6.2	9	SE	96
	23:00	-6.5	9	SE	93

EnCana Rosebud
Job # 2004-1724
Drumheller Weather Data

= Potential Wind Contamination

Date	Time	Temperature (°C)	Wind Speed (kph)	Wind Direction	Rel. Humidity (%)
December 16, 2004	0:00	-7.6	0	Calm	94
	1:00	-8.9	0	Calm	95
	2:00	-9.8	4	WNW	95
	3:00	-9.3	2	SSW	94
	4:00	-9.4	4	W	95
	5:00	-9.8	0	Calm	95
	6:00	-10.8	2	NW	93
	7:00	-11	2	WNW	92
	8:00	-11.2	0	Calm	92
	9:00	-10.6	4	SE	92
	10:00	-8.4	7	ESE	88
	11:00	-5.9	7	ESE	89
	12:00	-1.6	4	ESE	80
	13:00	0.2	7	ESE	75
	14:00	1.9	9	SE	72
	15:00	1.6	13	SE	76
	16:00	1.6	11	SE	75
	17:00	0.4	13	SE	80
	18:00	0.4	4	ESE	78
	19:00	1	4	SSW	77
	20:00	0.5	0	Calm	78
	21:00	0.8	2	W	82
	22:00	10.2	15	W	46
	23:00	8.1	11	WNW	53
December 17, 2004	0:00	8.7	19	WNW	47
	1:00	8.7	19	W	44
	2:00	6.3	6	NW	49
	3:00	1.9	2	ESE	68
	4:00	0.1	4	SSW	75
	5:00	0	4	S	76
	6:00	-1.6	4	SSE	82
	7:00	-4.2	2	ESE	88
	8:00	-5.1	2	SSW	89
	9:00	-4.5	4	SSW	91
	10:00	-2	0	Calm	80
	11:00	1.4	2	WSW	67
	12:00	3.2	4	ESE	60
	13:00	4.5	2	ESE	55
	14:00	6.4	2	NNE	49
	15:00	7.3	0	Calm	47
	16:00	3.1	4	SW	63
	17:00	0.5	0	Calm	69
	18:00	-1.9	2	SW	83
	19:00	-3.2	0	Calm	85
	20:00	-4.1	2	W	90
	21:00	-4.5	2	SSE	91
	22:00	-4.6	2	S	91
	23:00	-4.9	0	Calm	92

EnCana Rosebud
Job # 2004-1724
Drumheller Weather Data

= Potential Wind Contamination

Date	Time	Temperature (°C)	Wind Speed (kph)	Wind Direction	Rel. Humidity (%)
December 18, 2004	0:00	-5.5	0	Calm	93
	1:00	-6.1	0	Calm	93
	2:00	-6.2	0	Calm	94
	3:00	-7.4	6	SE	95
	4:00	-6	7	SSE	90
	5:00	-7	0	Calm	91
	6:00	-7.6	0	Calm	92
	7:00	-7.6	6	SE	93
	8:00	-7.5	4	SE	88
	9:00	-6.9	7	SE	88
	10:00	-6.1	9	SE	89
	11:00	-2.7	11	SE	83
	12:00	-0.3	13	SE	71
	13:00	0.6	20	SE	67
	14:00	0.3	15	SE	68
	15:00	-0.2	19	ESE	72
	16:00	-0.7	15	SE	75
	17:00	-1	15	SE	78
	18:00	-1.3	17	SE	80
	19:00	-2.3	17	SE	84
	20:00	-3.3	15	SE	86
	21:00	-3.2	15	SE	85
	22:00	-2.9	13	SE	85
	23:00	-2.7	11	SE	85
December 19, 2004	0:00	-3.4	13	ESE	87
	1:00	-4	17	SE	90
	2:00	-4.2	15	SE	90
	3:00	-4.5	13	ESE	91
	4:00	-4.5	11	ESE	91
	5:00	-3.9	6	SE	91
	6:00	-1.1	6	SE	84
	7:00	2	13	ESE	76
	8:00	11.7	28	SW	41
	9:00	10.4	28	SSW	45
	10:00	10.1	13	SSW	50
	11:00	10.9	17	S	52
	12:00	14	19	S	44
	13:00	14.9	9	SW	41
	14:00	14.9	35	W	36
	15:00	7.5	44	NW	58
	16:00	4.6	15	WNW	69
	17:00	4.7	7	NW	66
	18:00	4.1	4	W	68
	19:00	4	13	WNW	71
	20:00	3.3	13	W	70
	21:00	3.1	20	W	55
	22:00	2.7	13	WNW	48
	23:00	2	13	WNW	52

EnCana Rosebud
Job # 2004-1724
Drumheller Weather Data

= Potential Wind Contamination

Date	Time	Temperature (°C)	Wind Speed (kph)	Wind Direction	Rel. Humidity (%)
December 20, 2004	0:00	2.6	13	W	51
	1:00	3.8	19	W	41
	2:00	4.3	19	WNW	33
	3:00	3.6	19	WNW	39
	4:00	3.6	19	WNW	41
	5:00	4.3	37	WNW	37
	6:00	-0.3	44	NNW	82
	7:00	-2.5	30	NNW	87
	8:00	-5.9	26	NNW	78
	9:00	-7.3	19	NW	75
	10:00	-8	20	NW	73
	11:00	-7.5	20	NW	73
	12:00	-7.4	19	NNW	73
	13:00	-8	24	NNW	71
	14:00	-7.6	19	NNW	68
	15:00	-8.3	11	NNW	71
	16:00	-9	11	NNW	73
	17:00	-9.5	9	NNW	77
	18:00	-9.4	7	NW	78
	19:00	-9.9	9	NNW	81
	20:00	-10.5	9	NNW	81
	21:00	-10.8	9	NNW	79
	22:00	-11	7	NNW	81
	23:00	-12	4	NE	83

APPENDIX E1

Measurement Results
Graphs of 1-Minute L_{eq}, L_{10} and L_{90} Data
Site 1

Patching Associates Acoustical Engineering Ltd.

Consultants in Acoustics, Noise Control and Vibrations

Table E1.1
EnCana Rosebud
Site 1 Noise Survey
Daily Leq Values

Date	Time	Figure #	Measured		Residual	
			Leq	Hours	Leq	Hours
Nov. 23, 2004	07:00 - 21:59	1, 2	58.9	8.3	58.9	8.3
Nov. 23, 2004 - Nov. 24, 2004	**22:00 - 06:59**	**3**	**58.2**	**9.0**	**58.2**	**9.0**
Nov. 24, 2004	07:00 - 21:59	4, 5	59.5	14.4	59.5	14.4
Nov 24, 2004 - Nov 25, 2004	**22:00 - 06:59**	**6**	**58.3**	**9.0**	**58.3**	**9.0**
Nov. 25, 2004	07:00 - 21:59	7, 8	58.0	15.0	58.0	15.0
Nov. 25, 2004 - Nov. 26, 2004	**22:00 - 06:59**	**9**	**58.0**	**9.0**	**58.0**	**9.0**
Nov. 26, 2004	07:00 - 21:59	10, 11	58.7	14.6	58.7	14.6
Nov 26, 2004 - Nov 27, 2004	**22:00 - 06:59**	**12**	**59.0**	**9.0**	**59.0**	**9.0**
Nov. 27, 2004	07:00 - 21:59	13, 14	58.6	15.0	58.6	15.0
Nov. 27, 2004 - Nov. 28, 2004	**22:00 - 06:59**	**15**	**58.8**	**9.0**	**58.8**	**9.0**
Nov. 28, 2004	07:00 - 21:59	16, 17	58.9	15.0	58.9	15.0
Nov. 28, 2004 - Nov. 29, 2004	**22:00 - 06:59**	**18**	**59.0**	**9.0**	**59.0**	**9.0**
Nov. 29, 2004	07:00 - 21:59	19, 20	59.1	13.9	59.1	13.9
Nov. 29, 2004 - Nov. 30, 2004	**22:00 - 06:59**	**21**	**59.1**	**9.0**	**59.1**	**9.0**
Nov. 30, 2004	07:00 - 21:59	22, 23	59.0	15.0	59.0	15.0
Nov. 30, 2004 - Dec. 01, 2004	**22:00 - 06:59**	**24**	**58.9**	**9.0**	**58.9**	**9.0**
Dec. 01, 2004	07:00 - 21:59	25, 26	59.3	15.0	59.3	15.0
Dec. 01, 2004 - Dec. 02, 2004	**22:00 - 06:59**	**27**	**58.3**	**9.0**	**58.3**	**9.0**
Dec. 02, 2004	07:00 - 21:59	28, 29	60.8	15.0	60.8	15.0
Dec. 02, 2004 - Dec. 03, 2004	**22:00 - 06:59**	**30**	**59.6**	**9.0**	**59.6**	**9.0**
Dec. 03, 2004	07:00 - 21:59	31, 32	60.5	14.5	60.5	14.5
Dec. 03, 2004 - Dec. 04, 2004	**22:00 - 06:59**	**33**	**59.3**	**9.0**	**59.3**	**9.0**
Dec. 04, 2004	07:00 - 21:59	34, 35	58.7	15.0	58.7	15.0
Dec. 04, 2004 - Dec. 05, 2004	**22:00 - 06:59**	**36**	**58.4**	**9.0**	**58.4**	**9.0**
Dec. 05, 2004	07:00 - 21:59	37, 38	57.7	15.0	57.7	15.0
Dec. 05, 2004 - Dec. 06, 2004	**22:00 - 06:59**	**39**	**58.4**	**9.0**	**58.4**	**9.0**
Dec. 06, 2004	07:00 - 21:59	40, 41	59.1	14.4	59.1	14.4
Dec. 06, 2004 - Dec. 07, 2004	**22:00 - 06:59**	**42**	**59.1**	**9.0**	**59.1**	**9.0**
Dec. 07, 2004	07:00 - 21:59	43, 44	58.3	15.0	58.3	15.0
Dec. 07, 2004 - Dec. 08, 2004	**22:00 - 06:59**	**45**	**57.9**	**9.0**	**57.9**	**9.0**
Dec. 08, 2004	07:00 - 21:59	46, 47	57.4	15.0	57.4	15.0
Dec. 08, 2004 - Dec. 09, 2004	**22:00 - 06:59**	**48**	**57.6**	**9.0**	**57.6**	**9.0**
Dec. 09, 2004	07:00 - 21:59	49, 50	58.0	15.0	58.0	15.0
Dec. 09, 2004 - Dec. 10, 2004	**22:00 - 06:59**	**51**	**58.2**	**9.0**	**58.2**	**9.0**
Dec. 10, 2004	07:00 - 21:59	52, 53	59.1	14.4	59.1	14.4
Dec. 10, 2004 - Dec. 11, 2004	**22:00 - 06:59**	**54**	**60.8**	**9.0**	**60.8**	**9.0**
Dec. 11, 2004	07:00 - 21:59	55, 56	60.5	15.0	60.5	15.0
Dec. 11, 2004 - Dec. 12, 2004	**22:00 - 06:59**	**57**	**59.9**	**9.0**	**59.9**	**9.0**
Dec. 12, 2004	07:00 - 21:59	58, 59	59.5	15.0	59.5	15.0
Dec. 12, 2004 - Dec. 13, 2004	**22:00 - 06:59**	**60**	**59.8**	**9.0**	**59.8**	**9.0**
Dec. 13, 2004	07:00 - 21:59	61, 62	59.4	14.5	59.4	14.5
Dec. 13, 2004 - Dec. 14, 2004	**22:00 - 06:59**	**63**	**60.1**	**9.0**	**60.1**	**9.0**
Dec. 14, 2004	07:00 - 21:59	64, 65	60.2	15.0	60.2	15.0
Dec. 14, 2004 - Dec. 15, 2004	**22:00 - 06:59**	**66**	**59.6**	**9.0**	**59.6**	**9.0**
Dec. 15, 2004	07:00 - 21:59	67, 68	58.2	15.0	58.2	15.0
Dec 15, 2004 - Dec 16, 2004	**22:00 - 06:59**	**69**	**41.3**	**9.0**	**29.7**	**8.5**
Dec. 16, 2004	07:00 - 21:59	70, 71	60.1	15.0	60.1	15.0
Dec. 16, 2004 - Dec. 17, 2004	**22:00 - 06:59**	**72**	**60.0**	**9.0**	**60.0**	**9.0**
Dec. 17, 2004	07:00 - 21:59	73, 74	59.5	14.4	59.5	14.4
Dec 17, 2004 - Dec 18, 2004	**22:00 - 06:59**	**75**	**58.7**	**9.0**	**58.7**	**9.0**
Dec. 18, 2004	07:00 - 21:59	76, 77	59.0	15.0	59.0	15.0
Dec. 18, 2004 - Dec. 19, 2004	**22:00 - 06:59**	**78**	**59.1**	**9.0**	**59.1**	**9.0**
Dec. 19, 2004	07:00 - 21:59	79, 80	61.3	15.0	61.3	15.0
Dec. 19, 2004 - Dec. 20, 2004	**22:00 - 06:59**	**81**	**61.0**	**9.0**	**61.0**	**9.0**
Dec. 20, 2004	07:00 - 21:59	82, 83	59.5	6.6	59.5	6.6

Figure E1.1

EnCana Rosebud

Site 1 Noise Survey

Nov. 23, 2004 07:00 - 14:29

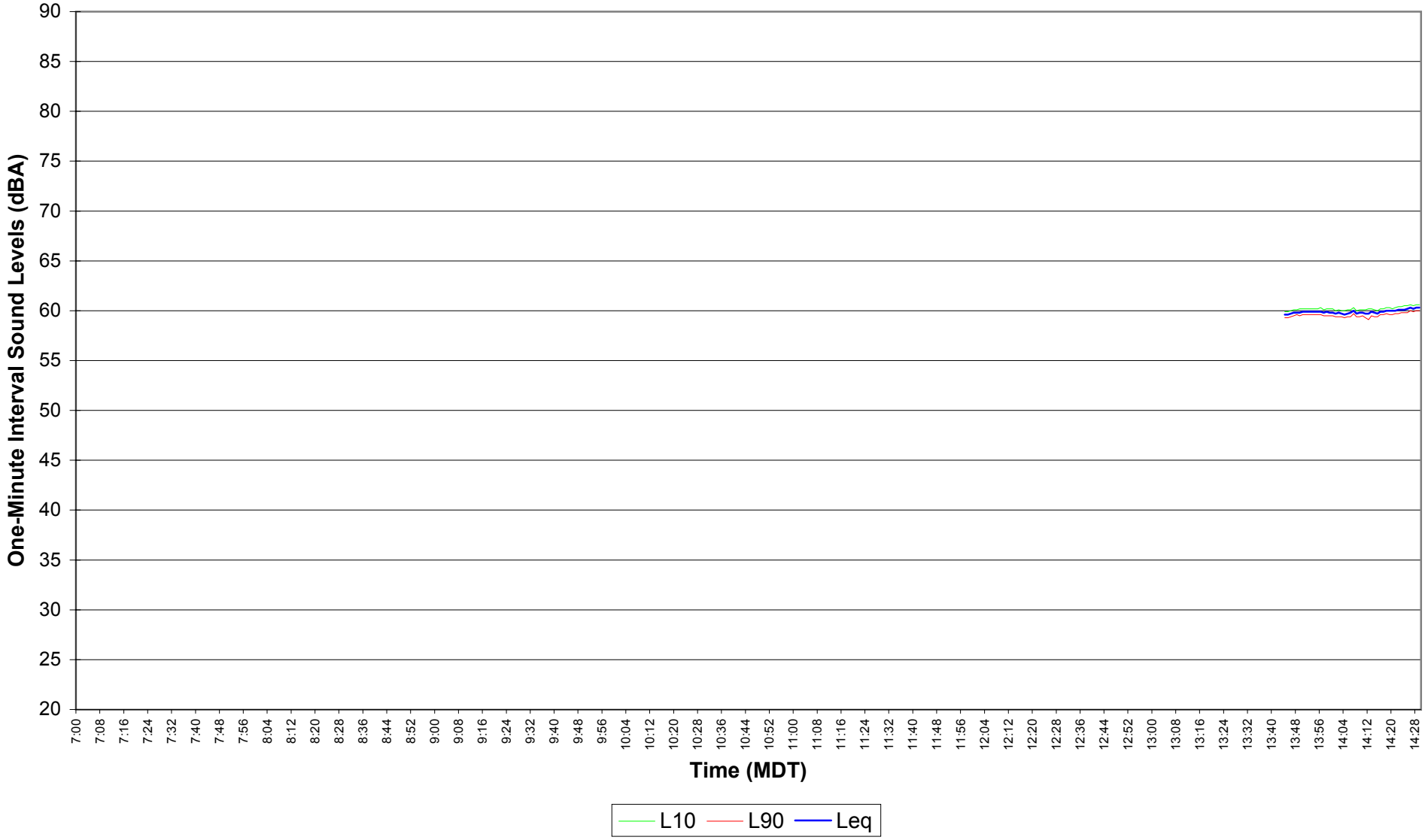


Figure E1.2
EnCana Rosebud
Site 1 Noise Survey
Nov. 23, 2004 14:30 - 21:59

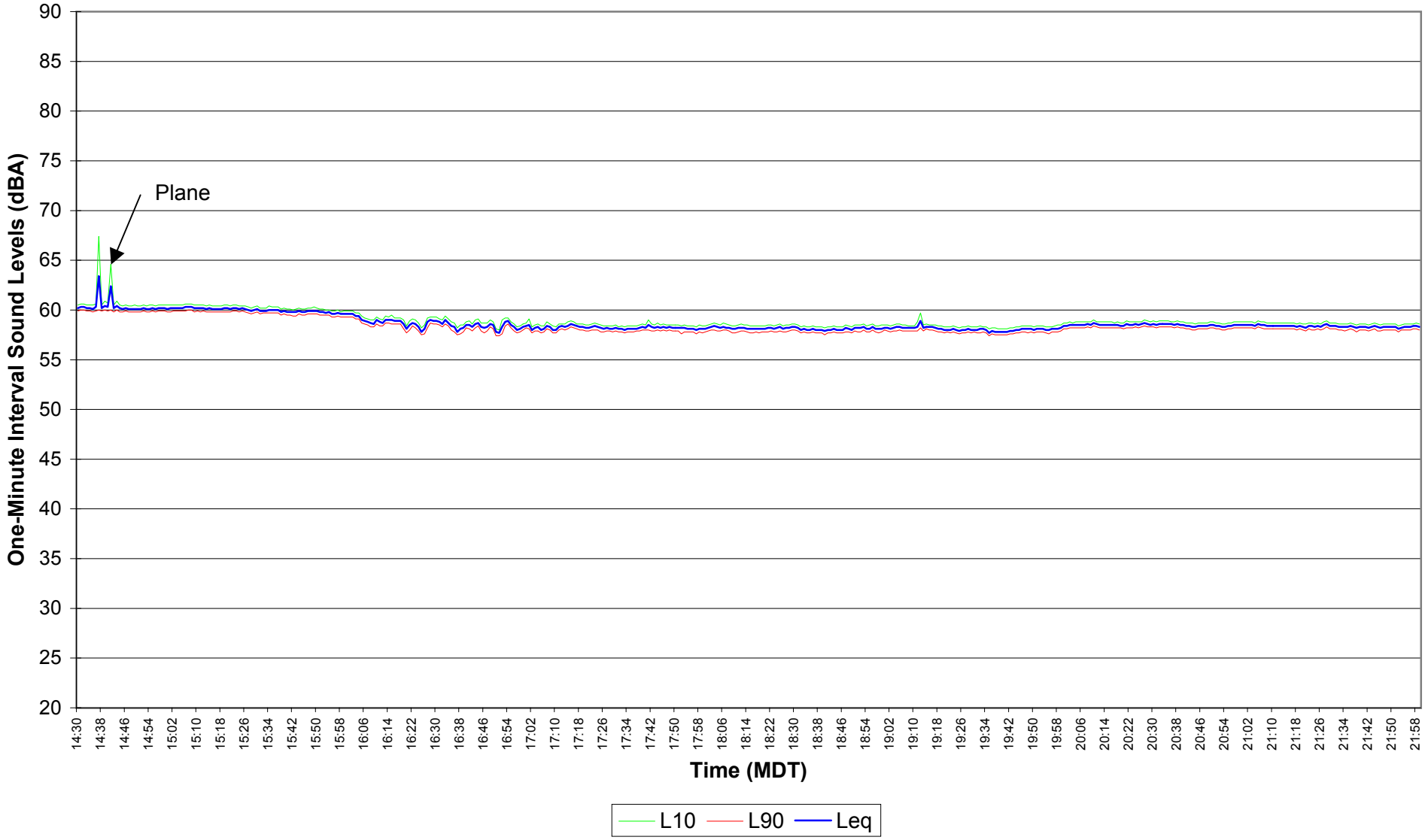


Figure E1.3
EnCana Rosebud
Site 1 Noise Survey
Nov. 23, 2004 - Nov. 24, 2004 22:00 - 06:59

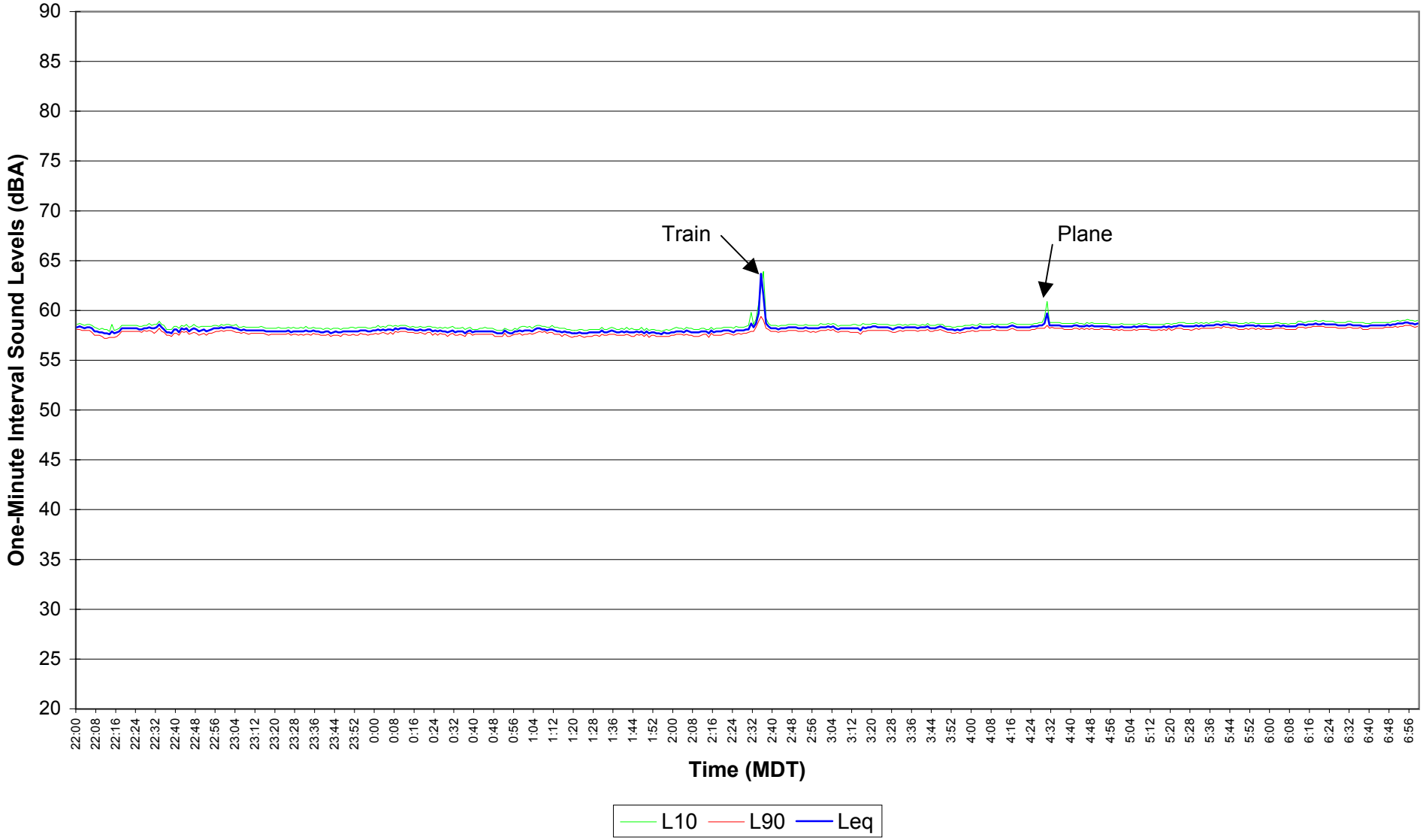


Figure E1.4
EnCana Rosebud
Site 1 Noise Survey
Nov. 24, 2004 07:00 - 14:29

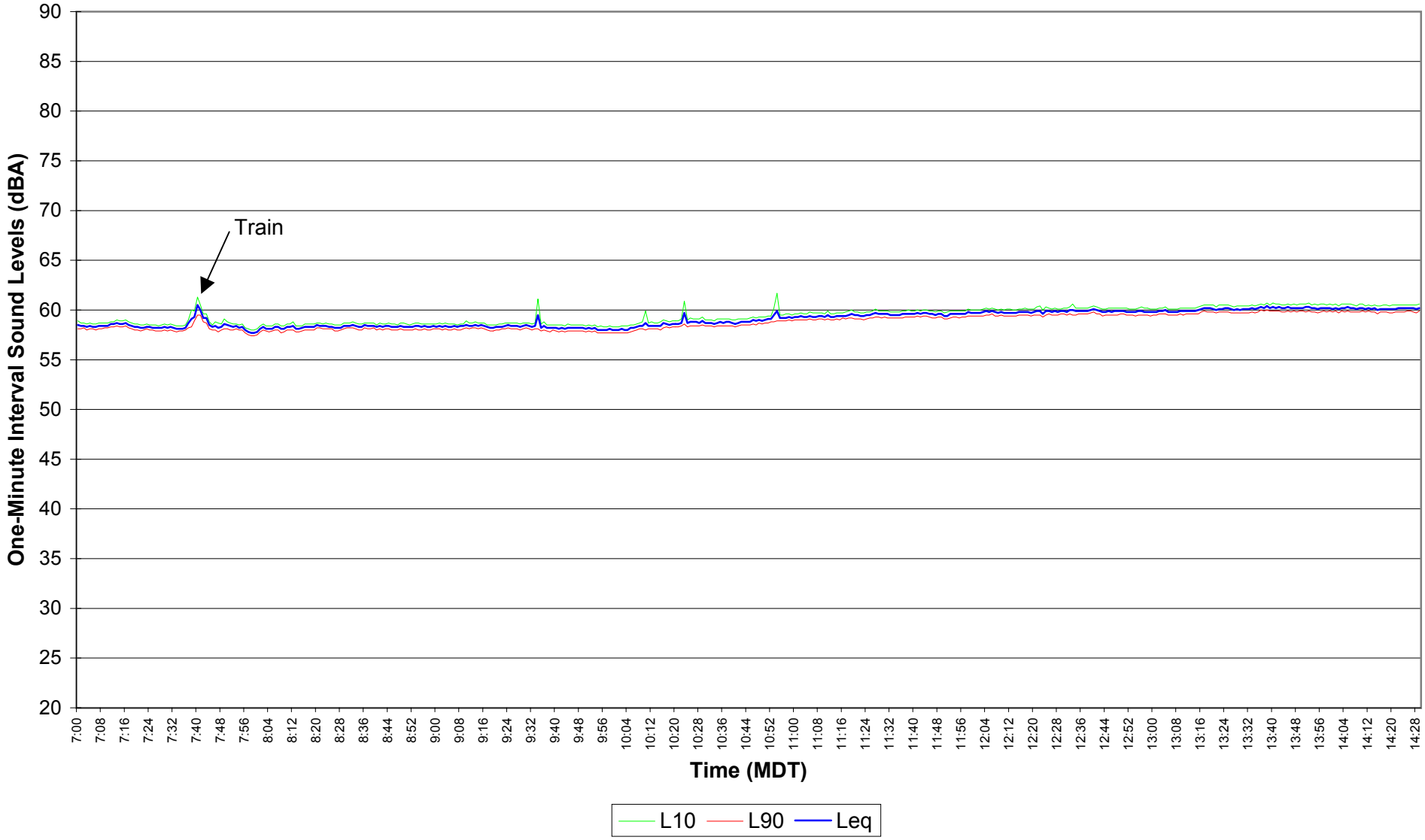


Figure E1.5
EnCana Rosebud
Site 1 Noise Survey
Nov. 24, 2004 14:30 - 21:59

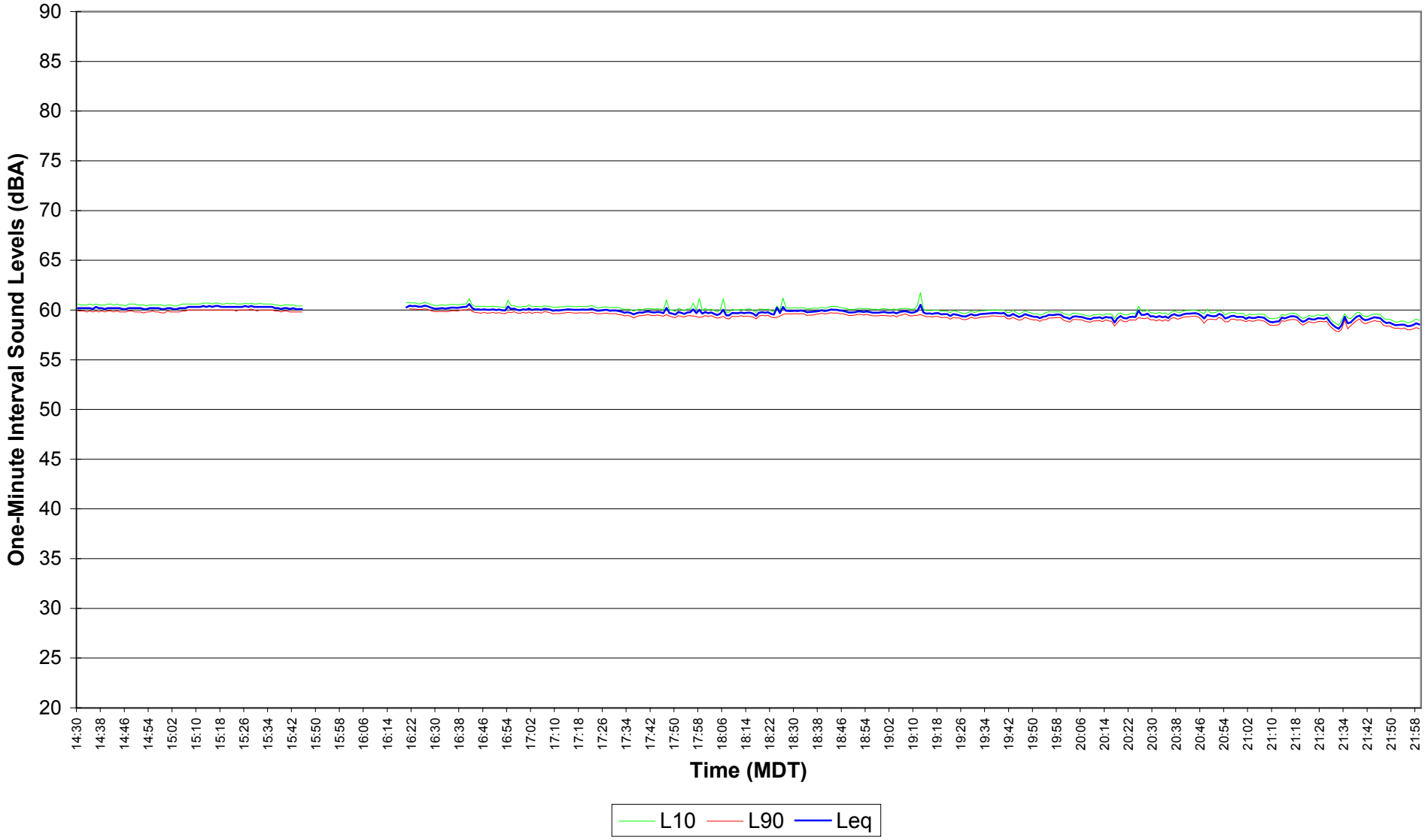


Figure E1.6
EnCana Rosebud
Site 1 Noise Survey
Nov 24, 2004 - Nov 25, 2004 22:00 - 06:59

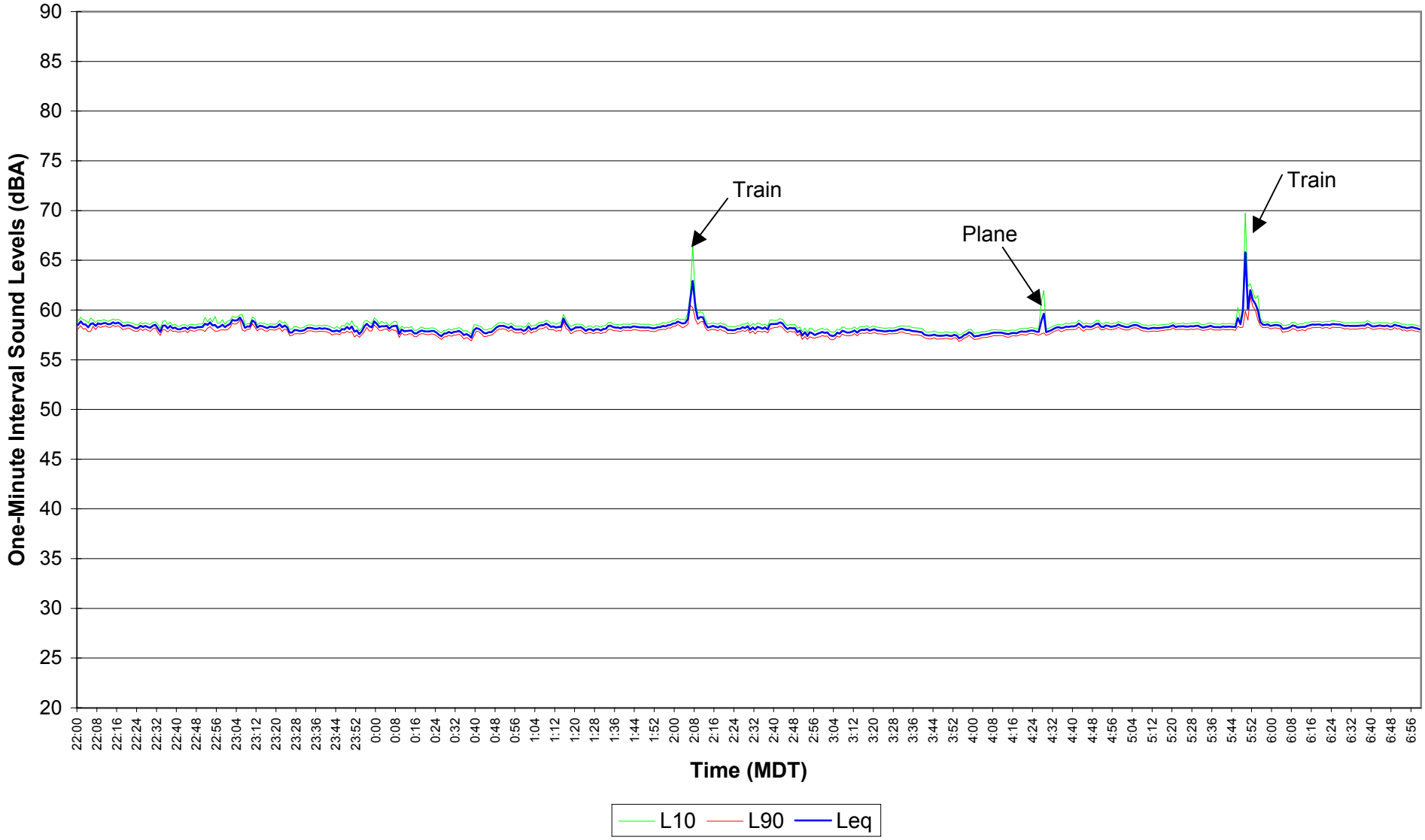


Figure E1.7
EnCana Rosebud
Site 1 Noise Survey
Nov. 25, 2004 07:00 - 14:29

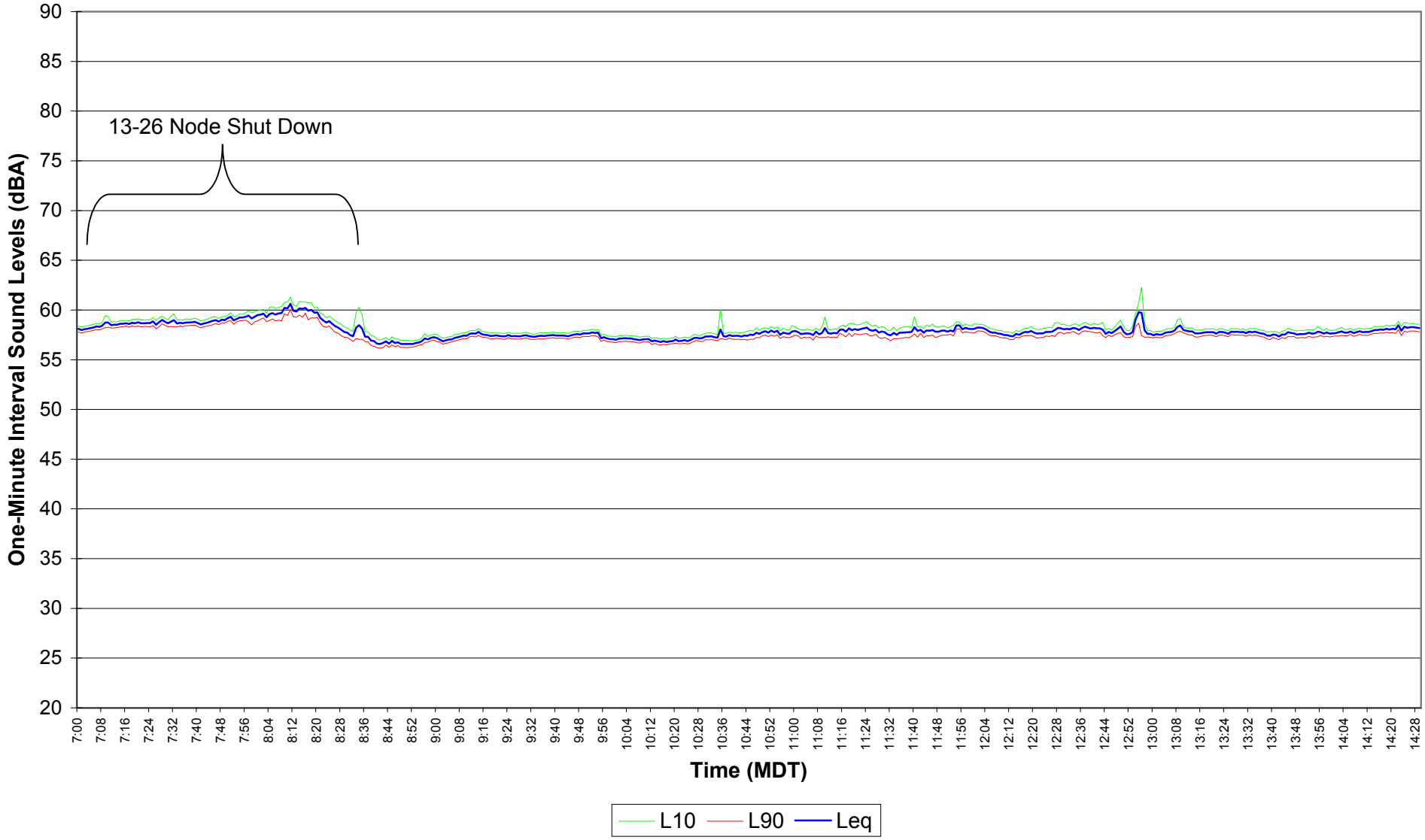


Figure E1.8
EnCana Rosebud
Site 1 Noise Survey
Nov. 25, 2004 14:30 - 21:59

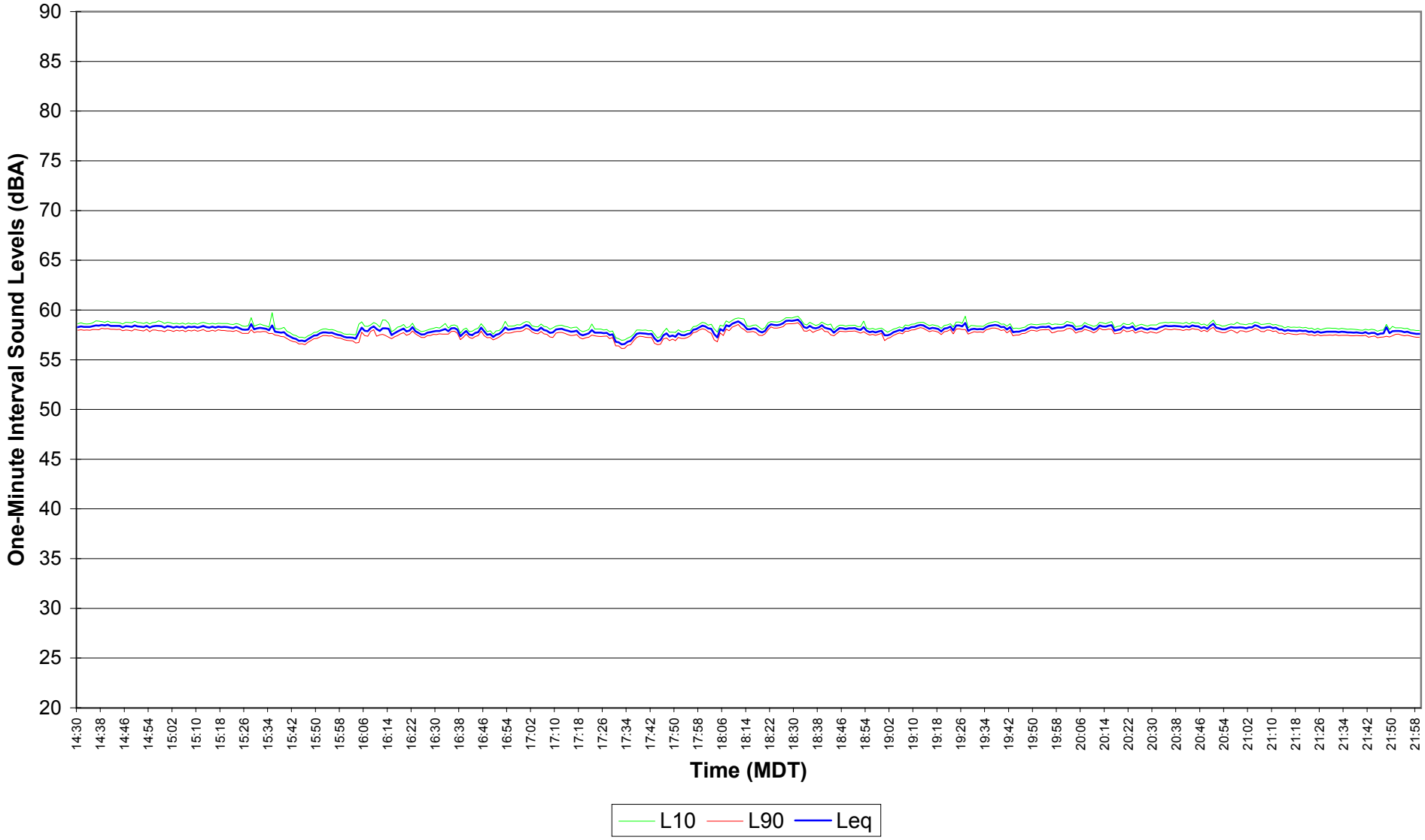


Figure E1.9
EnCana Rosebud
Site 1 Noise Survey
Nov. 25, 2004 - Nov. 26, 2004 22:00 - 06:59

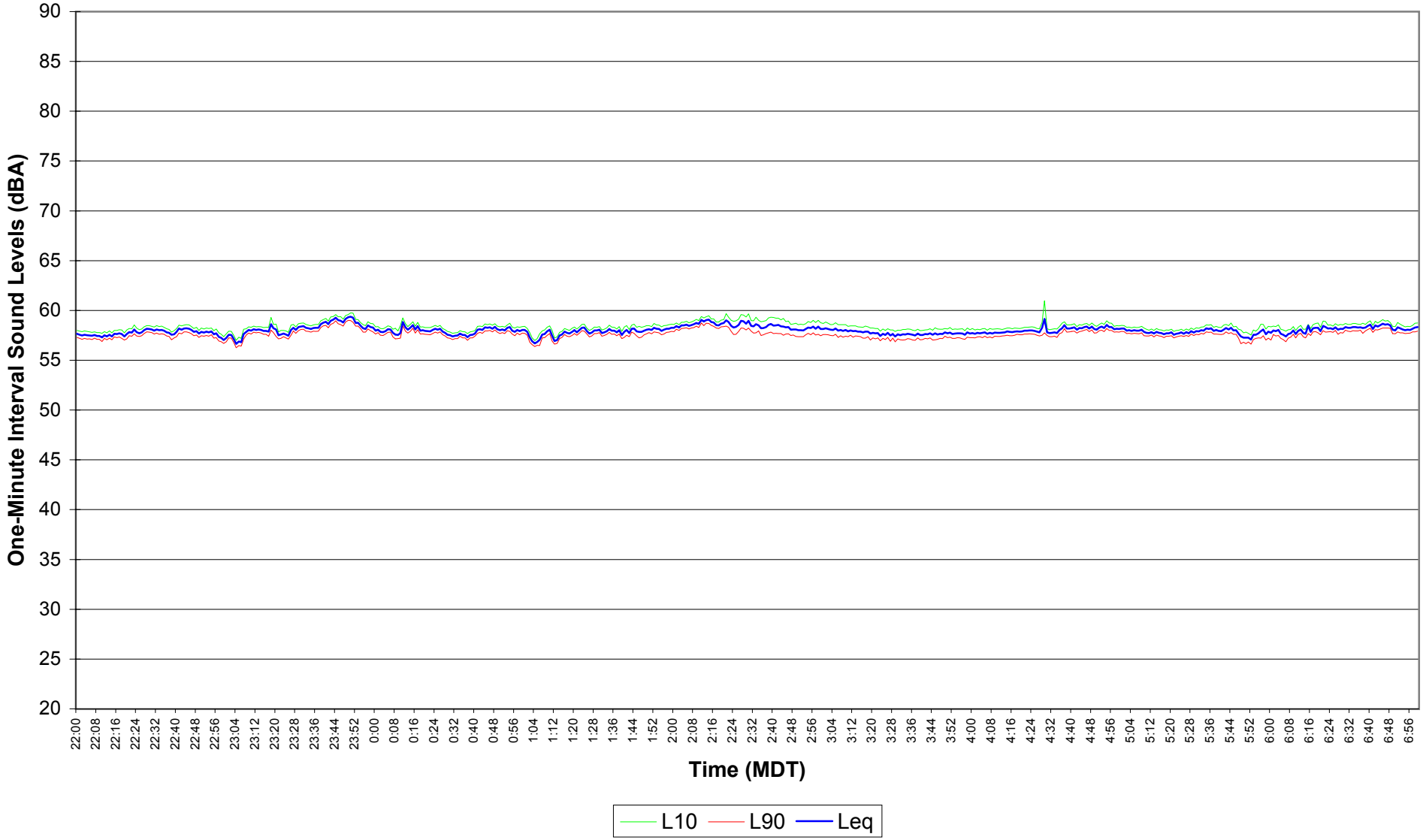


Figure E1.10
EnCana Rosebud
Site 1 Noise Survey
Nov. 26, 2004 07:00 - 14:29

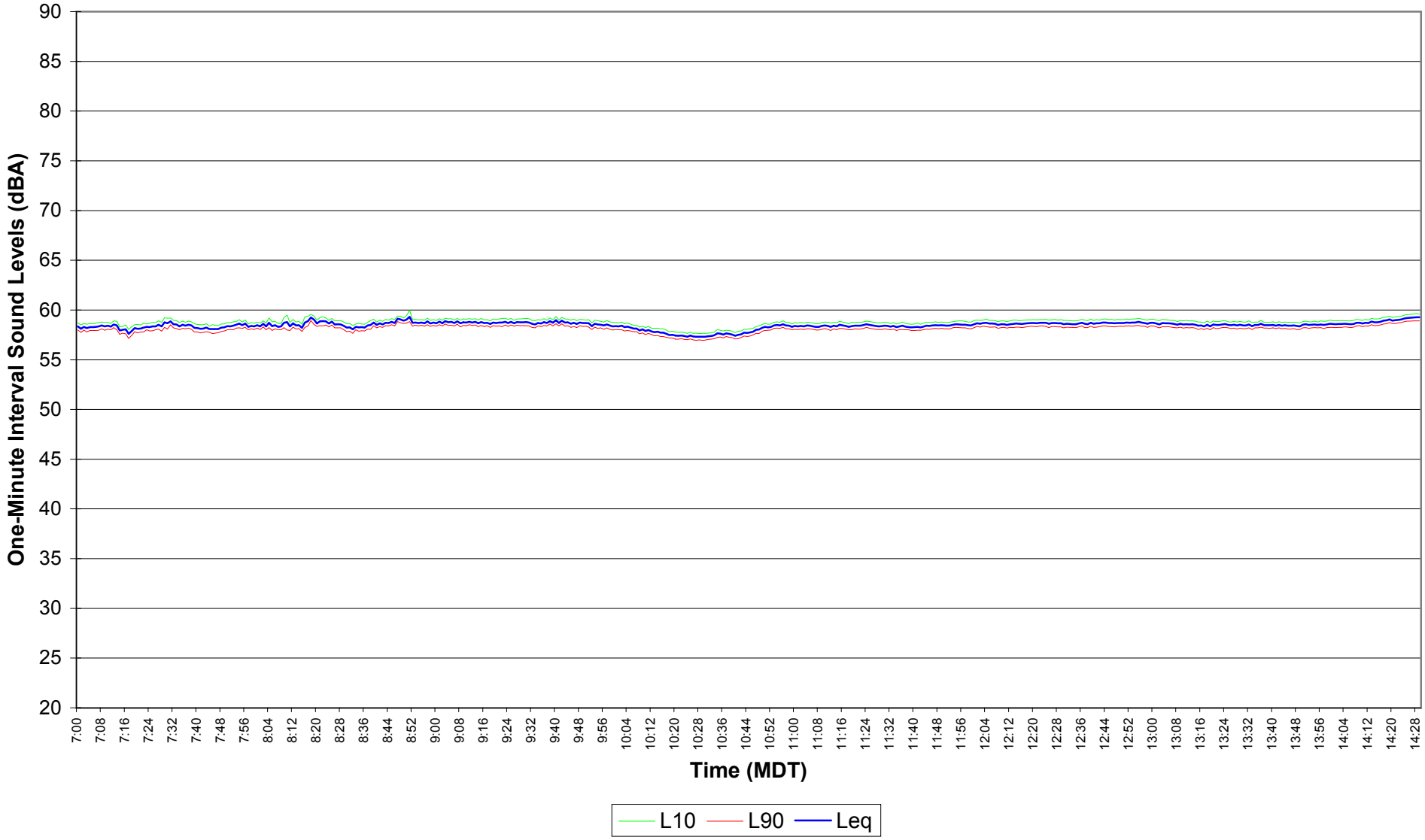


Figure E1.11
EnCana Rosebud
Site 1 Noise Survey
Nov. 26, 2004 14:30 - 21:59

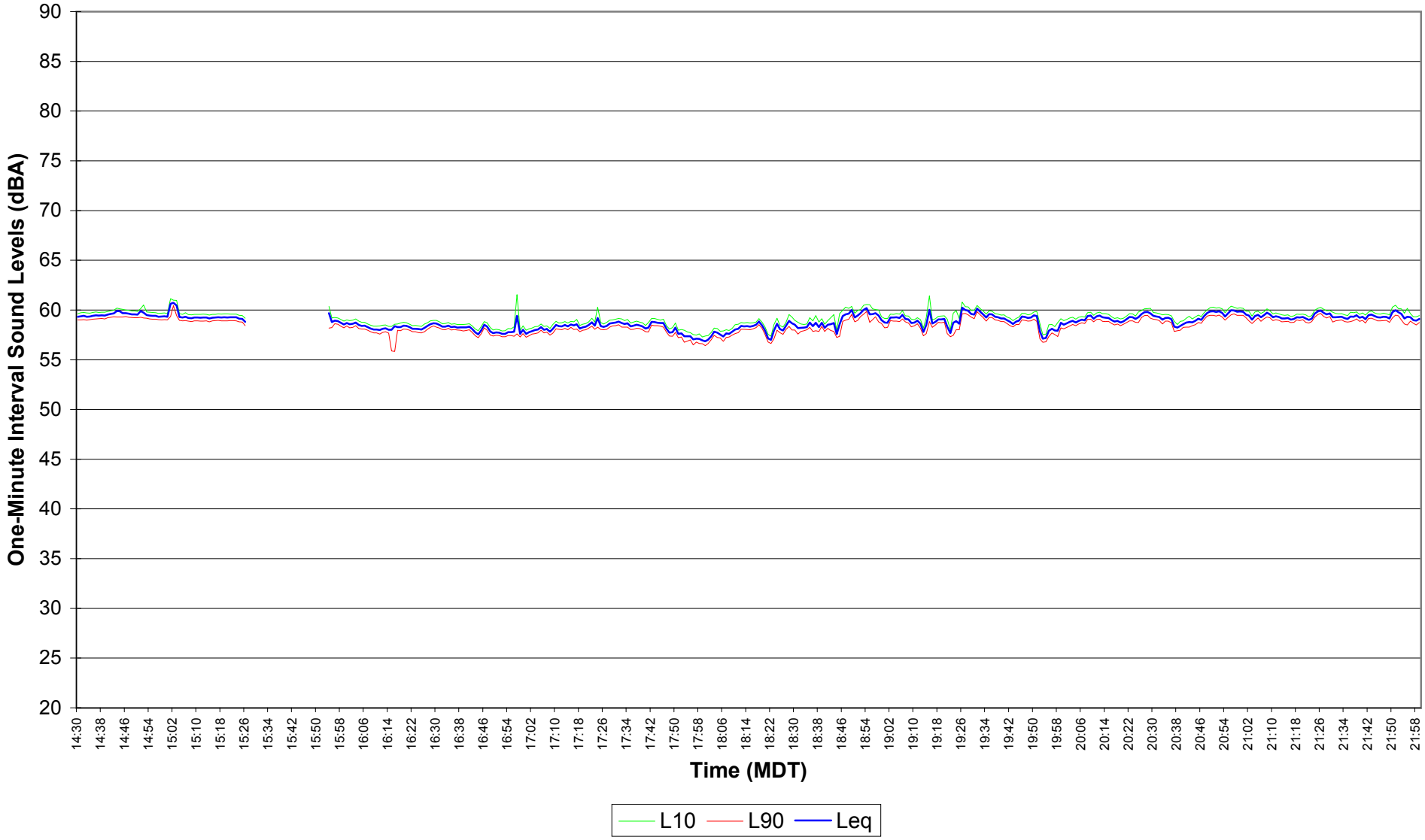


Figure E1.12
EnCana Rosebud
Site 1 Noise Survey
Nov 26, 2004 - Nov 27, 2004 22:00 - 06:59

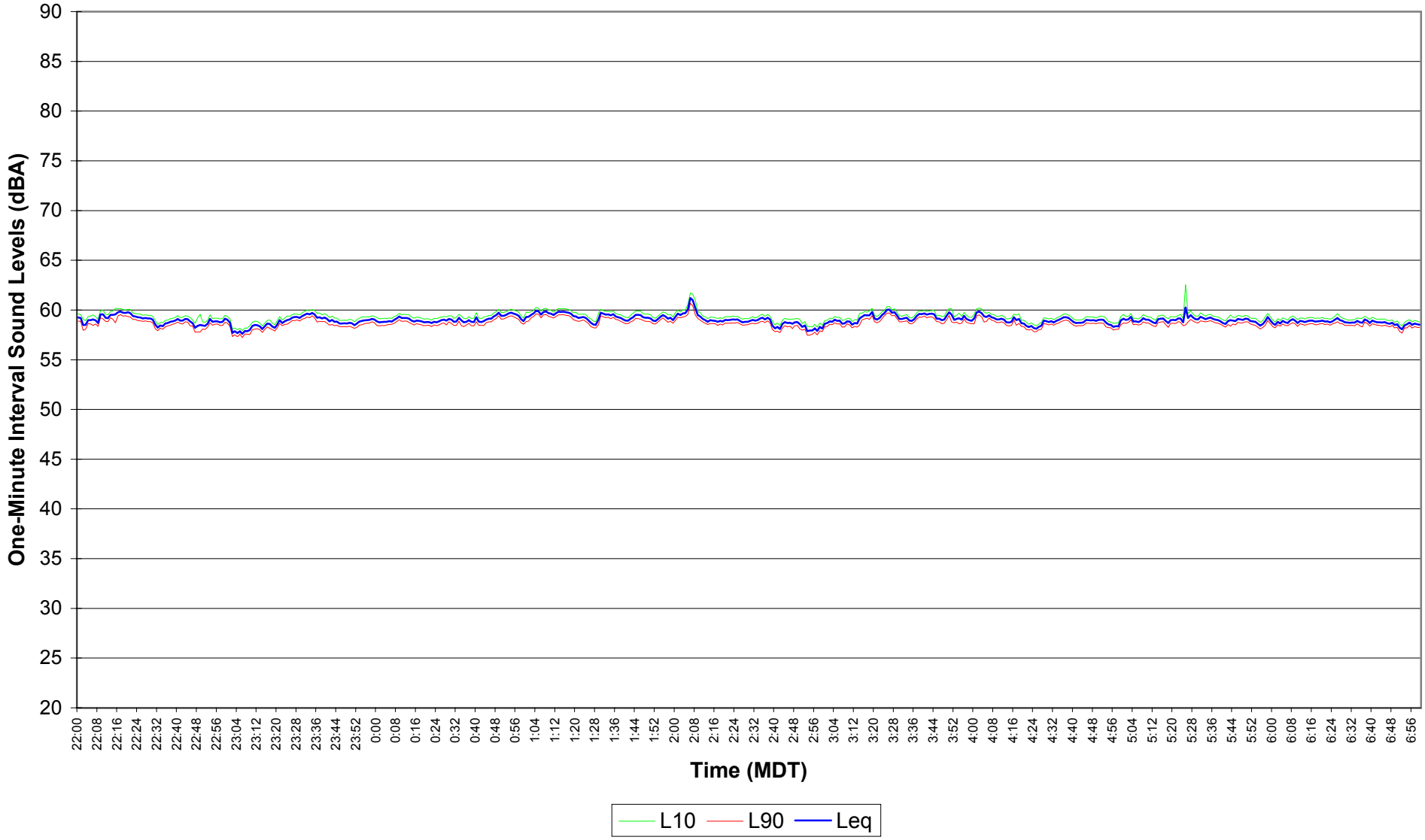


Figure E1.13
EnCana Rosebud
Site 1 Noise Survey
Nov. 27, 2004 07:00 - 14:29

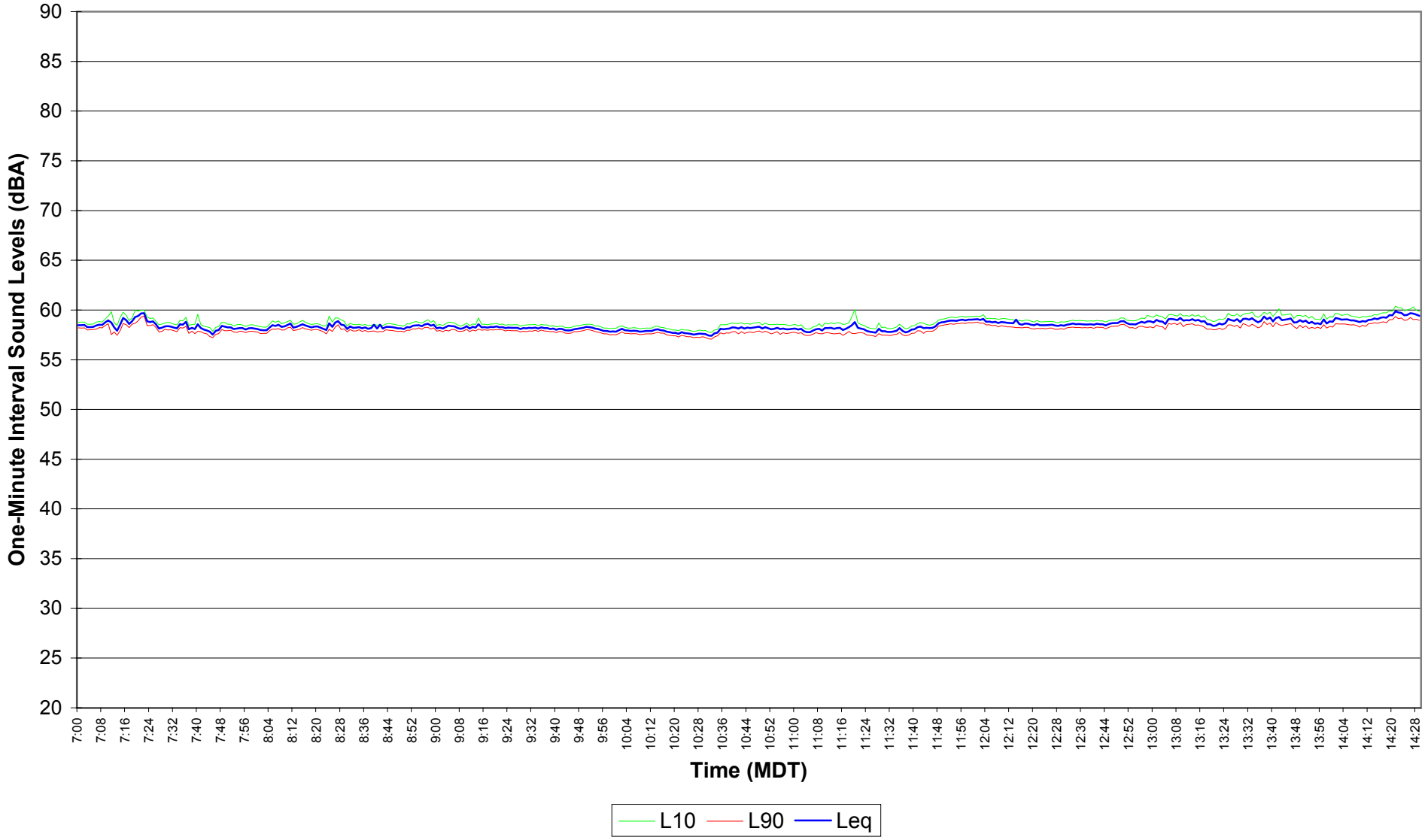


Figure E1.14
EnCana Rosebud
Site 1 Noise Survey
Nov. 27, 2004 14:30 - 21:59

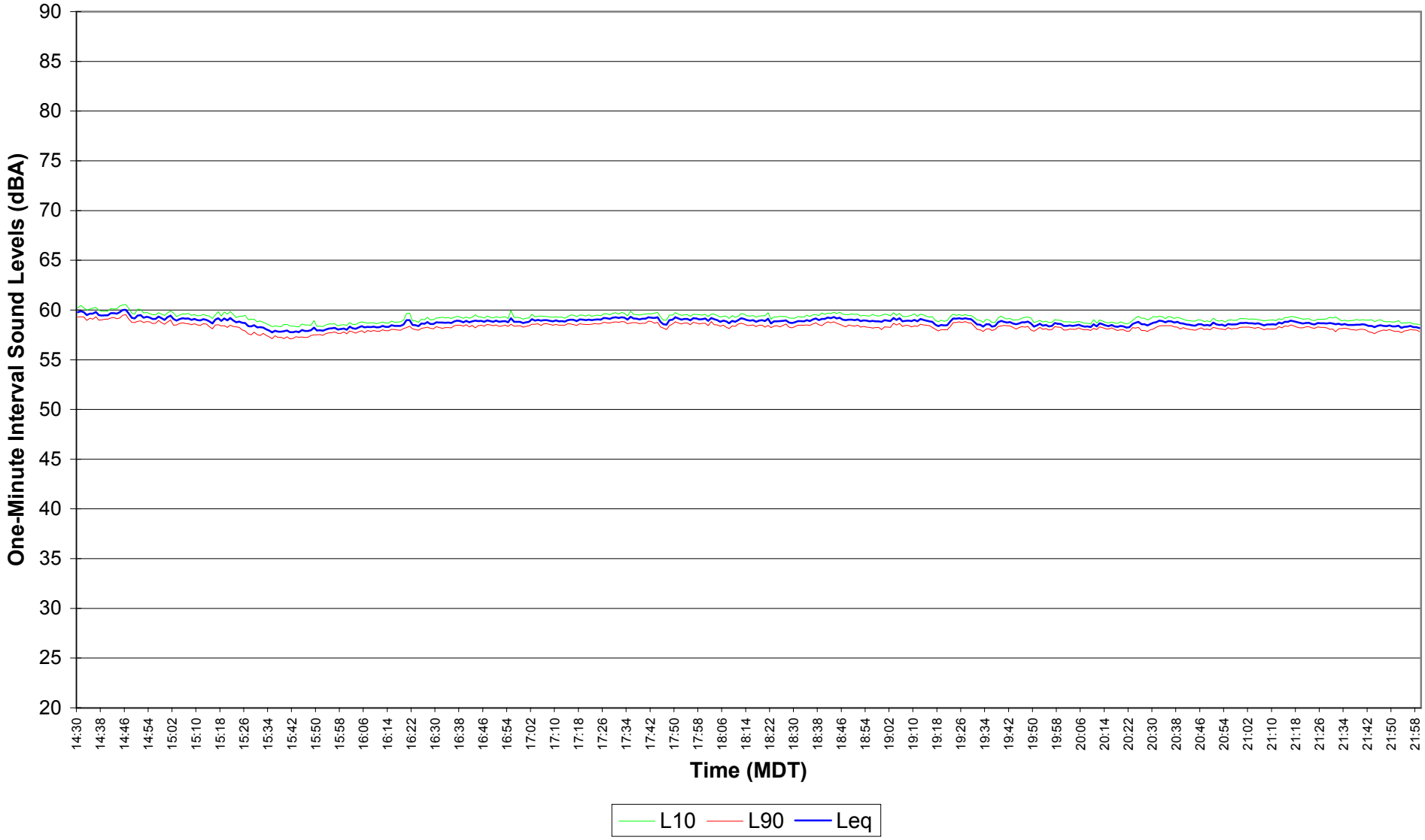


Figure E1.15
EnCana Rosebud
Site 1 Noise Survey
Nov. 27, 2004 - Nov. 28, 2004 22:00 - 06:59

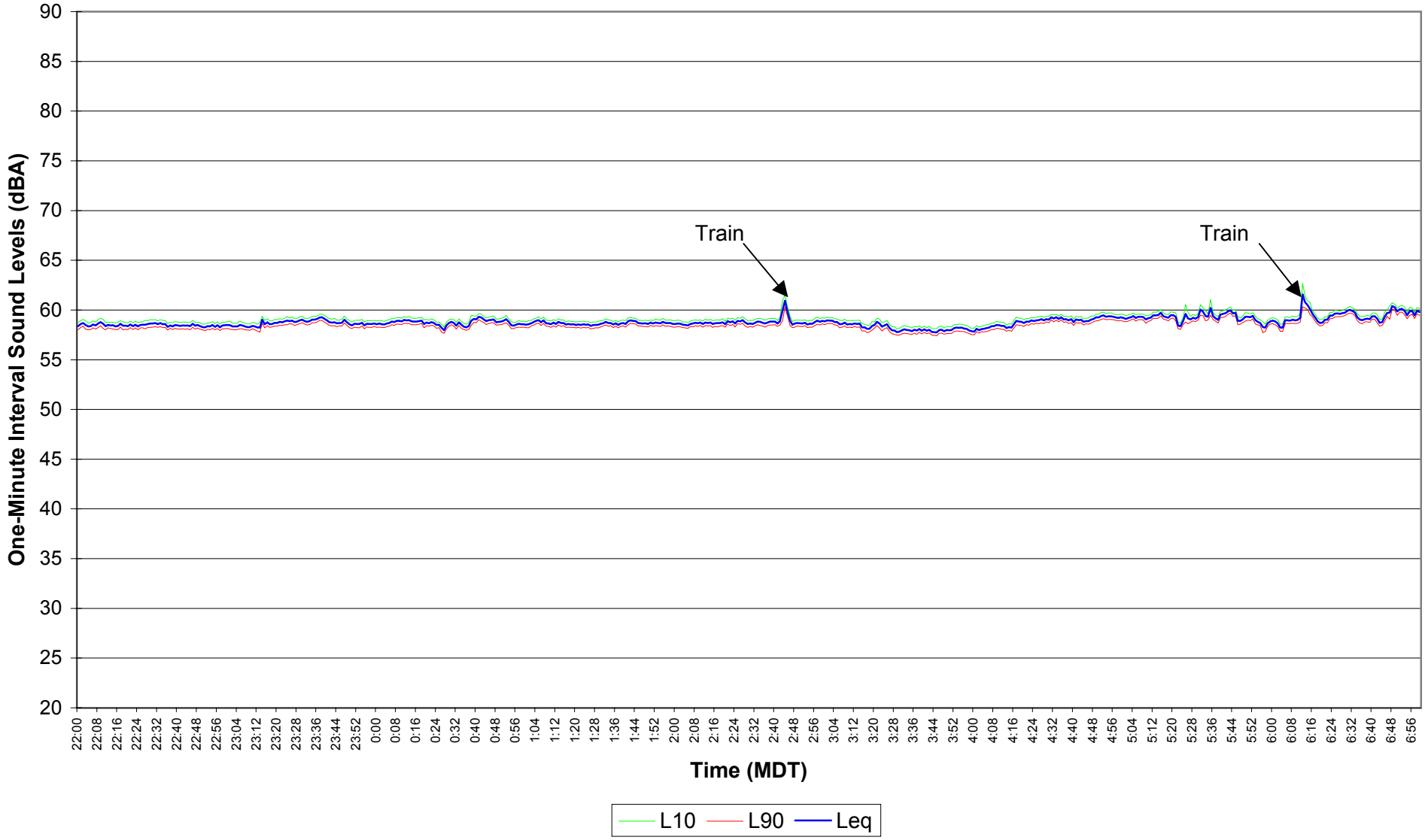


Figure E1.16

EnCana Rosebud

Site 1 Noise Survey

Nov. 28, 2004 07:00 - 14:29

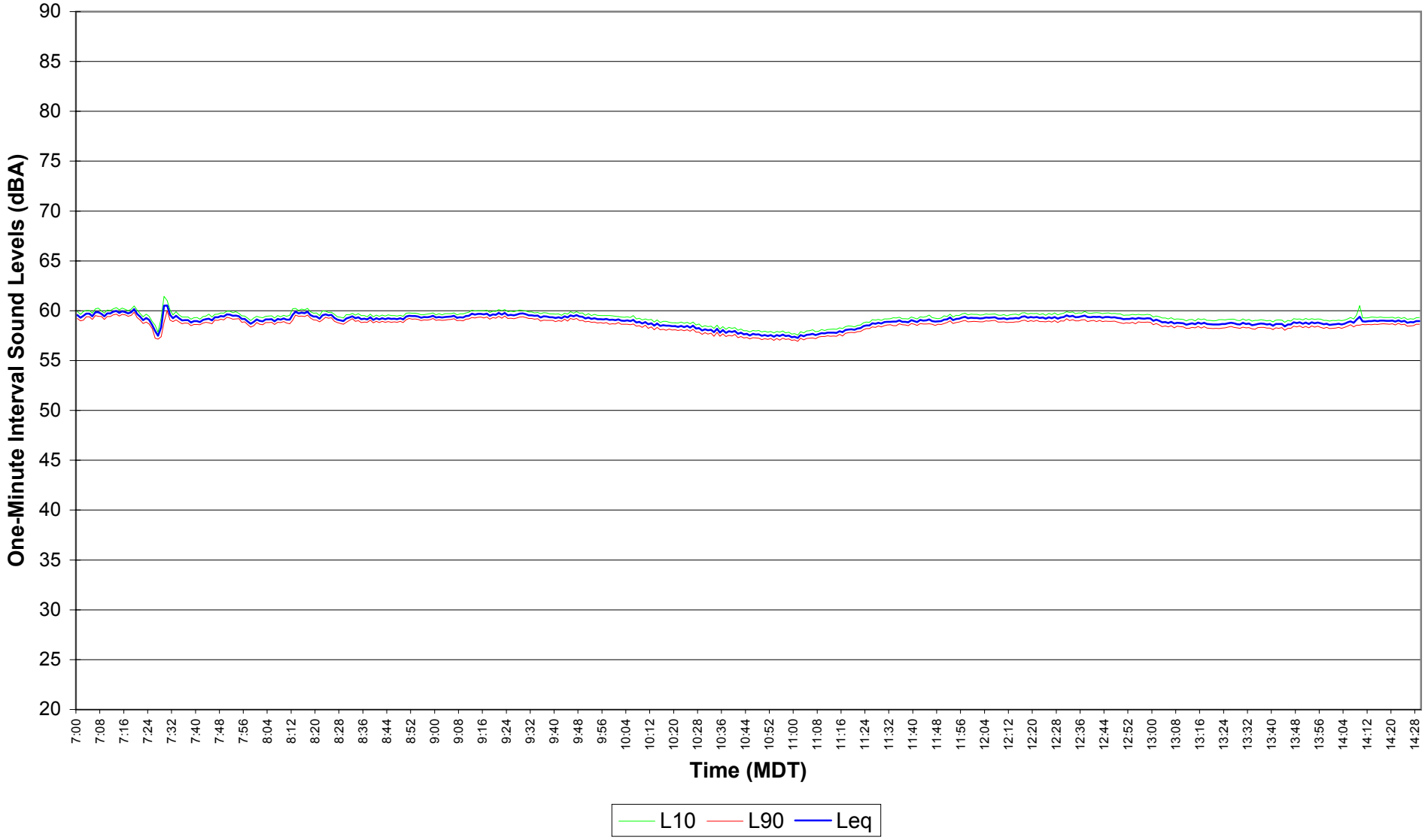


Figure E1.17
EnCana Rosebud
Site 1 Noise Survey
Nov. 28, 2004 14:30 - 21:59

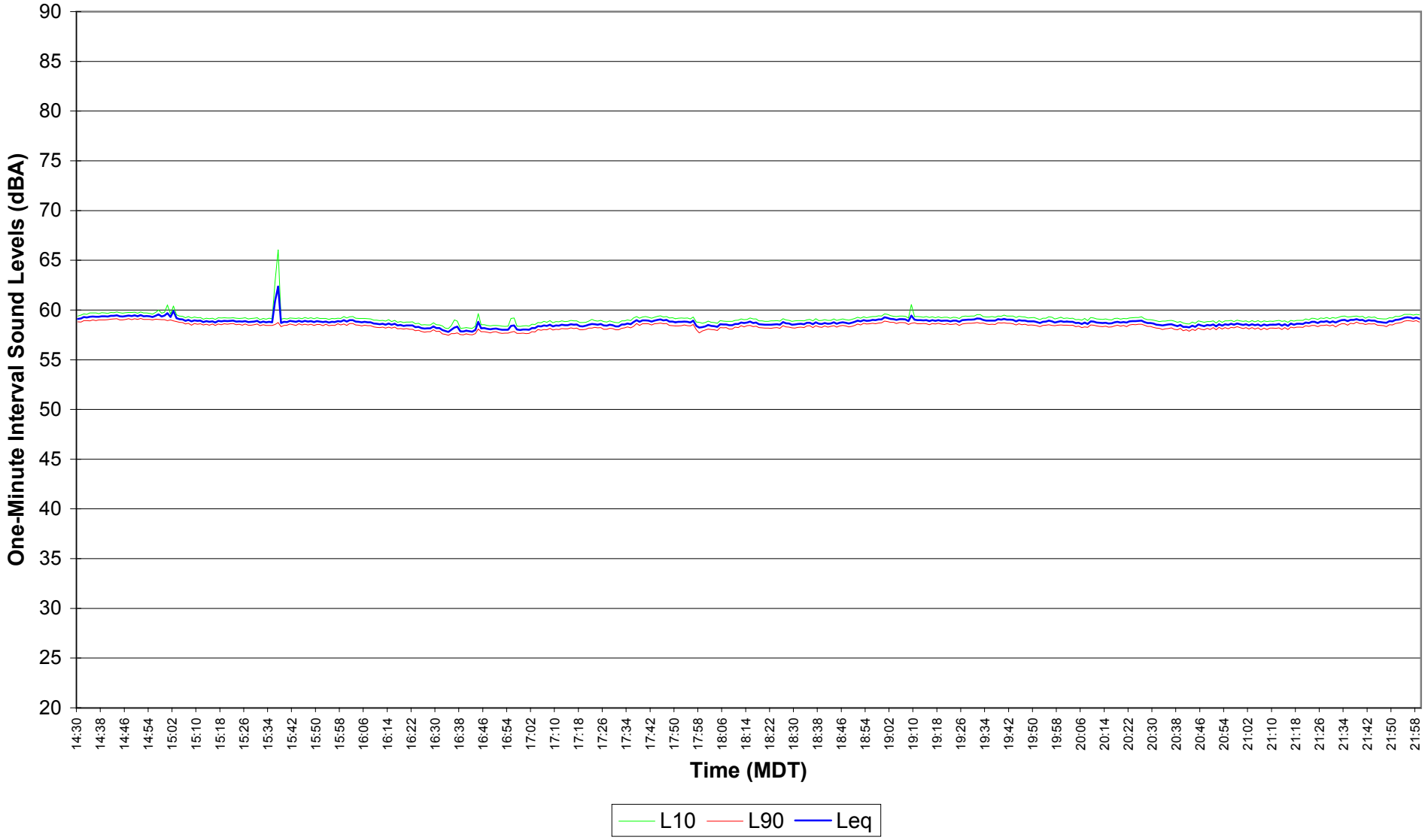


Figure E1.18
EnCana Rosebud
Site 1 Noise Survey
Nov. 28, 2004 - Nov. 29, 2004 22:00 - 06:59

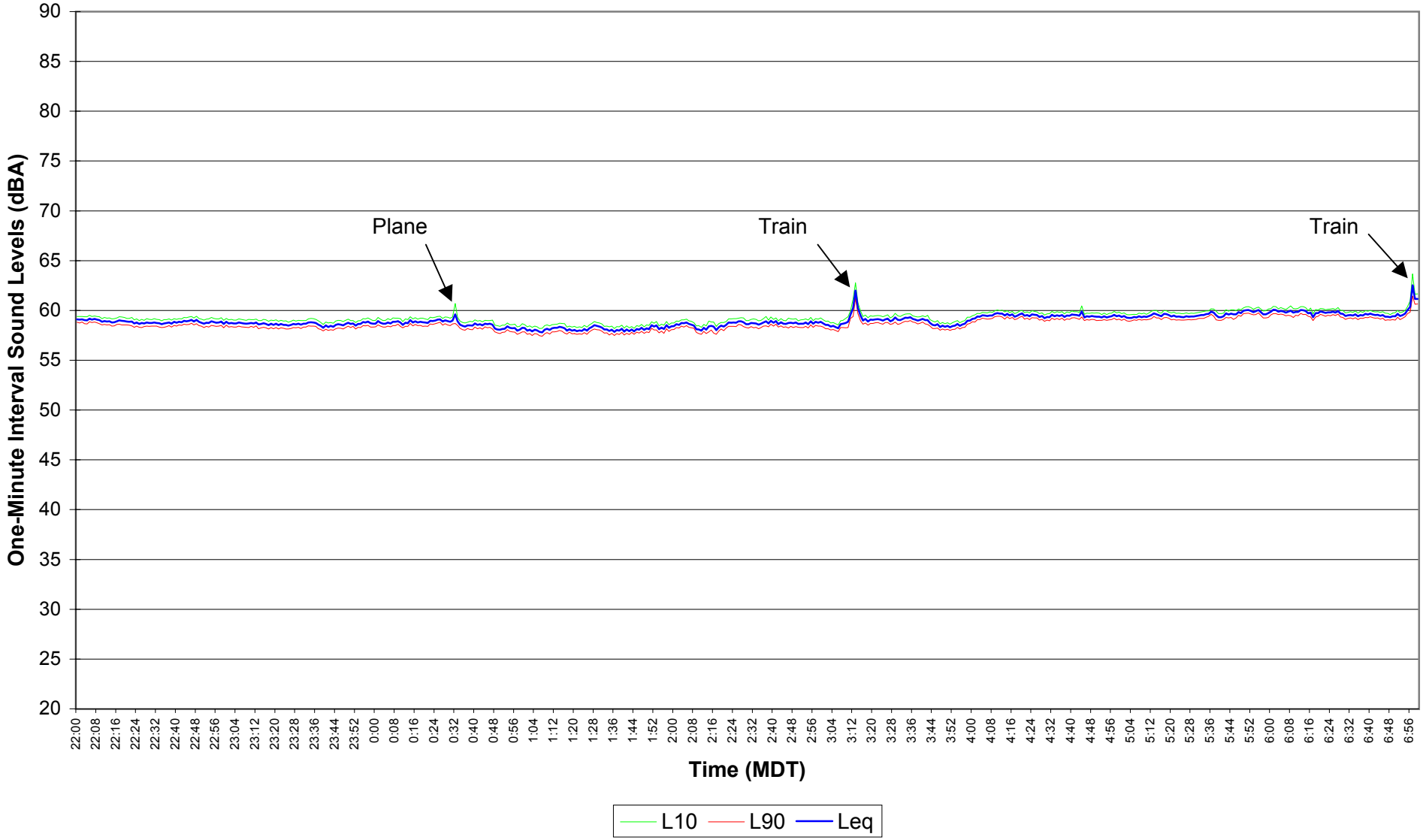


Figure E1.19
EnCana Rosebud
Site 1 Noise Survey
Nov. 29, 2004 07:00 - 14:29

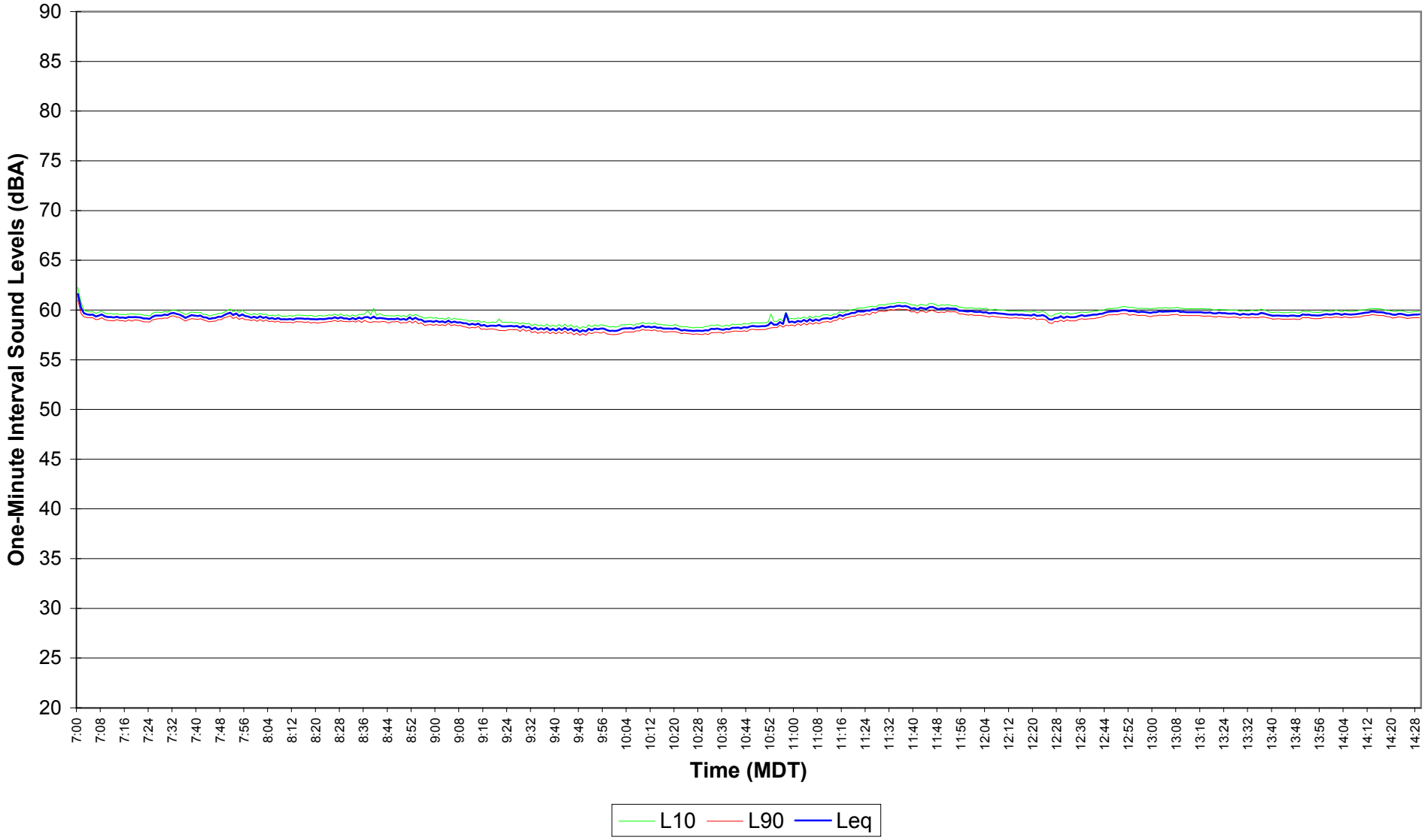


Figure E1.20
EnCana Rosebud
Site 1 Noise Survey
Nov. 29, 2004 14:30 - 21:59

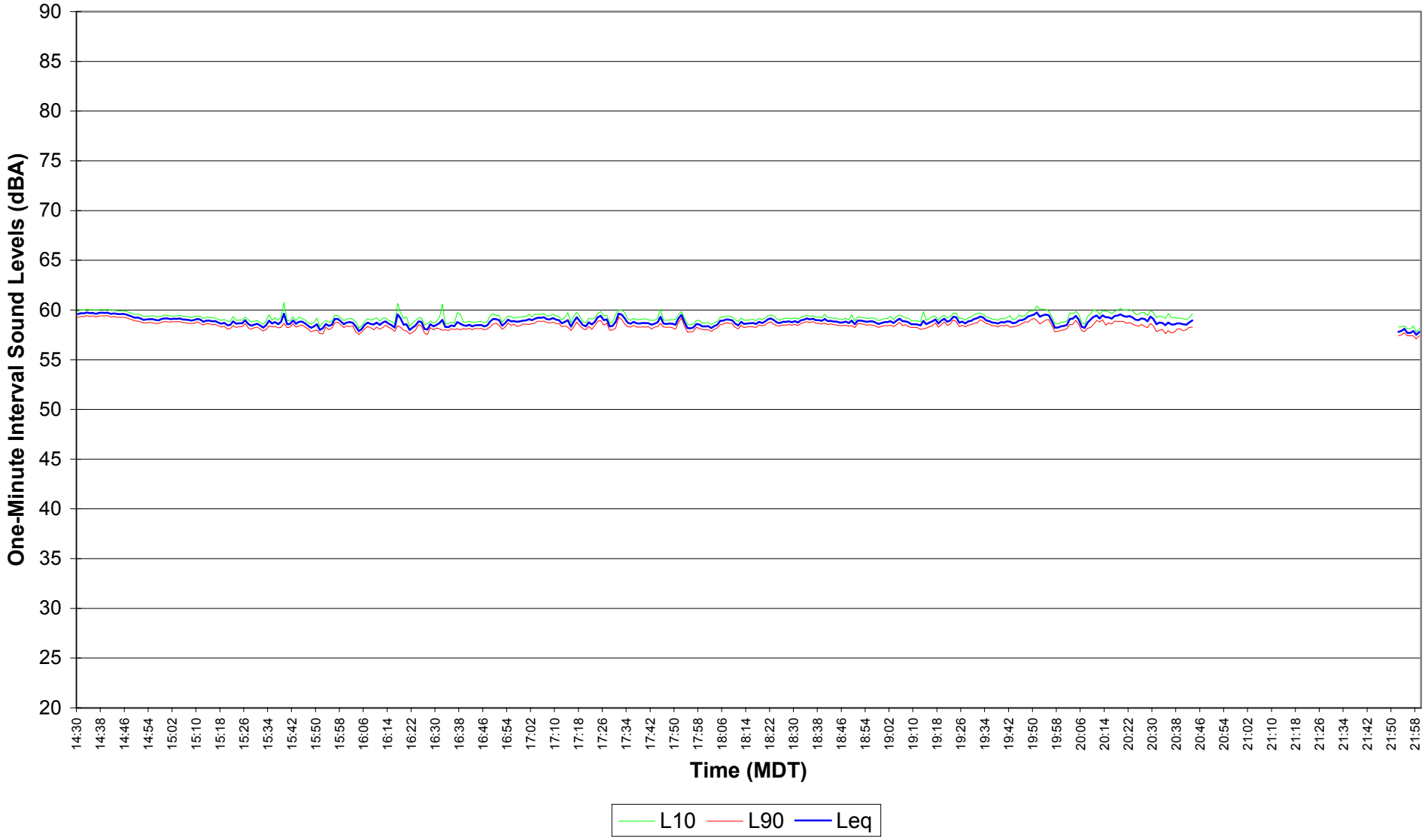


Figure E1.21
EnCana Rosebud
Site 1 Noise Survey
Nov. 29, 2004 - Nov. 30, 2004 22:00 - 06:59

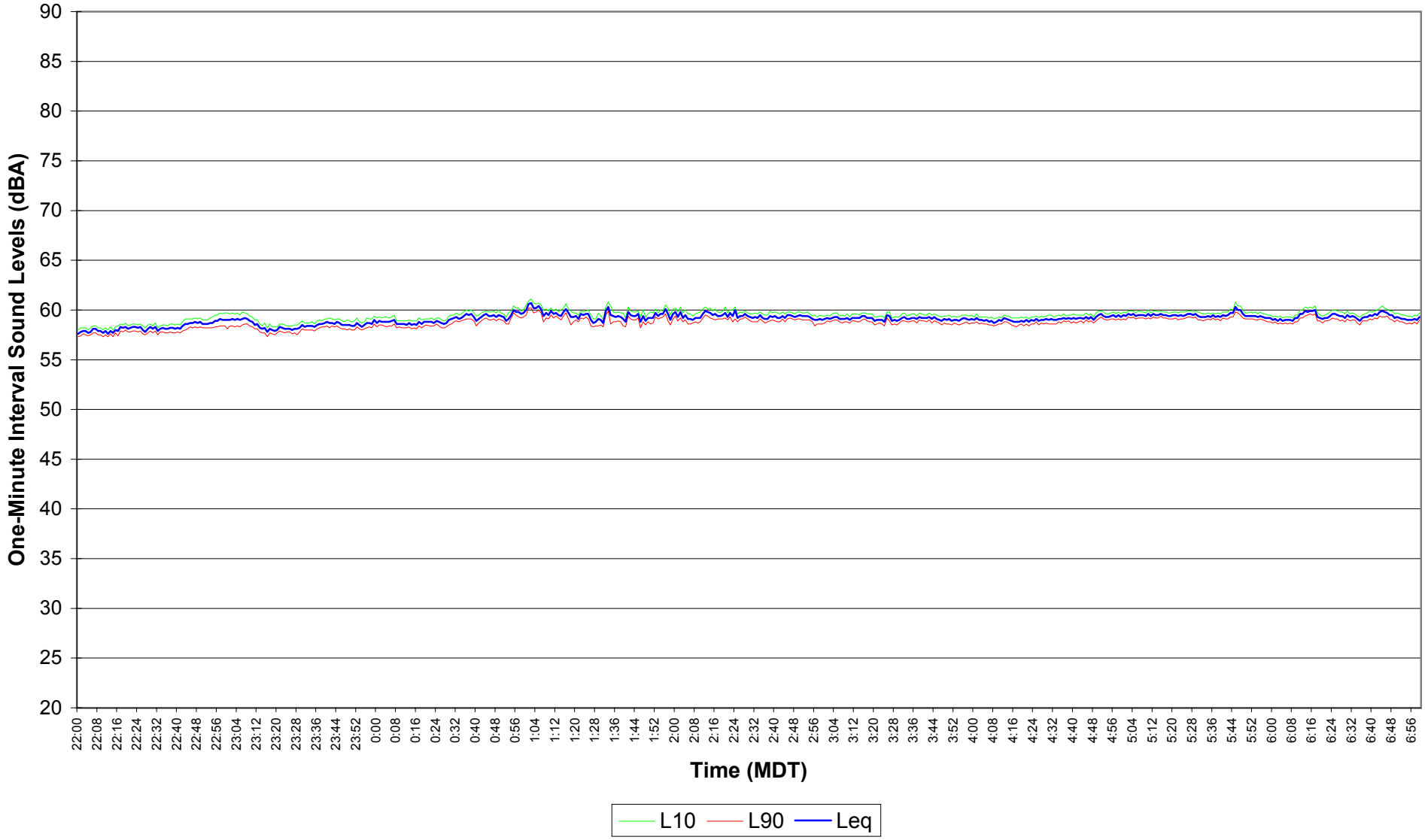


Figure E1.22
EnCana Rosebud
Site 1 Noise Survey
Nov. 30, 2004 07:00 - 14:29

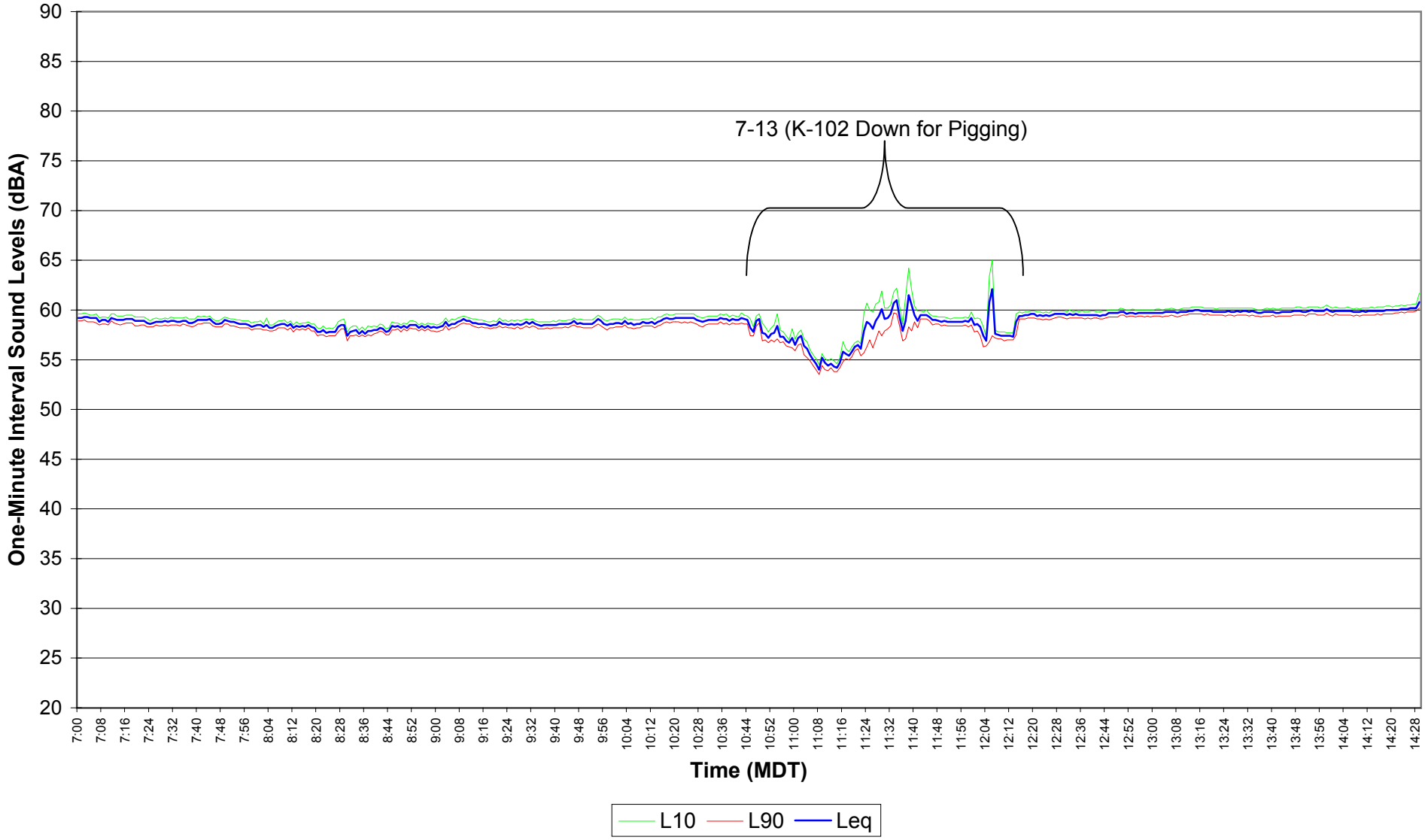


Figure E1.23
EnCana Rosebud
Site 1 Noise Survey
Nov. 30, 2004 14:30 - 21:59

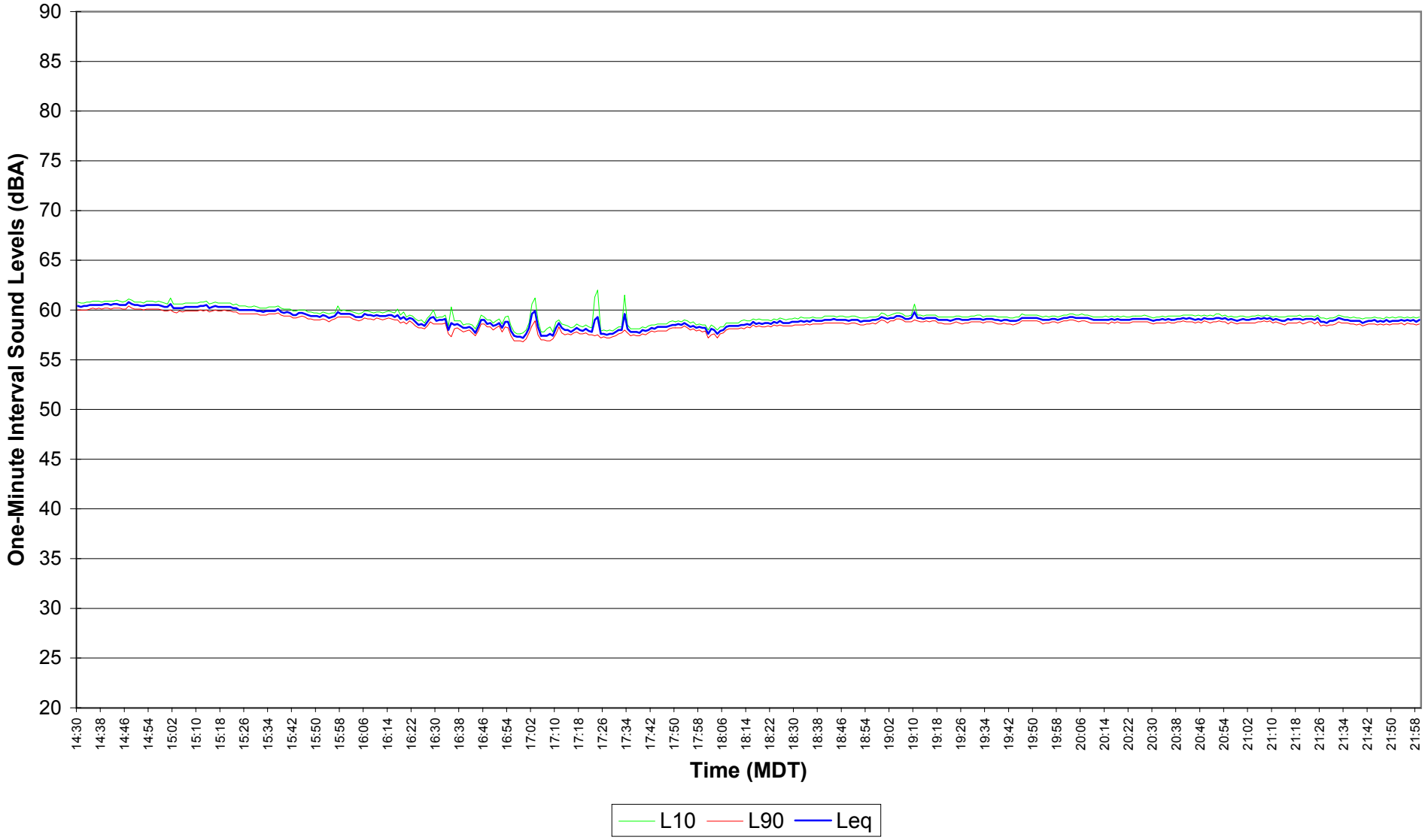


Figure E1.24
EnCana Rosebud
Site 1 Noise Survey
Nov. 30, 2004 - Dec. 01, 2004 22:00 - 06:59

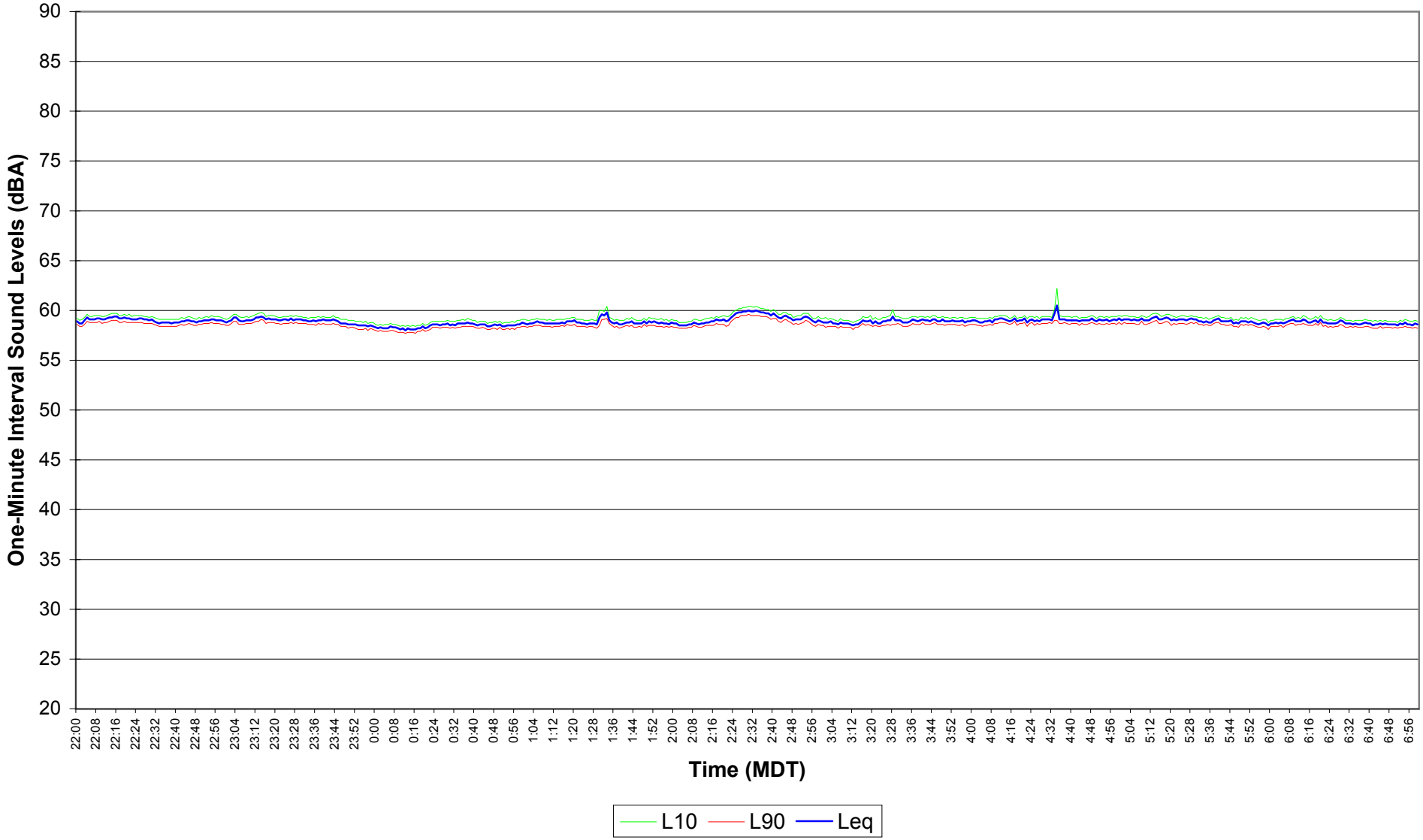


Figure E1.25
EnCana Rosebud
Site 1 Noise Survey
Dec. 01, 2004 07:00 - 14:29

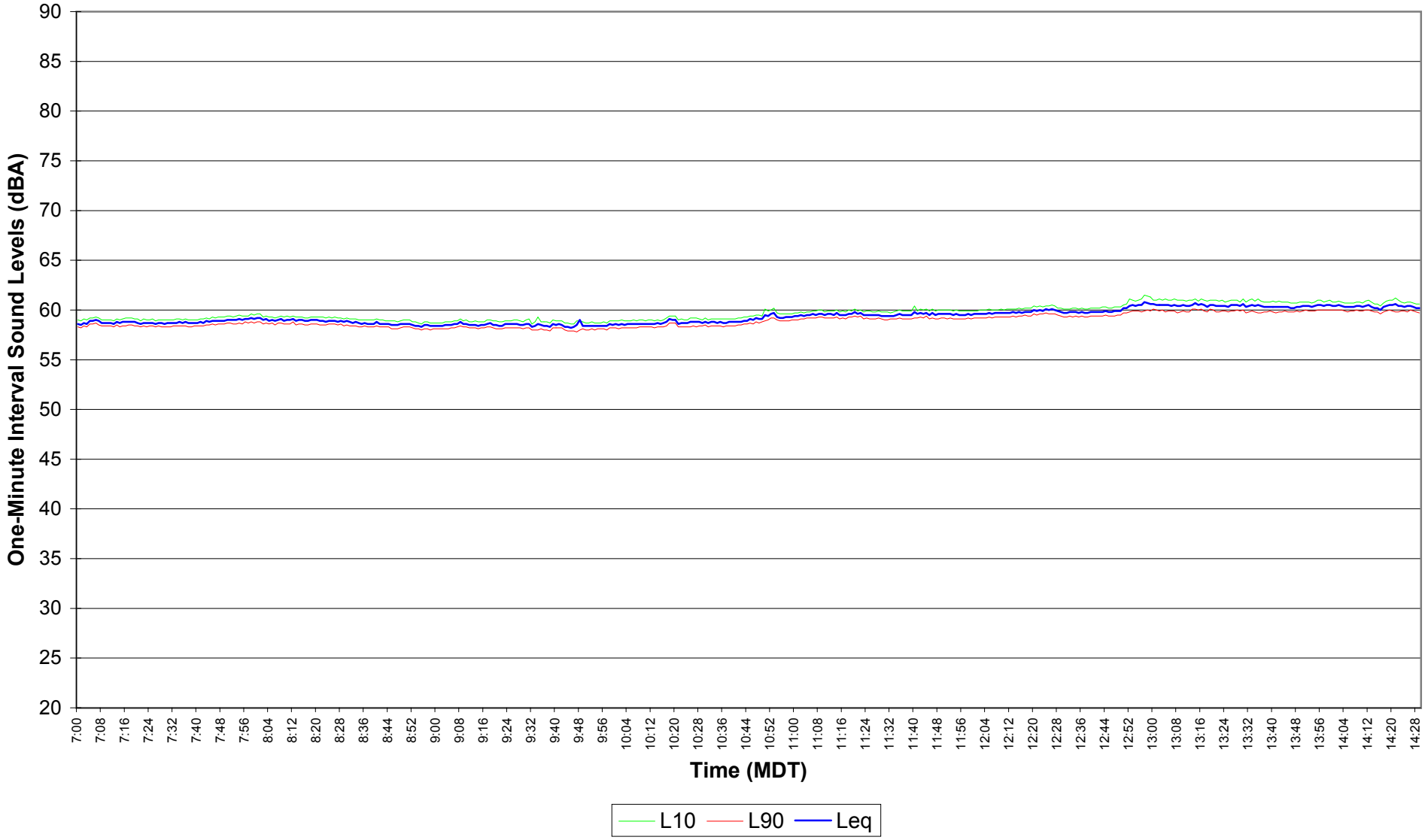


Figure E1.26
EnCana Rosebud
Site 1 Noise Survey
Dec. 01, 2004 14:30 - 21:59

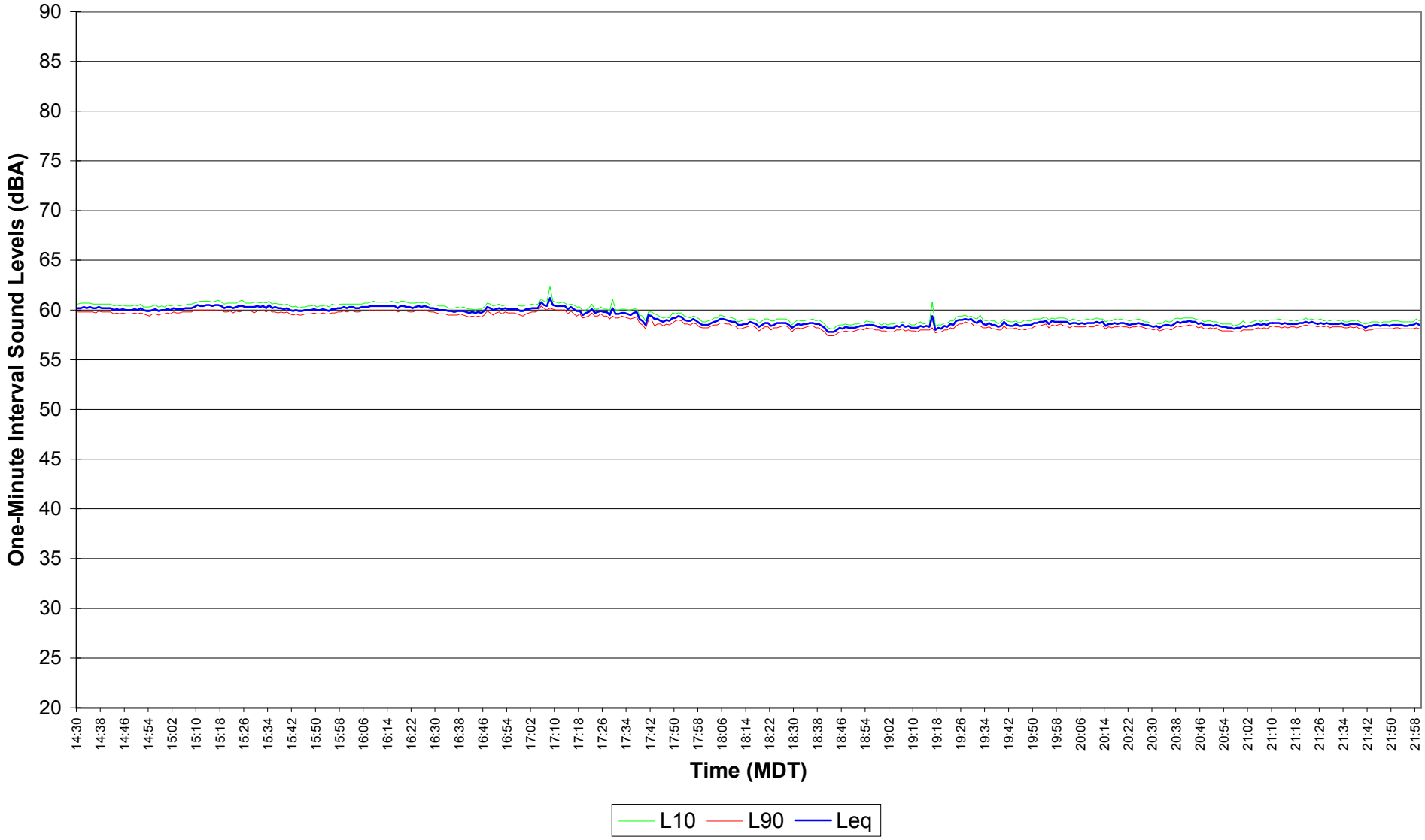


Figure E1.27
EnCana Rosebud
Site 1 Noise Survey
Dec. 01, 2004 - Dec. 02, 2004 22:00 - 06:59

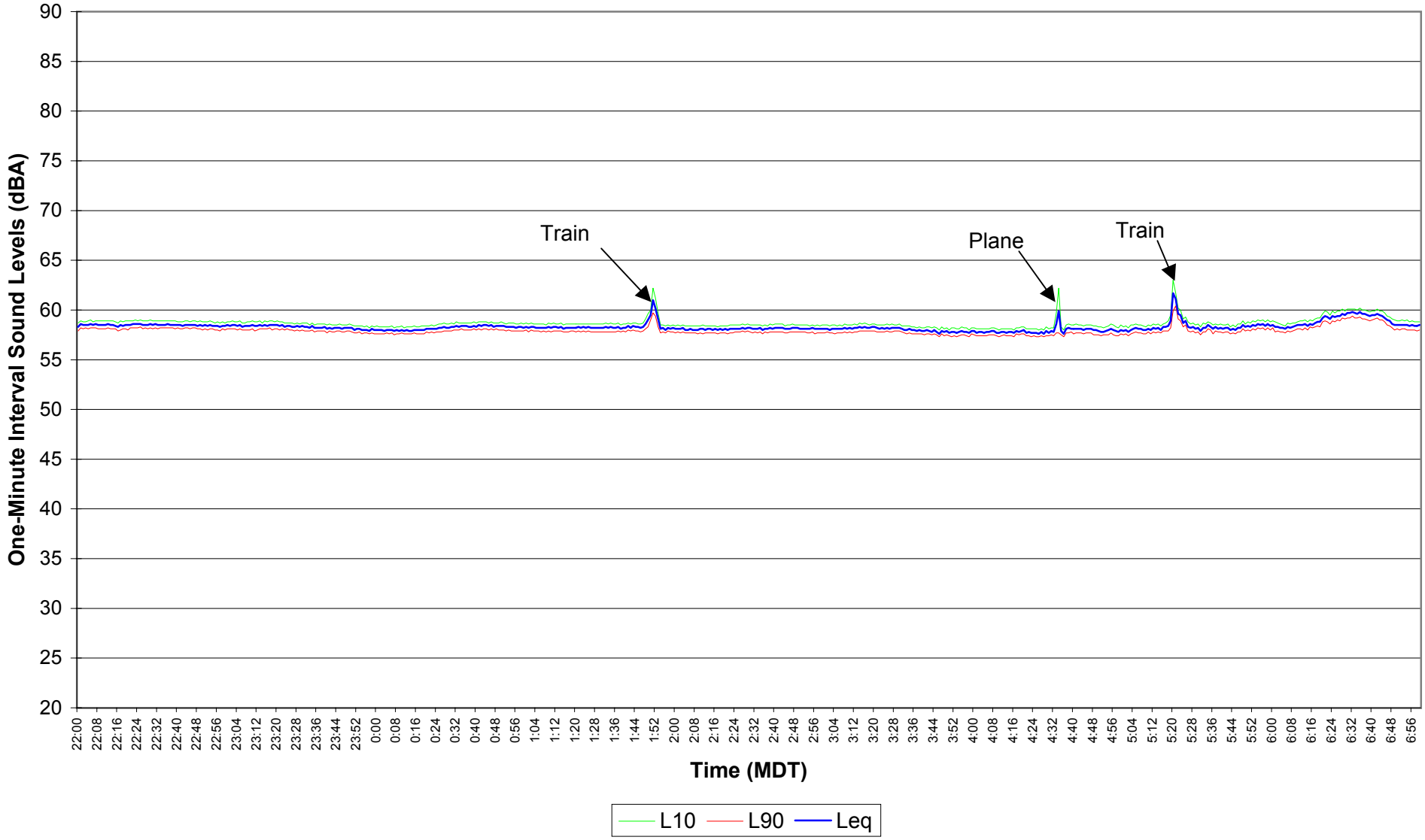


Figure E1.28
EnCana Rosebud
Site 1 Noise Survey
Dec. 02, 2004 07:00 - 14:29

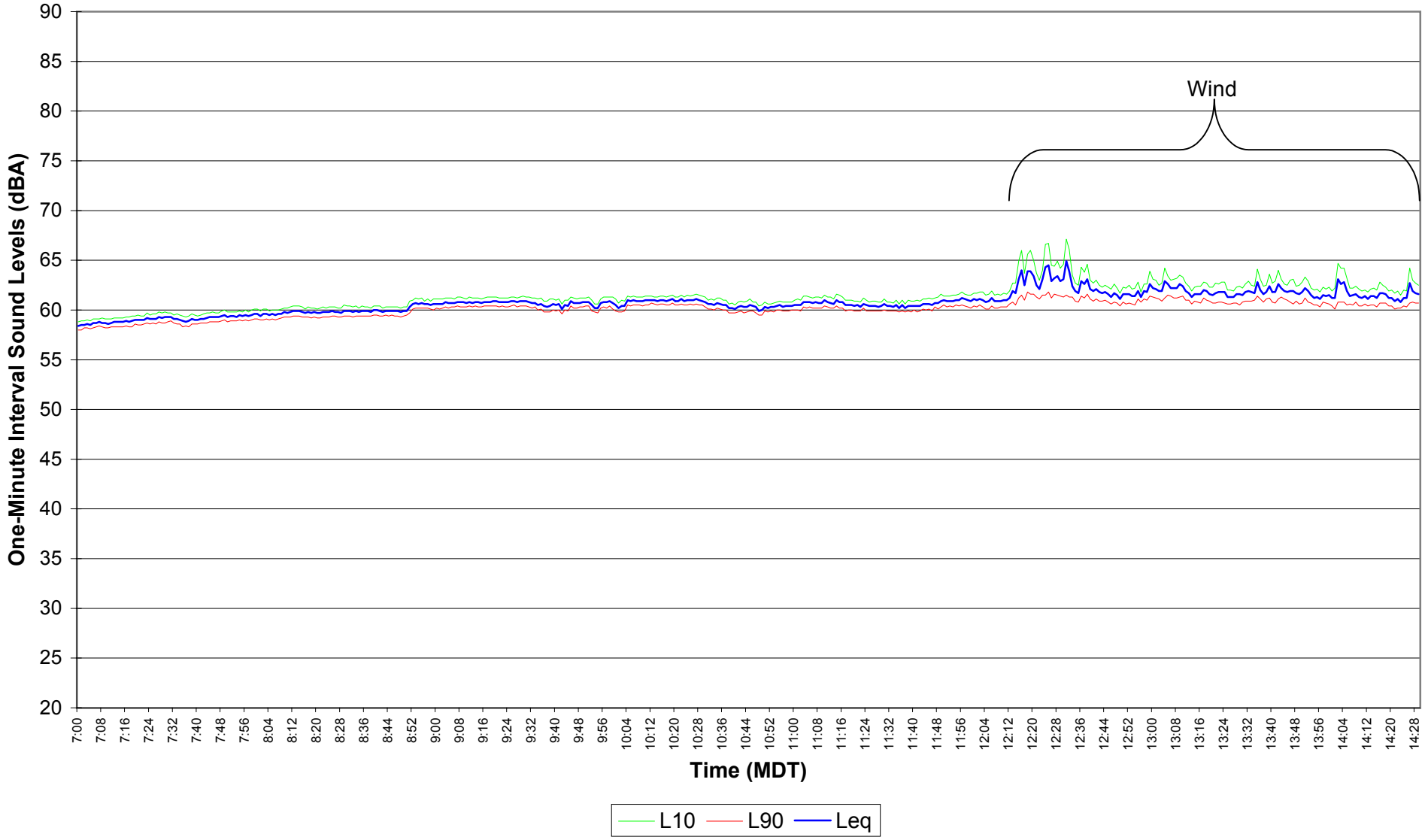


Figure E1.29
EnCana Rosebud
Site 1 Noise Survey
Dec. 02, 2004 14:30 - 21:59

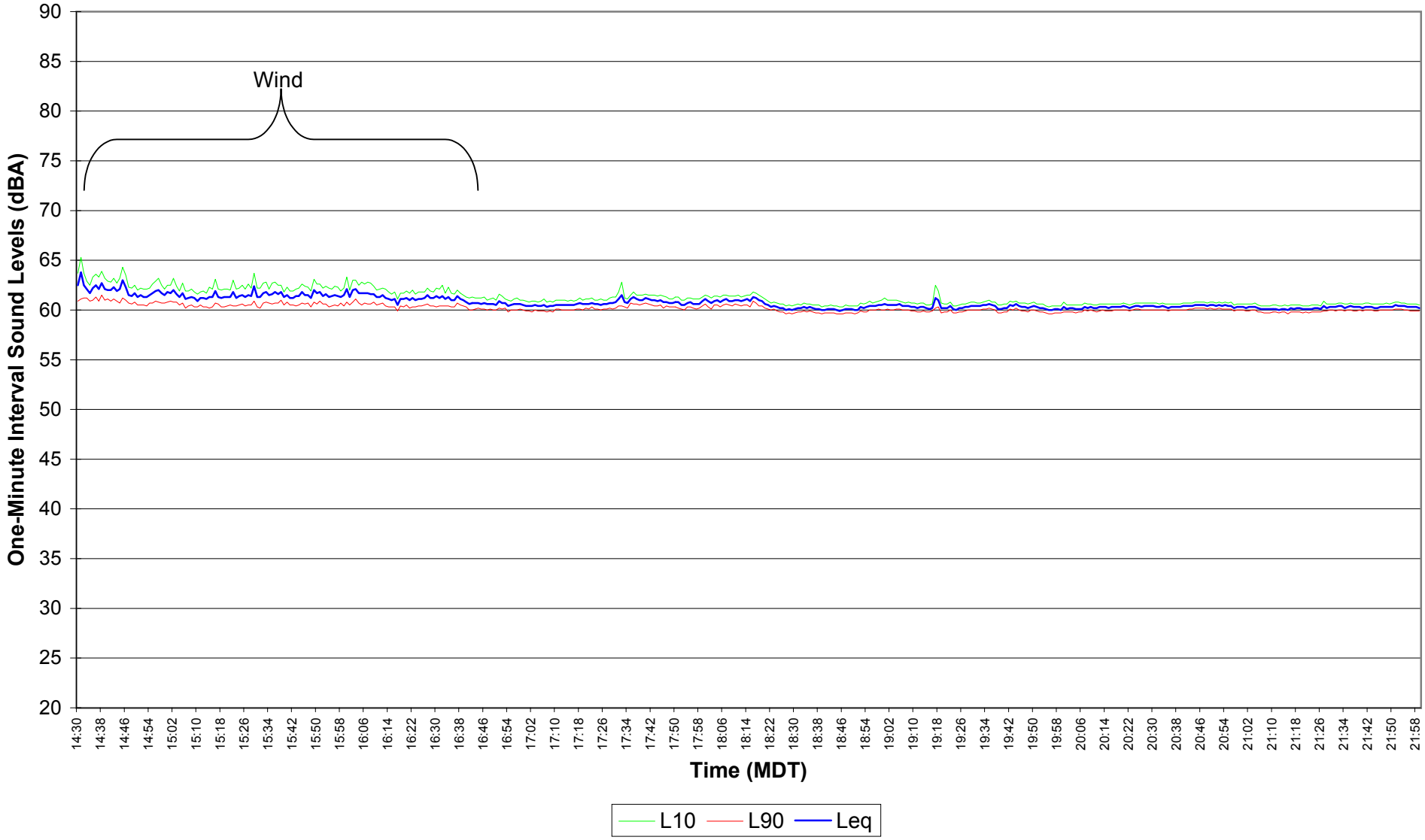


Figure E1.30
EnCana Rosebud
Site 1 Noise Survey
Dec. 02, 2004 - Dec. 03, 2004 22:00 - 06:59

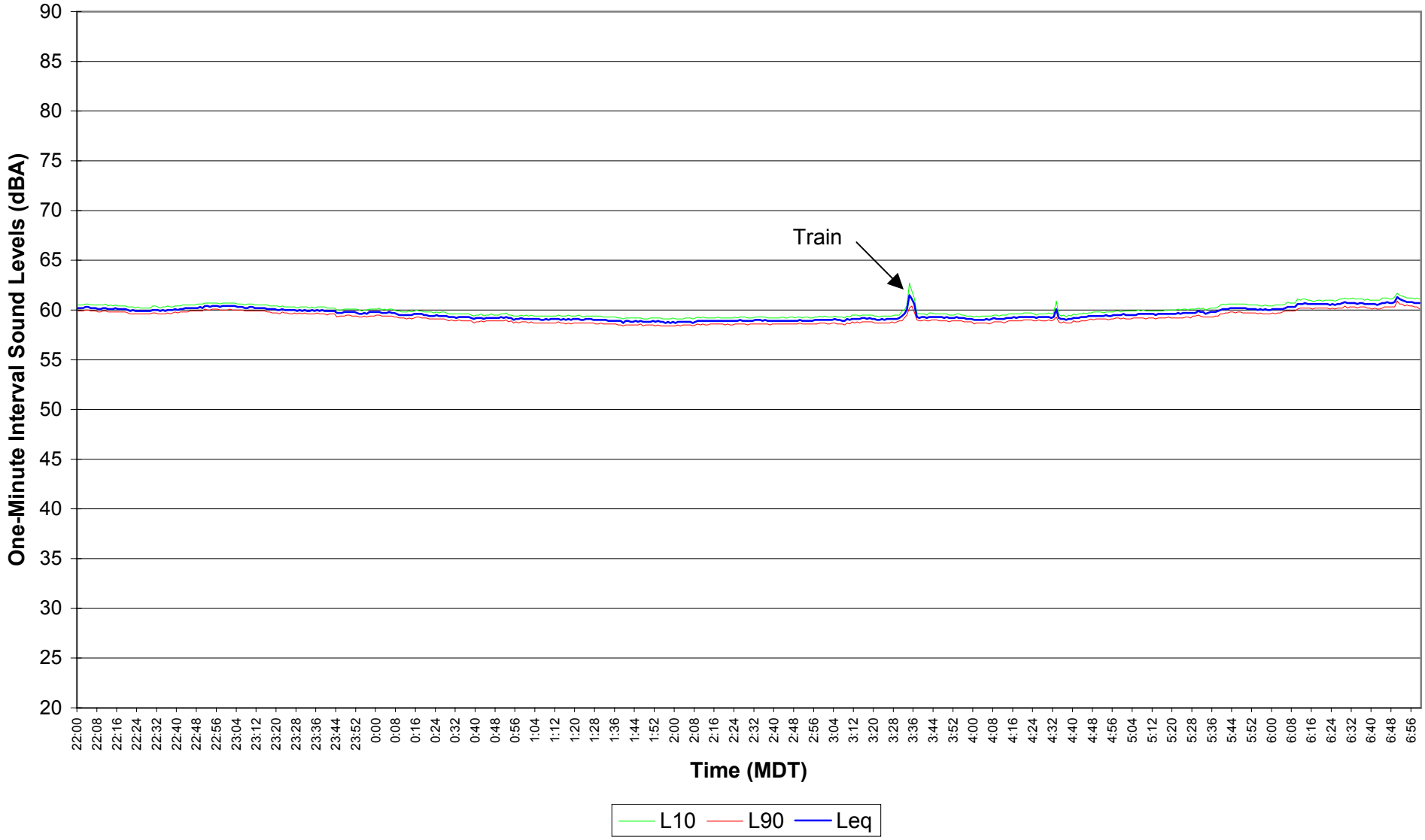


Figure E1.31

EnCana Rosebud

Site 1 Noise Survey

Dec. 03, 2004 07:00 - 14:29

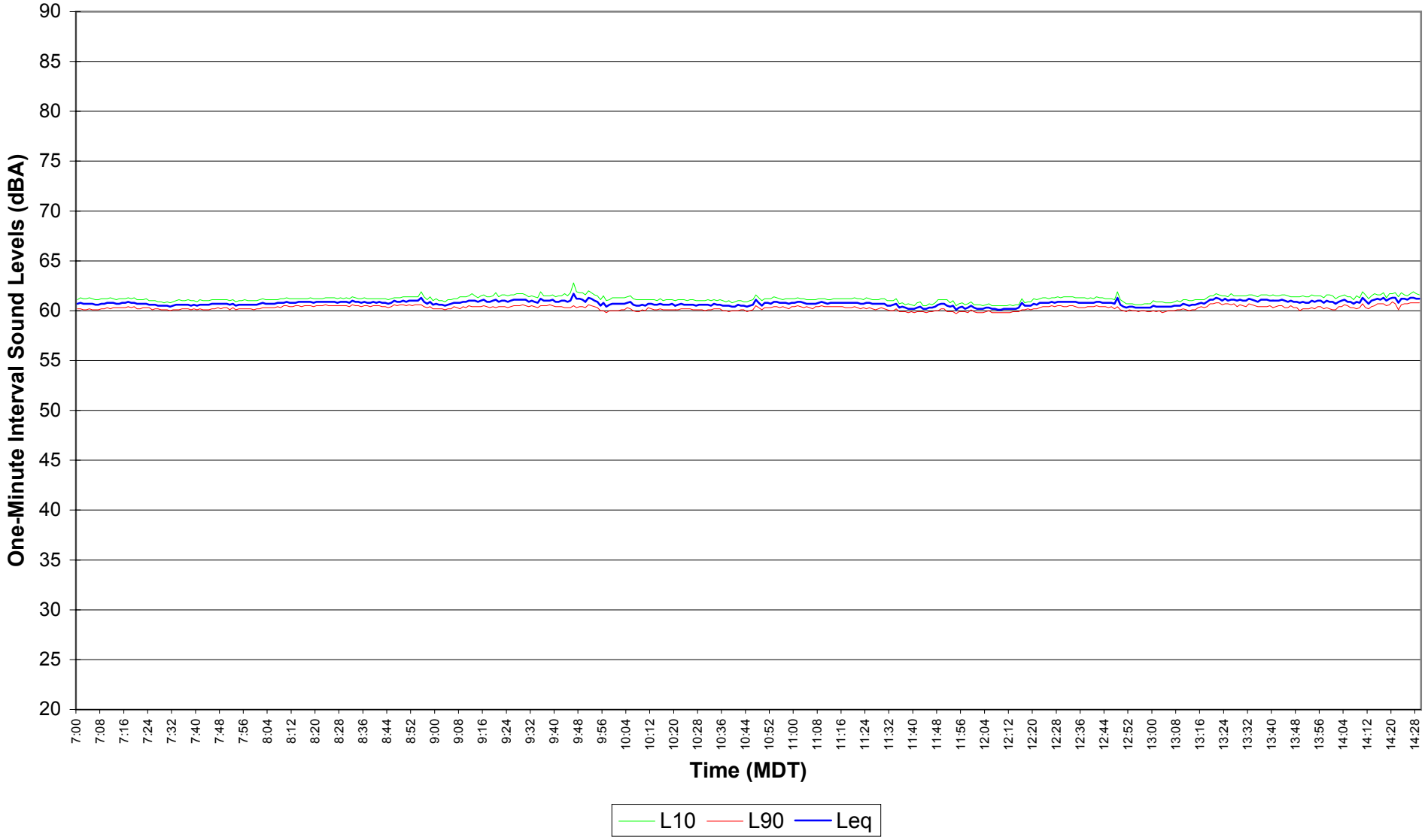


Figure E1.32
EnCana Rosebud
Site 1 Noise Survey
Dec. 03, 2004 14:30 - 21:59

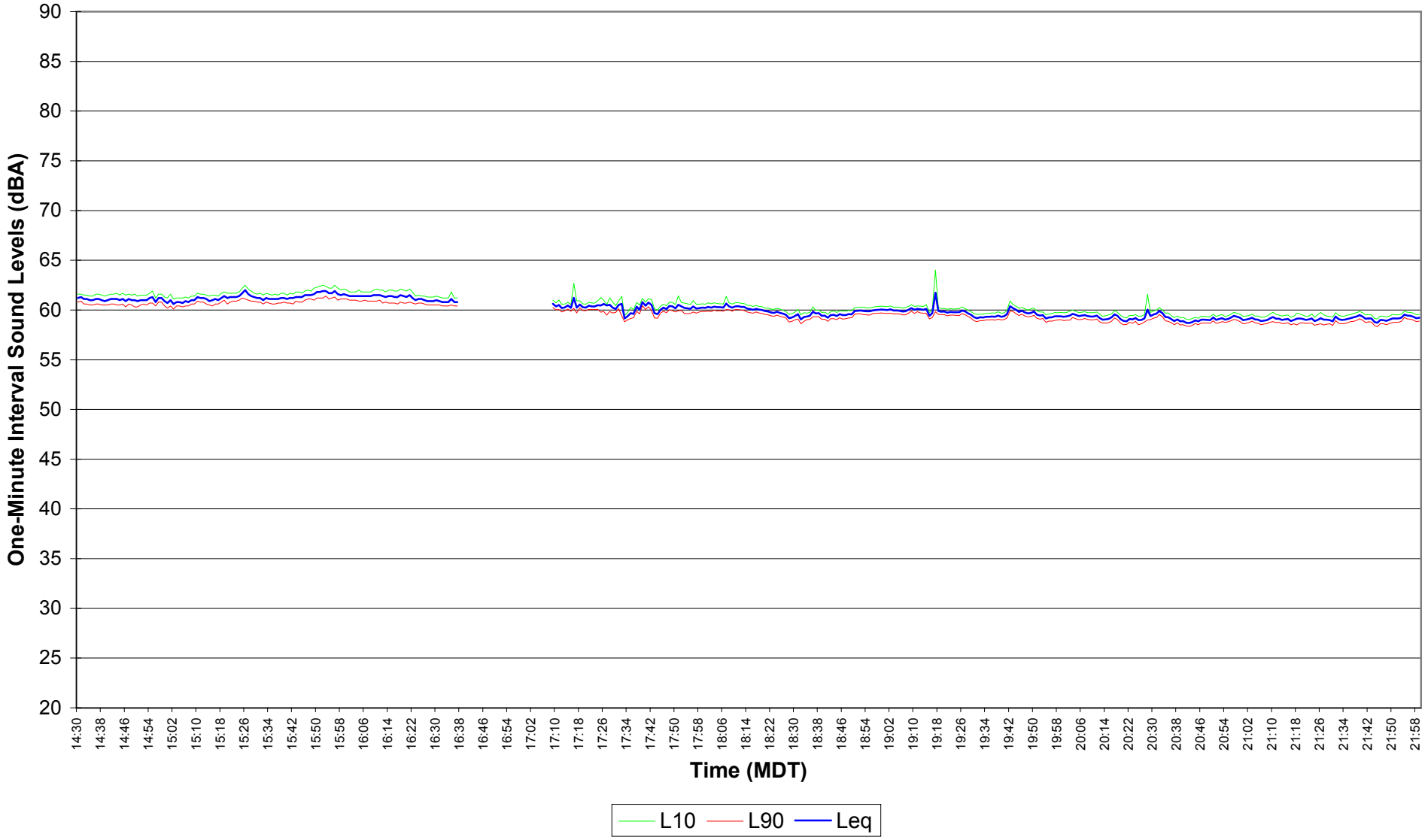


Figure E1.33
EnCana Rosebud
Site 1 Noise Survey
Dec. 03, 2004 - Dec. 04, 2004 22:00 - 06:59

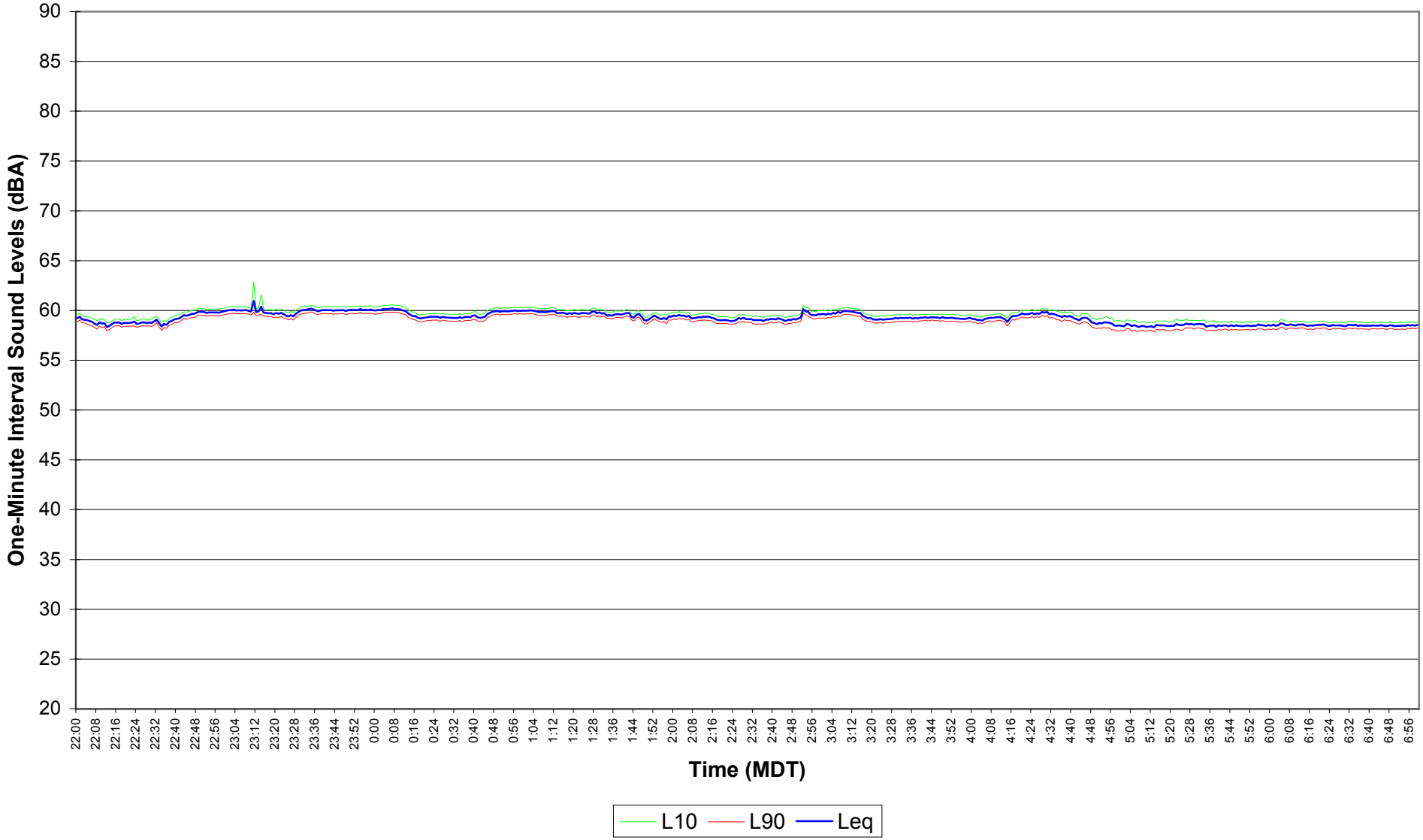


Figure E1.34
EnCana Rosebud
Site 1 Noise Survey
Dec. 04, 2004 07:00 - 14:29

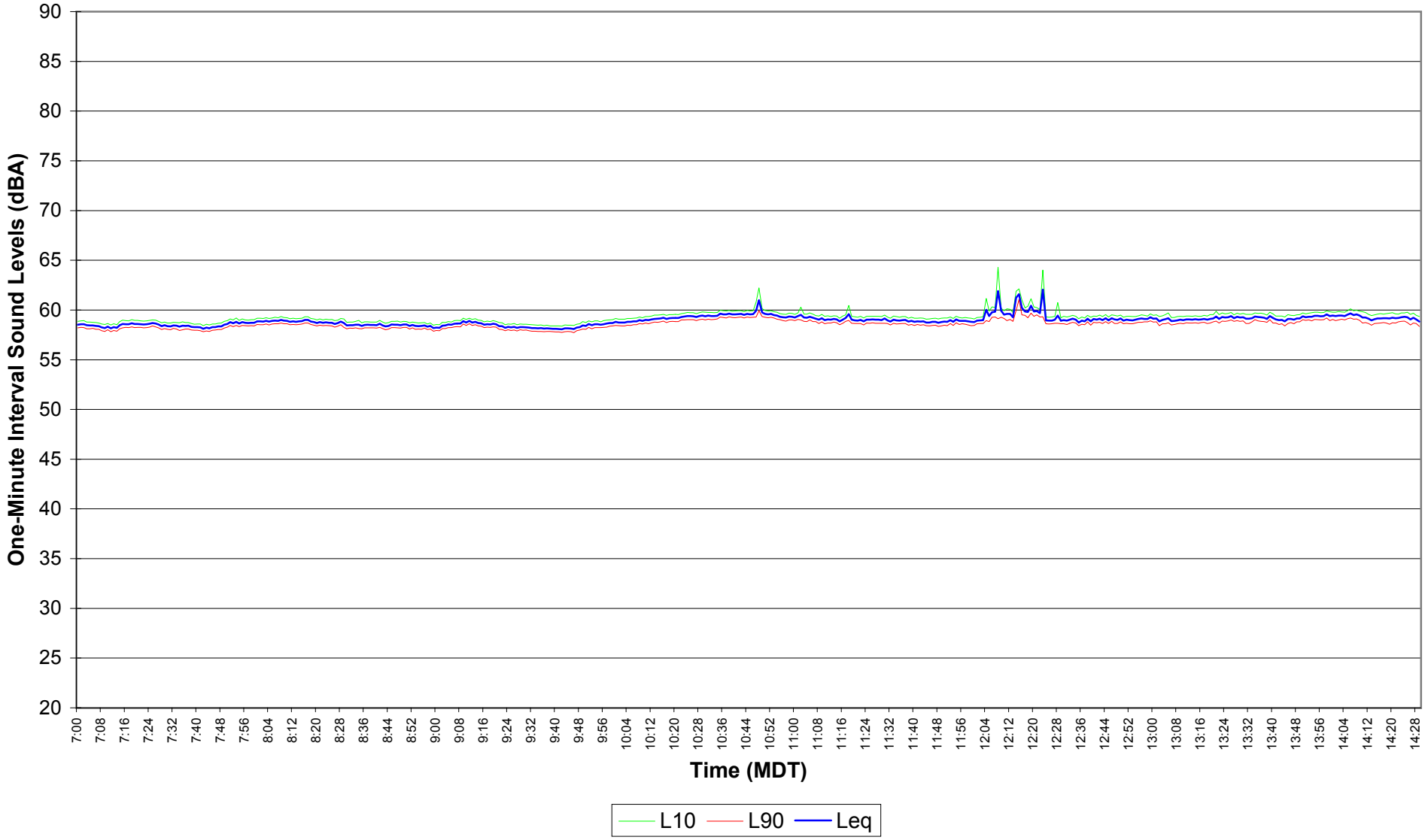


Figure E1.35
EnCana Rosebud
Site 1 Noise Survey
Dec. 04, 2004 14:30 - 21:59

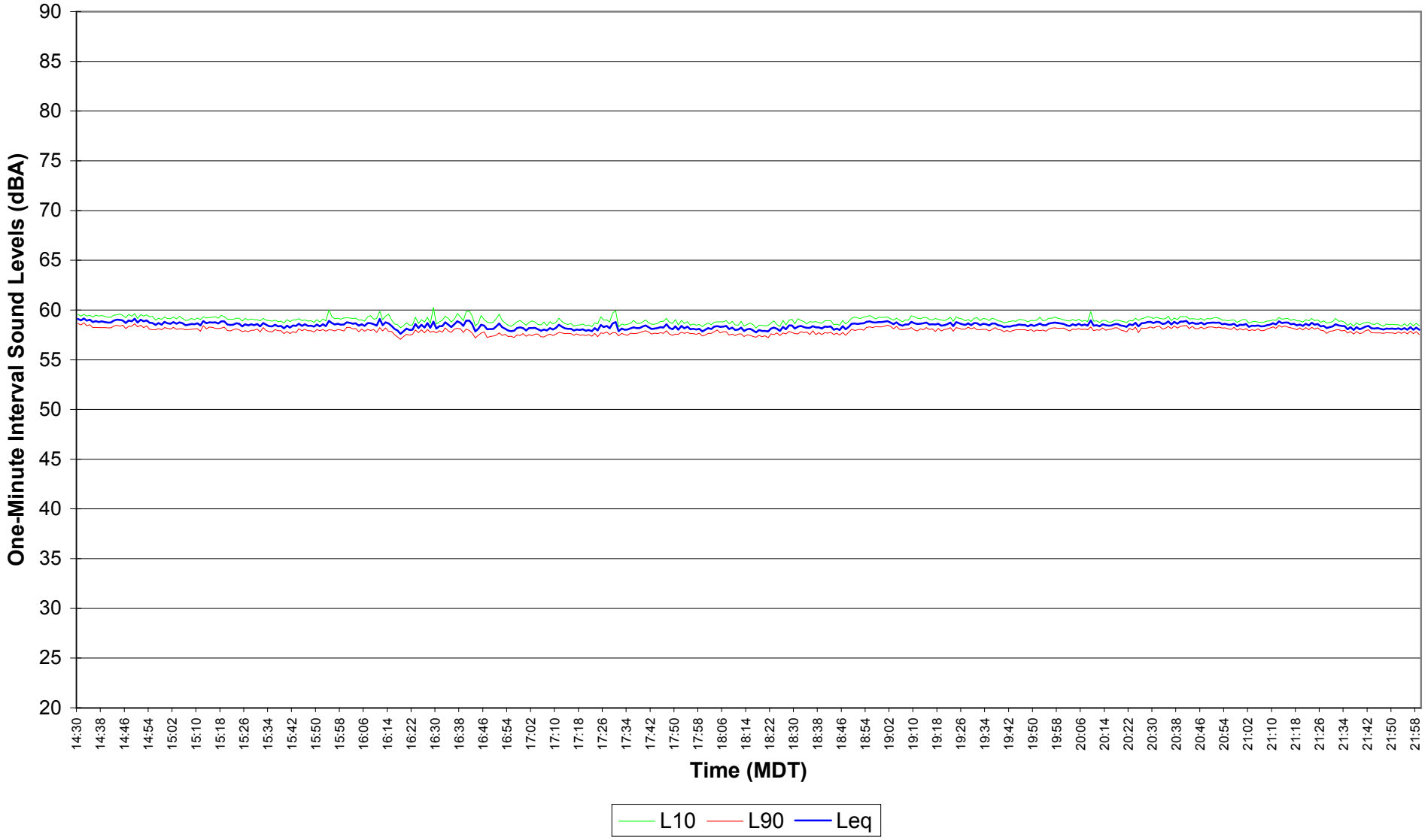


Figure E1.36
EnCana Rosebud
Site 1 Noise Survey
Dec. 04, 2004 - Dec. 05, 2004 22:00 - 06:59

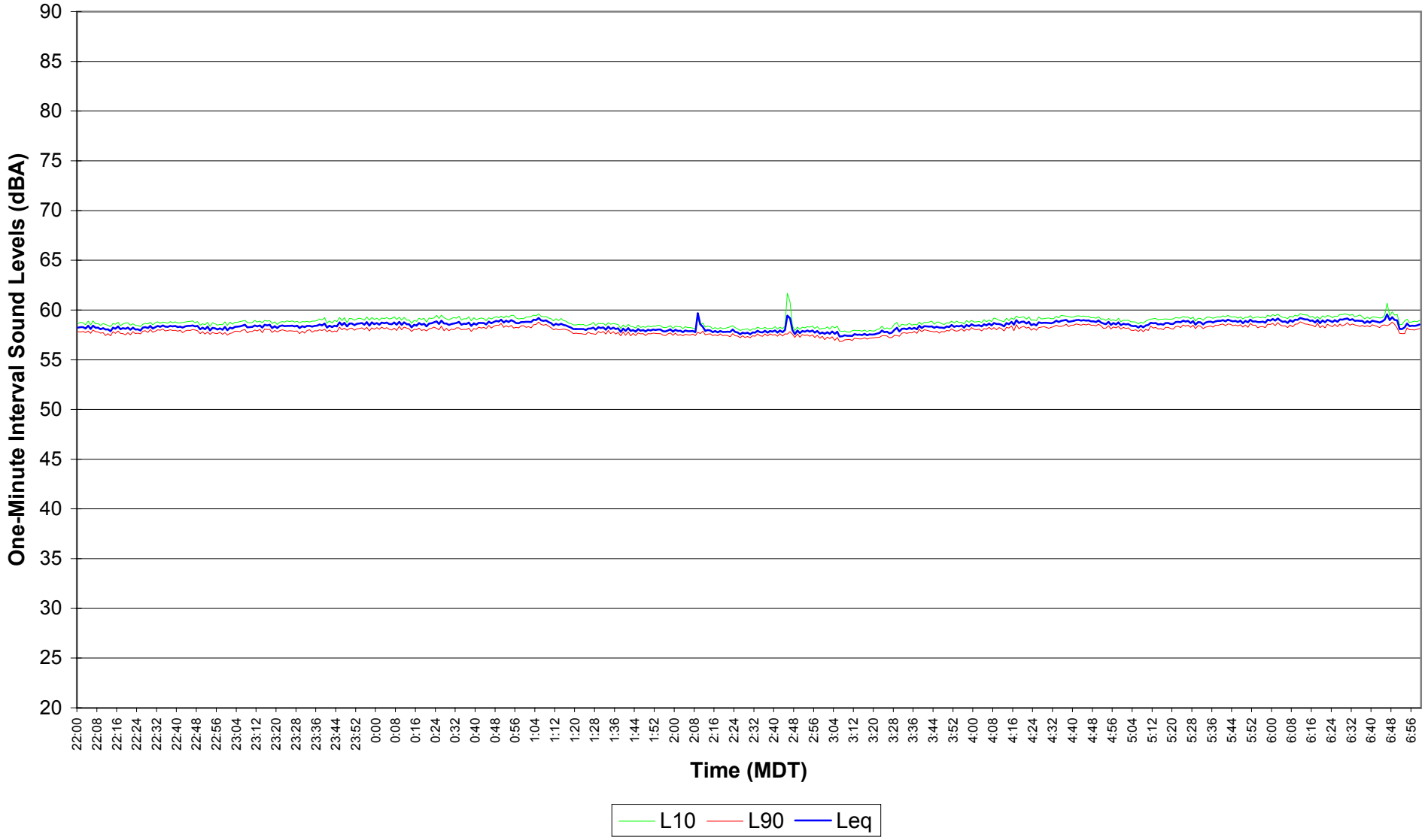


Figure E1.37
EnCana Rosebud
Site 1 Noise Survey
Dec. 05, 2004 07:00 - 14:29

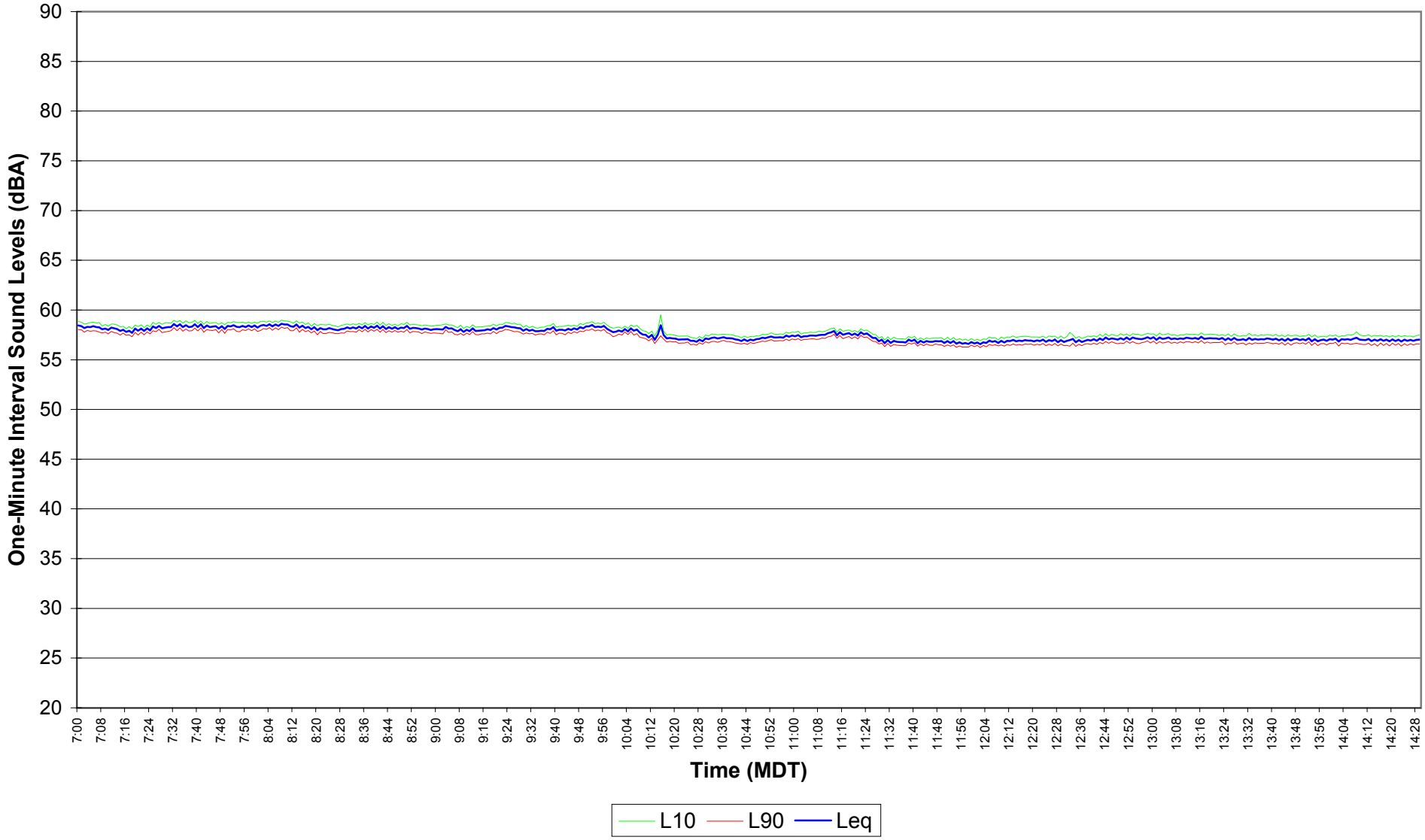


Figure E1.38
EnCana Rosebud
Site 1 Noise Survey
Dec. 05, 2004 14:30 - 21:59

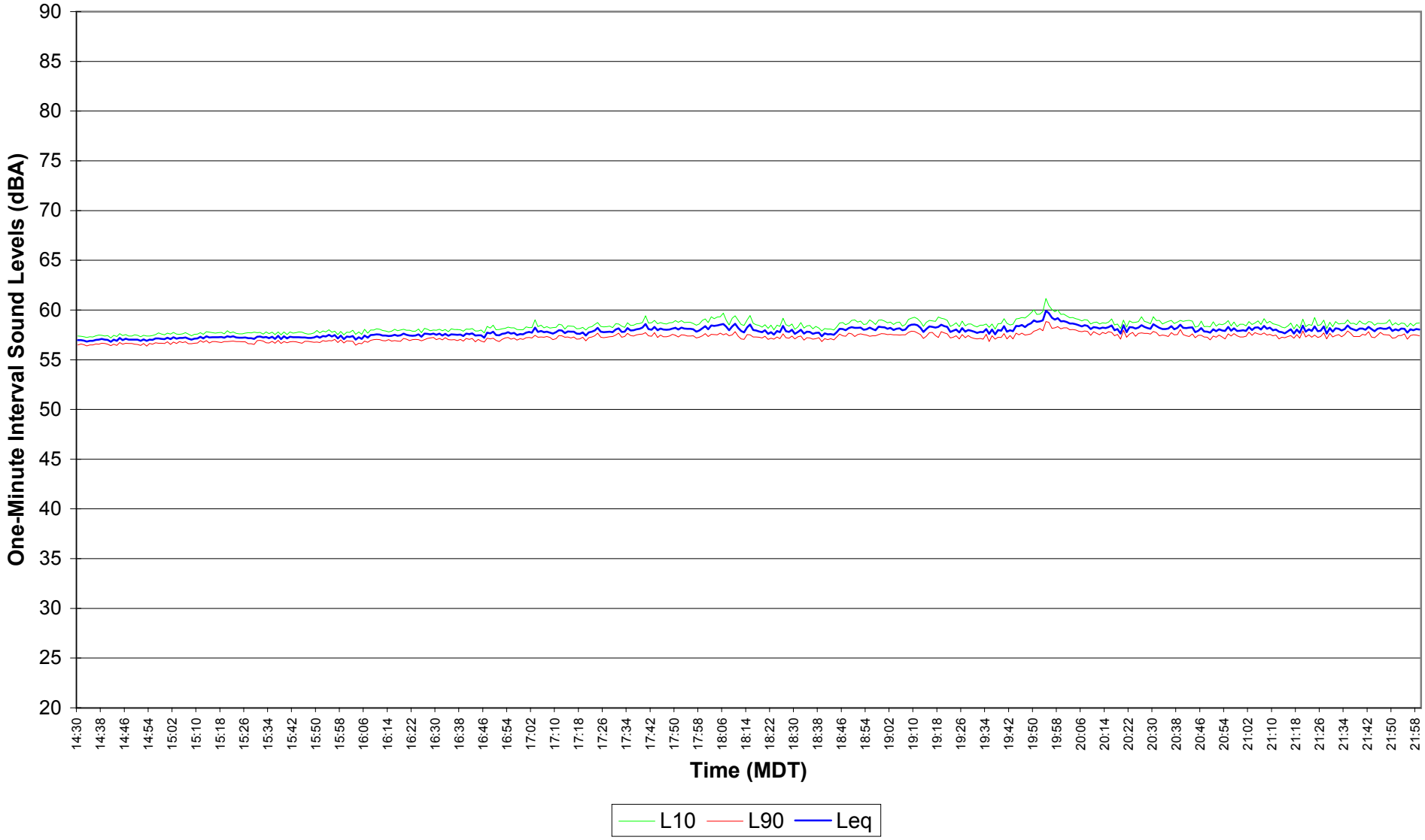


Figure E1.39
EnCana Rosebud
Site 1 Noise Survey
Dec. 05, 2004 - Dec. 06, 2004 22:00 - 06:59

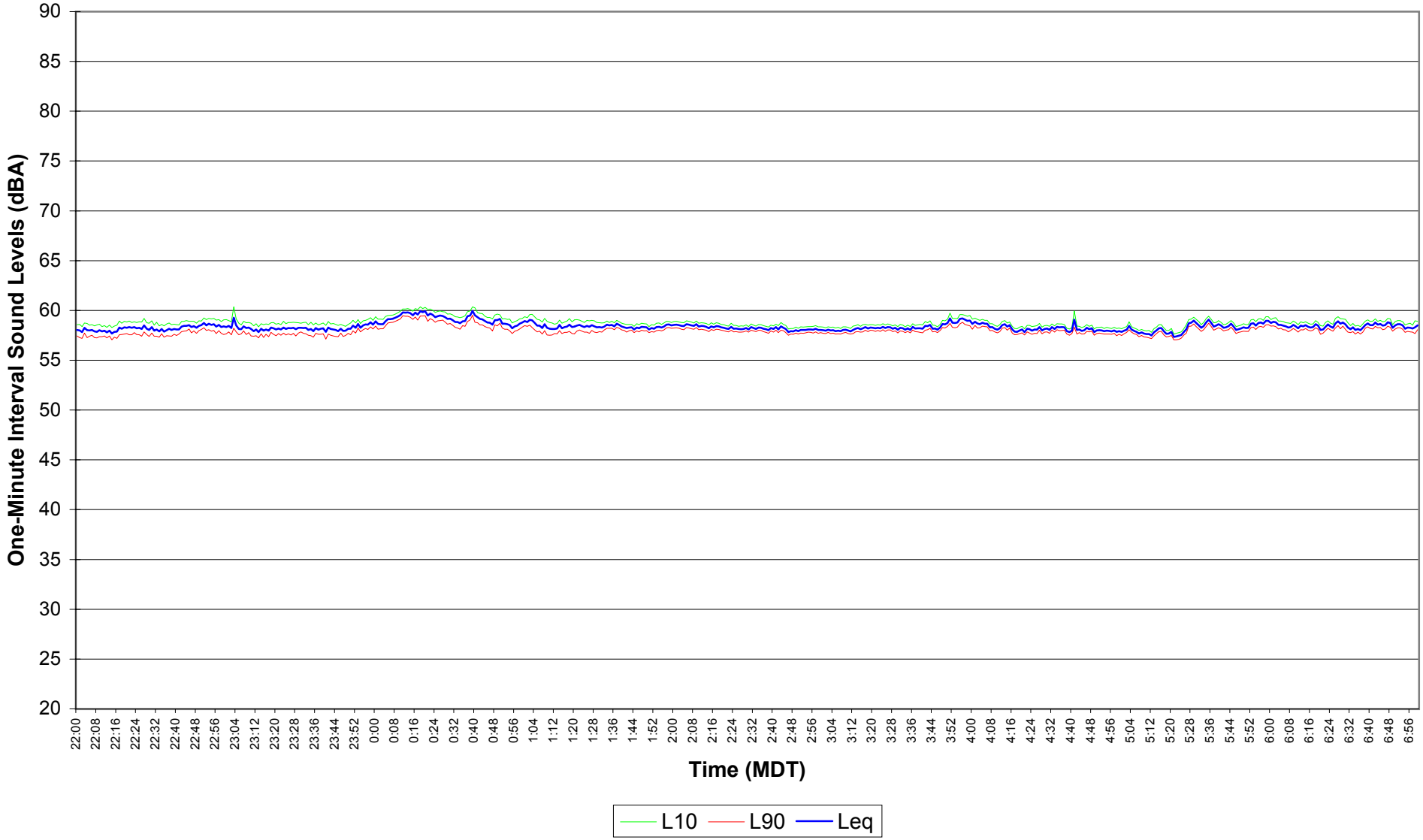


Figure E1.40
EnCana Rosebud
Site 1 Noise Survey
Dec. 06, 2004 07:00 - 14:29

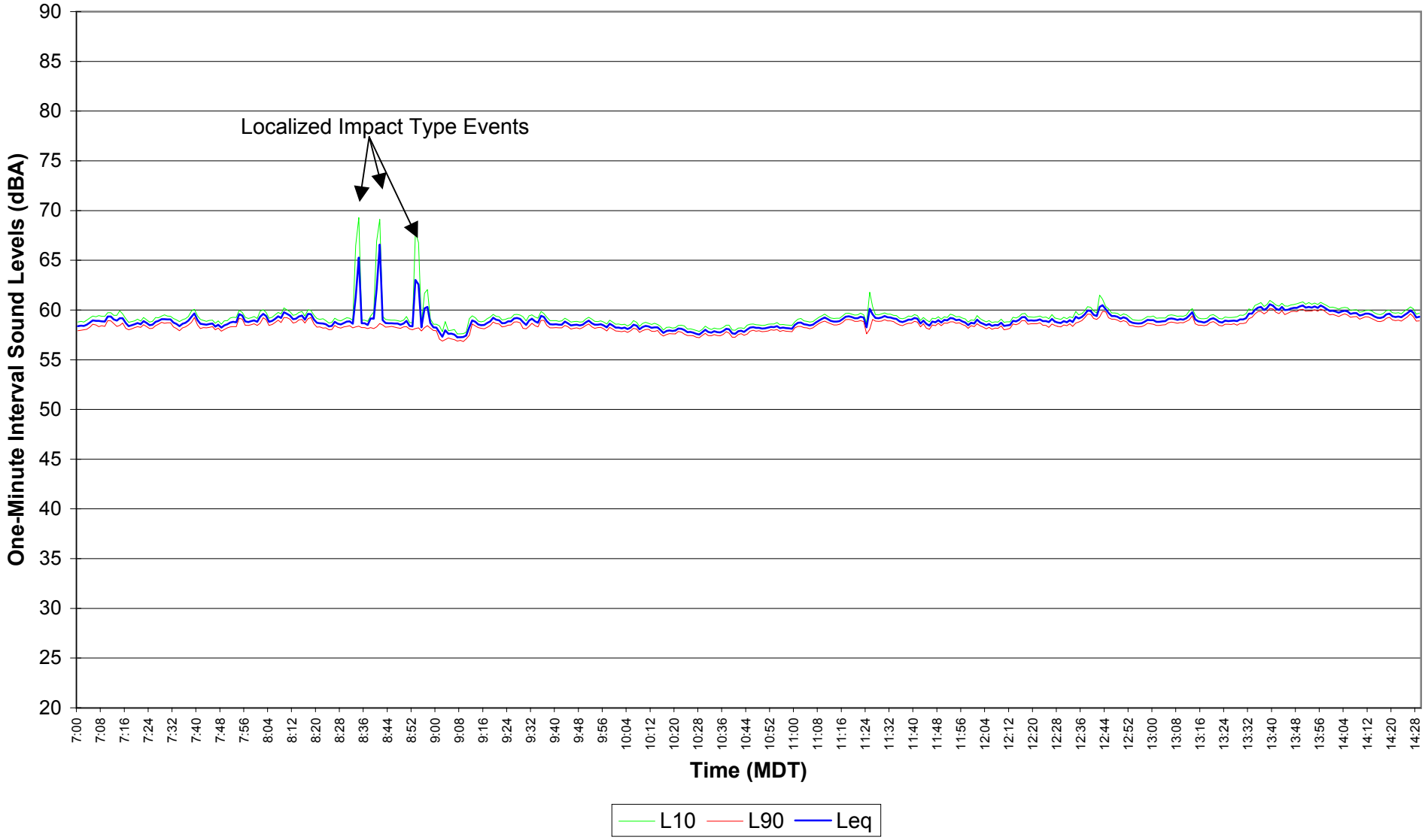


Figure E1.41
EnCana Rosebud
Site 1 Noise Survey
Dec. 06, 2004 14:30 - 21:59

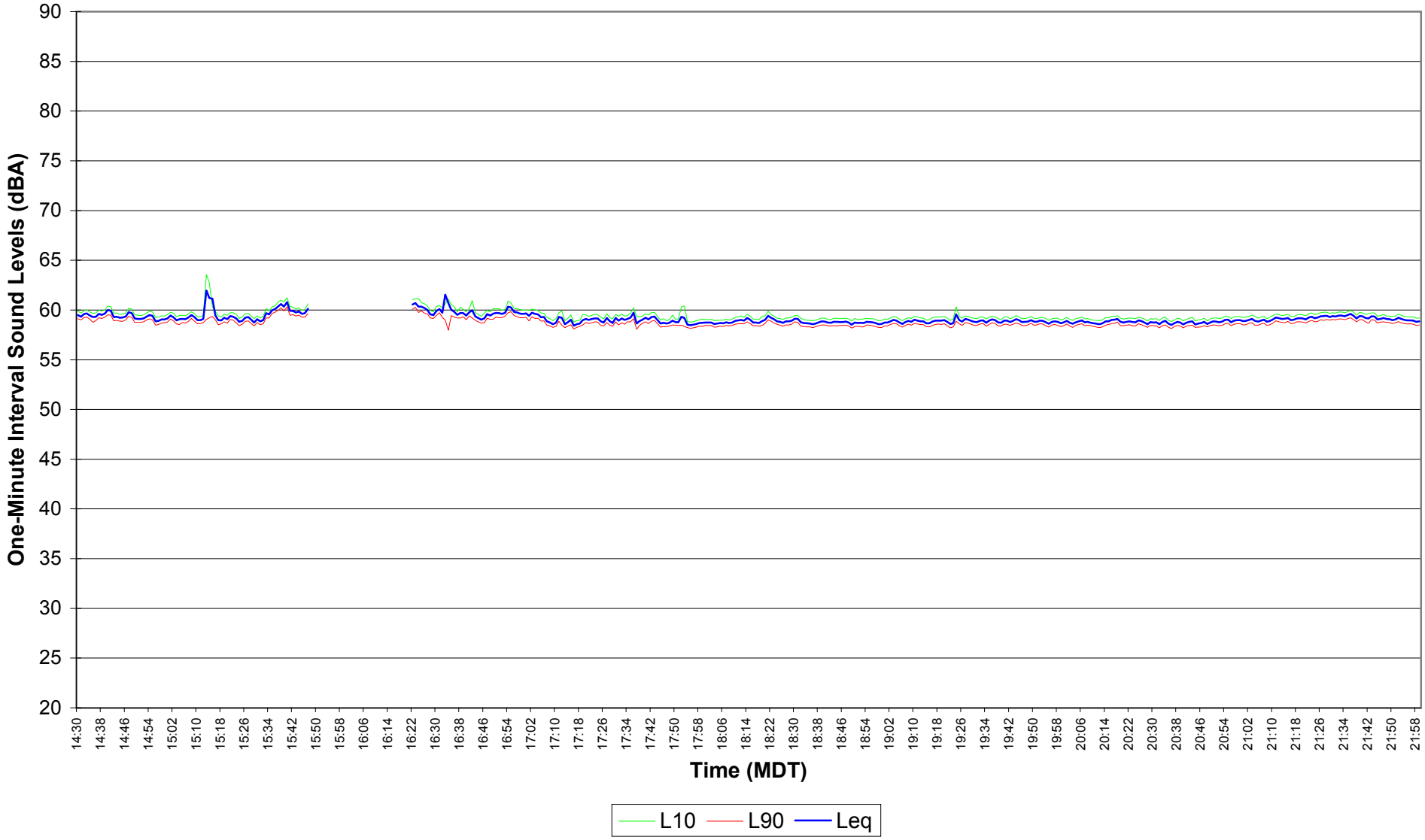


Figure E1.42
EnCana Rosebud
Site 1 Noise Survey
Dec. 06, 2004 - Dec. 07, 2004 22:00 - 06:59

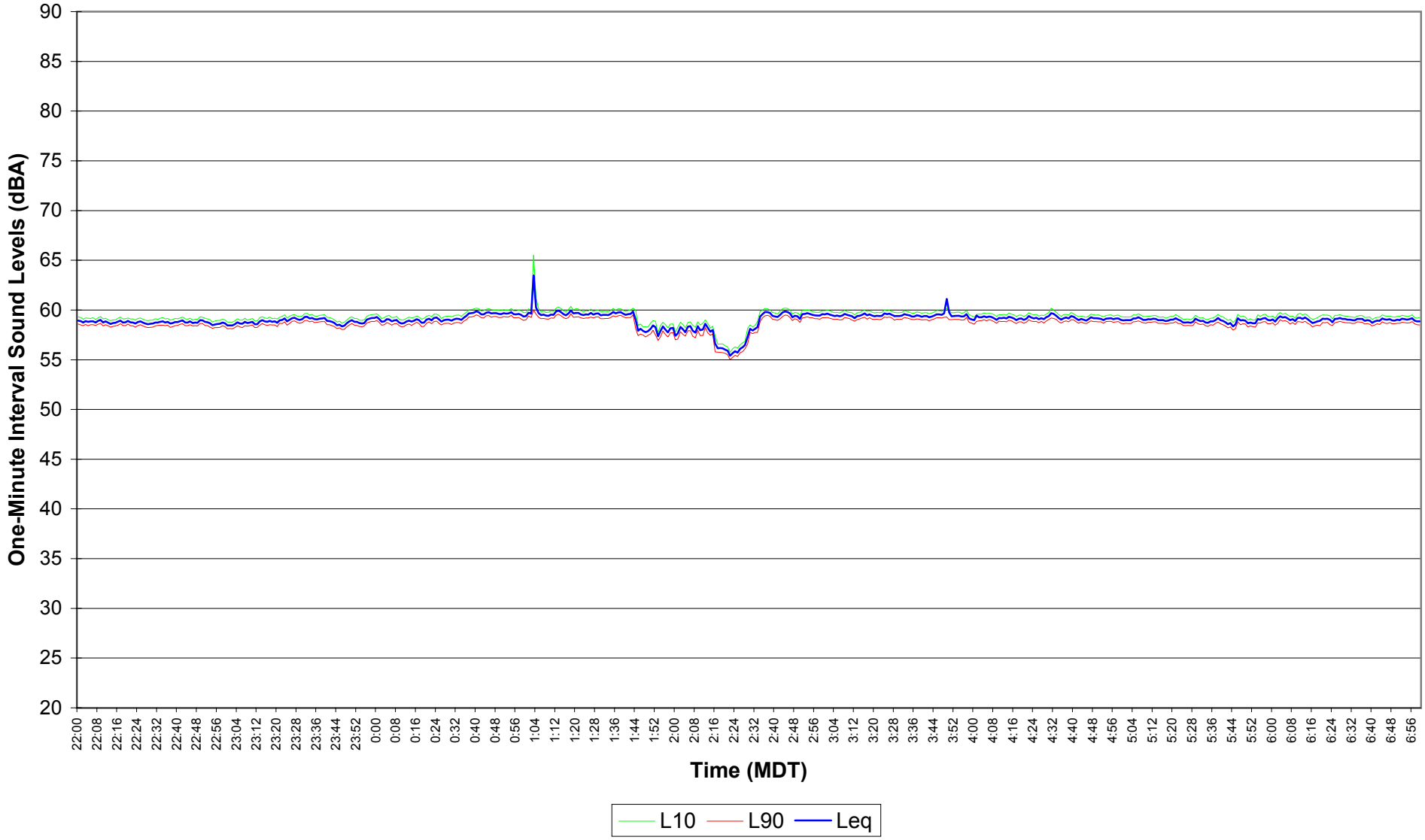


Figure E1.43
EnCana Rosebud
Site 1 Noise Survey
Dec. 07, 2004 07:00 - 14:29

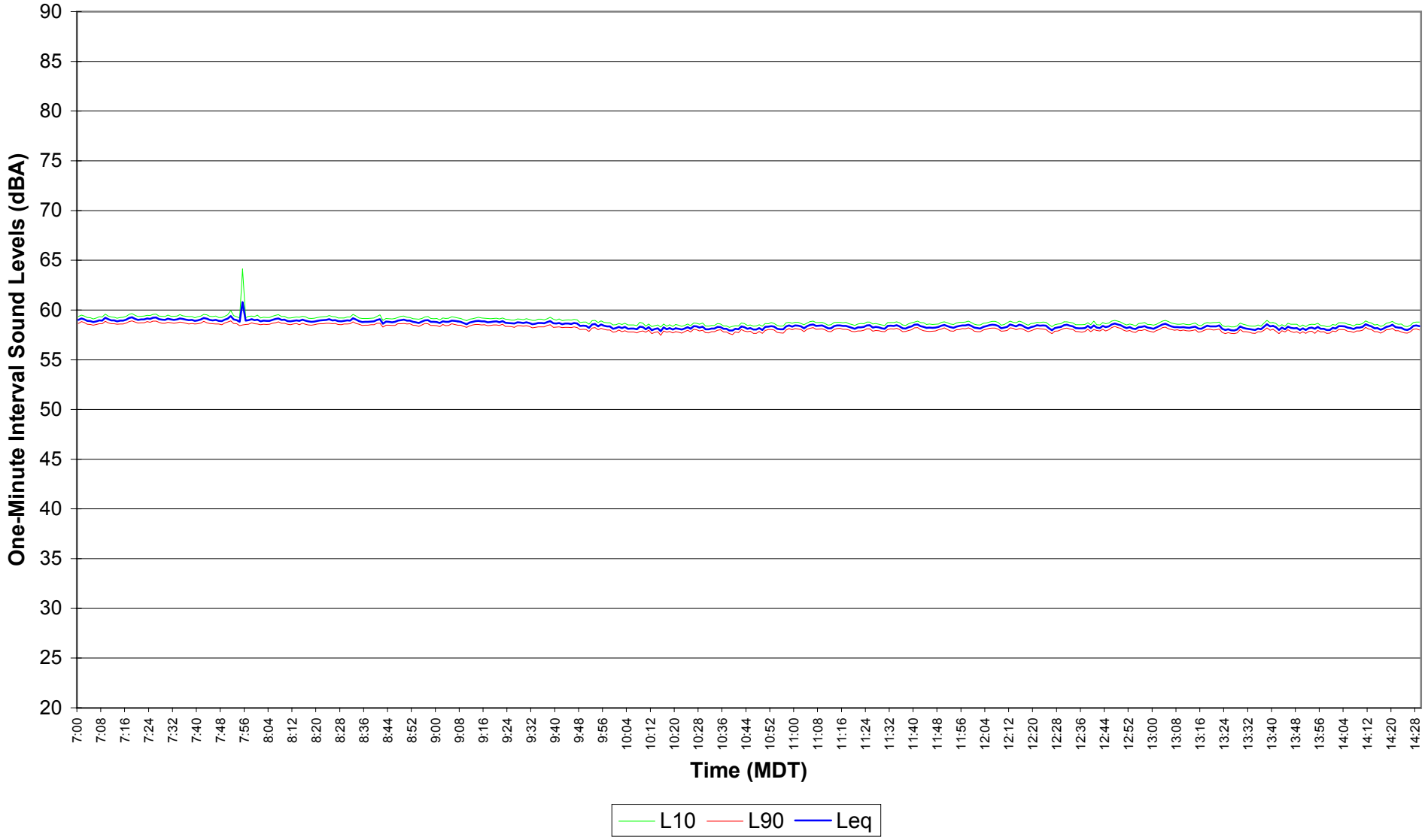


Figure E1.44
EnCana Rosebud
Site 1 Noise Survey
Dec. 07, 2004 14:30 - 21:59

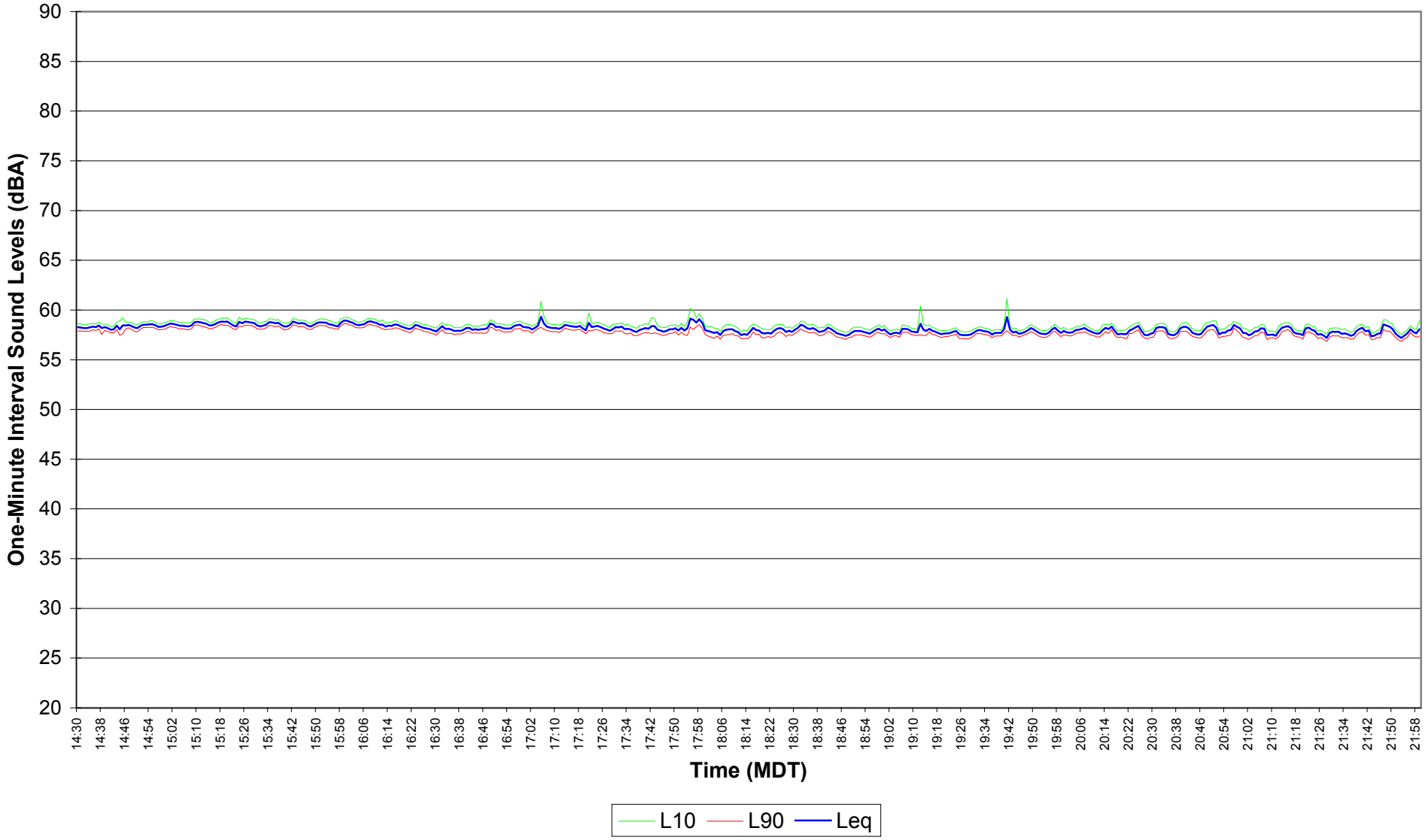


Figure E1.45
EnCana Rosebud
Site 1 Noise Survey
Dec. 07, 2004 - Dec. 08, 2004 22:00 - 06:59

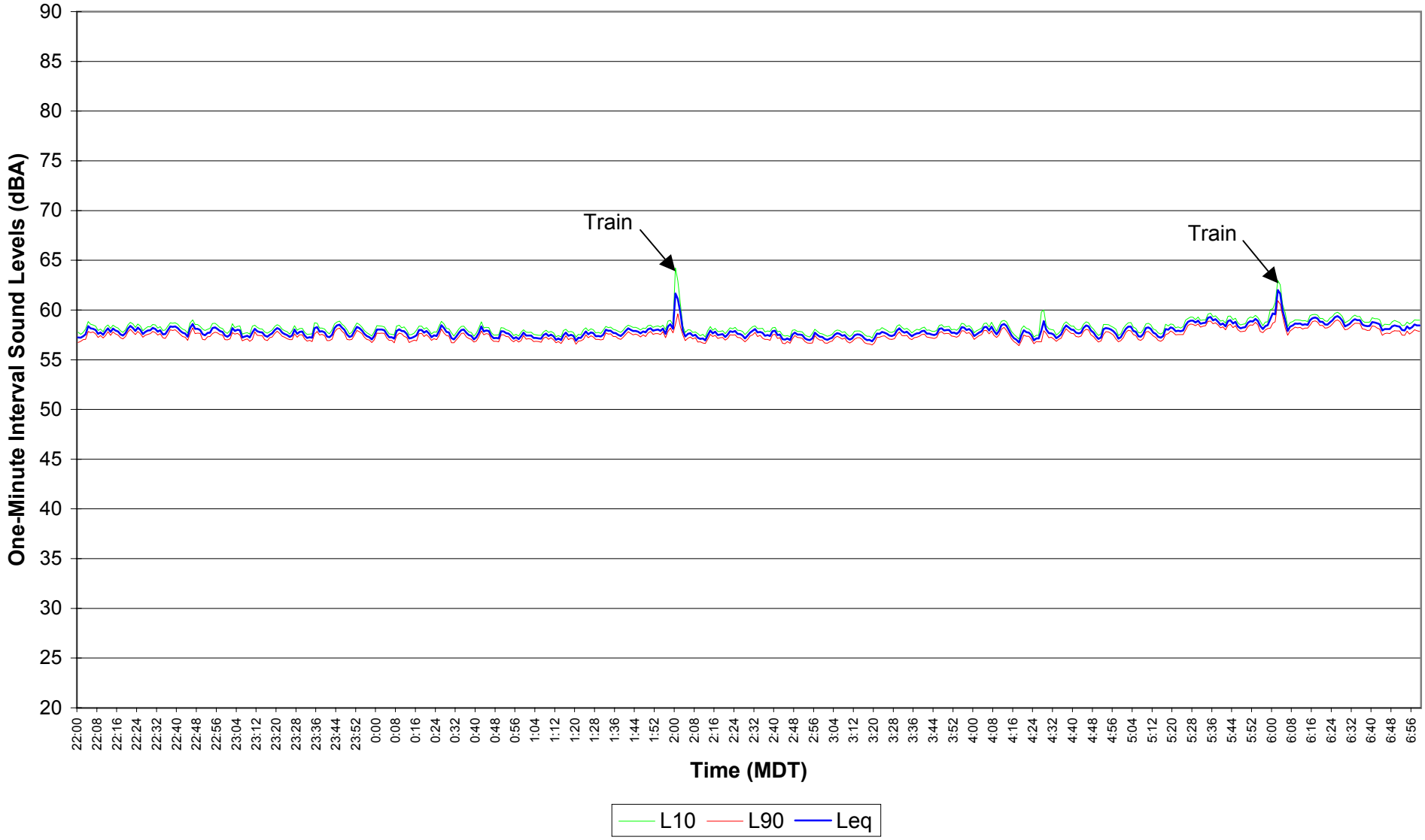


Figure E1.46

EnCana Rosebud

Site 1 Noise Survey

Dec. 08, 2004 07:00 - 14:29

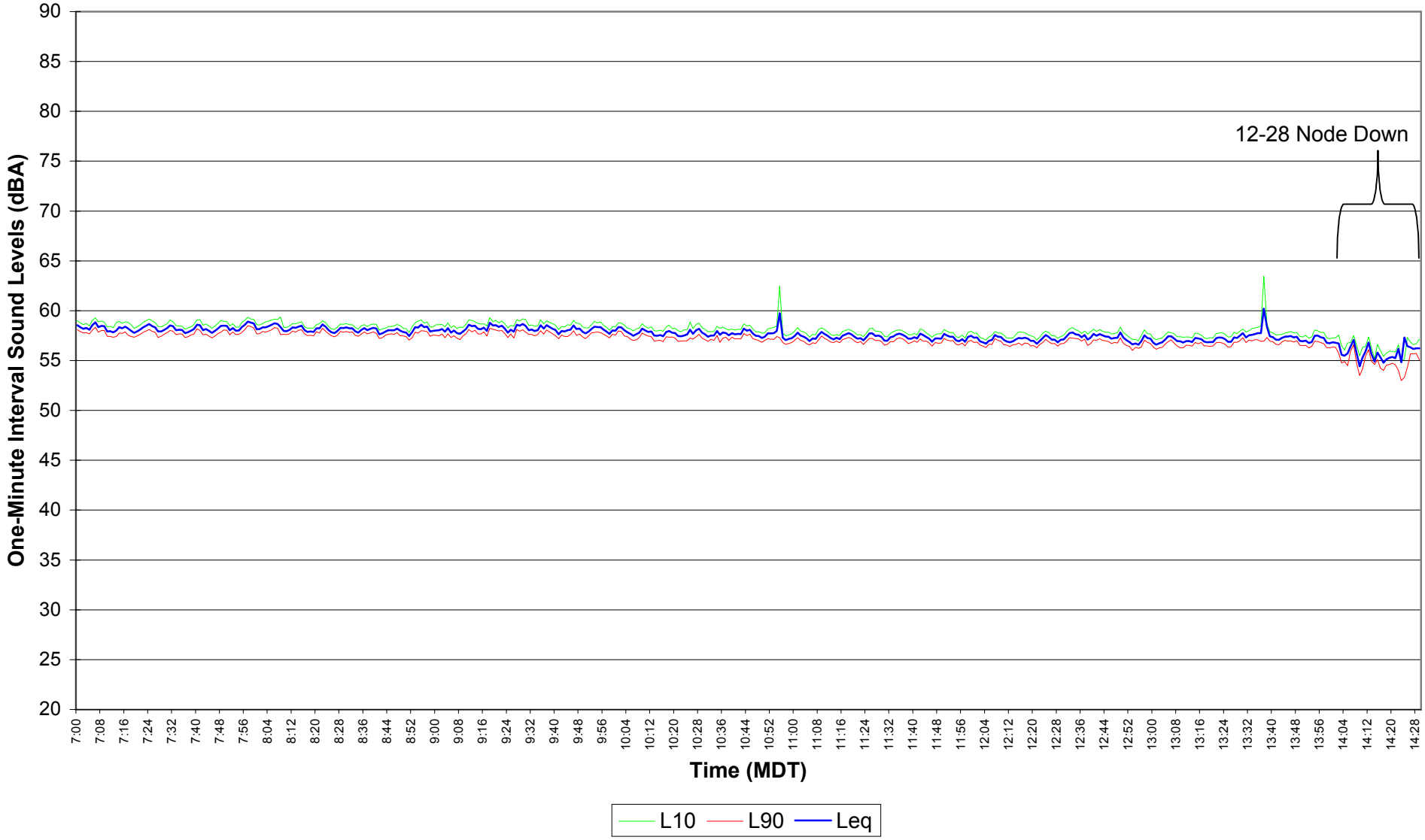


Figure E1.47
EnCana Rosebud
Site 1 Noise Survey
Dec. 08, 2004 14:30 - 21:59

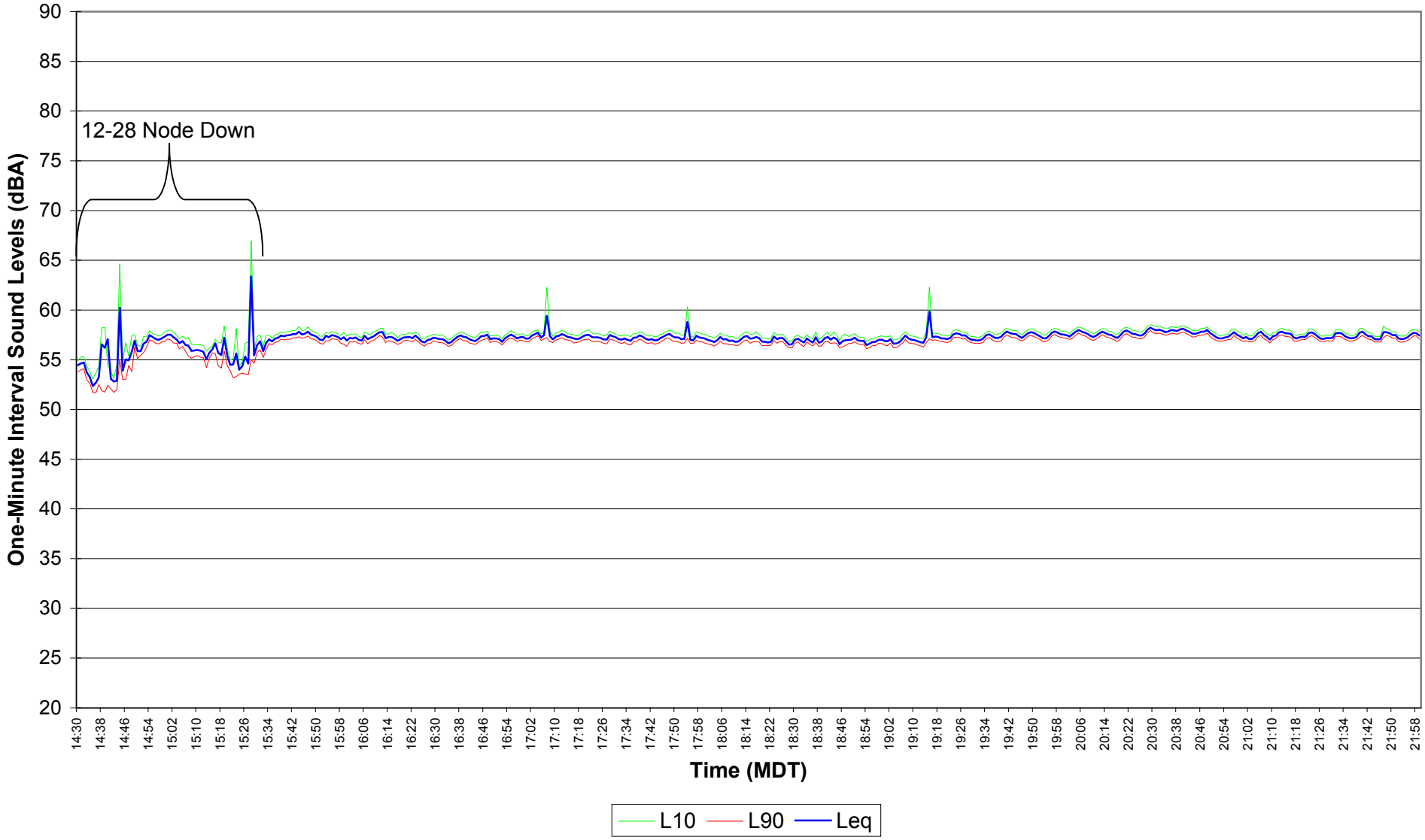


Figure E1.48
EnCana Rosebud
Site 1 Noise Survey
Dec. 08, 2004 - Dec. 09, 2004 22:00 - 06:59

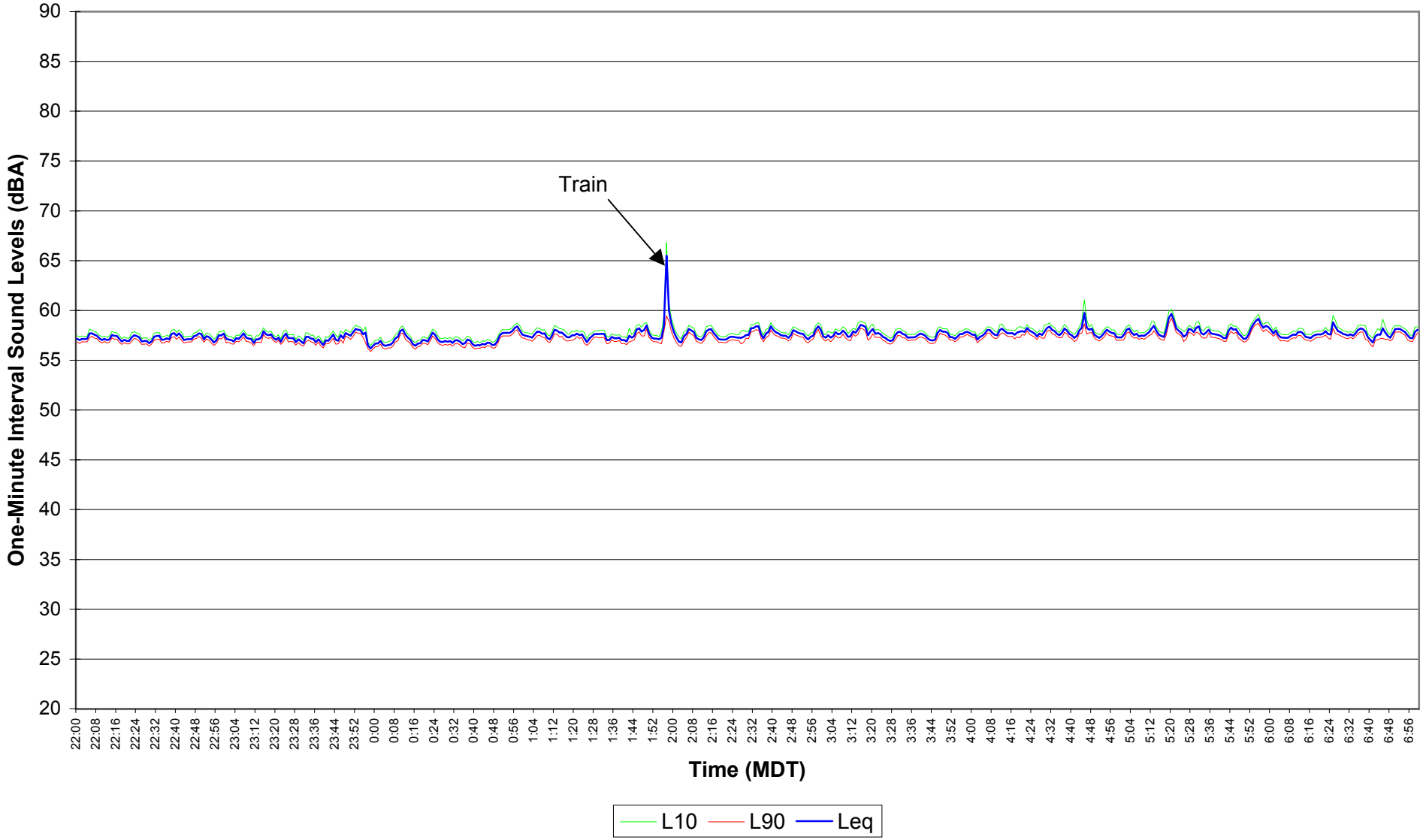


Figure E1.49
EnCana Rosebud
Site 1 Noise Survey
Dec. 09, 2004 07:00 - 14:29

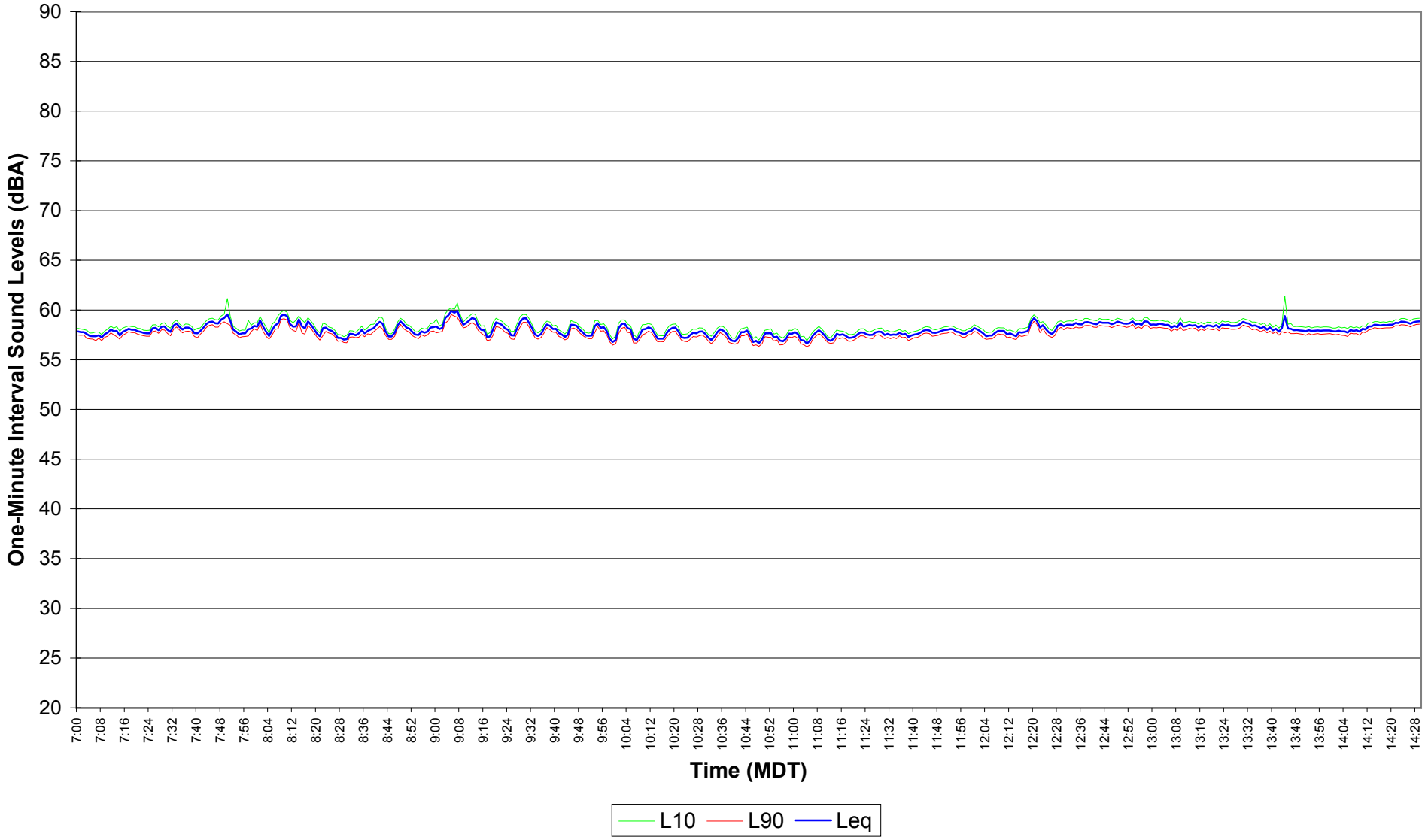


Figure E1.50
EnCana Rosebud
Site 1 Noise Survey
Dec. 09, 2004 14:30 - 21:59

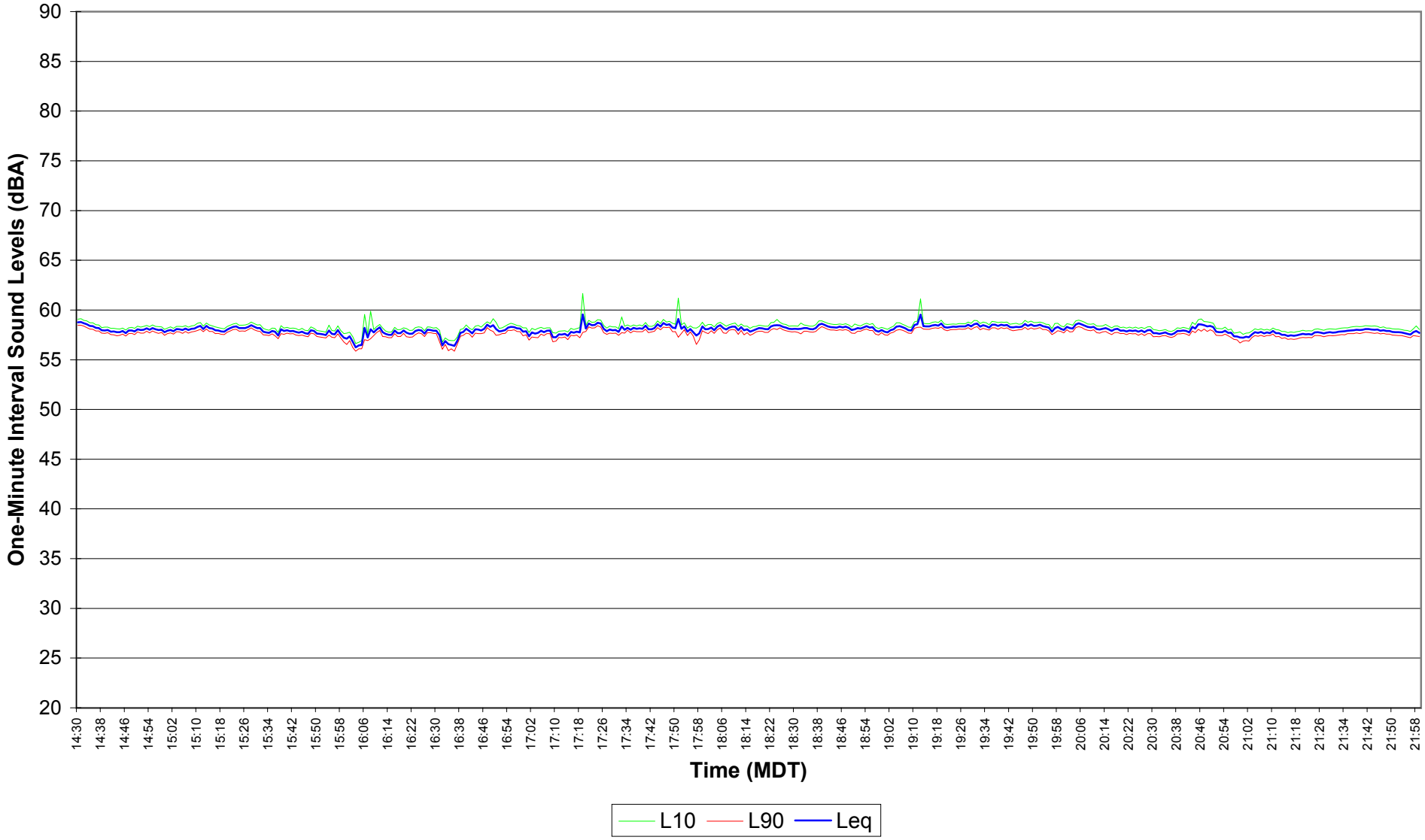


Figure E1.51
EnCana Rosebud
Site 1 Noise Survey
Dec. 09, 2004 - Dec. 10, 2004 22:00 - 06:59

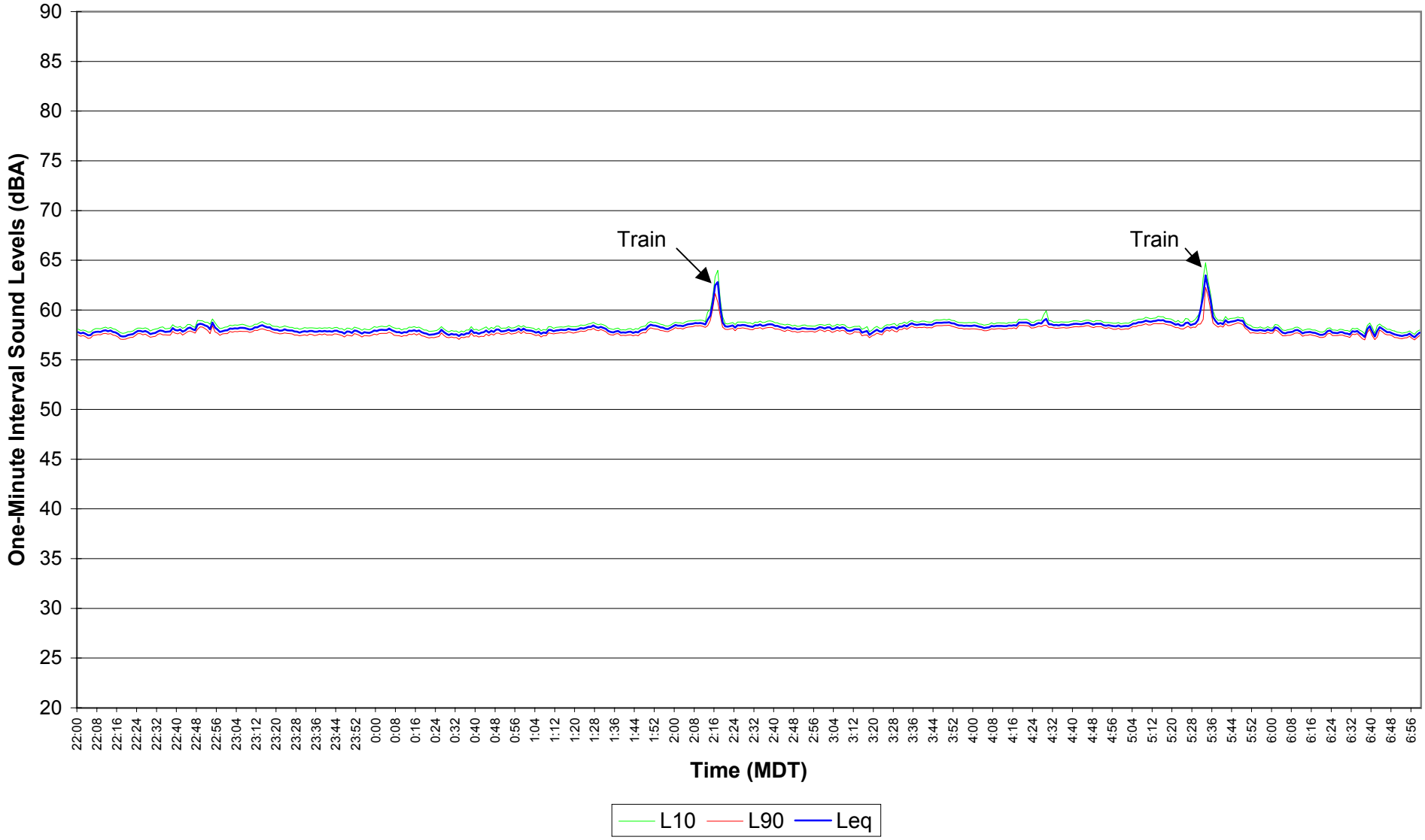


Figure E1.52
EnCana Rosebud
Site 1 Noise Survey
Dec. 10, 2004 07:00 - 14:29

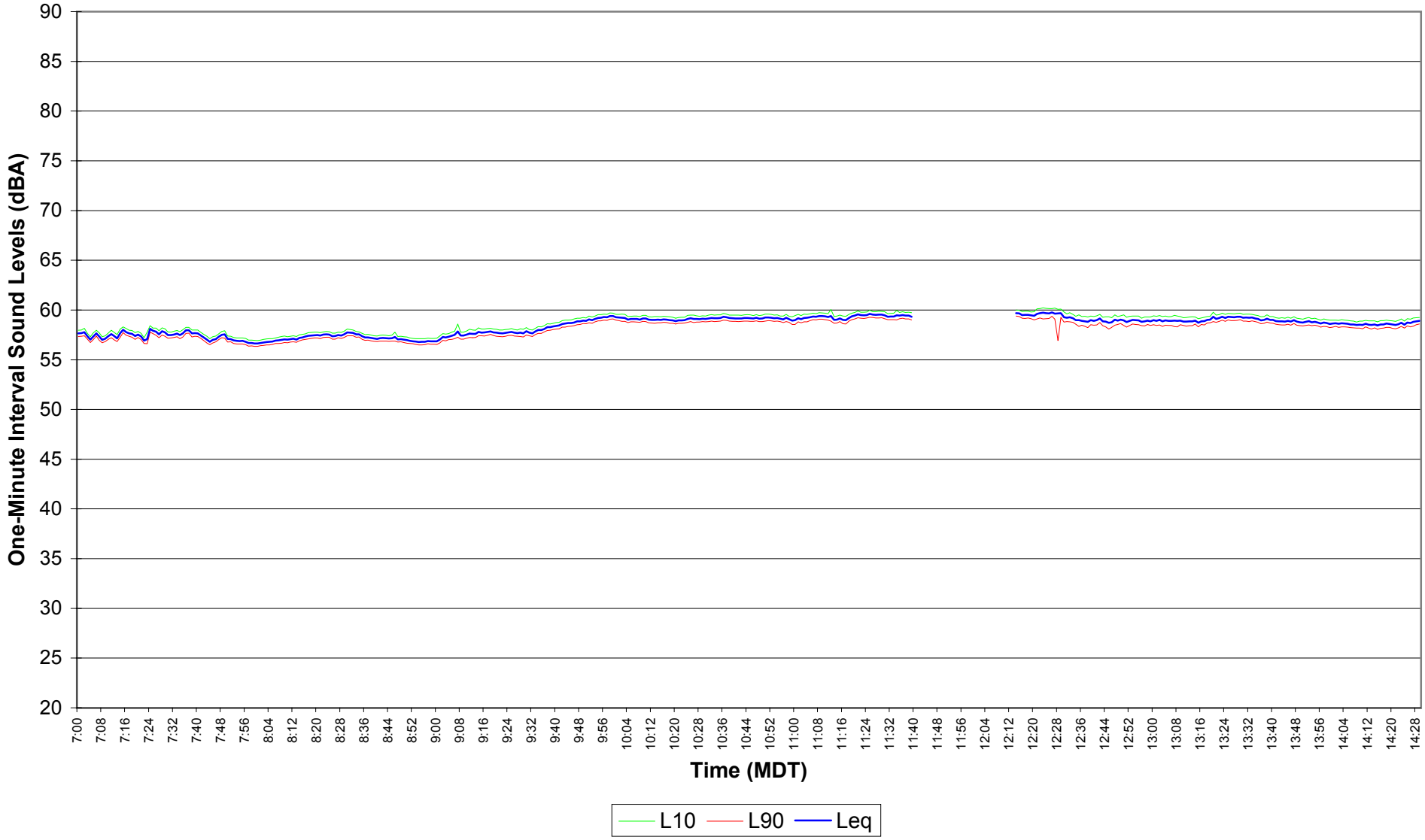


Figure E1.53
EnCana Rosebud
Site 1 Noise Survey
Dec. 10, 2004 14:30 - 21:59

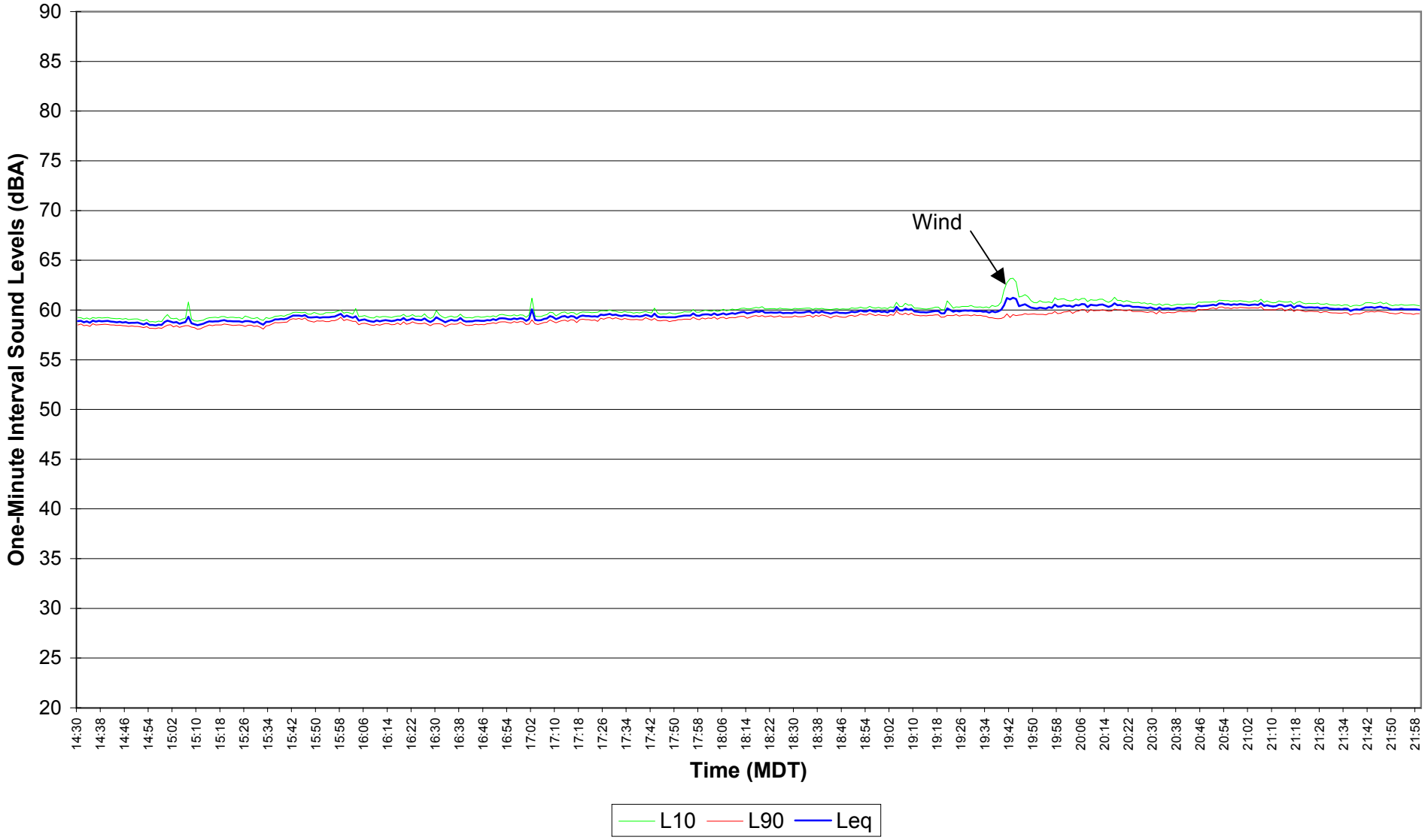


Figure E1.54
EnCana Rosebud
Site 1 Noise Survey
Dec. 10, 2004 - Dec. 11, 2004 22:00 - 06:59

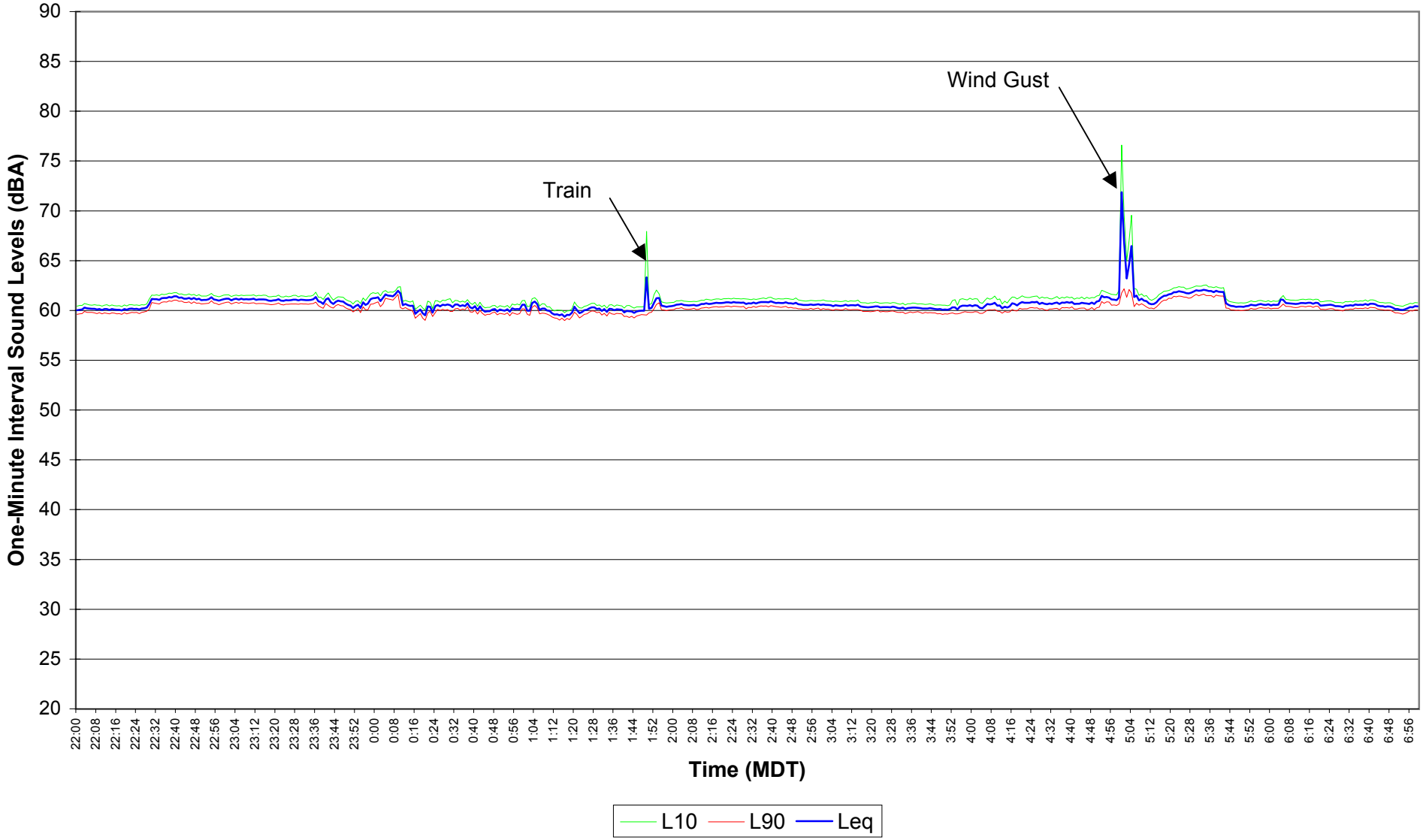


Figure E1.55
EnCana Rosebud
Site 1 Noise Survey
Dec. 11, 2004 07:00 - 14:29

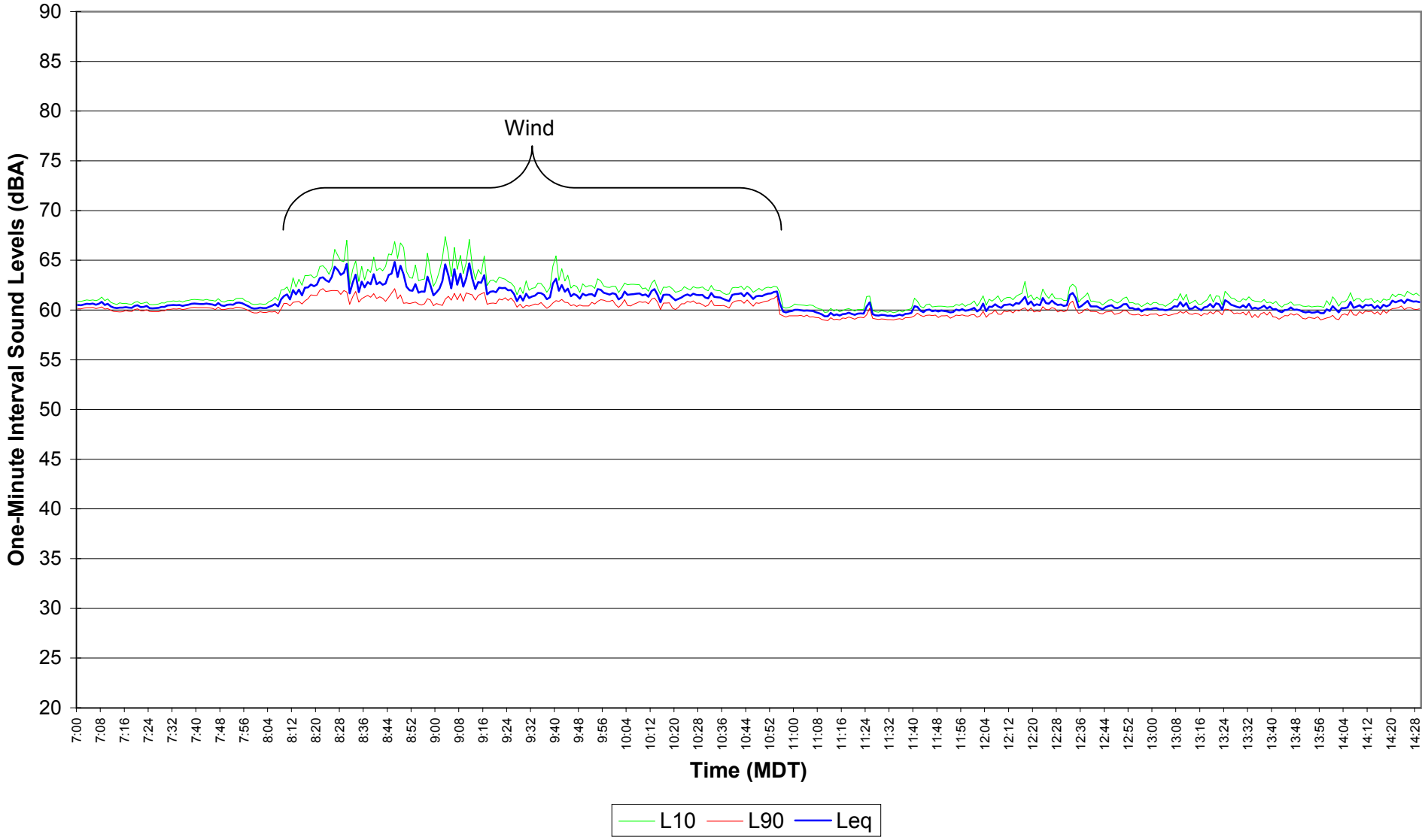


Figure E1.56
EnCana Rosebud
Site 1 Noise Survey
Dec. 11, 2004 14:30 - 21:59

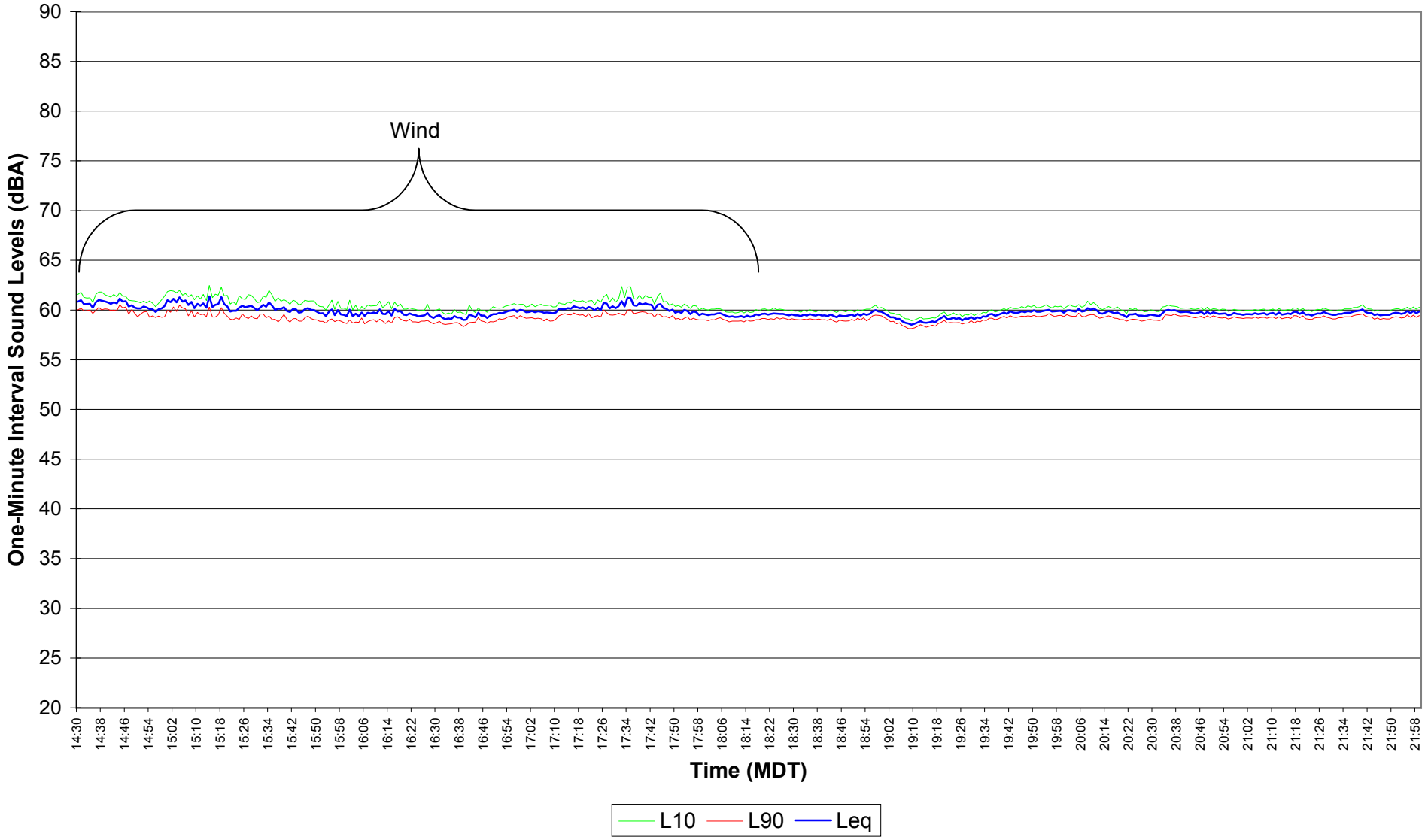


Figure E1.57
EnCana Rosebud
Site 1 Noise Survey
Dec. 11, 2004 - Dec. 12, 2004 22:00 - 06:59

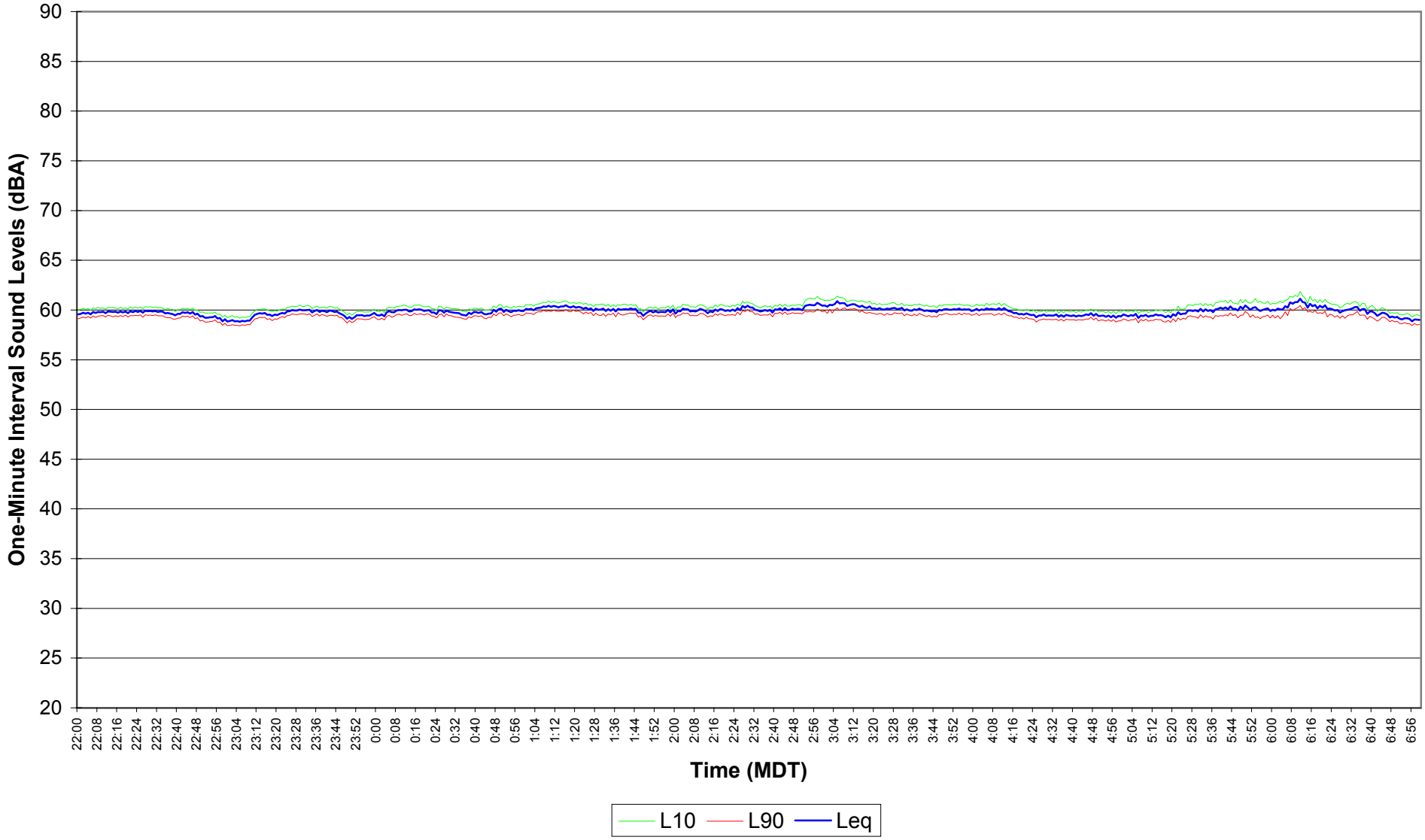


Figure E1.58
EnCana Rosebud
Site 1 Noise Survey
Dec. 12, 2004 07:00 - 14:29

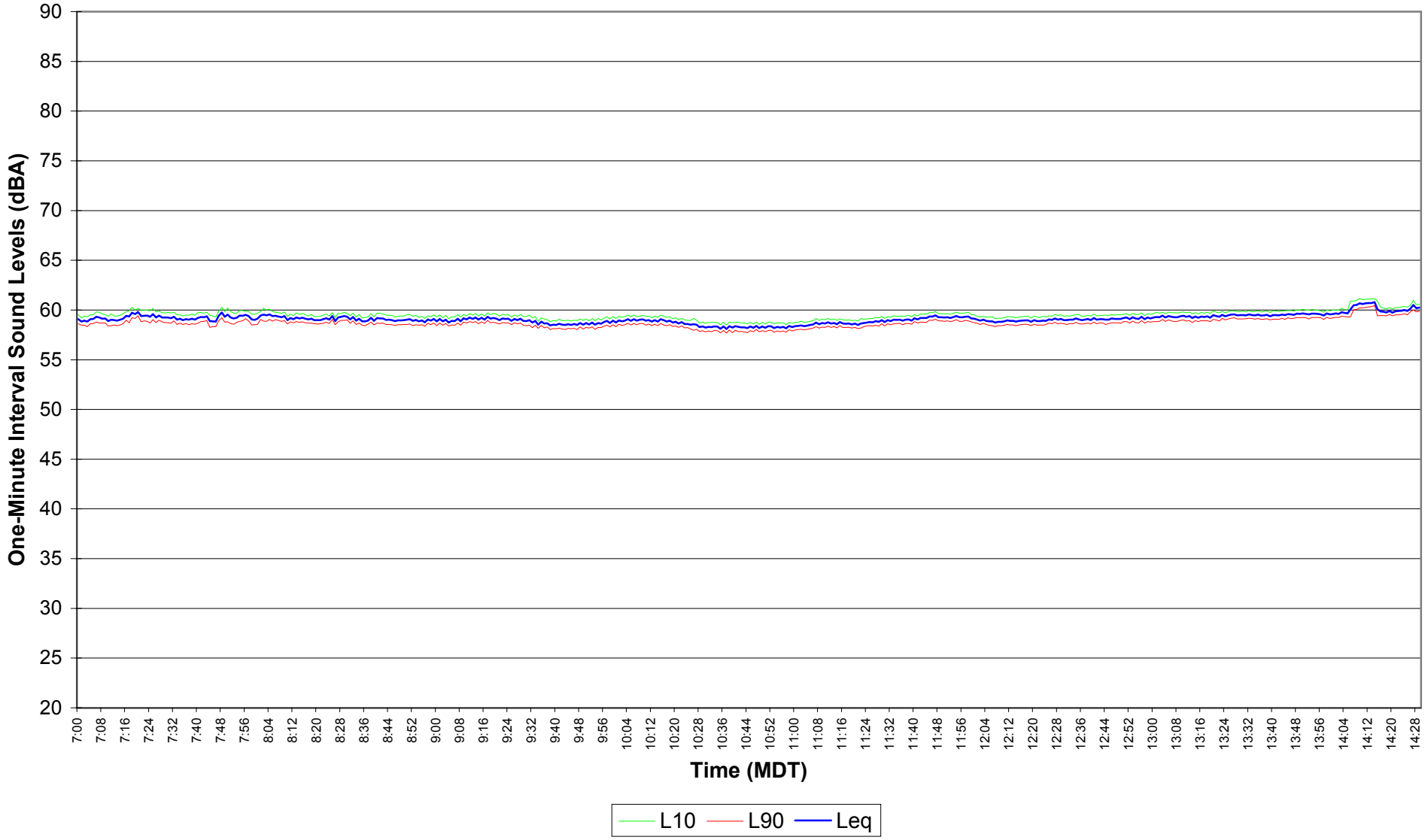


Figure E1.59
EnCana Rosebud
Site 1 Noise Survey
Dec. 12, 2004 14:30 - 21:59

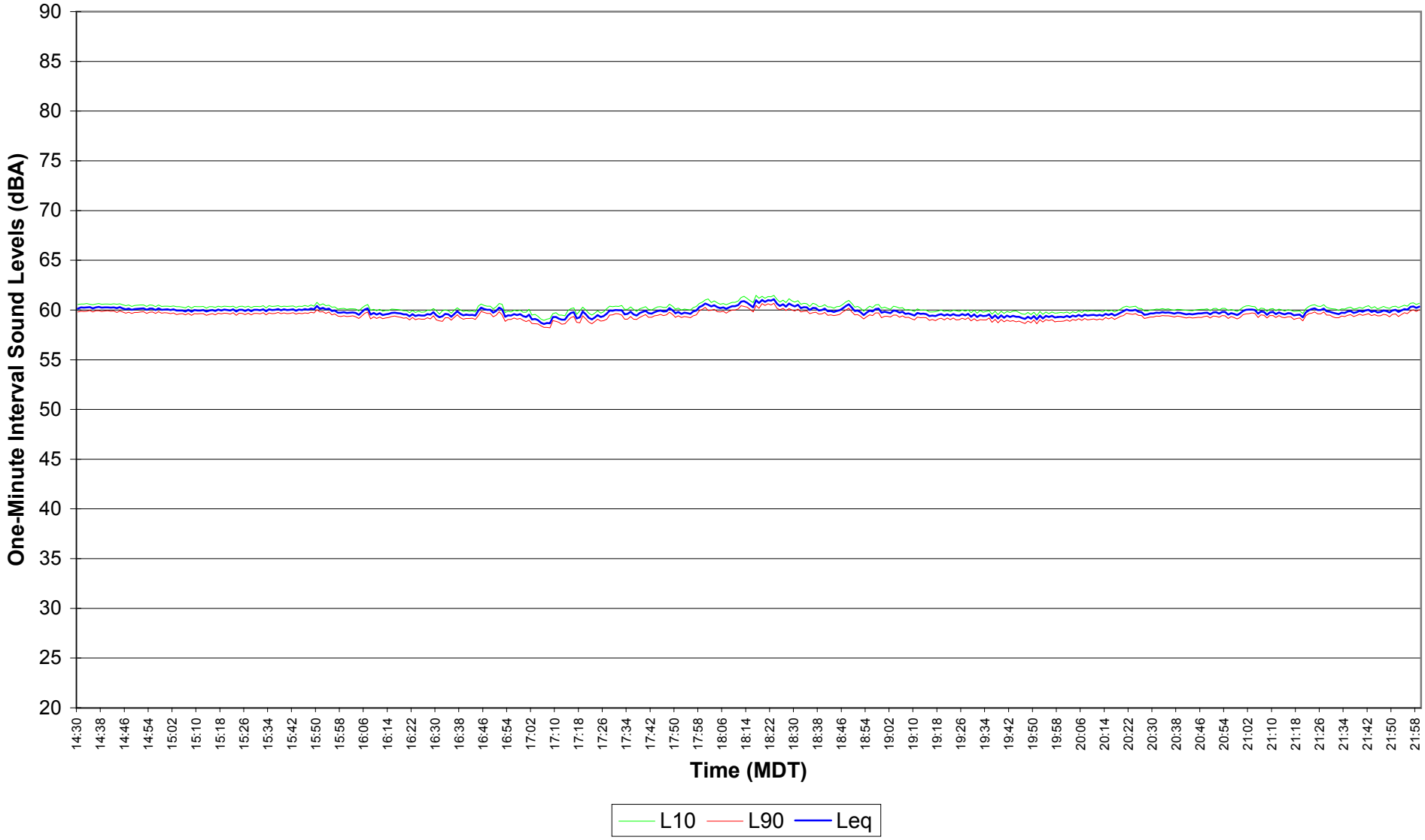


Figure E1.60
EnCana Rosebud
Site 1 Noise Survey
Dec. 12, 2004 - Dec. 13, 2004 22:00 - 06:59

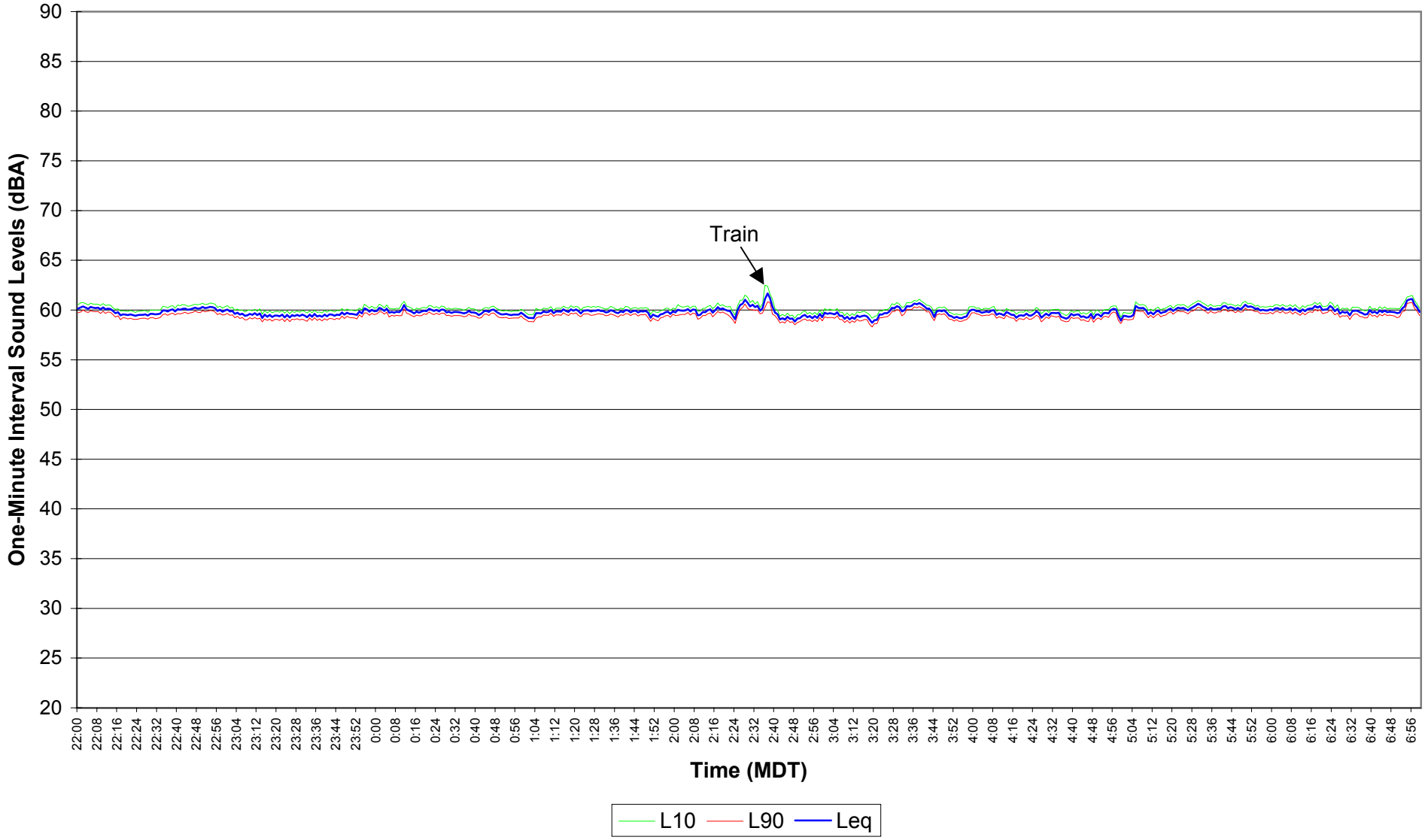


Figure E1.61
EnCana Rosebud
Site 1 Noise Survey
Dec. 13, 2004 07:00 - 14:29

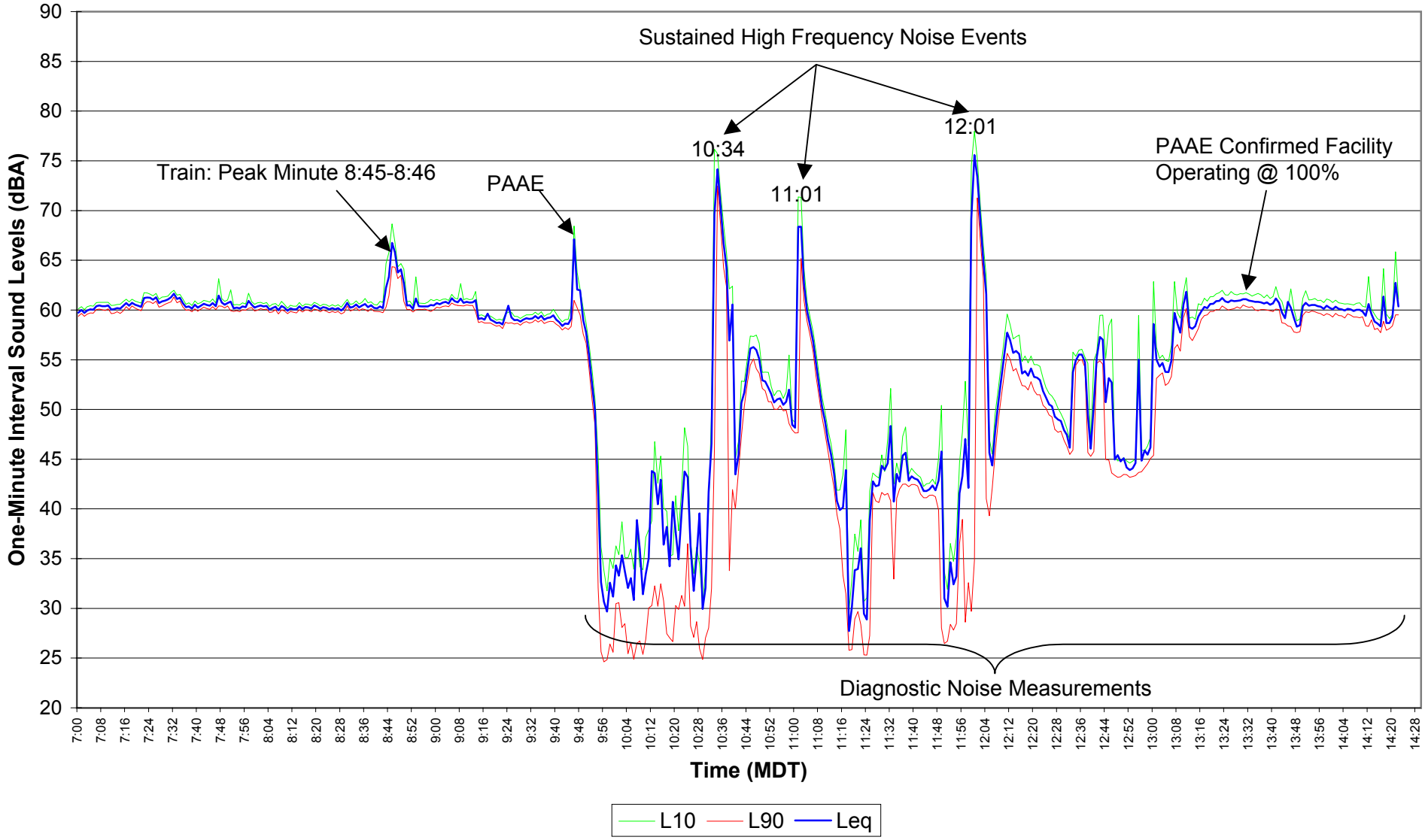


Figure E1.62
EnCana Rosebud
Site 1 Noise Survey
Dec. 13, 2004 14:30 - 21:59

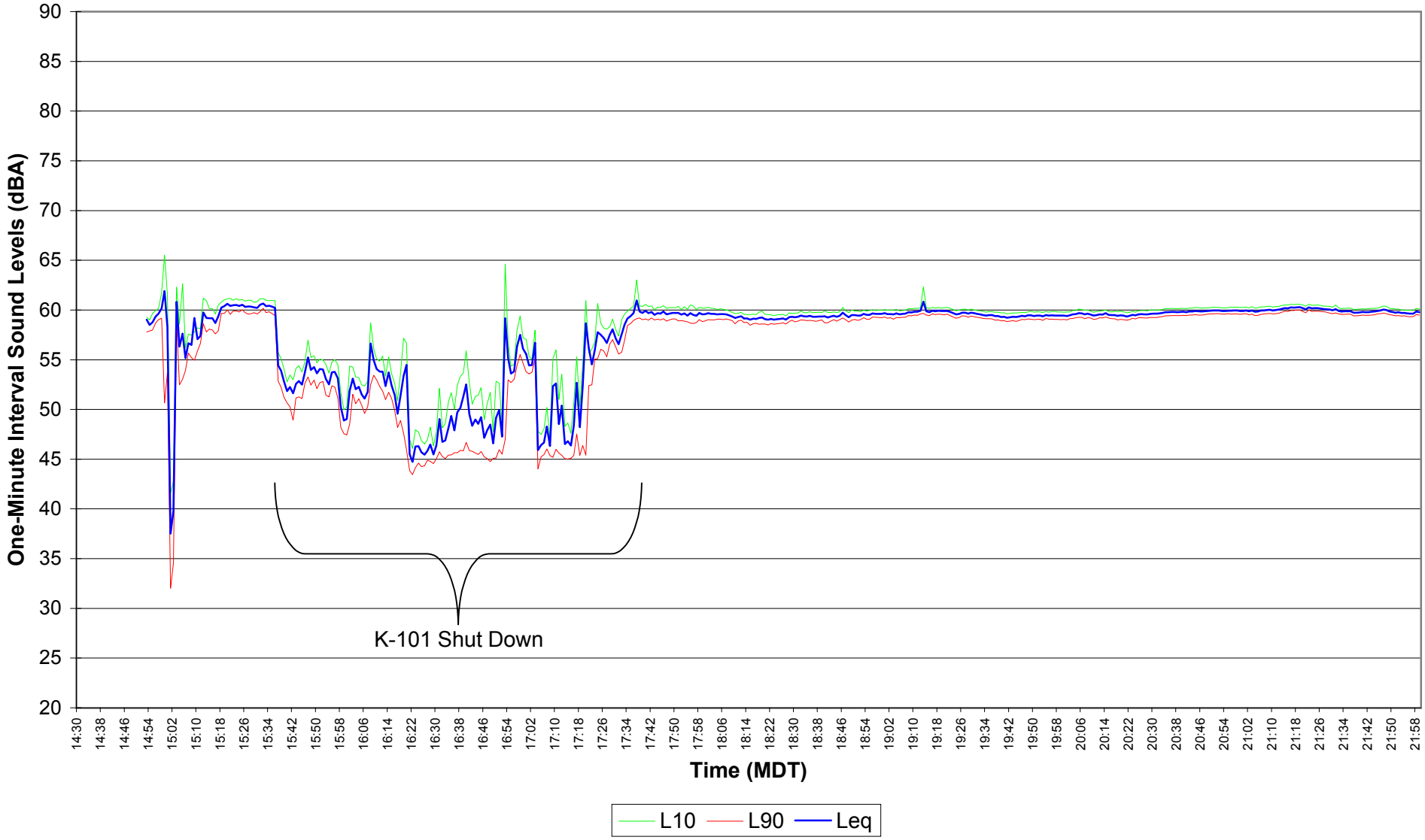


Figure E1.63
EnCana Rosebud
Site 1 Noise Survey
Dec. 13, 2004 - Dec. 14, 2004 22:00 - 06:59

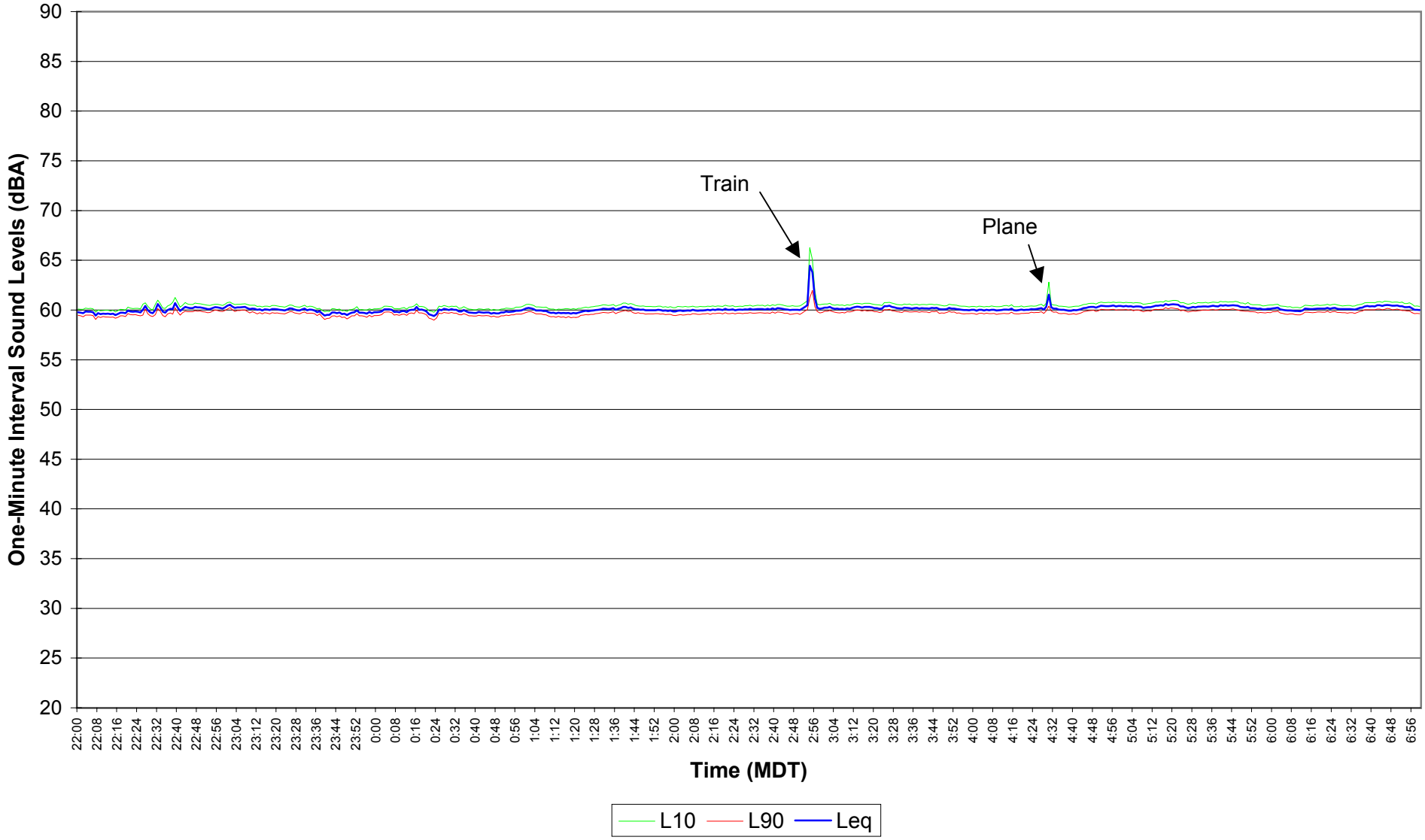


Figure E1.64

EnCana Rosebud

Site 1 Noise Survey

Dec. 14, 2004 07:00 - 14:29

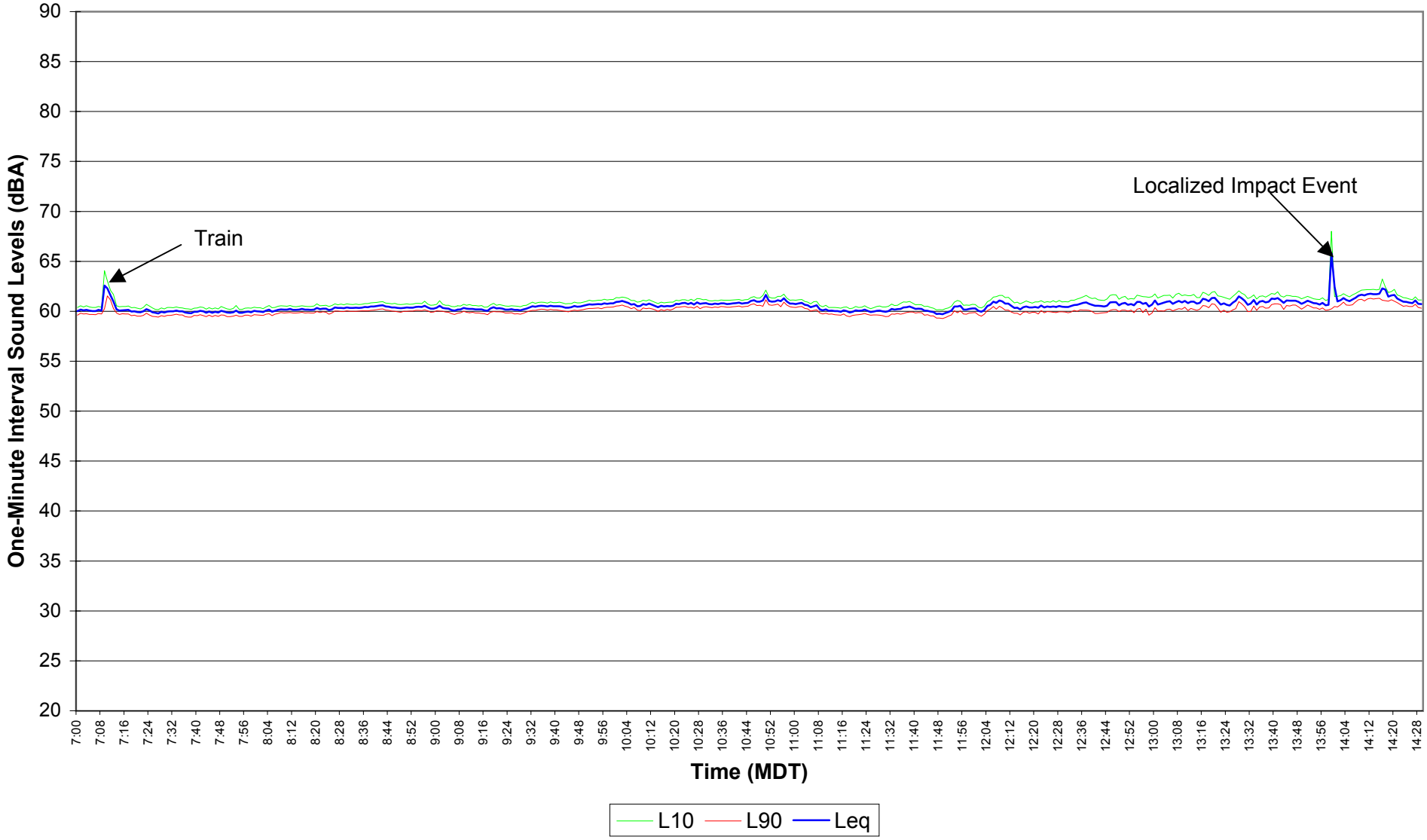


Figure E1.65
EnCana Rosebud
Site 1 Noise Survey
Dec. 14, 2004 14:30 - 21:59

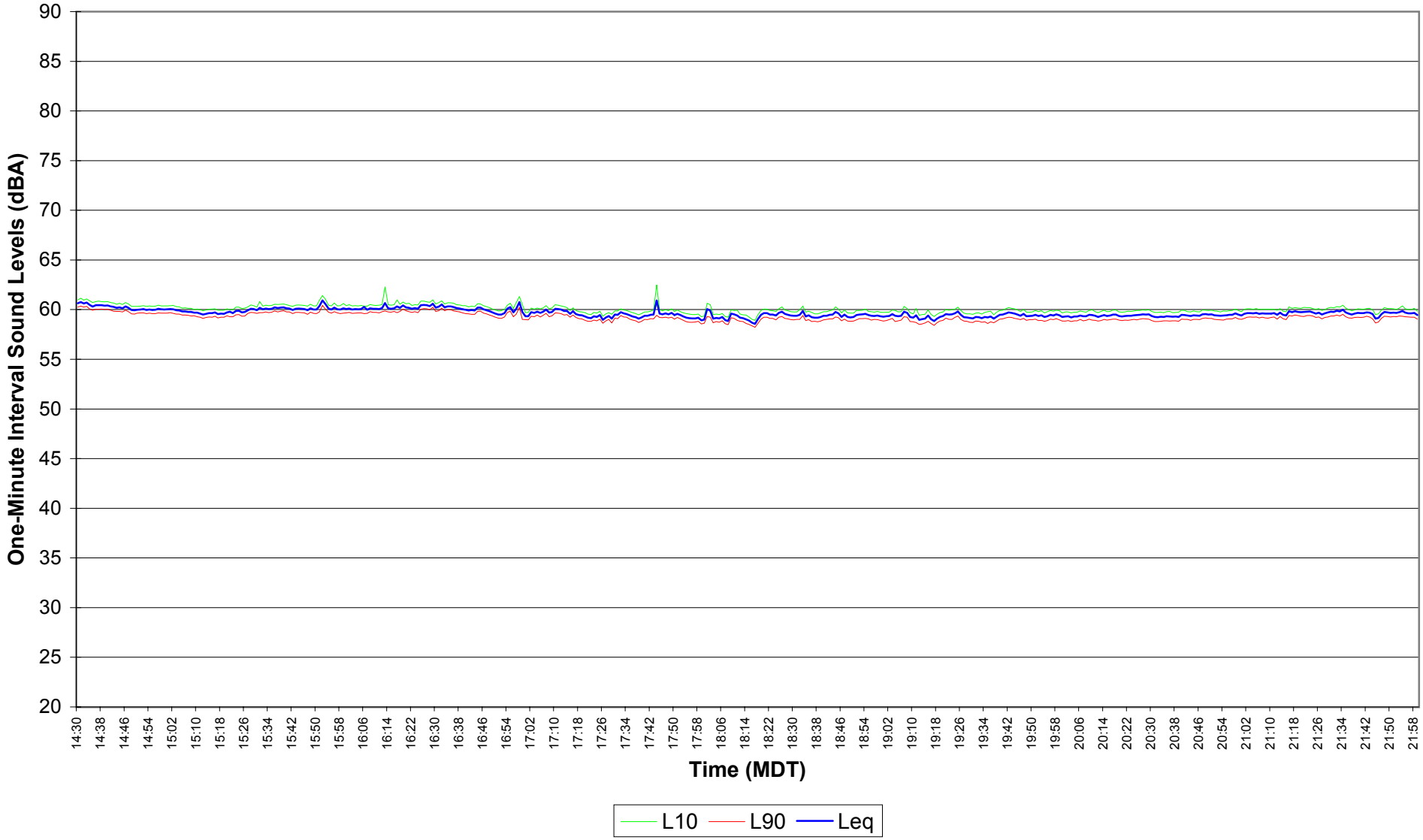


Figure E1.66
EnCana Rosebud
Site 1 Noise Survey
Dec. 14, 2004 - Dec. 15, 2004 22:00 - 06:59

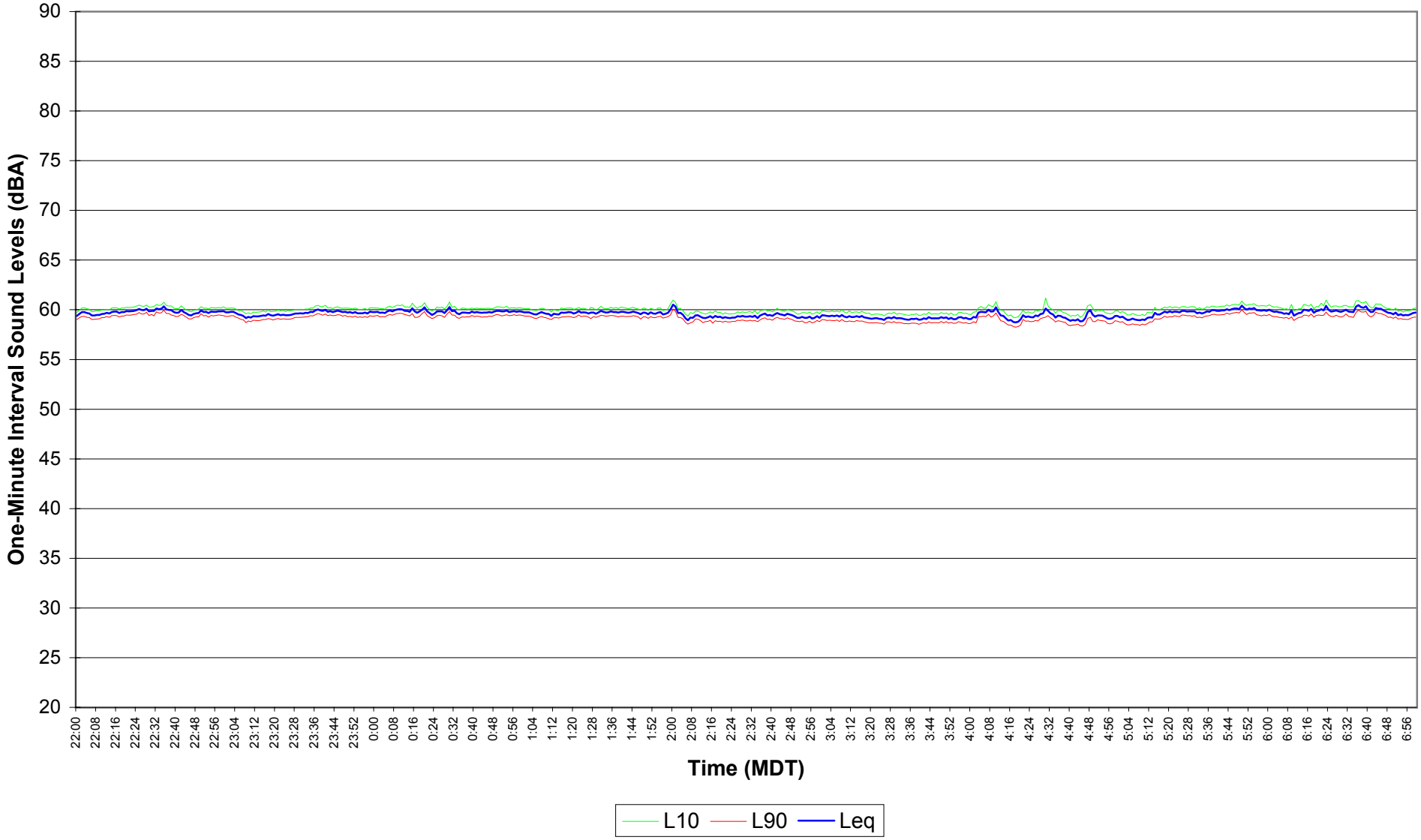


Figure E1.67
EnCana Rosebud
Site 1 Noise Survey
Dec. 15, 2004 07:00 - 14:29

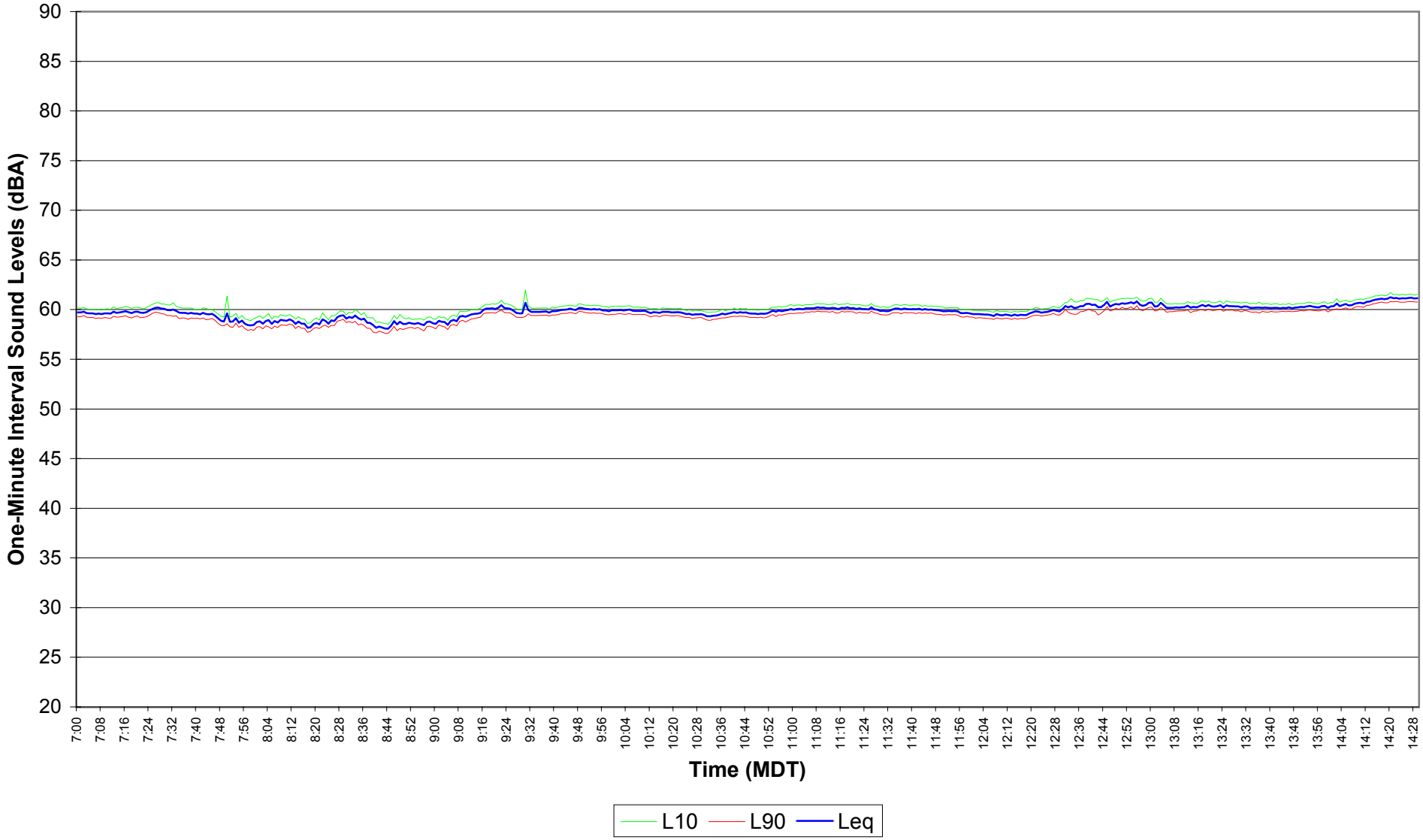


Figure E1.68
EnCana Rosebud
Site 1 Noise Survey
Dec. 15, 2004 14:30 - 21:59

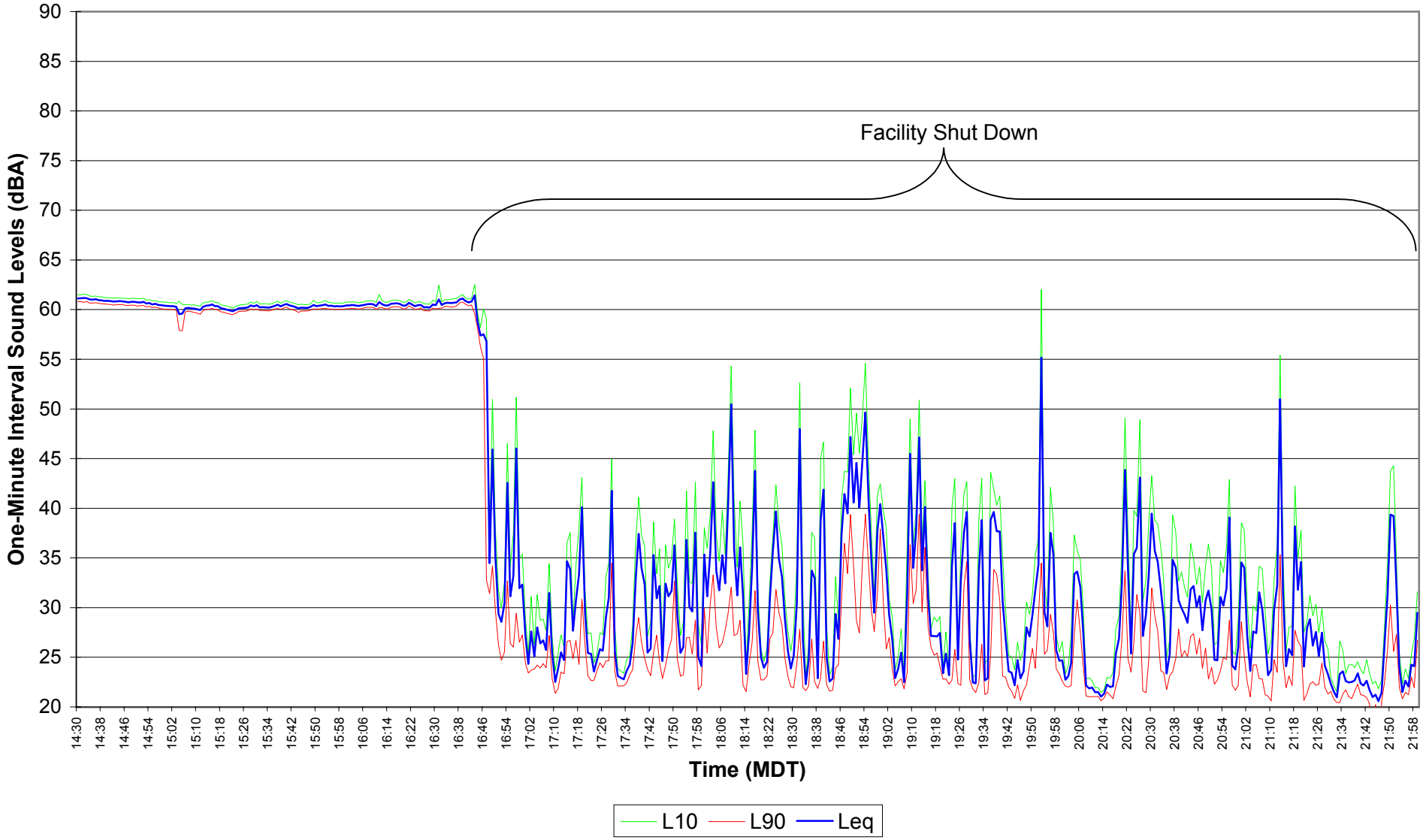


Figure E1.69
EnCana Rosebud
Site 1 Noise Survey
Dec 15, 2004 - Dec 16, 2004 22:00 - 06:59

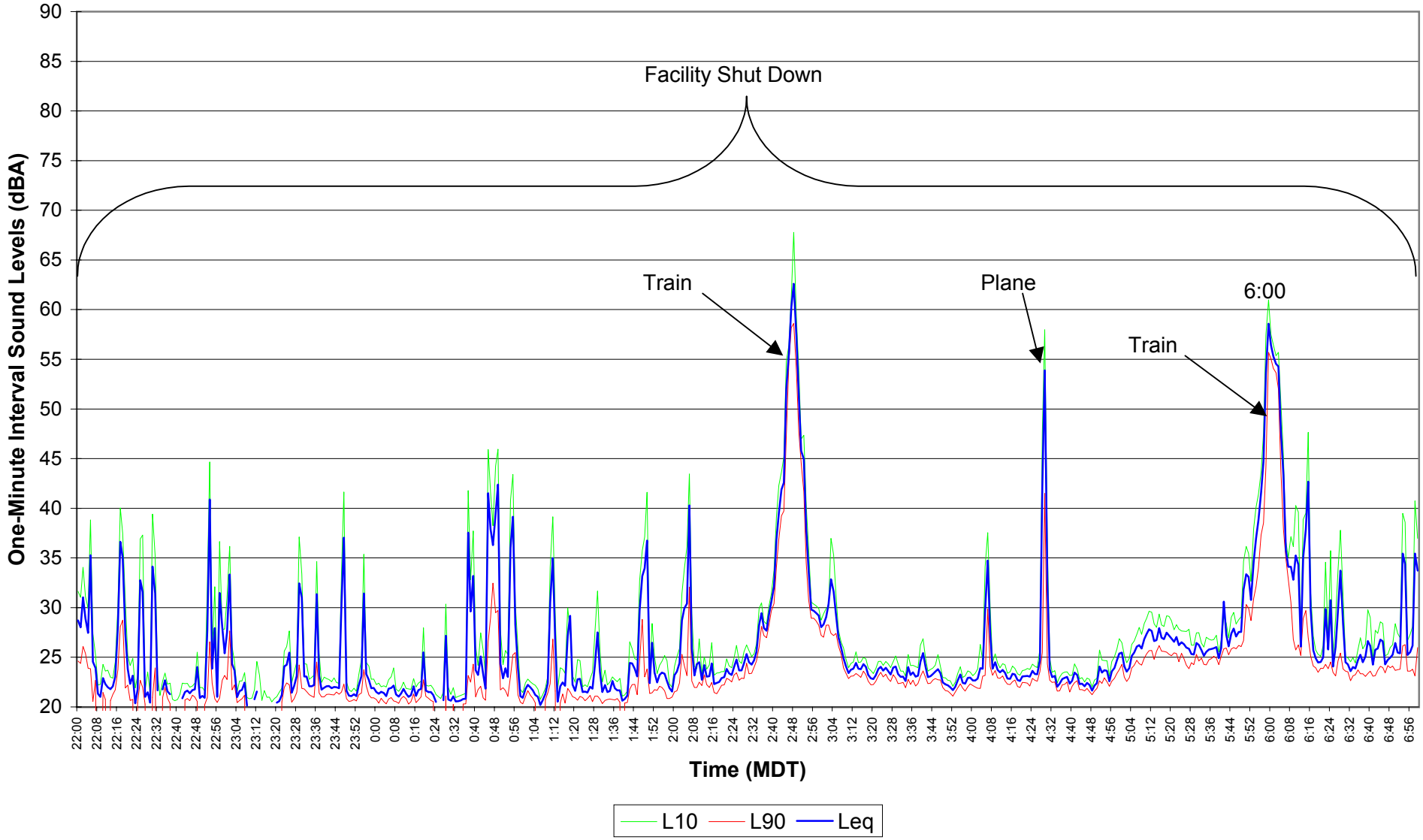


Figure E1.70
EnCana Rosebud
Site 1 Noise Survey
Dec. 16, 2004 07:00 - 14:29

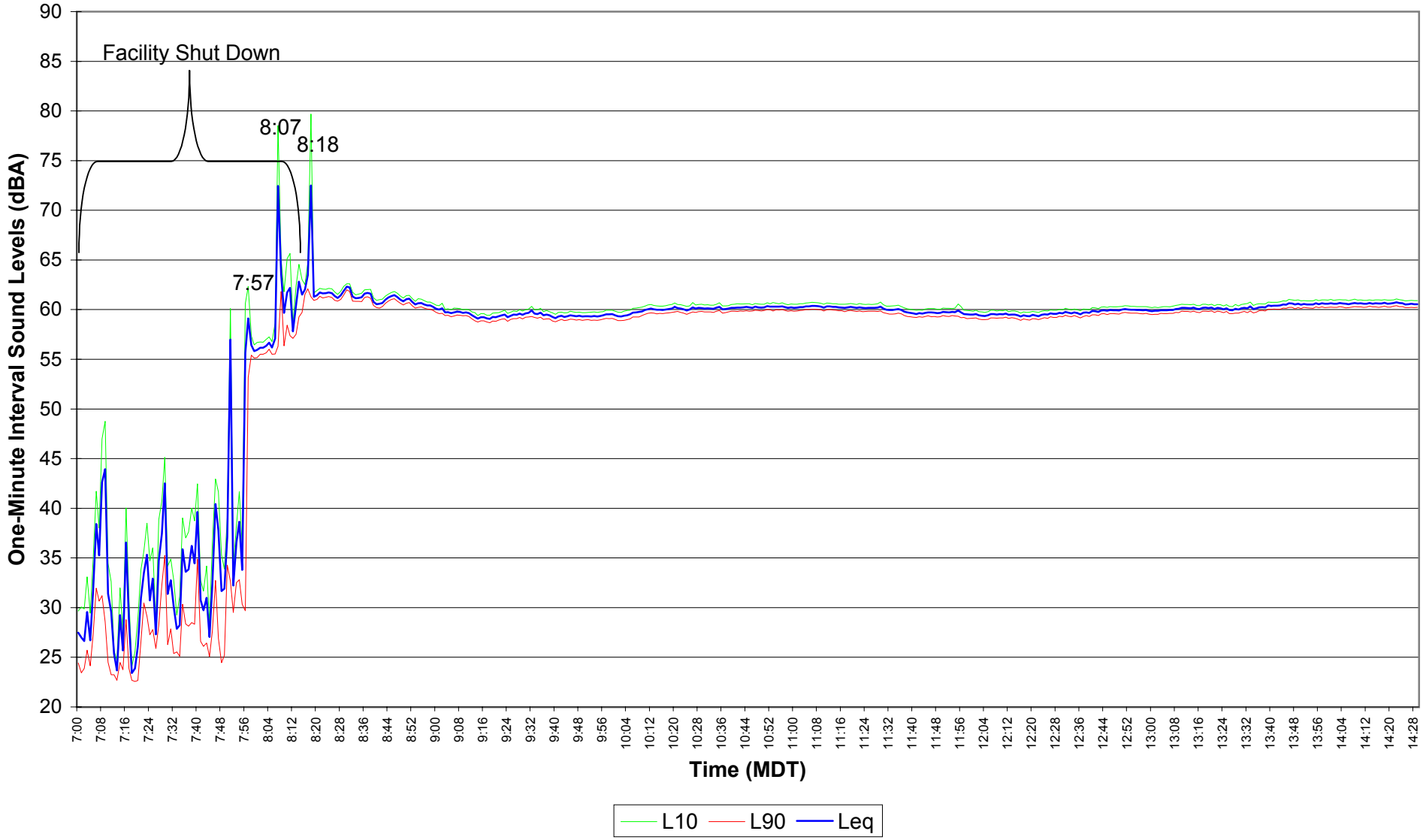


Figure E1.71
EnCana Rosebud
Site 1 Noise Survey
Dec. 16, 2004 14:30 - 21:59

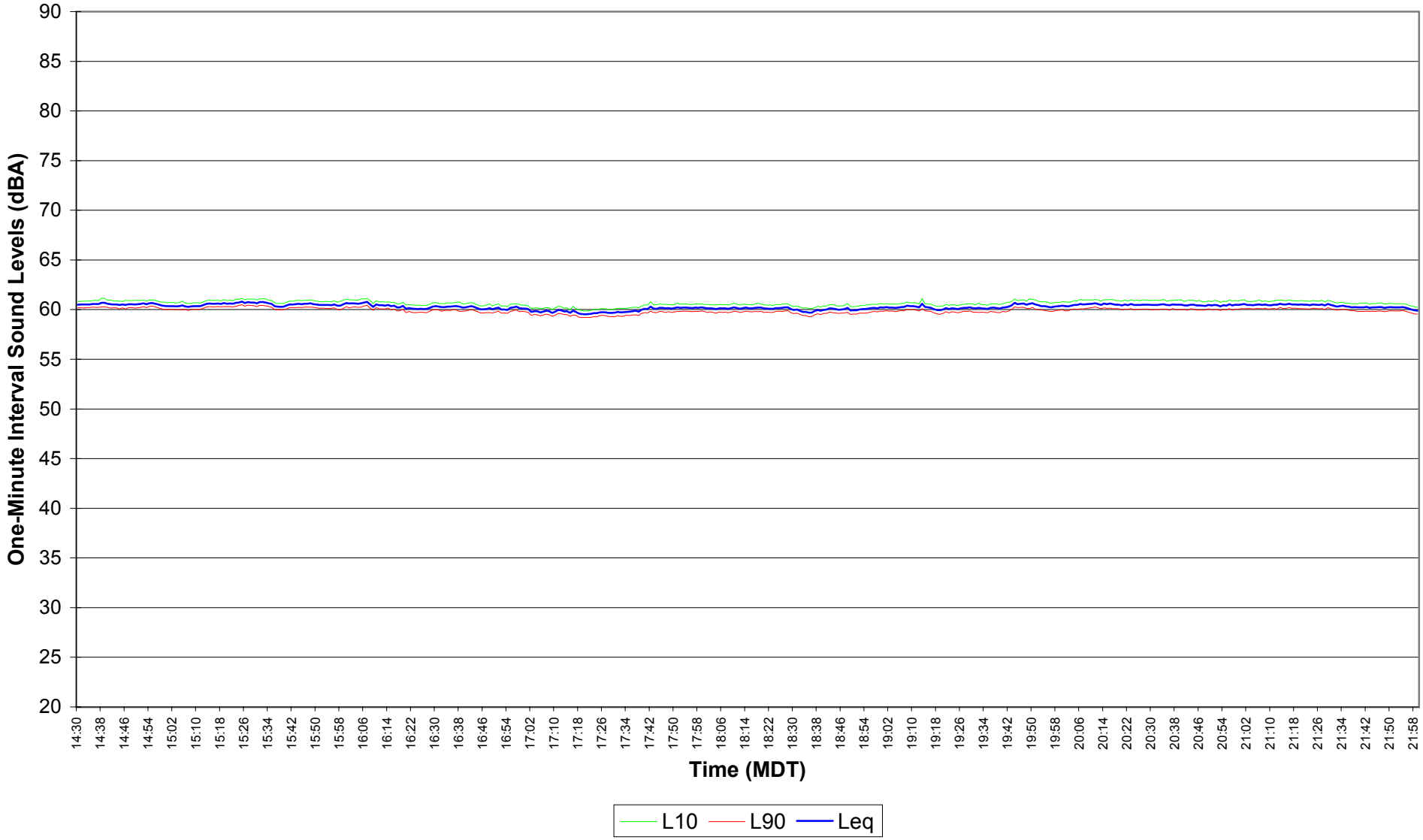


Figure E1.72
EnCana Rosebud
Site 1 Noise Survey
Dec. 16, 2004 - Dec. 17, 2004 22:00 - 06:59

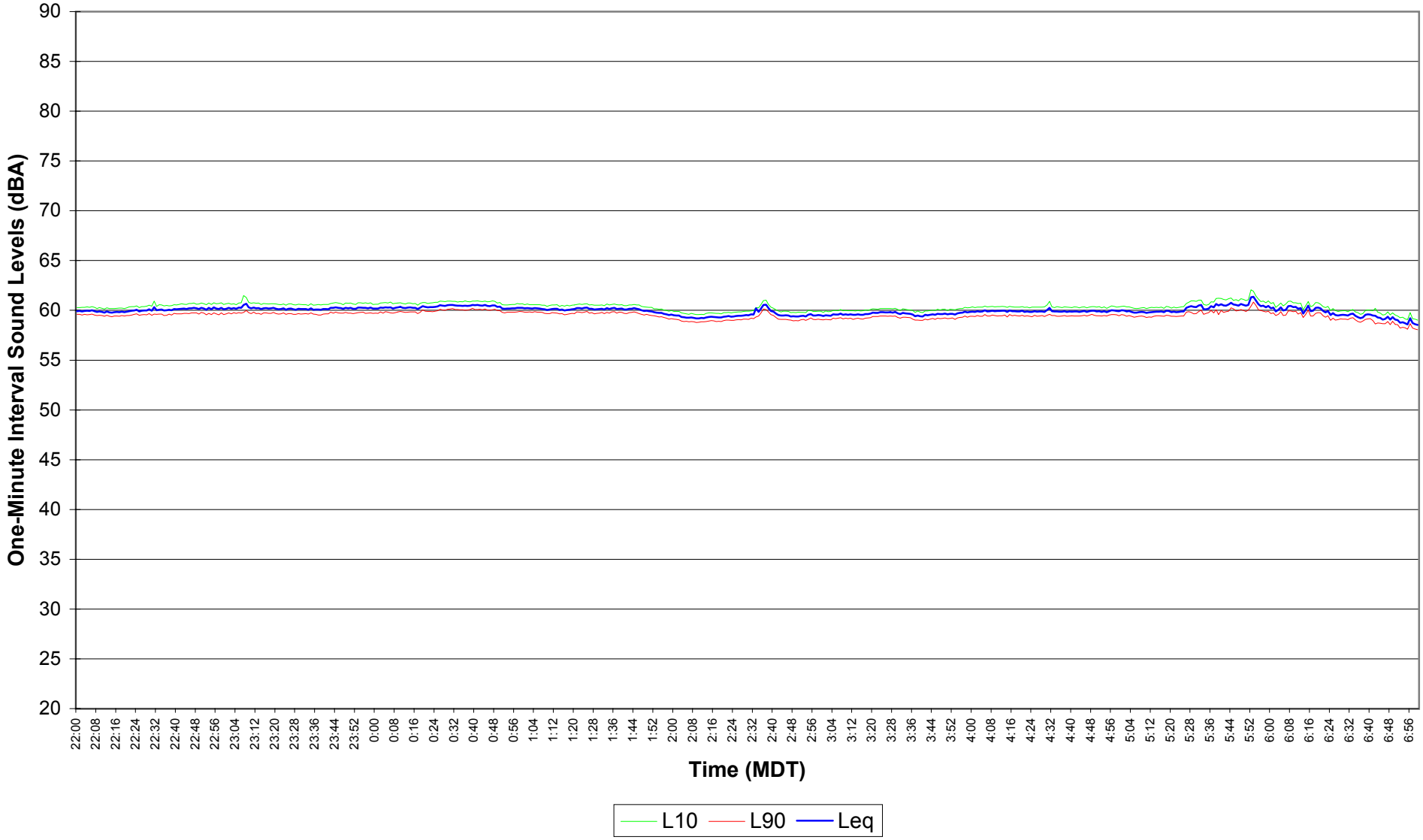


Figure E1.73
EnCana Rosebud
Site 1 Noise Survey
Dec. 17, 2004 07:00 - 14:29

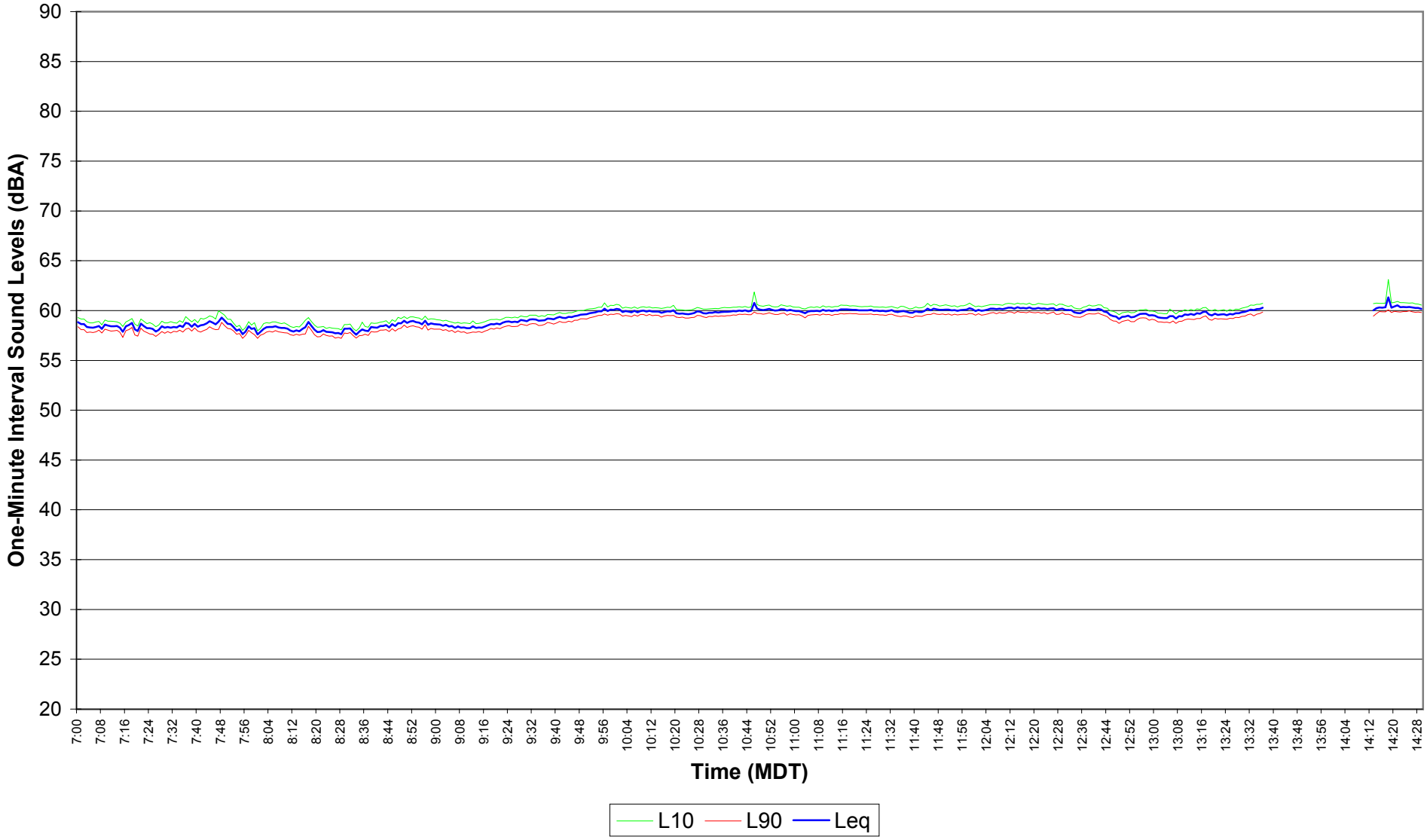


Figure E1.74
EnCana Rosebud
Site 1 Noise Survey
Dec. 17, 2004 14:30 - 21:59

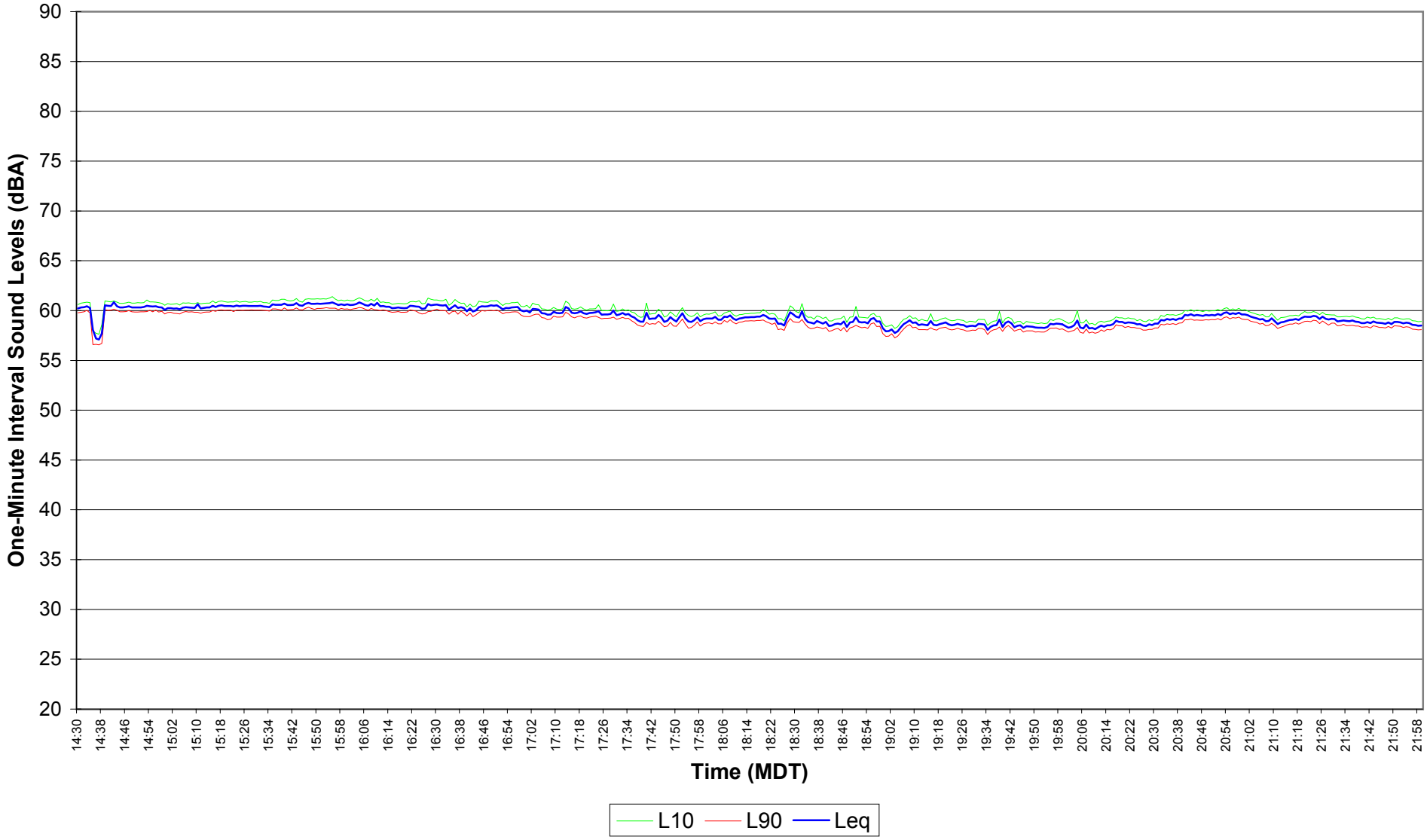


Figure E1.75
EnCana Rosebud
Site 1 Noise Survey
Dec 17, 2004 - Dec 18, 2004 22:00 - 06:59

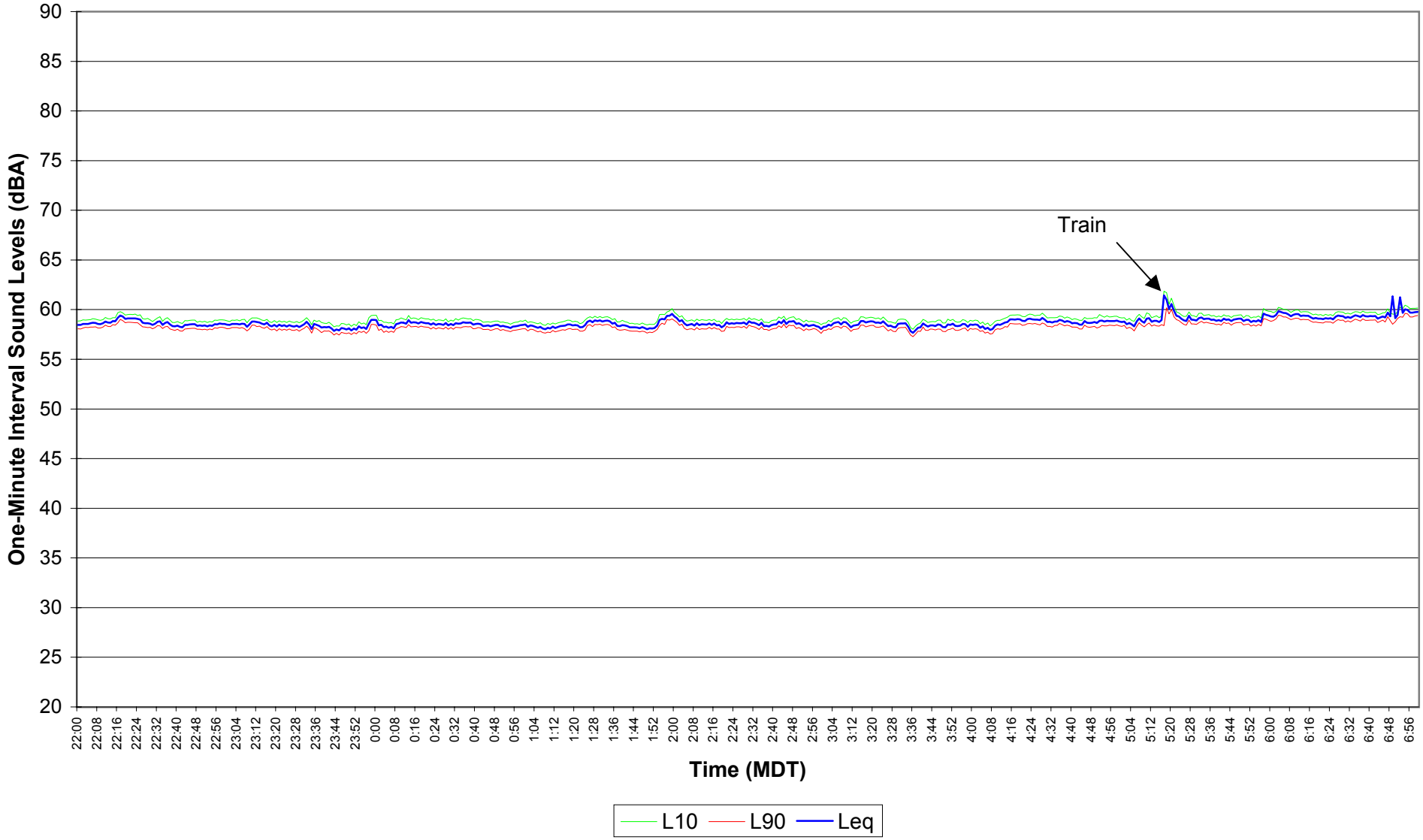


Figure E1.76
EnCana Rosebud
Site 1 Noise Survey
Dec. 18, 2004 07:00 - 14:29

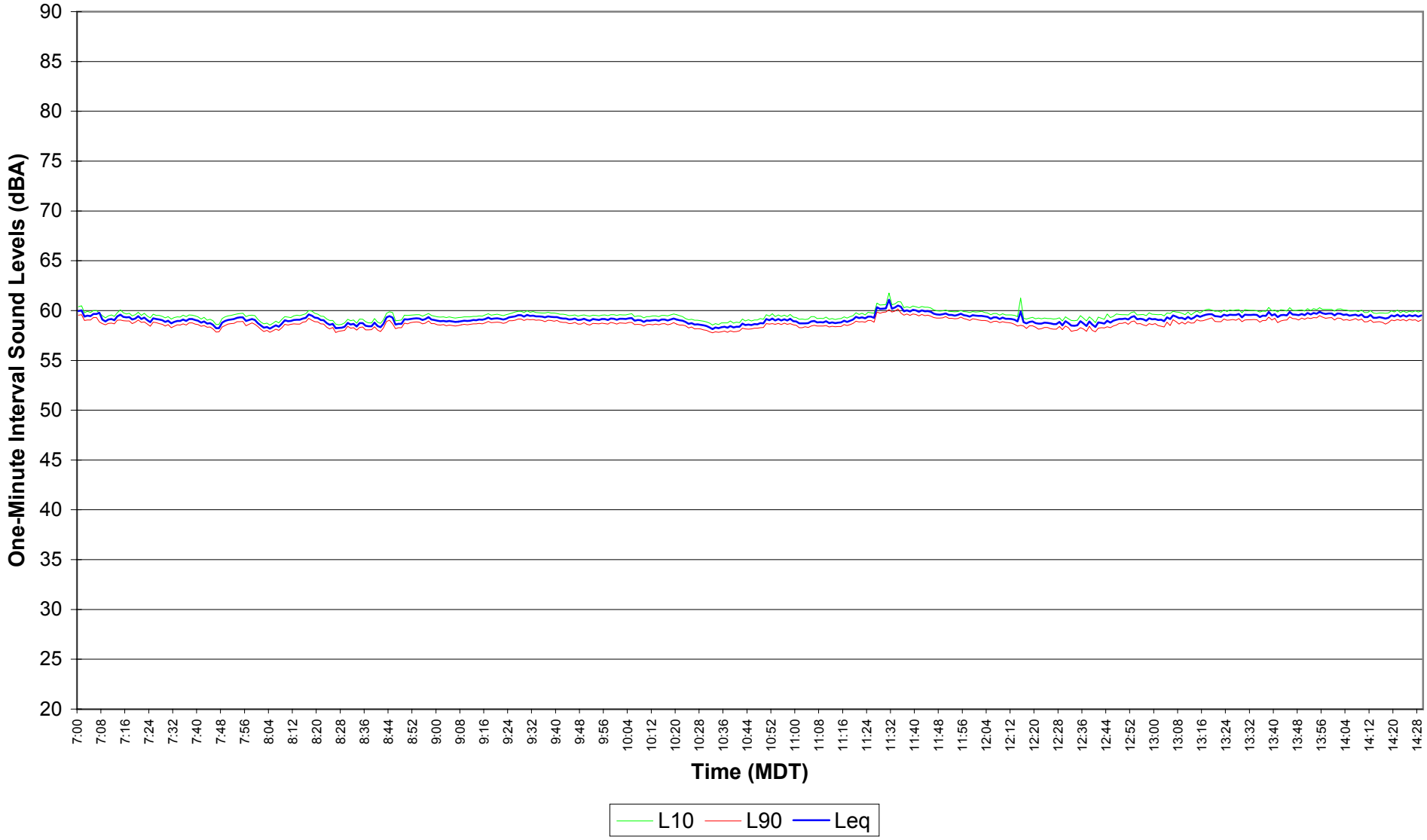


Figure E1.77
EnCana Rosebud
Site 1 Noise Survey
Dec. 18, 2004 14:30 - 21:59

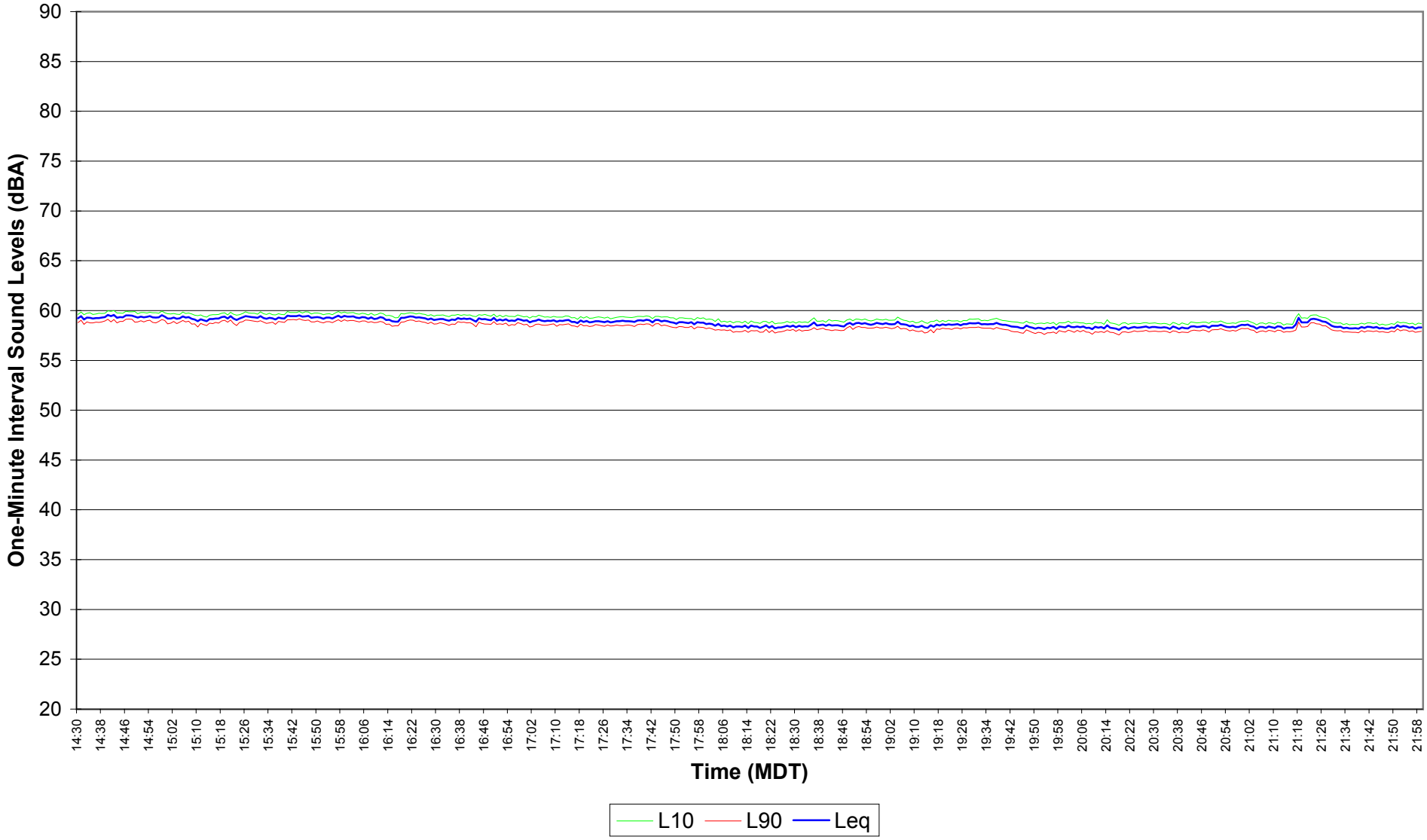


Figure E1.78
EnCana Rosebud
Site 1 Noise Survey
Dec. 18, 2004 - Dec. 19, 2004 22:00 - 06:59

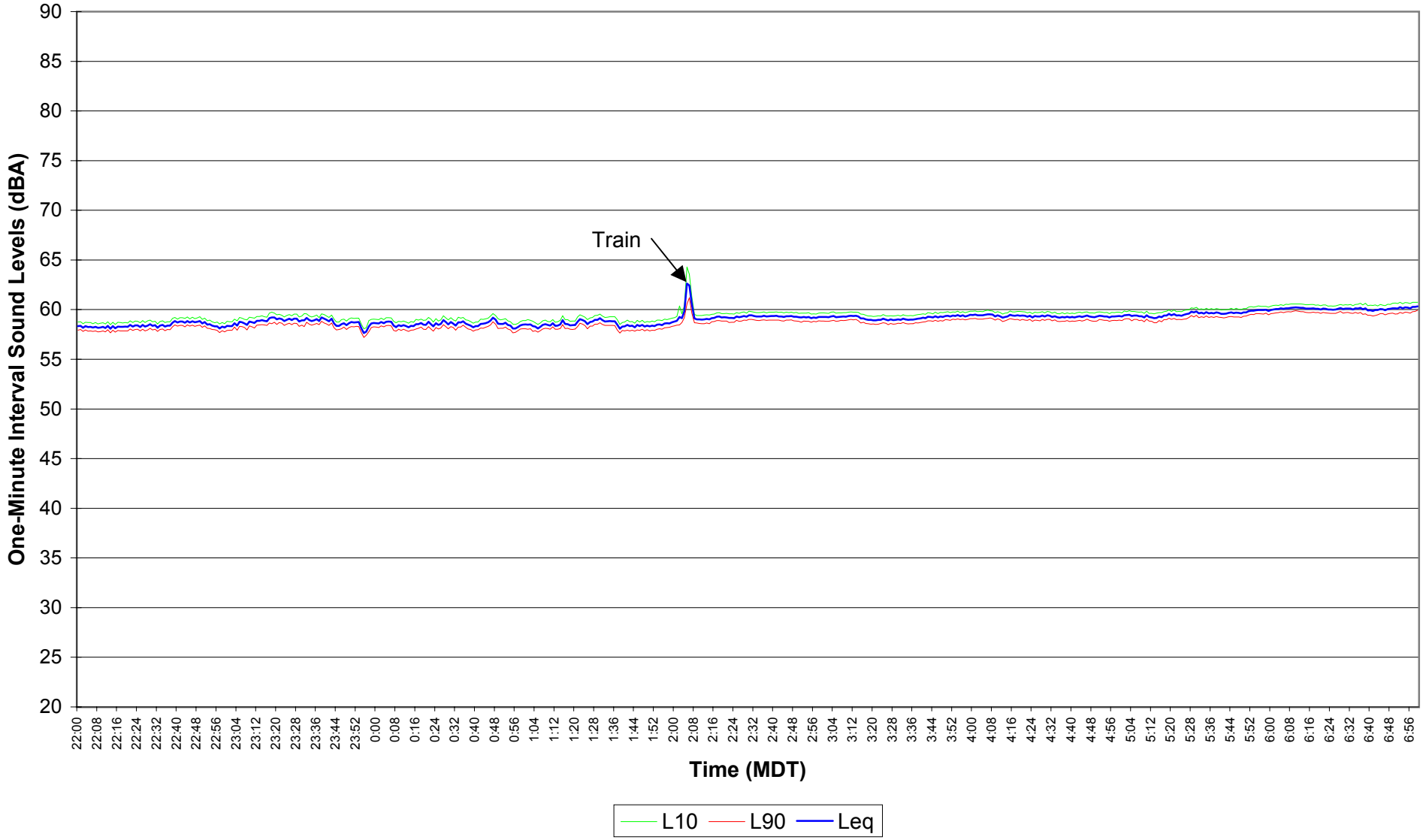


Figure E1.79

EnCana Rosebud

Site 1 Noise Survey

Dec. 19, 2004 07:00 - 14:29

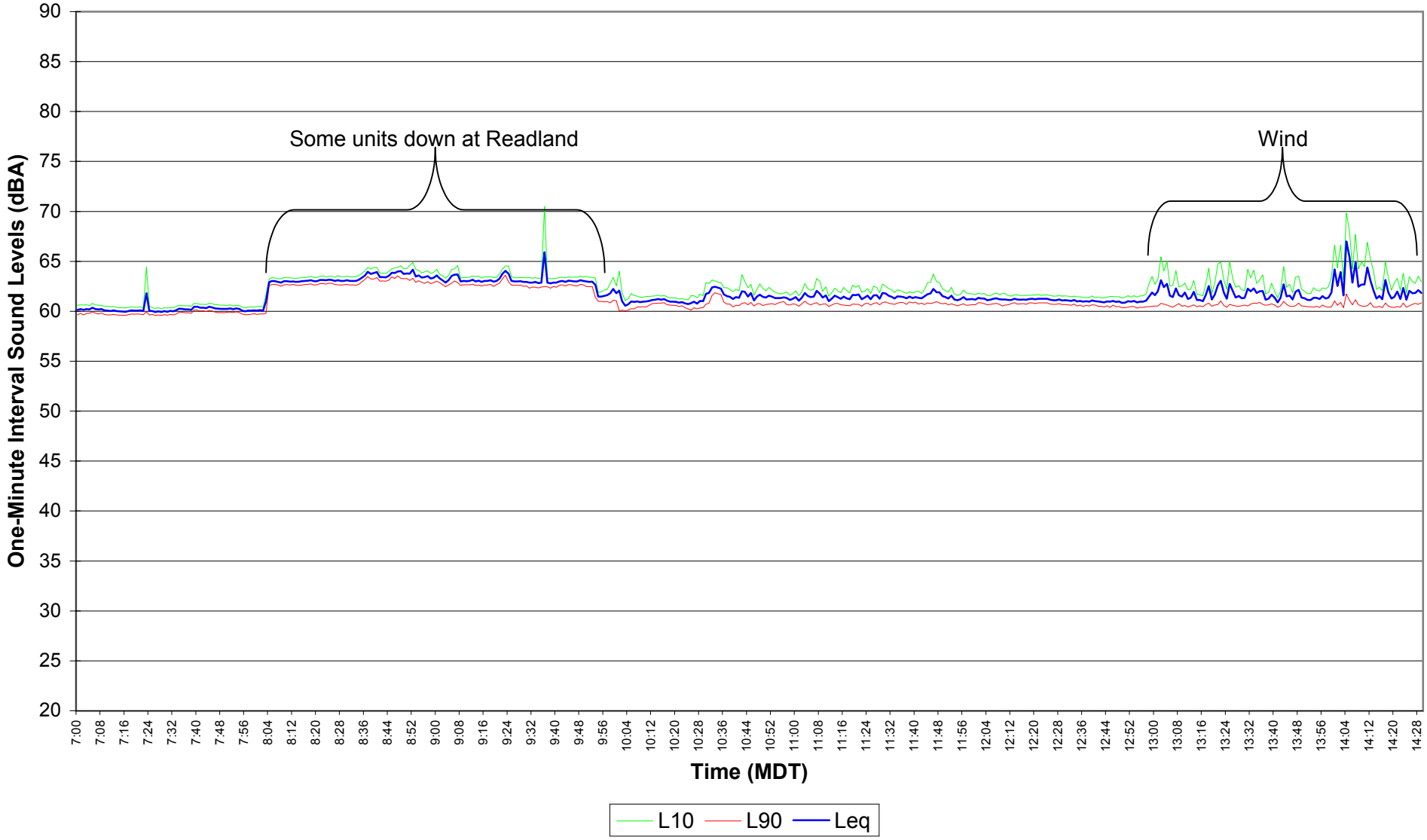


Figure E1.80
EnCana Rosebud
Site 1 Noise Survey
Dec. 19, 2004 14:30 - 21:59

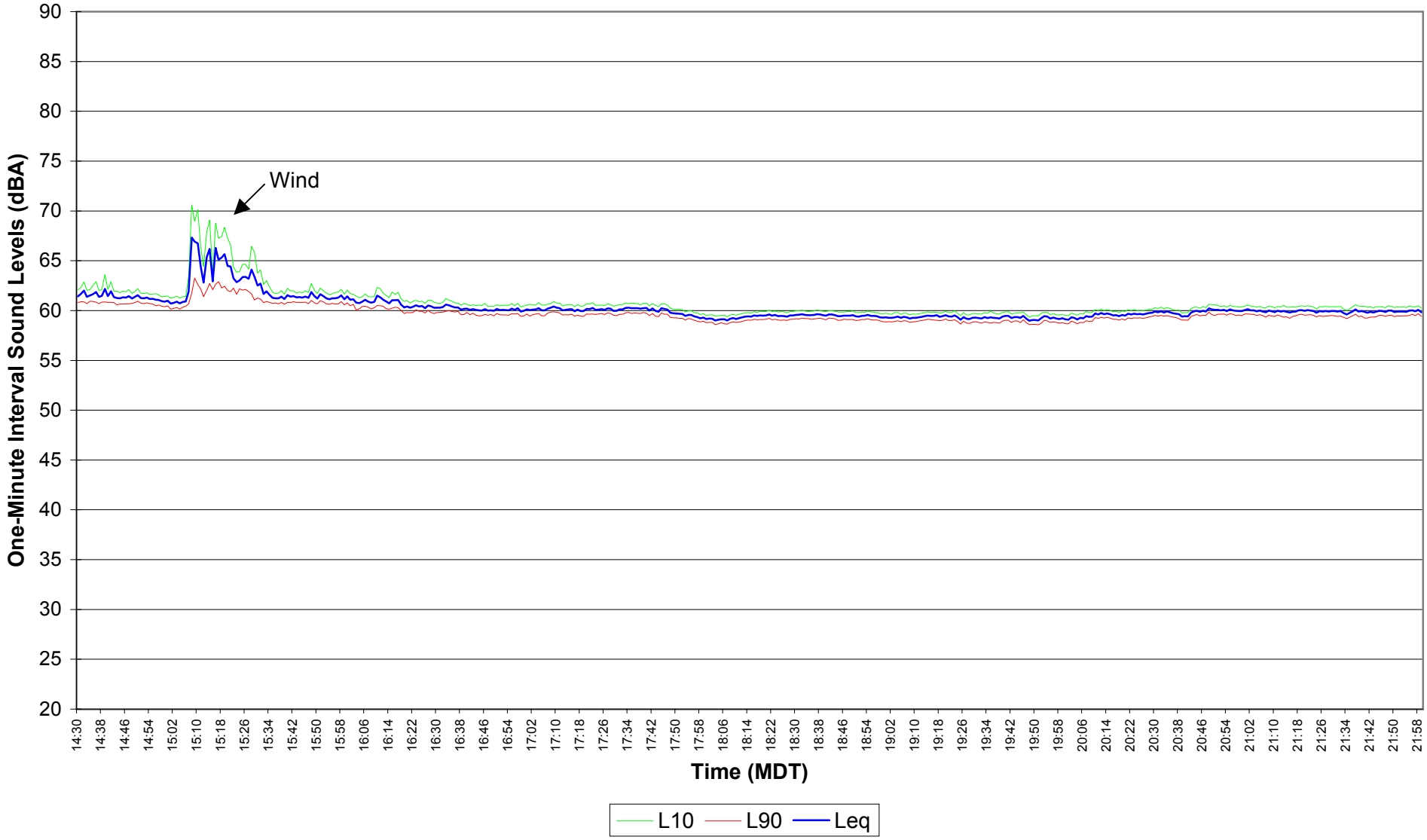


Figure E1.81
EnCana Rosebud
Site 1 Noise Survey
Dec. 19, 2004 - Dec. 20, 2004 22:00 - 06:59

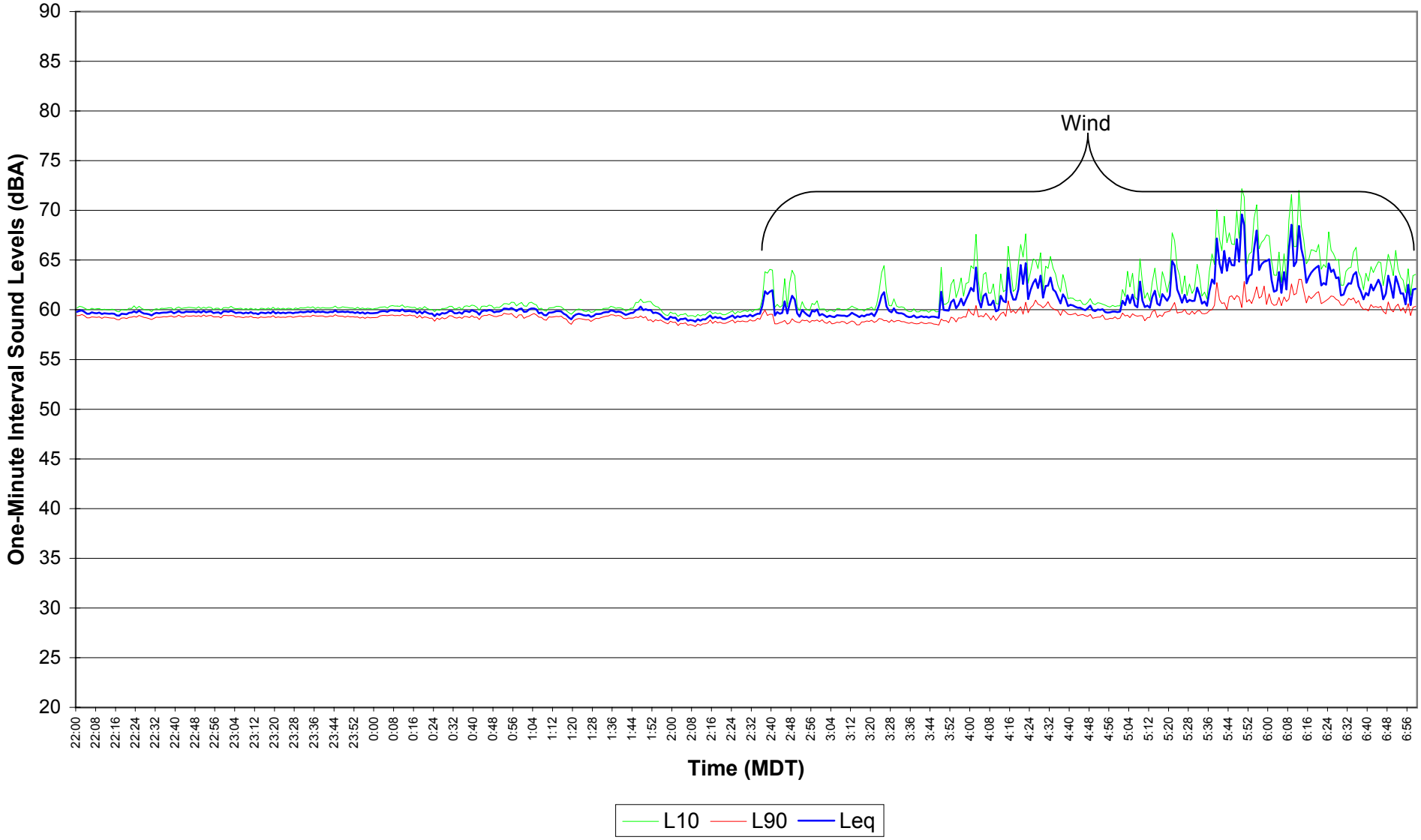
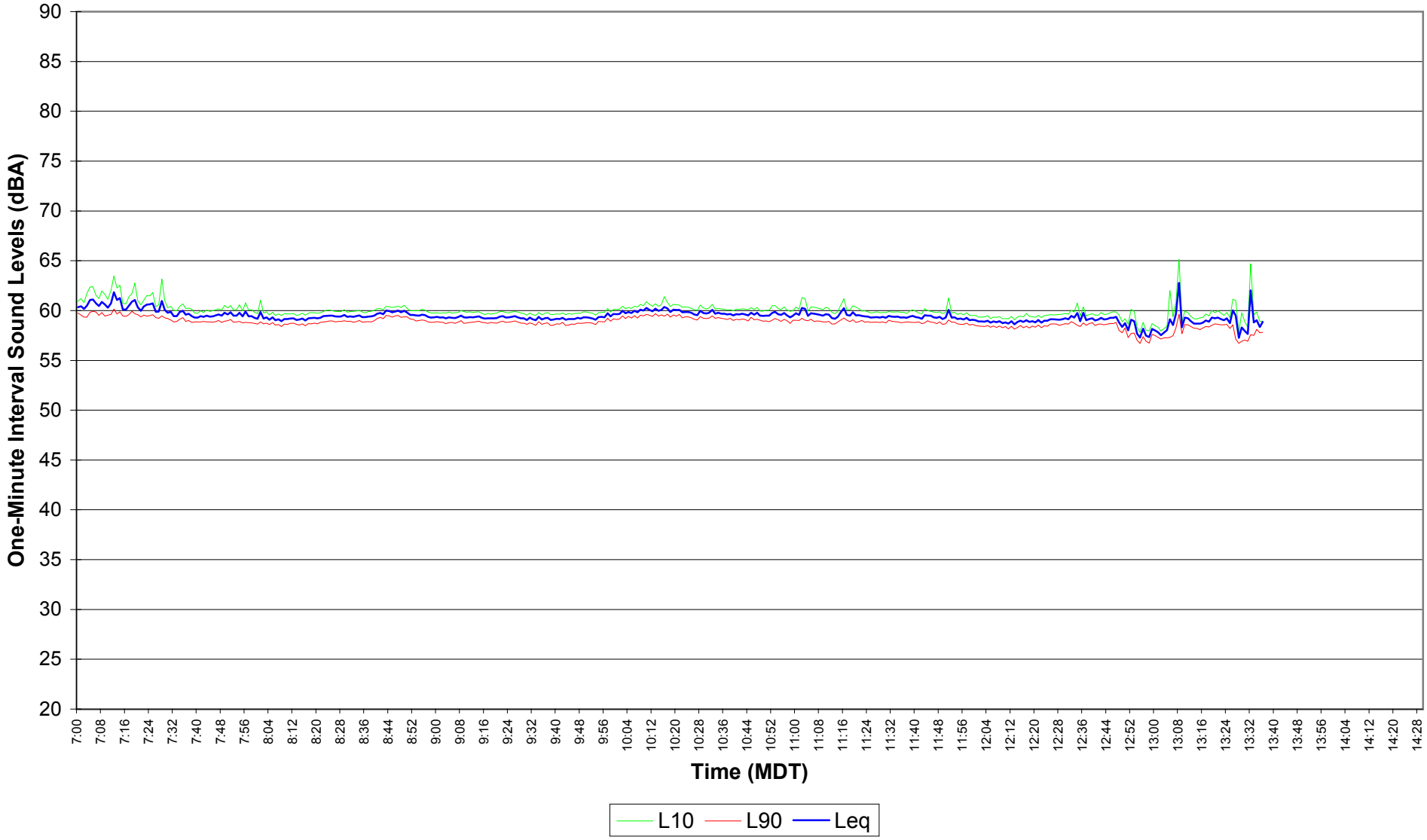


Figure E1.82
EnCana Rosebud
Site 1 Noise Survey
Dec. 20, 2004 07:00 - 14:29



APPENDIX E2

Measurement Results
Graphs of 1-Minute L_{eq}, L_{10} and L_{90} Data
Site 2

Patching Associates Acoustical Engineering Ltd.

Consultants in Acoustics, Noise Control and Vibrations

Table E2.1
EnCana Rosebud
Site 2 Noise Survey
Daily Leq Values

Date	Time	Figure #	Measured		Residual	
			Leq	Hours	Leq	Hours
Nov. 23, 2004	07:00 - 21:59	1, 2	41.2	9.8	35.4	9.4
Nov. 23, 2004 - Nov. 24, 2004	**22:00 - 06:59**	**3**	**35.3**	**9.0**	**31.4**	**8.9**
Nov. 24, 2004	07:00 - 21:59	4, 5	42.3	15.0	34.6	14.4
Nov 24, 2004 - Nov 25, 2004	**22:00 - 06:59**	**6**	**40.5**	**9.0**	**32.9**	**8.7**
Nov. 25, 2004	07:00 - 21:59	7, 8	38.5	15.0	36.7	14.4
Nov. 25, 2004 - Nov. 26, 2004	**22:00 - 06:59**	**9**	**33.9**	**9.0**	**32.9**	**8.8**
Nov. 26, 2004	07:00 - 21:59	10, 11	40.3	14.8	33.9	14.0
Nov 26, 2004 - Nov 27, 2004	**22:00 - 06:59**	**12**	**33.8**	**9.0**	**31.9**	**8.9**
Nov. 27, 2004	07:00 - 21:59	13, 14	38.4	15.0	36.4	14.5
Nov. 27, 2004 - Nov. 28, 2004	**22:00 - 06:59**	**15**	**31.2**	**9.0**	**30.8**	**9.0**
Nov. 28, 2004	07:00 - 21:59	16, 17	47.7	15.0	34.3	13.0
Nov. 28, 2004 - Nov. 29, 2004	**22:00 - 06:59**	**18**	**31.8**	**9.0**	**29.6**	**9.0**
Nov. 29, 2004	07:00 - 21:59	19, 20	39.8	14.8	36.7	13.8
Nov. 29, 2004 - Nov. 30, 2004	**22:00 - 06:59**	**21**	**31.6**	**9.0**	**30.7**	**9.0**
Nov. 30, 2004	07:00 - 21:59	22, 23	37.8	15.0	34.1	14.5
Nov. 30, 2004 - Dec. 01, 2004	**22:00 - 06:59**	**24**	**33.0**	**9.0**	**30.6**	**9.0**
Dec. 01, 2004	07:00 - 21:59	25, 26	36.4	15.0	33.2	14.6
Dec. 01, 2004 - Dec. 02, 2004	**22:00 - 06:59**	**27**	**33.5**	**9.0**	**30.9**	**8.9**
Dec. 02, 2004	07:00 - 21:59	28, N/A	45.3	7.4	41.3	4.7
Dec. 02, 2004 - Dec. 03, 2004	**22:00 - 06:59**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Dec. 03, 2004	07:00 - 21:59	N/A, 32	37.7	4.6	35.7	4.5
Dec. 03, 2004 - Dec. 04, 2004	**22:00 - 06:59**	**33**	**34.1**	**9.0**	**33.4**	**9.0**
Dec. 04, 2004	07:00 - 21:59	34, 35	41.5	15.0	39.2	13.2
Dec. 04, 2004 - Dec. 05, 2004	**22:00 - 06:59**	**36**	**36.2**	**9.0**	**33.7**	**5.9**
Dec. 05, 2004	07:00 - 21:59	37, 38	35.8	15.0	34.4	14.9
Dec. 05, 2004 - Dec. 06, 2004	**22:00 - 06:59**	**39**	**31.5**	**9.0**	**29.8**	**9.0**
Dec. 06, 2004	07:00 - 21:59	40, 41	36.4	14.9	34.7	14.6
Dec. 06, 2004 - Dec. 07, 2004	**22:00 - 06:59**	**42**	**31.8**	**9.0**	**31.0**	**9.0**
Dec. 07, 2004	07:00 - 21:59	43, 44	38.4	15.0	36.8	14.6
Dec. 07, 2004 - Dec. 08, 2004	**22:00 - 06:59**	**45**	**34.0**	**9.0**	**32.6**	**8.9**
Dec. 08, 2004	07:00 - 21:59	46, 47	37.3	15.0	33.8	14.3
Dec. 08, 2004 - Dec. 09, 2004	**22:00 - 06:59**	**48**	**33.8**	**9.0**	**32.5**	**8.9**
Dec. 09, 2004	07:00 - 21:59	49, 50	34.3	15.0	33.5	14.9
Dec. 09, 2004 - Dec. 10, 2004	**22:00 - 06:59**	**51**	**34.9**	**9.0**	**30.2**	**8.8**
Dec. 10, 2004	07:00 - 21:59	52, 53	36.9	14.9	35.3	14.7
Dec. 10, 2004 - Dec. 11, 2004	**22:00 - 06:59**	**54**	**42.1**	**9.0**	**31.3**	**6.0**
Dec. 11, 2004	07:00 - 21:59	55, 56	43.3	15.0	38.2	12.5
Dec. 11, 2004 - Dec. 12, 2004	**22:00 - 06:59**	**57**	**31.4**	**9.0**	**31.2**	**9.0**
Dec. 12, 2004	07:00 - 21:59	58, 59	31.3	15.0	30.7	15.0
Dec. 12, 2004 - Dec. 13, 2004	**22:00 - 06:59**	**60**	**31.2**	**9.0**	**29.8**	**8.9**
Dec. 13, 2004	07:00 - 21:59	61, 62	41.1	14.9	34.9	13.7
Dec. 13, 2004 - Dec. 14, 2004	**22:00 - 06:59**	**63**	**32.8**	**9.0**	**29.2**	**8.9**
Dec. 14, 2004	07:00 - 21:59	64, 65	38.0	15.0	34.8	14.4
Dec. 14, 2004 - Dec. 15, 2004	**22:00 - 06:59**	**66**	**31.1**	**9.0**	**30.3**	**9.0**
Dec. 15, 2004	07:00 - 21:59	67, 68	39.6	15.0	35.3	14.6
Dec 15, 2004 - Dec 16, 2004	**22:00 - 06:59**	**69**	**35.3**	**9.0**	**29.1**	**8.8**
Dec. 16, 2004	07:00 - 21:59	70, 71	39.0	13.4	35.5	12.5
Dec. 16, 2004 - Dec. 17, 2004	**22:00 - 06:59**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Dec. 17, 2004	07:00 - 21:59	N/A, 74	39.2	7.5	37.0	7.2
Dec 17, 2004 - Dec 18, 2004	**22:00 - 06:59**	**75**	**39.1**	**9.0**	**33.6**	**8.6**
Dec. 18, 2004	07:00 - 21:59	76, 77	41.5	15.0	34.1	14.4
Dec. 18, 2004 - Dec. 19, 2004	**22:00 - 06:59**	**78**	**36.3**	**9.0**	**31.0**	**4.0**
Dec. 19, 2004	07:00 - 21:59	79, 80	55.6	15.0	36.3	11.1
Dec. 19, 2004 - Dec. 20, 2004	**22:00 - 06:59**	**81**	**48.8**	**9.0**	**36.1**	**5.9**
Dec. 20, 2004	07:00 - 21:59	82, 83	41.0	7.2	39.4	6.7

Figure E2.1

EnCana Rosebud

Site 2 Noise Survey

Nov. 23, 2004 07:00 - 14:29

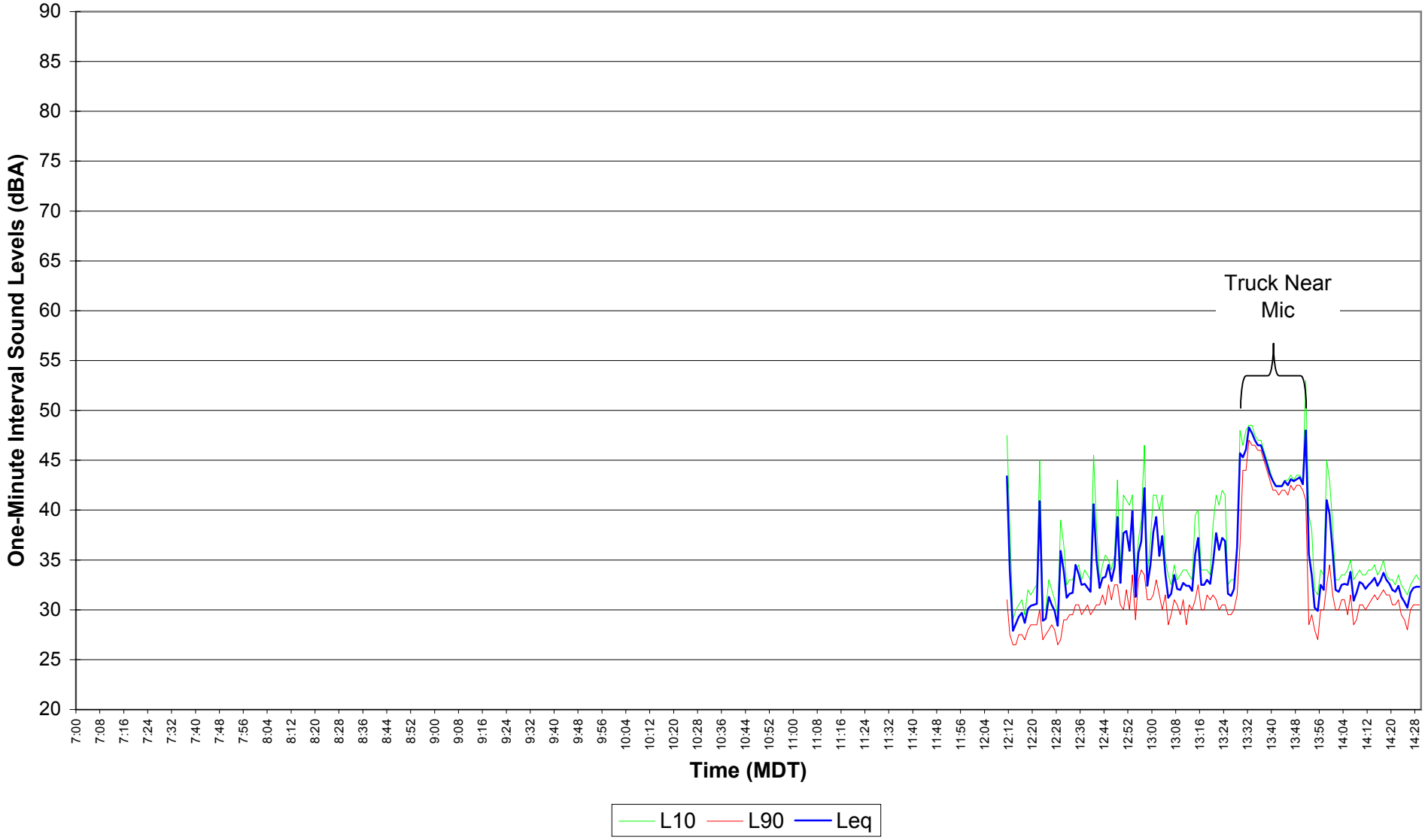


Figure E2.2
EnCana Rosebud
Site 2 Noise Survey
Nov. 23, 2004 14:30 - 21:59

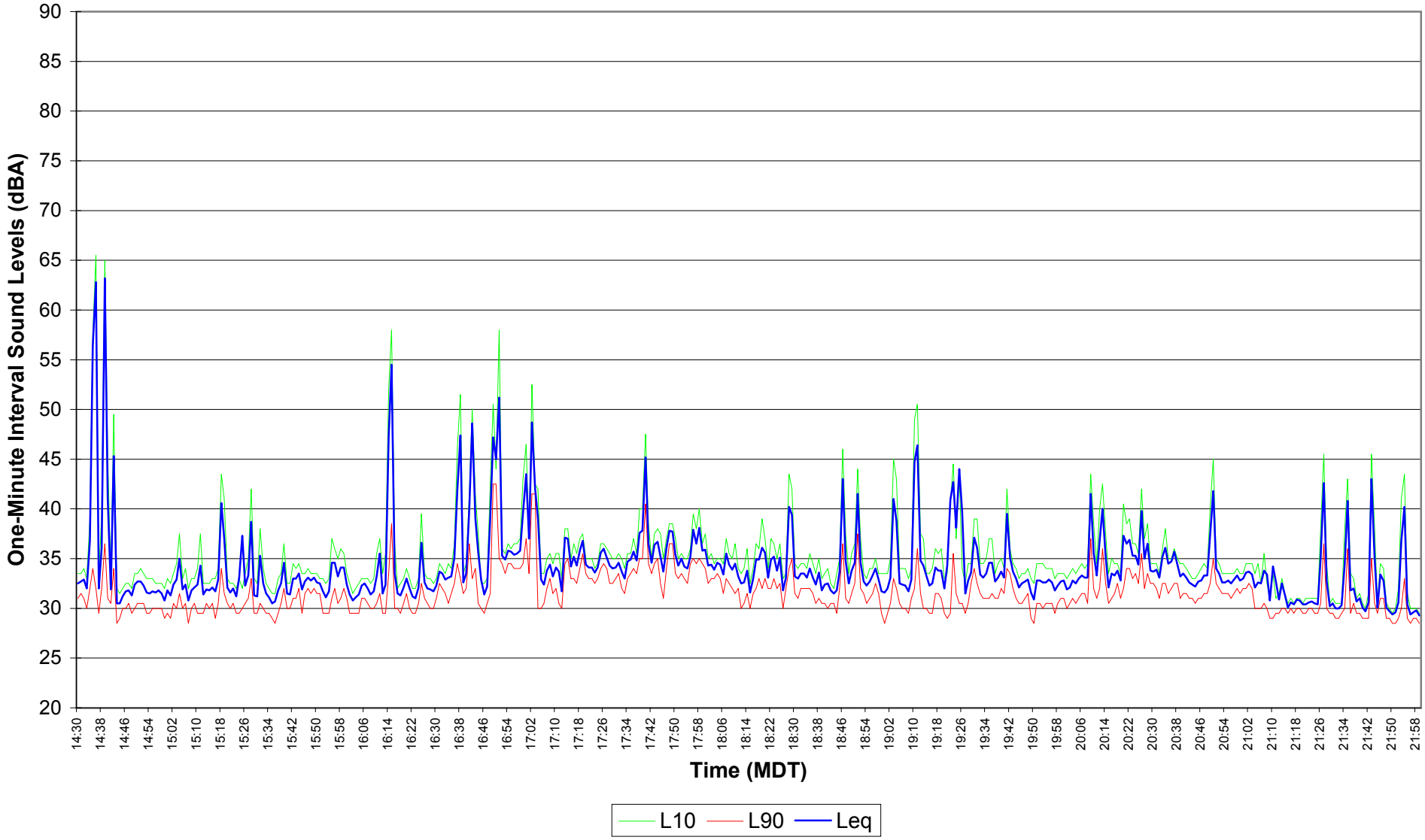


Figure E2.3
EnCana Rosebud
Site 2 Noise Survey
Nov. 23, 2004 - Nov. 24, 2004 22:00 - 06:59

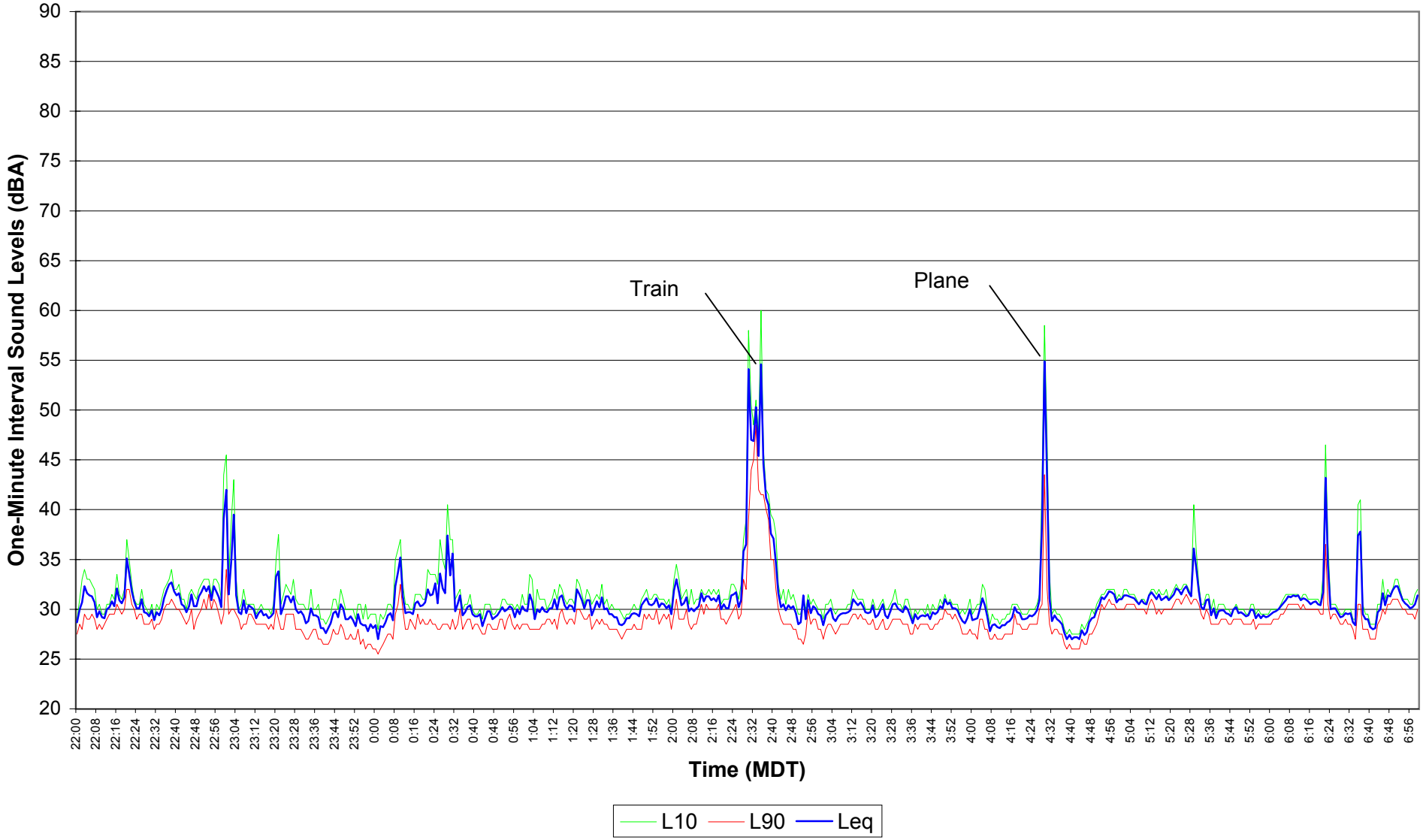


Figure E2.4
EnCana Rosebud
Site 2 Noise Survey
Nov. 24, 2004 07:00 - 14:29

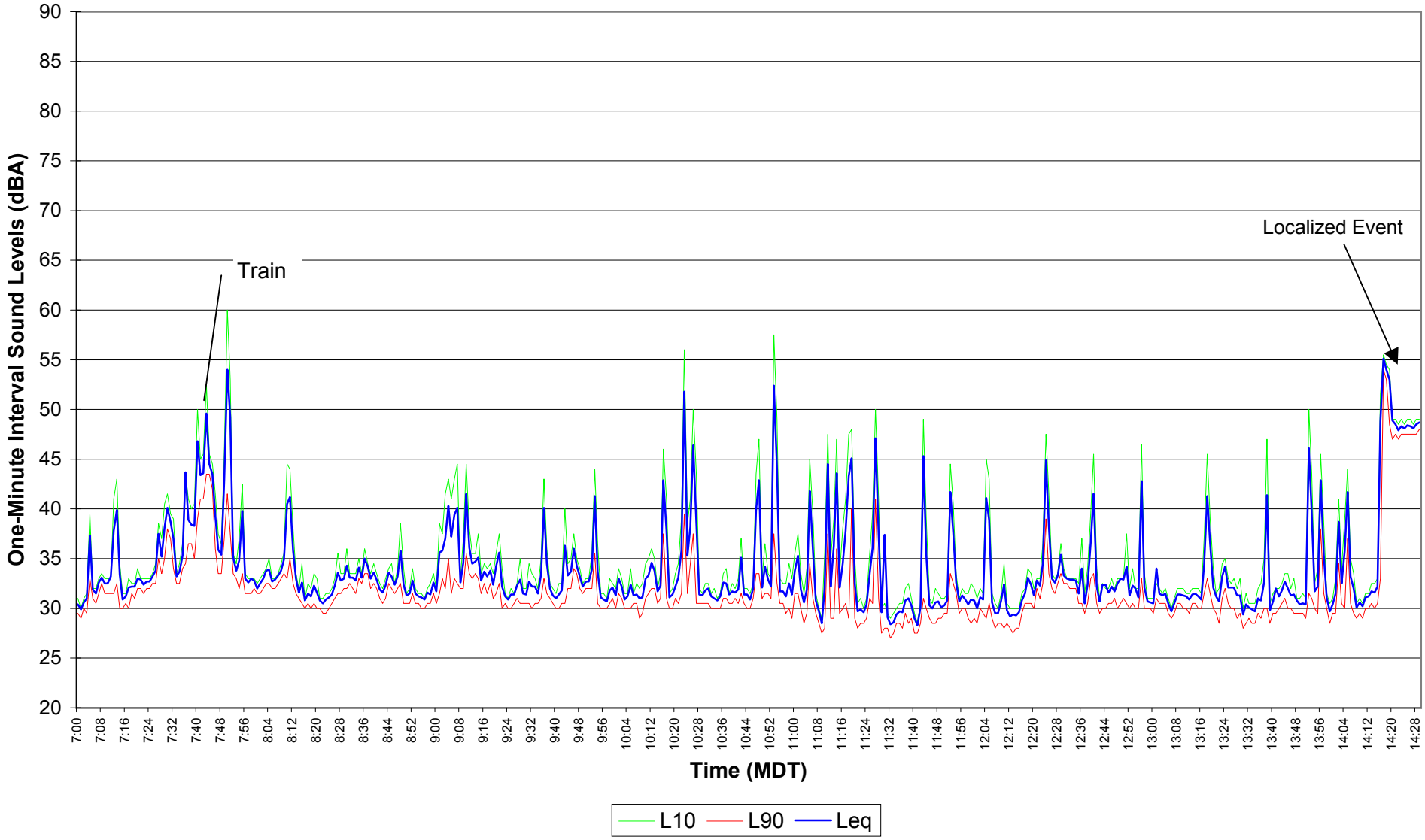


Figure E2.5
EnCana Rosebud
Site 2 Noise Survey
Nov. 24, 2004 14:30 - 21:59

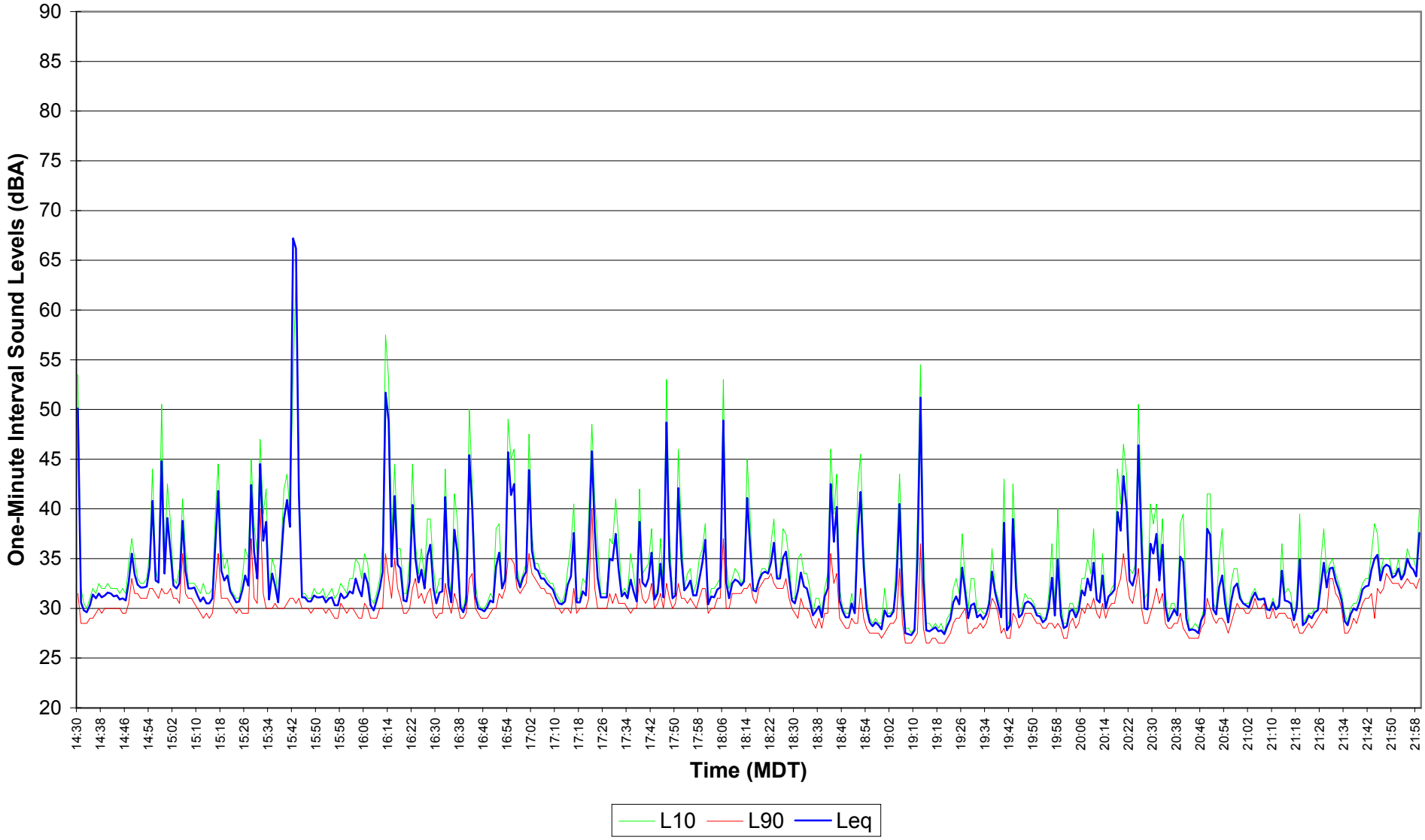


Figure E2.6
EnCana Rosebud
Site 2 Noise Survey
Nov 24, 2004 - Nov 25, 2004 22:00 - 06:59

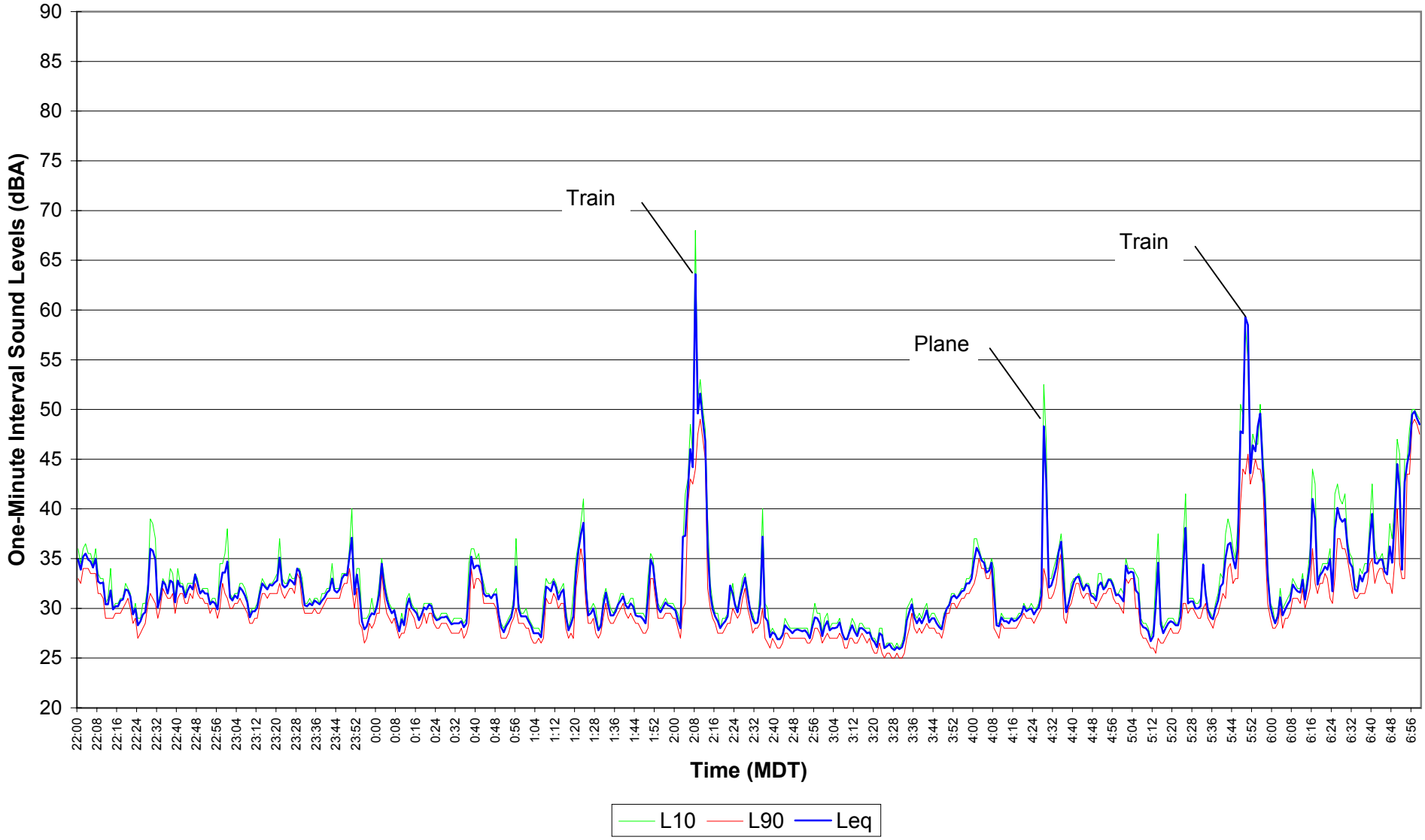


Figure E2.7
EnCana Rosebud
Site 2 Noise Survey
Nov. 25, 2004 07:00 - 14:29

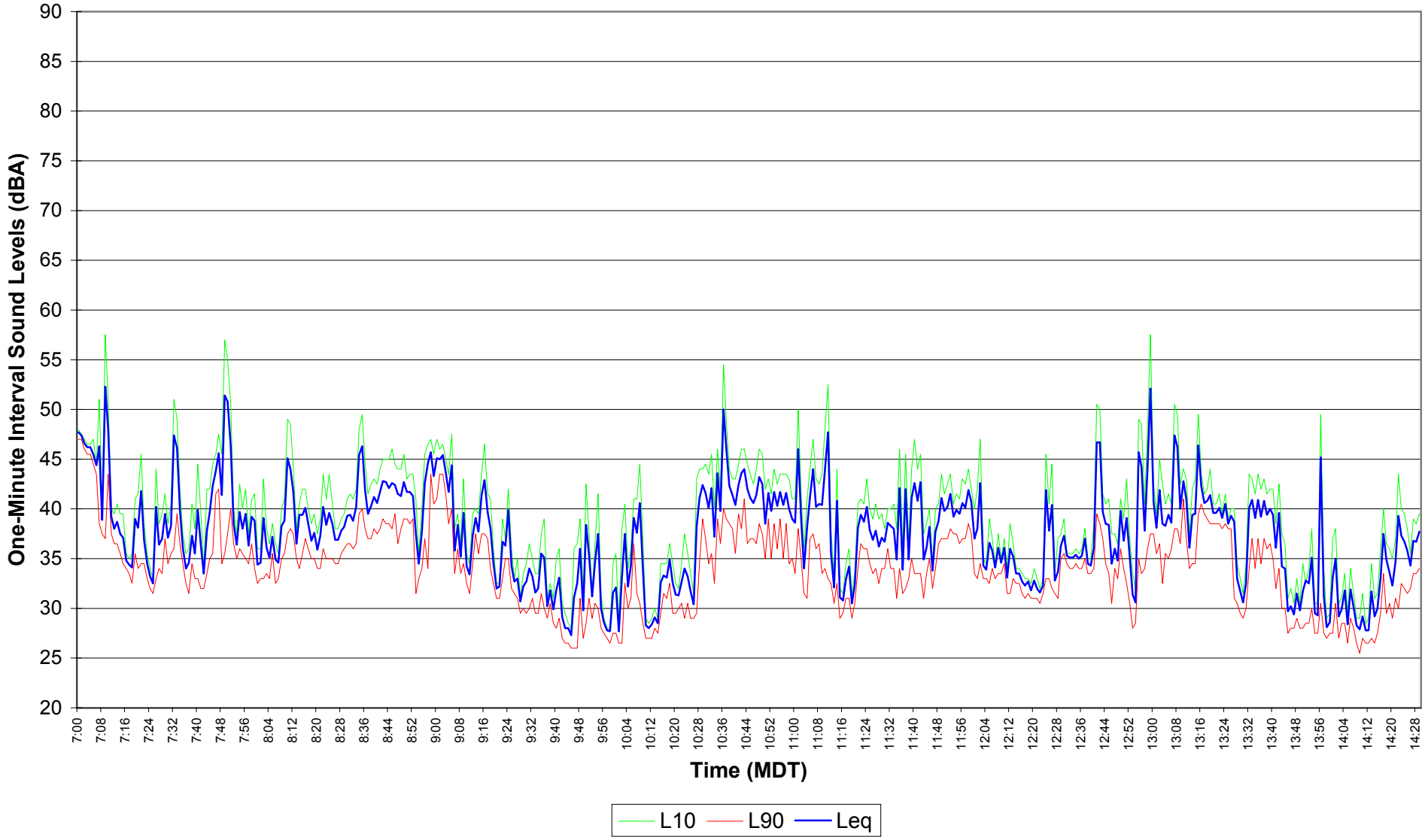


Figure E2.8
EnCana Rosebud
Site 2 Noise Survey
Nov. 25, 2004 14:30 - 21:59

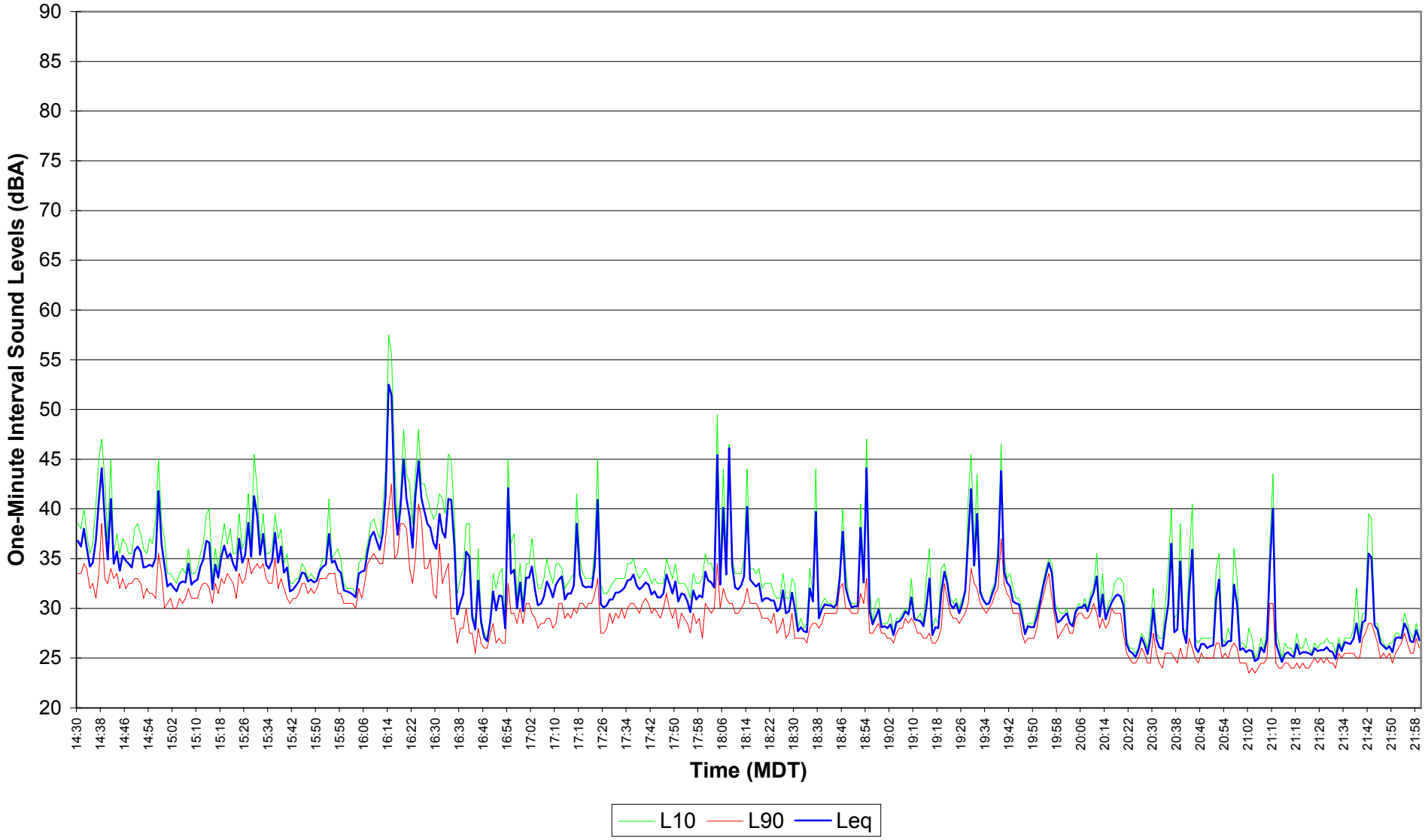


Figure E2.9
EnCana Rosebud
Site 2 Noise Survey
Nov. 25, 2004 - Nov. 26, 2004 22:00 - 06:59

Figure E2.10
EnCana Rosebud
Site 2 Noise Survey
Nov. 26, 2004 07:00 - 14:29

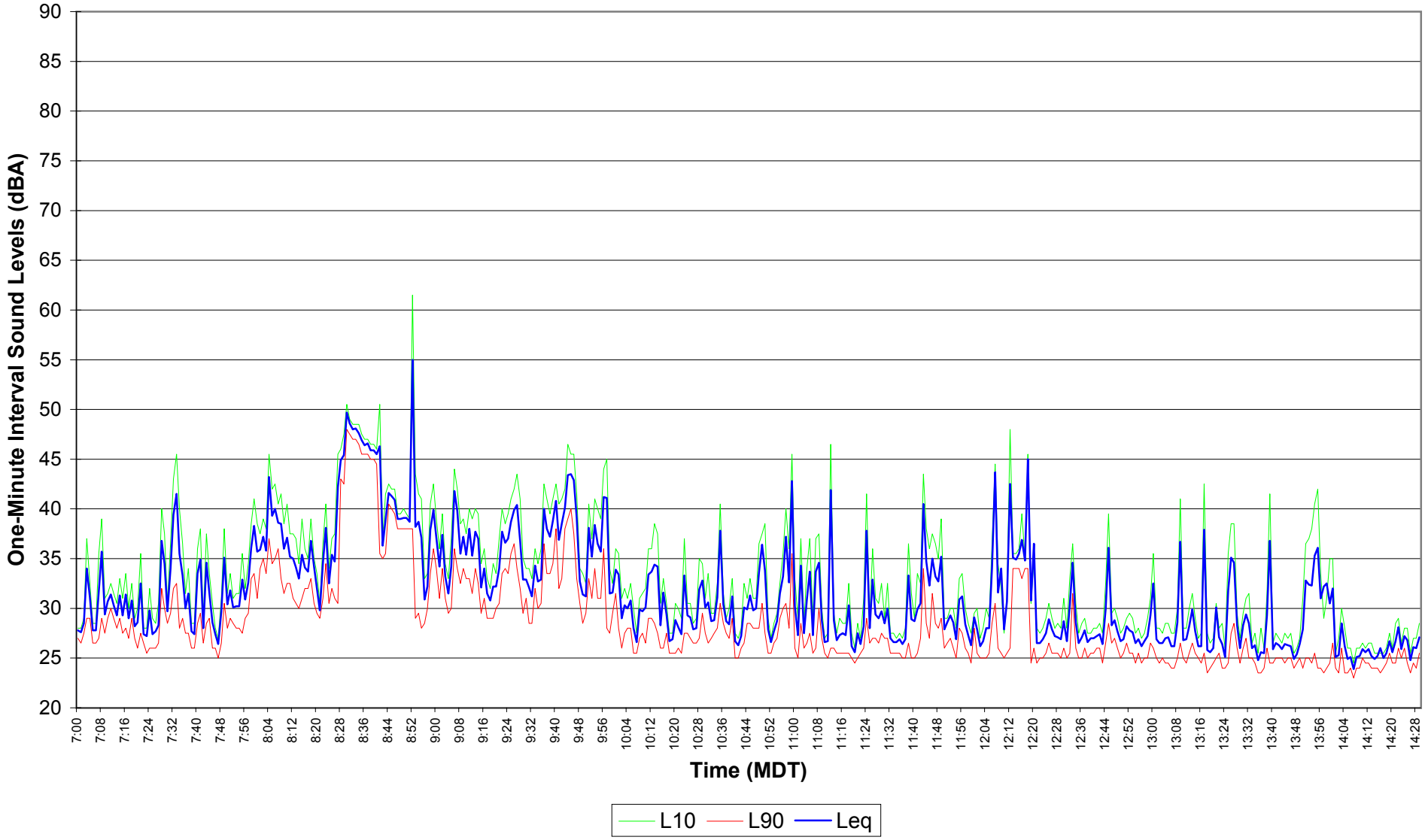


Figure E2.11
EnCana Rosebud
Site 2 Noise Survey
Nov. 26, 2004 14:30 - 21:59

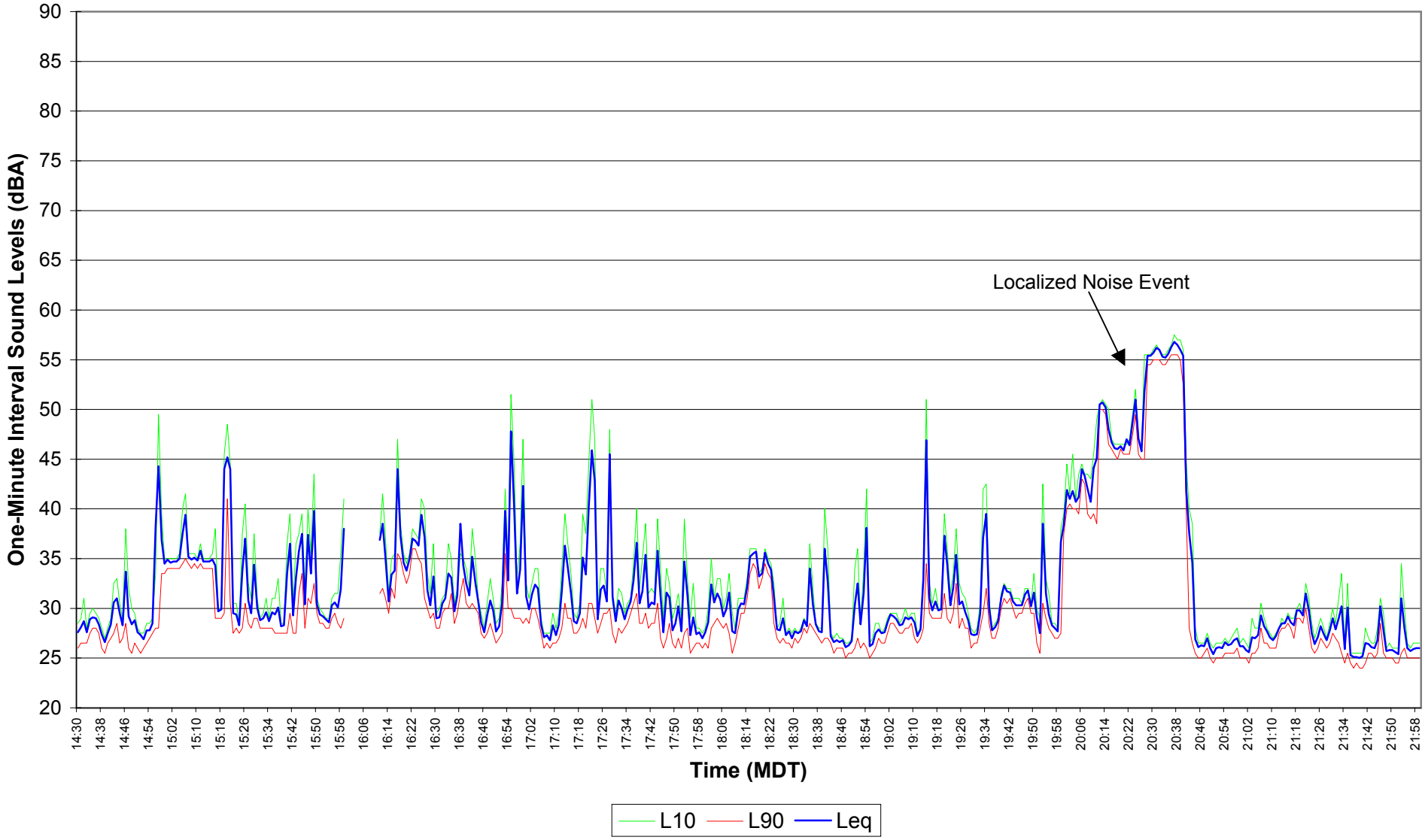


Figure E2.12
EnCana Rosebud
Site 2 Noise Survey
Nov 26, 2004 - Nov 27, 2004 22:00 - 06:59

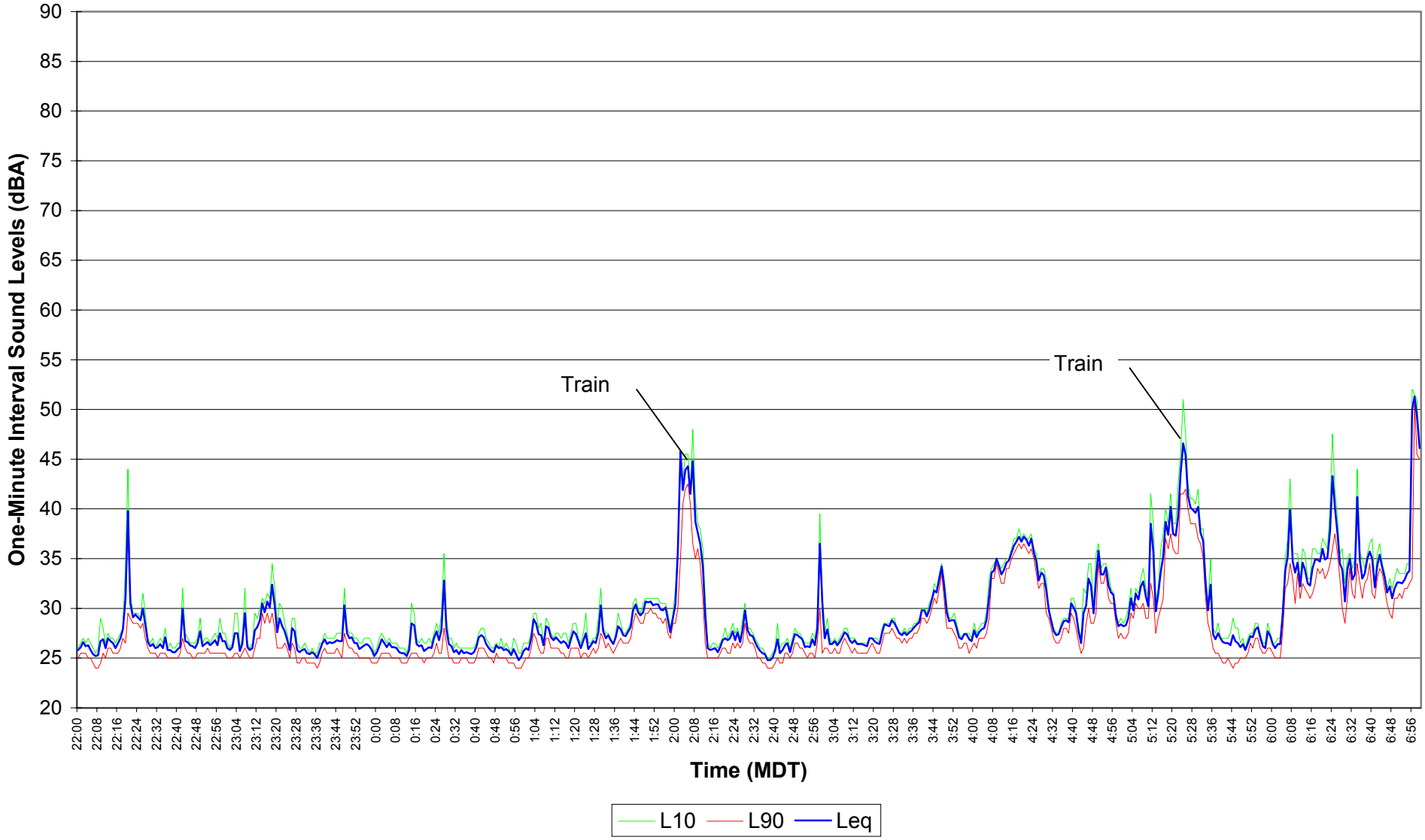


Figure E2.13
EnCana Rosebud
Site 2 Noise Survey
Nov. 27, 2004 07:00 - 14:29

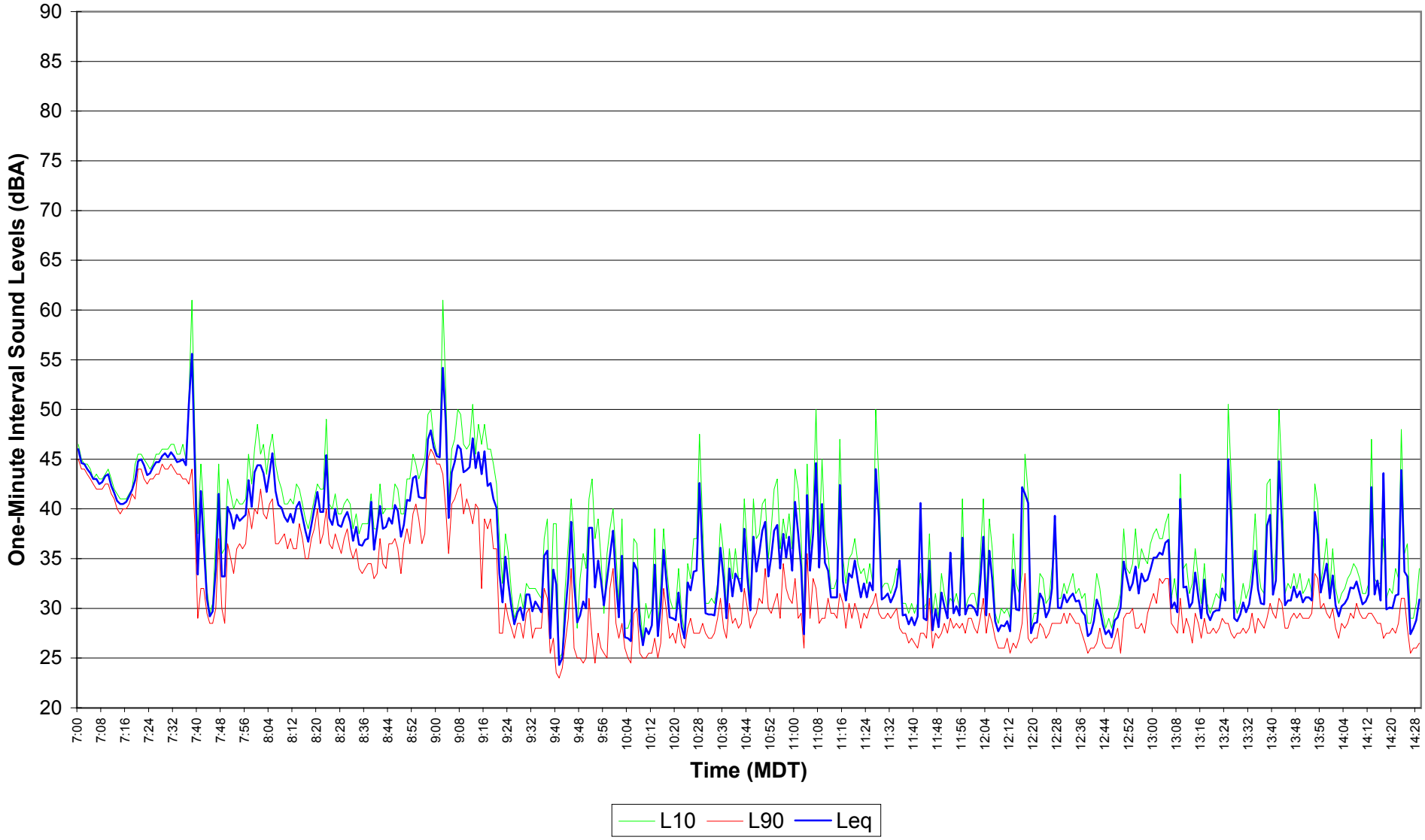


Figure E2.14
EnCana Rosebud
Site 2 Noise Survey
Nov. 27, 2004 14:30 - 21:59

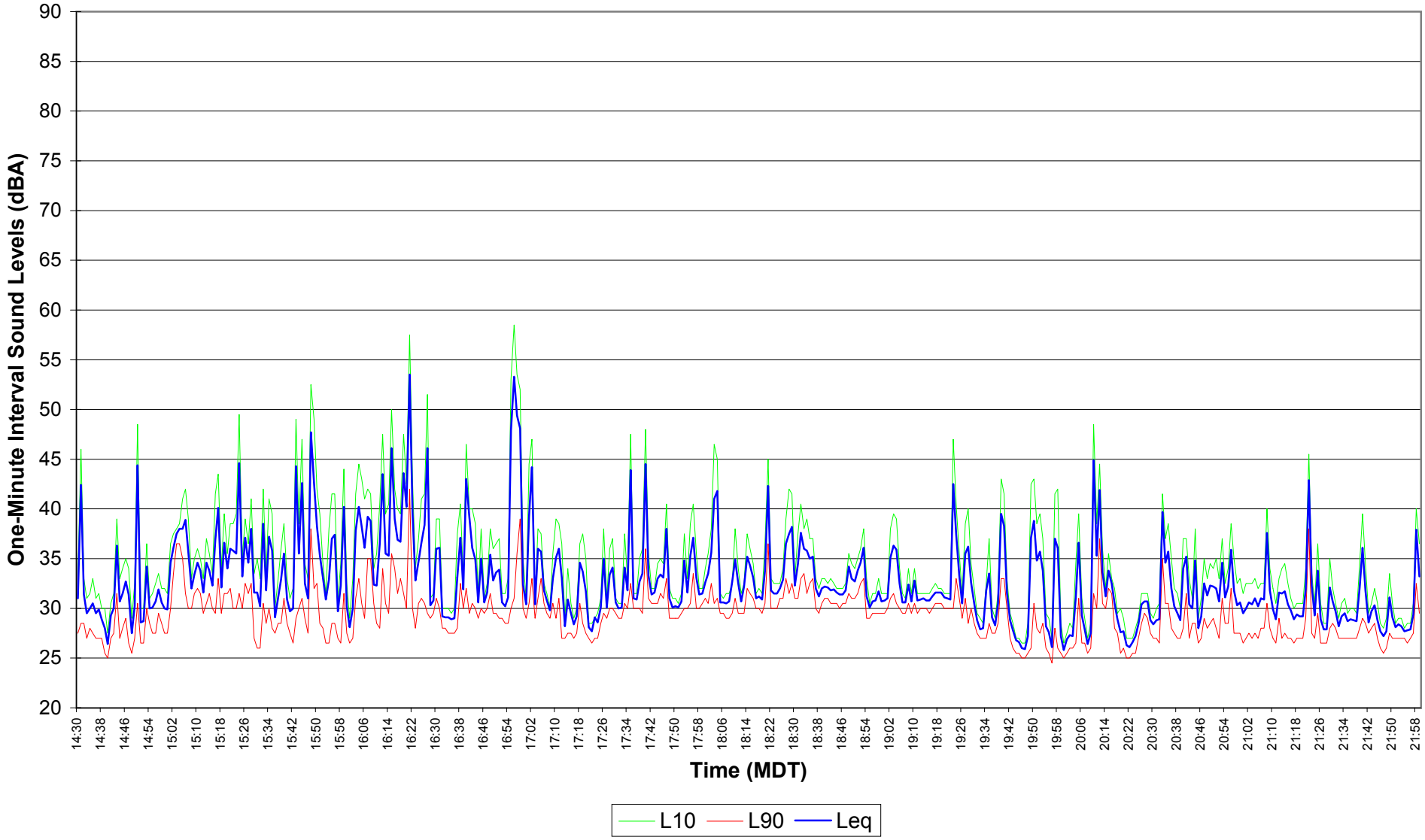


Figure E2.15
EnCana Rosebud
Site 2 Noise Survey
Nov. 27, 2004 - Nov. 28, 2004 22:00 - 06:59

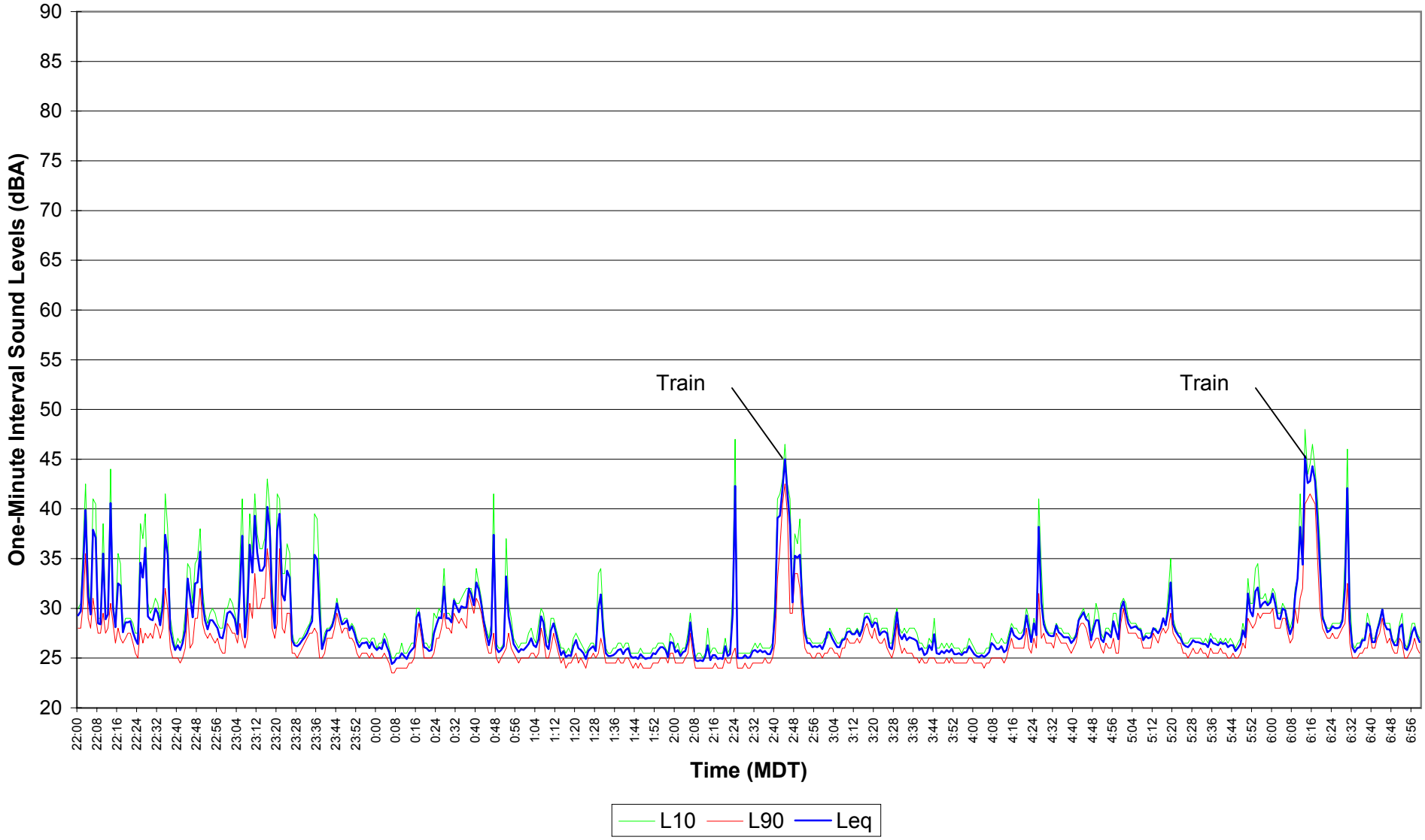


Figure E2.16

EnCana Rosebud

Site 2 Noise Survey

Nov. 28, 2004 07:00 - 14:29

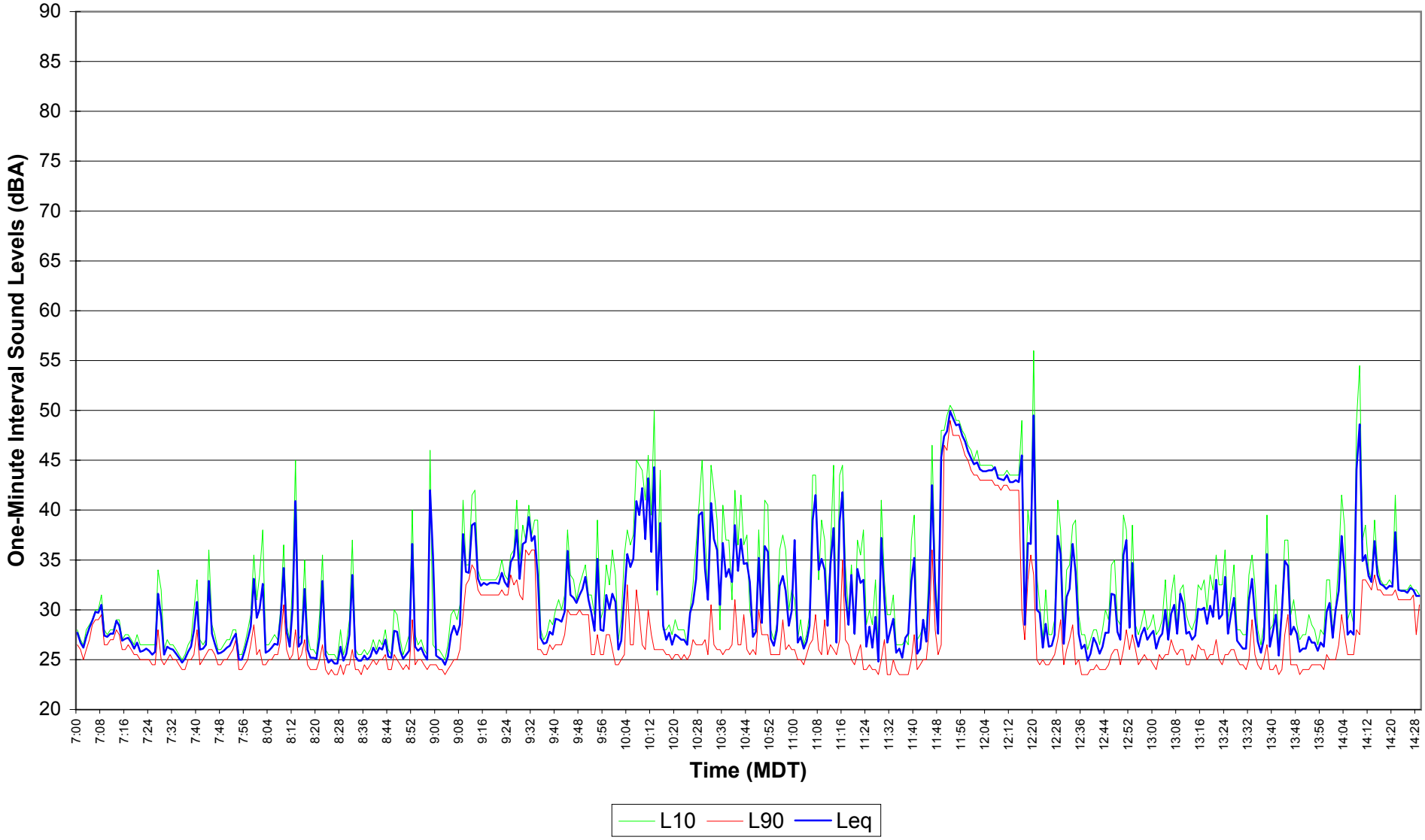


Figure E2.17
EnCana Rosebud
Site 2 Noise Survey
Nov. 28, 2004 14:30 - 21:59

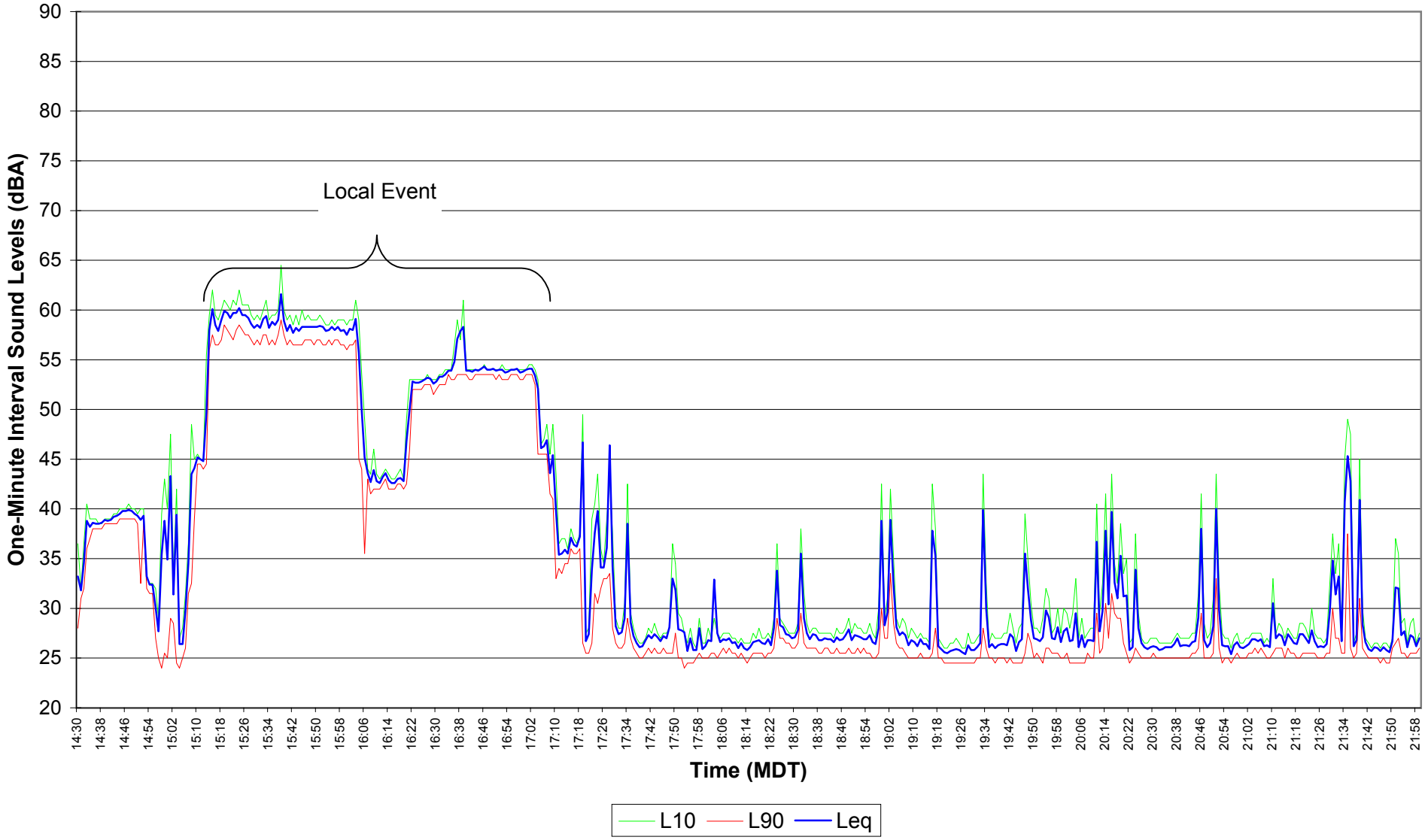


Figure E2.18
EnCana Rosebud
Site 2 Noise Survey
Nov. 28, 2004 - Nov. 29, 2004 22:00 - 06:59

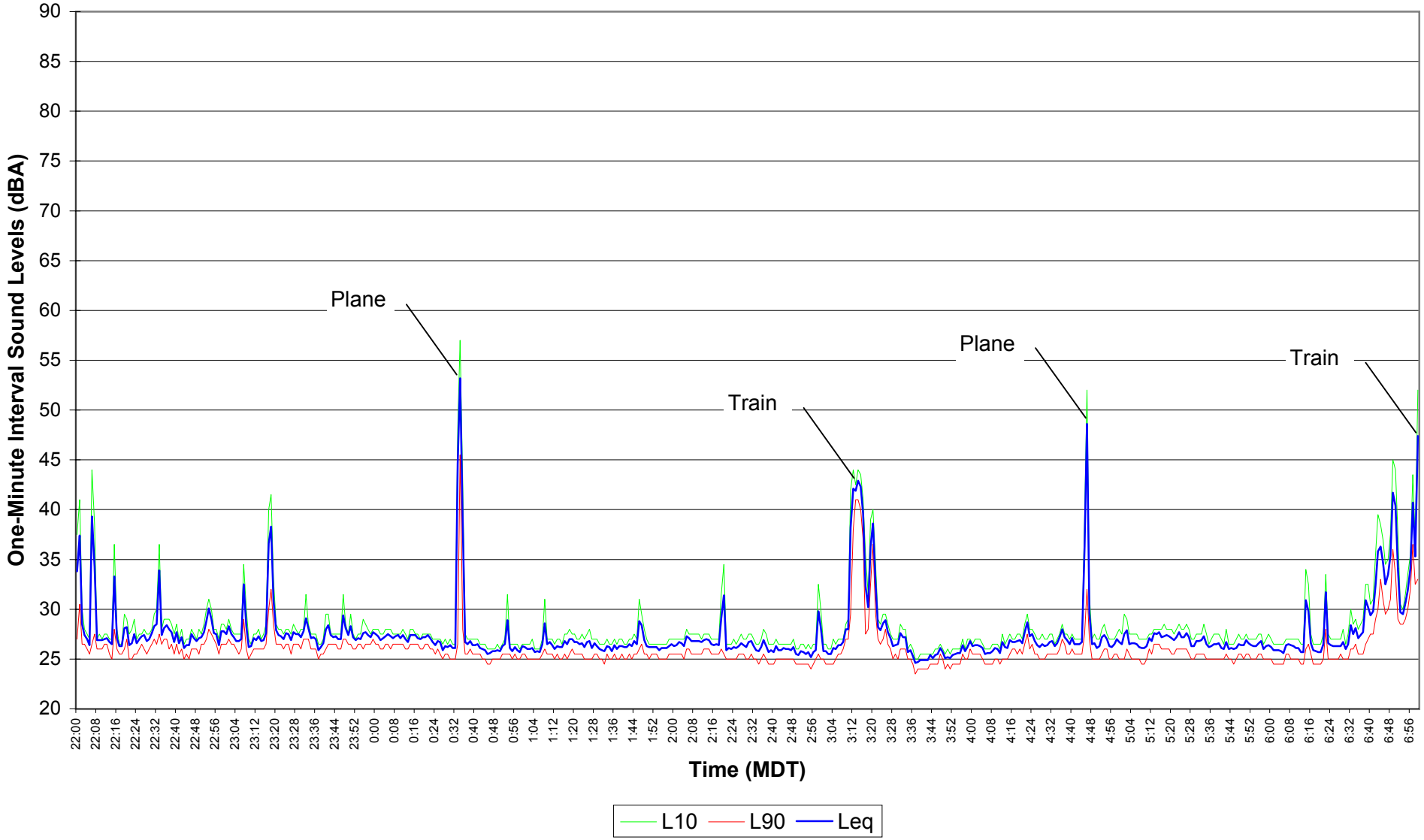


Figure E2.19
EnCana Rosebud
Site 2 Noise Survey
Nov. 29, 2004 07:00 - 14:29

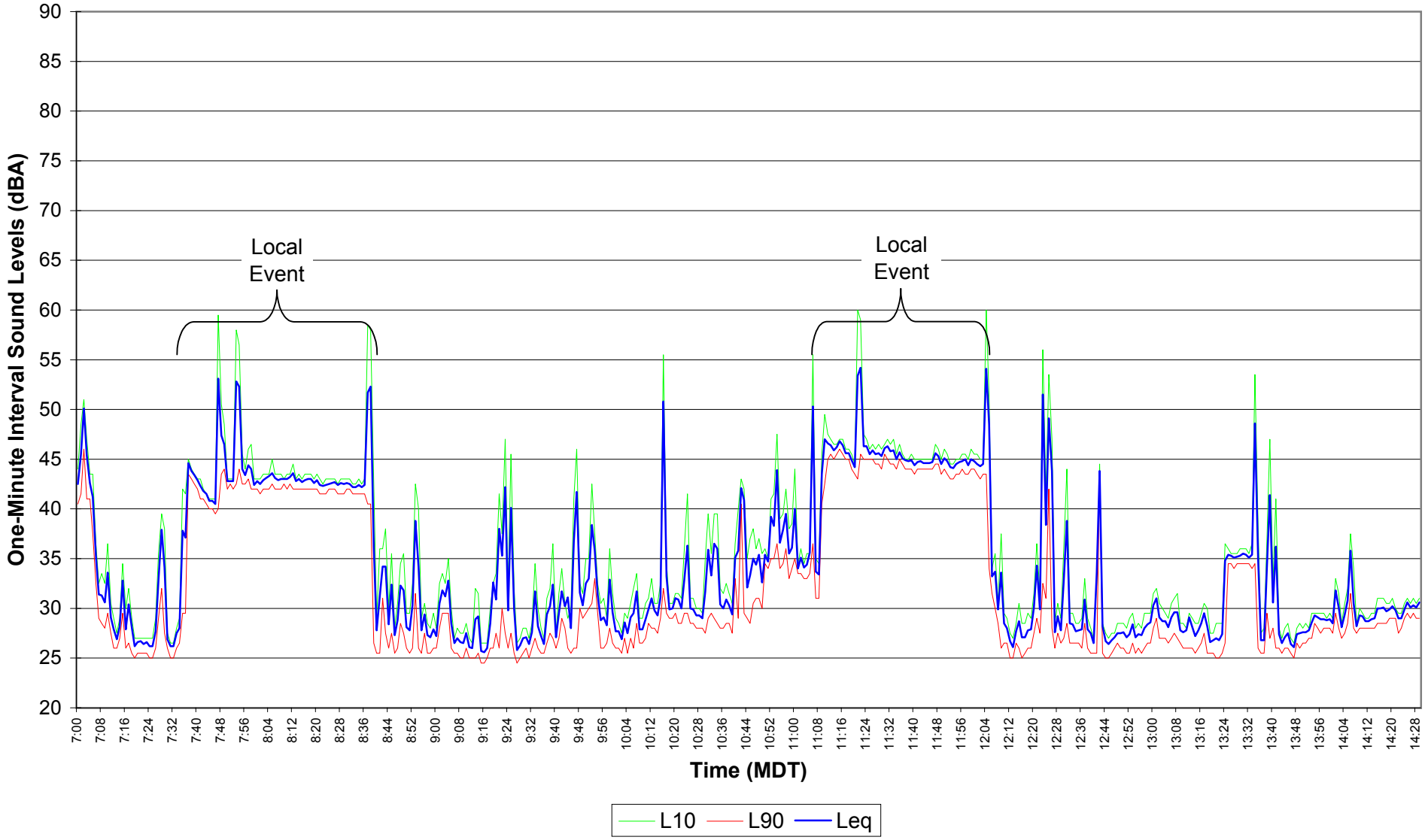


Figure E2.20
EnCana Rosebud
Site 2 Noise Survey
Nov. 29, 2004 14:30 - 21:59

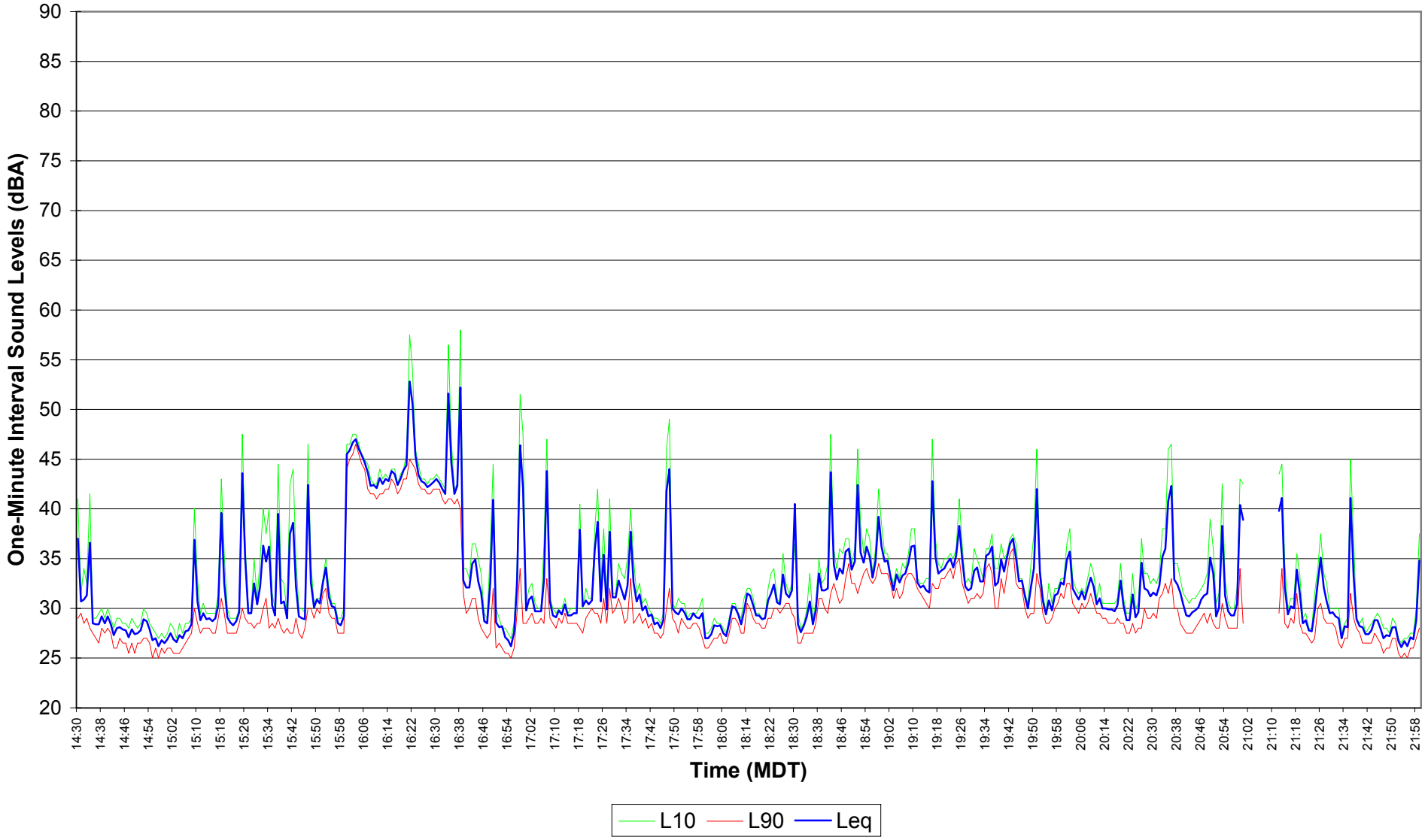


Figure E2.21
EnCana Rosebud
Site 2 Noise Survey
Nov. 29, 2004 - Nov. 30, 2004 22:00 - 06:59

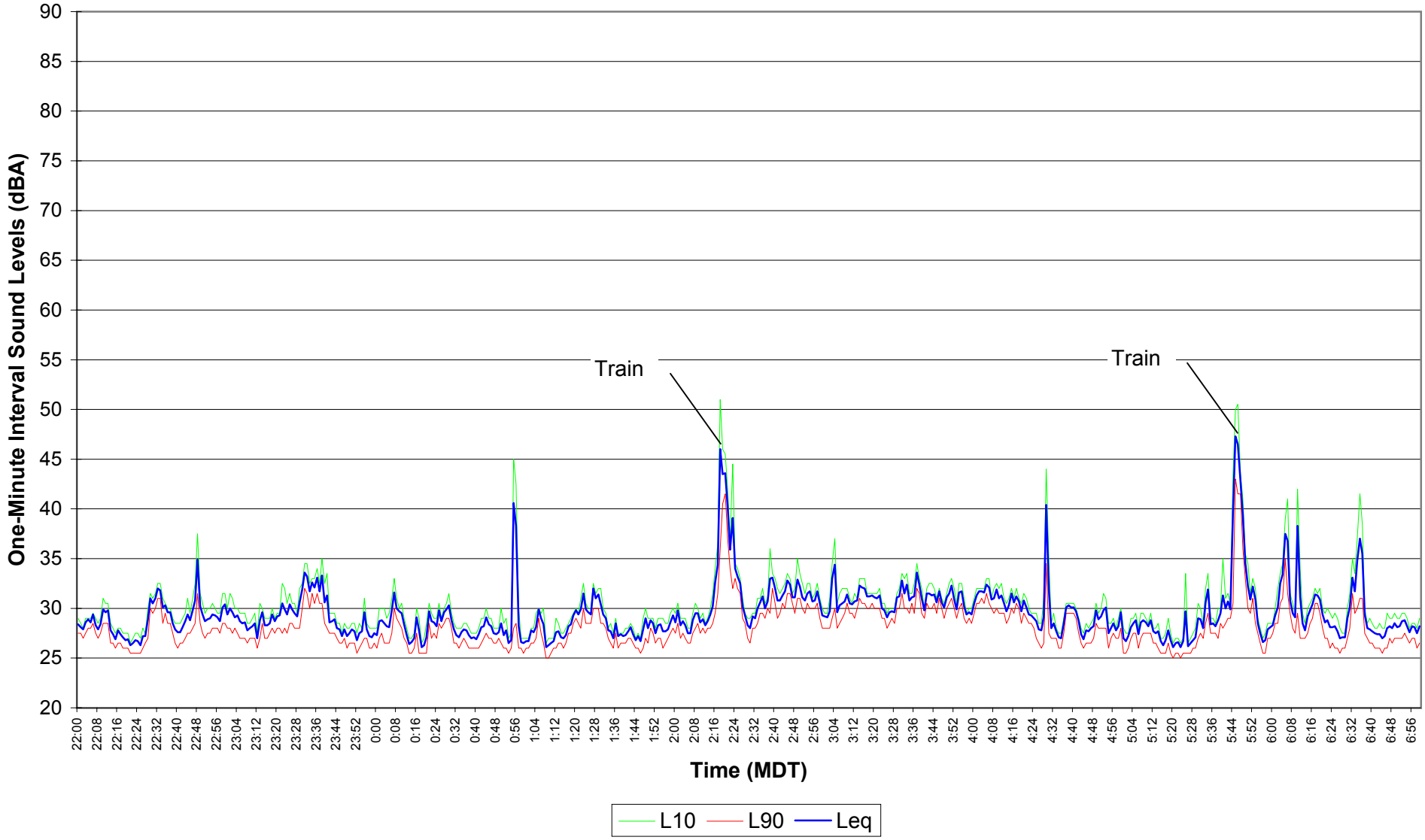


Figure E2.22
EnCana Rosebud
Site 2 Noise Survey
Nov. 30, 2004 07:00 - 14:29

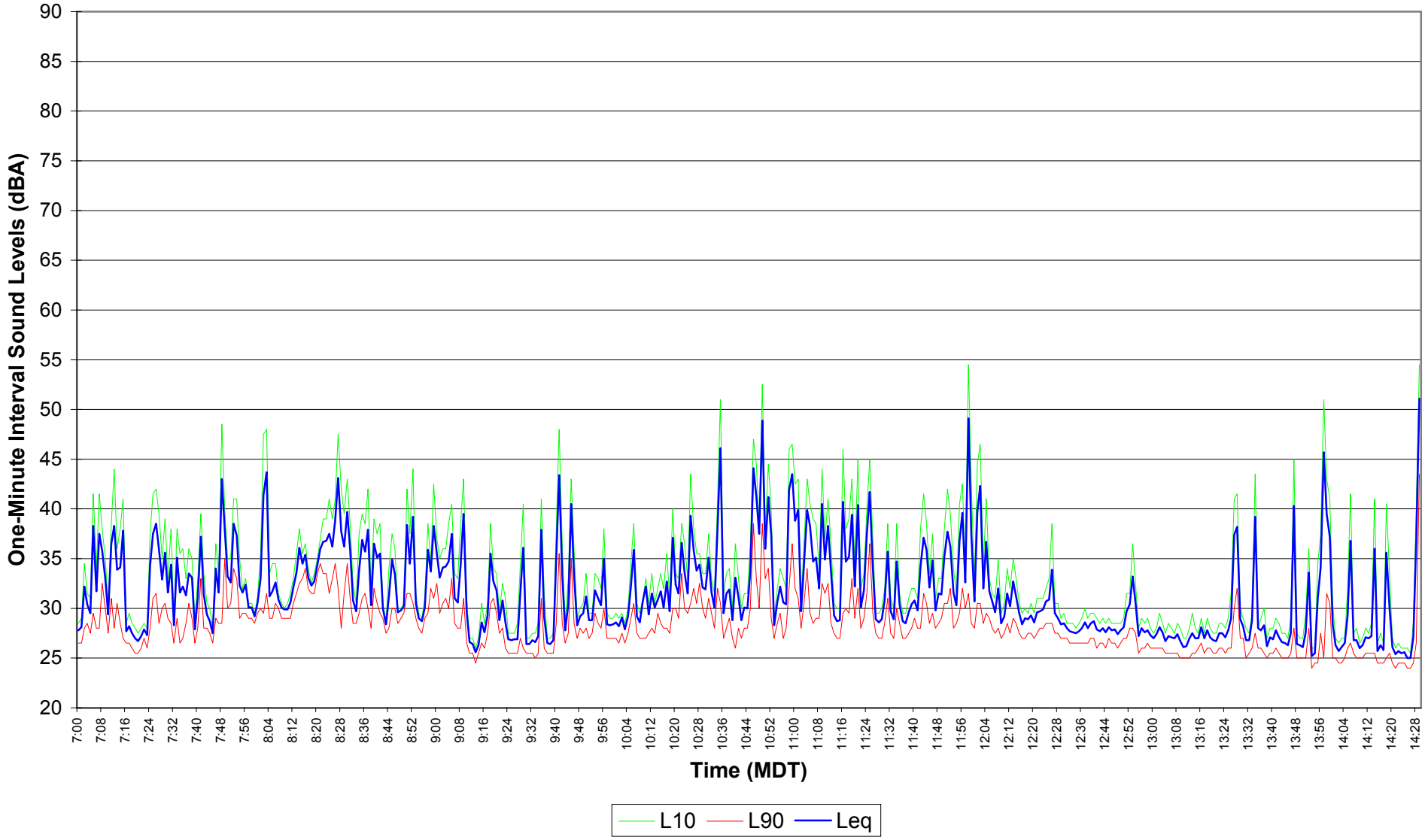


Figure E2.23
EnCana Rosebud
Site 2 Noise Survey
Nov. 30, 2004 14:30 - 21:59

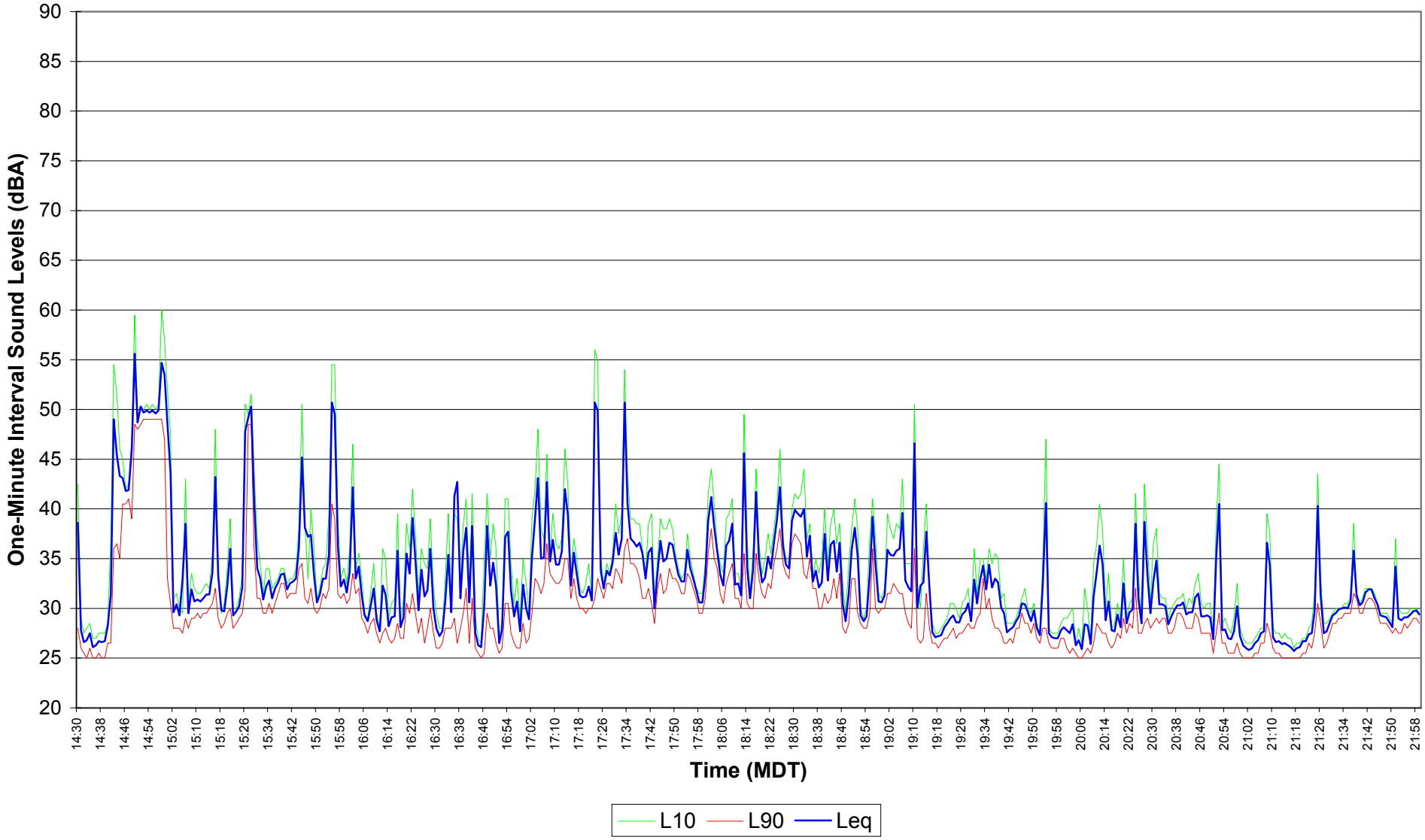


Figure E2.24
EnCana Rosebud
Site 2 Noise Survey
Nov. 30, 2004 - Dec. 01, 2004 22:00 - 06:59

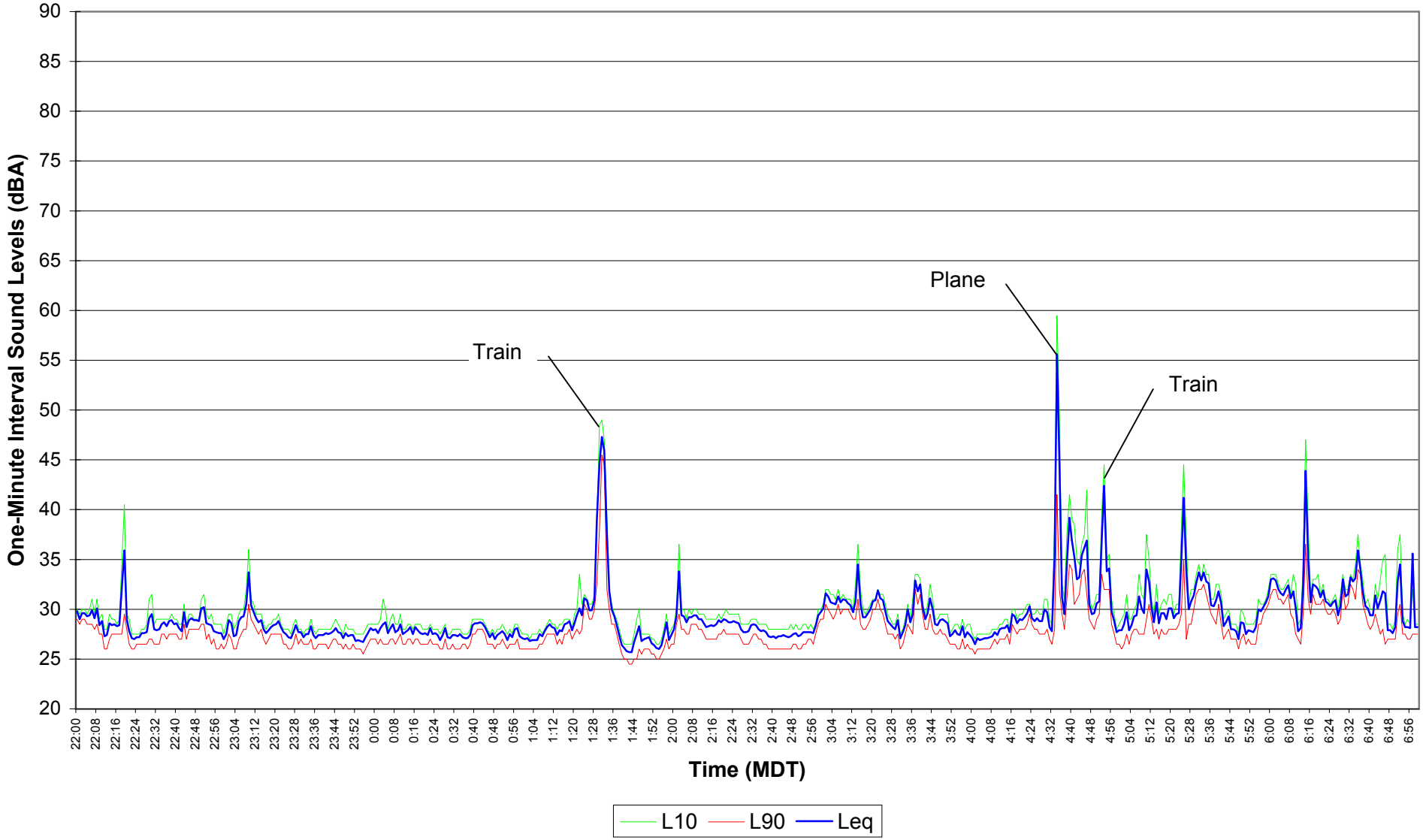


Figure E2.25
EnCana Rosebud
Site 2 Noise Survey
Dec. 01, 2004 07:00 - 14:29

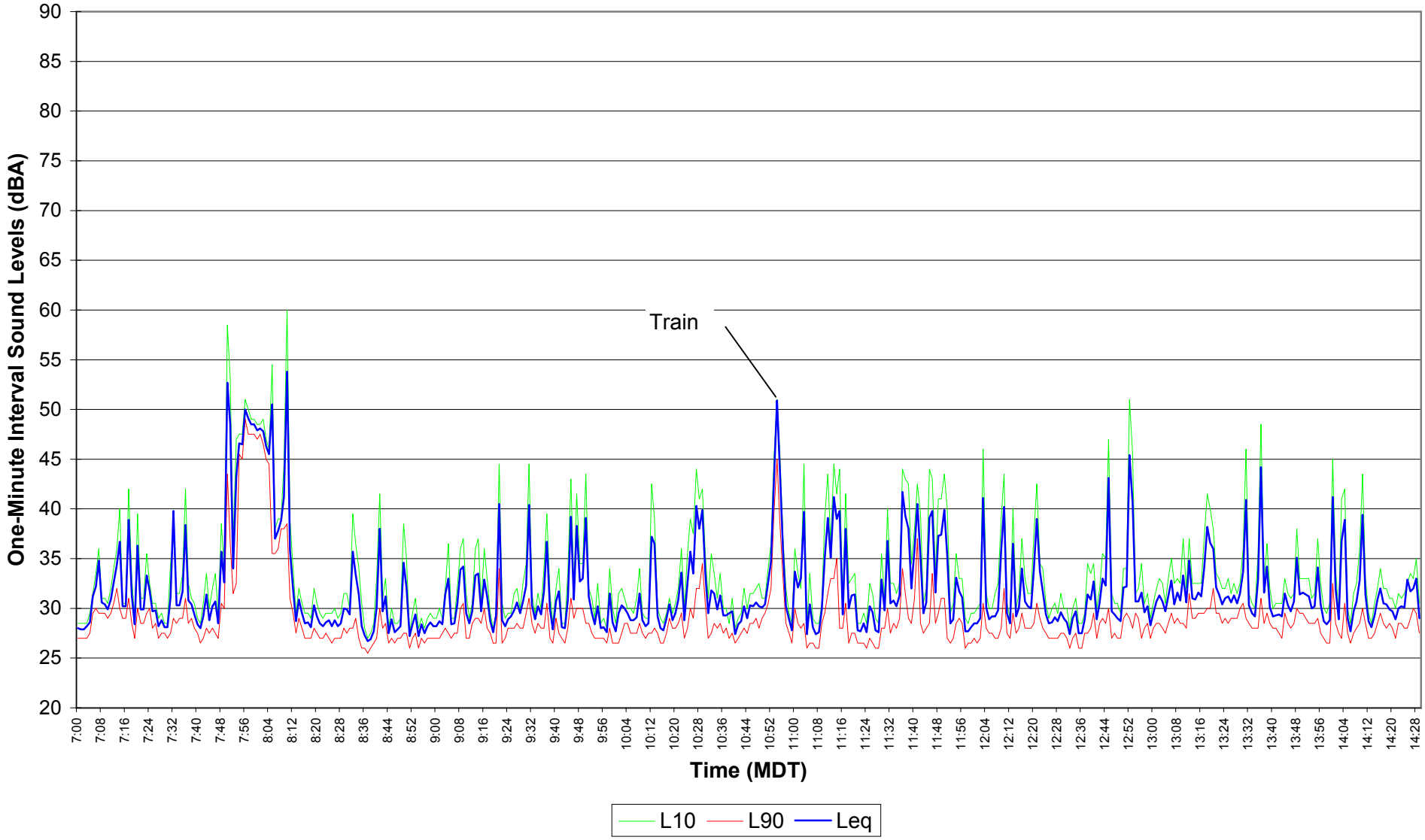


Figure E2.26
EnCana Rosebud
Site 2 Noise Survey
Dec. 01, 2004 14:30 - 21:59

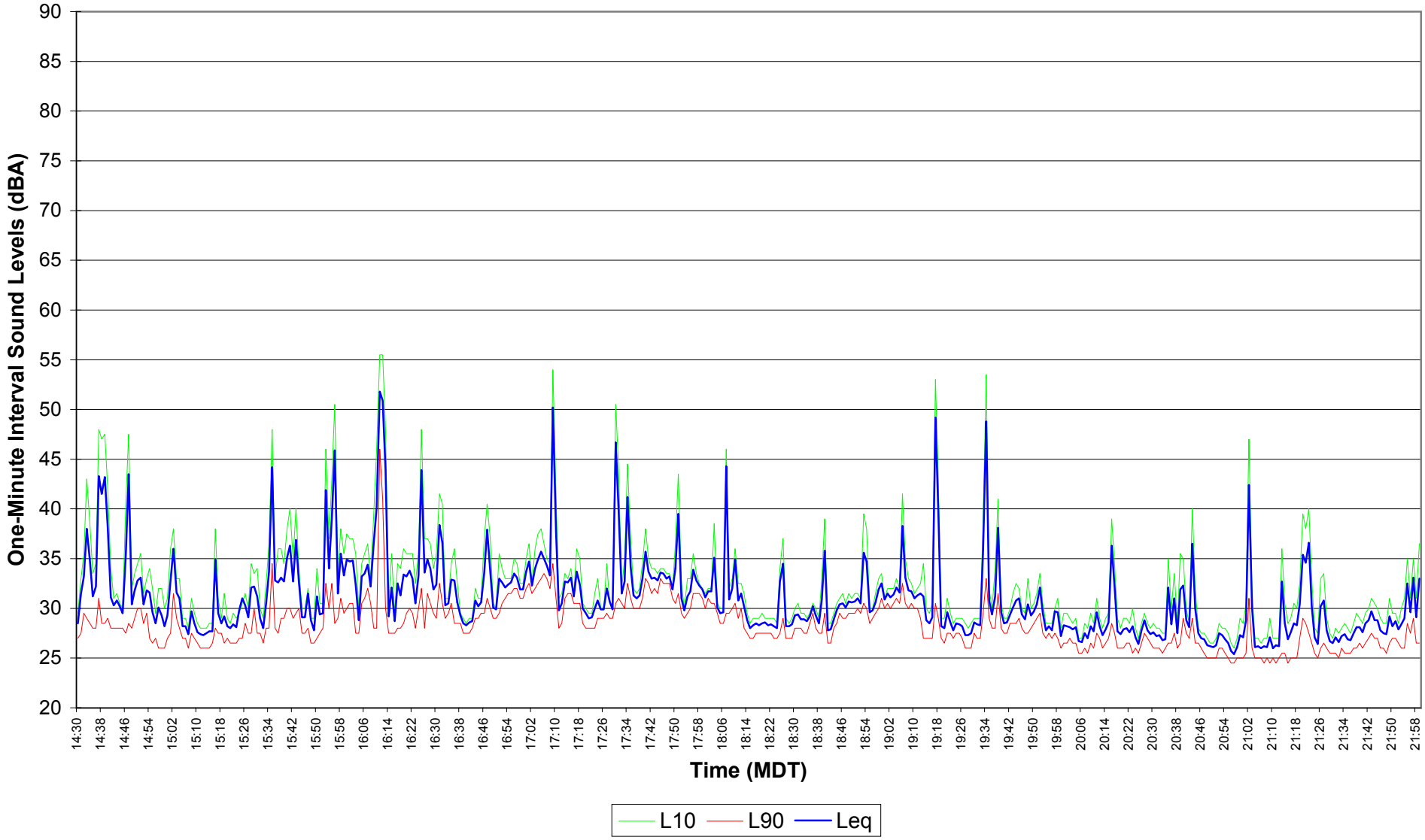


Figure E2.27
EnCana Rosebud
Site 2 Noise Survey
Dec. 01, 2004 - Dec. 02, 2004 22:00 - 06:59

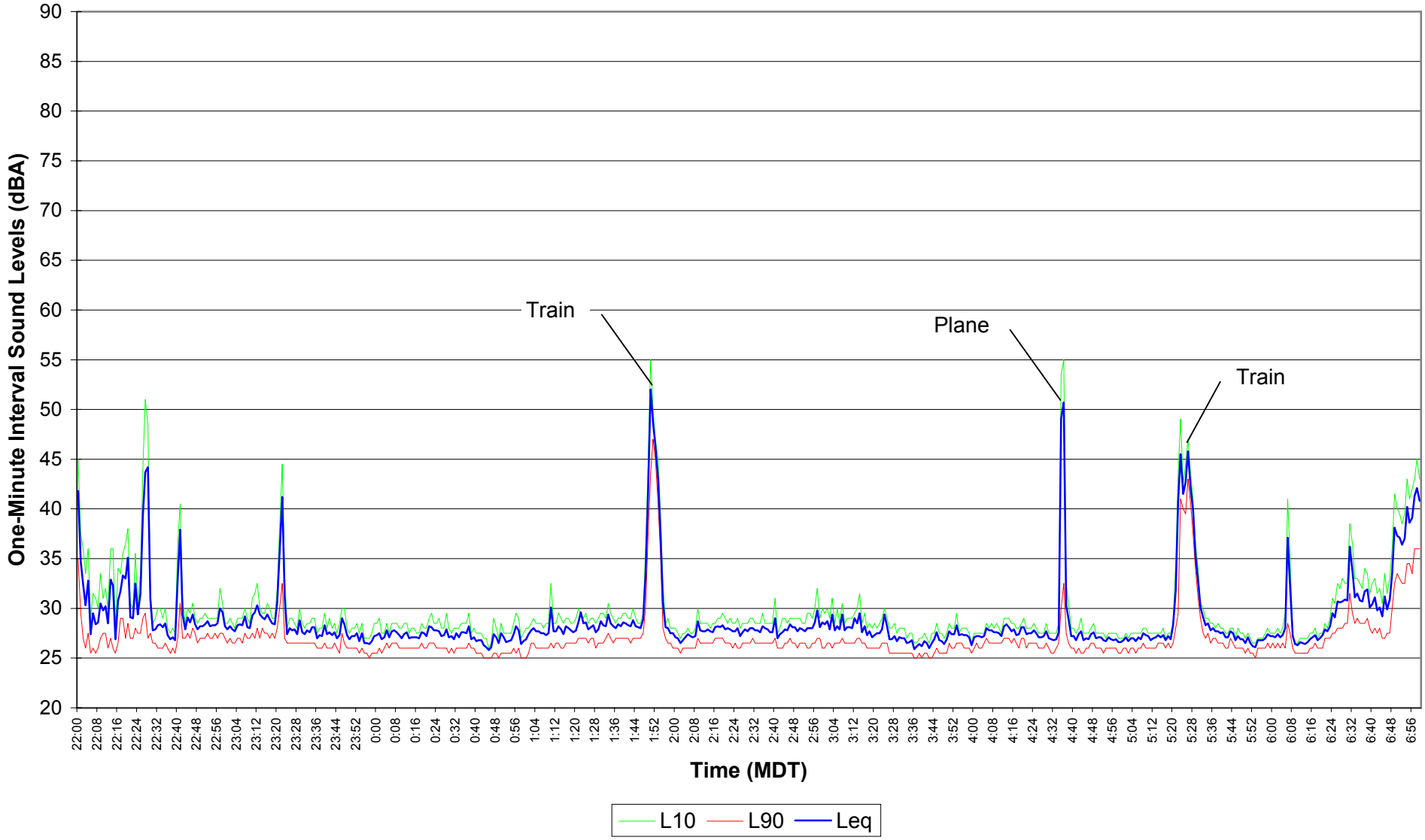


Figure E2.28
EnCana Rosebud
Site 2 Noise Survey
Dec. 02, 2004 07:00 - 14:29

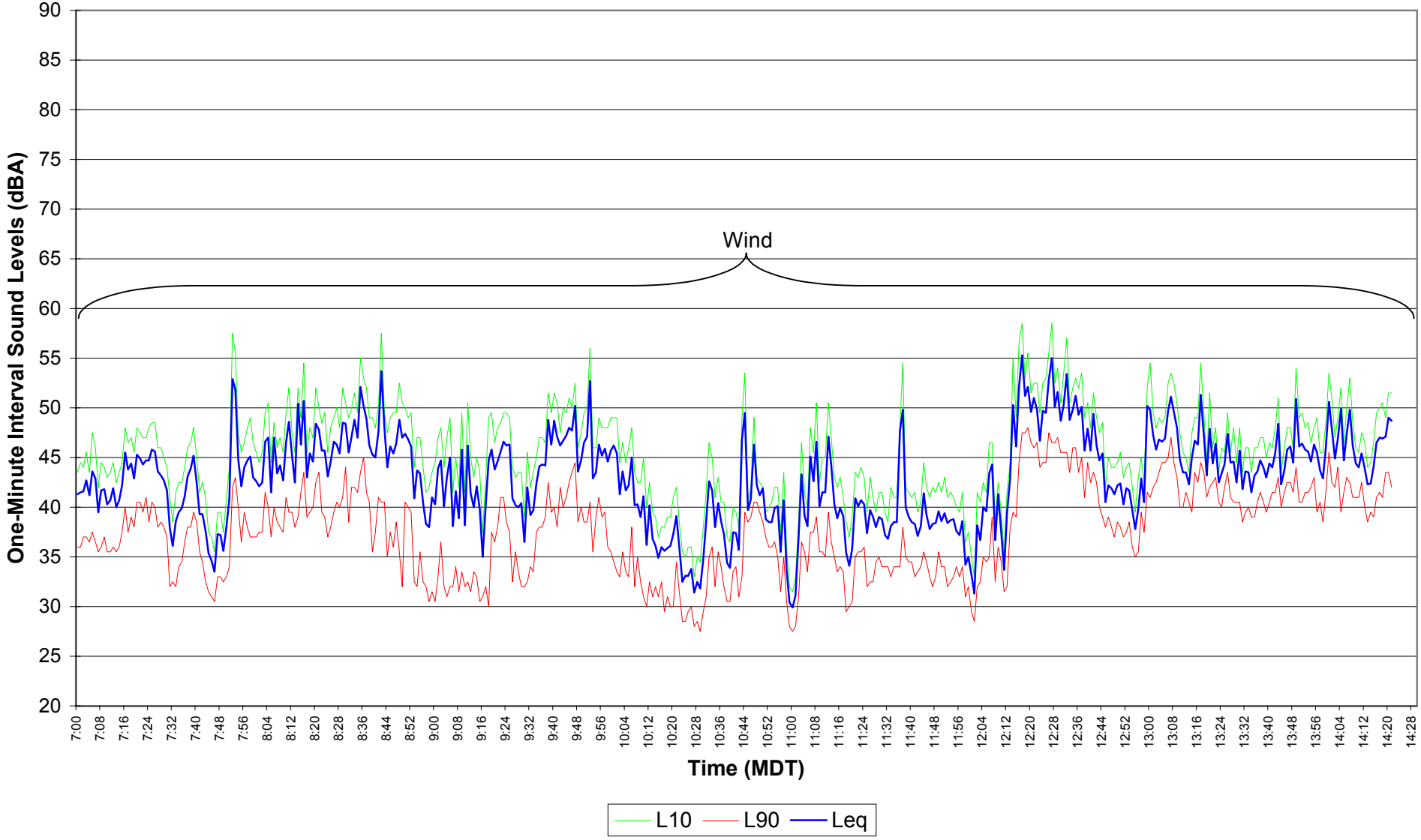


Figure E2.32
EnCana Rosebud
Site 2 Noise Survey
Dec. 03, 2004 14:30 - 21:59

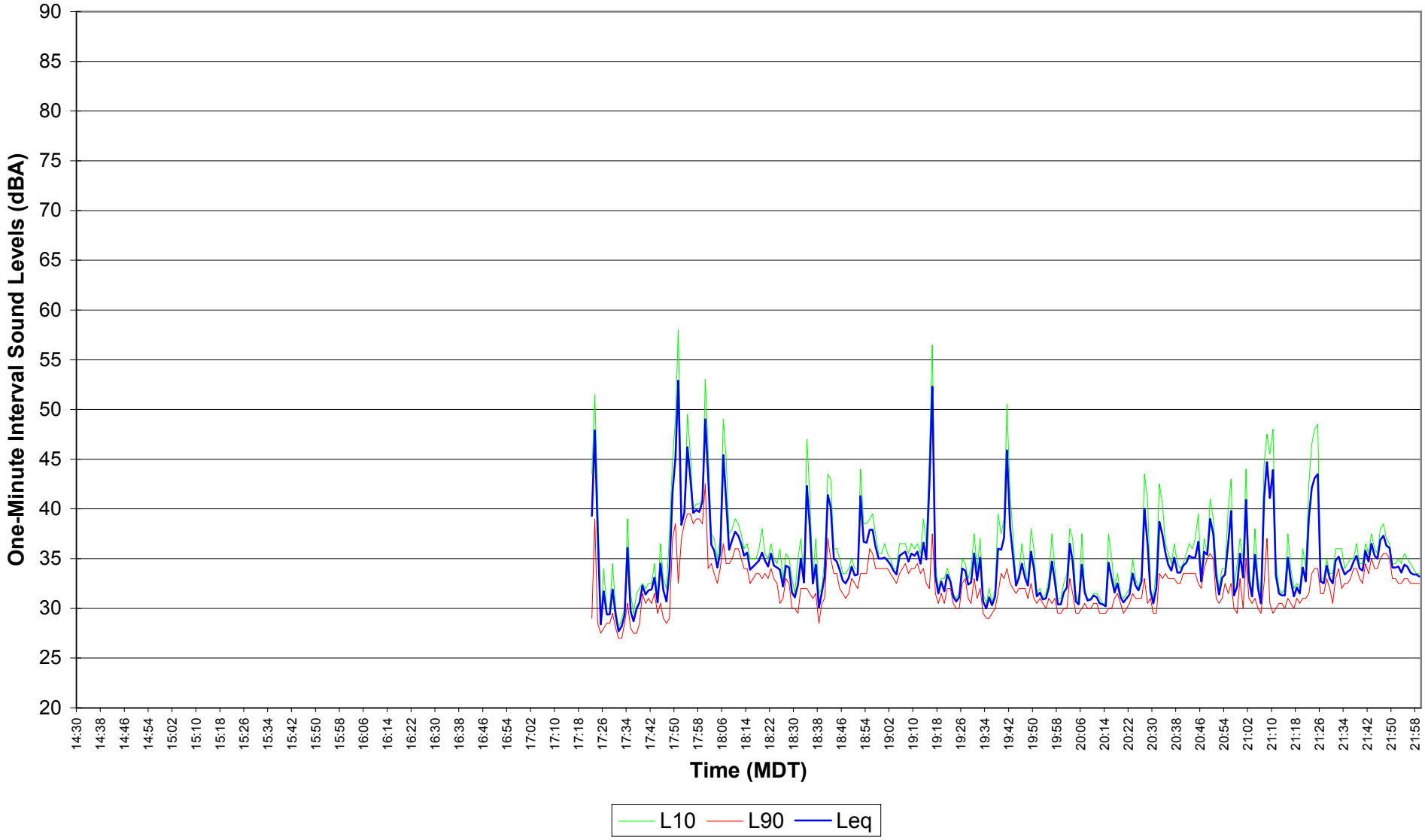


Figure E2.33
EnCana Rosebud
Site 2 Noise Survey
Dec. 03, 2004 - Dec. 04, 2004 22:00 - 06:59

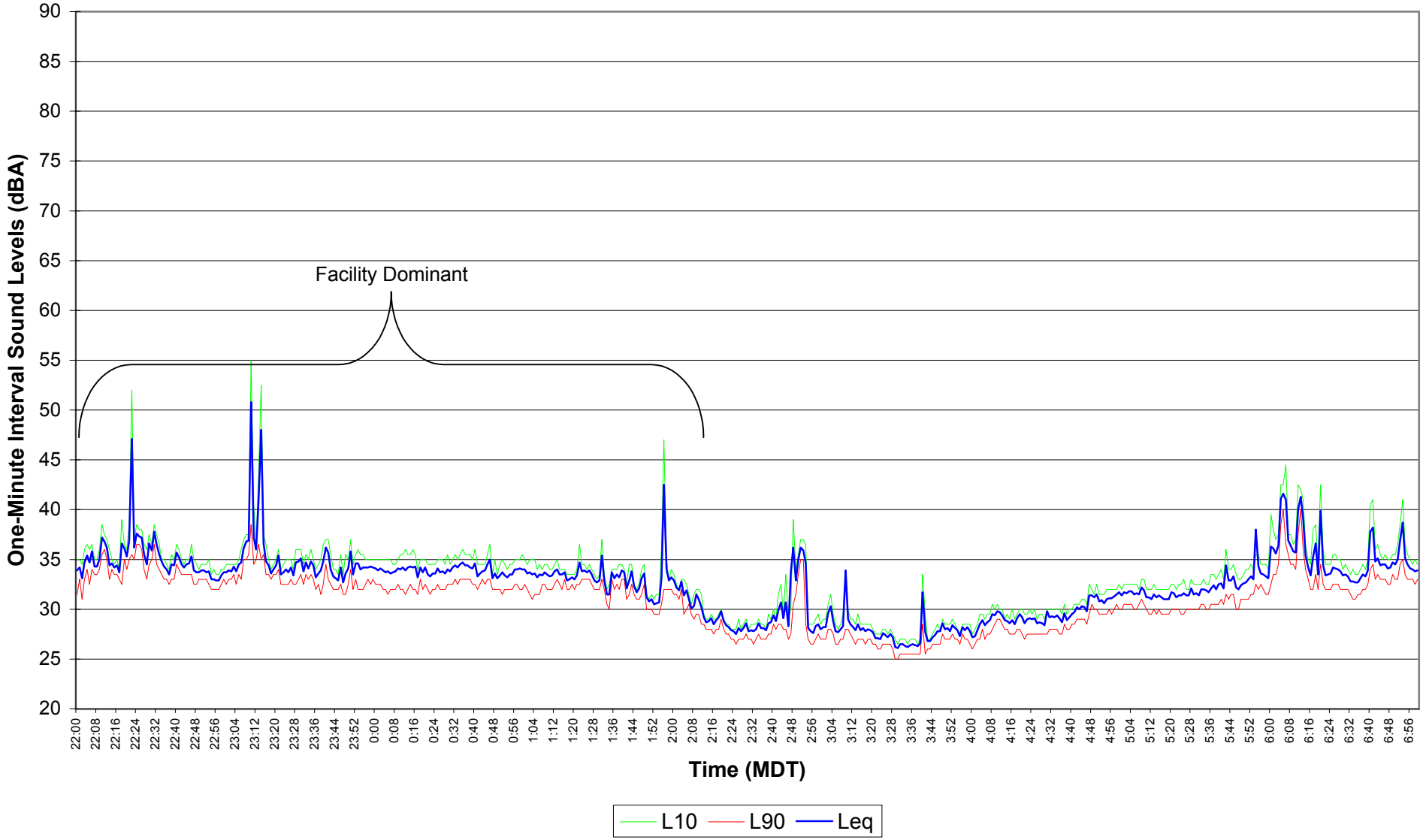


Figure E2.34
EnCana Rosebud
Site 2 Noise Survey
Dec. 04, 2004 07:00 - 14:29

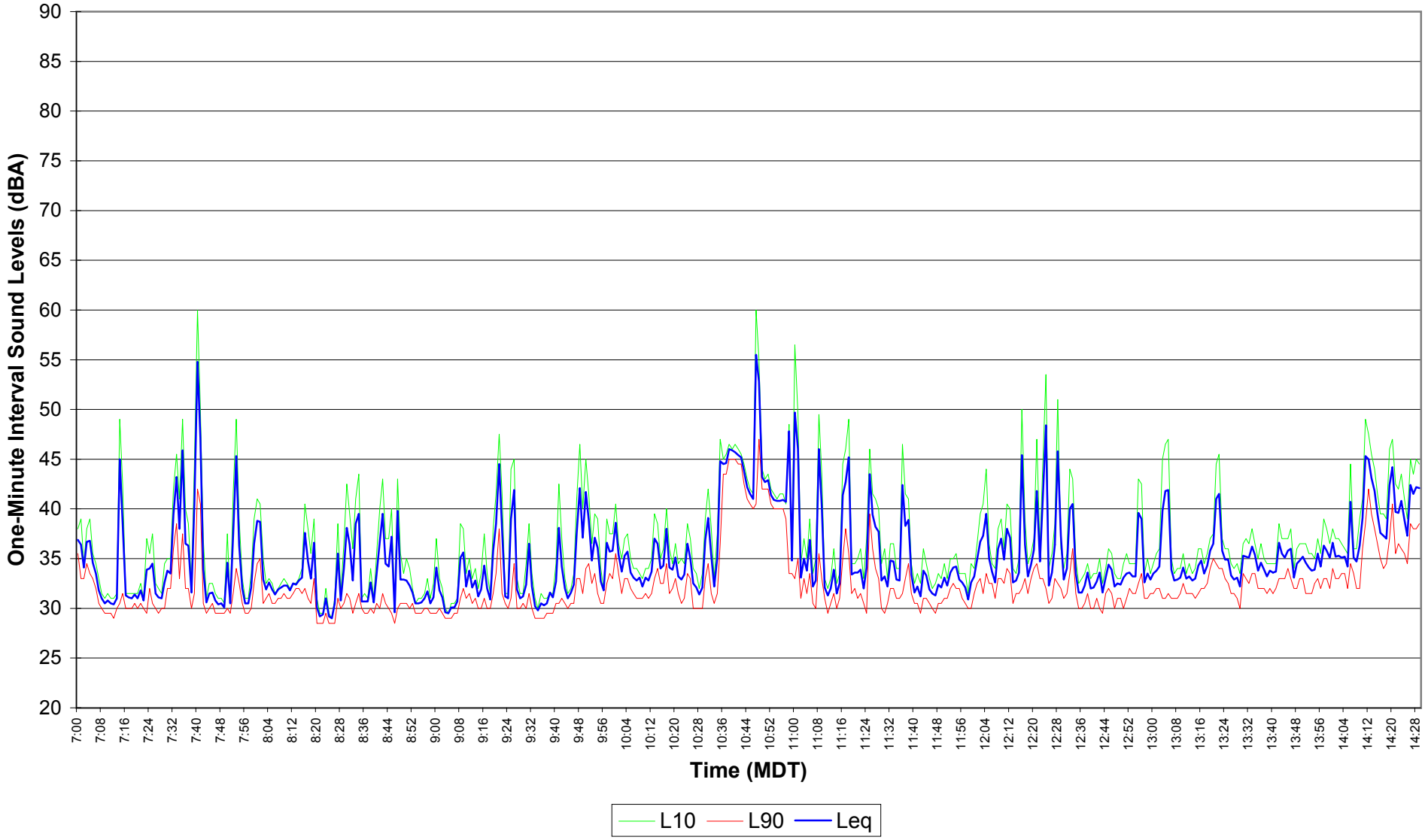


Figure E2.35
EnCana Rosebud
Site 2 Noise Survey
Dec. 04, 2004 14:30 - 21:59

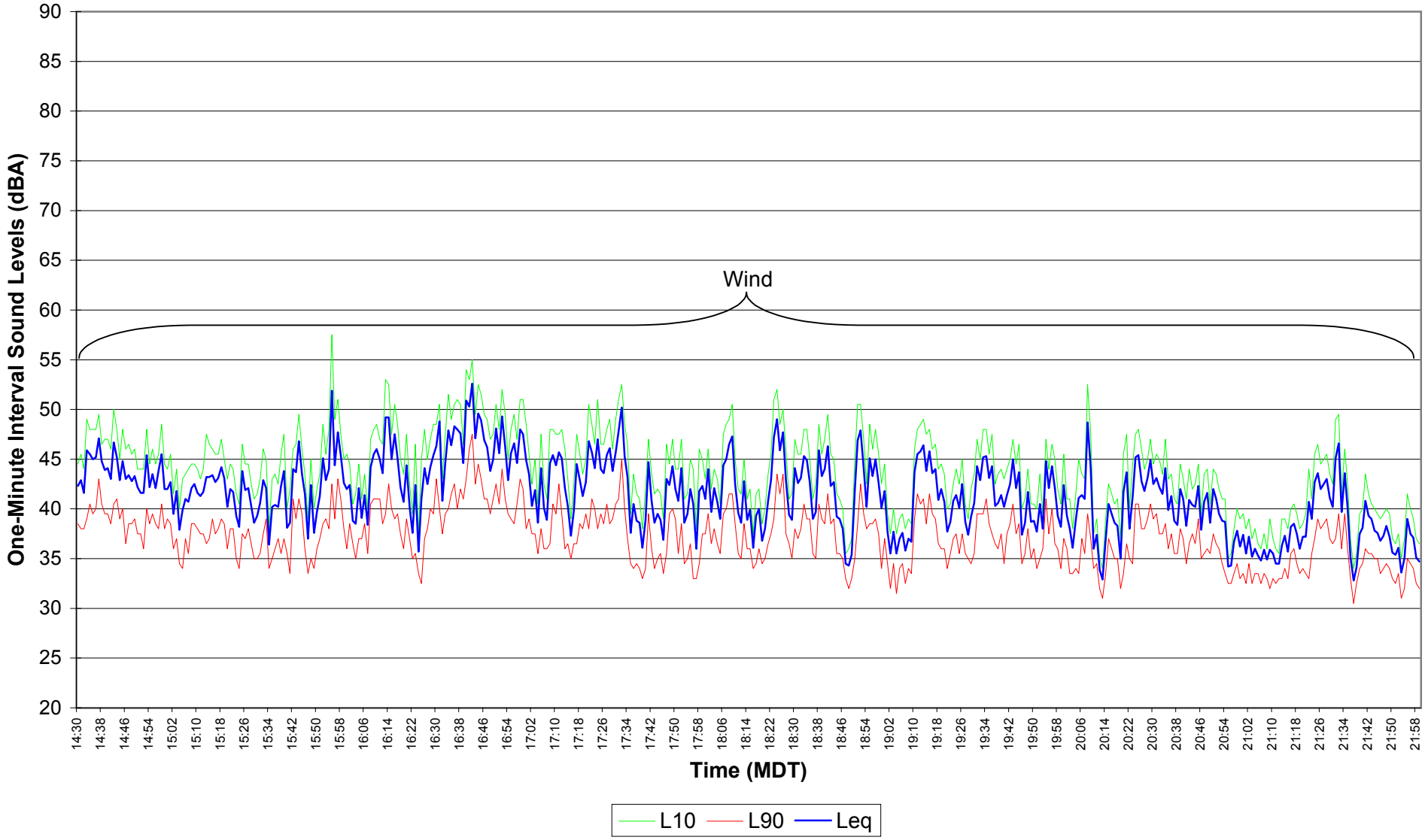


Figure E2.36
EnCana Rosebud
Site 2 Noise Survey
Dec. 04, 2004 - Dec. 05, 2004 22:00 - 06:59

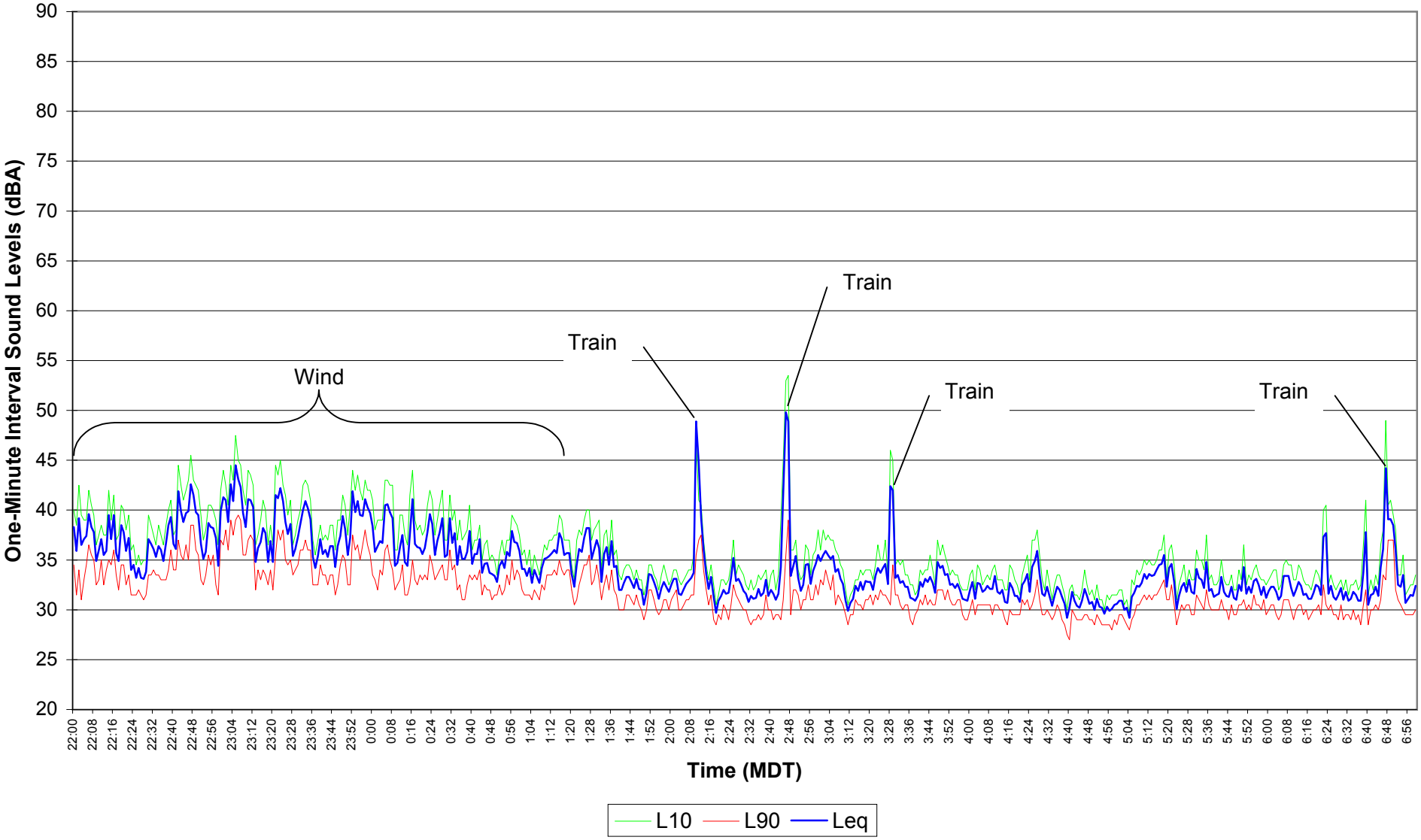


Figure E2.37
EnCana Rosebud
Site 2 Noise Survey
Dec. 05, 2004 07:00 - 14:29

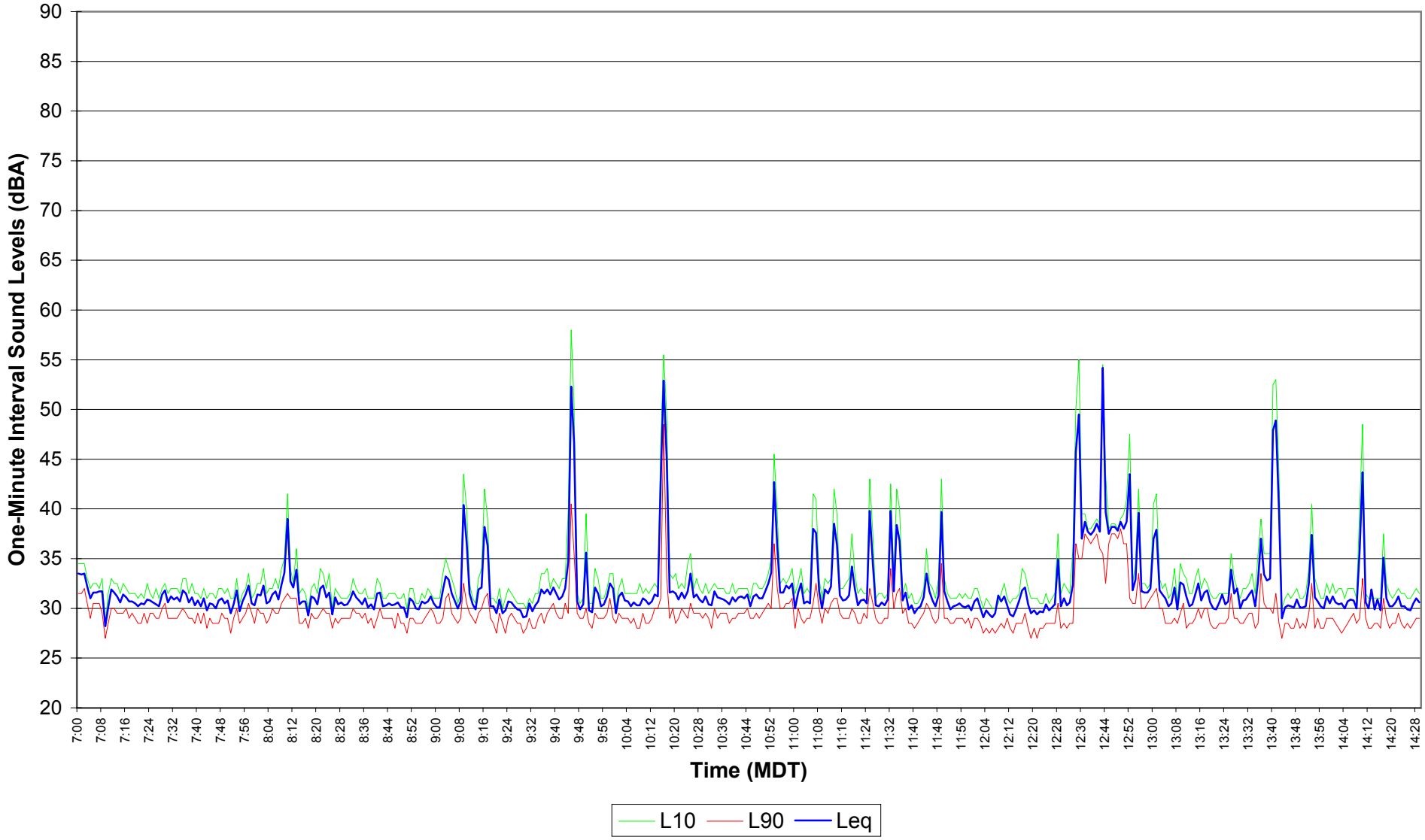


Figure E2.38
EnCana Rosebud
Site 2 Noise Survey
Dec. 05, 2004 14:30 - 21:59

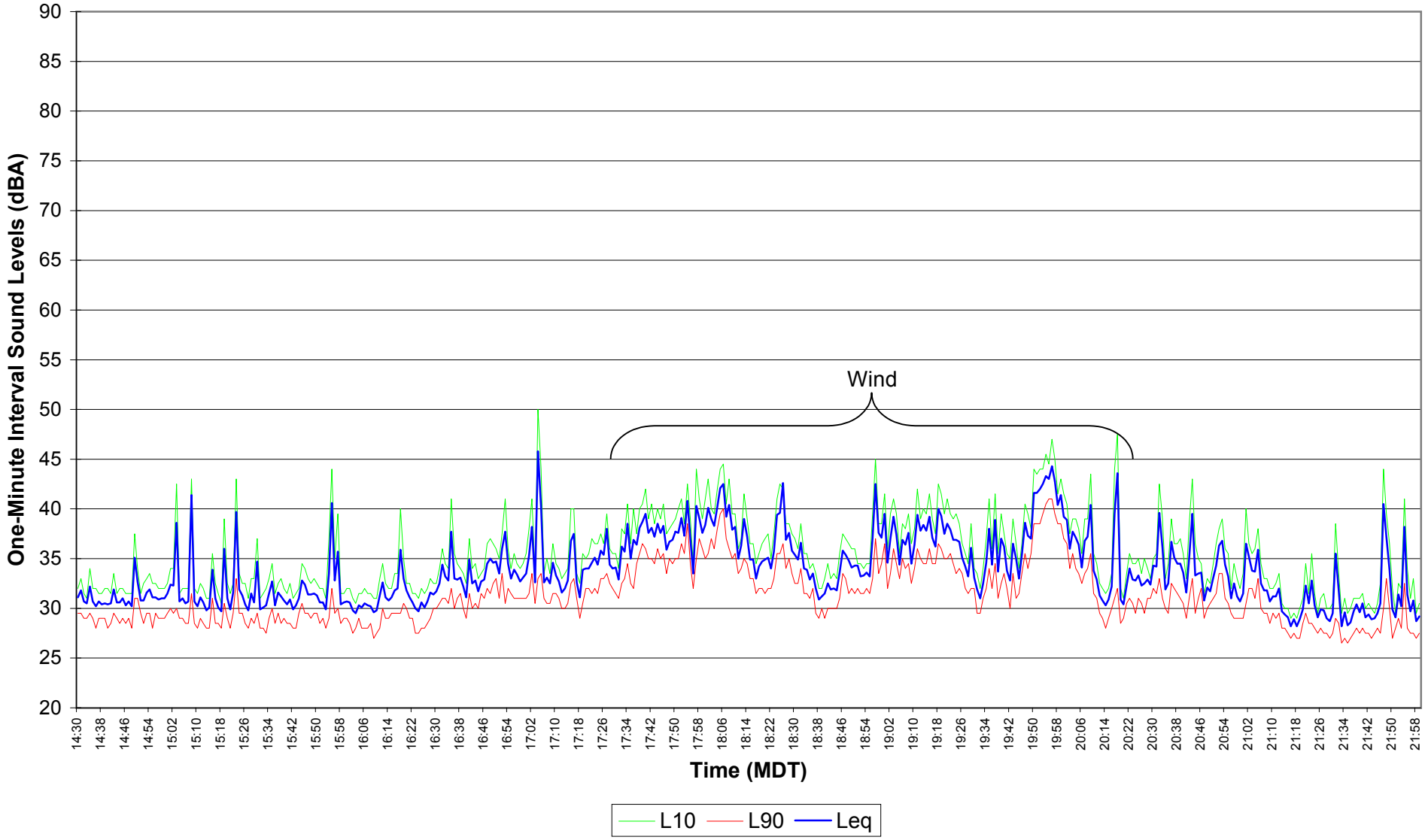


Figure E2.39
EnCana Rosebud
Site 2 Noise Survey
Dec. 05, 2004 - Dec. 06, 2004 22:00 - 06:59

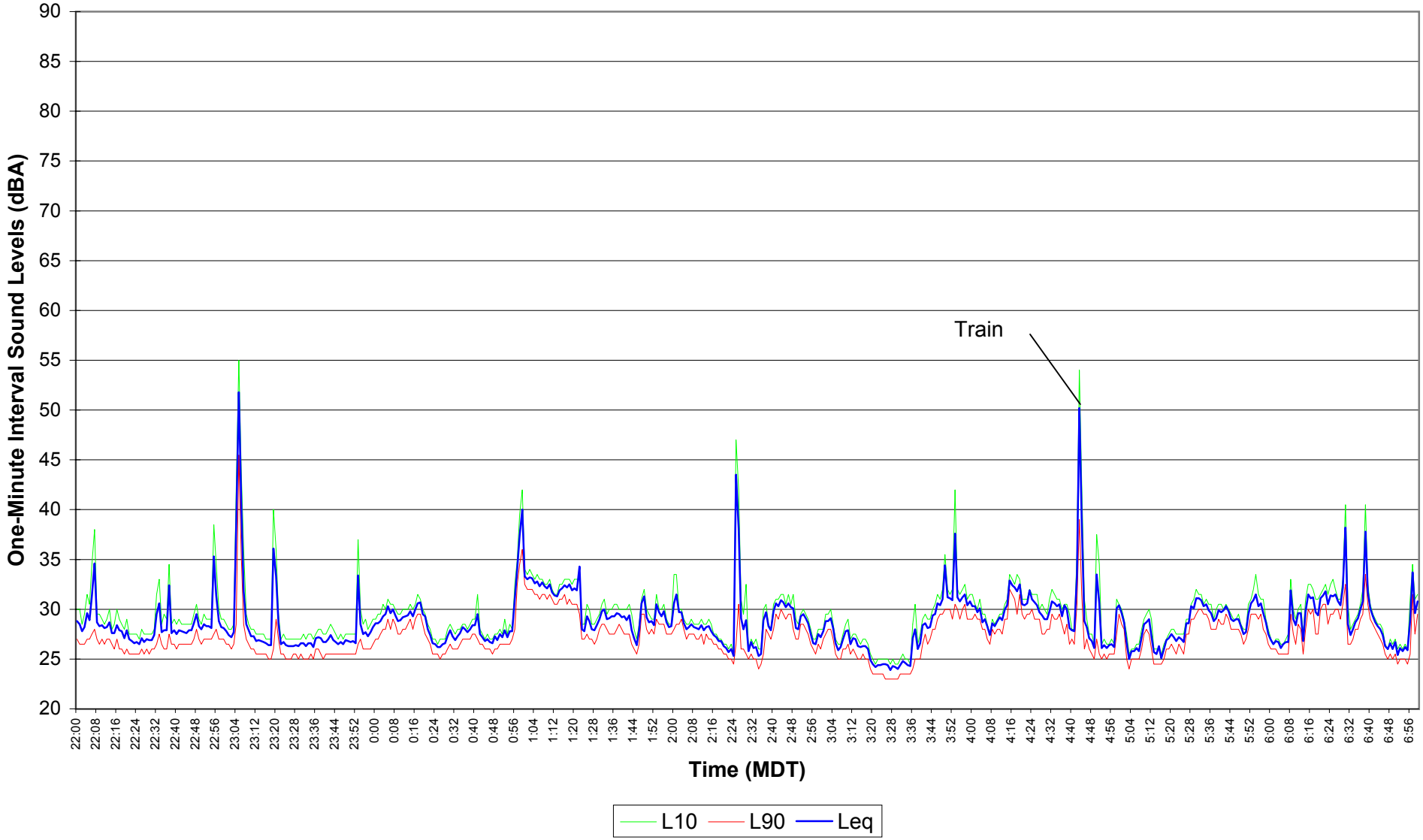


Figure E2.40
EnCana Rosebud
Site 2 Noise Survey
Dec. 06, 2004 07:00 - 14:29

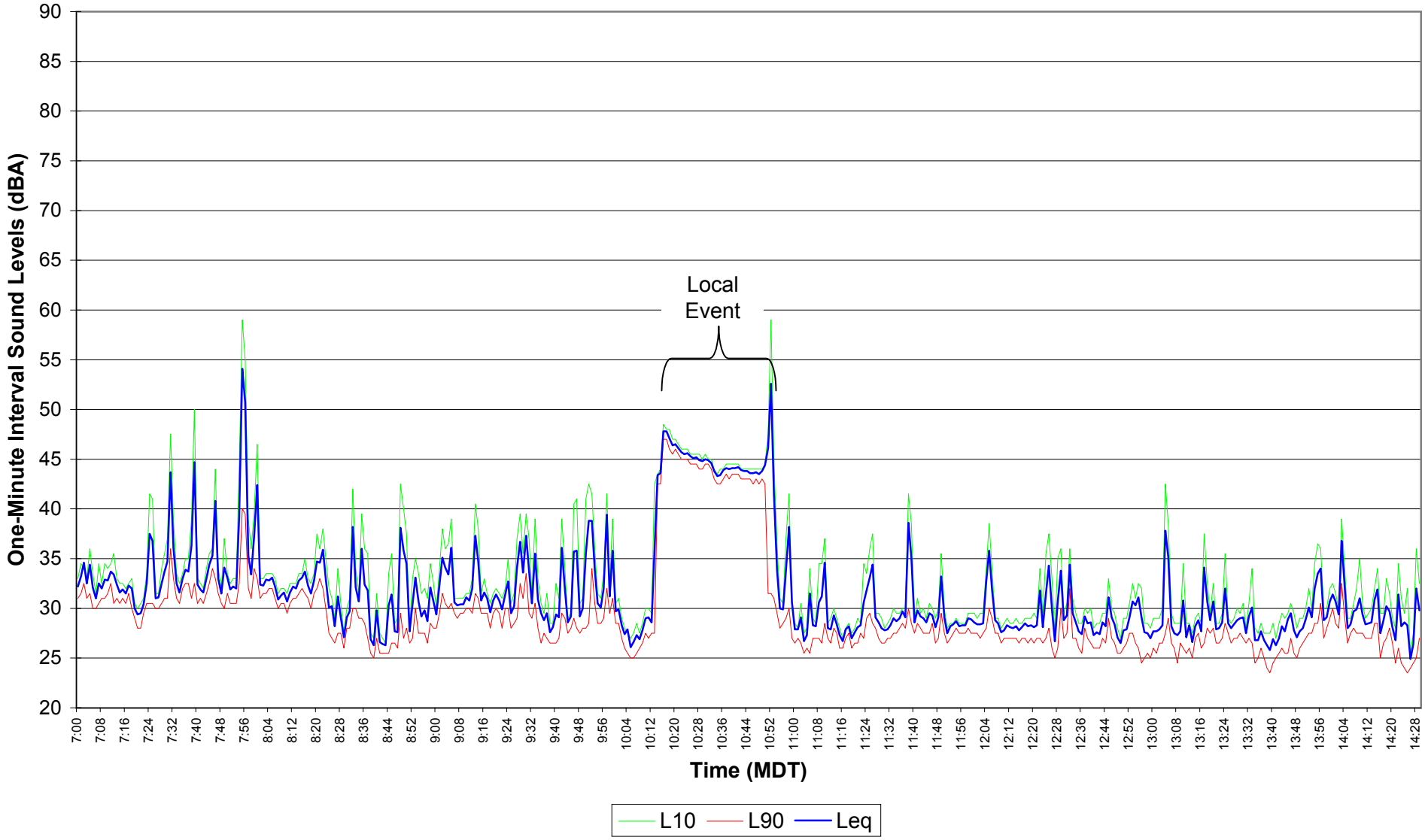


Figure E2.41
EnCana Rosebud
Site 2 Noise Survey
Dec. 06, 2004 14:30 - 21:59

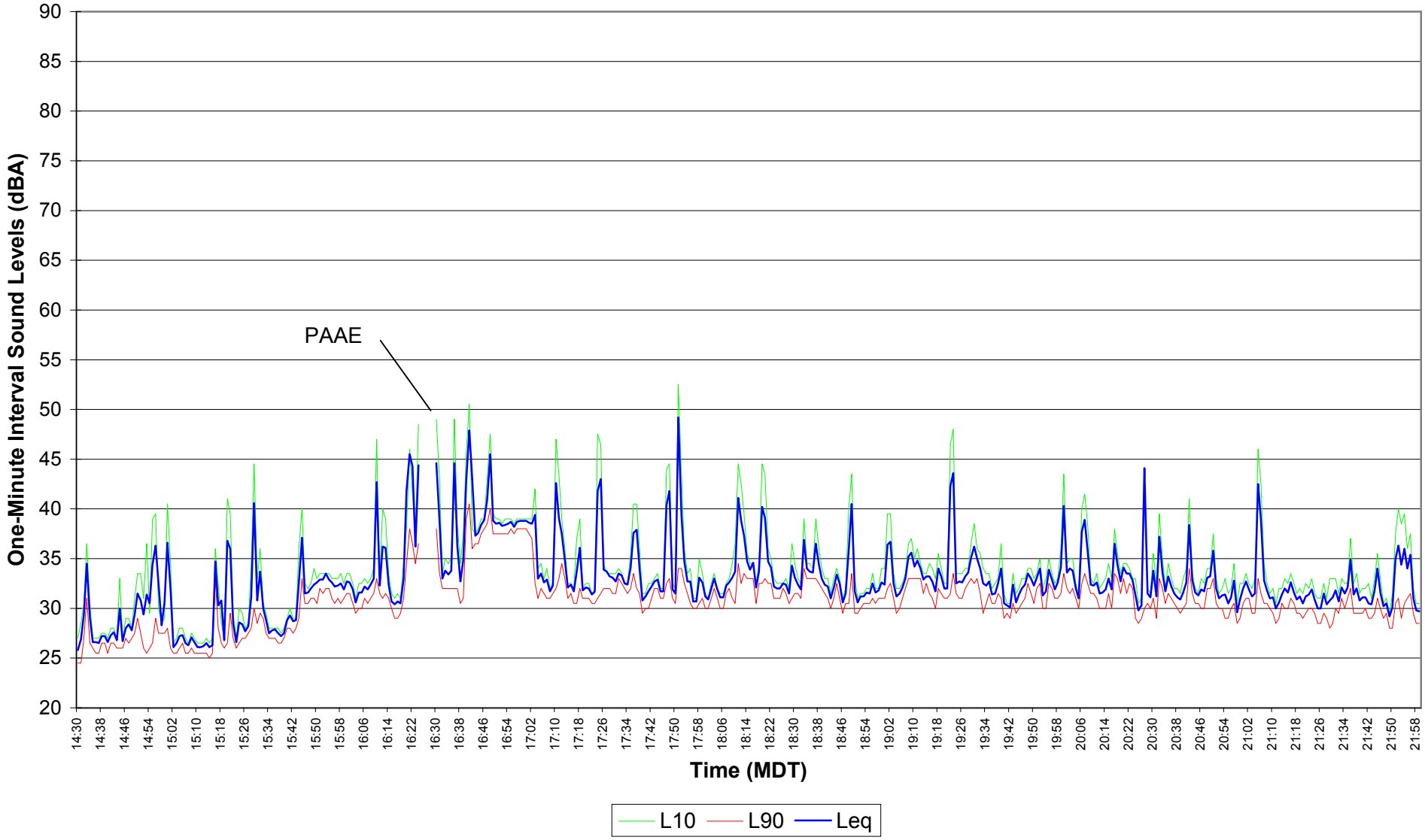


Figure E2.42
EnCana Rosebud
Site 2 Noise Survey
Dec. 06, 2004 - Dec. 07, 2004 22:00 - 06:59

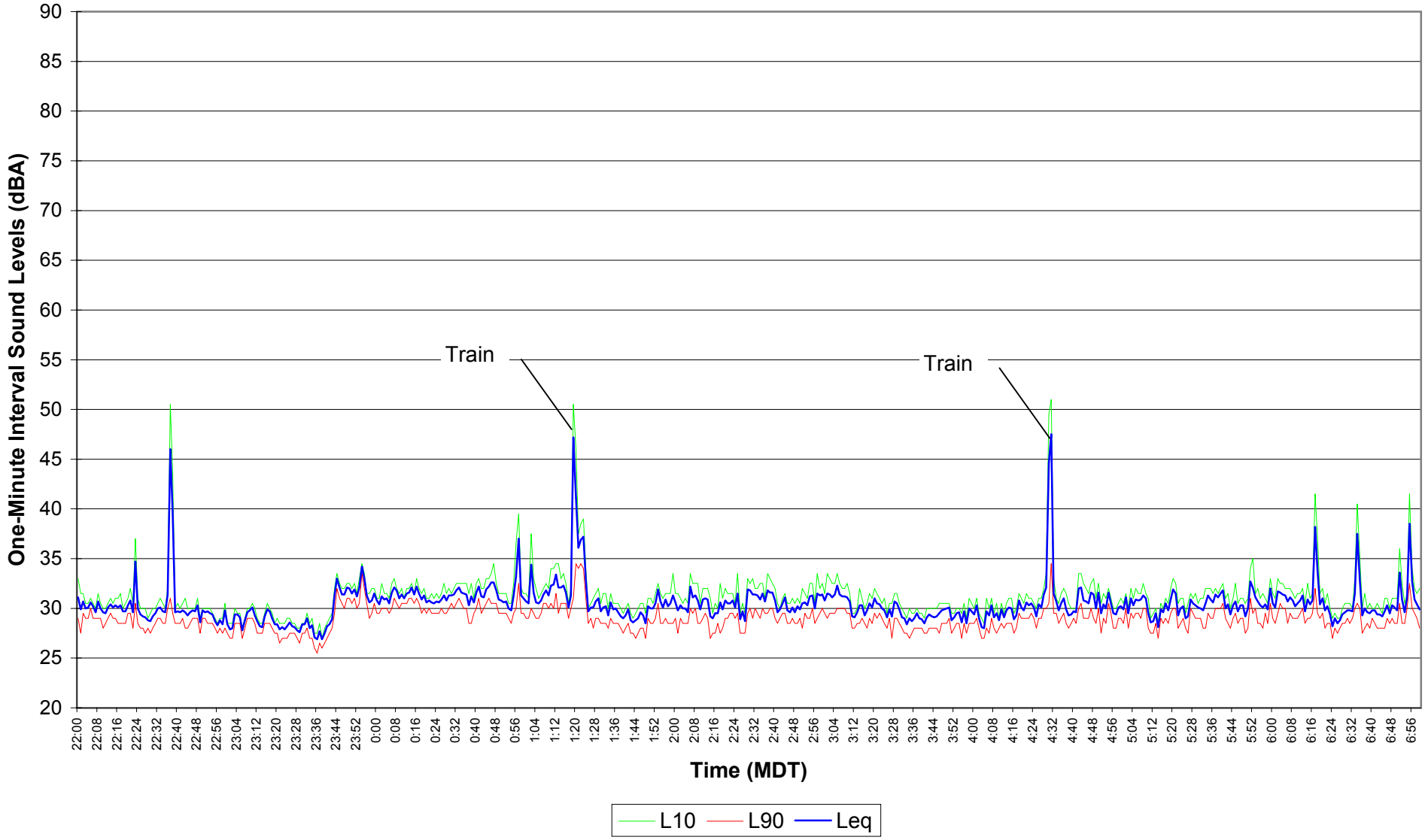


Figure E2.43
EnCana Rosebud
Site 2 Noise Survey
Dec. 07, 2004 07:00 - 14:29

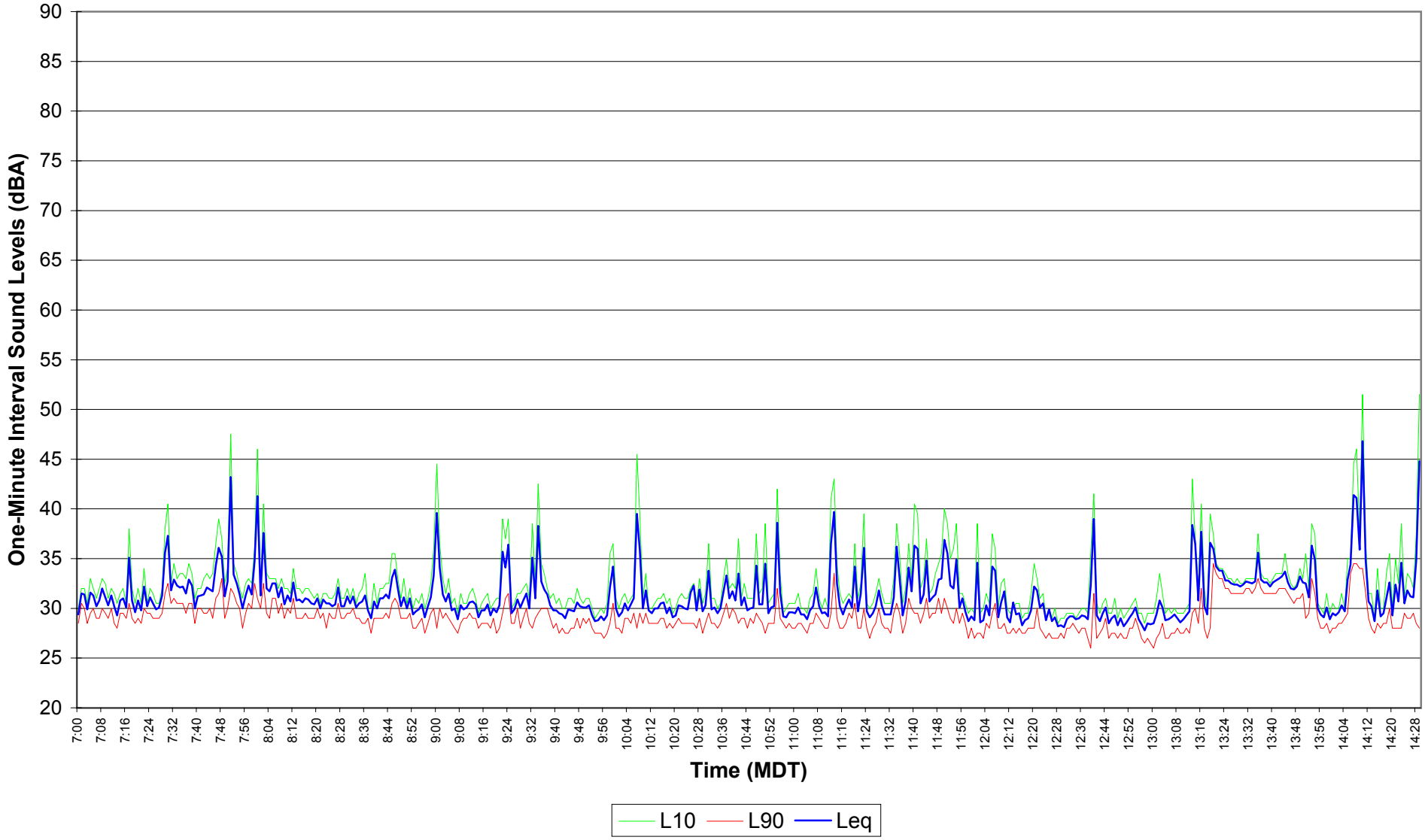


Figure E2.44
EnCana Rosebud
Site 2 Noise Survey
Dec. 07, 2004 14:30 - 21:59

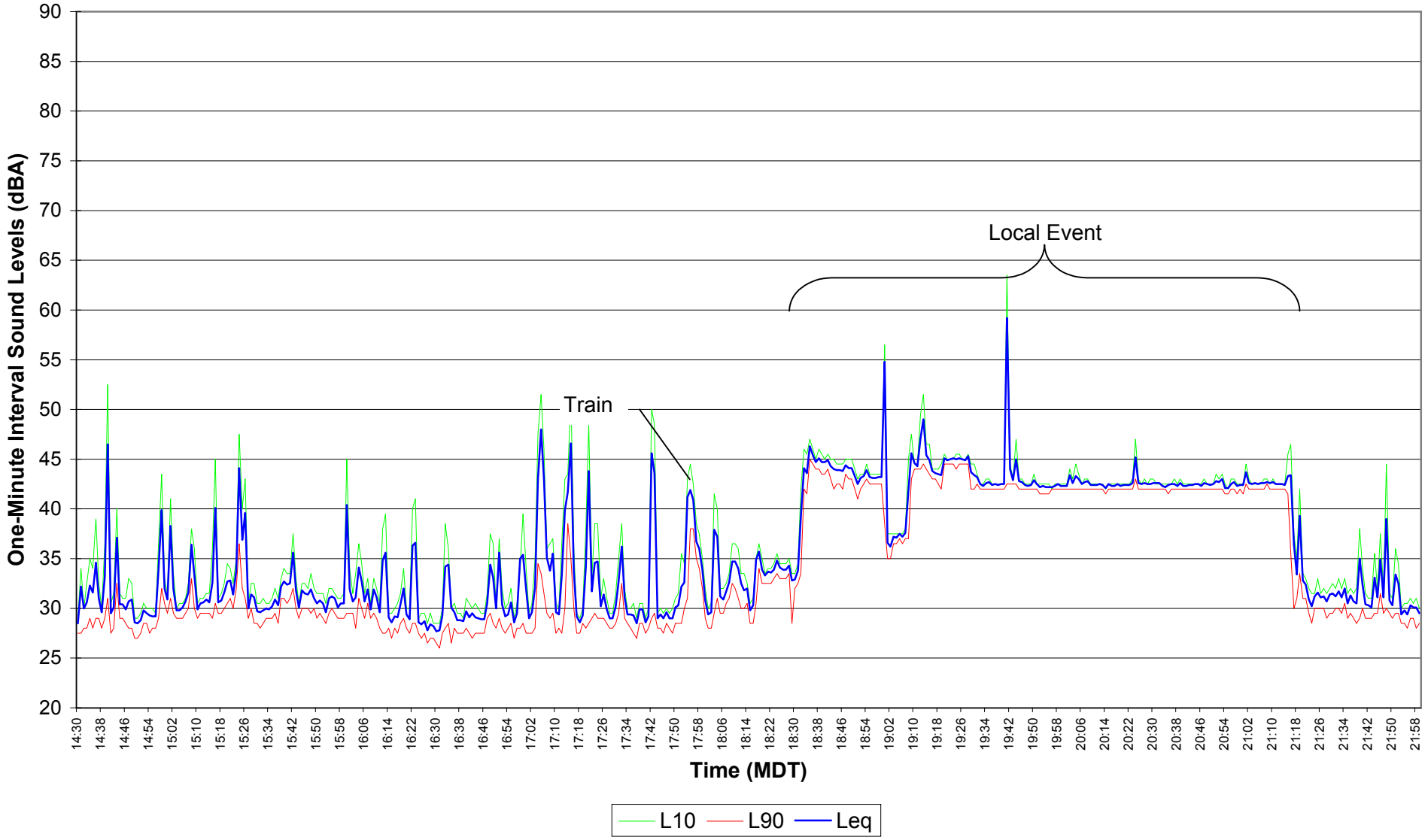


Figure E2.45
EnCana Rosebud
Site 2 Noise Survey
Dec. 07, 2004 - Dec. 08, 2004 22:00 - 06:59

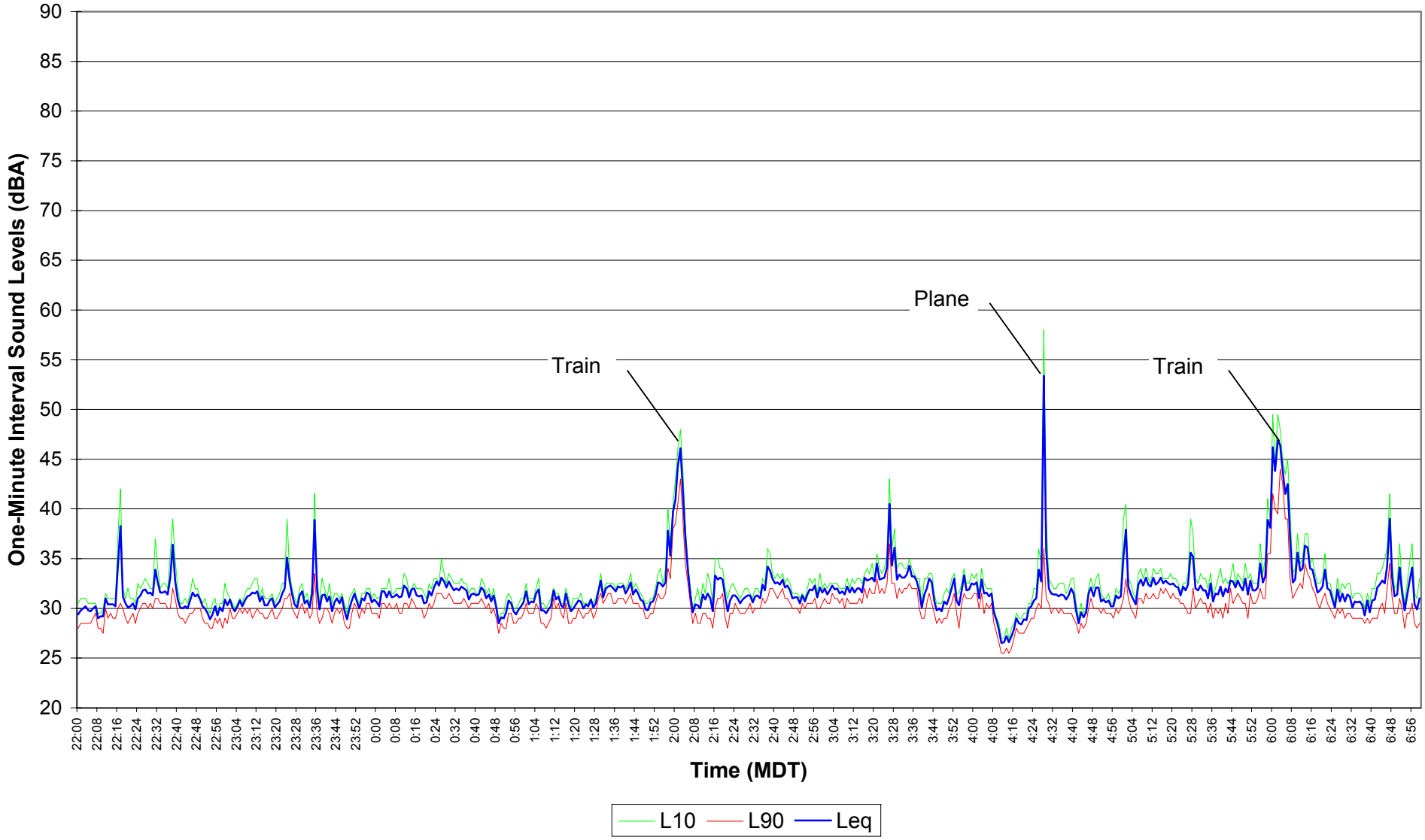


Figure E2.46

EnCana Rosebud

Site 2 Noise Survey

Dec. 08, 2004 07:00 - 14:29

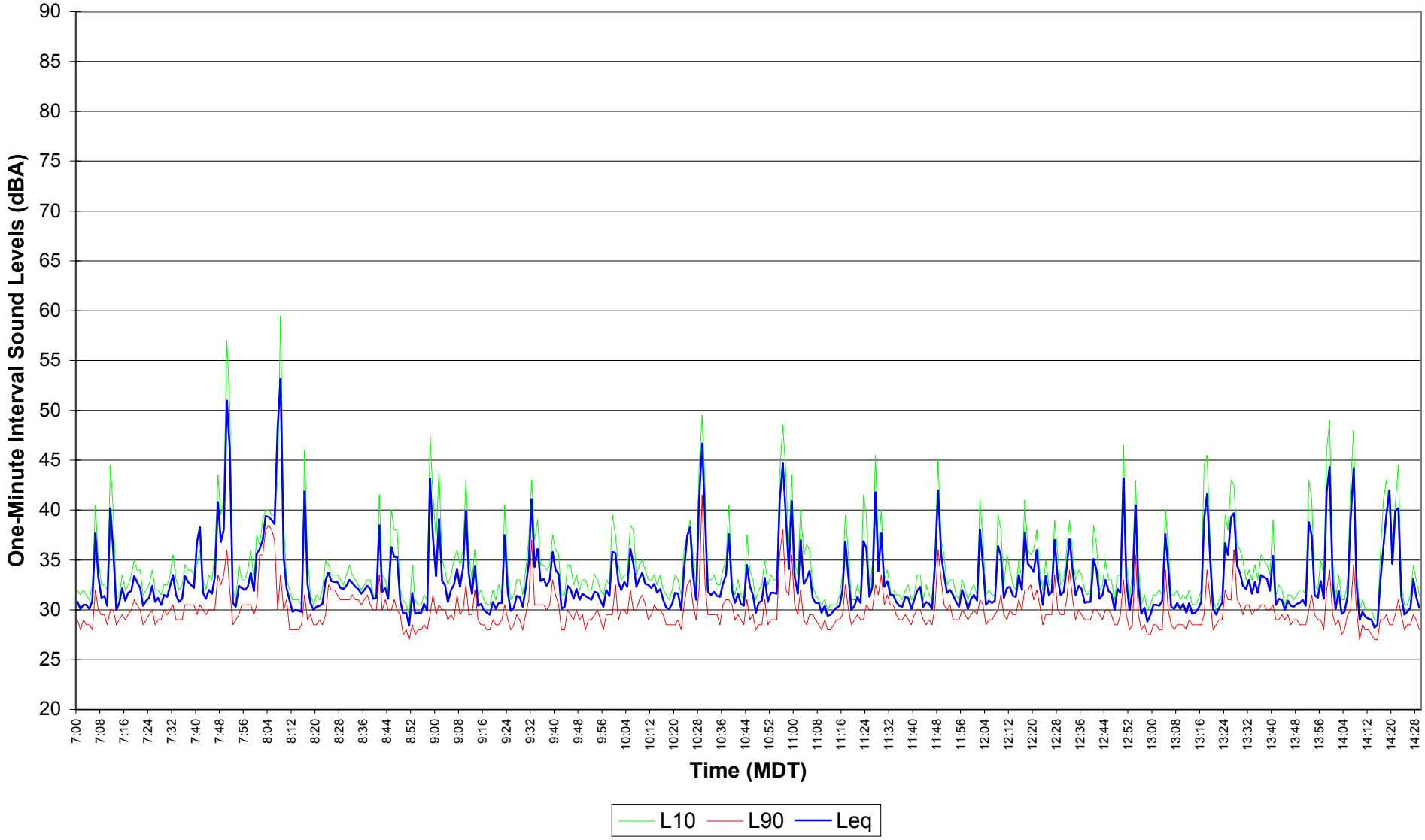


Figure E2.47
EnCana Rosebud
Site 2 Noise Survey
Dec. 08, 2004 14:30 - 21:59

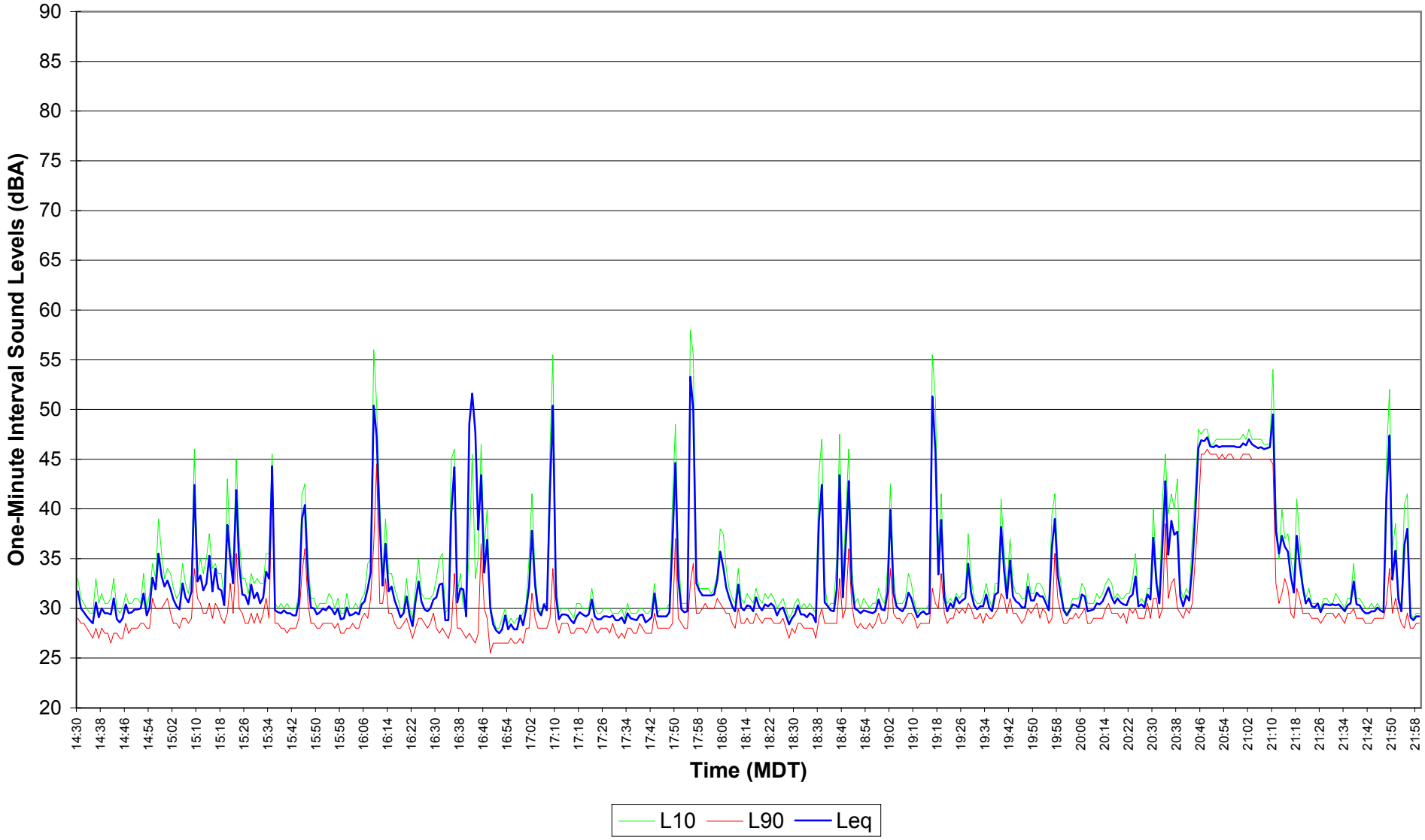


Figure E2.48
EnCana Rosebud
Site 2 Noise Survey
Dec. 08, 2004 - Dec. 09, 2004 22:00 - 06:59

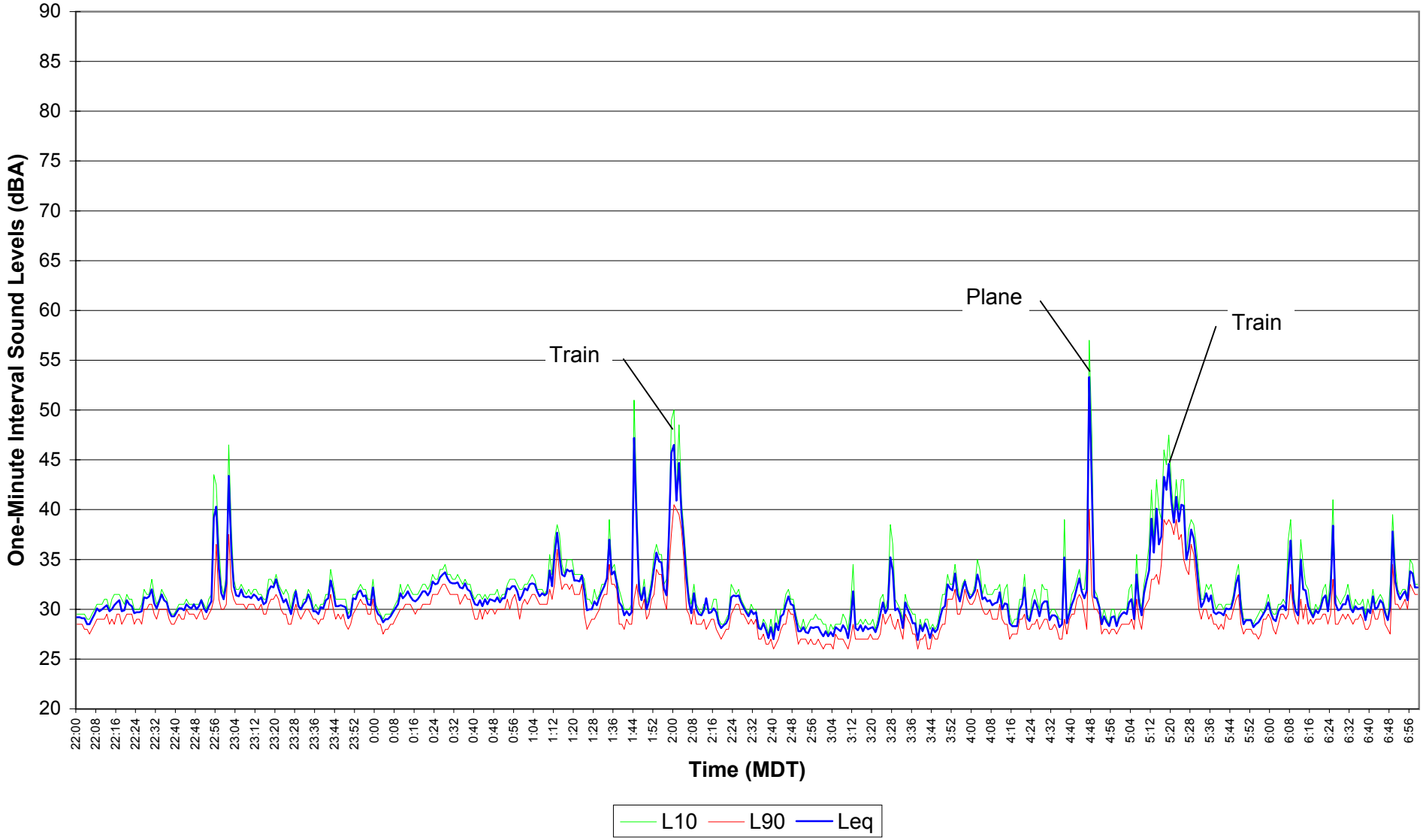


Figure E2.49
EnCana Rosebud
Site 2 Noise Survey
Dec. 09, 2004 07:00 - 14:29

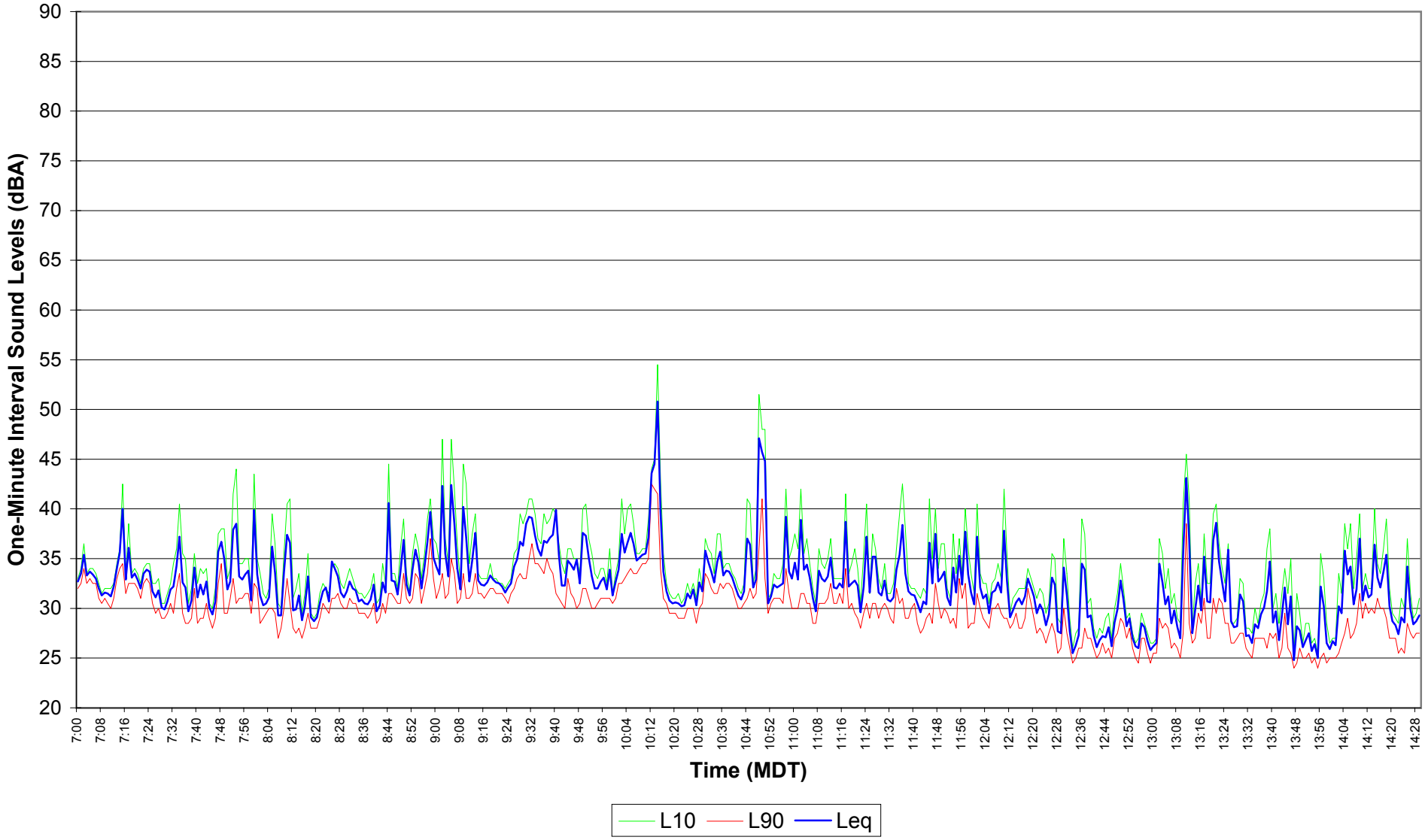


Figure E2.50
EnCana Rosebud
Site 2 Noise Survey
Dec. 09, 2004 14:30 - 21:59

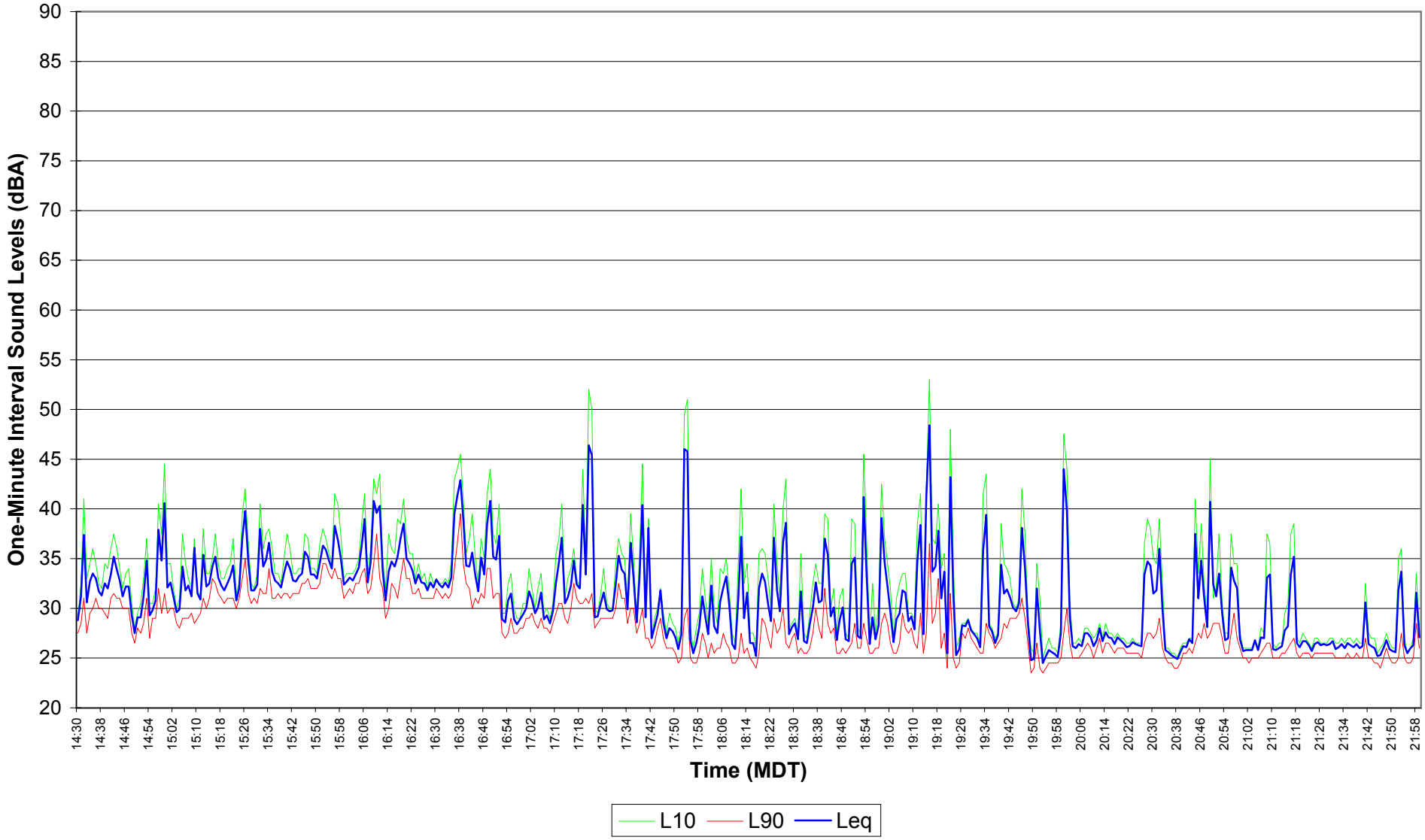


Figure E2.51
EnCana Rosebud
Site 2 Noise Survey
Dec. 09, 2004 - Dec. 10, 2004 22:00 - 06:59

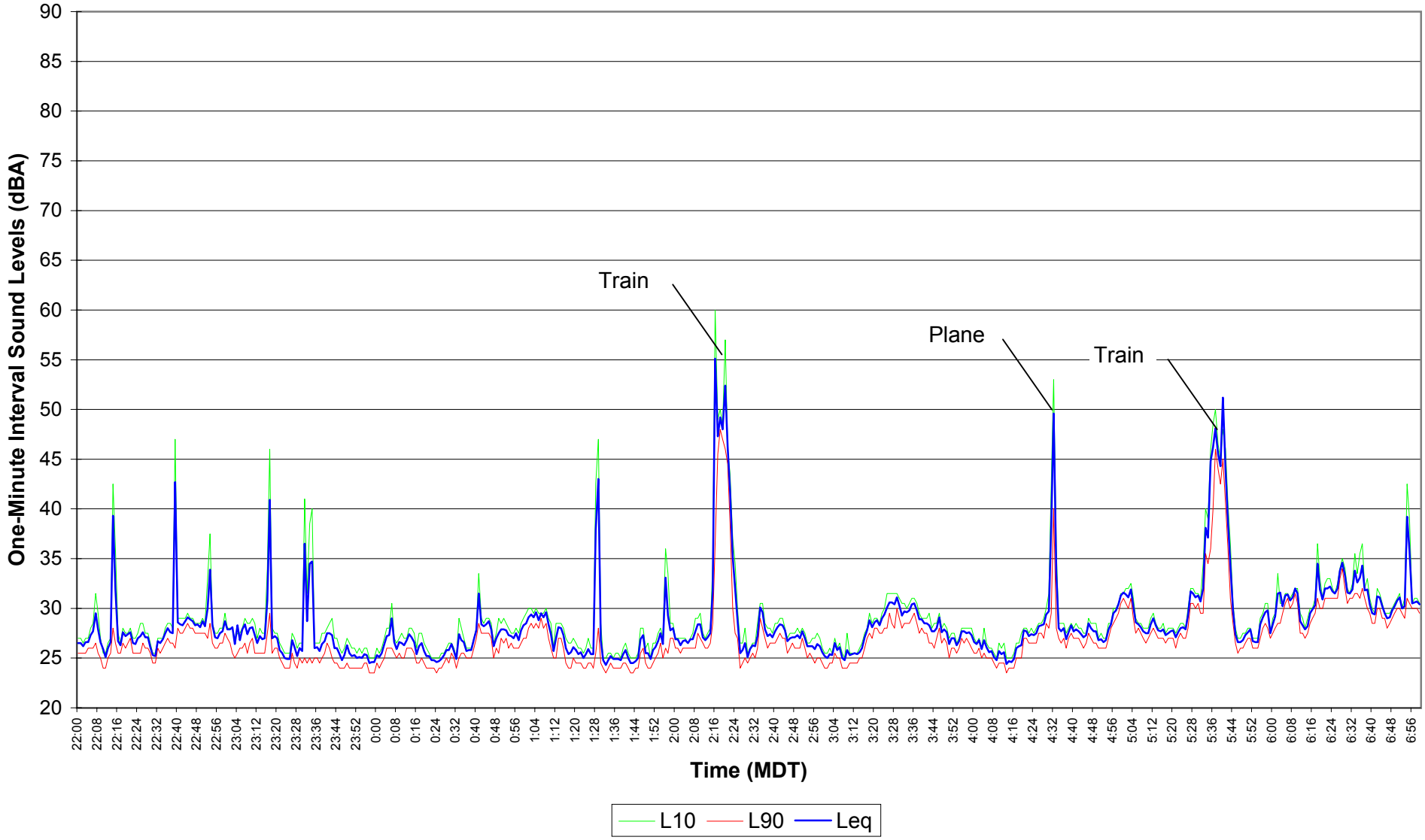


Figure E2.52
EnCana Rosebud
Site 2 Noise Survey
Dec. 10, 2004 07:00 - 14:29

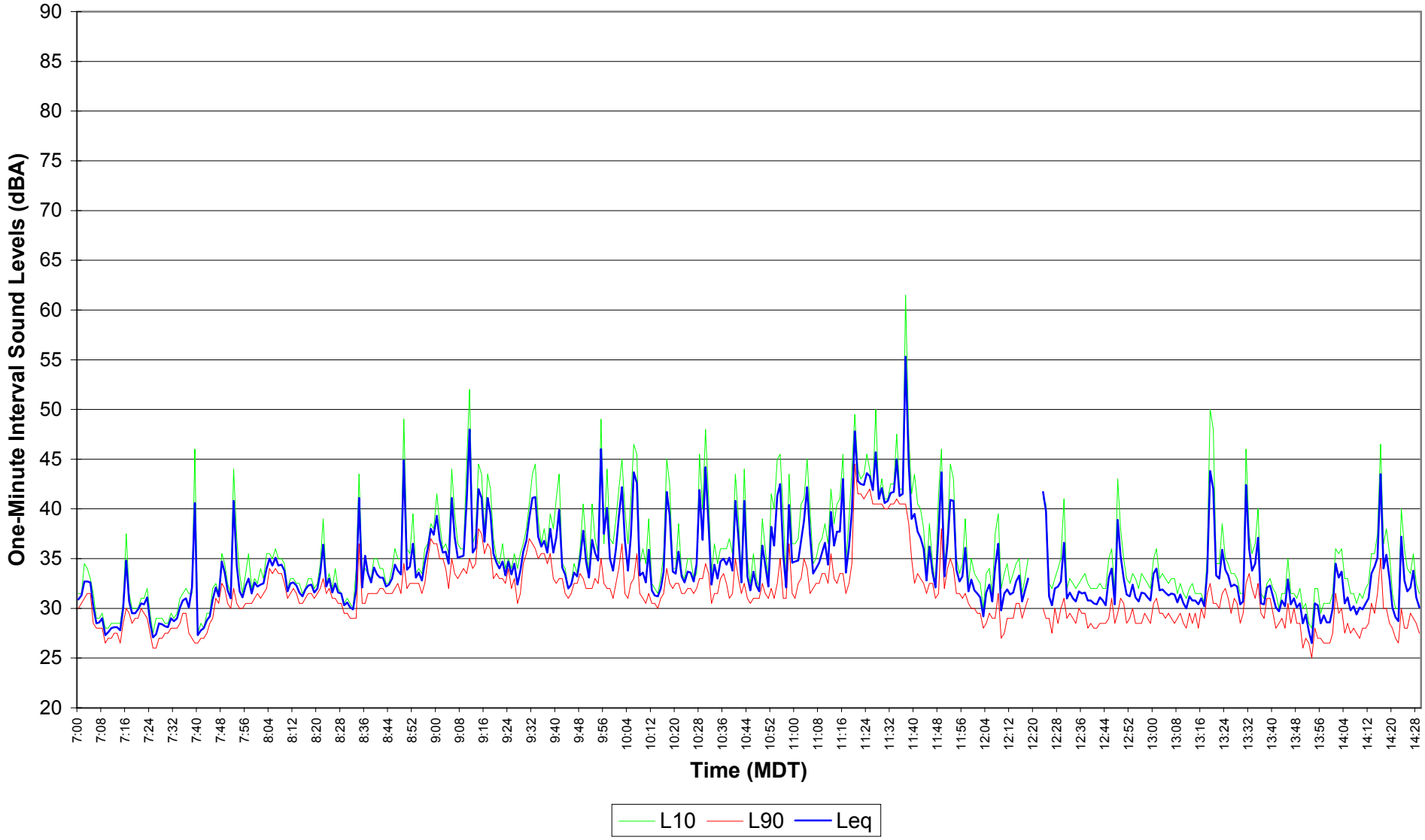


Figure E2.53
EnCana Rosebud
Site 2 Noise Survey
Dec. 10, 2004 14:30 - 21:59

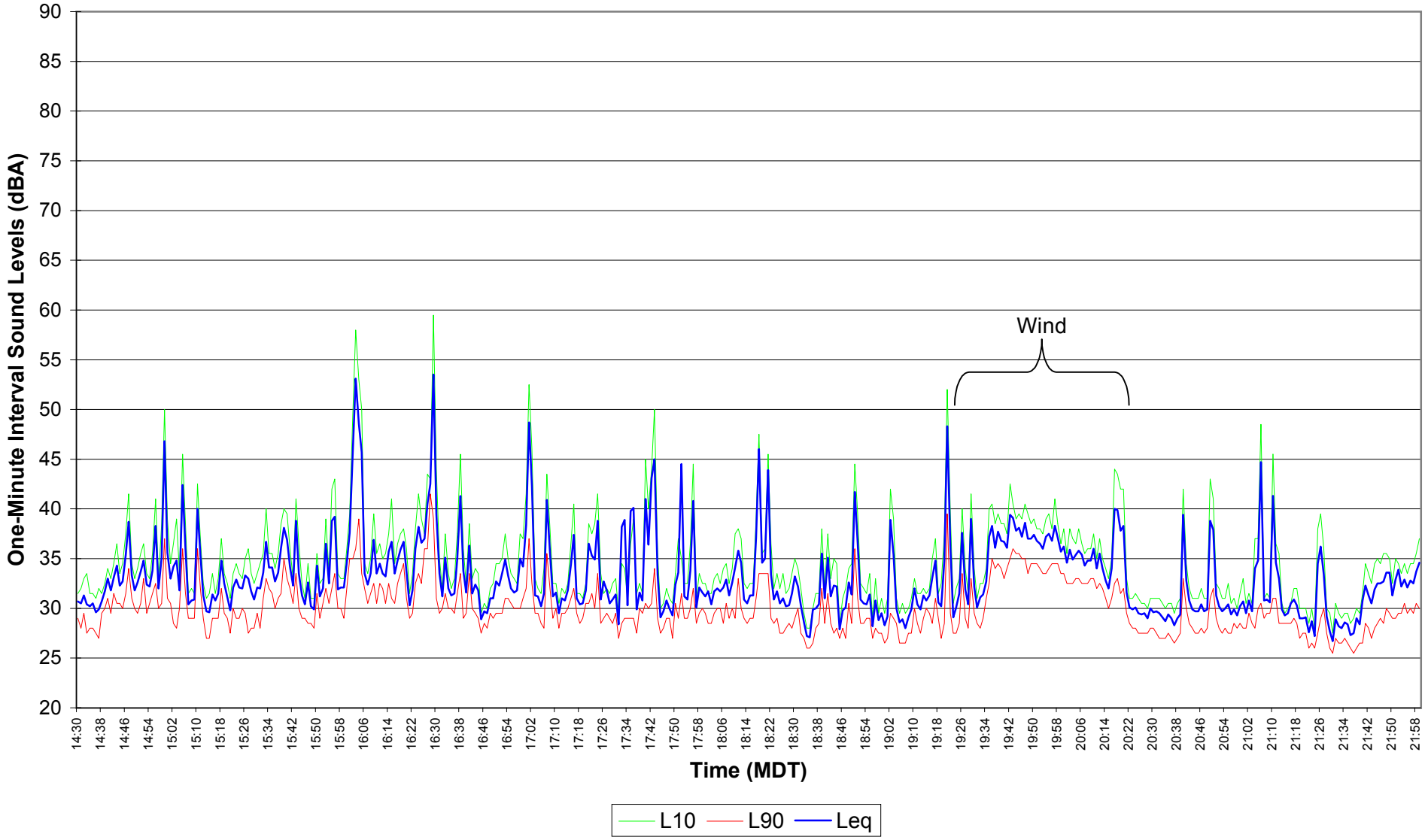


Figure E2.54
EnCana Rosebud
Site 2 Noise Survey
Dec. 10, 2004 - Dec. 11, 2004 22:00 - 06:59

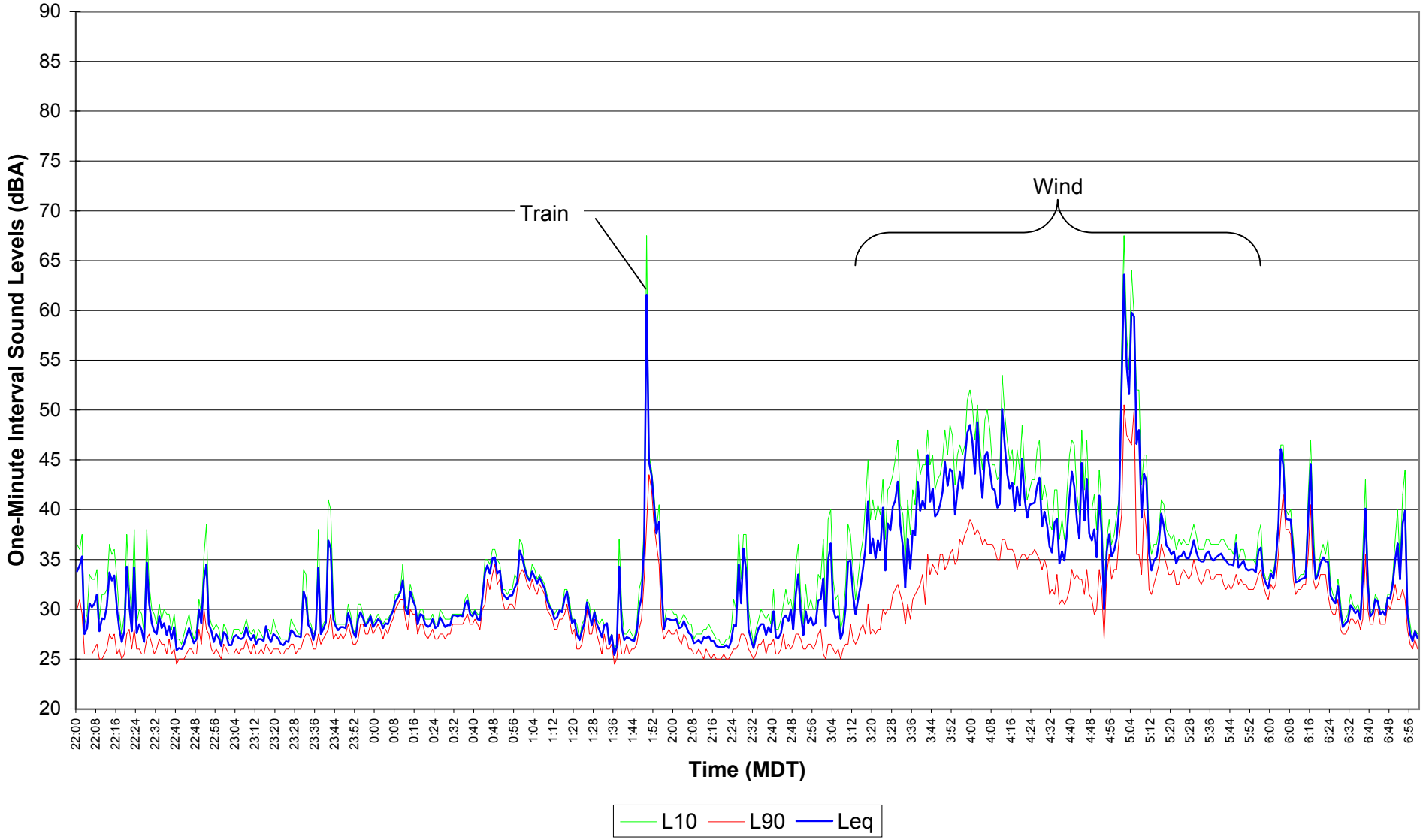


Figure E2.55
EnCana Rosebud
Site 2 Noise Survey
Dec. 11, 2004 07:00 - 14:29

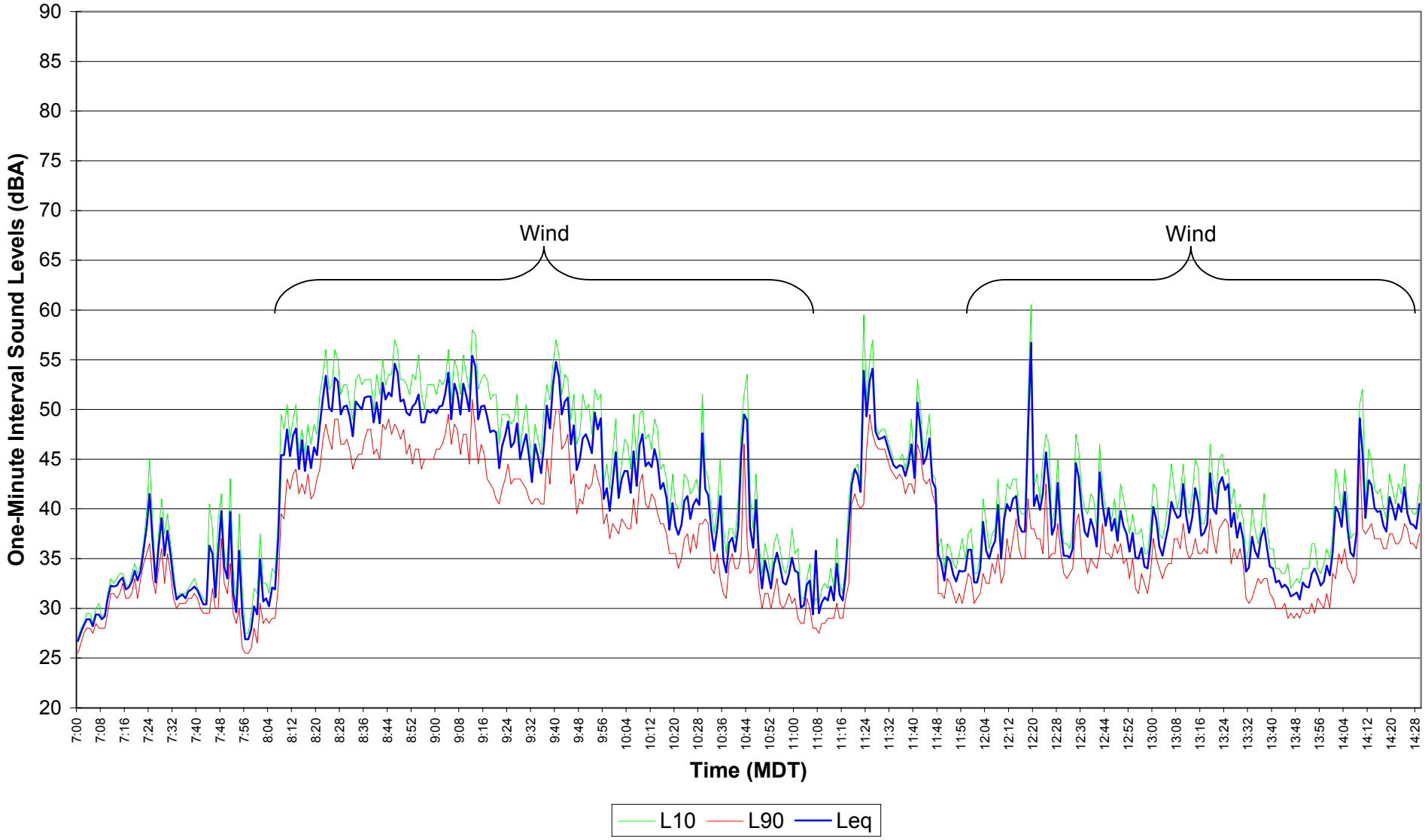


Figure E2.56
EnCana Rosebud
Site 2 Noise Survey
Dec. 11, 2004 14:30 - 21:59

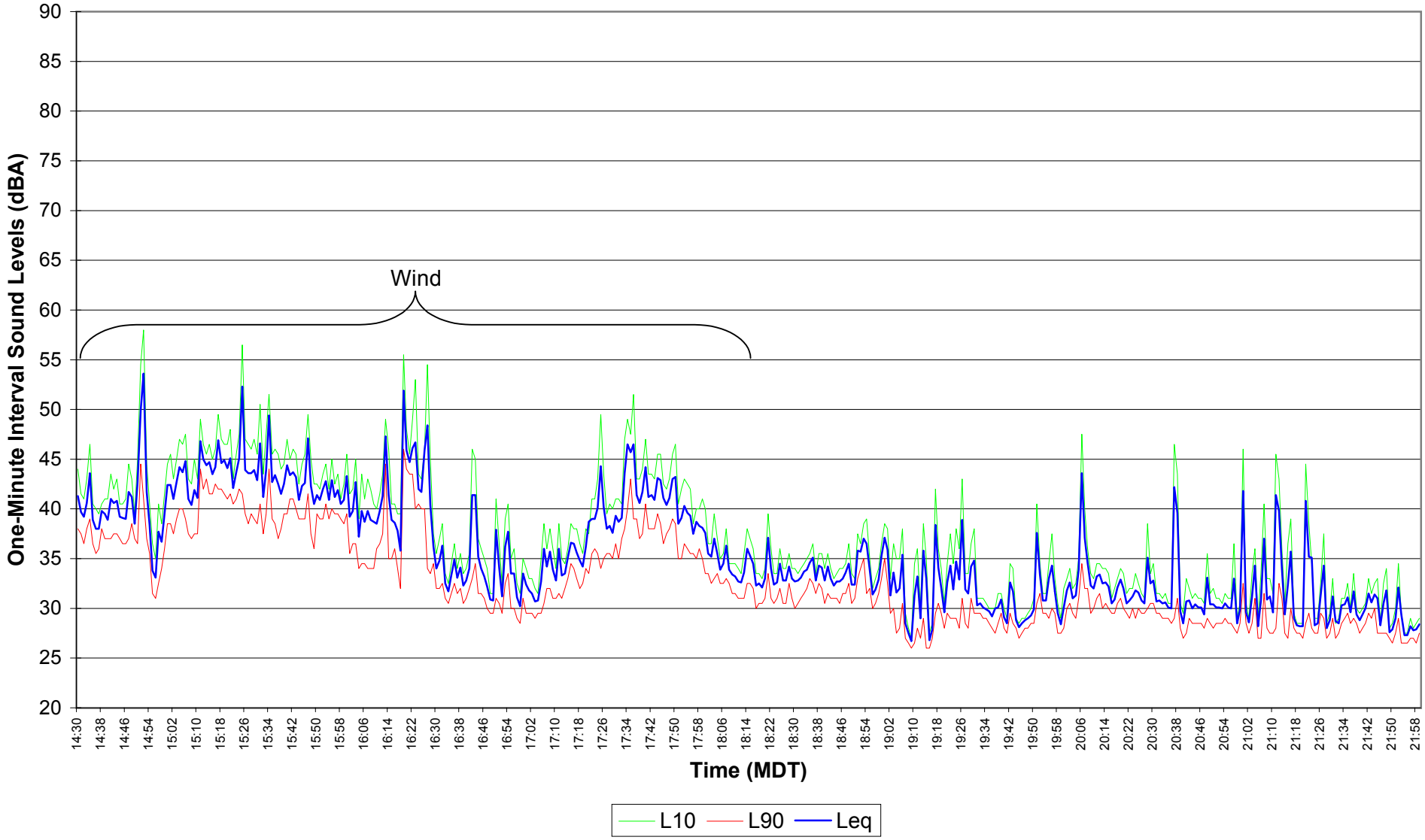


Figure E2.57
EnCana Rosebud
Site 2 Noise Survey
Dec. 11, 2004 - Dec. 12, 2004 22:00 - 06:59

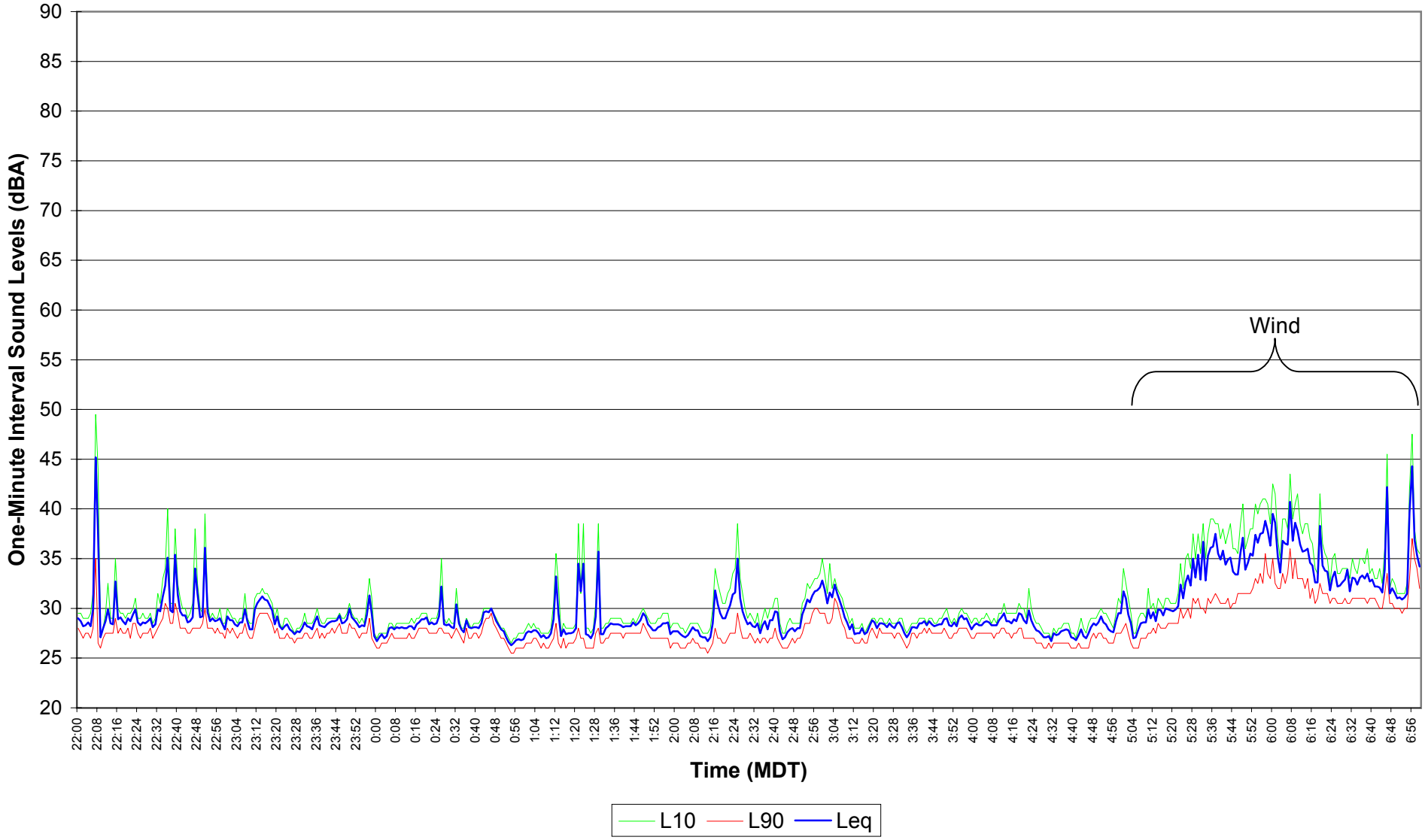


Figure E2.58
EnCana Rosebud
Site 2 Noise Survey
Dec. 12, 2004 07:00 - 14:29

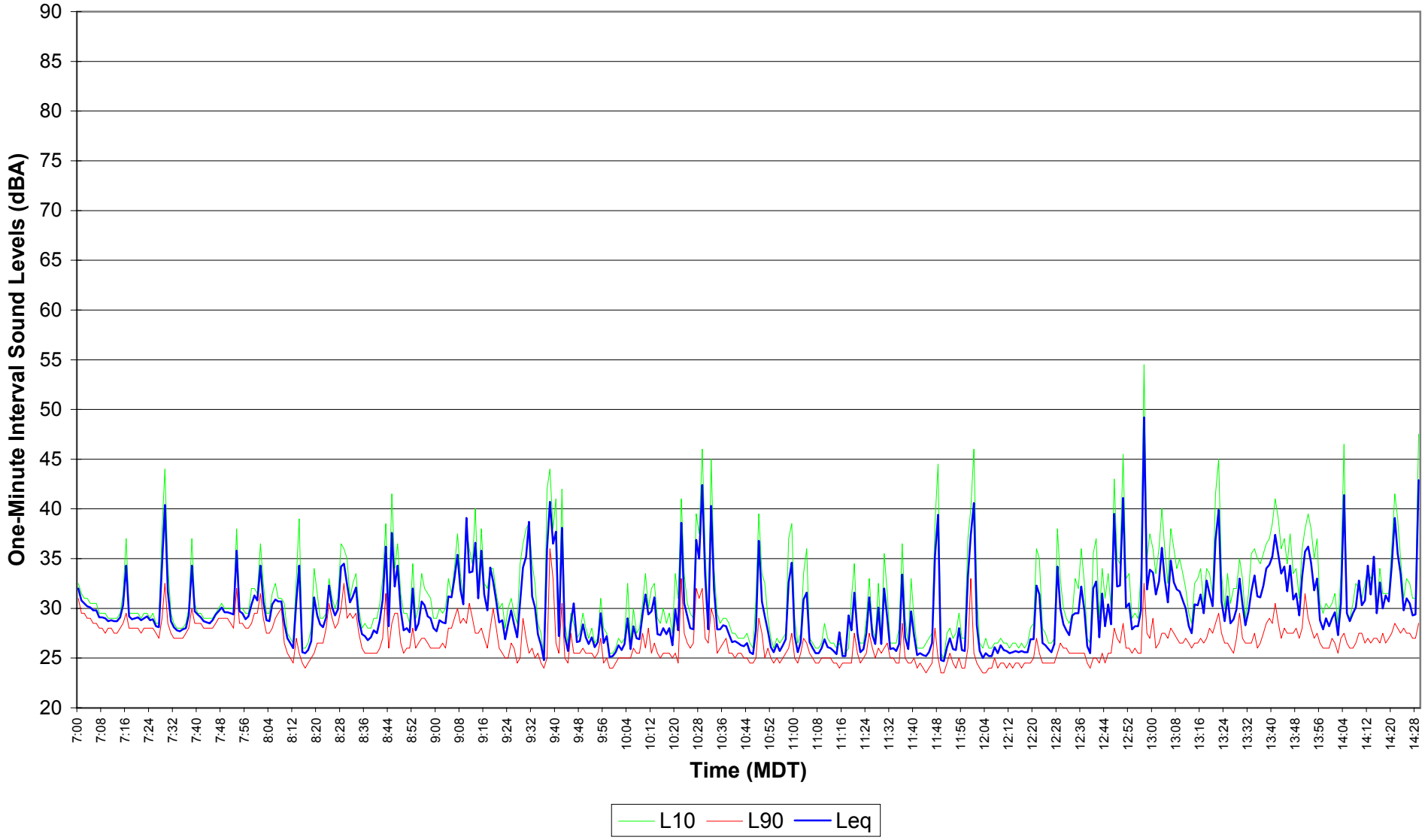


Figure E2.59
EnCana Rosebud
Site 2 Noise Survey
Dec. 12, 2004 14:30 - 21:59

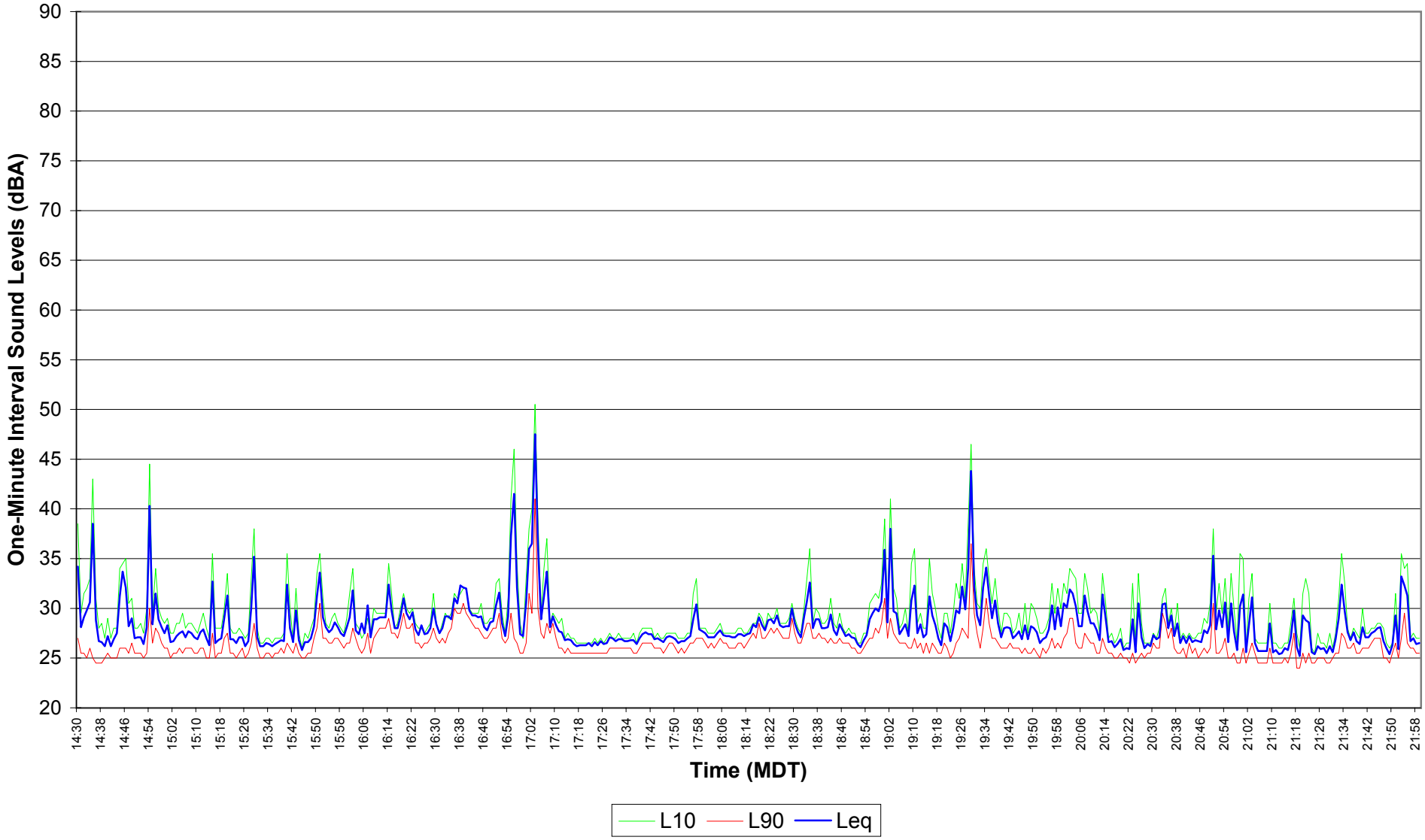


Figure E2.60
EnCana Rosebud
Site 2 Noise Survey
Dec. 12, 2004 - Dec. 13, 2004 22:00 - 06:59

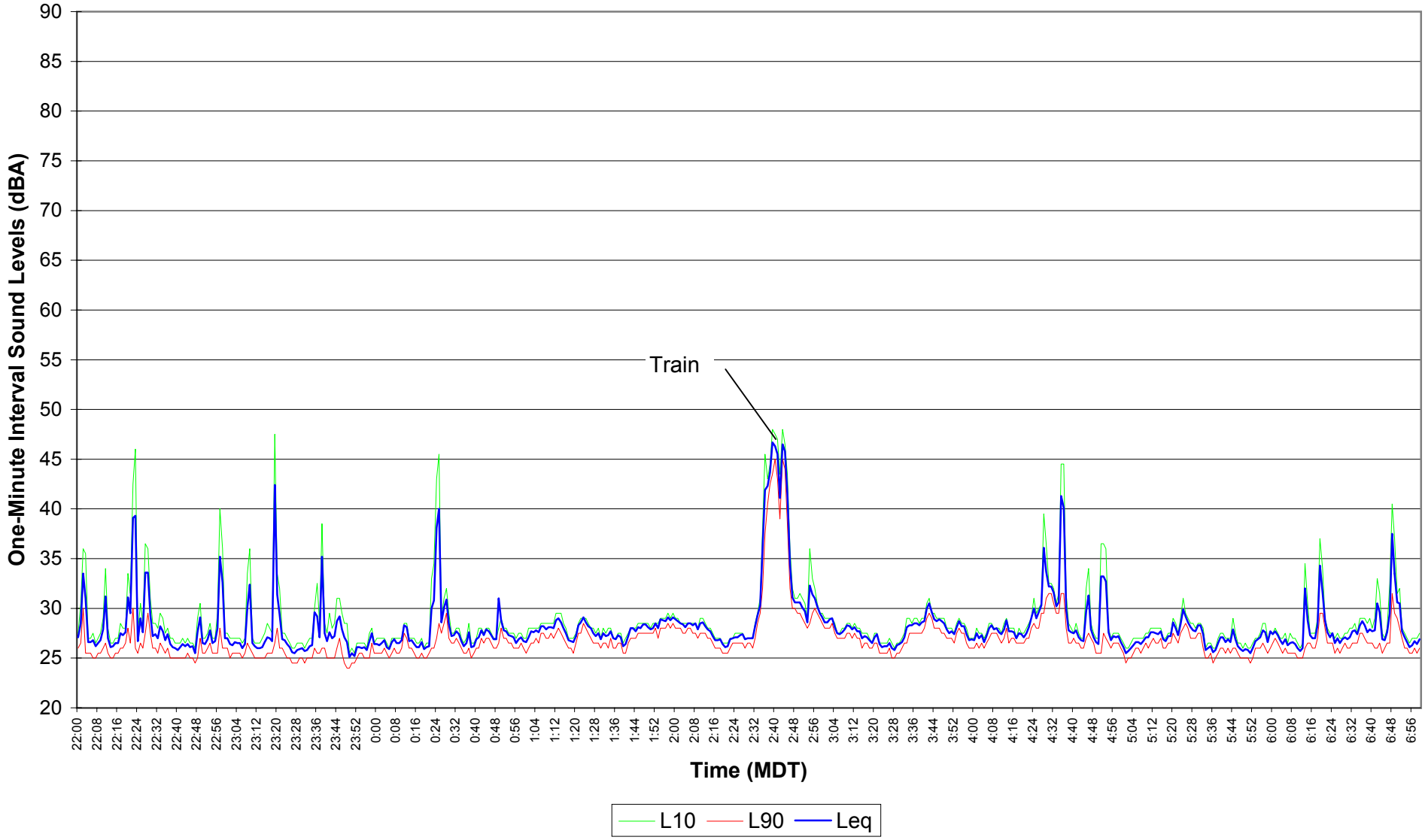


Figure E2.61
EnCana Rosebud
Site 2 Noise Survey

Dec. 13, 2004 07:00 - 14:29

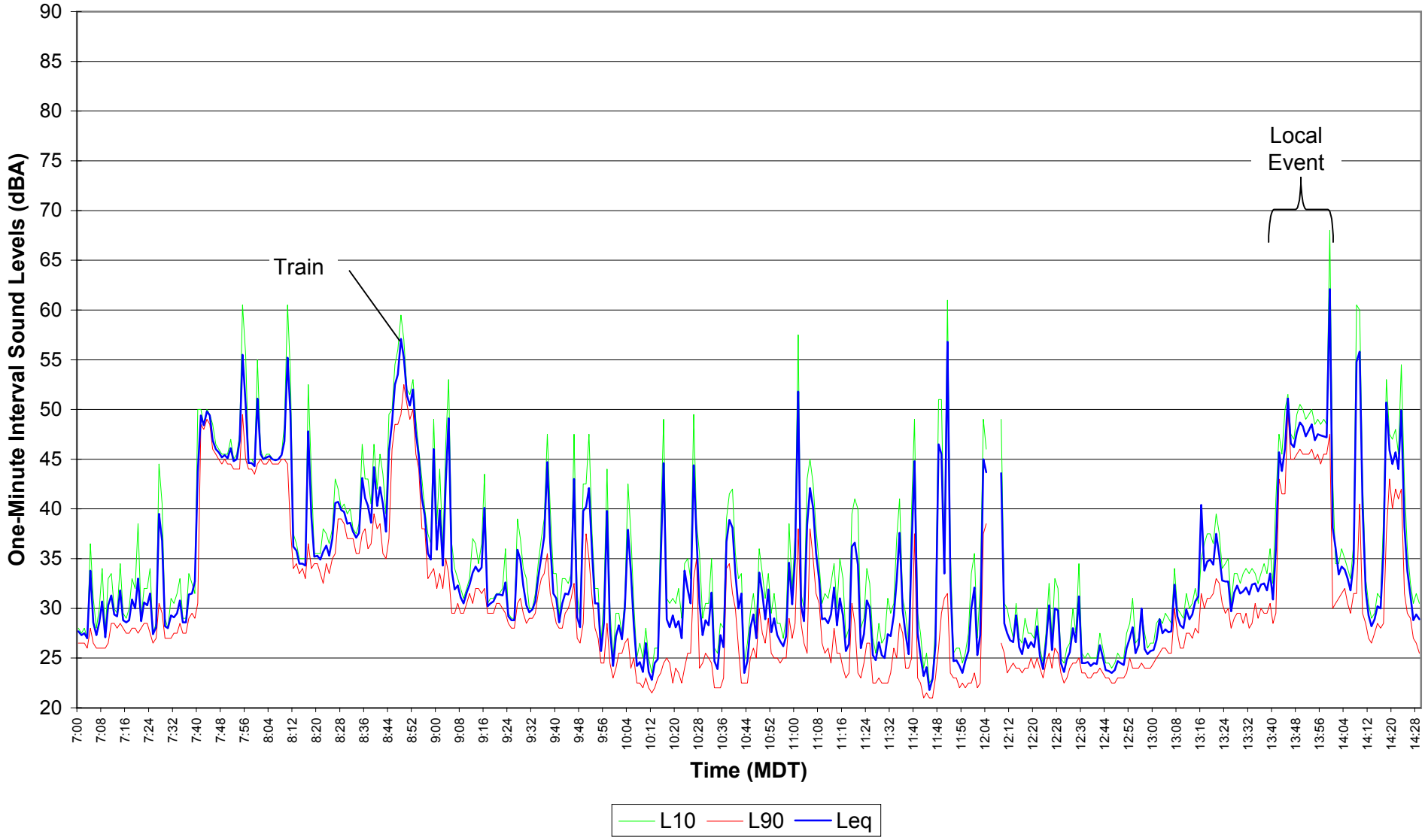


Figure E2.62
EnCana Rosebud
Site 2 Noise Survey
Dec. 13, 2004 14:30 - 21:59

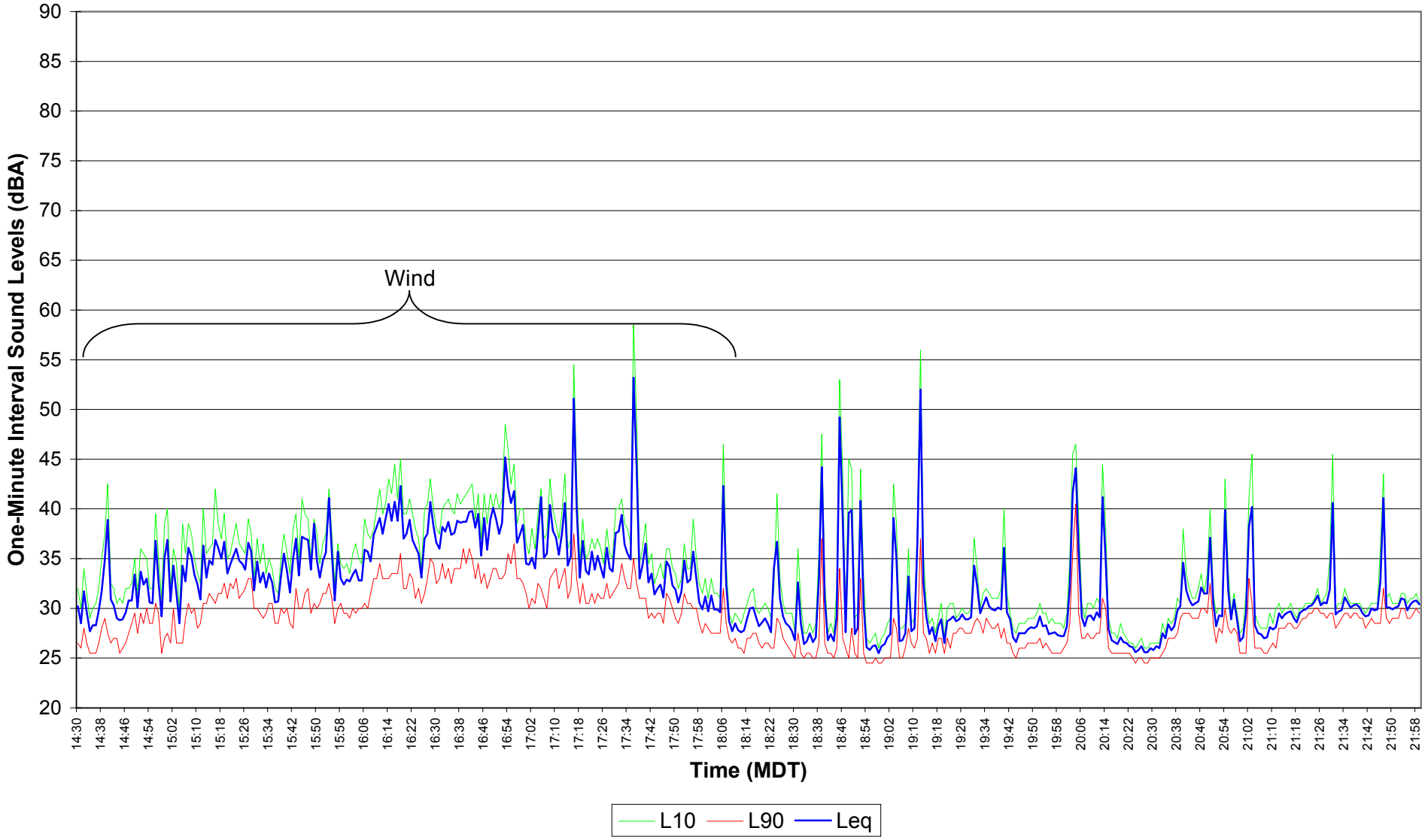


Figure E2.63
EnCana Rosebud
Site 2 Noise Survey
Dec. 13, 2004 - Dec. 14, 2004 22:00 - 06:59

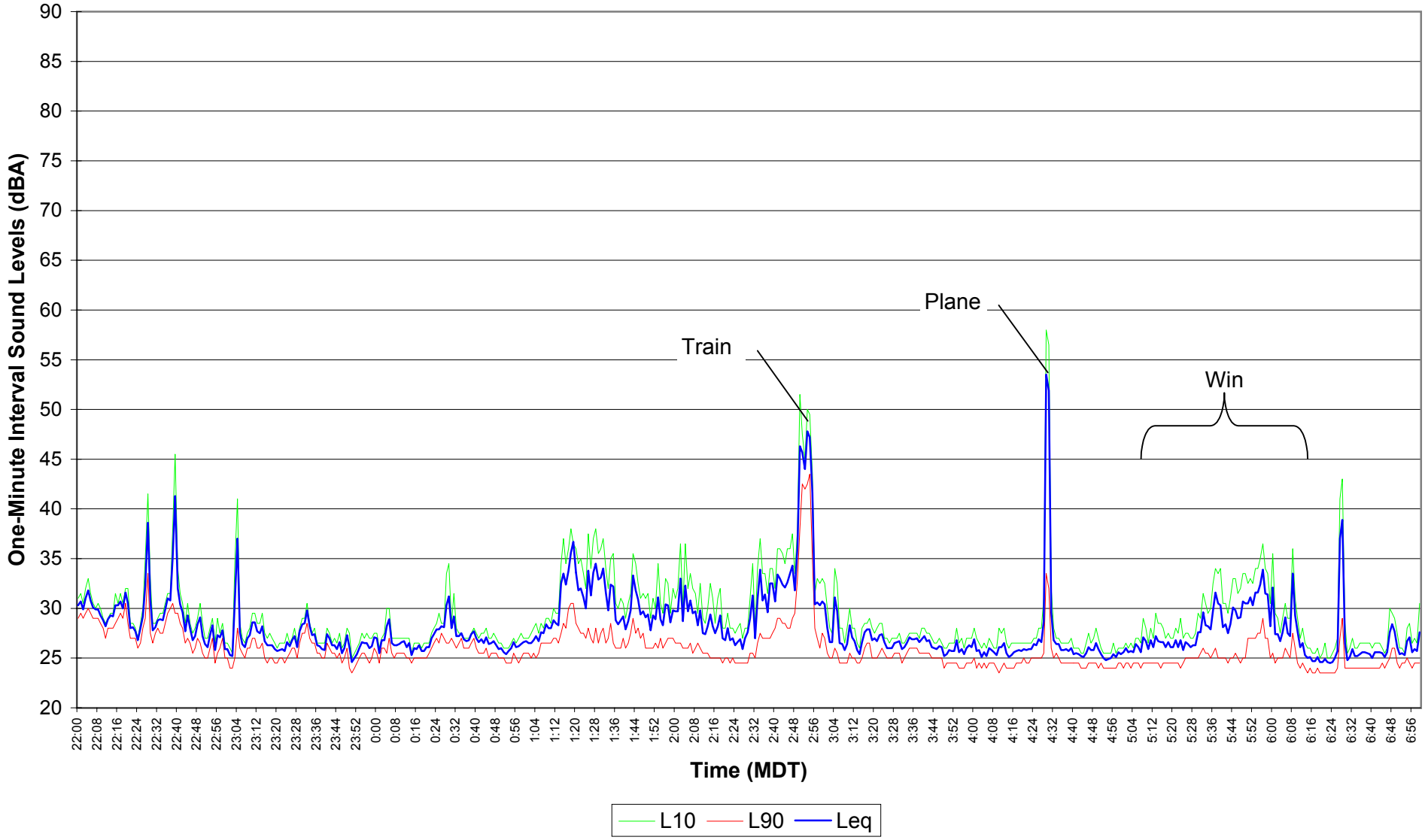


Figure E2.64

EnCana Rosebud

Site 2 Noise Survey

Dec. 14, 2004 07:00 - 14:29

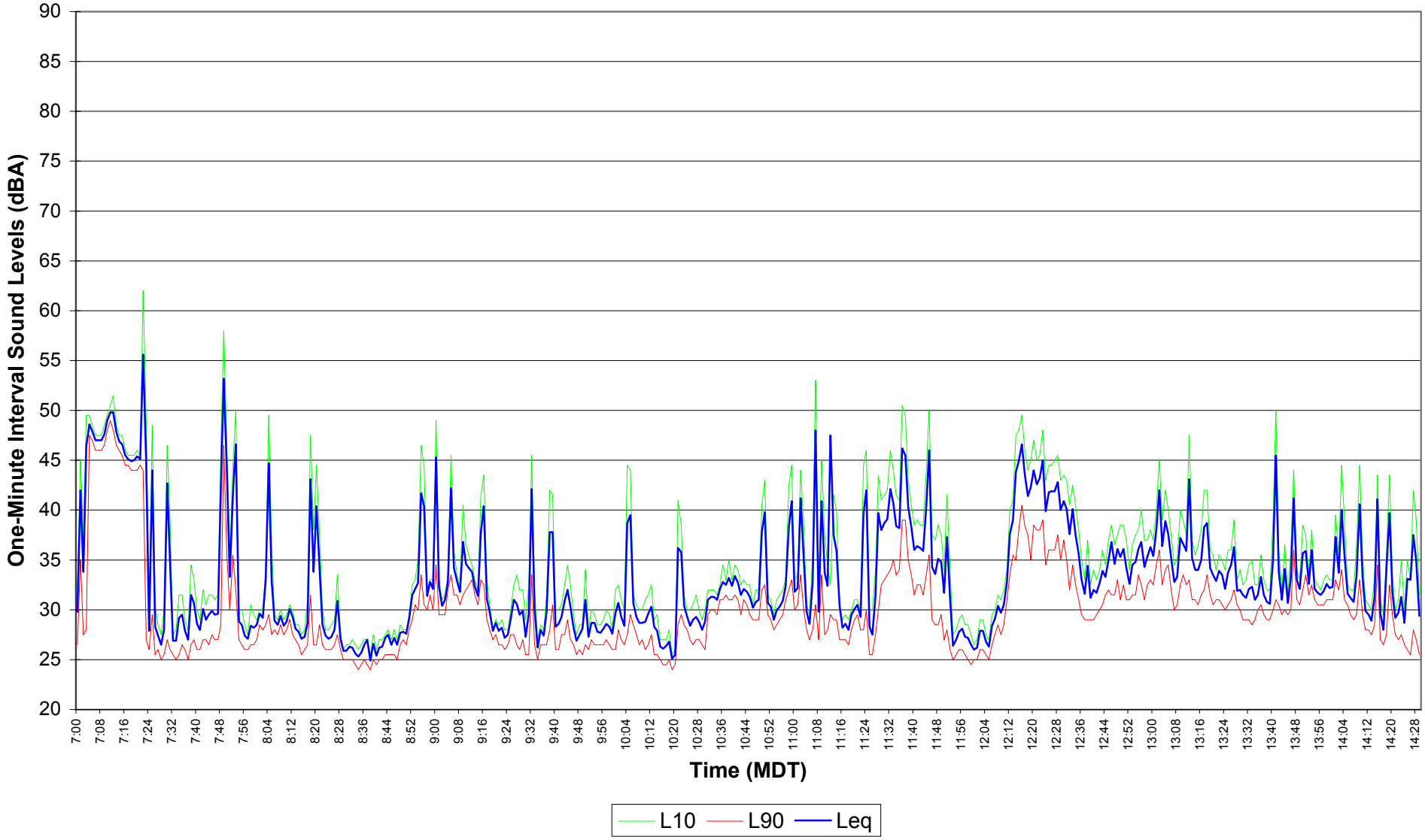


Figure E2.65
EnCana Rosebud
Site 2 Noise Survey
Dec. 14, 2004 14:30 - 21:59

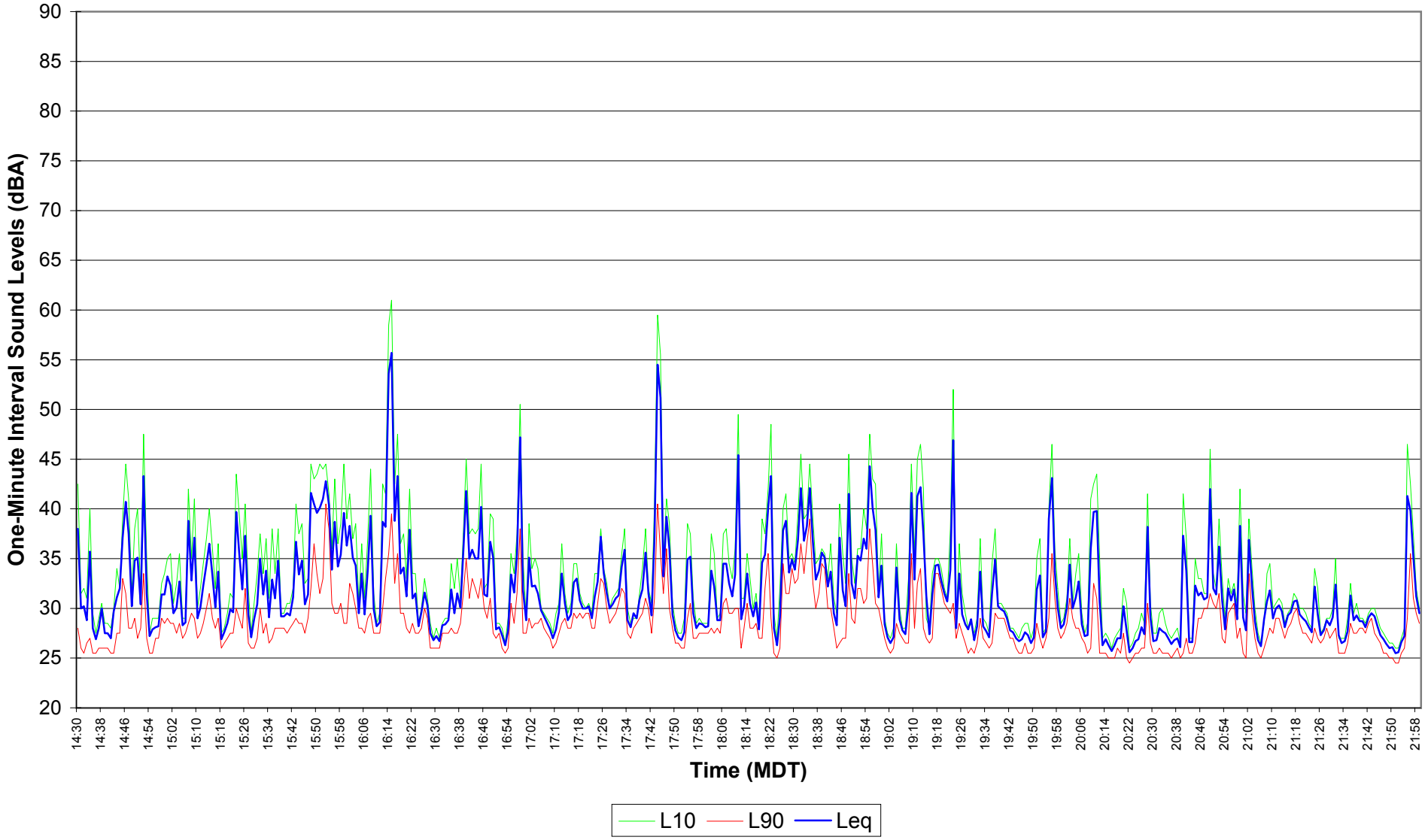


Figure E2.66
EnCana Rosebud
Site 2 Noise Survey
Dec. 14, 2004 - Dec. 15, 2004 22:00 - 06:59

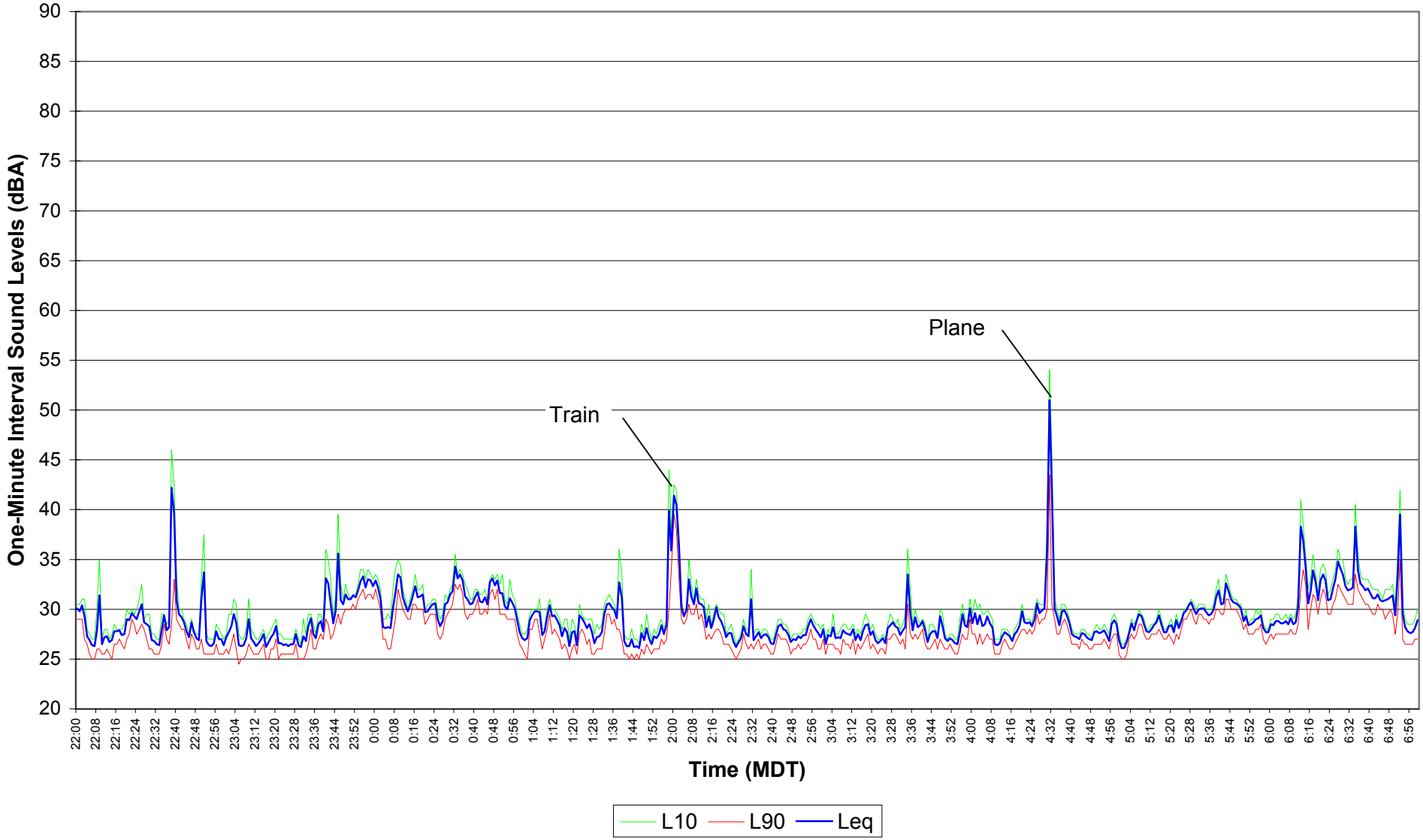


Figure E2.67
EnCana Rosebud
Site 2 Noise Survey
Dec. 15, 2004 07:00 - 14:29

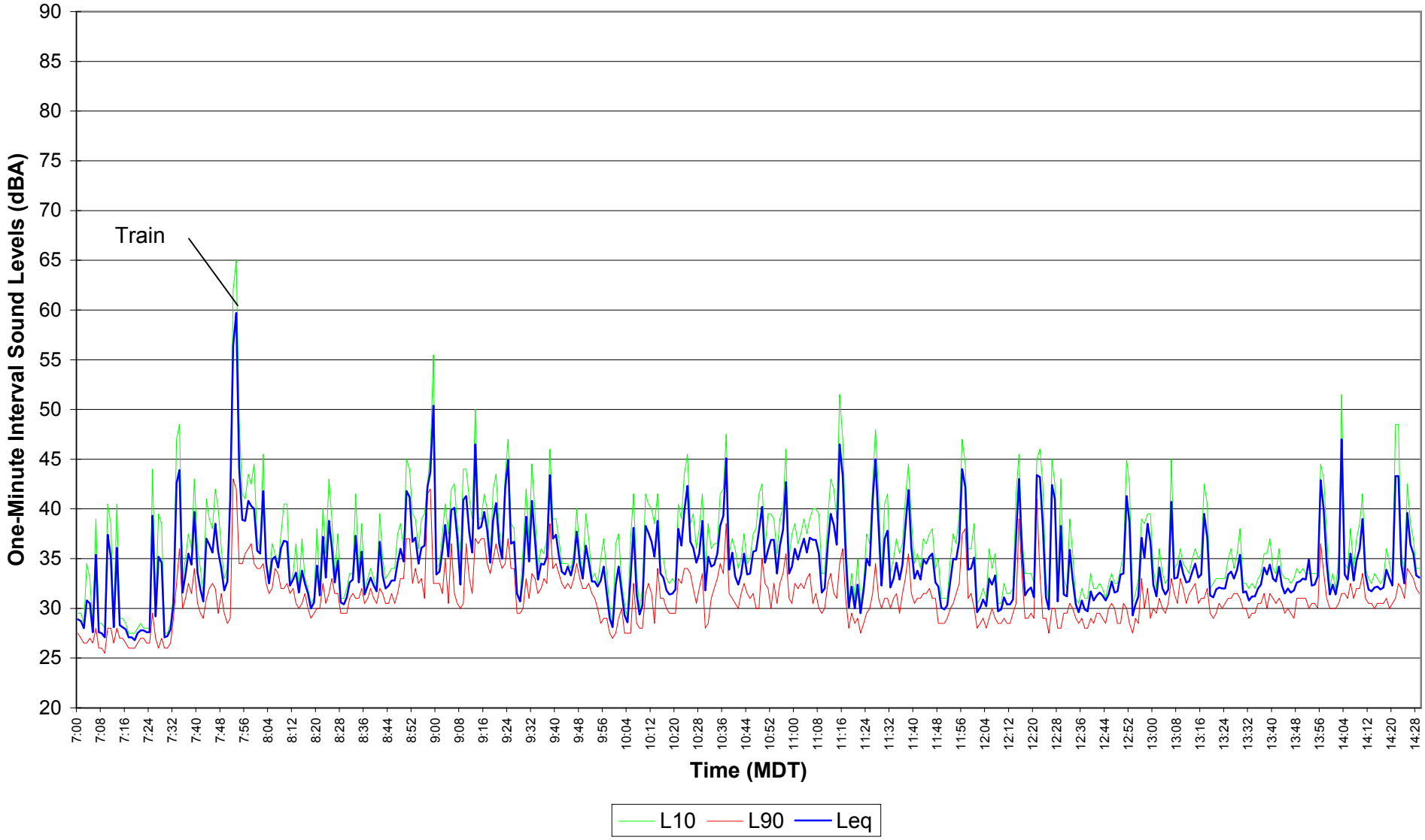


Figure E2.68
EnCana Rosebud
Site 2 Noise Survey
Dec. 15, 2004 14:30 - 21:59

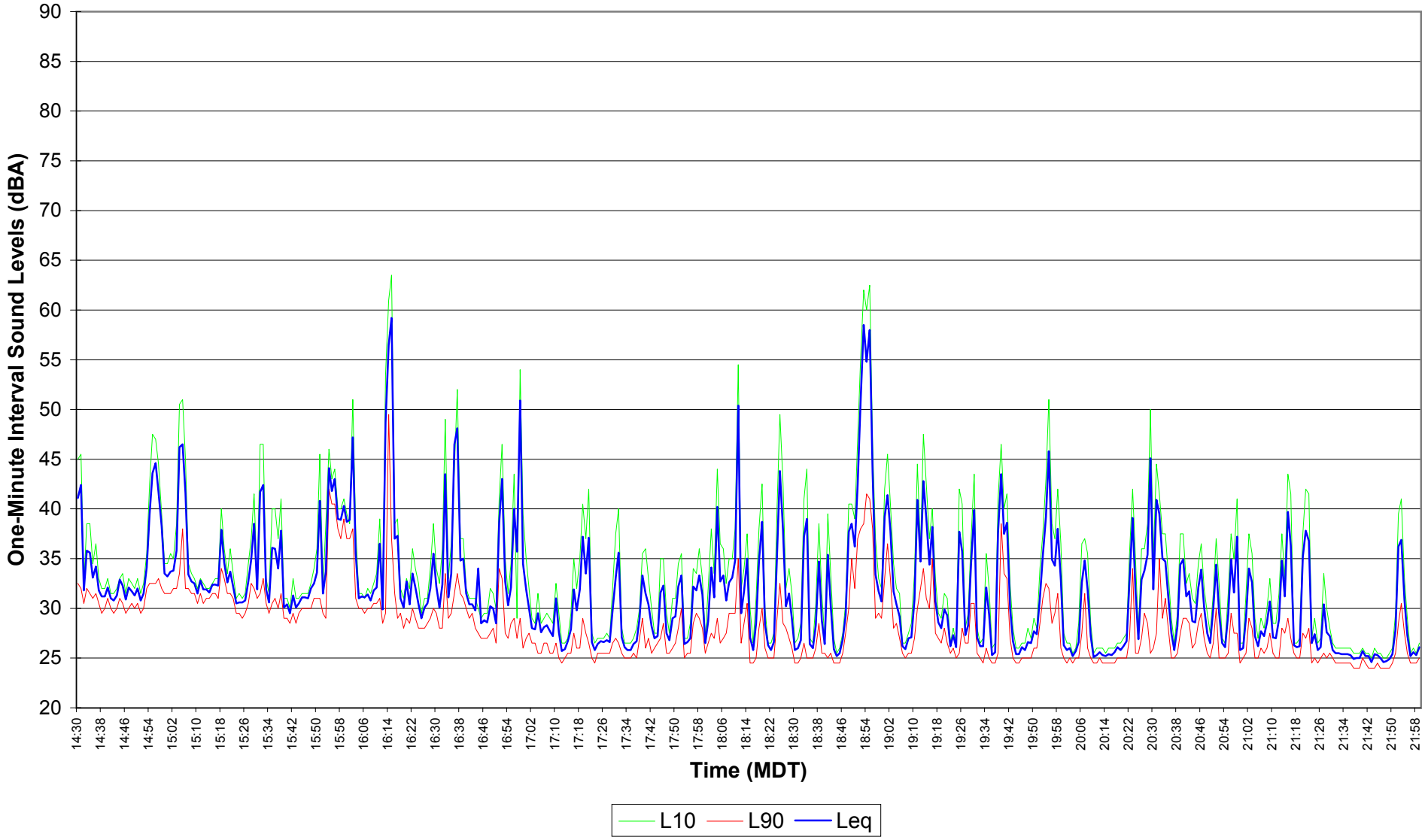


Figure E2.69
EnCana Rosebud
Site 2 Noise Survey
Dec 15, 2004 - Dec 16, 2004 22:00 - 06:59

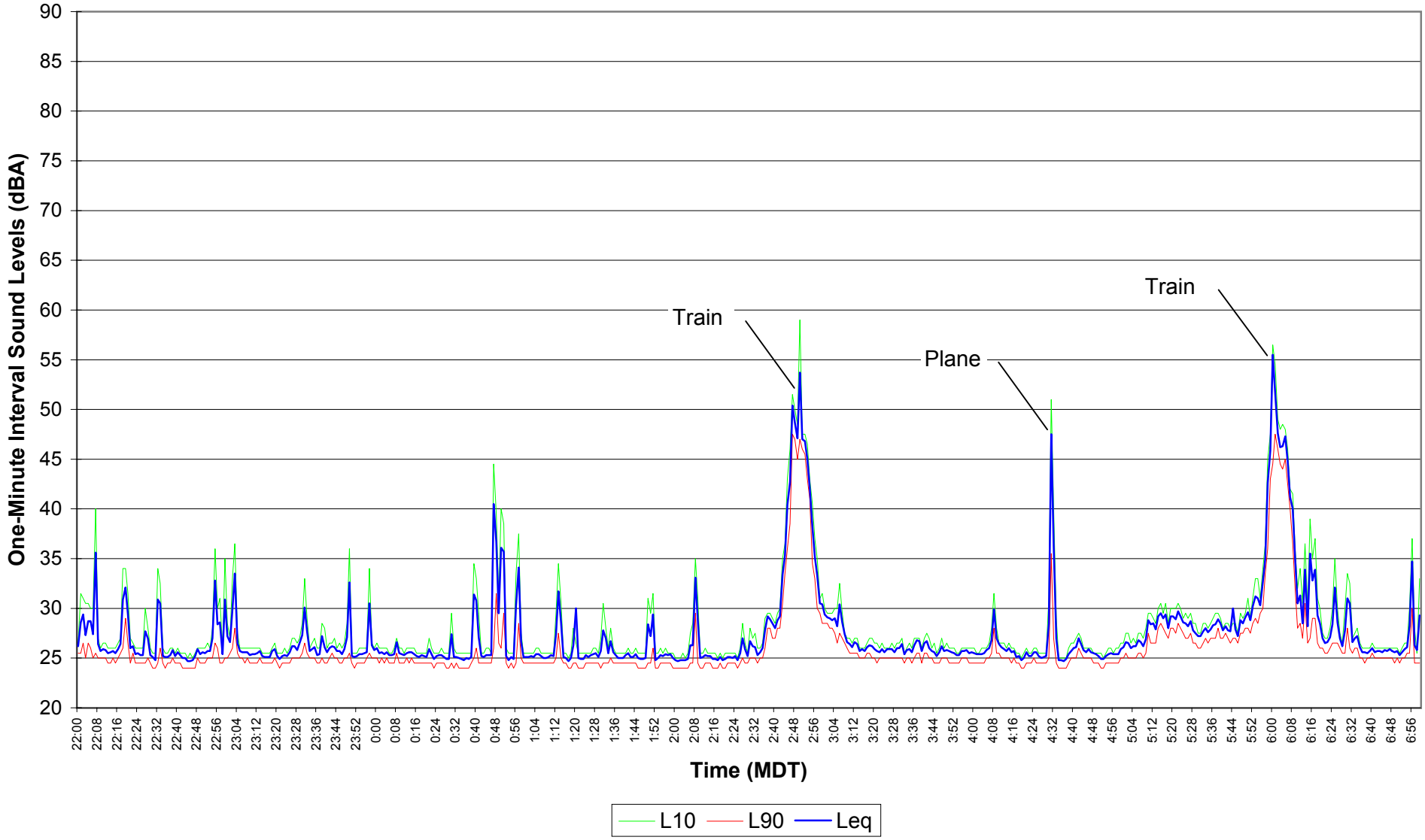


Figure E2.70
EnCana Rosebud
Site 2 Noise Survey
Dec. 16, 2004 07:00 - 14:29

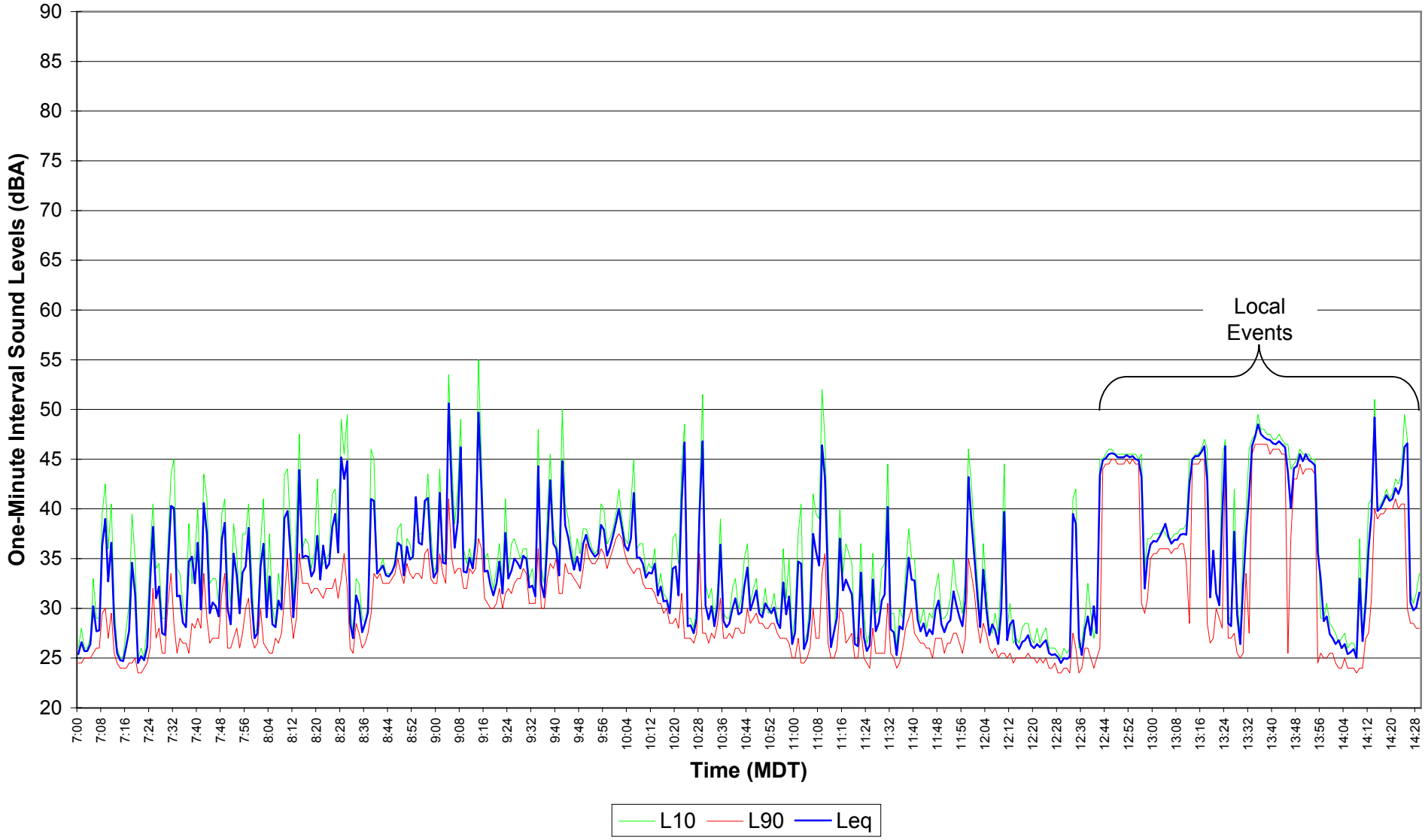


Figure E2.71
EnCana Rosebud
Site 2 Noise Survey
Dec. 16, 2004 14:30 - 21:59

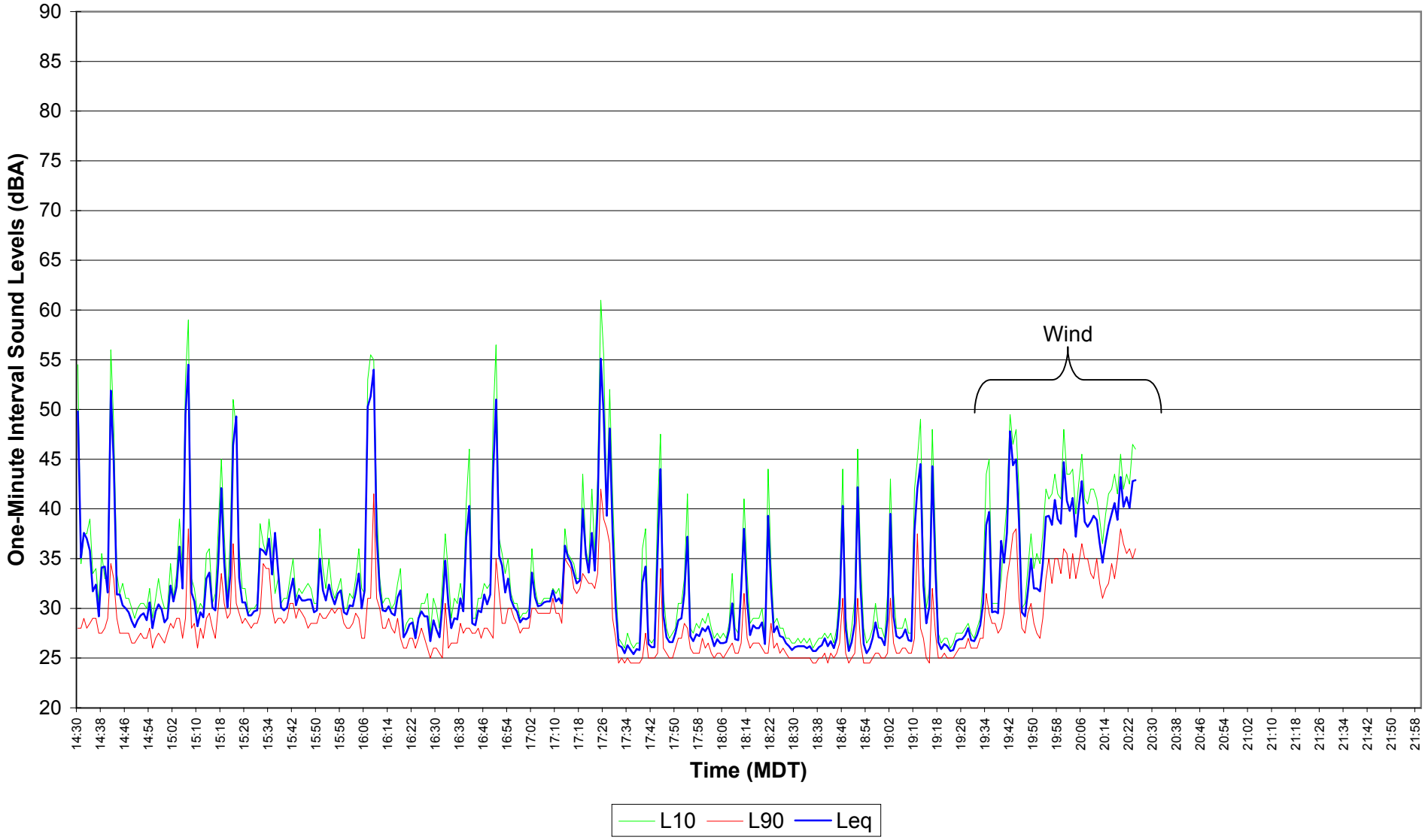


Figure E2.74
EnCana Rosebud
Site 2 Noise Survey
Dec. 17, 2004 14:30 - 21:59

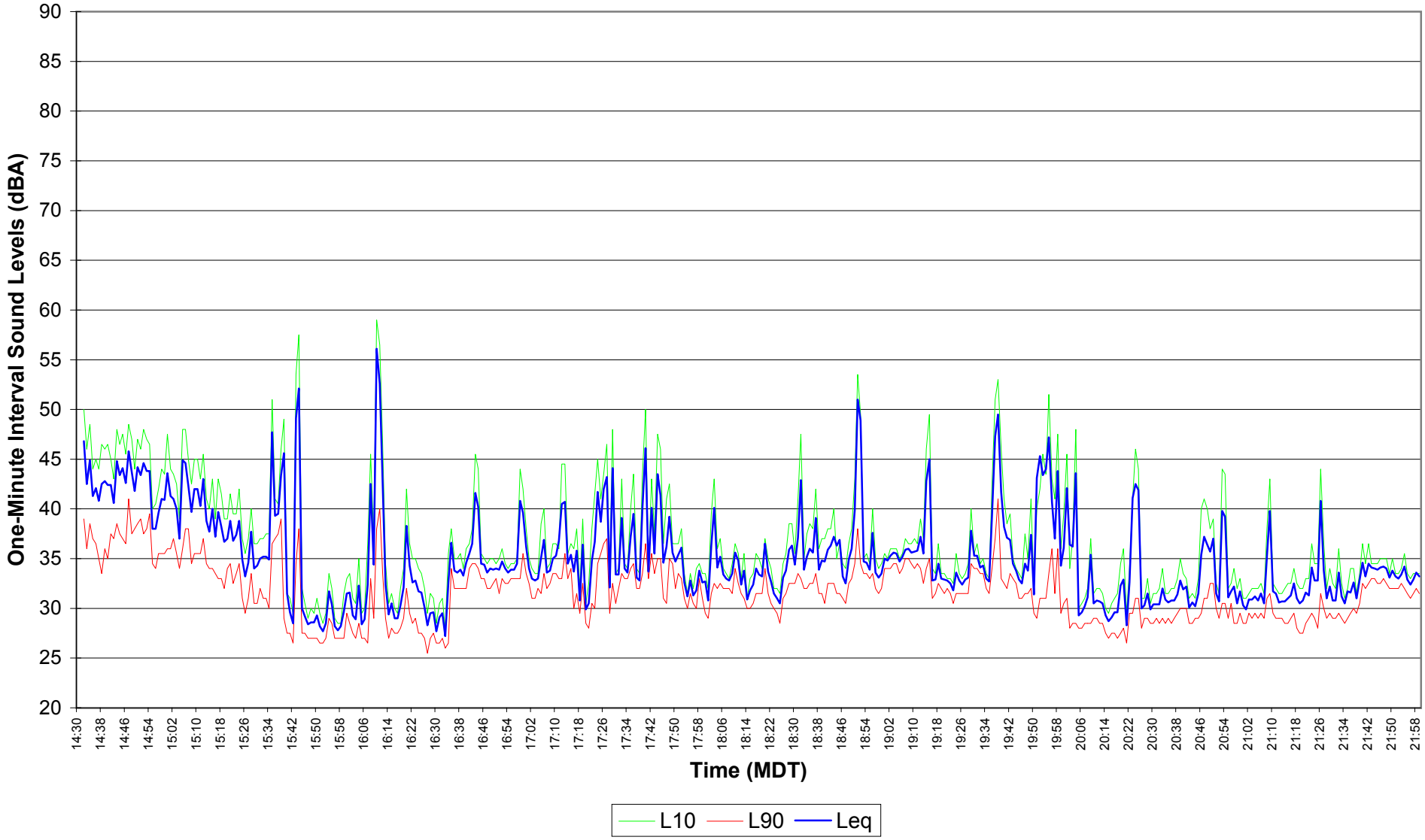


Figure E2.75
EnCana Rosebud
Site 2 Noise Survey
Dec 17, 2004 - Dec 18, 2004 22:00 - 06:59

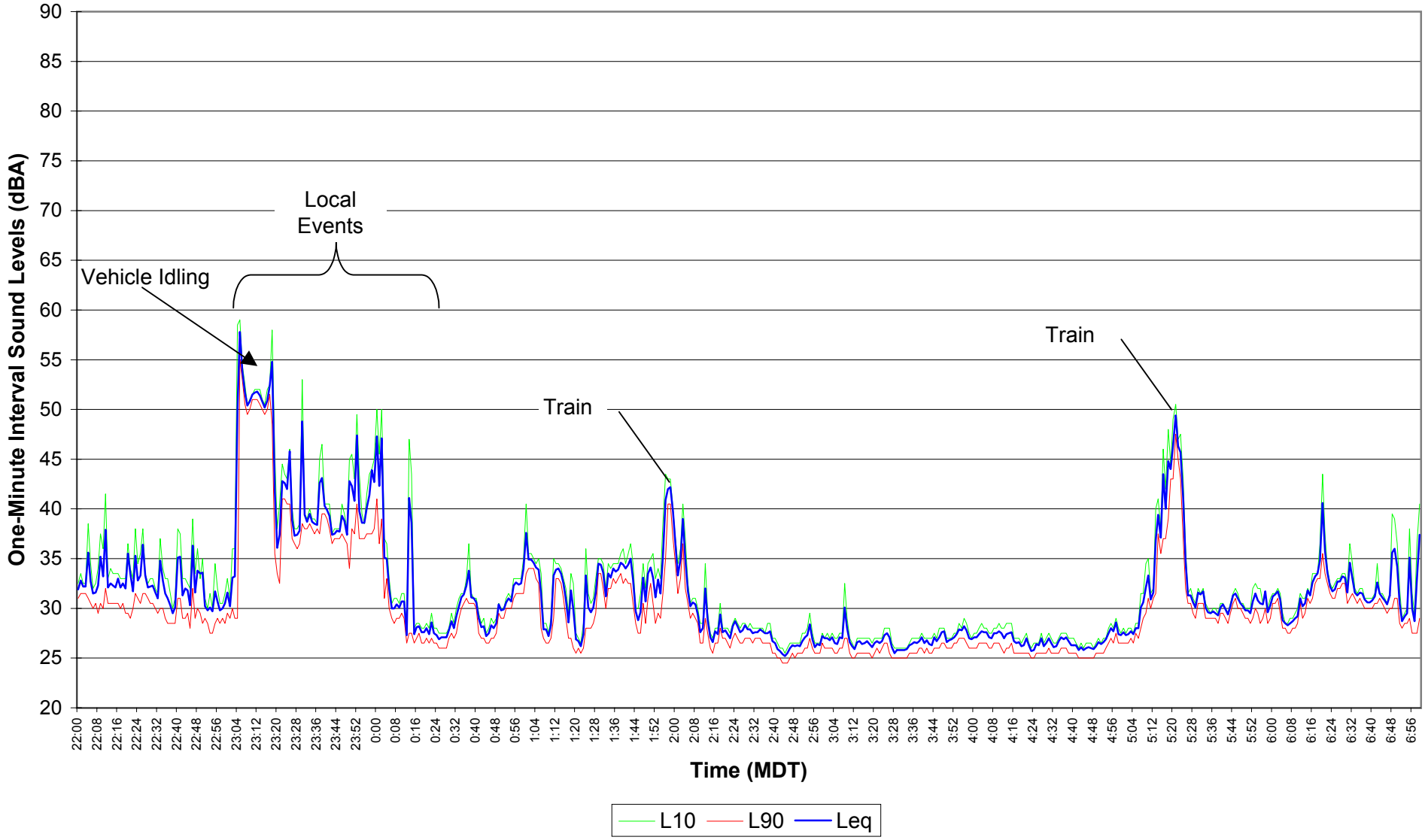


Figure E2.76
EnCana Rosebud
Site 2 Noise Survey
Dec. 18, 2004 07:00 - 14:29

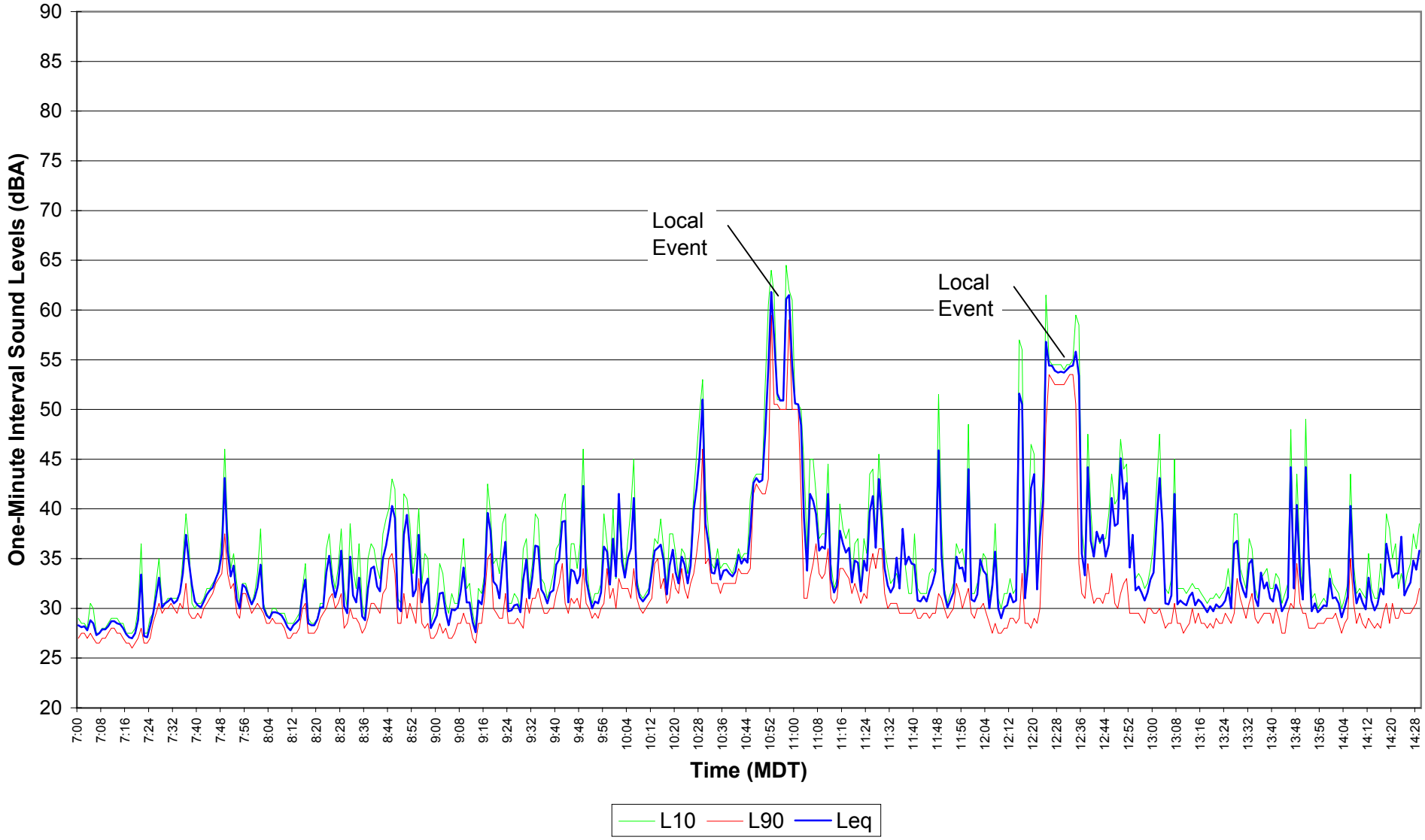


Figure E2.77
EnCana Rosebud
Site 2 Noise Survey
Dec. 18, 2004 14:30 - 21:59

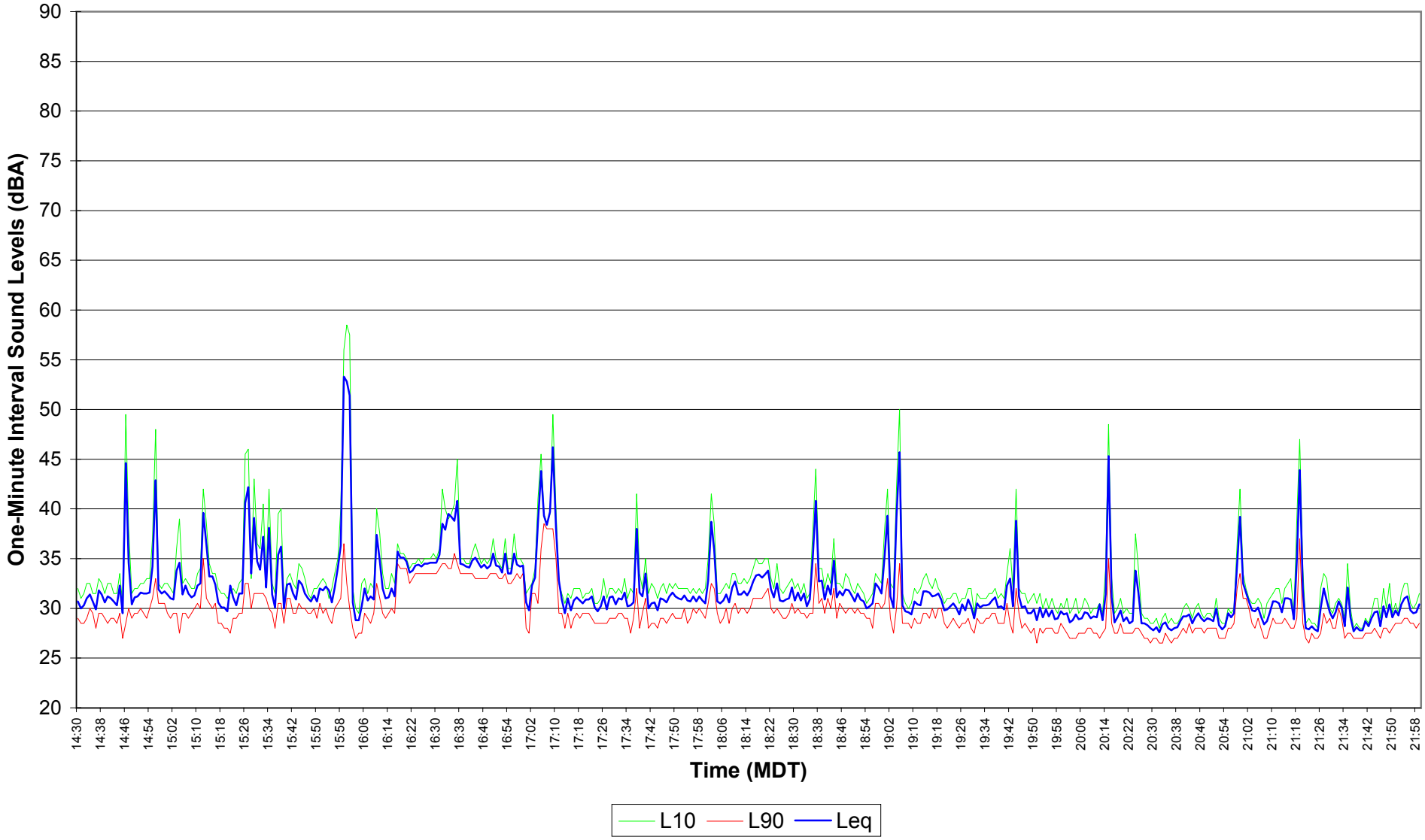


Figure E2.78
EnCana Rosebud
Site 2 Noise Survey
Dec. 18, 2004 - Dec. 19, 2004 22:00 - 06:59

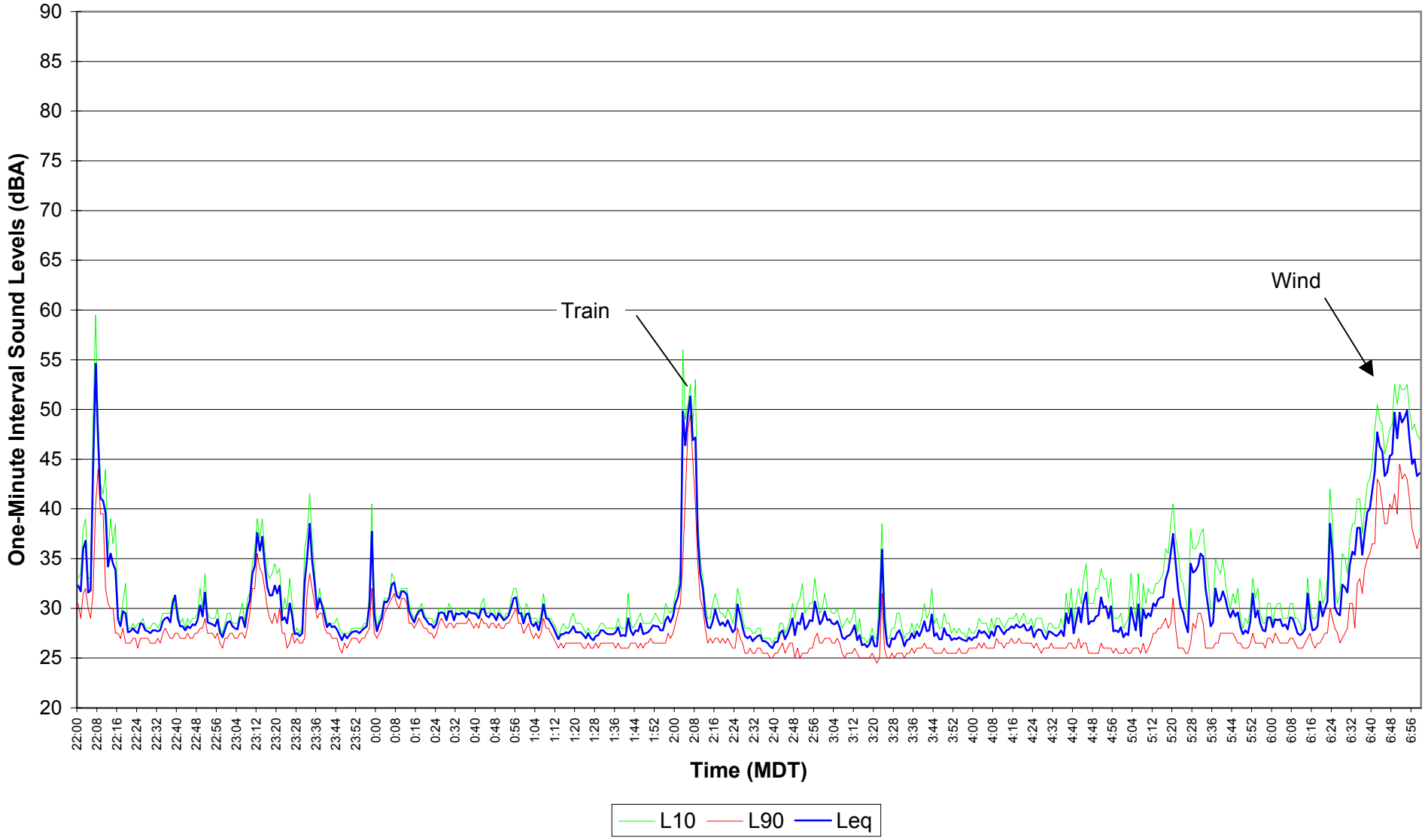


Figure E2.79

EnCana Rosebud

Site 2 Noise Survey

Dec. 19, 2004 07:00 - 14:29

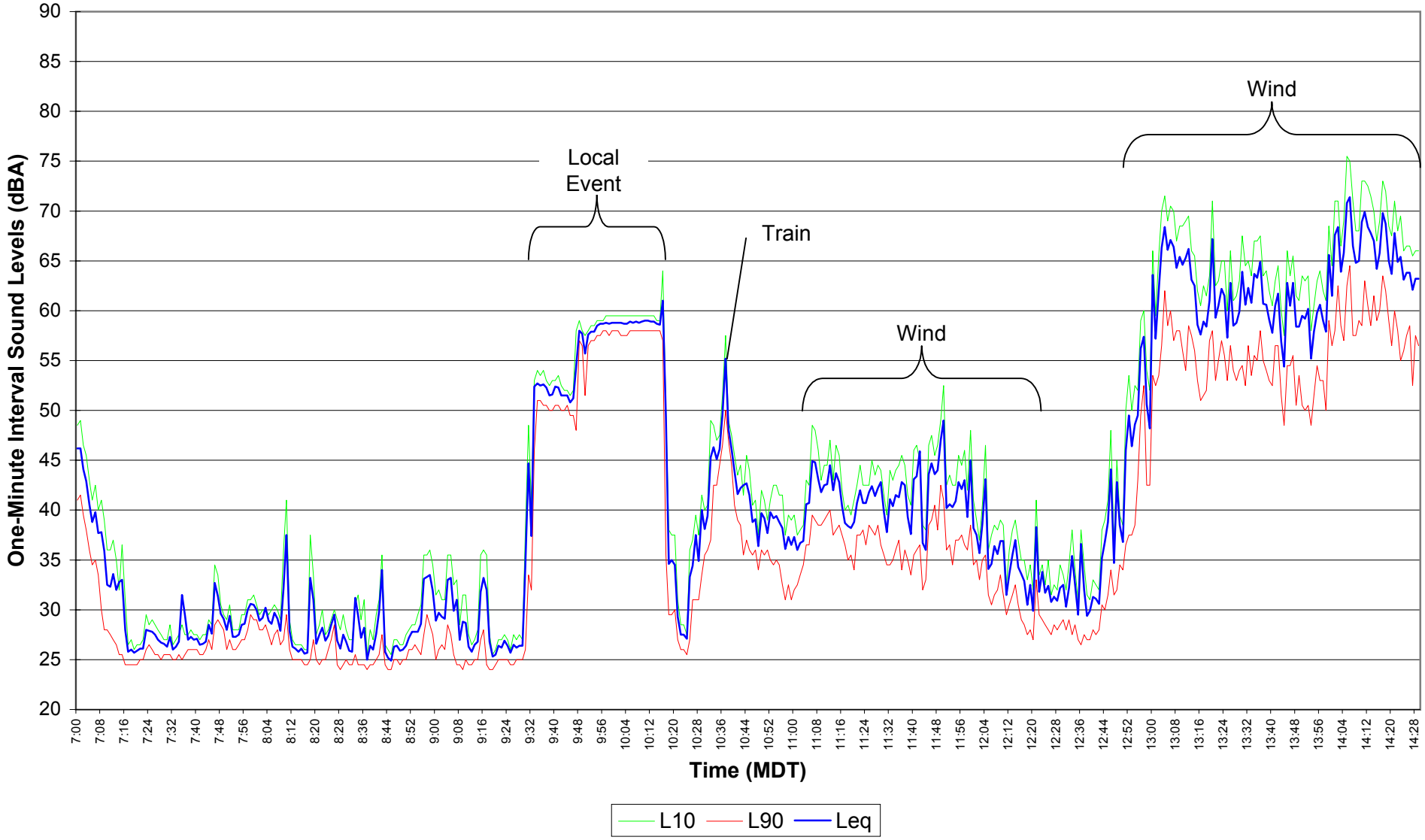


Figure E2.80
EnCana Rosebud
Site 2 Noise Survey
Dec. 19, 2004 14:30 - 21:59

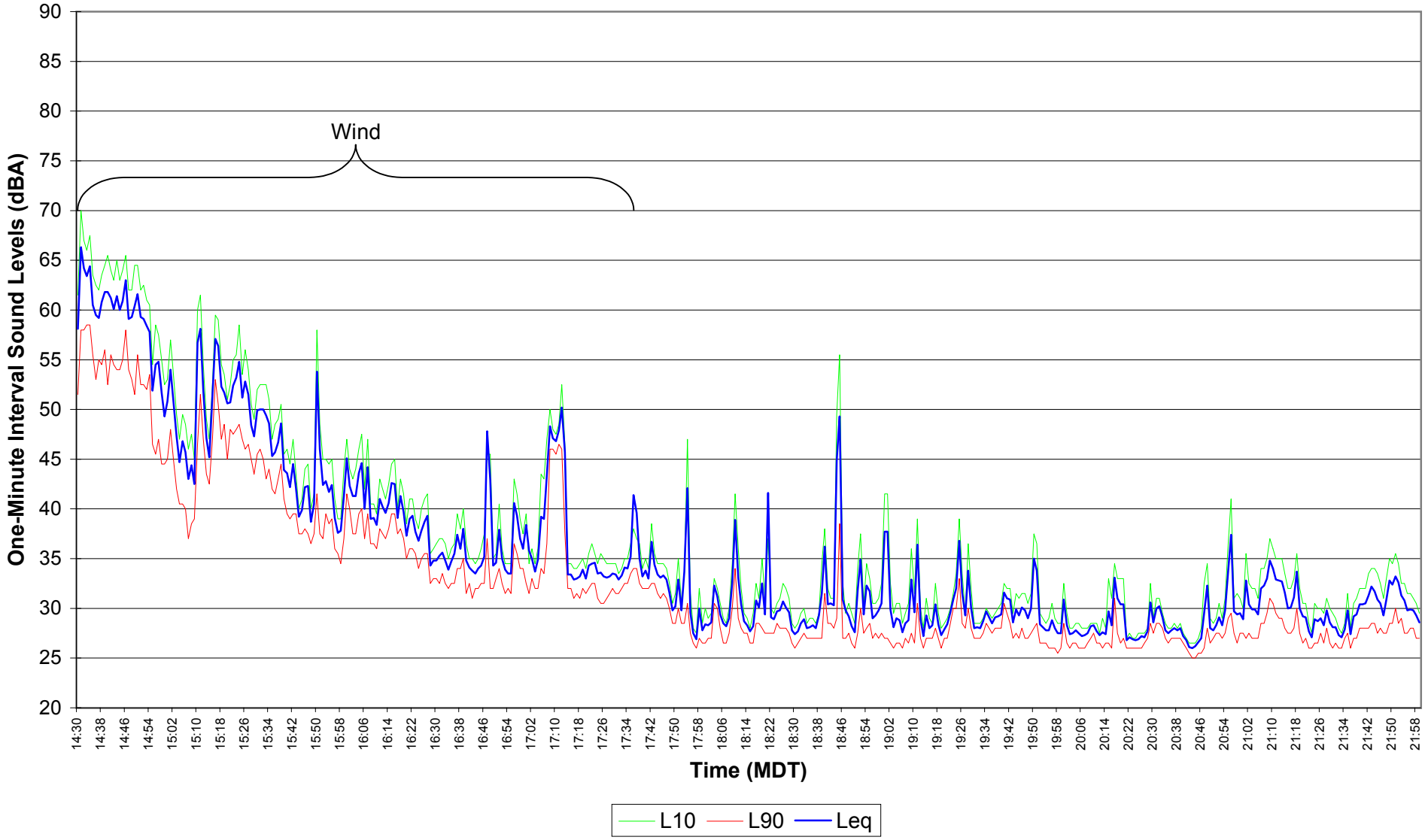


Figure E2.81
EnCana Rosebud
Site 2 Noise Survey
Dec. 19, 2004 - Dec. 20, 2004 22:00 - 06:59

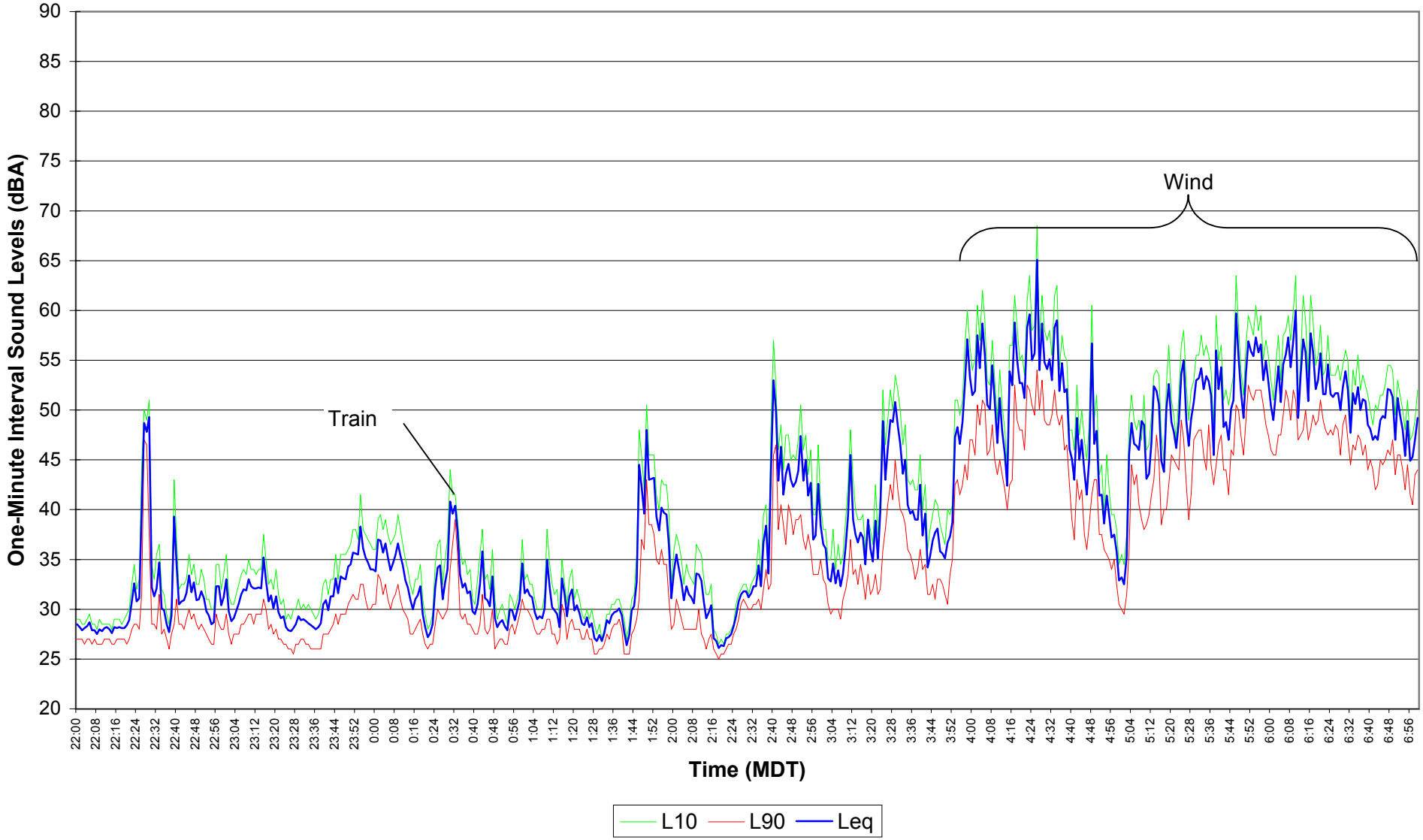
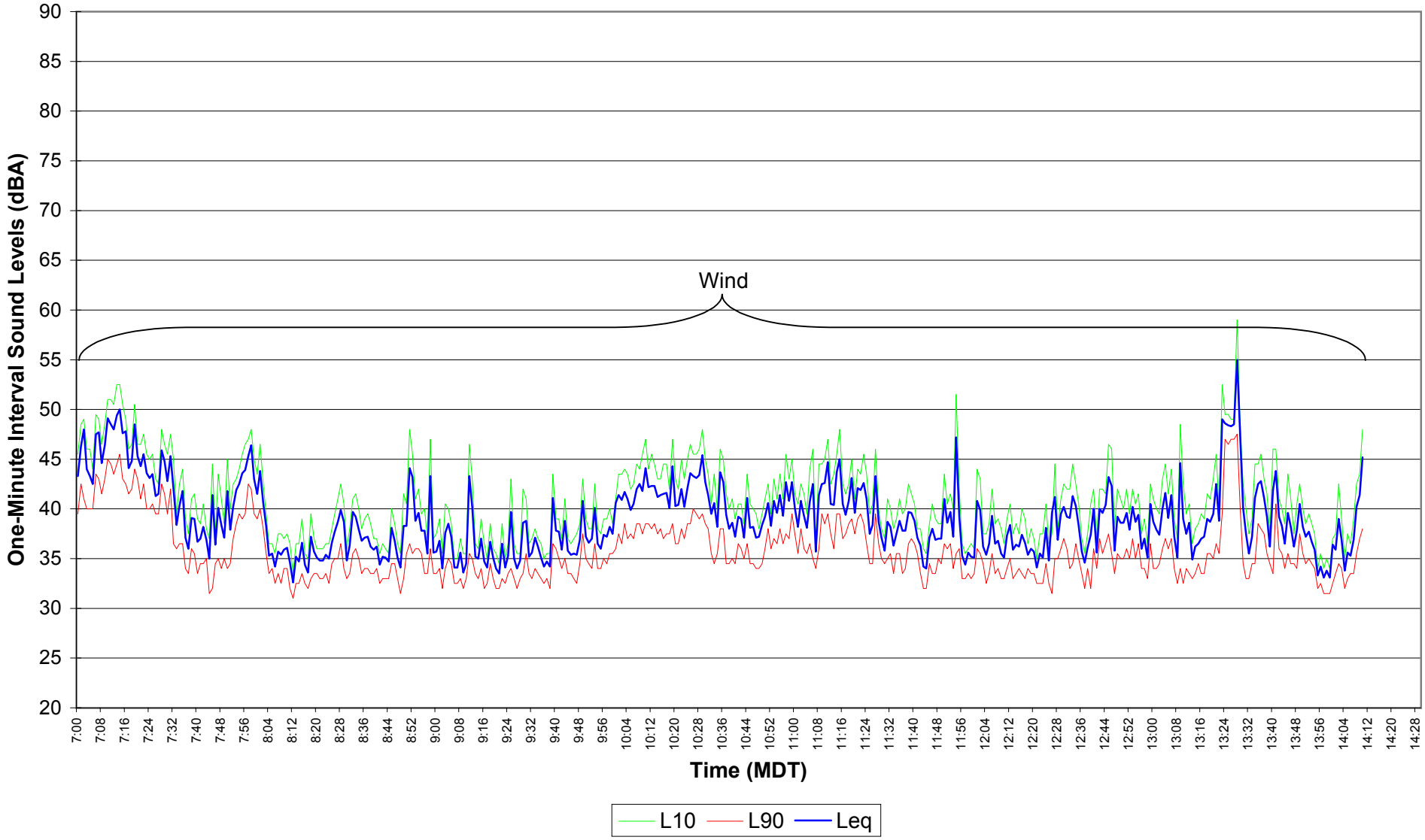


Figure E2.82
EnCana Rosebud
Site 2 Noise Survey
Dec. 20, 2004 07:00 - 14:29



APPENDIX E3

Measurement Results
Graphs of 1-Minute L_{eq}, L_{10} and L_{90} Data
Site 3

Patching Associates Acoustical Engineering Ltd.

Consultants in Acoustics, Noise Control and Vibrations

Table E3.1
EnCana Rosebud
Site 3 Noise Survey
Daily Leq Values

Date	Time	Figure #	Measured		Residual	
			Leq	Hours	Leq	Hours
Nov. 23, 2004	07:00 - 21:59	1, 2	38.1	7.7	35.1	7.4
Nov. 23, 2004 - Nov. 24, 2004	**22:00 - 06:59**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Nov. 24, 2004	07:00 - 21:59	N/A, 5	39.5	6.6	36.9	6.3
Nov 24, 2004 - Nov 25, 2004	**22:00 - 06:59**	**6**	**35.3**	**3.9**	**34.9**	**3.8**
Nov. 25, 2004	07:00 - 21:59	N/A	N/A	N/A	N/A	N/A
Nov. 25, 2004 - Nov. 26, 2004	**22:00 - 06:59**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Nov. 26, 2004	07:00 - 21:59	N/A, 11	38.1	5.5	36.9	5.4
Nov 26, 2004 - Nov 27, 2004	**22:00 - 06:59**	**12**	**41.9**	**9.0**	**35.9**	**8.8**
Nov. 27, 2004	07:00 - 21:59	13, 14	39.0	15.0	38.4	14.6
Nov. 27, 2004 - Nov. 28, 2004	**22:00 - 06:59**	**15**	**40.7**	**9.0**	**35.0**	**8.8**
Nov. 28, 2004	07:00 - 21:59	16, 17	36.5	15.0	35.6	15.0
Nov. 28, 2004 - Nov. 29, 2004	**22:00 - 06:59**	**18**	**41.6**	**9.0**	**34.1**	**8.8**
Nov. 29, 2004	07:00 - 21:59	19, 20	37.9	15.0	36.1	14.6
Nov. 29, 2004 - Nov. 30, 2004	**22:00 - 06:59**	**21**	**42.5**	**9.0**	**34.8**	**8.6**
Nov. 30, 2004	07:00 - 21:59	22, 23	40.7	15.0	38.6	14.2
Nov. 30, 2004 - Dec. 01, 2004	**22:00 - 06:59**	**24**	**39.3**	**9.0**	**34.8**	**8.8**
Dec. 01, 2004	07:00 - 21:59	25, 26	39.0	15.0	37.4	14.6
Dec. 01, 2004 - Dec. 02, 2004	**22:00 - 06:59**	**27**	**41.6**	**9.0**	**36.1**	**8.8**
Dec. 02, 2004	07:00 - 21:59	28, 29	49.3	15.0	39.5	10.0
Dec. 02, 2004 - Dec. 03, 2004	**22:00 - 06:59**	**30**	**41.0**	**9.0**	**36.3**	**8.8**
Dec. 03, 2004	07:00 - 21:59	31, 32	43.0	14.9	39.1	13.1
Dec. 03, 2004 - Dec. 04, 2004	**22:00 - 06:59**	**33**	**36.5**	**9.0**	**34.2**	**8.8**
Dec. 04, 2004	07:00 - 21:59	34, 35	42.5	15.0	39.7	12.5
Dec. 04, 2004 - Dec. 05, 2004	**22:00 - 06:59**	**36**	**43.5**	**9.0**	**34.7**	**8.7**
Dec. 05, 2004	07:00 - 21:59	37, 38	41.1	15.0	37.4	13.4
Dec. 05, 2004 - Dec. 06, 2004	**22:00 - 06:59**	**39**	**36.0**	**9.0**	**33.4**	**8.9**
Dec. 06, 2004	07:00 - 21:59	40, 41	41.5	9.8	35.6	9.3
Dec. 06, 2004 - Dec. 07, 2004	**22:00 - 06:59**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Dec. 07, 2004	07:00 - 21:59	N/A	N/A	N/A	N/A	N/A
Dec. 07, 2004 - Dec. 08, 2004	**22:00 - 06:59**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Dec. 08, 2004	07:00 - 21:59	46, 47	38.3	7.8	34.5	7.7
Dec. 08, 2004 - Dec. 09, 2004	**22:00 - 06:59**	**48**	**40.7**	**9.0**	**34.4**	**8.8**
Dec. 09, 2004	07:00 - 21:59	49, 50	38.9	15.0	37.8	14.6
Dec. 09, 2004 - Dec. 10, 2004	**22:00 - 06:59**	**51**	**45.6**	**9.0**	**33.9**	**8.7**
Dec. 10, 2004	07:00 - 21:59	52, 53	46.9	14.9	39.8	11.7
Dec. 10, 2004 - Dec. 11, 2004	**22:00 - 06:59**	**54**	**50.5**	**9.0**	**37.4**	**7.6**
Dec. 11, 2004	07:00 - 21:59	55, 56	53.2	15.0	38.4	8.0
Dec. 11, 2004 - Dec. 12, 2004	**22:00 - 06:59**	**57**	**37.0**	**9.0**	**36.3**	**8.8**
Dec. 12, 2004	07:00 - 21:59	58, 59	35.7	15.0	34.8	14.9
Dec. 12, 2004 - Dec. 13, 2004	**22:00 - 06:59**	**60**	**38.7**	**9.0**	**33.9**	**8.9**
Dec. 13, 2004	07:00 - 21:59	61, 62	48.9	14.9	37.3	9.7
Dec. 13, 2004 - Dec. 14, 2004	**22:00 - 06:59**	**63**	**40.4**	**9.0**	**34.9**	**8.8**
Dec. 14, 2004	07:00 - 21:59	64, 65	42.3	15.0	38.5	14.4
Dec. 14, 2004 - Dec. 15, 2004	**22:00 - 06:59**	**66**	**37.1**	**9.0**	**33.3**	**8.9**
Dec. 15, 2004	07:00 - 21:59	67, 68	40.6	15.0	37.7	14.1
Dec 15, 2004 - Dec 16, 2004	**22:00 - 06:59**	**69**	**44.5**	**9.0**	**31.0**	**8.6**
Dec. 16, 2004	07:00 - 21:59	70, 71	38.9	15.0	37.8	14.5
Dec. 16, 2004 - Dec. 17, 2004	**22:00 - 06:59**	**72**	**42.4**	**9.0**	**38.1**	**8.2**
Dec. 17, 2004	07:00 - 21:59	73, 74	41.3	14.9	39.3	14.3
Dec 17, 2004 - Dec 18, 2004	**22:00 - 06:59**	**75**	**42.1**	**9.0**	**34.7**	**8.7**
Dec. 18, 2004	07:00 - 21:59	76, 77	55.7	15.0	36.2	14.3
Dec. 18, 2004 - Dec. 19, 2004	**22:00 - 06:59**	**78**	**40.8**	**9.0**	**36.5**	**8.8**
Dec. 19, 2004	07:00 - 21:59	79, 80	54.5	15.0	37.6	8.8
Dec. 19, 2004 - Dec. 20, 2004	**22:00 - 06:59**	**81**	**56.4**	**9.0**	**37.9**	**5.2**
Dec. 20, 2004	07:00 - 21:59	82, 83	51.0	7.4	42.5	2.4

Figure E3.1

EnCana Rosebud

Site 3 Noise Survey

Nov. 23, 2004 07:00 - 14:29

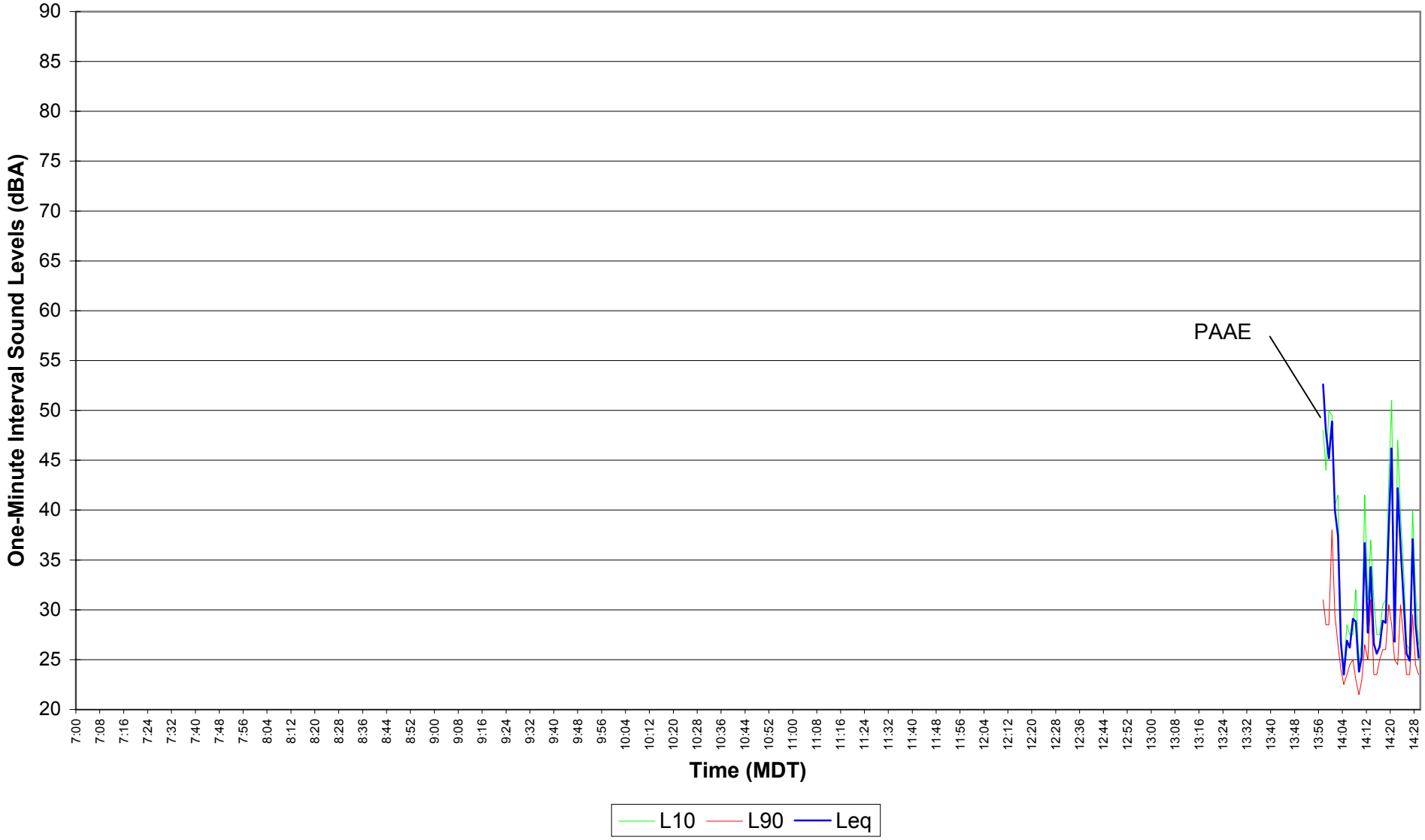


Figure E3.2
EnCana Rosebud
Site 3 Noise Survey
Nov. 23, 2004 14:30 - 21:59

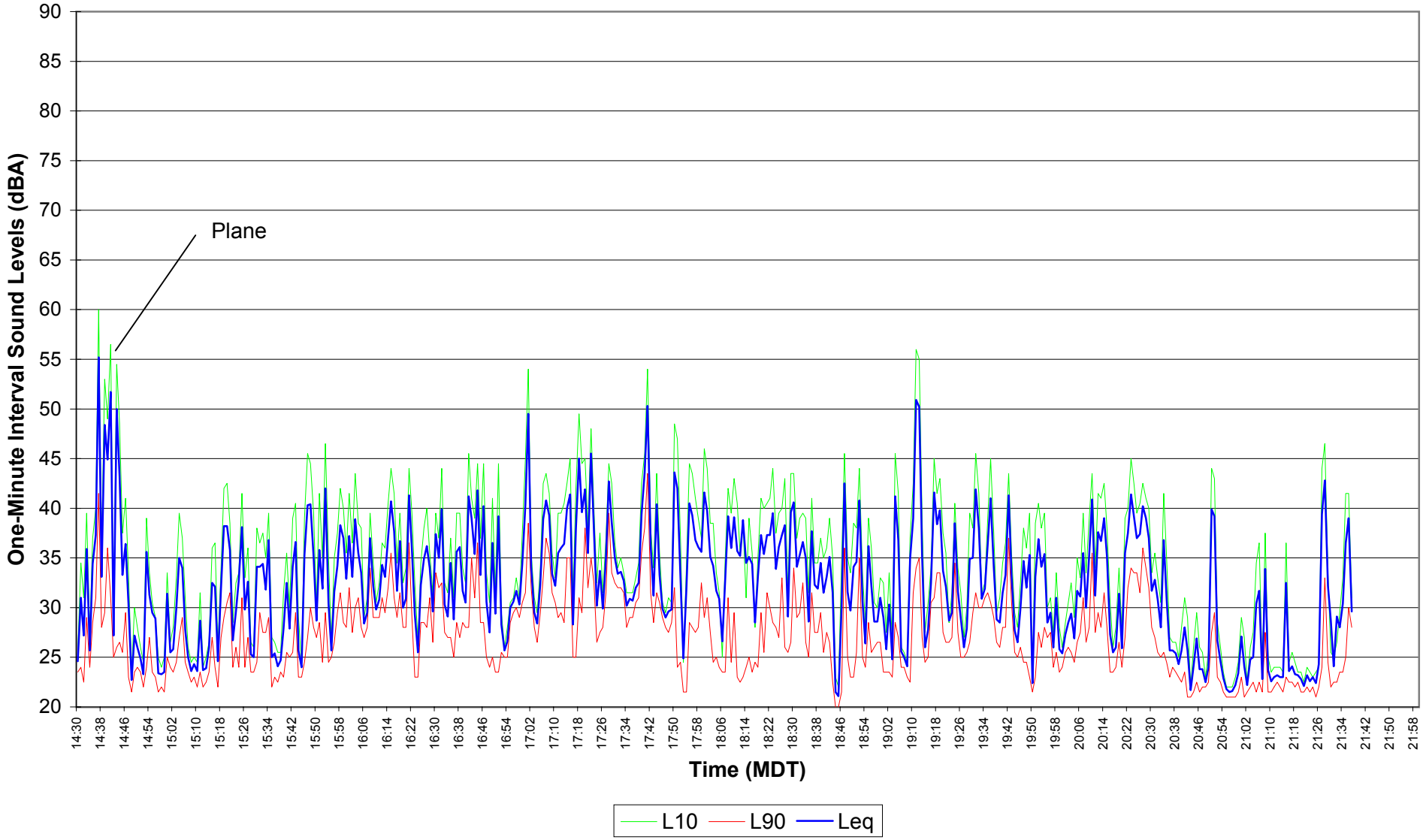


Figure E3.5
EnCana Rosebud
Site 3 Noise Survey
Nov. 24, 2004 14:30 - 21:59

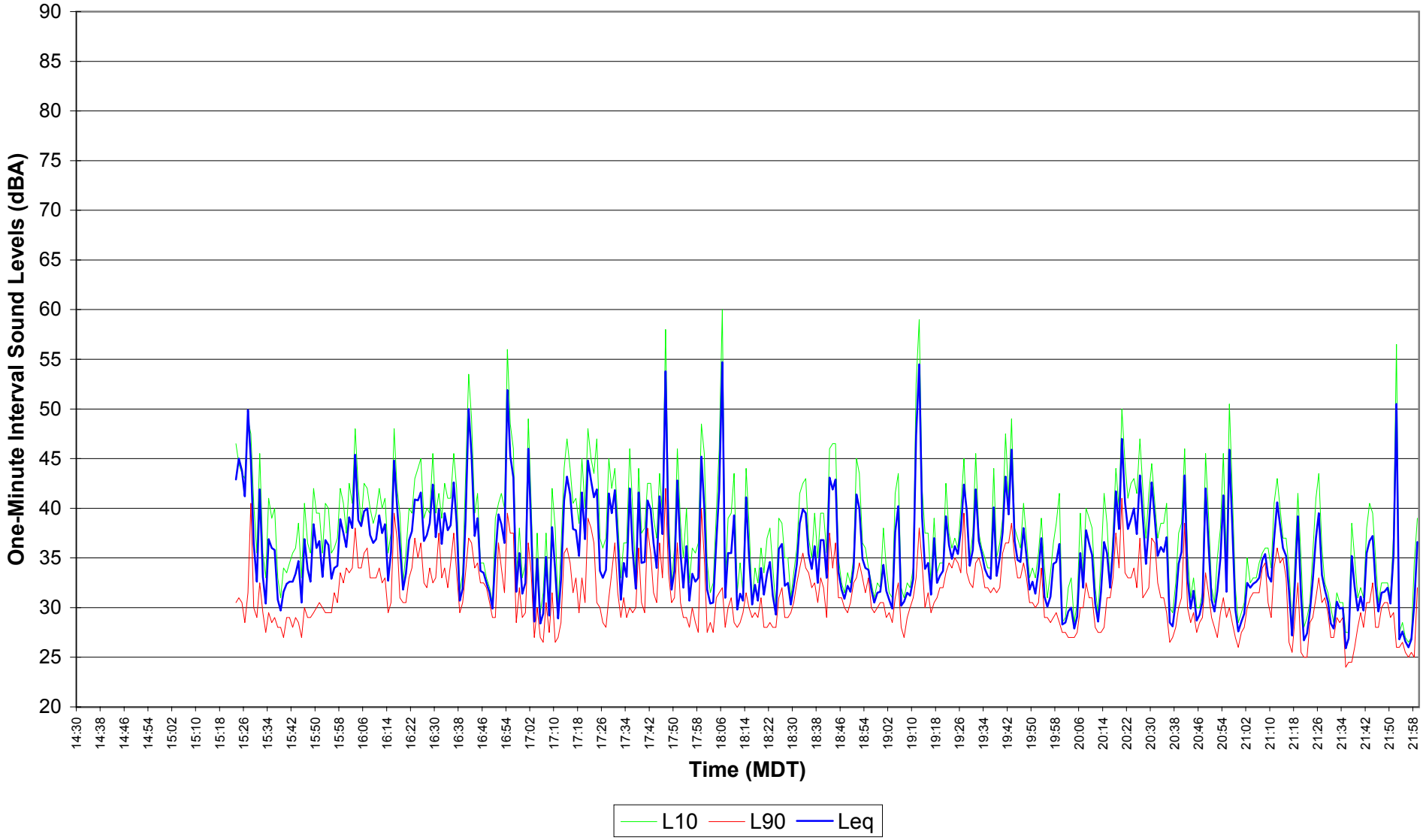


Figure E3.6
EnCana Rosebud
Site 3 Noise Survey
Nov 24, 2004 - Nov 25, 2004 22:00 - 06:59

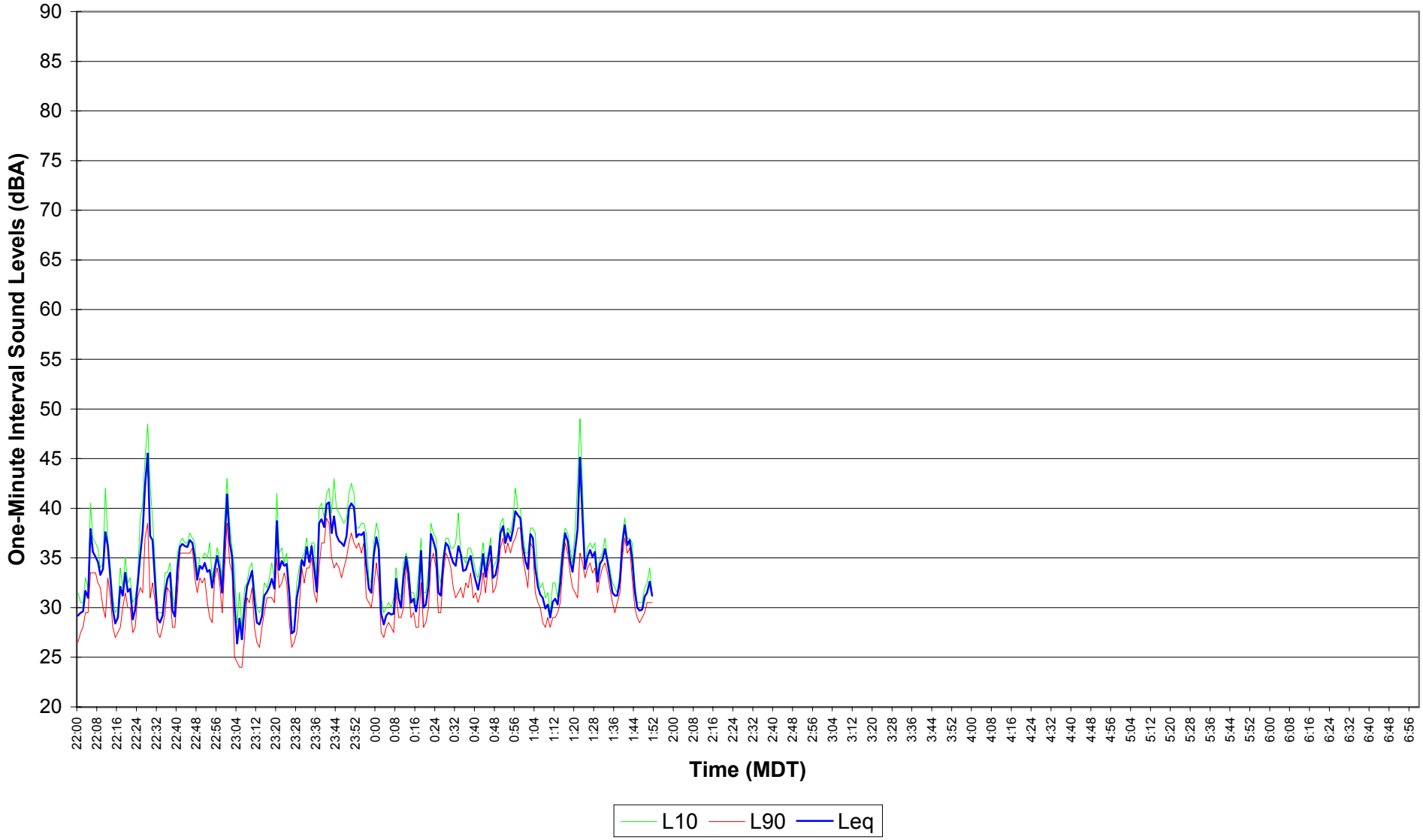


Figure E3.11
EnCana Rosebud
Site 3 Noise Survey
Nov. 26, 2004 14:30 - 21:59

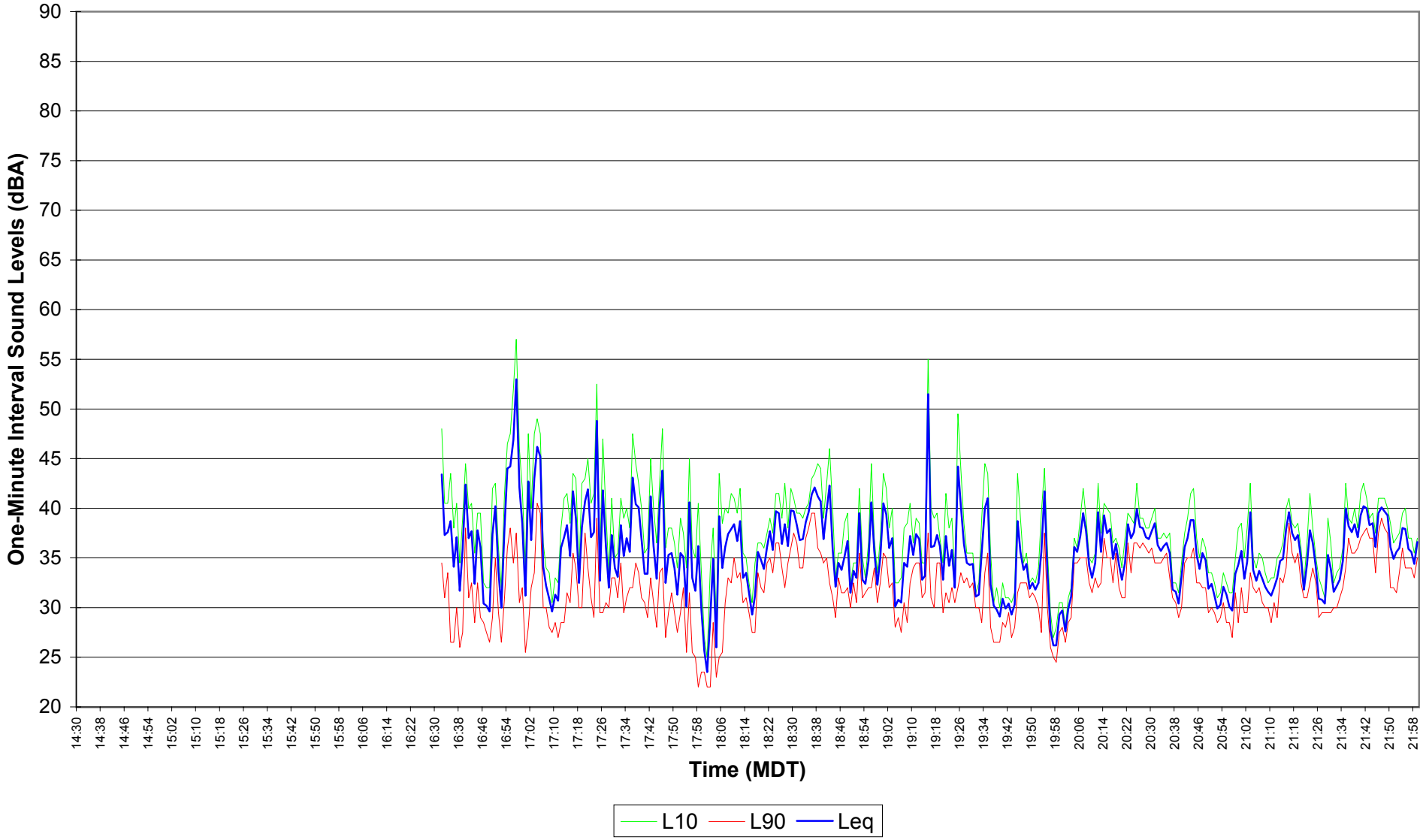


Figure E3.12
EnCana Rosebud
Site 3 Noise Survey
Nov 26, 2004 - Nov 27, 2004 22:00 - 06:59

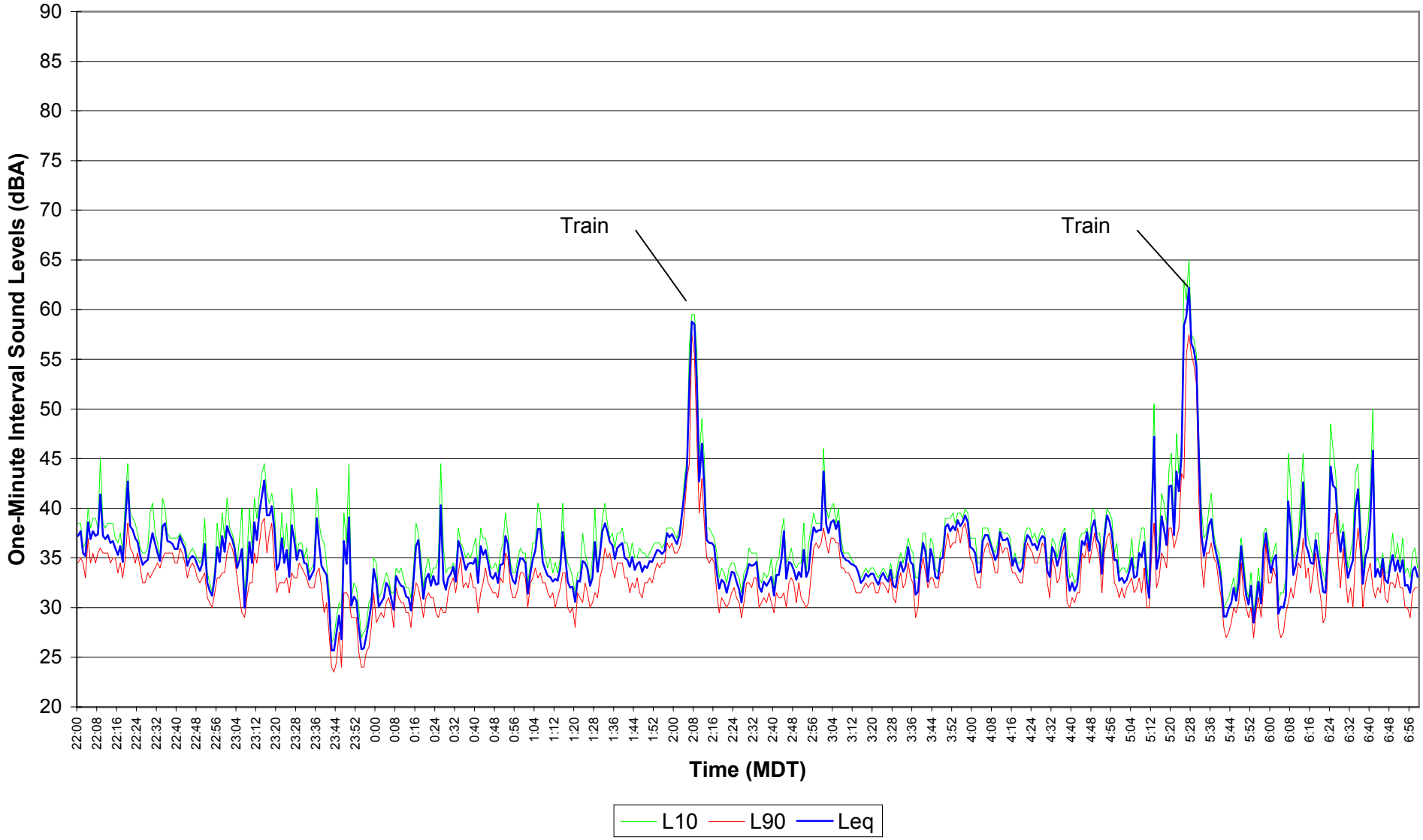


Figure E3.13
EnCana Rosebud
Site 3 Noise Survey
Nov. 27, 2004 07:00 - 14:29

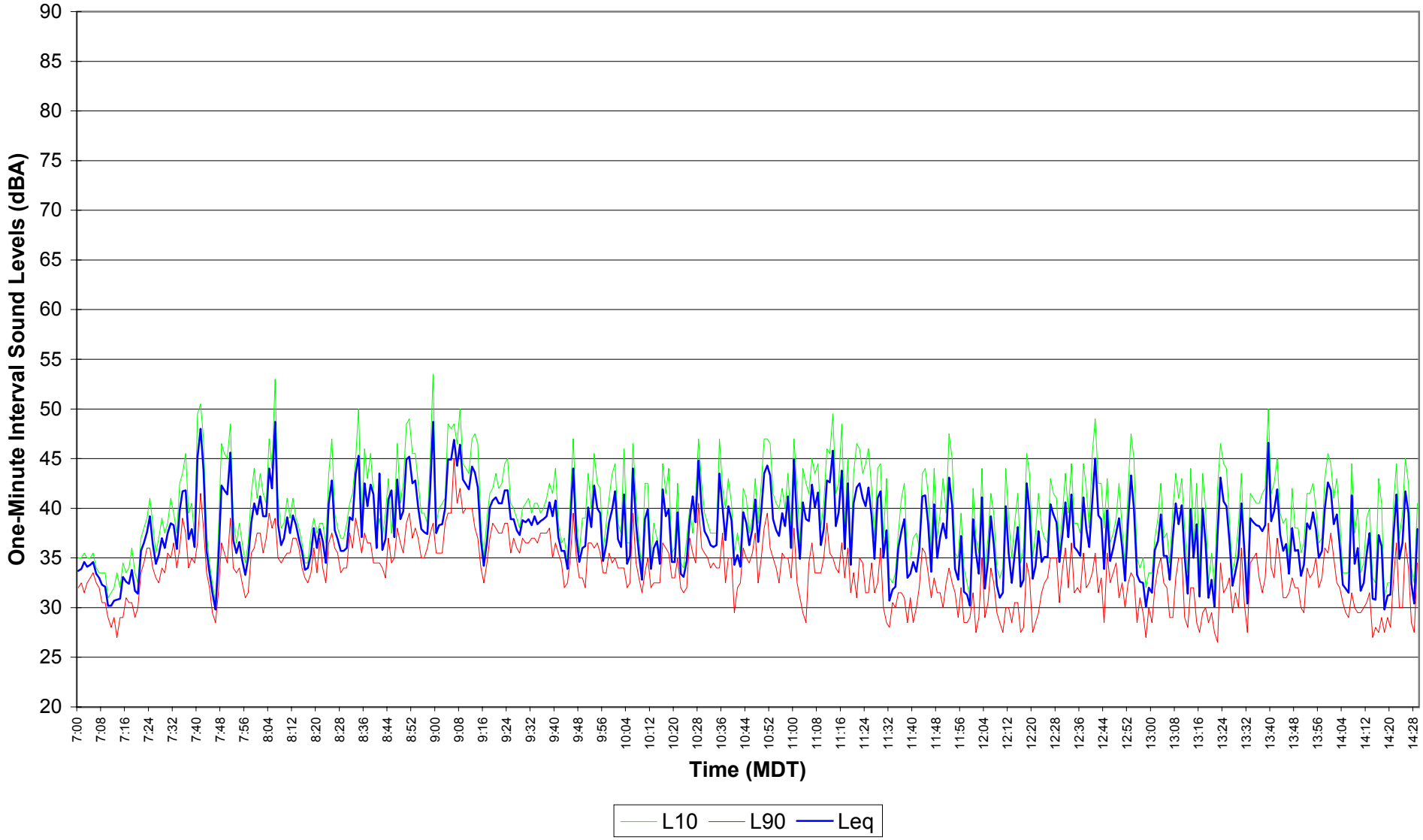


Figure E3.14
EnCana Rosebud
Site 3 Noise Survey
Nov. 27, 2004 14:30 - 21:59

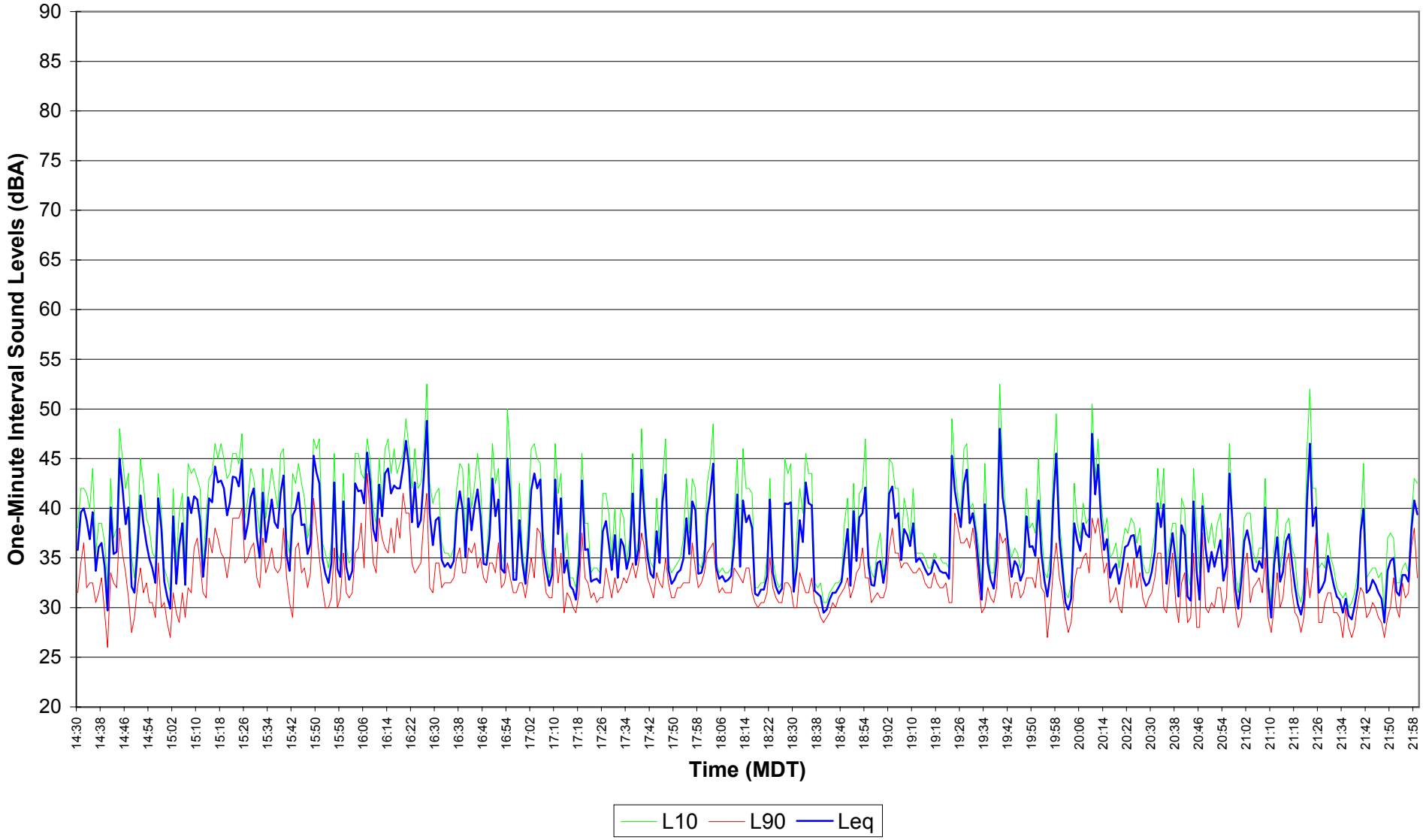


Figure E3.15
EnCana Rosebud
Site 3 Noise Survey
Nov. 27, 2004 - Nov. 28, 2004 22:00 - 06:59

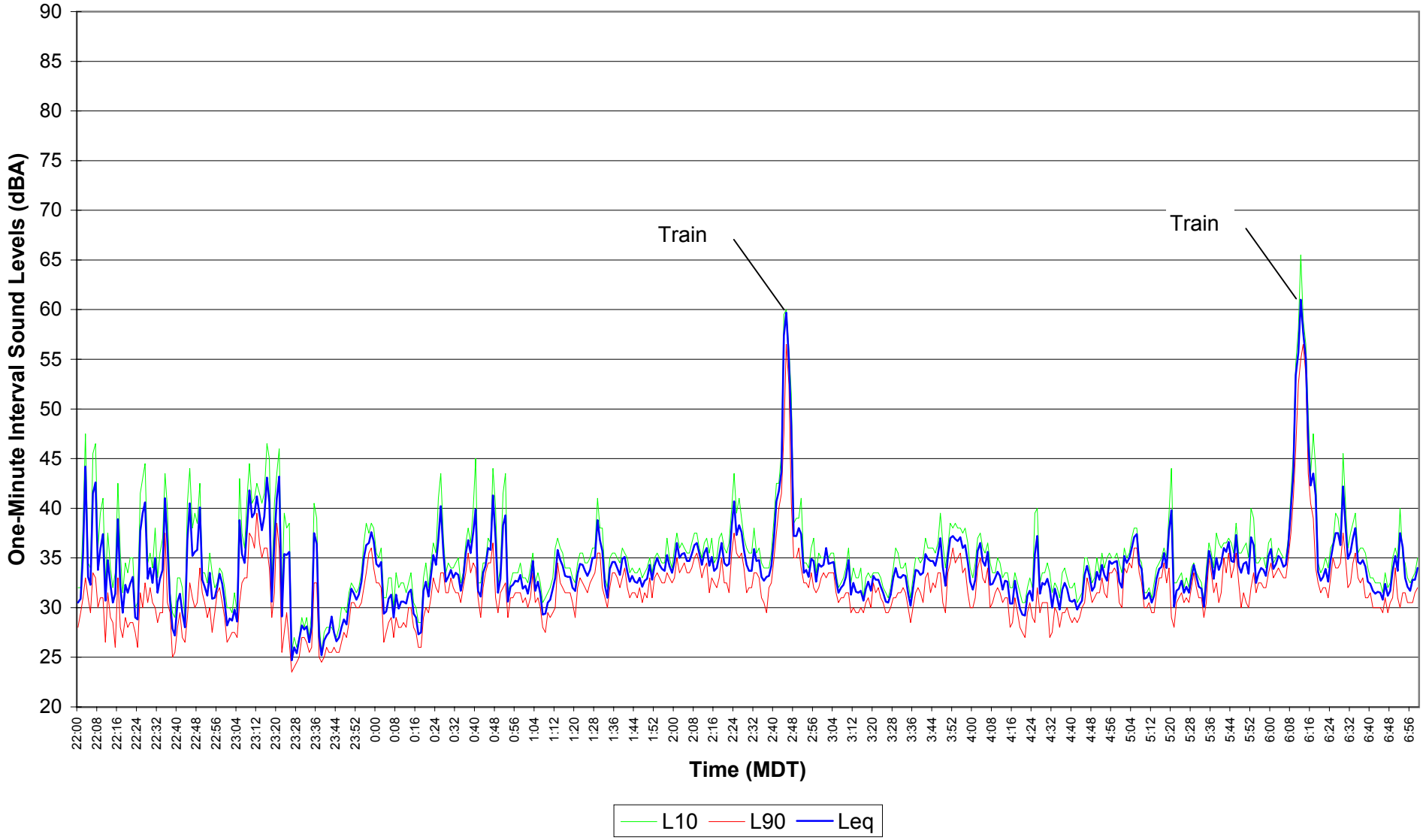


Figure E3.16

EnCana Rosebud

Site 3 Noise Survey

Nov. 28, 2004 07:00 - 14:29

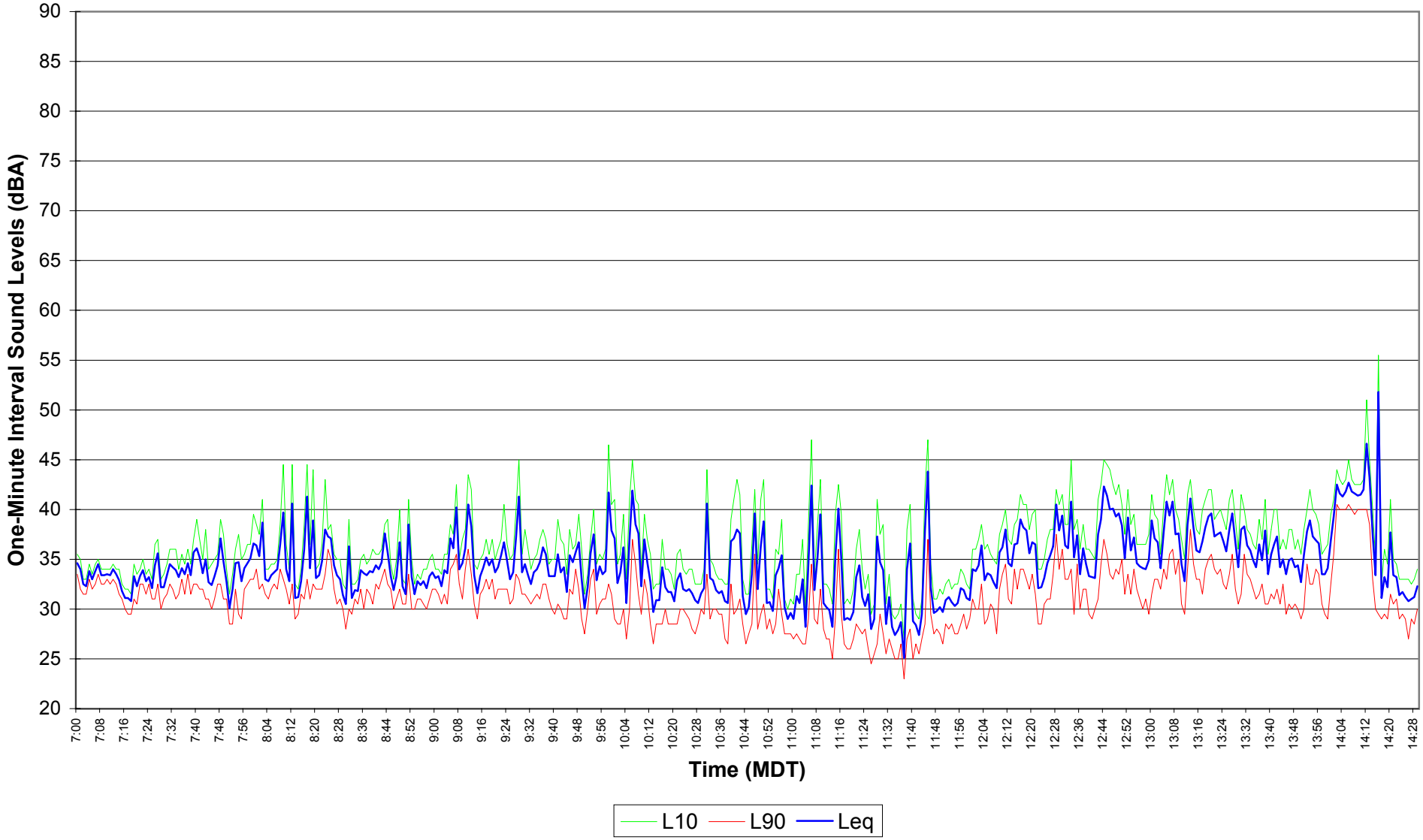


Figure E3.17
EnCana Rosebud
Site 3 Noise Survey
Nov. 28, 2004 14:30 - 21:59

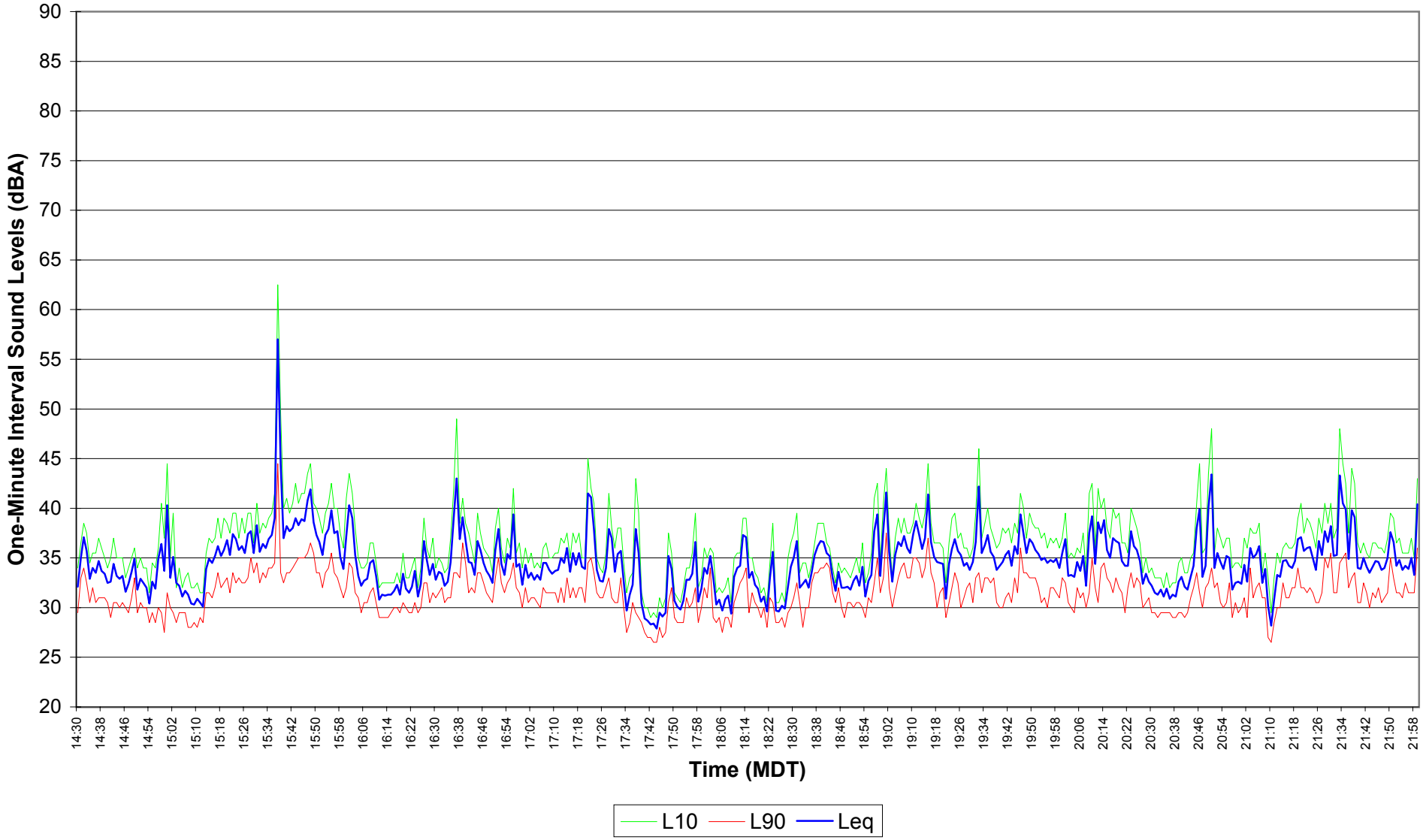


Figure E3.18
EnCana Rosebud
Site 3 Noise Survey
Nov. 28, 2004 - Nov. 29, 2004 22:00 - 06:59

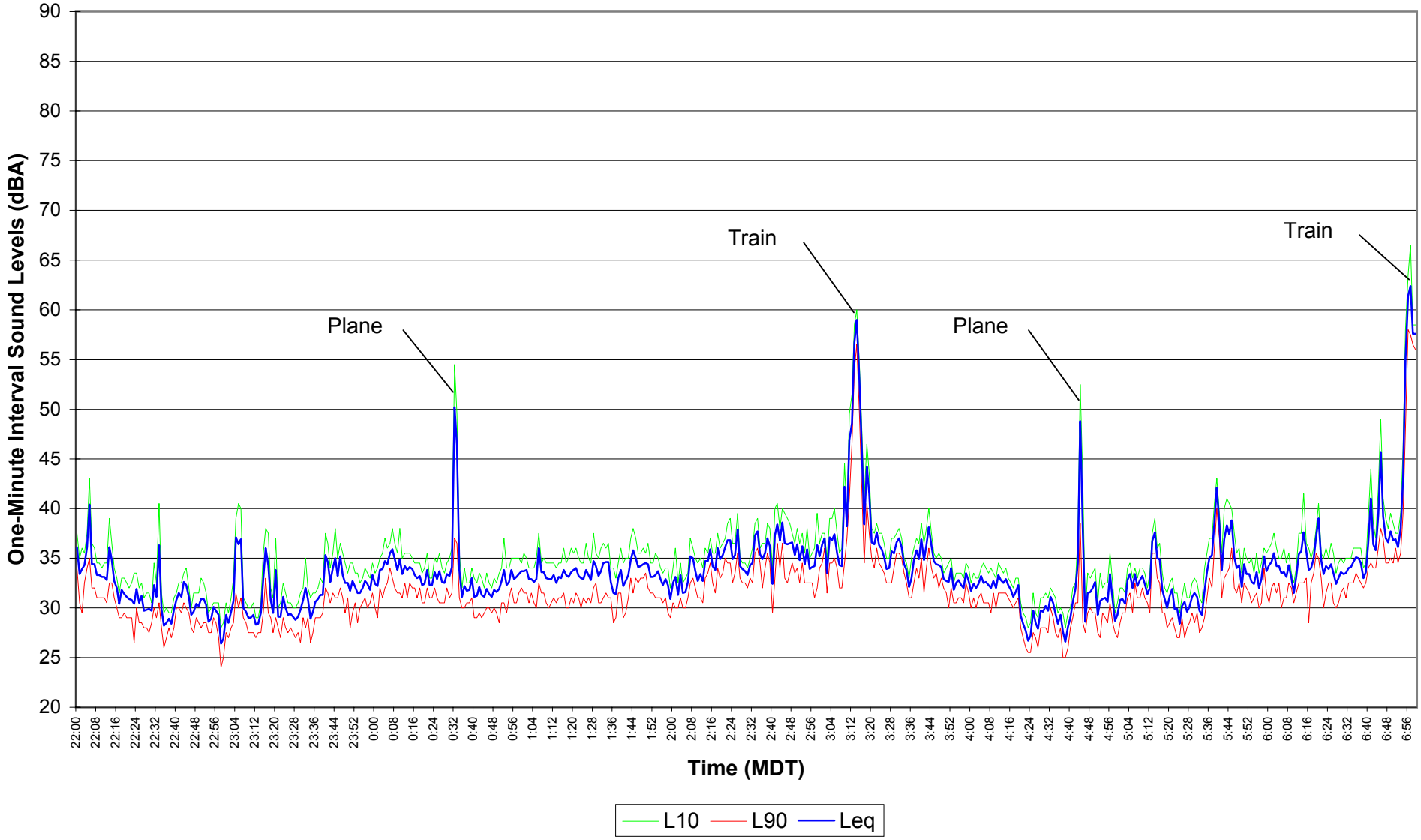


Figure E3.19
EnCana Rosebud
Site 3 Noise Survey
Nov. 29, 2004 07:00 - 14:29

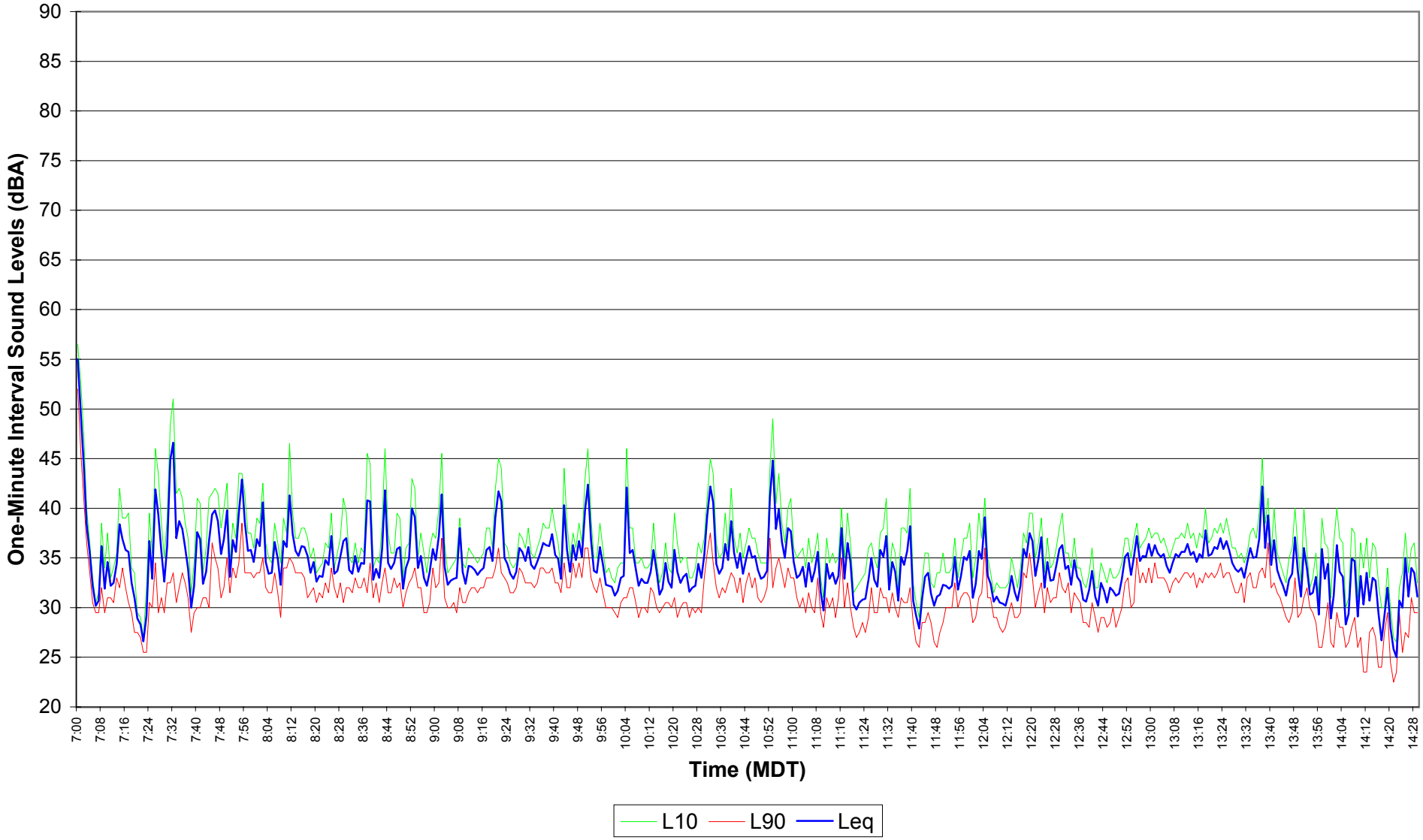


Figure E3.20
EnCana Rosebud
Site 3 Noise Survey
Nov. 29, 2004 14:30 - 21:59

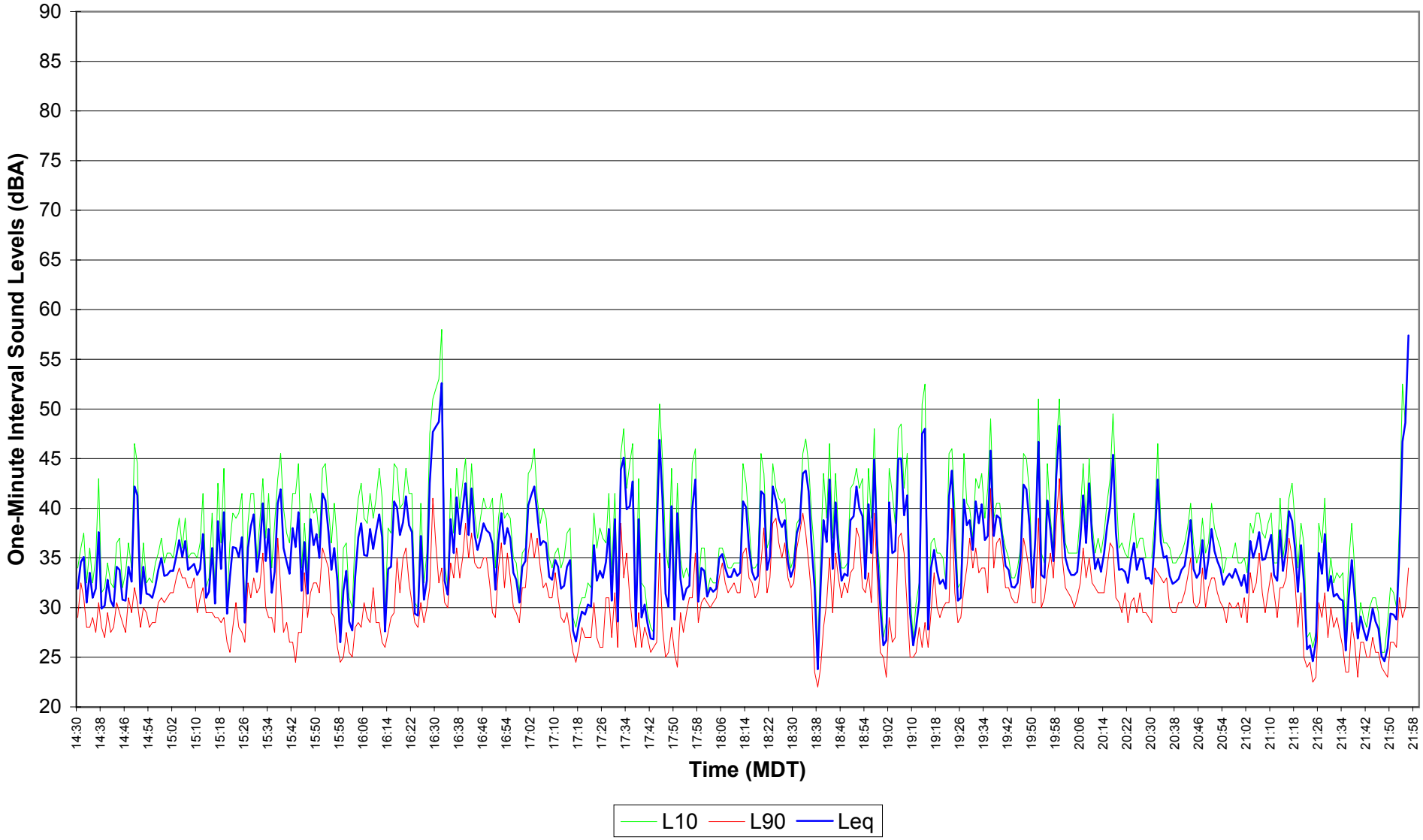


Figure E3.21
EnCana Rosebud
Site 3 Noise Survey
Nov. 29, 2004 - Nov. 30, 2004 22:00 - 06:59

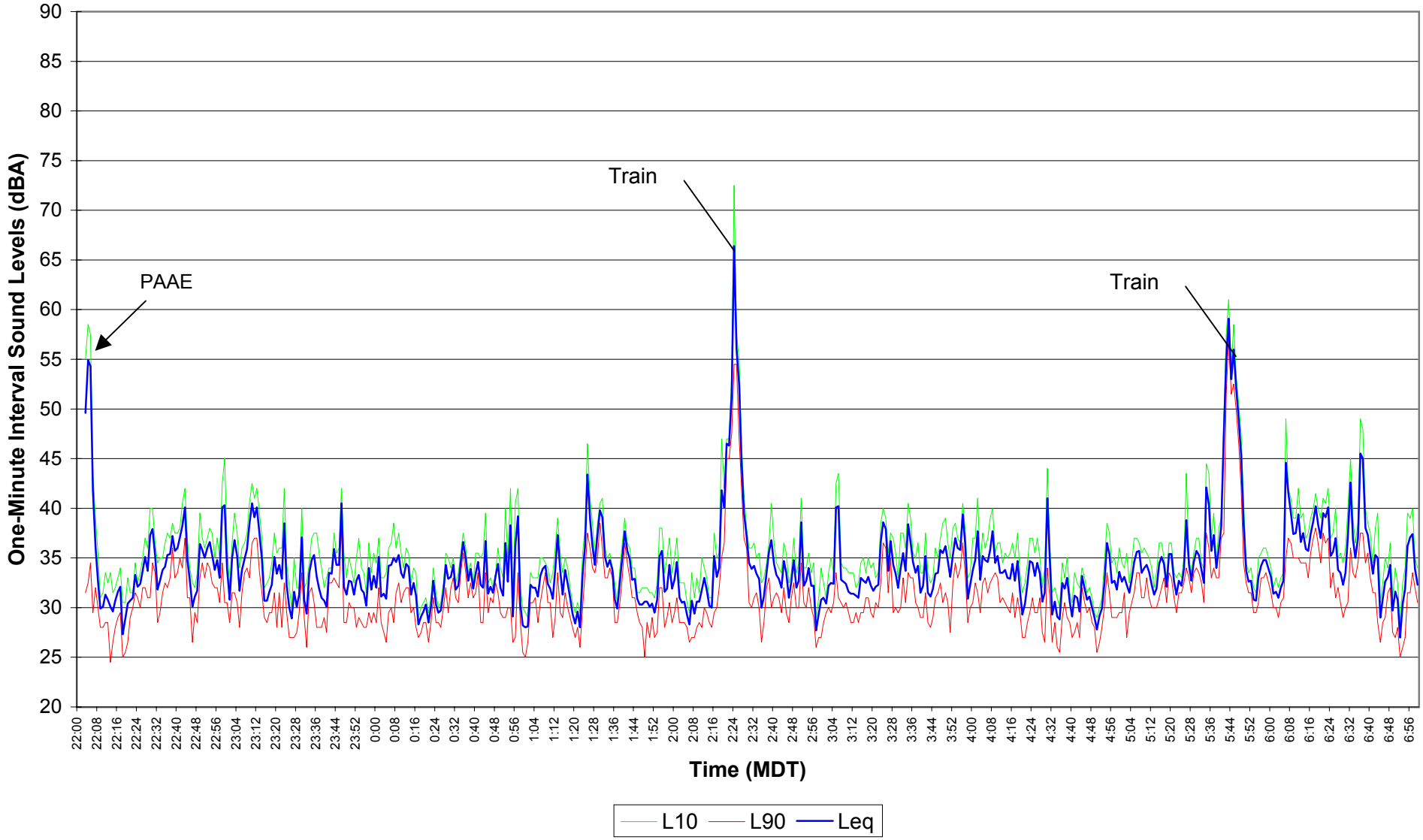


Figure E3.22
EnCana Rosebud
Site 3 Noise Survey
Nov. 30, 2004 07:00 - 14:29

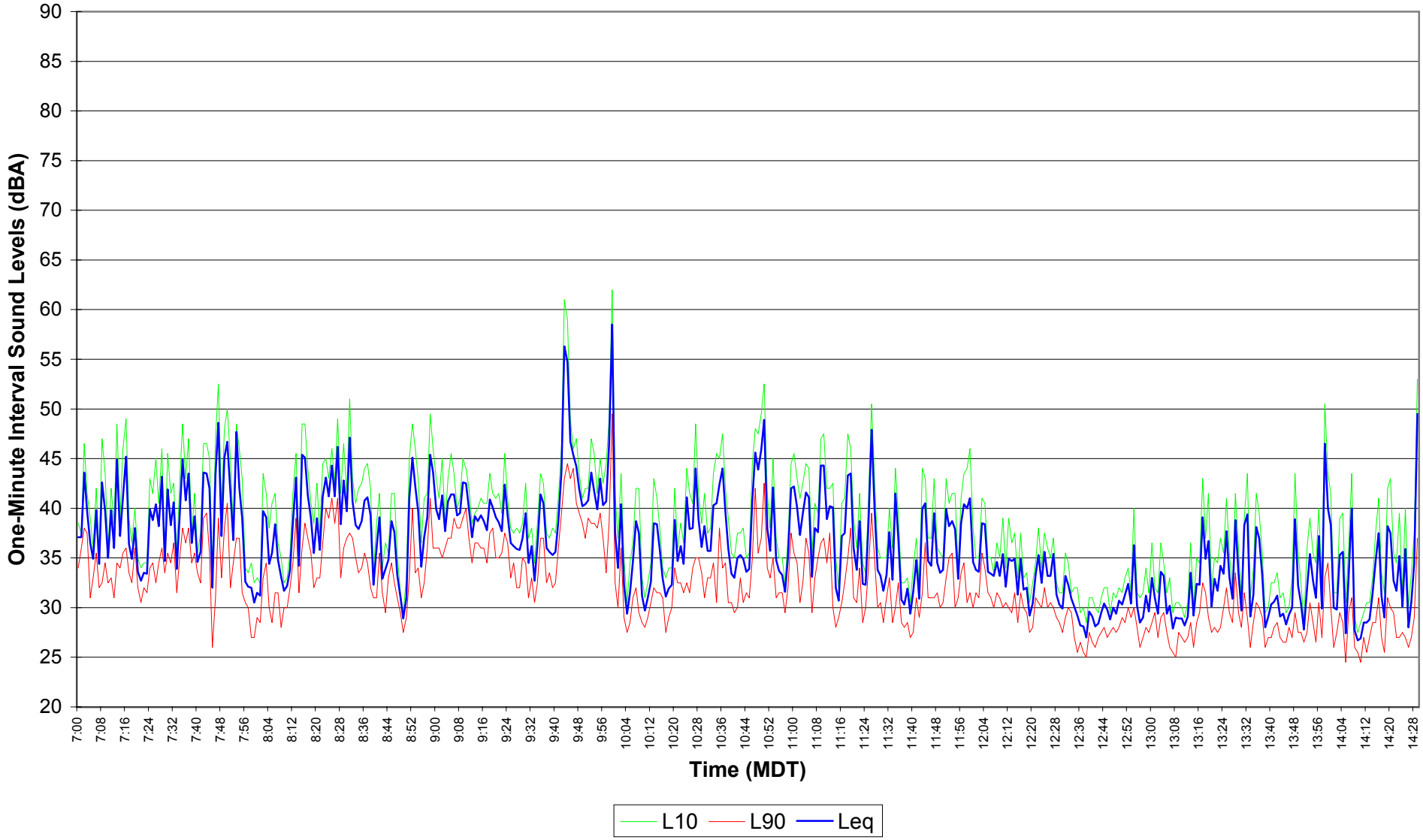


Figure E3.23
EnCana Rosebud
Site 3 Noise Survey
Nov. 30, 2004 14:30 - 21:59

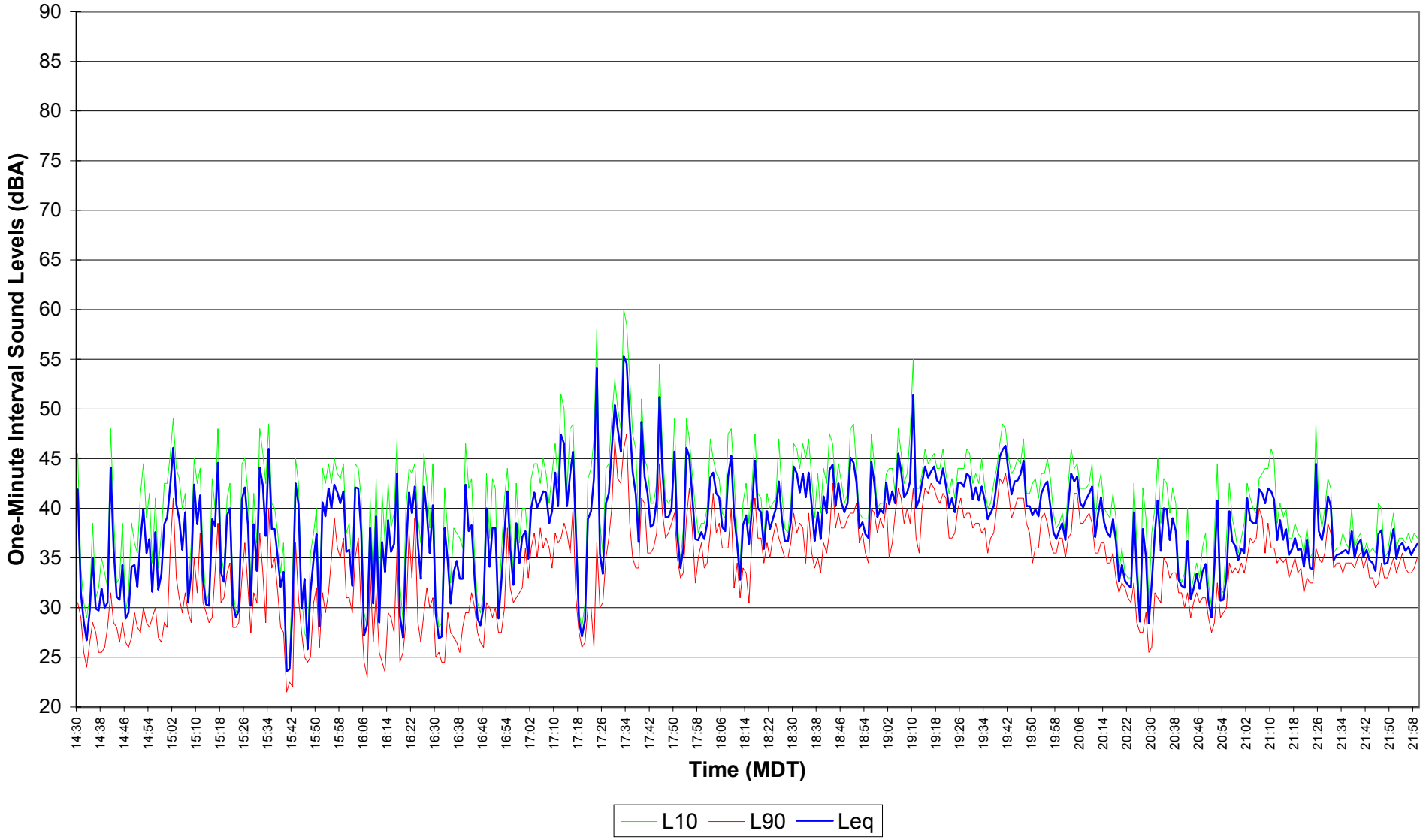


Figure E3.24
EnCana Rosebud
Site 3 Noise Survey
Nov. 30, 2004 - Dec. 01, 2004 22:00 - 06:59

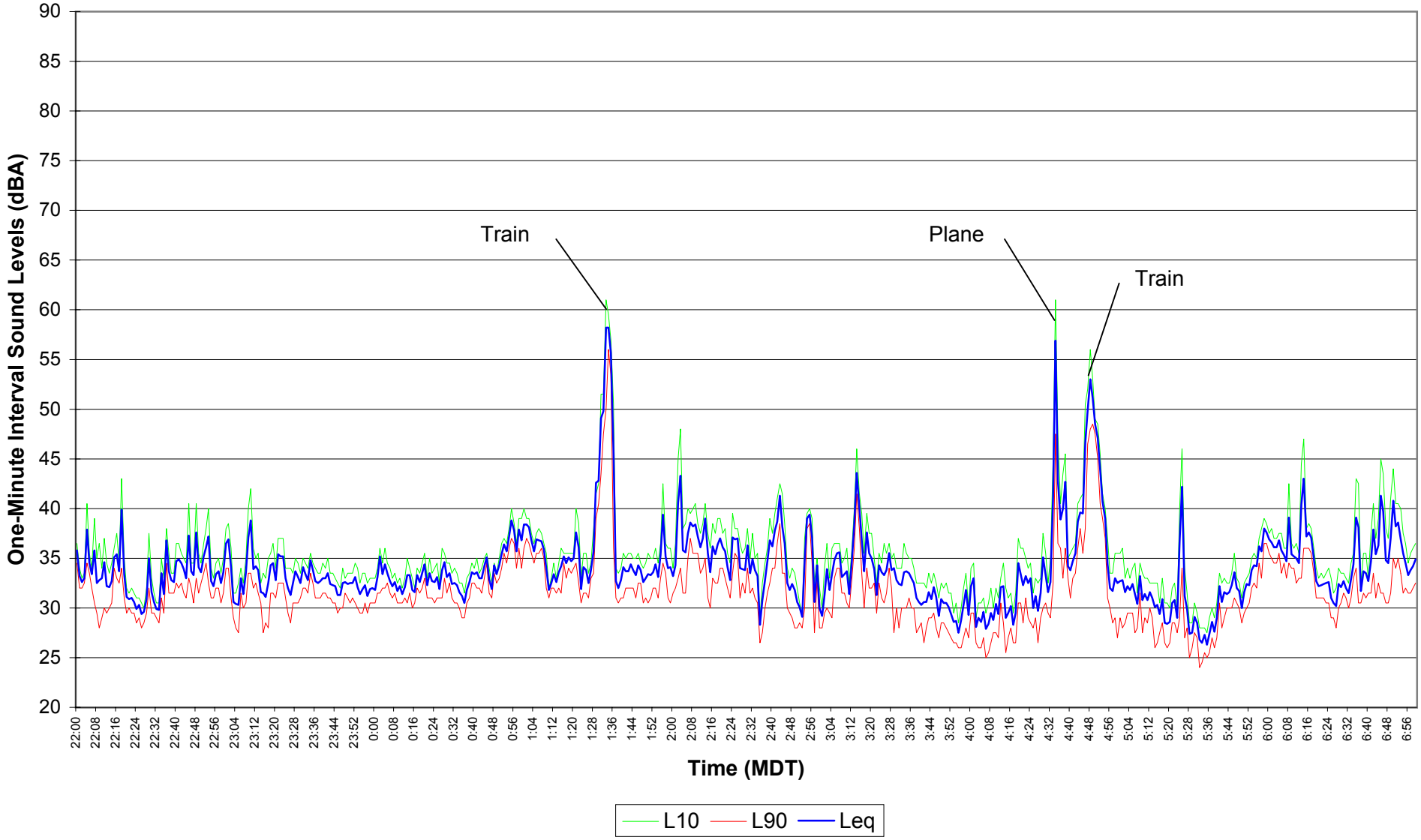


Figure E3.25
EnCana Rosebud
Site 3 Noise Survey
Dec. 01, 2004 07:00 - 14:29

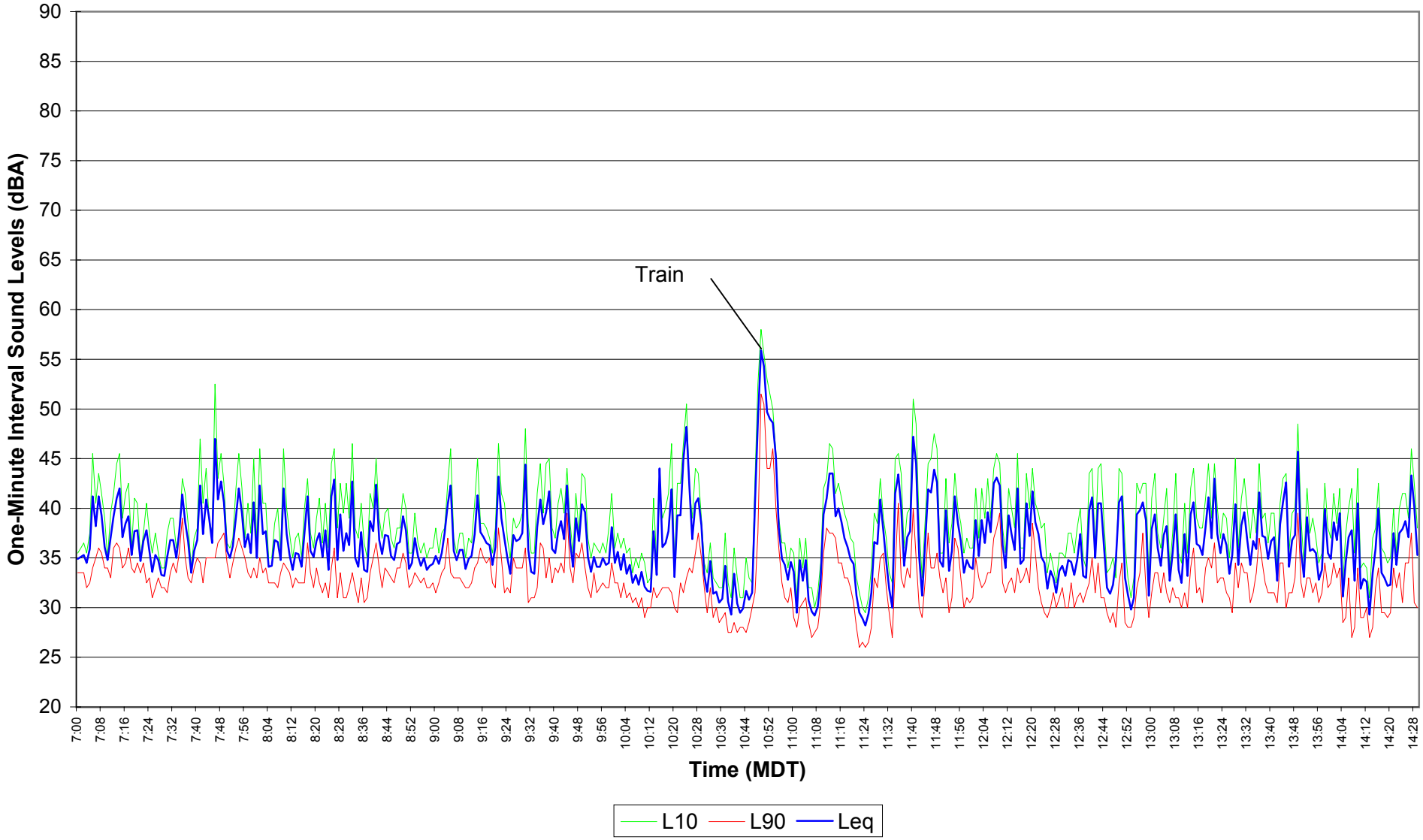


Figure E3.26
EnCana Rosebud
Site 3 Noise Survey
Dec. 01, 2004 14:30 - 21:59

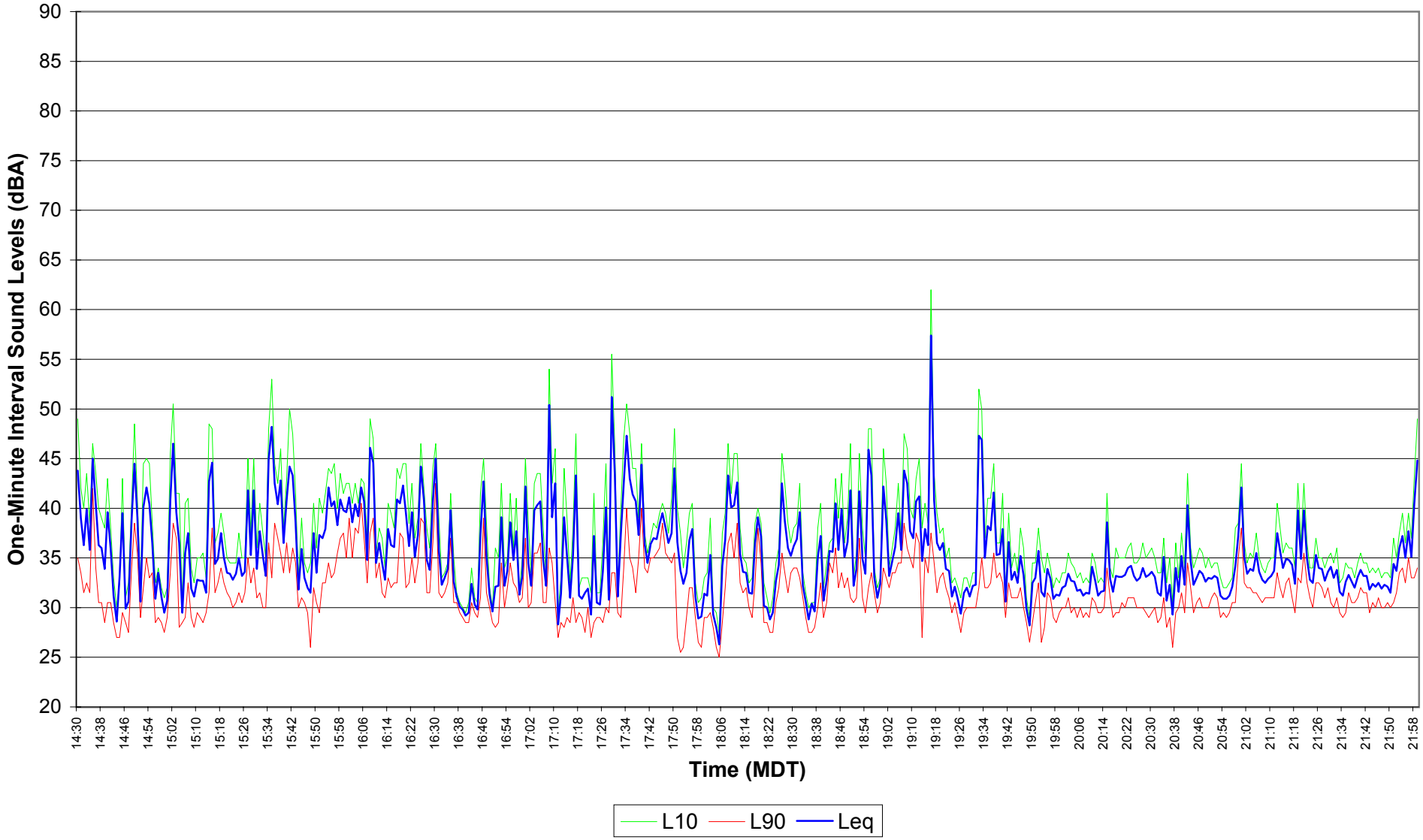


Figure E3.27
EnCana Rosebud
Site 3 Noise Survey
Dec. 01, 2004 - Dec. 02, 2004 22:00 - 06:59

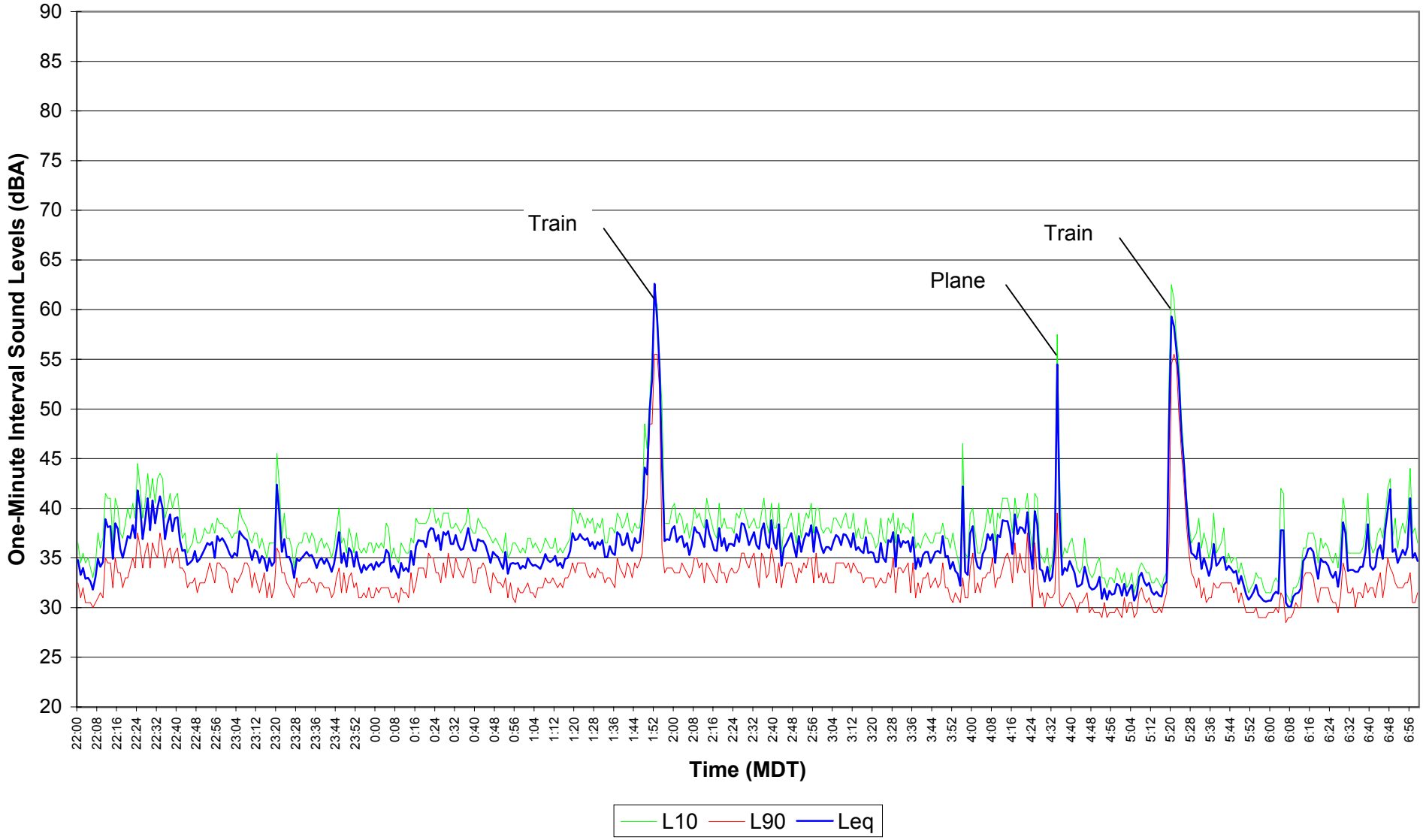


Figure E3.28
EnCana Rosebud
Site 3 Noise Survey
Dec. 02, 2004 07:00 - 14:29

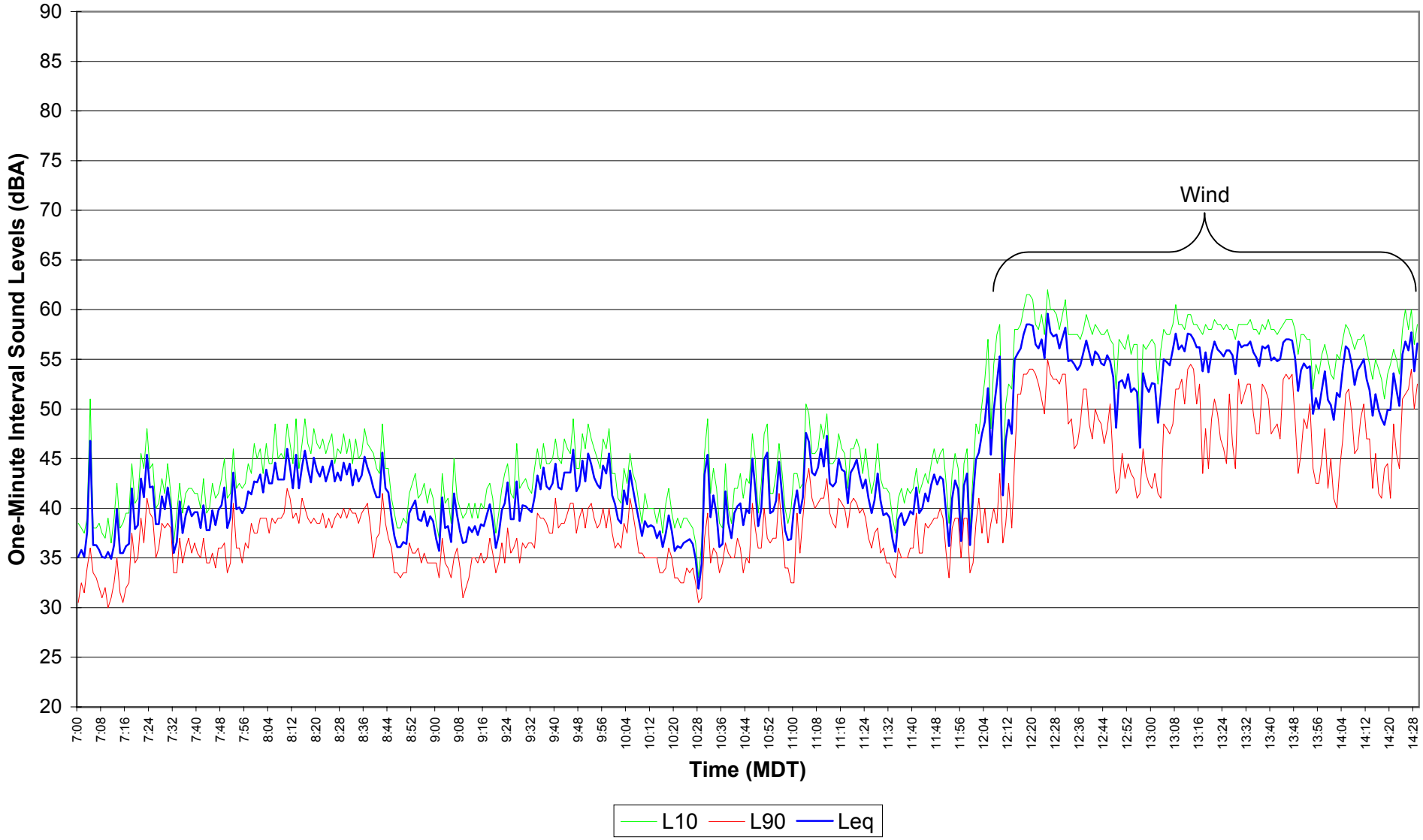


Figure E3.29
EnCana Rosebud
Site 3 Noise Survey
Dec. 02, 2004 14:30 - 21:59

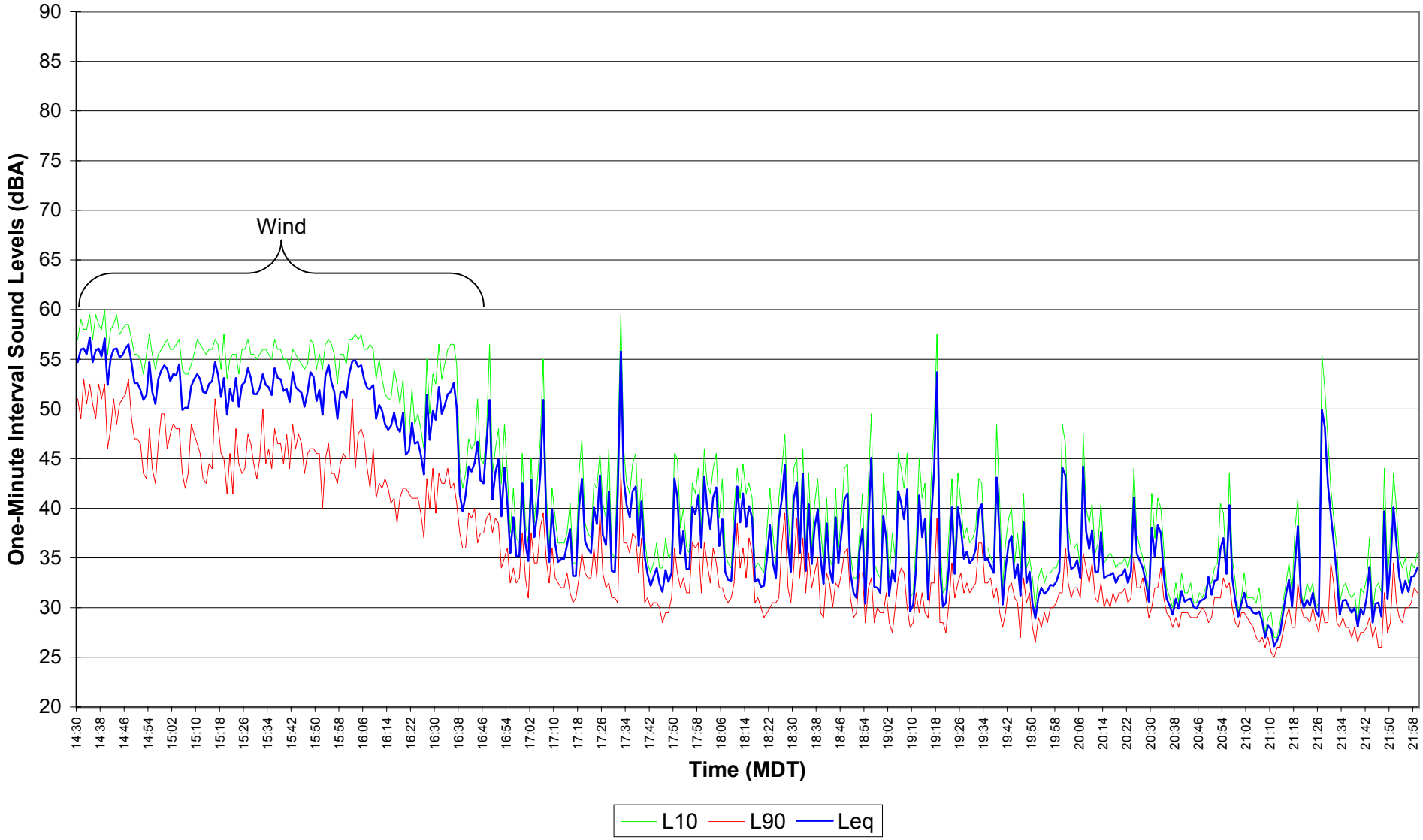


Figure E3.30
EnCana Rosebud
Site 3 Noise Survey
Dec. 02, 2004 - Dec. 03, 2004 22:00 - 06:59

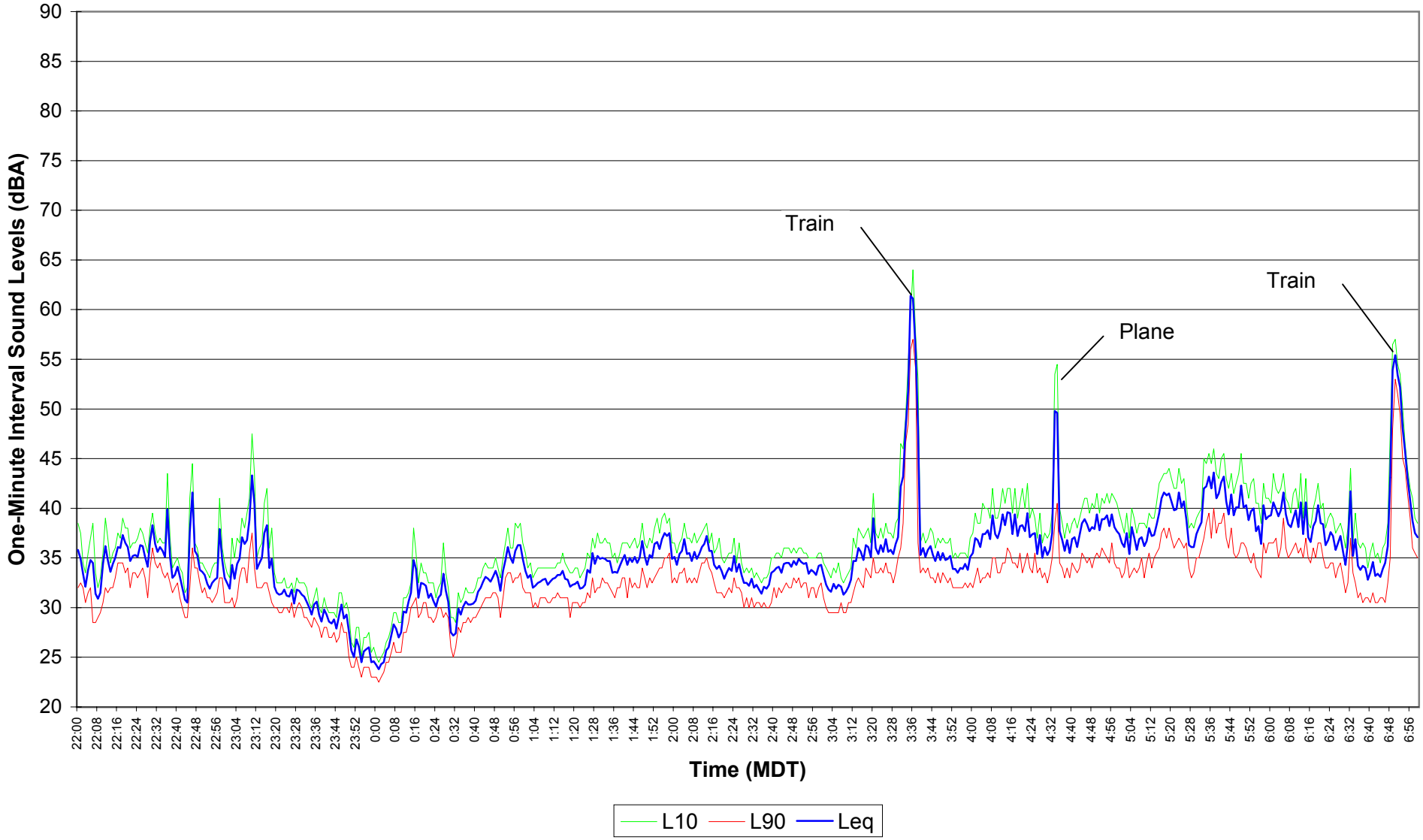


Figure E3.31

EnCana Rosebud

Site 3 Noise Survey

Dec. 03, 2004 07:00 - 14:29

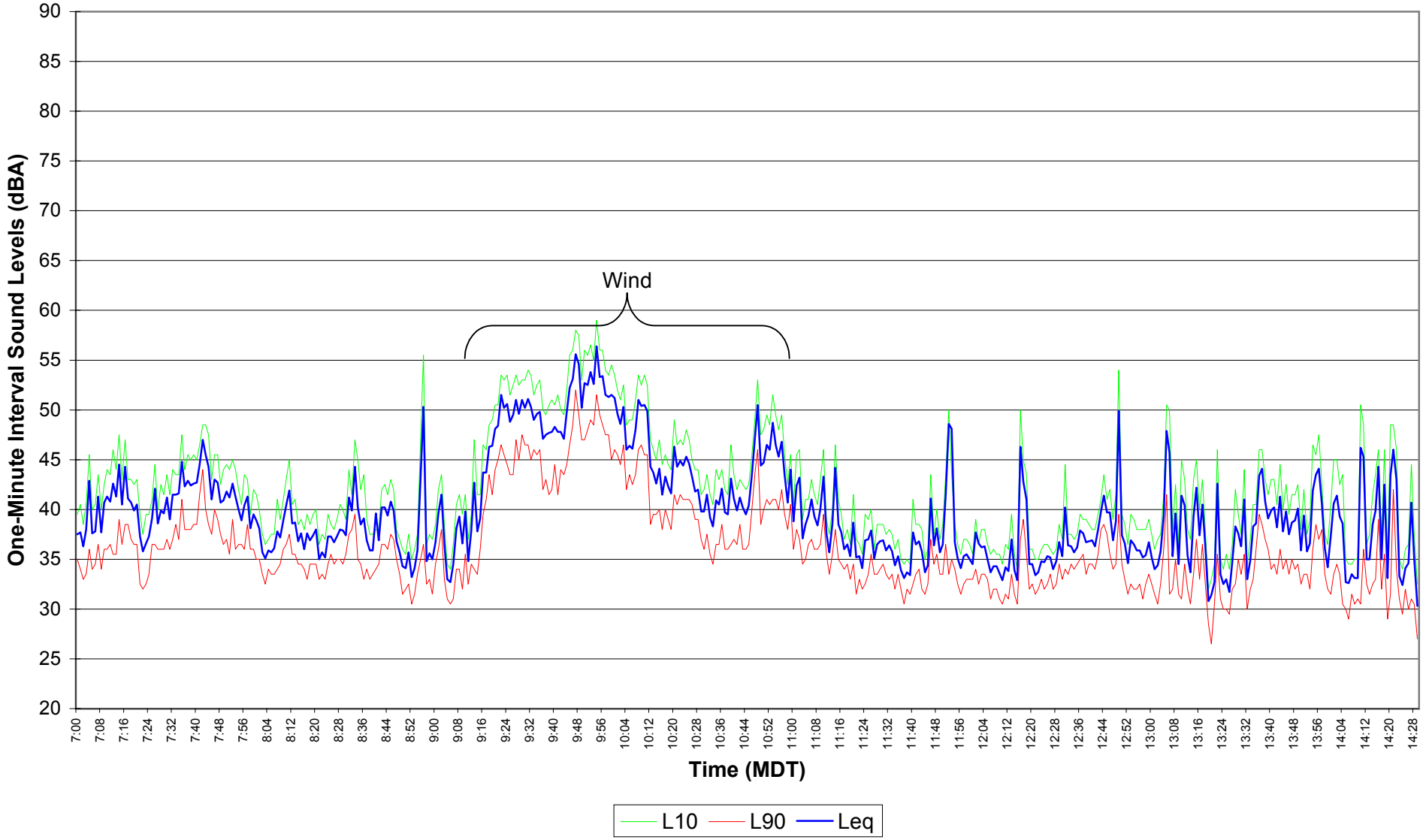


Figure E3.32
EnCana Rosebud
Site 3 Noise Survey
Dec. 03, 2004 14:30 - 21:59

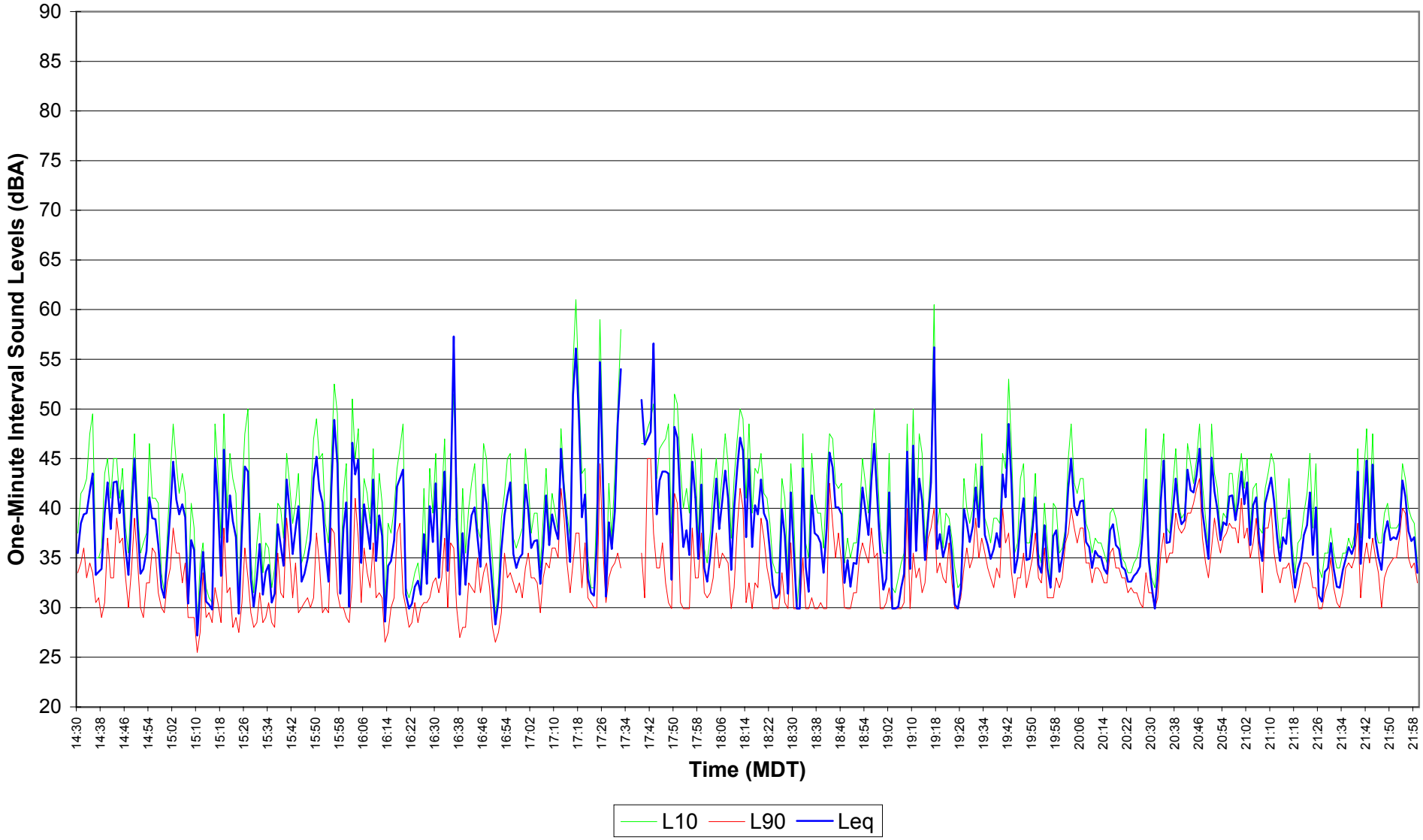


Figure E3.33
EnCana Rosebud
Site 3 Noise Survey
Dec. 03, 2004 - Dec. 04, 2004 22:00 - 06:59

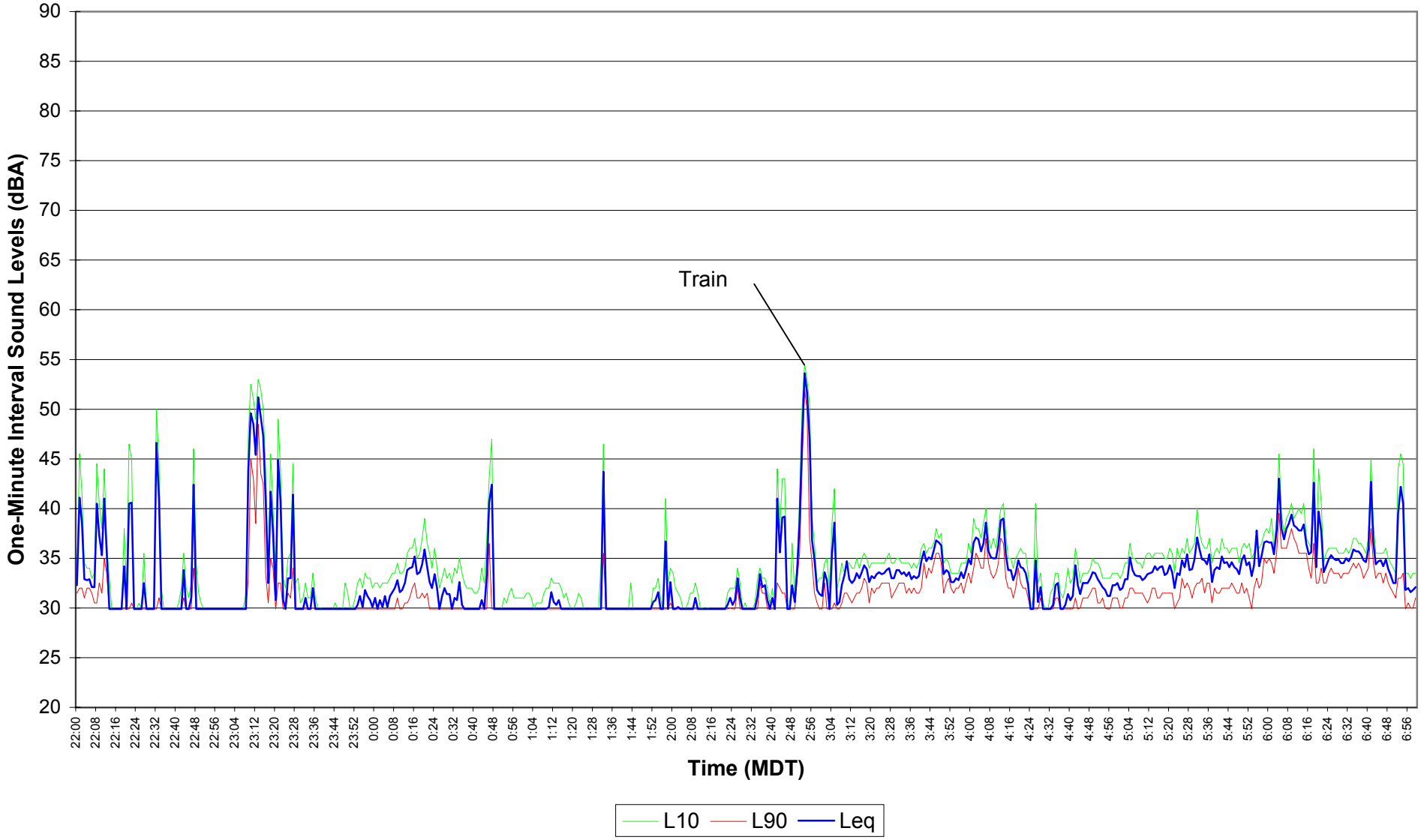


Figure E3.34
EnCana Rosebud
Site 3 Noise Survey
Dec. 04, 2004 07:00 - 14:29

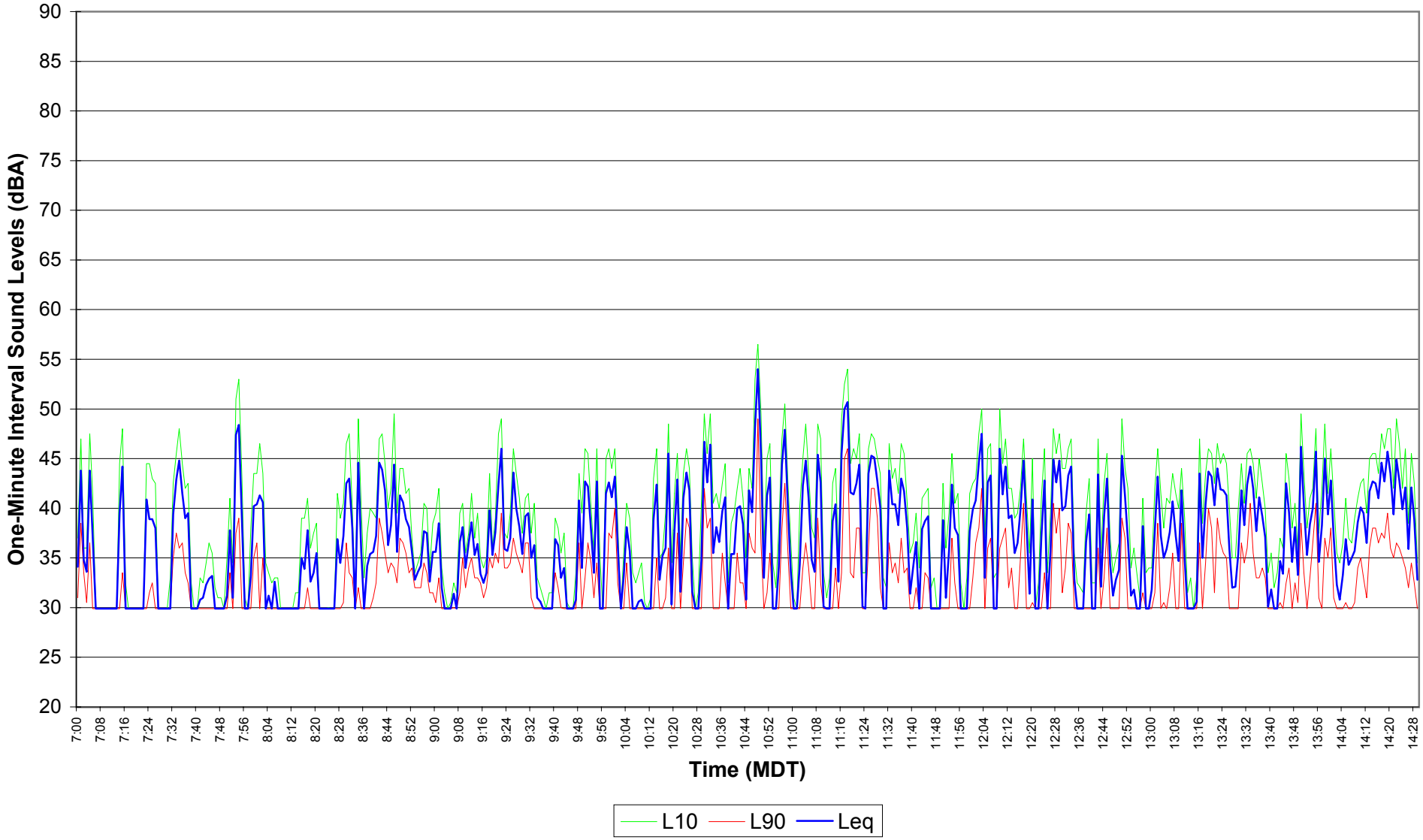


Figure E3.35
EnCana Rosebud
Site 3 Noise Survey
Dec. 04, 2004 14:30 - 21:59

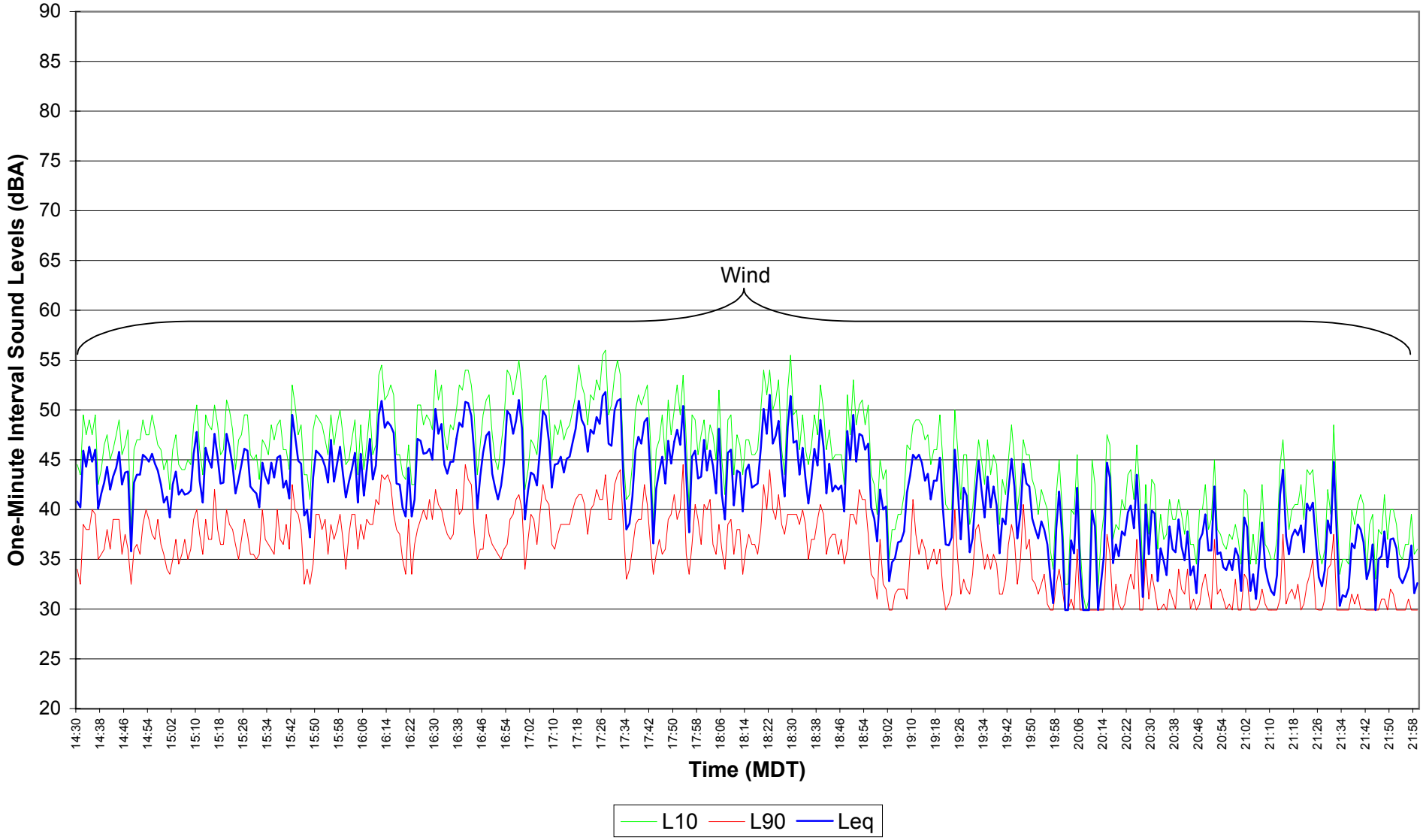


Figure E3.36
EnCana Rosebud
Site 3 Noise Survey
Dec. 04, 2004 - Dec. 05, 2004 22:00 - 06:59

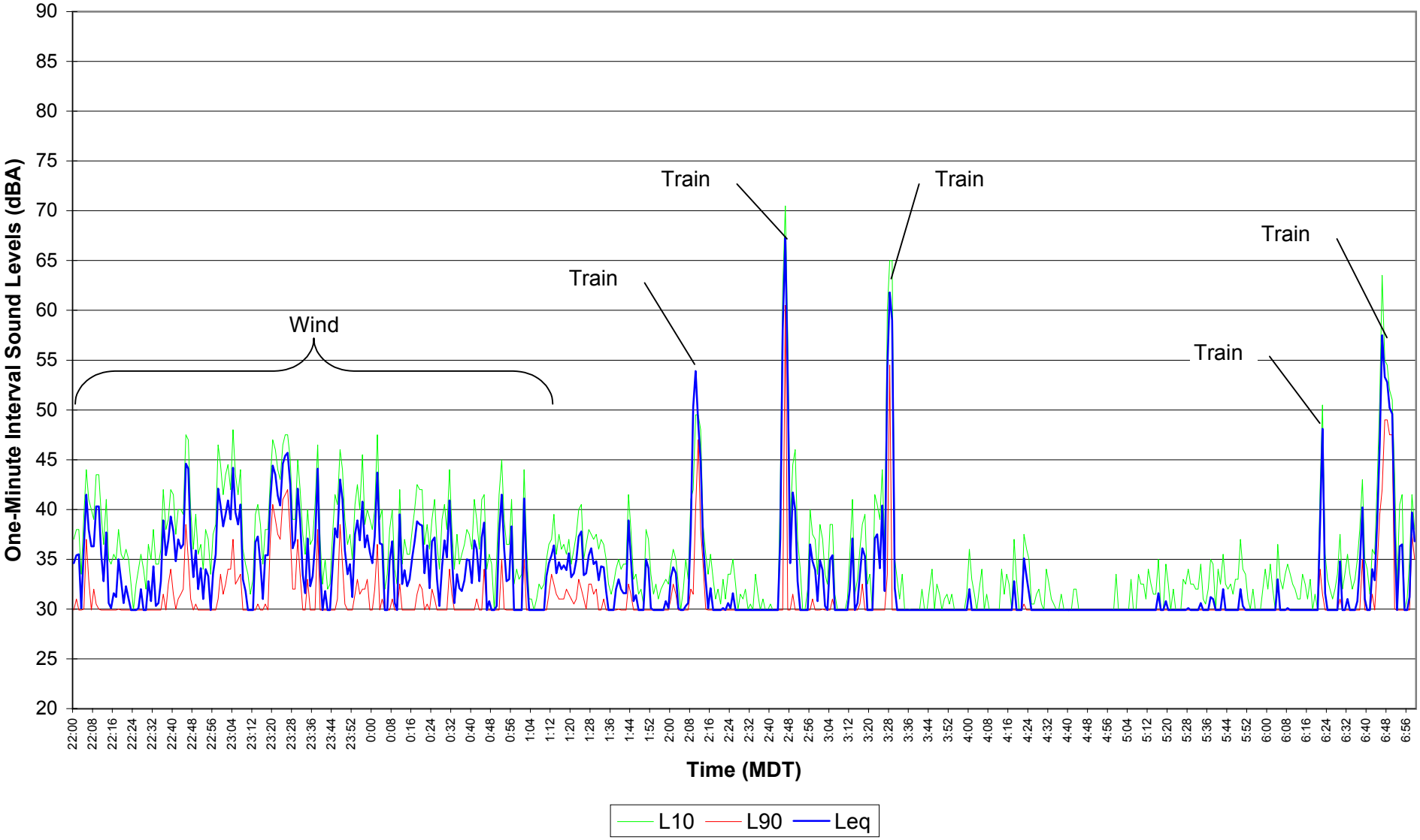


Figure E3.37
EnCana Rosebud
Site 3 Noise Survey
Dec. 05, 2004 07:00 - 14:29

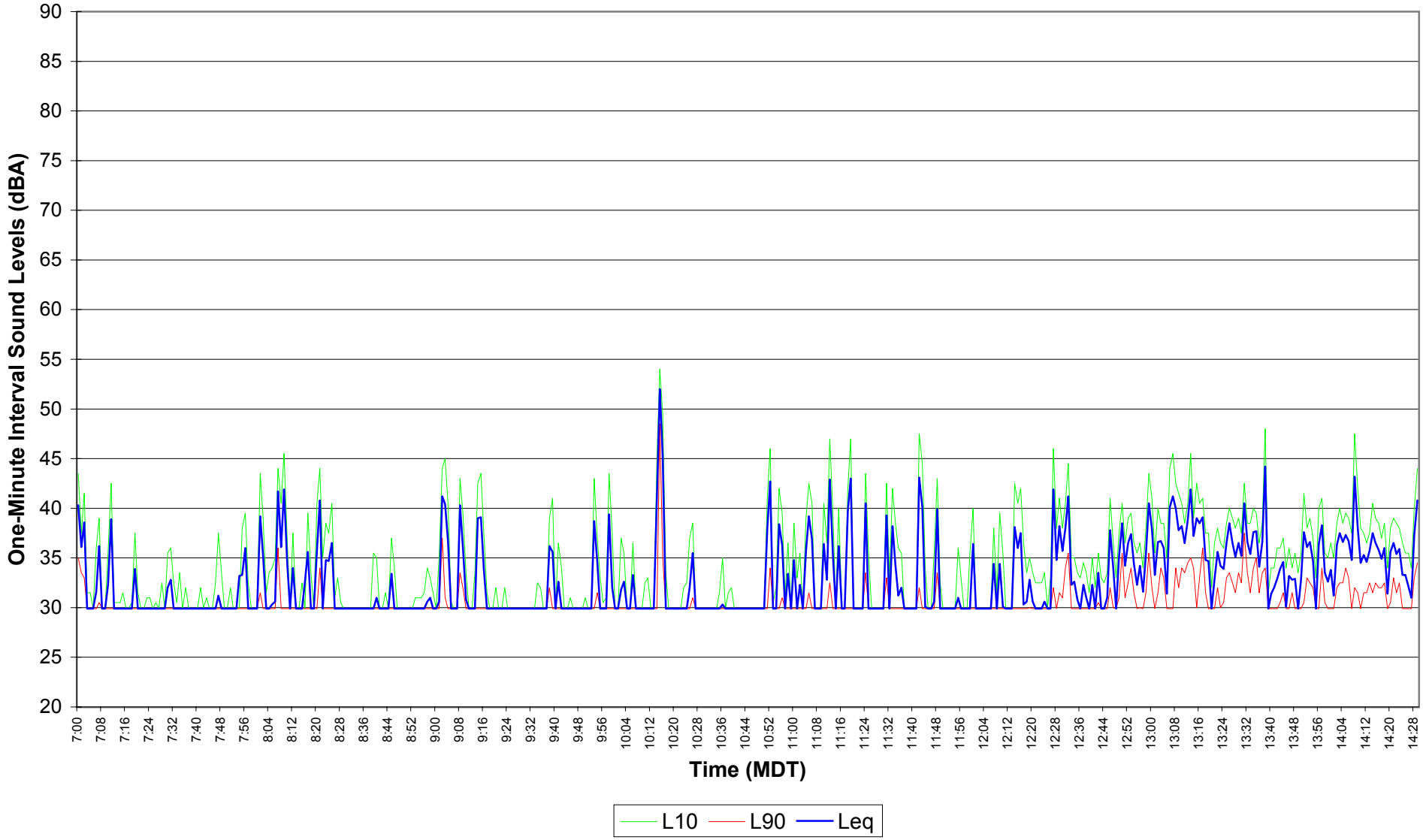


Figure E3.38
EnCana Rosebud
Site 3 Noise Survey
Dec. 05, 2004 14:30 - 21:59

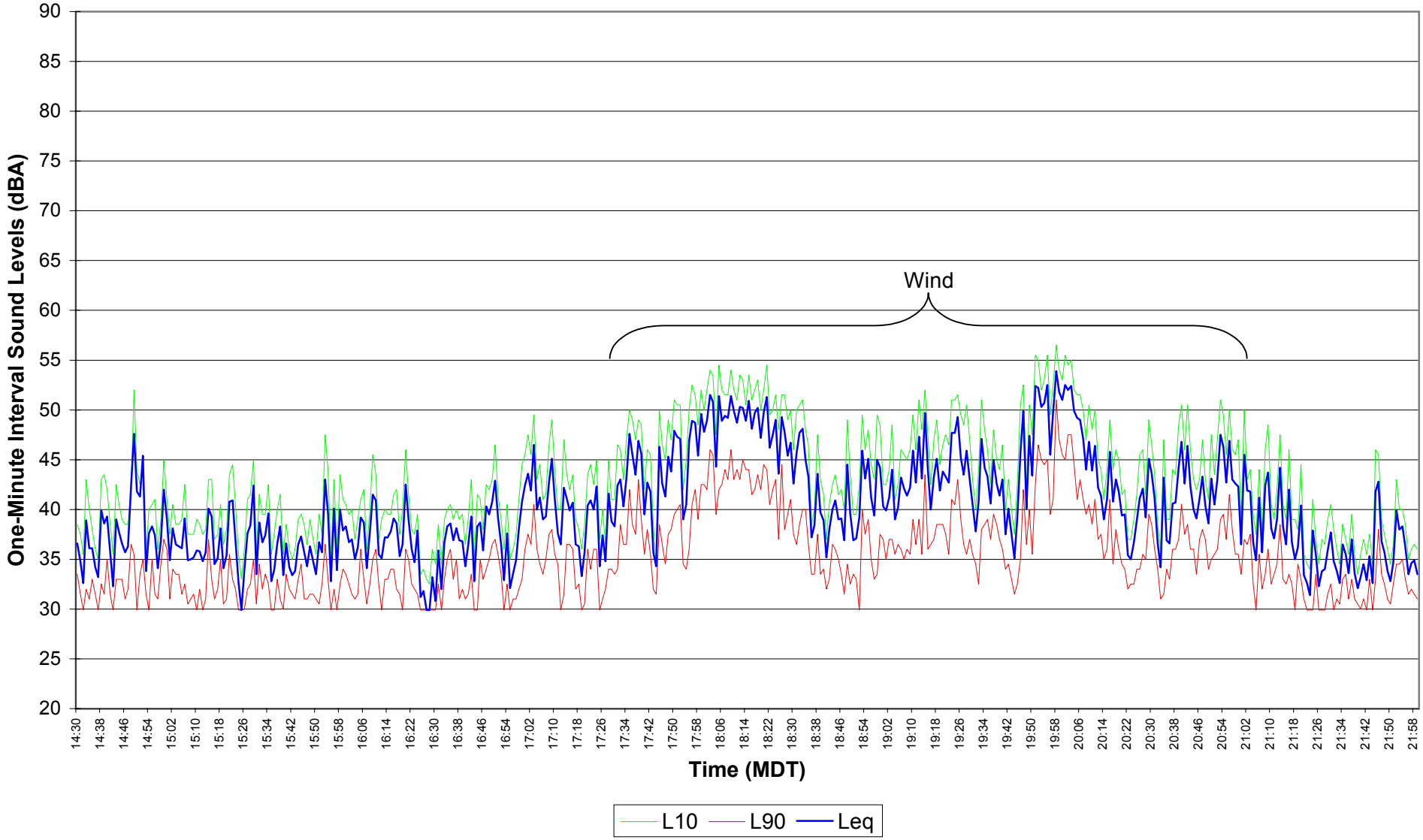


Figure E3.39
EnCana Rosebud
Site 3 Noise Survey
Dec. 05, 2004 - Dec. 06, 2004 22:00 - 06:59

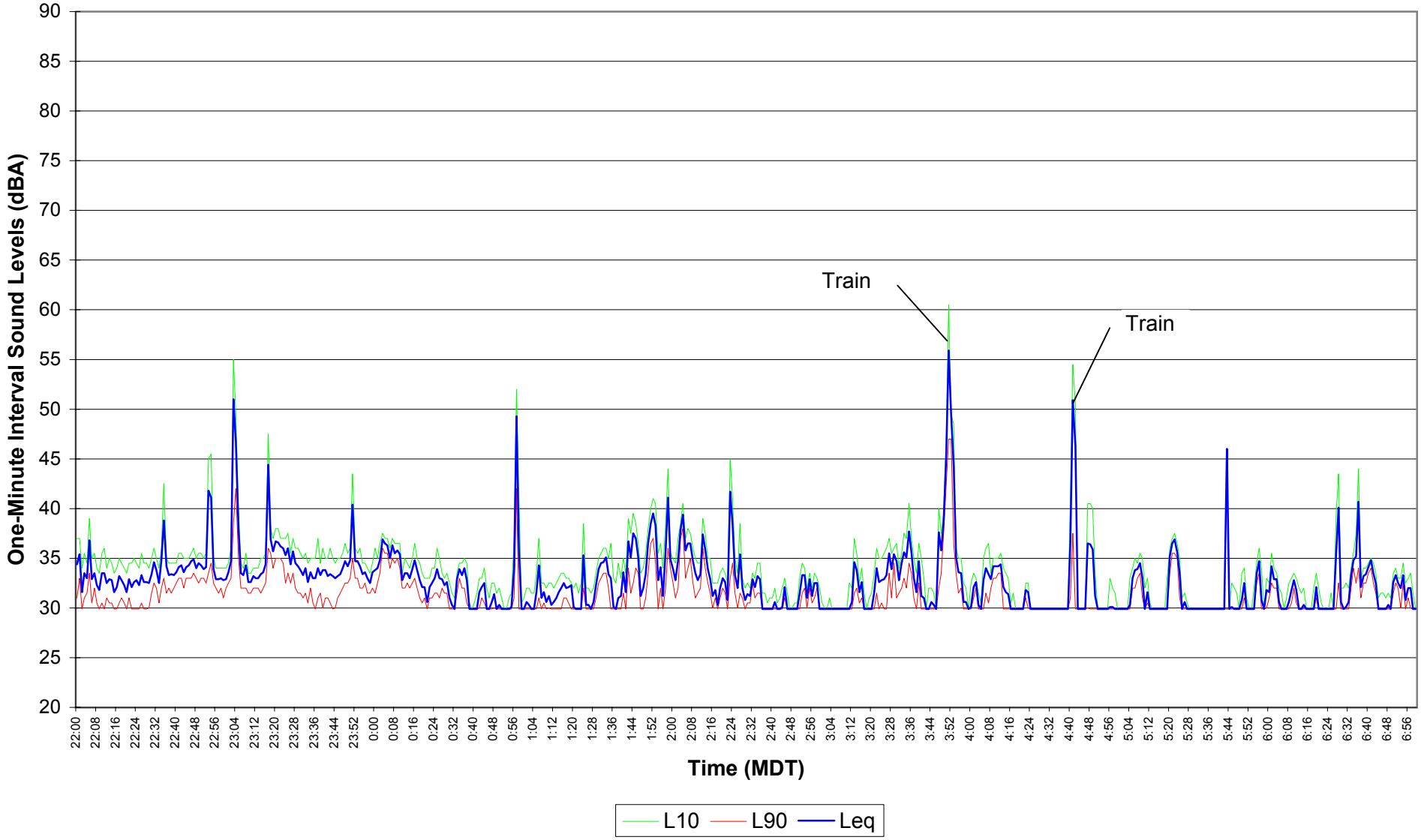


Figure E3.40
EnCana Rosebud
Site 3 Noise Survey
Dec. 06, 2004 07:00 - 14:29

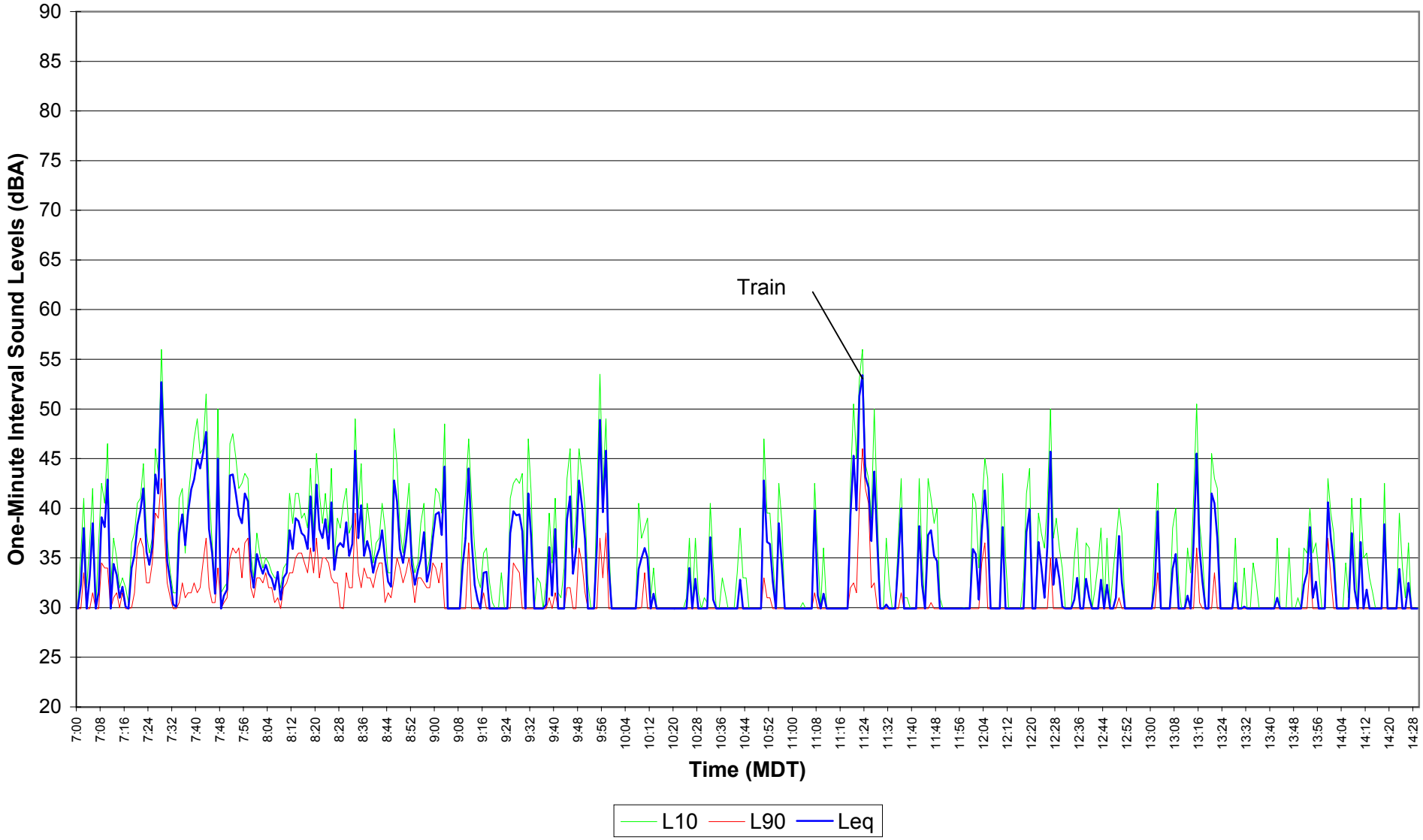


Figure E3.41
EnCana Rosebud
Site 3 Noise Survey
Dec. 06, 2004 14:30 - 21:59

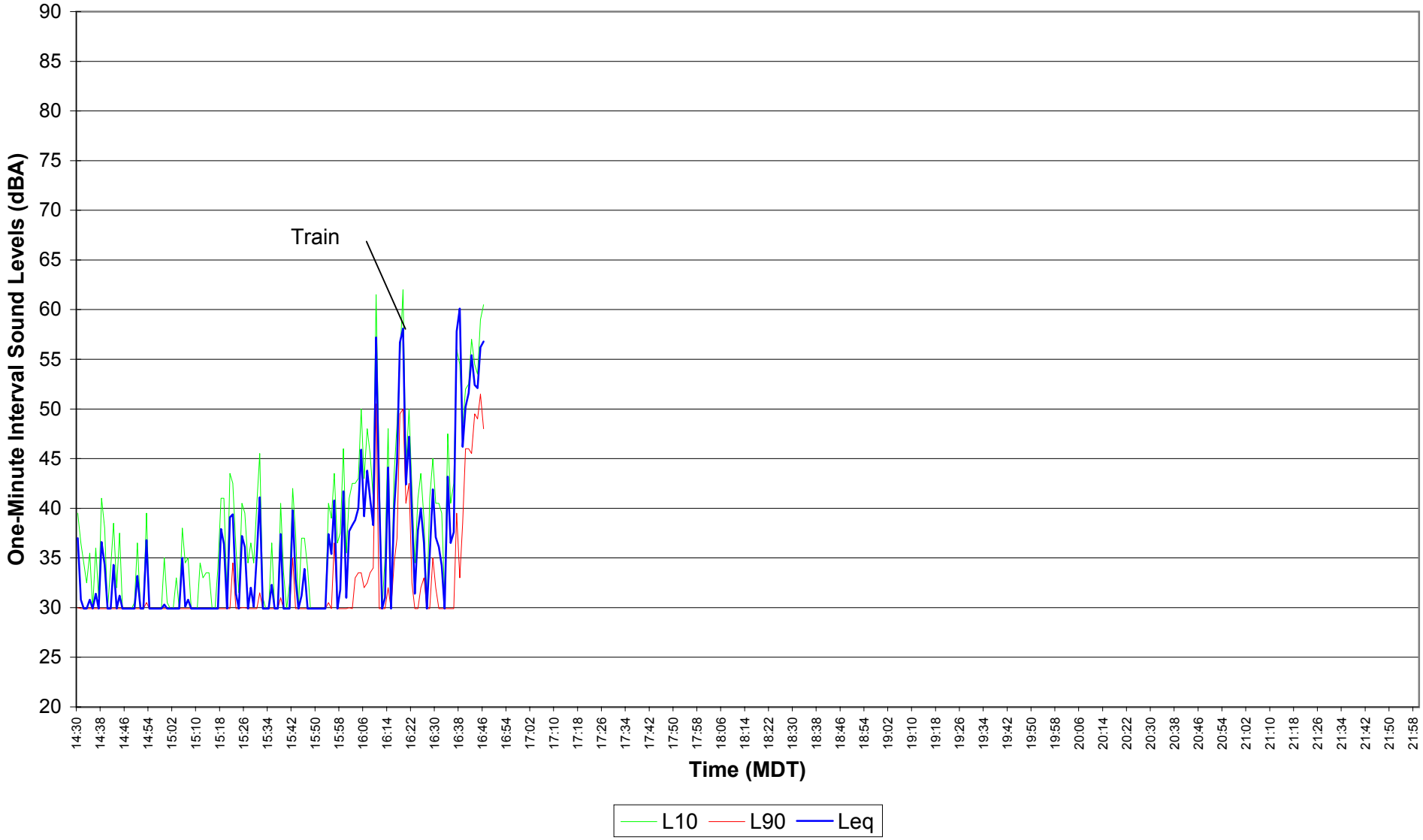


Figure E3.46

EnCana Rosebud

Site 3 Noise Survey

Dec. 08, 2004 07:00 - 14:29

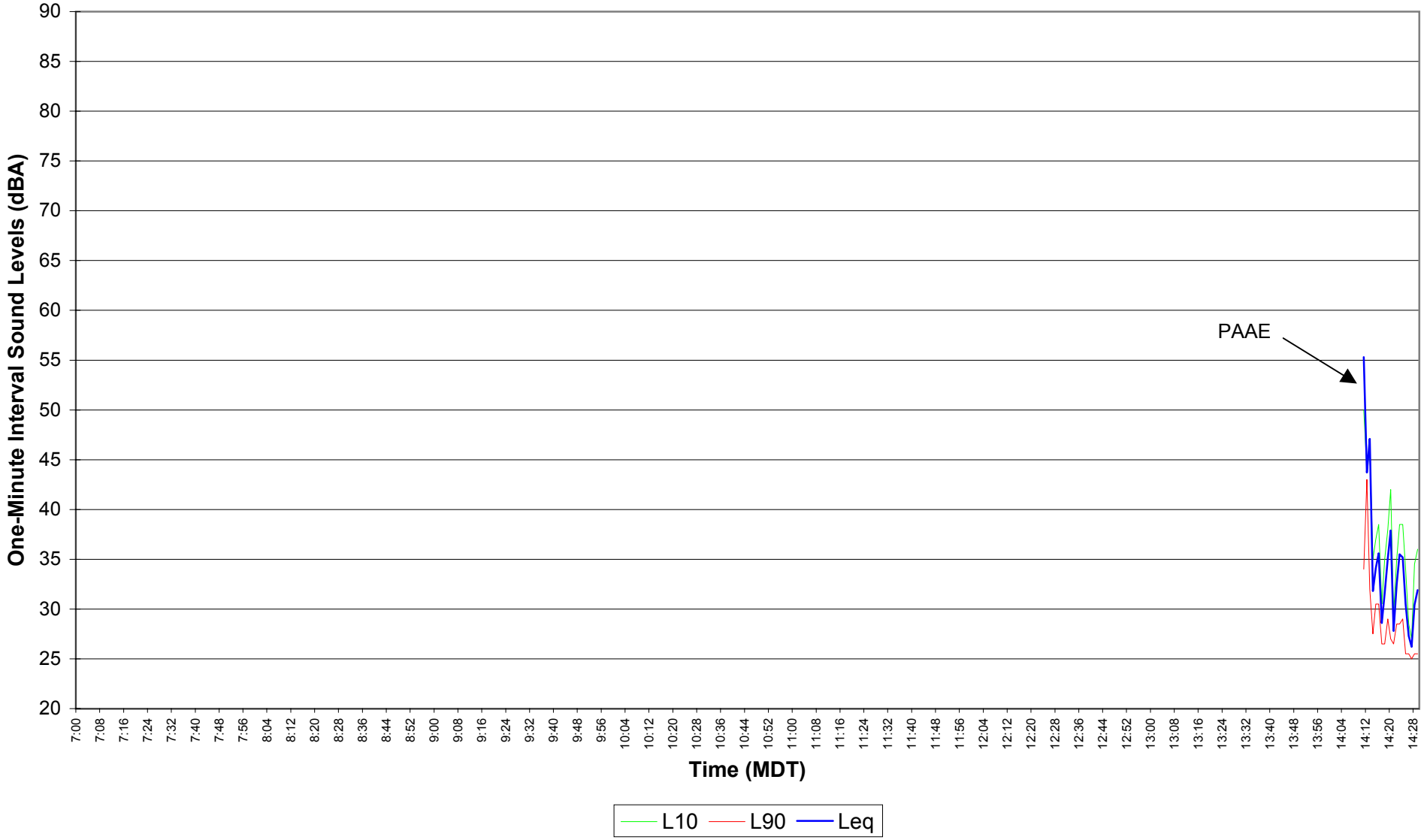


Figure E3.47
EnCana Rosebud
Site 3 Noise Survey
Dec. 08, 2004 14:30 - 21:59

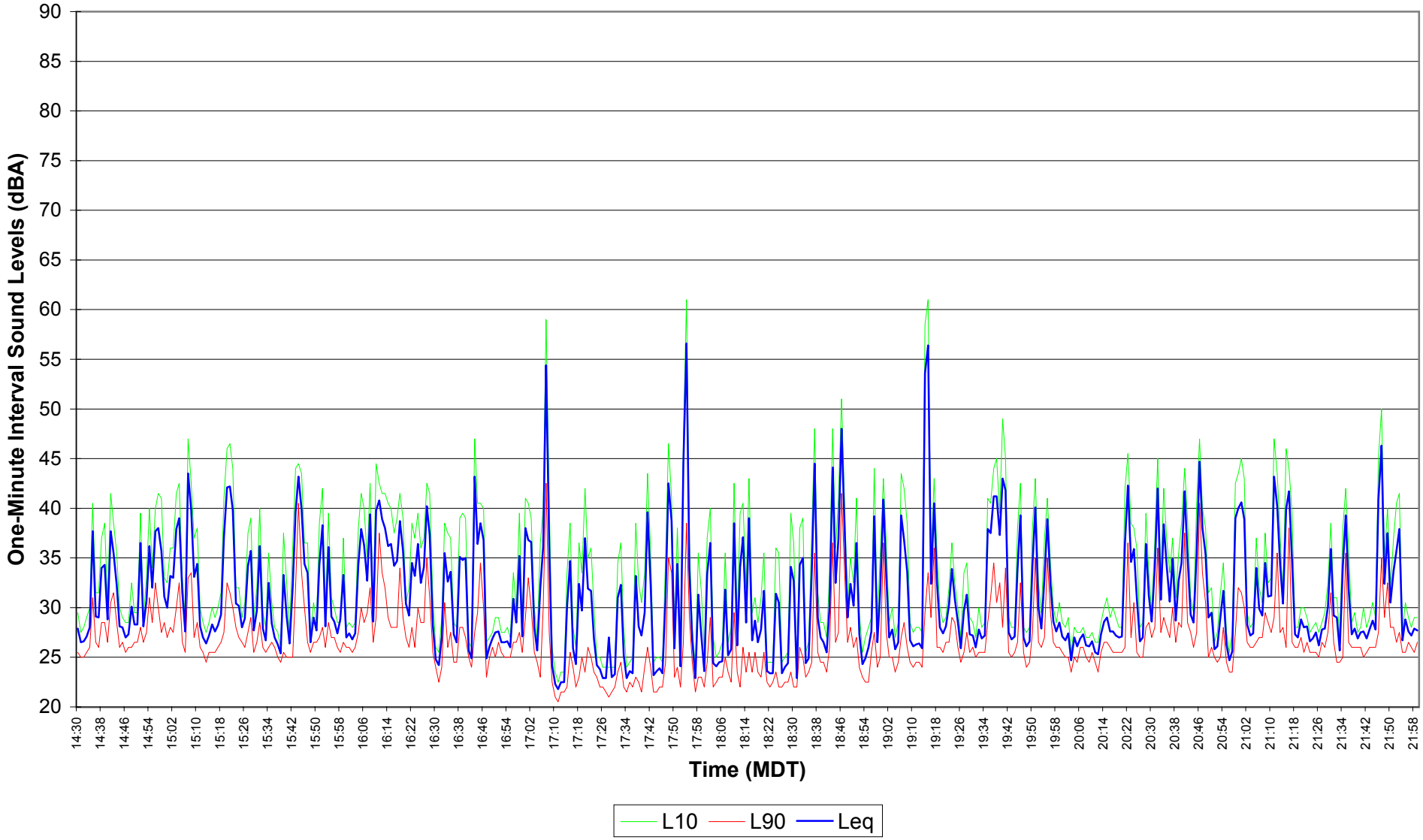


Figure E3.48
EnCana Rosebud
Site 3 Noise Survey
Dec. 08, 2004 - Dec. 09, 2004 22:00 - 06:59

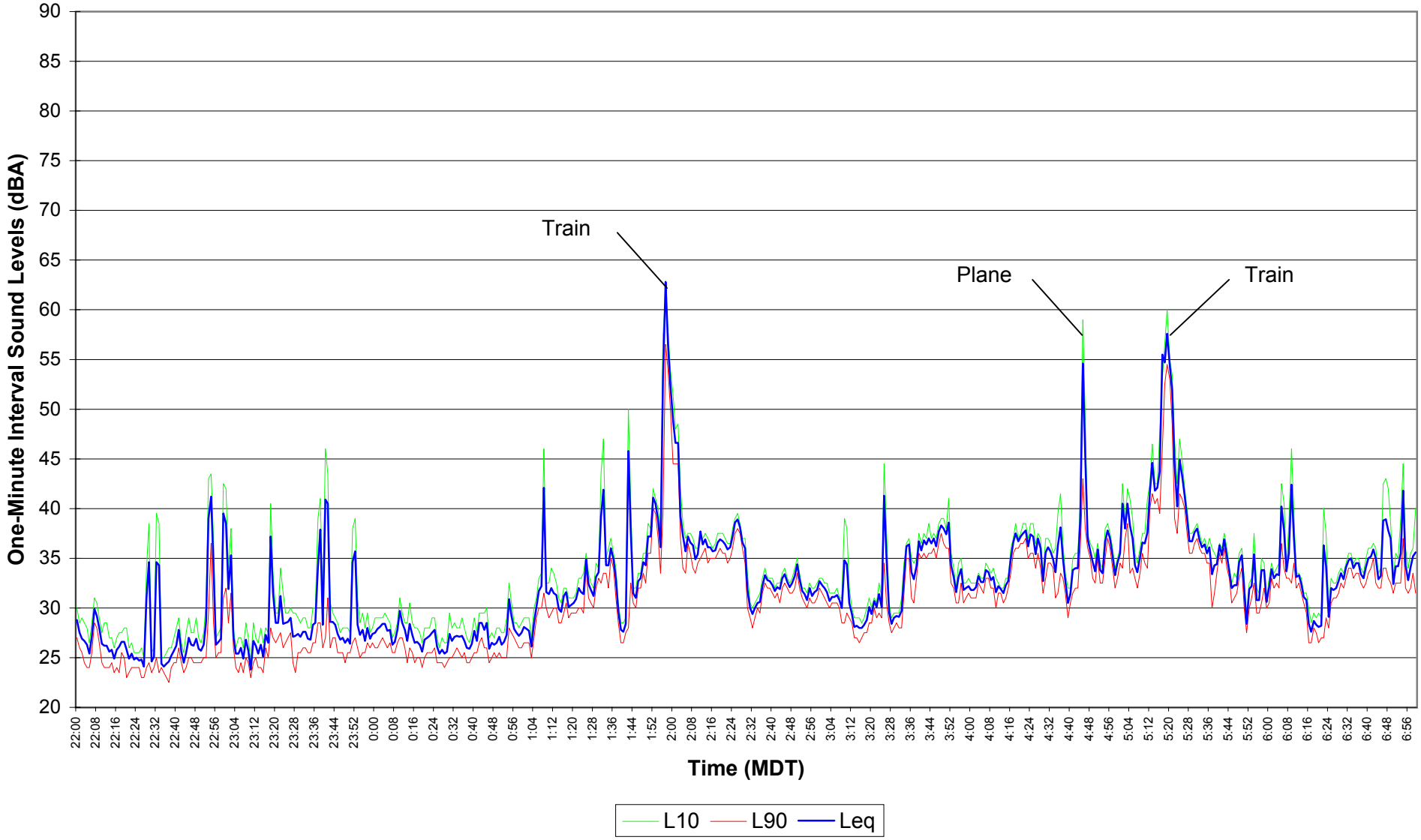


Figure E3.49
EnCana Rosebud
Site 3 Noise Survey
Dec. 09, 2004 07:00 - 14:29

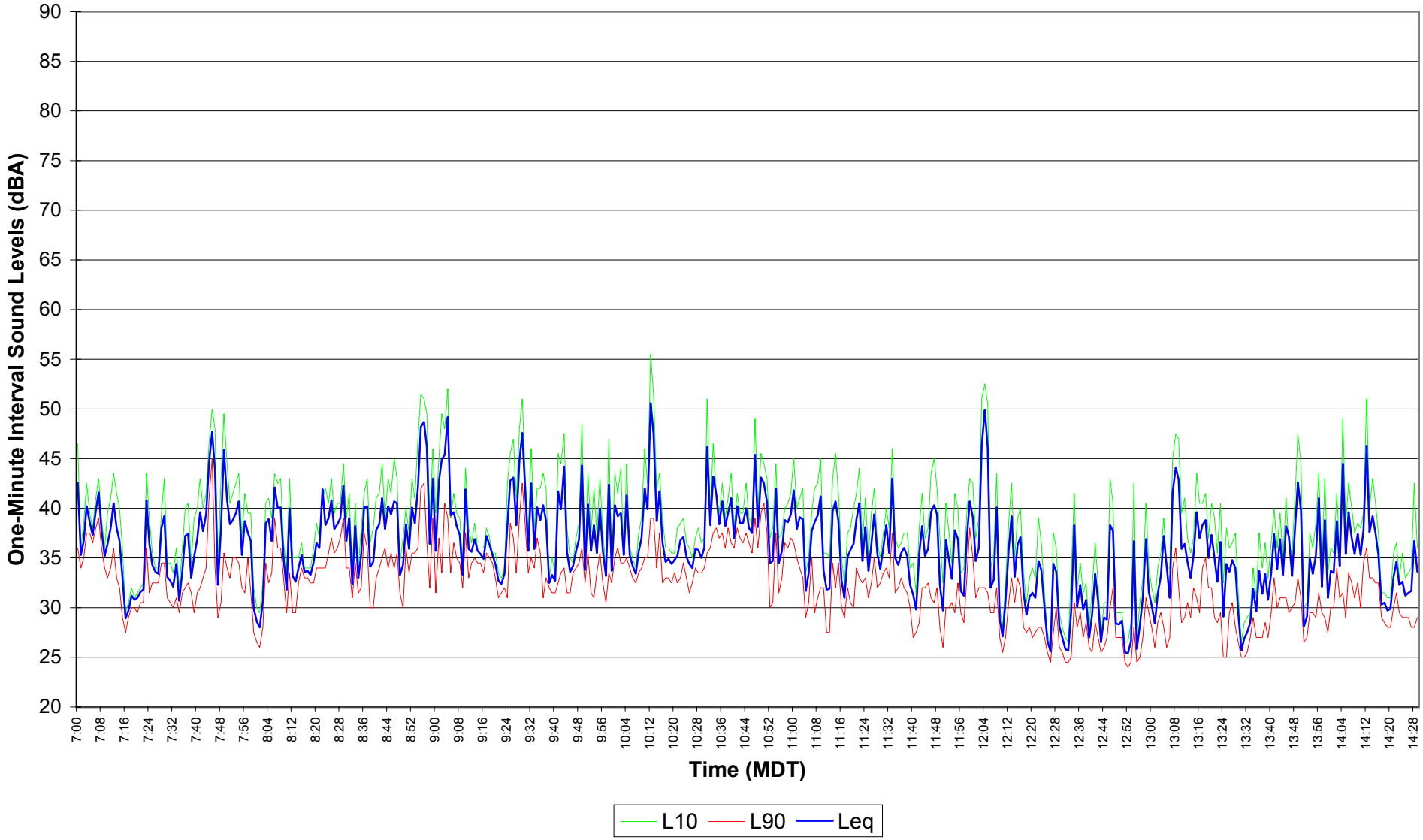


Figure E3.50
EnCana Rosebud
Site 3 Noise Survey
Dec. 09, 2004 14:30 - 21:59

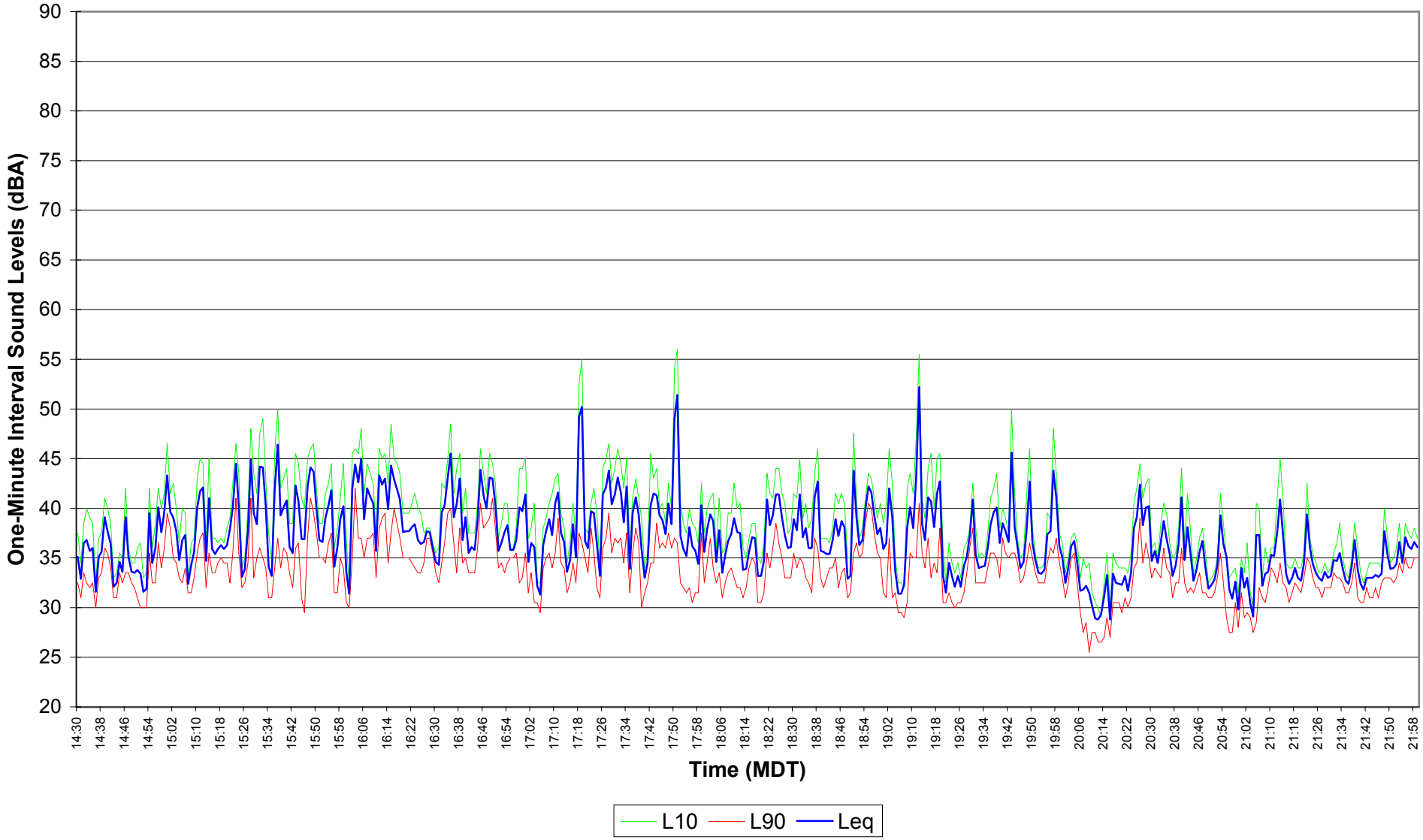


Figure E3.51
EnCana Rosebud
Site 3 Noise Survey
Dec. 09, 2004 - Dec. 10, 2004 22:00 - 06:59

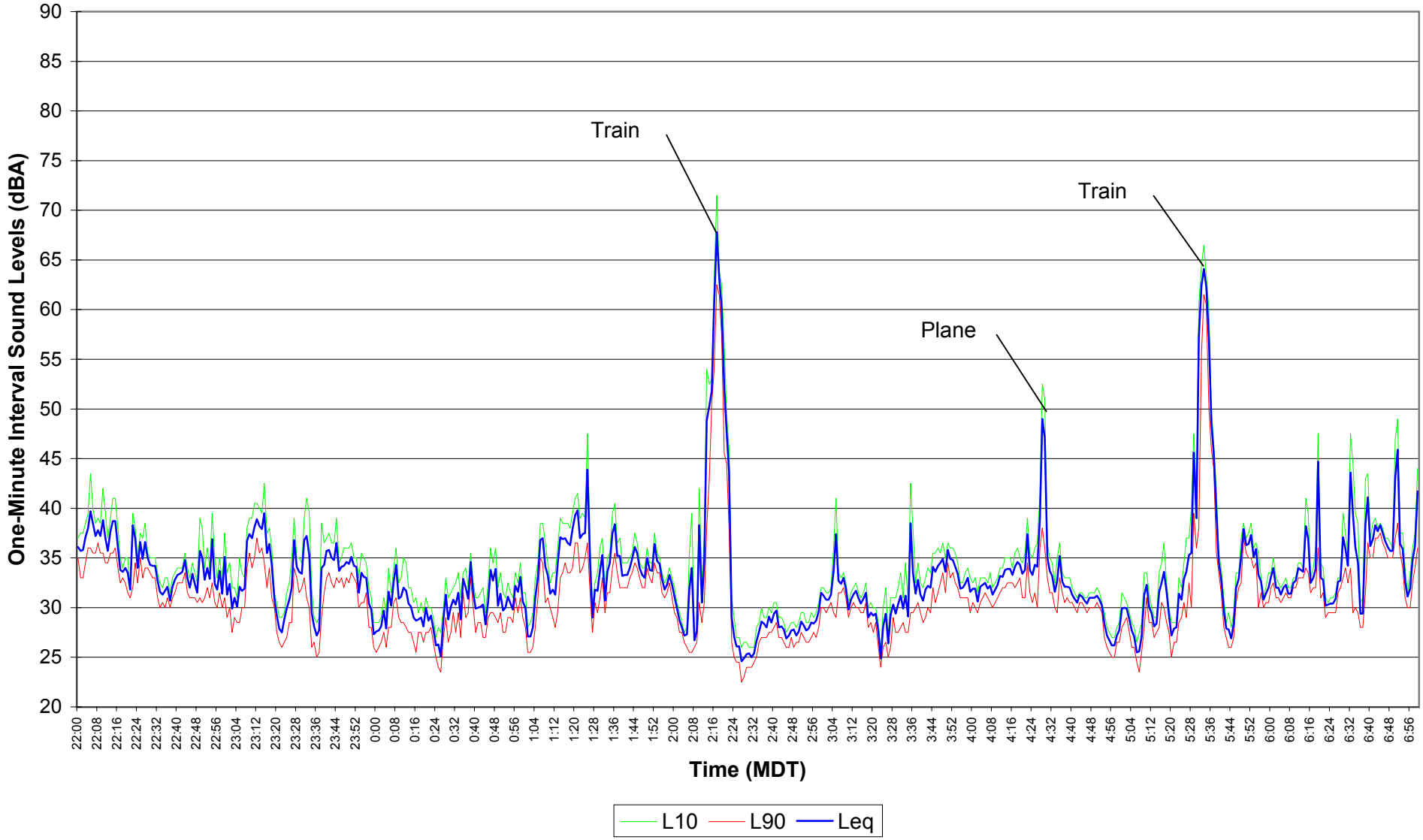


Figure E3.52
EnCana Rosebud
Site 3 Noise Survey
Dec. 10, 2004 07:00 - 14:29

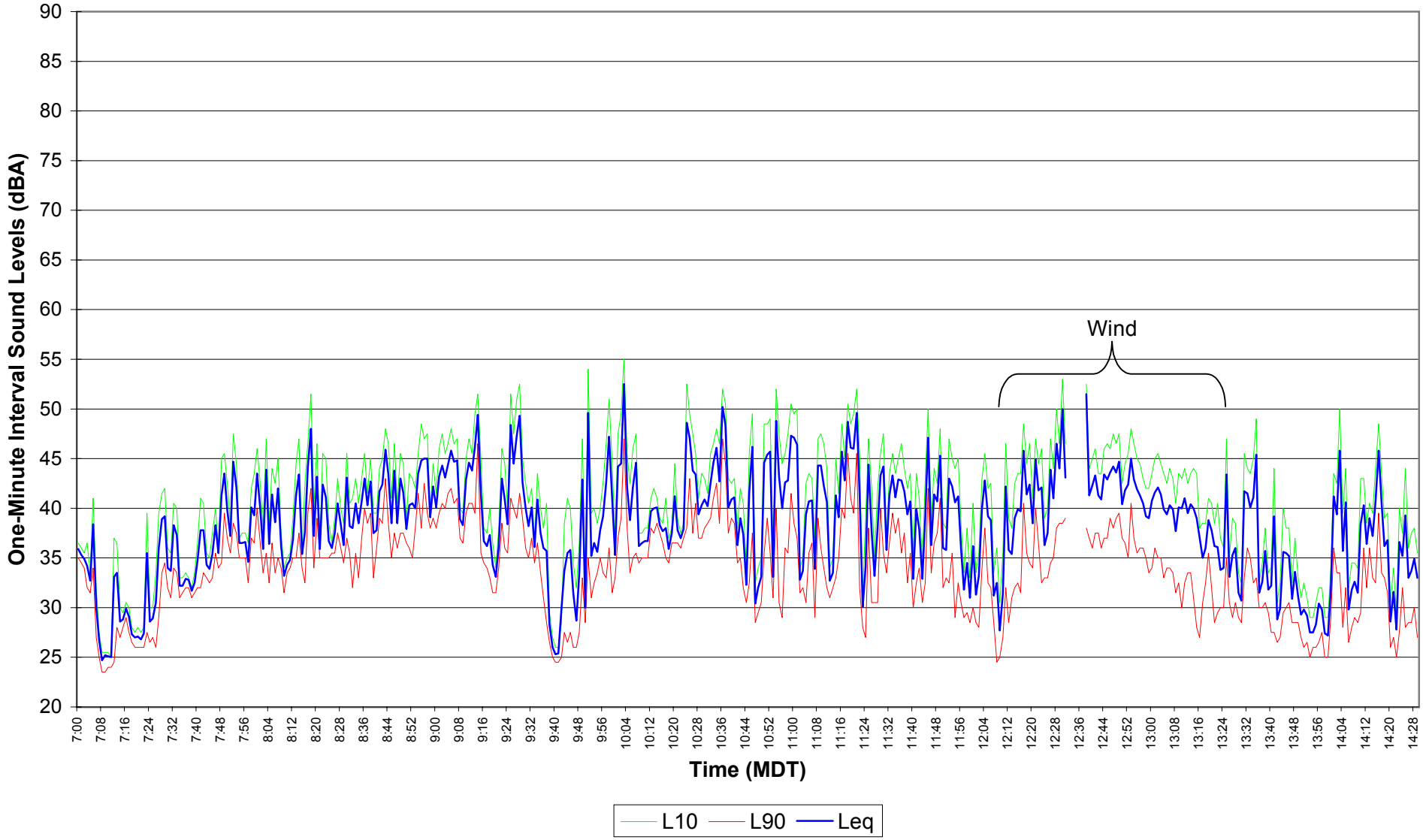


Figure E3.53
EnCana Rosebud
Site 3 Noise Survey
Dec. 10, 2004 14:30 - 21:59

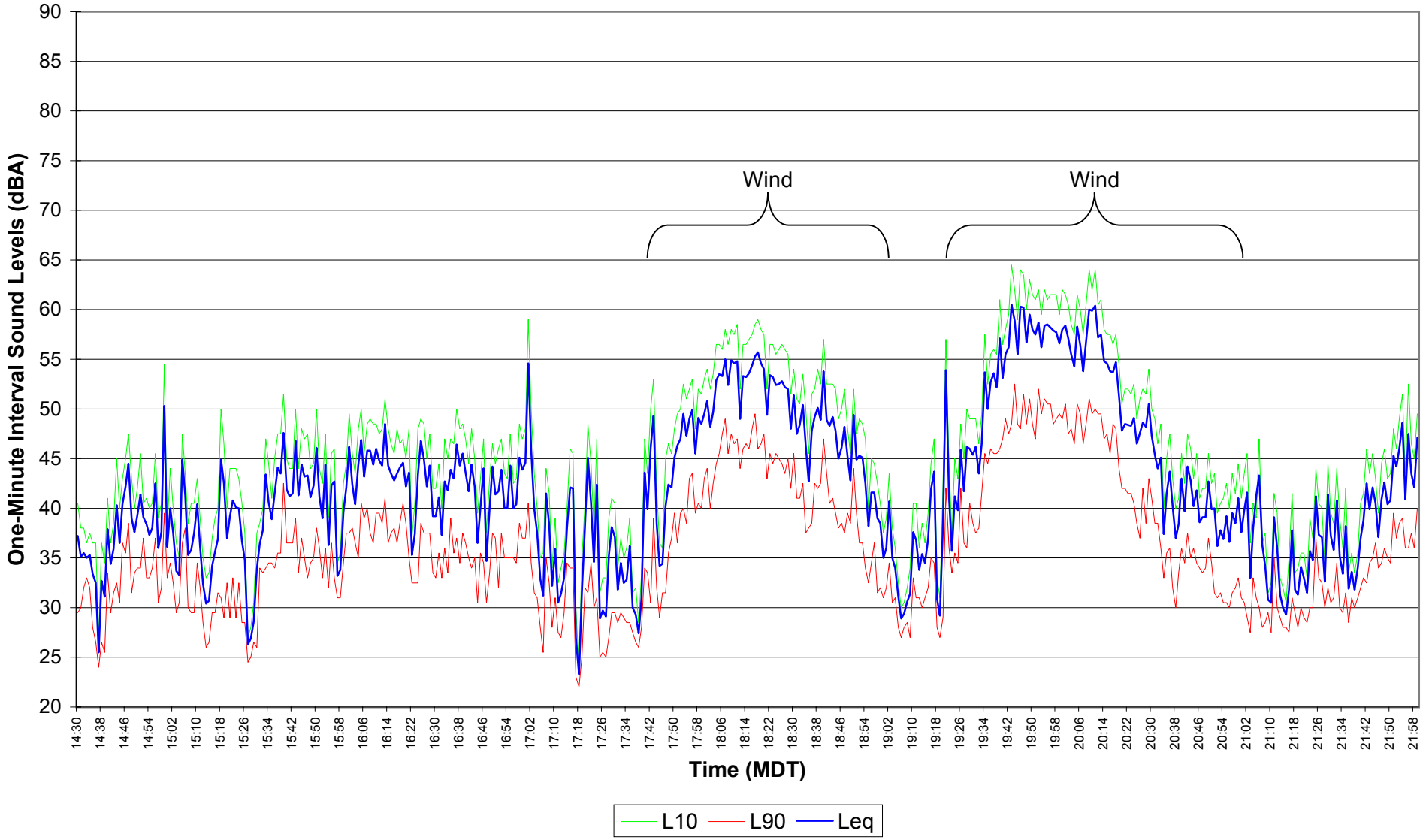


Figure E3.54
EnCana Rosebud
Site 3 Noise Survey
Dec. 10, 2004 - Dec. 11, 2004 22:00 - 06:59

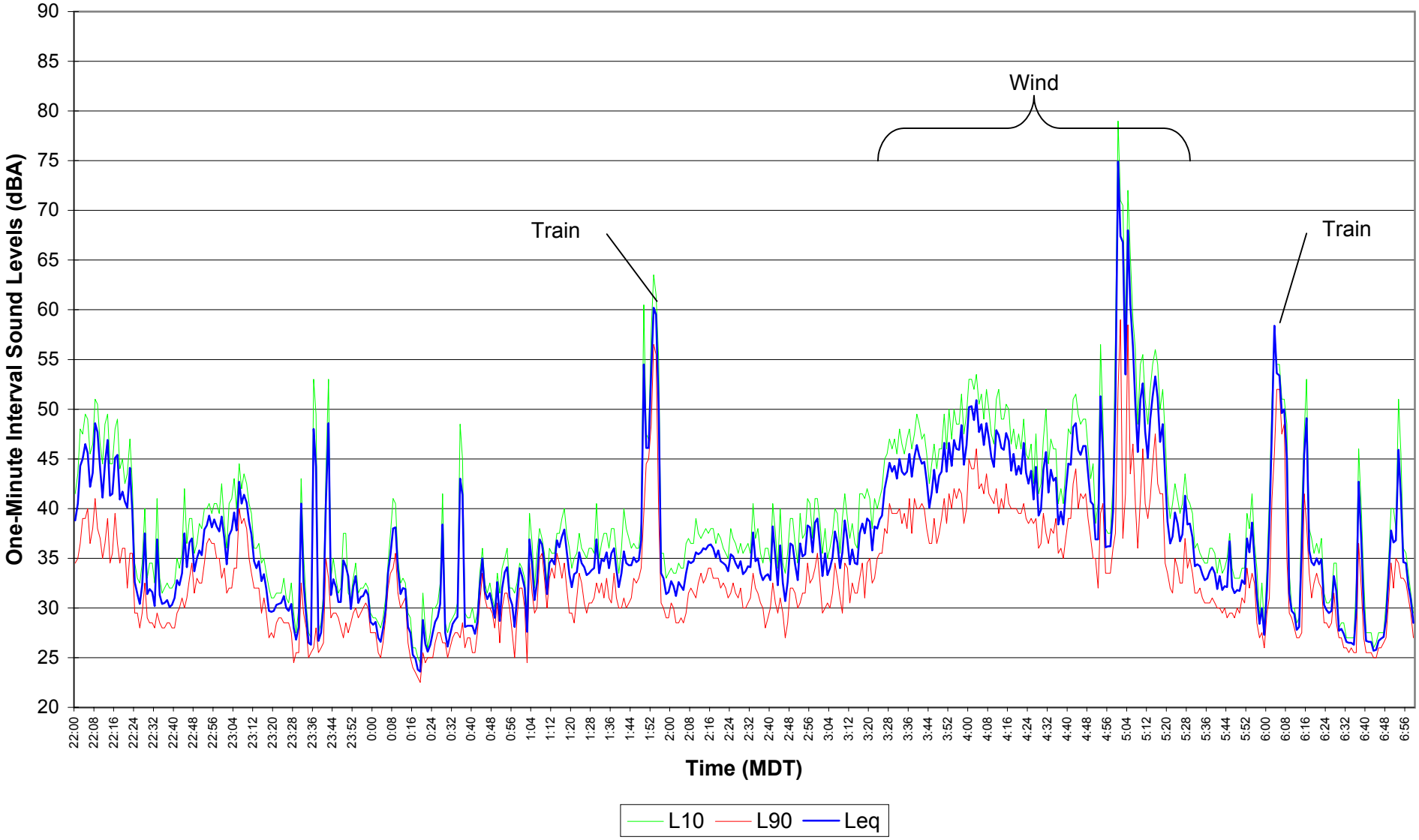


Figure E3.55
EnCana Rosebud
Site 3 Noise Survey
Dec. 11, 2004 07:00 - 14:29

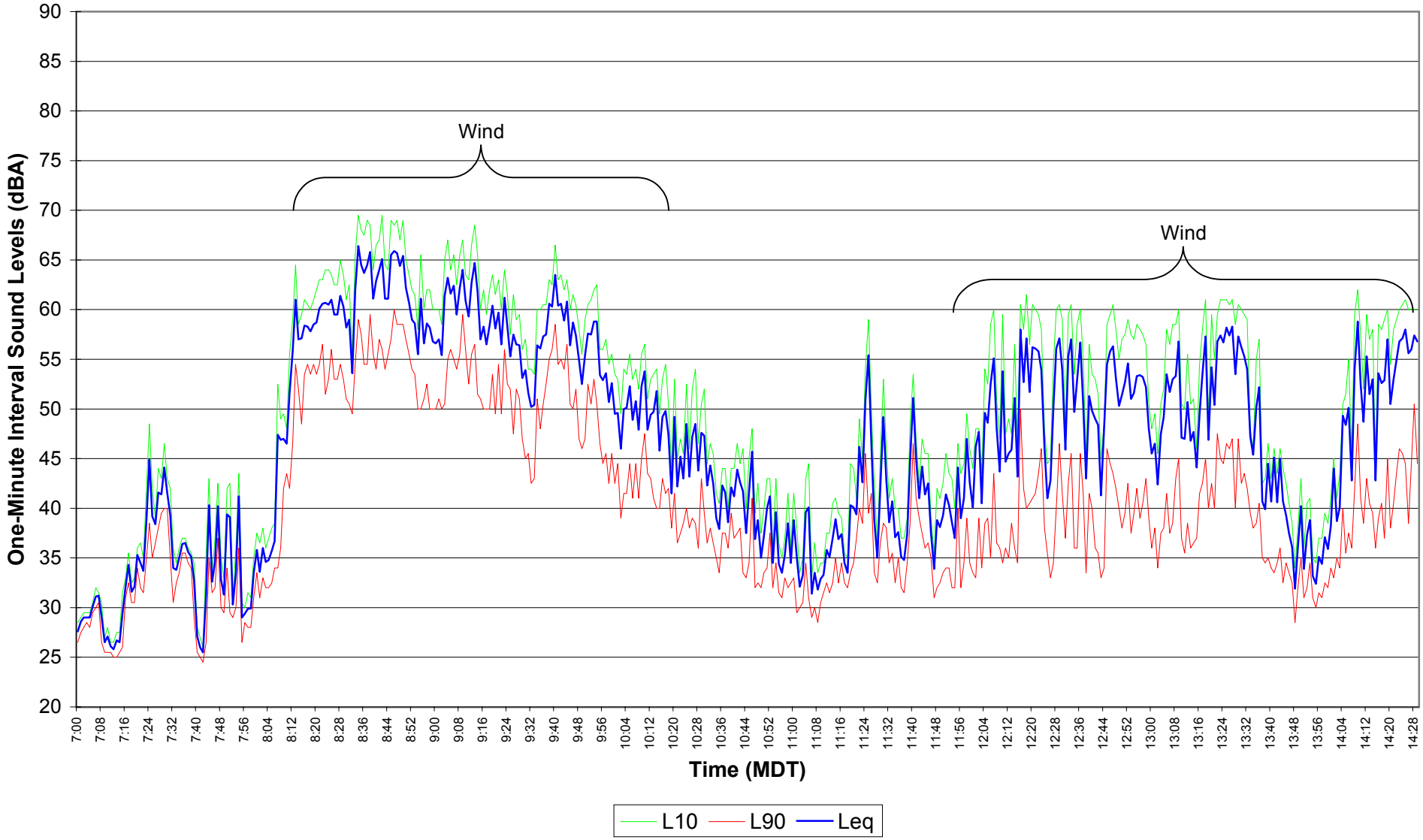


Figure E3.56
EnCana Rosebud
Site 3 Noise Survey
Dec. 11, 2004 14:30 - 21:59

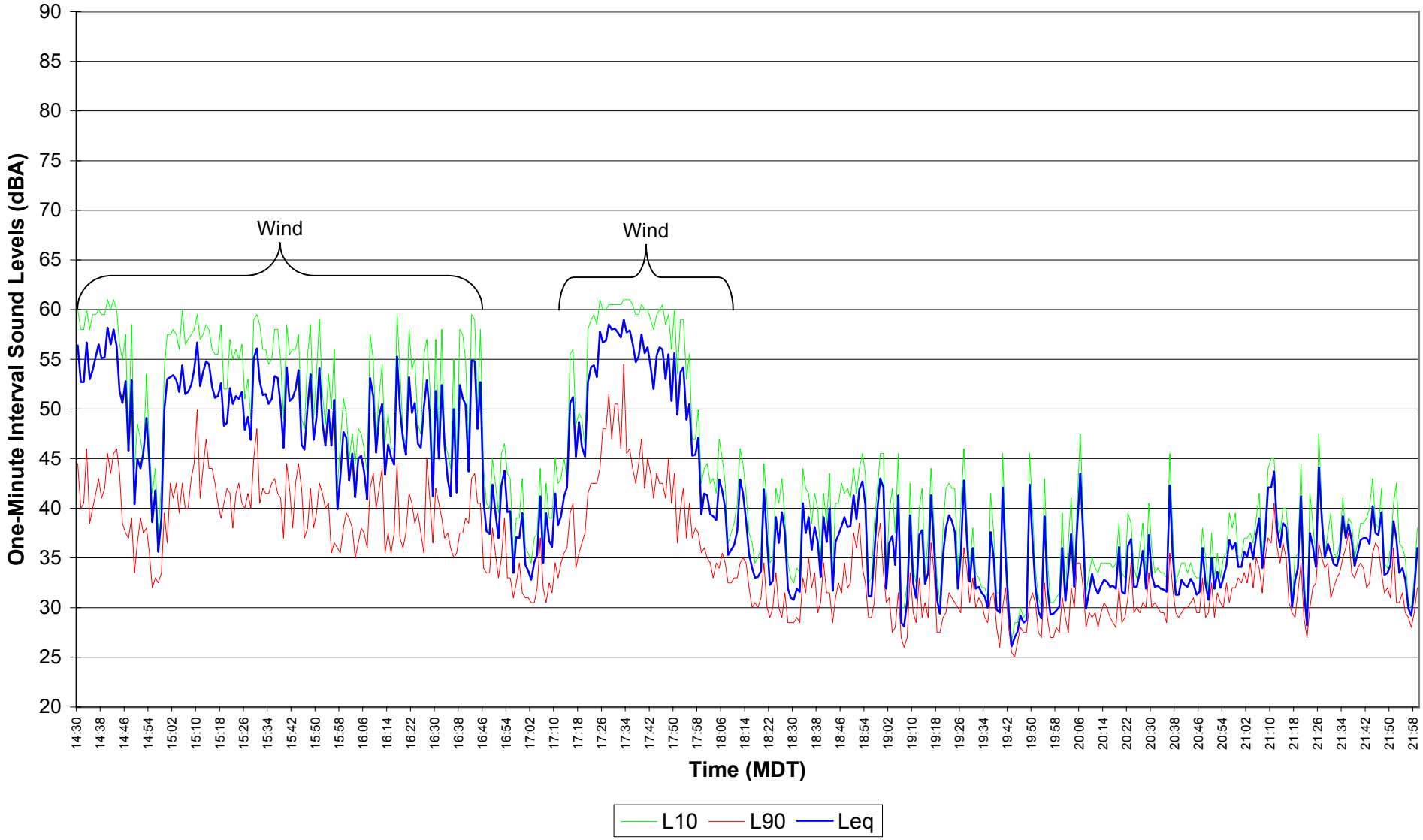


Figure E3.57
EnCana Rosebud
Site 3 Noise Survey
Dec. 11, 2004 - Dec. 12, 2004 22:00 - 06:59

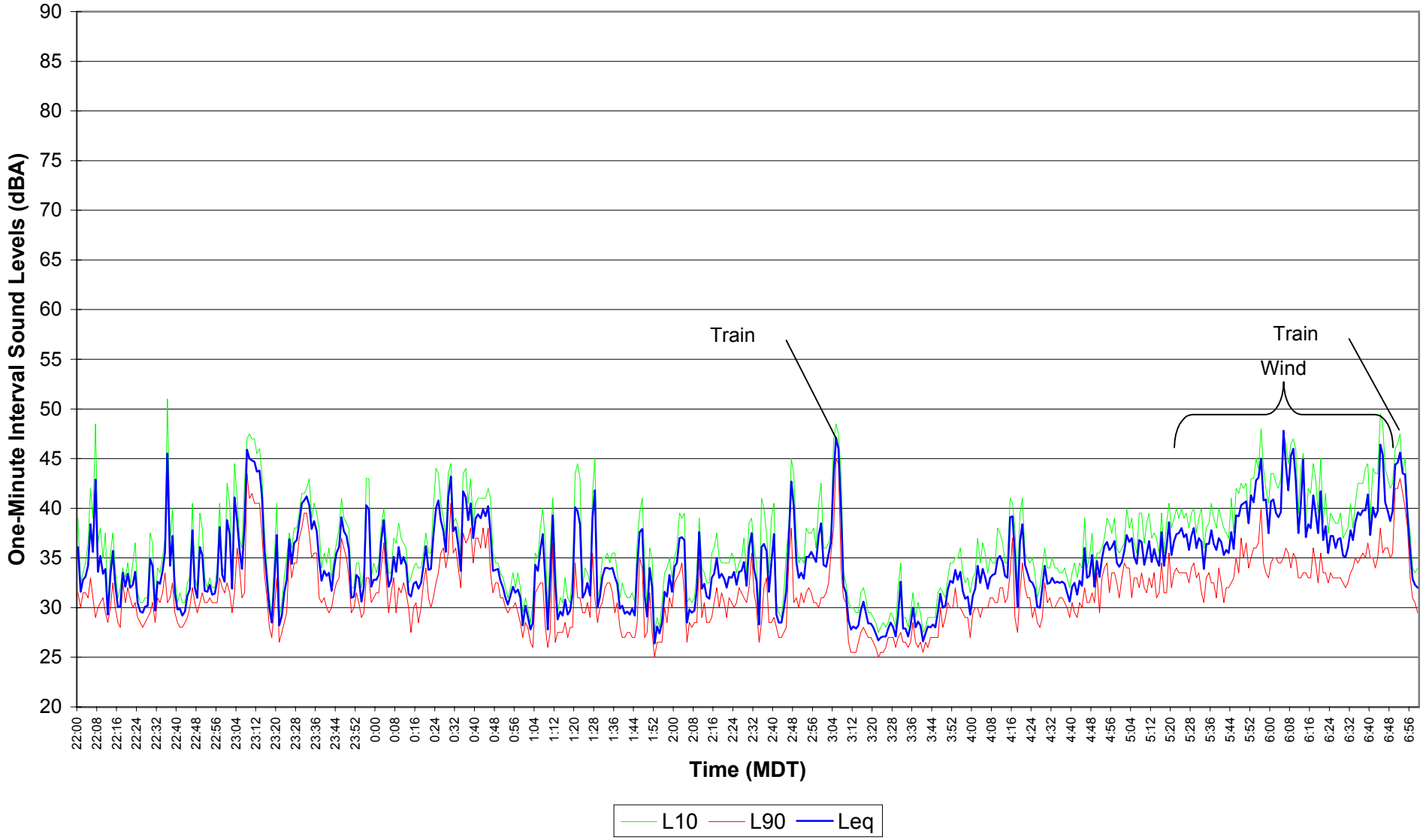


Figure E3.58
EnCana Rosebud
Site 3 Noise Survey
Dec. 12, 2004 07:00 - 14:29

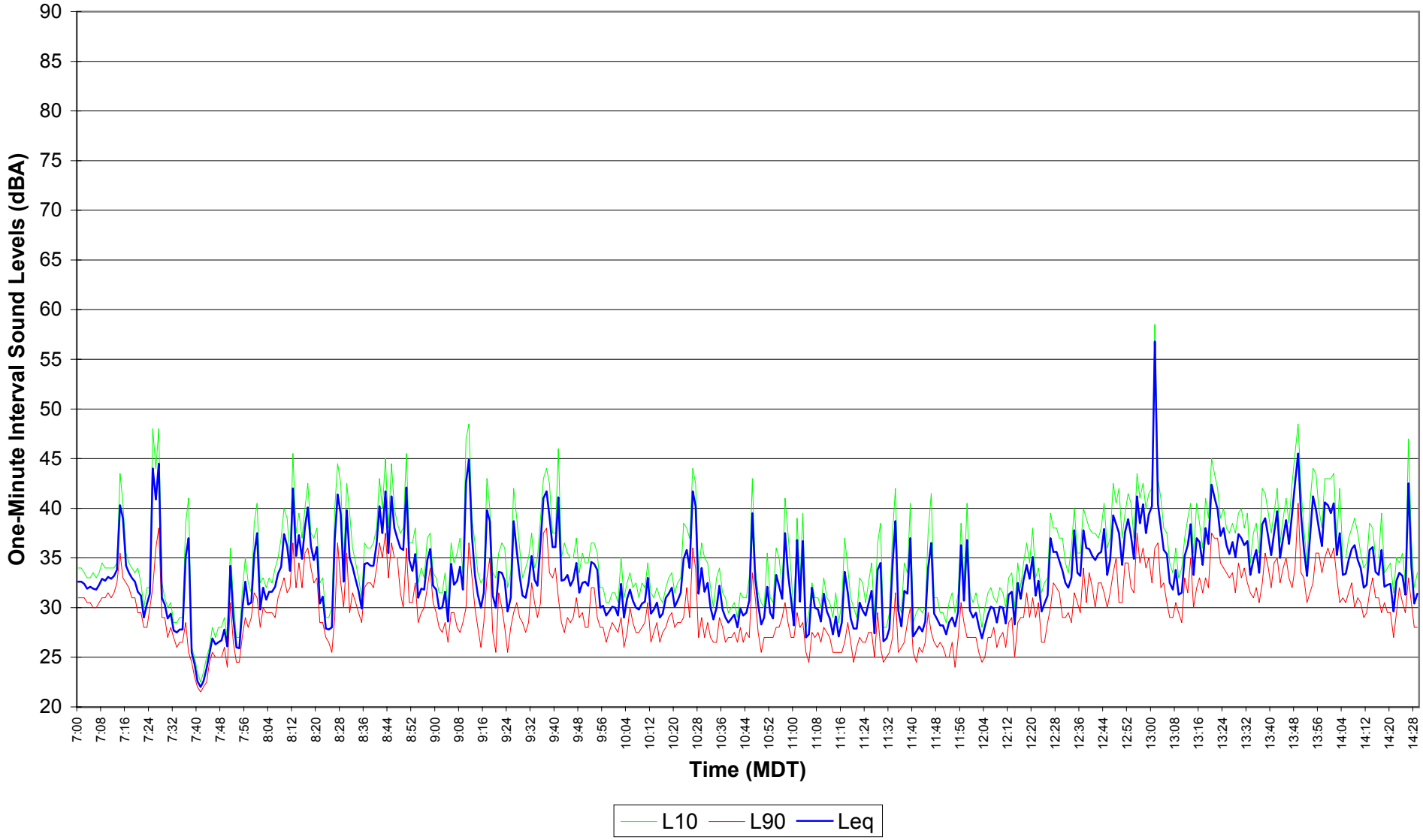


Figure E3.59
EnCana Rosebud
Site 3 Noise Survey
Dec. 12, 2004 14:30 - 21:59

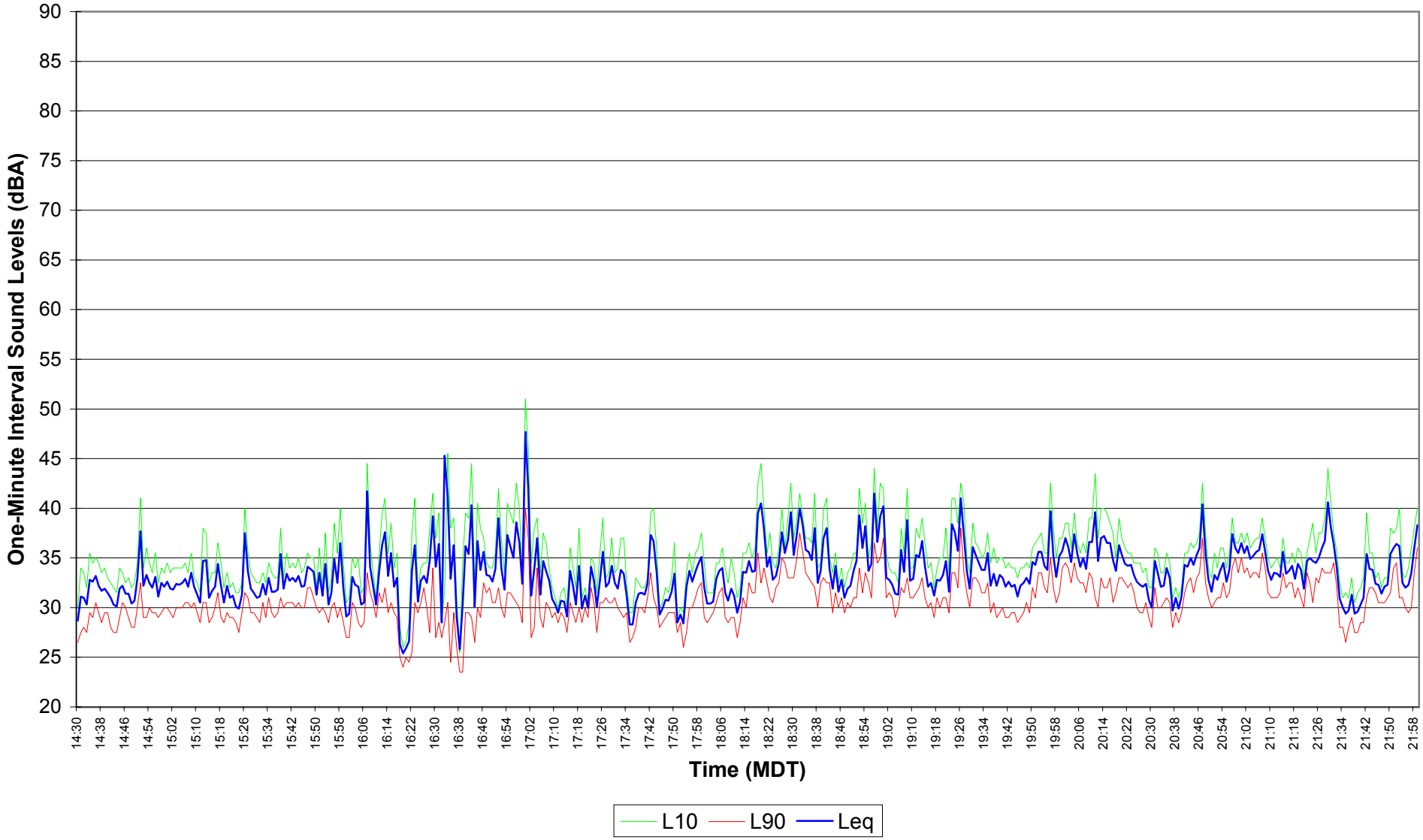


Figure E3.60
EnCana Rosebud
Site 3 Noise Survey
Dec. 12, 2004 - Dec. 13, 2004 22:00 - 06:59

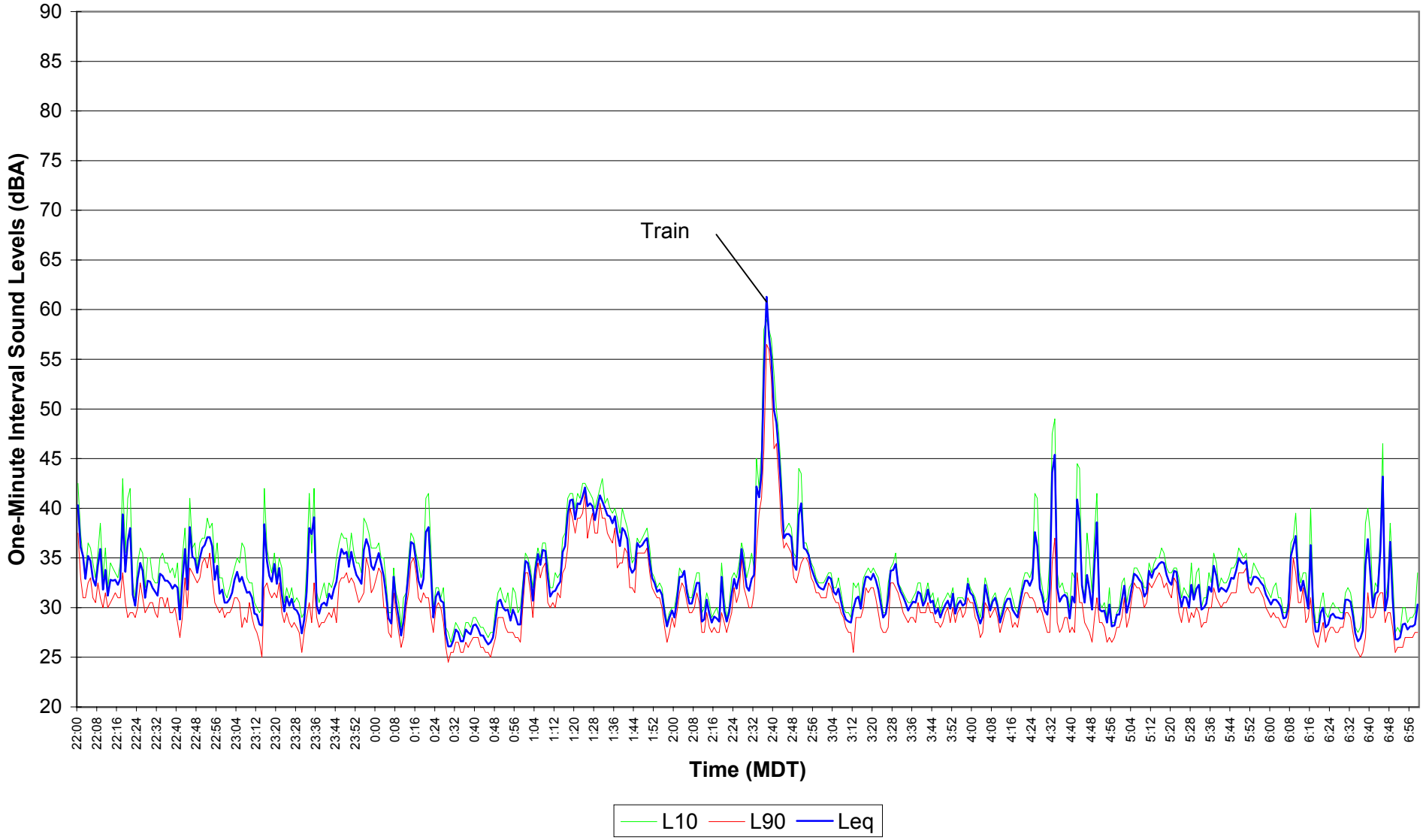


Figure E3.61
EnCana Rosebud
Site 3 Noise Survey
Dec. 13, 2004 07:00 - 14:29

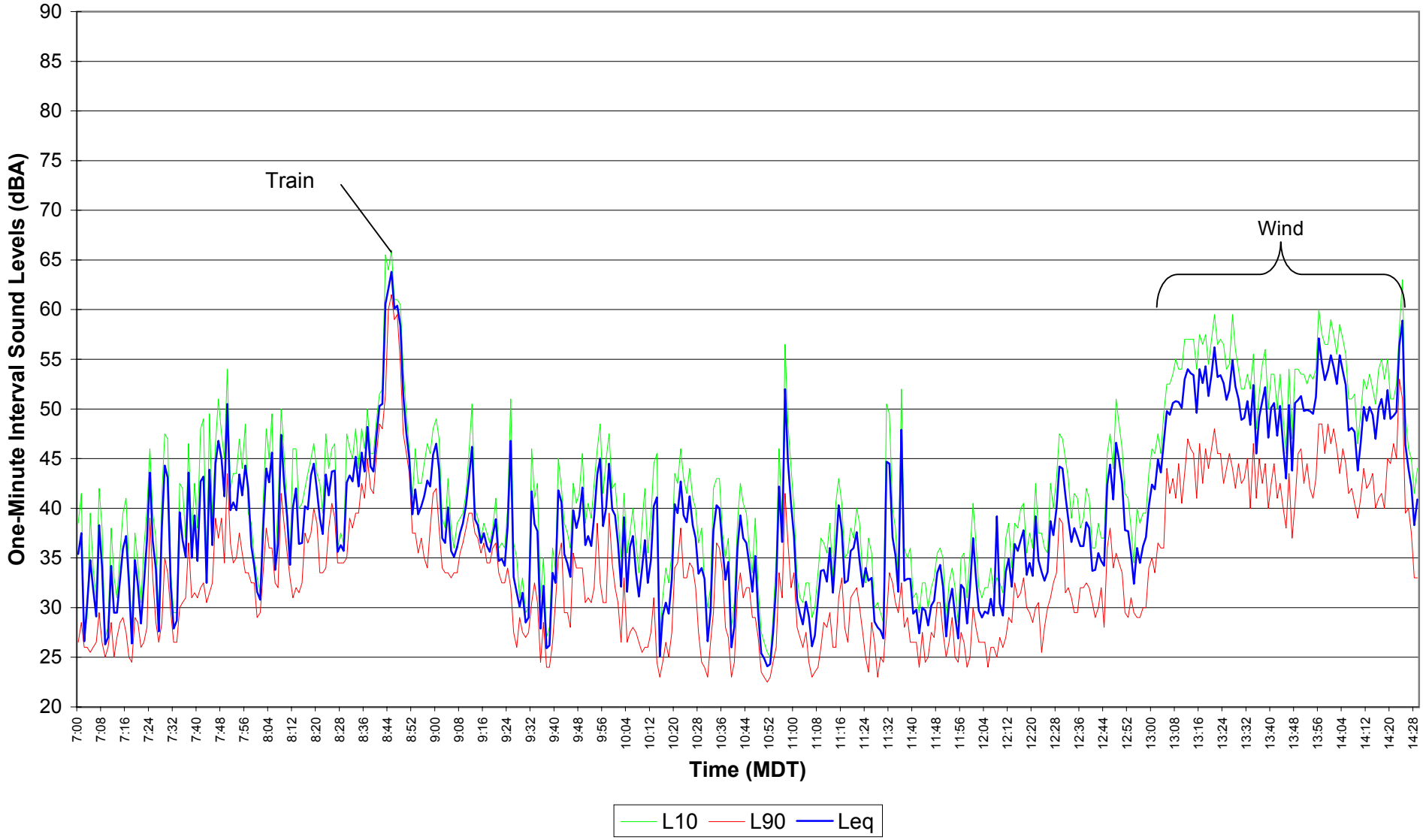


Figure E3.62
EnCana Rosebud
Site 3 Noise Survey
Dec. 13, 2004 14:30 - 21:59

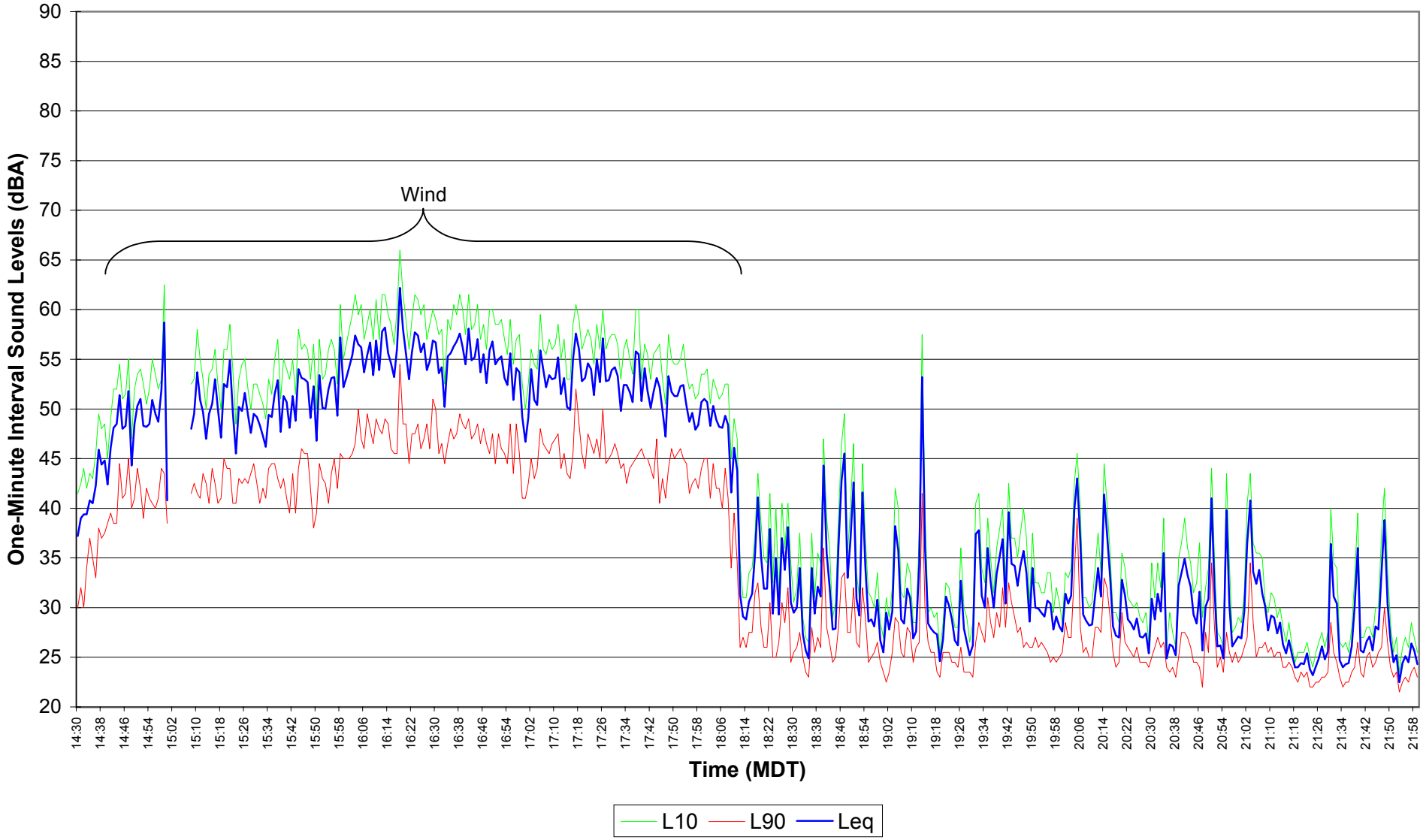


Figure E3.63
EnCana Rosebud
Site 3 Noise Survey
Dec. 13, 2004 - Dec. 14, 2004 22:00 - 06:59

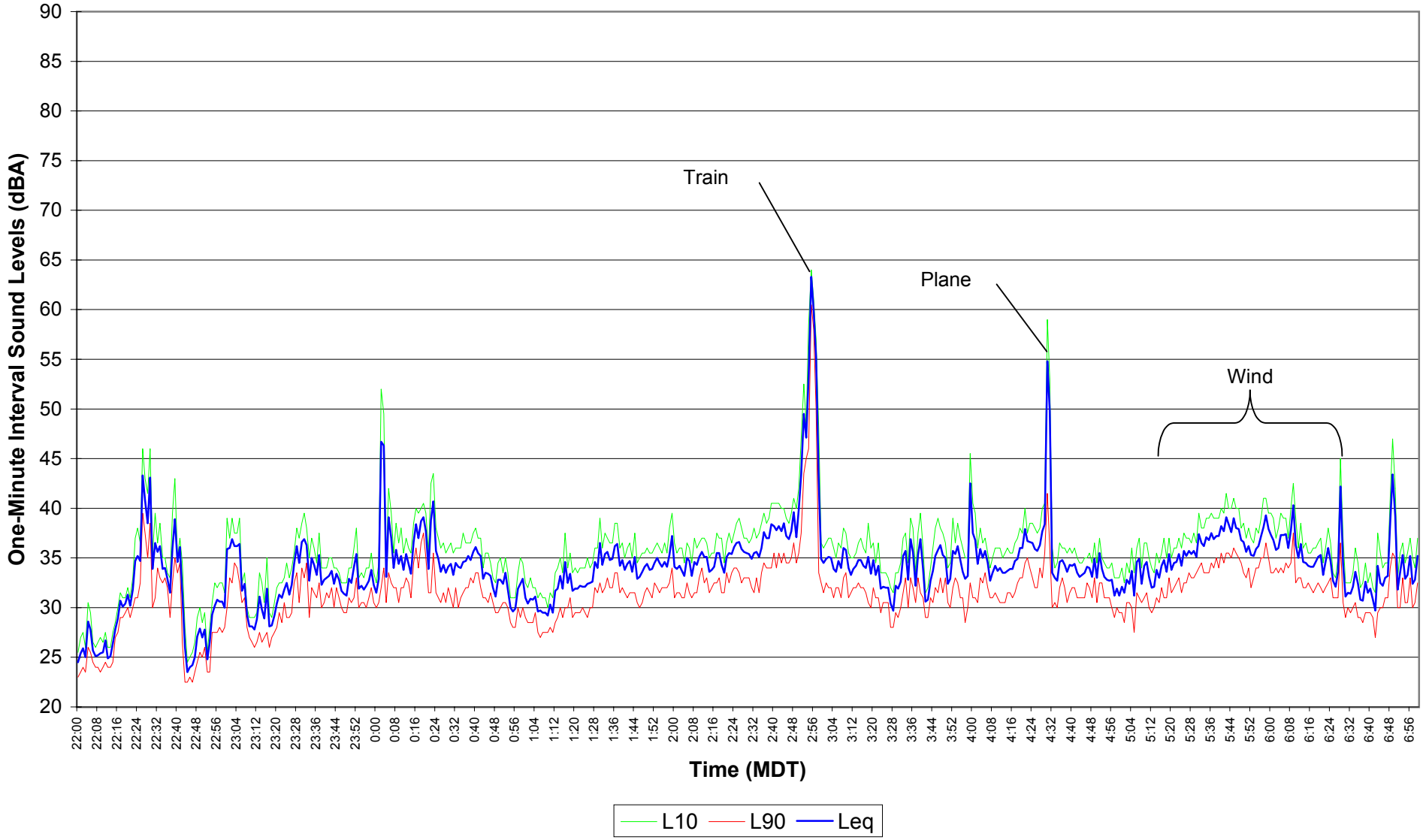


Figure E3.64

EnCana Rosebud

Site 3 Noise Survey

Dec. 14, 2004 07:00 - 14:29

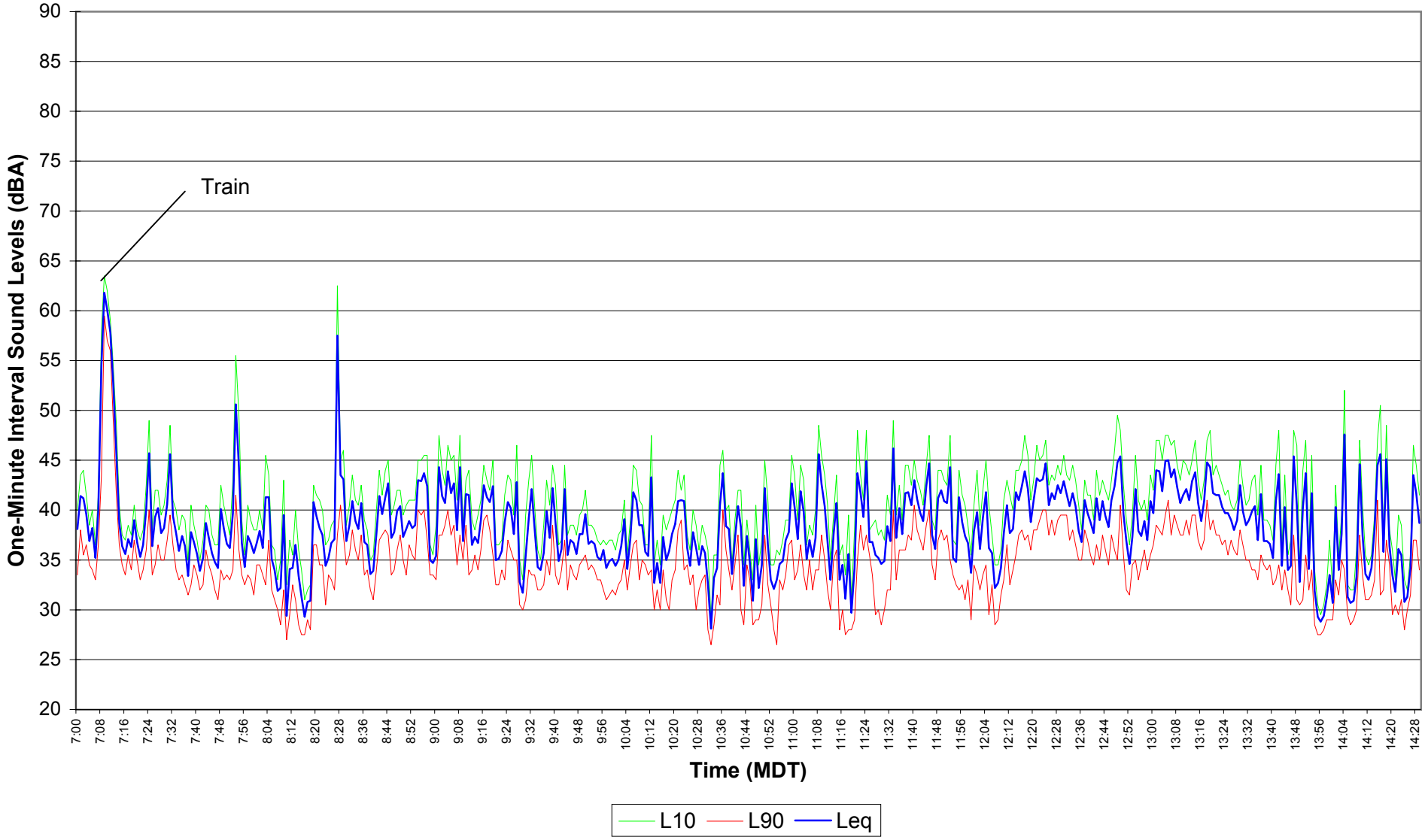


Figure E3.65
EnCana Rosebud
Site 3 Noise Survey
Dec. 14, 2004 14:30 - 21:59

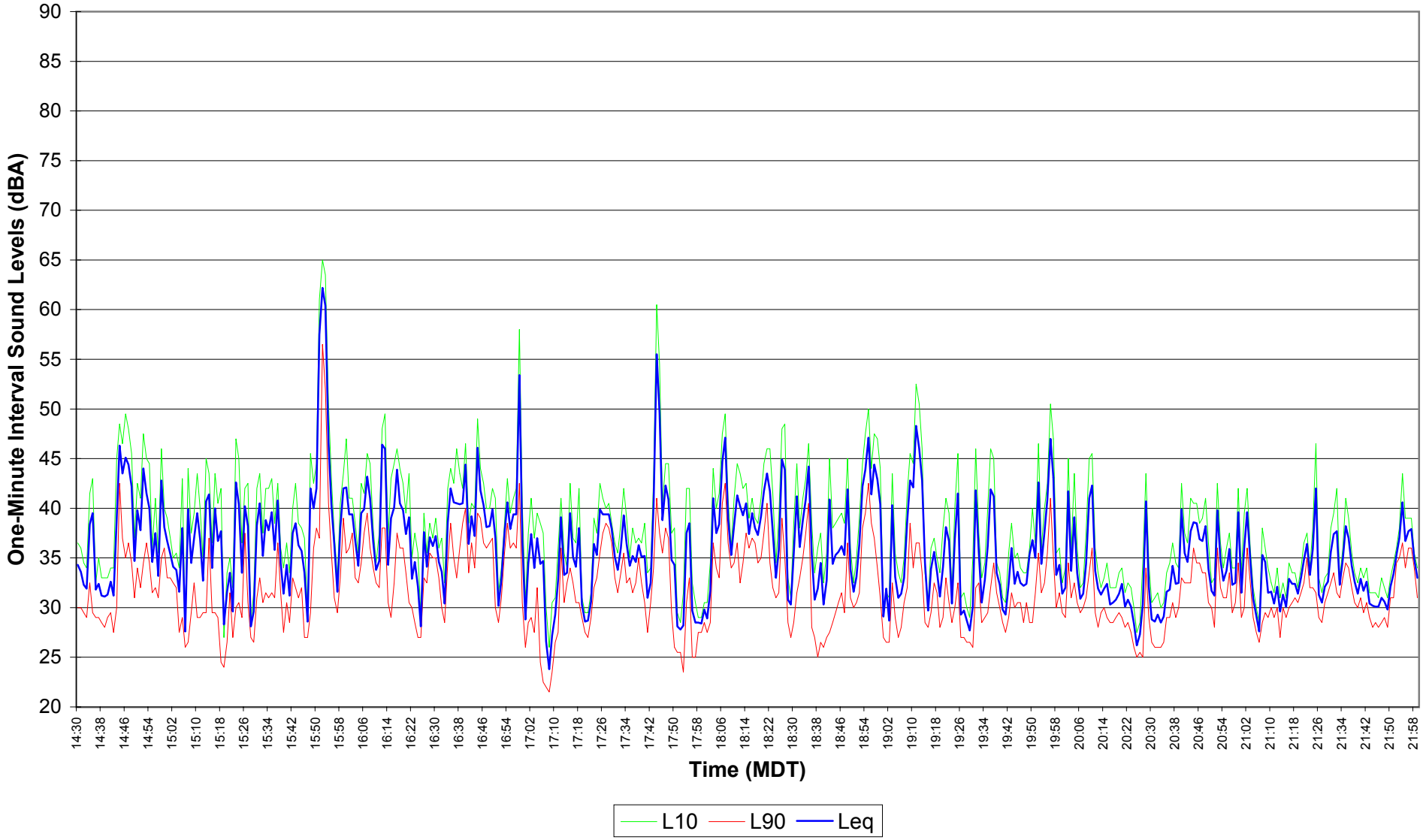


Figure E3.66
EnCana Rosebud
Site 3 Noise Survey
Dec. 14, 2004 - Dec. 15, 2004 22:00 - 06:59

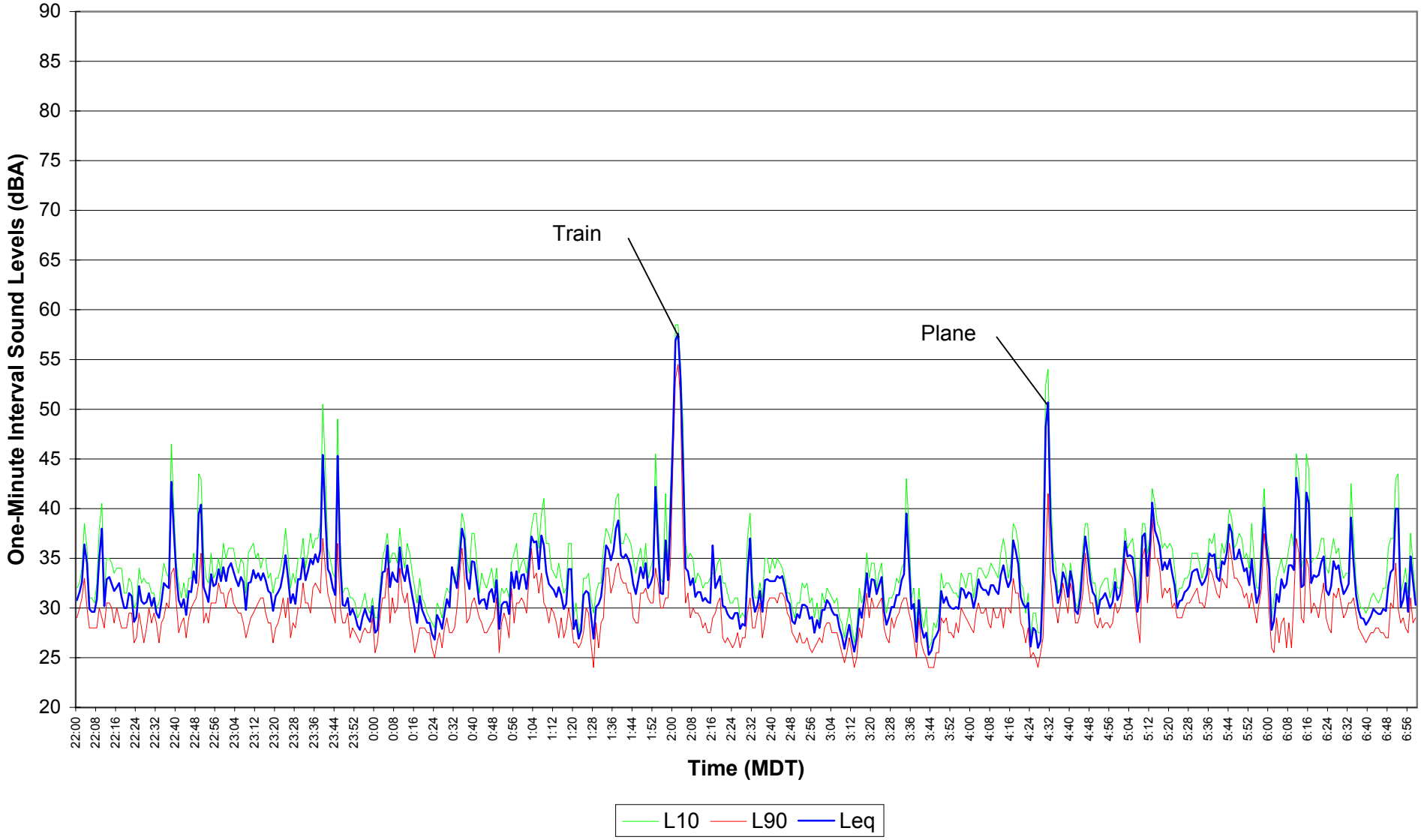


Figure E3.67
EnCana Rosebud
Site 3 Noise Survey
Dec. 15, 2004 07:00 - 14:29

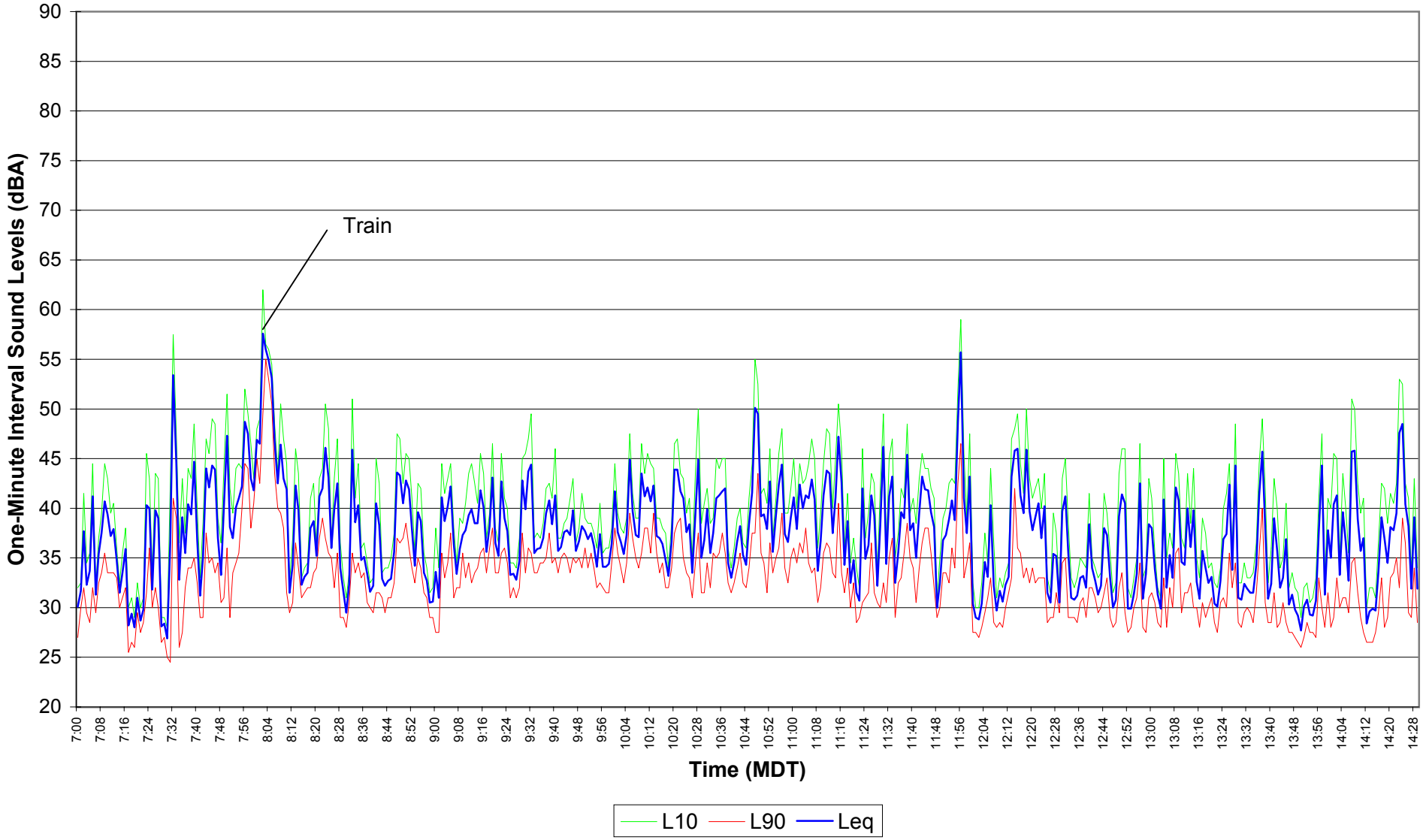


Figure E3.68
EnCana Rosebud
Site 3 Noise Survey
Dec. 15, 2004 14:30 - 21:59

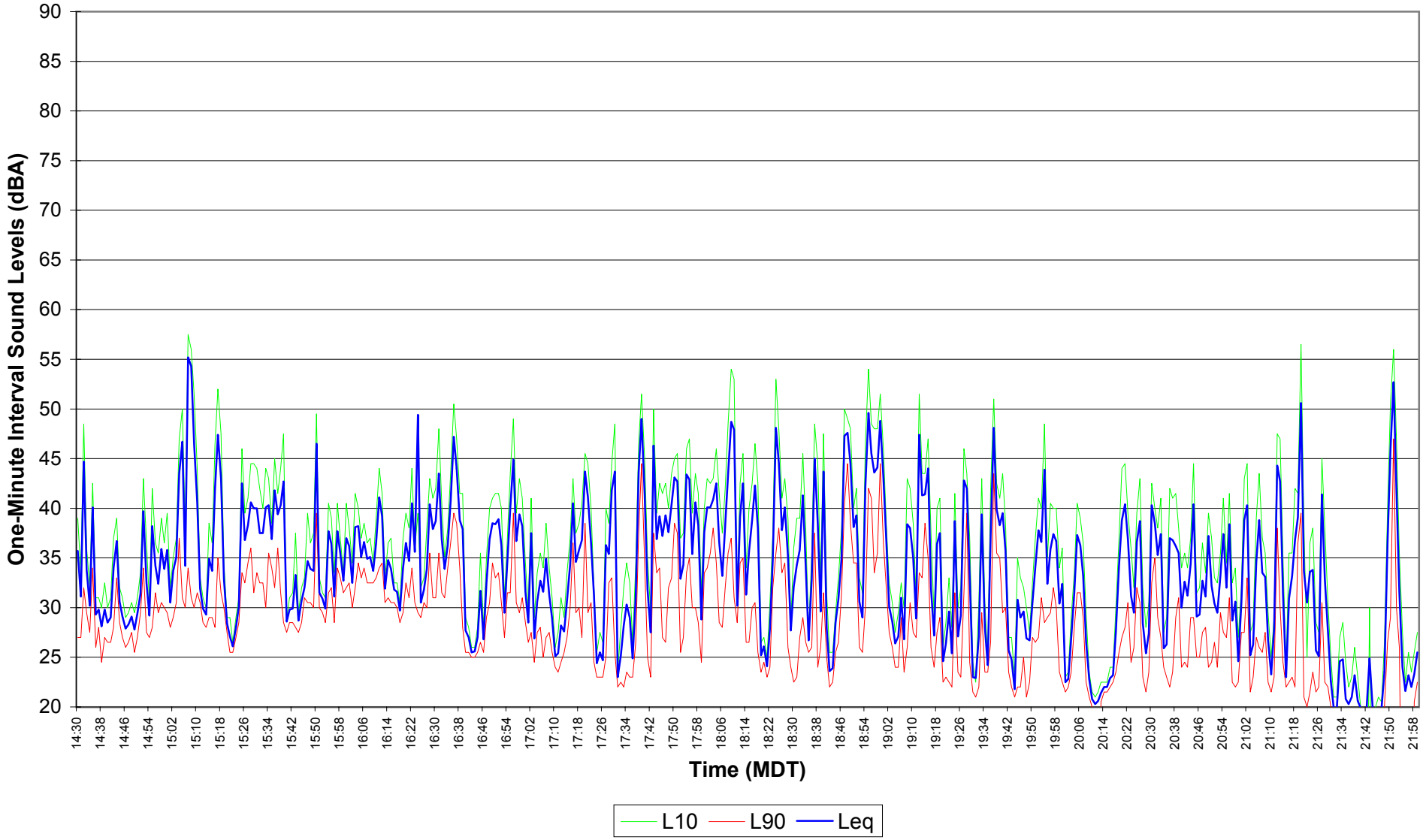


Figure E3.69
EnCana Rosebud
Site 3 Noise Survey
Dec 15, 2004 - Dec 16, 2004 22:00 - 06:59

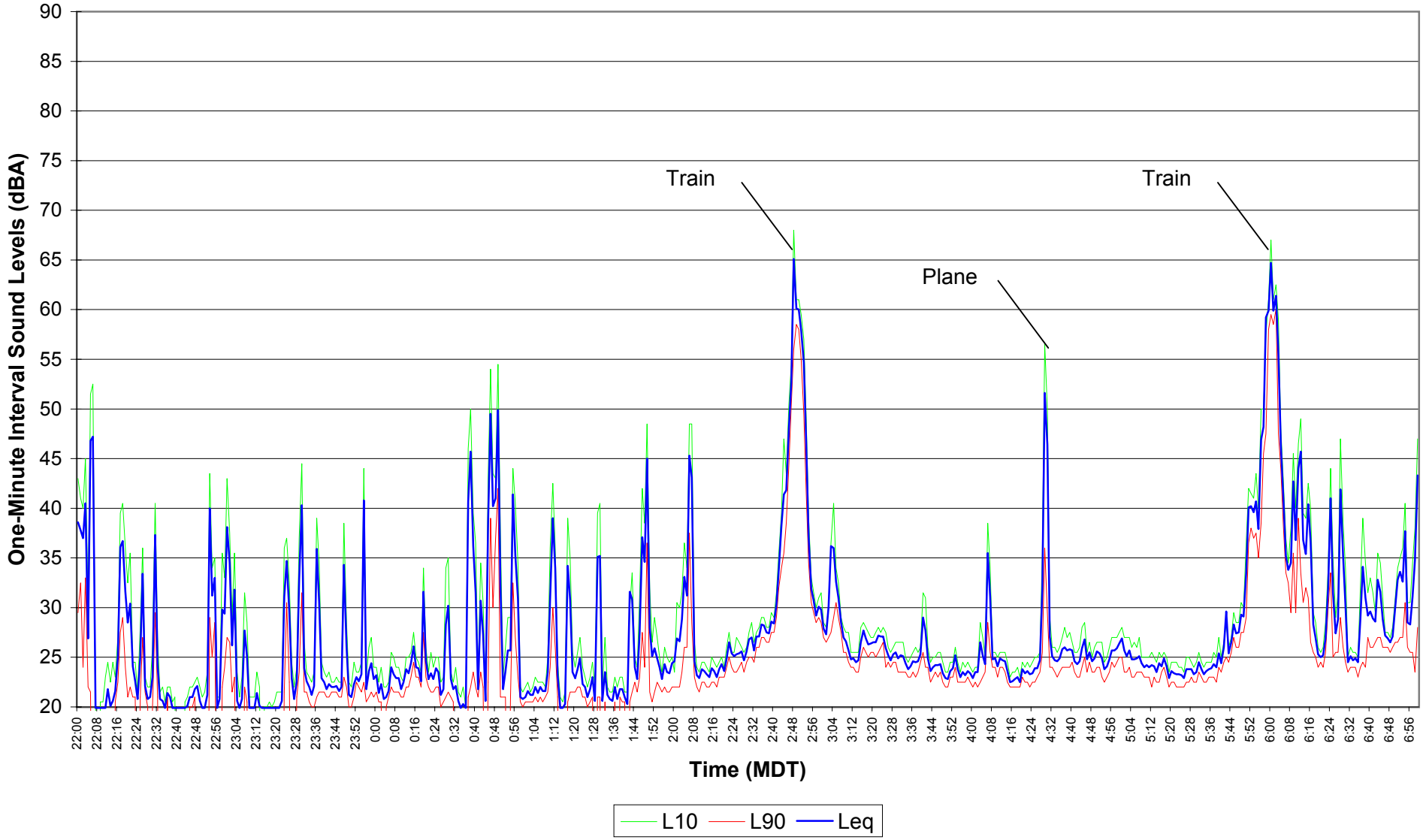


Figure E3.70
EnCana Rosebud
Site 3 Noise Survey
Dec. 16, 2004 07:00 - 14:29

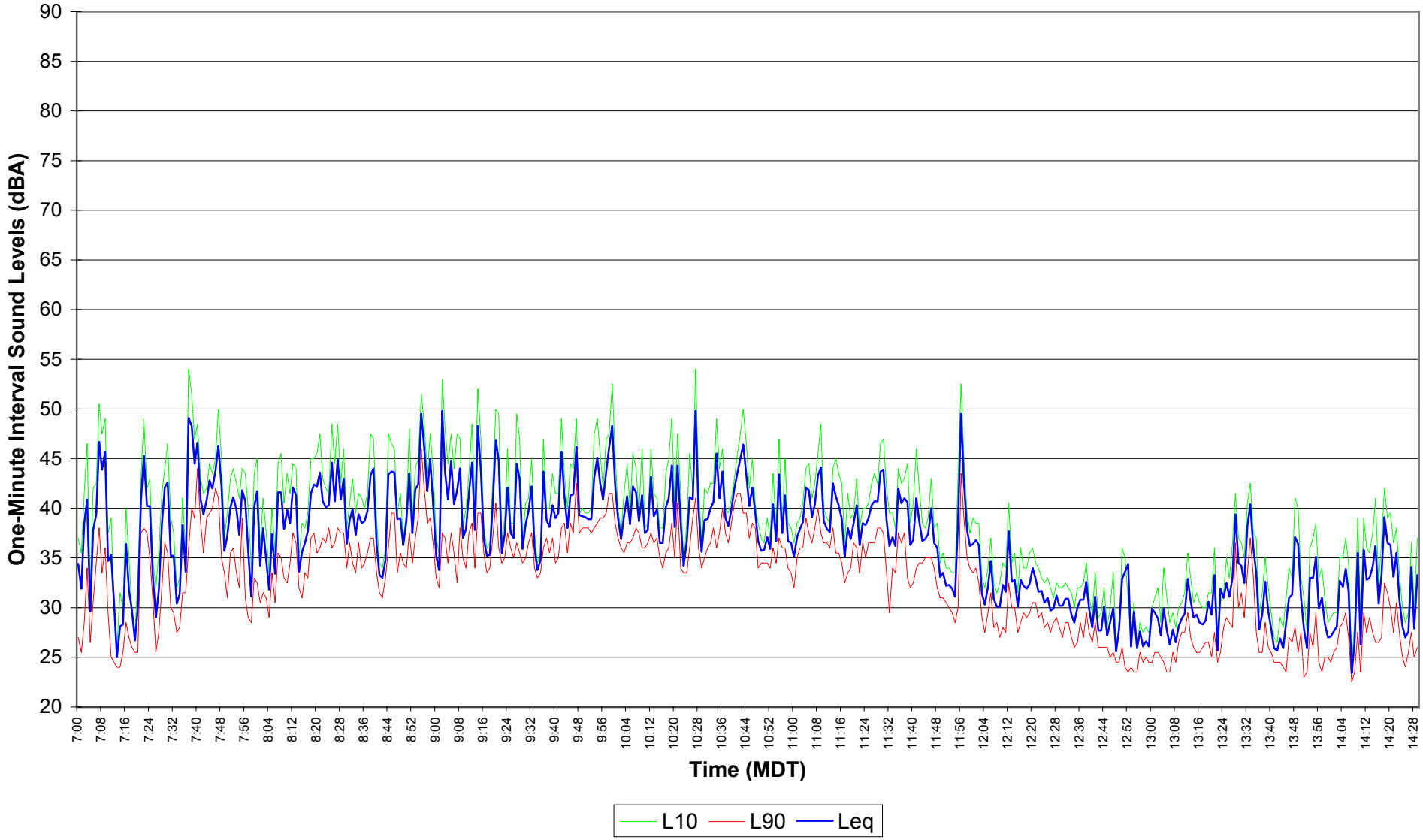


Figure E3.71
EnCana Rosebud
Site 3 Noise Survey
Dec. 16, 2004 14:30 - 21:59

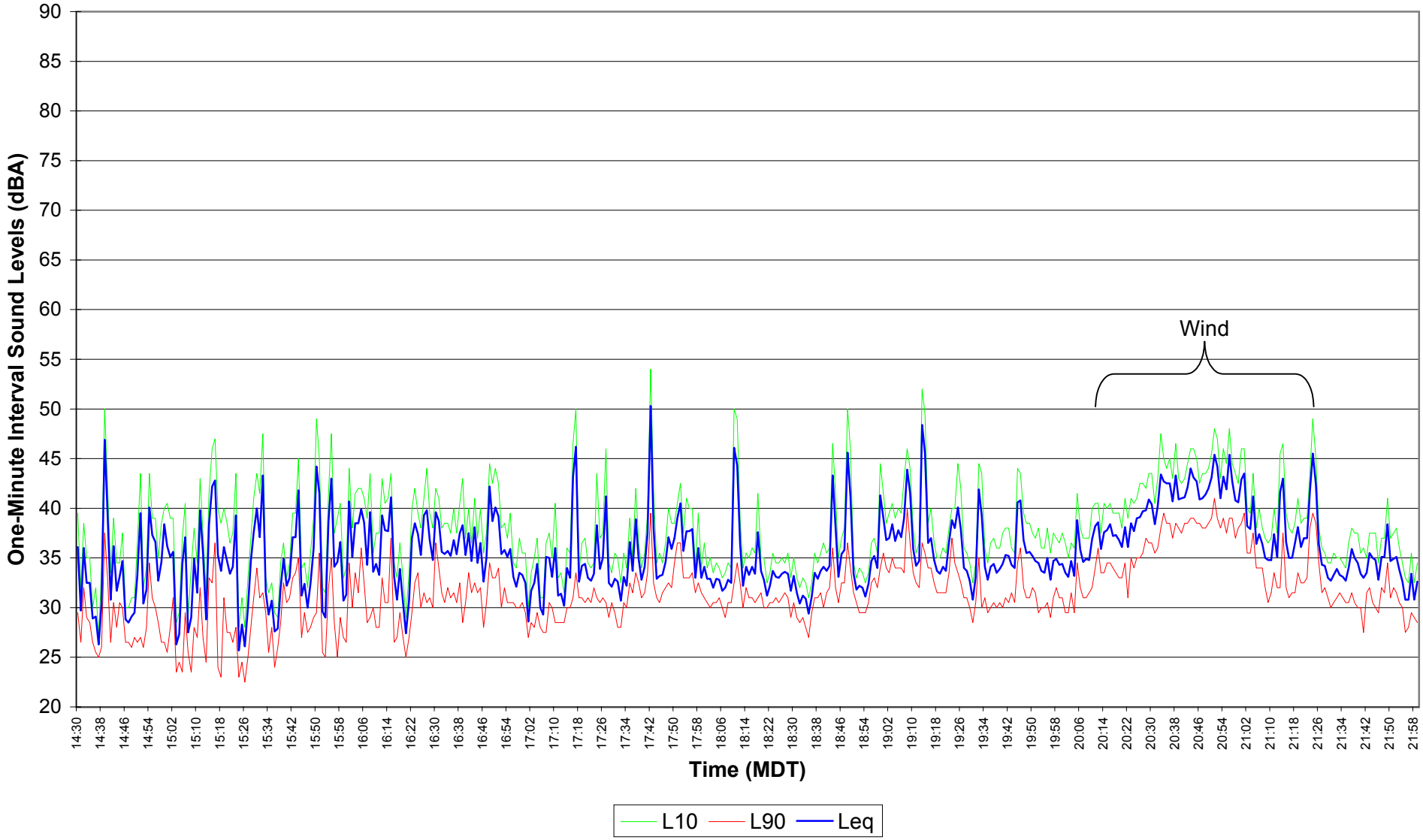


Figure E3.72
EnCana Rosebud
Site 3 Noise Survey
Dec. 16, 2004 - Dec. 17, 2004 22:00 - 06:59

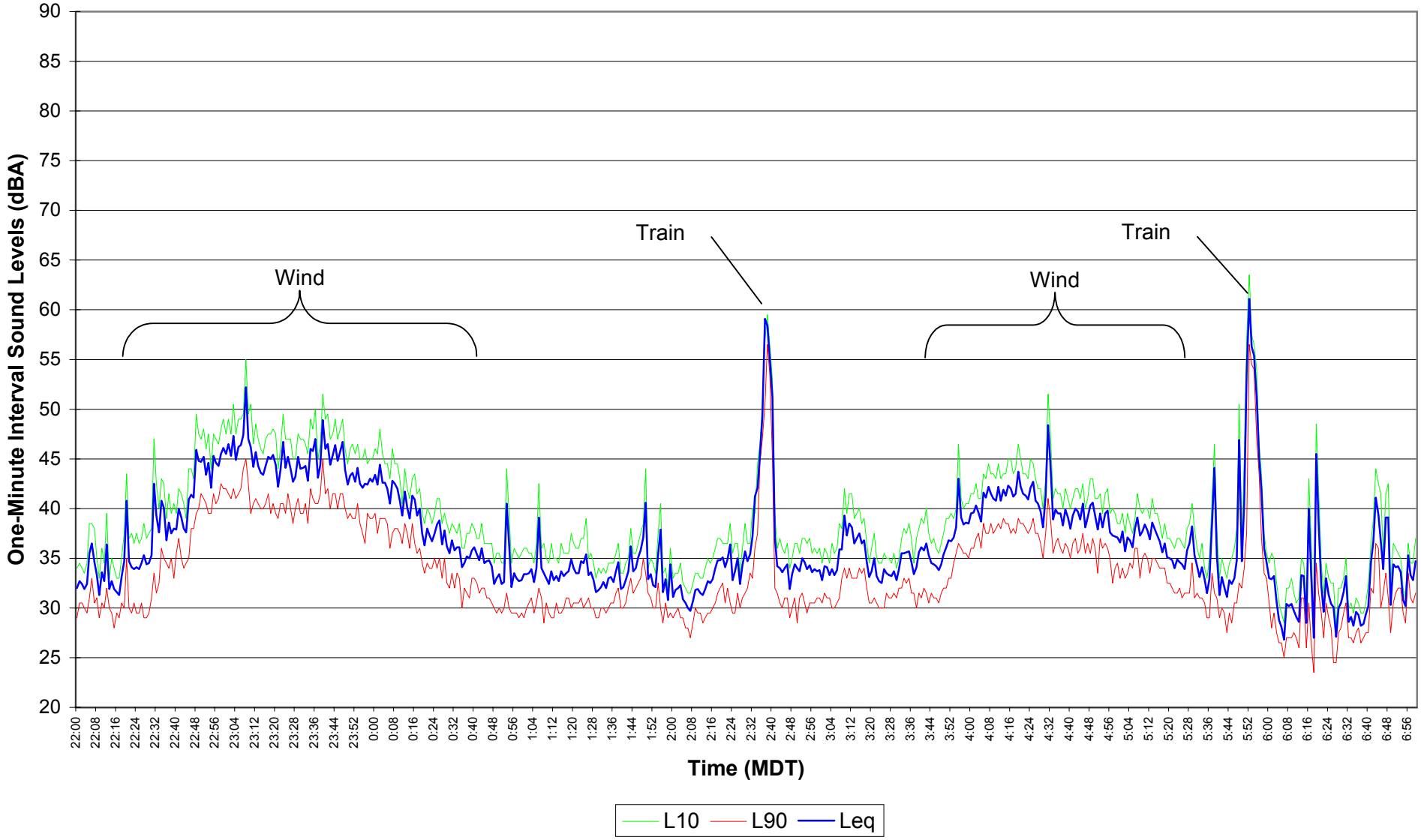


Figure E3.73
EnCana Rosebud
Site 3 Noise Survey
Dec. 17, 2004 07:00 - 14:29

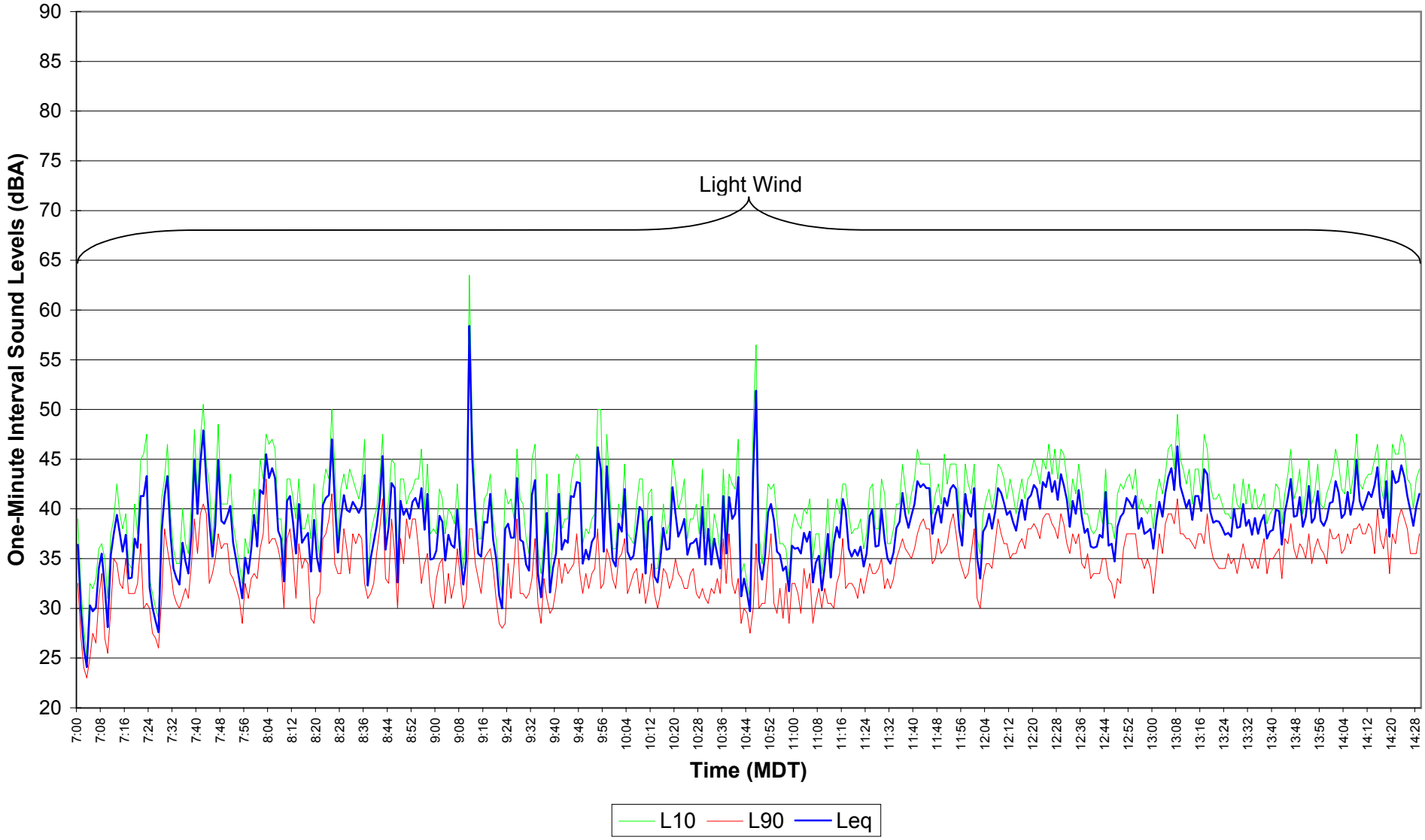


Figure E3.74
EnCana Rosebud
Site 3 Noise Survey
Dec. 17, 2004 14:30 - 21:59

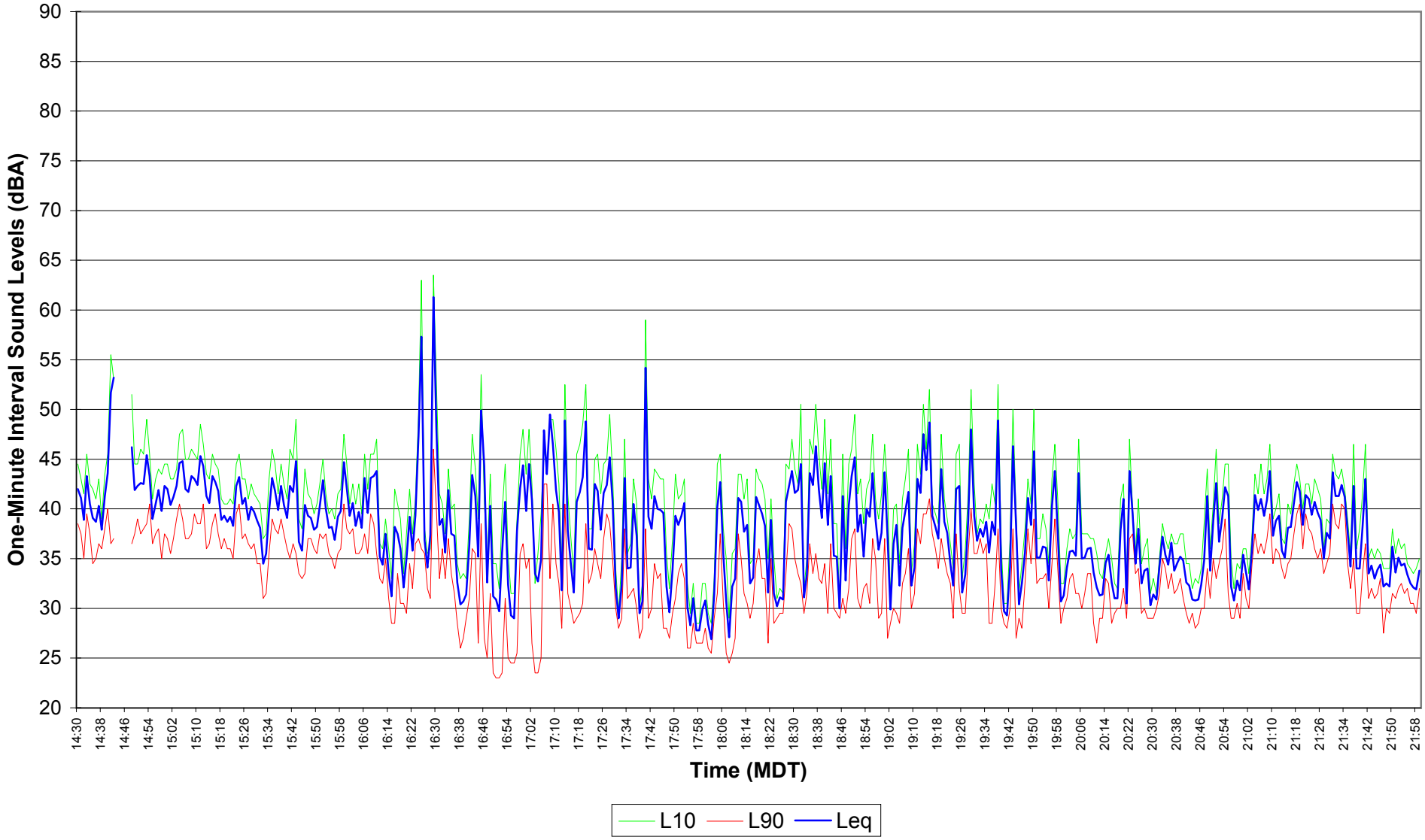


Figure E3.75
EnCana Rosebud
Site 3 Noise Survey
Dec 17, 2004 - Dec 18, 2004 22:00 - 06:59

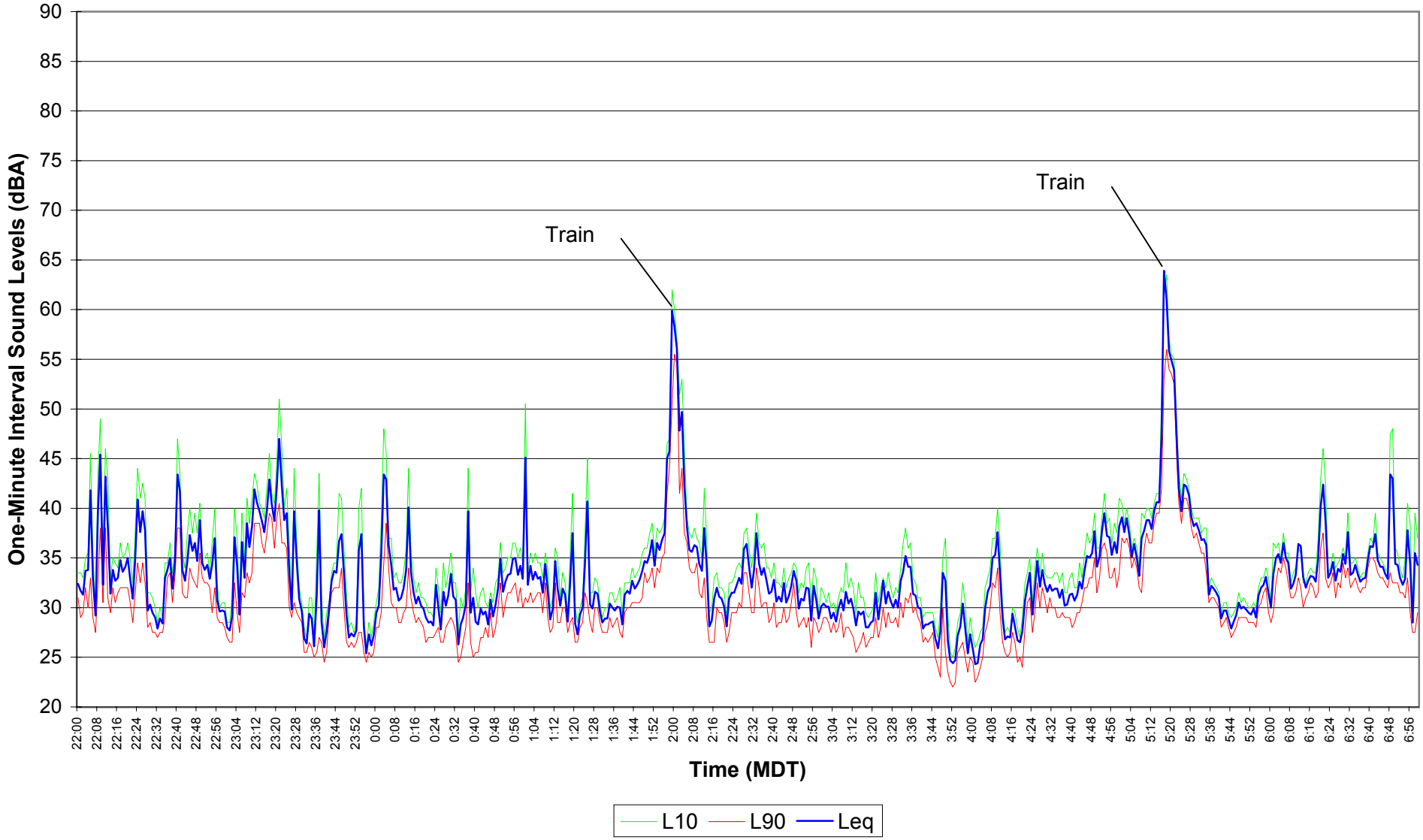


Figure E3.76
EnCana Rosebud
Site 3 Noise Survey
Dec. 18, 2004 07:00 - 14:29

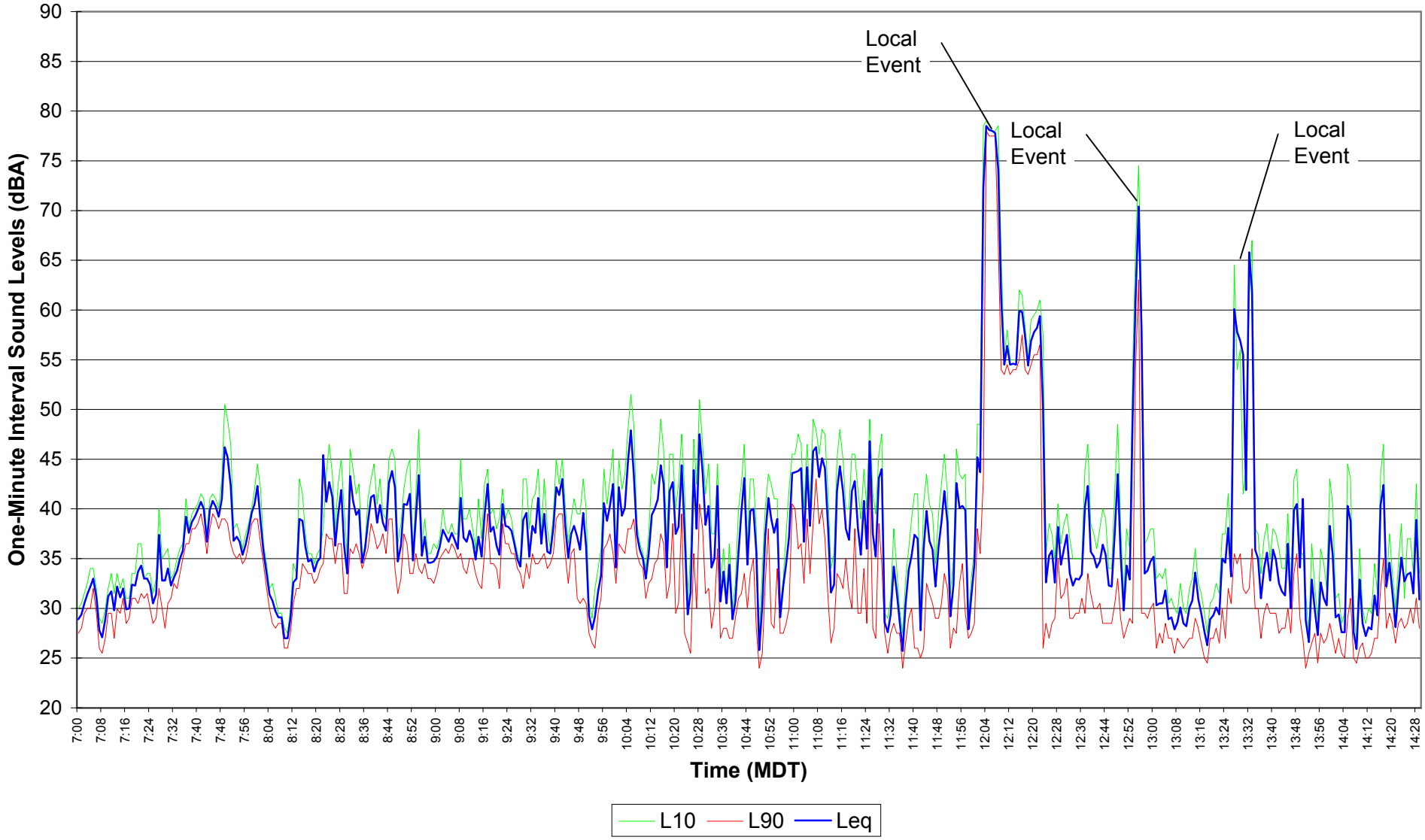


Figure E3.77
EnCana Rosebud
Site 3 Noise Survey
Dec. 18, 2004 14:30 - 21:59

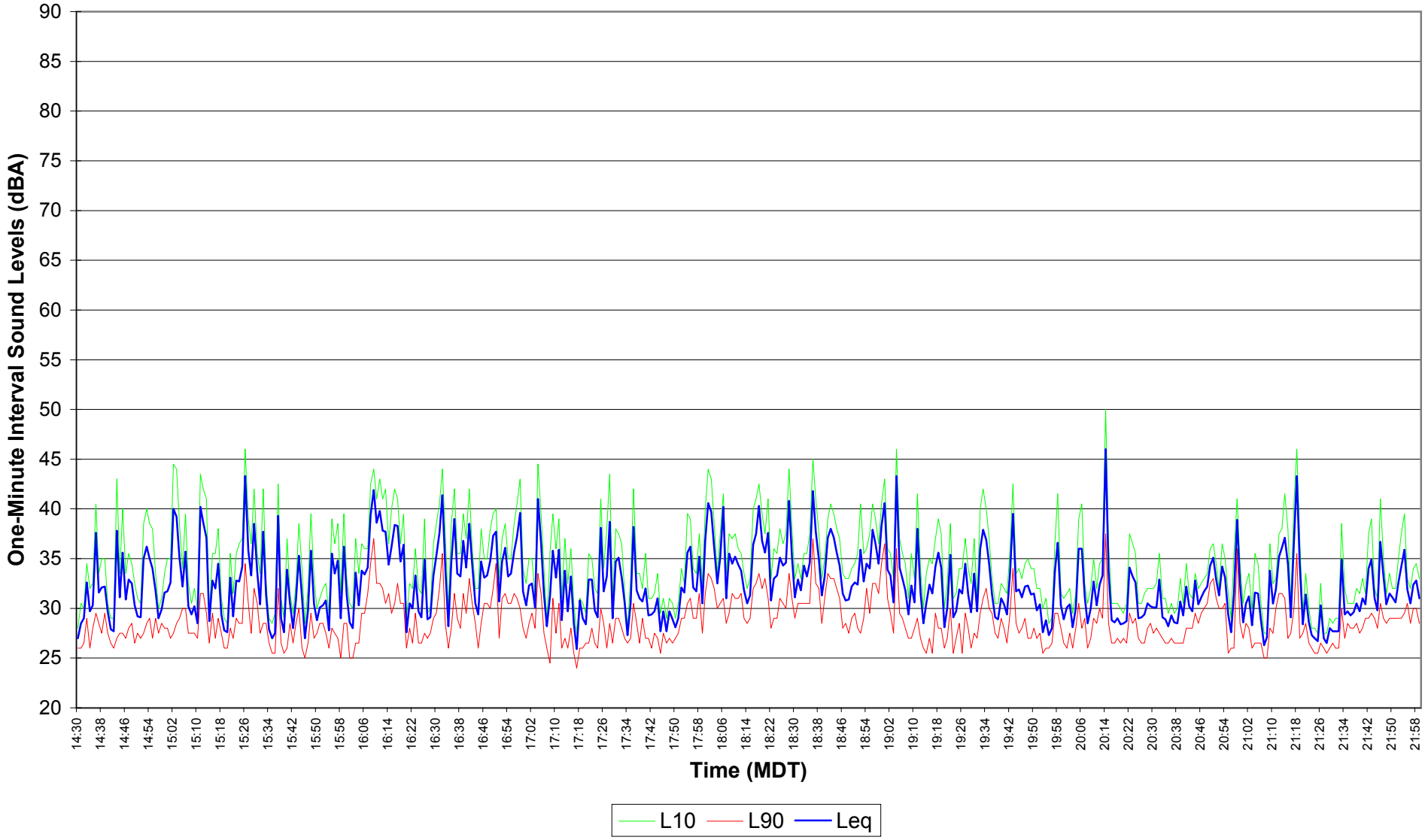


Figure E3.78
EnCana Rosebud
Site 3 Noise Survey
Dec. 18, 2004 - Dec. 19, 2004 22:00 - 06:59

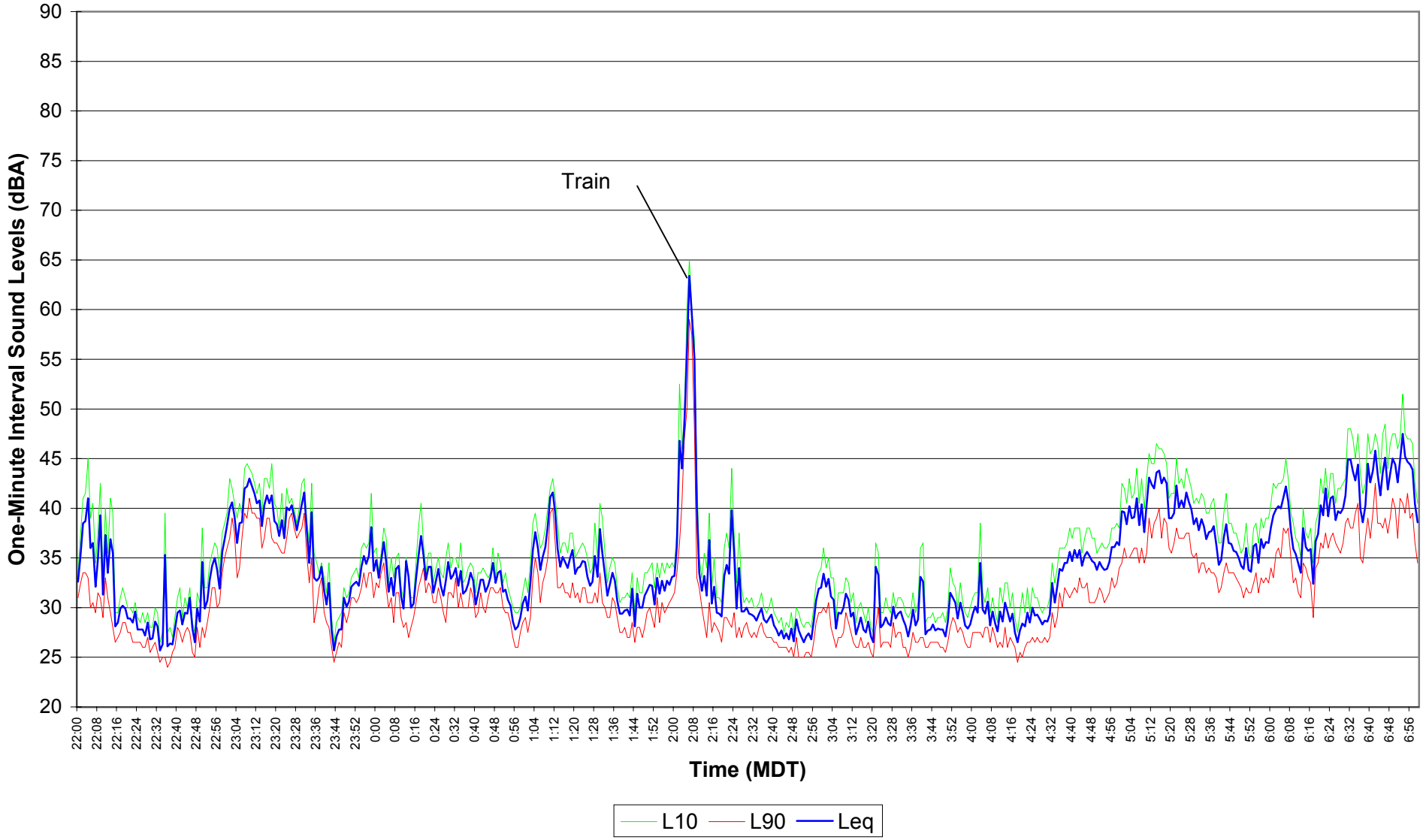


Figure E3.79

EnCana Rosebud

Site 3 Noise Survey

Dec. 19, 2004 07:00 - 14:29

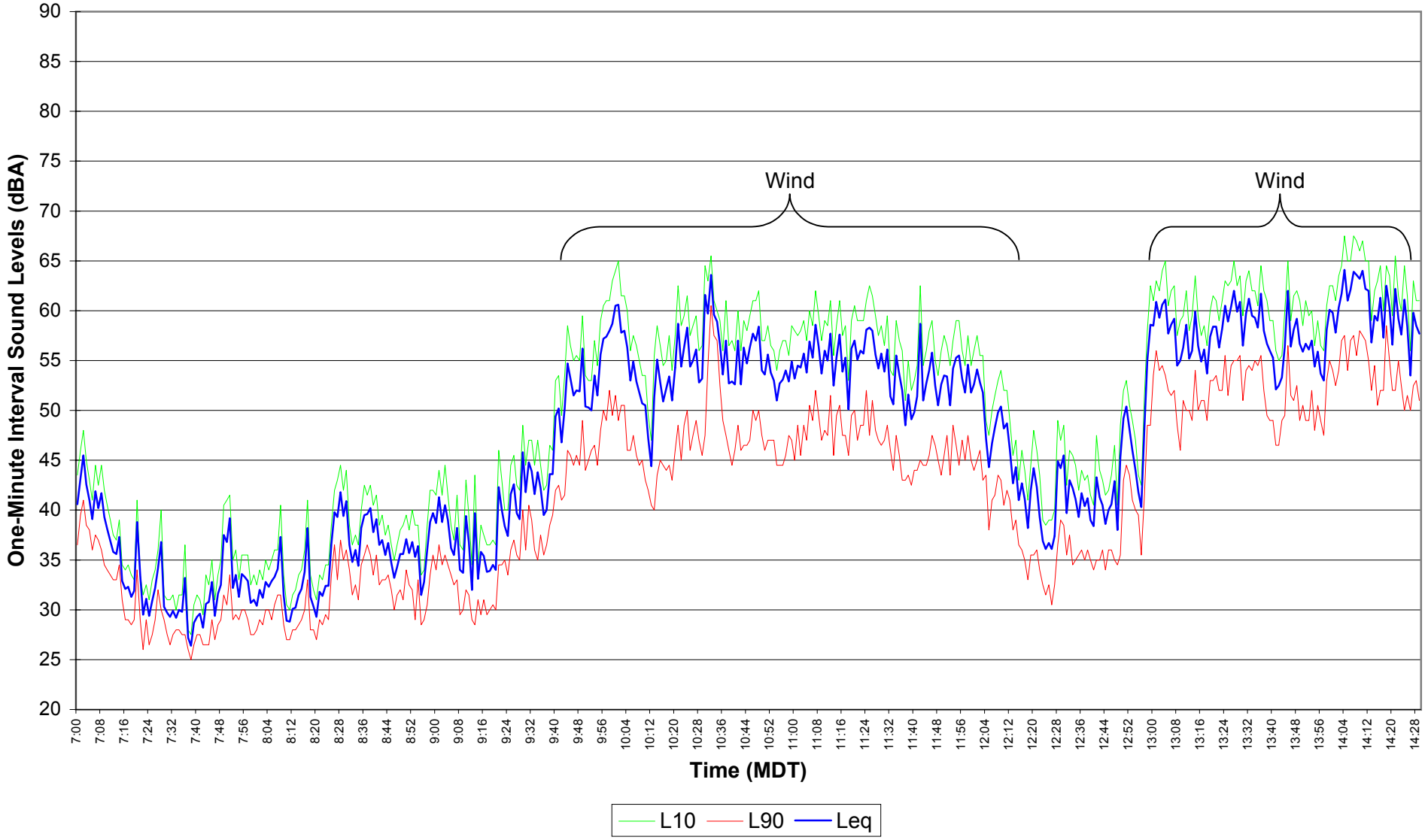


Figure E3.80
EnCana Rosebud
Site 3 Noise Survey
Dec. 19, 2004 14:30 - 21:59

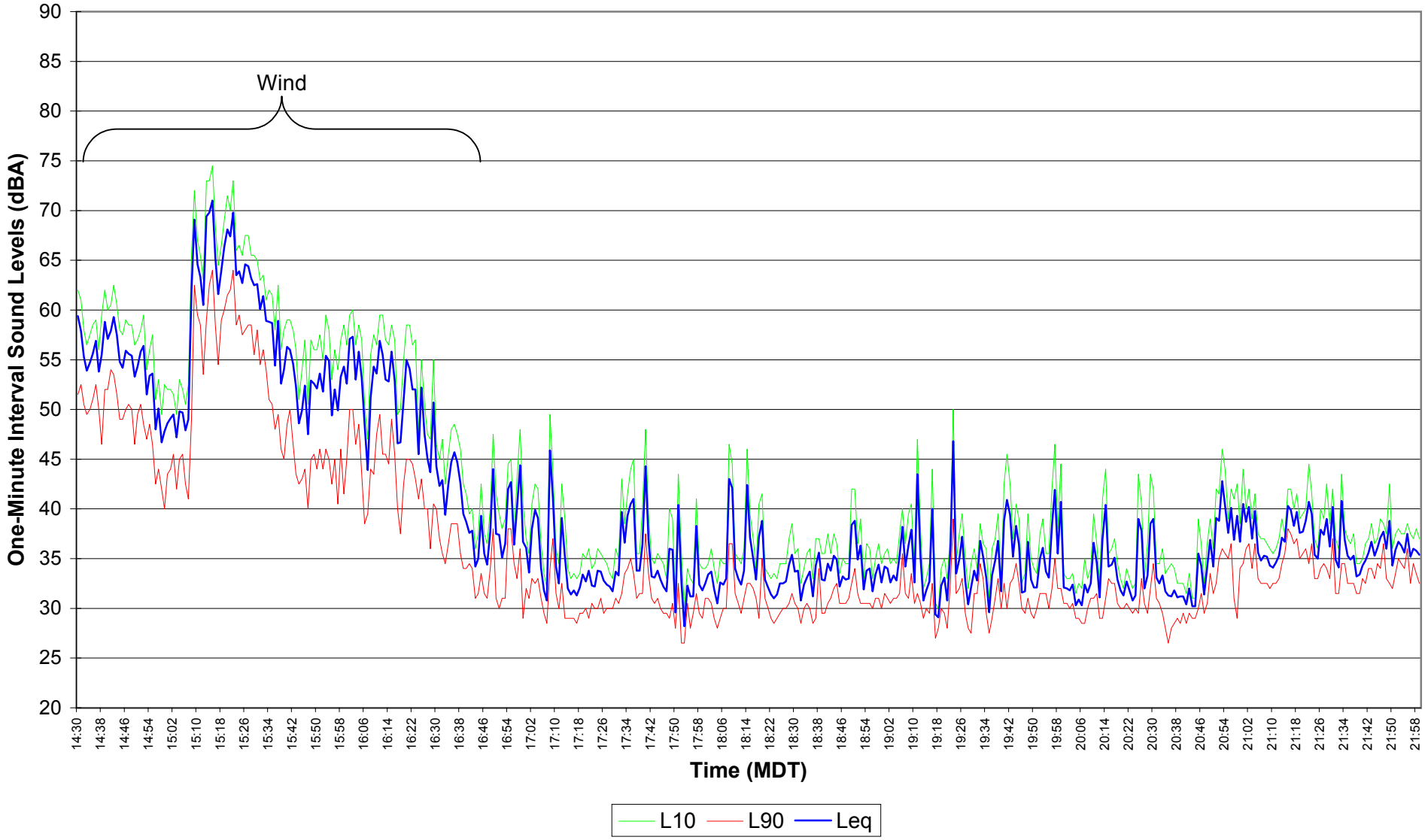


Figure E3.81
EnCana Rosebud
Site 3 Noise Survey
Dec. 19, 2004 - Dec. 20, 2004 22:00 - 06:59

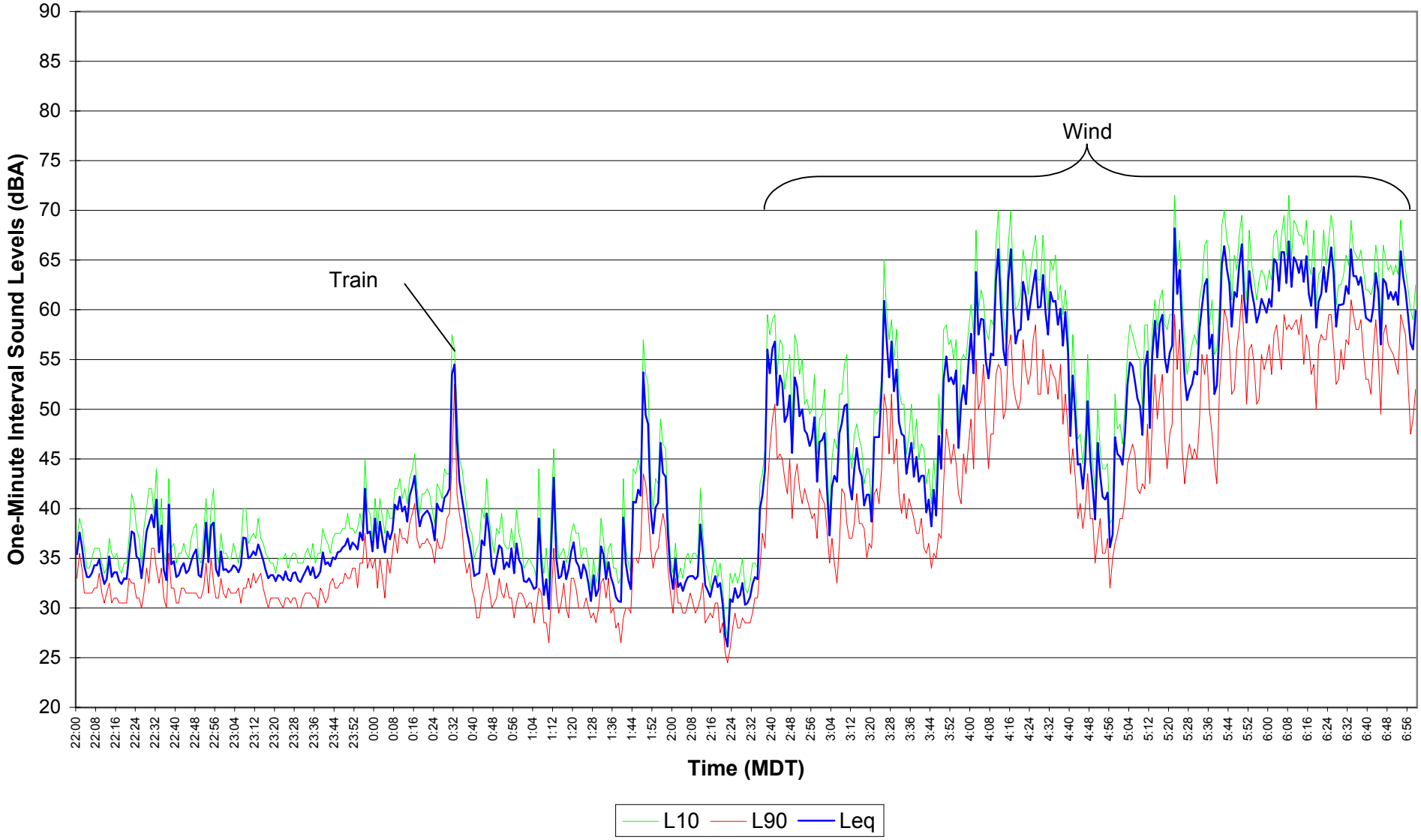
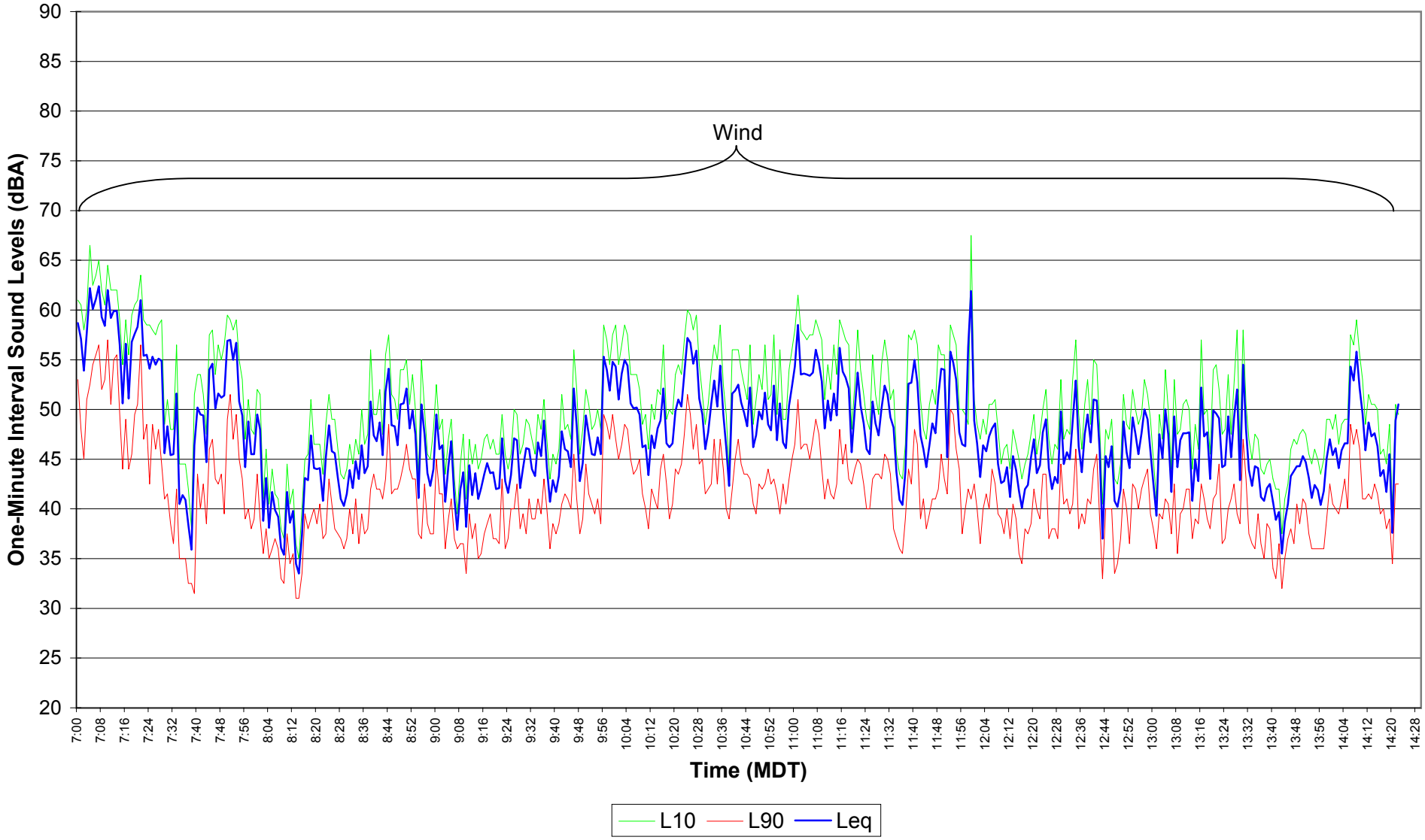


Figure E3.82
EnCana Rosebud
Site 3 Noise Survey
Dec. 20, 2004 07:00 - 14:29



APPENDIX E4

Measurement Results
Graphs of 1-Minute L_{eq}, L_{10} and L_{90} Data
Site 4

Patching Associates Acoustical Engineering Ltd.

Consultants in Acoustics, Noise Control and Vibrations

Table E4.1
EnCana Rosebud
Site 4 Noise Survey
Daily Leq Values

Date	Time	Figure #	Measured		Residual	
			Leq	Hours	Leq	Hours
Nov. 26, 2004	07:00 - 21:59	N/A, 11	37.8	6.7	33.3	6.6
Nov. 26, 2004 - Nov. 27, 2004	**22:00 - 06:59**	**12**	**43.6**	**9.0**	**34.9**	**8.8**
Nov. 27, 2004	07:00 - 21:59	13, 14	37.8	15.0	37.3	14.8
Nov 27, 2004 - Nov 28, 2004	**22:00 - 06:59**	**15**	**42.6**	**9.0**	**33.4**	**8.8**
Nov. 28, 2004	07:00 - 21:59	16, 17	39.3	15.0	33.4	14.1
Nov. 28, 2004 - Nov. 29, 2004	**22:00 - 06:59**	**18**	**43.7**	**9.0**	**32.0**	**8.7**
Nov. 29, 2004	07:00 - 21:59	19, 20	35.0	14.6	33.7	14.5
Nov 29, 2004 - Nov 30, 2004	**22:00 - 06:59**	**21**	**45.8**	**9.0**	**34.1**	**8.5**
Nov. 30, 2004	07:00 - 21:59	22, 23	42.0	15.0	35.8	14.7
Nov. 30, 2004 - Dec. 01, 2004	**22:00 - 06:59**	**24**	**40.8**	**9.0**	**33.4**	**8.7**
Dec. 01, 2004	07:00 - 21:59	25, 26	40.2	15.0	35.0	14.8
Dec. 01, 2004 - Dec. 02, 2004	**22:00 - 06:59**	**27**	**43.3**	**9.0**	**32.1**	**8.8**
Dec. 02, 2004	07:00 - 21:59	28, 29	52.9	15.0	38.6	10.0
Dec. 02, 2004 - Dec. 03, 2004	**22:00 - 06:59**	**30**	**42.8**	**9.0**	**33.3**	**8.7**
Dec. 03, 2004	07:00 - 21:59	31, 32	43.6	14.8	37.1	13.5
Dec. 03, 2004 - Dec. 04, 2004	**22:00 - 06:59**	**33**	**40.3**	**9.0**	**35.2**	**8.9**
Dec. 04, 2004	07:00 - 21:59	34, 35	42.8	15.0	39.0	12.2
Dec. 04, 2004 - Dec. 05, 2004	**22:00 - 06:59**	**36**	**44.3**	**9.0**	**35.3**	**8.7**
Dec. 05, 2004	07:00 - 21:59	37, 38	43.1	15.0	37.4	12.7
Dec. 05, 2004 - Dec. 06, 2004	**22:00 - 06:59**	**39**	**35.8**	**5.5**	**35.3**	**5.5**
Dec. 06, 2004	07:00 - 21:59	N/A, 41	42.5	5.9	37.5	5.7
Dec. 06, 2004 - Dec. 07, 2004	**22:00 - 06:59**	**42**	**39.4**	**9.0**	**27.7**	**8.9**
Dec. 07, 2004	07:00 - 21:59	43, 44	40.4	15.0	34.8	14.8
Dec. 07, 2004 - Dec. 08, 2004	**22:00 - 06:59**	**45**	**44.0**	**9.0**	**30.1**	**8.8**
Dec. 08, 2004	07:00 - 21:59	46, 47	38.1	15.0	35.5	14.7
Dec. 08, 2004 - Dec. 09, 2004	**22:00 - 06:59**	**48**	**42.2**	**9.0**	**33.0**	**8.8**
Dec. 09, 2004	07:00 - 21:59	49, 50	37.1	15.0	36.6	14.9
Dec. 09, 2004 - Dec. 10, 2004	**22:00 - 06:59**	**51**	**46.1**	**9.0**	**31.2**	**8.7**
Dec. 10, 2004	07:00 - 21:59	52, 53	45.1	14.6	38.0	12.5
Dec. 10, 2004 - Dec. 11, 2004	**22:00 - 06:59**	**54**	**50.2**	**9.0**	**36.4**	**8.2**
Dec. 11, 2004	07:00 - 21:59	55, 56	54.2	15.0	38.0	8.0
Dec. 11, 2004 - Dec. 12, 2004	**22:00 - 06:59**	**57**	**37.9**	**9.0**	**36.2**	**8.6**
Dec. 12, 2004	07:00 - 21:59	58, 59	44.6	15.0	32.2	14.9
Dec. 12, 2004 - Dec. 13, 2004	**22:00 - 06:59**	**60**	**39.9**	**9.0**	**31.7**	**8.9**
Dec. 13, 2004	07:00 - 21:59	61, 62	54.1	14.7	36.0	9.8
Dec. 13, 2004 - Dec. 14, 2004	**22:00 - 06:59**	**63**	**43.2**	**9.0**	**33.0**	**8.8**
Dec. 14, 2004	07:00 - 21:59	64, 65	42.3	15.0	37.0	14.4
Dec. 14, 2004 - Dec. 15, 2004	**22:00 - 06:59**	**66**	**39.9**	**9.0**	**33.9**	**8.9**
Dec. 15, 2004	07:00 - 21:59	67, 68	39.2	15.0	35.3	14.8
Dec. 15, 2004 - Dec. 16, 2004	**22:00 - 06:59**	**69**	**46.7**	**9.0**	**29.5**	**8.6**
Dec. 16, 2004	07:00 - 21:59	70, 71	37.2	15.0	36.5	14.8
Dec. 16, 2004 - Dec. 17, 2004	**22:00 - 06:59**	**72**	**44.7**	**9.0**	**38.5**	**8.1**
Dec. 17, 2004	07:00 - 21:59	73, 74	38.4	14.7	37.6	14.4
Dec. 17, 2004 - Dec. 18, 2004	**22:00 - 06:59**	**75**	**48.9**	**9.0**	**33.5**	**8.7**
Dec. 18, 2004	07:00 - 21:59	76, 77	45.4	15.0	35.2	14.7
Dec 18, 2004 - Dec 19, 2004	**22:00 - 06:59**	**78**	**45.8**	**9.0**	**34.4**	**8.5**
Dec. 19, 2004	07:00 - 21:59	79, 80	55.3	15.0	36.0	8.9
Dec. 19, 2004 - Dec. 20, 2004	**22:00 - 06:59**	**81**	**59.7**	**9.0**	**37.2**	**4.7**
Dec. 20, 2004	07:00 - 21:59	82, 83	53.9	6.8	42.2	1.8

Figure E4.11
EnCana Rosebud
Site 4 Noise Survey
Nov. 26, 2004 14:30 - 21:59

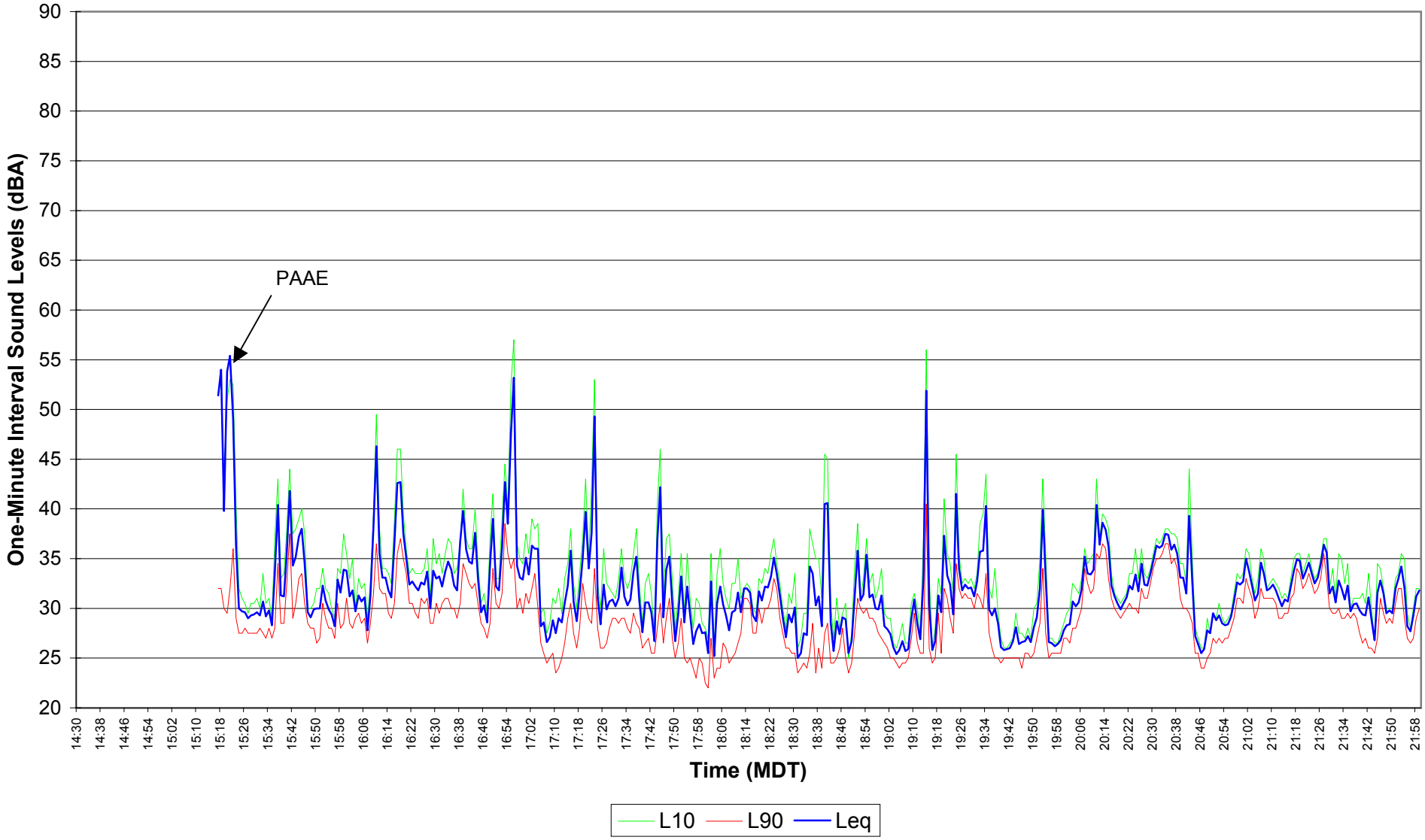


Figure E4.12
EnCana Rosebud
Site 4 Noise Survey
Nov. 26, 2004 - Nov. 27, 2004 22:00 - 06:59

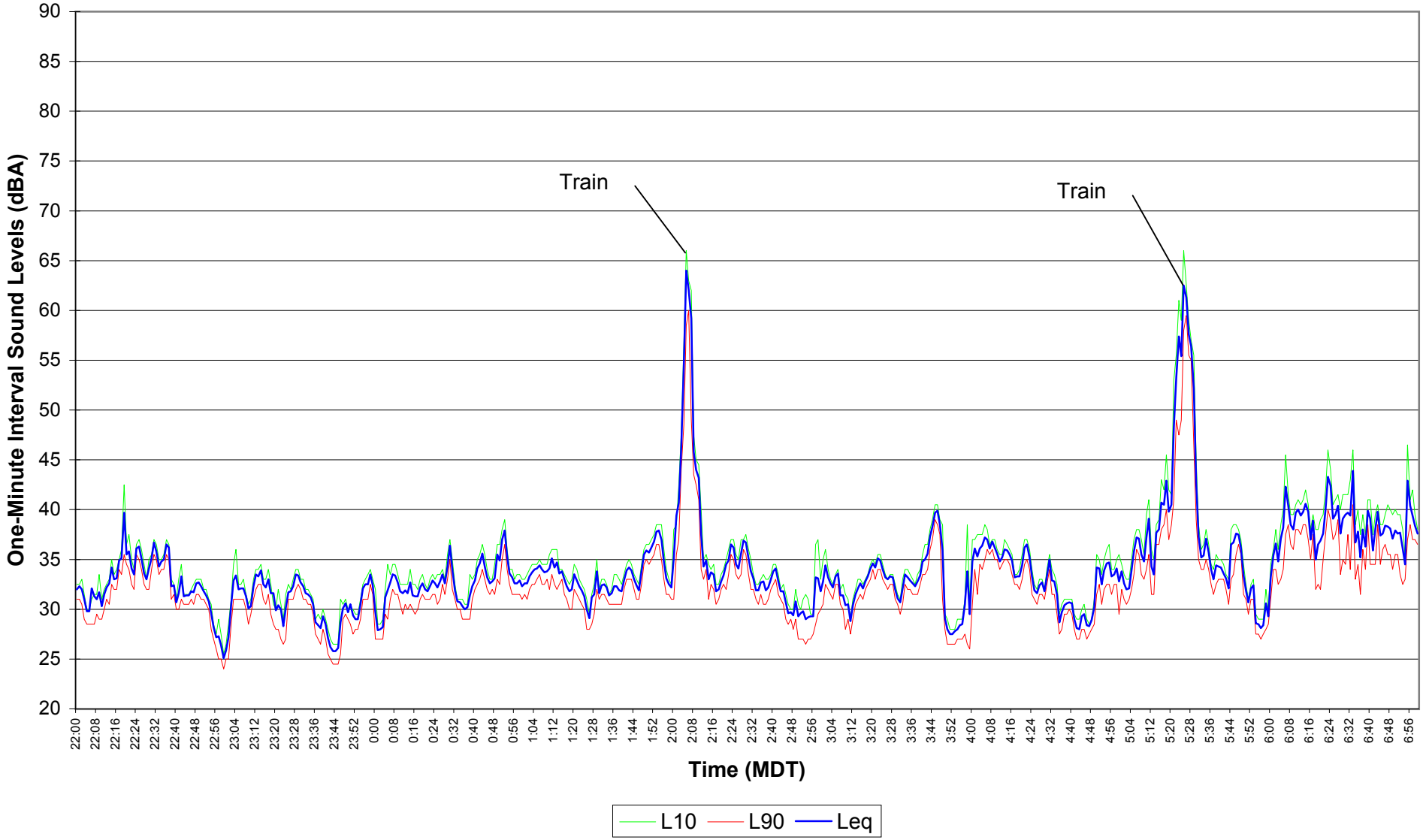


Figure E4.13
EnCana Rosebud
Site 4 Noise Survey
Nov. 27, 2004 07:00 - 14:29

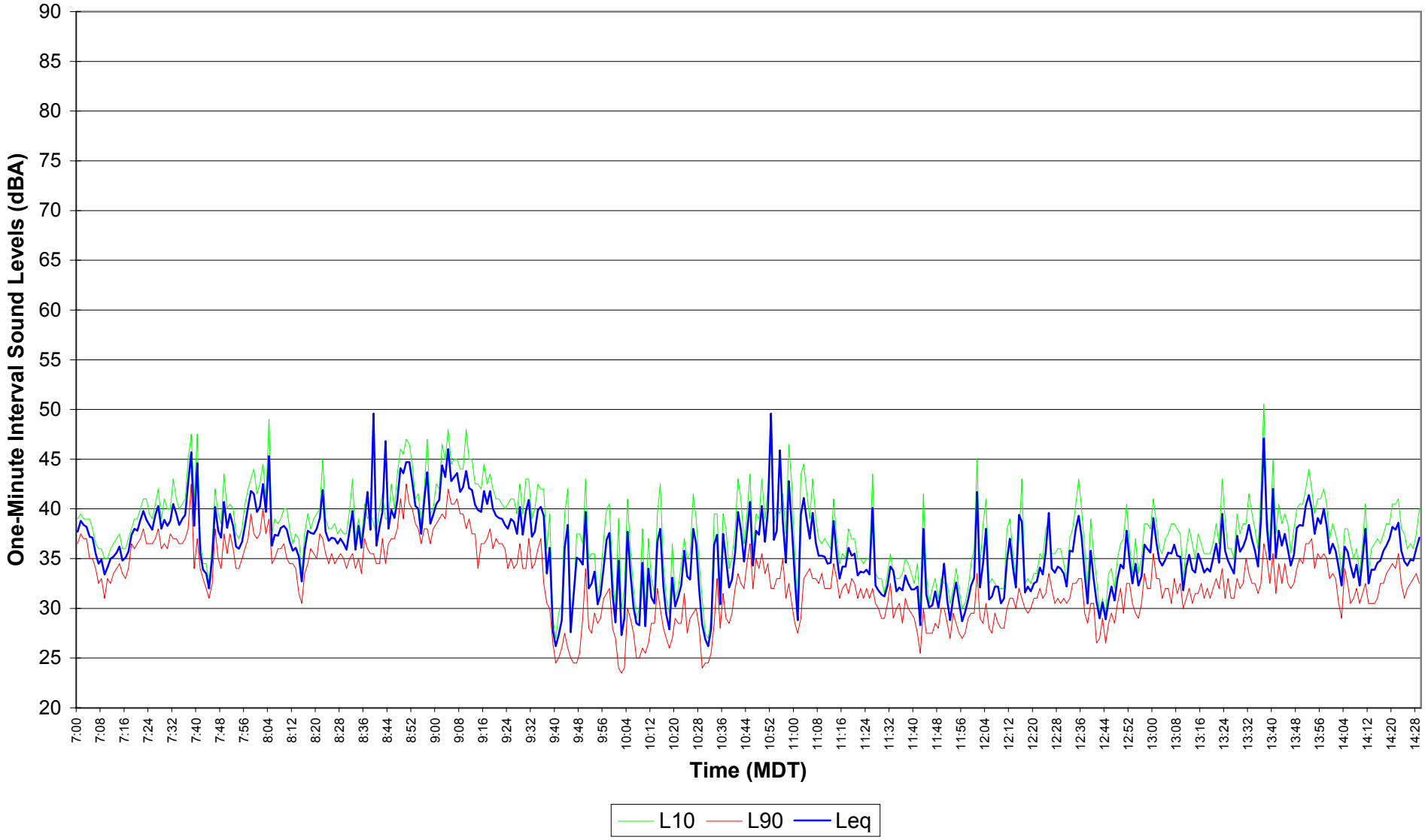


Figure E4.14
EnCana Rosebud
Site 4 Noise Survey
Nov. 27, 2004 14:30 - 21:59

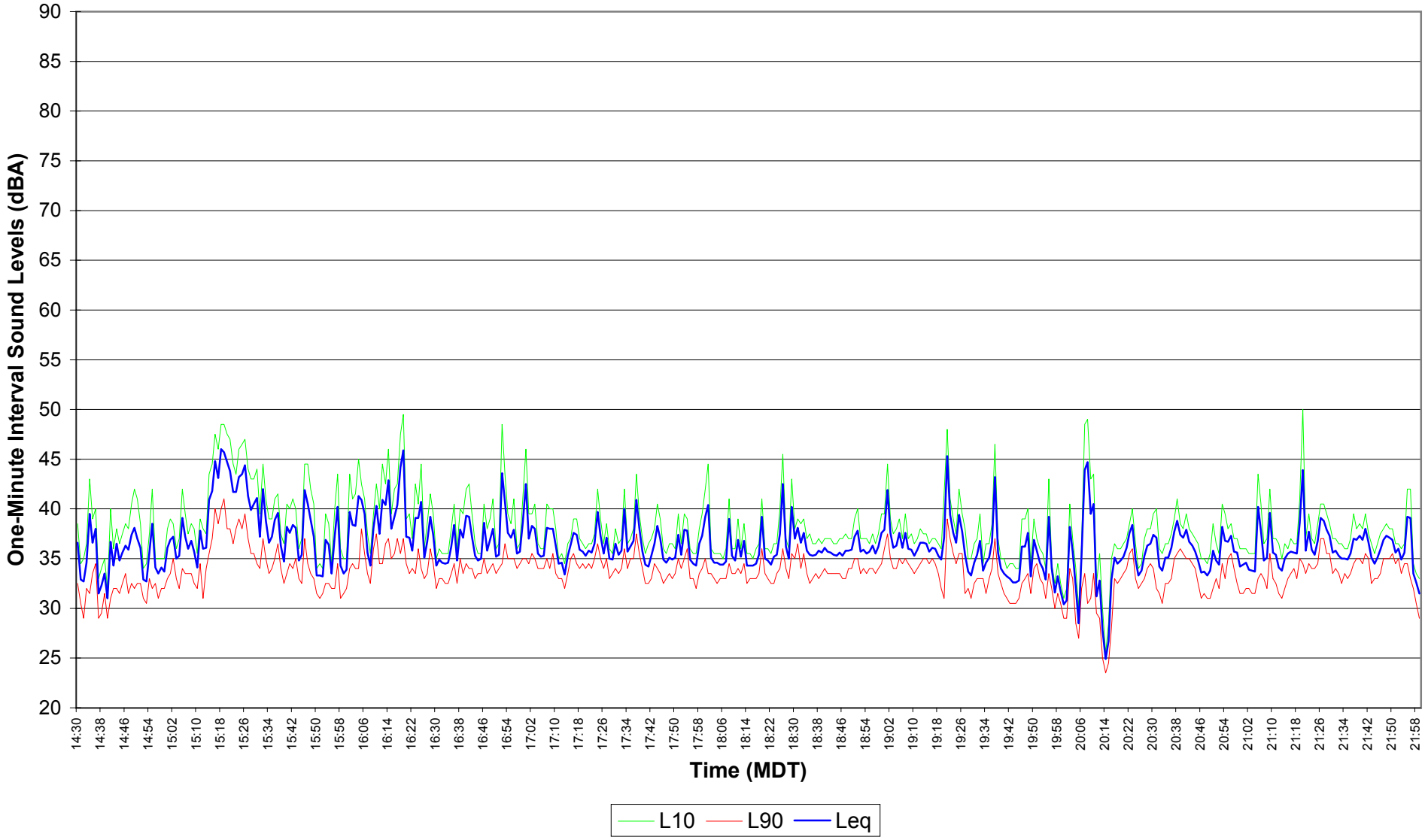


Figure E4.15
EnCana Rosebud
Site 4 Noise Survey
Nov 27, 2004 - Nov 28, 2004 22:00 - 06:59

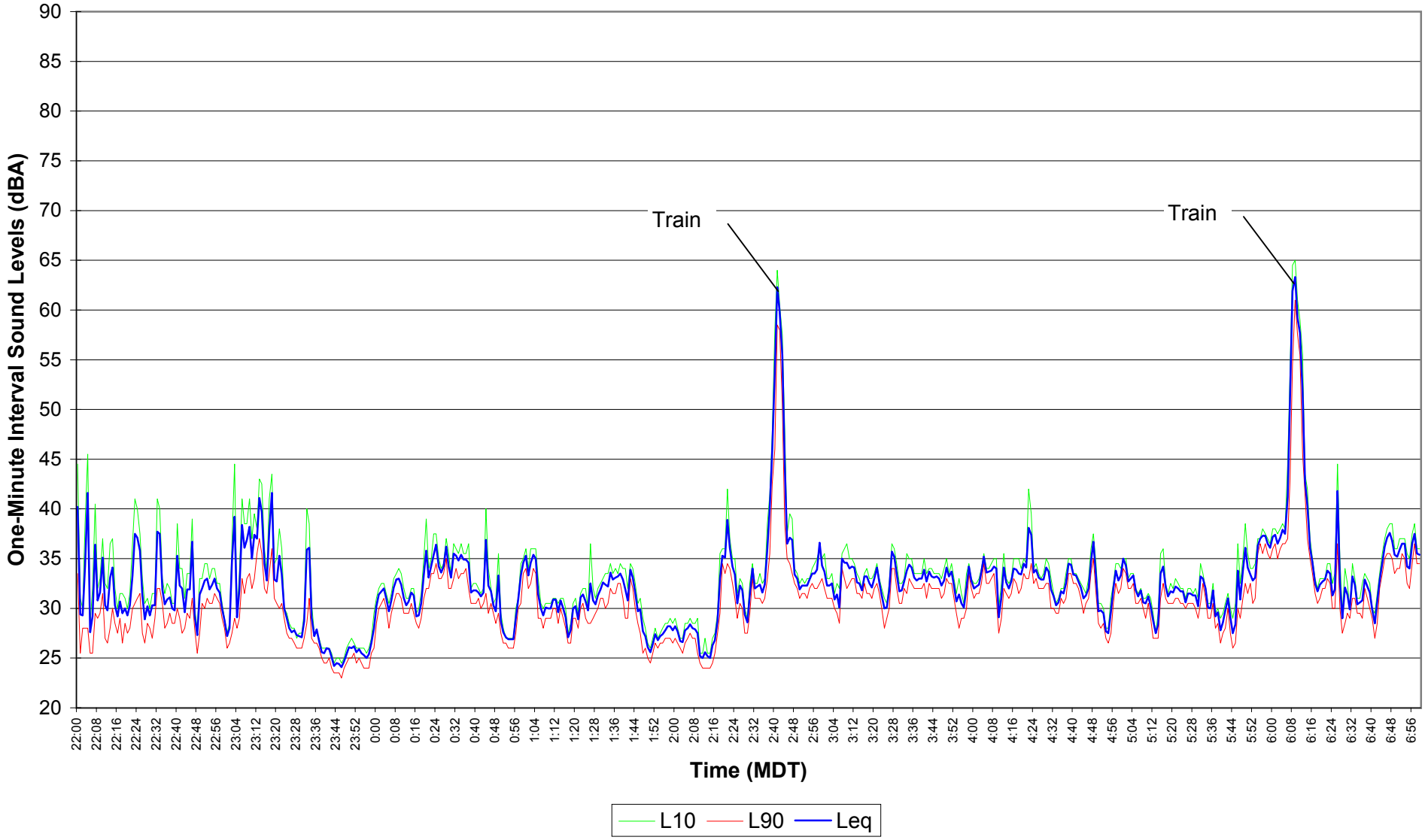


Figure E4.16
EnCana Rosebud
Site 4 Noise Survey
Nov. 28, 2004 07:00 - 14:29

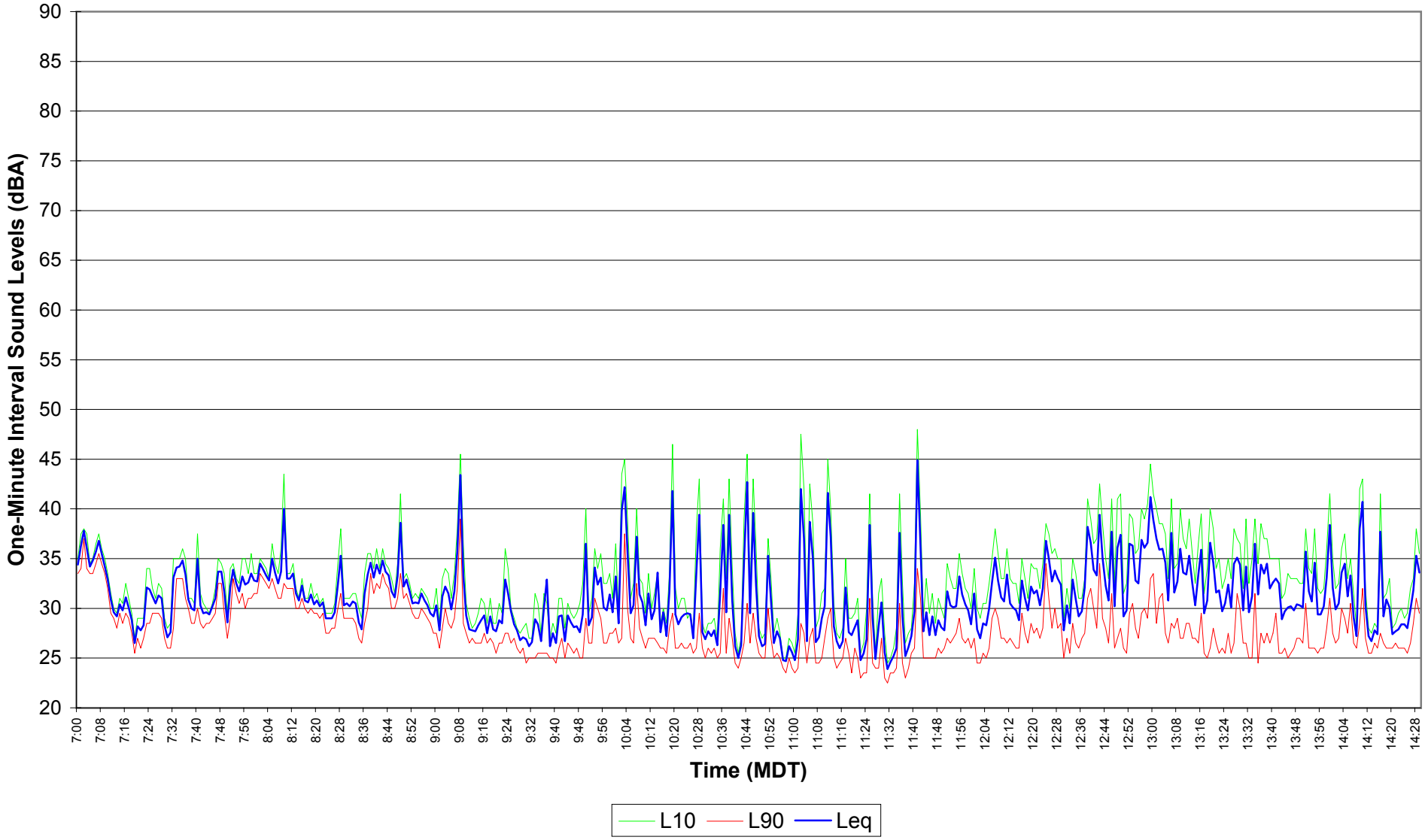


Figure E4.17
EnCana Rosebud
Site 4 Noise Survey
Nov. 28, 2004 14:30 - 21:59

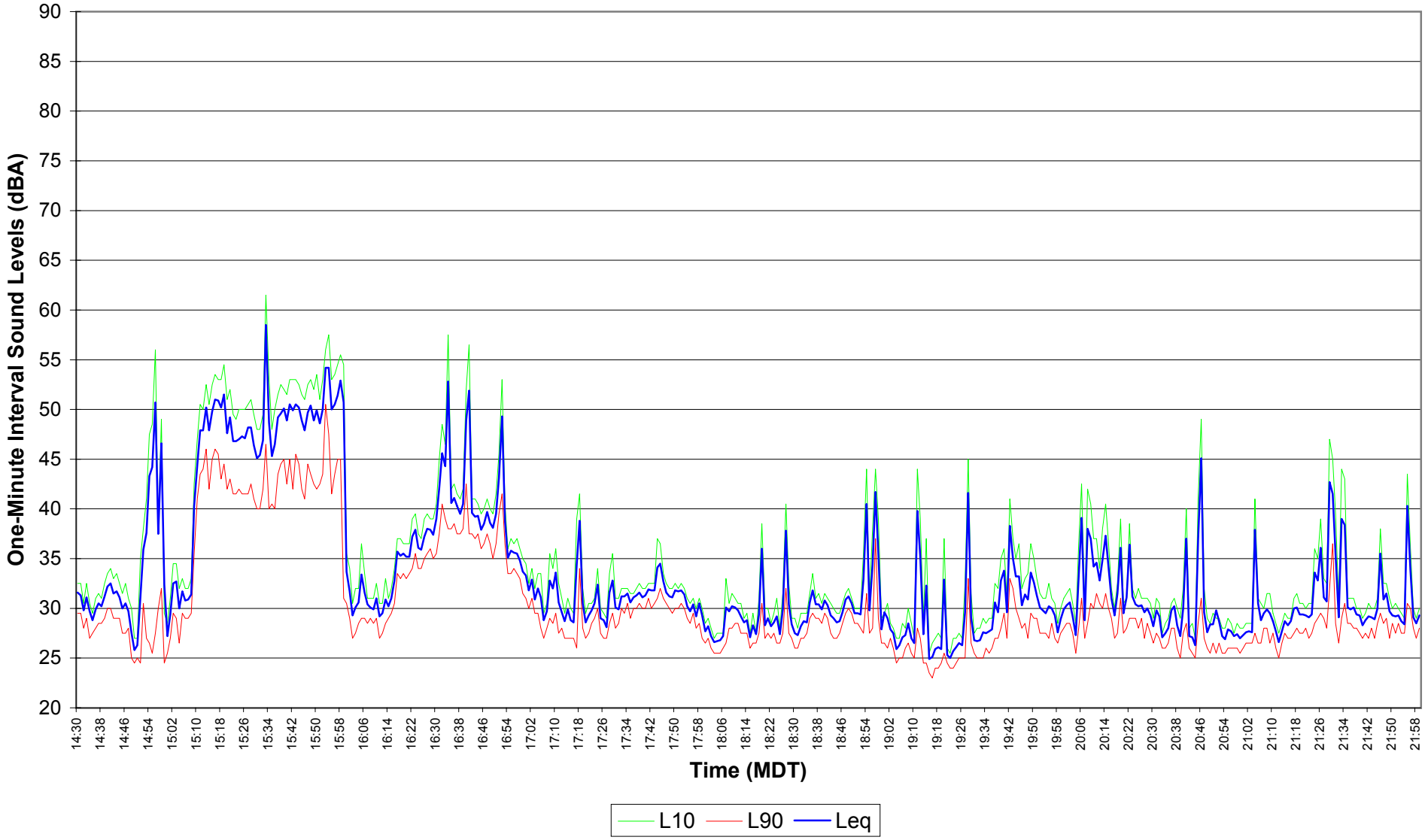


Figure E4.18
EnCana Rosebud
Site 4 Noise Survey
Nov. 28, 2004 - Nov. 29, 2004 22:00 - 06:59

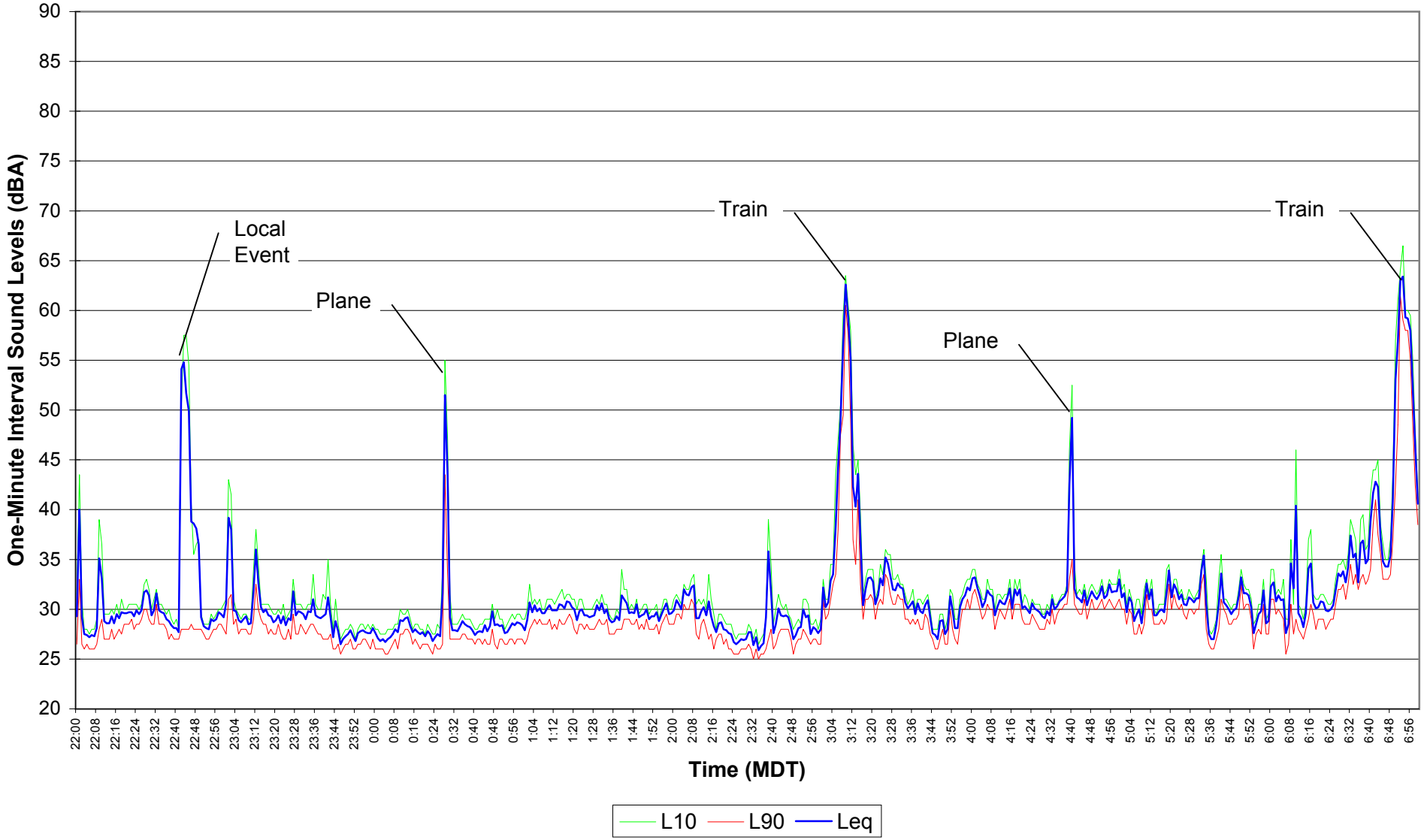


Figure E4.19
EnCana Rosebud
Site 4 Noise Survey
Nov. 29, 2004 07:00 - 14:29

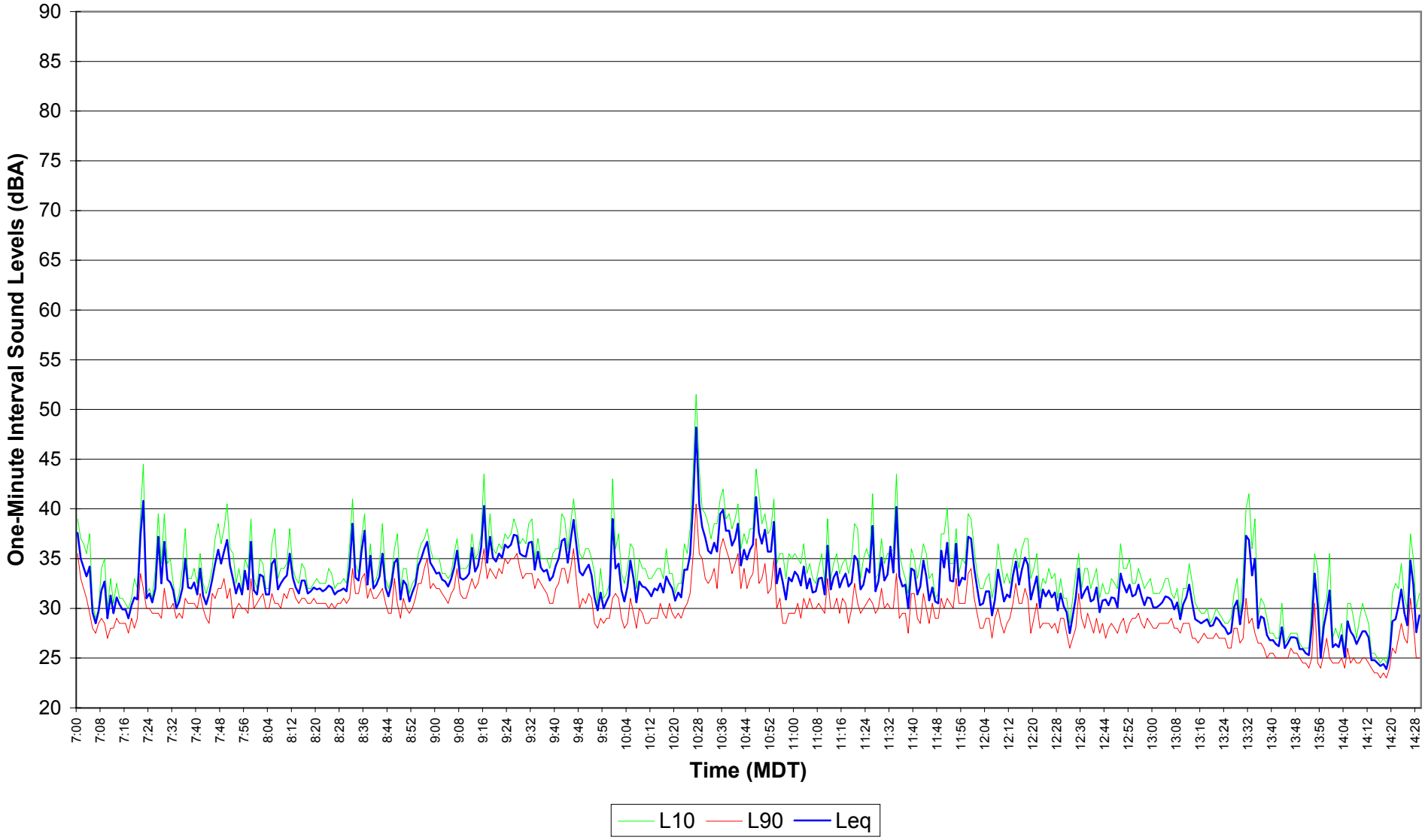


Figure E4.20
EnCana Rosebud
Site 4 Noise Survey
Nov. 29, 2004 14:30 - 21:59

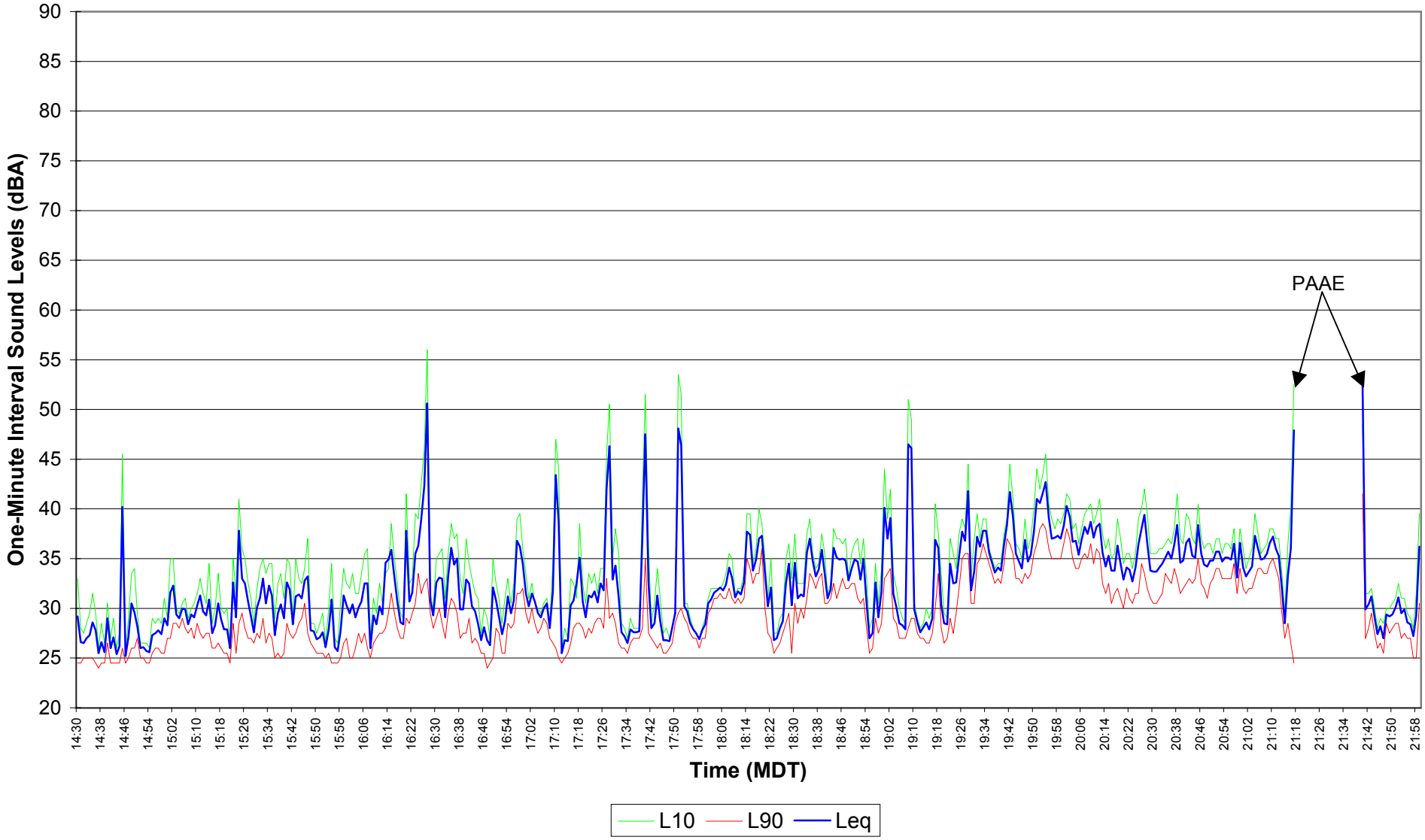


Figure E4.21
EnCana Rosebud
Site 4 Noise Survey
Nov 29, 2004 - Nov 30, 2004 22:00 - 06:59

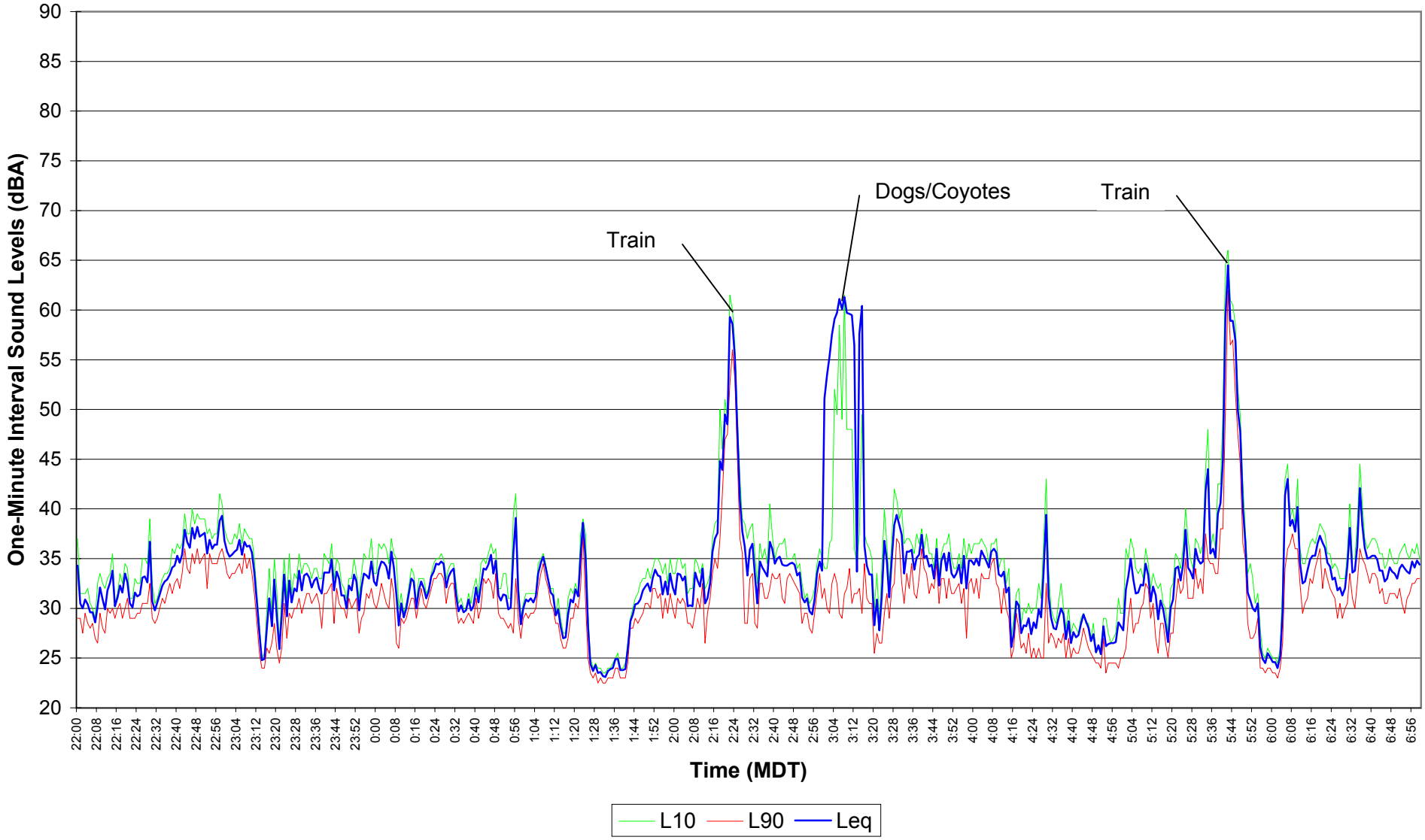


Figure E4.22
EnCana Rosebud
Site 4 Noise Survey
Nov. 30, 2004 07:00 - 14:29

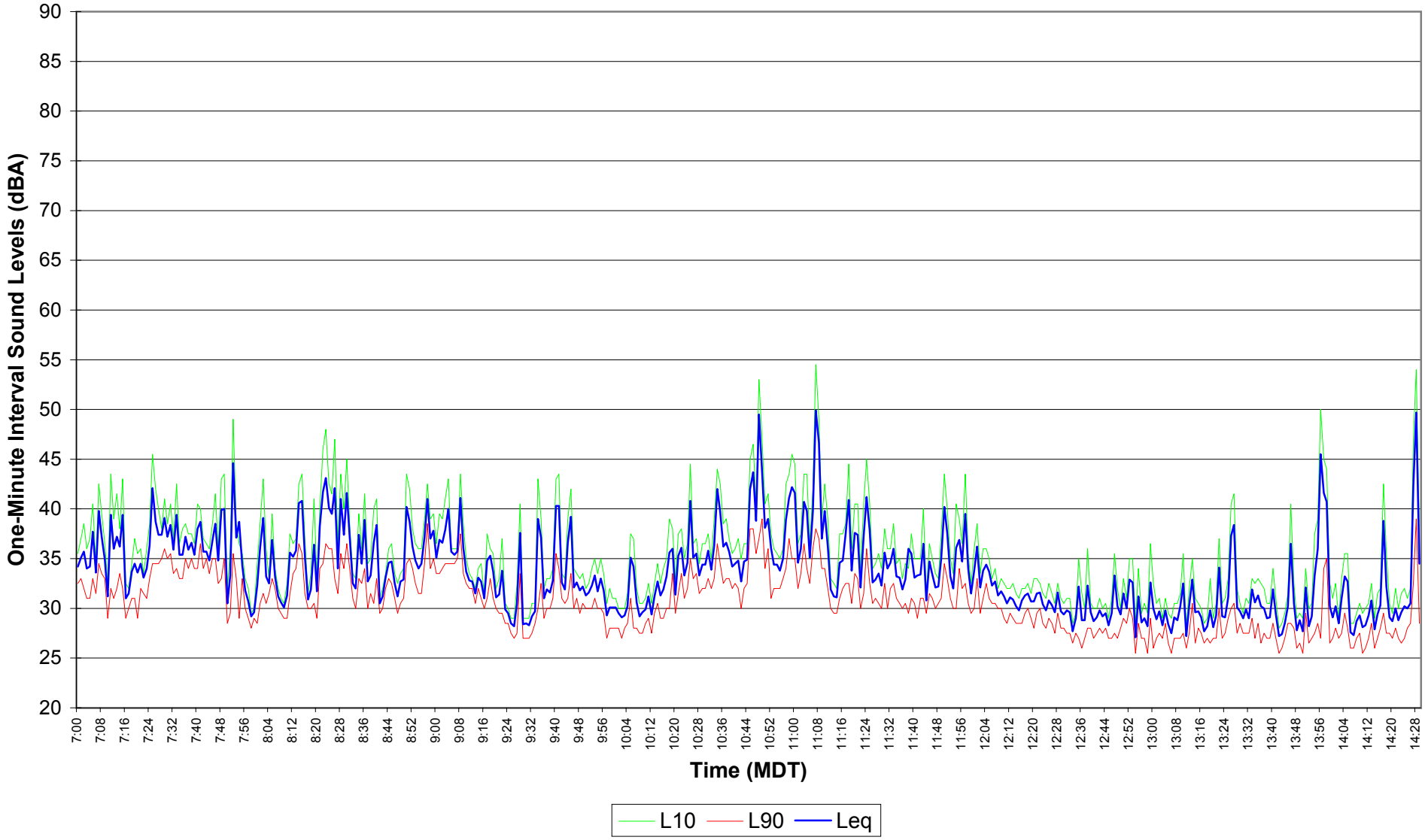


Figure E4.23
EnCana Rosebud
Site 4 Noise Survey
Nov. 30, 2004 14:30 - 21:59

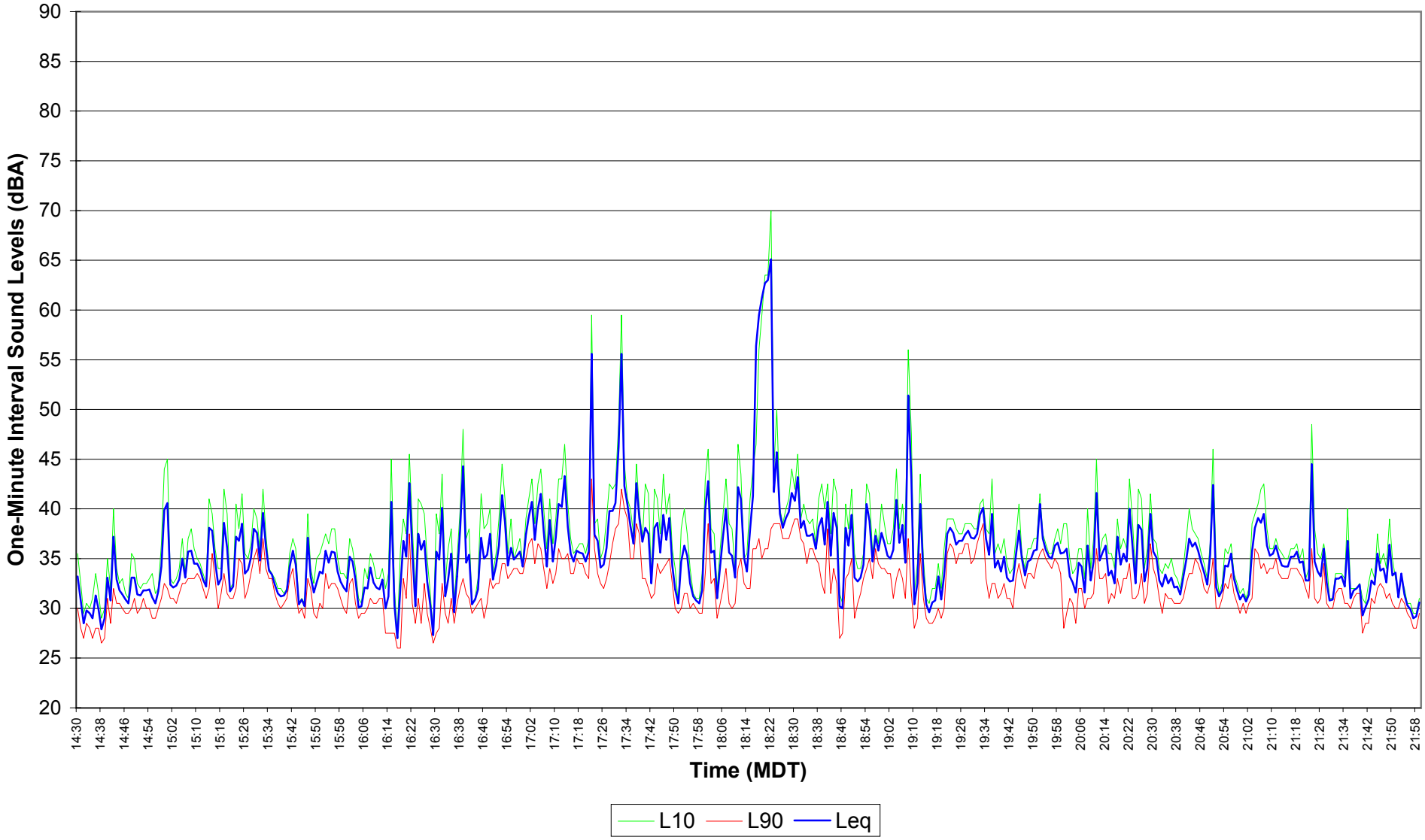


Figure E4.24
EnCana Rosebud
Site 4 Noise Survey
Nov. 30, 2004 - Dec. 01, 2004 22:00 - 06:59

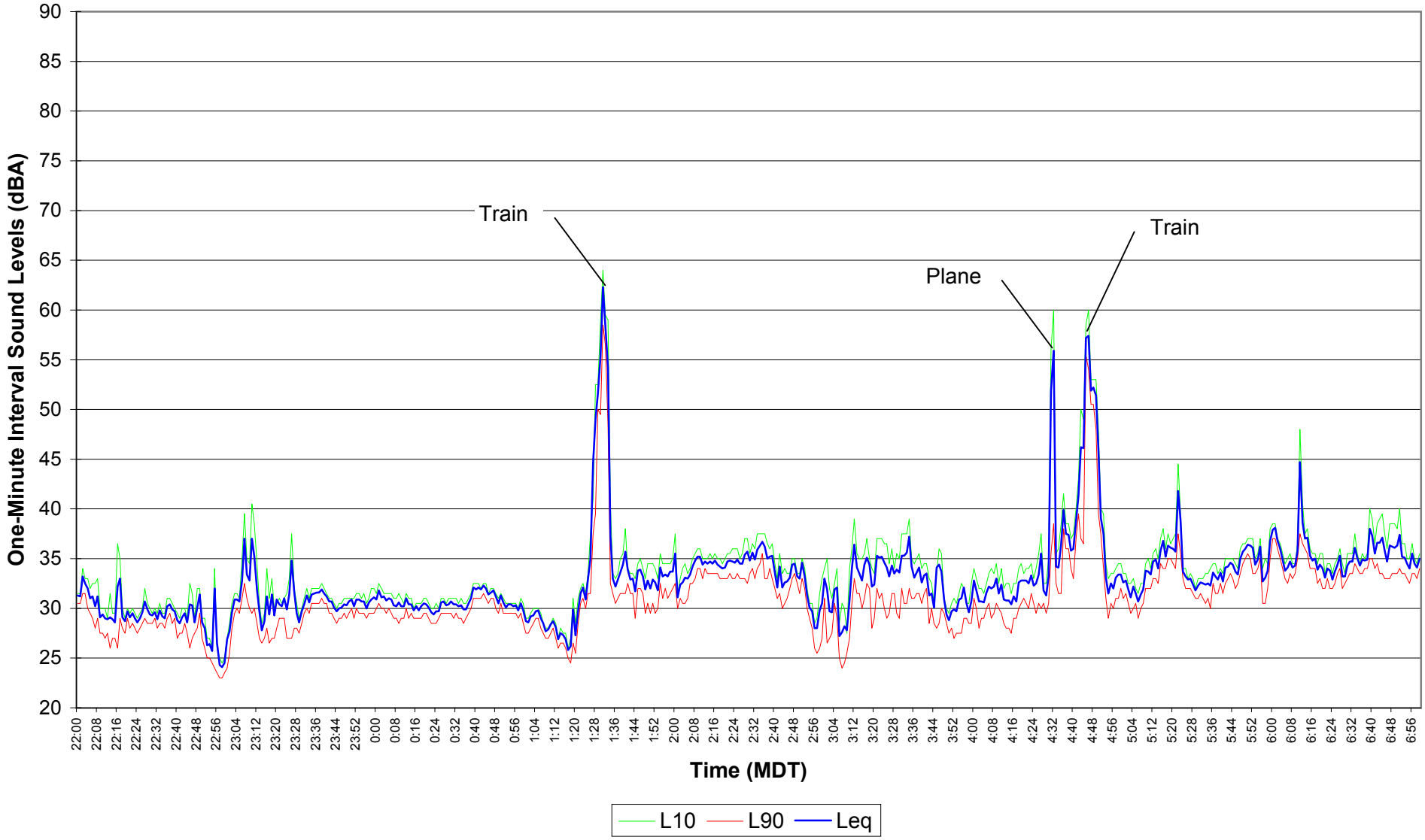


Figure E4.25

EnCana Rosebud

Site 4 Noise Survey

Dec. 01, 2004 07:00 - 14:29

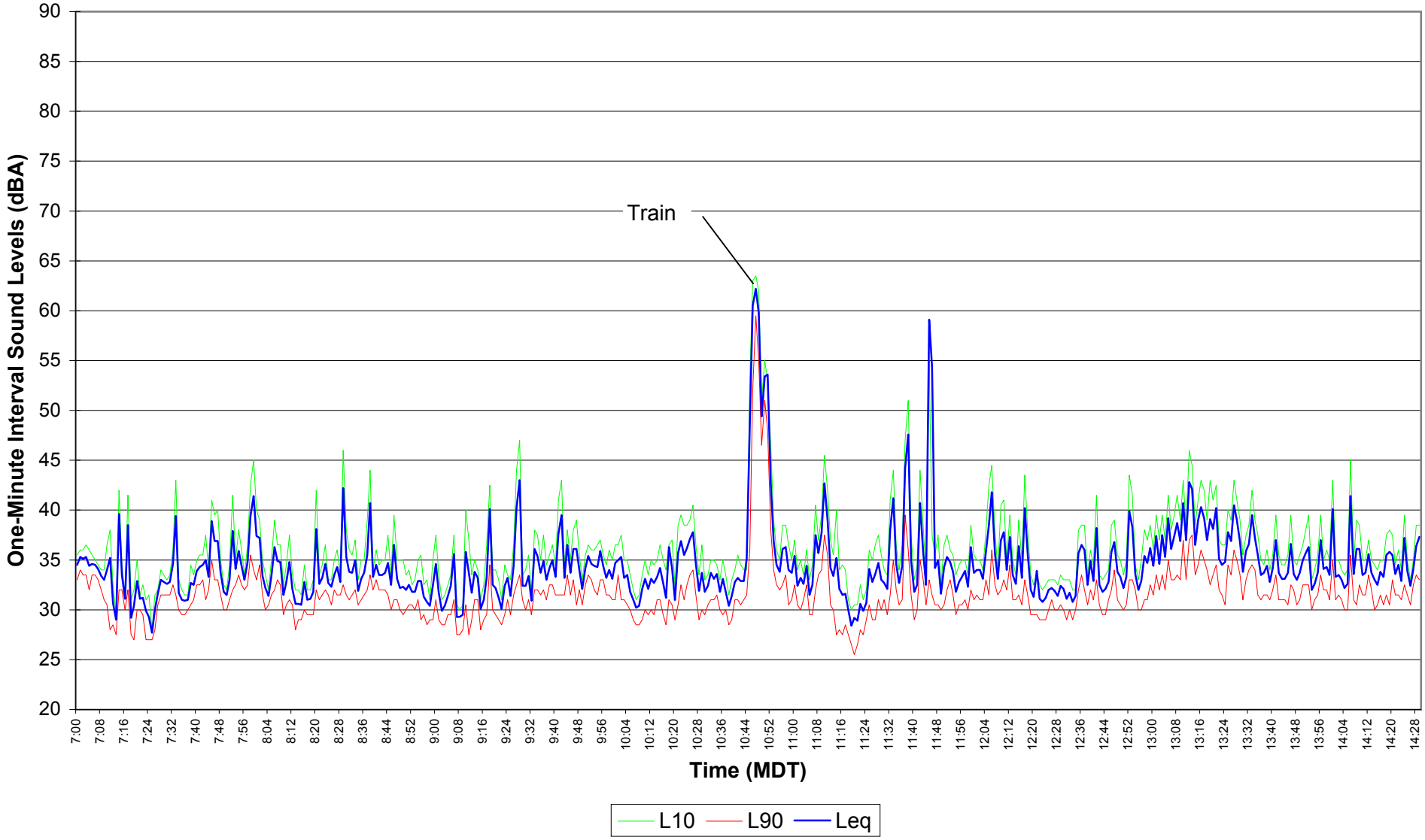


Figure E4.26
EnCana Rosebud
Site 4 Noise Survey
Dec. 01, 2004 14:30 - 21:59

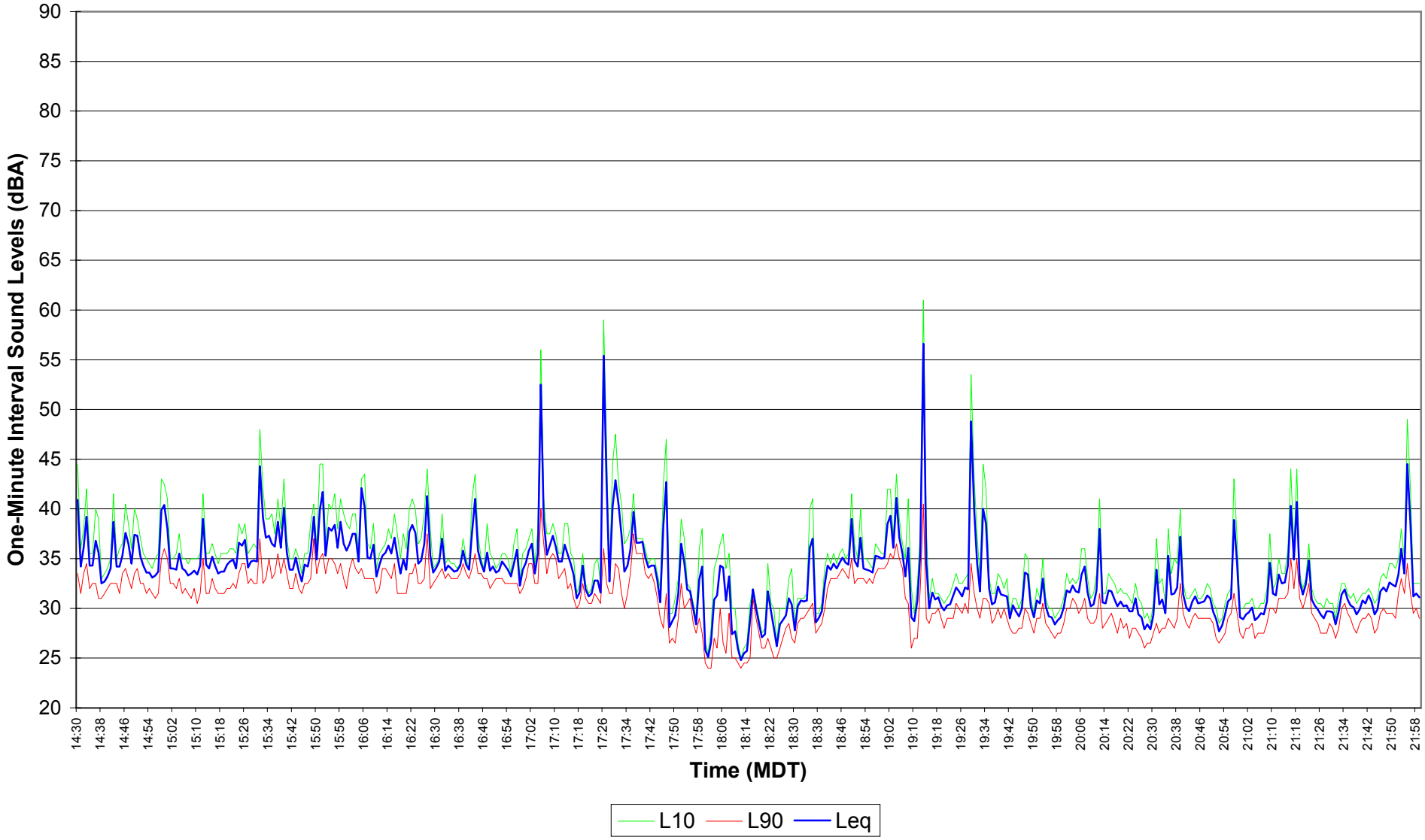


Figure E4.27
EnCana Rosebud
Site 4 Noise Survey
Dec. 01, 2004 - Dec. 02, 2004 22:00 - 06:59

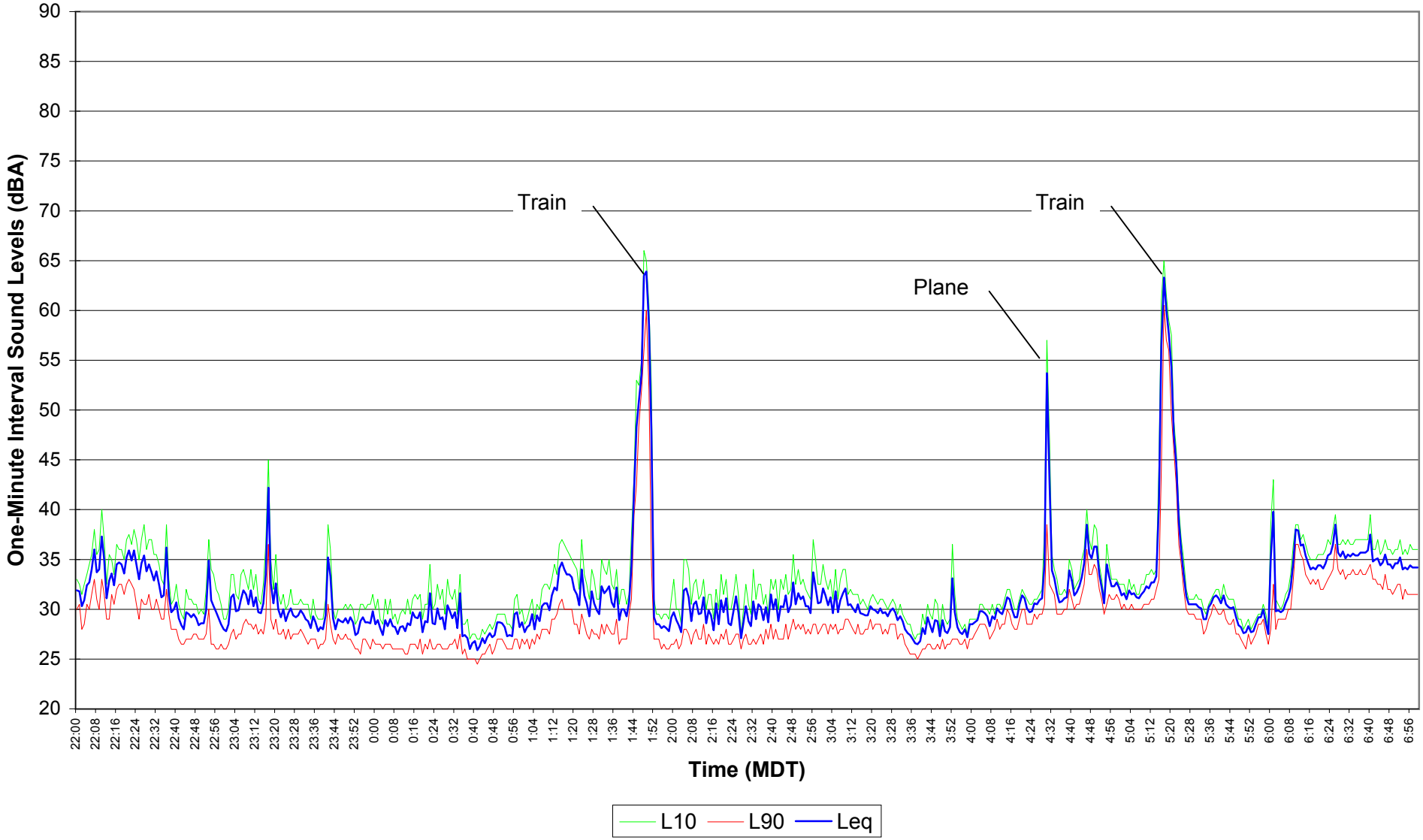


Figure E4.28
EnCana Rosebud
Site 4 Noise Survey
Dec. 02, 2004 07:00 - 14:29

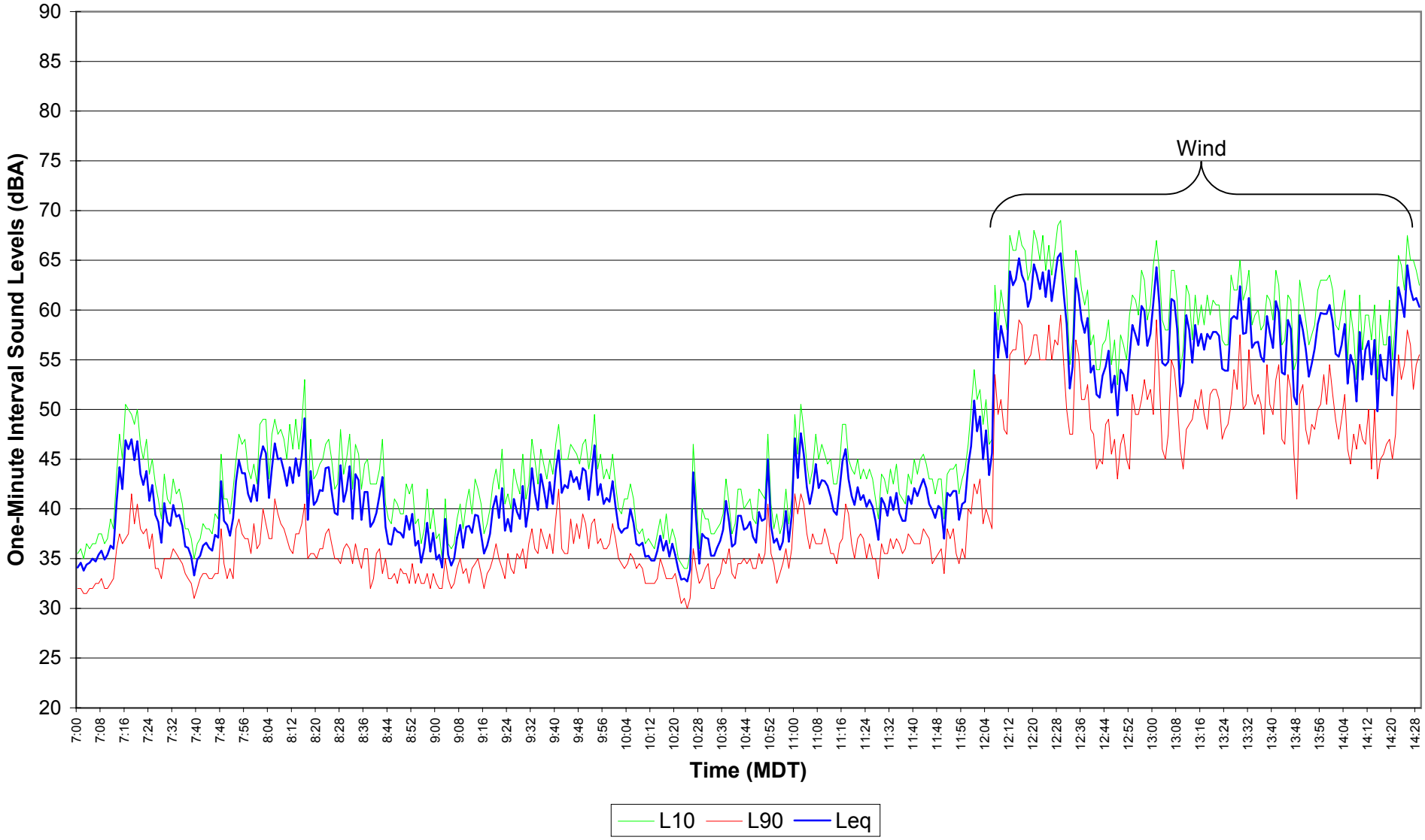


Figure E4.29
EnCana Rosebud
Site 4 Noise Survey
Dec. 02, 2004 14:30 - 21:59

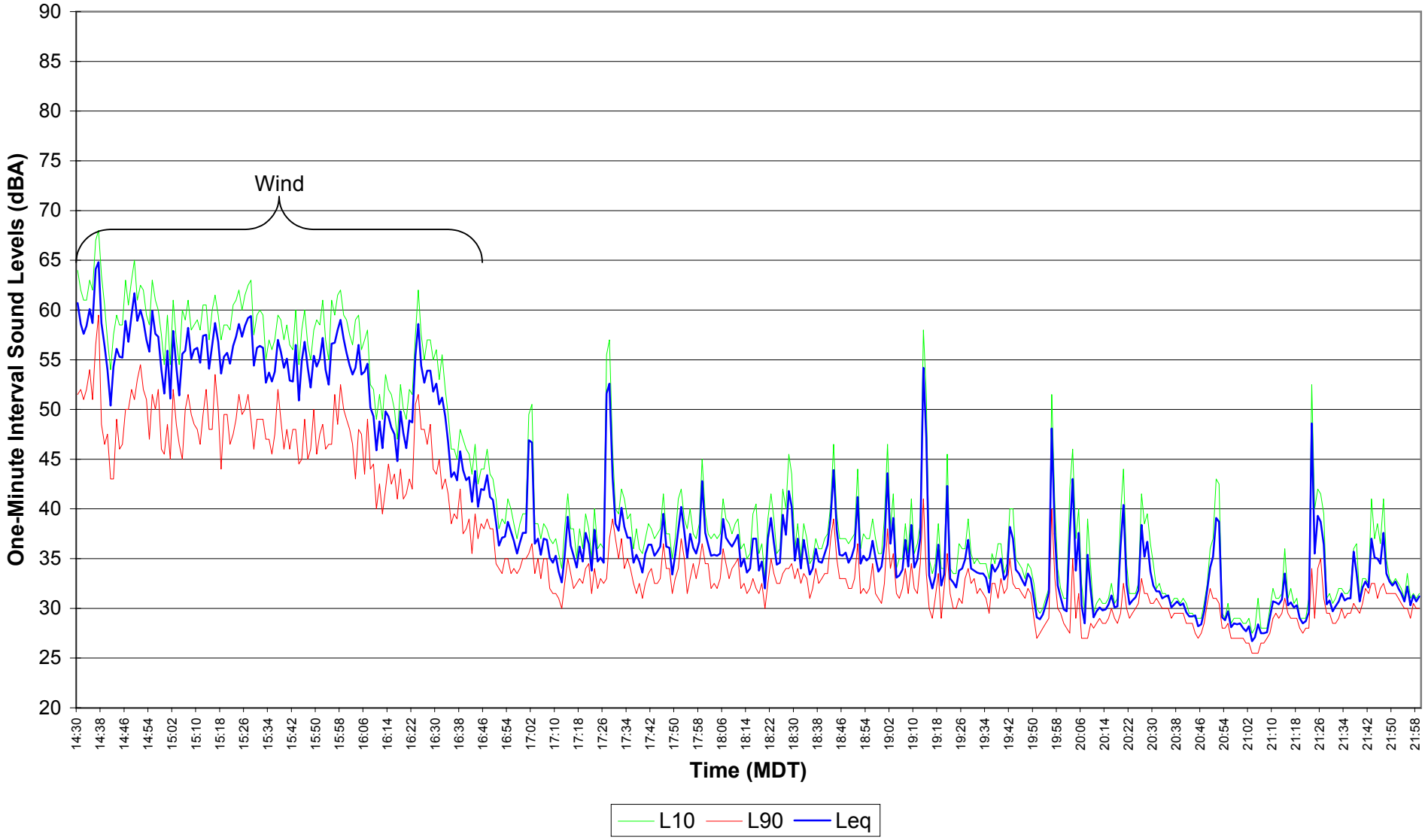


Figure E4.30
EnCana Rosebud
Site 4 Noise Survey
Dec. 02, 2004 - Dec. 03, 2004 22:00 - 06:59

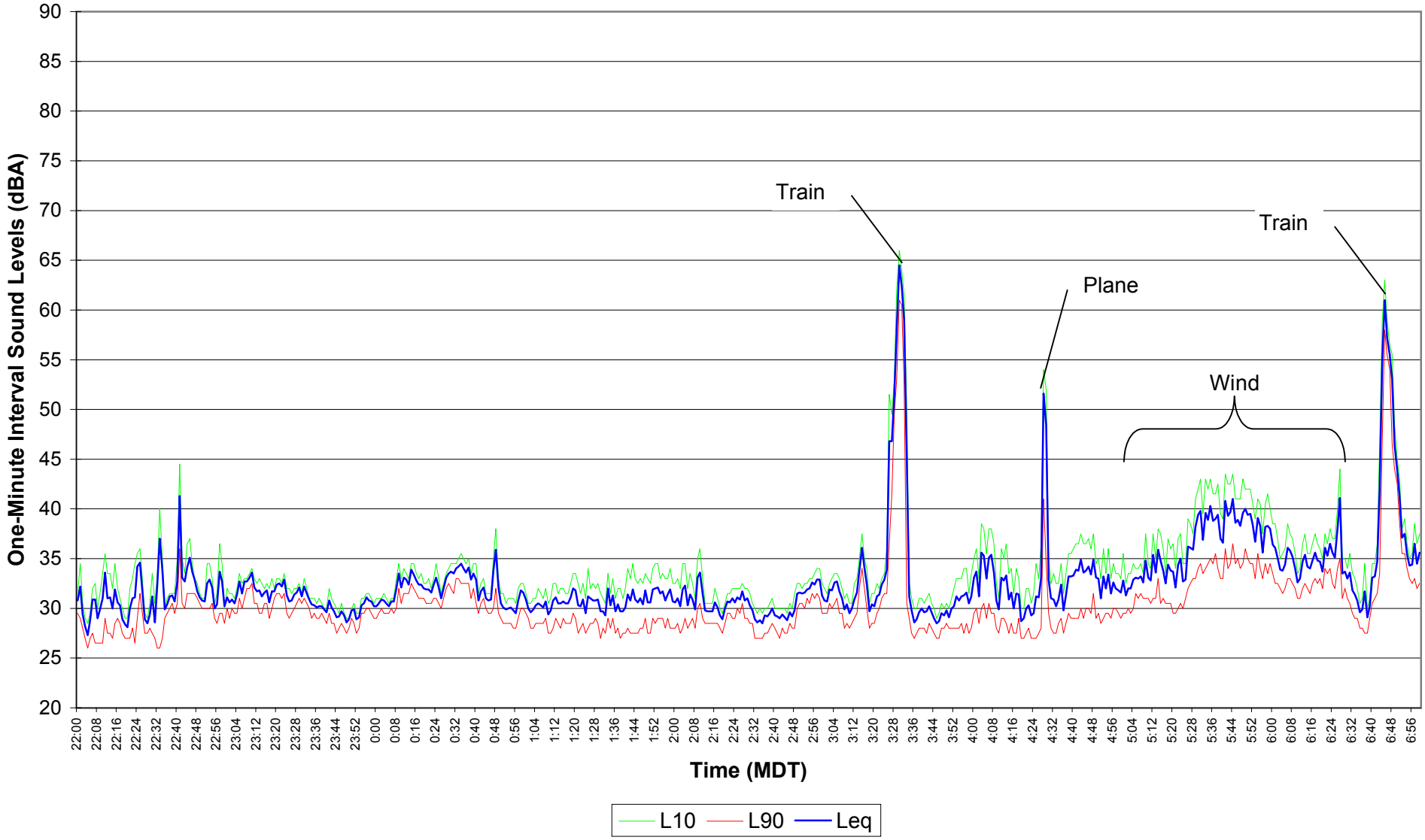


Figure E4.31
EnCana Rosebud
Site 4 Noise Survey
Dec. 03, 2004 07:00 - 14:29

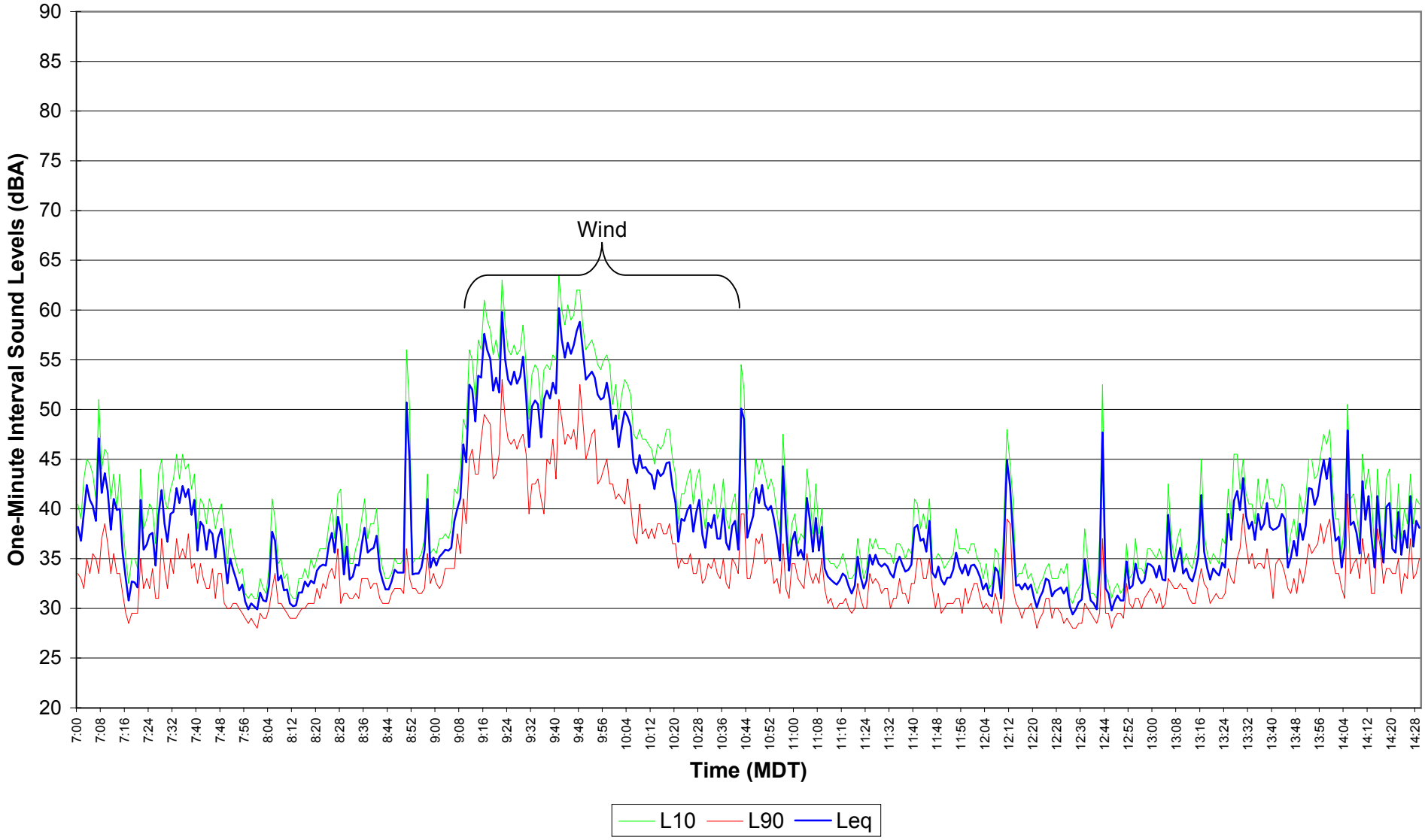


Figure E4.32
EnCana Rosebud
Site 4 Noise Survey
Dec. 03, 2004 14:30 - 21:59

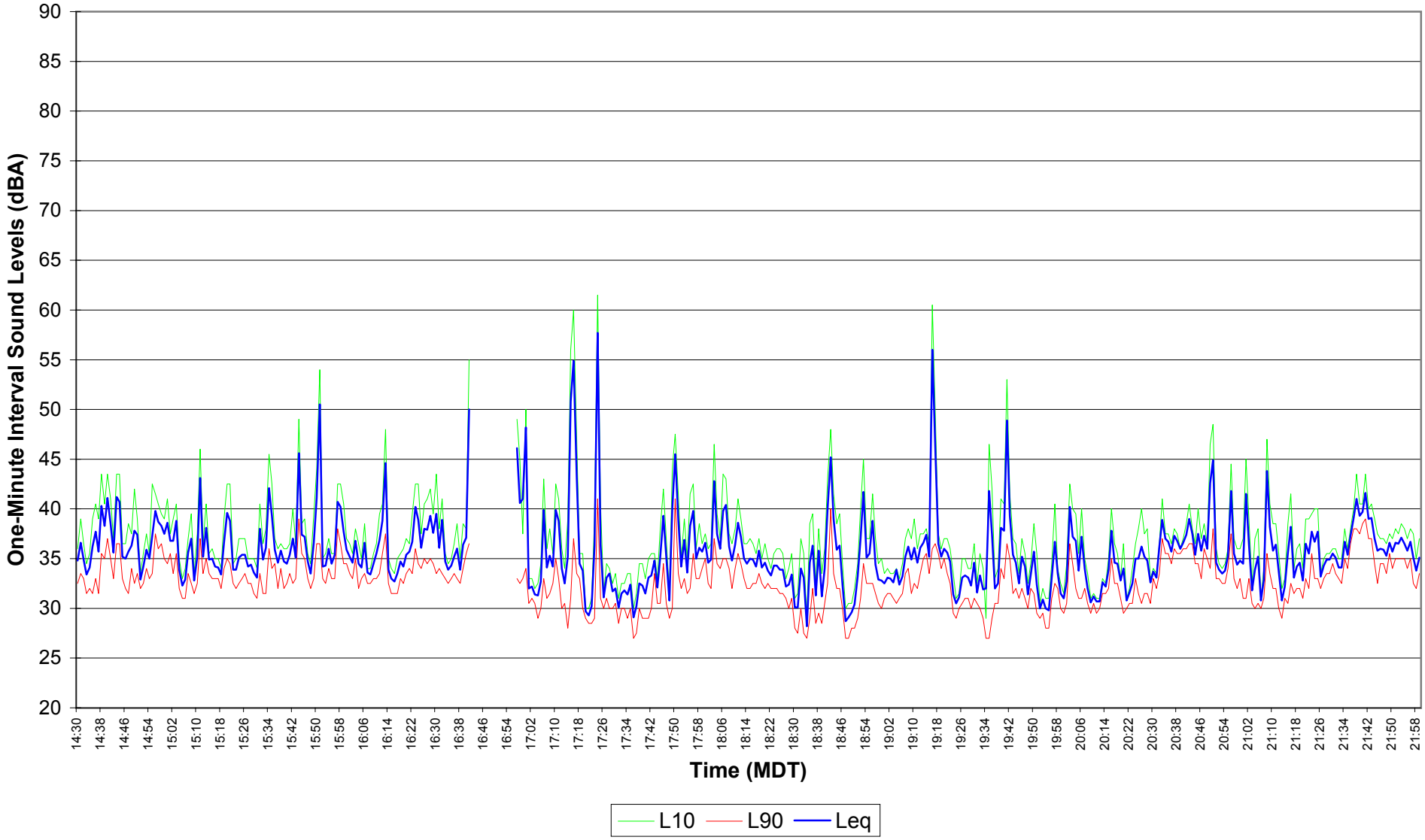


Figure E4.33
EnCana Rosebud
Site 4 Noise Survey
Dec. 03, 2004 - Dec. 04, 2004 22:00 - 06:59

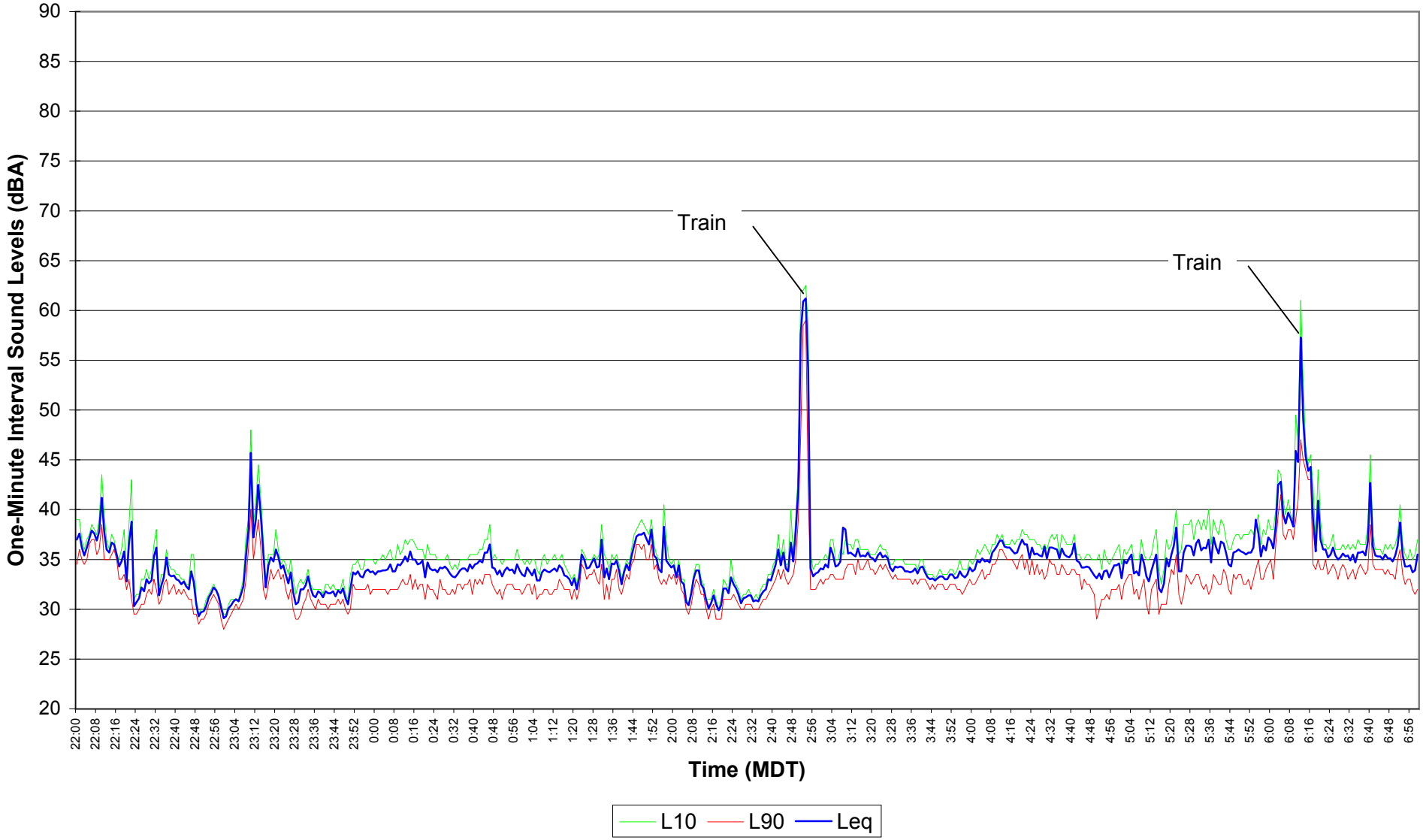


Figure E4.34
EnCana Rosebud
Site 4 Noise Survey
Dec. 04, 2004 07:00 - 14:29

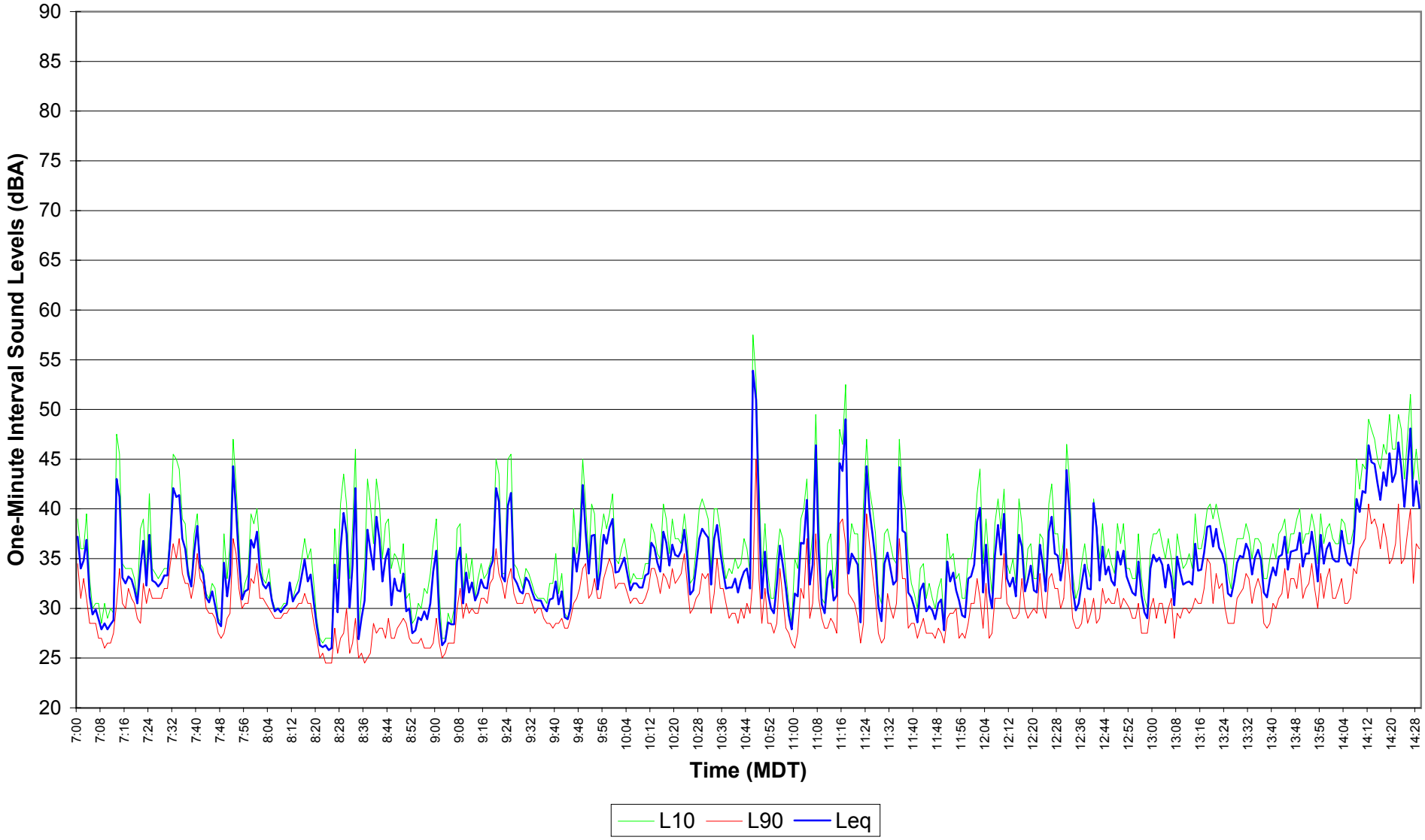


Figure E4.35
EnCana Rosebud
Site 4 Noise Survey
Dec. 04, 2004 14:30 - 21:59

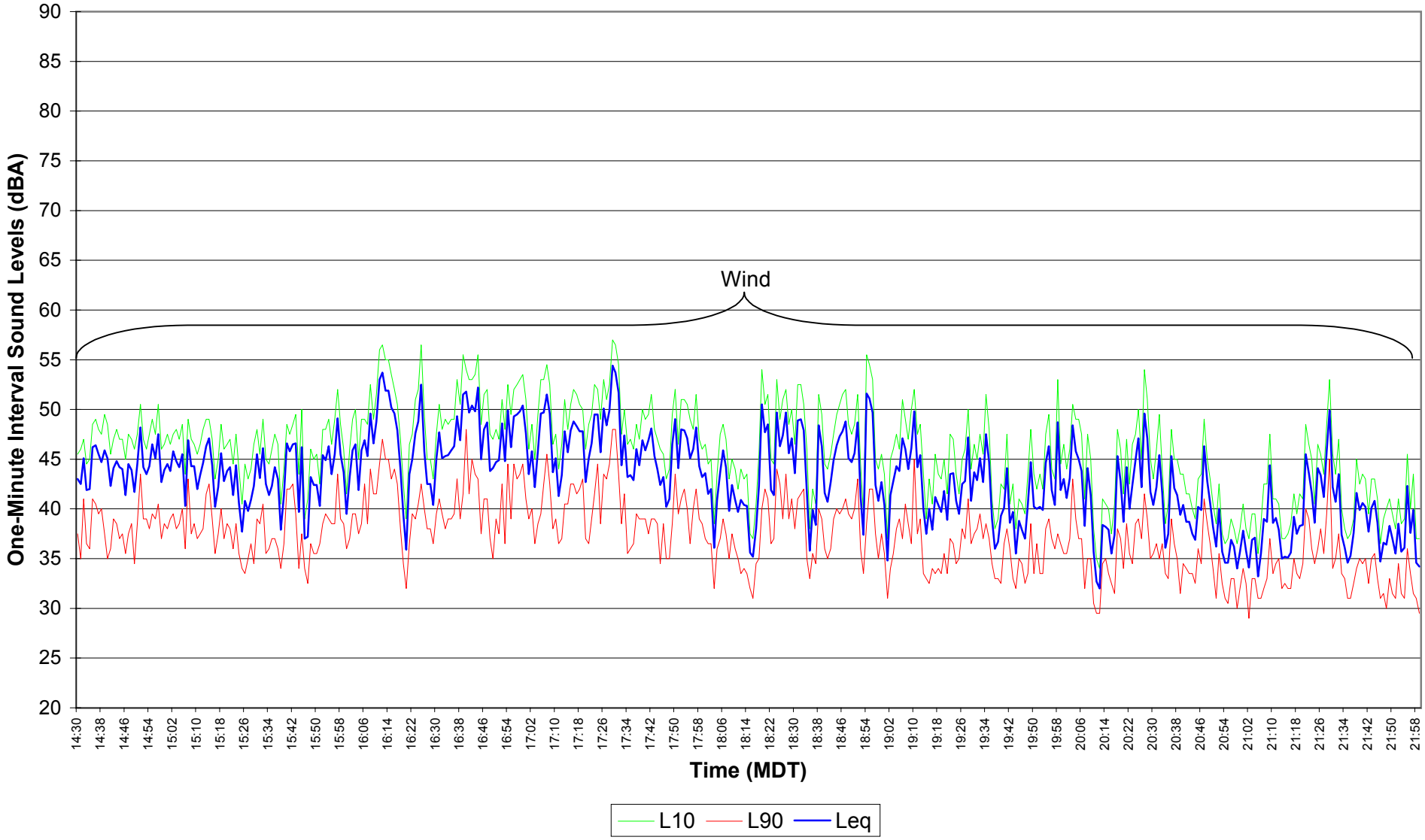


Figure E4.36
EnCana Rosebud
Site 4 Noise Survey
Dec. 04, 2004 - Dec. 05, 2004 22:00 - 06:59

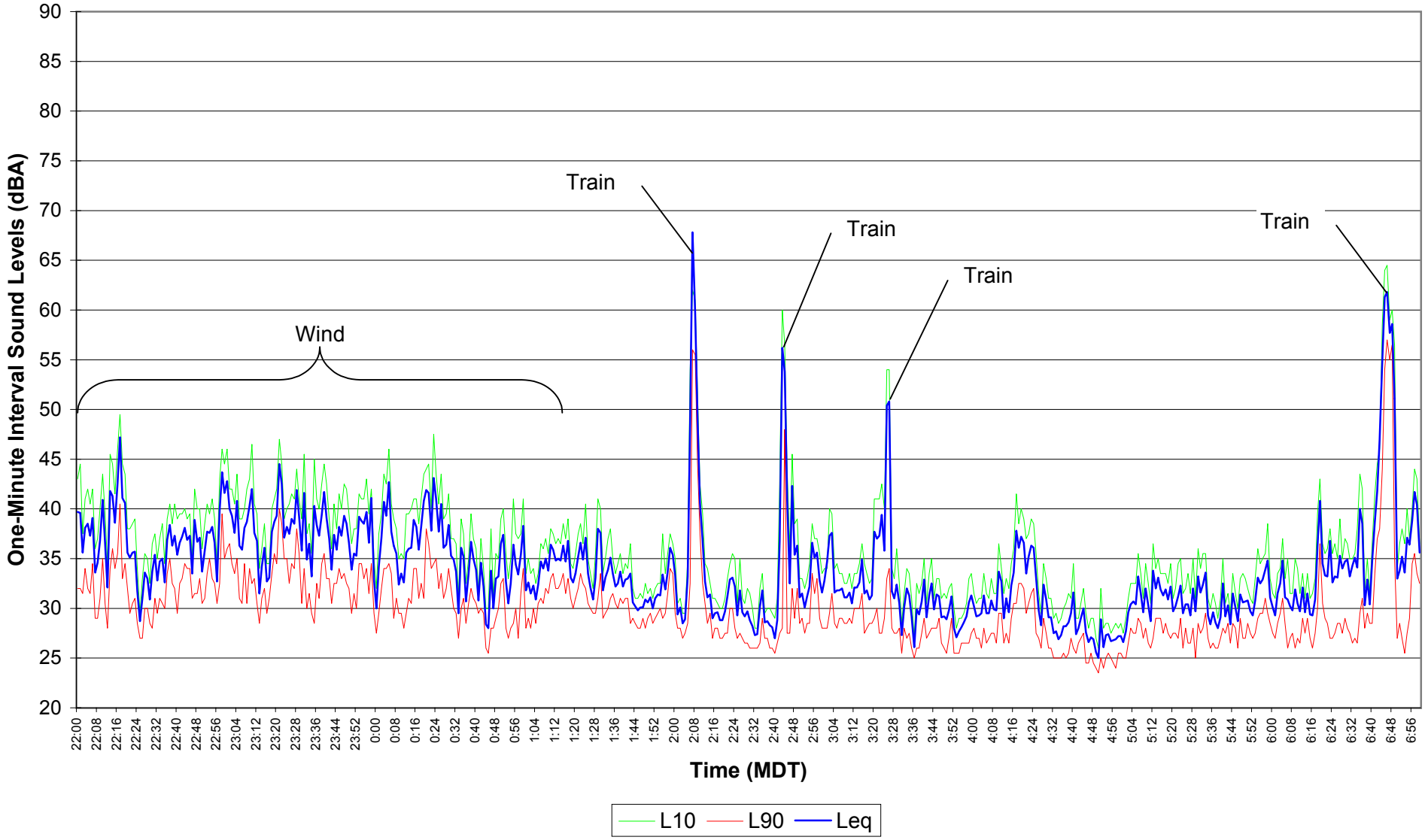


Figure E4.37
EnCana Rosebud
Site 4 Noise Survey
Dec. 05, 2004 07:00 - 14:29

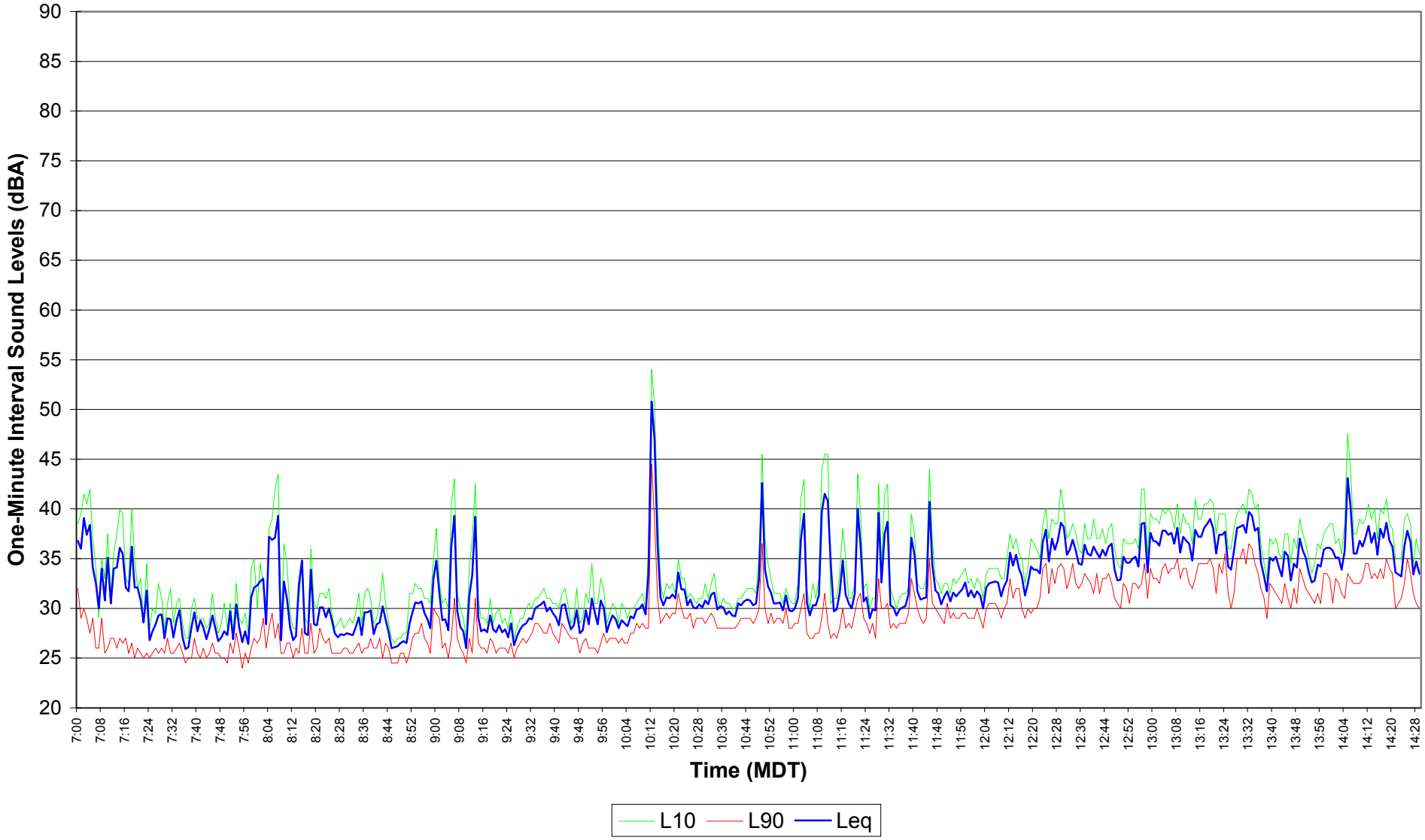


Figure E4.38
EnCana Rosebud
Site 4 Noise Survey
Dec. 05, 2004 14:30 - 21:59

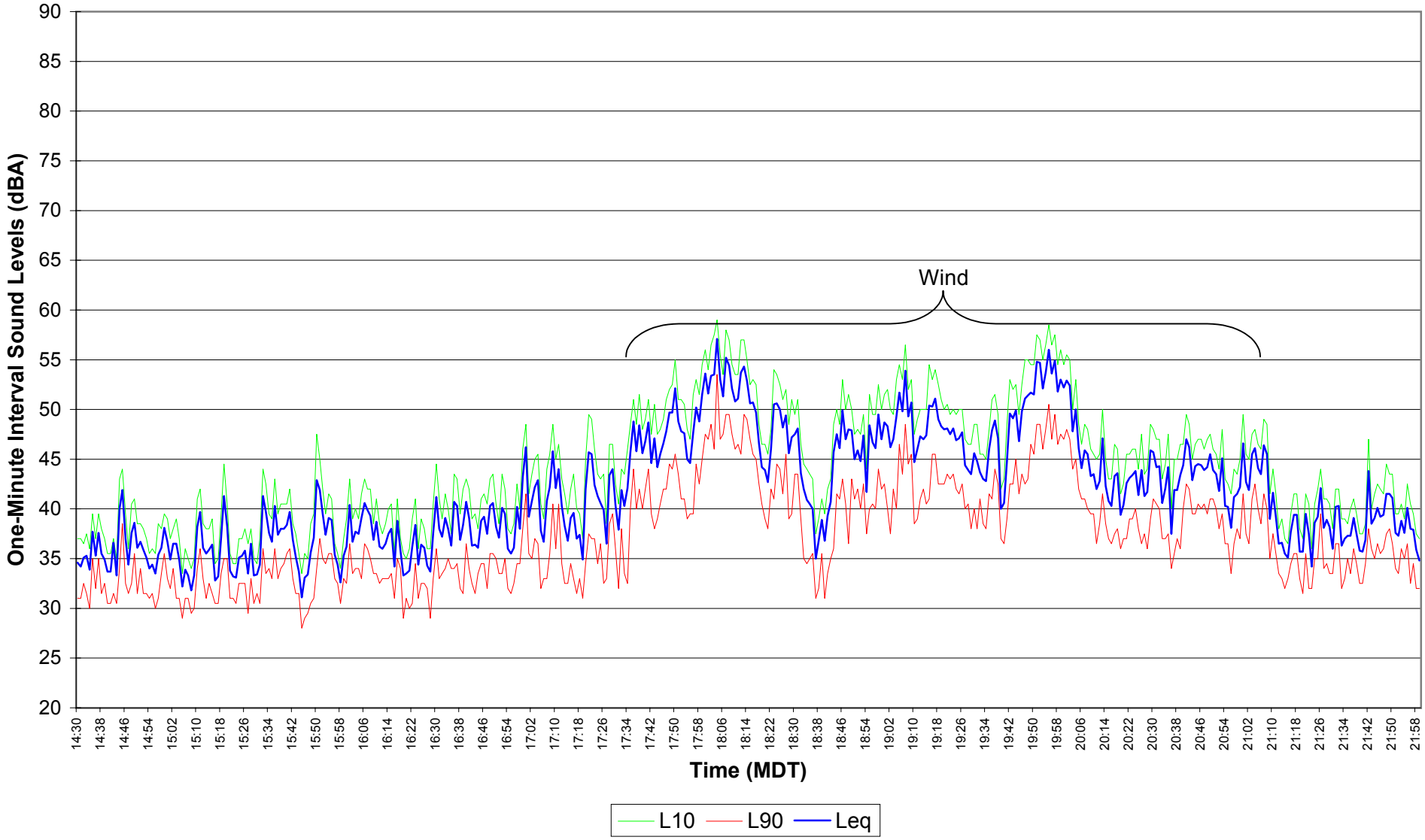


Figure E4.39
EnCana Rosebud
Site 4 Noise Survey
Dec. 05, 2004 - Dec. 06, 2004 22:00 - 06:59

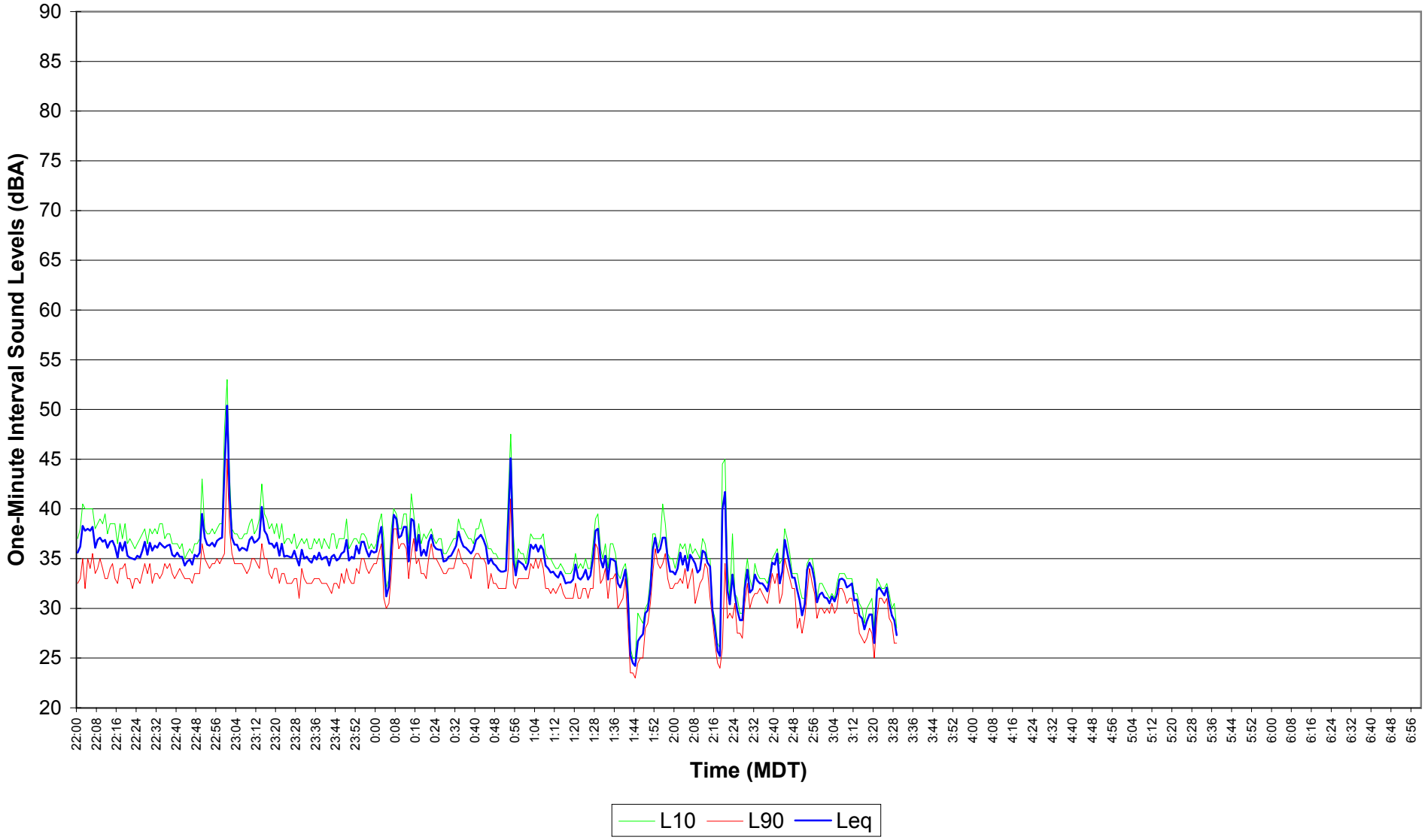


Figure E4.41
EnCana Rosebud
Site 4 Noise Survey
Dec. 06, 2004 14:30 - 21:59

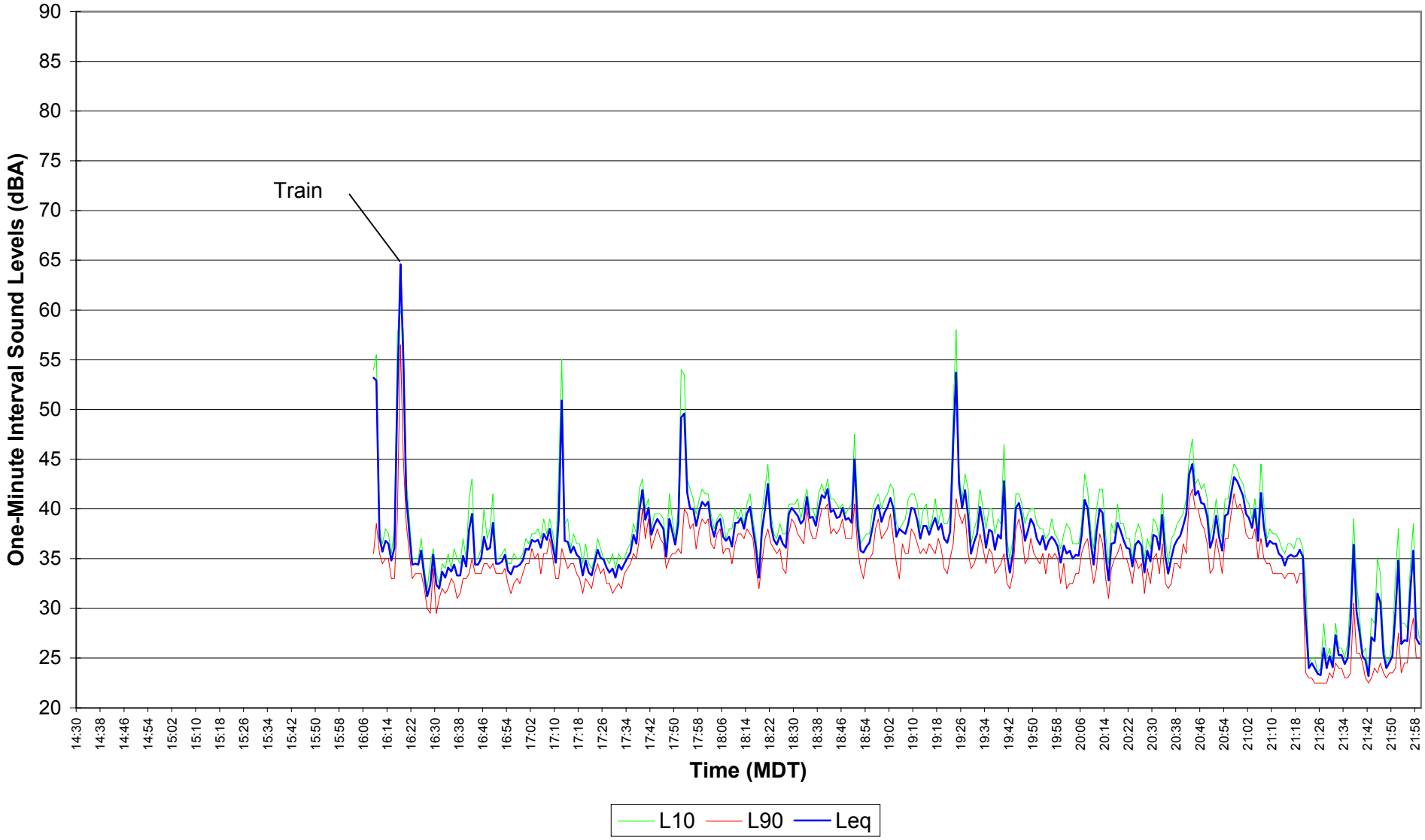


Figure E4.42
EnCana Rosebud
Site 4 Noise Survey
Dec. 06, 2004 - Dec. 07, 2004 22:00 - 06:59

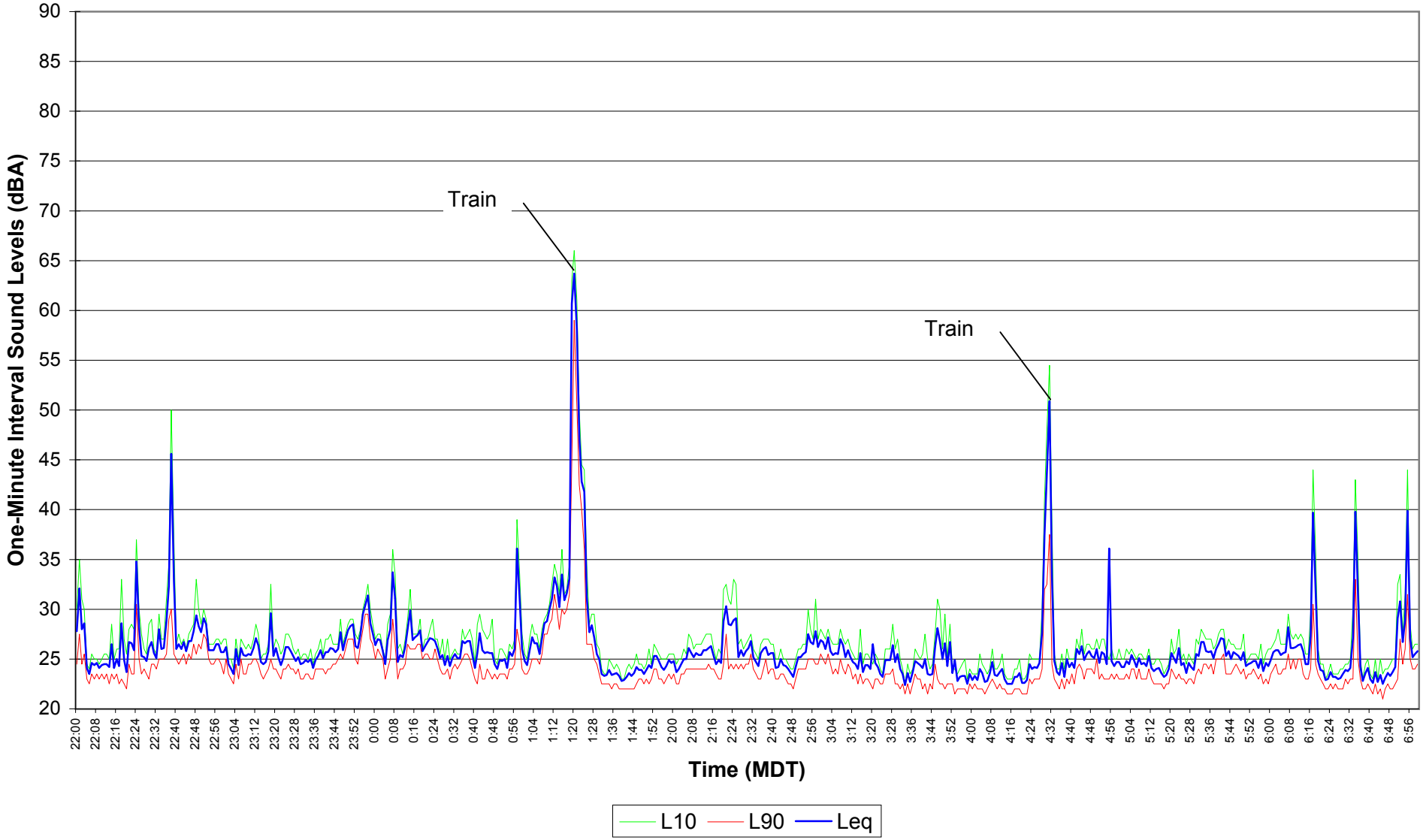


Figure E4.43
EnCana Rosebud
Site 4 Noise Survey
Dec. 07, 2004 07:00 - 14:29

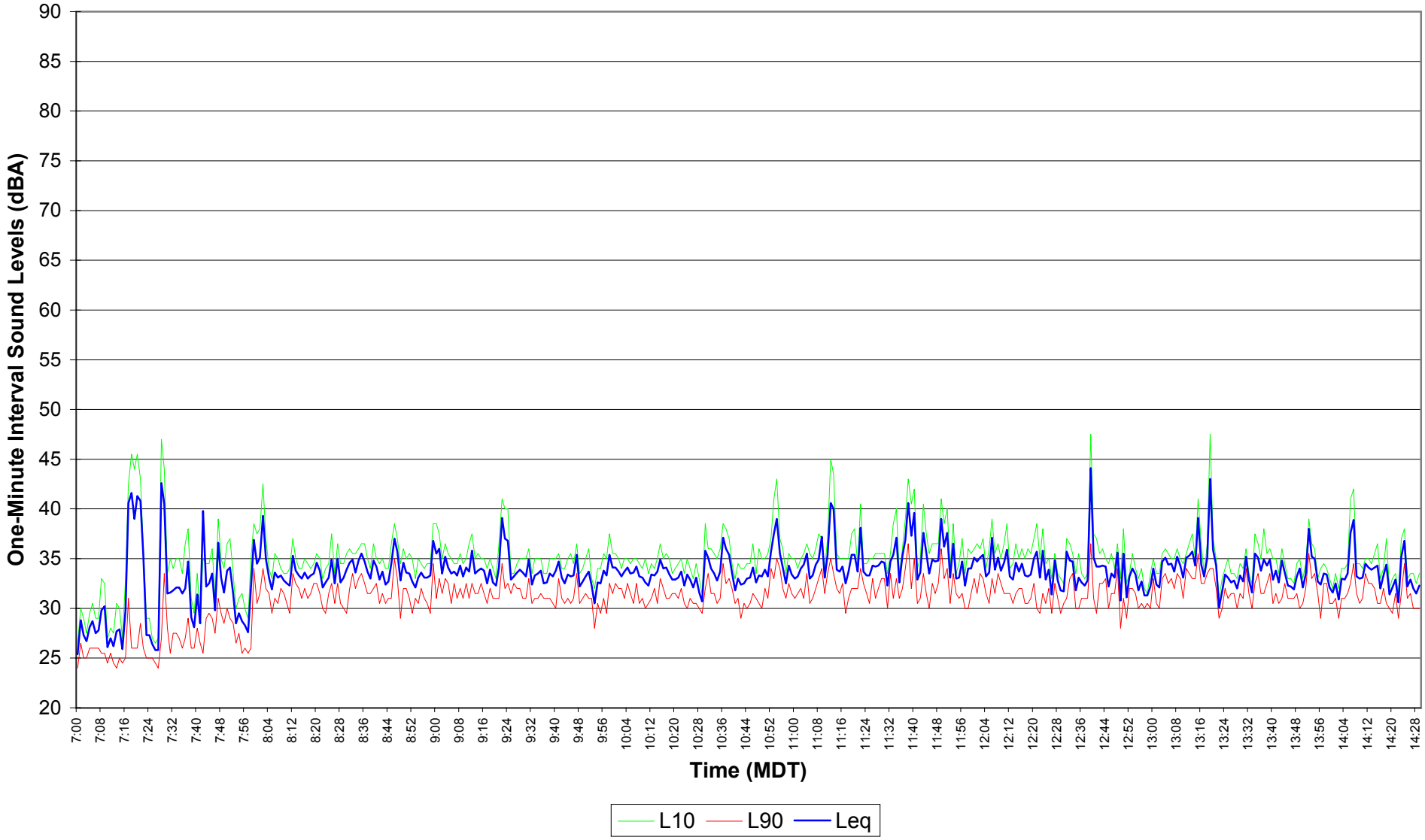


Figure E4.44
EnCana Rosebud
Site 4 Noise Survey
Dec. 07, 2004 14:30 - 21:59

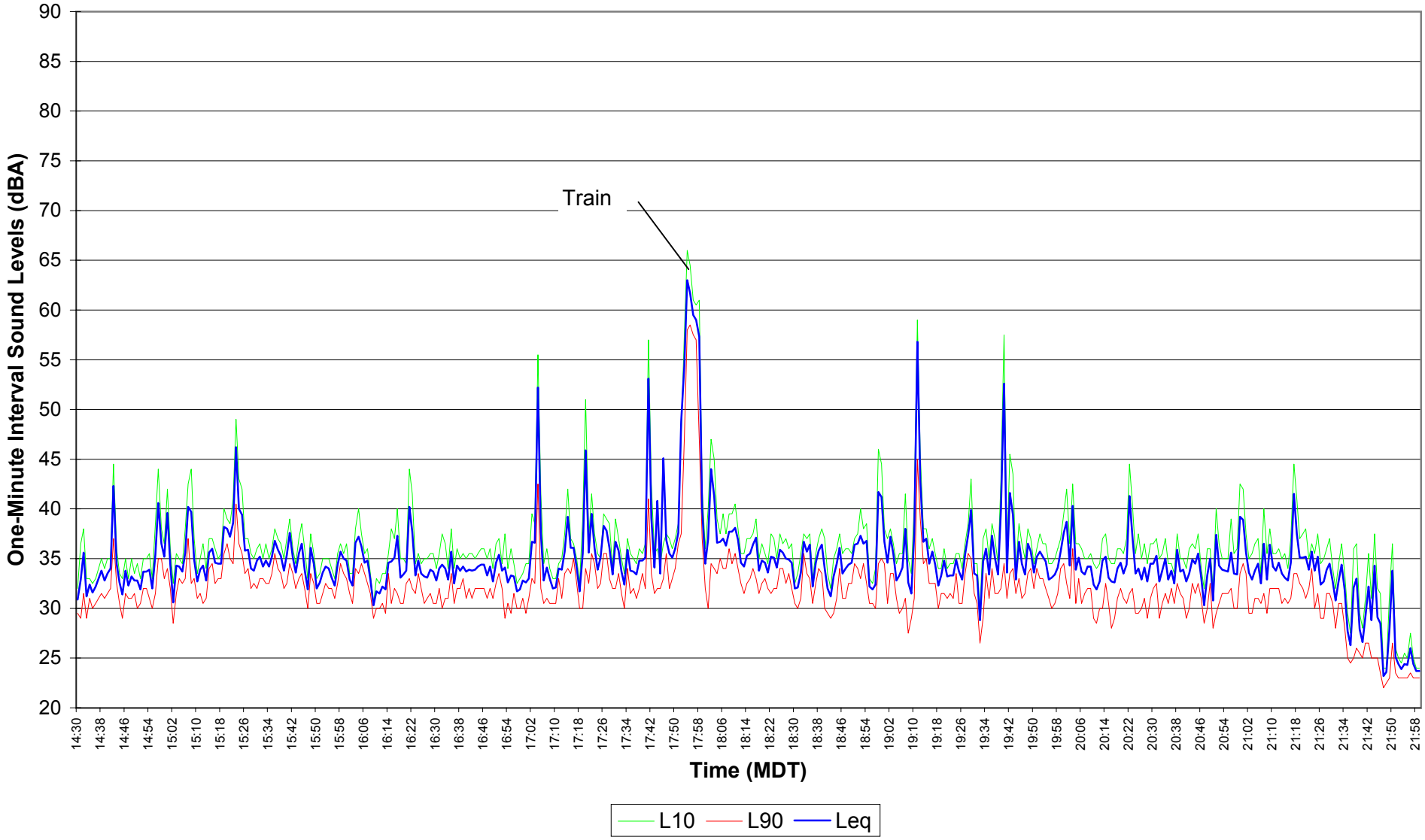


Figure E4.45
EnCana Rosebud
Site 4 Noise Survey
Dec. 07, 2004 - Dec. 08, 2004 22:00 - 06:59

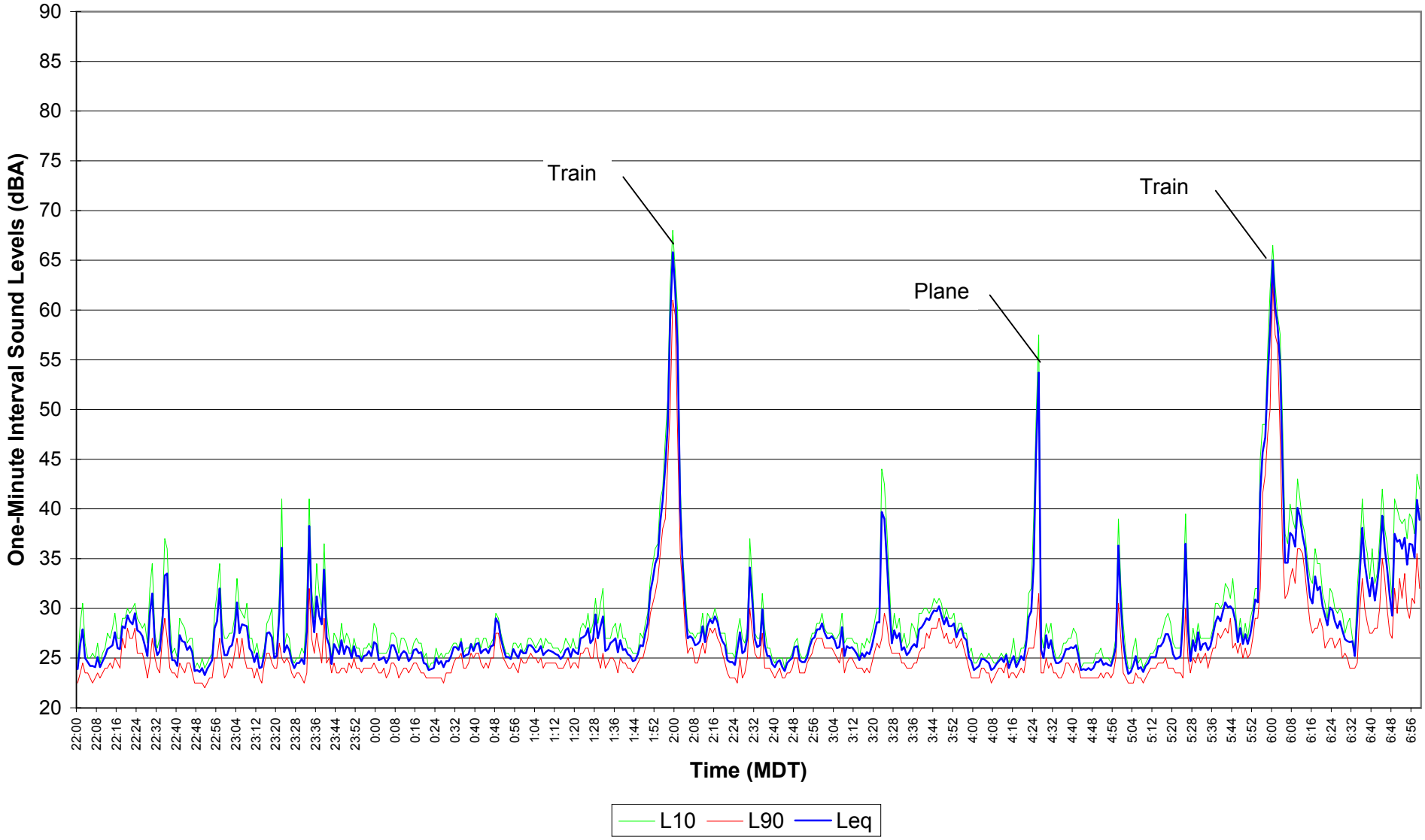


Figure E4.46
EnCana Rosebud
Site 4 Noise Survey
Dec. 08, 2004 07:00 - 14:29

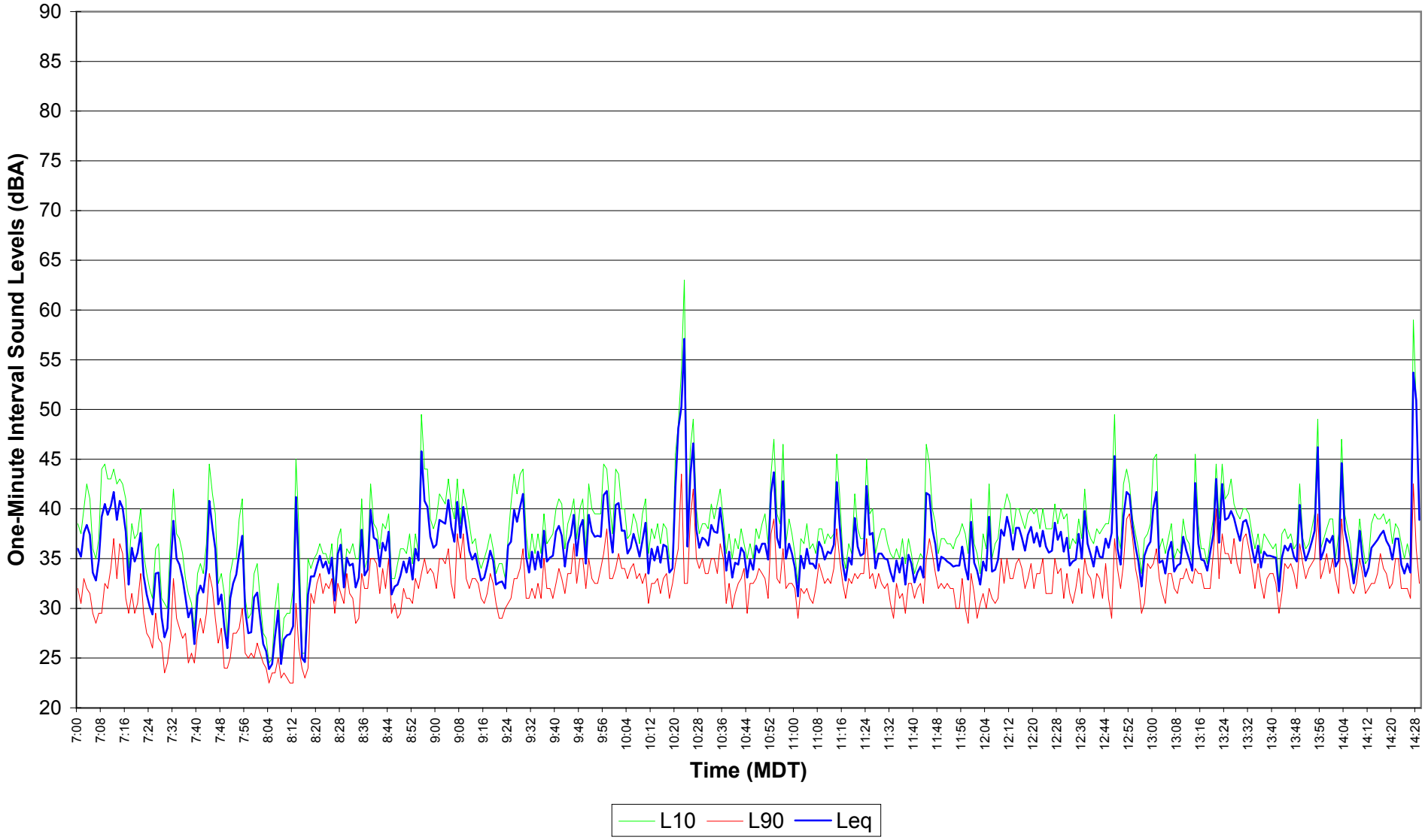


Figure E4.47
EnCana Rosebud
Site 4 Noise Survey
Dec. 08, 2004 14:30 - 21:59

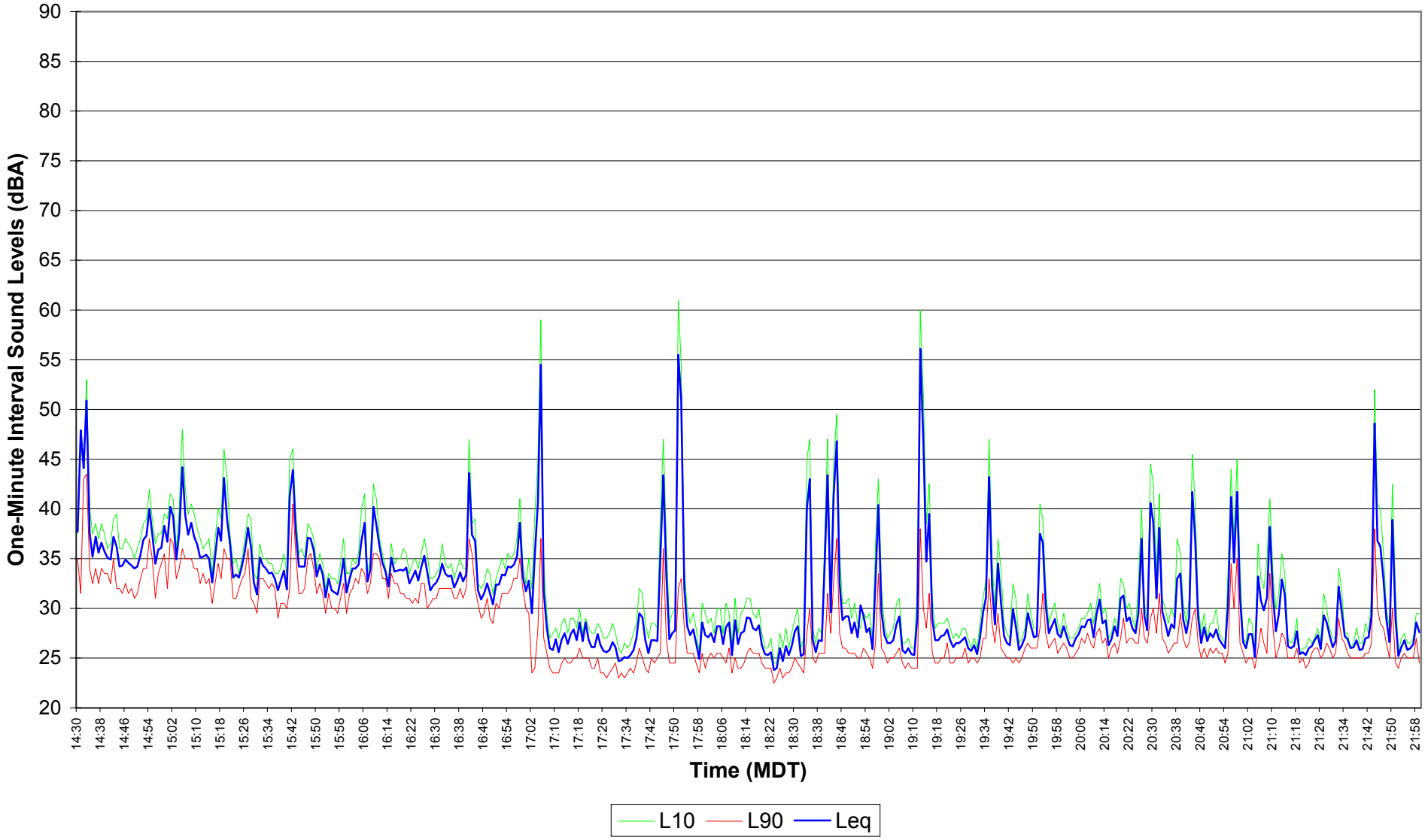


Figure E4.48
EnCana Rosebud
Site 4 Noise Survey
Dec. 08, 2004 - Dec. 09, 2004 22:00 - 06:59

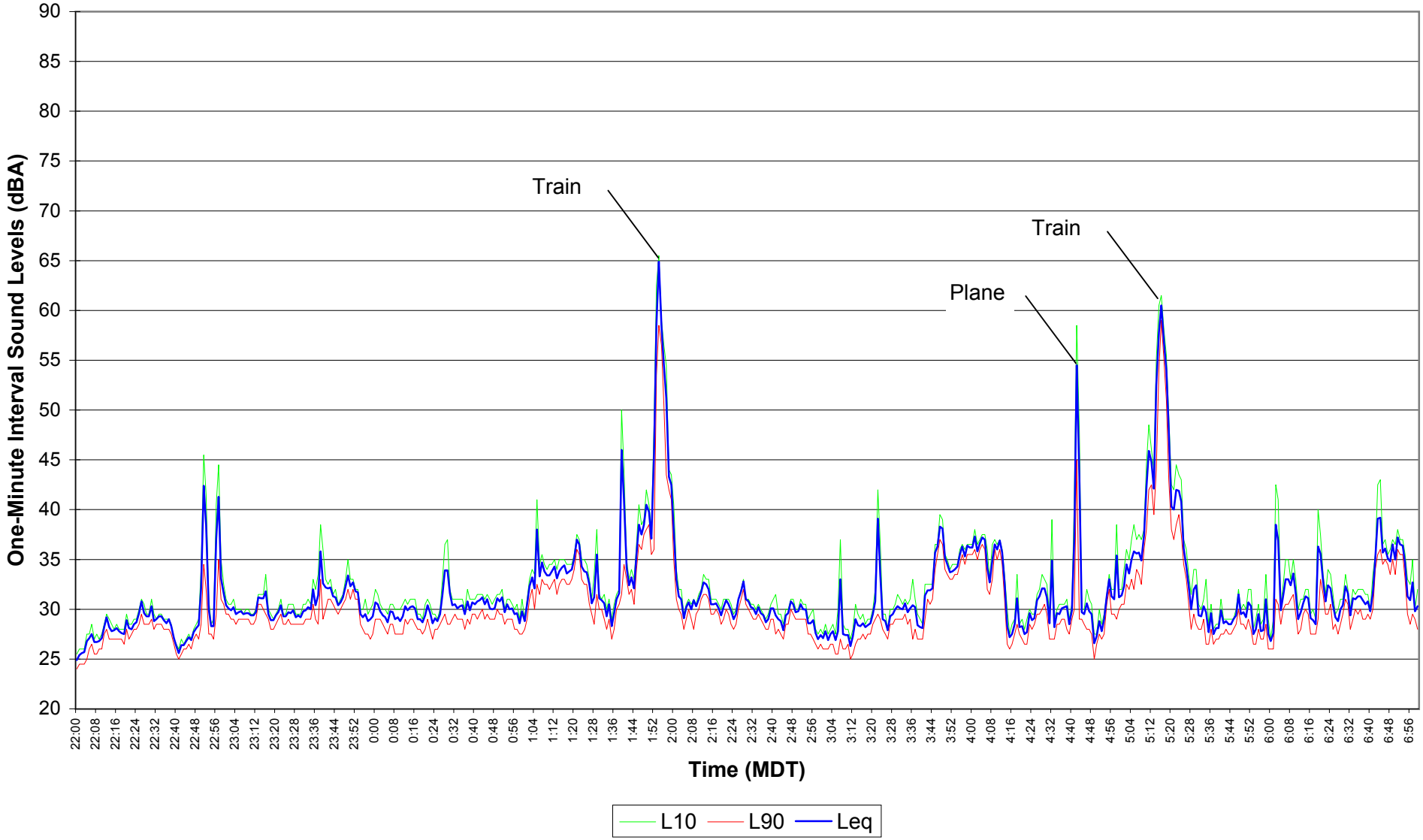


Figure E4.49
EnCana Rosebud
Site 4 Noise Survey
Dec. 09, 2004 07:00 - 14:29

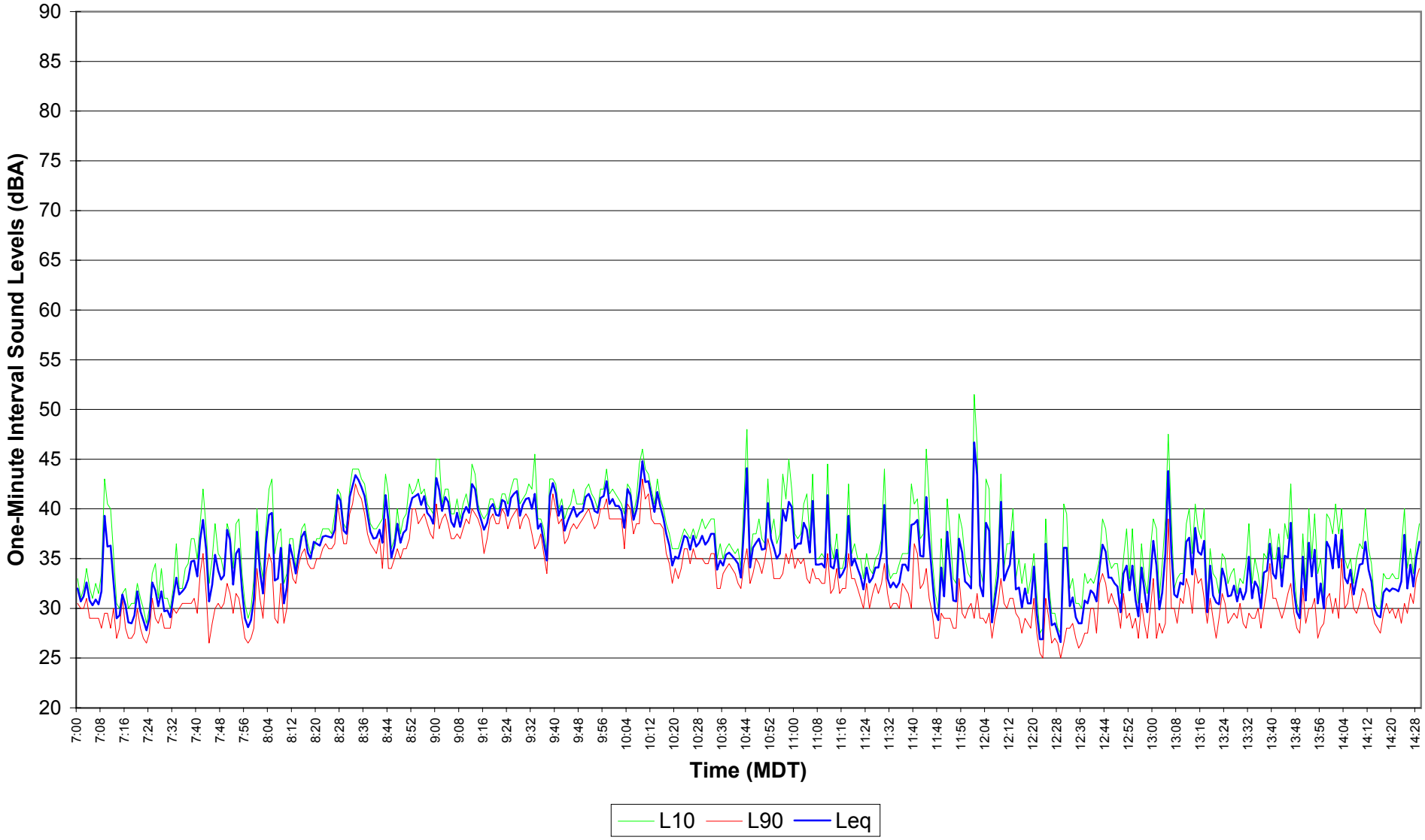


Figure E4.50
EnCana Rosebud
Site 4 Noise Survey
Dec. 09, 2004 14:30 - 21:59

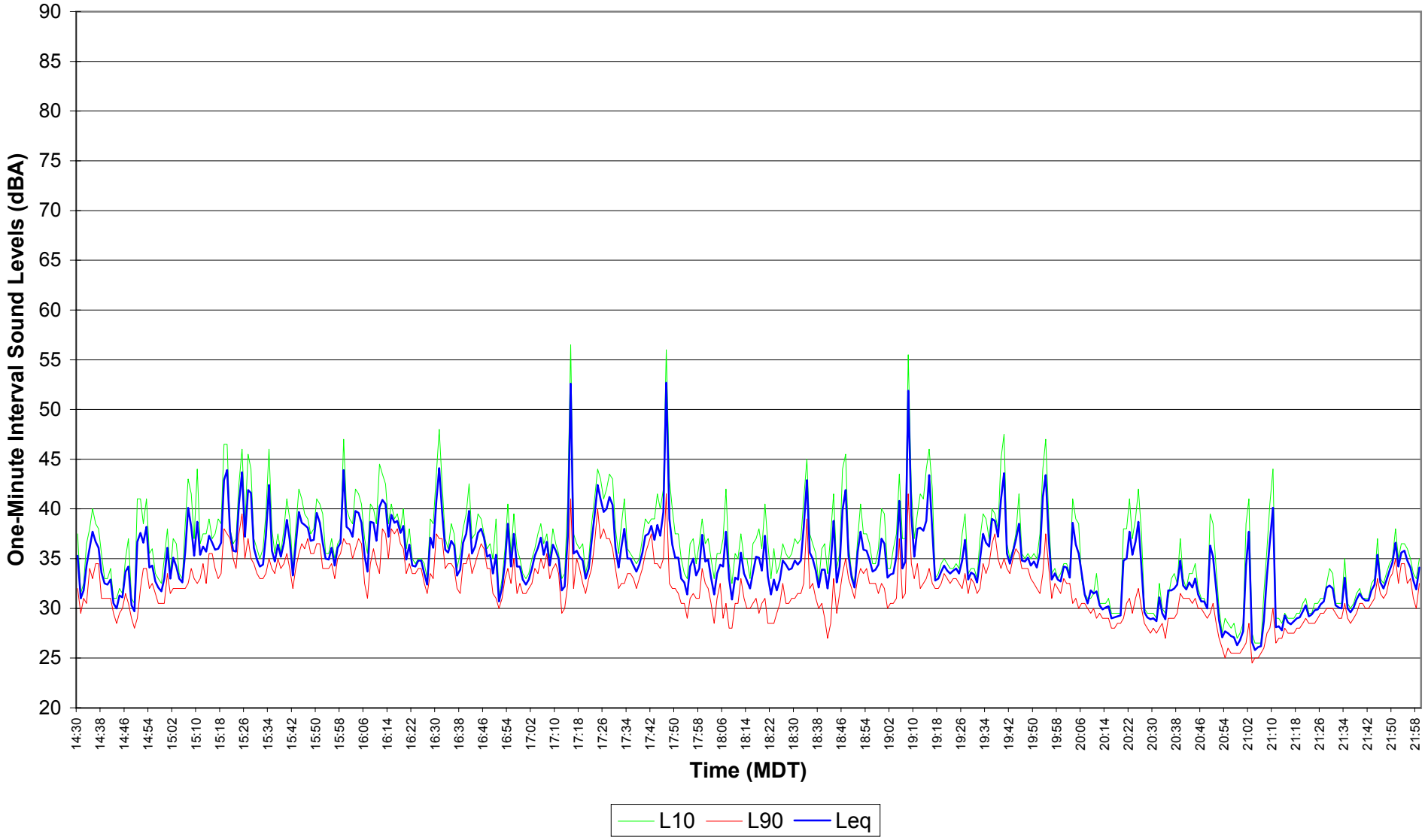


Figure E4.51
EnCana Rosebud
Site 4 Noise Survey
Dec. 09, 2004 - Dec. 10, 2004 22:00 - 06:59

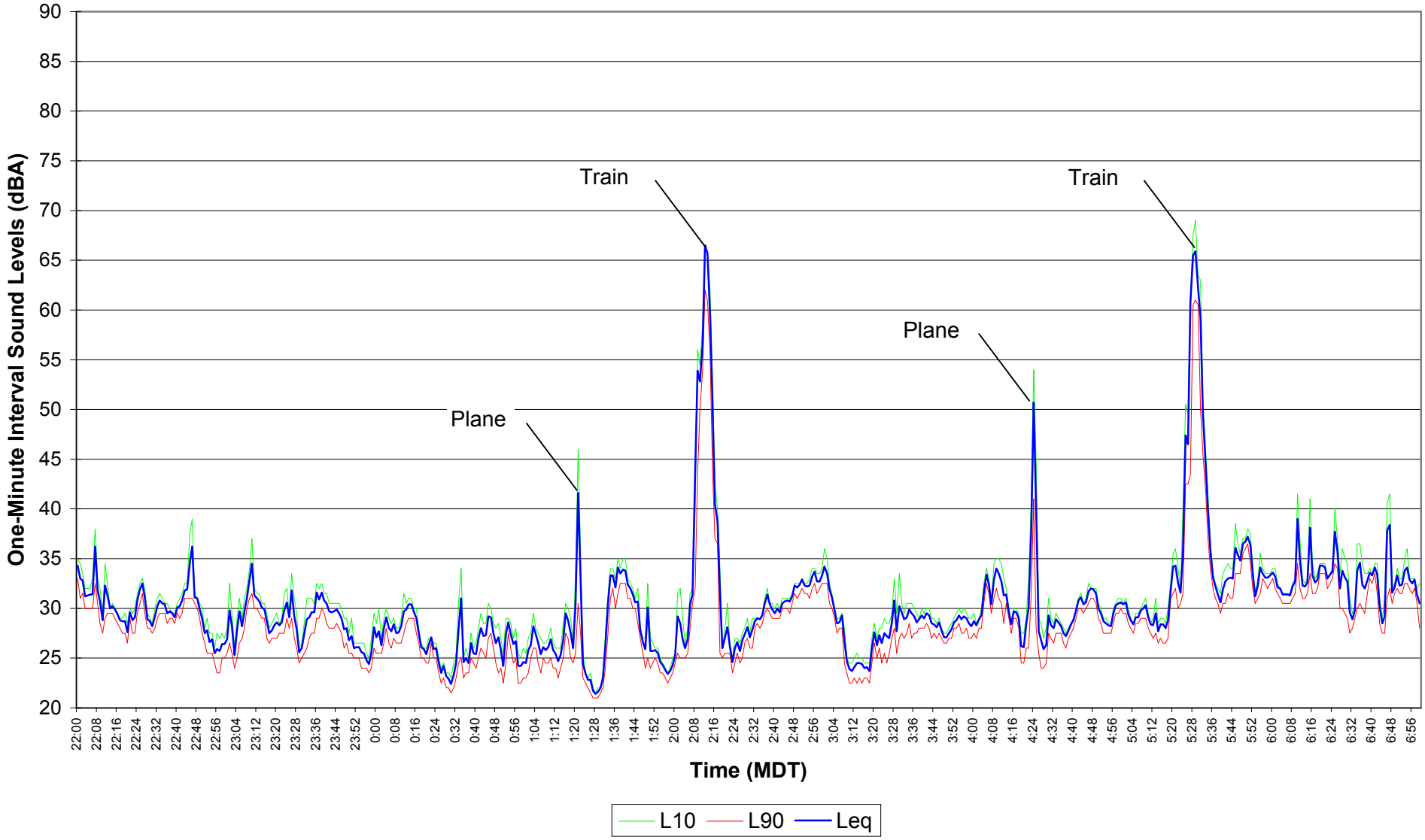


Figure E4.52
EnCana Rosebud
Site 4 Noise Survey
Dec. 10, 2004 07:00 - 14:29

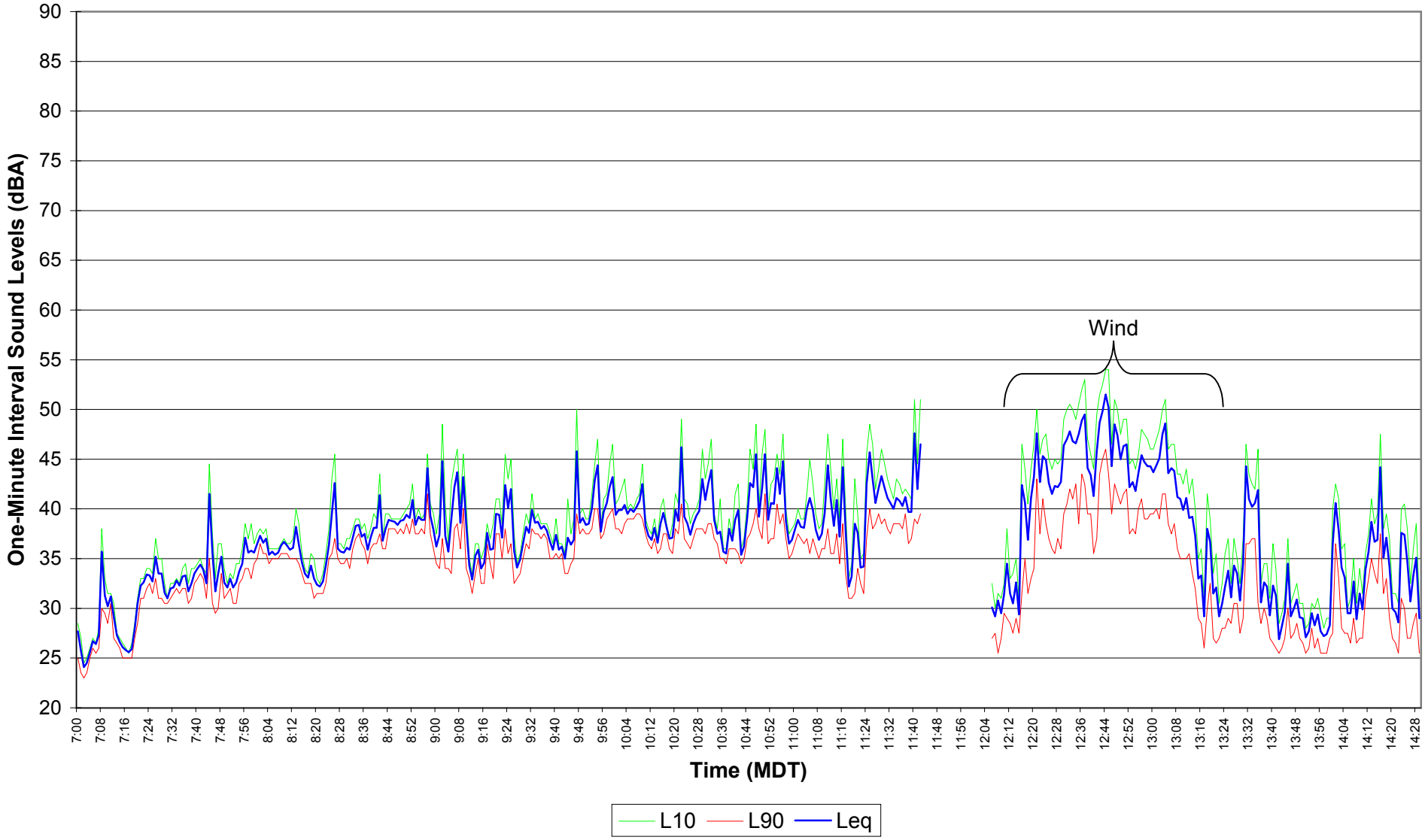


Figure E4.53
EnCana Rosebud
Site 4 Noise Survey
Dec. 10, 2004 14:30 - 21:59

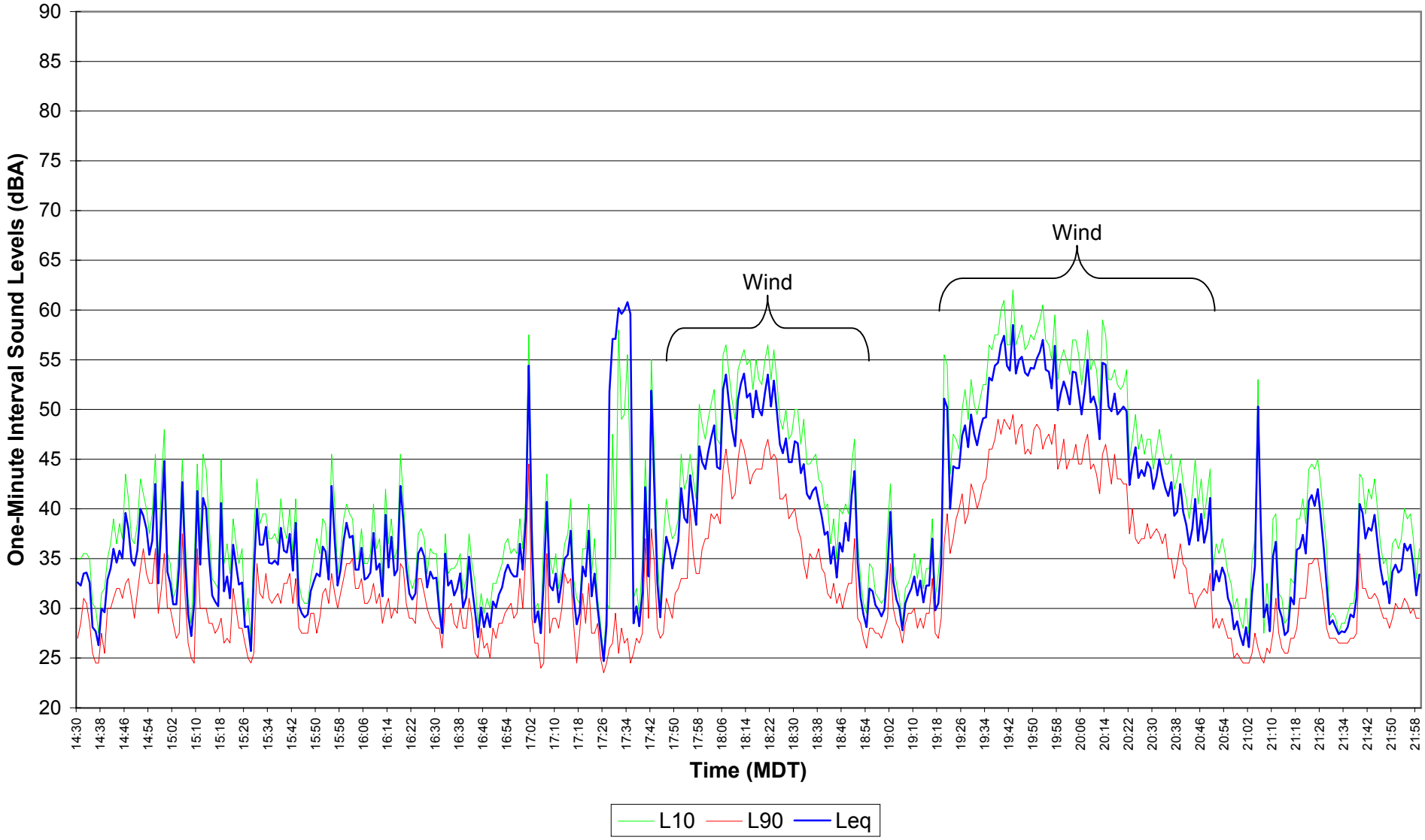


Figure E4.54
EnCana Rosebud
Site 4 Noise Survey
Dec. 10, 2004 - Dec. 11, 2004 22:00 - 06:59

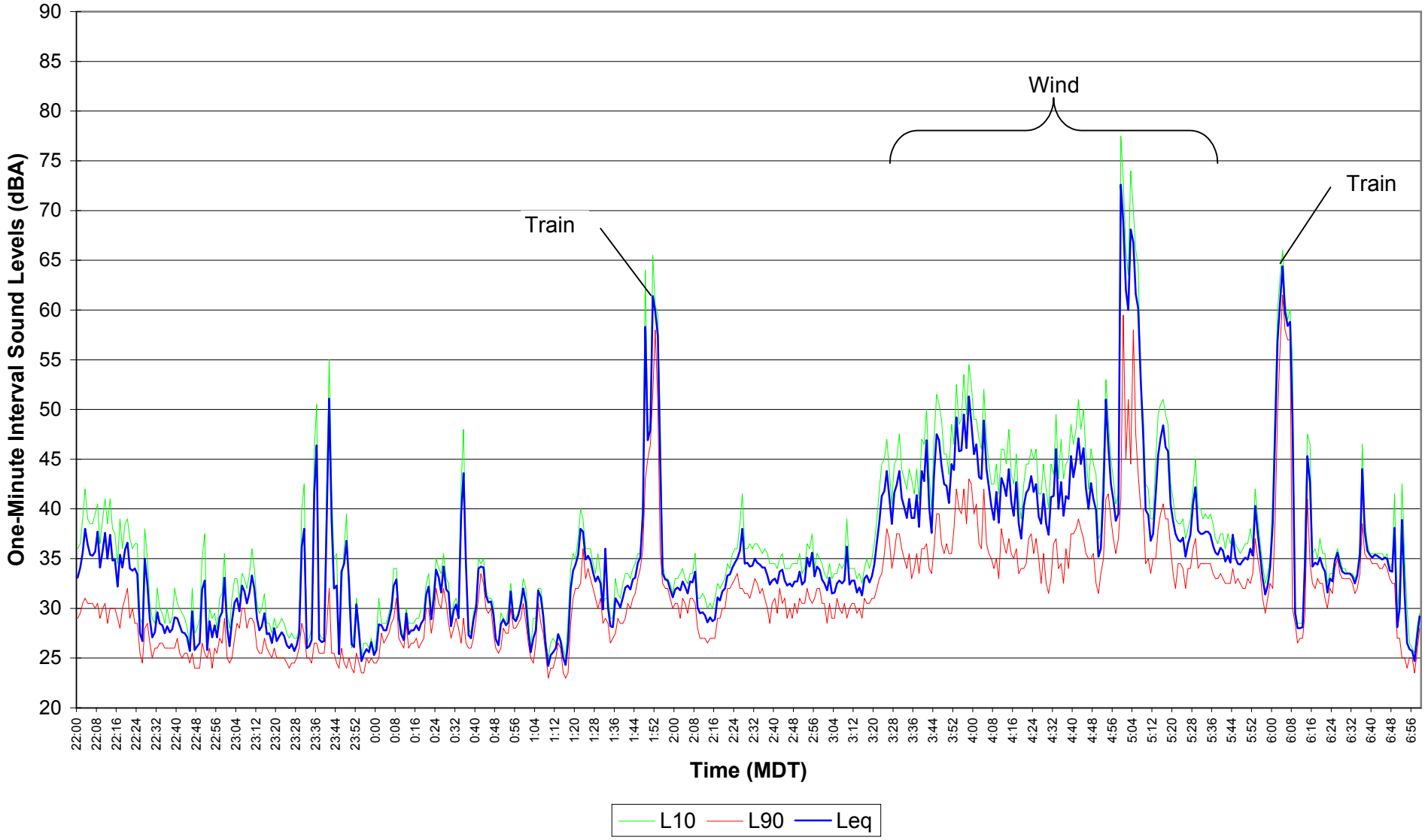


Figure E4.55

EnCana Rosebud

Site 4 Noise Survey

Dec. 11, 2004 07:00 - 14:29

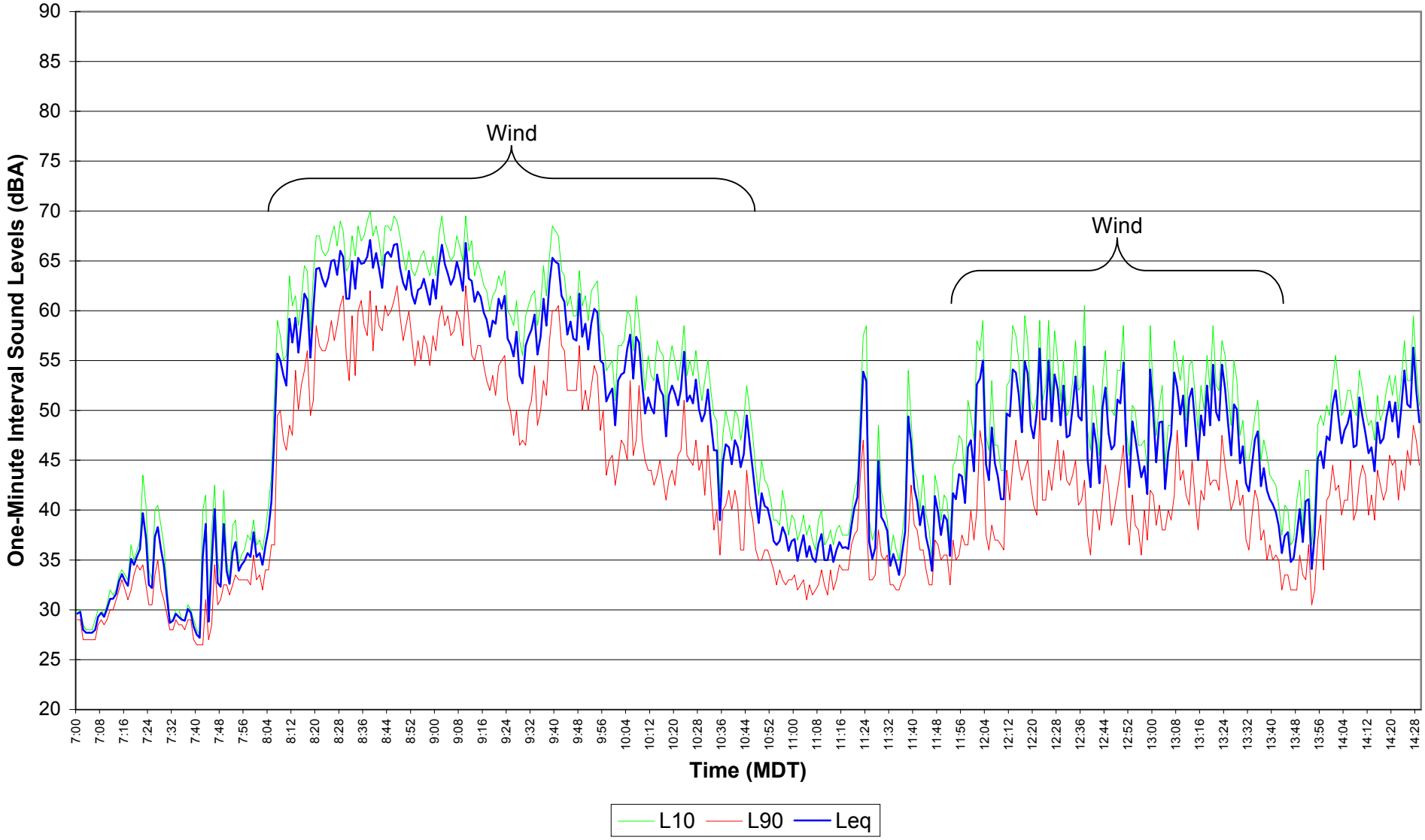


Figure E4.56
EnCana Rosebud
Site 4 Noise Survey
Dec. 11, 2004 14:30 - 21:59

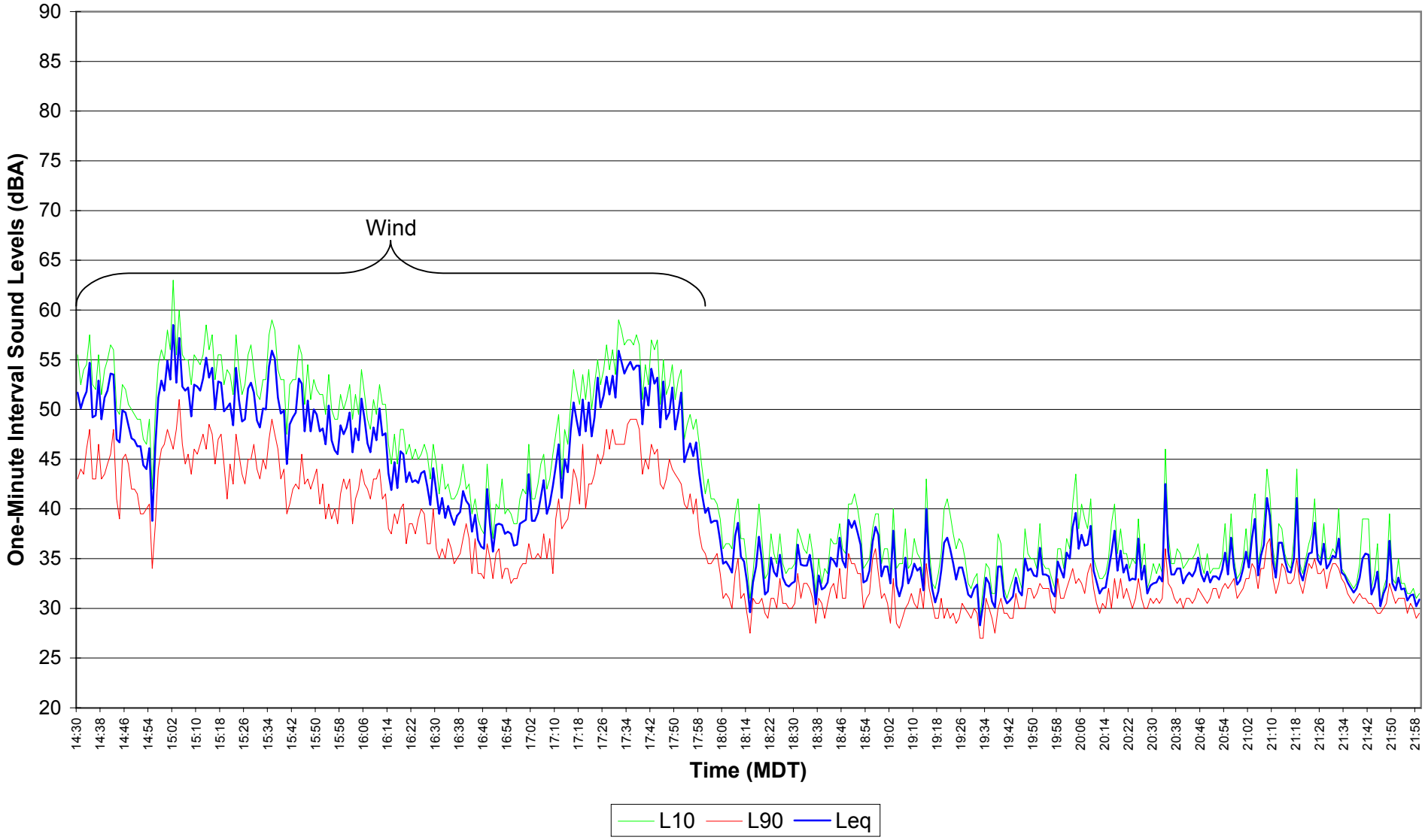


Figure E4.57
EnCana Rosebud
Site 4 Noise Survey
Dec. 11, 2004 - Dec. 12, 2004 22:00 - 06:59

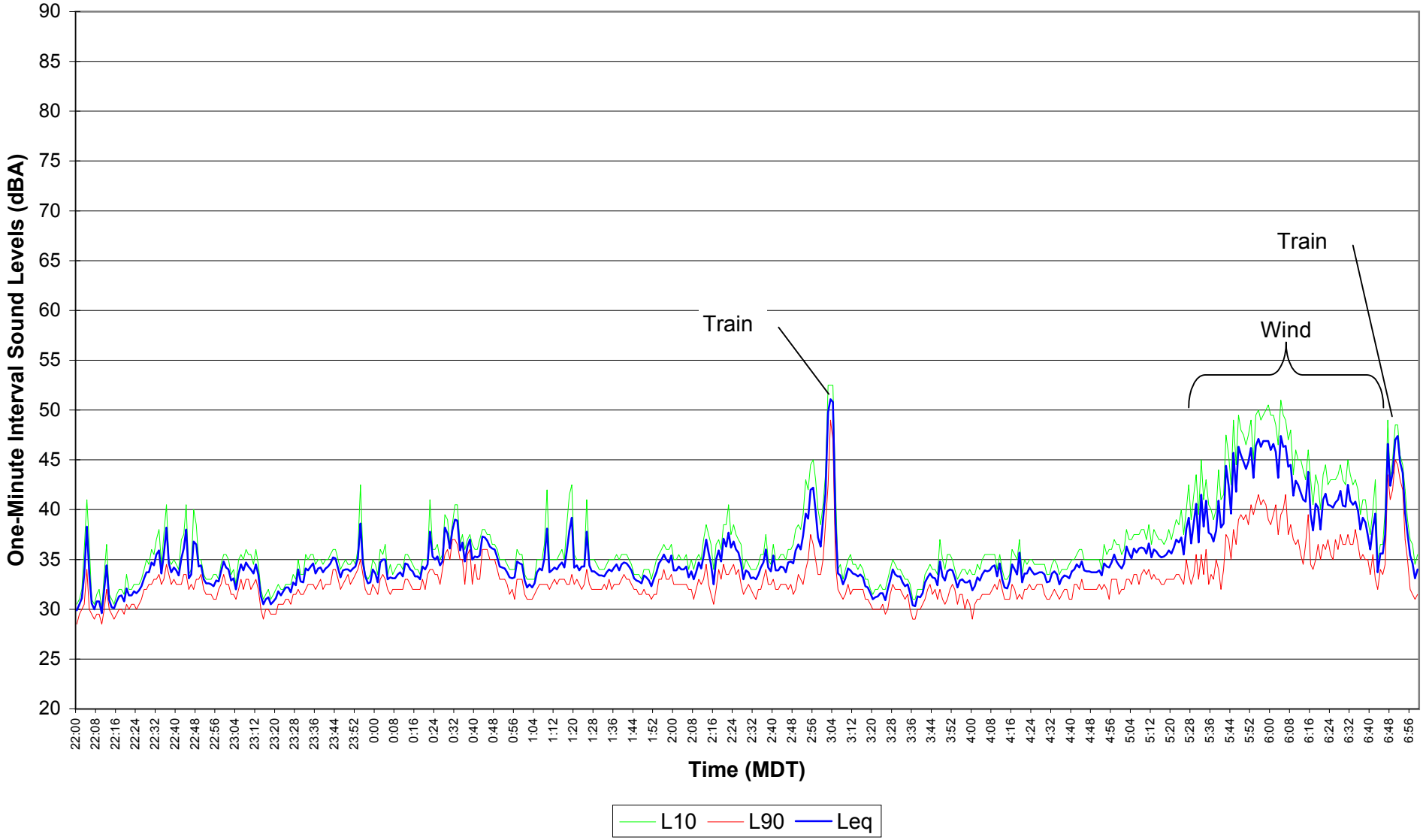


Figure E4.58
EnCana Rosebud
Site 4 Noise Survey
Dec. 12, 2004 07:00 - 14:29

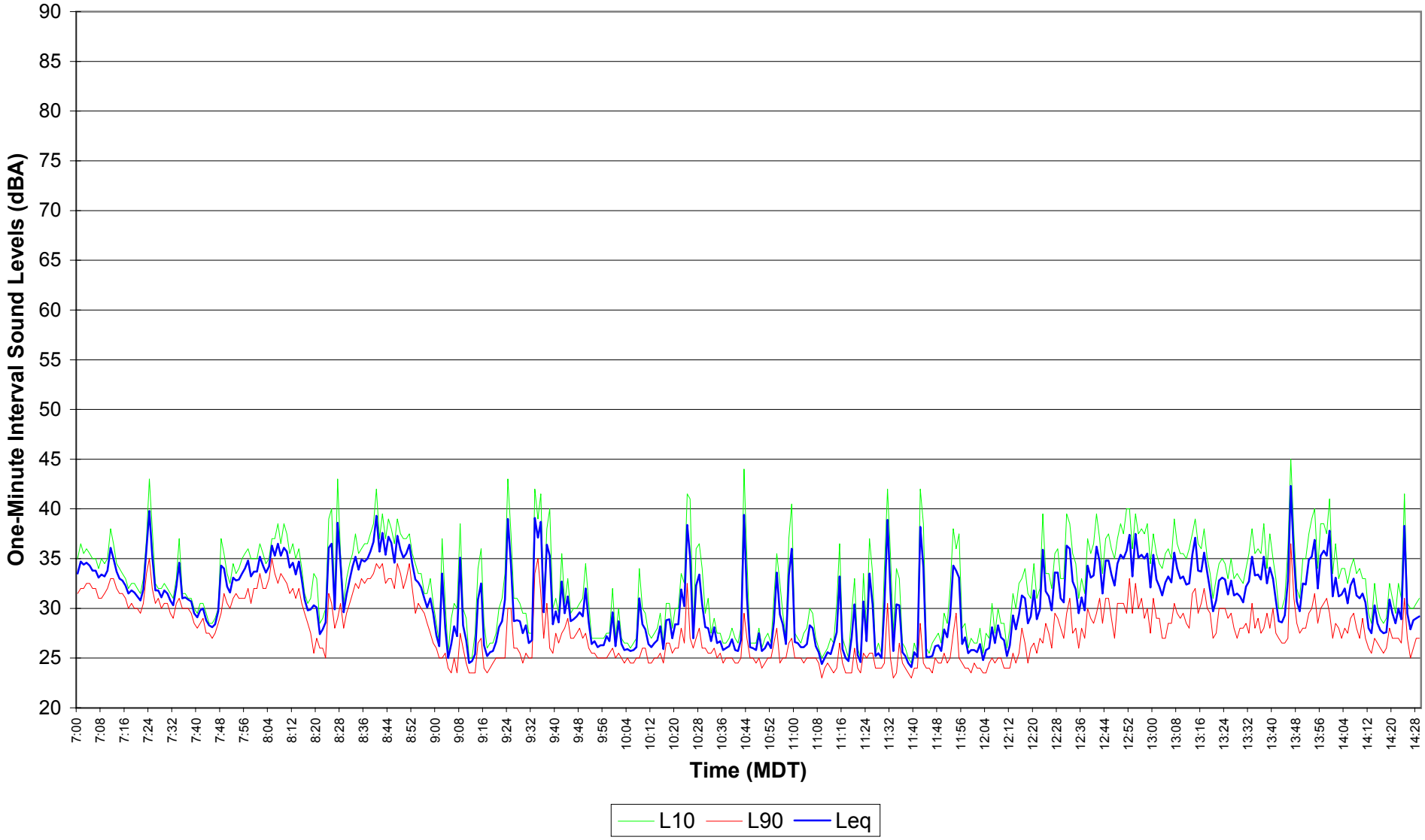


Figure E4.59
EnCana Rosebud
Site 4 Noise Survey
Dec. 12, 2004 14:30 - 21:59

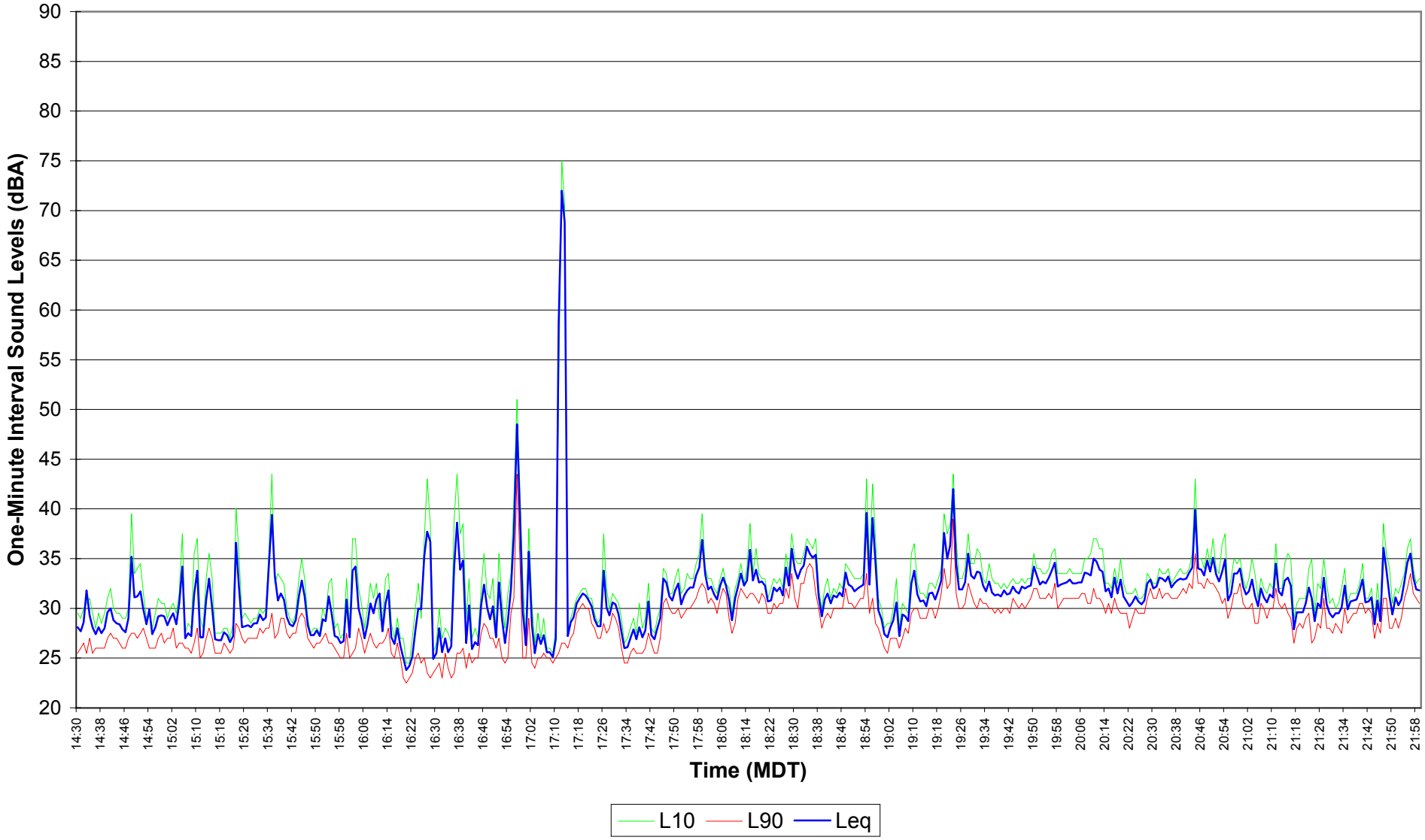


Figure E4.60
EnCana Rosebud
Site 4 Noise Survey
Dec. 12, 2004 - Dec. 13, 2004 22:00 - 06:59

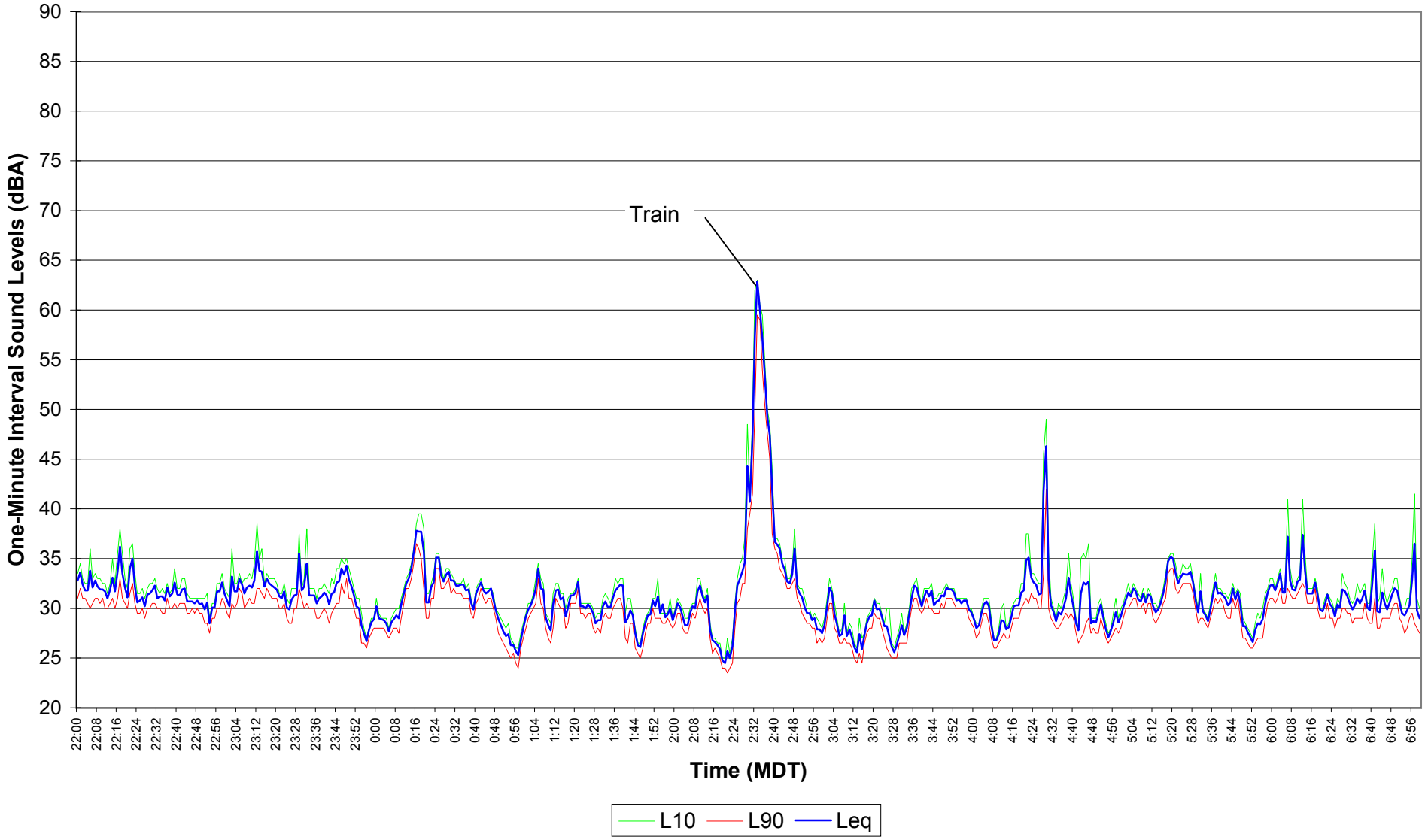


Figure E4.61
EnCana Rosebud
Site 4 Noise Survey

Dec. 13, 2004 07:00 - 14:29

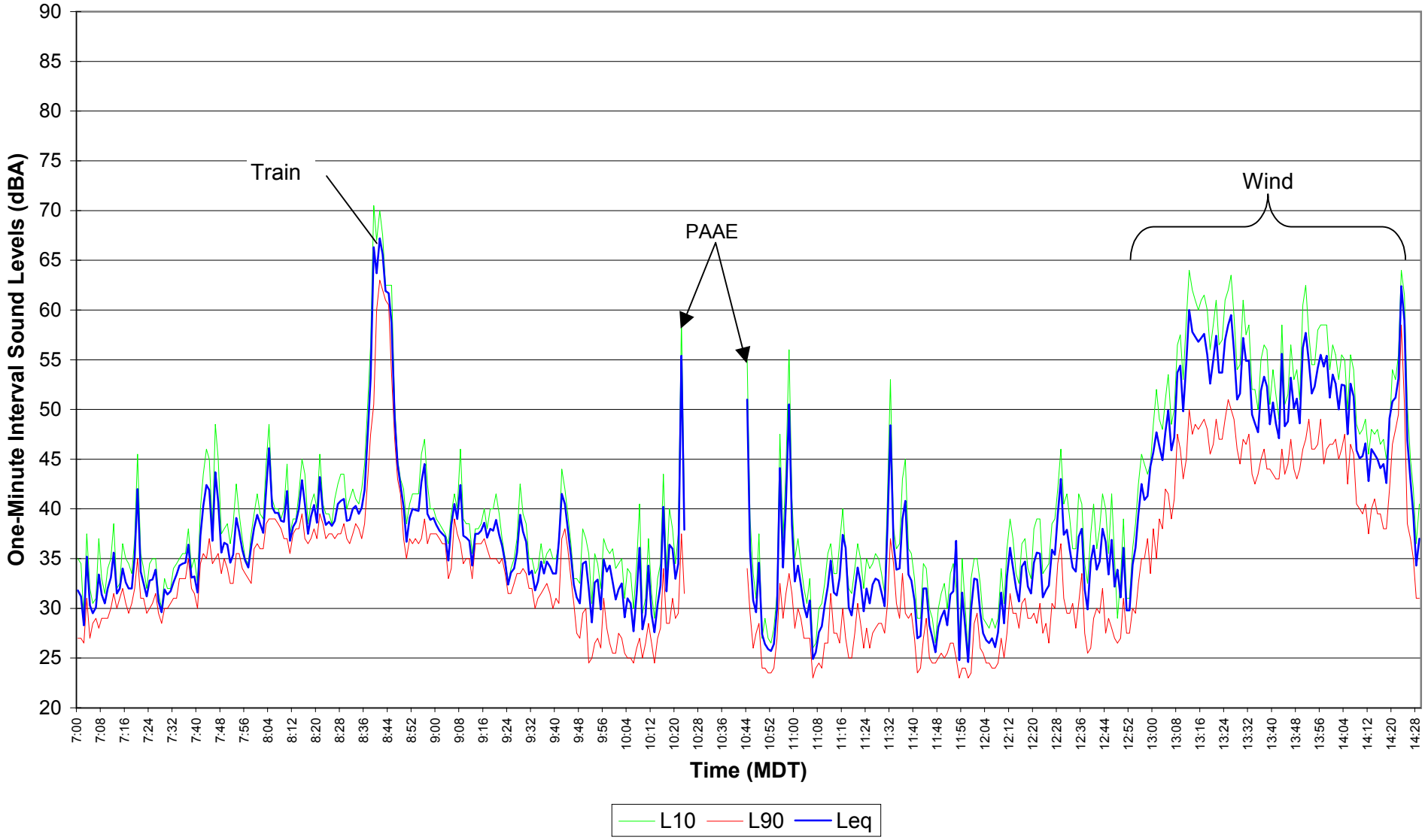


Figure E4.62
EnCana Rosebud
Site 4 Noise Survey
Dec. 13, 2004 14:30 - 21:59

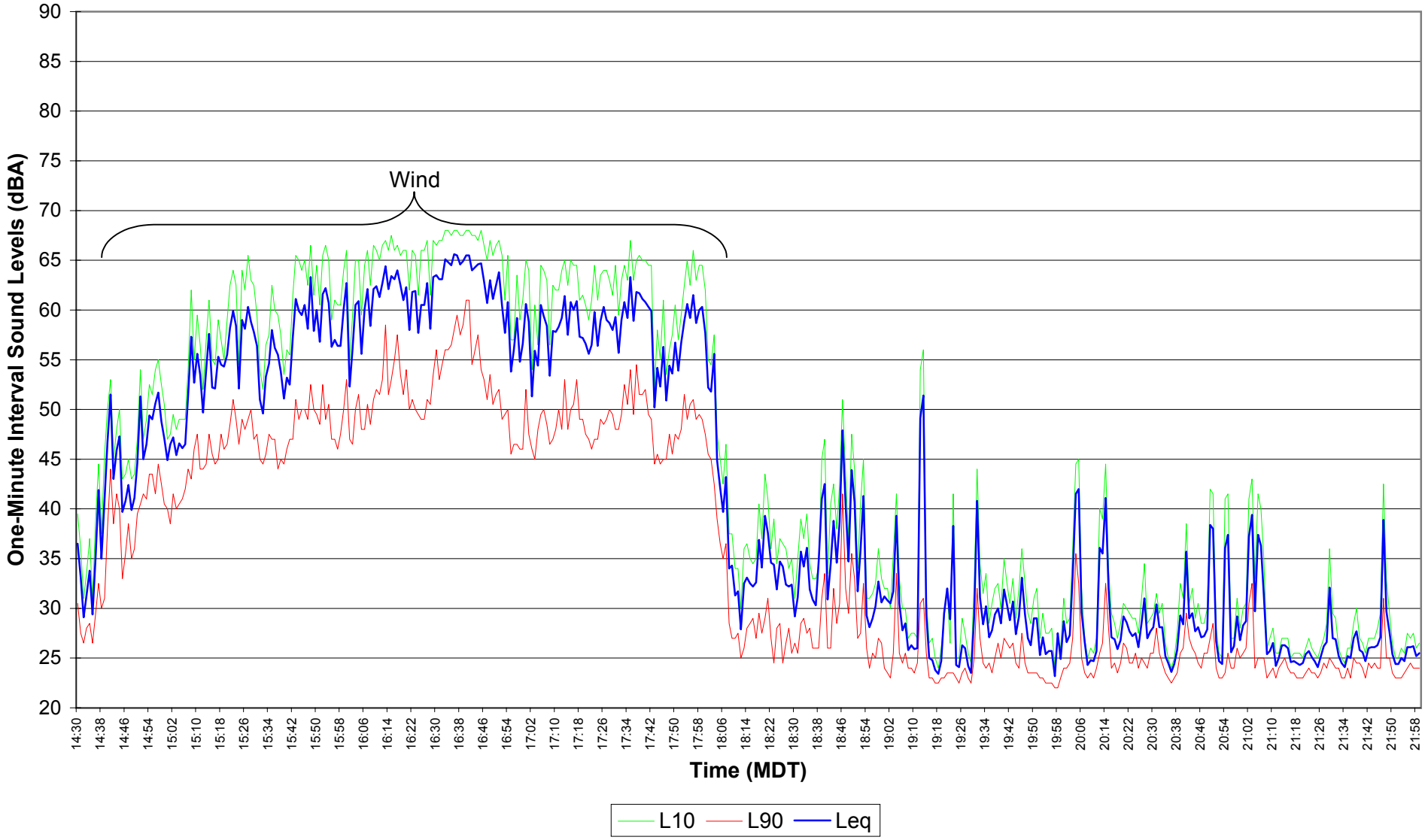


Figure E4.63
EnCana Rosebud
Site 4 Noise Survey
Dec. 13, 2004 - Dec. 14, 2004 22:00 - 06:59

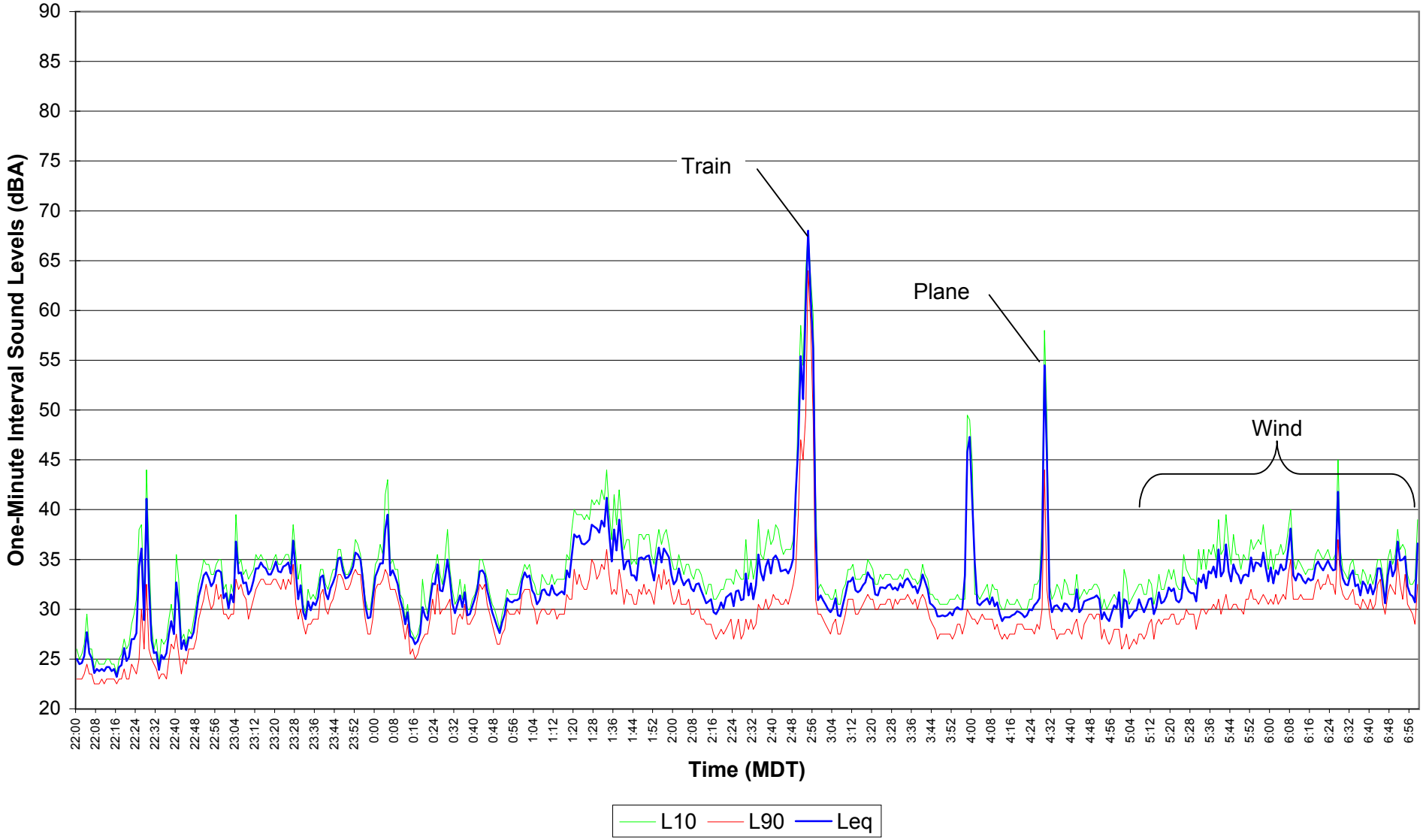


Figure E4.64
EnCana Rosebud
Site 4 Noise Survey
Dec. 14, 2004 07:00 - 14:29

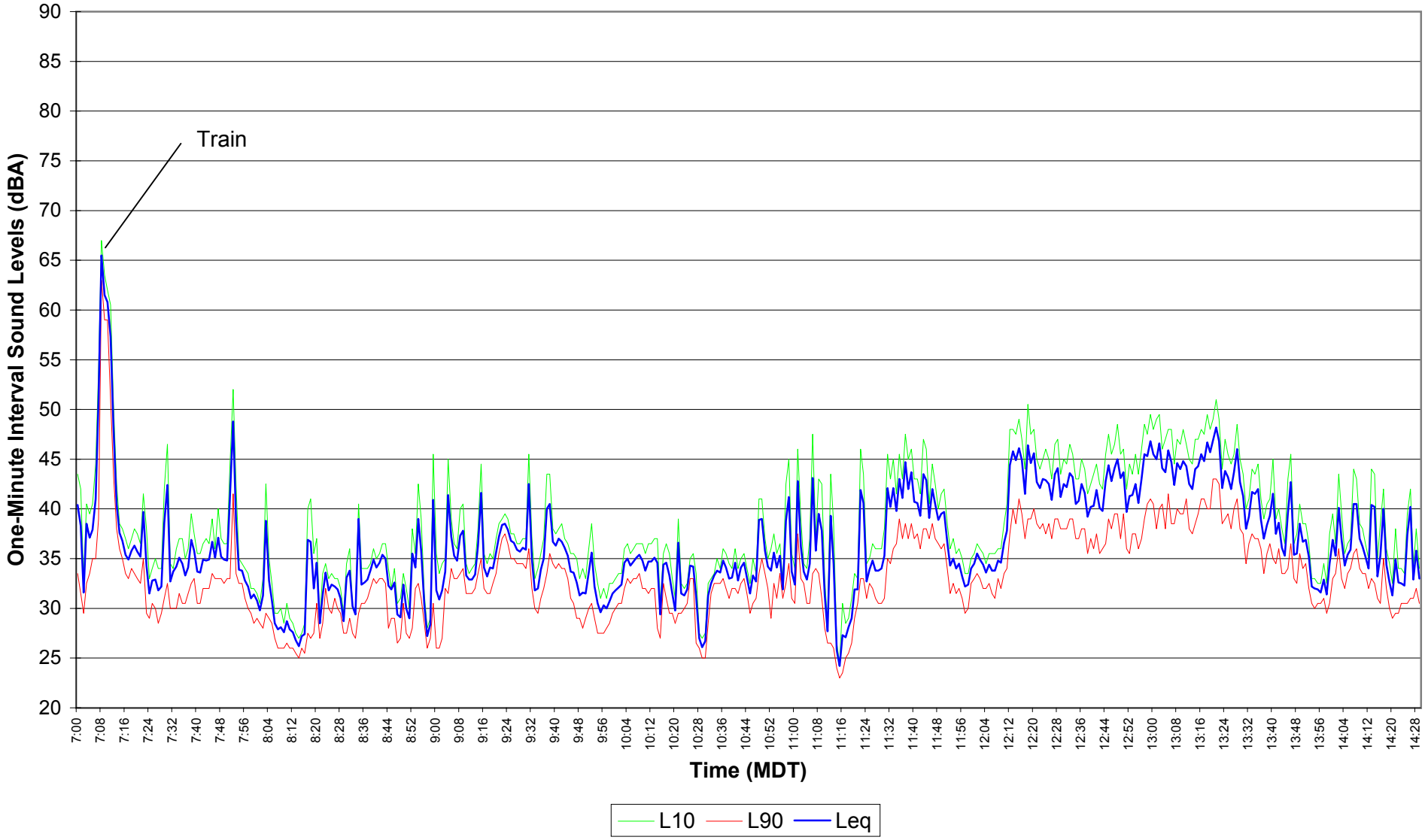


Figure E4.65
EnCana Rosebud
Site 4 Noise Survey
Dec. 14, 2004 14:30 - 21:59

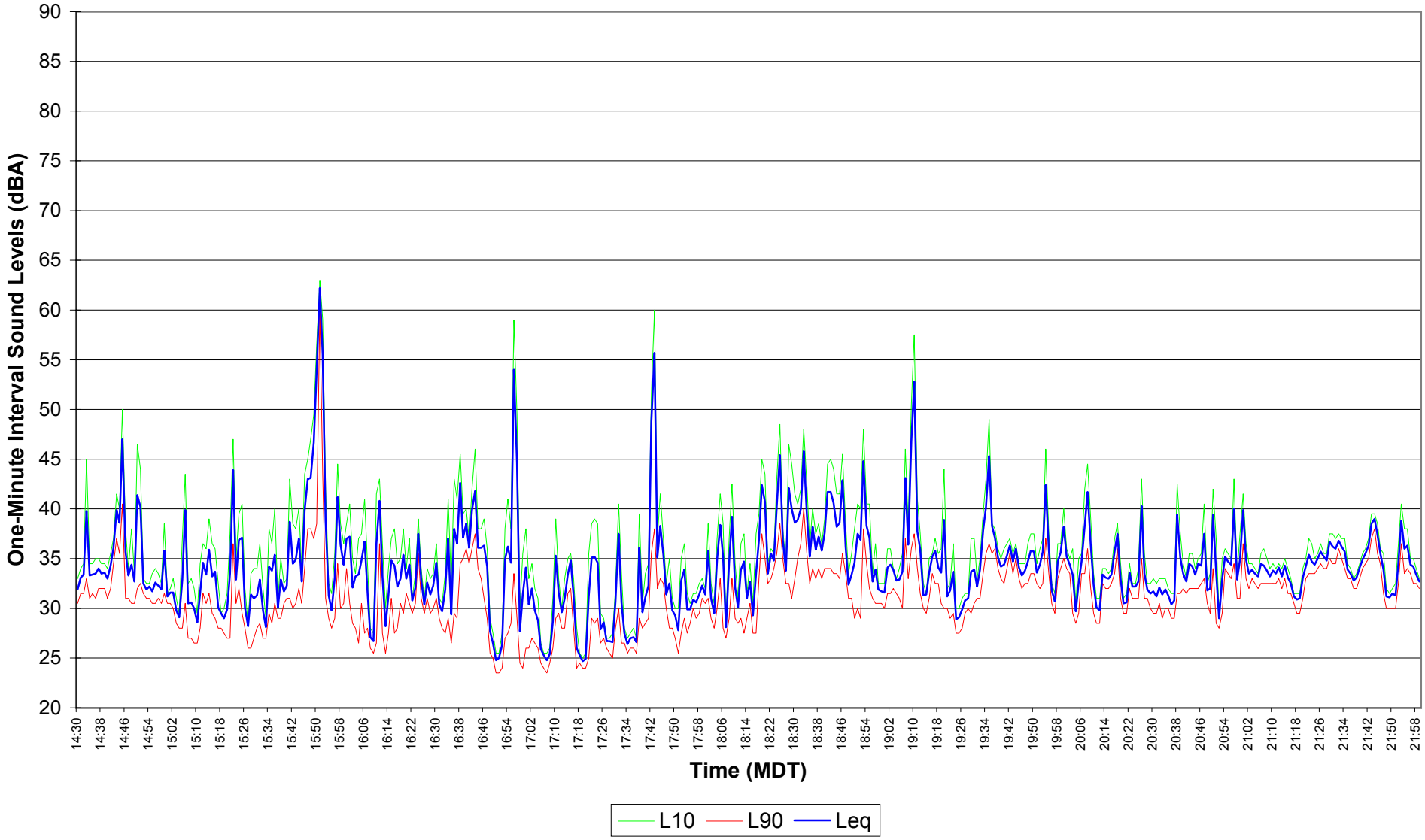


Figure E4.66
EnCana Rosebud
Site 4 Noise Survey
Dec. 14, 2004 - Dec. 15, 2004 22:00 - 06:59

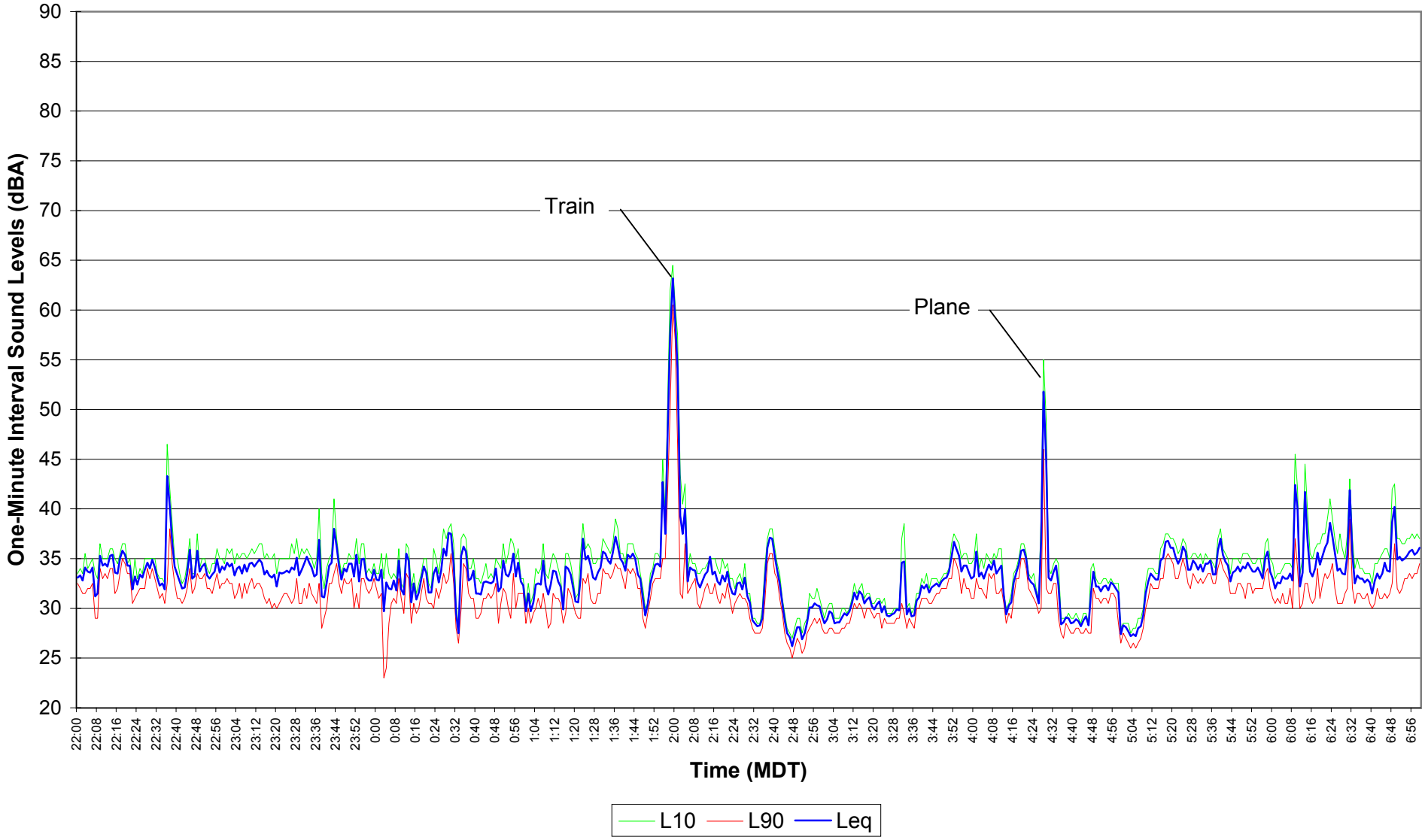


Figure E4.67
EnCana Rosebud
Site 4 Noise Survey
Dec. 15, 2004 07:00 - 14:29

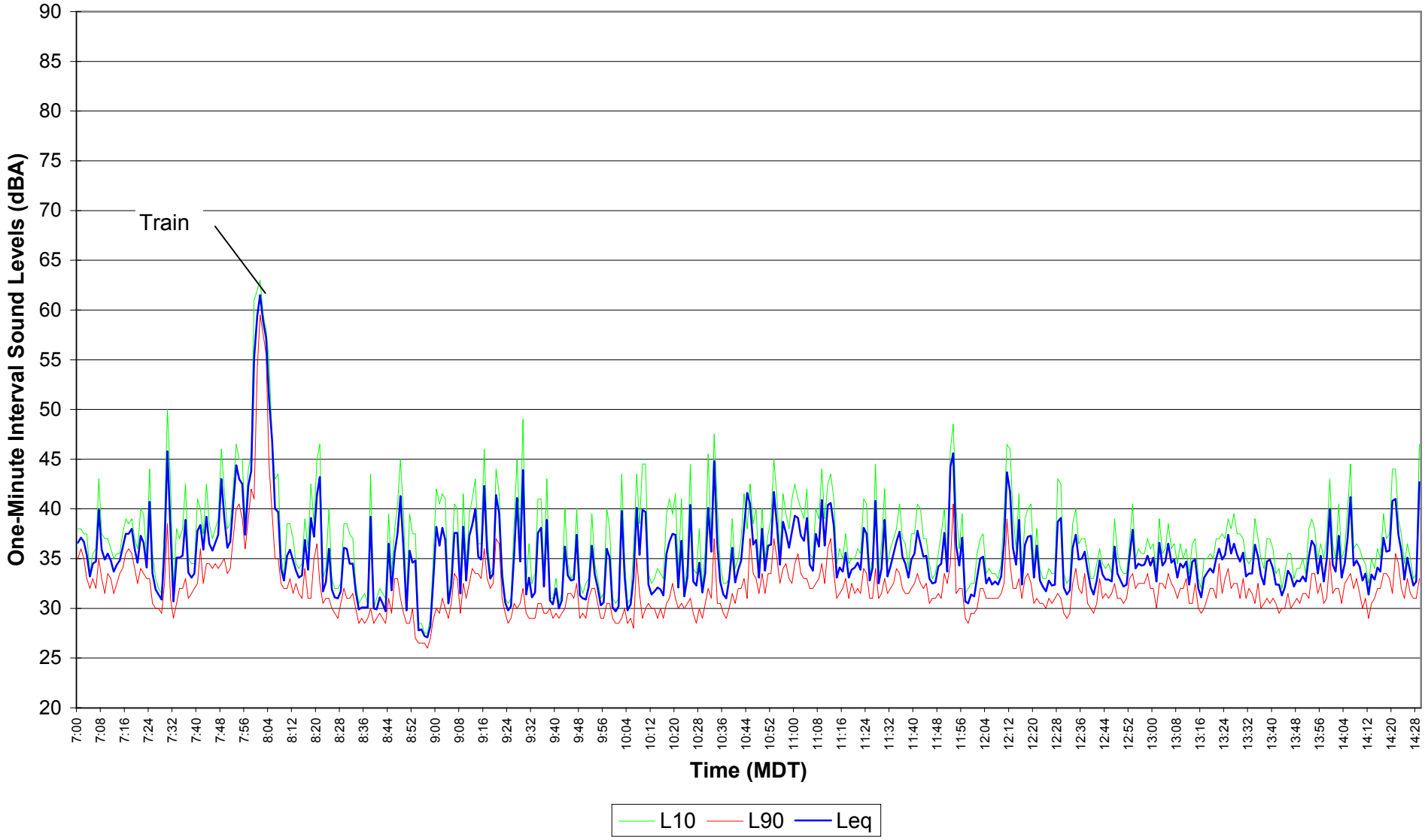


Figure E4.68
EnCana Rosebud
Site 4 Noise Survey
Dec. 15, 2004 14:30 - 21:59

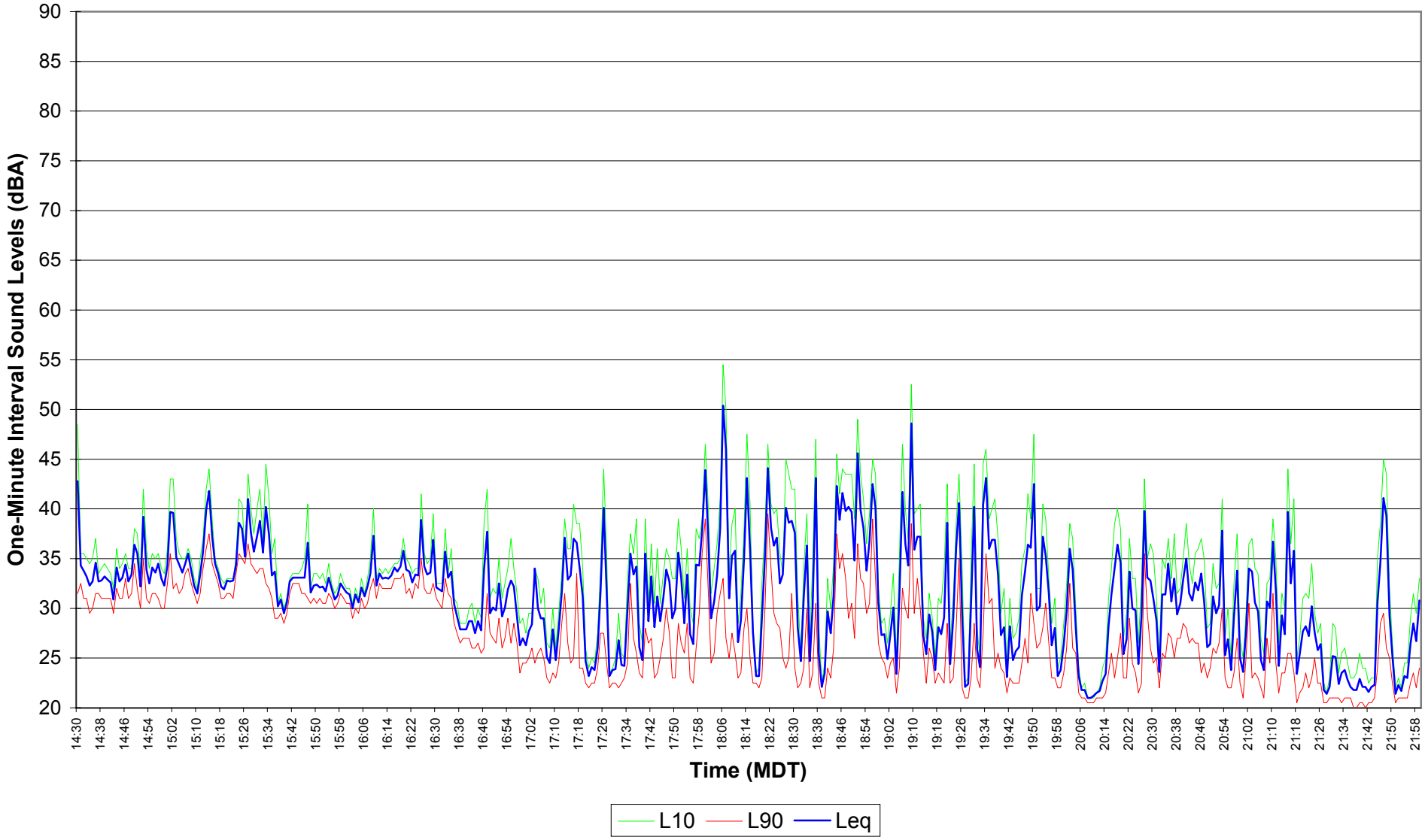


Figure E4.69
EnCana Rosebud
Site 4 Noise Survey
Dec. 15, 2004 - Dec. 16, 2004 22:00 - 06:59

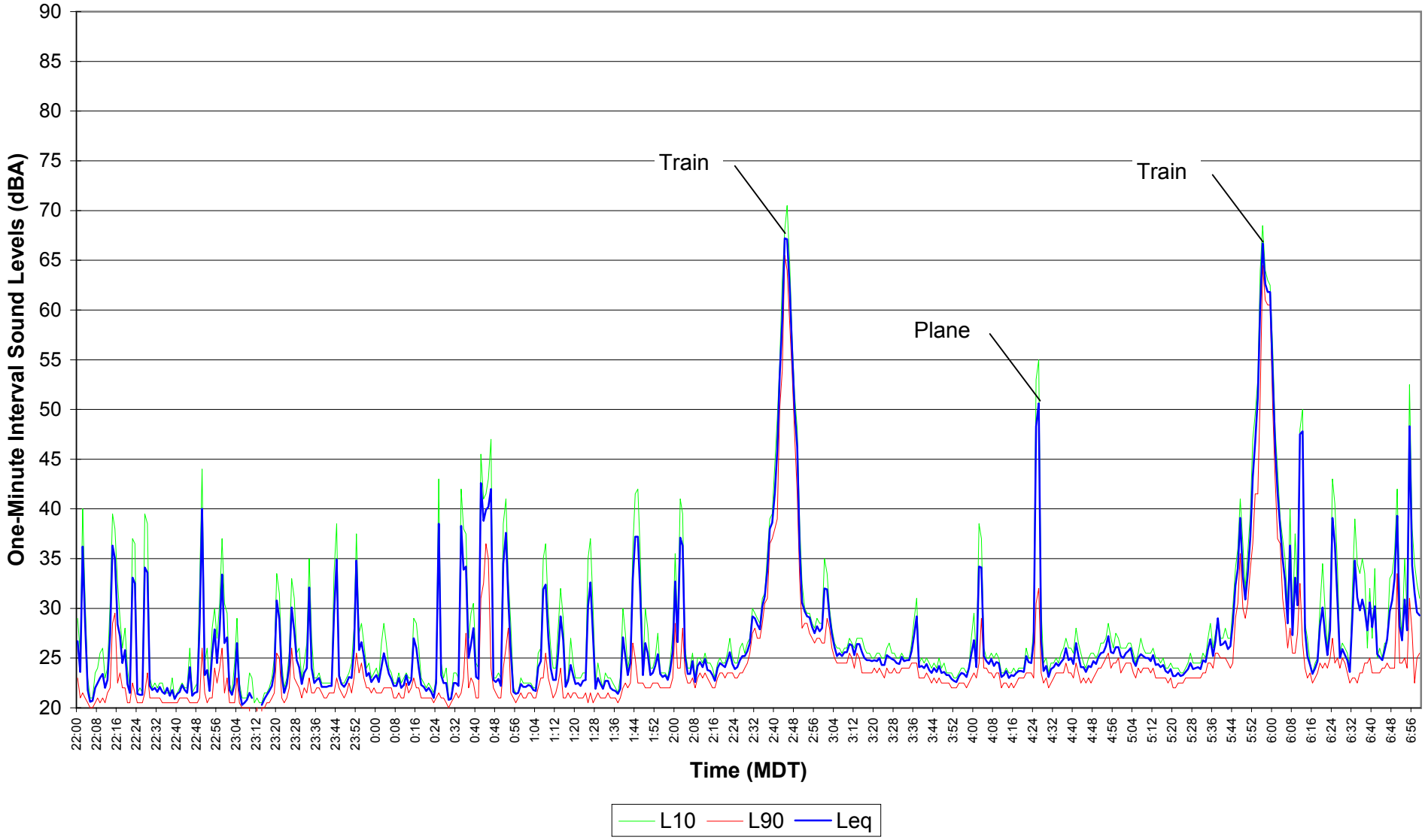


Figure E4.70
EnCana Rosebud
Site 4 Noise Survey
Dec. 16, 2004 07:00 - 14:29

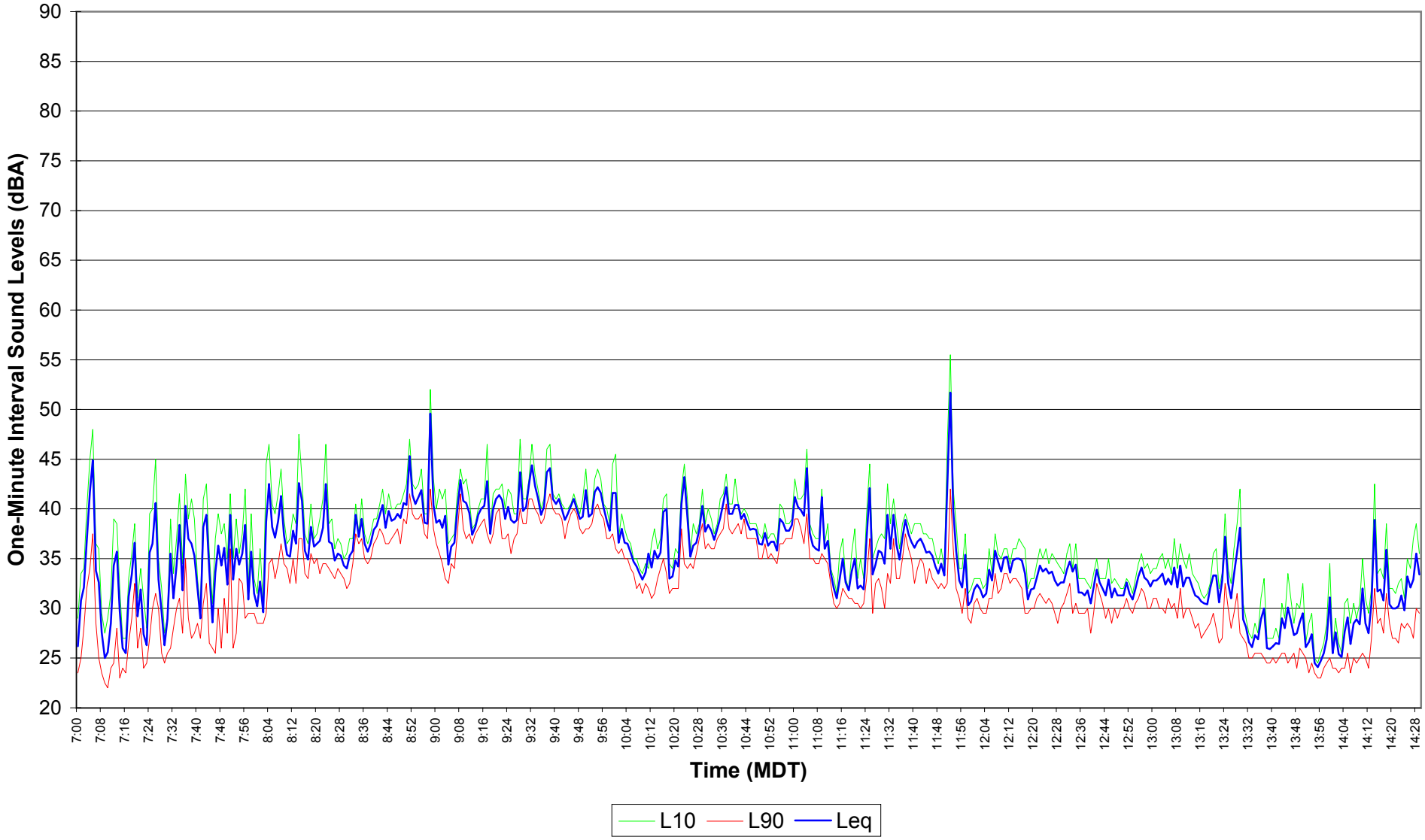


Figure E4.71
EnCana Rosebud
Site 4 Noise Survey
Dec. 16, 2004 14:30 - 21:59

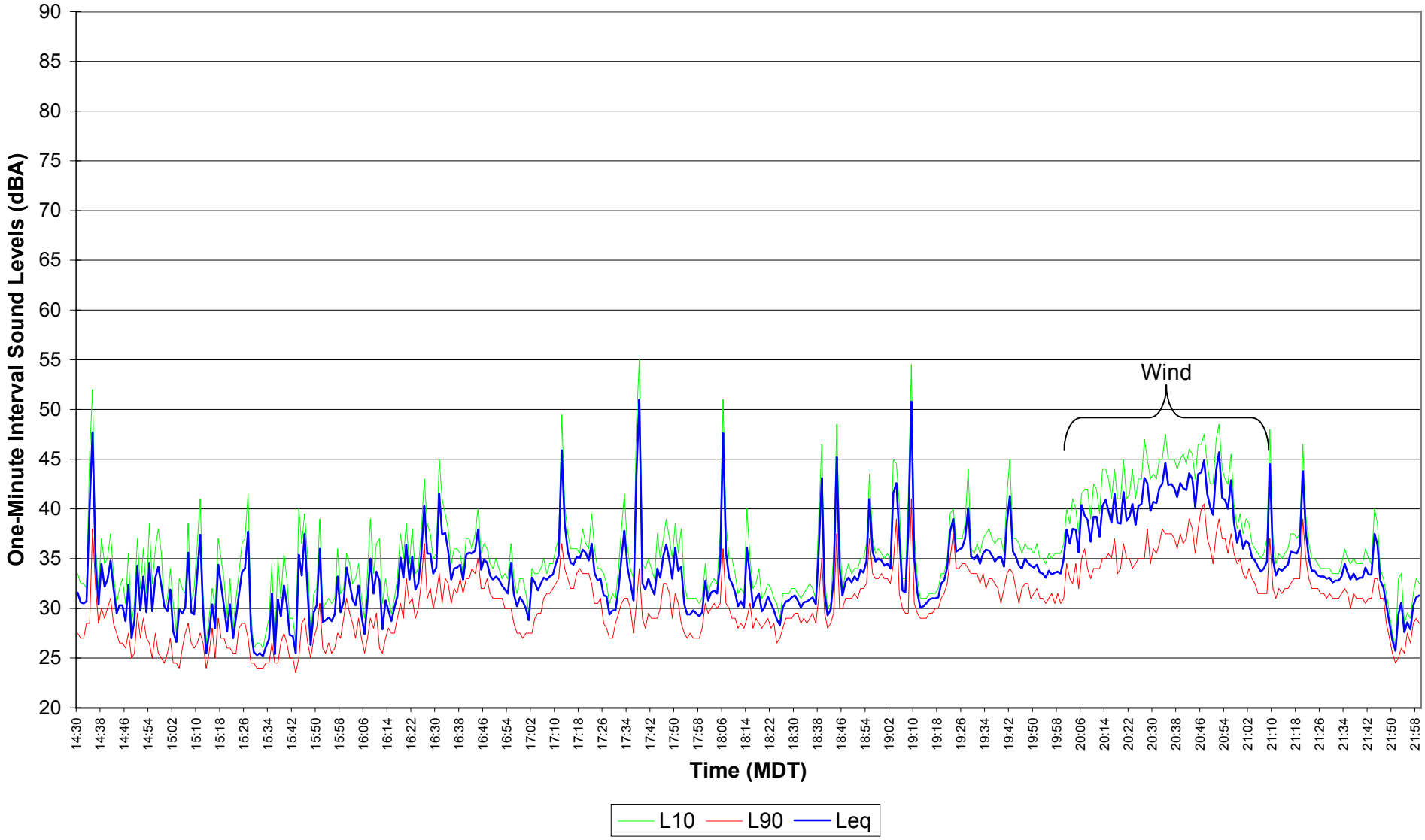


Figure E4.72
EnCana Rosebud
Site 4 Noise Survey
Dec. 16, 2004 - Dec. 17, 2004 22:00 - 06:59

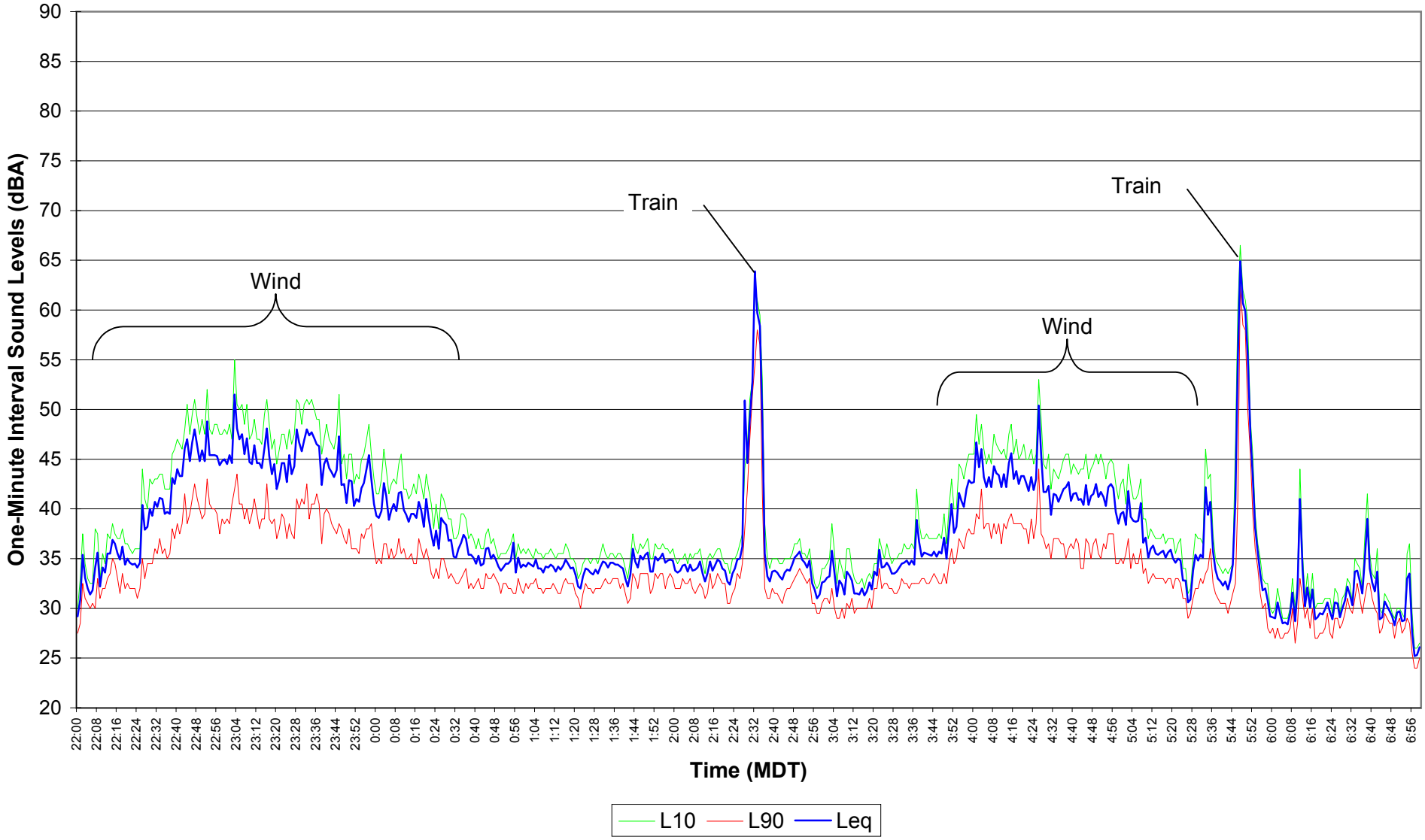


Figure E4.73

EnCana Rosebud

Site 4 Noise Survey

Dec. 17, 2004 07:00 - 14:29

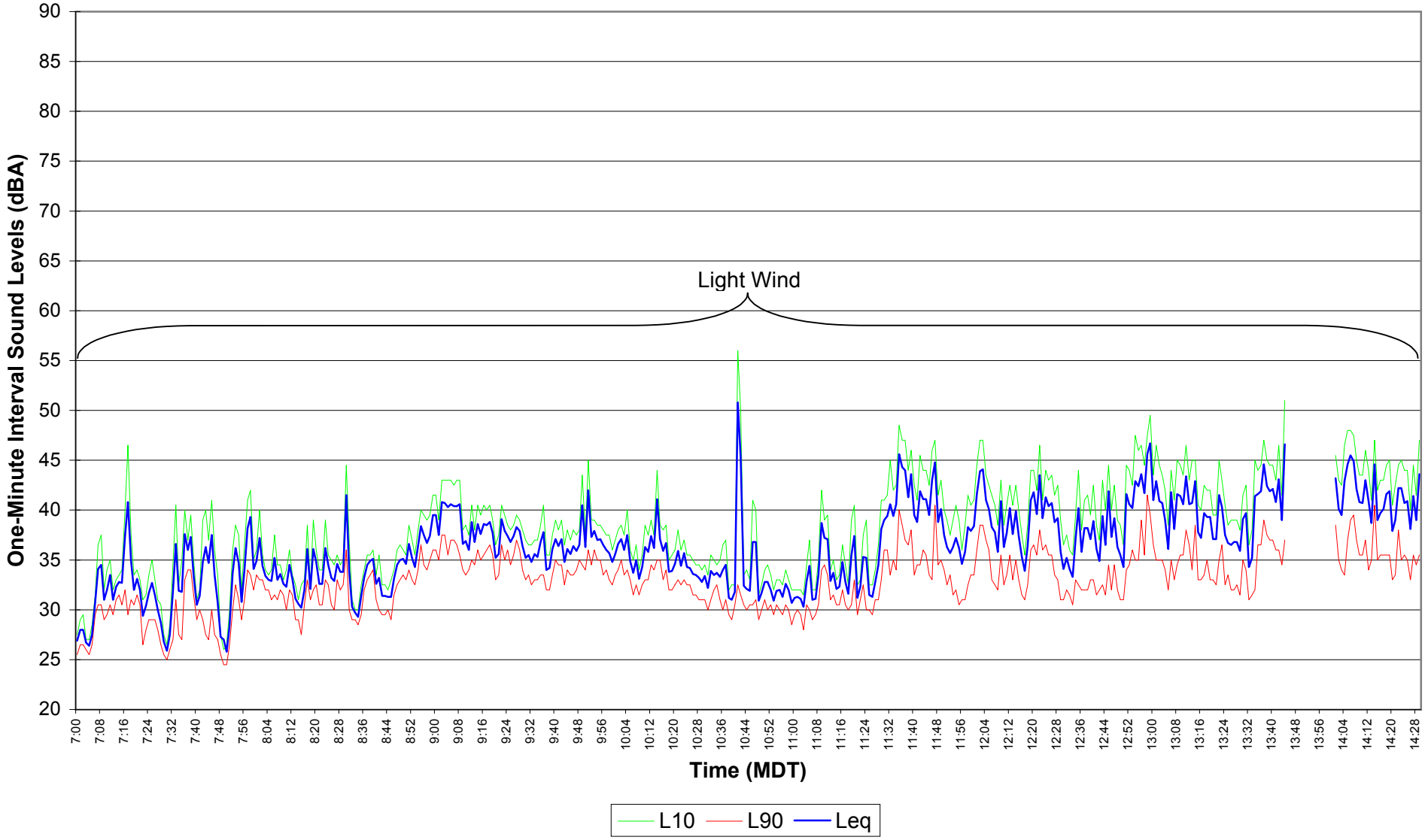


Figure E4.74
EnCana Rosebud
Site 4 Noise Survey
Dec. 17, 2004 14:30 - 21:59

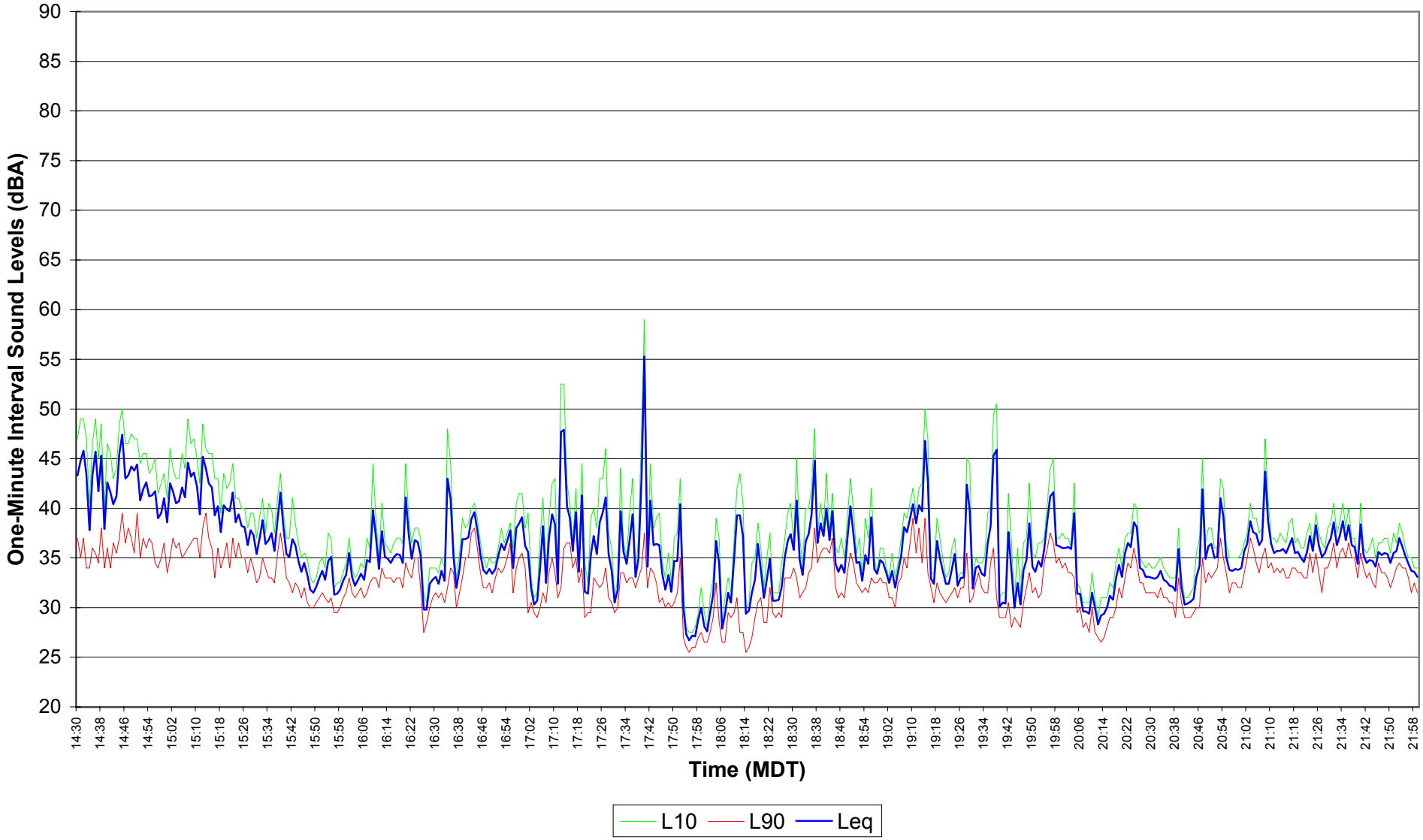


Figure E4.75
EnCana Rosebud
Site 4 Noise Survey
Dec. 17, 2004 - Dec. 18, 2004 22:00 - 06:59

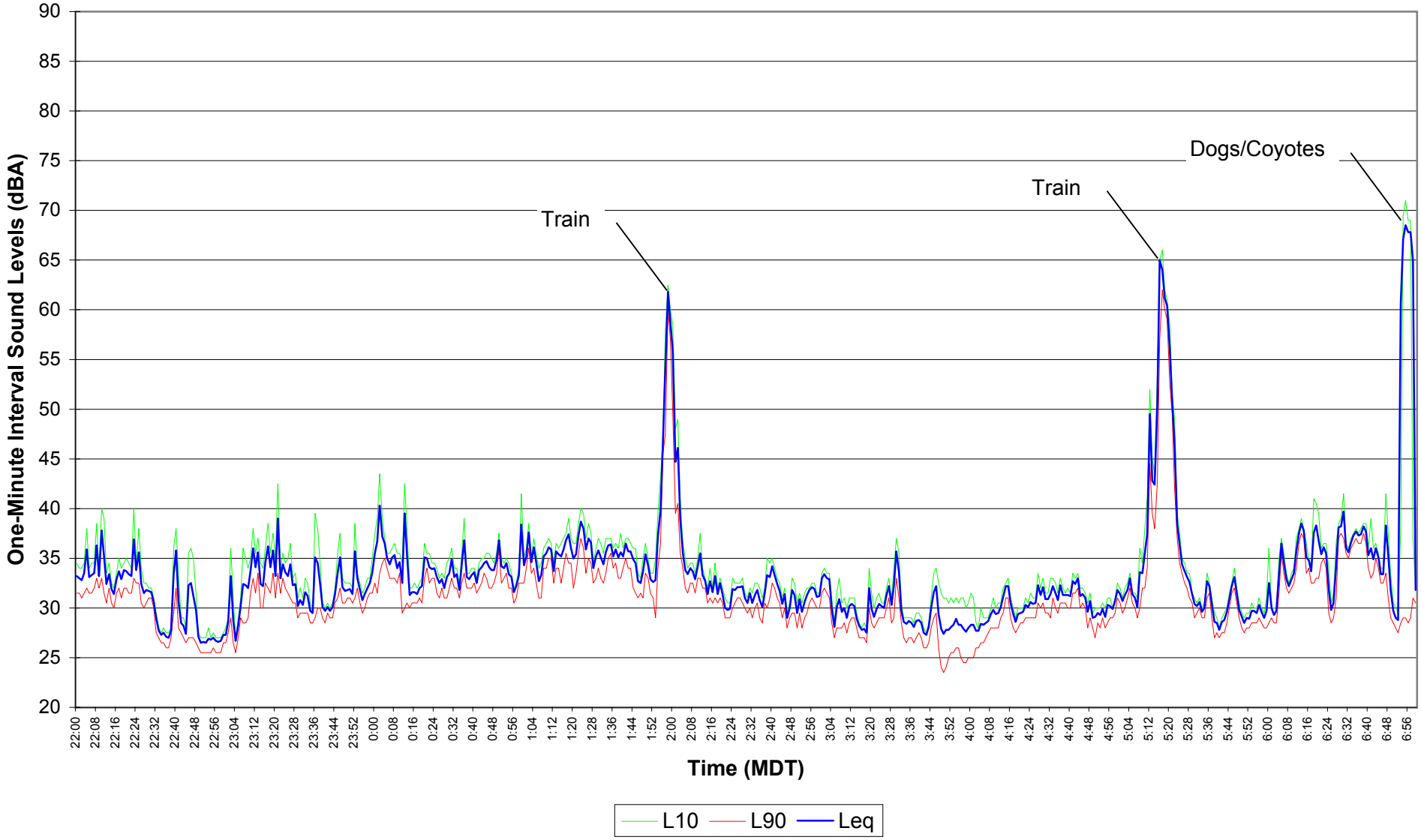


Figure E4.76
EnCana Rosebud
Site 4 Noise Survey
Dec. 18, 2004 07:00 - 14:29

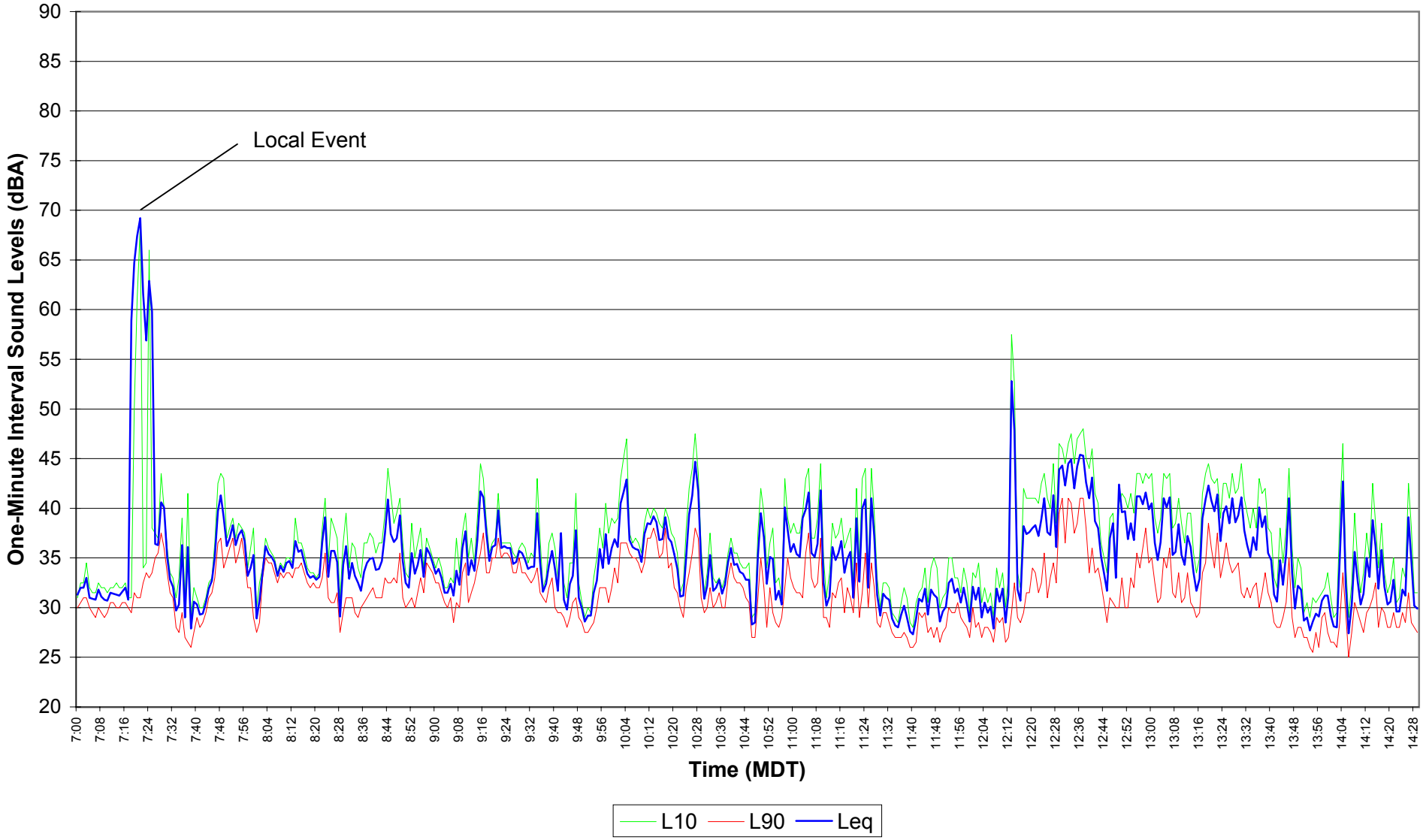


Figure E4.77
EnCana Rosebud
Site 4 Noise Survey
Dec. 18, 2004 14:30 - 21:59

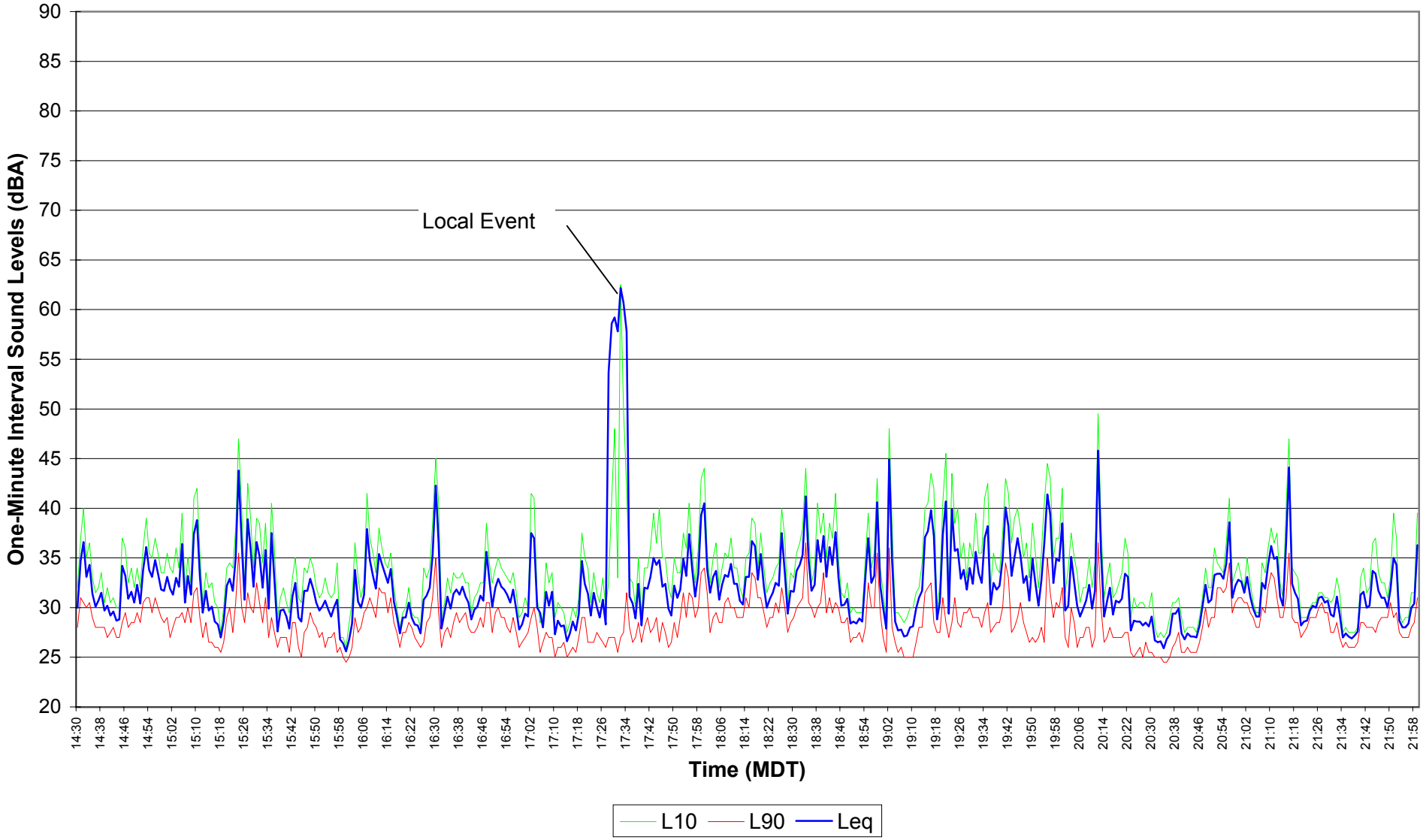


Figure E4.78
EnCana Rosebud
Site 4 Noise Survey
Dec 18, 2004 - Dec 19, 2004 22:00 - 06:59

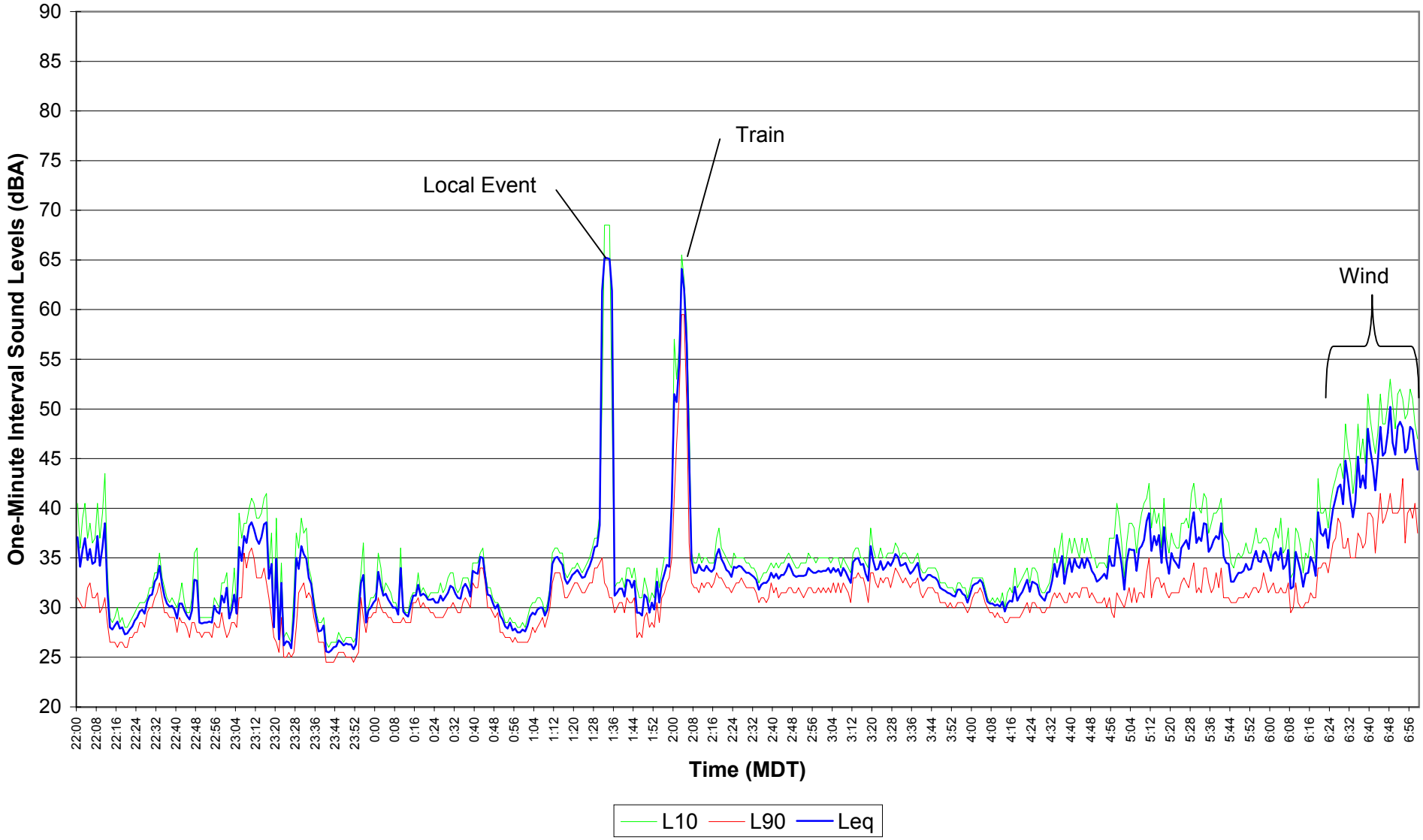


Figure E4.79
EnCana Rosebud
Site 4 Noise Survey
Dec. 19, 2004 07:00 - 14:29

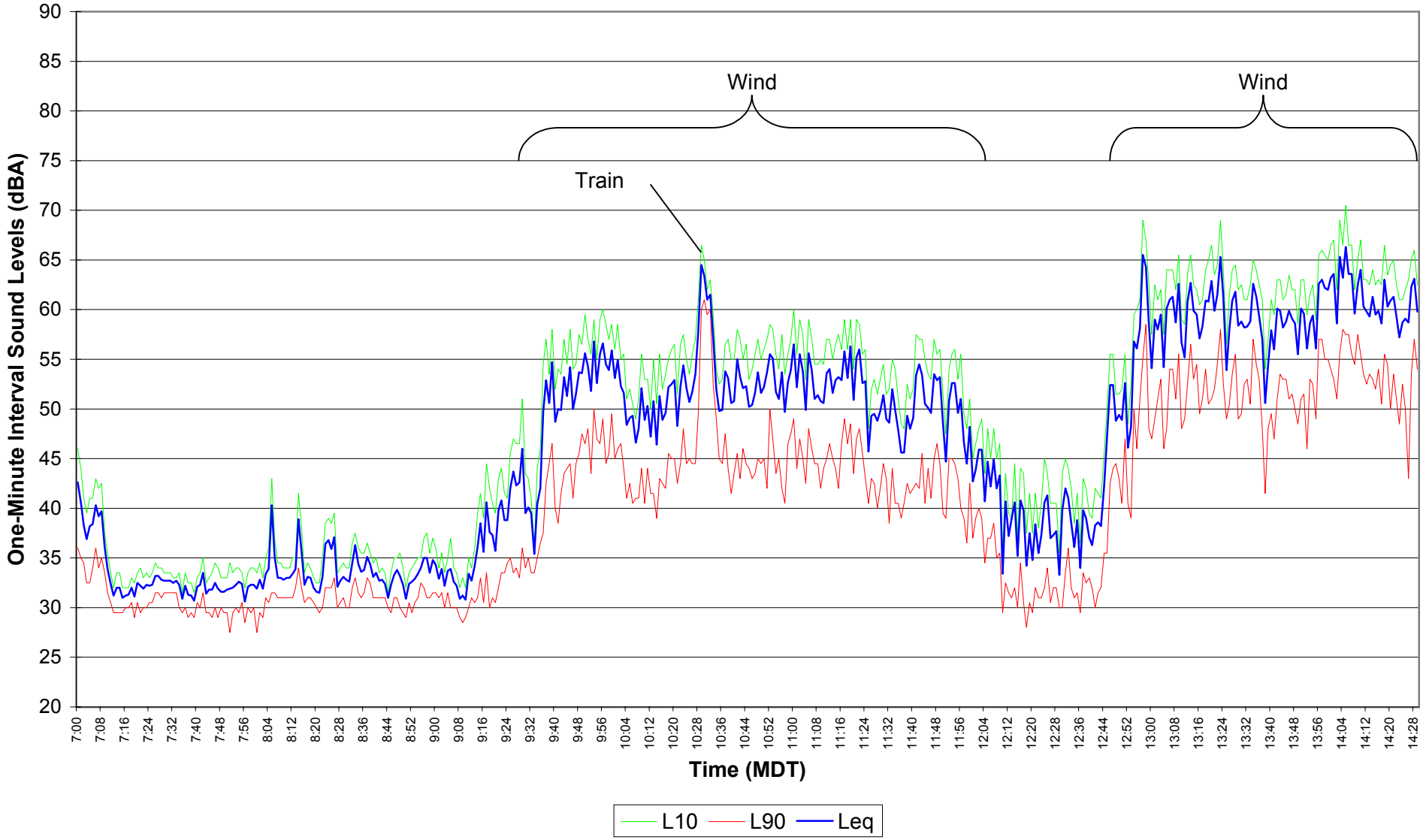


Figure E4.80
EnCana Rosebud
Site 4 Noise Survey
Dec. 19, 2004 14:30 - 21:59

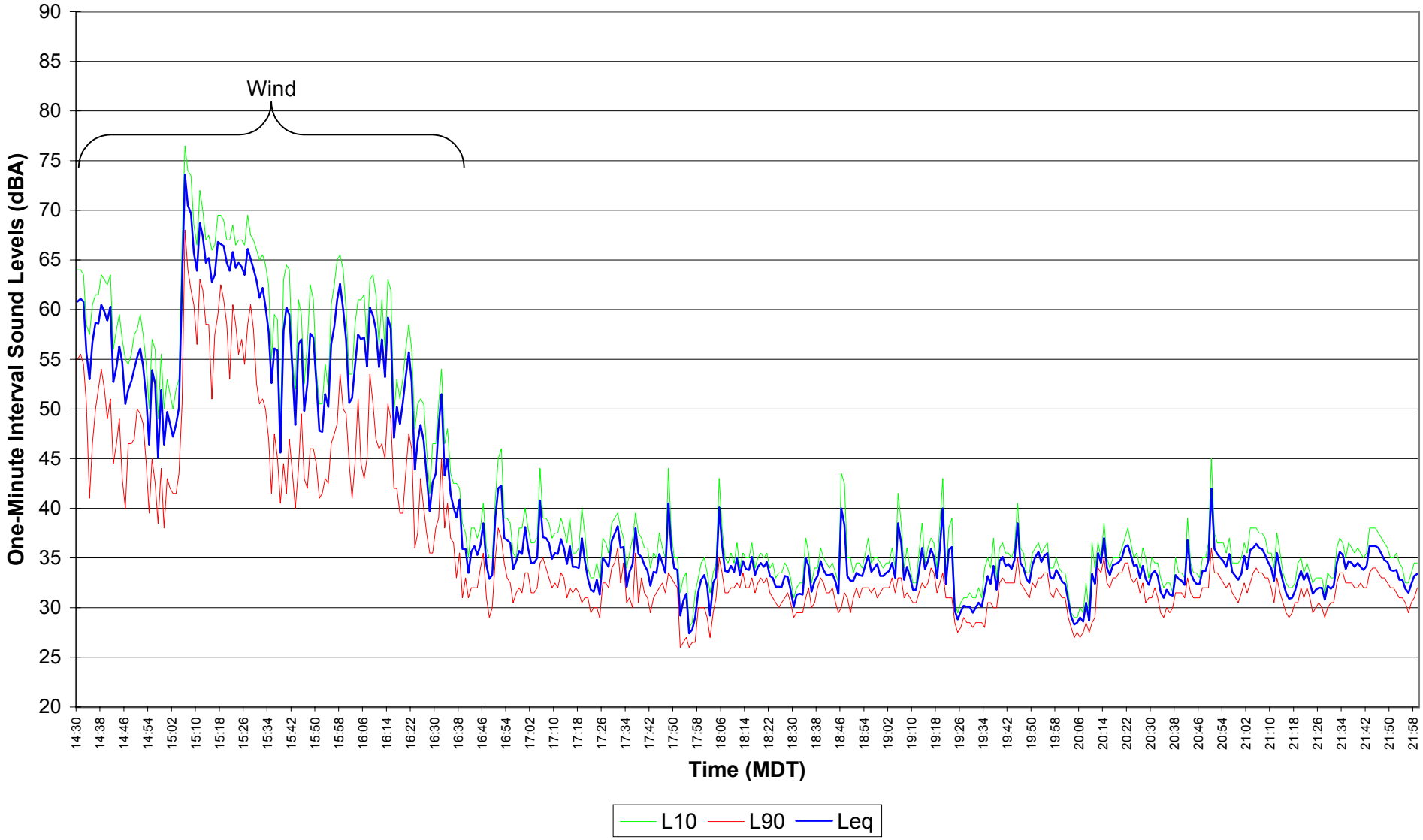


Figure E4.81
EnCana Rosebud
Site 4 Noise Survey
Dec. 19, 2004 - Dec. 20, 2004 22:00 - 06:59

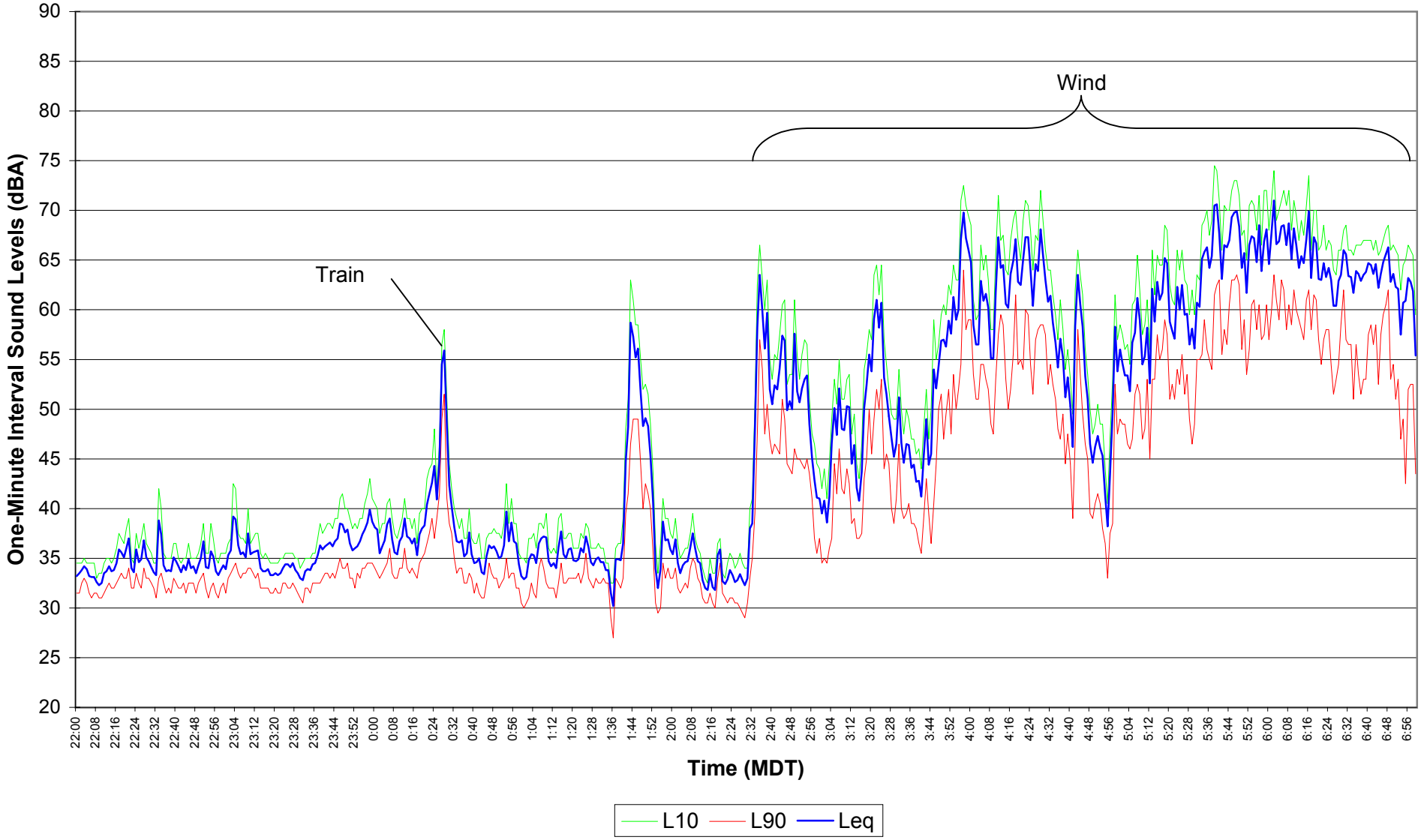
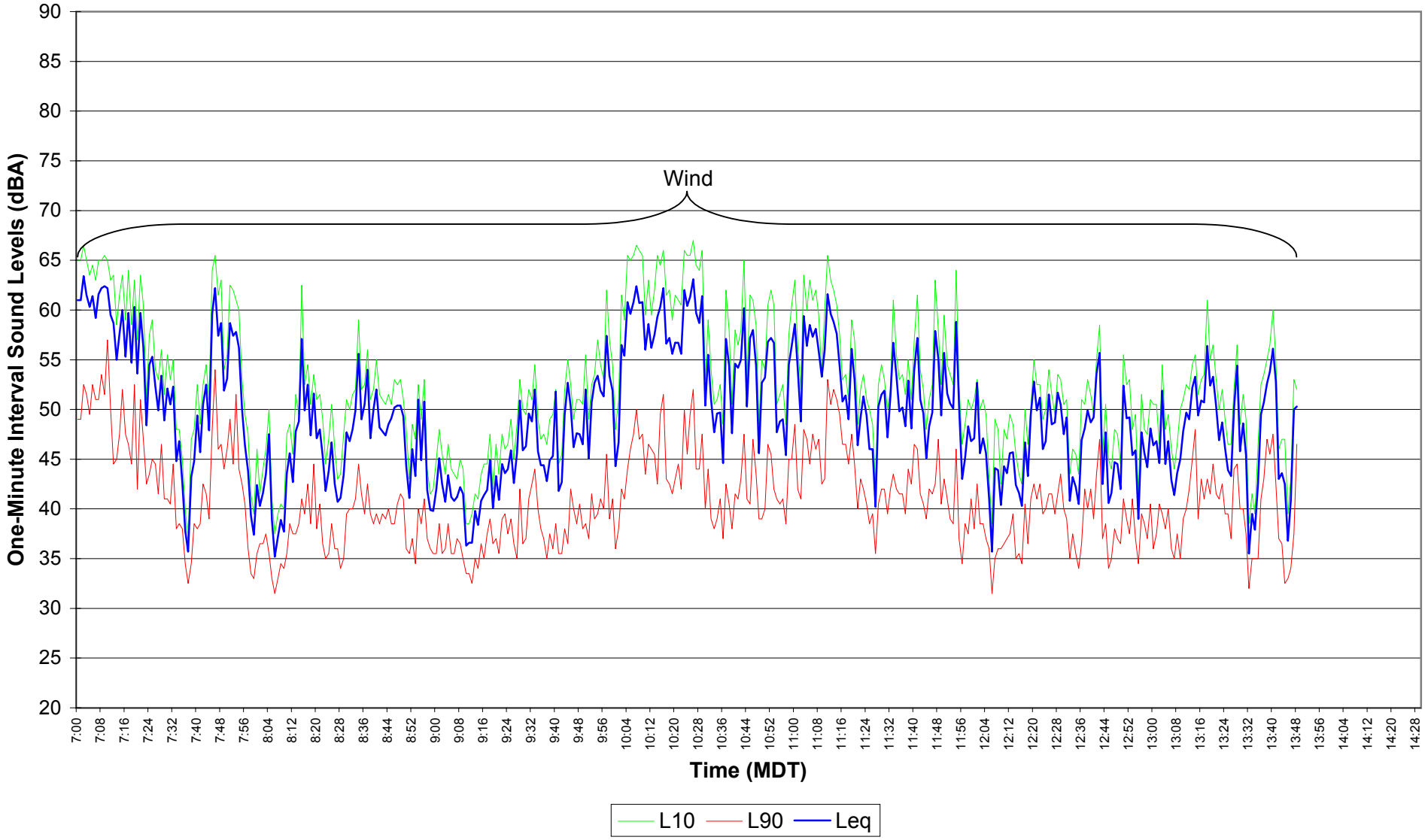


Figure E4.82
EnCana Rosebud
Site 4 Noise Survey
Dec. 20, 2004 07:00 - 14:29



APPENDIX E5

Measurement Results
Graphs of 1-Minute L_{eq}, L_{10} and L_{90} Data
Site 5

Patching Associates Acoustical Engineering Ltd.

Consultants in Acoustics, Noise Control and Vibrations

Table E5.1
EnCana Rosebud
Site 5 Noise Survey
Daily Leq Values

Date	Time	Figure #	Measured		Residual	
			Leq	Hours	Leq	Hours
Nov. 23, 2004	07:00 - 21:59	1, 2	45.7	11.7	36.3	11.3
Nov. 23, 2004 - Nov. 24, 2004	**22:00 - 06:59**	**3**	**42.6**	**9.0**	**32.3**	**8.8**
Nov. 24, 2004	07:00 - 21:59	4, 5	43.8	13.4	36.2	13.2
Nov 24, 2004 - Nov 25, 2004	**22:00 - 06:59**	**6**	**45.2**	**9.0**	**34.3**	**8.8**
Nov. 25, 2004	07:00 - 21:59	7, 8	36.0	15.0	35.8	15.0
Nov. 25, 2004 - Nov. 26, 2004	**22:00 - 06:59**	**9**	**43.4**	**9.0**	**32.6**	**8.9**
Nov. 26, 2004	07:00 - 21:59	10, 11	43.9	14.5	35.0	14.3
Nov 26, 2004 - Nov 27, 2004	**22:00 - 06:59**	**12**	**49.7**	**9.0**	**33.1**	**8.8**
Nov. 27, 2004	07:00 - 21:59	13, 14	36.1	15.0	35.2	14.9
Nov. 27, 2004 - Nov. 28, 2004	**22:00 - 06:59**	**15**	**48.6**	**9.0**	**32.1**	**8.8**
Nov. 28, 2004	07:00 - 21:59	16, 17	34.9	15.0	33.5	15.0
Nov. 28, 2004 - Nov. 29, 2004	**22:00 - 06:59**	**18**	**49.3**	**9.0**	**29.6**	**8.8**
Nov. 29, 2004	07:00 - 21:59	19, 20	35.5	14.2	34.0	14.1
Nov. 29, 2004 - Nov. 30, 2004	**22:00 - 06:59**	**21**	**49.4**	**9.0**	**32.9**	**8.9**
Nov. 30, 2004	07:00 - 21:59	22, 23	38.0	15.0	35.1	14.9
Nov. 30, 2004 - Dec. 01, 2004	**22:00 - 06:59**	**24**	**46.5**	**9.0**	**31.5**	**8.8**
Dec. 01, 2004	07:00 - 21:59	25, 26	41.8	15.0	33.9	14.9
Dec. 01, 2004 - Dec. 02, 2004	**22:00 - 06:59**	**27**	**47.9**	**9.0**	**32.4**	**8.8**
Dec. 02, 2004	07:00 - 21:59	28, 29	44.5	15.0	41.4	13.9
Dec. 02, 2004 - Dec. 03, 2004	**22:00 - 06:59**	**30**	**47.0**	**9.0**	**32.8**	**7.7**
Dec. 03, 2004	07:00 - 21:59	31, 32	42.4	14.4	39.2	14.0
Dec. 03, 2004 - Dec. 04, 2004	**22:00 - 06:59**	**33**	**43.1**	**9.0**	**33.0**	**8.9**
Dec. 04, 2004	07:00 - 21:59	34, 35	38.2	15.0	37.8	15.0
Dec. 04, 2004 - Dec. 05, 2004	**22:00 - 06:59**	**36**	**48.8**	**9.0**	**32.0**	**8.8**
Dec. 05, 2004	07:00 - 21:59	37, 38	37.5	15.0	35.0	15.0
Dec. 05, 2004 - Dec. 06, 2004	**22:00 - 06:59**	**39**	**43.2**	**9.0**	**31.6**	**8.9**
Dec. 06, 2004	07:00 - 21:59	40, 41	46.9	14.4	35.2	14.2
Dec. 06, 2004 - Dec. 07, 2004	**22:00 - 06:59**	**42**	**39.1**	**9.0**	**27.1**	**9.0**
Dec. 07, 2004	07:00 - 21:59	43, 44	45.0	15.0	34.6	14.8
Dec. 07, 2004 - Dec. 08, 2004	**22:00 - 06:59**	**45**	**49.3**	**9.0**	**29.8**	**8.7**
Dec. 08, 2004	07:00 - 21:59	46, 47	41.6	15.0	36.4	14.8
Dec. 08, 2004 - Dec. 09, 2004	**22:00 - 06:59**	**48**	**49.7**	**9.0**	**31.6**	**8.8**
Dec. 09, 2004	07:00 - 21:59	49, 50	51.0	15.0	36.3	13.6
Dec. 09, 2004 - Dec. 10, 2004	**22:00 - 06:59**	**51**	**47.8**	**9.0**	**31.5**	**8.8**
Dec. 10, 2004	07:00 - 21:59	52, 53	51.8	14.5	41.3	10.9
Dec. 10, 2004 - Dec. 11, 2004	**22:00 - 06:59**	**54**	**50.5**	**9.0**	**33.3**	**6.1**
Dec. 11, 2004	07:00 - 21:59	55, 56	48.3	15.0	40.5	13.3
Dec. 11, 2004 - Dec. 12, 2004	**22:00 - 06:59**	**57**	**42.3**	**9.0**	**32.6**	**8.9**
Dec. 12, 2004	07:00 - 21:59	58, 59	38.8	15.0	32.6	14.9
Dec. 12, 2004 - Dec. 13, 2004	**22:00 - 06:59**	**60**	**50.1**	**9.0**	**30.6**	**8.9**
Dec. 13, 2004	07:00 - 21:59	61, 62	51.8	14.1	39.6	10.7
Dec. 13, 2004 - Dec. 14, 2004	**22:00 - 06:59**	**63**	**42.9**	**9.0**	**34.3**	**8.9**
Dec. 14, 2004	07:00 - 21:59	64, 65	47.3	15.0	37.7	14.8
Dec. 14, 2004 - Dec. 15, 2004	**22:00 - 06:59**	**66**	**42.6**	**9.0**	**31.9**	**8.9**
Dec. 15, 2004	07:00 - 21:59	67, 68	44.0	14.9	35.8	14.5
Dec 15, 2004 - Dec 16, 2004	**22:00 - 06:59**	**69**	**48.4**	**9.0**	**31.2**	**8.8**
Dec. 16, 2004	07:00 - 21:59	70, 71	39.1	15.0	35.8	14.8
Dec. 16, 2004 - Dec. 17, 2004	**22:00 - 06:59**	**72**	**49.5**	**9.0**	**33.9**	**6.4**
Dec. 17, 2004	07:00 - 21:59	73, 74	40.9	14.5	35.6	14.4
Dec 17, 2004 - Dec 18, 2004	**22:00 - 06:59**	**75**	**47.9**	**9.0**	**31.4**	**8.8**
Dec. 18, 2004	07:00 - 21:59	76, 77	39.0	15.0	34.0	14.8
Dec. 18, 2004 - Dec. 19, 2004	**22:00 - 06:59**	**78**	**44.9**	**9.0**	**32.9**	**8.9**
Dec. 19, 2004	07:00 - 21:59	79, 80	51.3	15.0	41.3	11.7
Dec. 19, 2004 - Dec. 20, 2004	**22:00 - 06:59**	**81**	**49.3**	**9.0**	**34.5**	**4.6**
Dec. 20, 2004	07:00 - 21:59	82, 83	45.0	7.6	41.6	7.4

Figure E5.1

EnCana Rosebud

Site 5 Noise Survey

Nov. 23, 2004 07:00 - 14:29

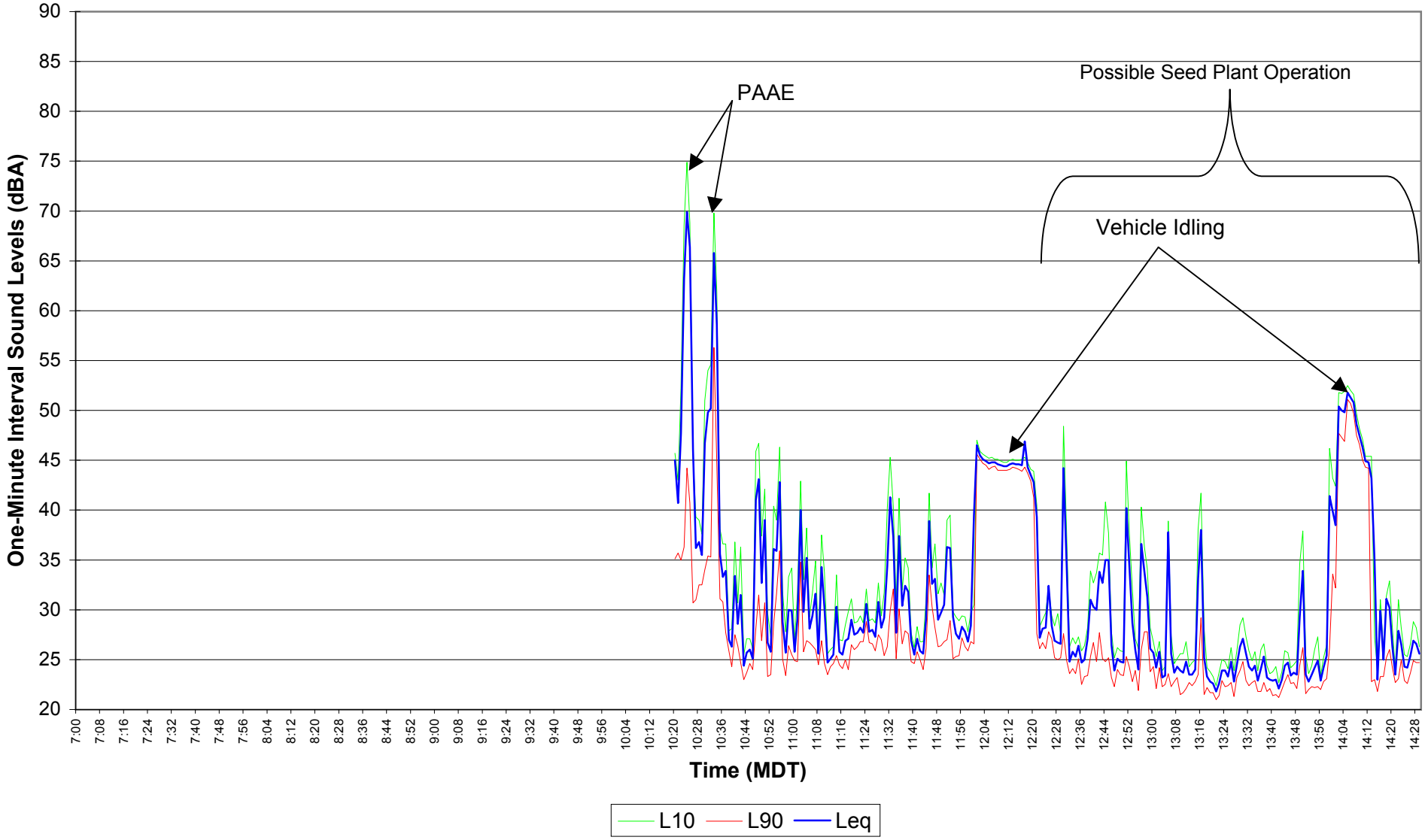


Figure E5.2
EnCana Rosebud
Site 5 Noise Survey
Nov. 23, 2004 14:30 - 21:59

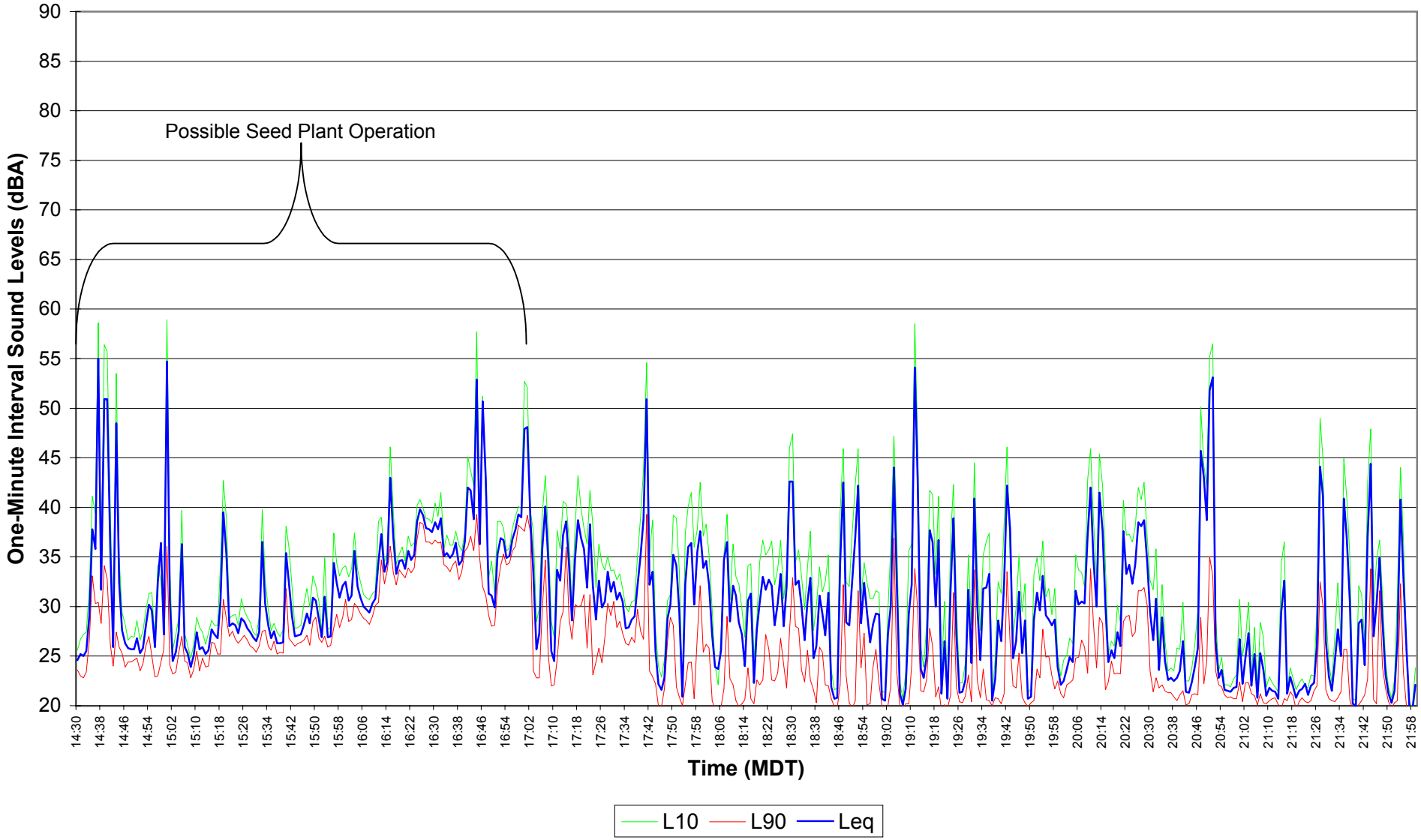


Figure E5.3
EnCana Rosebud
Site 5 Noise Survey
Nov. 23, 2004 - Nov. 24, 2004 22:00 - 06:59

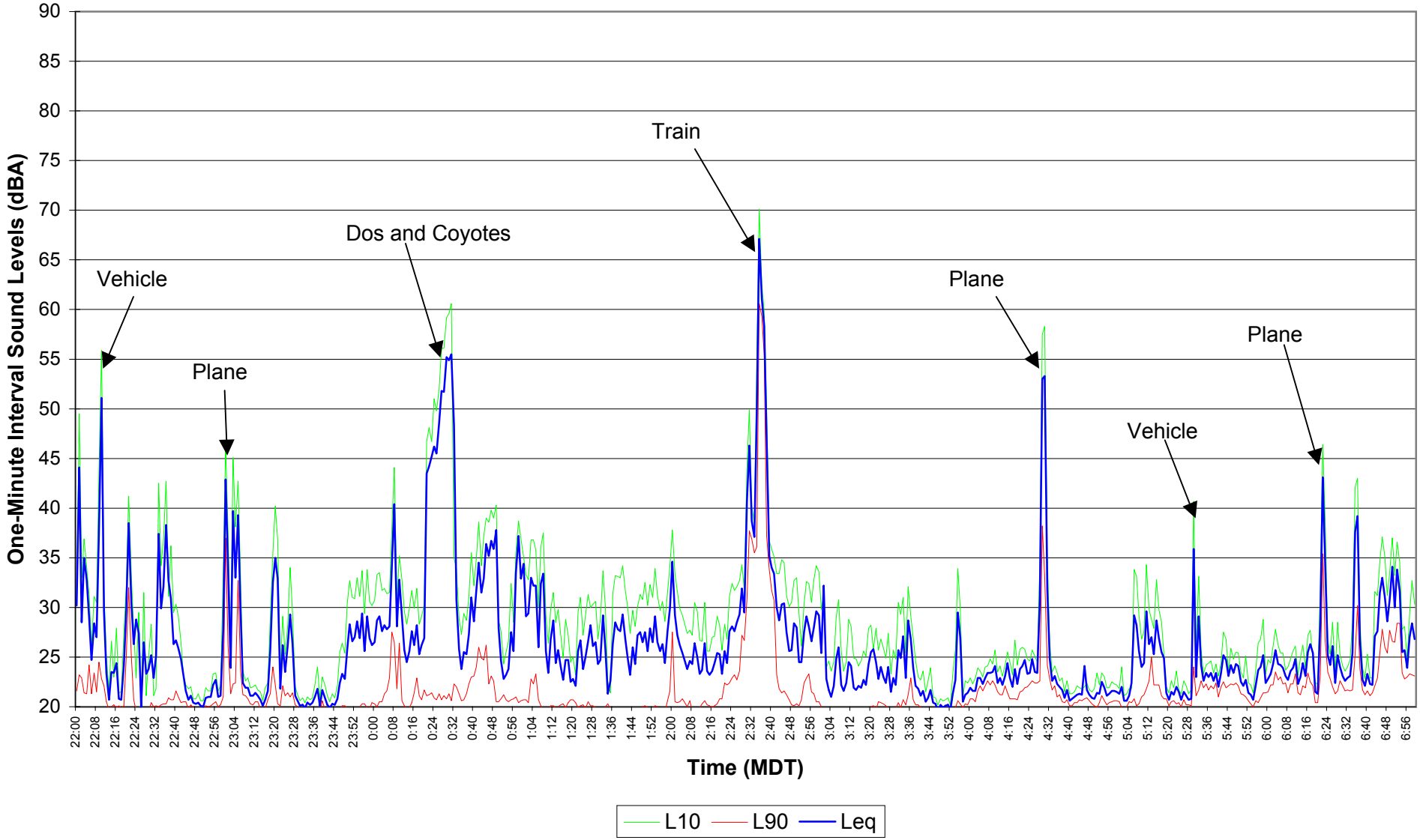


Figure E5.4
EnCana Rosebud
Site 5 Noise Survey
Nov. 24, 2004 07:00 - 14:29

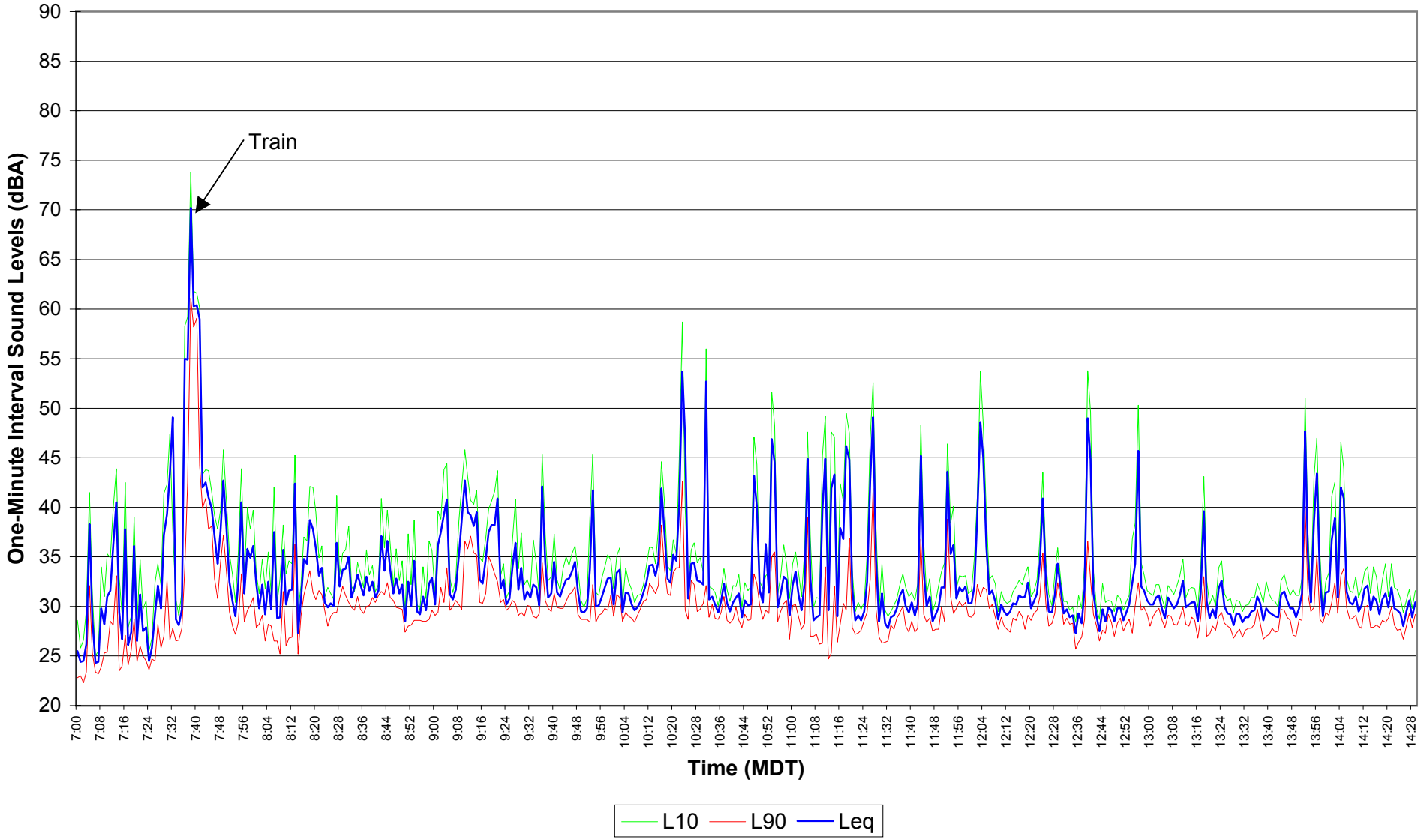


Figure E5.5
EnCana Rosebud
Site 5 Noise Survey
Nov. 24, 2004 14:30 - 21:59

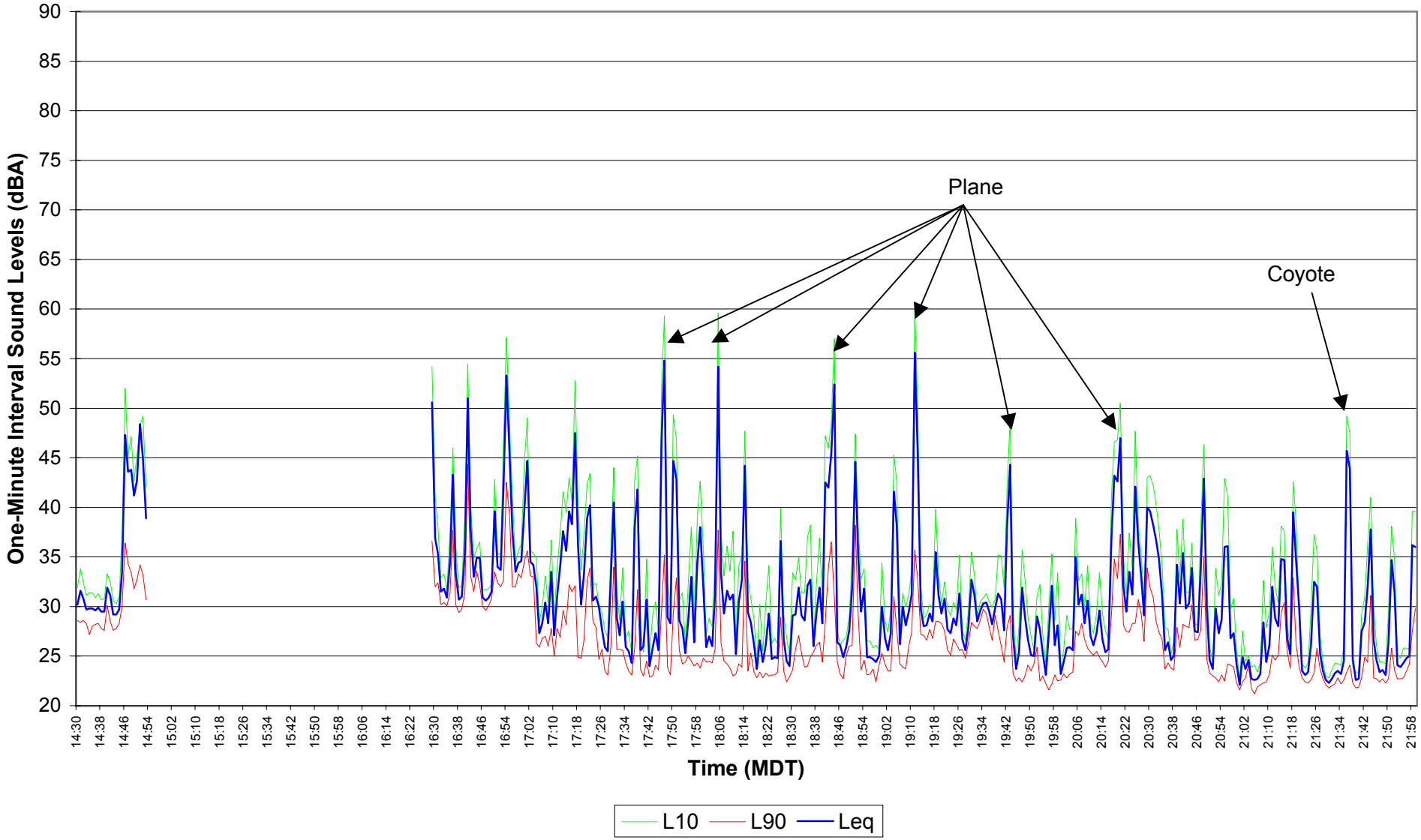


Figure E5.6
EnCana Rosebud
Site 5 Noise Survey
Nov 24, 2004 - Nov 25, 2004 22:00 - 06:59

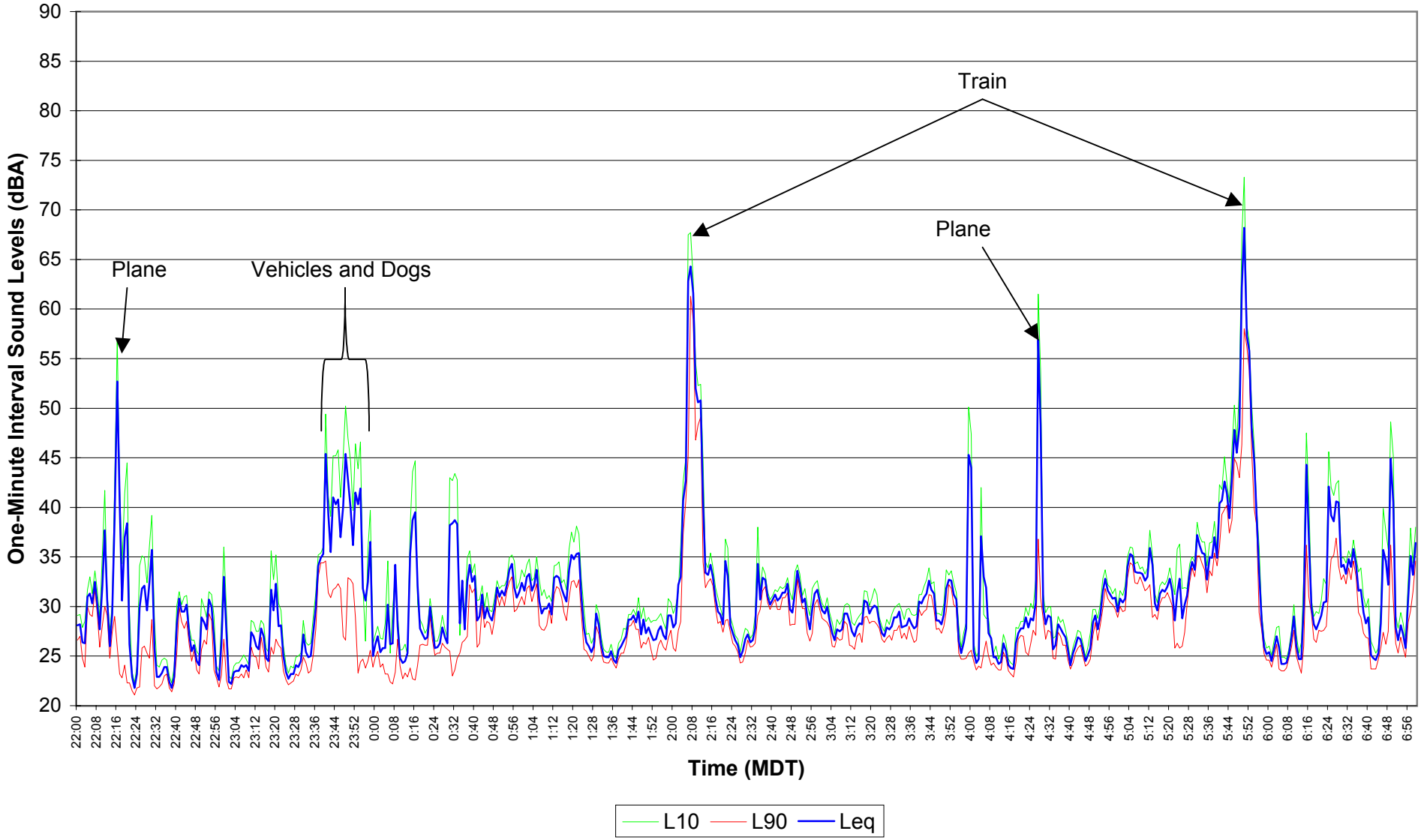


Figure E5.7
EnCana Rosebud
Site 5 Noise Survey
Nov. 25, 2004 07:00 - 14:29

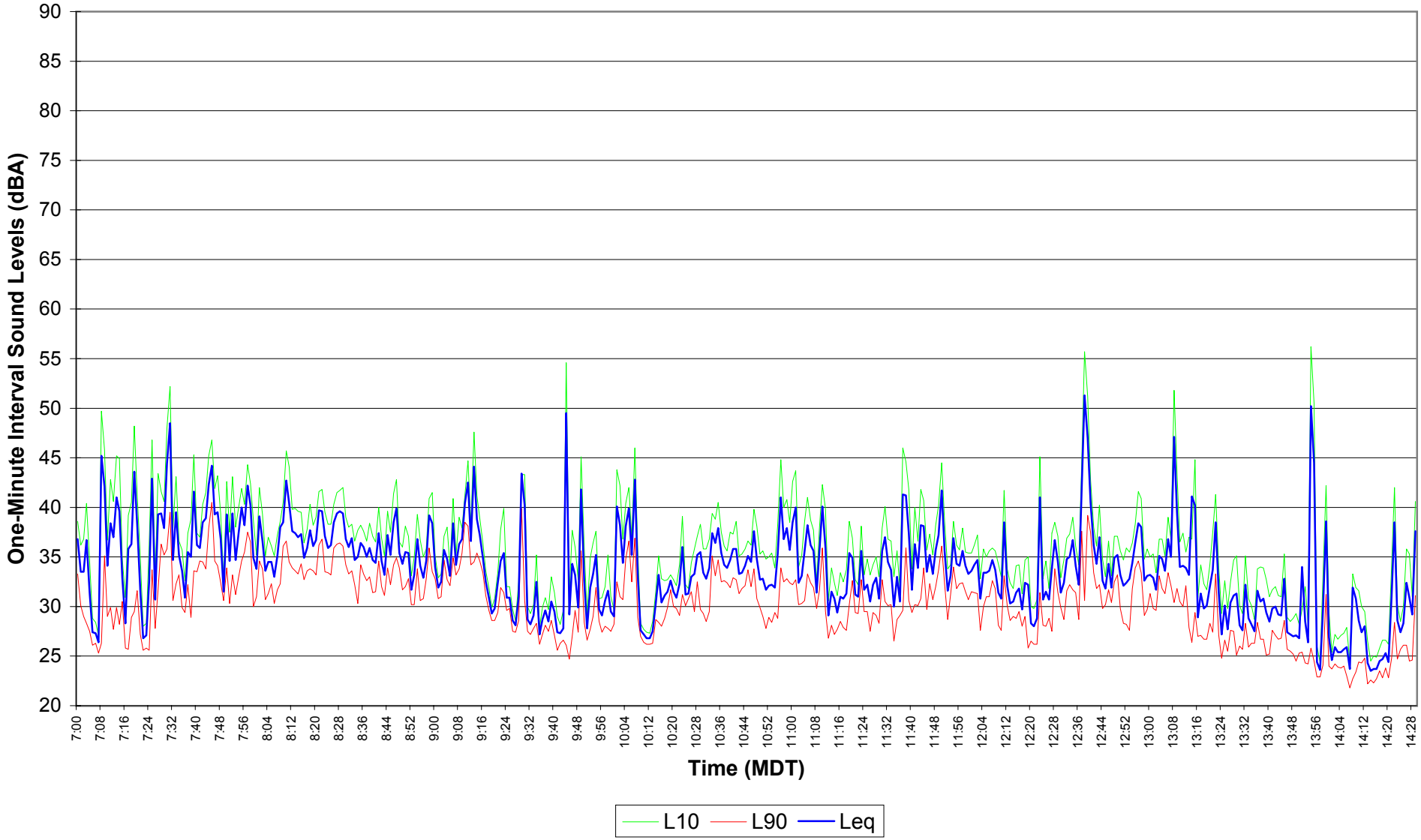


Figure E5.8
EnCana Rosebud
Site 5 Noise Survey
Nov. 25, 2004 14:30 - 21:59

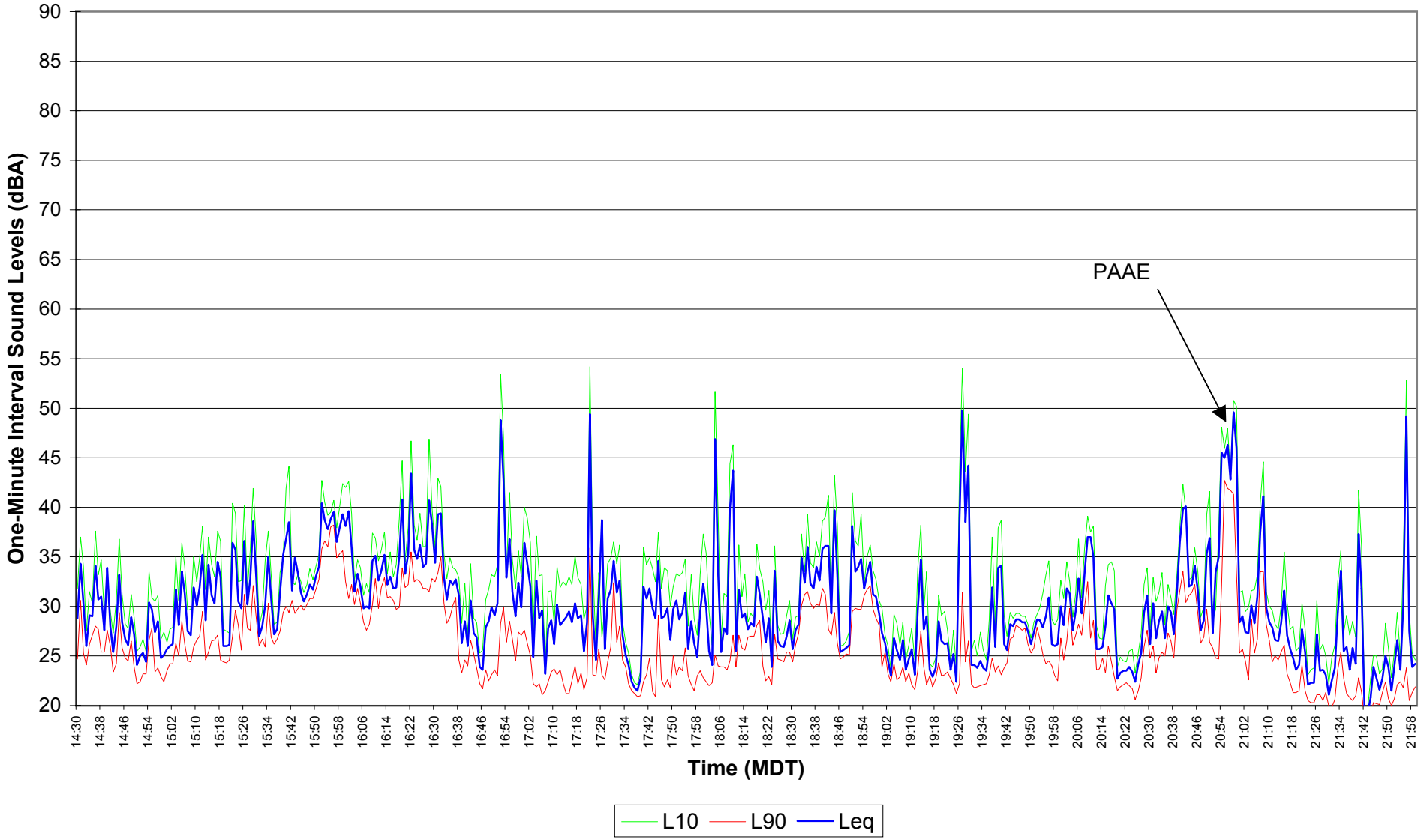


Figure E5.9
EnCana Rosebud
Site 5 Noise Survey
Nov. 25, 2004 - Nov. 26, 2004 22:00 - 06:59

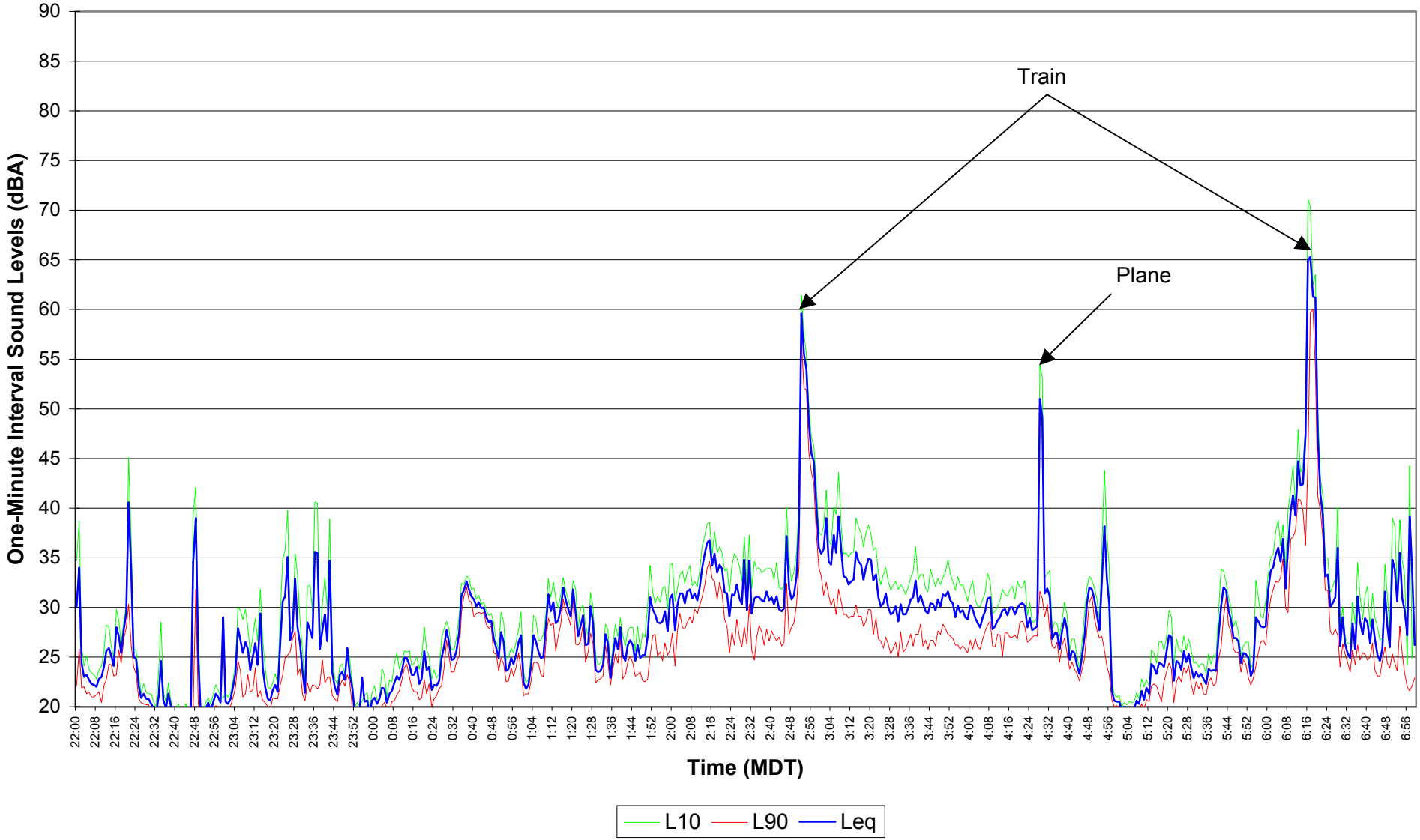


Figure E5.10
EnCana Rosebud
Site 5 Noise Survey
Nov. 26, 2004 07:00 - 14:29

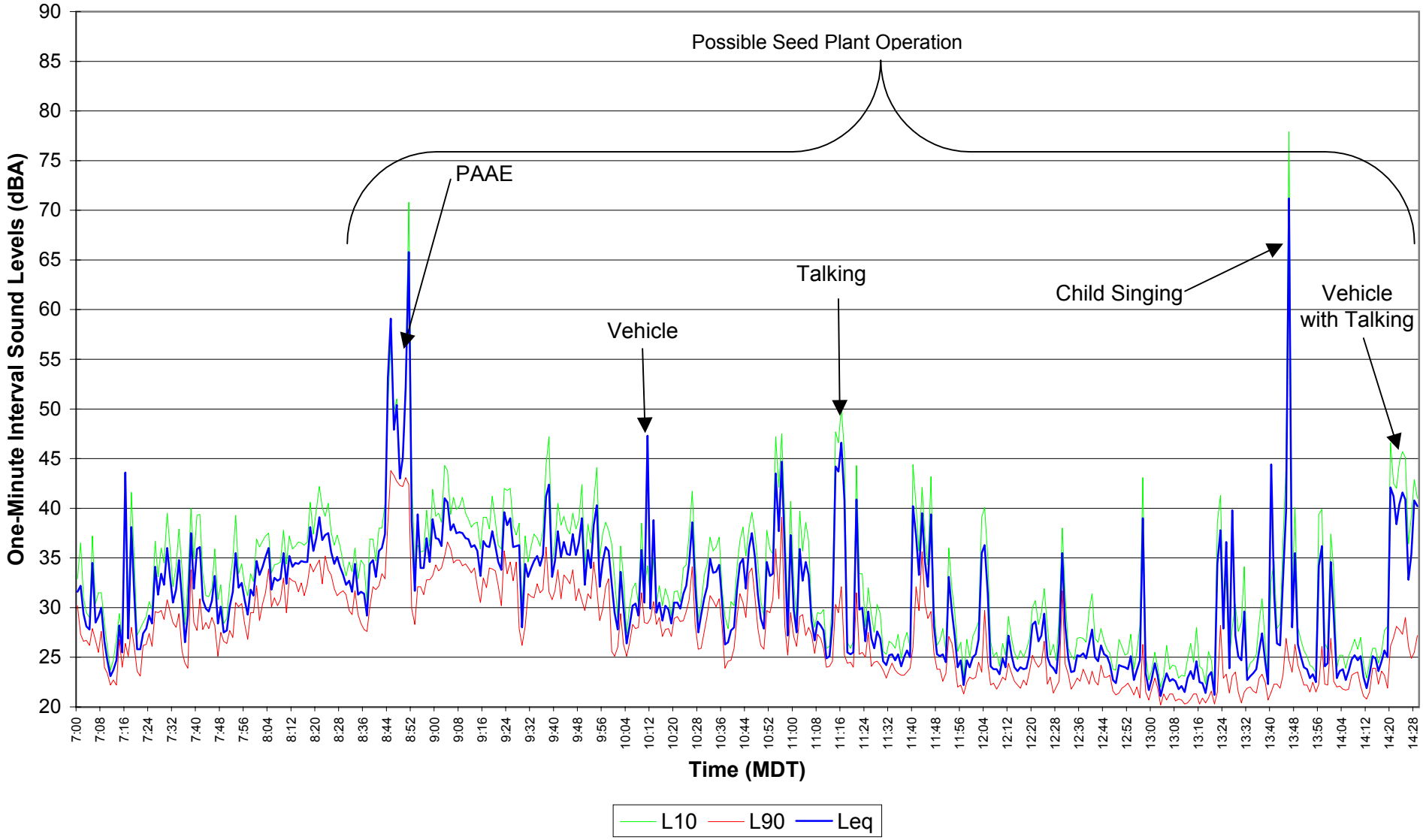


Figure E5.11
EnCana Rosebud
Site 5 Noise Survey
Nov. 26, 2004 14:30 - 21:59

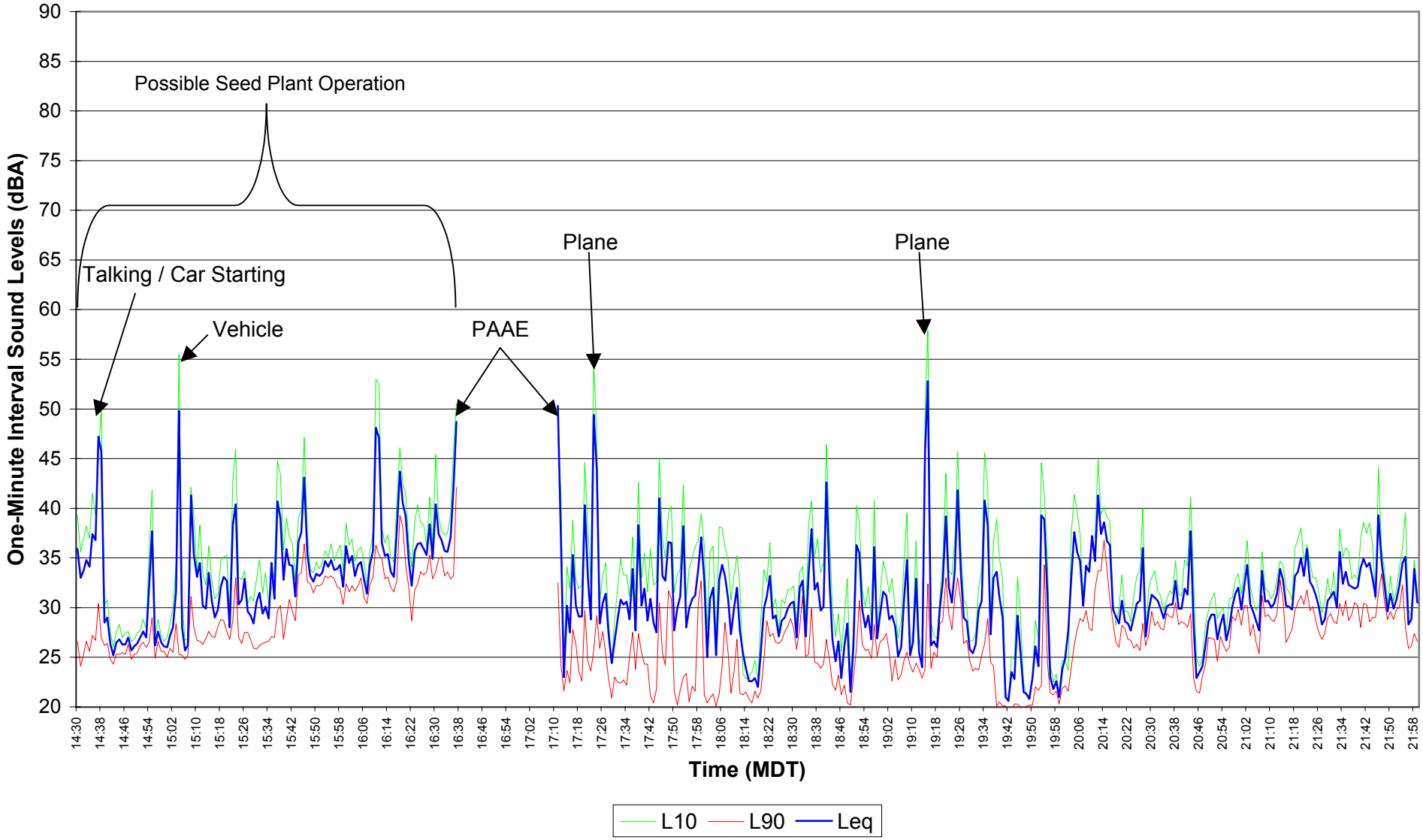


Figure E5.12
EnCana Rosebud
Site 5 Noise Survey
Nov 26, 2004 - Nov 27, 2004 22:00 - 06:59

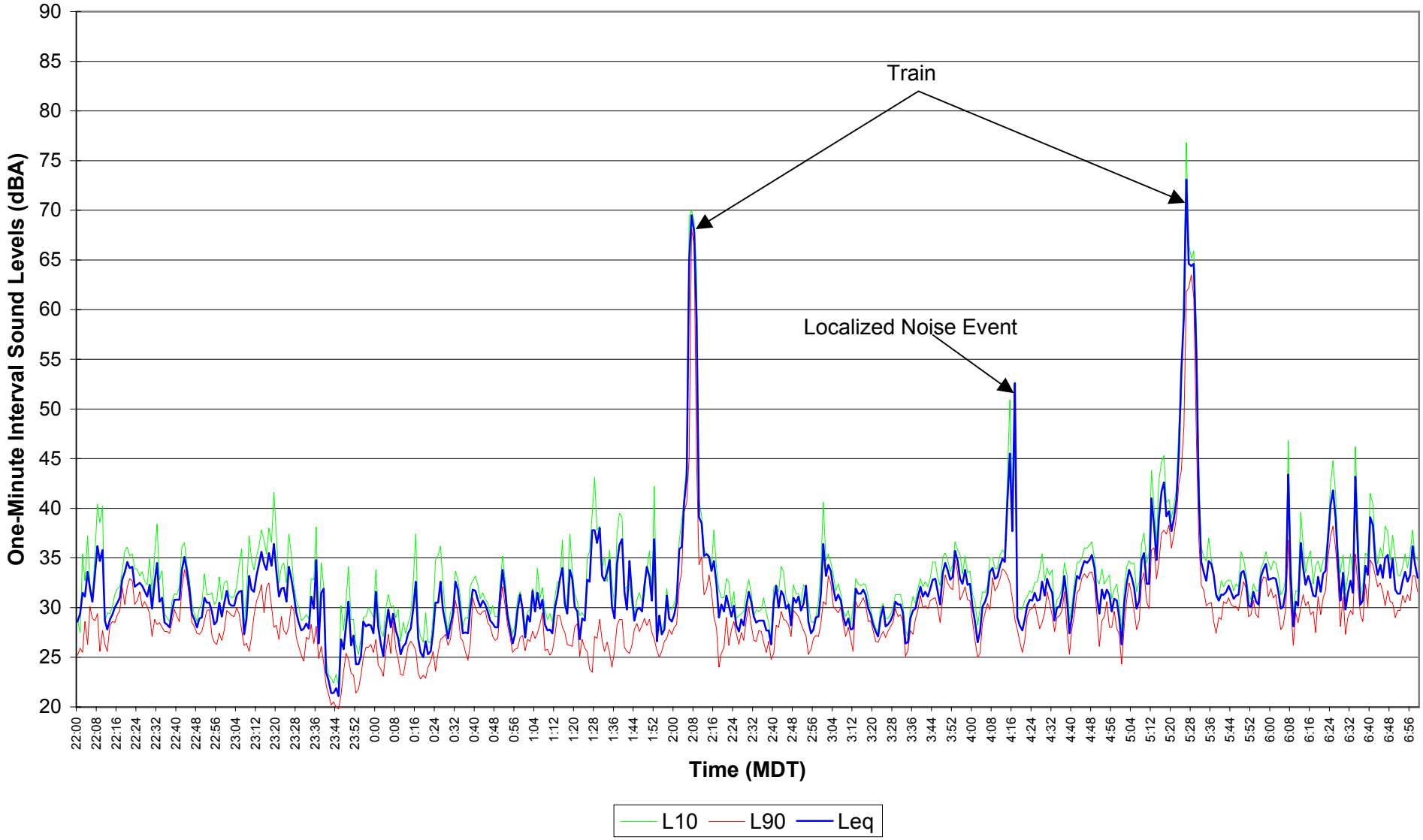


Figure E5.13
EnCana Rosebud
Site 5 Noise Survey
Nov. 27, 2004 07:00 - 14:29

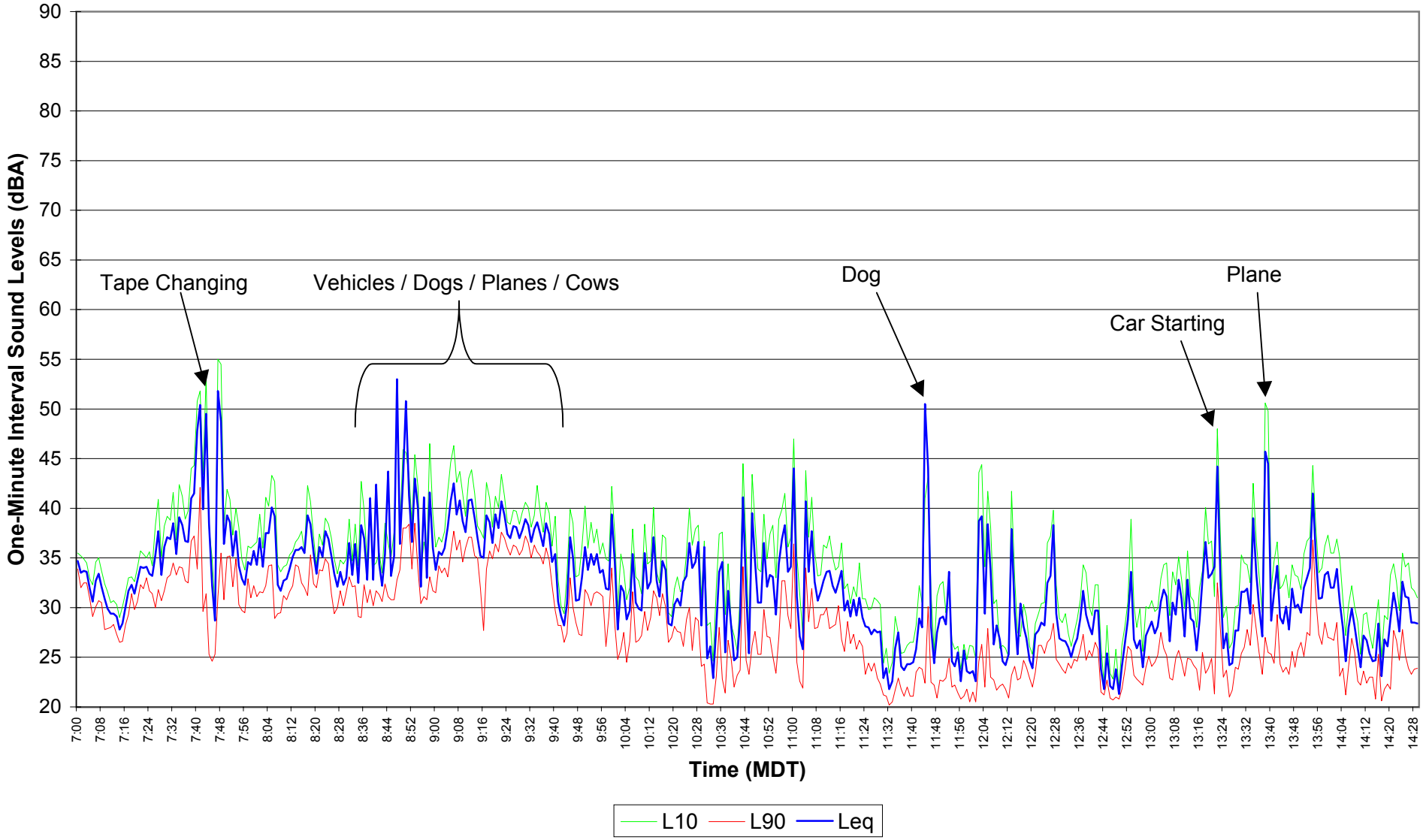


Figure E5.14
EnCana Rosebud
Site 5 Noise Survey
Nov. 27, 2004 14:30 - 21:59

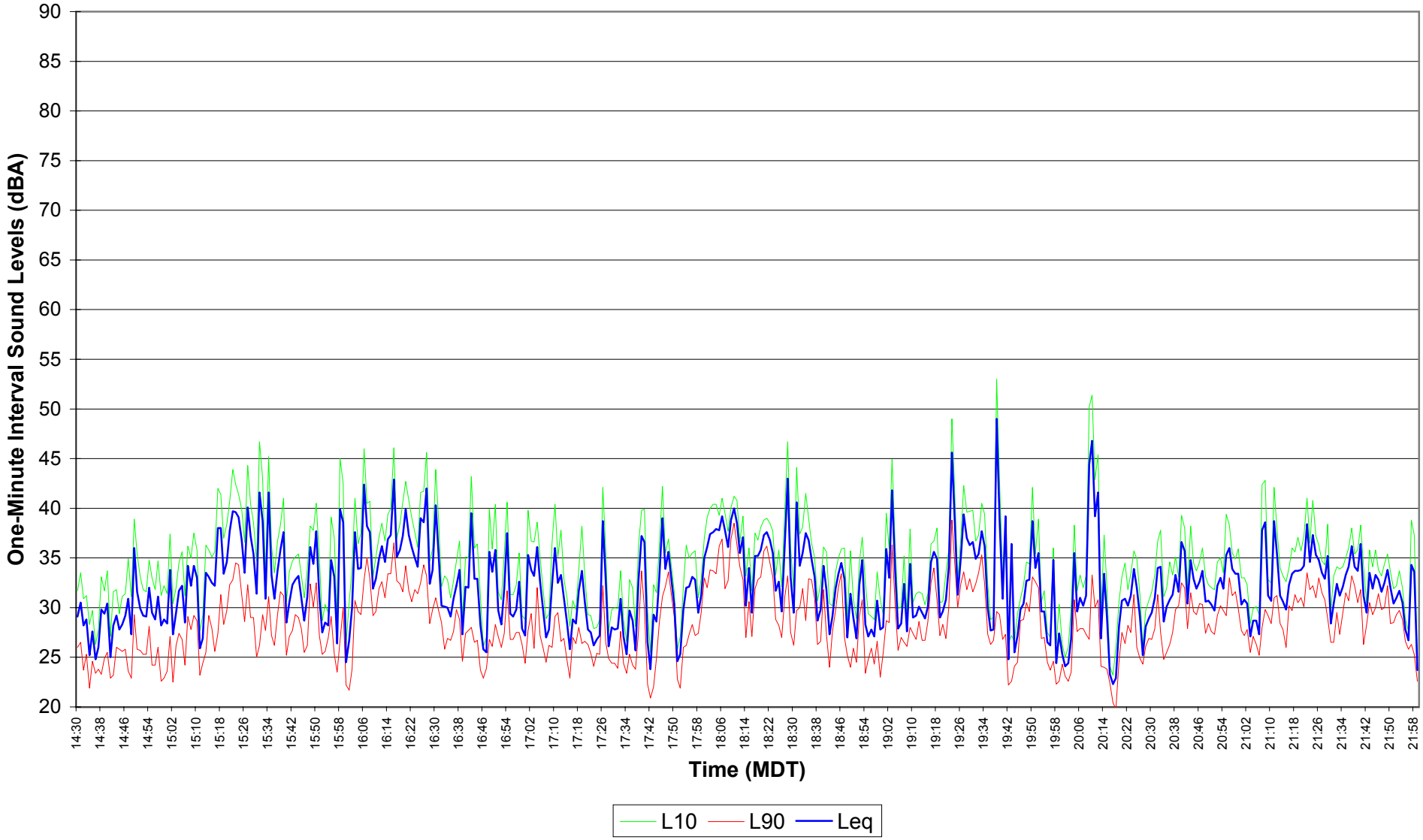


Figure E5.15
EnCana Rosebud
Site 5 Noise Survey
Nov. 27, 2004 - Nov. 28, 2004 22:00 - 06:59

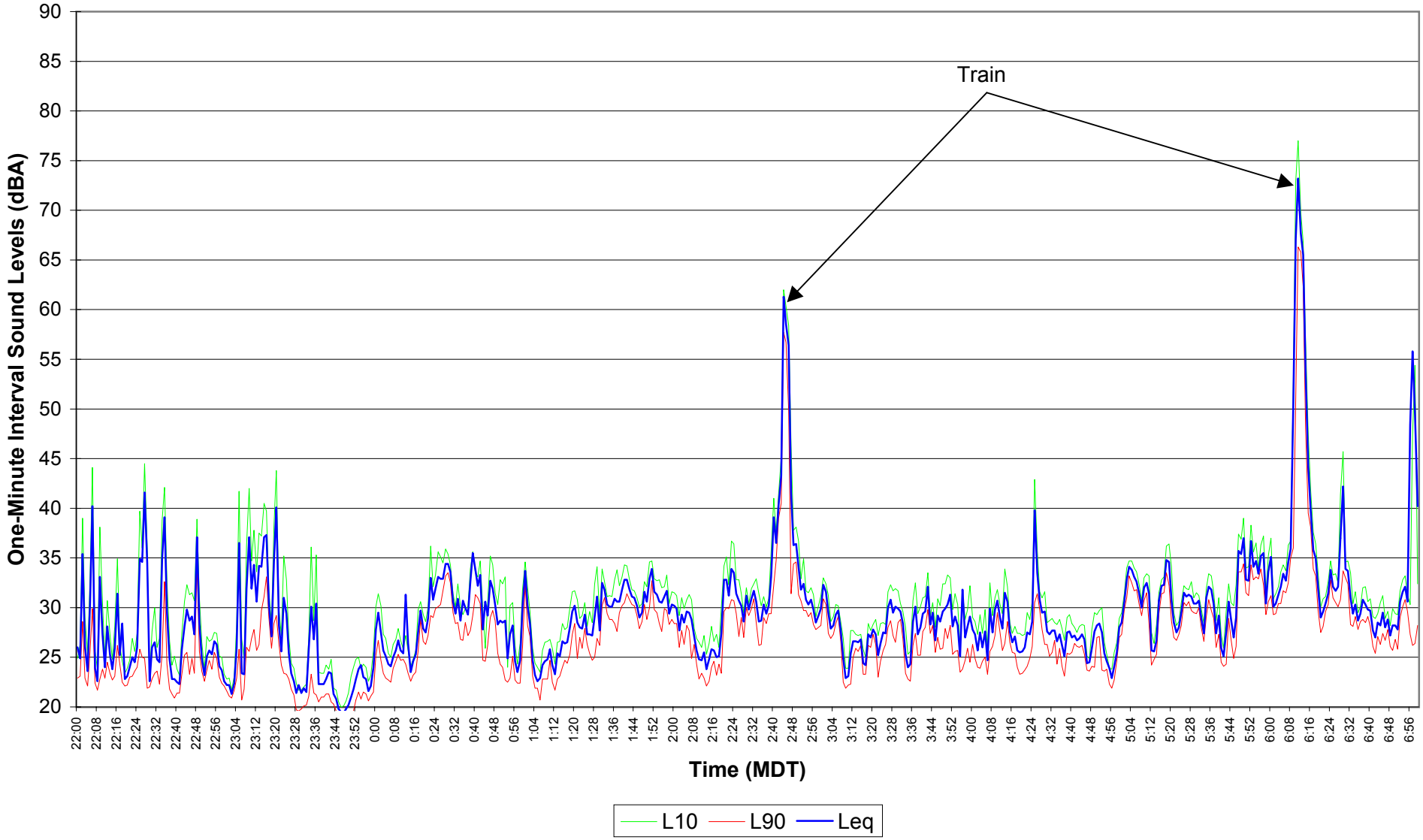


Figure E5.16

EnCana Rosebud

Site 5 Noise Survey

Nov. 28, 2004 07:00 - 14:29

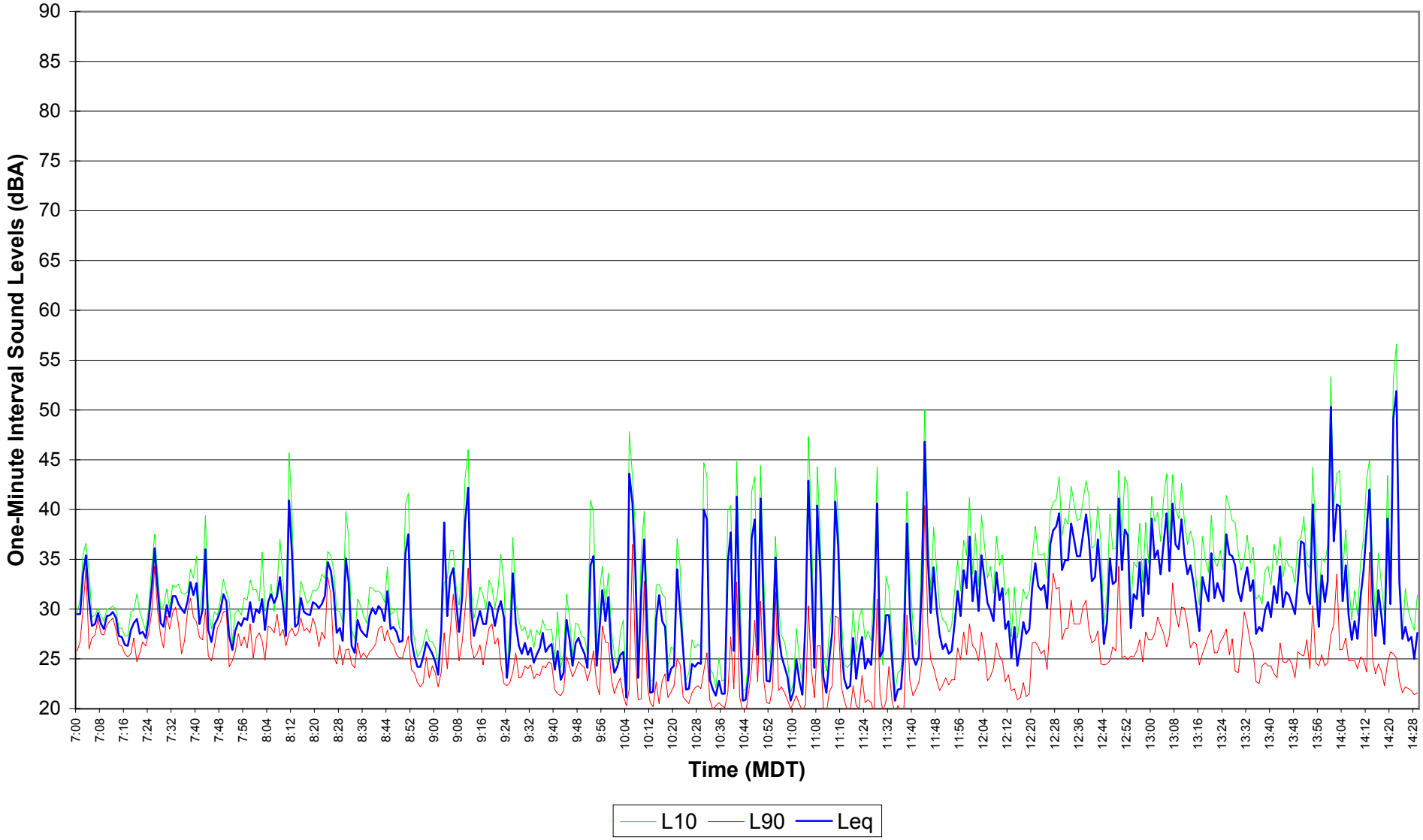


Figure E5.17
EnCana Rosebud
Site 5 Noise Survey
Nov. 28, 2004 14:30 - 21:59

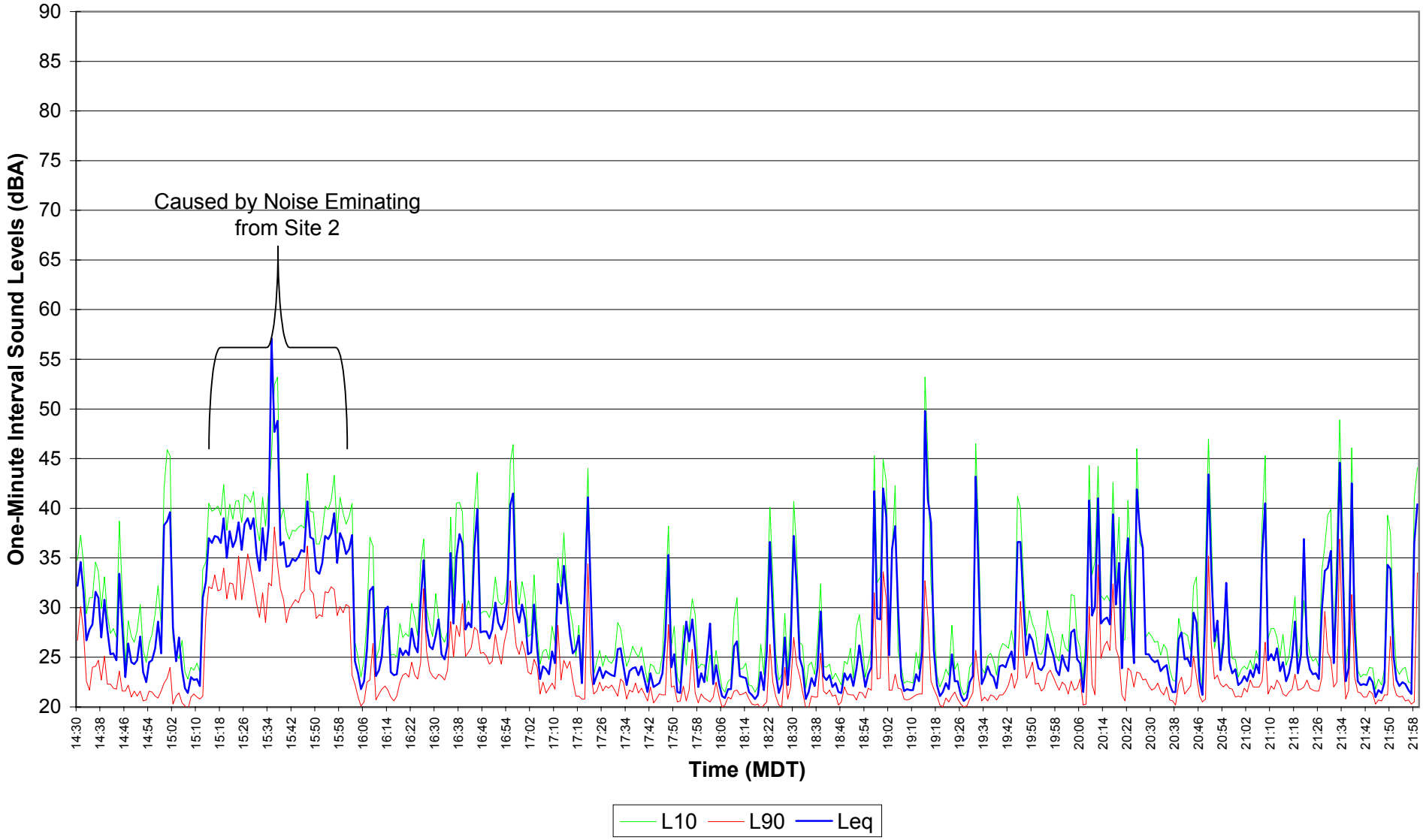


Figure E5.18
EnCana Rosebud
Site 5 Noise Survey
Nov. 28, 2004 - Nov. 29, 2004 22:00 - 06:59

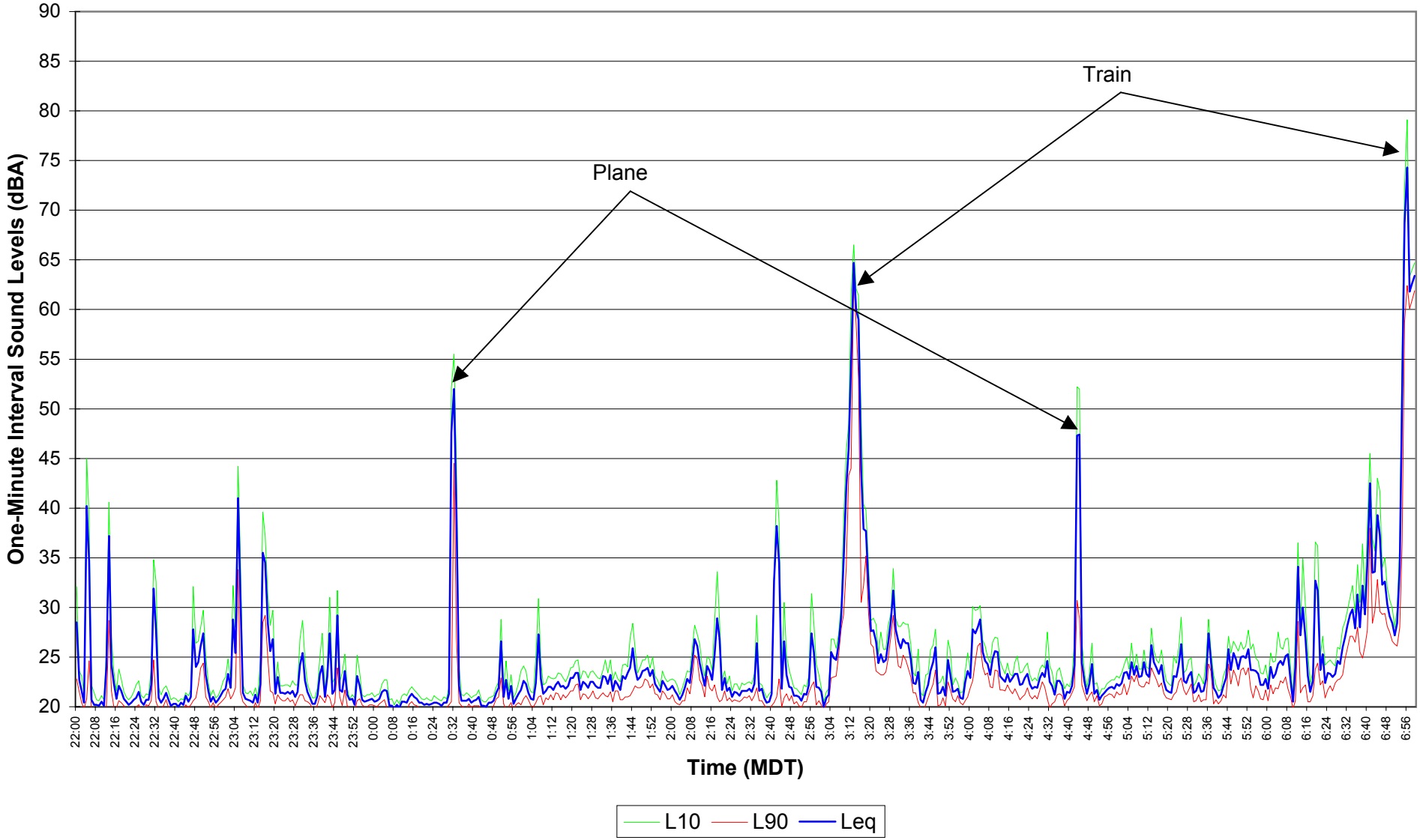


Figure E5.19
EnCana Rosebud
Site 5 Noise Survey
Nov. 29, 2004 07:00 - 14:29

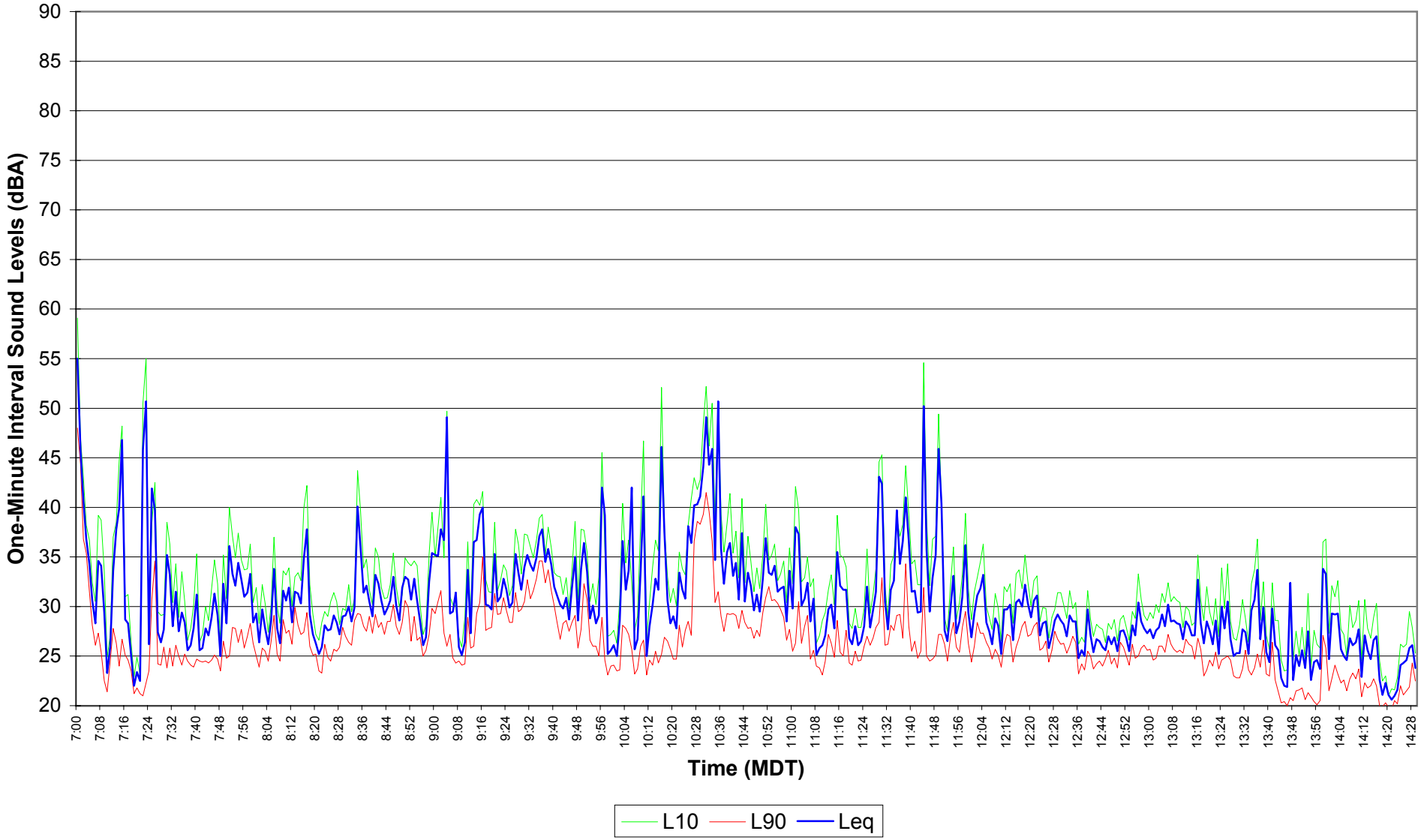


Figure E5.20
EnCana Rosebud
Site 5 Noise Survey
Nov. 29, 2004 14:30 - 21:59

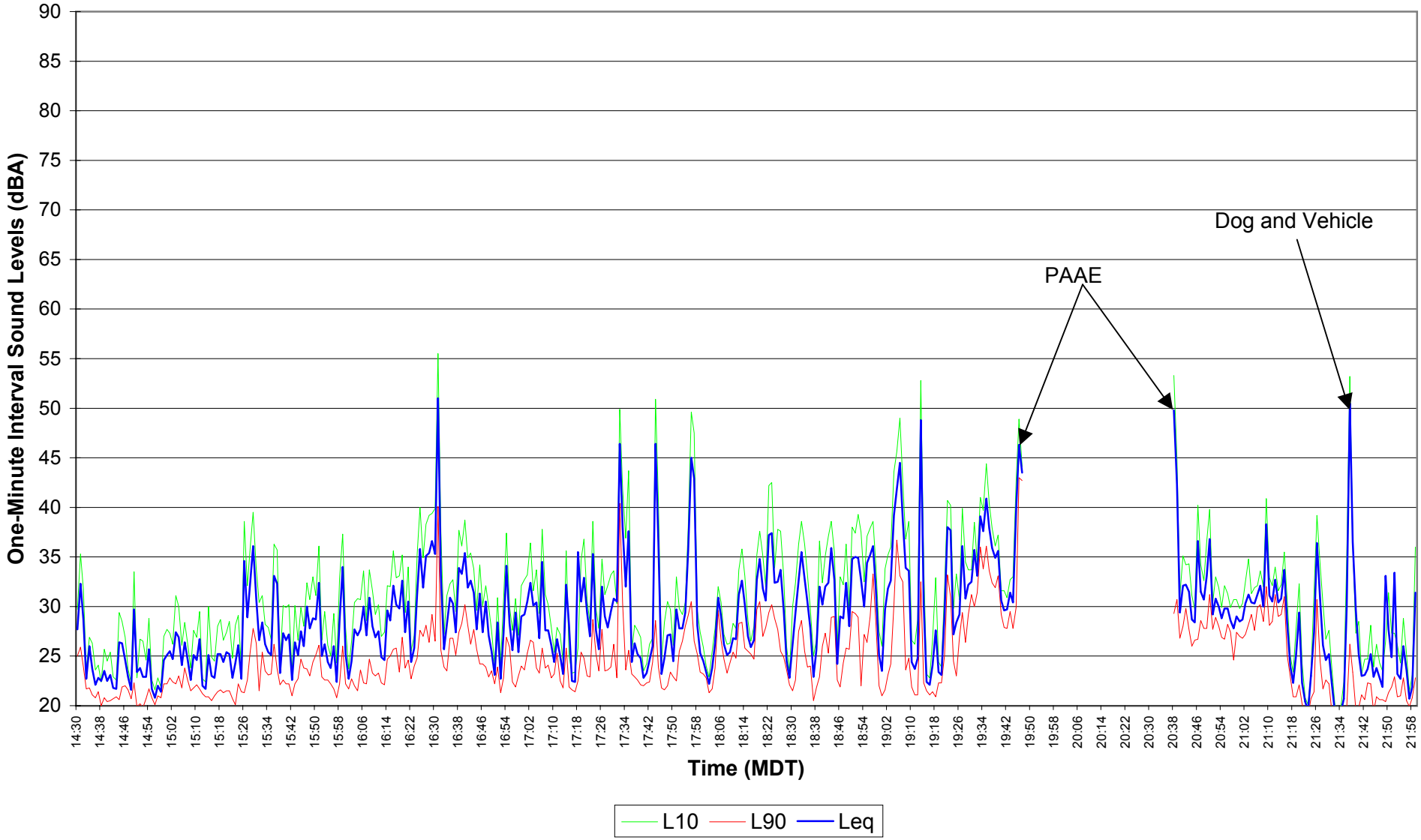


Figure E5.21
EnCana Rosebud
Site 5 Noise Survey
Nov. 29, 2004 - Nov. 30, 2004 22:00 - 06:59

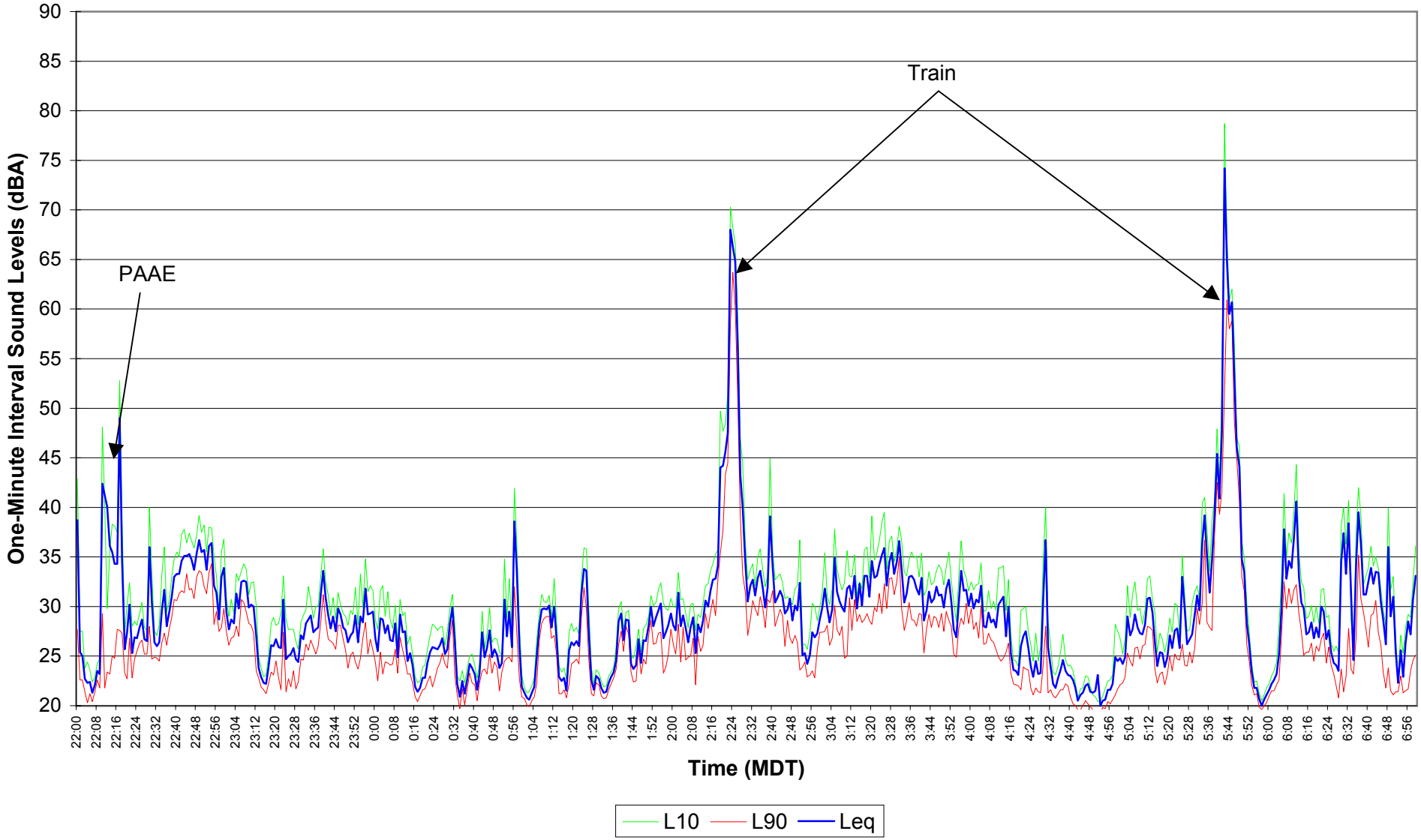


Figure E5.22
EnCana Rosebud
Site 5 Noise Survey
Nov. 30, 2004 07:00 - 14:29

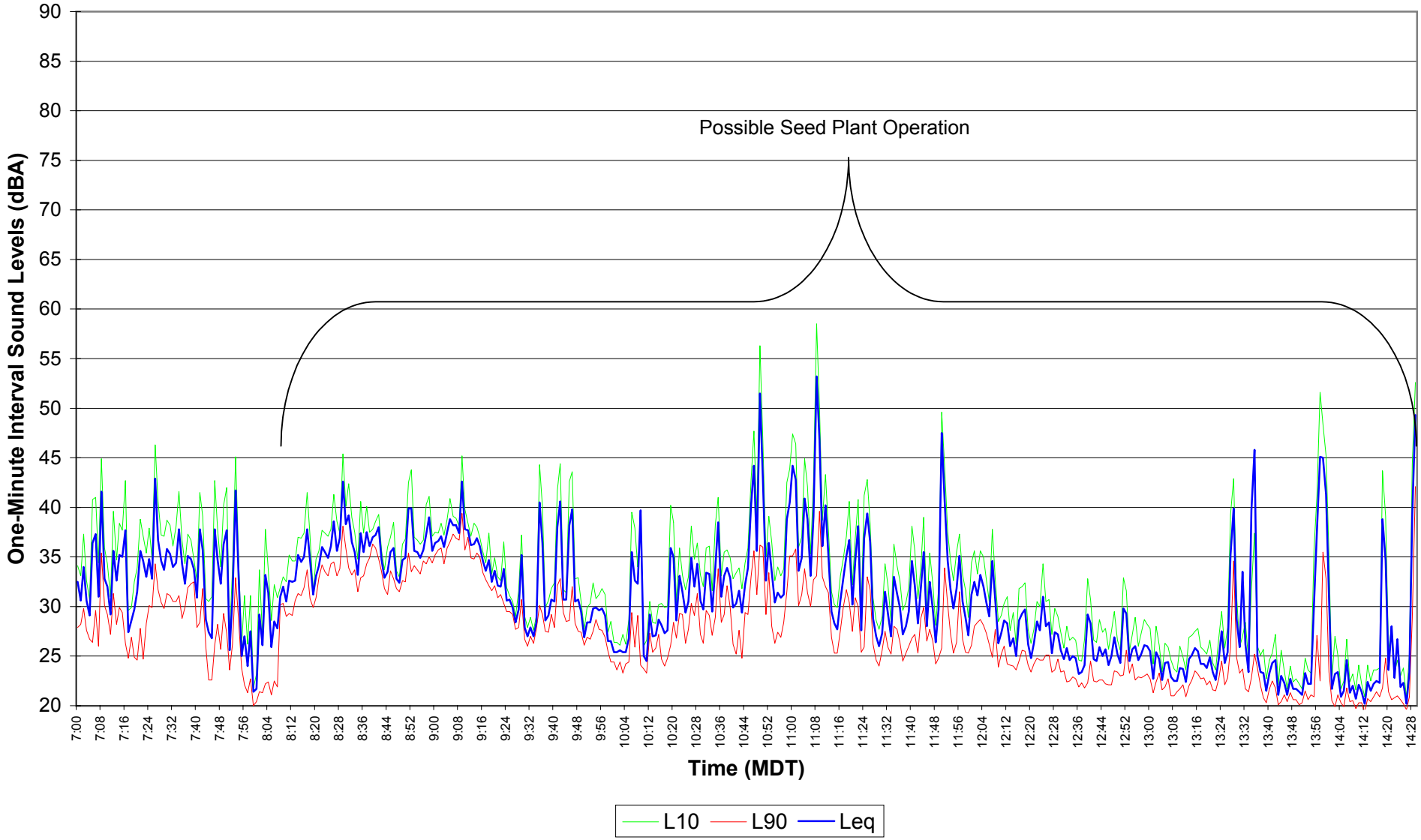


Figure E5.23
EnCana Rosebud
Site 5 Noise Survey
Nov. 30, 2004 14:30 - 21:59

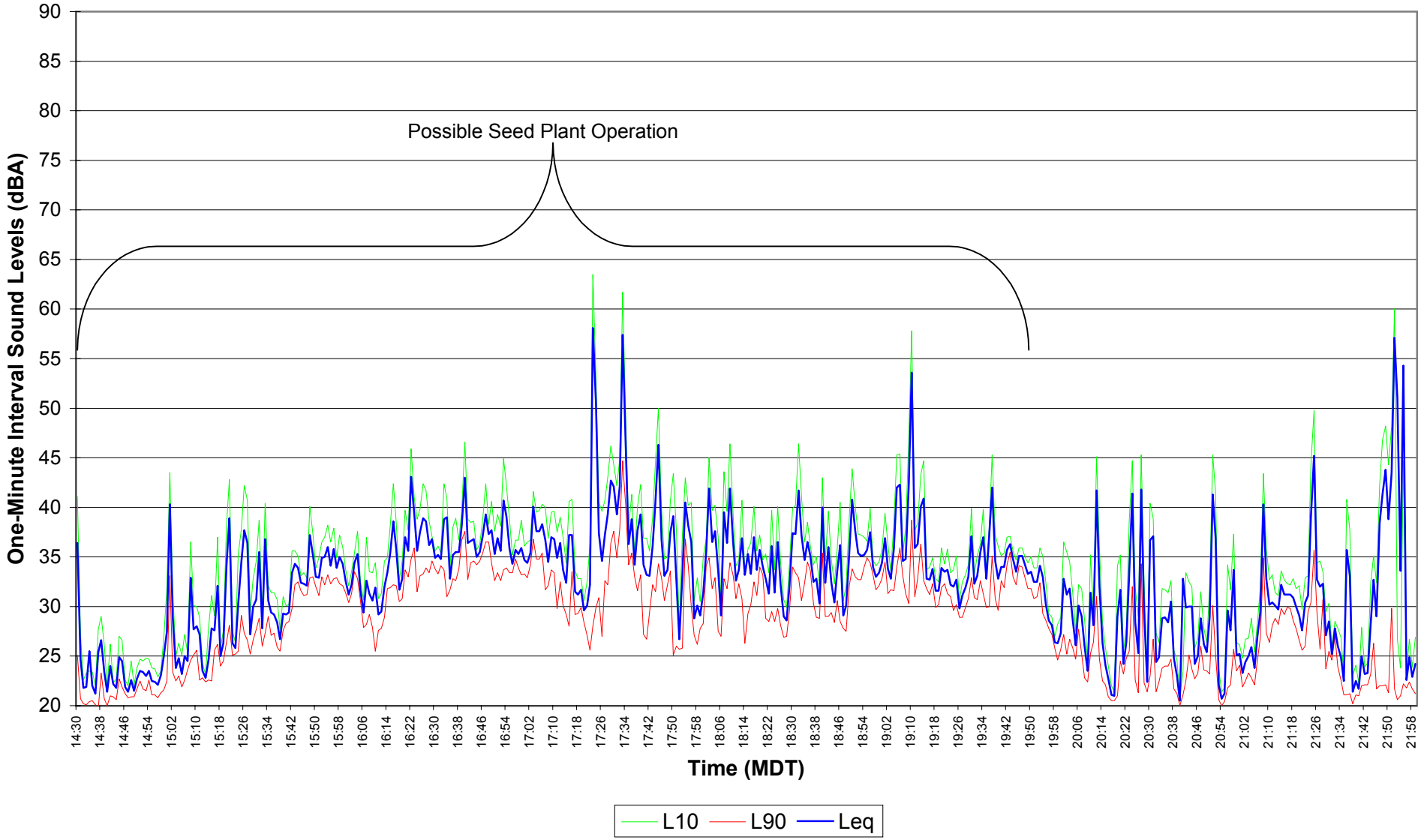


Figure E5.24
EnCana Rosebud
Site 5 Noise Survey
Nov. 30, 2004 - Dec. 01, 2004 22:00 - 06:59

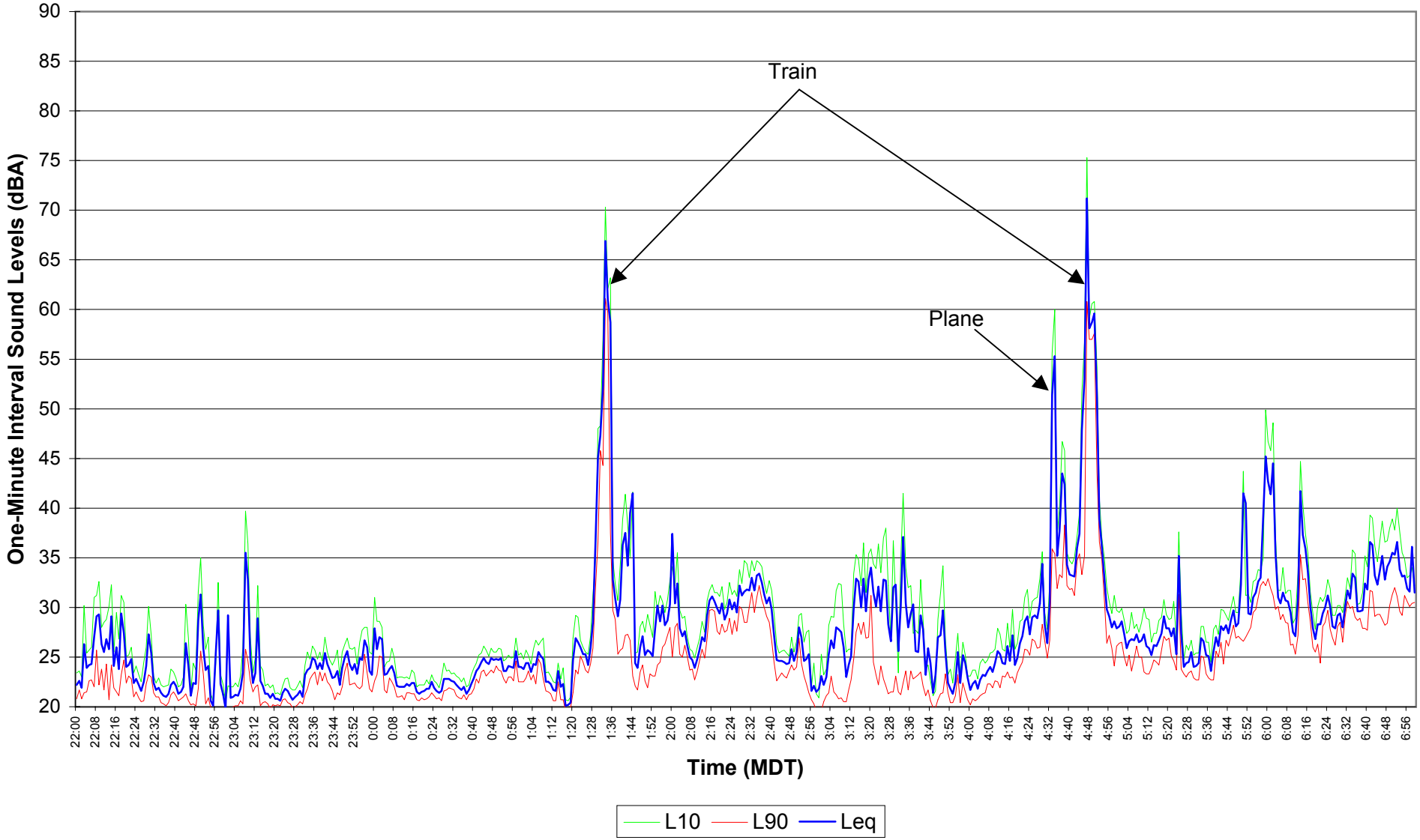


Figure E5.25
EnCana Rosebud
Site 5 Noise Survey
Dec. 01, 2004 07:00 - 14:29

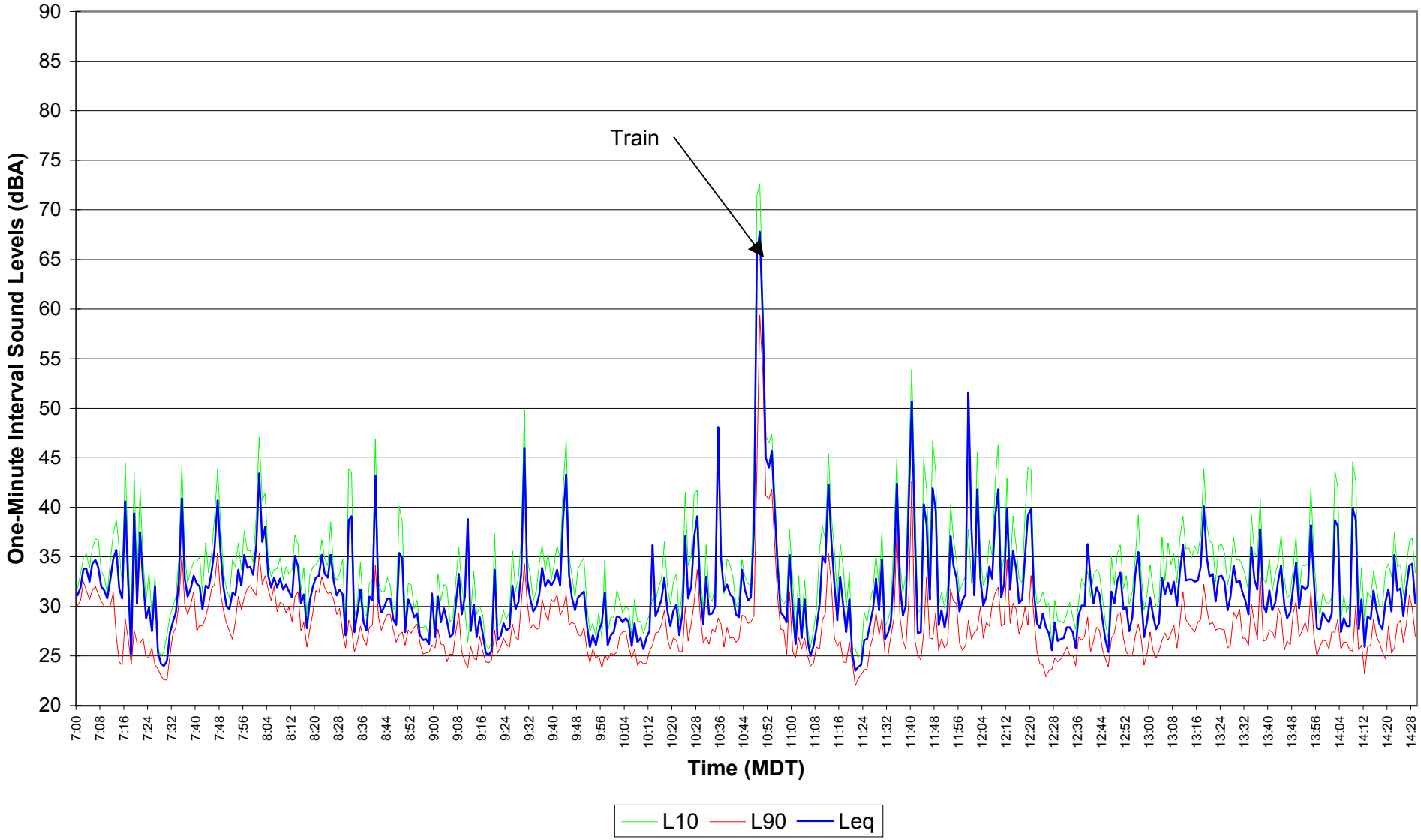


Figure E5.26
EnCana Rosebud
Site 5 Noise Survey
Dec. 01, 2004 14:30 - 21:59

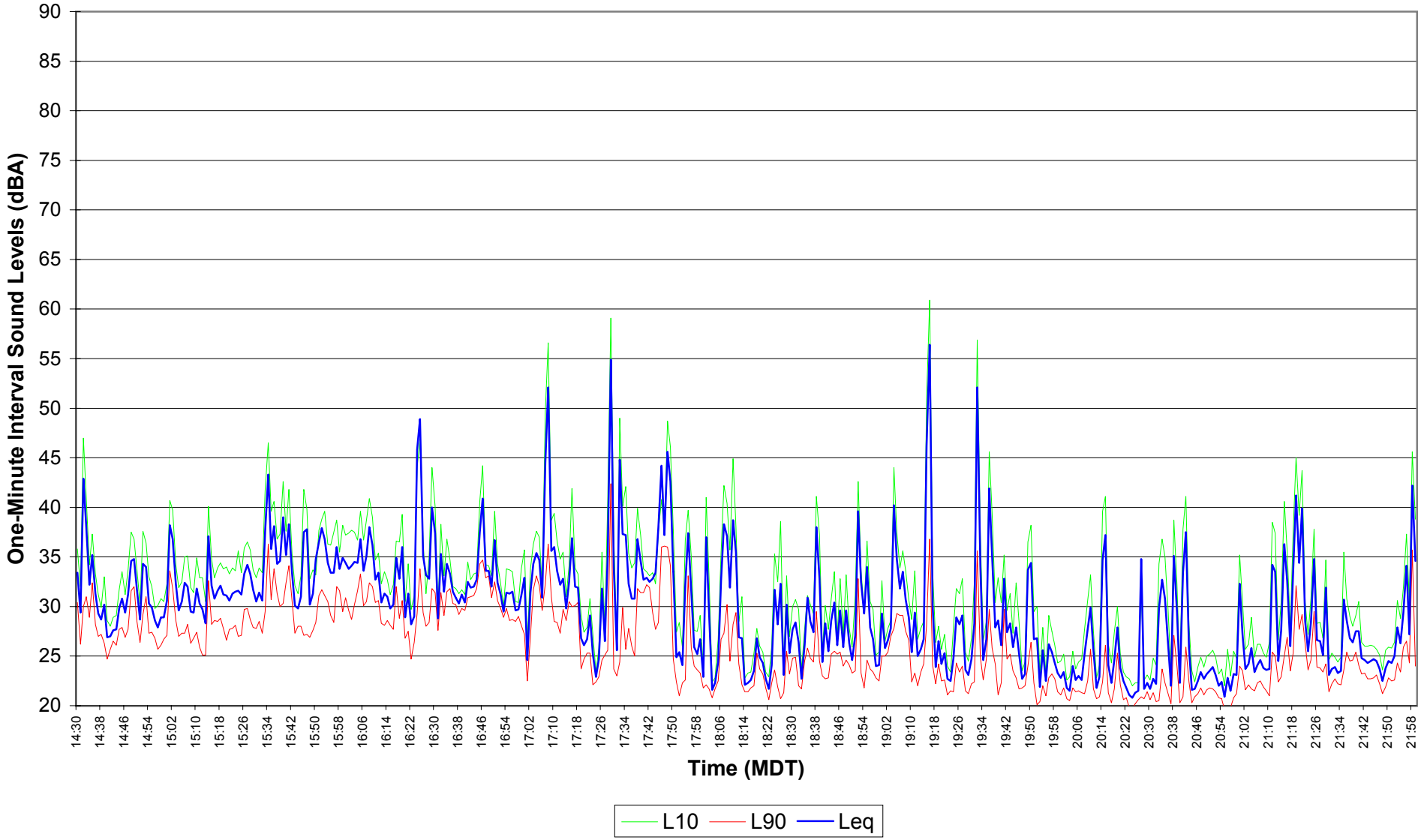


Figure E5.27
EnCana Rosebud
Site 5 Noise Survey
Dec. 01, 2004 - Dec. 02, 2004 22:00 - 06:59

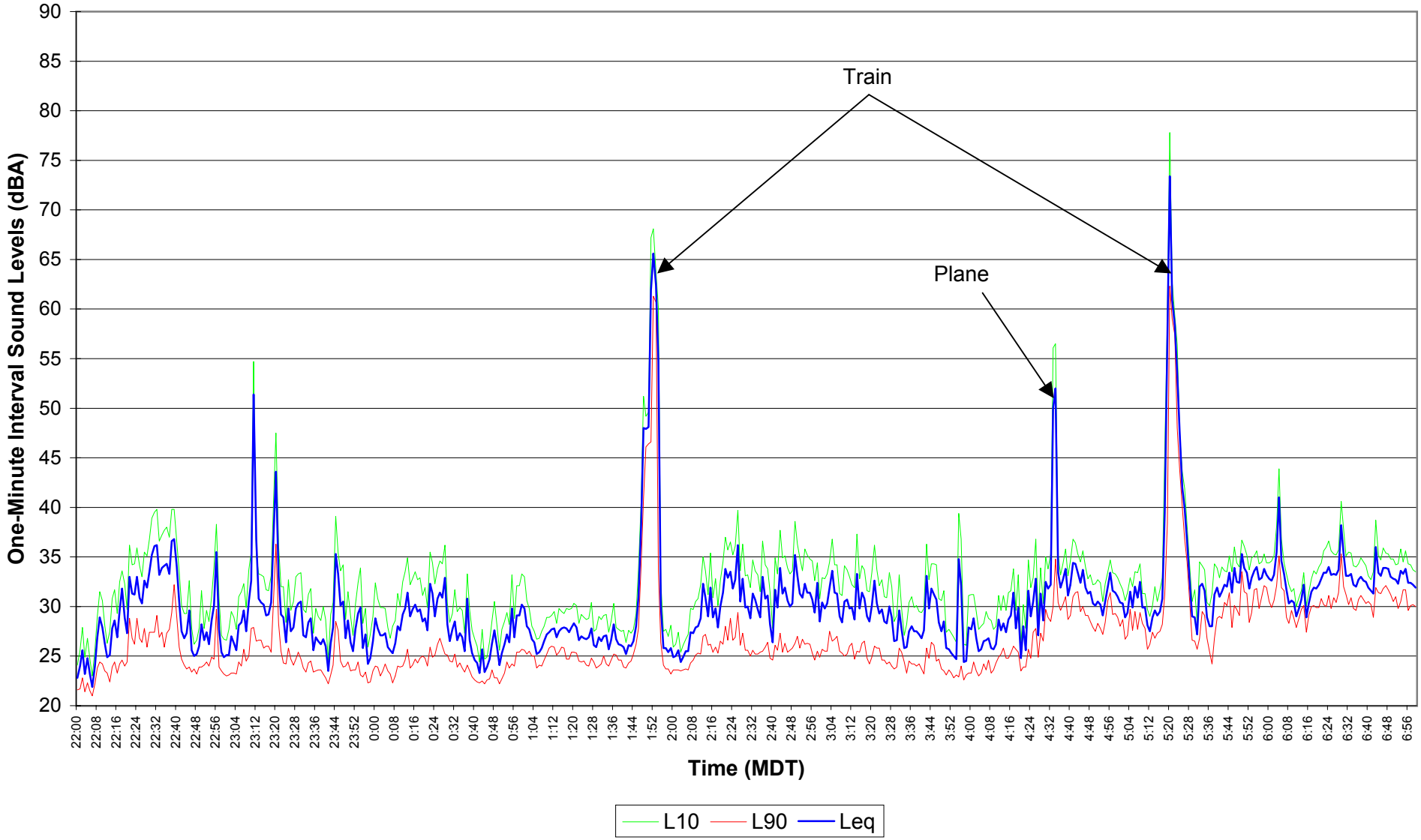


Figure E5.28
EnCana Rosebud
Site 5 Noise Survey
Dec. 02, 2004 07:00 - 14:29

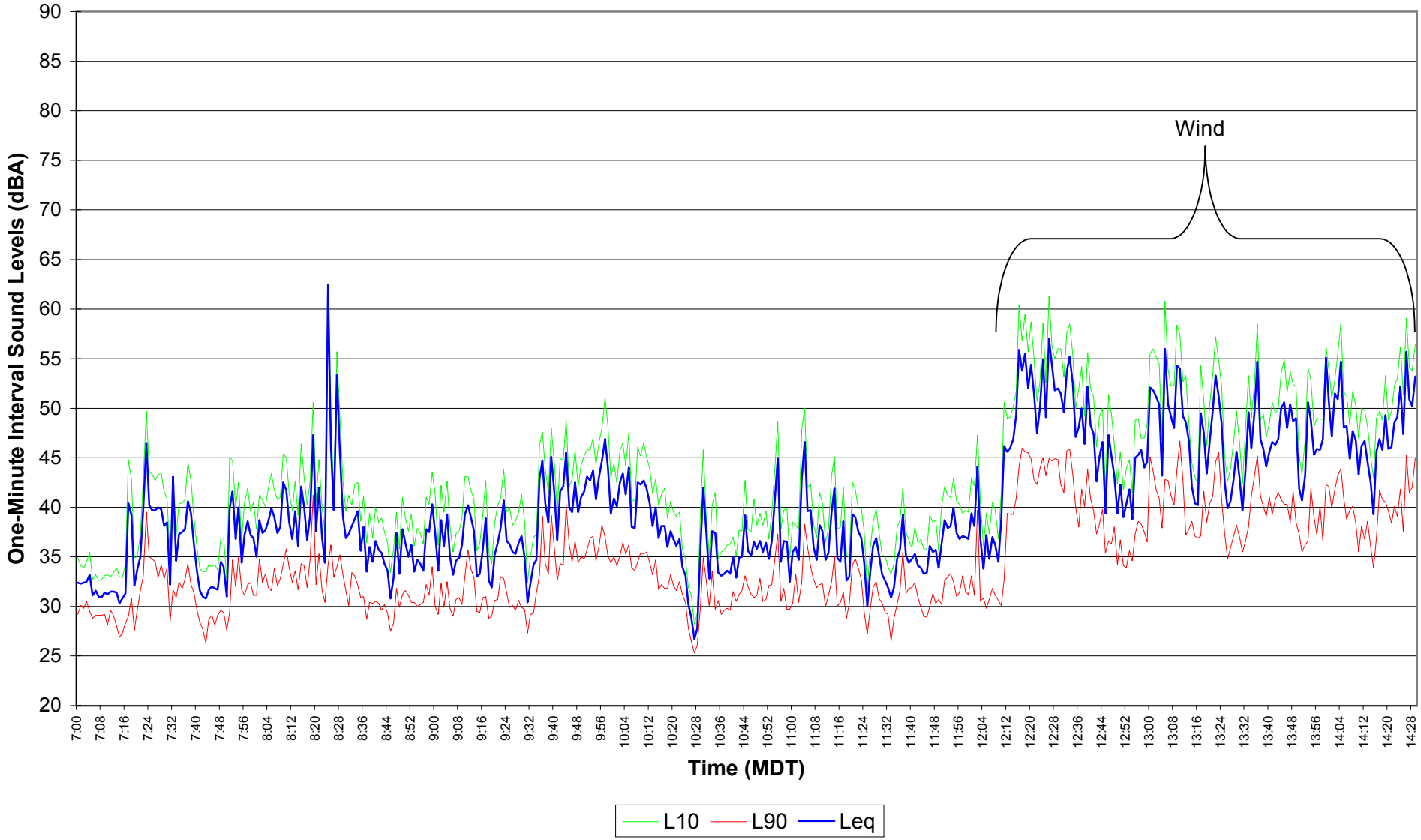


Figure E5.29
EnCana Rosebud
Site 5 Noise Survey
Dec. 02, 2004 14:30 - 21:59

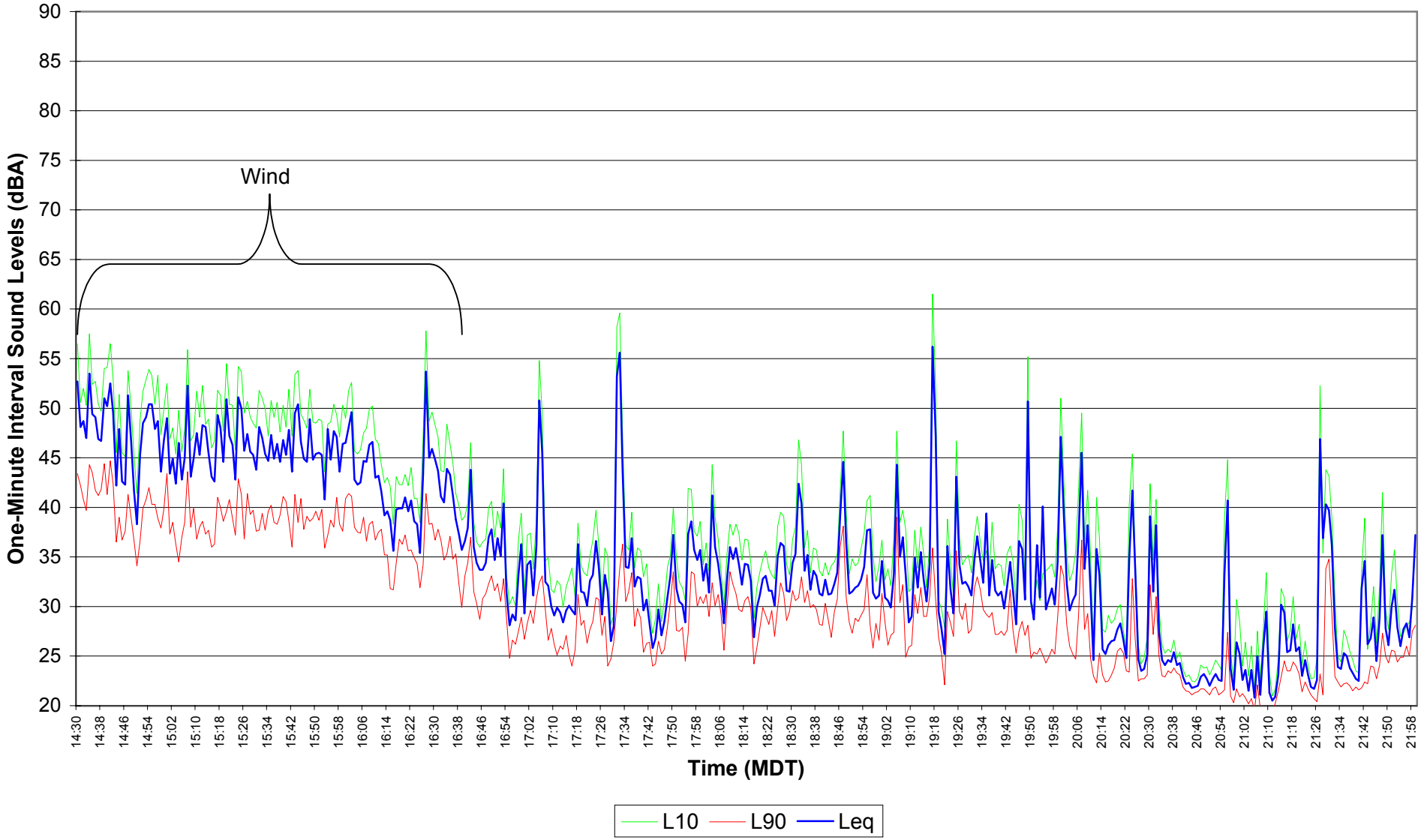


Figure E5.30
EnCana Rosebud
Site 5 Noise Survey
Dec. 02, 2004 - Dec. 03, 2004 22:00 - 06:59

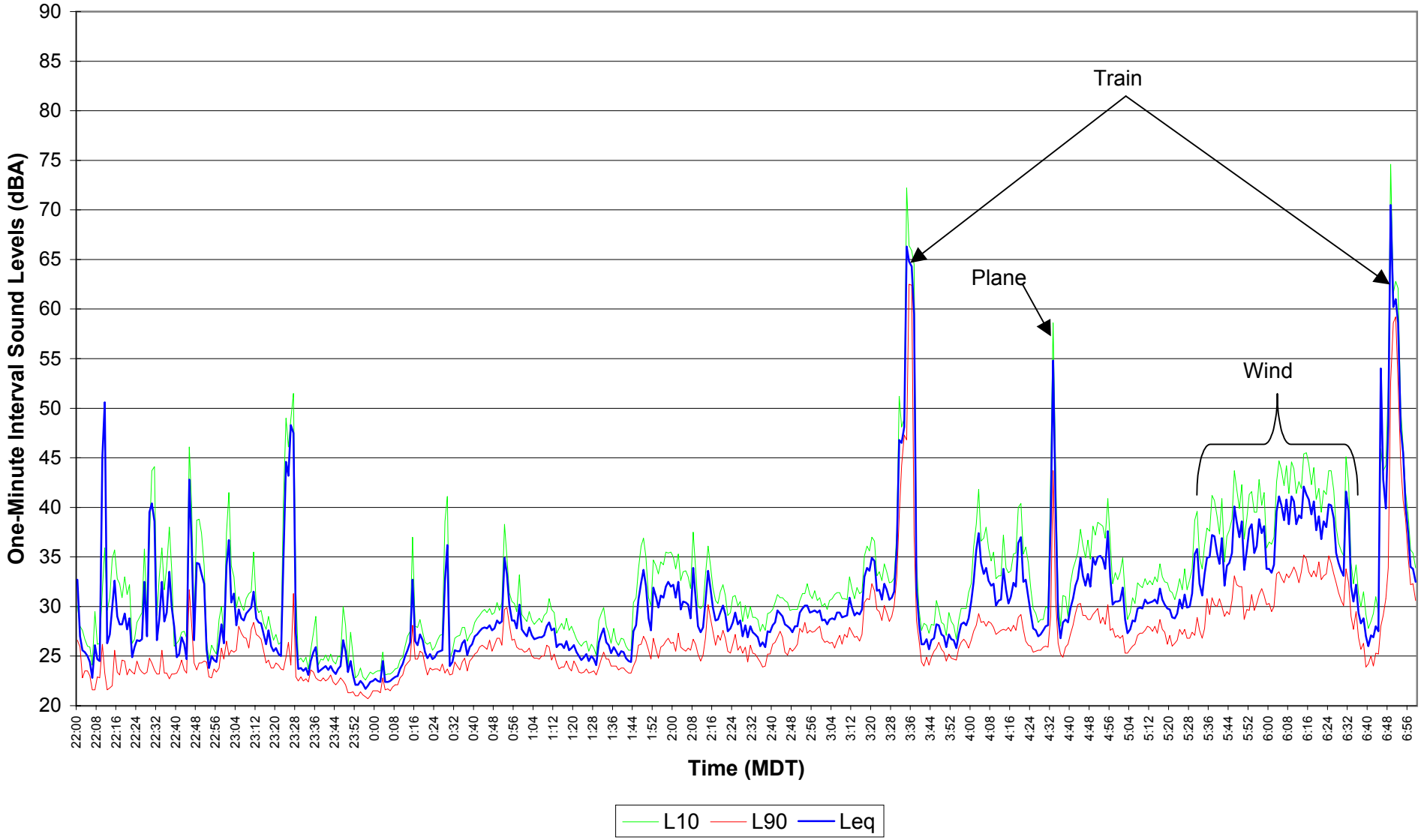


Figure E5.31

EnCana Rosebud

Site 5 Noise Survey

Dec. 03, 2004 07:00 - 14:29

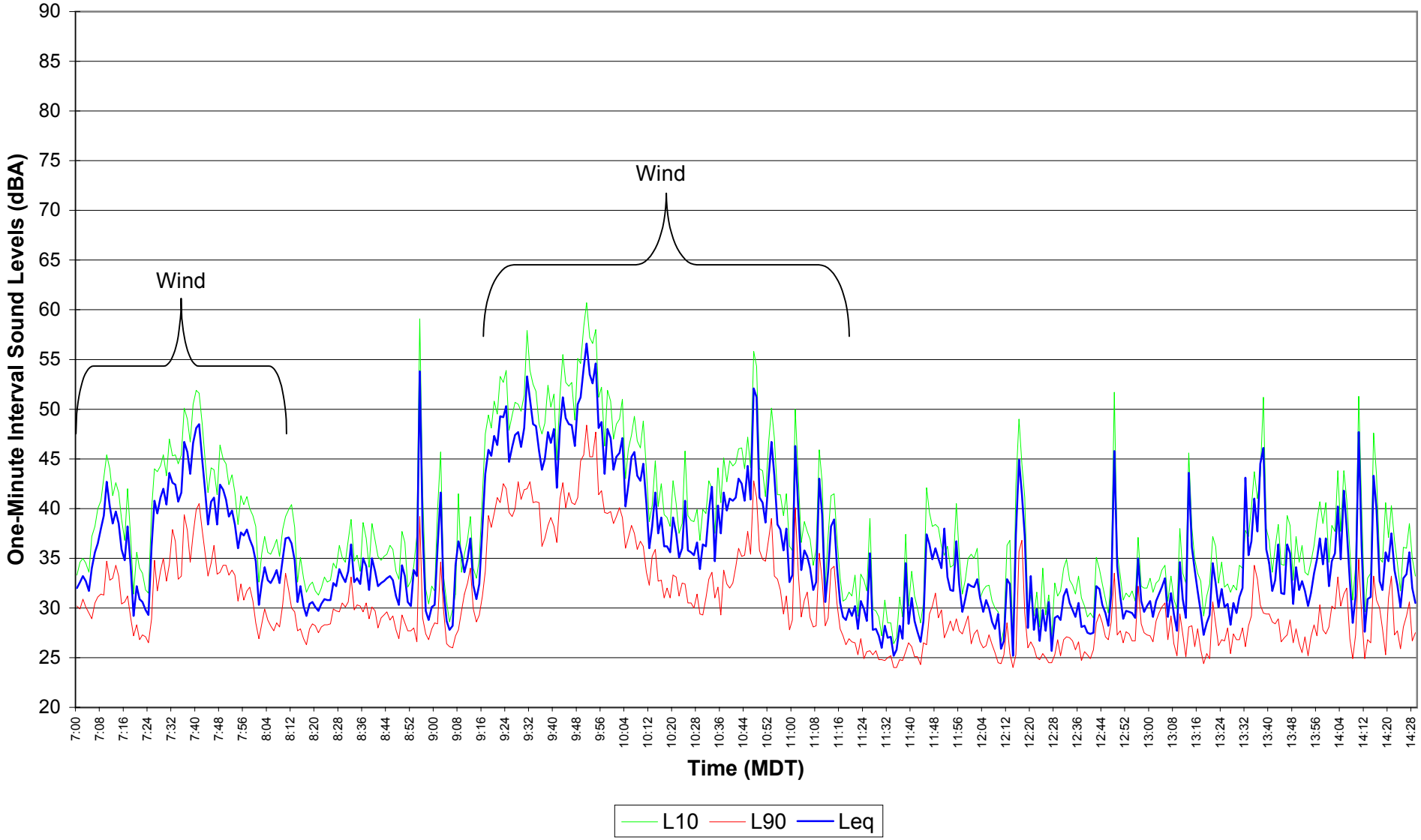


Figure E5.32
EnCana Rosebud
Site 5 Noise Survey
Dec. 03, 2004 14:30 - 21:59

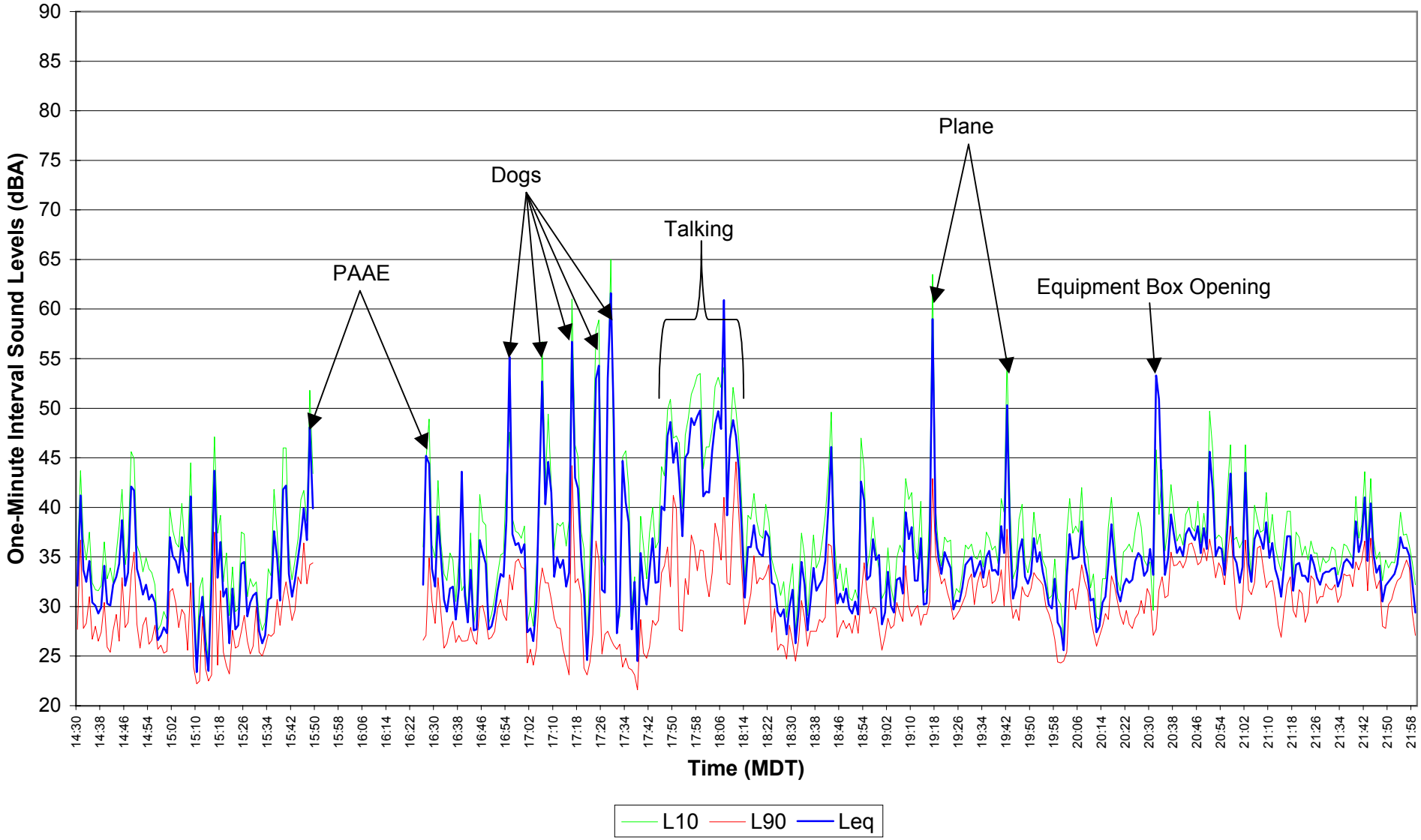


Figure E5.33
EnCana Rosebud
Site 5 Noise Survey
Dec. 03, 2004 - Dec. 04, 2004 22:00 - 06:59

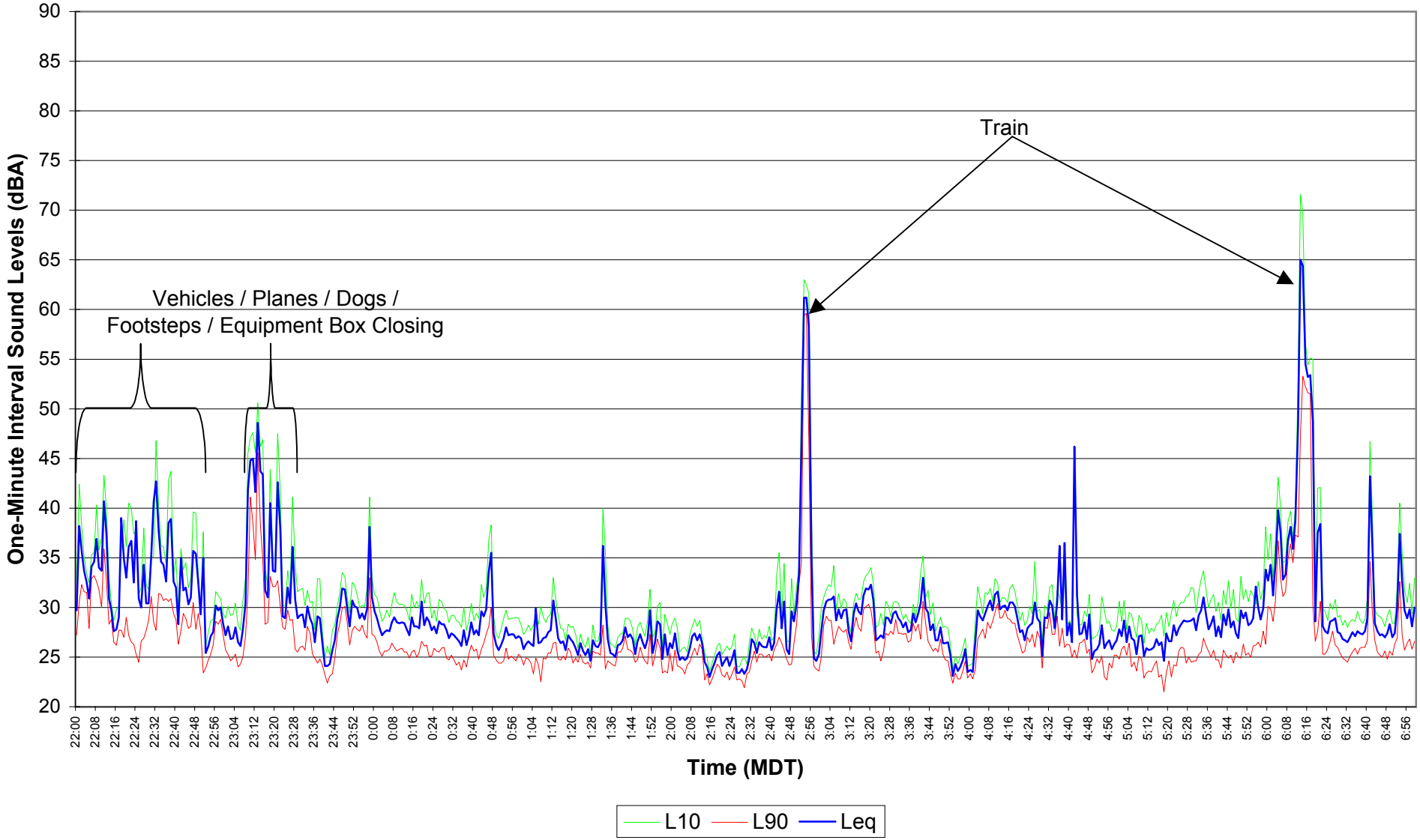


Figure E5.34
EnCana Rosebud
Site 5 Noise Survey
Dec. 04, 2004 07:00 - 14:29

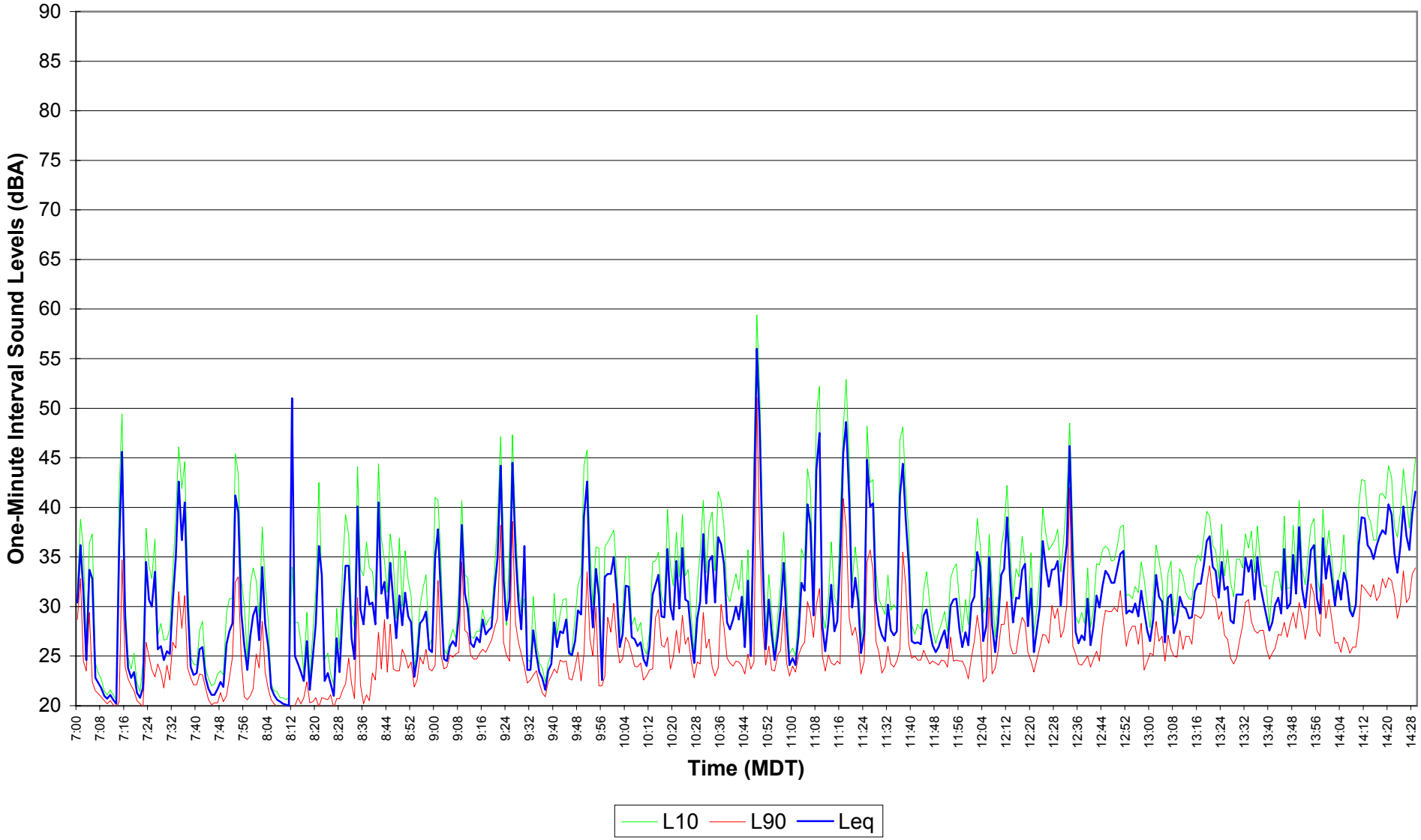


Figure E5.35
EnCana Rosebud
Site 5 Noise Survey
Dec. 04, 2004 14:30 - 21:59

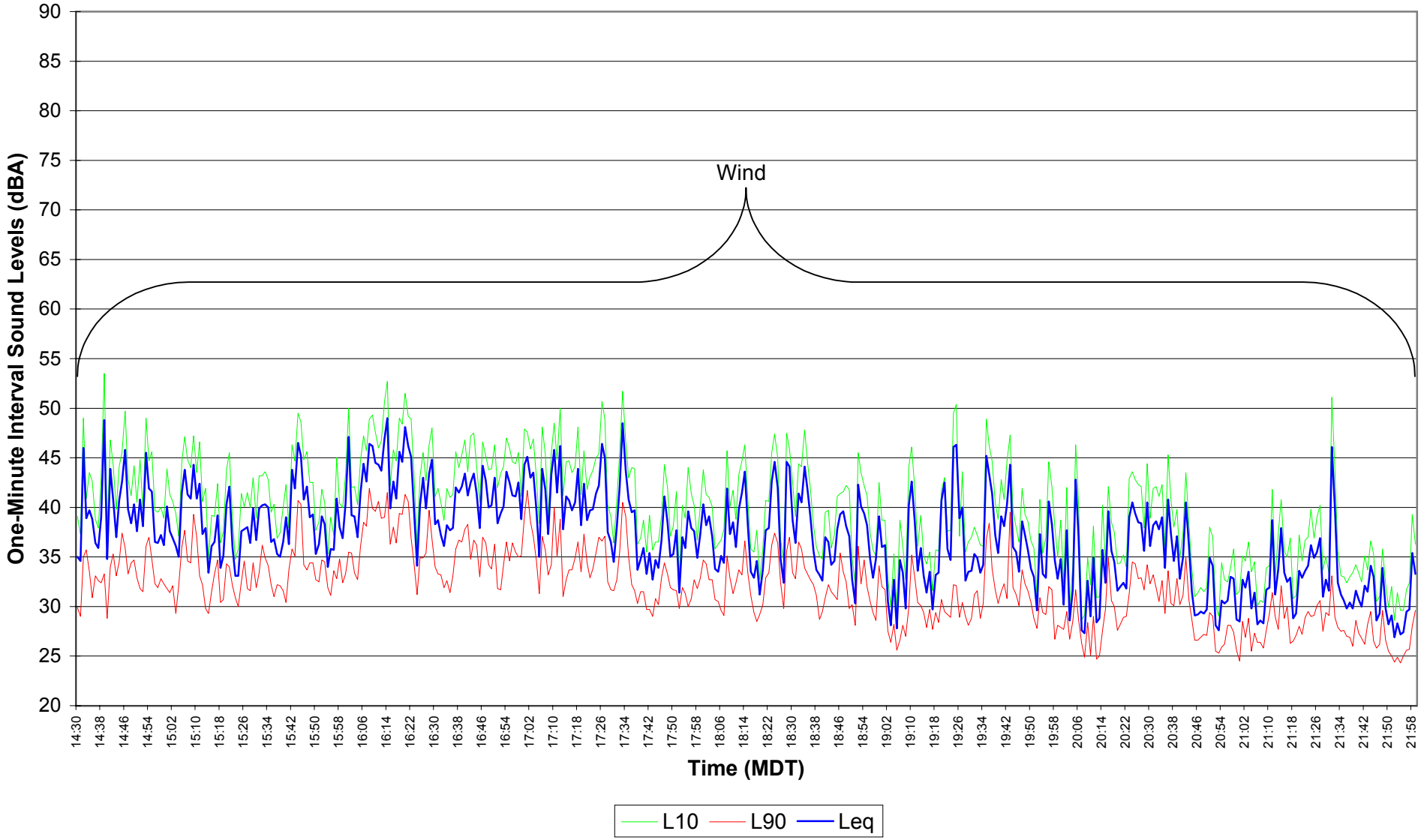


Figure E5.36
EnCana Rosebud
Site 5 Noise Survey
Dec. 04, 2004 - Dec. 05, 2004 22:00 - 06:59

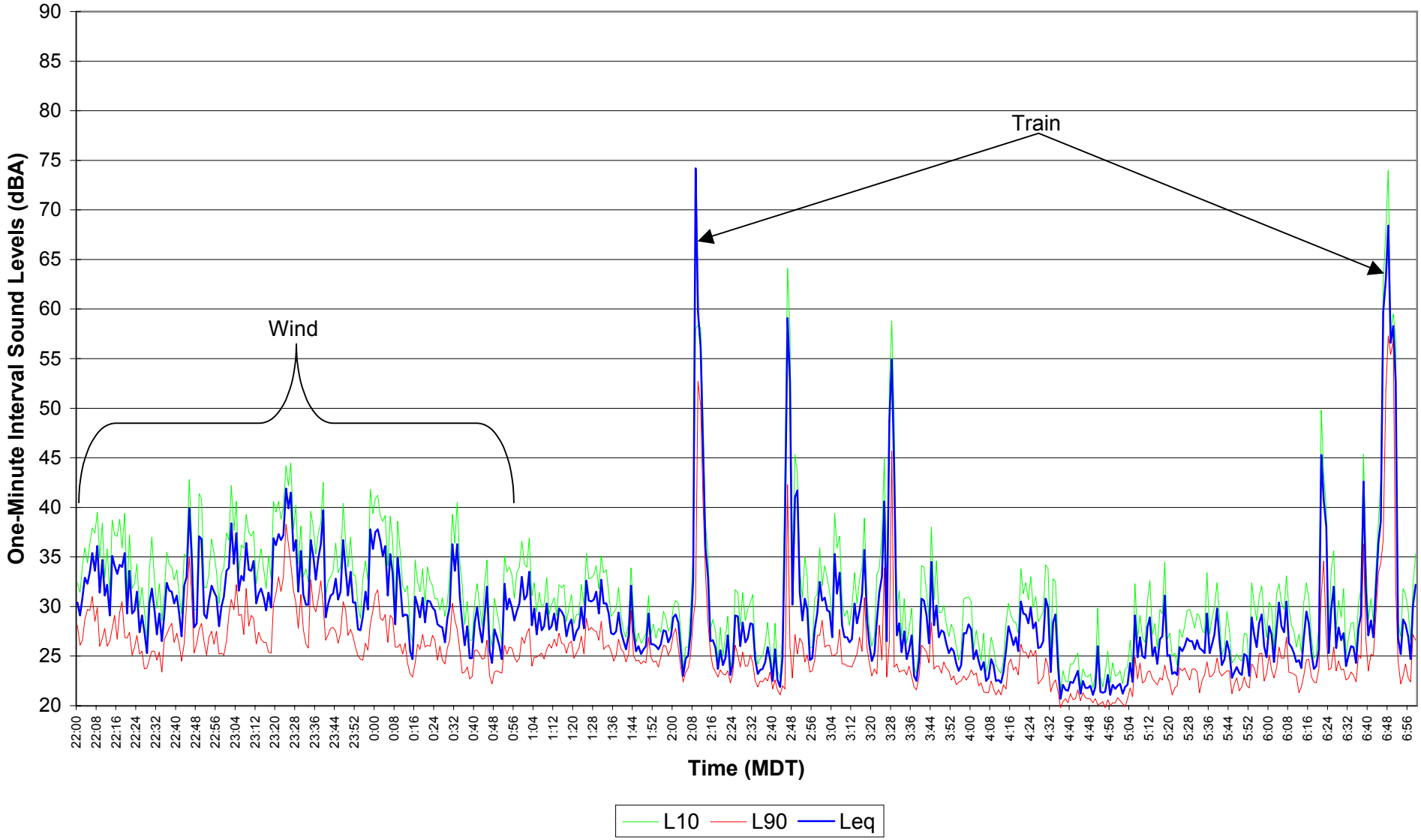


Figure E5.37
EnCana Rosebud
Site 5 Noise Survey
Dec. 05, 2004 07:00 - 14:29

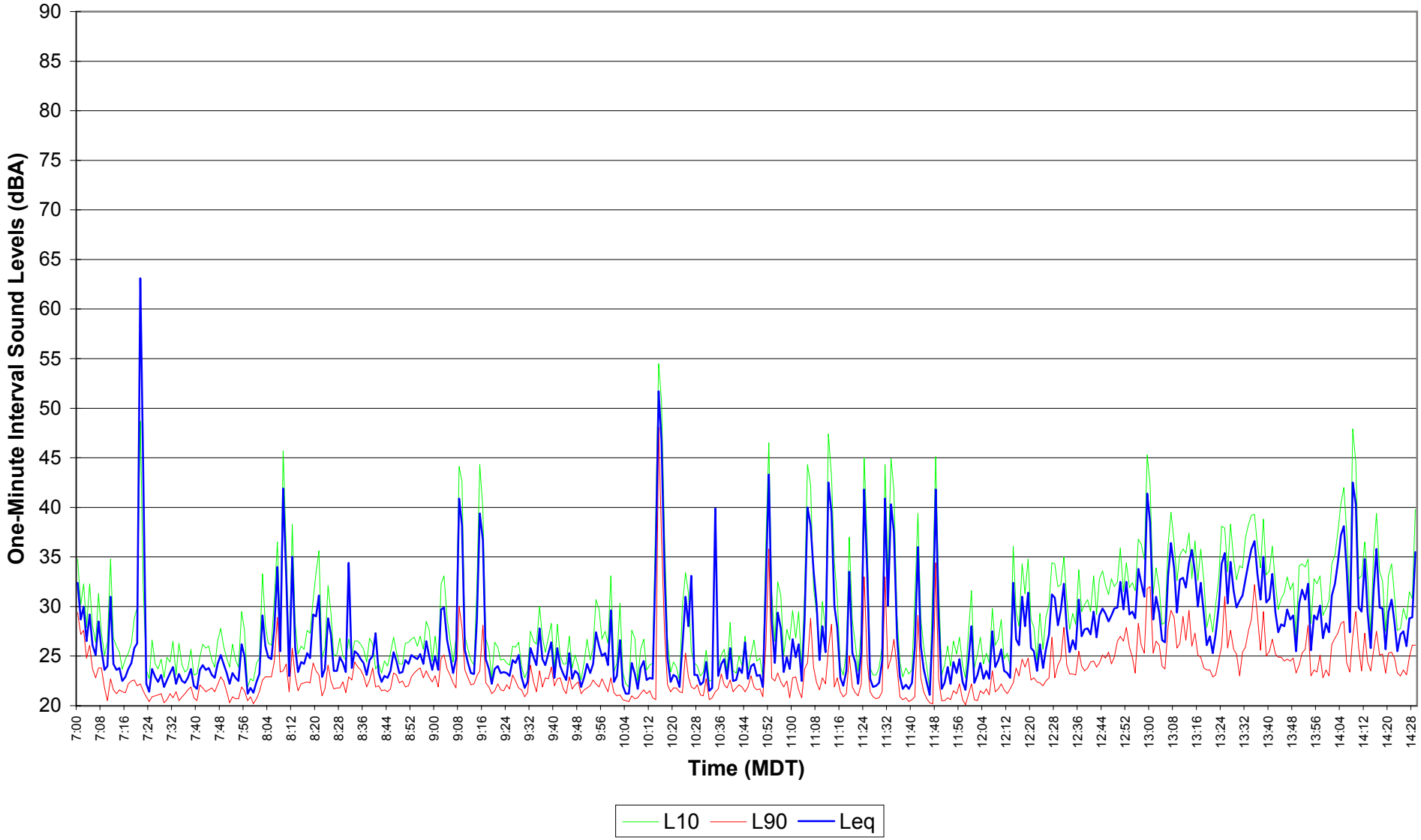


Figure E5.38
EnCana Rosebud
Site 5 Noise Survey
Dec. 05, 2004 14:30 - 21:59

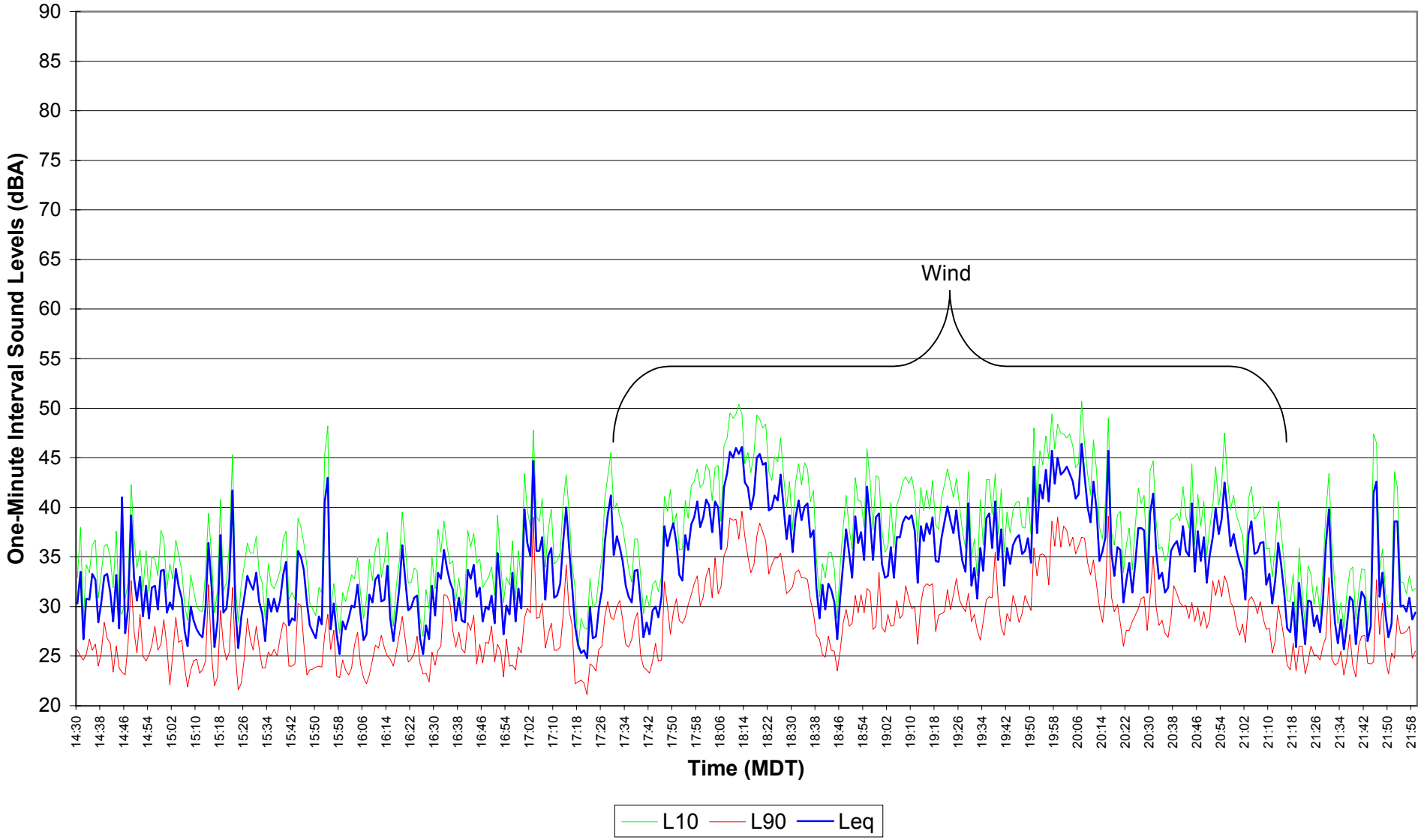


Figure E5.39
EnCana Rosebud
Site 5 Noise Survey
Dec. 05, 2004 - Dec. 06, 2004 22:00 - 06:59

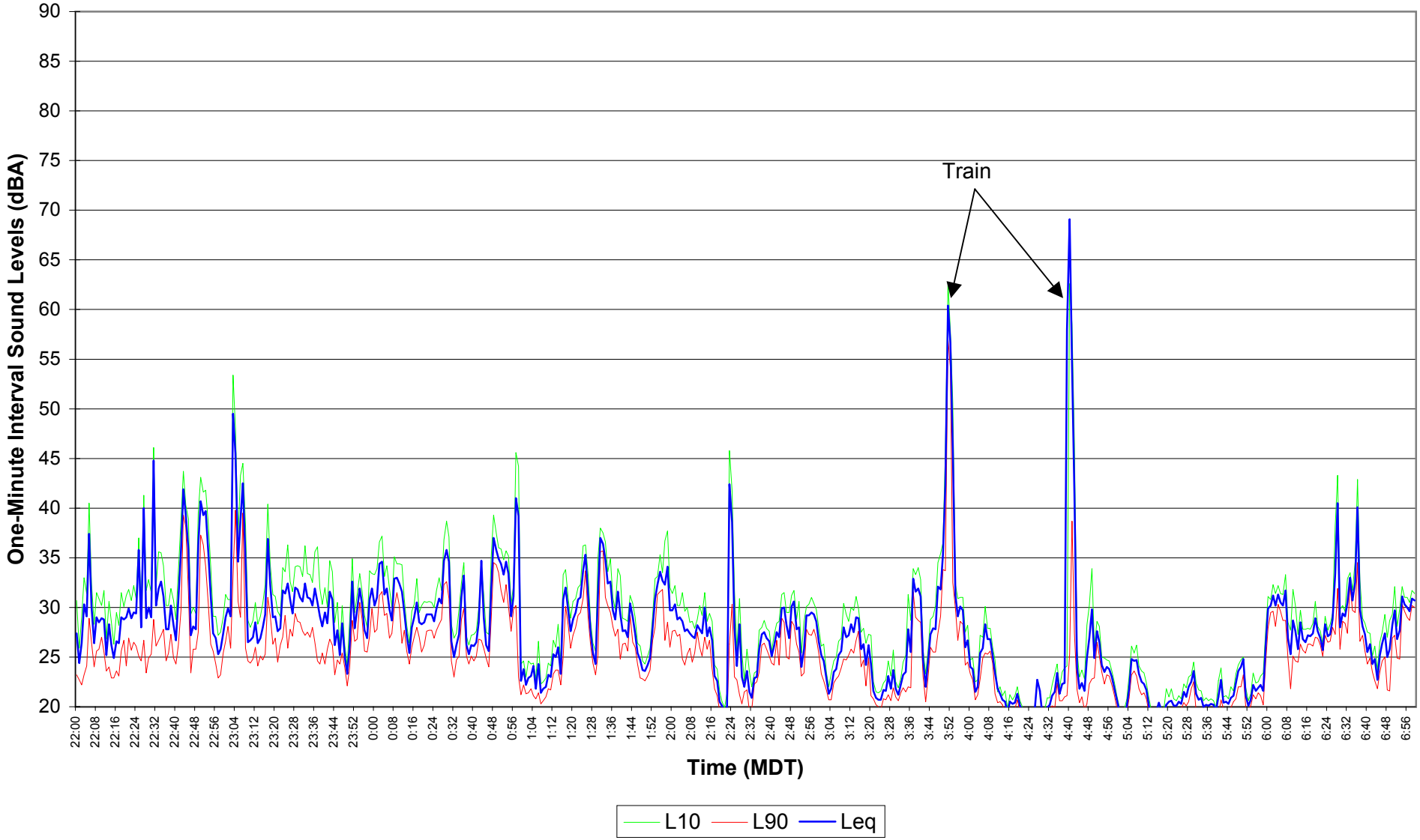


Figure E5.40
EnCana Rosebud
Site 5 Noise Survey
Dec. 06, 2004 07:00 - 14:29

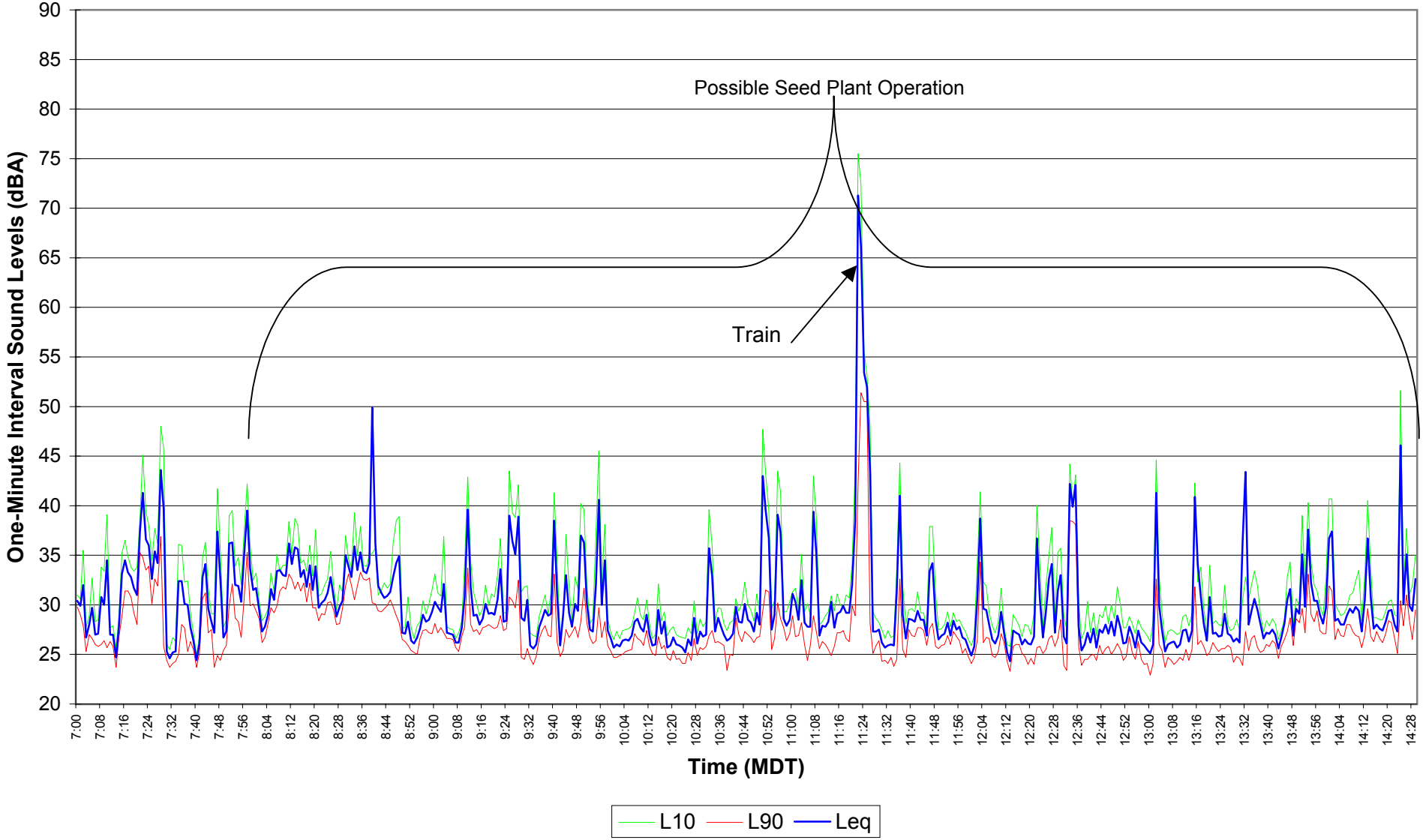


Figure E5.41
EnCana Rosebud
Site 5 Noise Survey
Dec. 06, 2004 14:30 - 21:59

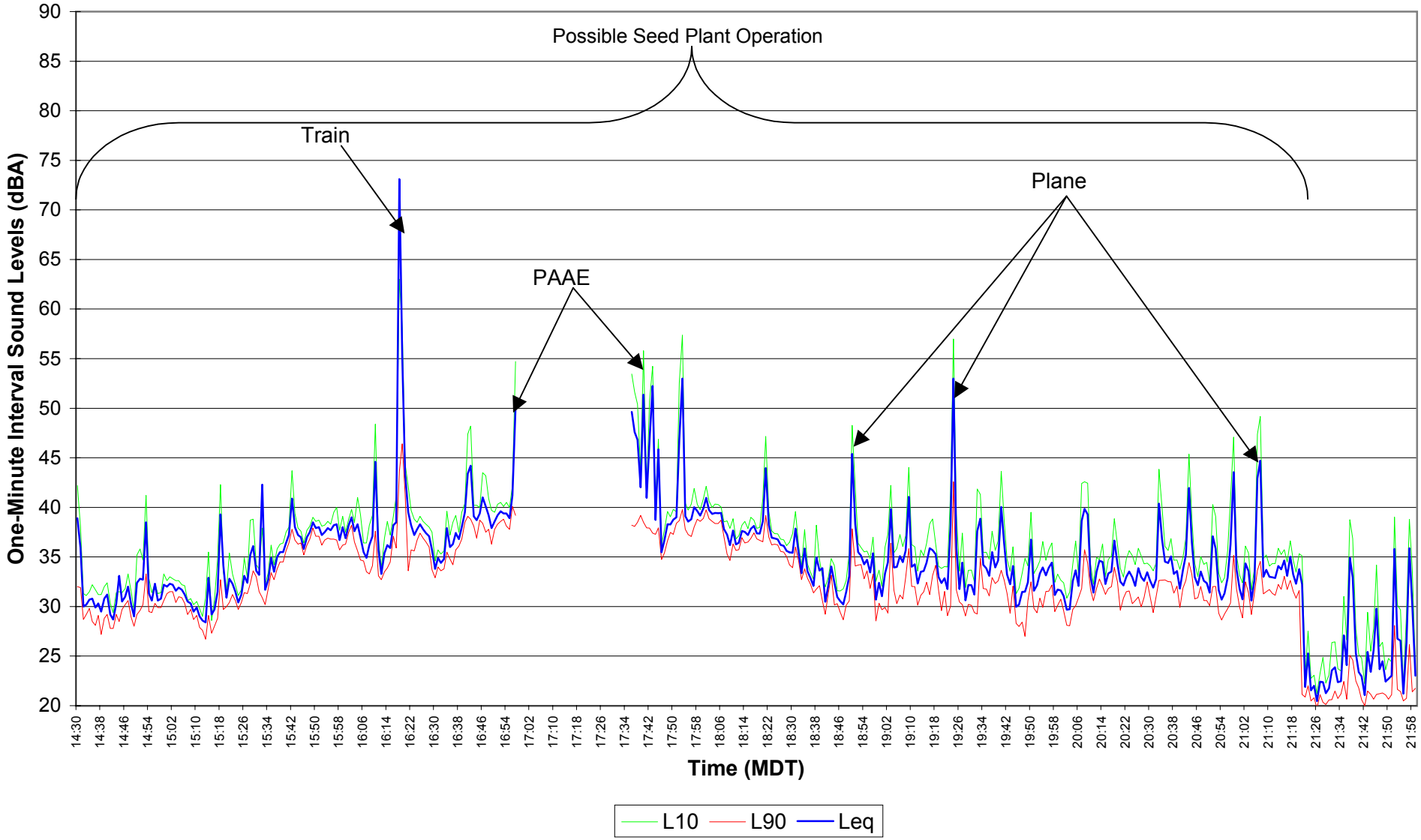


Figure E5.42
EnCana Rosebud
Site 5 Noise Survey
Dec. 06, 2004 - Dec. 07, 2004 22:00 - 06:59

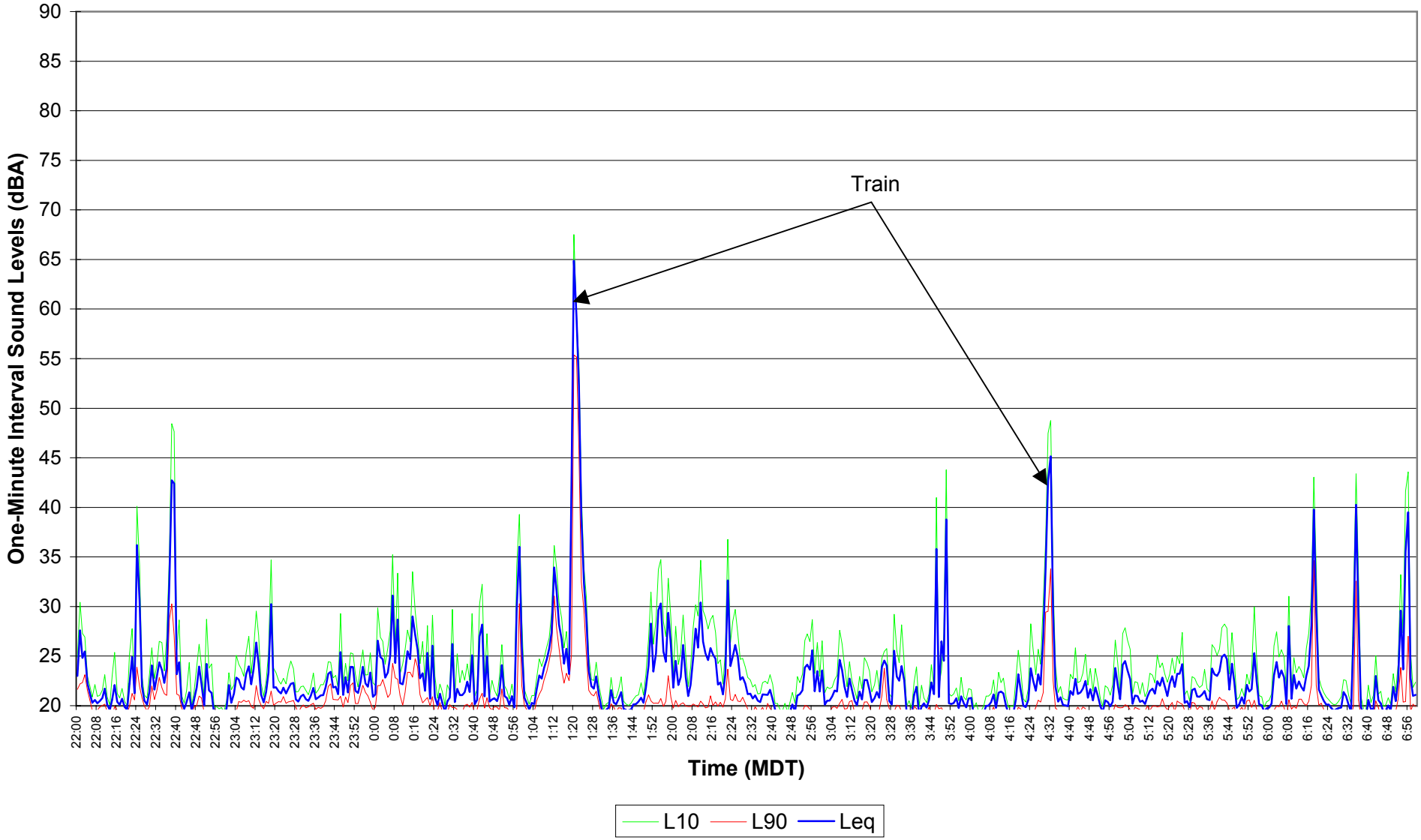


Figure E5.43
EnCana Rosebud
Site 5 Noise Survey
Dec. 07, 2004 07:00 - 14:29

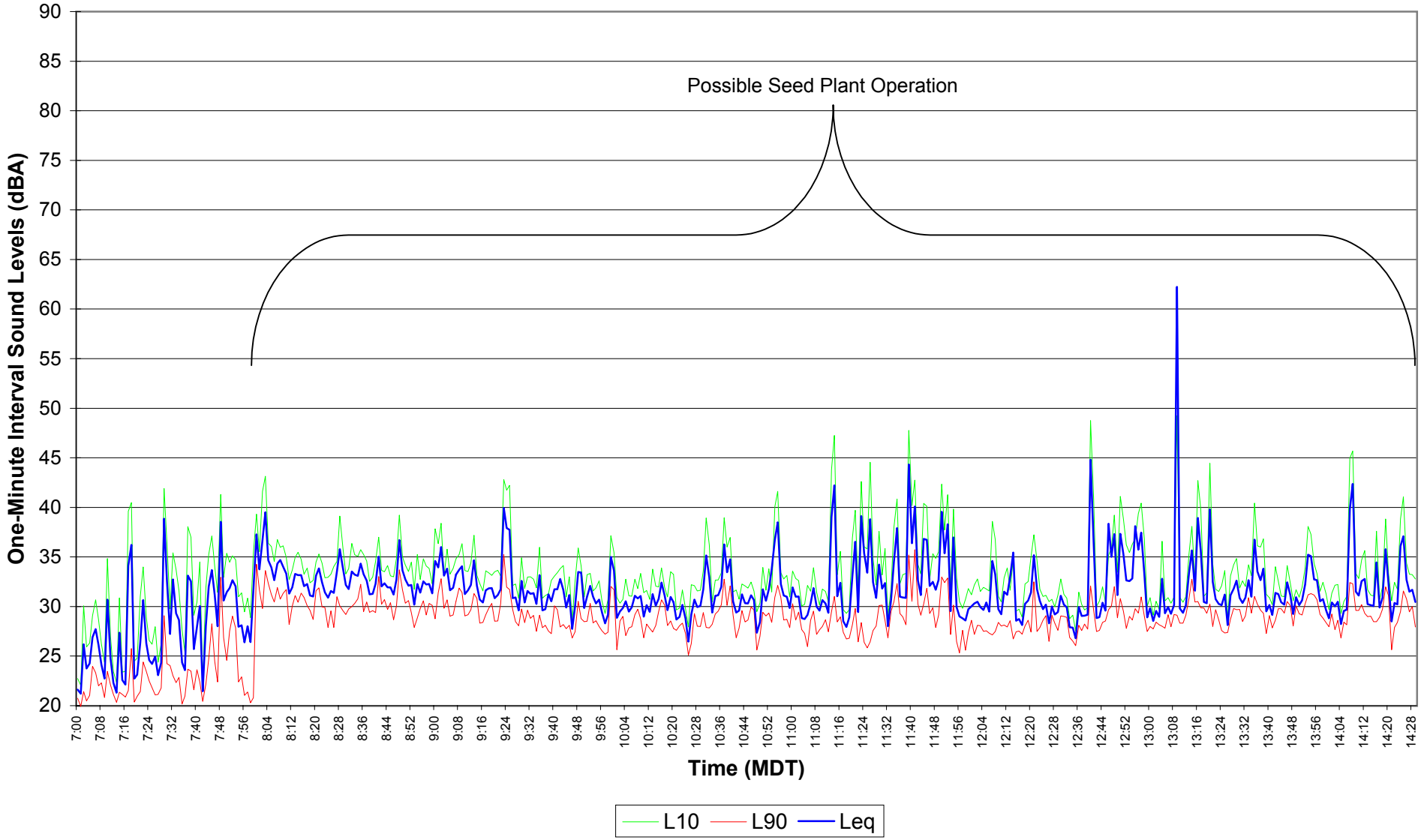


Figure E5.44
EnCana Rosebud
Site 5 Noise Survey
Dec. 07, 2004 14:30 - 21:59

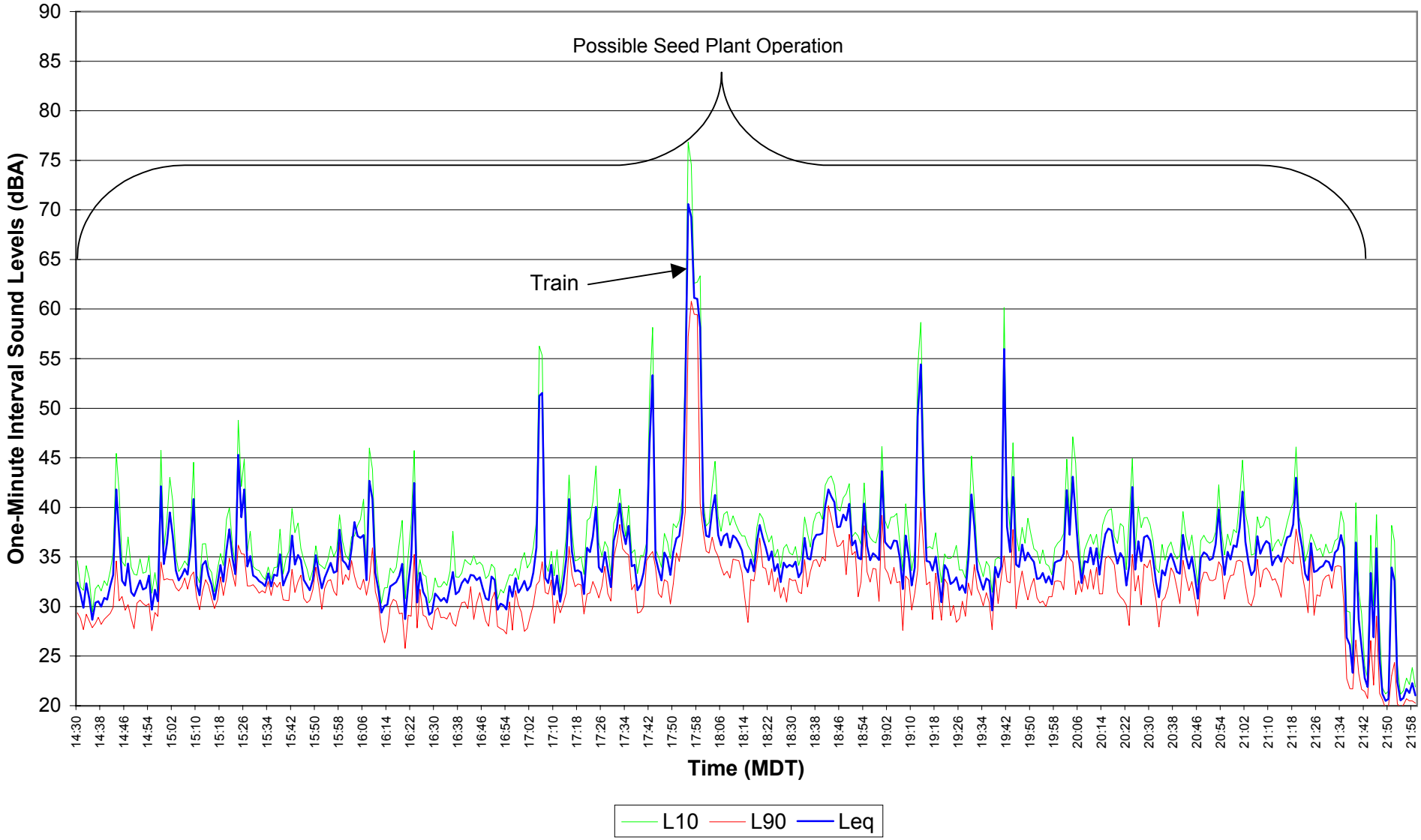


Figure E5.45
EnCana Rosebud
Site 5 Noise Survey
Dec. 07, 2004 - Dec. 08, 2004 22:00 - 06:59

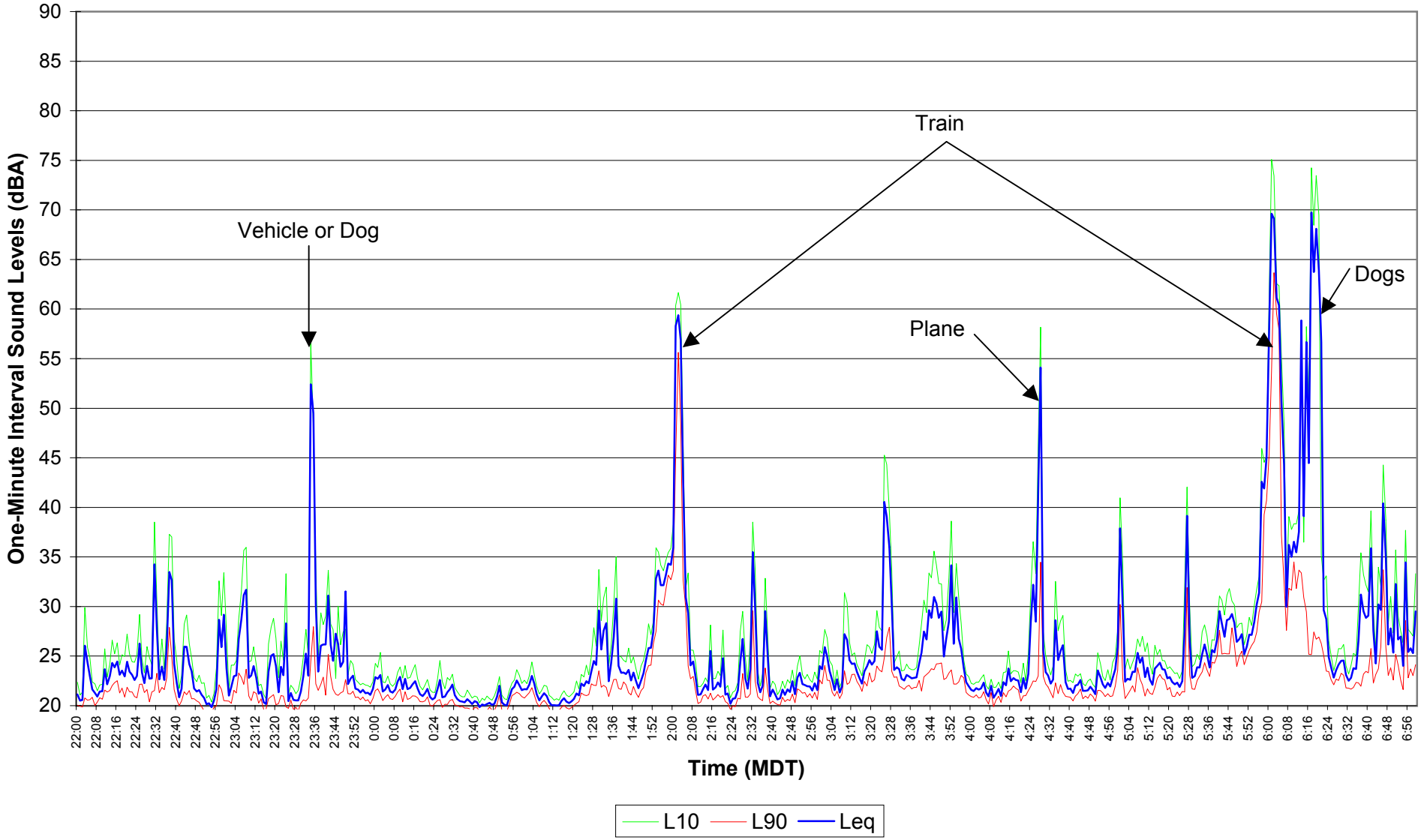


Figure E5.46

EnCana Rosebud

Site 5 Noise Survey

Dec. 08, 2004 07:00 - 14:29

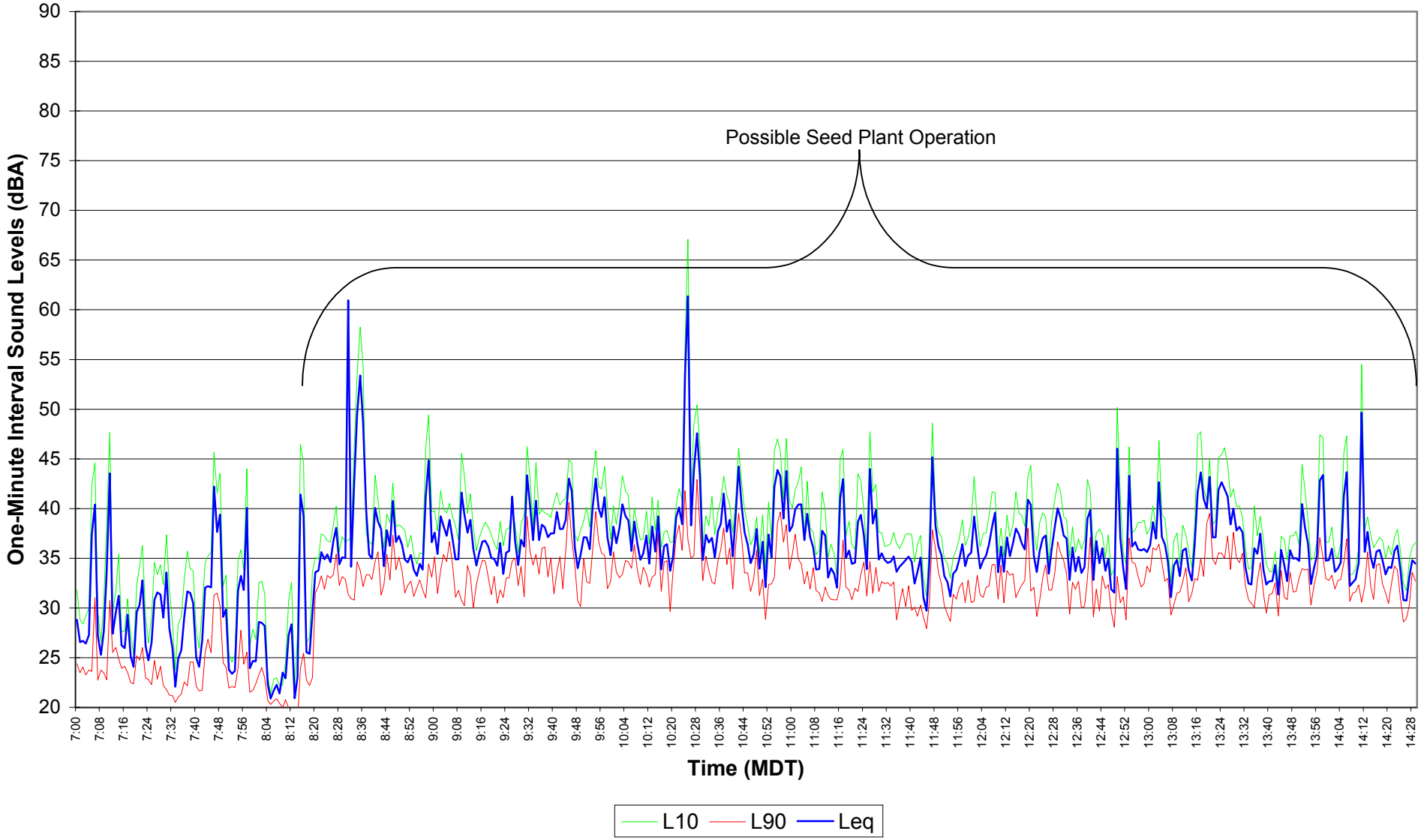


Figure E5.47
EnCana Rosebud
Site 5 Noise Survey
Dec. 08, 2004 14:30 - 21:59

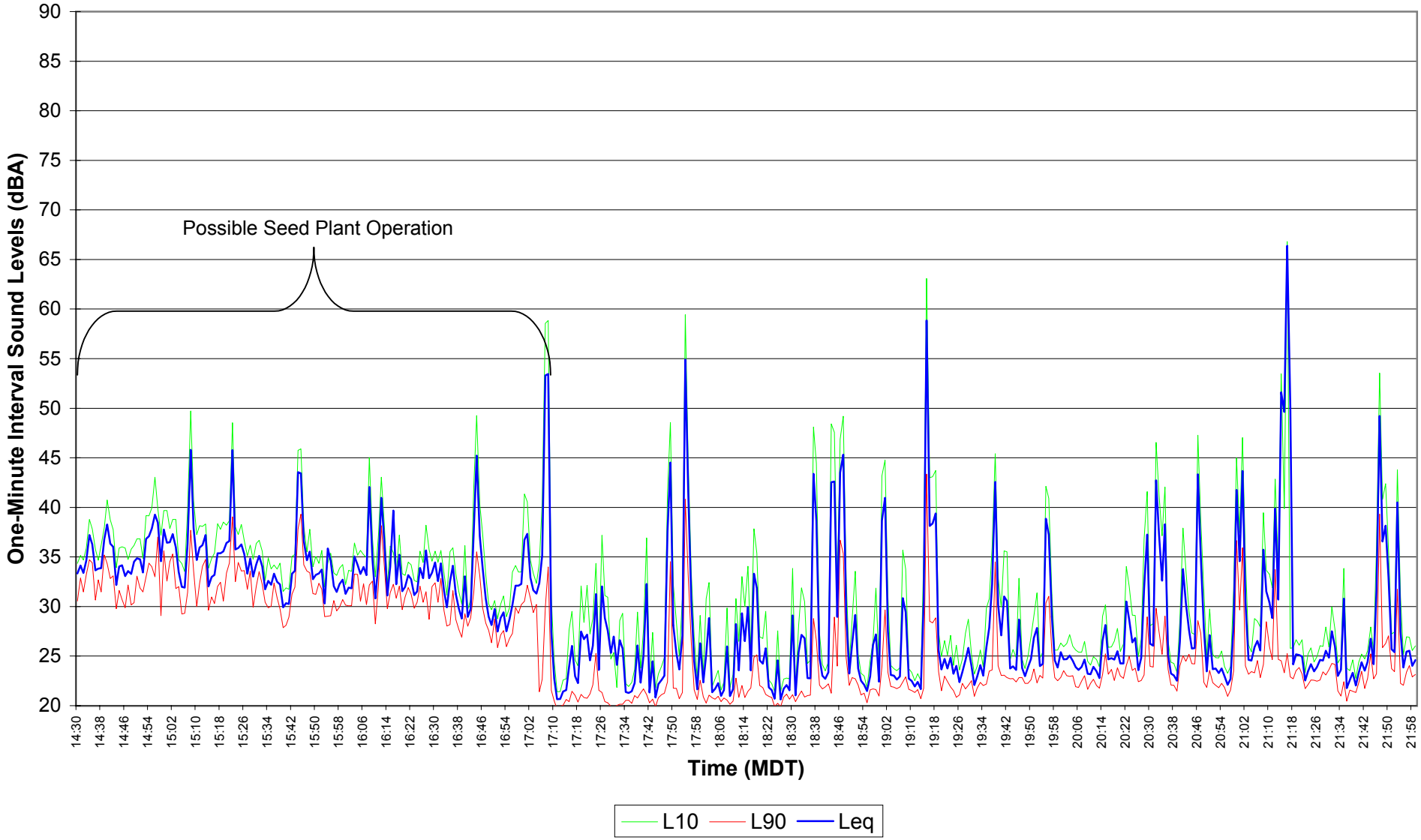


Figure E5.48
EnCana Rosebud
Site 5 Noise Survey
Dec. 08, 2004 - Dec. 09, 2004 22:00 - 06:59

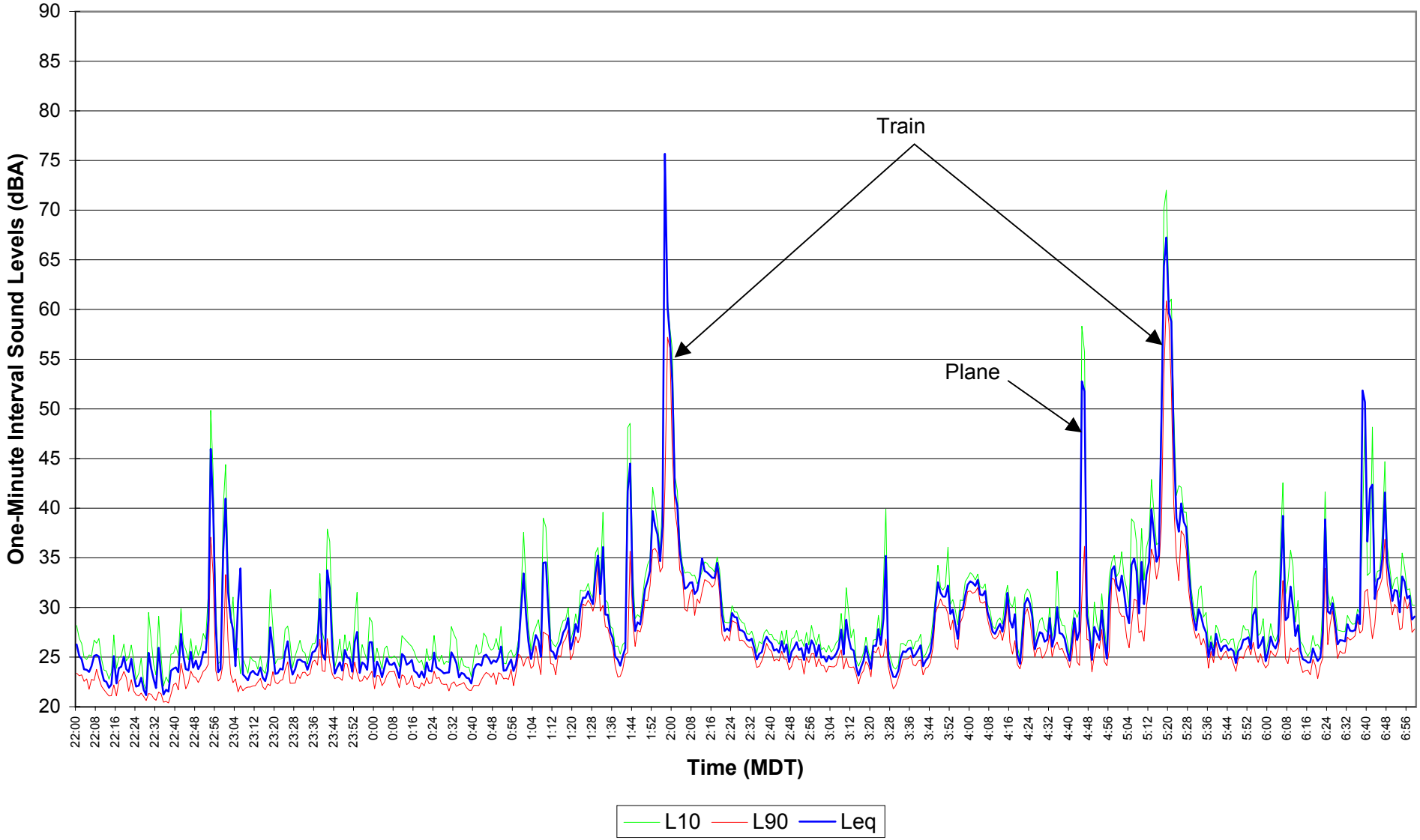


Figure E5.49
EnCana Rosebud
Site 5 Noise Survey
Dec. 09, 2004 07:00 - 14:29

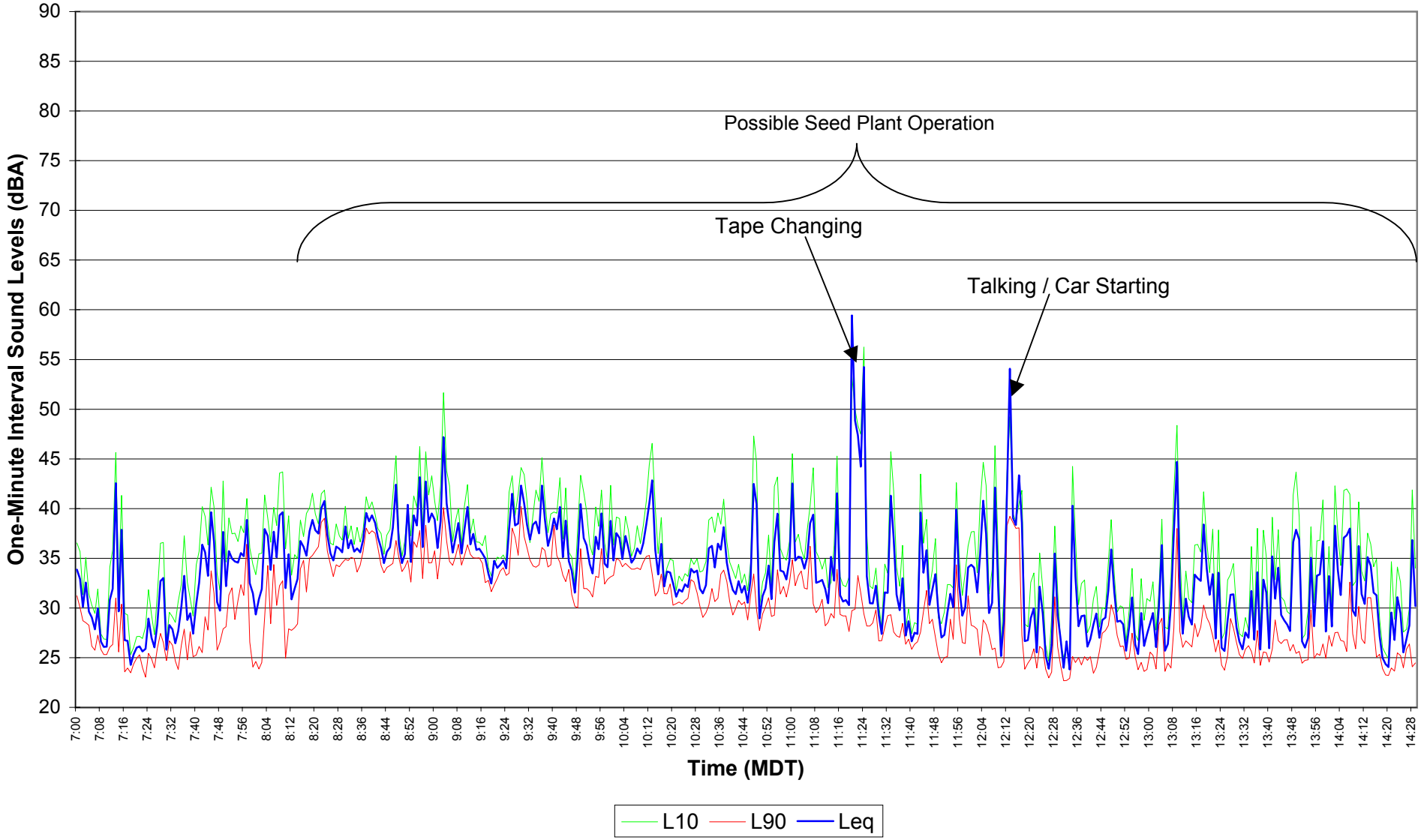


Figure E5.50
EnCana Rosebud
Site 5 Noise Survey
Dec. 09, 2004 14:30 - 21:59

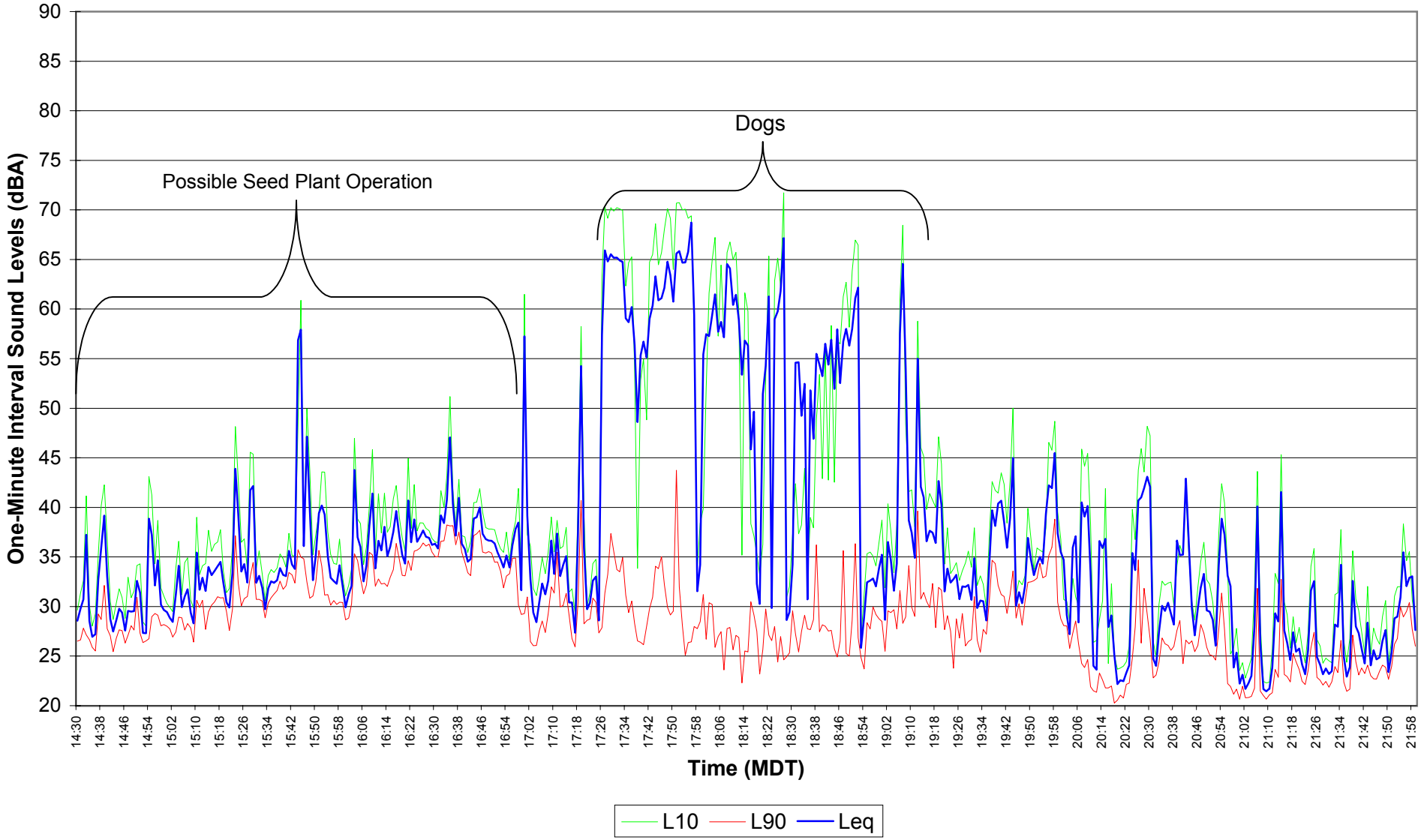


Figure E5.51
EnCana Rosebud
Site 5 Noise Survey
Dec. 09, 2004 - Dec. 10, 2004 22:00 - 06:59

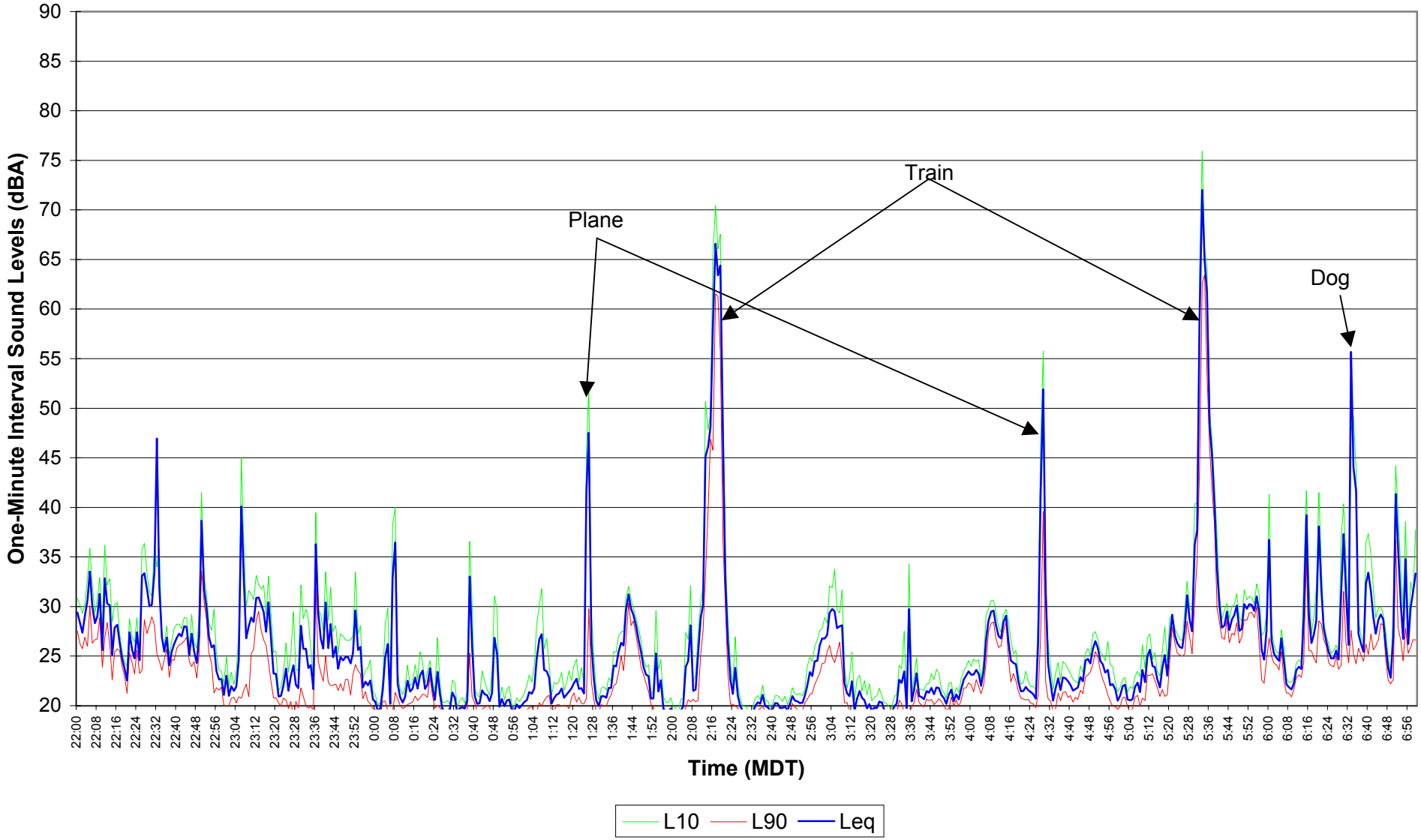


Figure E5.52
EnCana Rosebud
Site 5 Noise Survey
Dec. 10, 2004 07:00 - 14:29

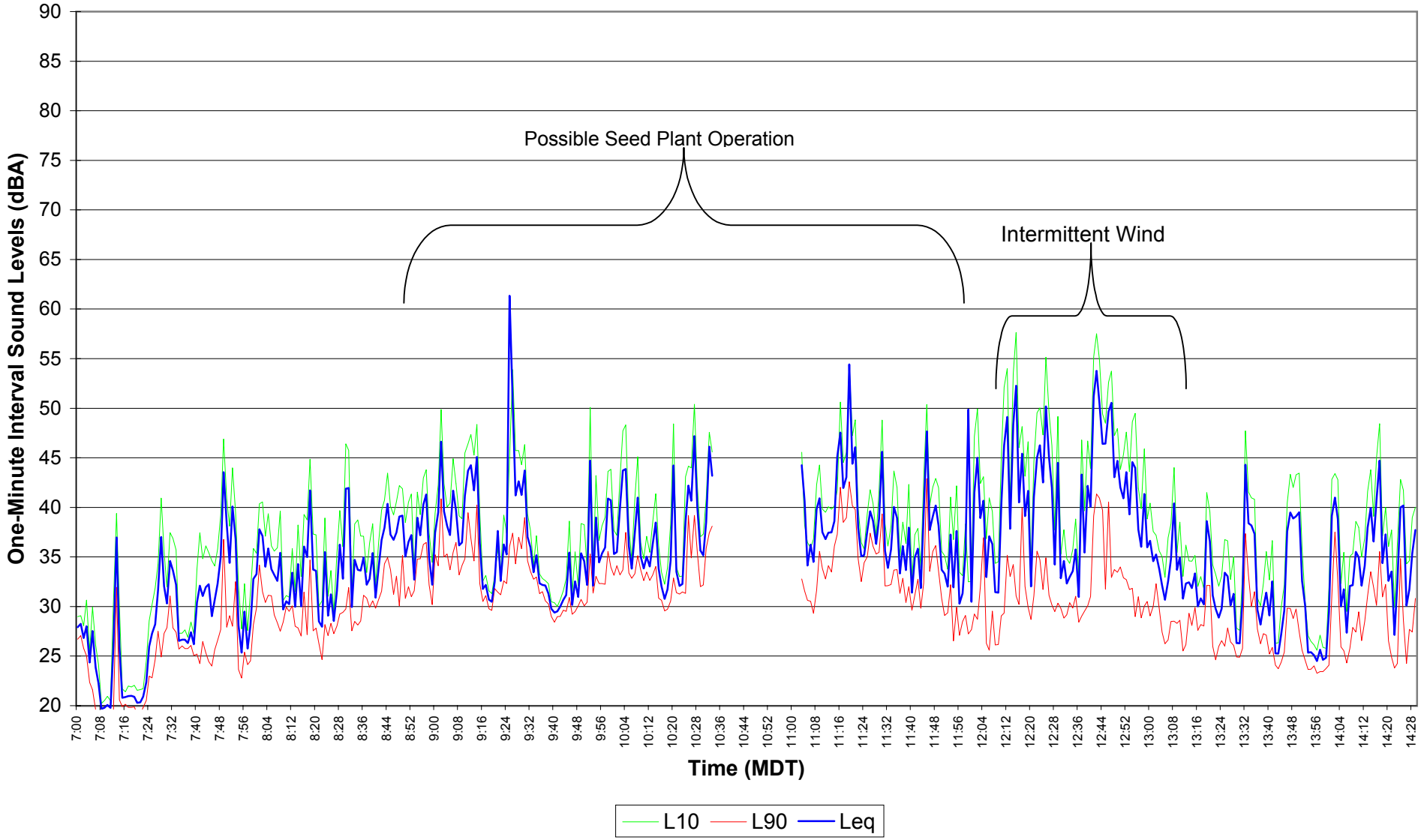


Figure E5.53
EnCana Rosebud
Site 5 Noise Survey
Dec. 10, 2004 14:30 - 21:59

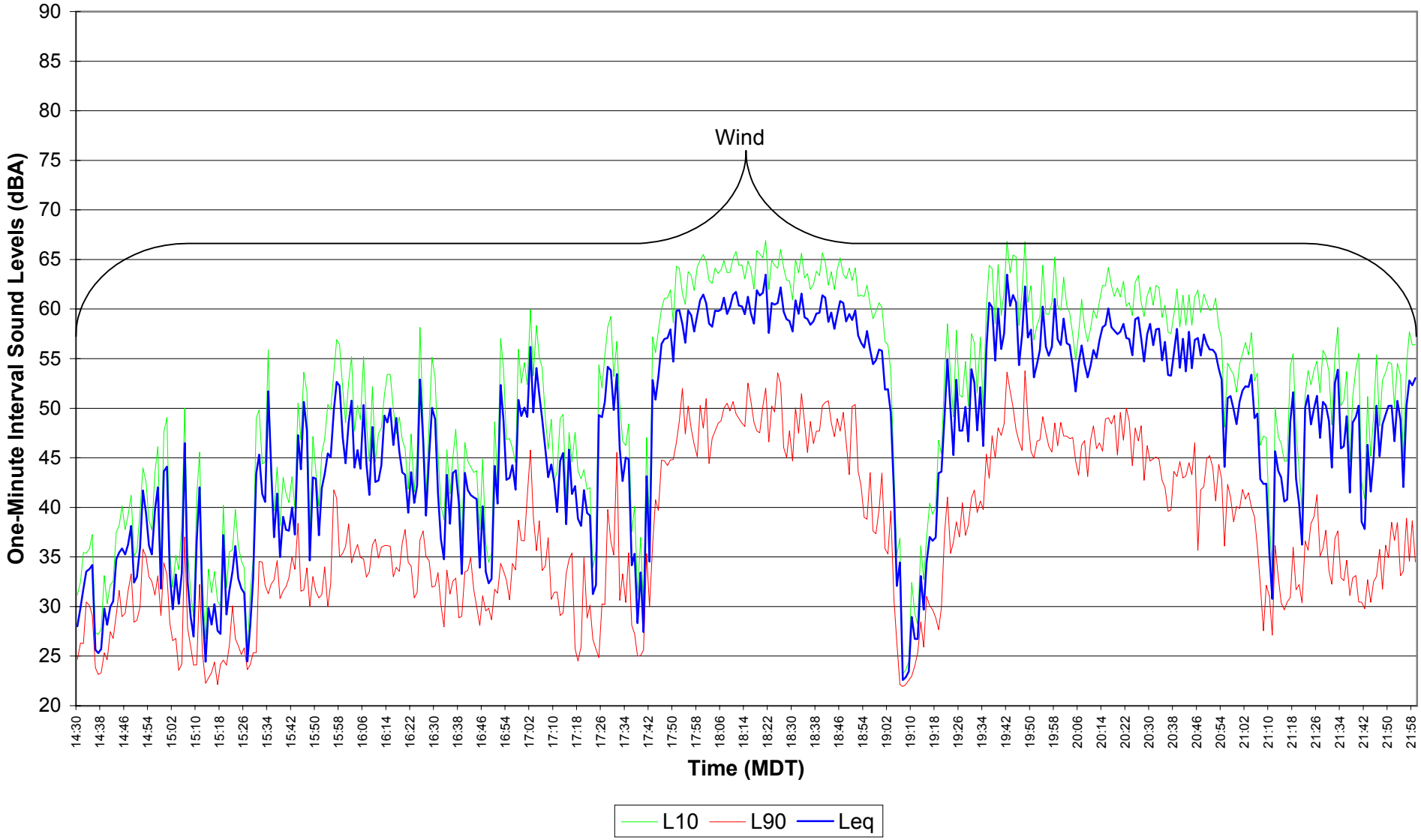


Figure E5.54
EnCana Rosebud
Site 5 Noise Survey
Dec. 10, 2004 - Dec. 11, 2004 22:00 - 06:59

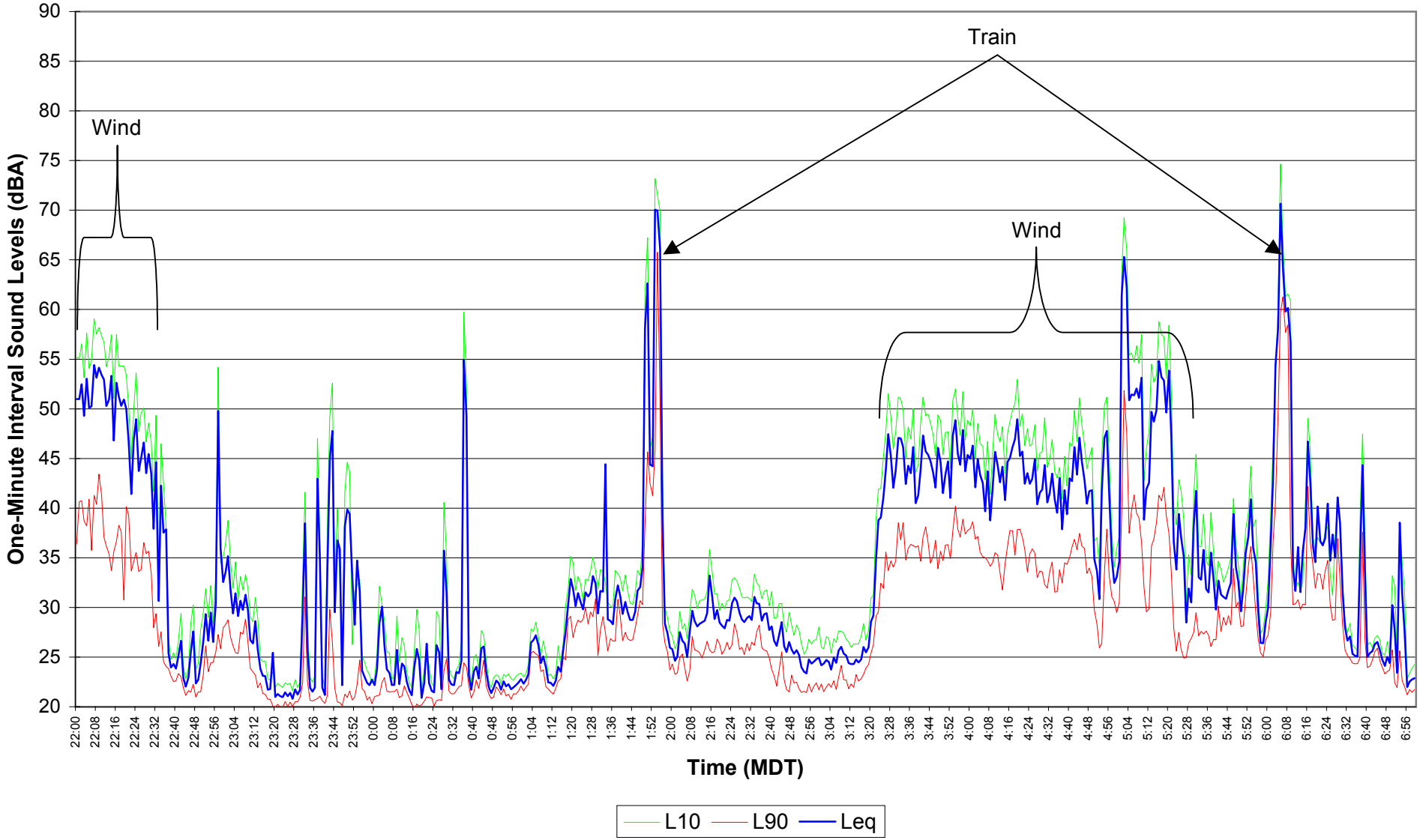


Figure E5.55
EnCana Rosebud
Site 5 Noise Survey
Dec. 11, 2004 07:00 - 14:29

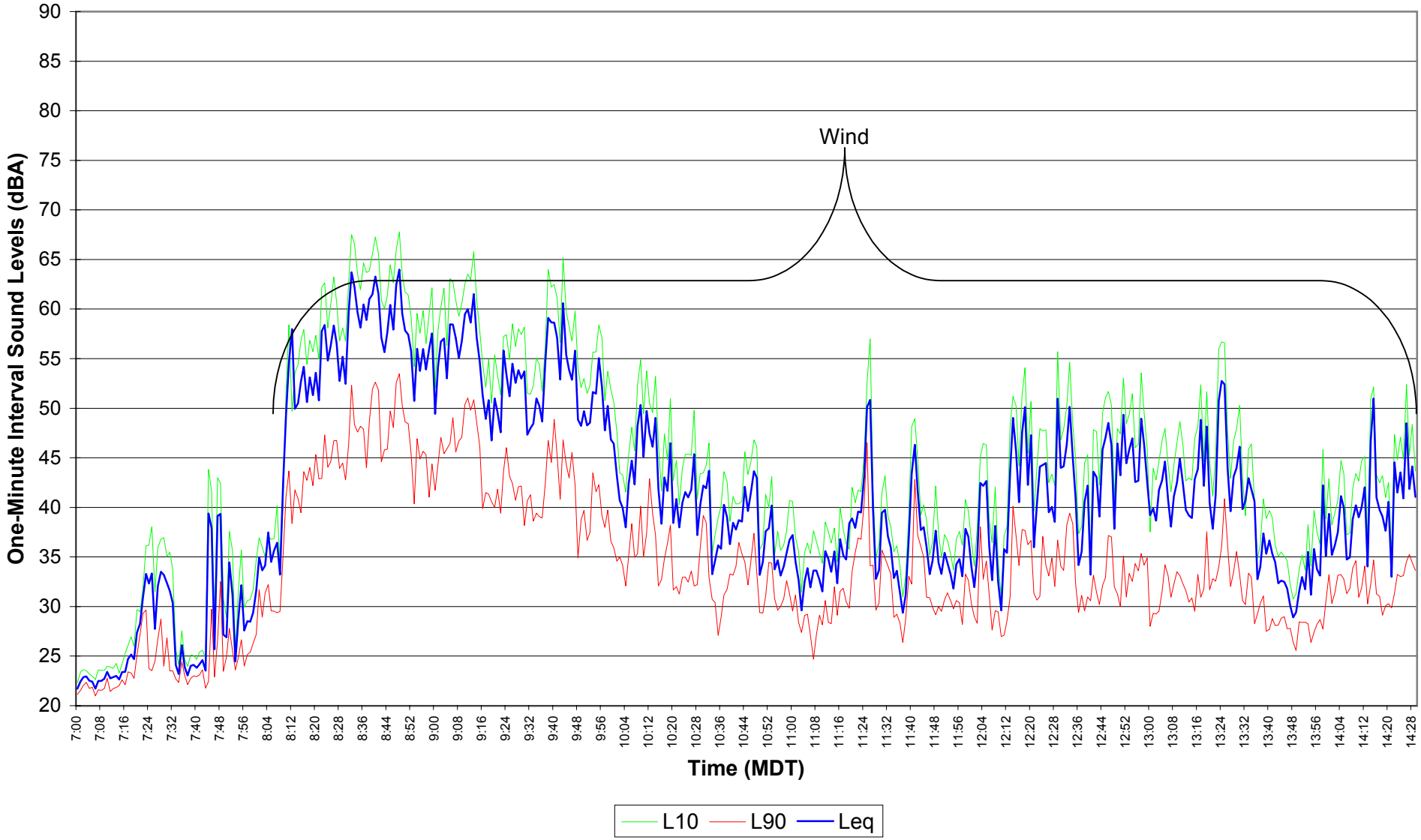


Figure E5.56
EnCana Rosebud
Site 5 Noise Survey
Dec. 11, 2004 14:30 - 21:59

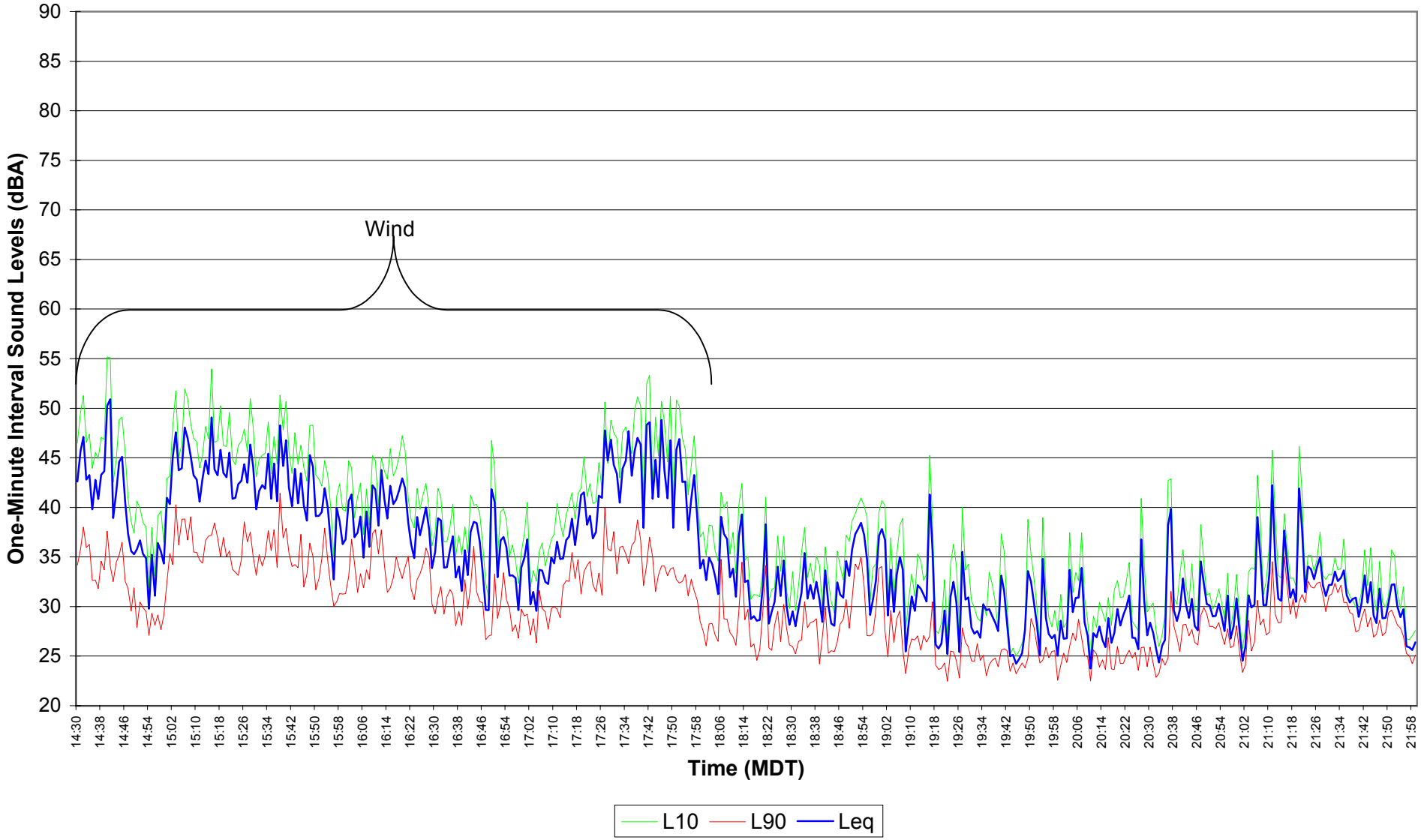


Figure E5.57
EnCana Rosebud
Site 5 Noise Survey
Dec. 11, 2004 - Dec. 12, 2004 22:00 - 06:59

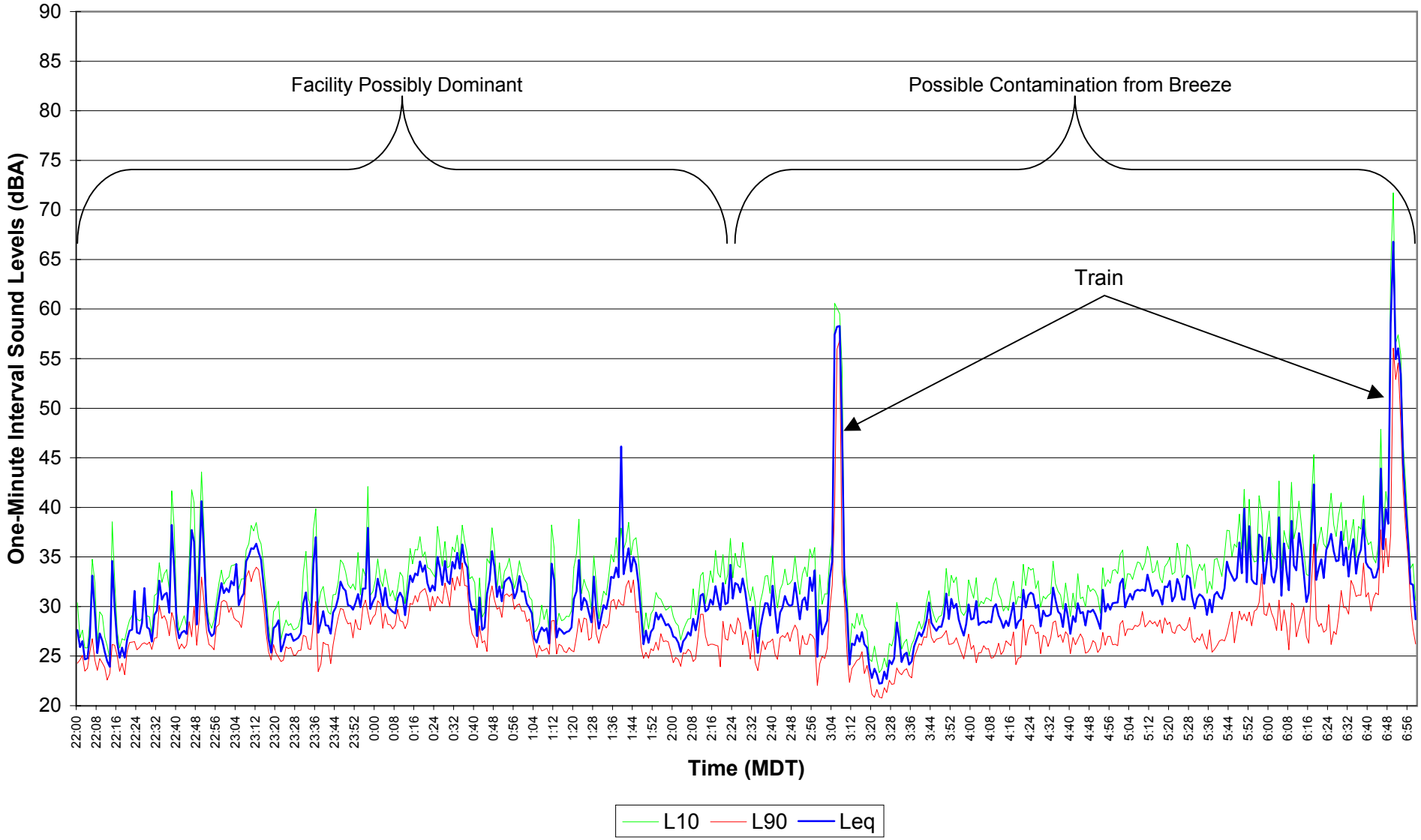


Figure E5.58
EnCana Rosebud
Site 5 Noise Survey
Dec. 12, 2004 07:00 - 14:29

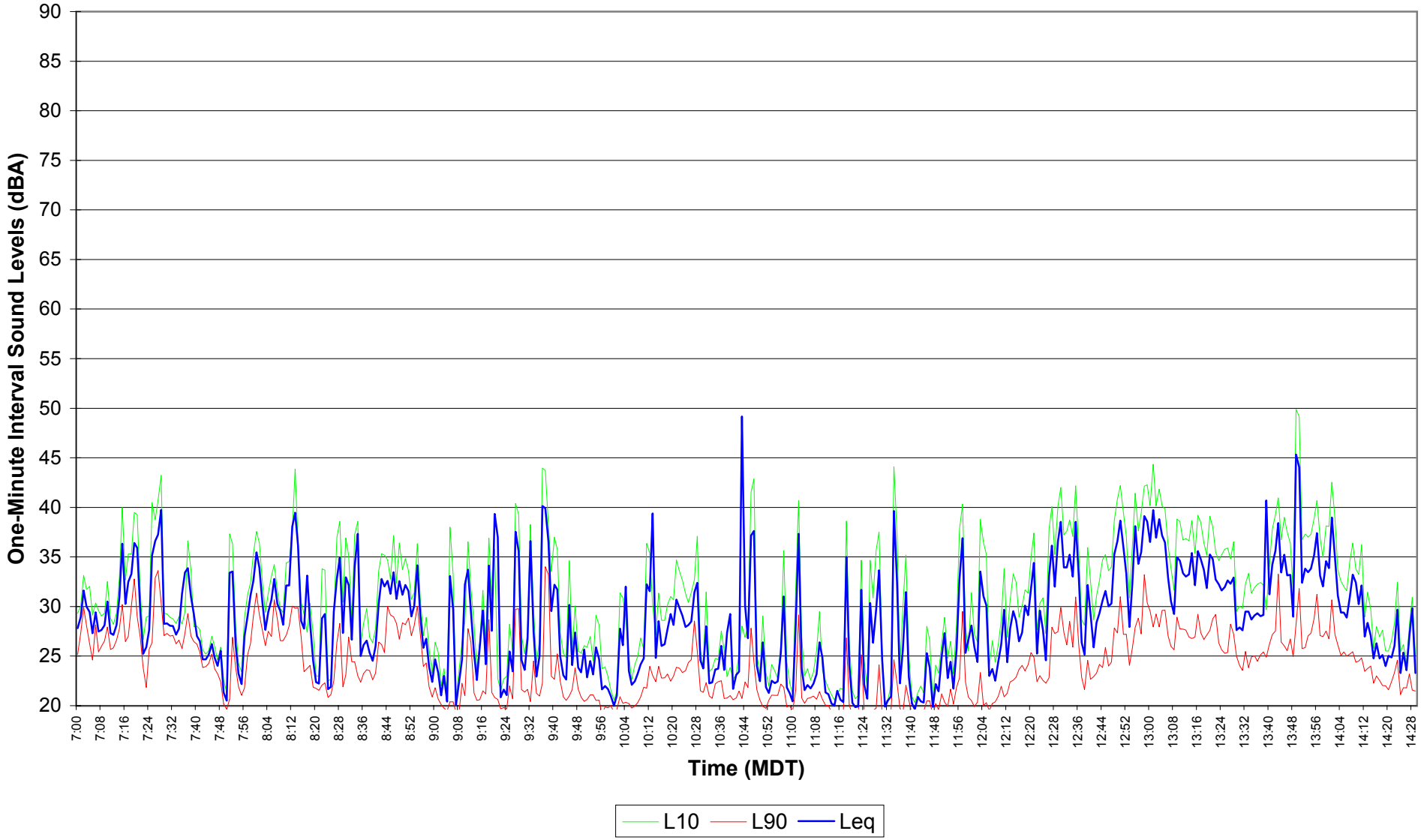


Figure E5.59
EnCana Rosebud
Site 5 Noise Survey
Dec. 12, 2004 14:30 - 21:59

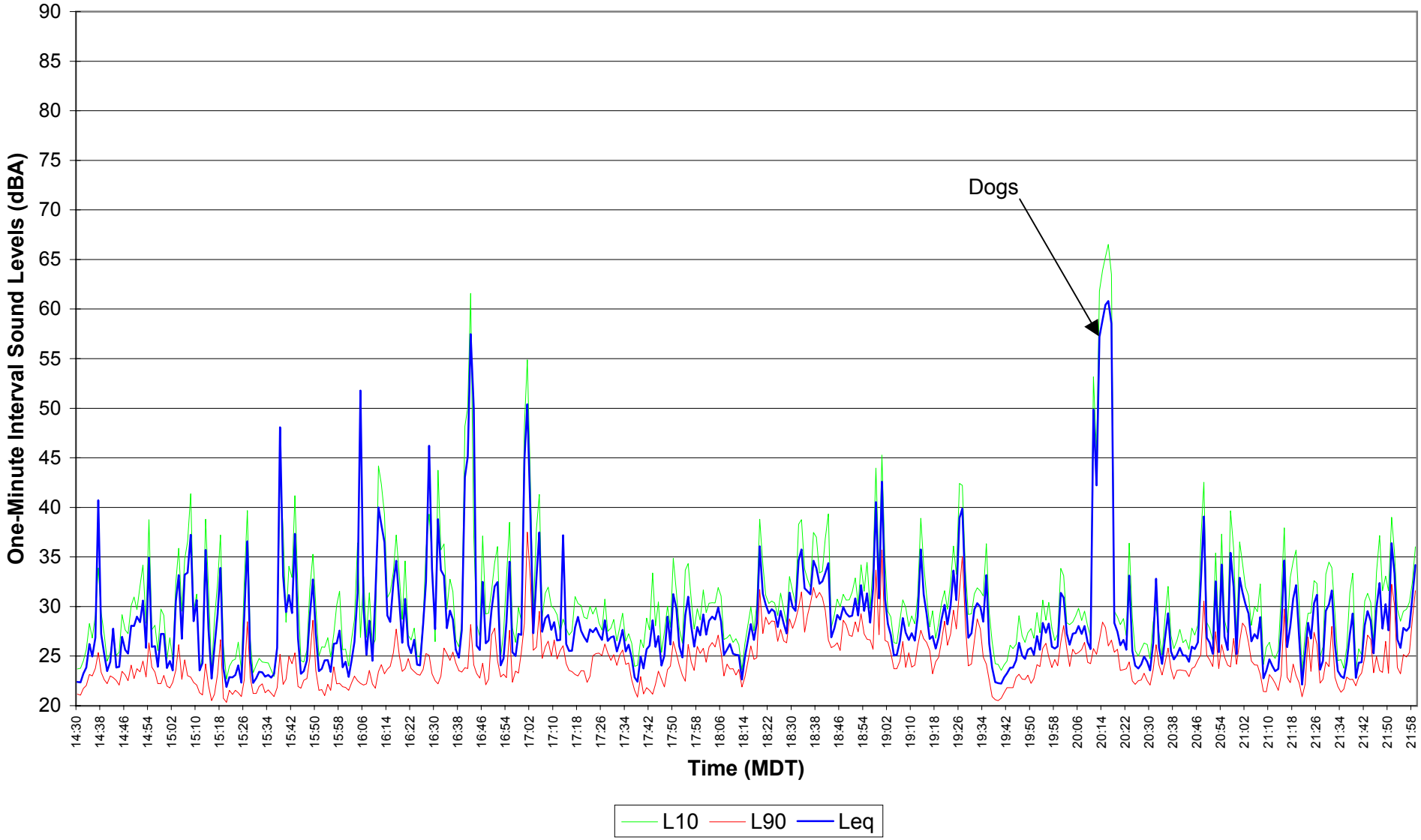


Figure E5.60
EnCana Rosebud
Site 5 Noise Survey
Dec. 12, 2004 - Dec. 13, 2004 22:00 - 06:59

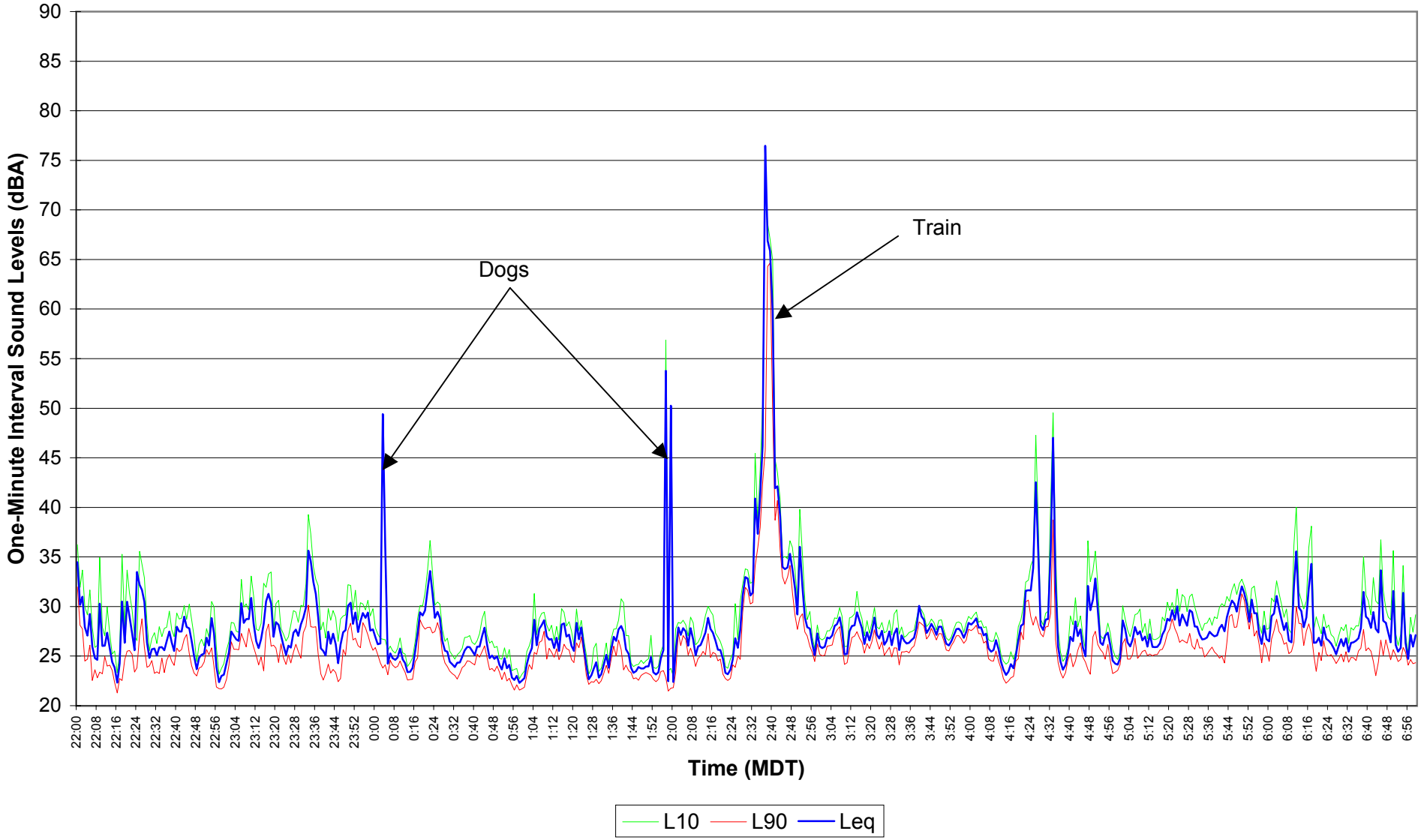


Figure E5.61
EnCana Rosebud
Site 5 Noise Survey

Dec. 13, 2004 07:00 - 14:29

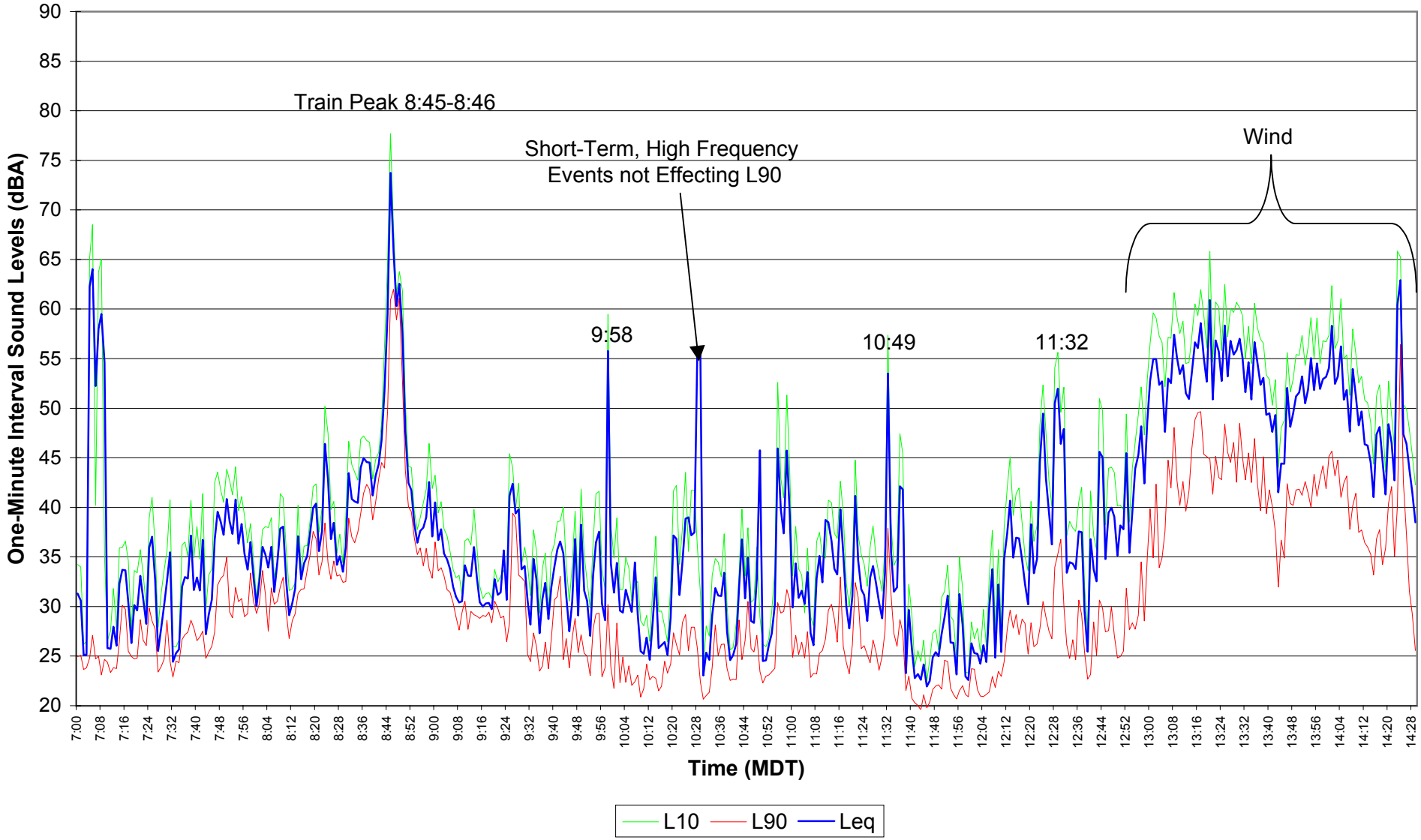


Figure E5.62
EnCana Rosebud
Site 5 Noise Survey
Dec. 13, 2004 14:30 - 21:59

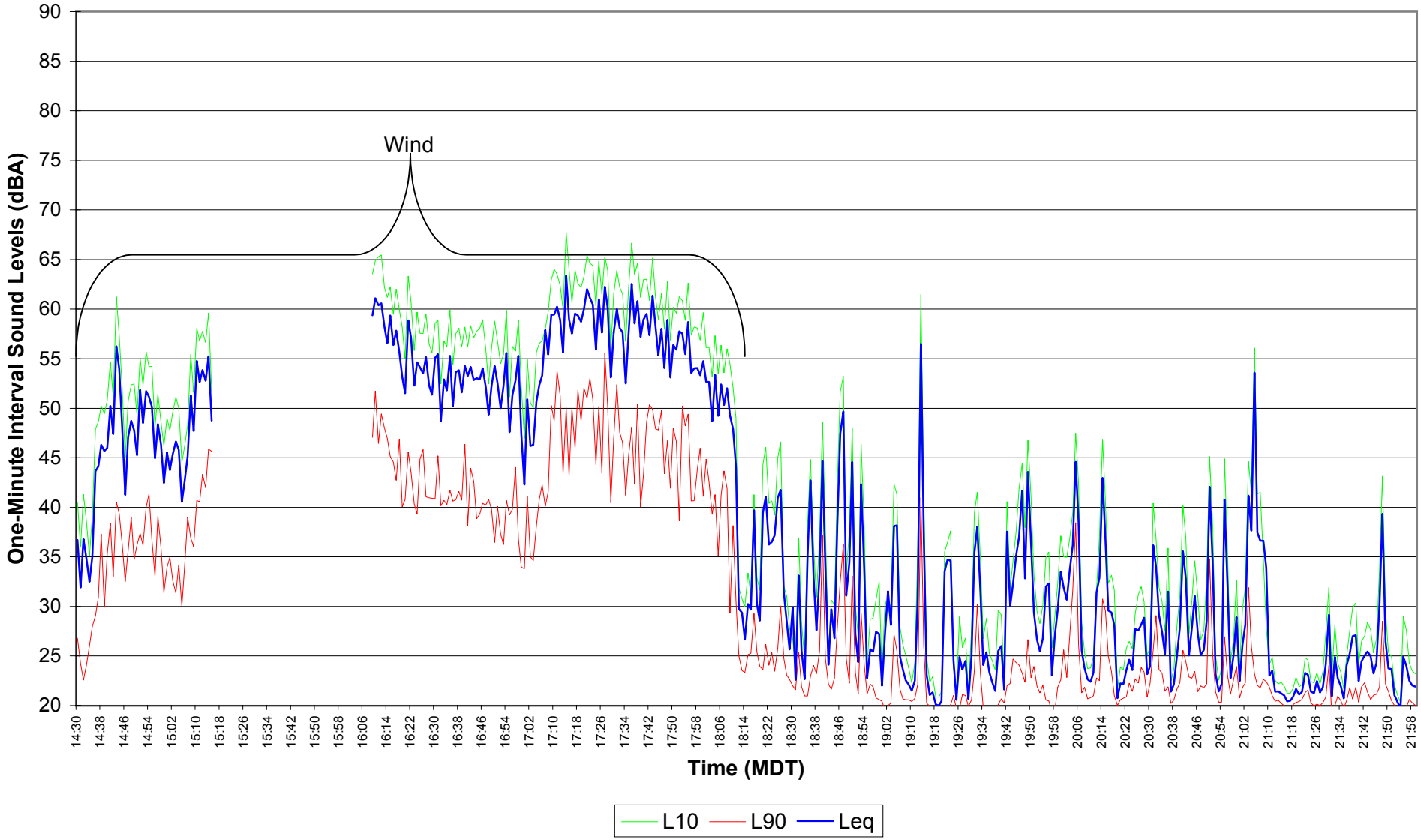


Figure E5.63
EnCana Rosebud
Site 5 Noise Survey
Dec. 13, 2004 - Dec. 14, 2004 22:00 - 06:59

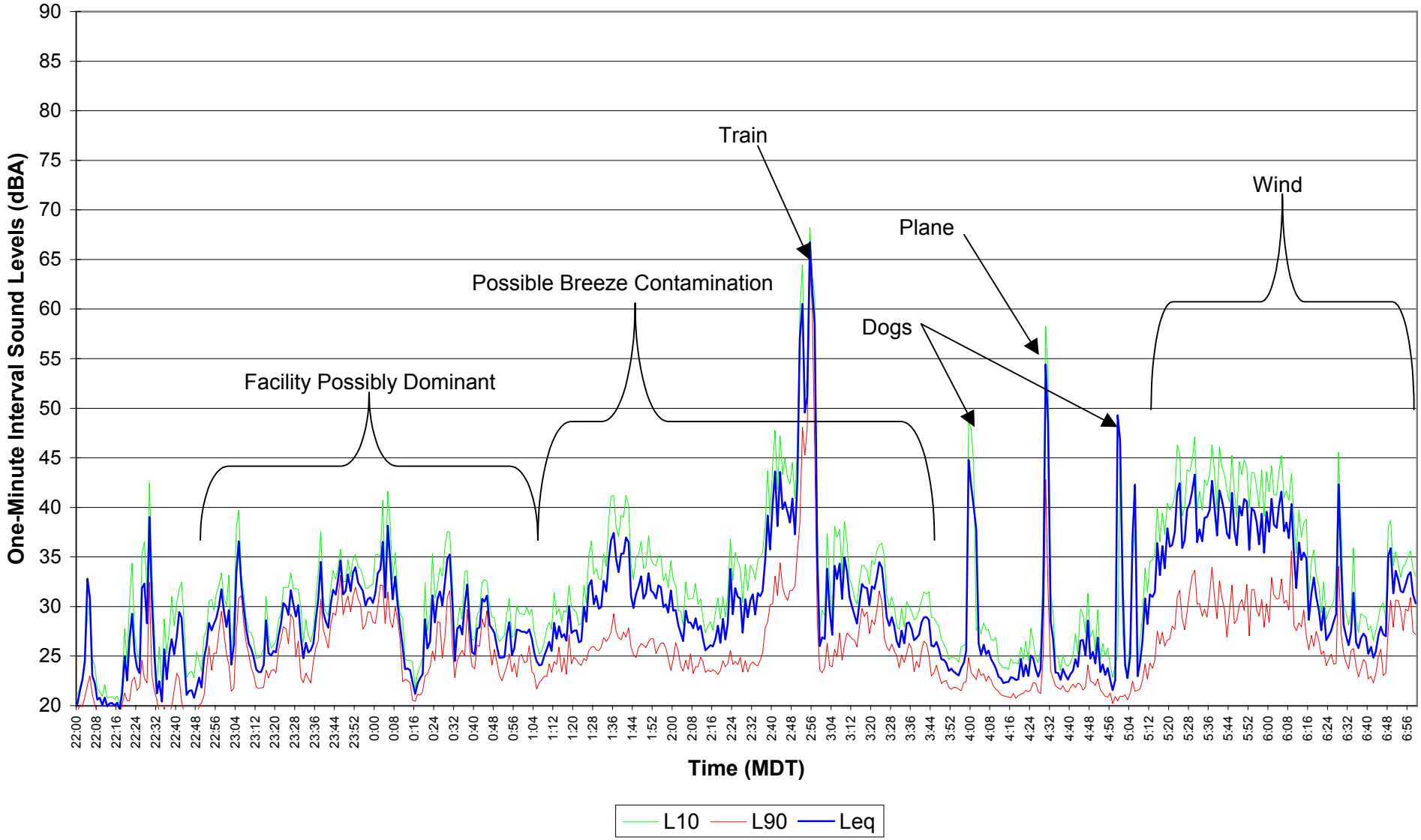


Figure E5.64

EnCana Rosebud

Site 5 Noise Survey

Dec. 14, 2004 07:00 - 14:29

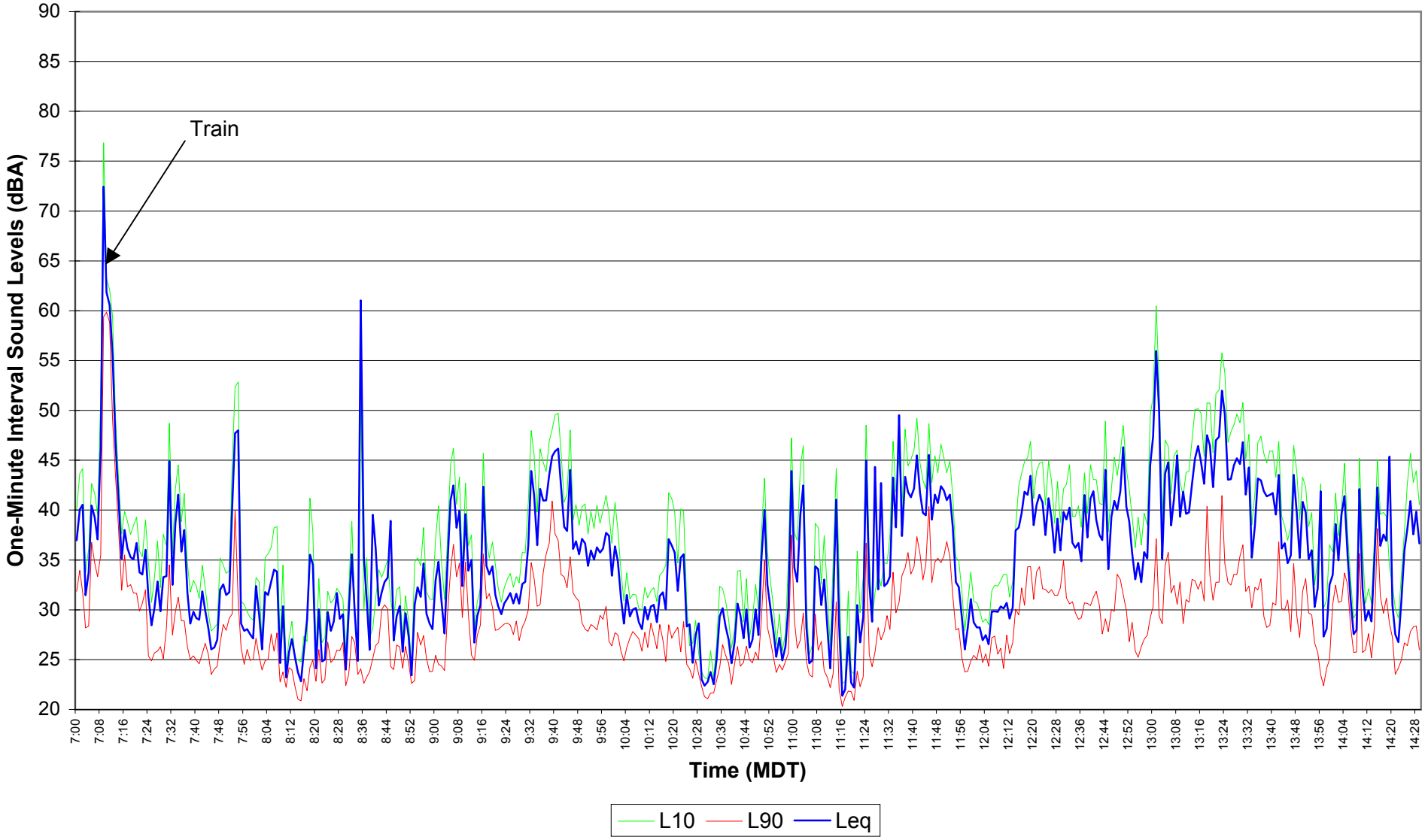


Figure E5.65
EnCana Rosebud
Site 5 Noise Survey
Dec. 14, 2004 14:30 - 21:59

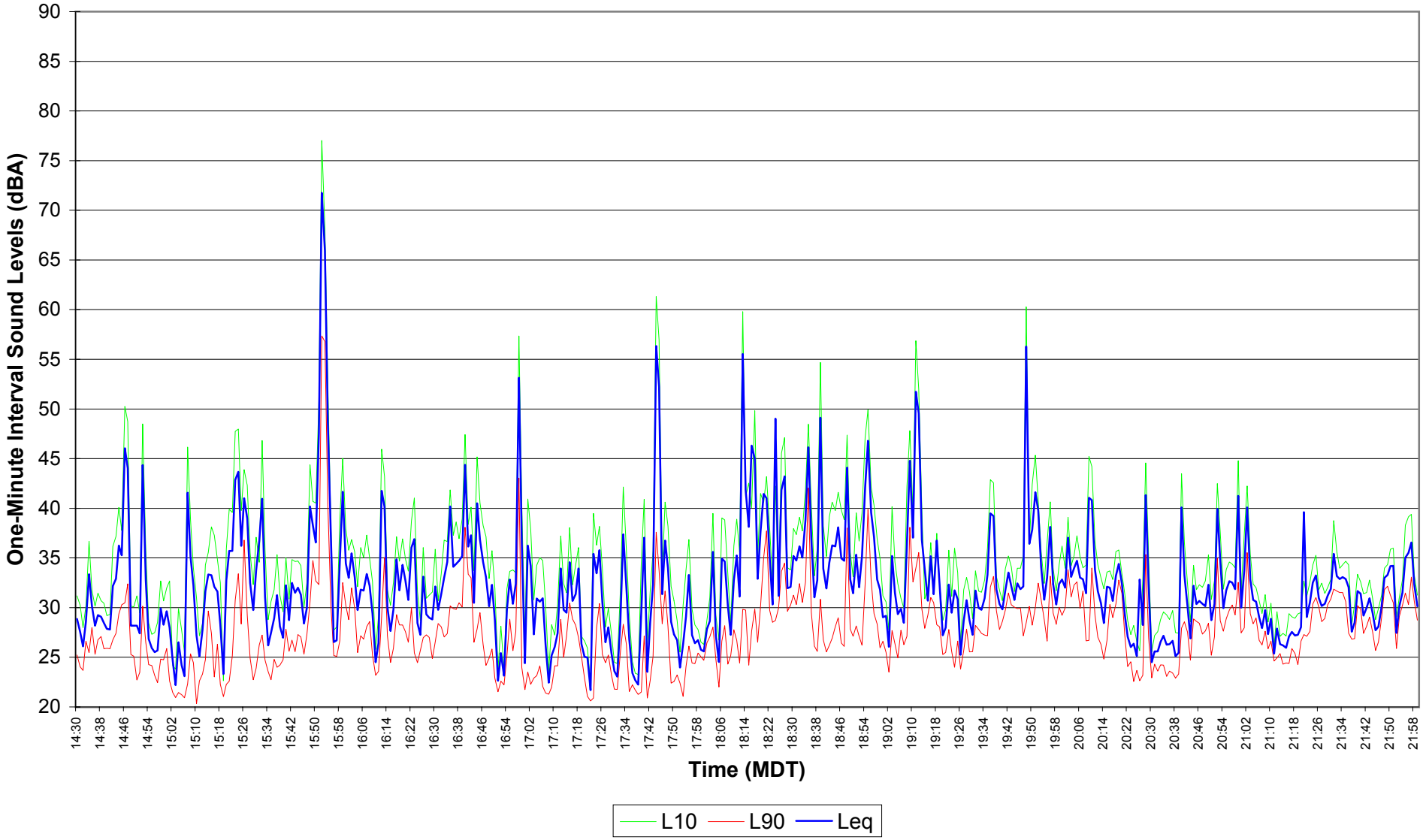


Figure E5.66
EnCana Rosebud
Site 5 Noise Survey
Dec. 14, 2004 - Dec. 15, 2004 22:00 - 06:59

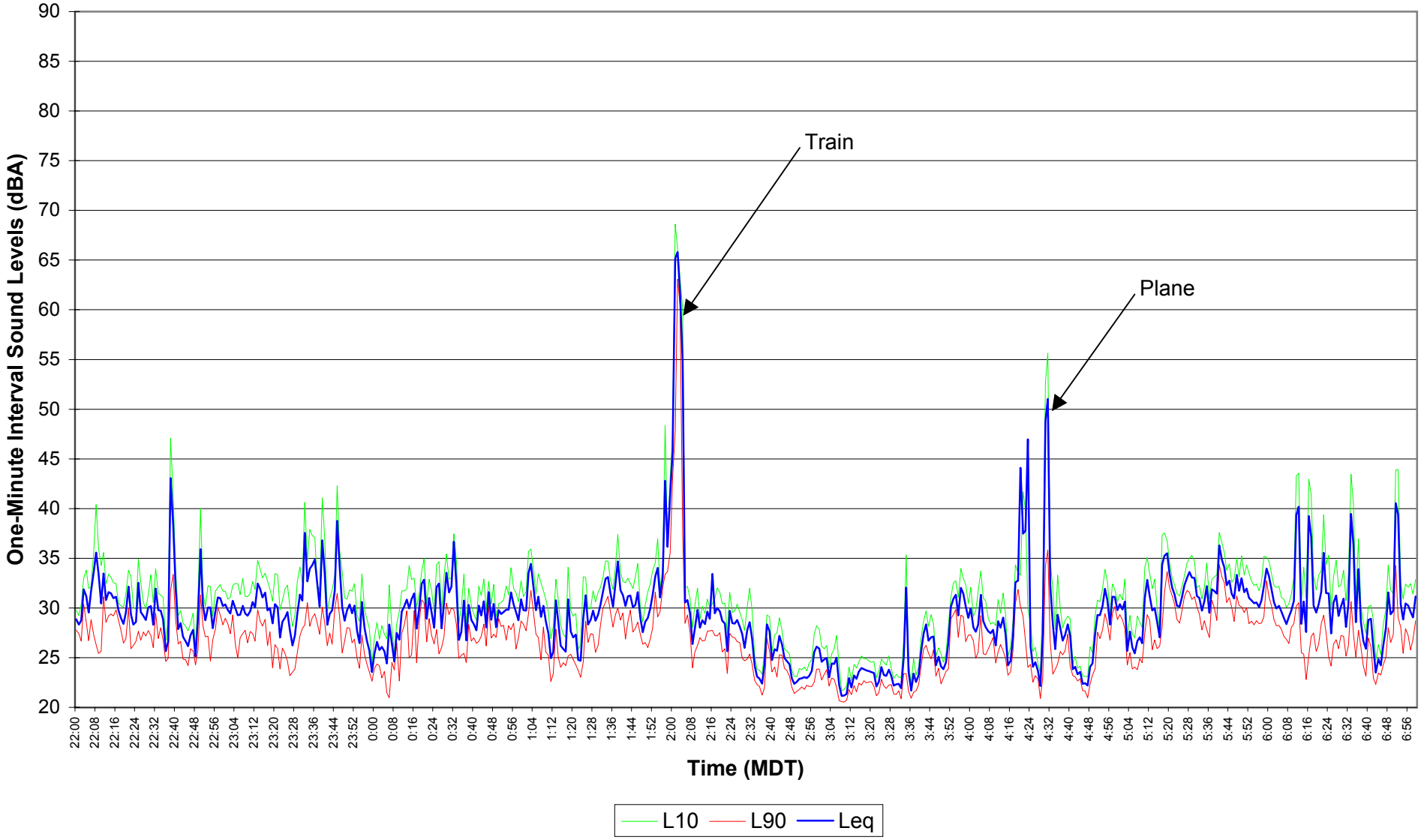


Figure E5.67
EnCana Rosebud
Site 5 Noise Survey
Dec. 15, 2004 07:00 - 14:29

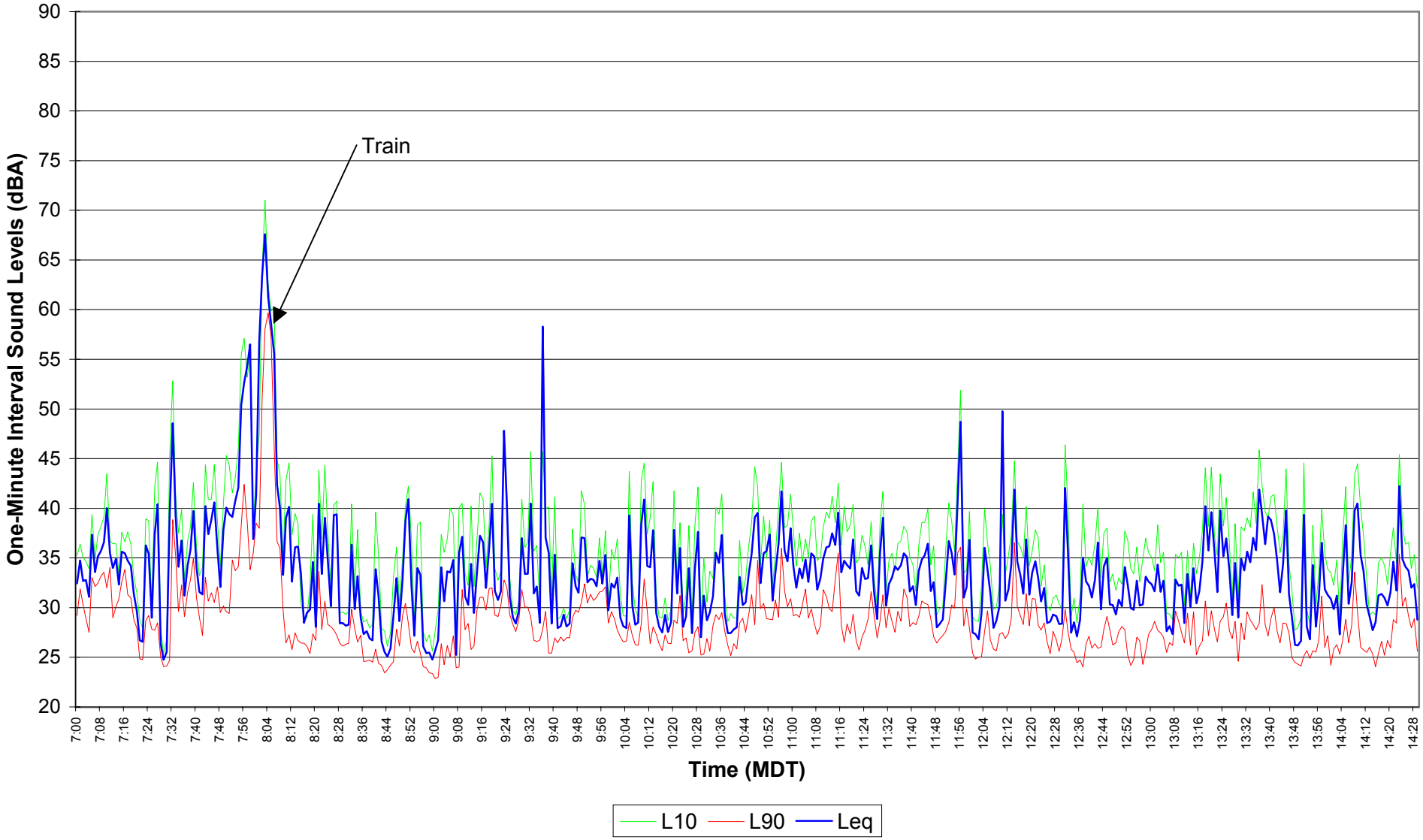


Figure E5.68
EnCana Rosebud
Site 5 Noise Survey
Dec. 15, 2004 14:30 - 21:59

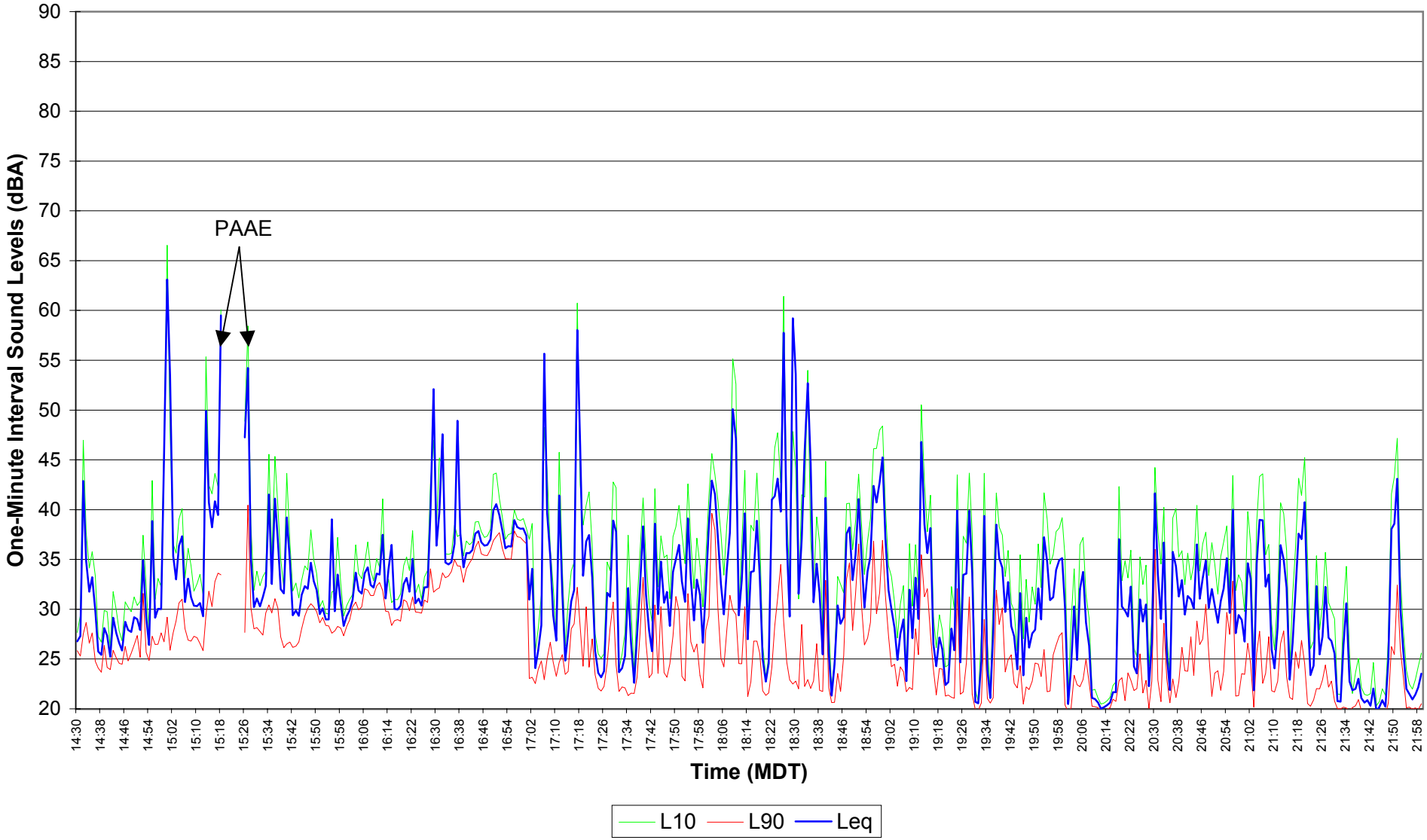


Figure E5.69
EnCana Rosebud
Site 5 Noise Survey
Dec 15, 2004 - Dec 16, 2004 22:00 - 06:59

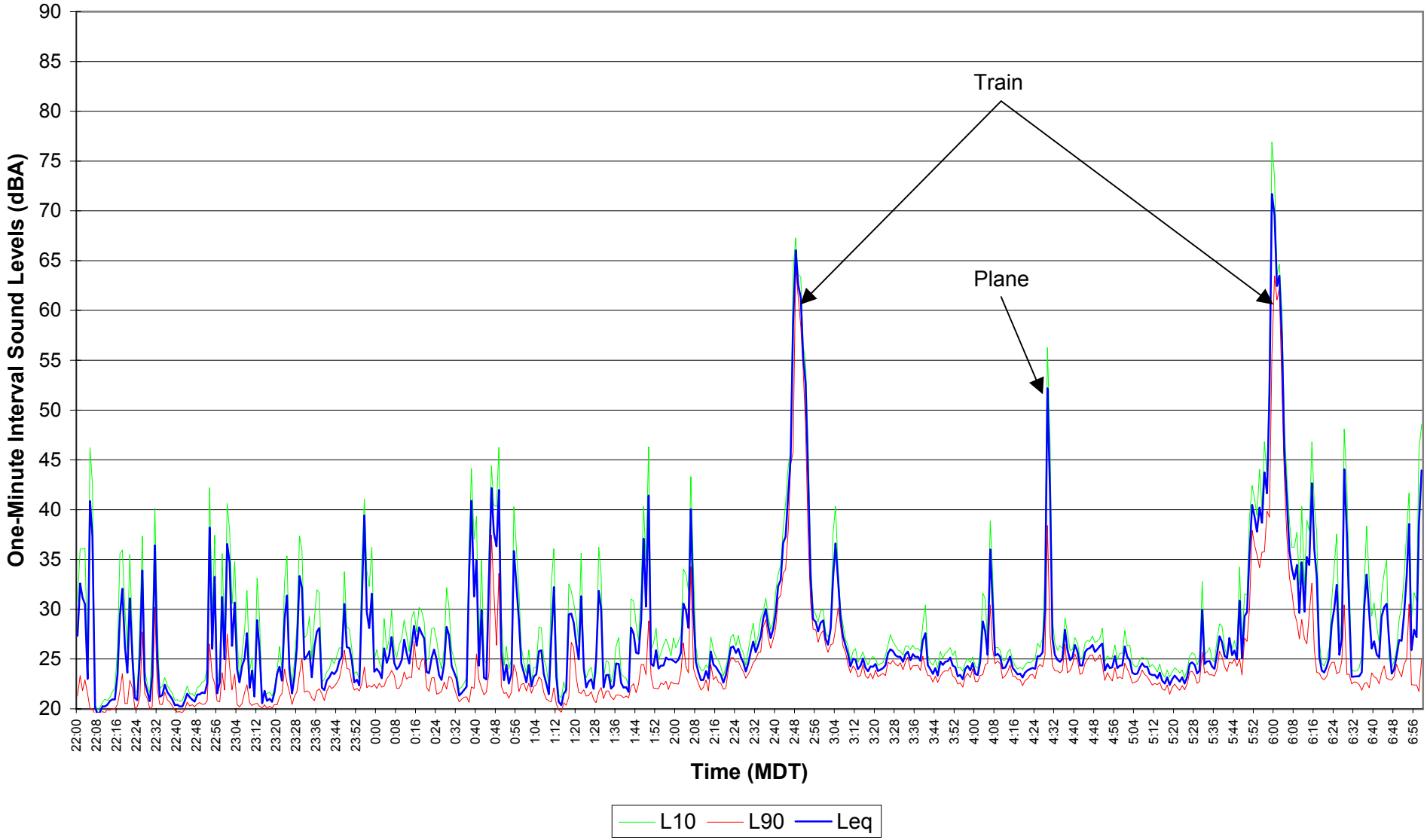


Figure E5.70
EnCana Rosebud
Site 5 Noise Survey
Dec. 16, 2004 07:00 - 14:29

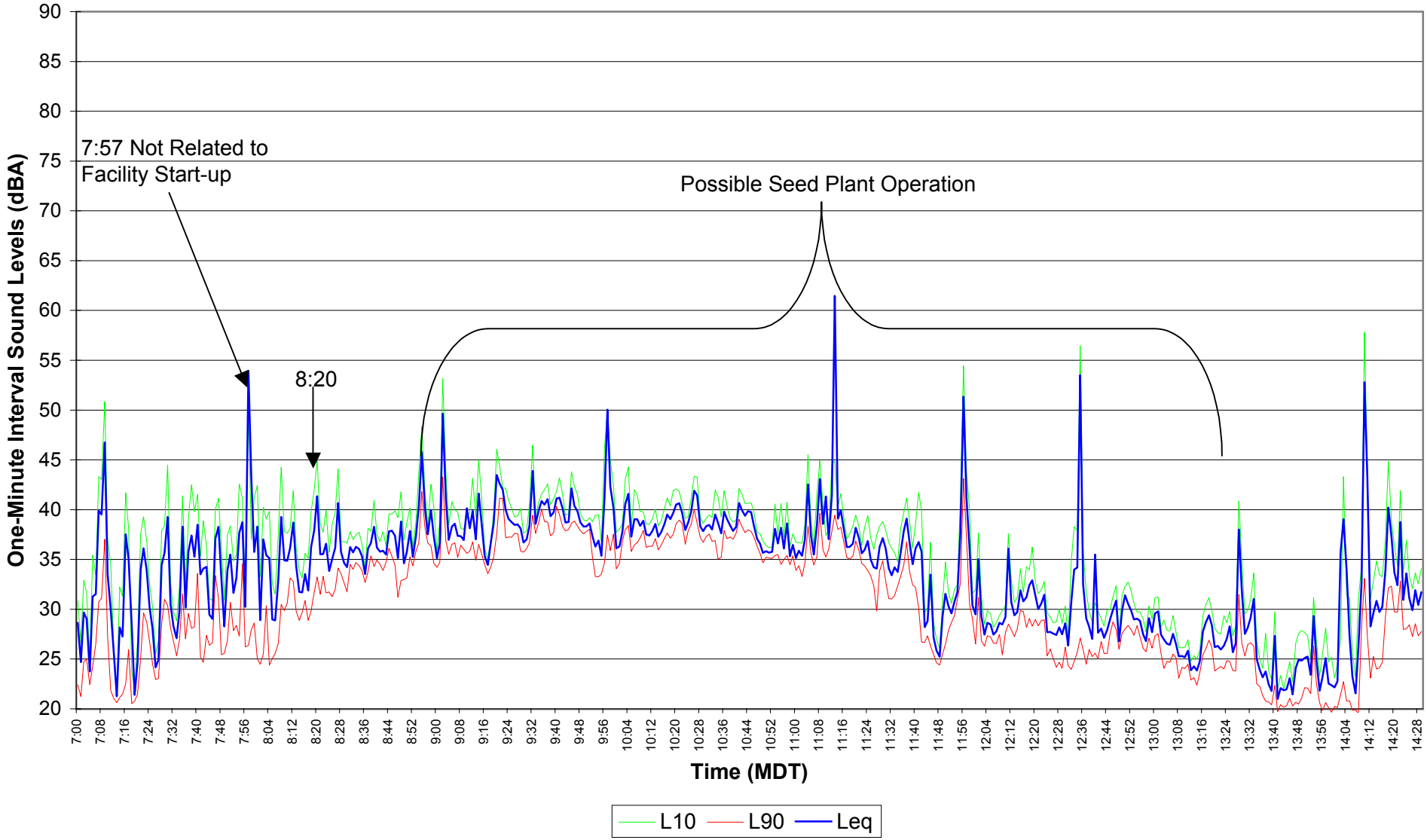


Figure E5.71
EnCana Rosebud
Site 5 Noise Survey
Dec. 16, 2004 14:30 - 21:59

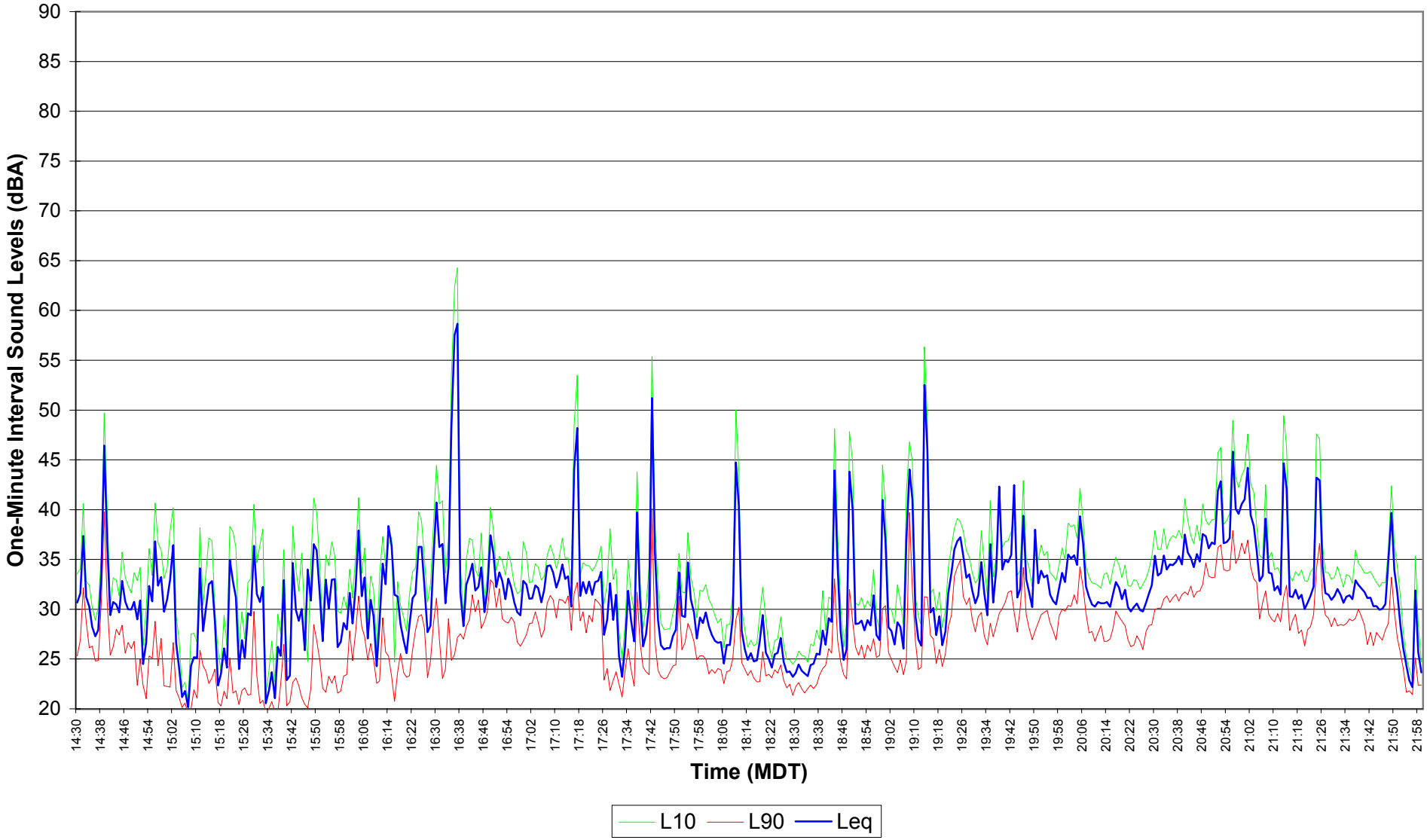


Figure E5.72
EnCana Rosebud
Site 5 Noise Survey
Dec. 16, 2004 - Dec. 17, 2004 22:00 - 06:59

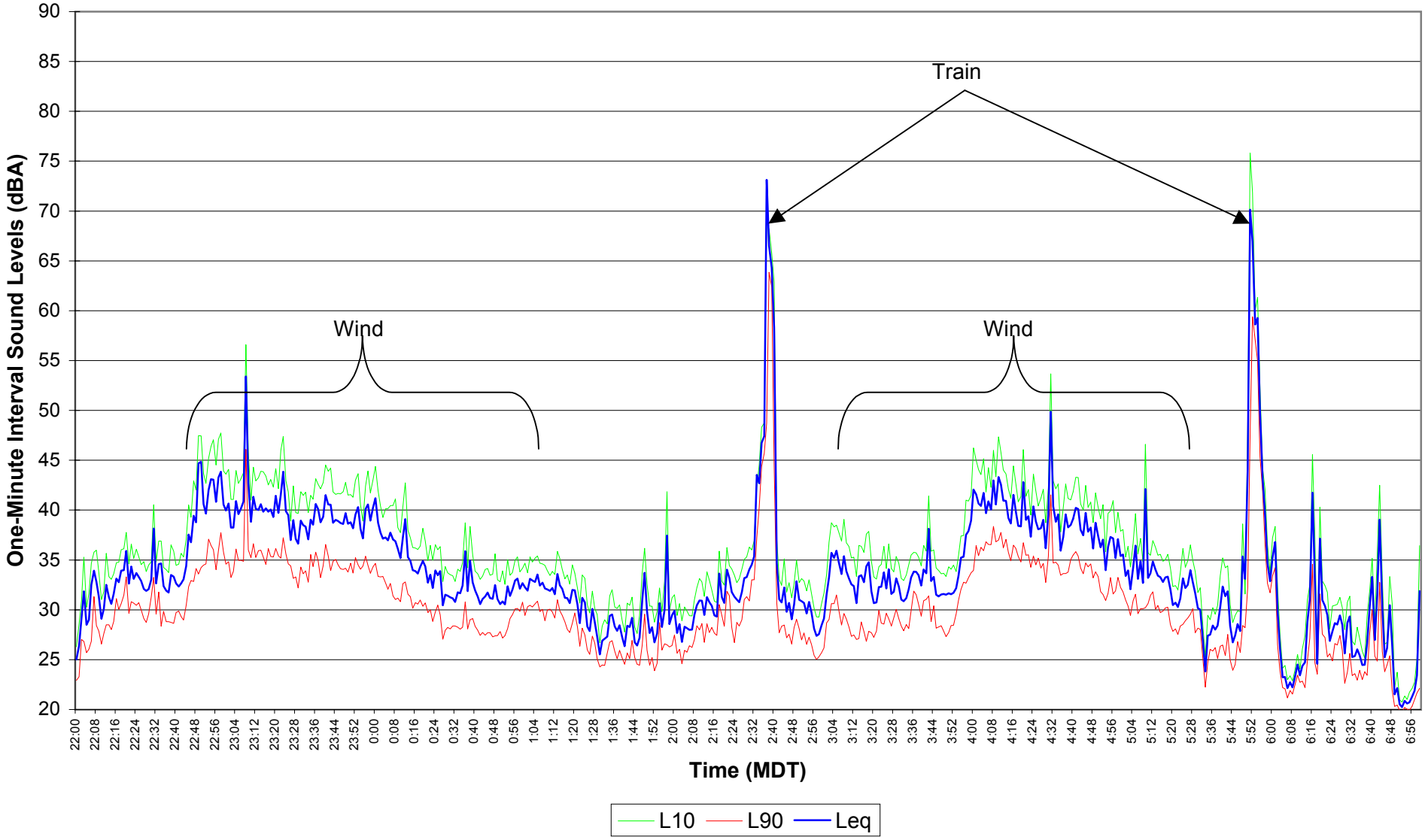


Figure E5.73
EnCana Rosebud
Site 5 Noise Survey
Dec. 17, 2004 07:00 - 14:29

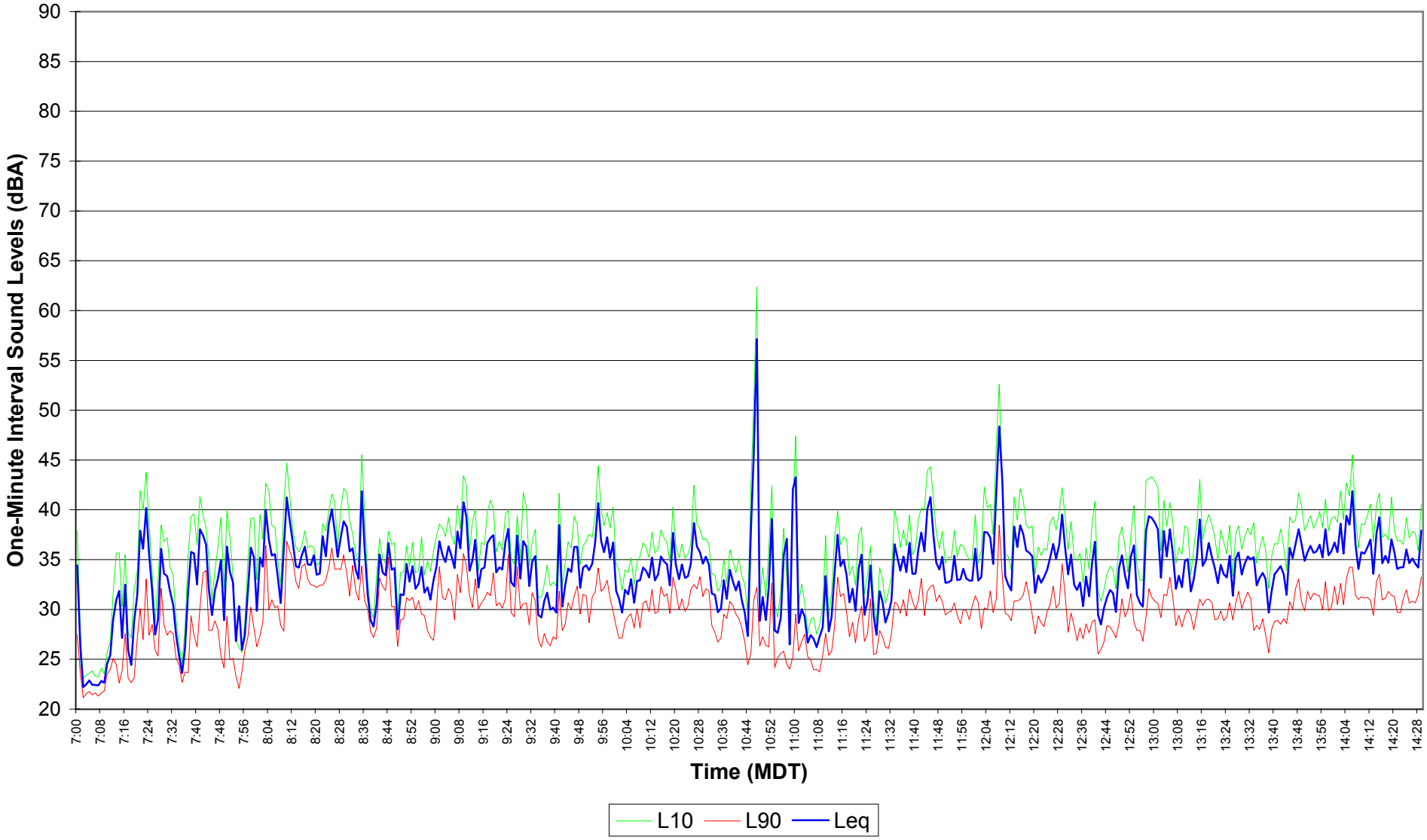


Figure E5.74
EnCana Rosebud
Site 5 Noise Survey
Dec. 17, 2004 14:30 - 21:59

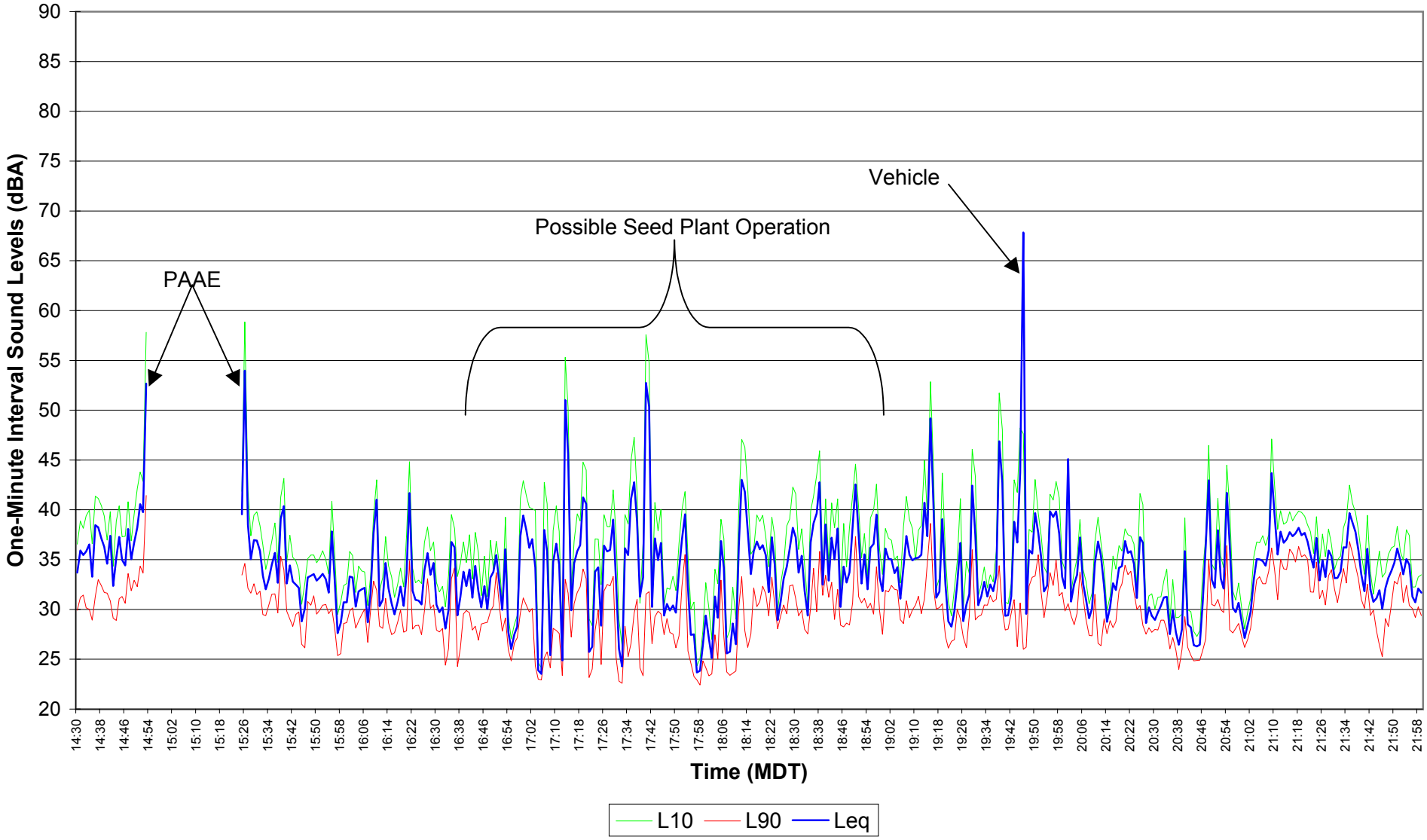


Figure E5.75
EnCana Rosebud
Site 5 Noise Survey
Dec 17, 2004 - Dec 18, 2004 22:00 - 06:59

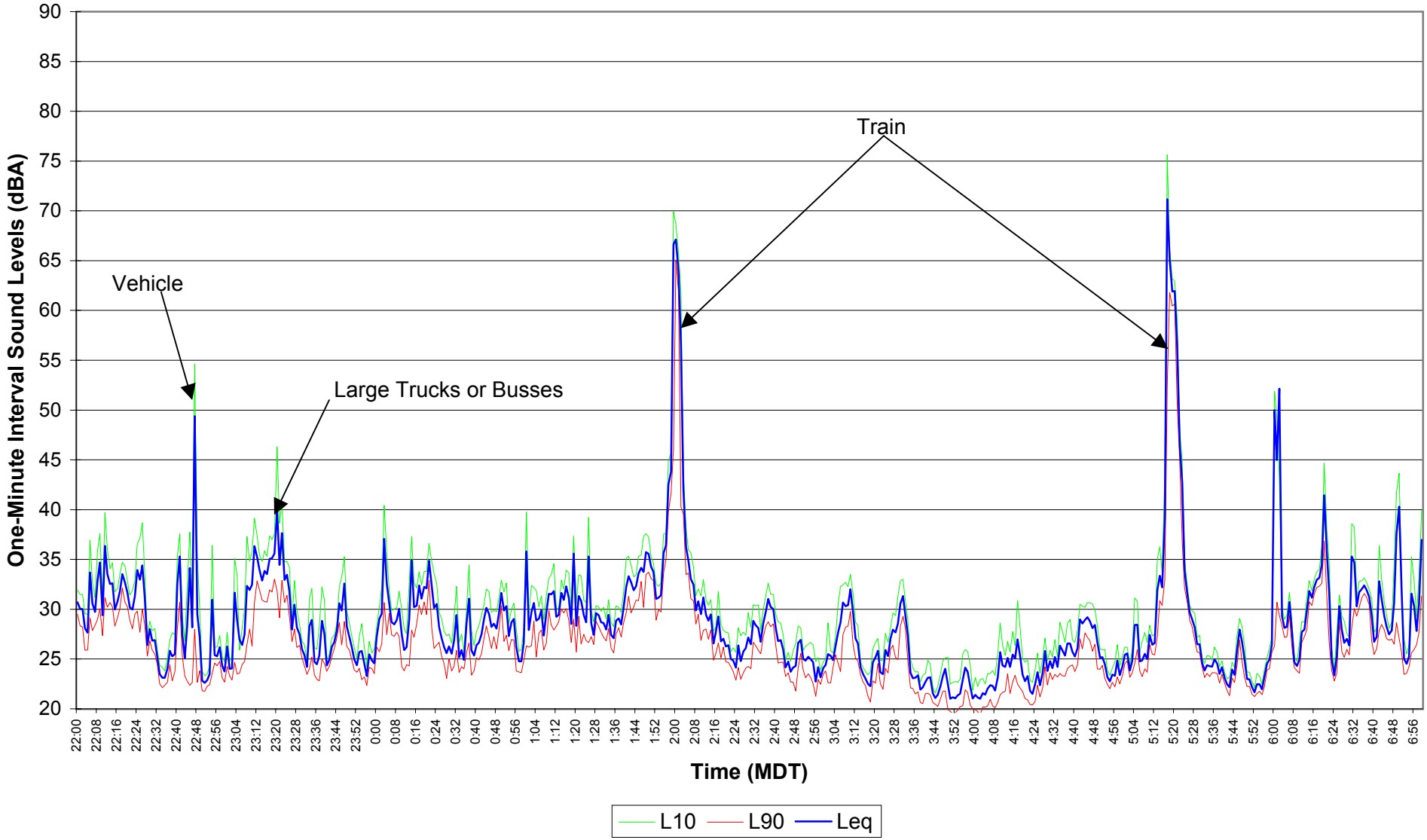


Figure E5.76
EnCana Rosebud
Site 5 Noise Survey
Dec. 18, 2004 07:00 - 14:29

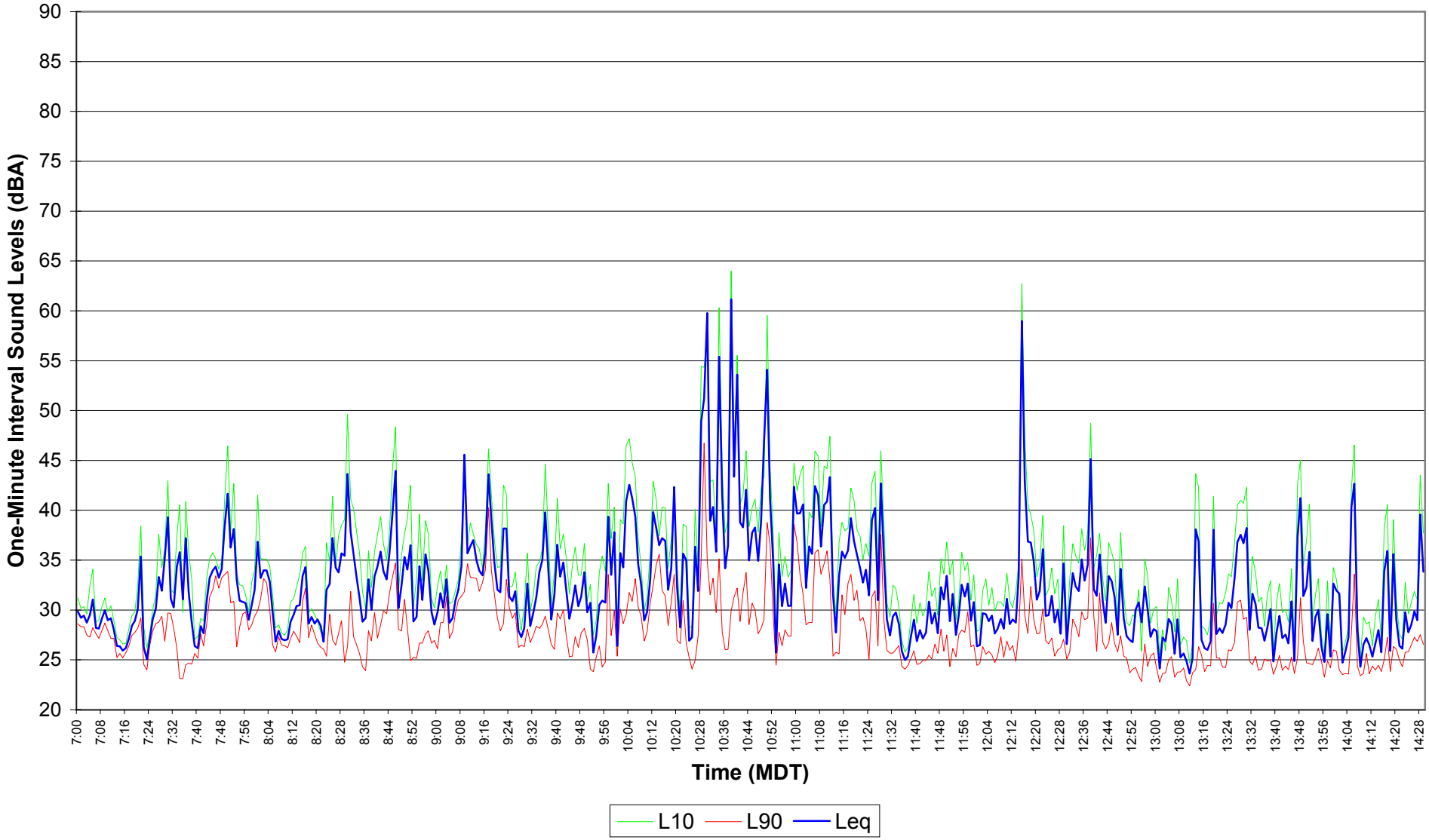


Figure E5.77
EnCana Rosebud
Site 5 Noise Survey
Dec. 18, 2004 14:30 - 21:59

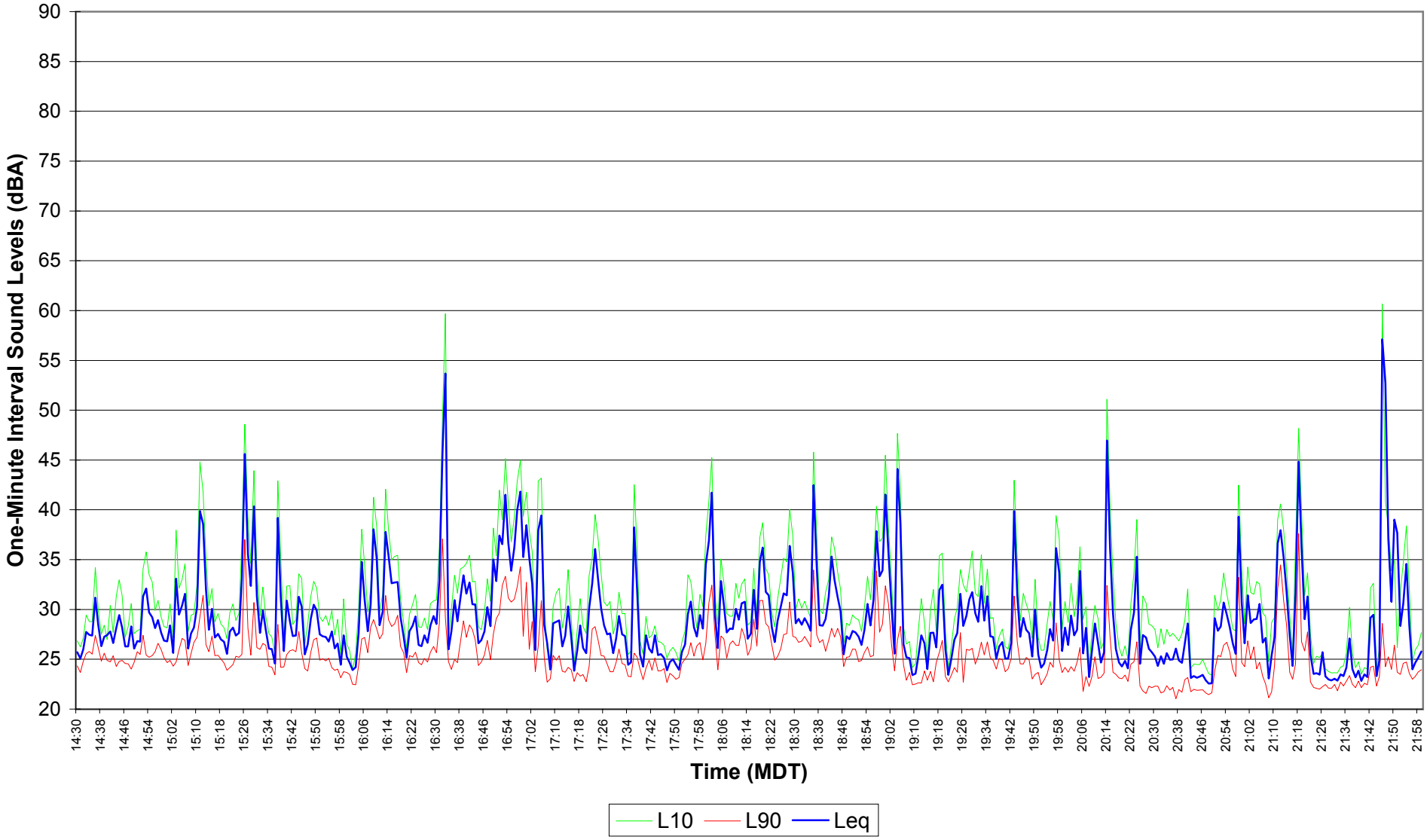


Figure E5.78
EnCana Rosebud
Site 5 Noise Survey
Dec. 18, 2004 - Dec. 19, 2004 22:00 - 06:59

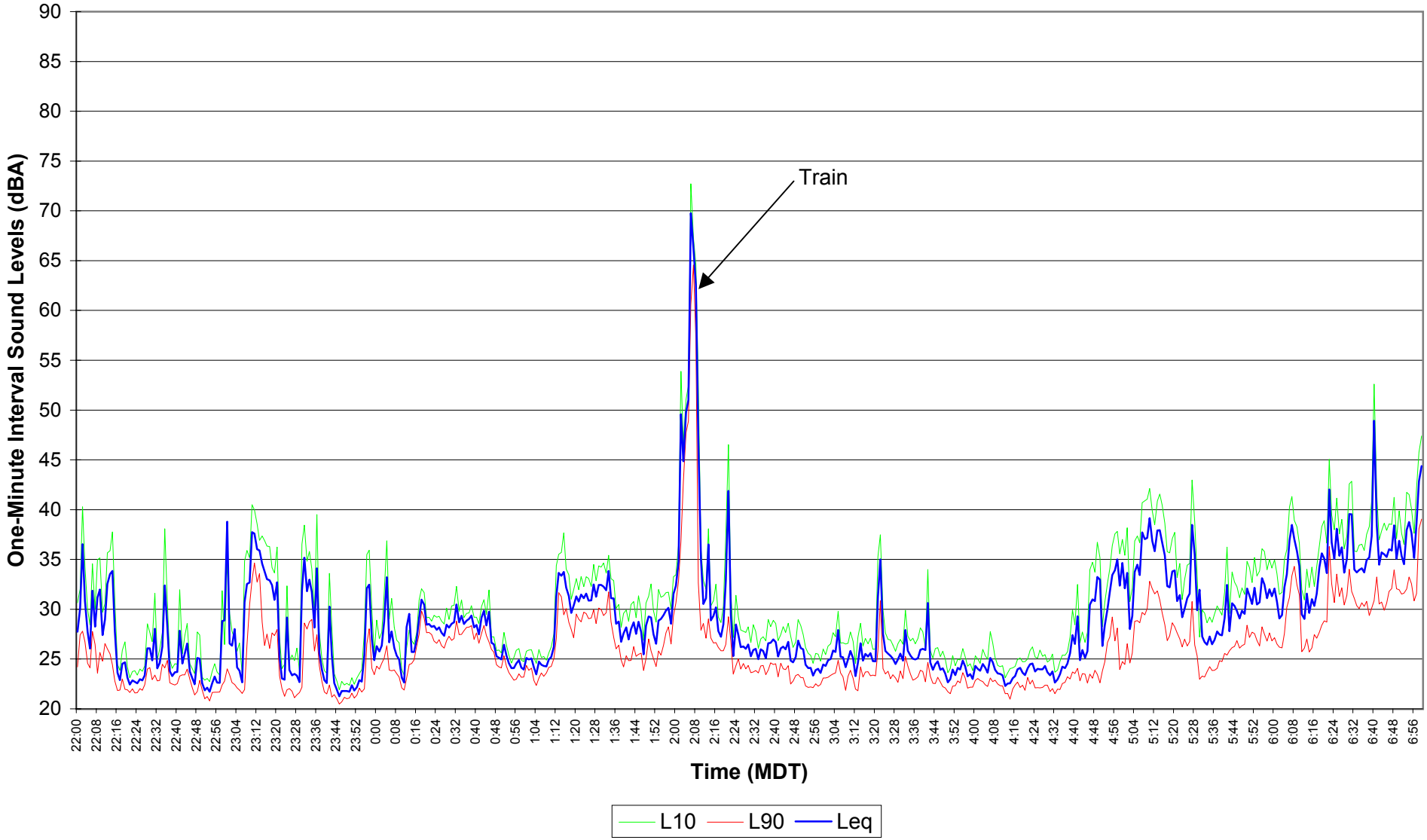


Figure E5.79

EnCana Rosebud

Site 5 Noise Survey

Dec. 19, 2004 07:00 - 14:29

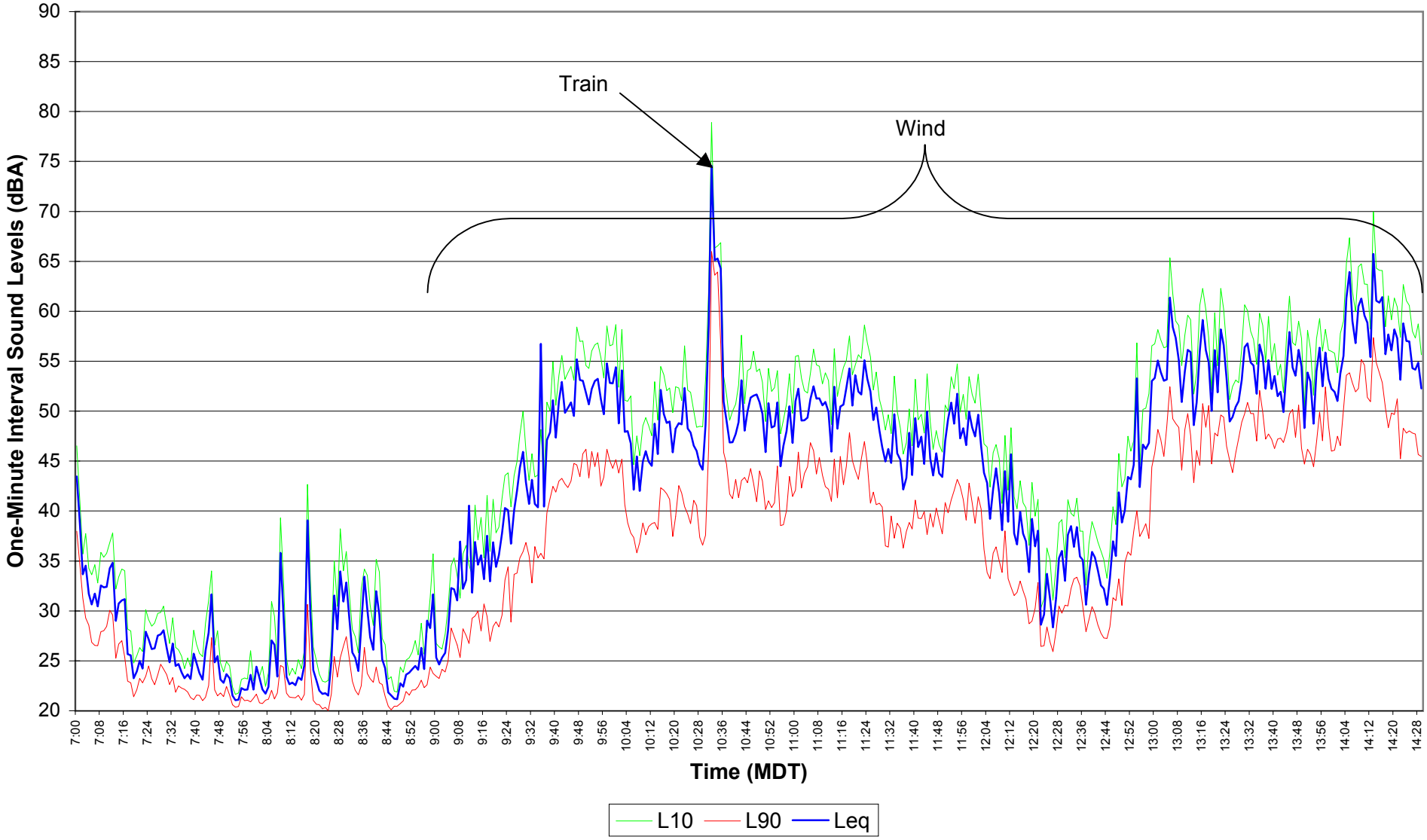


Figure E5.80
EnCana Rosebud
Site 5 Noise Survey
Dec. 19, 2004 14:30 - 21:59

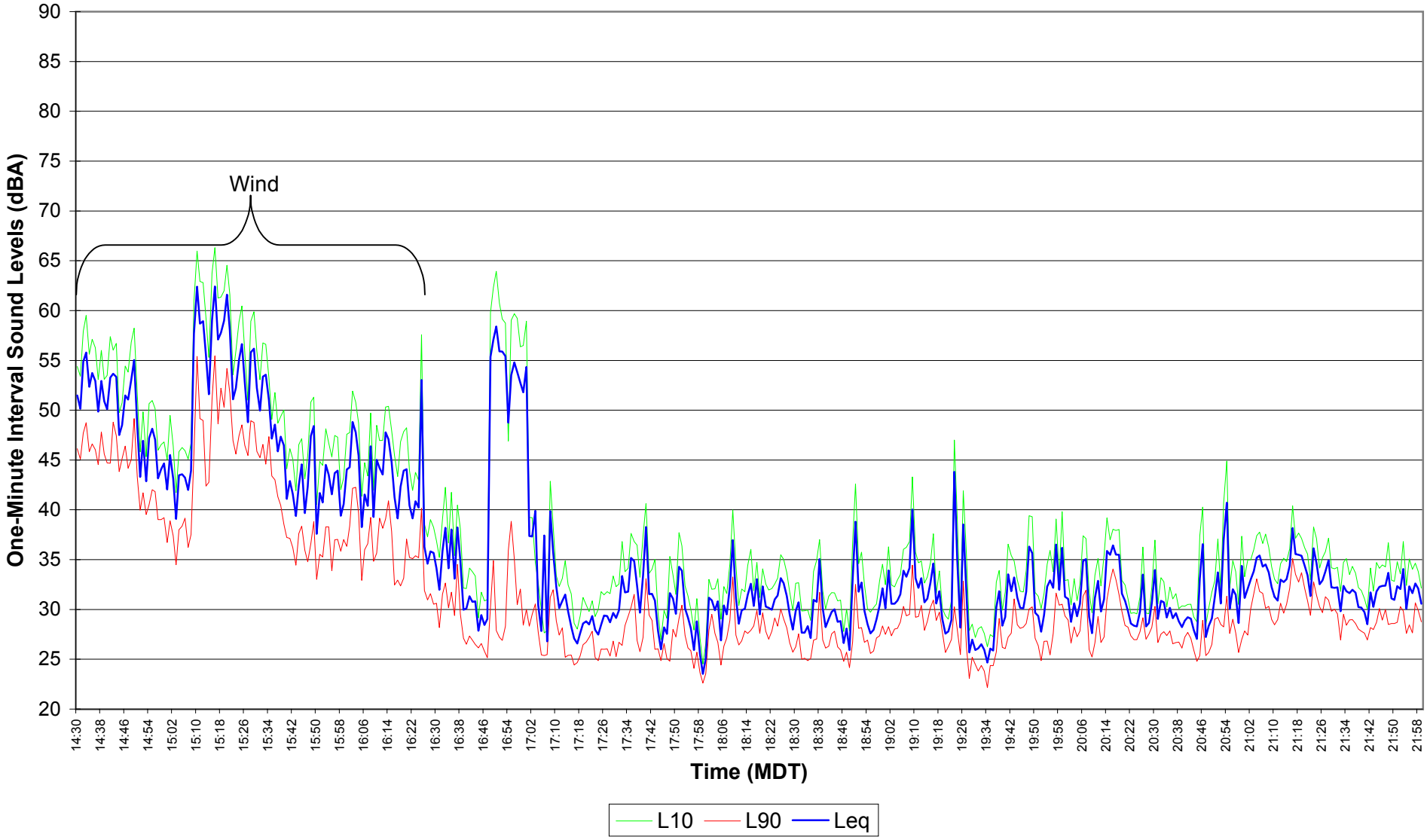


Figure E5.81
EnCana Rosebud
Site 5 Noise Survey
Dec. 19, 2004 - Dec. 20, 2004 22:00 - 06:59

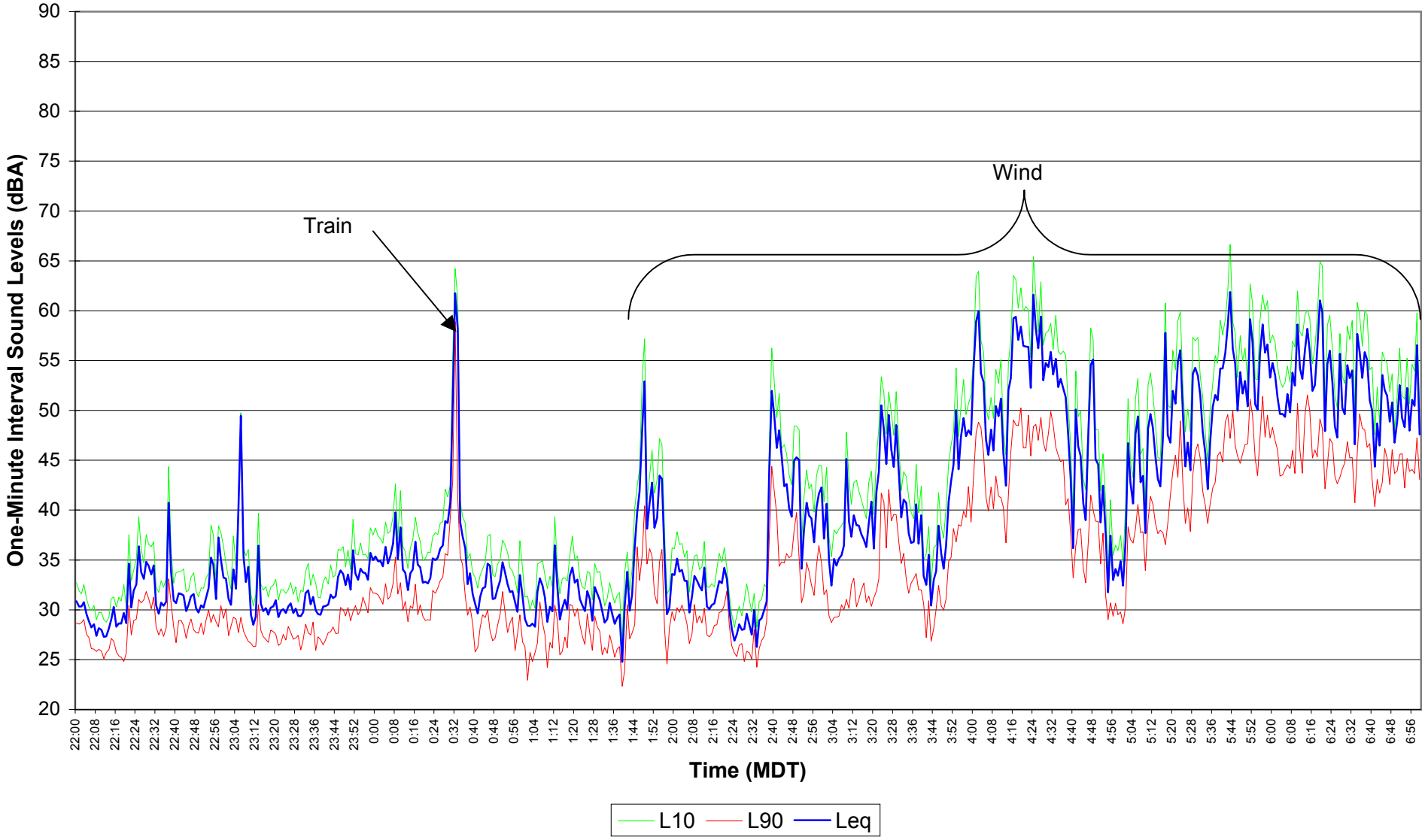
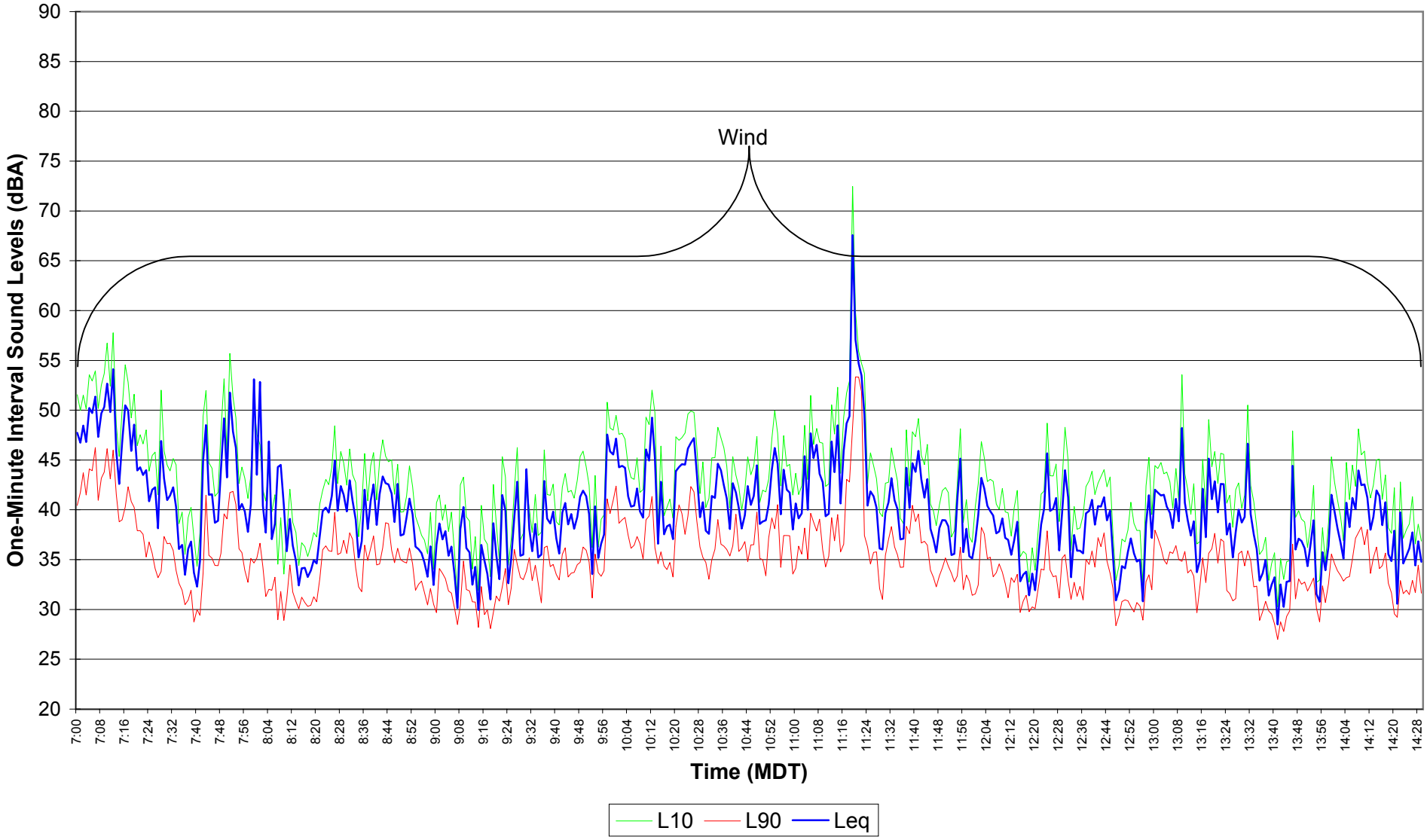


Figure E5.82
EnCana Rosebud
Site 5 Noise Survey
Dec. 20, 2004 07:00 - 14:29



APPENDIX E6

Measurement Results
Graphs of 1-Minute L_{eq}, L_{10} and L_{90} Data
Site 6

Patching Associates Acoustical Engineering Ltd.

Consultants in Acoustics, Noise Control and Vibrations

Table E6.1
EnCana Rosebud
Site 6 Noise Survey
Daily Leq Values

Date	Time	Figure #	Measured		Residual	
			Leq	Hours	Leq	Hours
Nov. 23, 2004	07:00 - 21:59	1, 2	42.0	10.3	37.2	9.9
Nov. 23, 2004 - Nov. 24, 2004	**22:00 - 06:59**	**3**	**42.9**	**9.0**	**32.6**	**8.9**
Nov. 24, 2004	07:00 - 21:59	4, 5	46.2	15.0	38.4	14.5
Nov 24, 2004 - Nov 25, 2004	**22:00 - 06:59**	**6**	**42.8**	**9.0**	**33.9**	**8.7**
Nov. 25, 2004	07:00 - 21:59	7, 8	42.5	15.0	38.6	14.8
Nov. 25, 2004 - Nov. 26, 2004	**22:00 - 06:59**	**9**	**41.6**	**9.0**	**35.2**	**8.8**
Nov. 26, 2004	07:00 - 21:59	10, 11	42.9	14.7	37.8	14.6
Nov 26, 2004 - Nov 27, 2004	**22:00 - 06:59**	**12**	**45.5**	**9.0**	**32.8**	**8.8**
Nov. 27, 2004	07:00 - 21:59	13, 14	40.3	15.0	38.5	14.9
Nov. 27, 2004 - Nov. 28, 2004	**22:00 - 06:59**	**15**	**44.3**	**9.0**	**33.0**	**8.9**
Nov. 28, 2004	07:00 - 21:59	16, 17	37.9	15.0	37.5	15.0
Nov. 28, 2004 - Nov. 29, 2004	**22:00 - 06:59**	**18**	**43.6**	**9.0**	**30.2**	**8.8**
Nov. 29, 2004	07:00 - 21:59	19, 20	39.4	14.6	37.0	14.4
Nov. 29, 2004 - Nov. 30, 2004	**22:00 - 06:59**	**21**	**47.9**	**9.0**	**33.1**	**8.8**
Nov. 30, 2004	07:00 - 21:59	22, 23	41.0	15.0	38.1	14.8
Nov. 30, 2004 - Dec. 01, 2004	**22:00 - 06:59**	**24**	**42.9**	**9.0**	**33.0**	**8.8**
Dec. 01, 2004	07:00 - 21:59	25, 26	39.9	15.0	37.2	14.8
Dec. 01, 2004 - Dec. 02, 2004	**22:00 - 06:59**	**27**	**43.2**	**9.0**	**33.0**	**8.8**
Dec. 02, 2004	07:00 - 21:59	28, 29	45.5	15.0	42.0	13.5
Dec. 02, 2004 - Dec. 03, 2004	**22:00 - 06:59**	**30**	**44.1**	**9.0**	**33.8**	**8.7**
Dec. 03, 2004	07:00 - 21:59	31, 32	43.8	14.4	39.8	13.9
Dec. 03, 2004 - Dec. 04, 2004	**22:00 - 06:59**	**33**	**39.9**	**9.0**	**33.9**	**8.9**
Dec. 04, 2004	07:00 - 21:59	34, 35	39.2	15.0	38.7	14.9
Dec. 04, 2004 - Dec. 05, 2004	**22:00 - 06:59**	**36**	**42.2**	**9.0**	**32.8**	**8.9**
Dec. 05, 2004	07:00 - 21:59	37, 38	36.4	15.0	36.3	15.0
Dec. 05, 2004 - Dec. 06, 2004	**22:00 - 06:59**	**39**	**39.2**	**9.0**	**30.7**	**8.9**
Dec. 06, 2004	07:00 - 21:59	40, 41	40.2	14.7	35.1	14.5
Dec. 06, 2004 - Dec. 07, 2004	**22:00 - 06:59**	**42**	**34.3**	**9.0**	**27.8**	**8.4**
Dec. 07, 2004	07:00 - 21:59	43, 44	39.7	15.0	34.8	14.7
Dec. 07, 2004 - Dec. 08, 2004	**22:00 - 06:59**	**45**	**36.3**	**9.0**	**30.9**	**8.9**
Dec. 08, 2004	07:00 - 21:59	46, 47	40.0	15.0	35.3	14.8
Dec. 08, 2004 - Dec. 09, 2004	**22:00 - 06:59**	**48**	**41.1**	**9.0**	**30.9**	**8.9**
Dec. 09, 2004	07:00 - 21:59	49, 50	40.1	15.0	37.3	14.9
Dec. 09, 2004 - Dec. 10, 2004	**22:00 - 06:59**	**51**	**43.4**	**9.0**	**32.7**	**8.9**
Dec. 10, 2004	07:00 - 21:59	52, N/A	38.4	4.4	38.2	4.4
Dec. 10, 2004 - Dec. 11, 2004	**22:00 - 06:59**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Dec. 11, 2004	07:00 - 21:59	N/A	N/A	N/A	N/A	N/A
Dec. 11, 2004 - Dec. 12, 2004	**22:00 - 06:59**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Dec. 12, 2004	07:00 - 21:59	N/A	N/A	N/A	N/A	N/A
Dec. 12, 2004 - Dec. 13, 2004	**22:00 - 06:59**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Dec. 13, 2004	07:00 - 21:59	N/A, 62	43.1	6.1	41.3	6.0
Dec. 13, 2004 - Dec. 14, 2004	**22:00 - 06:59**	**63**	**42.7**	**9.0**	**33.6**	**8.9**
Dec. 14, 2004	07:00 - 21:59	64, 65	44.0	15.0	38.5	14.7
Dec. 14, 2004 - Dec. 15, 2004	**22:00 - 06:59**	**66**	**42.9**	**9.0**	**32.1**	**8.7**
Dec. 15, 2004	07:00 - 21:59	67, 68	43.4	15.0	38.3	14.7
Dec 15, 2004 - Dec 16, 2004	**22:00 - 06:59**	**69**	**43.8**	**9.0**	**32.6**	**8.5**
Dec. 16, 2004	07:00 - 21:59	70, 71	40.9	15.0	38.1	14.9
Dec. 16, 2004 - Dec. 17, 2004	**22:00 - 06:59**	**72**	**45.1**	**9.0**	**34.0**	**5.5**
Dec. 17, 2004	07:00 - 21:59	73, 74	41.5	14.8	38.8	14.6
Dec 17, 2004 - Dec 18, 2004	**22:00 - 06:59**	**75**	**43.9**	**9.0**	**33.2**	**8.8**
Dec. 18, 2004	07:00 - 21:59	76, 77	42.0	15.0	40.0	14.7
Dec. 18, 2004 - Dec. 19, 2004	**22:00 - 06:59**	**78**	**44.3**	**9.0**	**33.6**	**8.9**
Dec. 19, 2004	07:00 - 21:59	79, 80	49.1	15.0	42.2	12.8
Dec. 19, 2004 - Dec. 20, 2004	**22:00 - 06:59**	**81**	**49.9**	**9.0**	**33.7**	**4.6**
Dec. 20, 2004	07:00 - 21:59	82, 83	49.0	37.5	43.0	7.5

Figure E6.1

EnCana Rosebud

Site 6 Noise Survey

Nov. 23, 2004 07:00 - 14:29

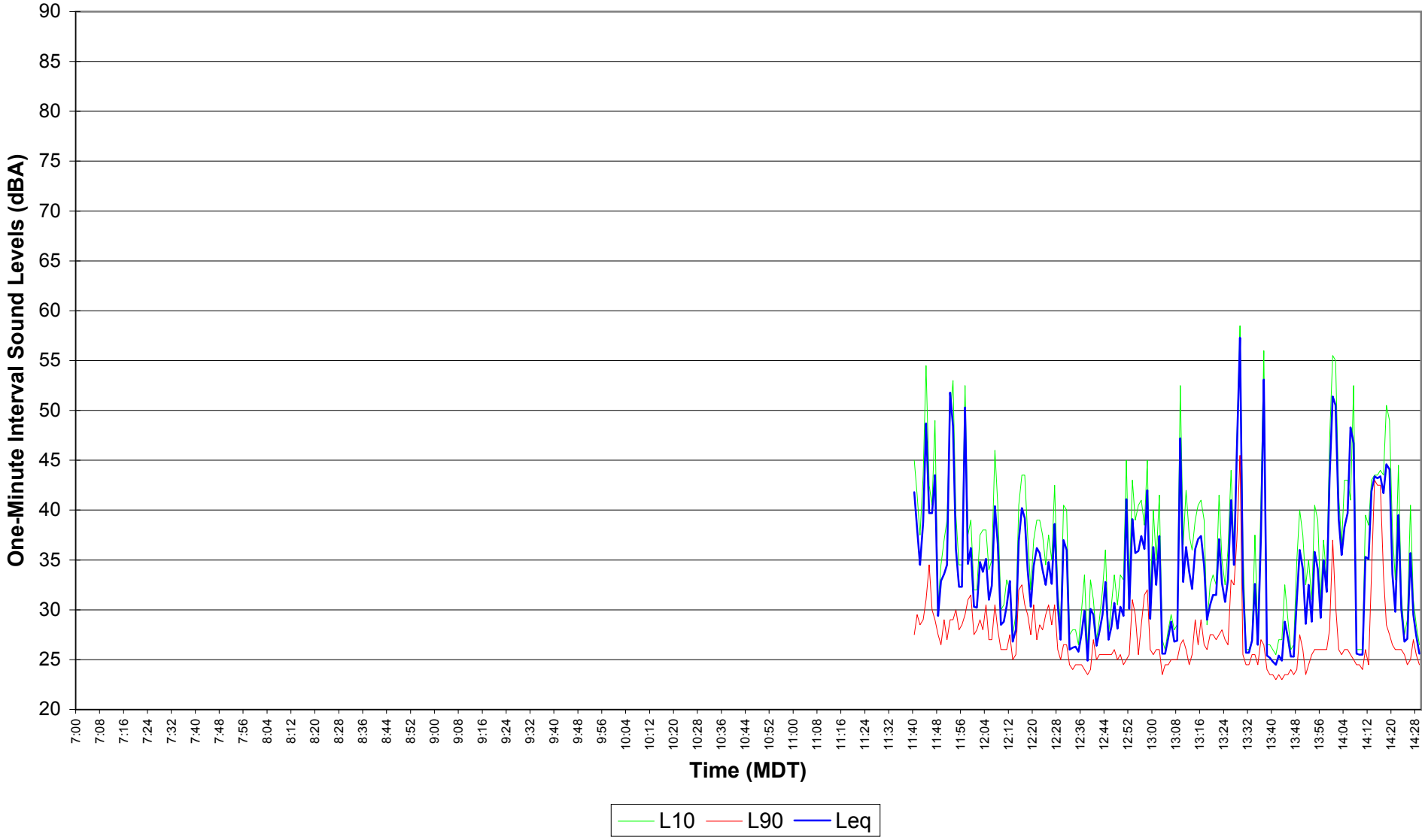


Figure E6.2
EnCana Rosebud
Site 6 Noise Survey
Nov. 23, 2004 14:30 - 21:59

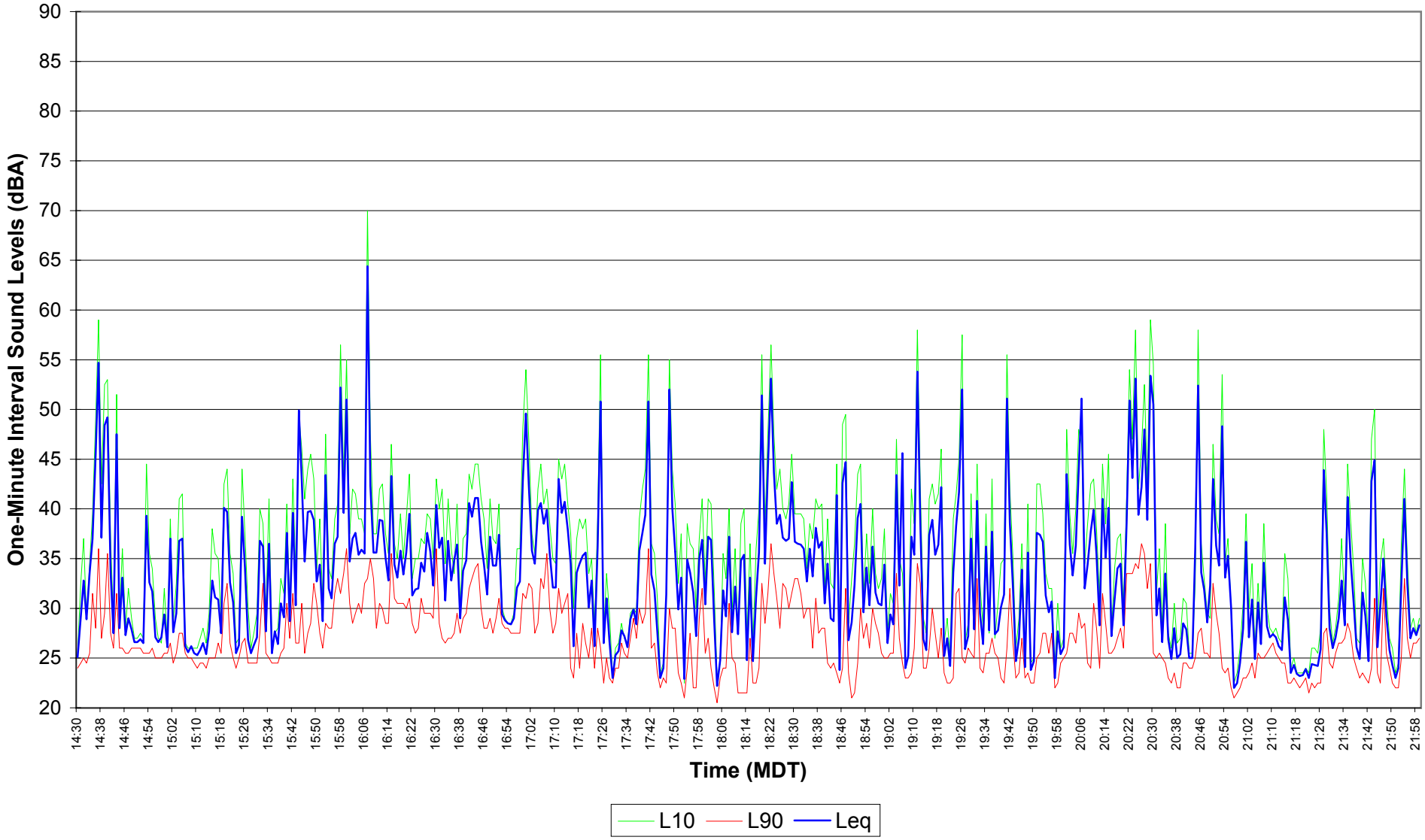


Figure E6.3
EnCana Rosebud
Site 6 Noise Survey
Nov. 23, 2004 - Nov. 24, 2004 22:00 - 06:59

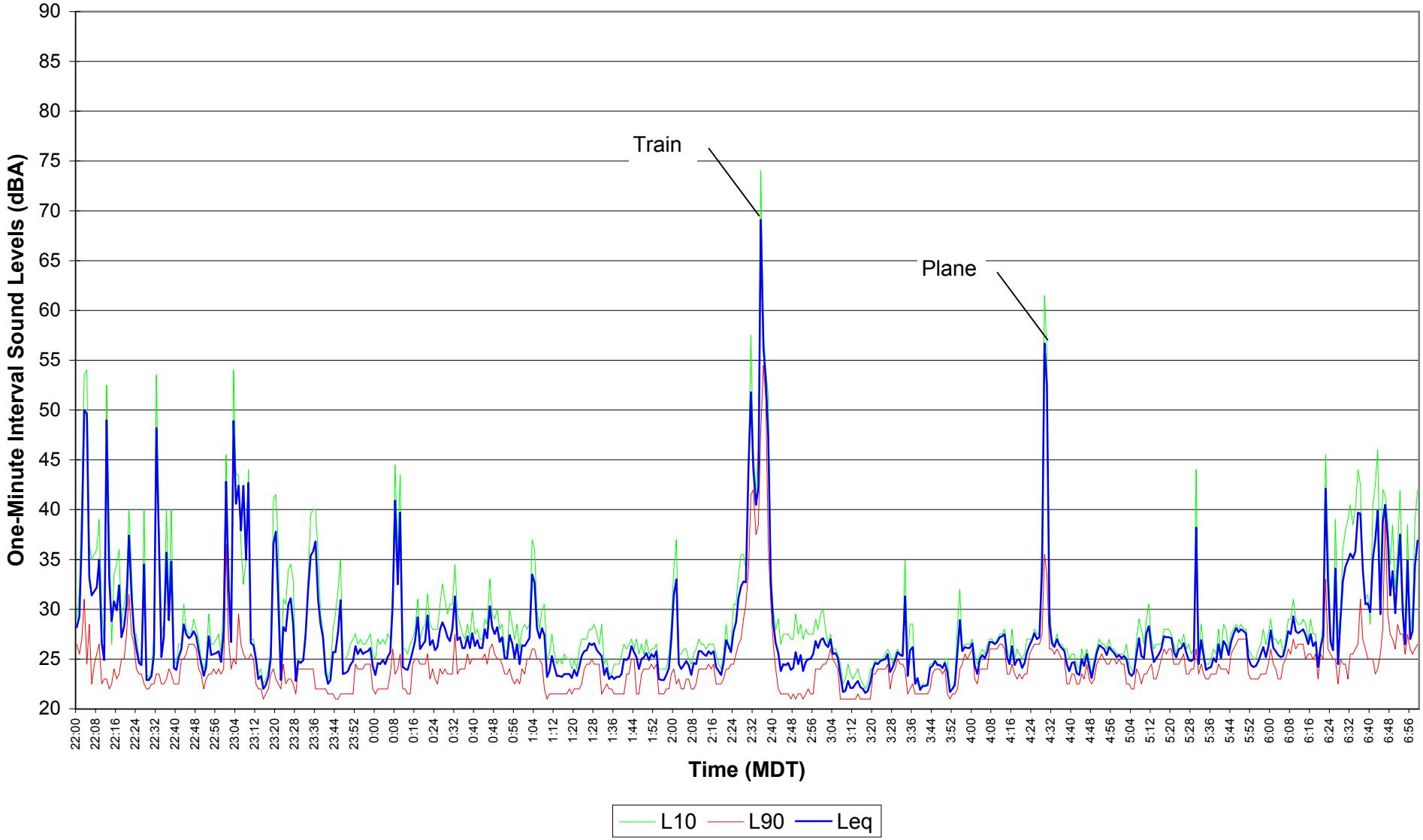


Figure E6.4
EnCana Rosebud
Site 6 Noise Survey
Nov. 24, 2004 07:00 - 14:29

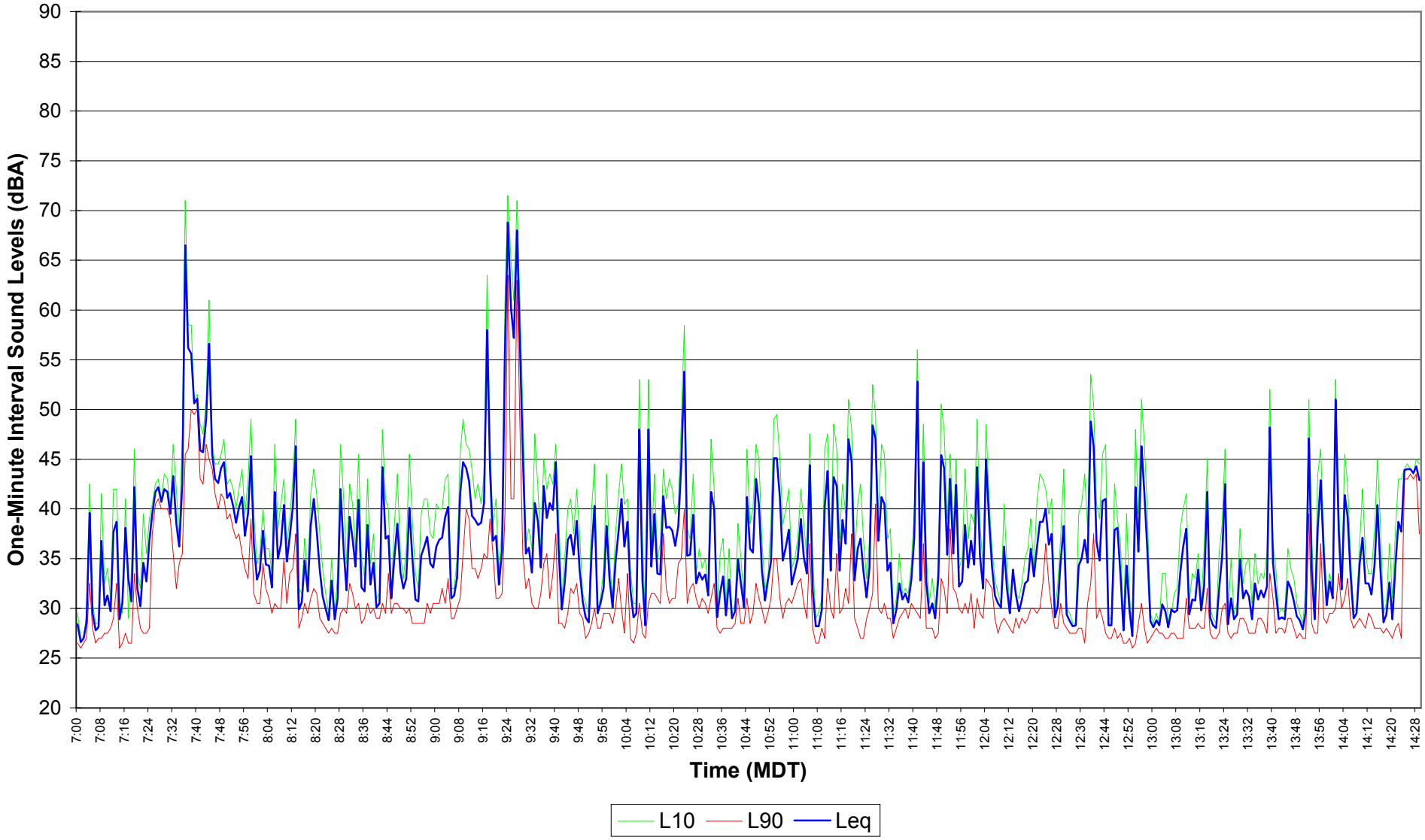


Figure E6.5
EnCana Rosebud
Site 6 Noise Survey
Nov. 24, 2004 14:30 - 21:59

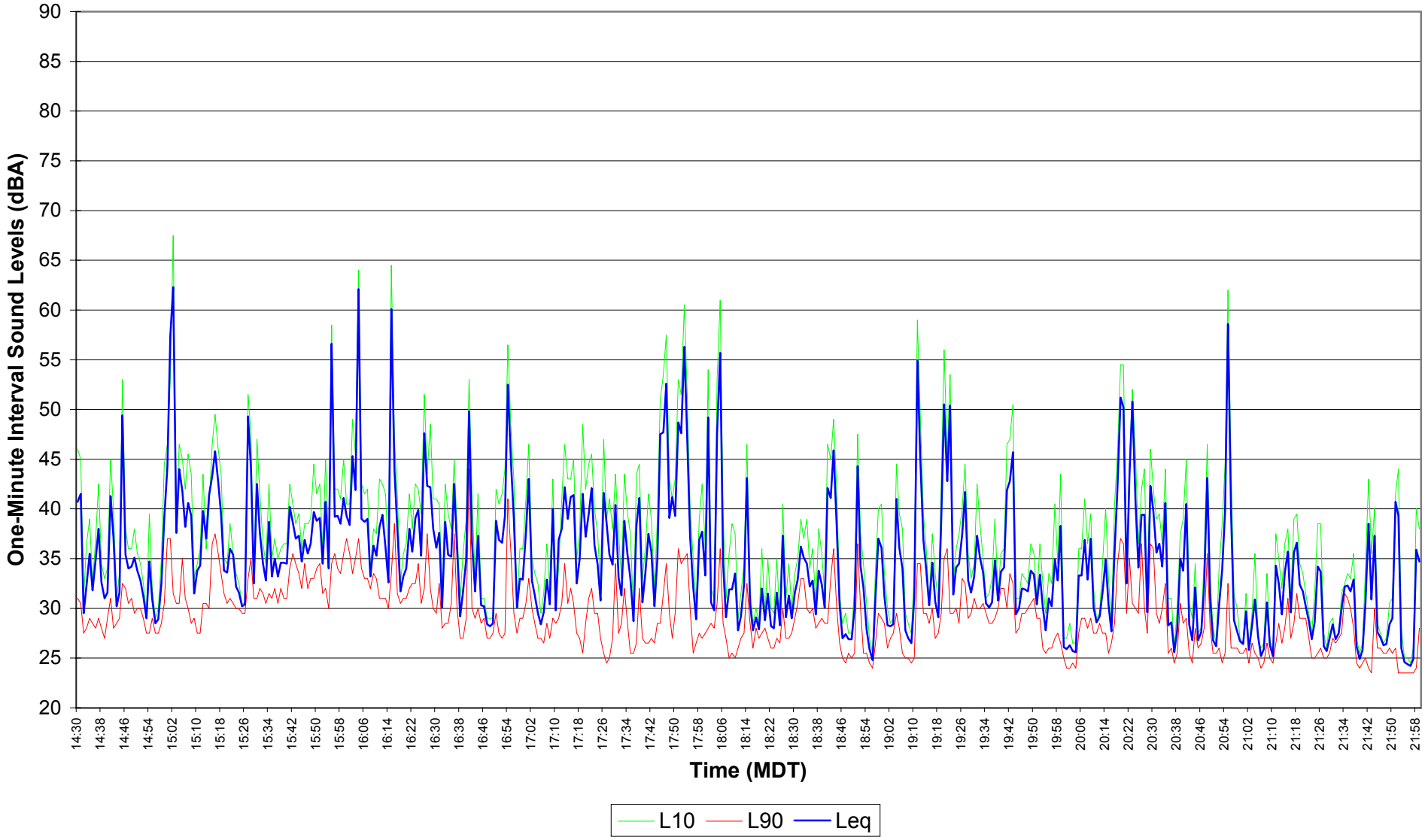


Figure E6.6
EnCana Rosebud
Site 6 Noise Survey
Nov 24, 2004 - Nov 25, 2004 22:00 - 06:59

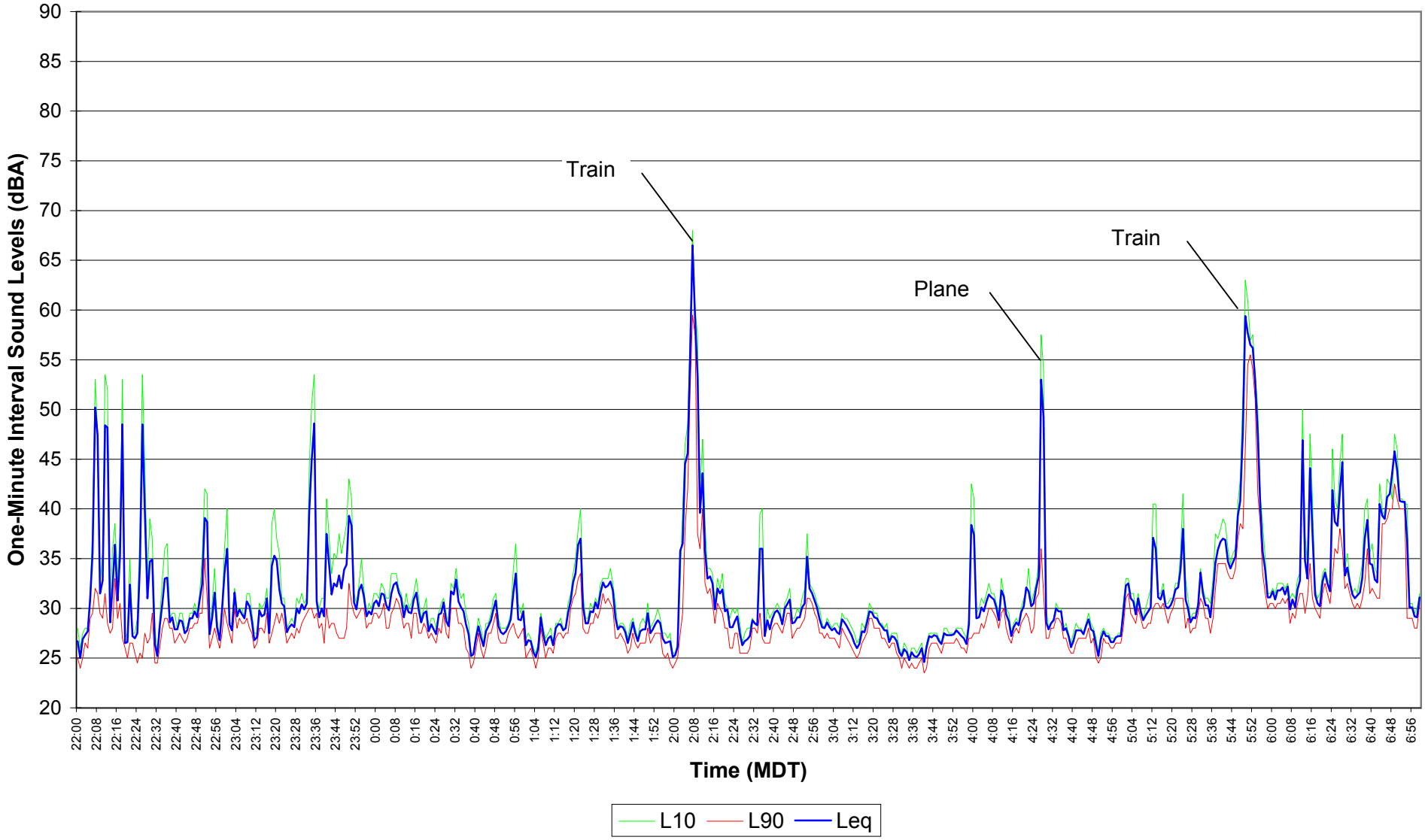


Figure E6.7
EnCana Rosebud
Site 6 Noise Survey
Nov. 25, 2004 07:00 - 14:29

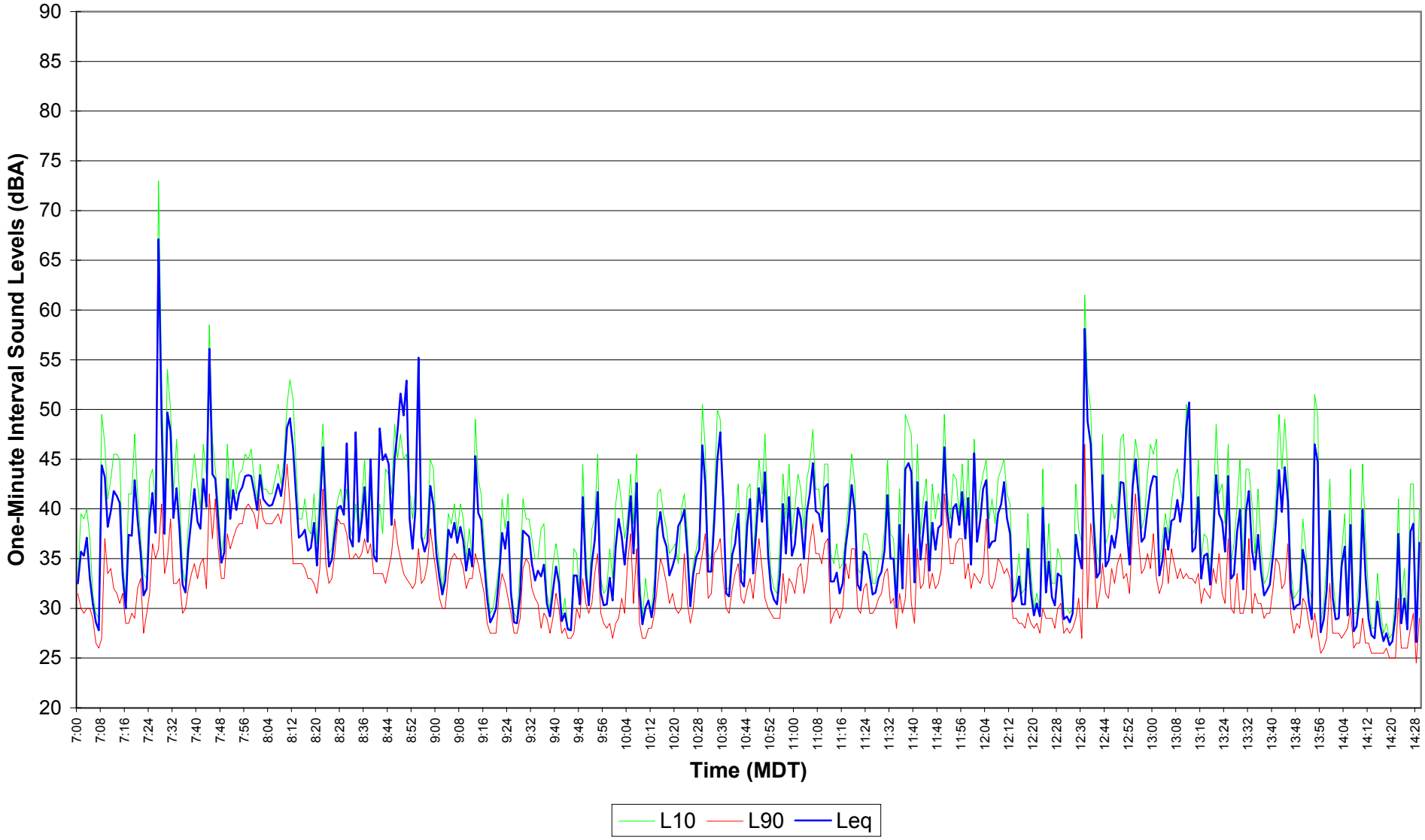


Figure E6.8
EnCana Rosebud
Site 6 Noise Survey
Nov. 25, 2004 14:30 - 21:59

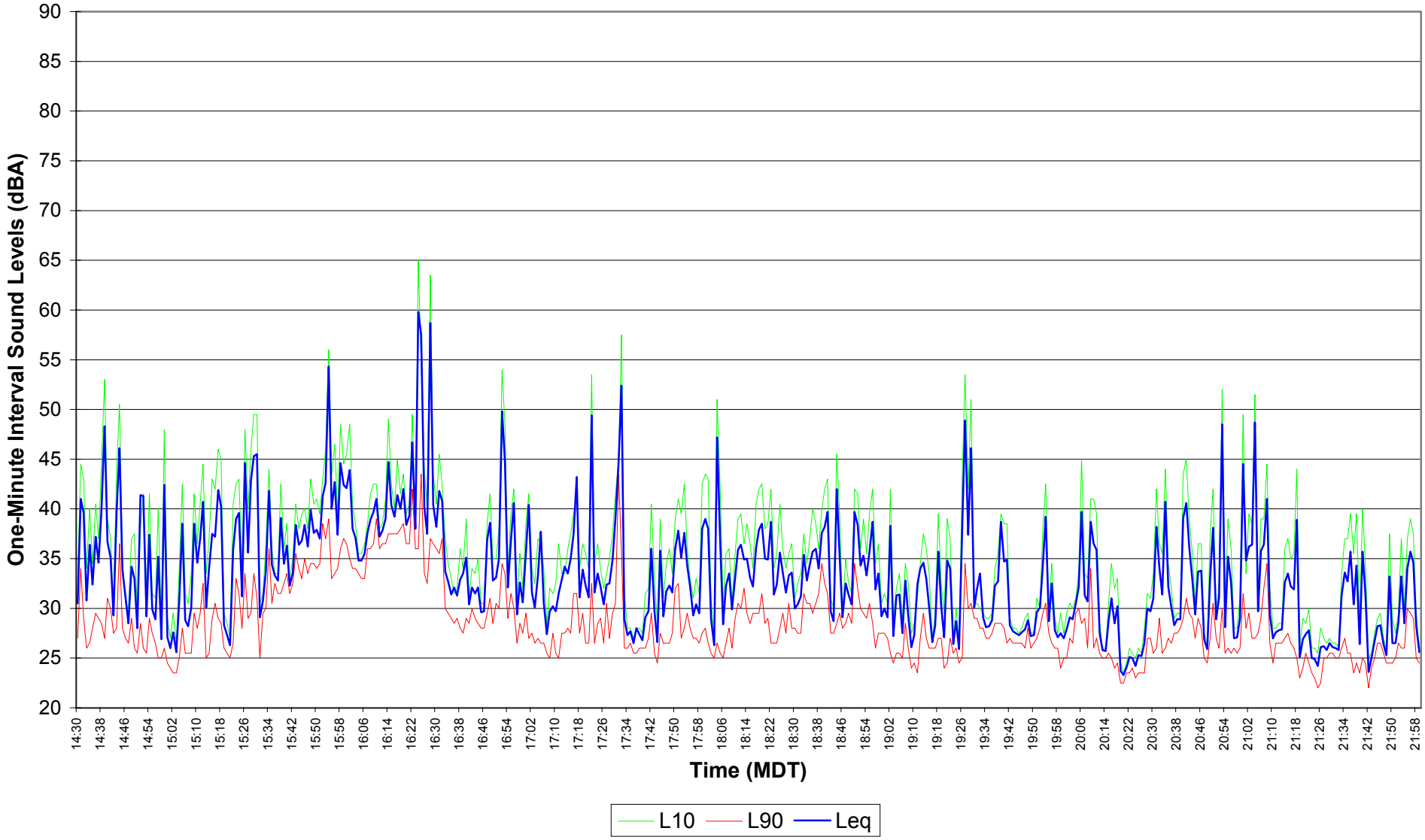


Figure E6.9
EnCana Rosebud
Site 6 Noise Survey
Nov. 25, 2004 - Nov. 26, 2004 22:00 - 06:59

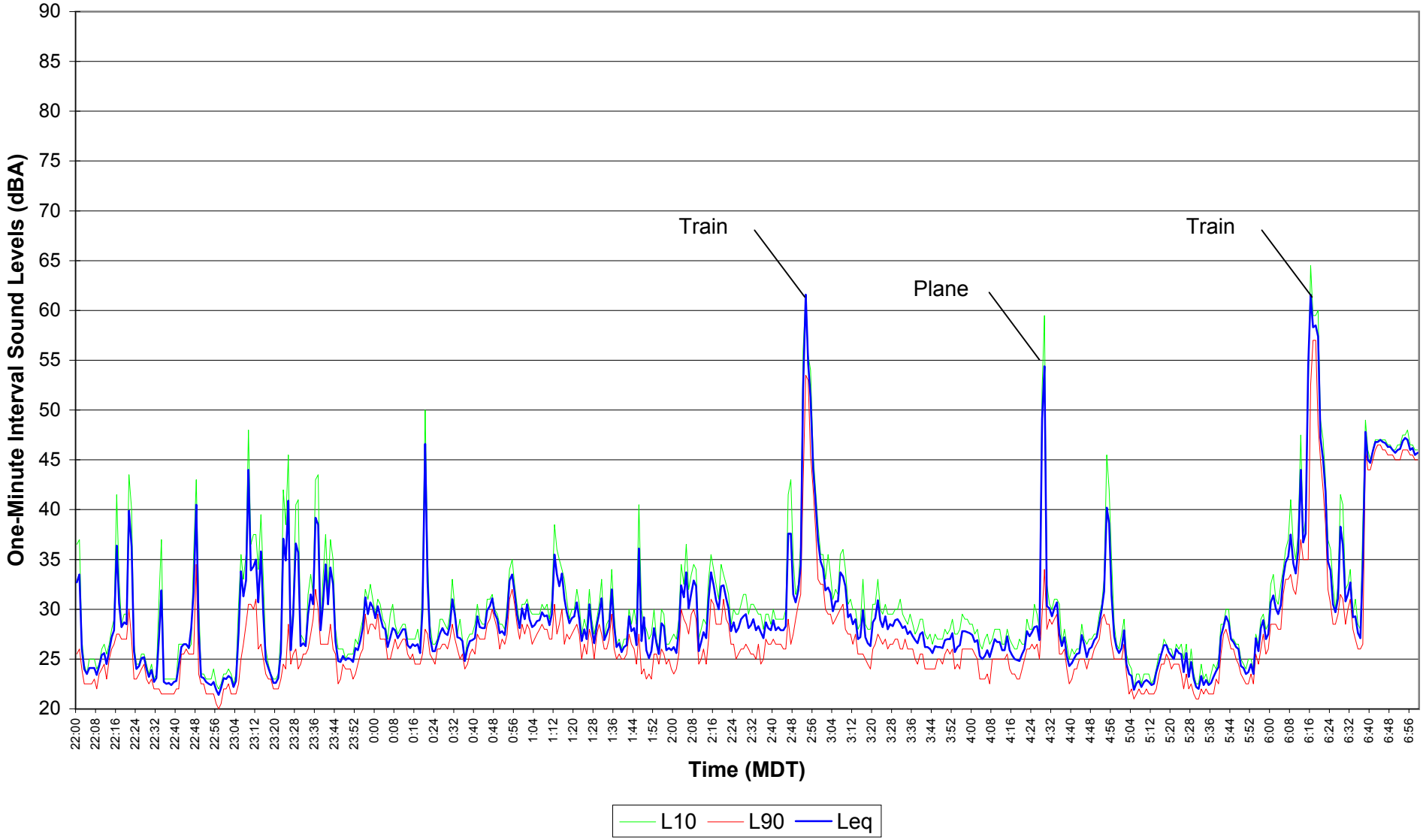


Figure E6.10
EnCana Rosebud
Site 6 Noise Survey
Nov. 26, 2004 07:00 - 14:29

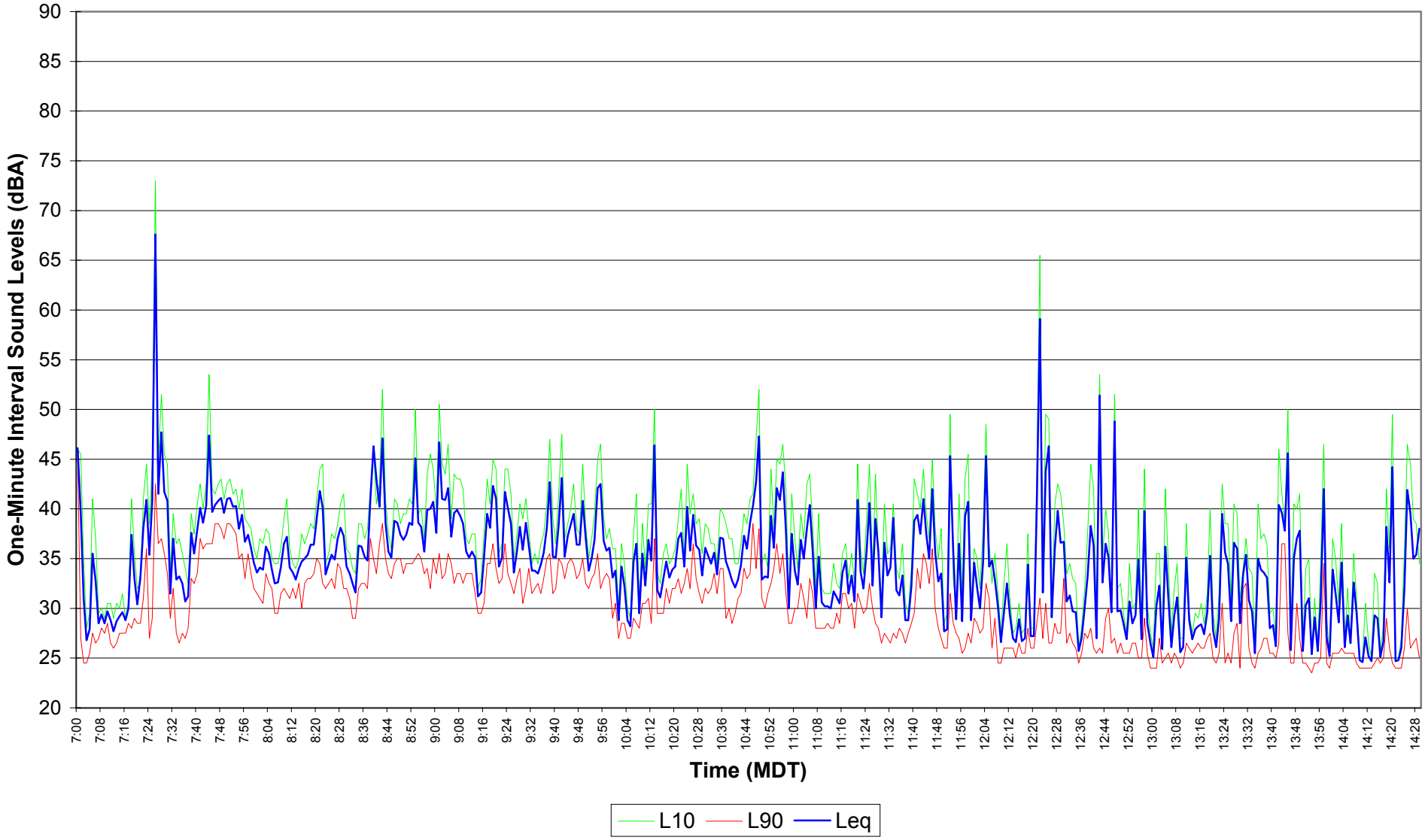


Figure E6.11
EnCana Rosebud
Site 6 Noise Survey
Nov. 26, 2004 14:30 - 21:59

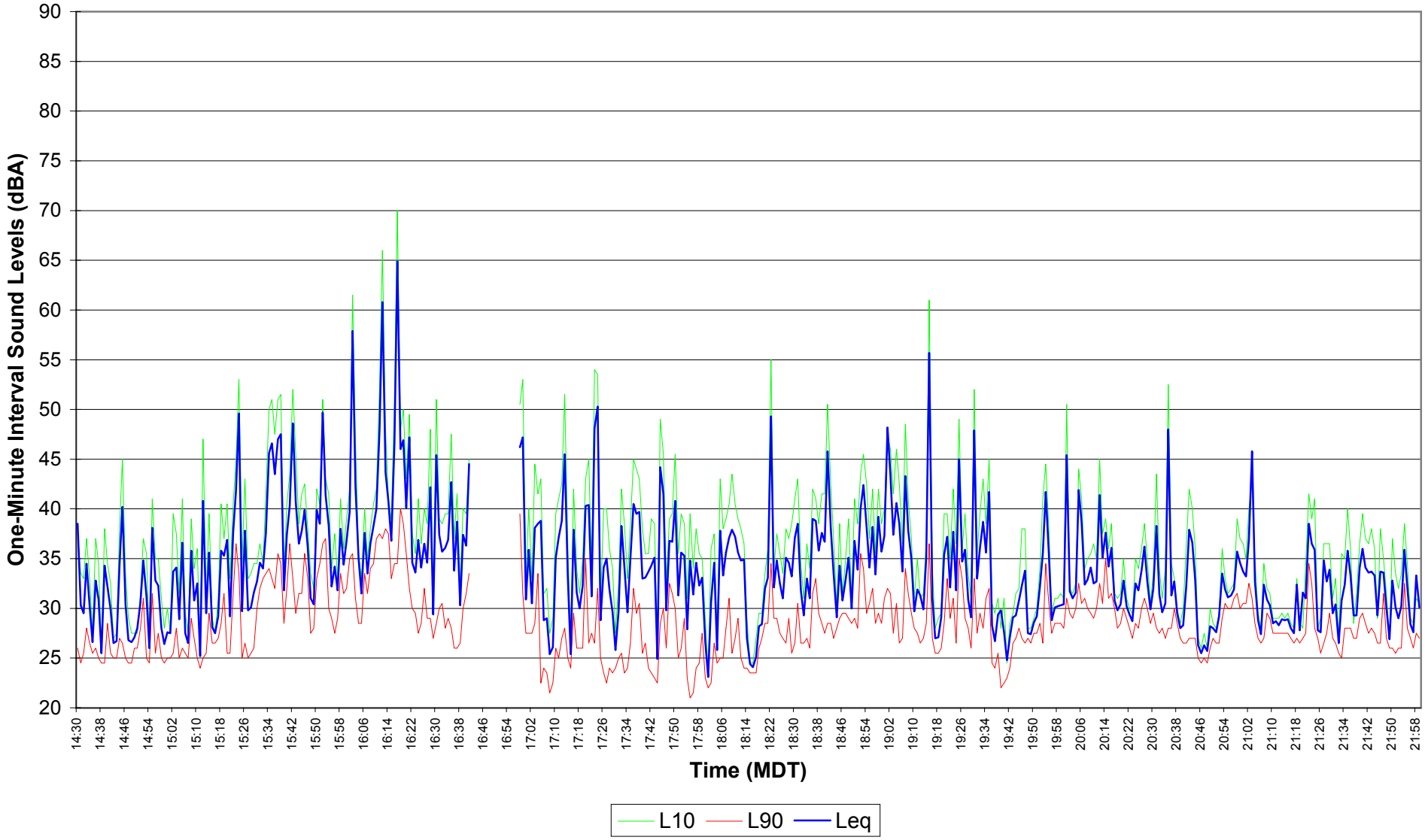


Figure E6.12
EnCana Rosebud
Site 6 Noise Survey
Nov 26, 2004 - Nov 27, 2004 22:00 - 06:59

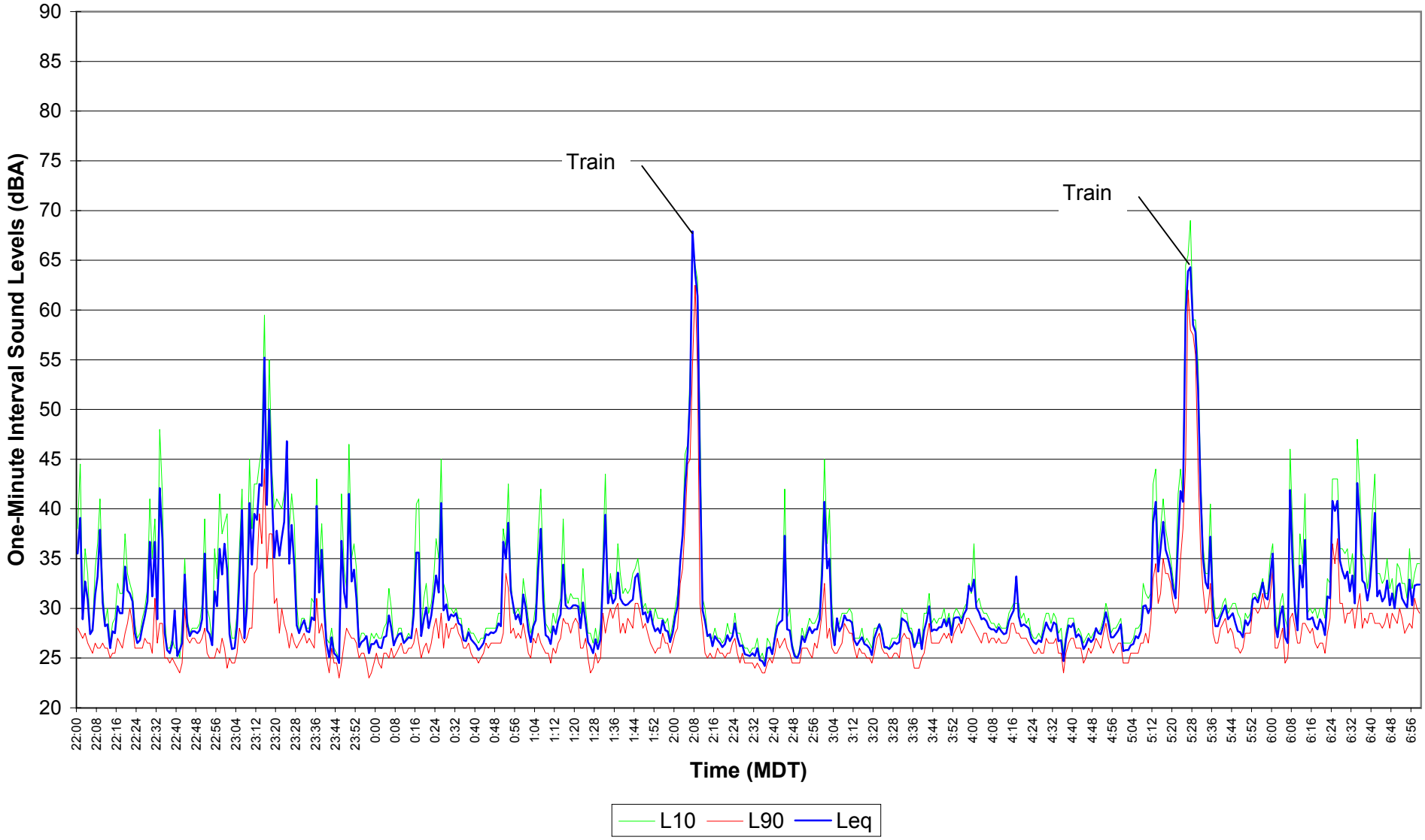


Figure E6.13
EnCana Rosebud
Site 6 Noise Survey
Nov. 27, 2004 07:00 - 14:29

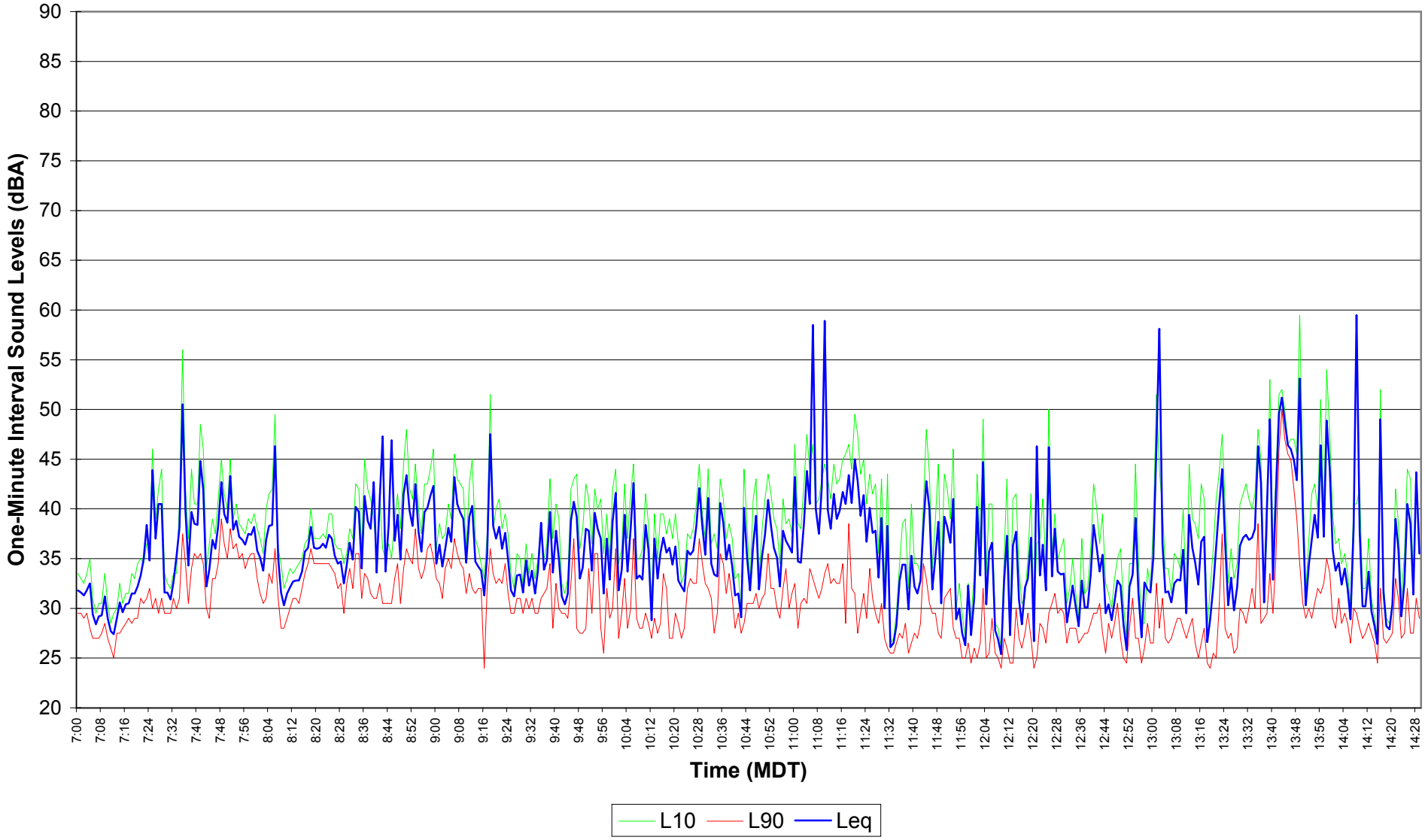


Figure E6.14
EnCana Rosebud
Site 6 Noise Survey
Nov. 27, 2004 14:30 - 21:59

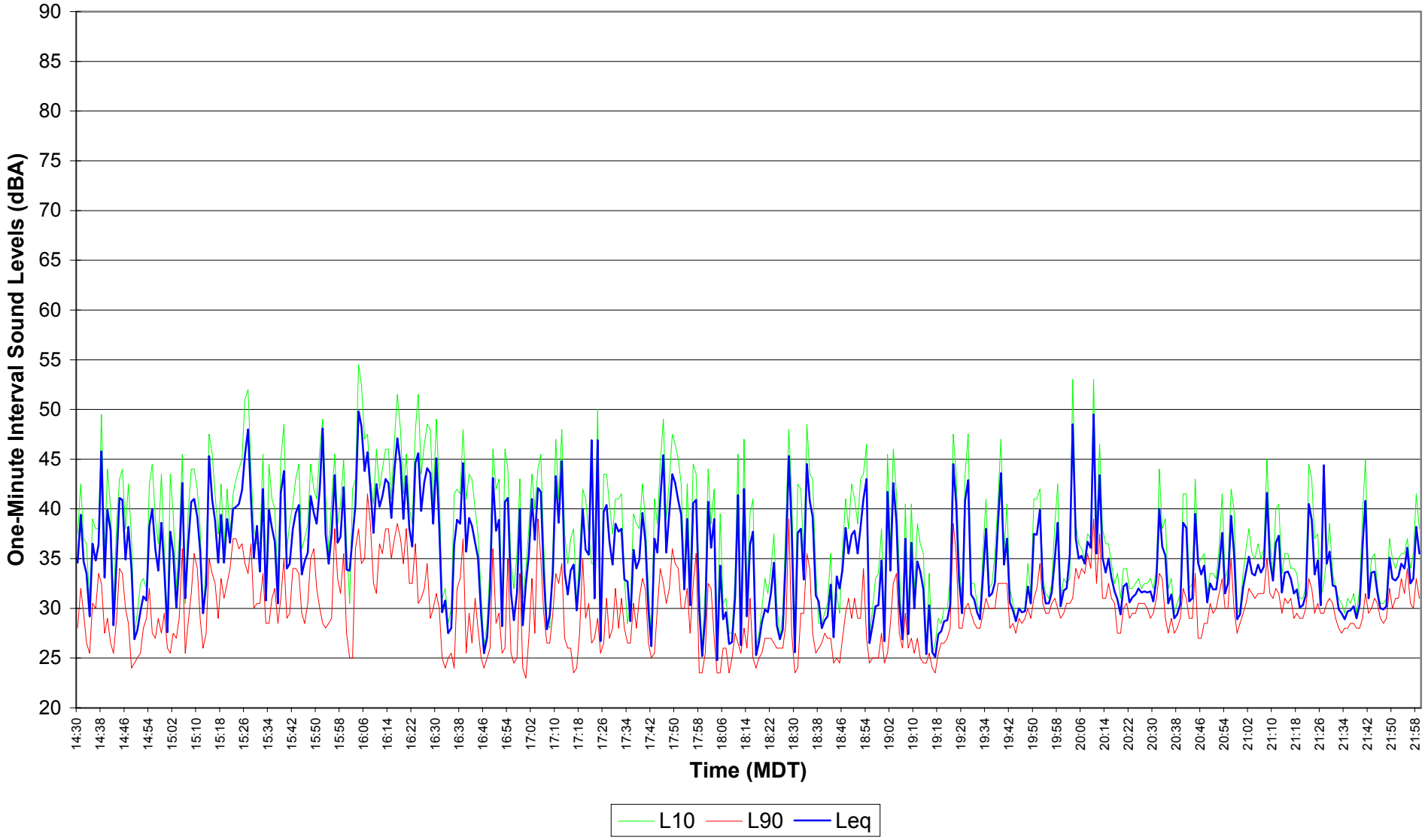


Figure E6.15
EnCana Rosebud
Site 6 Noise Survey
Nov. 27, 2004 - Nov. 28, 2004 22:00 - 06:59

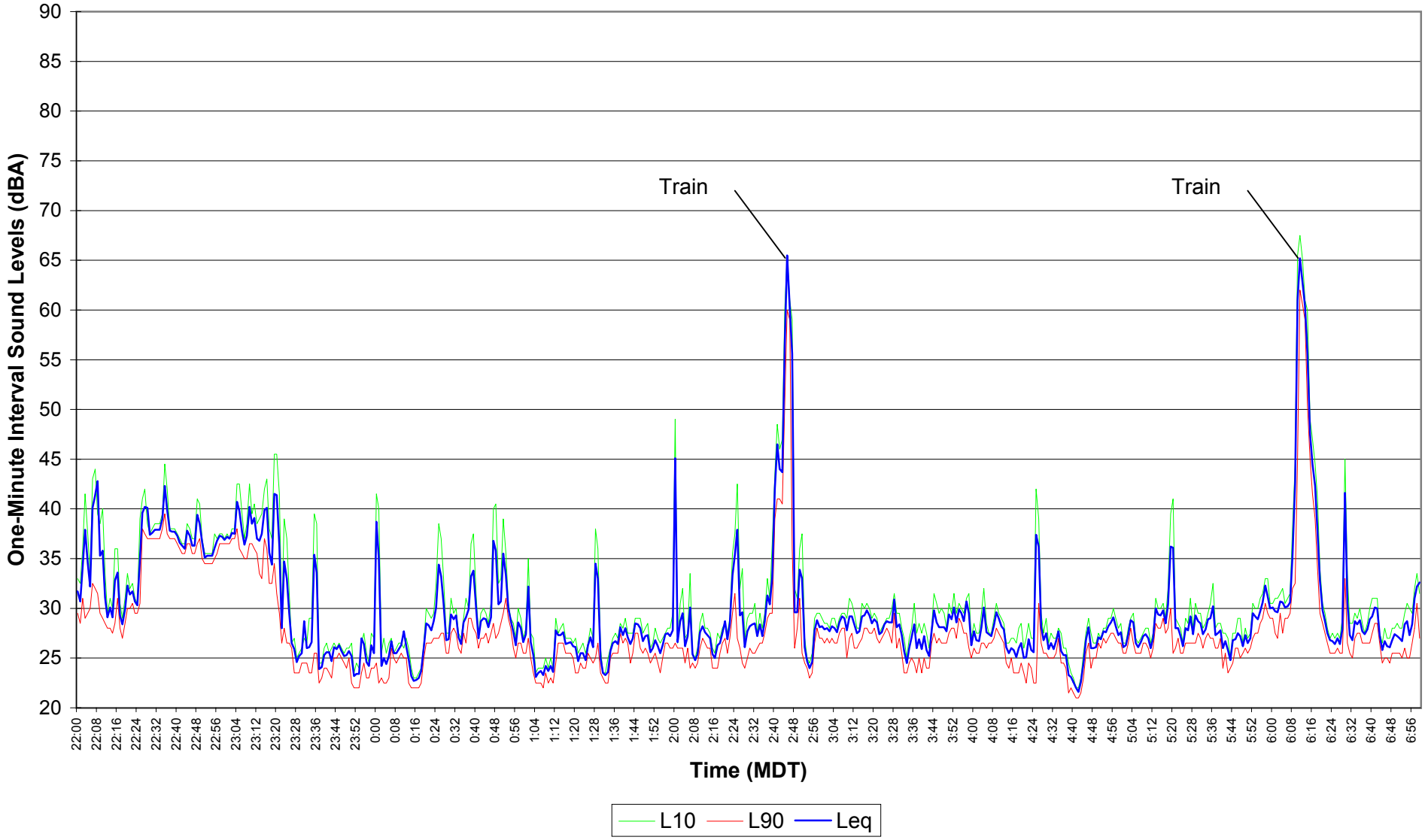


Figure E6.16

EnCana Rosebud

Site 6 Noise Survey

Nov. 28, 2004 07:00 - 14:29

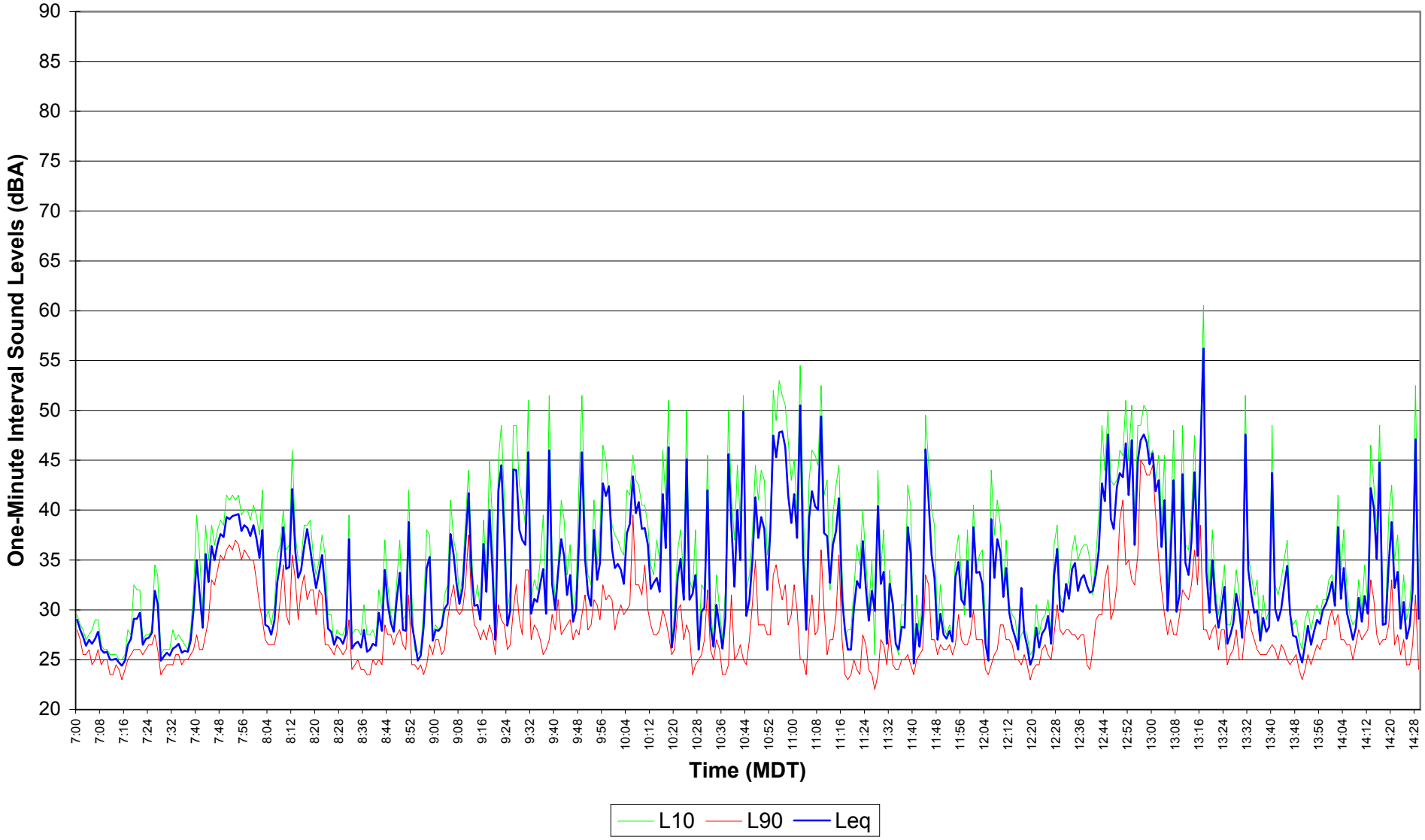


Figure E6.17
EnCana Rosebud
Site 6 Noise Survey
Nov. 28, 2004 14:30 - 21:59

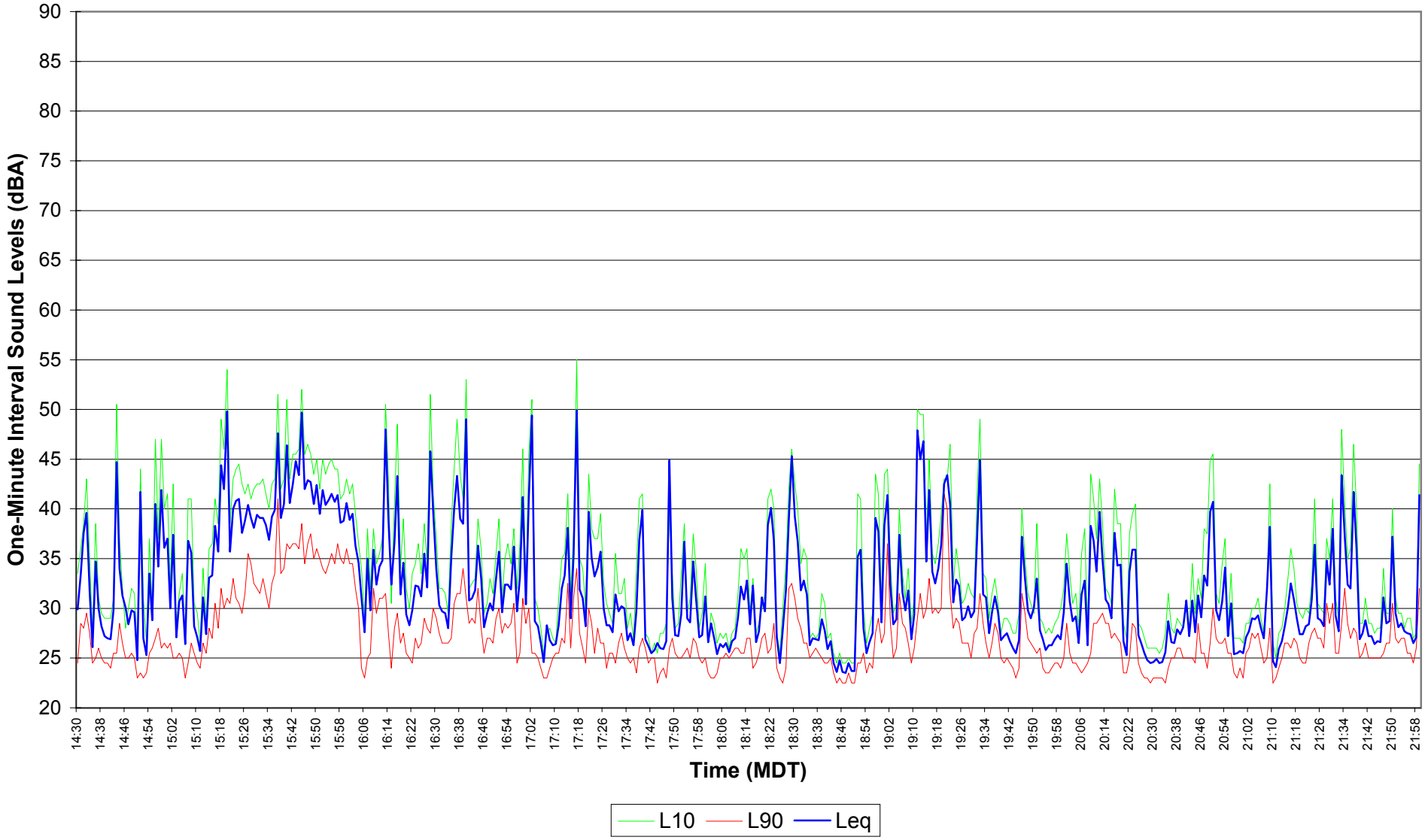


Figure E6.18
EnCana Rosebud
Site 6 Noise Survey
Nov. 28, 2004 - Nov. 29, 2004 22:00 - 06:59

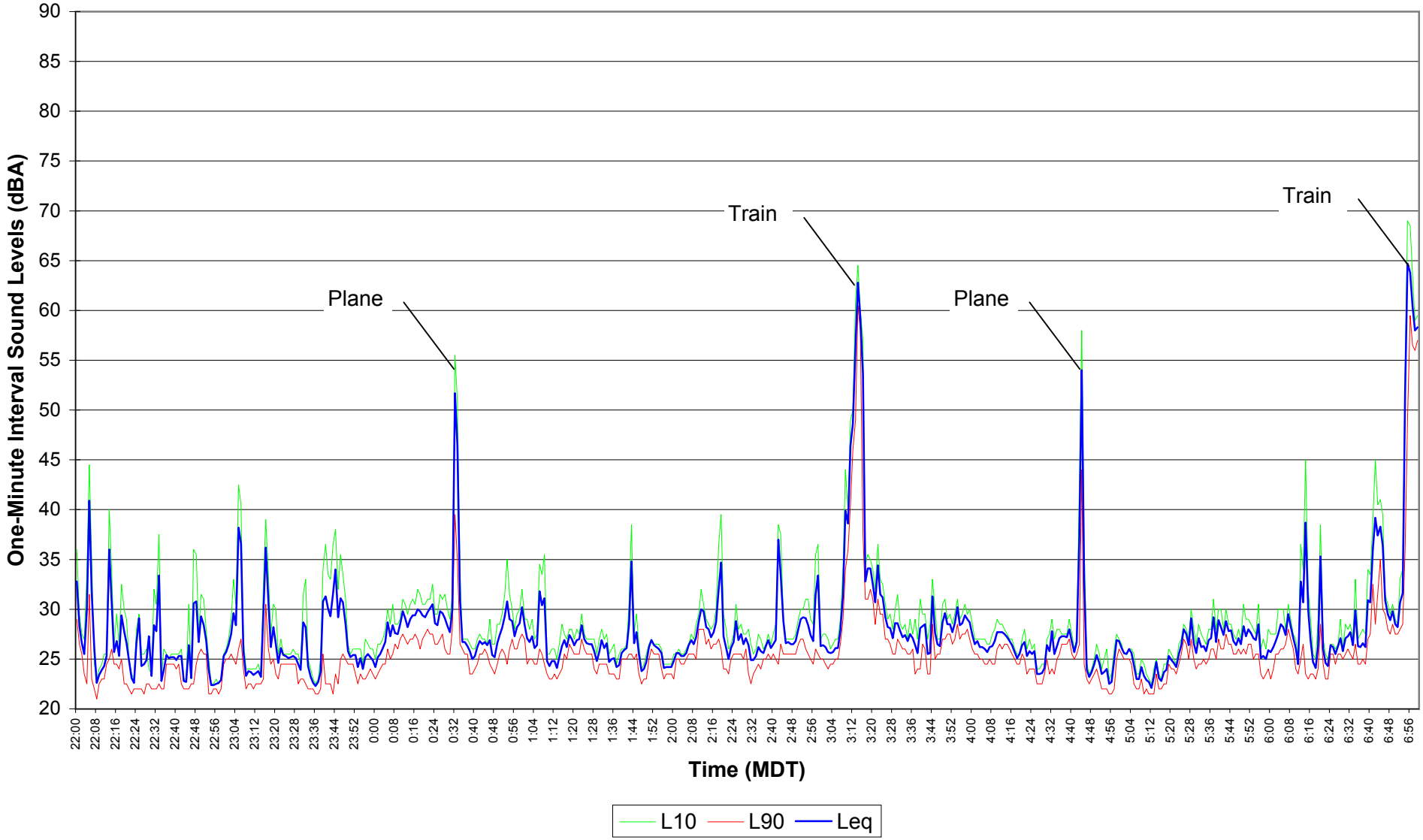


Figure E6.19
EnCana Rosebud
Site 6 Noise Survey
Nov. 29, 2004 07:00 - 14:29

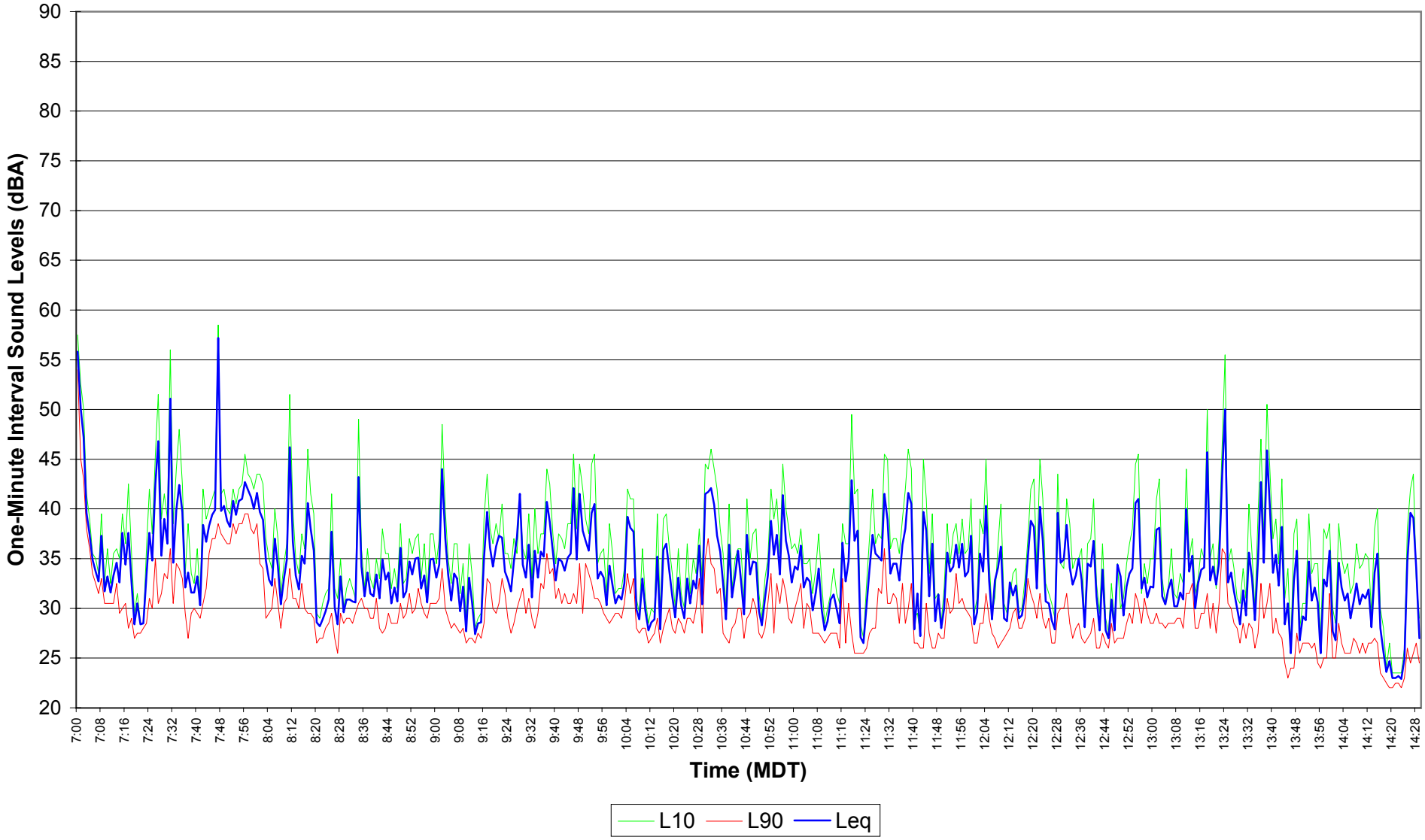


Figure E6.20
EnCana Rosebud
Site 6 Noise Survey
Nov. 29, 2004 14:30 - 21:59

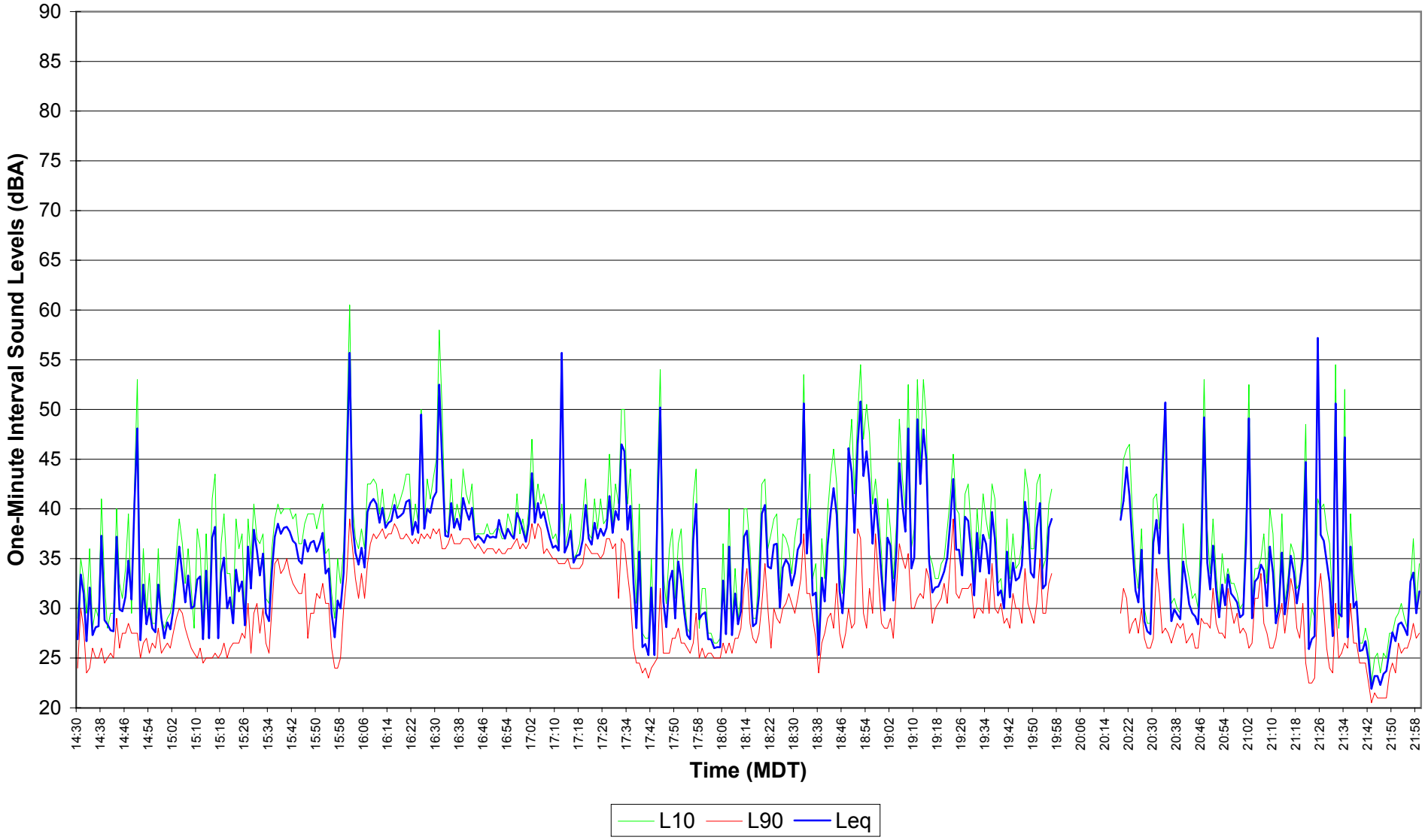


Figure E6.21
EnCana Rosebud
Site 6 Noise Survey
Nov. 29, 2004 - Nov. 30, 2004 22:00 - 06:59

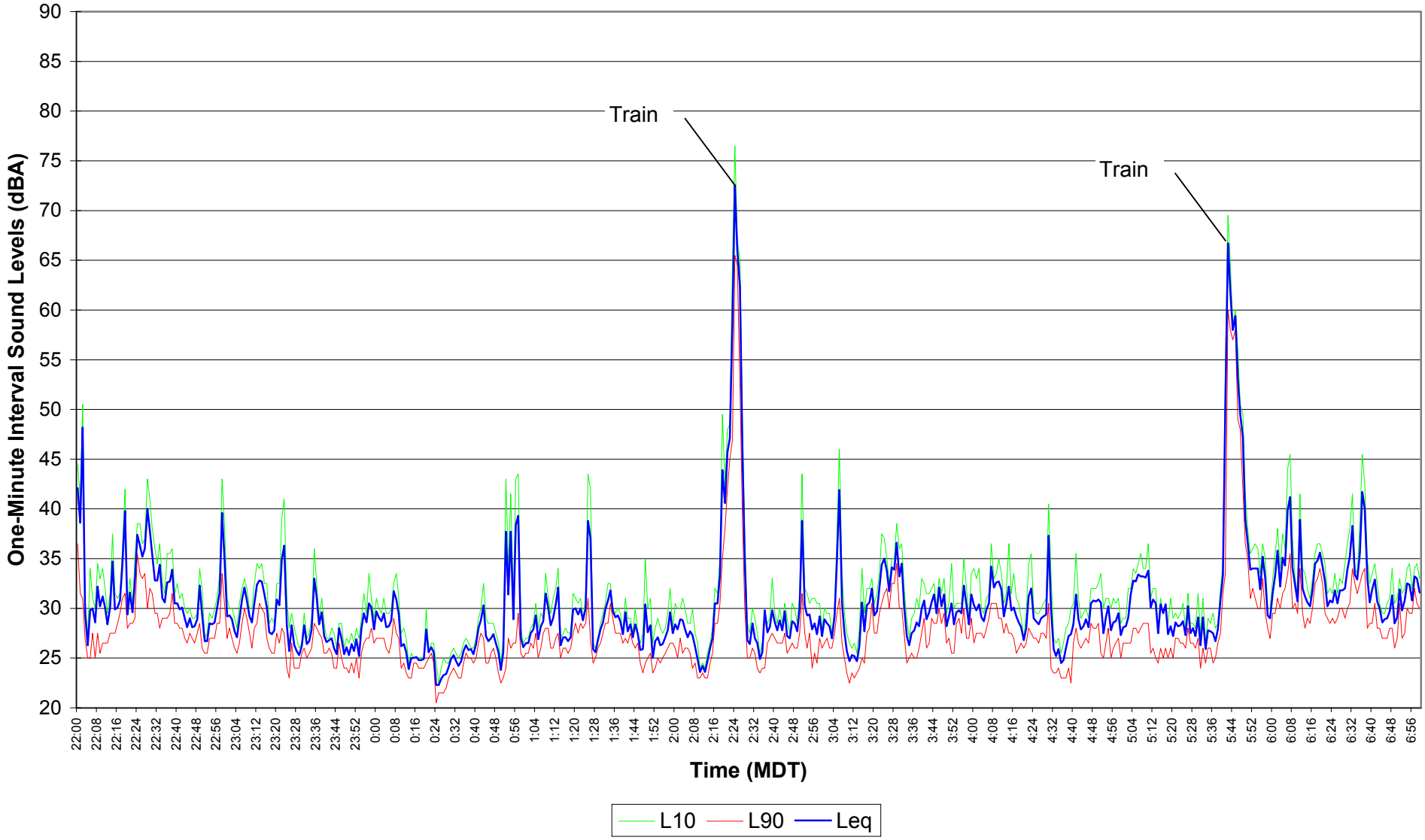


Figure E6.22
EnCana Rosebud
Site 6 Noise Survey
Nov. 30, 2004 07:00 - 14:29

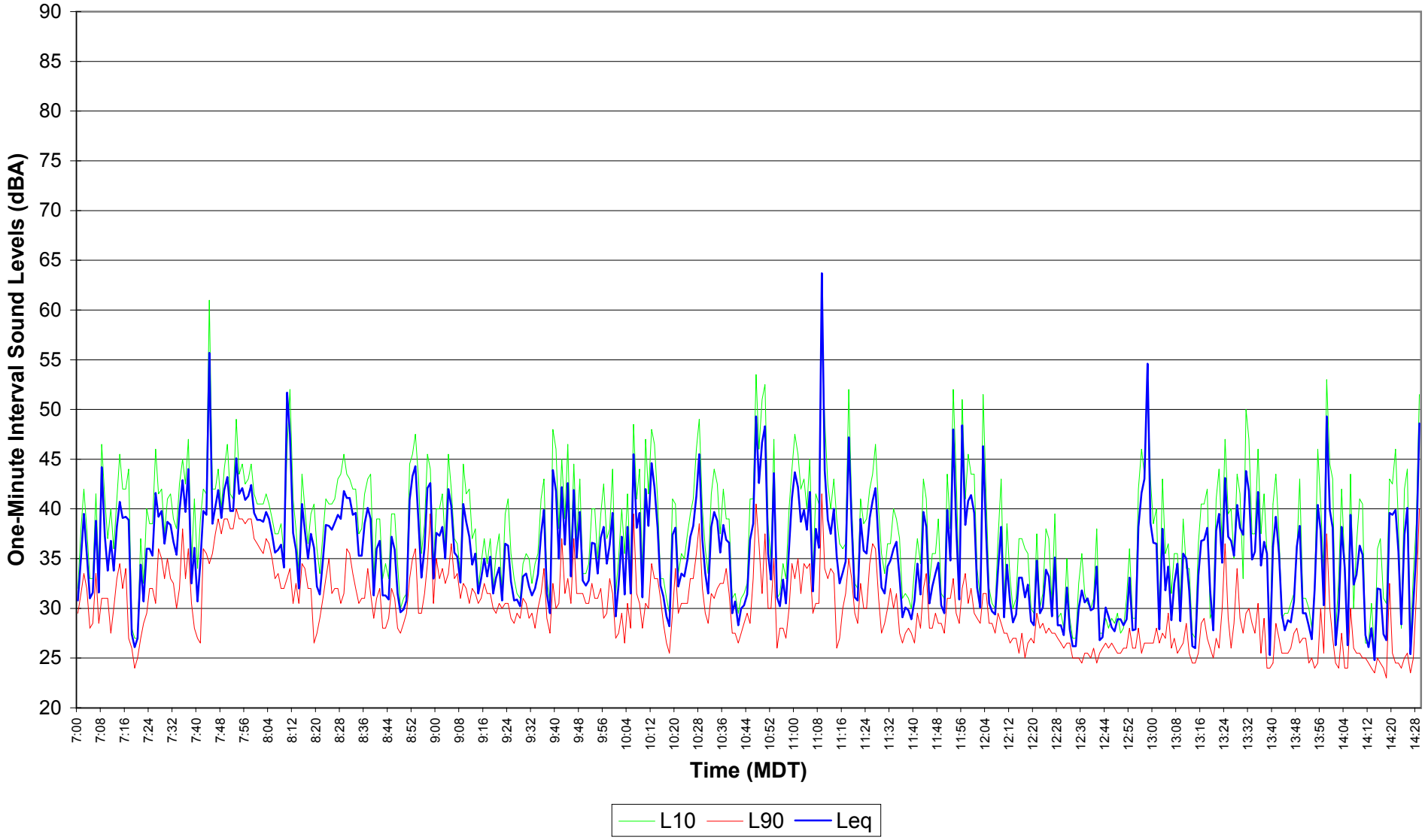


Figure E6.23
EnCana Rosebud
Site 6 Noise Survey
Nov. 30, 2004 14:30 - 21:59

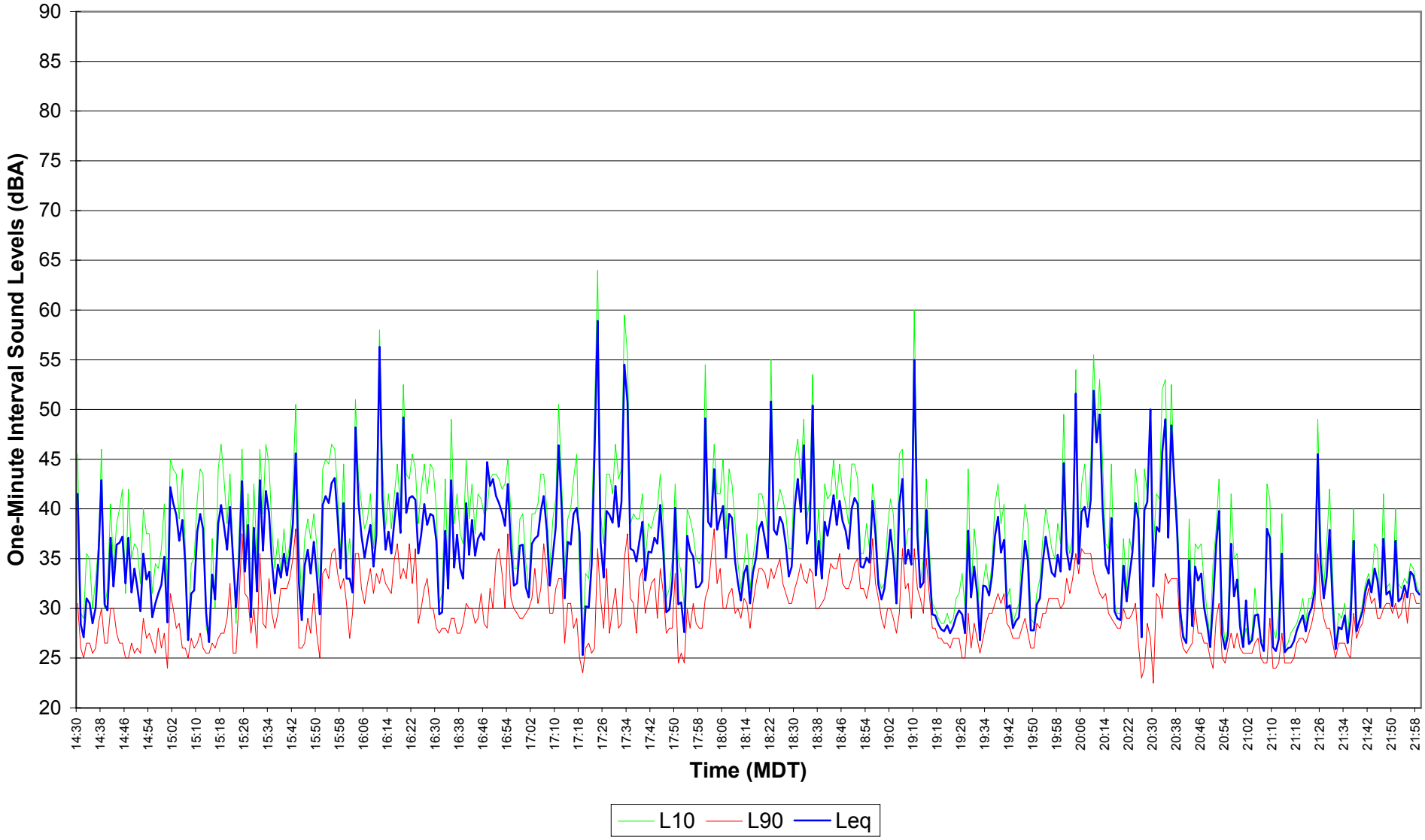


Figure E6.24
EnCana Rosebud
Site 6 Noise Survey
Nov. 30, 2004 - Dec. 01, 2004 22:00 - 06:59

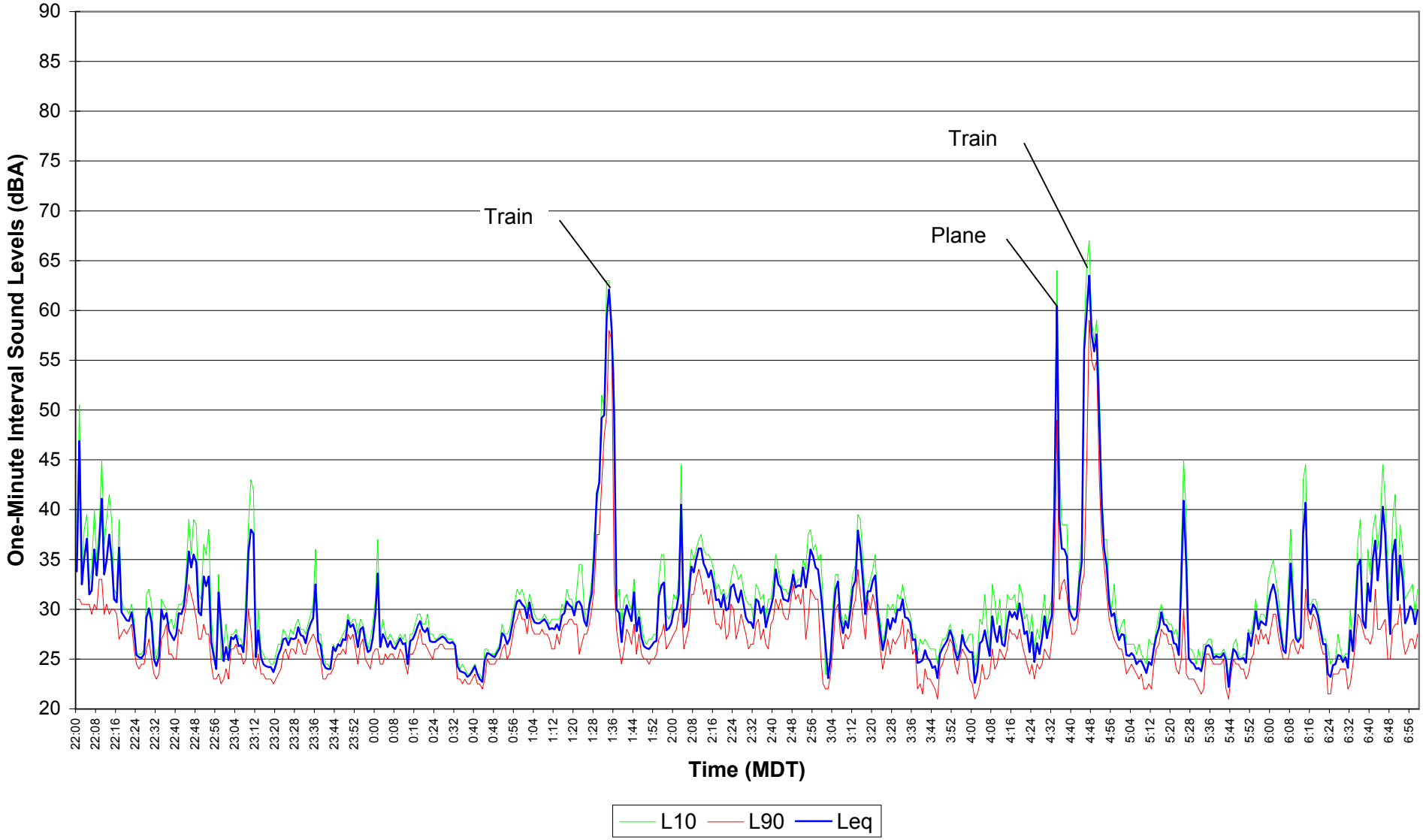


Figure E6.25
EnCana Rosebud
Site 6 Noise Survey
Dec. 01, 2004 07:00 - 14:29

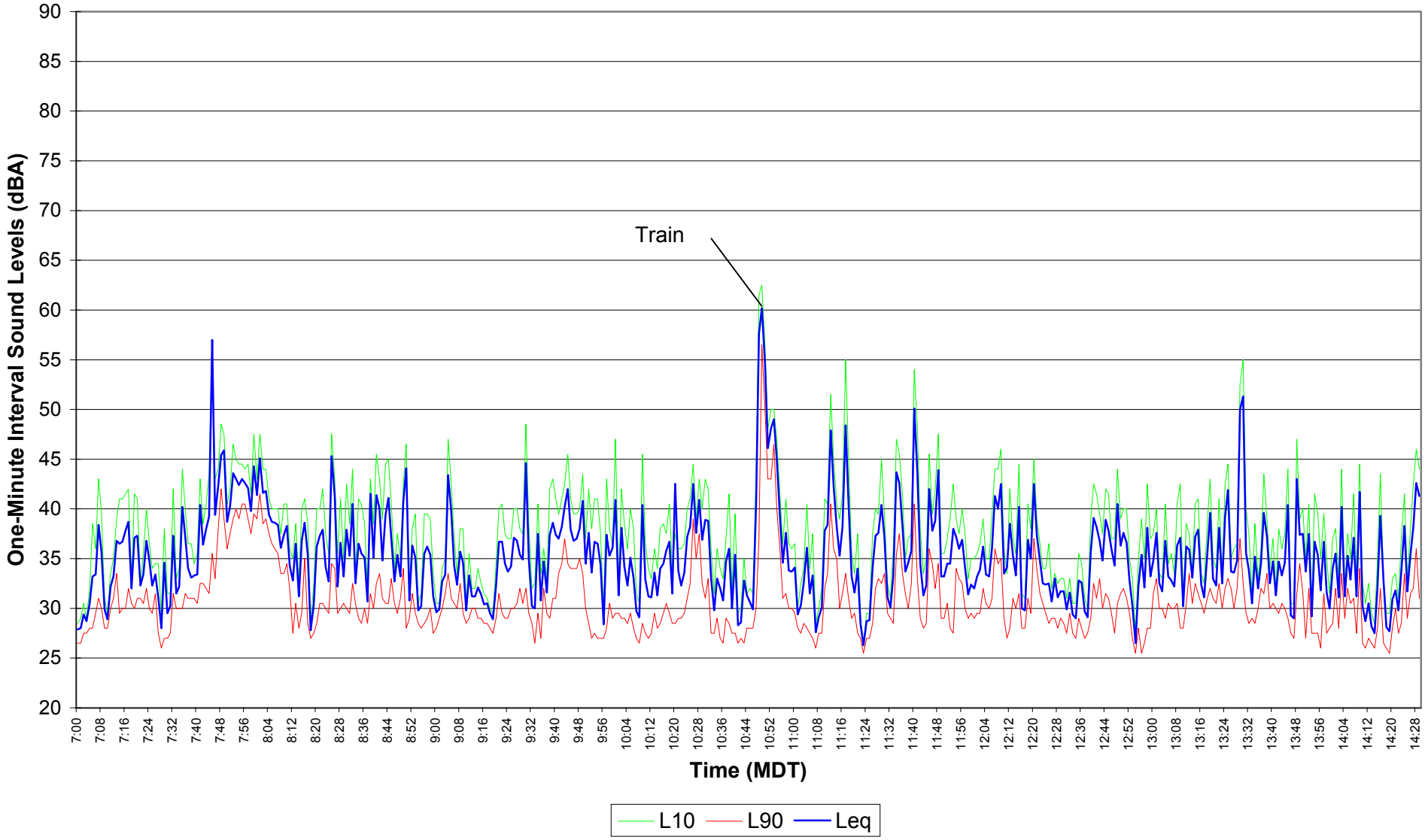


Figure E6.26
EnCana Rosebud
Site 6 Noise Survey
Dec. 01, 2004 14:30 - 21:59

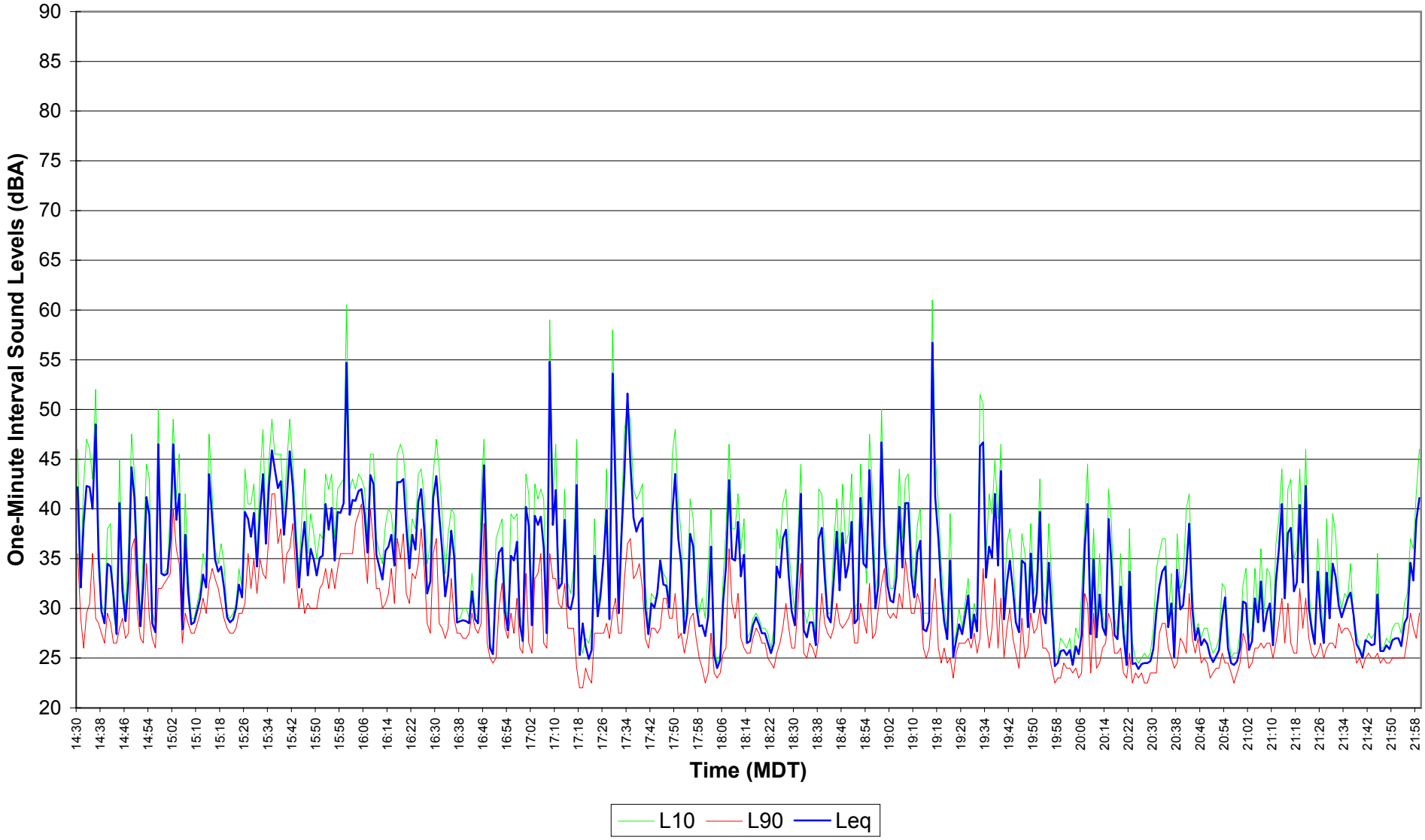


Figure E6.27
EnCana Rosebud
Site 6 Noise Survey
Dec. 01, 2004 - Dec. 02, 2004 22:00 - 06:59

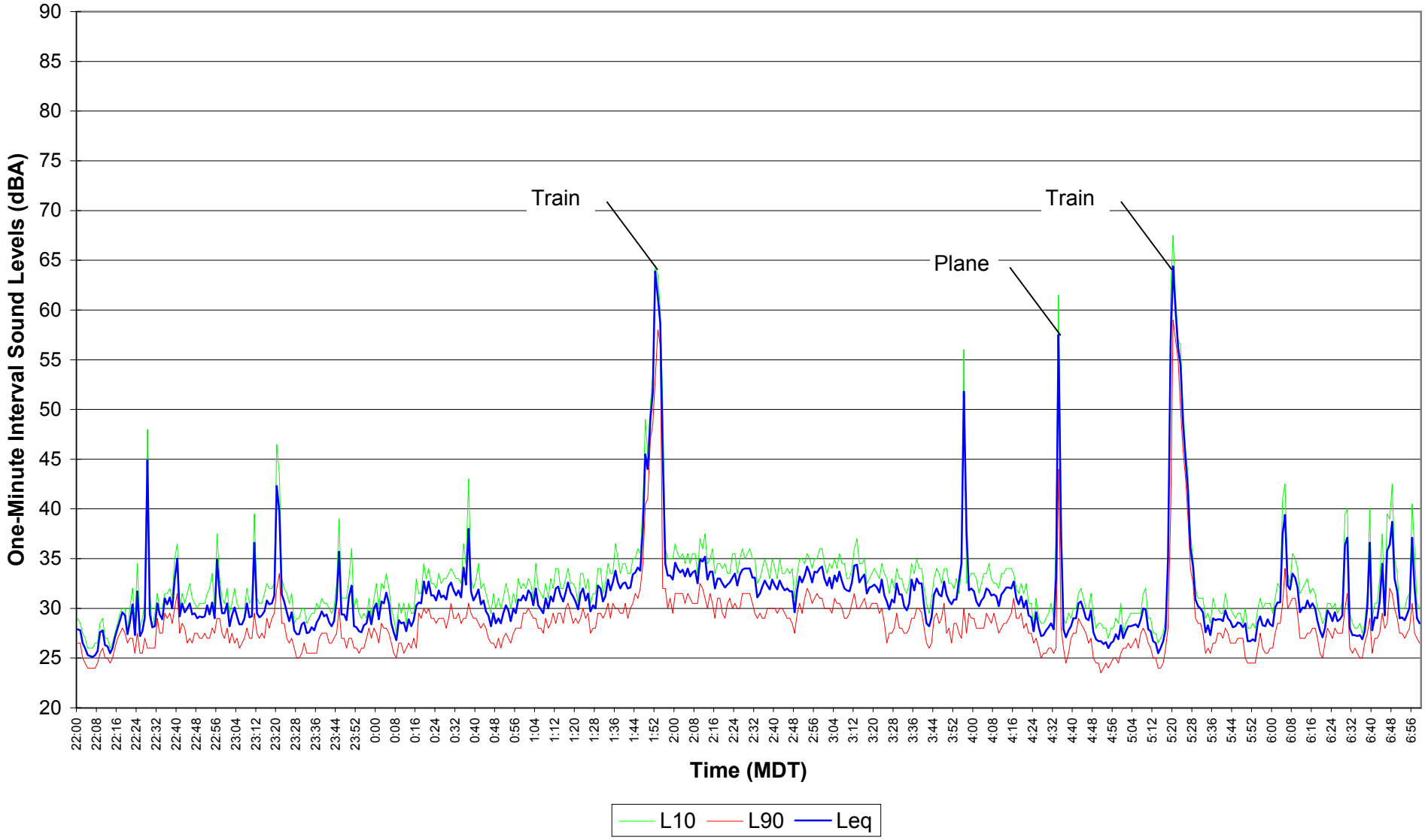


Figure E6.28
EnCana Rosebud
Site 6 Noise Survey
Dec. 02, 2004 07:00 - 14:29

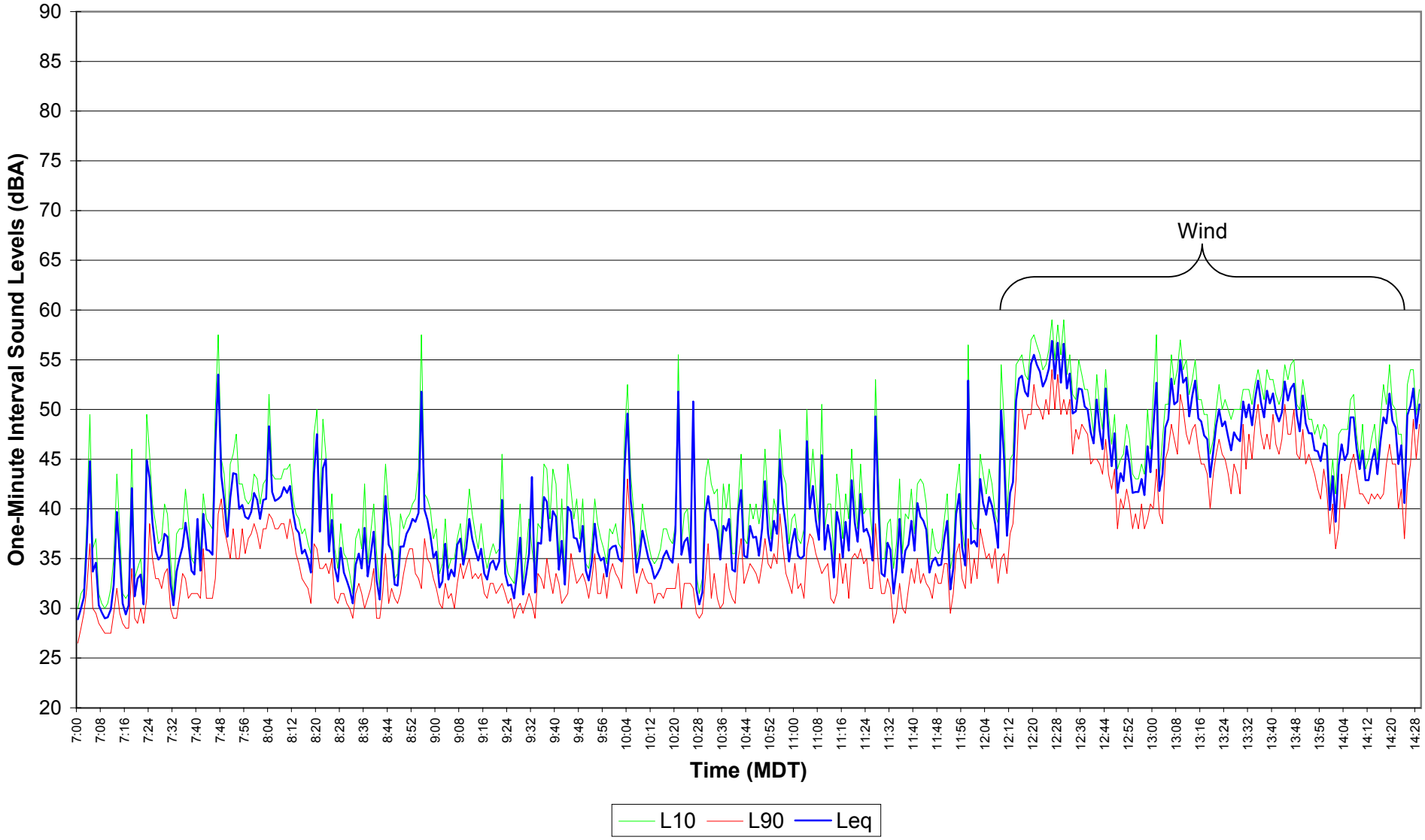


Figure E6.29
EnCana Rosebud
Site 6 Noise Survey
Dec. 02, 2004 14:30 - 21:59

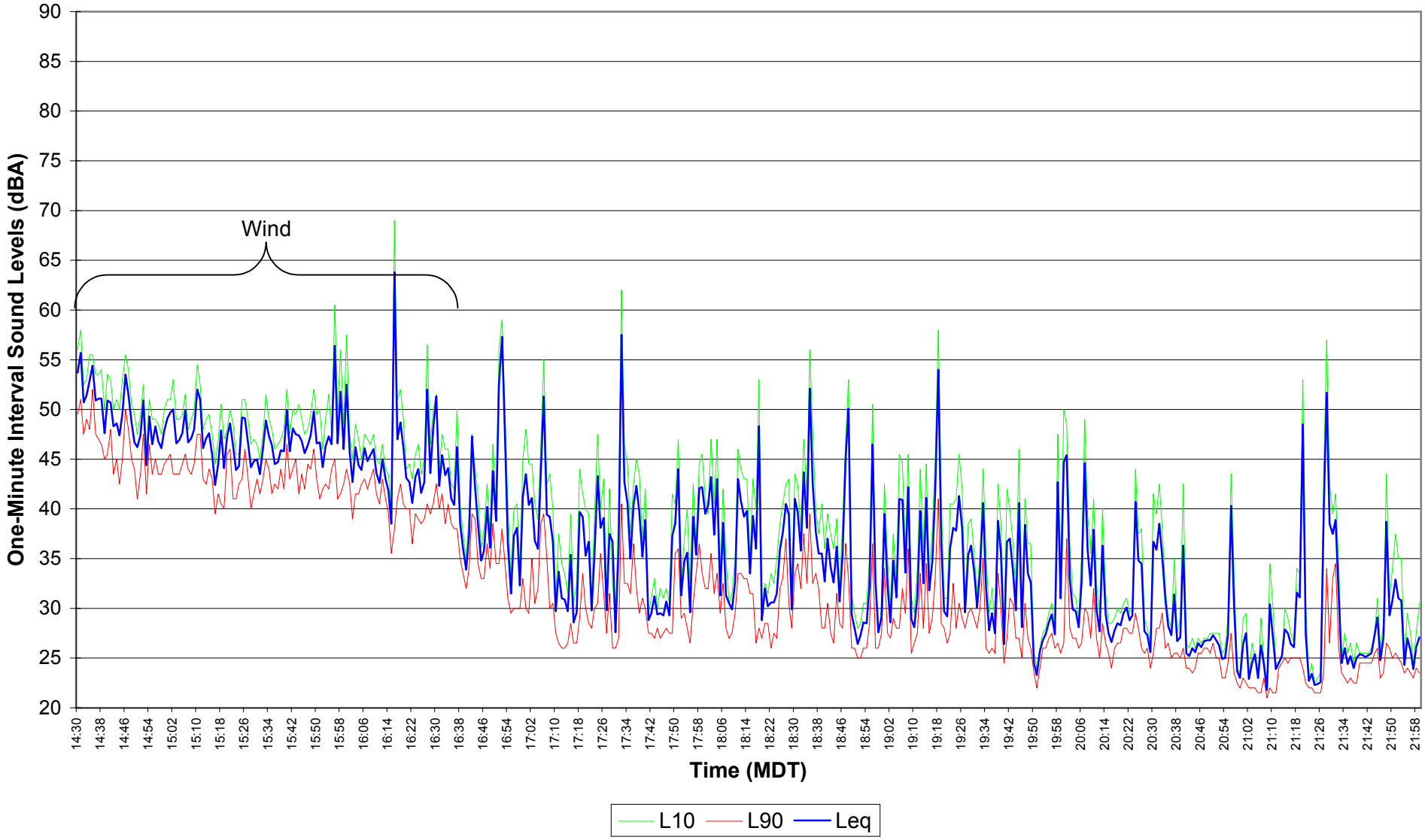


Figure E6.30
EnCana Rosebud
Site 6 Noise Survey
Dec. 02, 2004 - Dec. 03, 2004 22:00 - 06:59

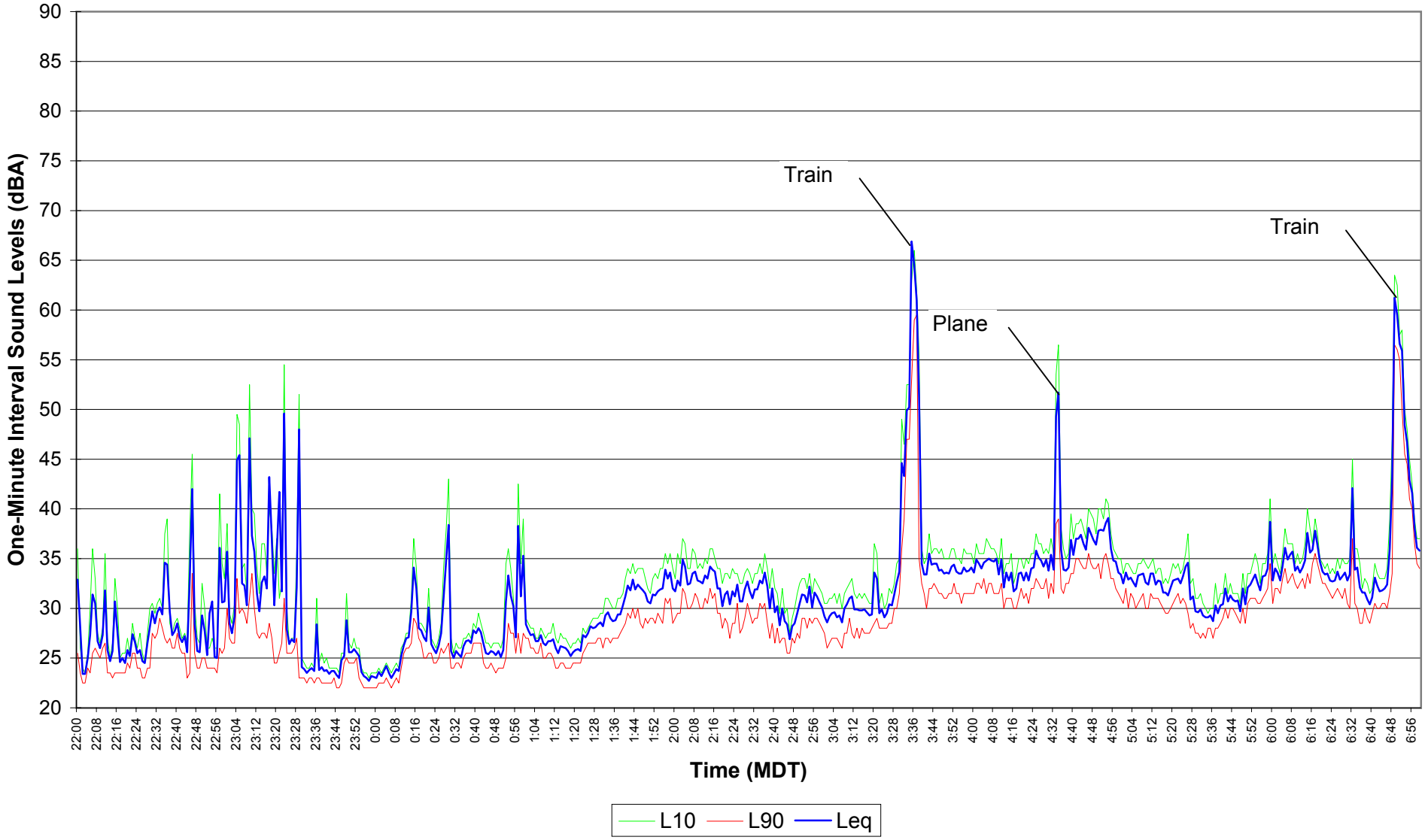


Figure E6.31

EnCana Rosebud

Site 6 Noise Survey

Dec. 03, 2004 07:00 - 14:29

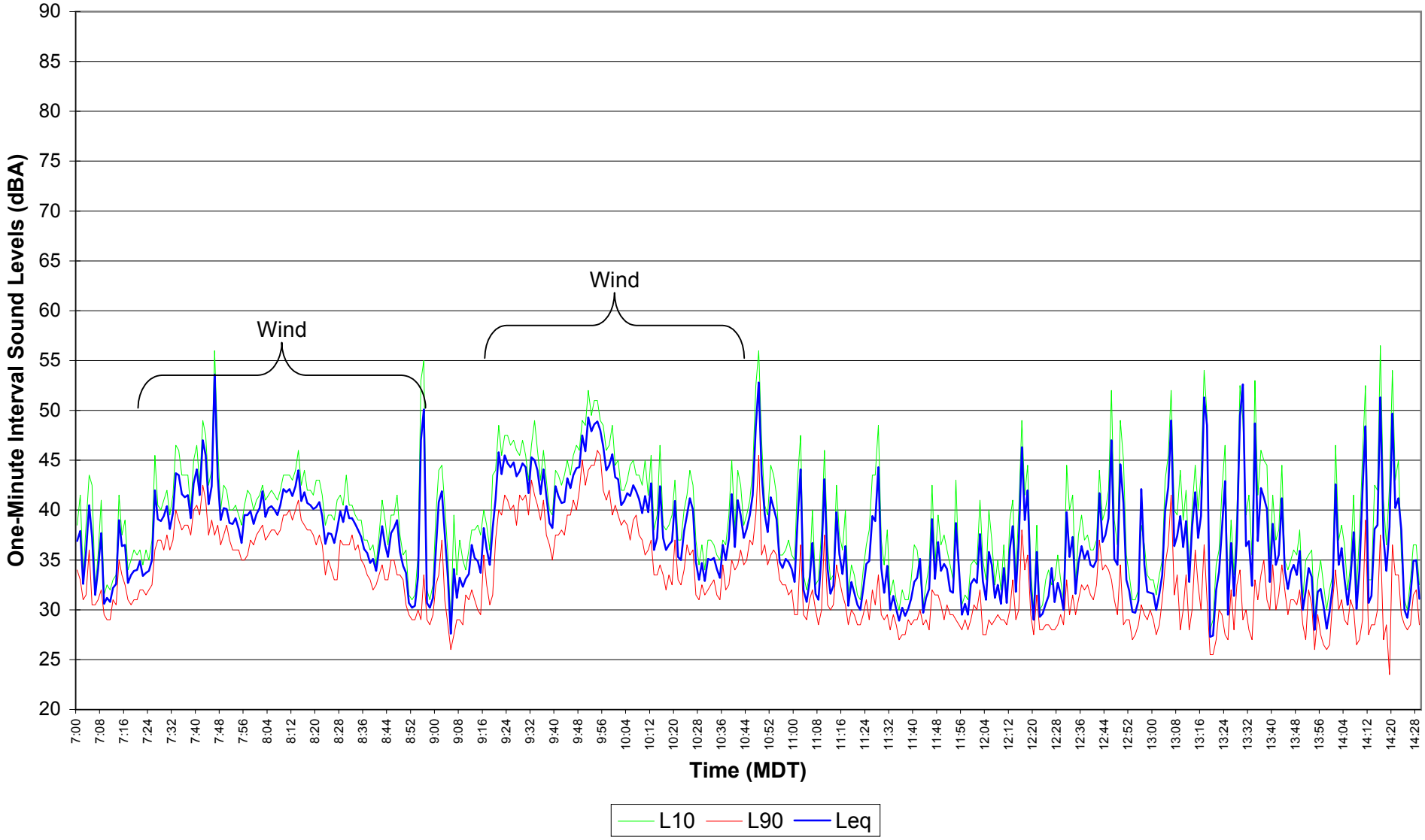


Figure E6.32
EnCana Rosebud
Site 6 Noise Survey
Dec. 03, 2004 14:30 - 21:59

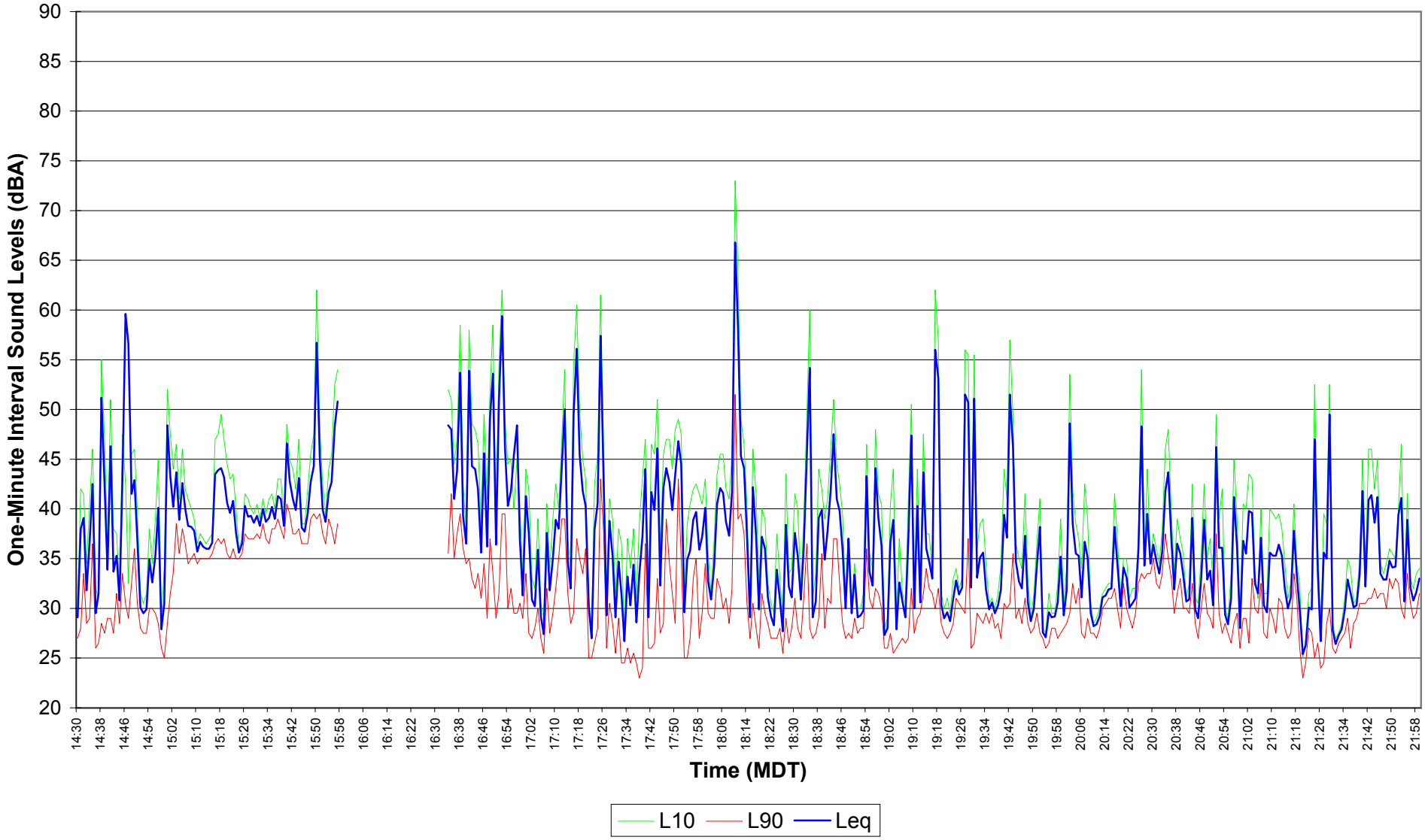


Figure E6.33
EnCana Rosebud
Site 6 Noise Survey
Dec. 03, 2004 - Dec. 04, 2004 22:00 - 06:59

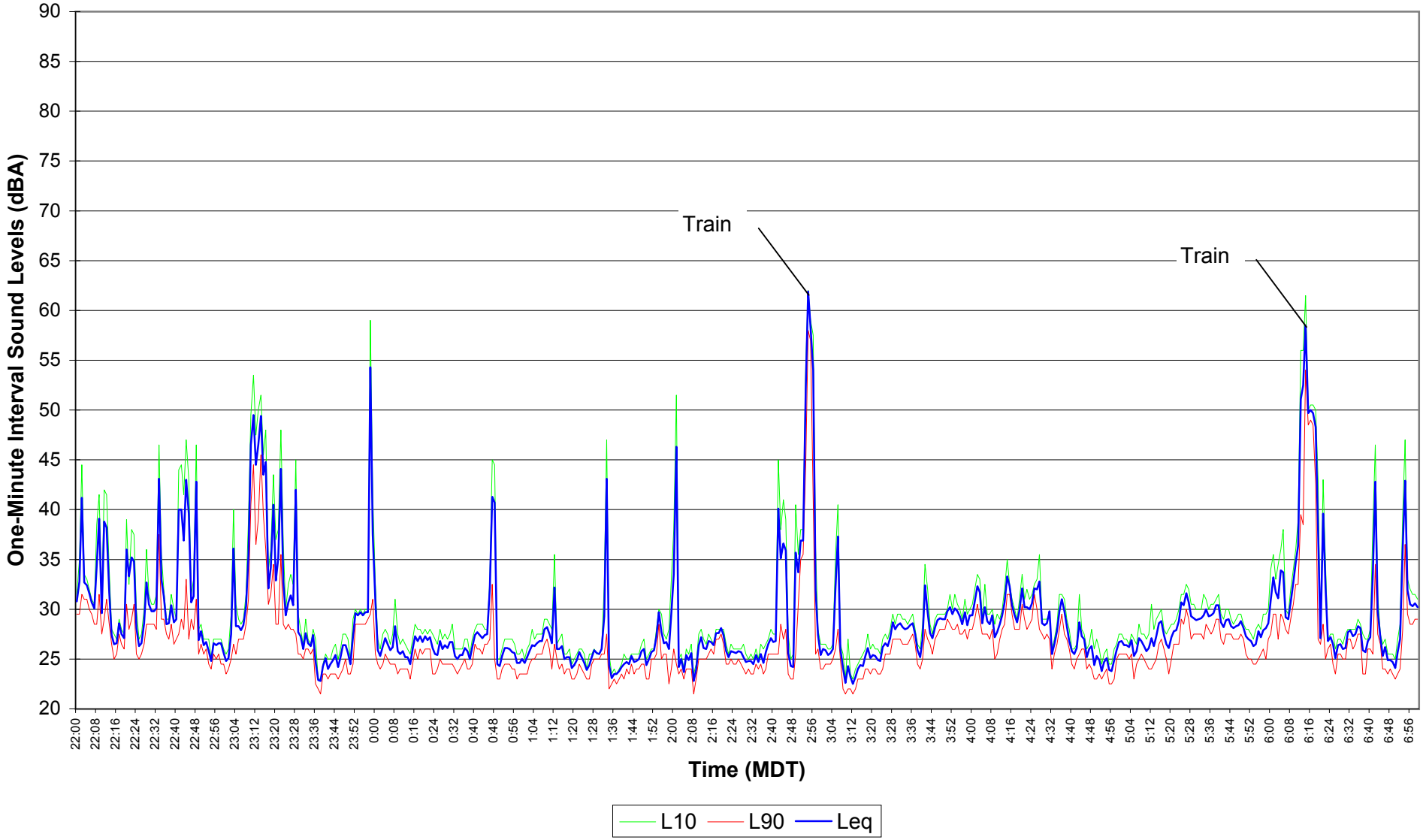


Figure E6.34
EnCana Rosebud
Site 6 Noise Survey
Dec. 04, 2004 07:00 - 14:29

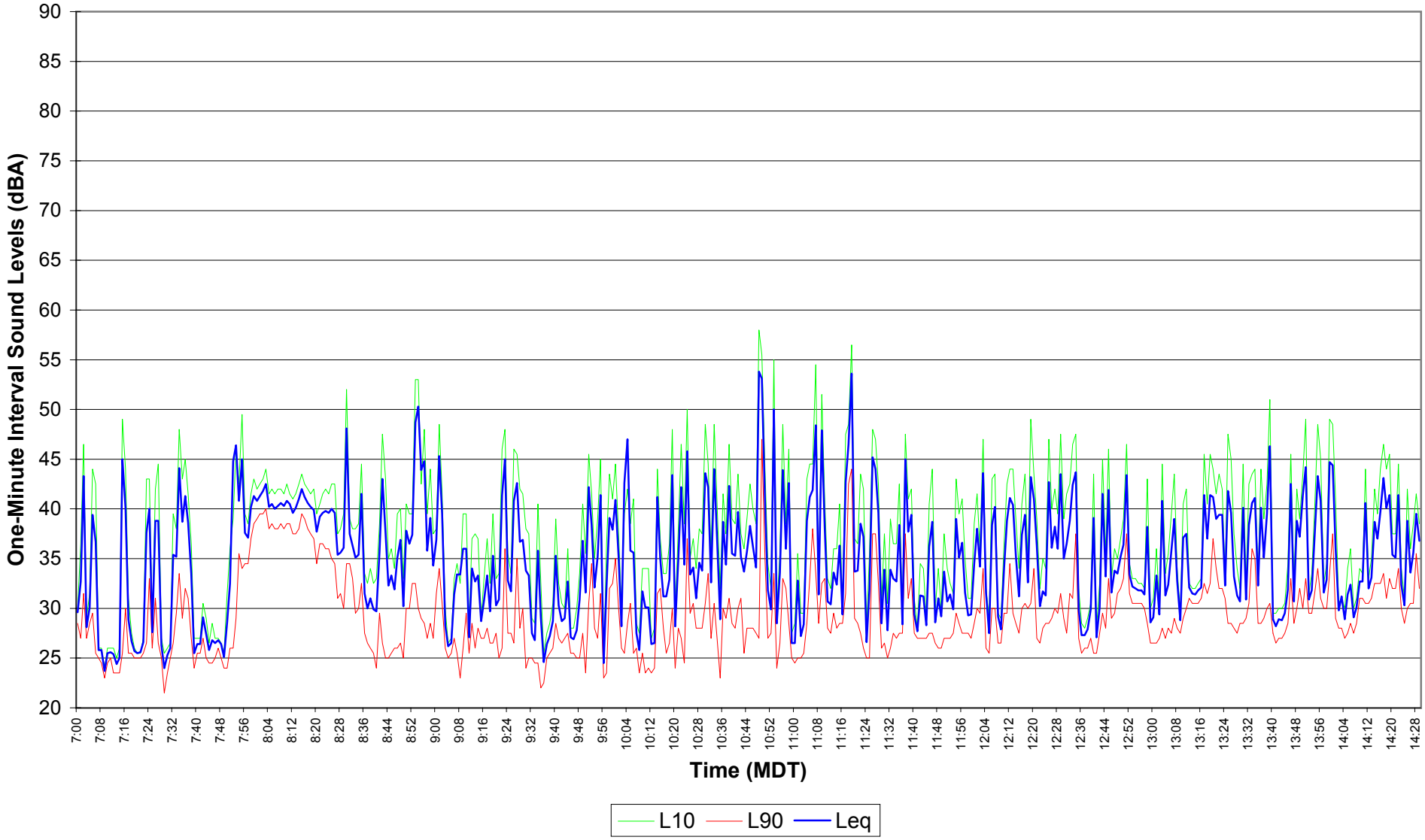


Figure E6.35
EnCana Rosebud
Site 6 Noise Survey
Dec. 04, 2004 14:30 - 21:59

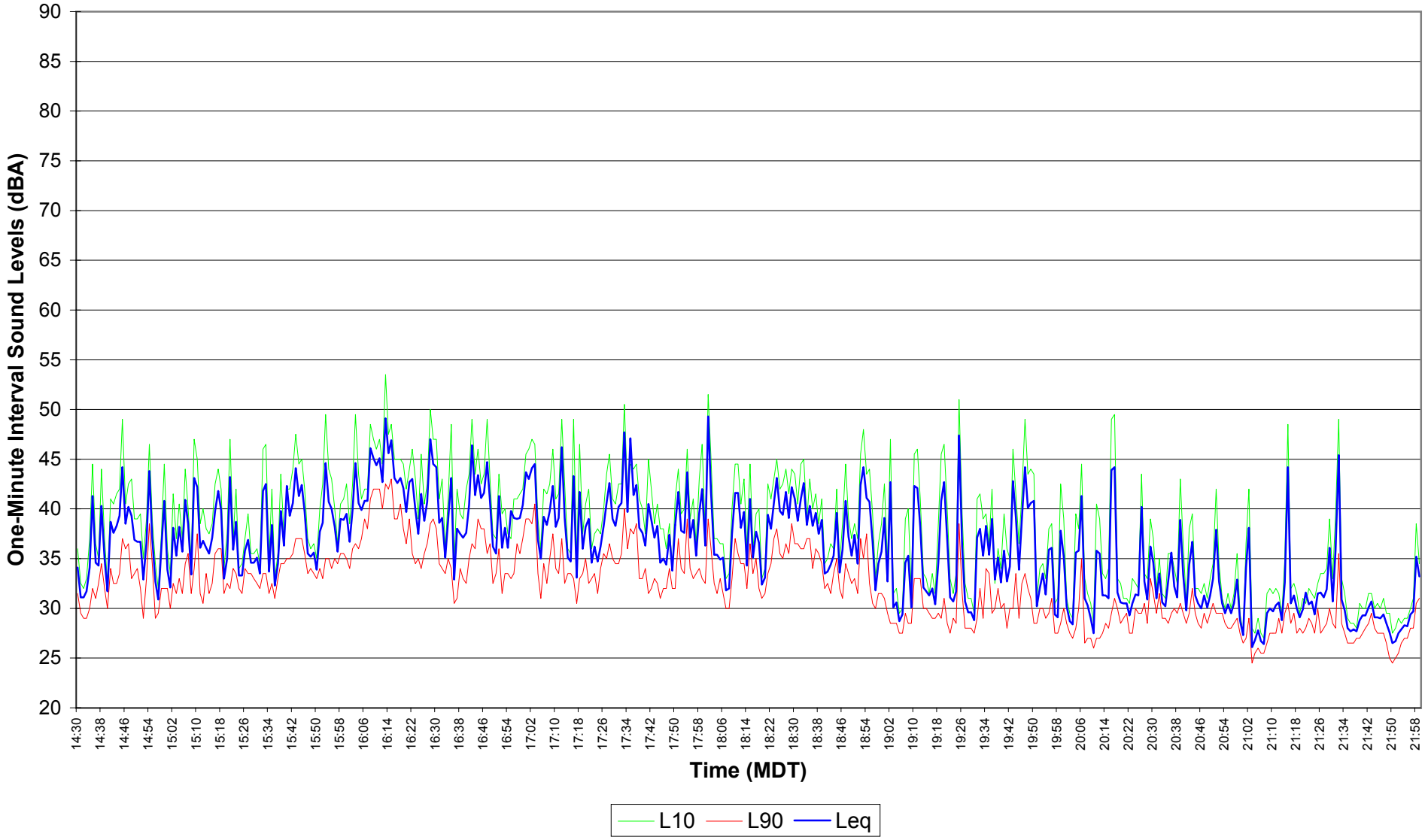


Figure E6.36
EnCana Rosebud
Site 6 Noise Survey
Dec. 04, 2004 - Dec. 05, 2004 22:00 - 06:59

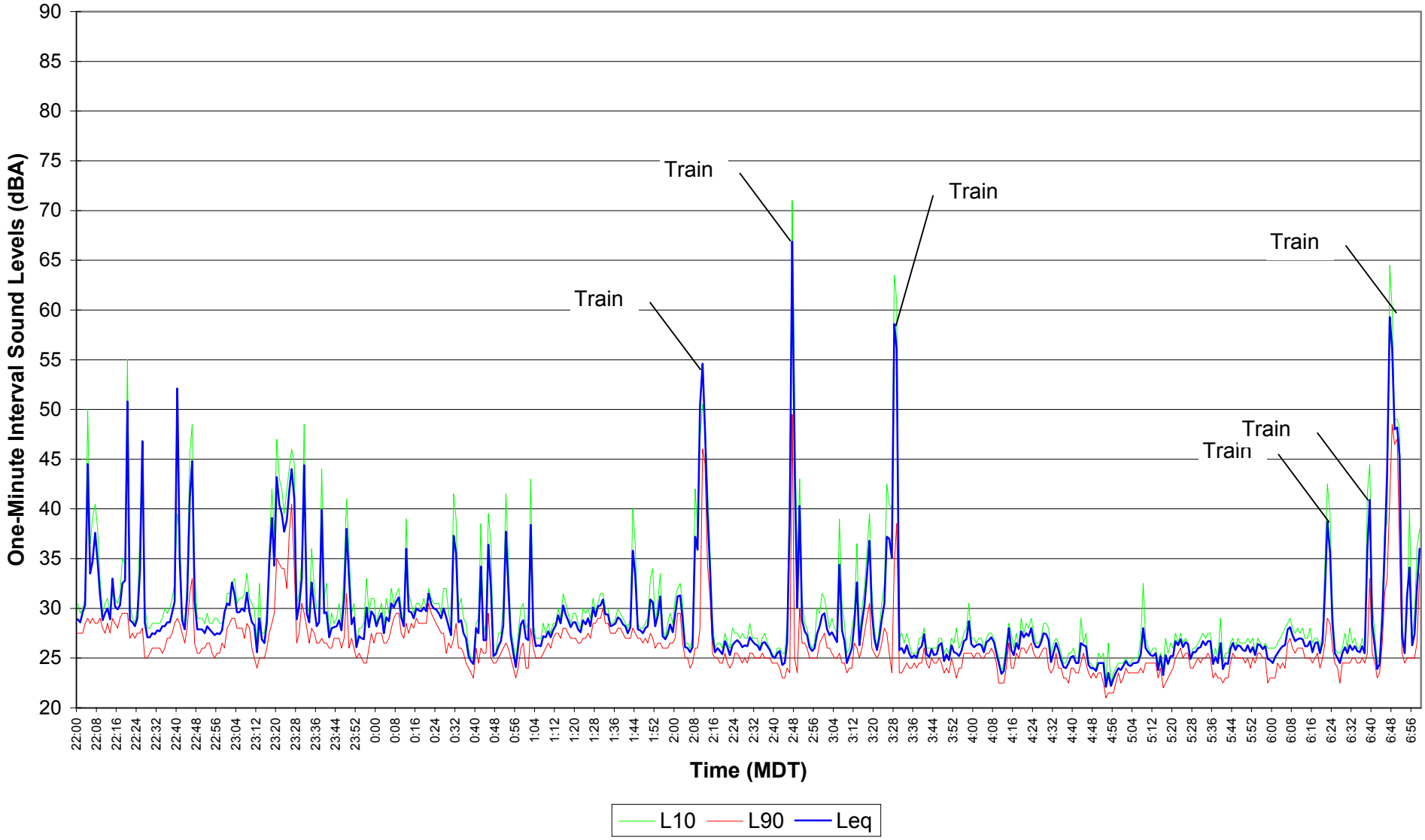


Figure E6.37
EnCana Rosebud
Site 6 Noise Survey
Dec. 05, 2004 07:00 - 14:29

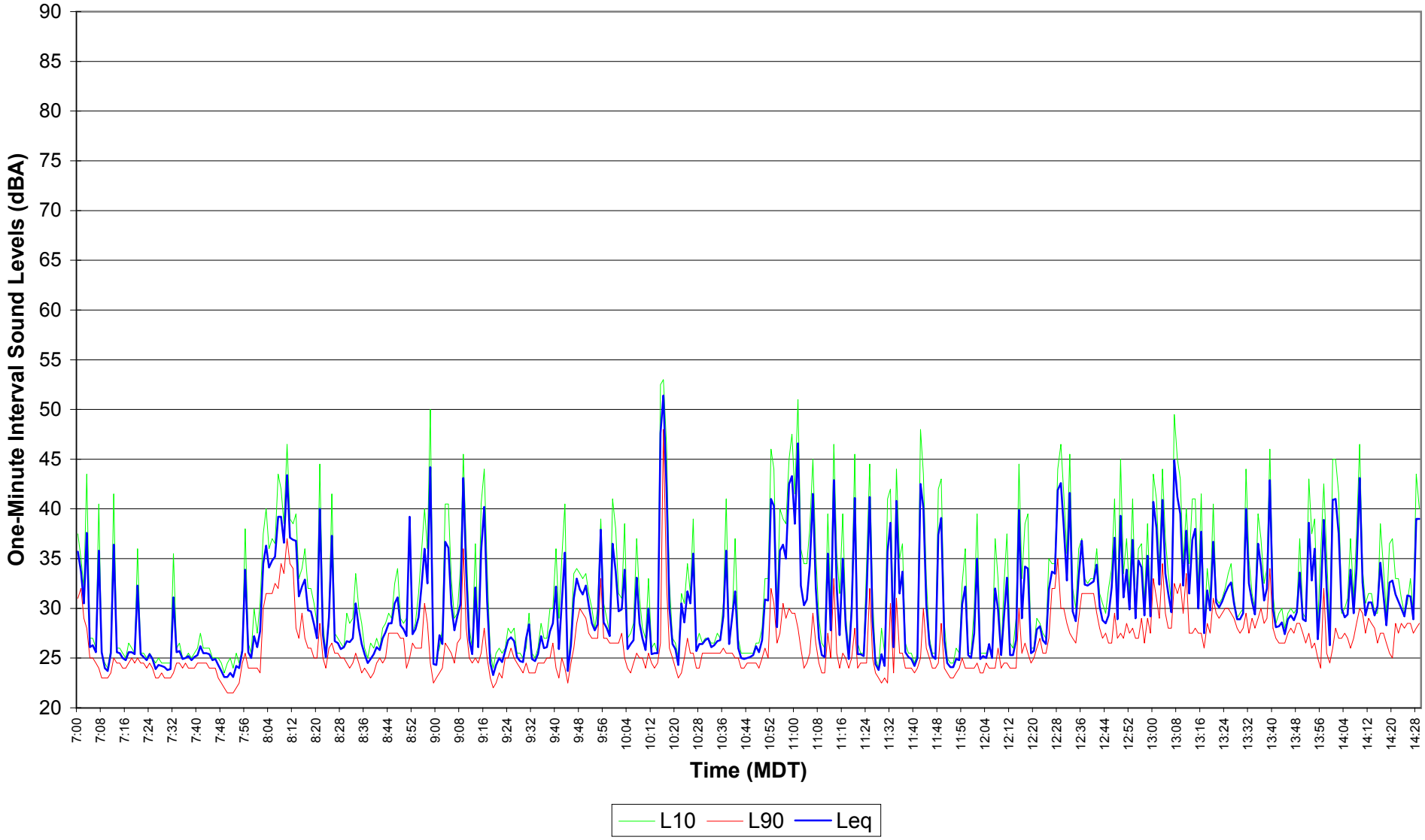


Figure E6.38
EnCana Rosebud
Site 6 Noise Survey
Dec. 05, 2004 14:30 - 21:59

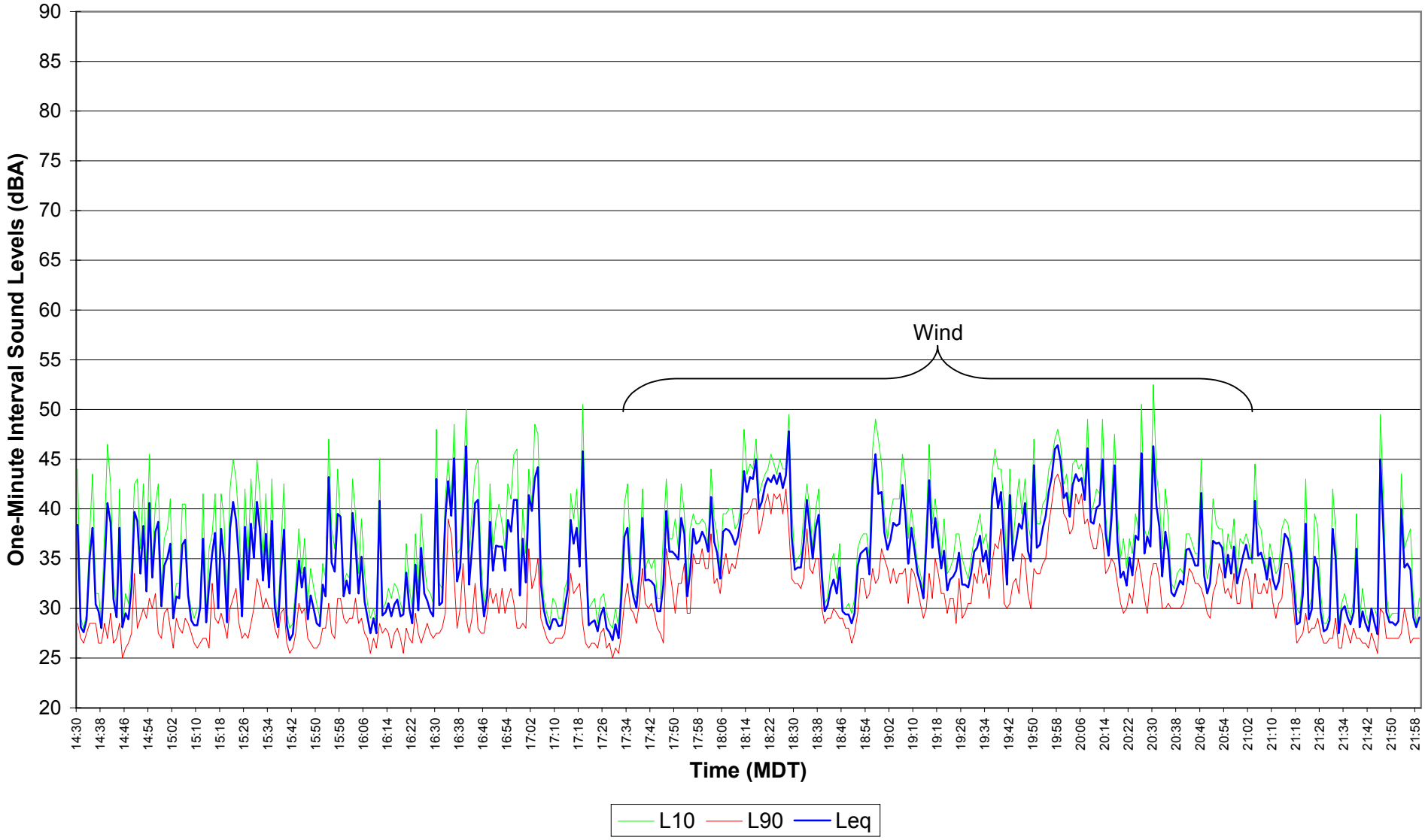


Figure E6.39
EnCana Rosebud
Site 6 Noise Survey
Dec. 05, 2004 - Dec. 06, 2004 22:00 - 06:59

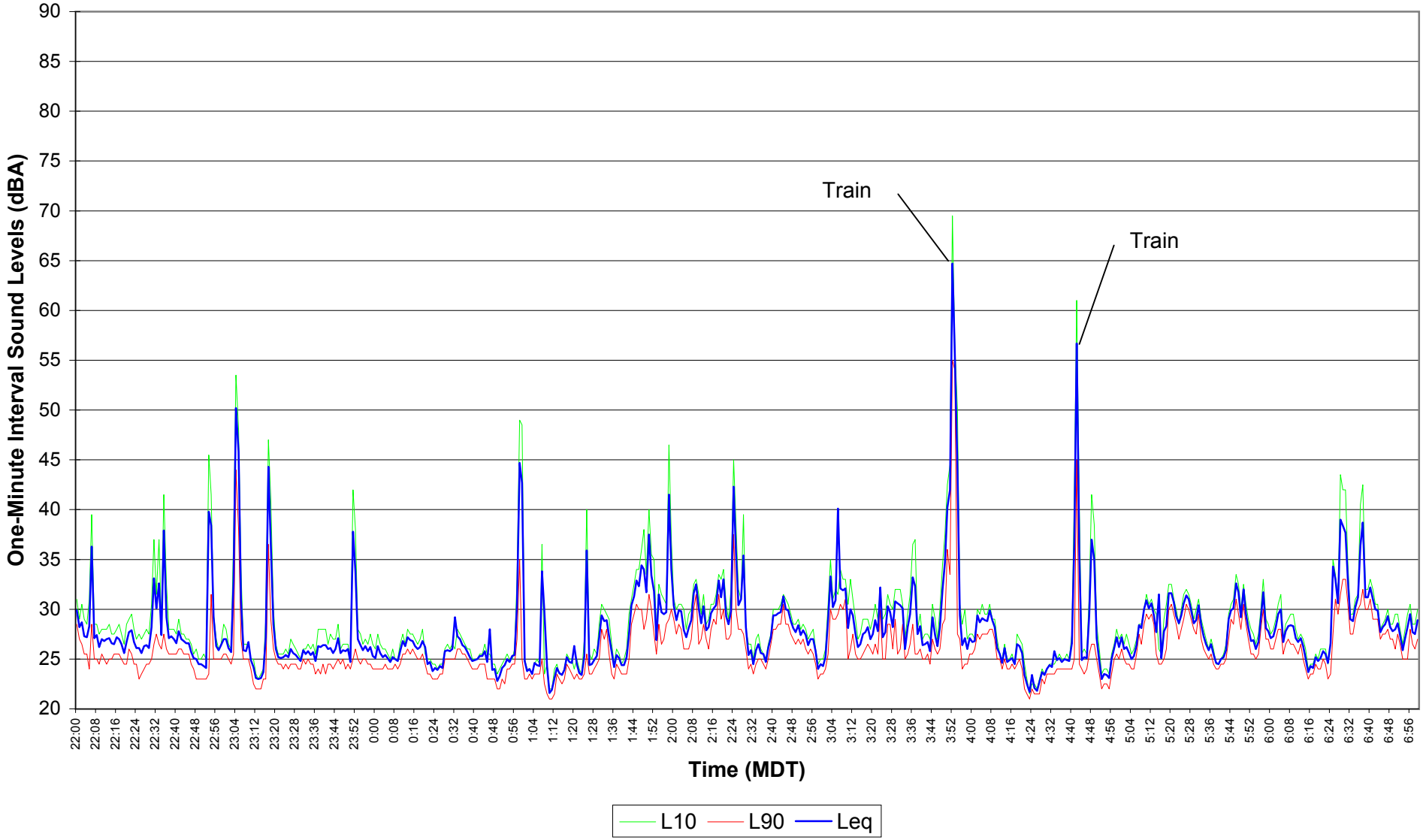


Figure E6.40
EnCana Rosebud
Site 6 Noise Survey
Dec. 06, 2004 07:00 - 14:29

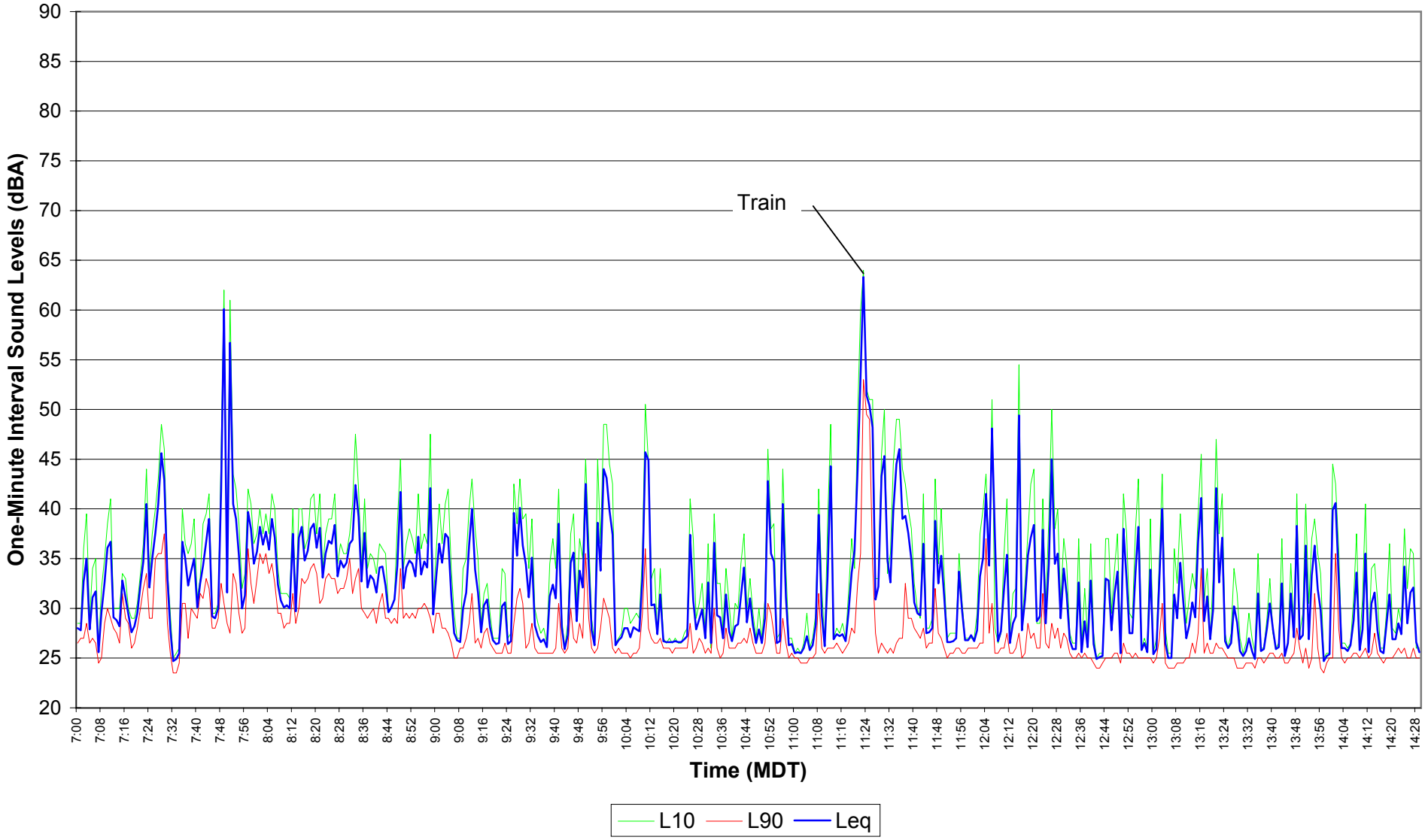


Figure E6.41
EnCana Rosebud
Site 6 Noise Survey
Dec. 06, 2004 14:30 - 21:59

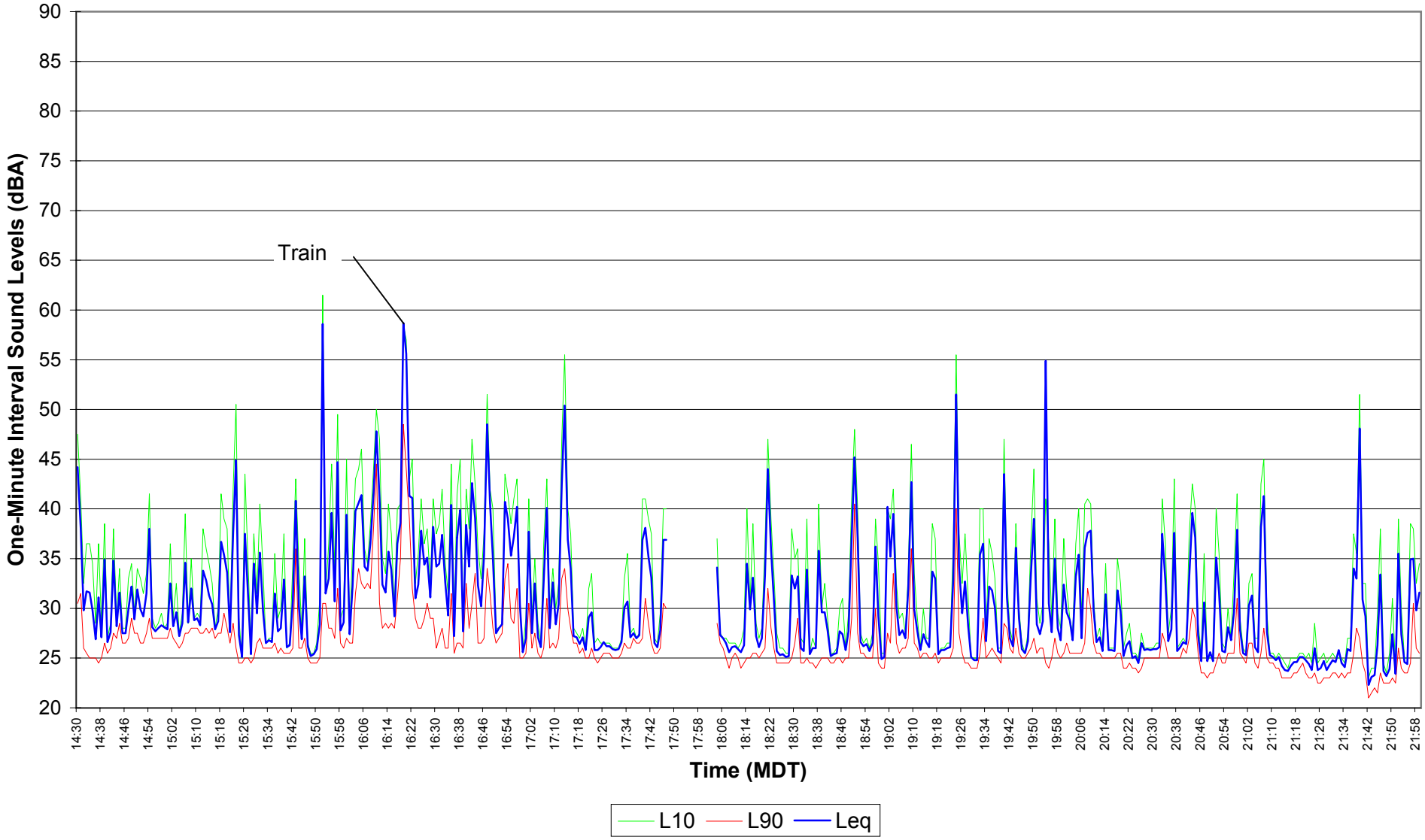


Figure E6.42
EnCana Rosebud
Site 6 Noise Survey
Dec. 06, 2004 - Dec. 07, 2004 22:00 - 06:59

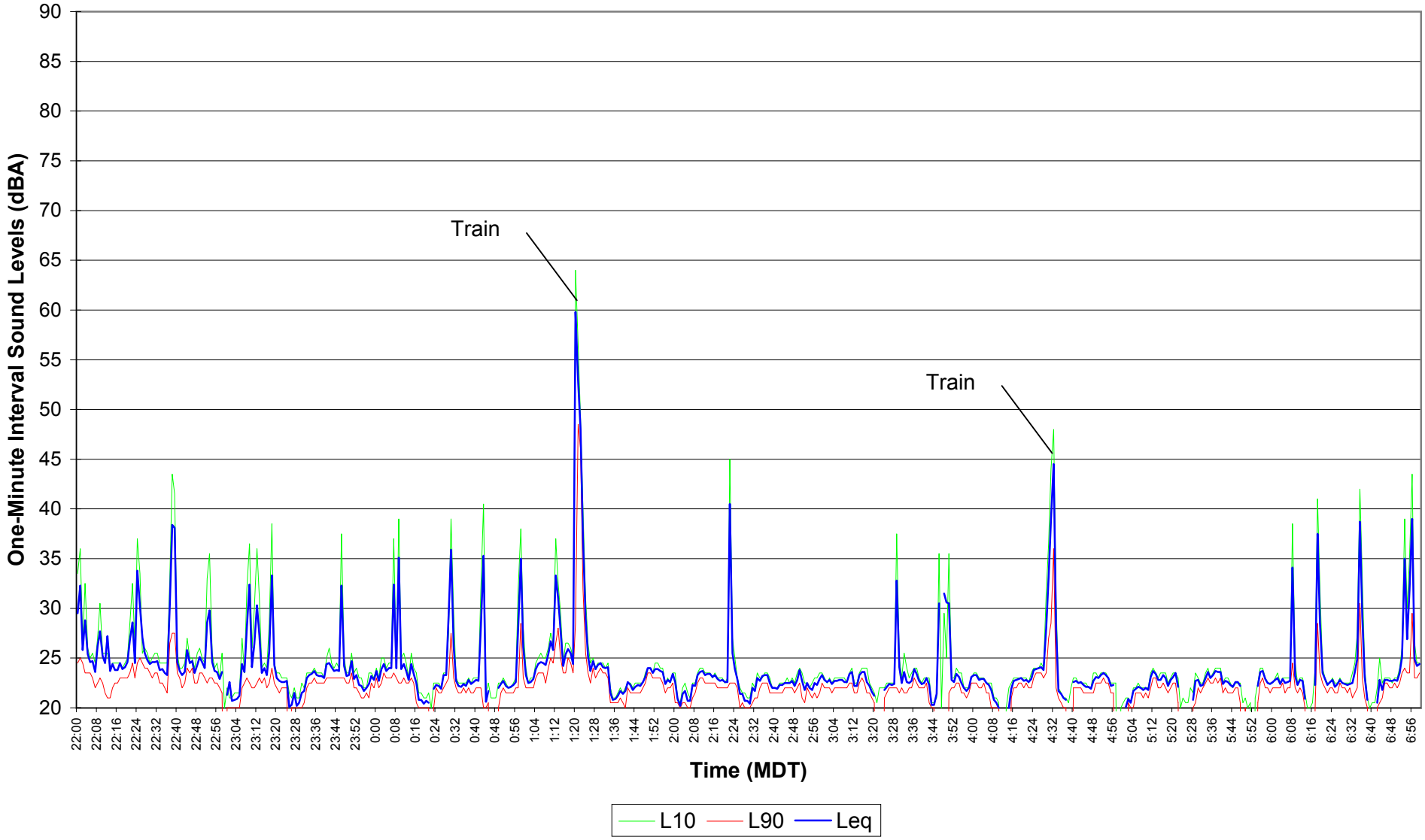


Figure E6.43
EnCana Rosebud
Site 6 Noise Survey
Dec. 07, 2004 07:00 - 14:29

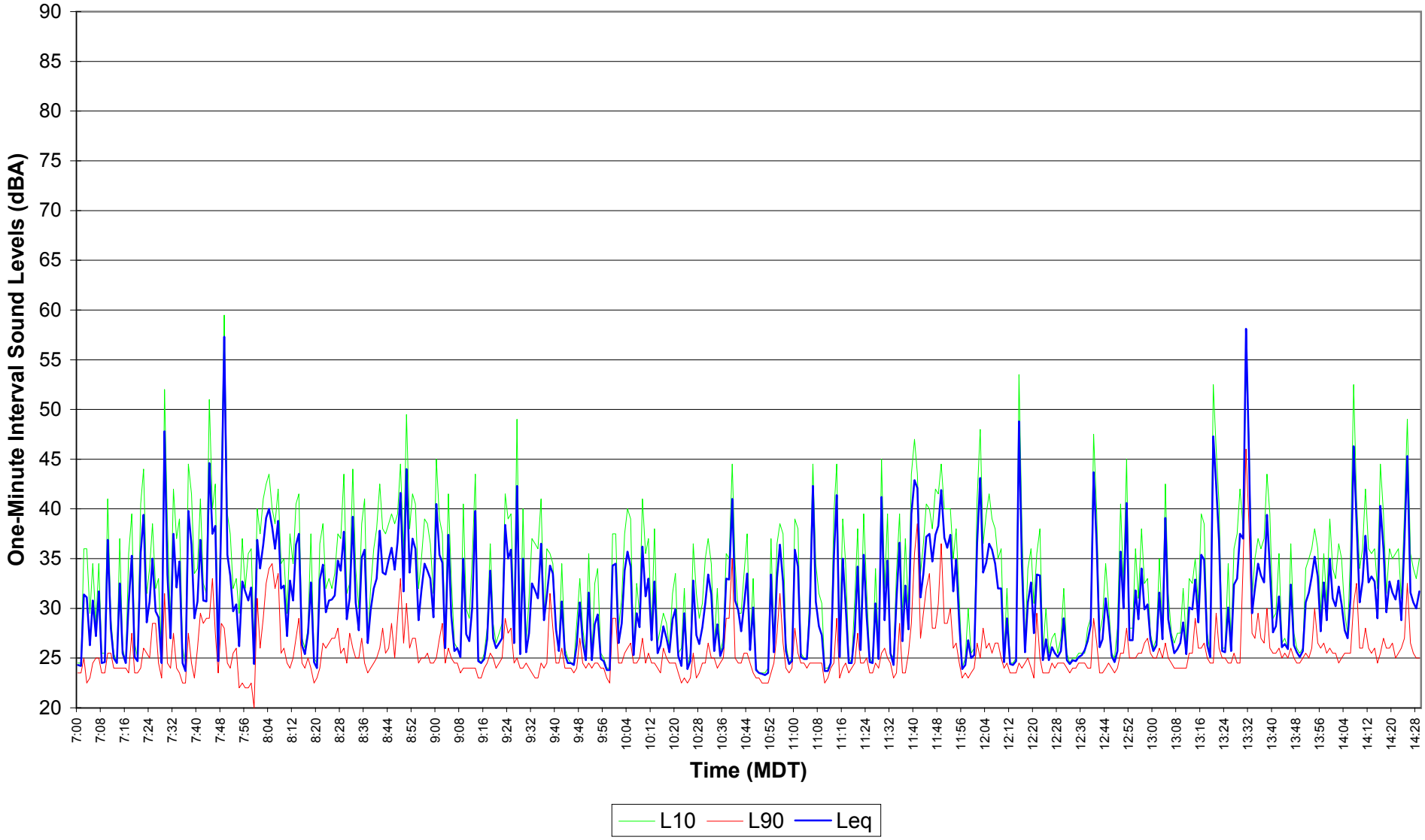


Figure E6.44
EnCana Rosebud
Site 6 Noise Survey
Dec. 07, 2004 14:30 - 21:59

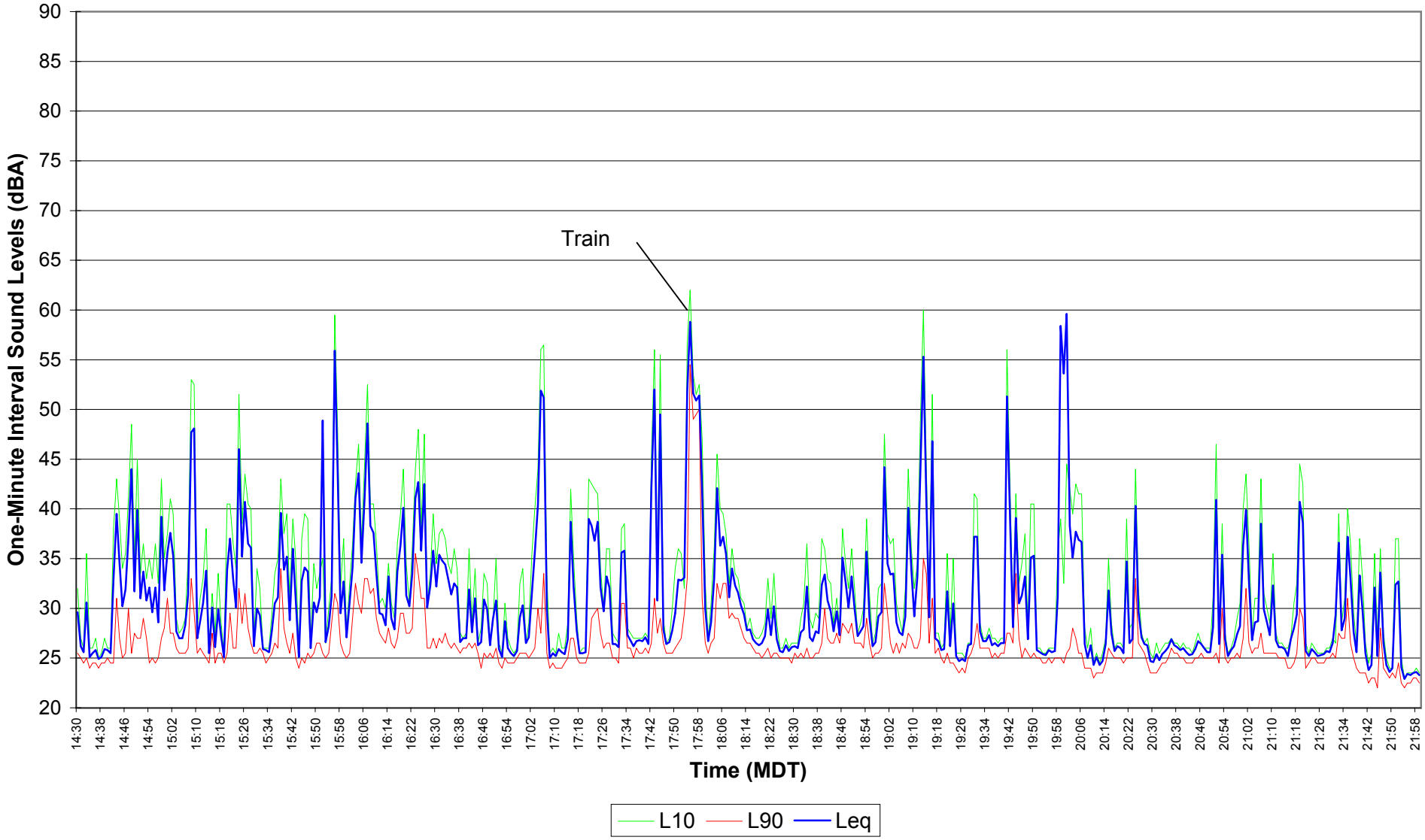


Figure E6.45
EnCana Rosebud
Site 6 Noise Survey
Dec. 07, 2004 - Dec. 08, 2004 22:00 - 06:59

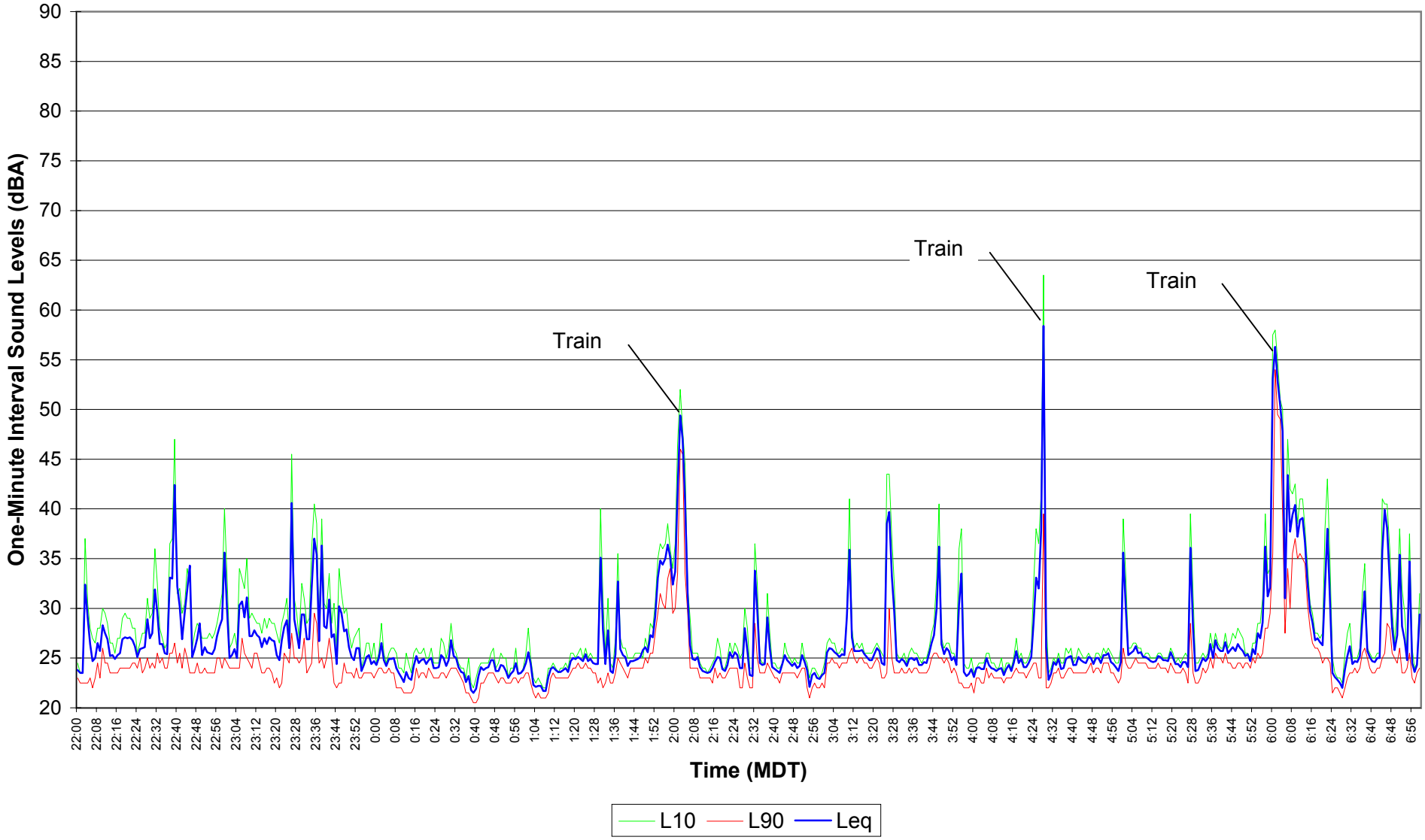


Figure E6.46

EnCana Rosebud

Site 6 Noise Survey

Dec. 08, 2004 07:00 - 14:29

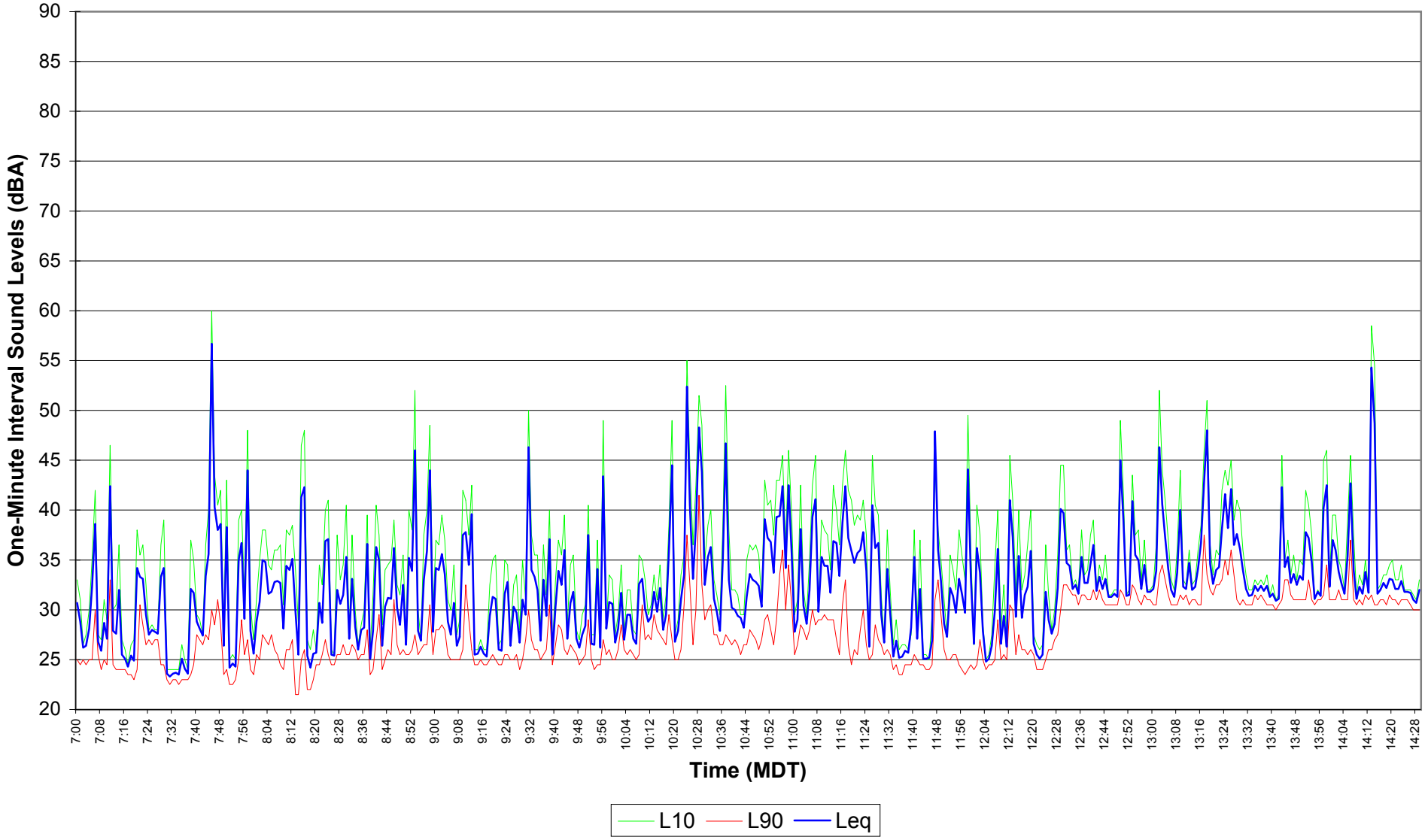


Figure E6.47
EnCana Rosebud
Site 6 Noise Survey
Dec. 08, 2004 14:30 - 21:59

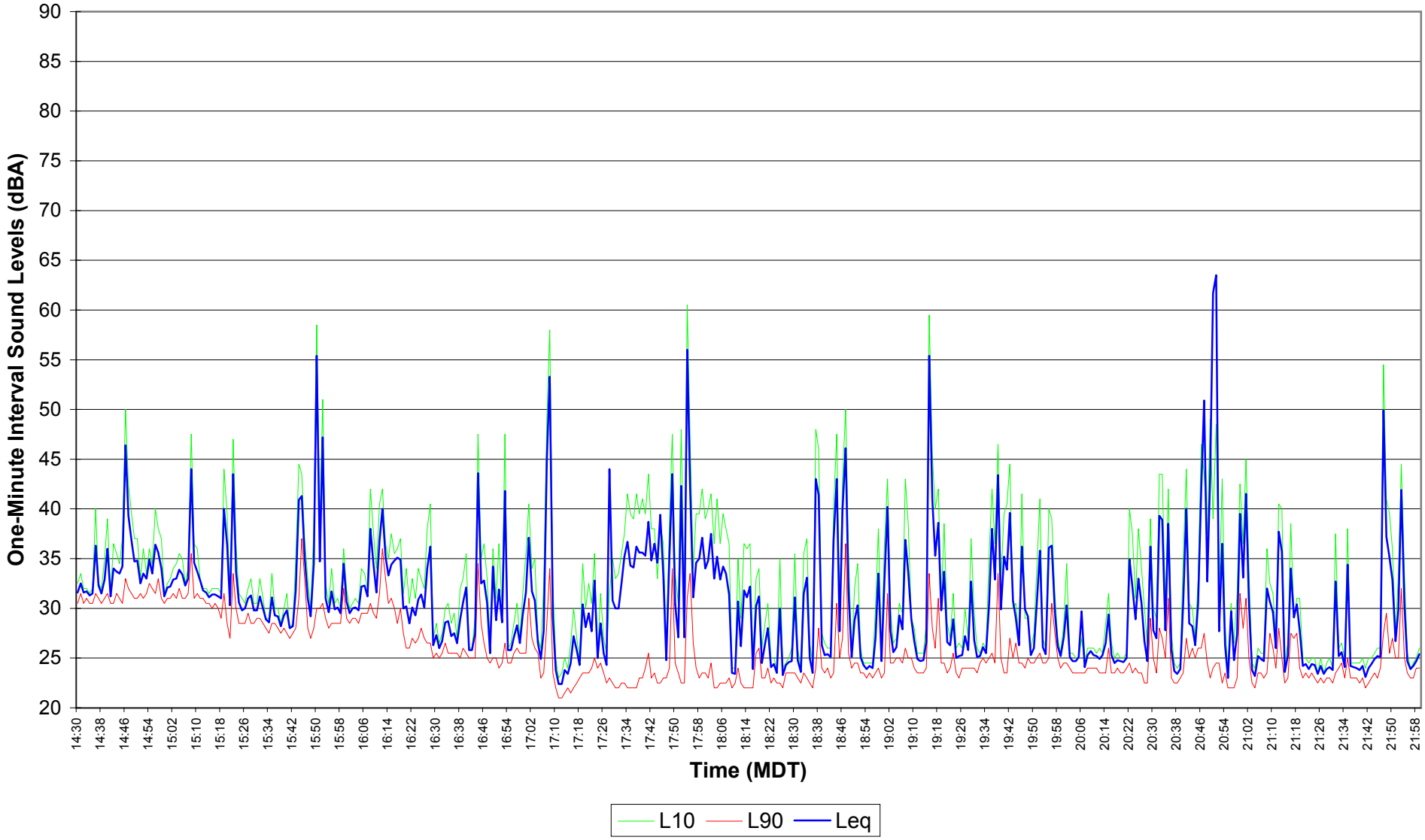


Figure E6.48
EnCana Rosebud
Site 6 Noise Survey
Dec. 08, 2004 - Dec. 09, 2004 22:00 - 06:59

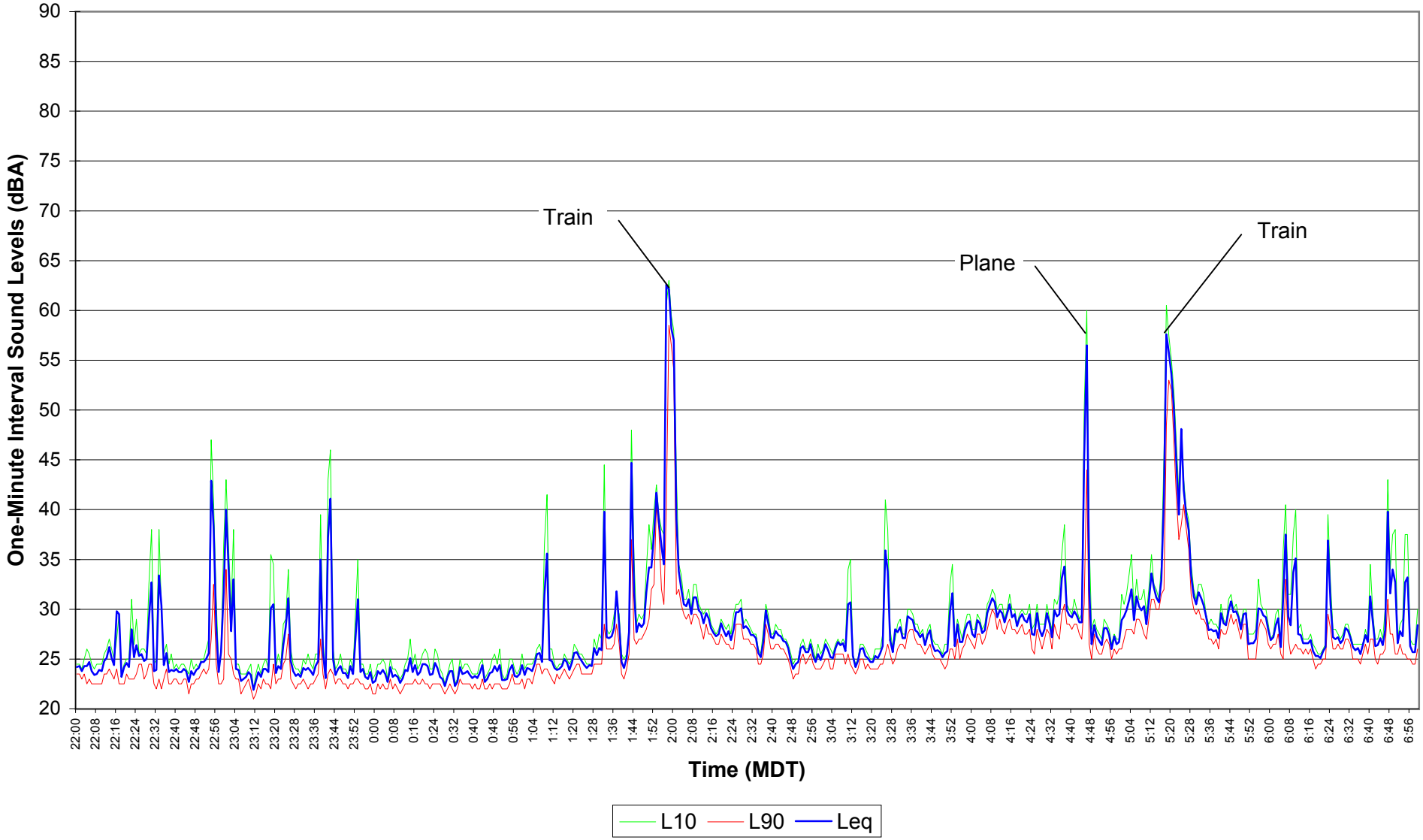


Figure E6.49
EnCana Rosebud
Site 6 Noise Survey
Dec. 09, 2004 07:00 - 14:29

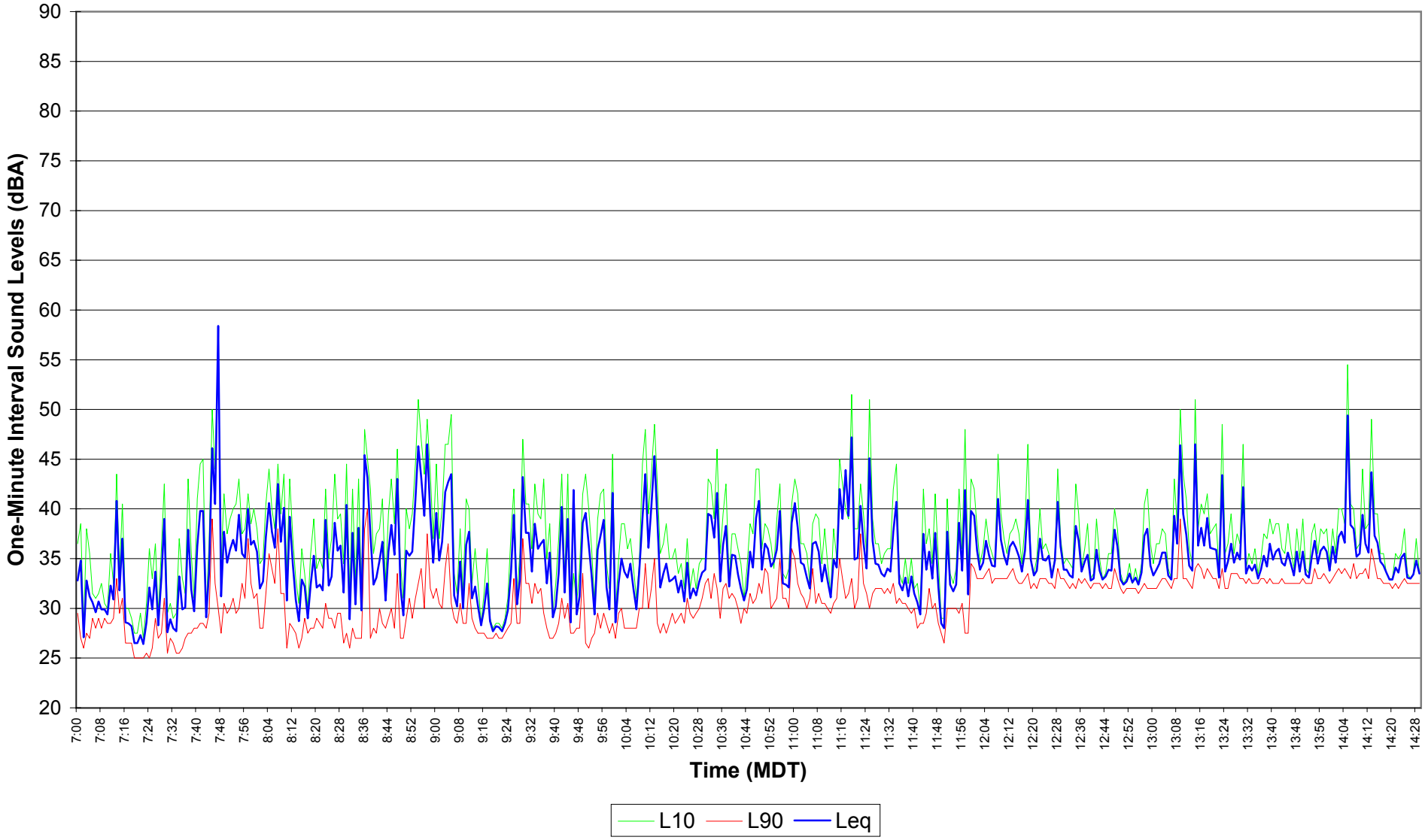


Figure E6.50
EnCana Rosebud
Site 6 Noise Survey
Dec. 09, 2004 14:30 - 21:59

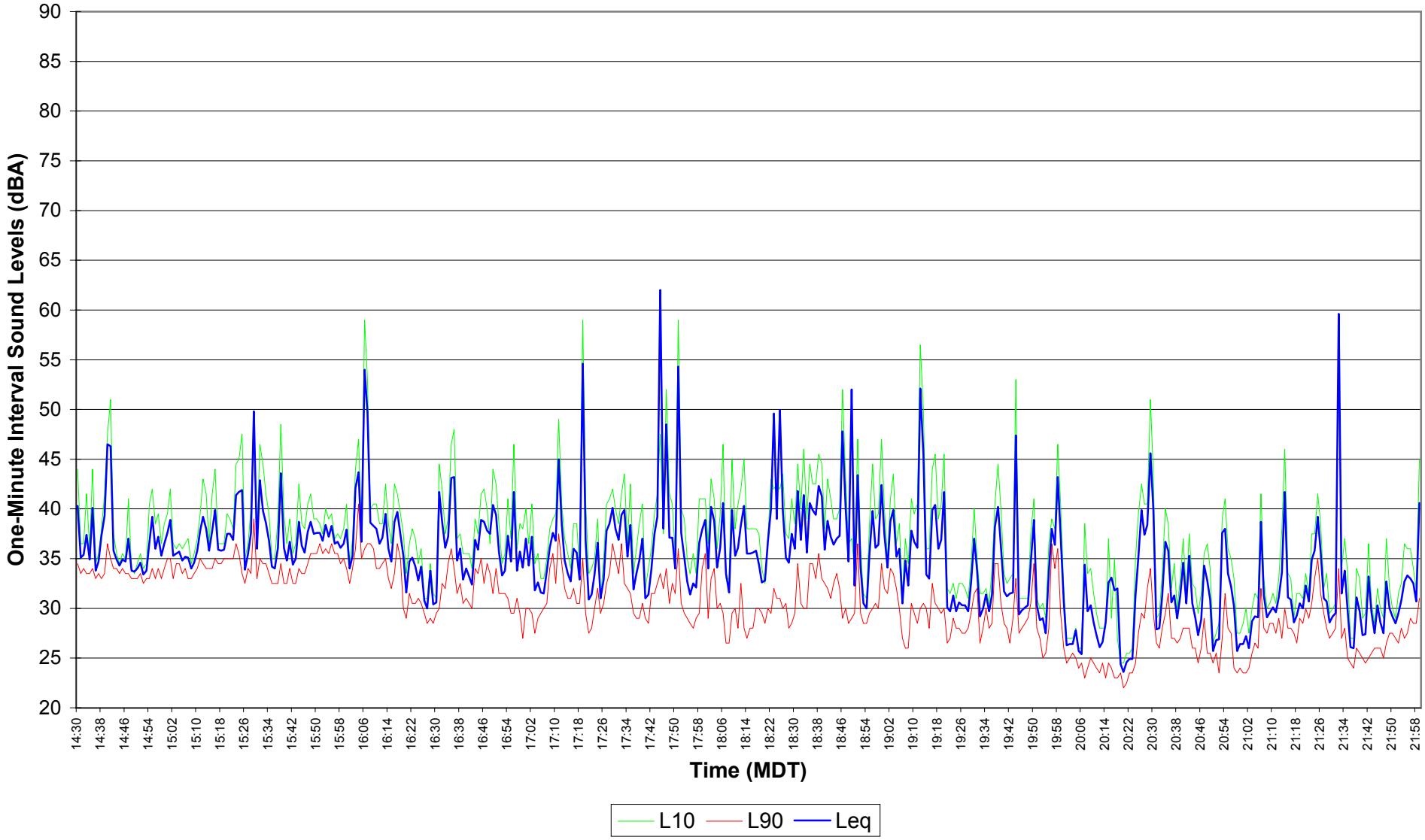


Figure E6.51
EnCana Rosebud
Site 6 Noise Survey
Dec. 09, 2004 - Dec. 10, 2004 22:00 - 06:59

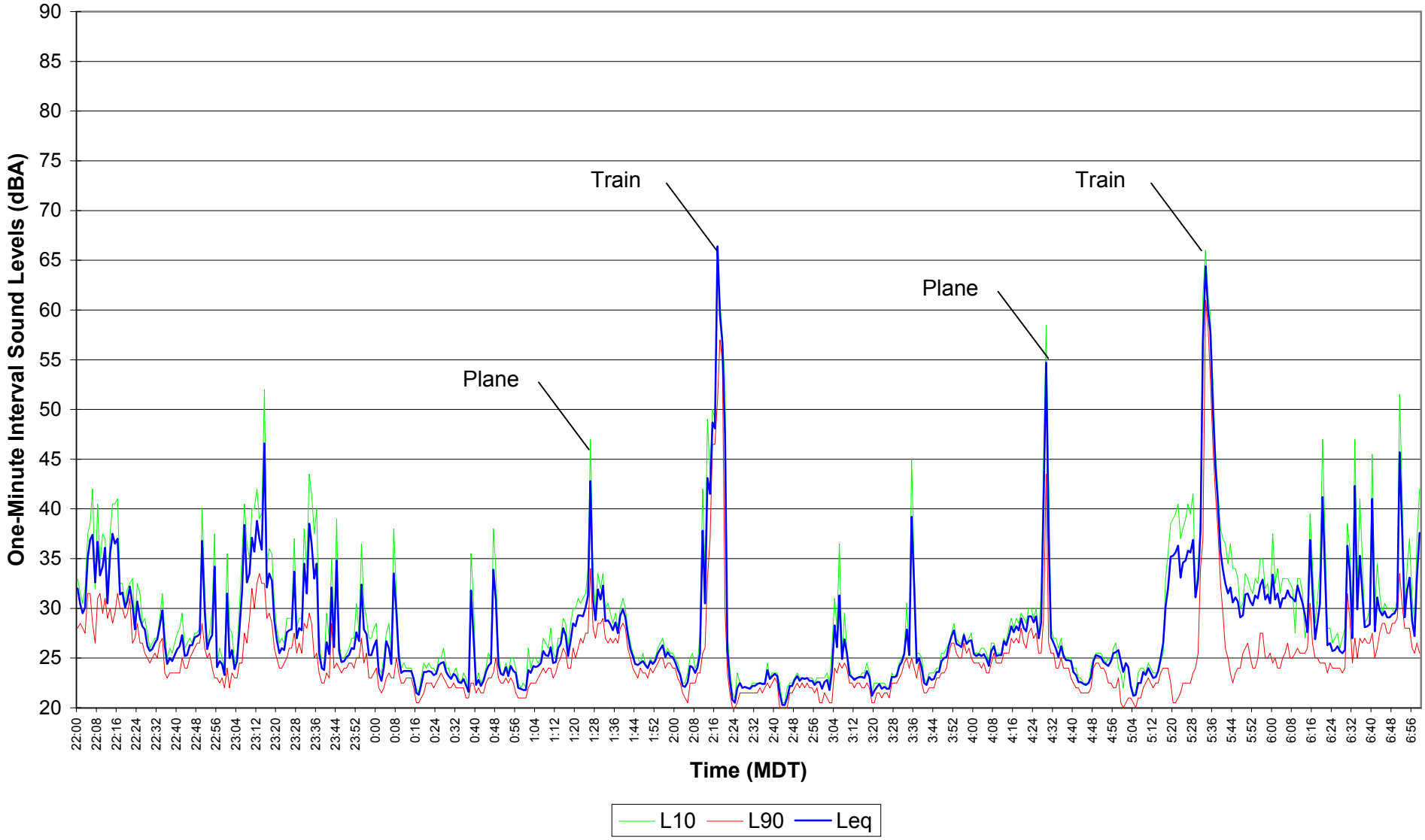


Figure E6.52
EnCana Rosebud
Site 6 Noise Survey
Dec. 10, 2004 07:00 - 14:29

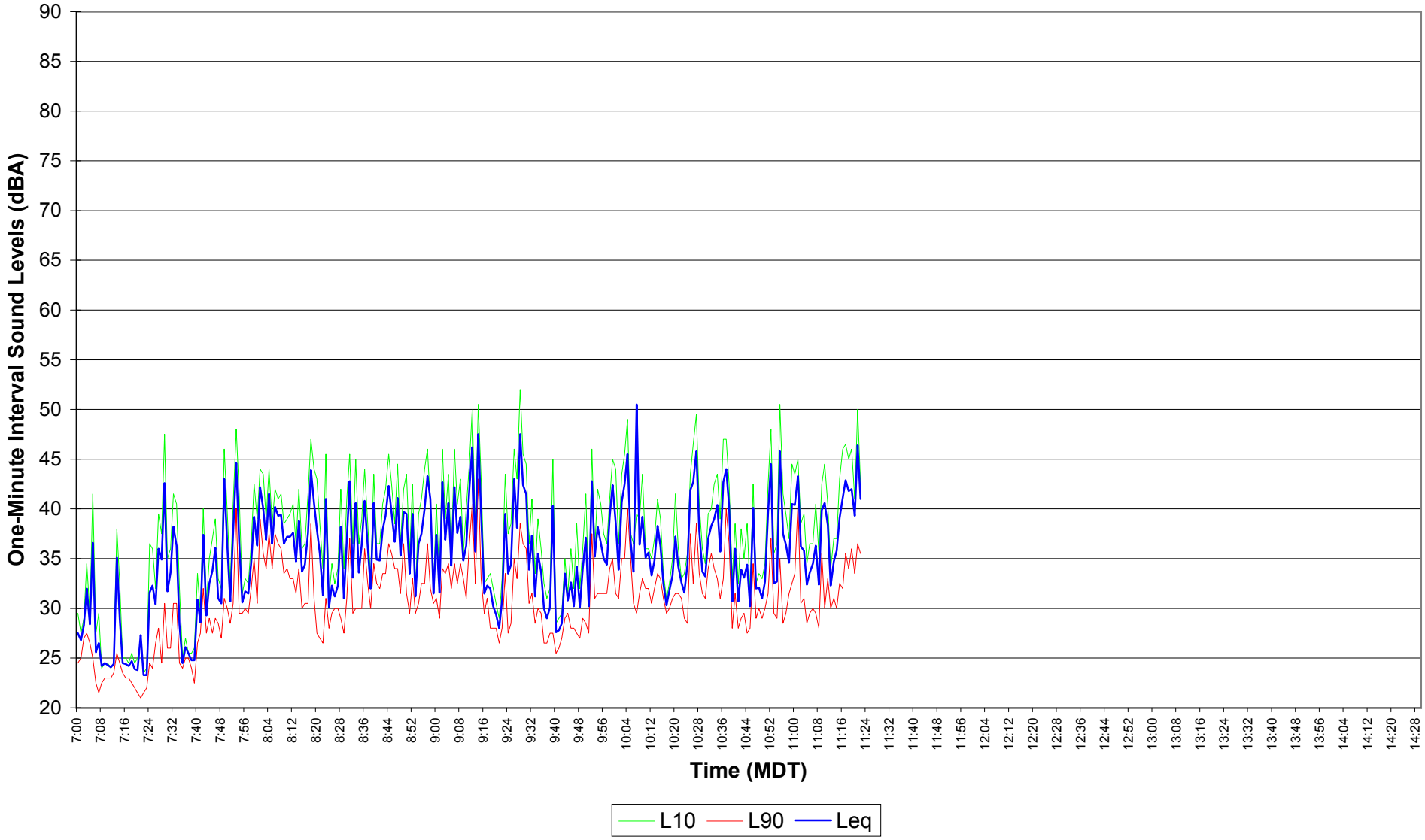


Figure E6.62
EnCana Rosebud
Site 6 Noise Survey
Dec. 13, 2004 14:30 - 21:59

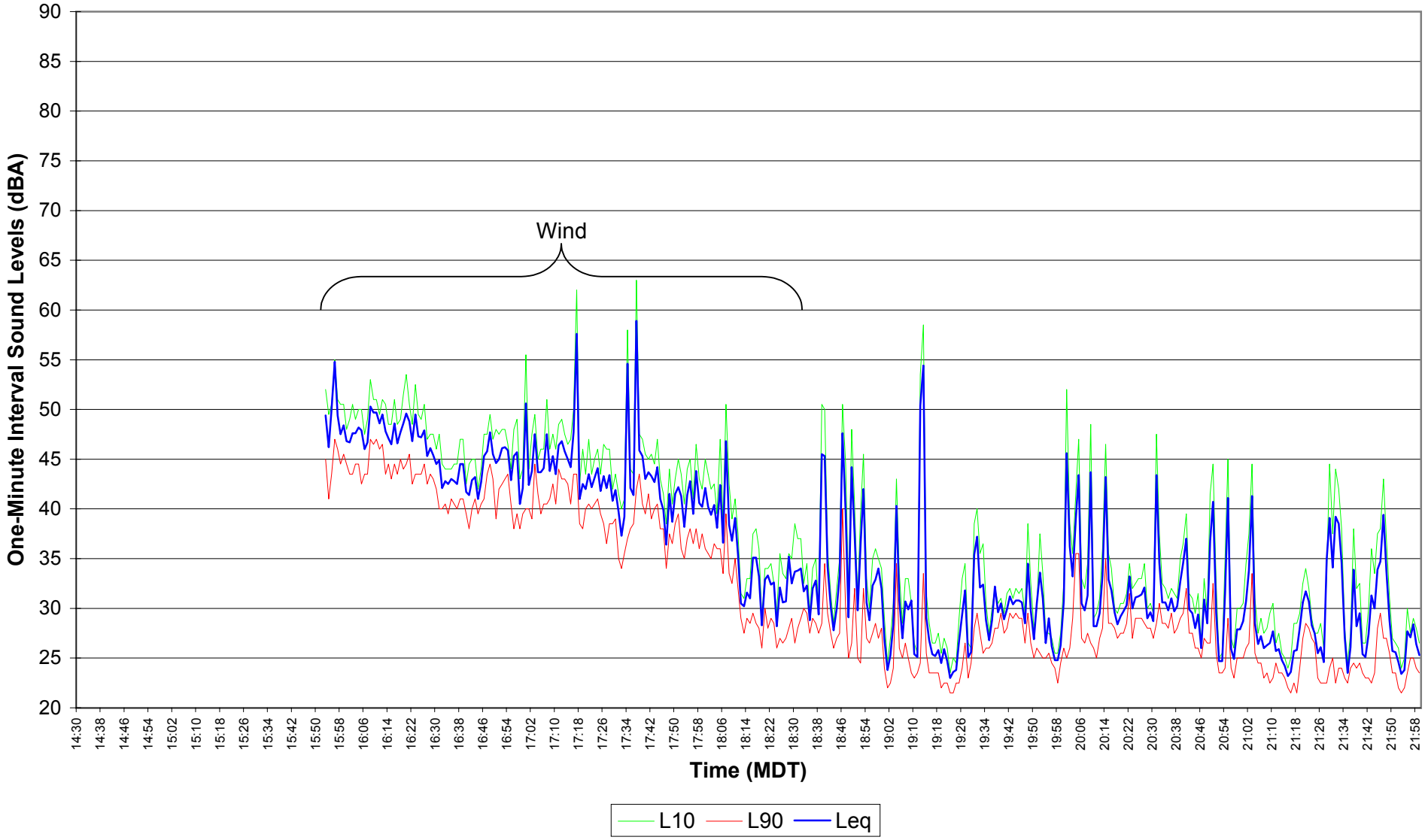


Figure E6.63
EnCana Rosebud
Site 6 Noise Survey
Dec. 13, 2004 - Dec. 14, 2004 22:00 - 06:59

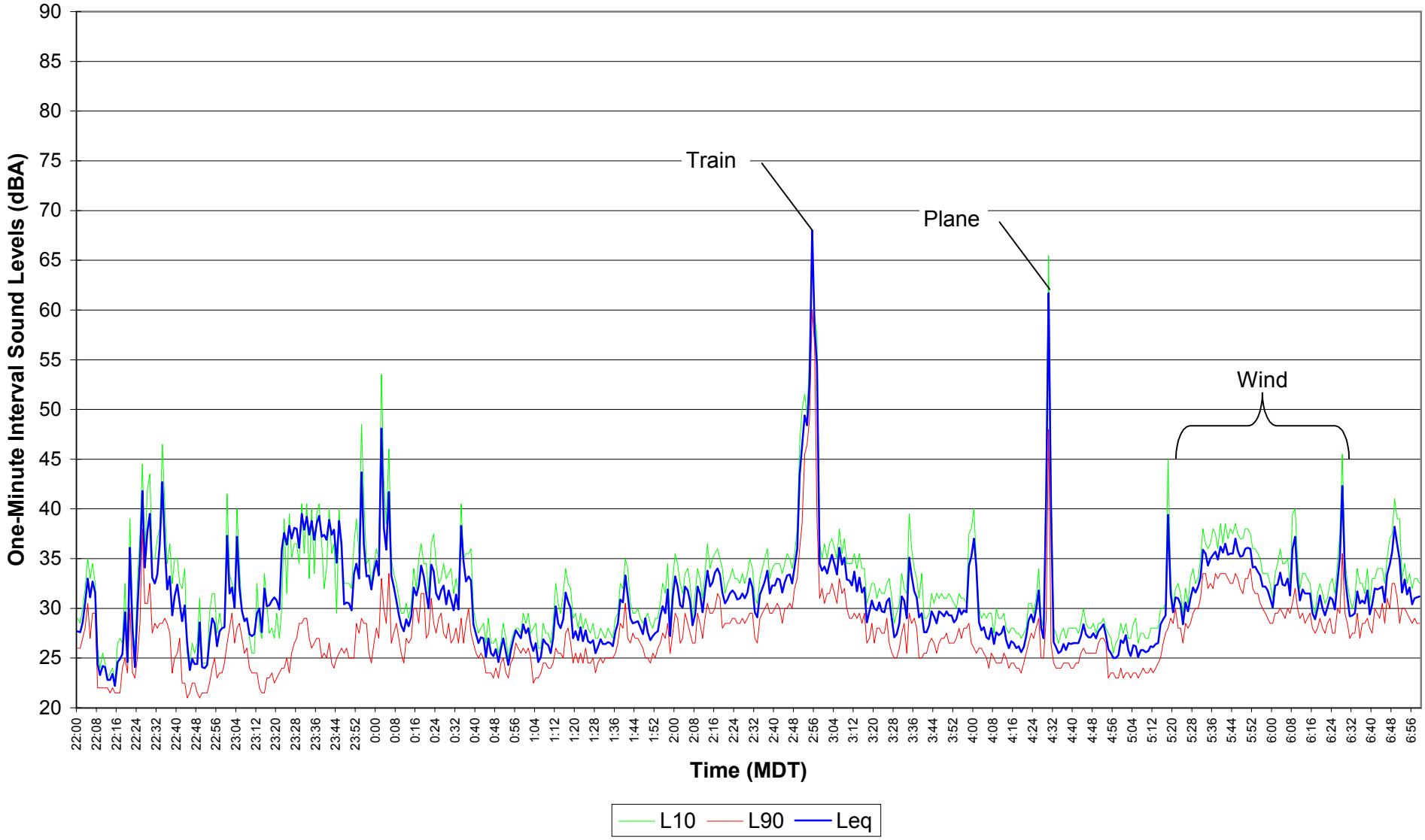


Figure E6.64

EnCana Rosebud

Site 6 Noise Survey

Dec. 14, 2004 07:00 - 14:29

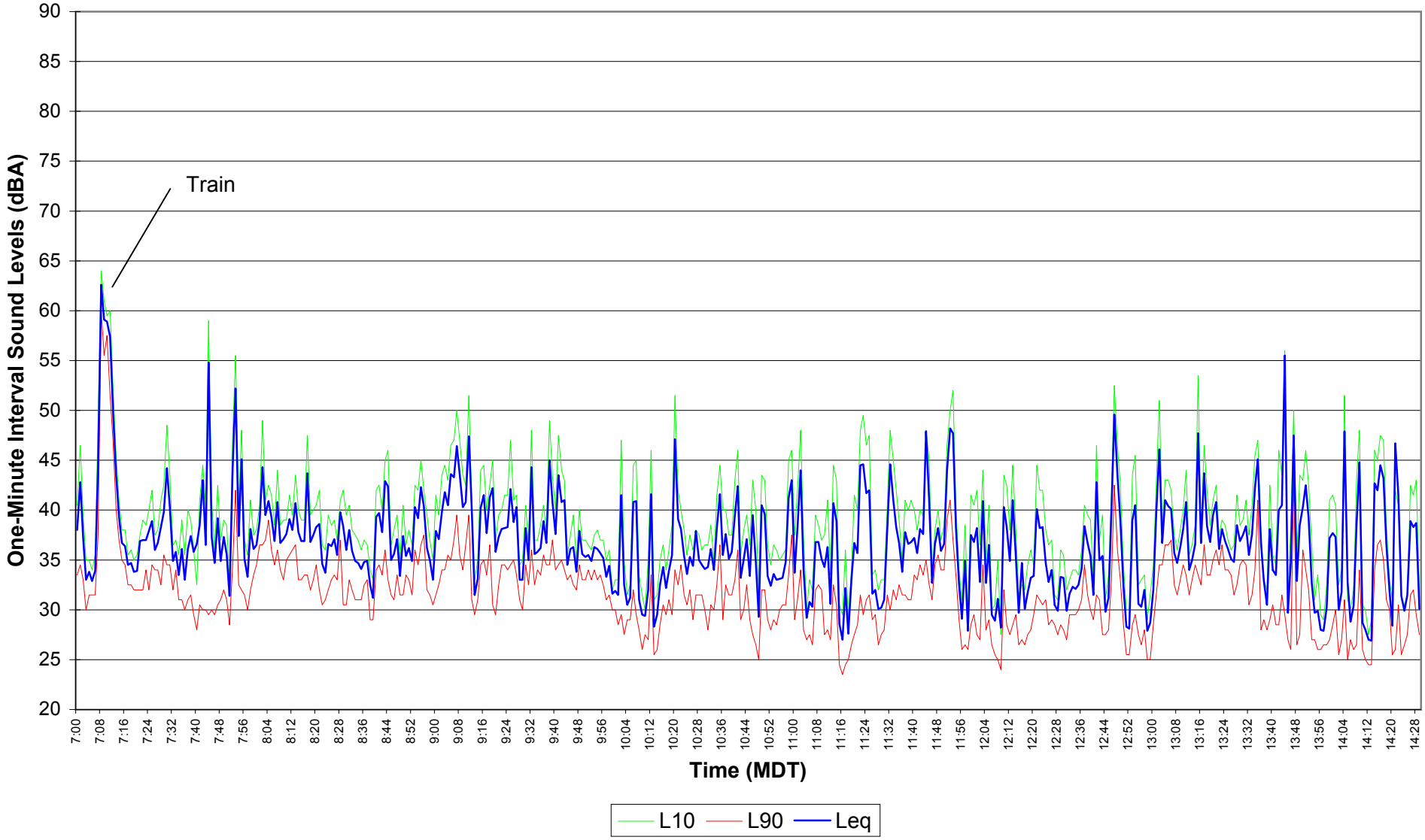


Figure E6.65
EnCana Rosebud
Site 6 Noise Survey
Dec. 14, 2004 14:30 - 21:59

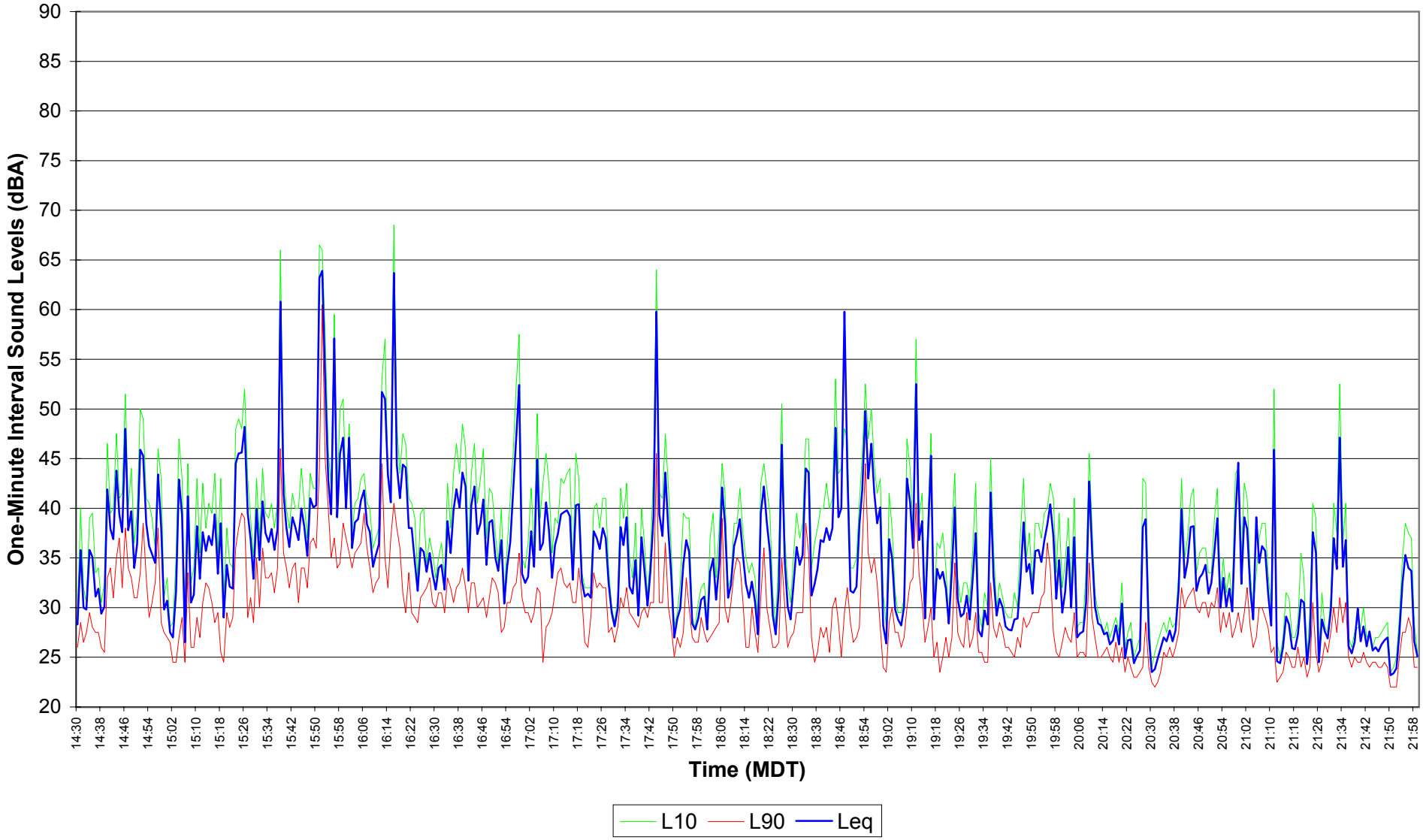


Figure E6.66
EnCana Rosebud
Site 6 Noise Survey
Dec. 14, 2004 - Dec. 15, 2004 22:00 - 06:59

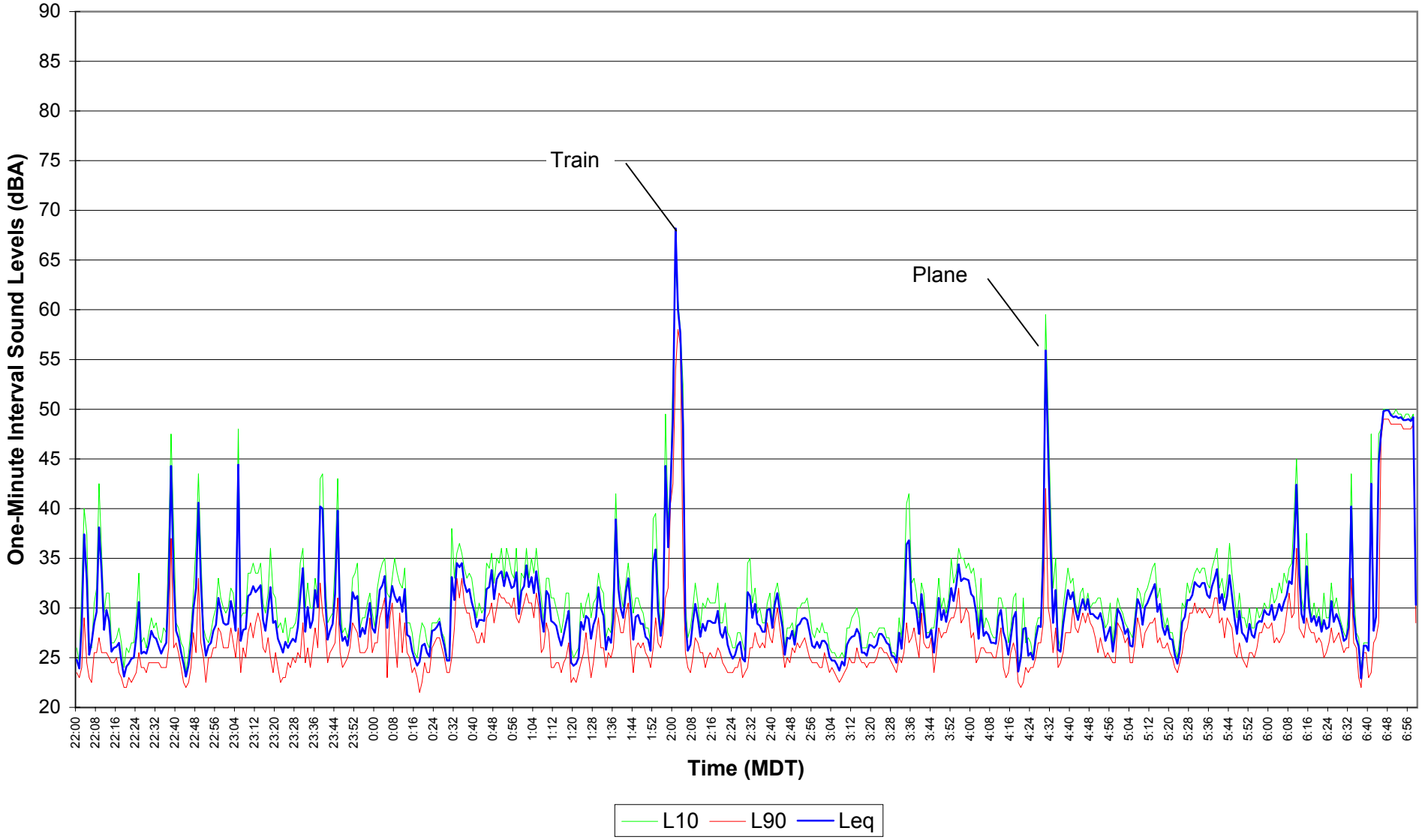


Figure E6.67
EnCana Rosebud
Site 6 Noise Survey
Dec. 15, 2004 07:00 - 14:29

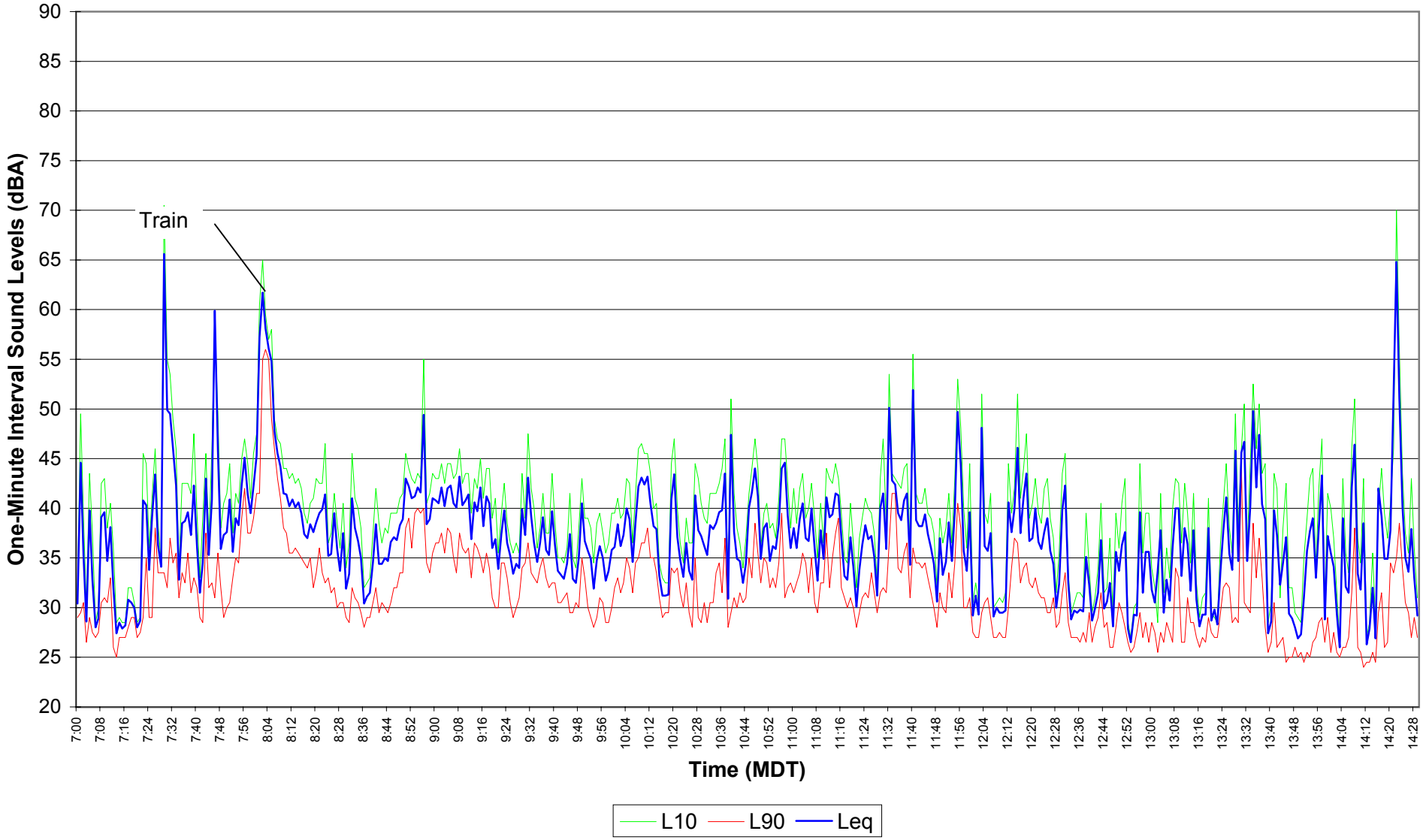


Figure E6.68
EnCana Rosebud
Site 6 Noise Survey
Dec. 15, 2004 14:30 - 21:59

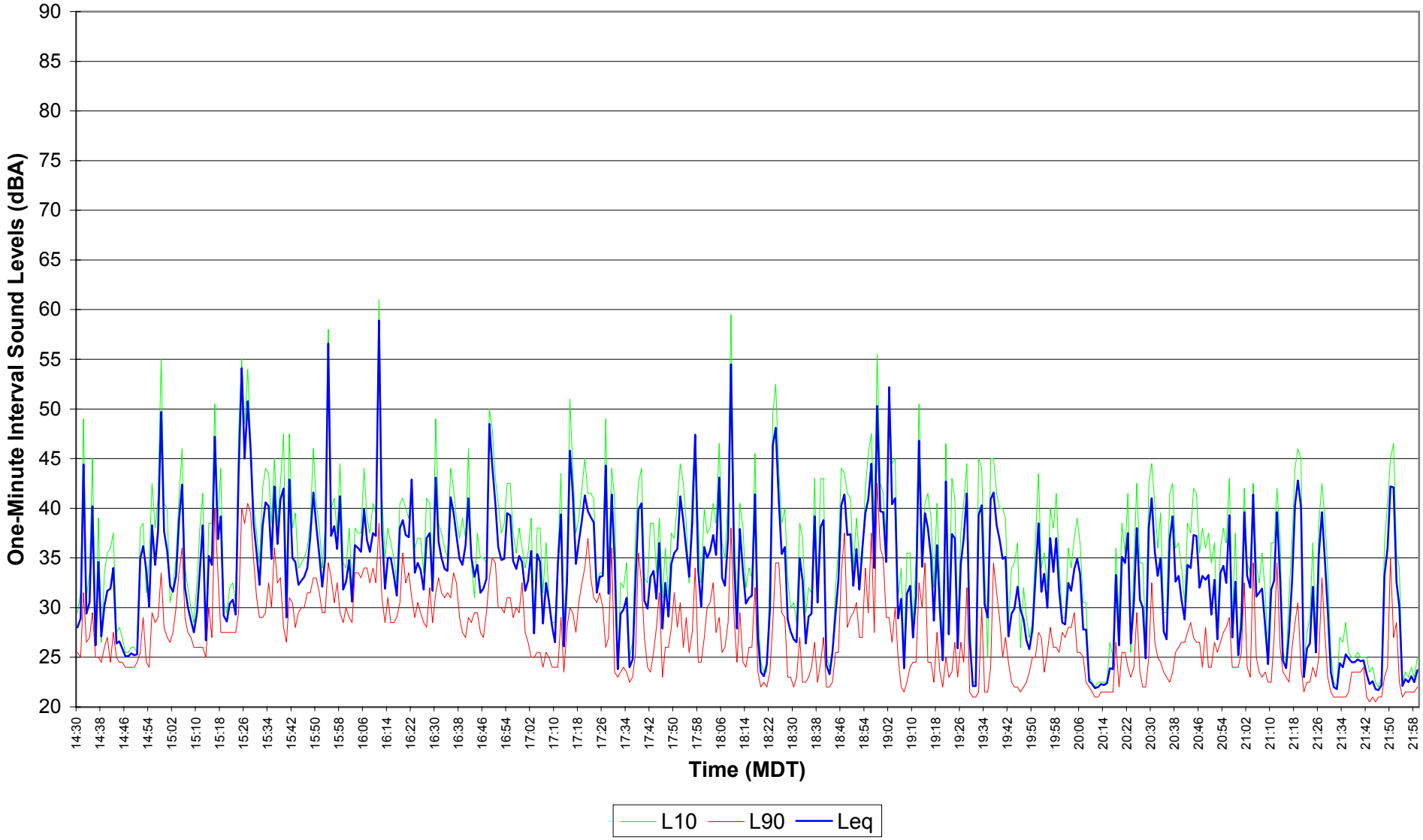


Figure E6.69
EnCana Rosebud
Site 6 Noise Survey
Dec 15, 2004 - Dec 16, 2004 22:00 - 06:59

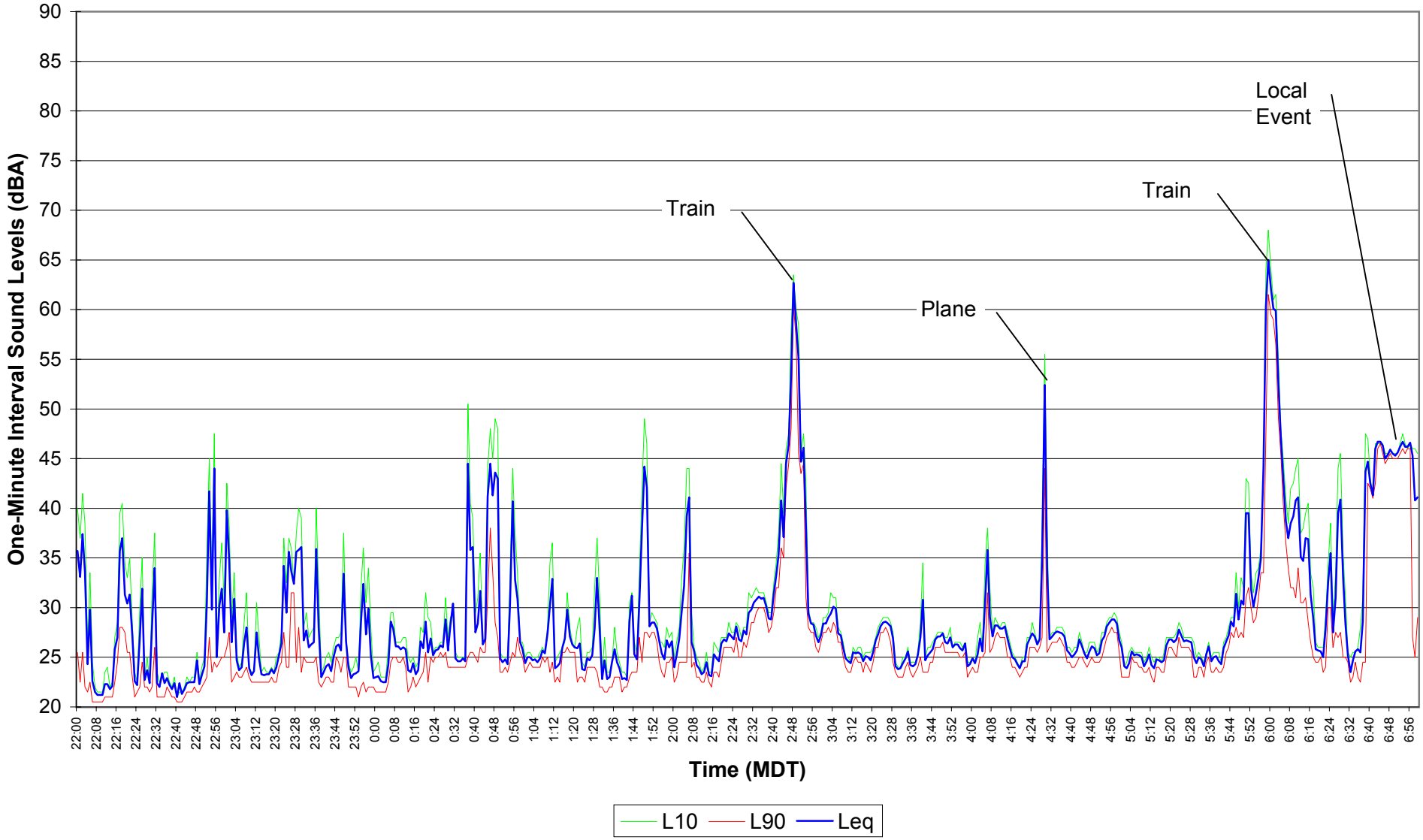


Figure E6.70
EnCana Rosebud
Site 6 Noise Survey
Dec. 16, 2004 07:00 - 14:29

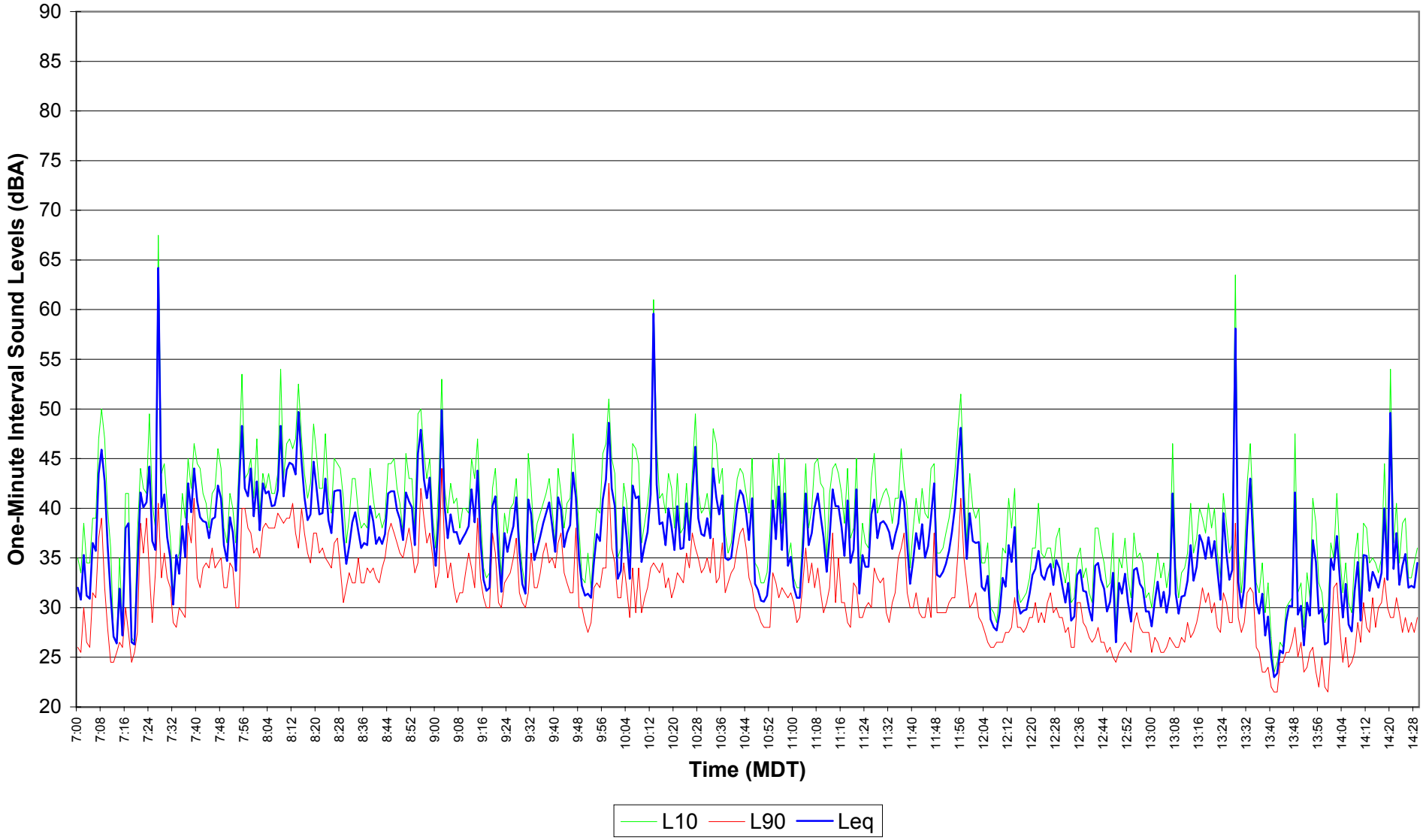


Figure E6.71
EnCana Rosebud
Site 6 Noise Survey
Dec. 16, 2004 14:30 - 21:59

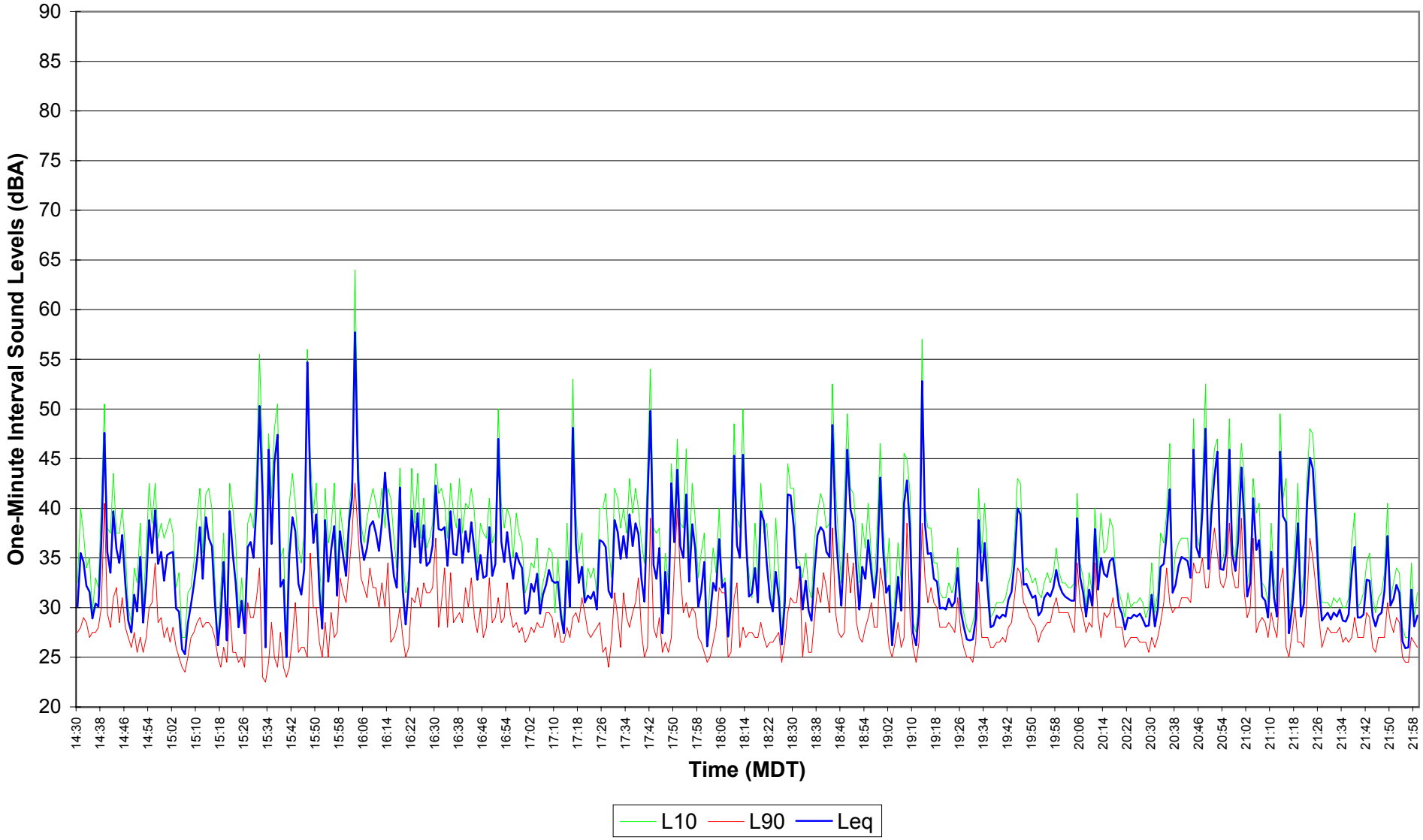


Figure E6.72
EnCana Rosebud
Site 6 Noise Survey
Dec. 16, 2004 - Dec. 17, 2004 22:00 - 06:59

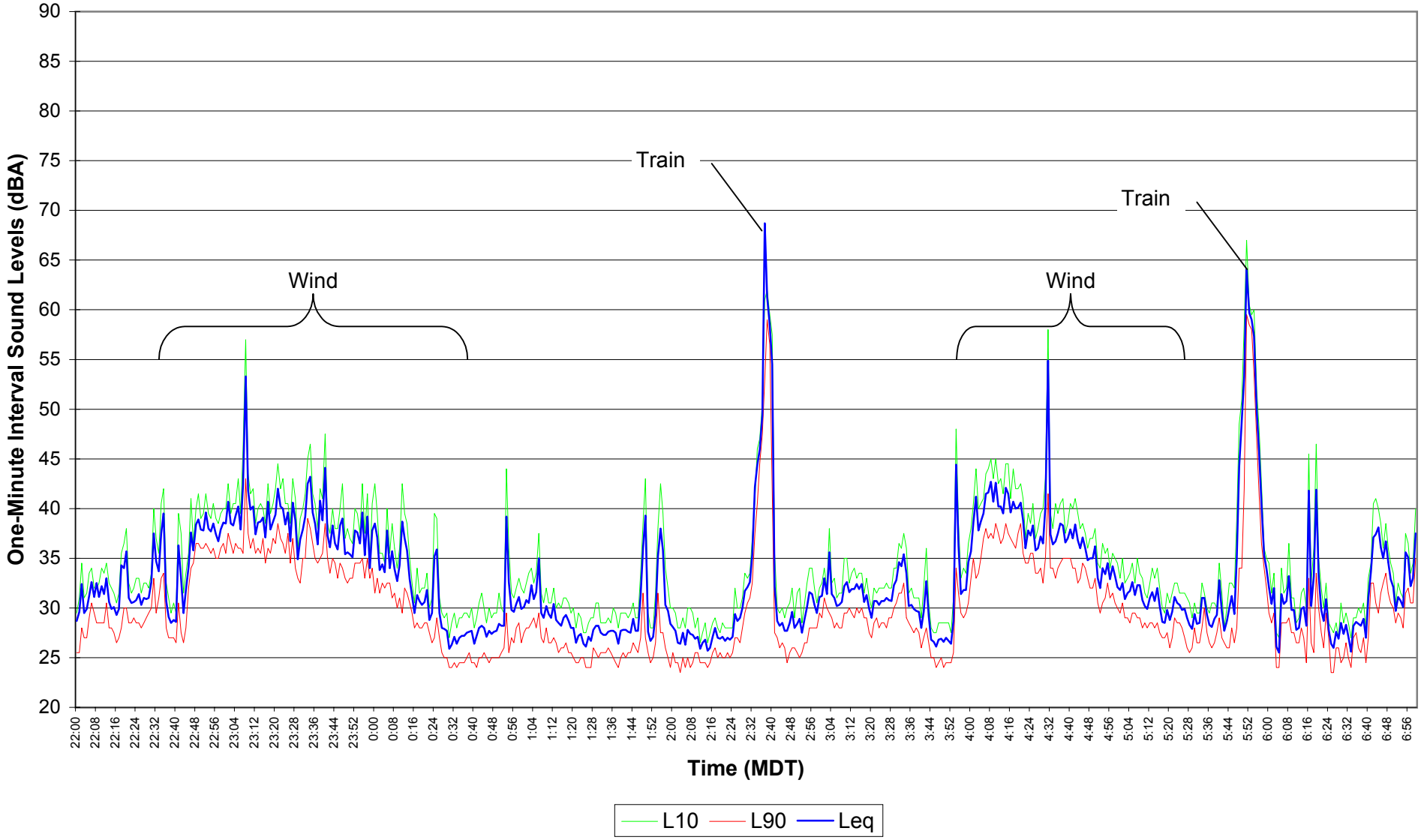


Figure E6.73
EnCana Rosebud
Site 6 Noise Survey
Dec. 17, 2004 07:00 - 14:29

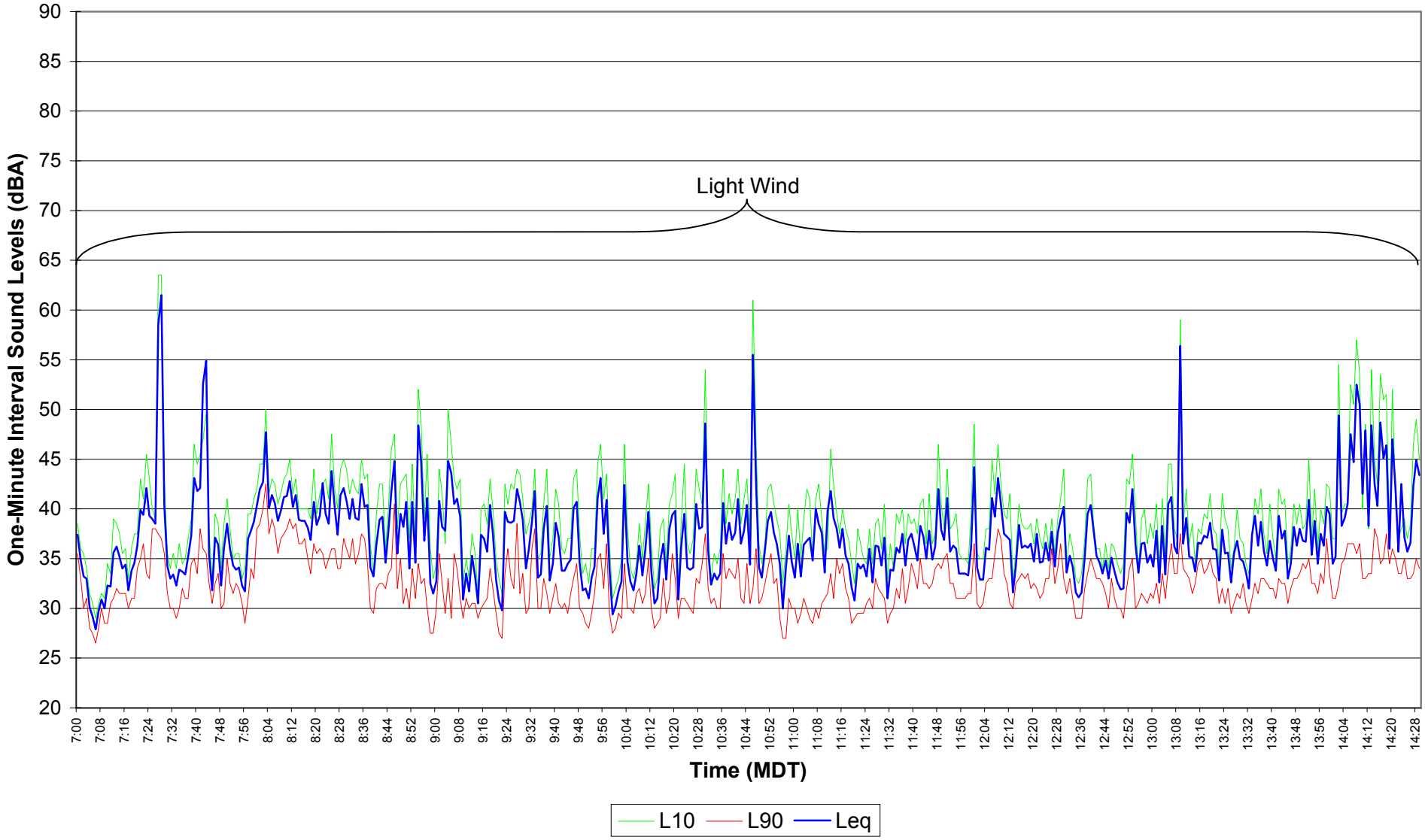


Figure E6.74
EnCana Rosebud
Site 6 Noise Survey
Dec. 17, 2004 14:30 - 21:59

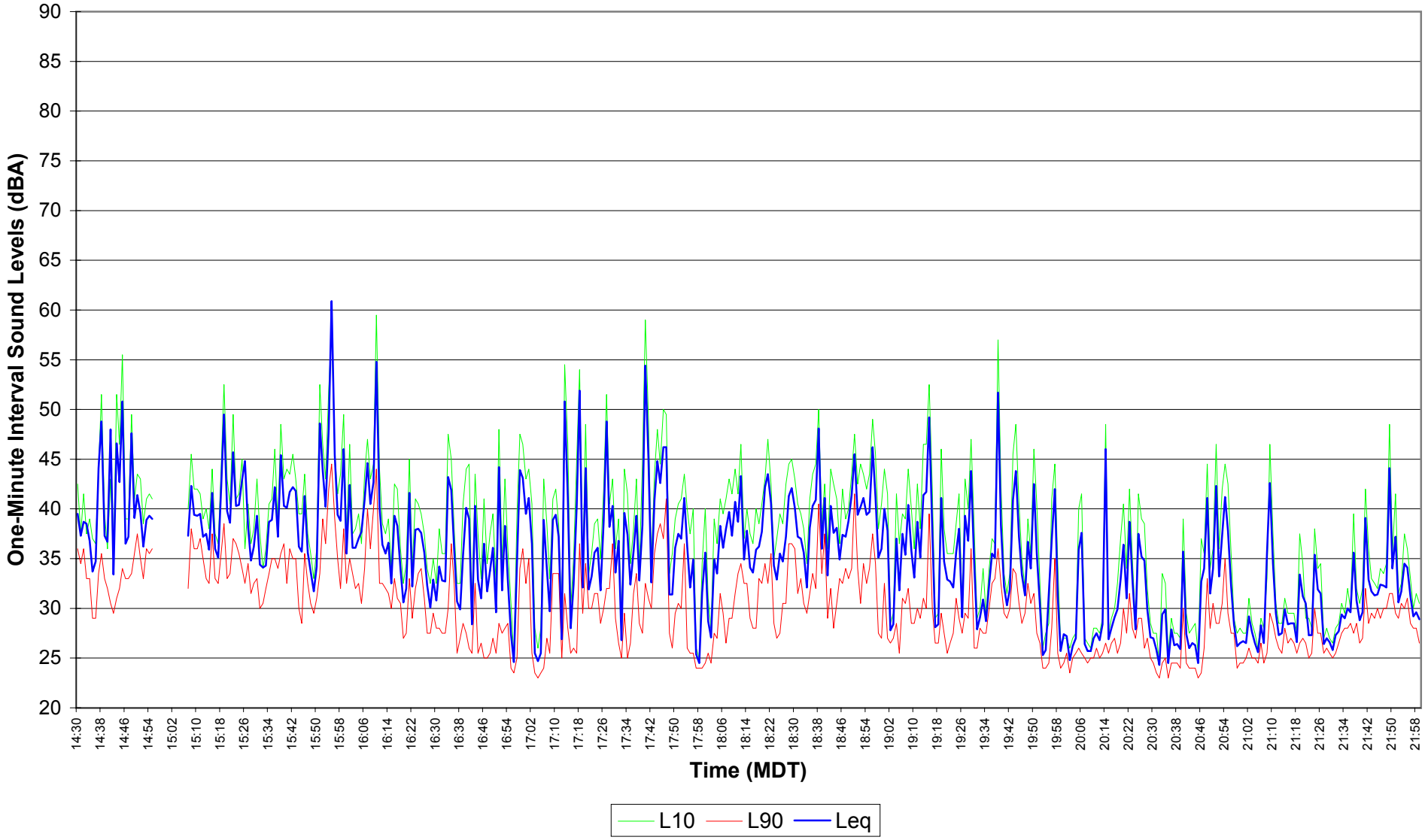


Figure E6.75
EnCana Rosebud
Site 6 Noise Survey
Dec 17, 2004 - Dec 18, 2004 22:00 - 06:59

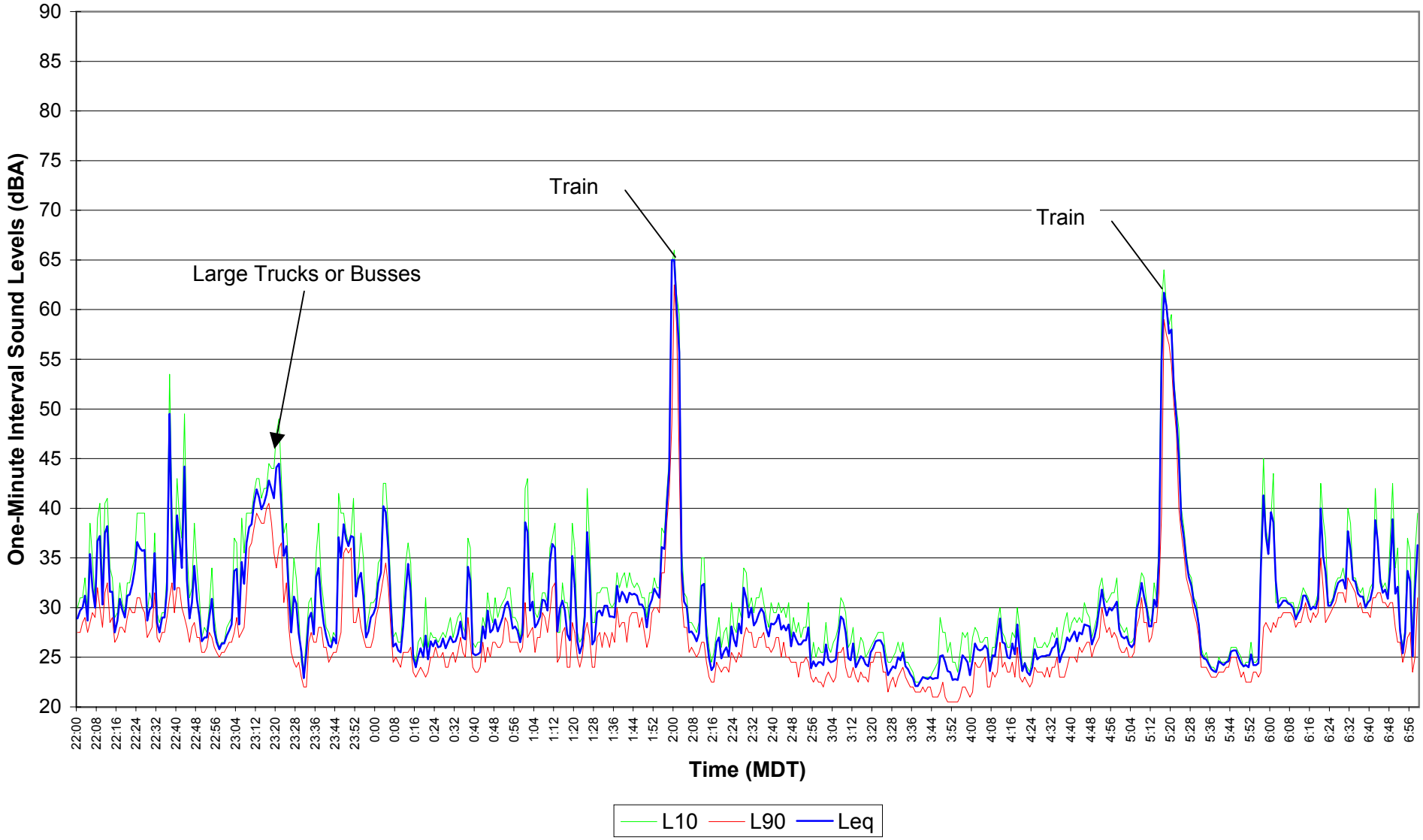


Figure E6.76
EnCana Rosebud
Site 6 Noise Survey
Dec. 18, 2004 07:00 - 14:29

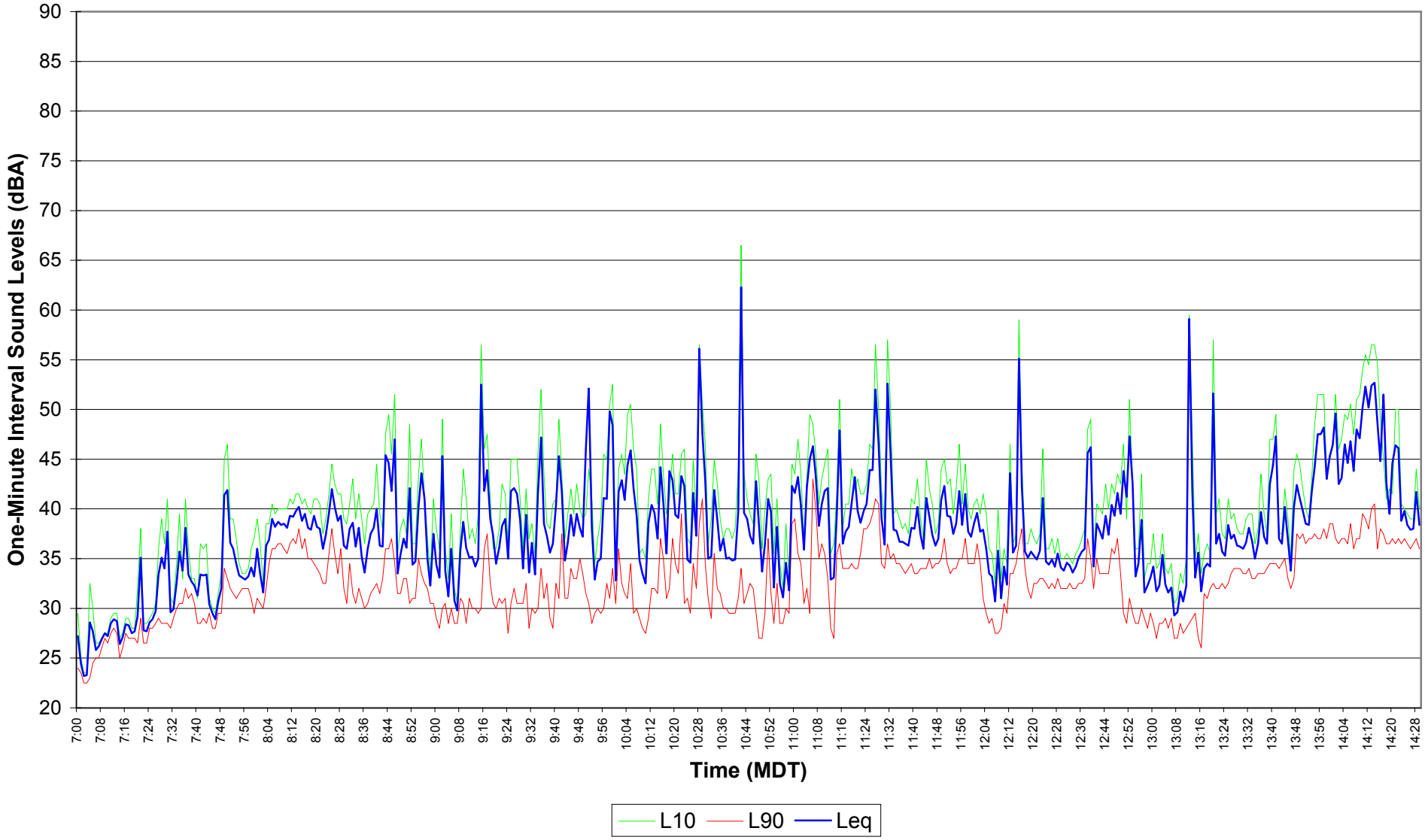


Figure E6.77
EnCana Rosebud
Site 6 Noise Survey
Dec. 18, 2004 14:30 - 21:59

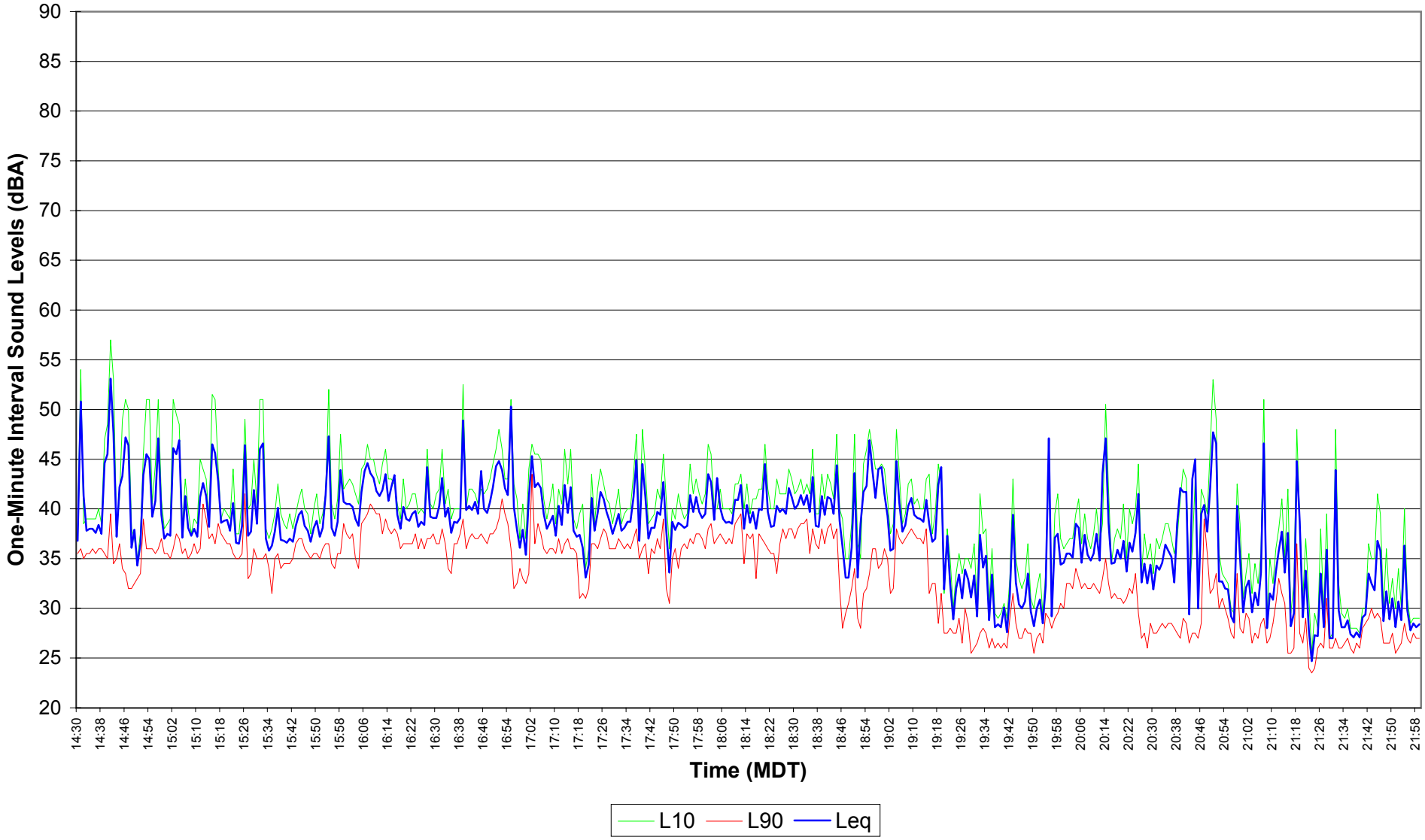


Figure E6.78
EnCana Rosebud
Site 6 Noise Survey
Dec. 18, 2004 - Dec. 19, 2004 22:00 - 06:59

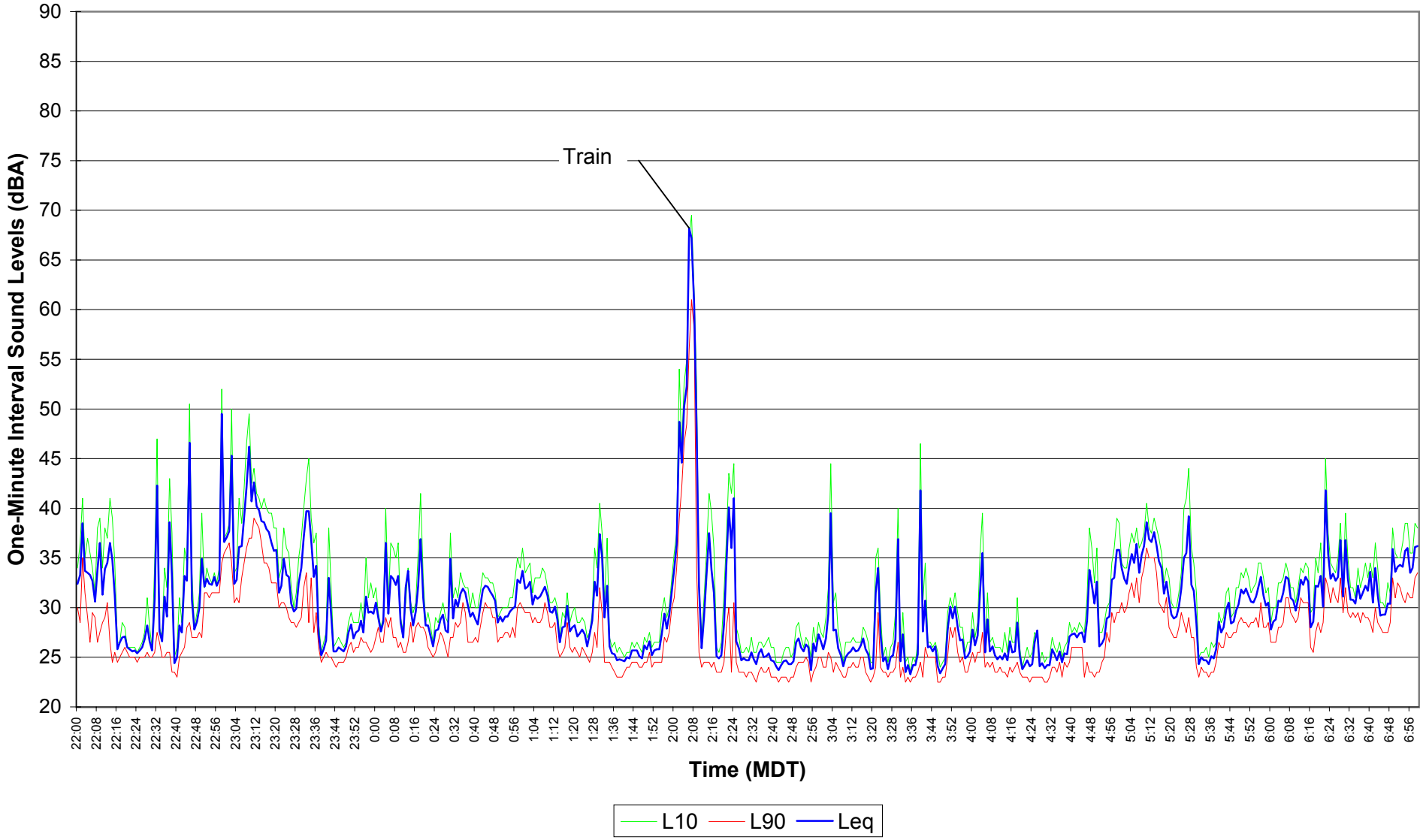


Figure E6.79

EnCana Rosebud

Site 6 Noise Survey

Dec. 19, 2004 07:00 - 14:29

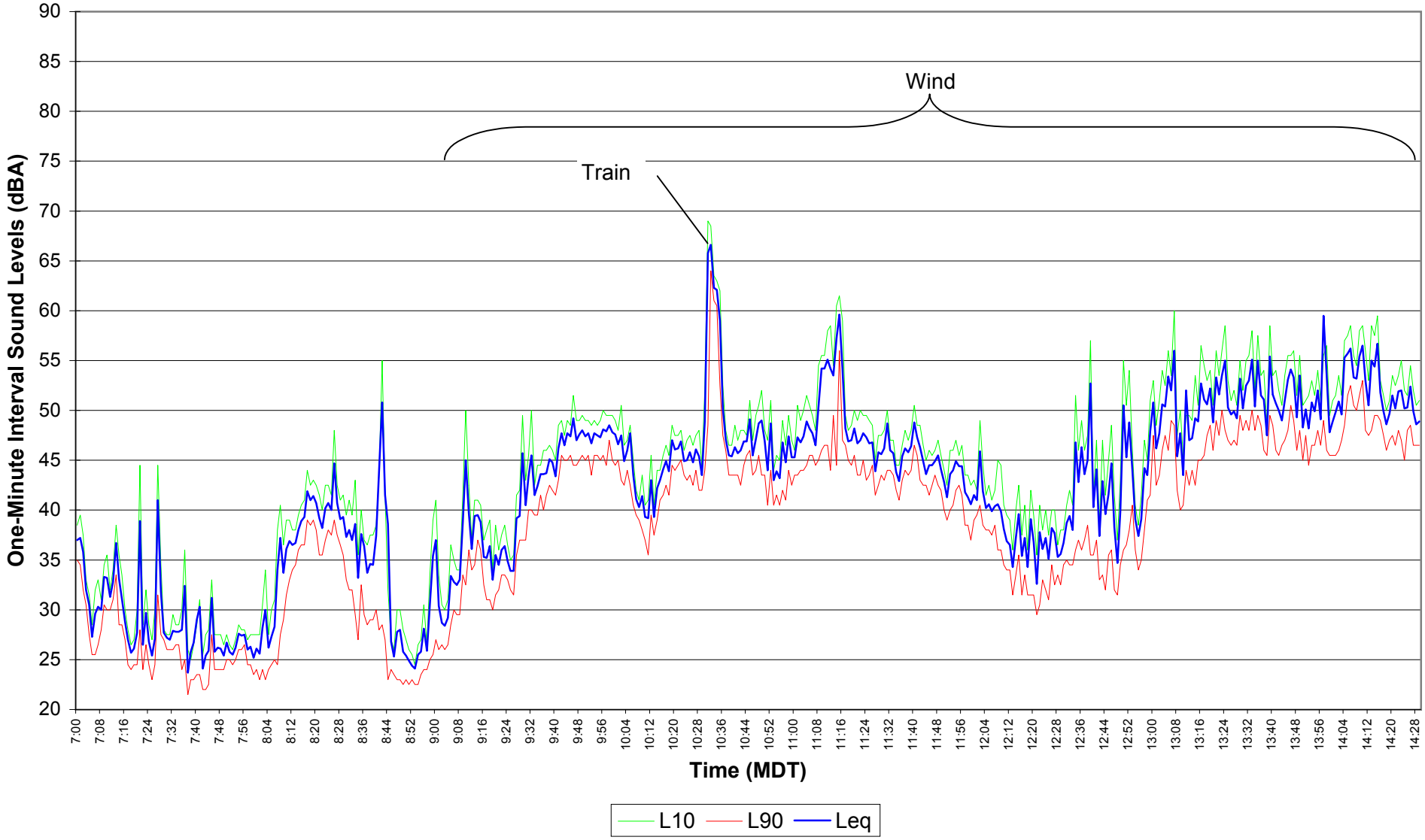


Figure E6.80
EnCana Rosebud
Site 6 Noise Survey
Dec. 19, 2004 14:30 - 21:59

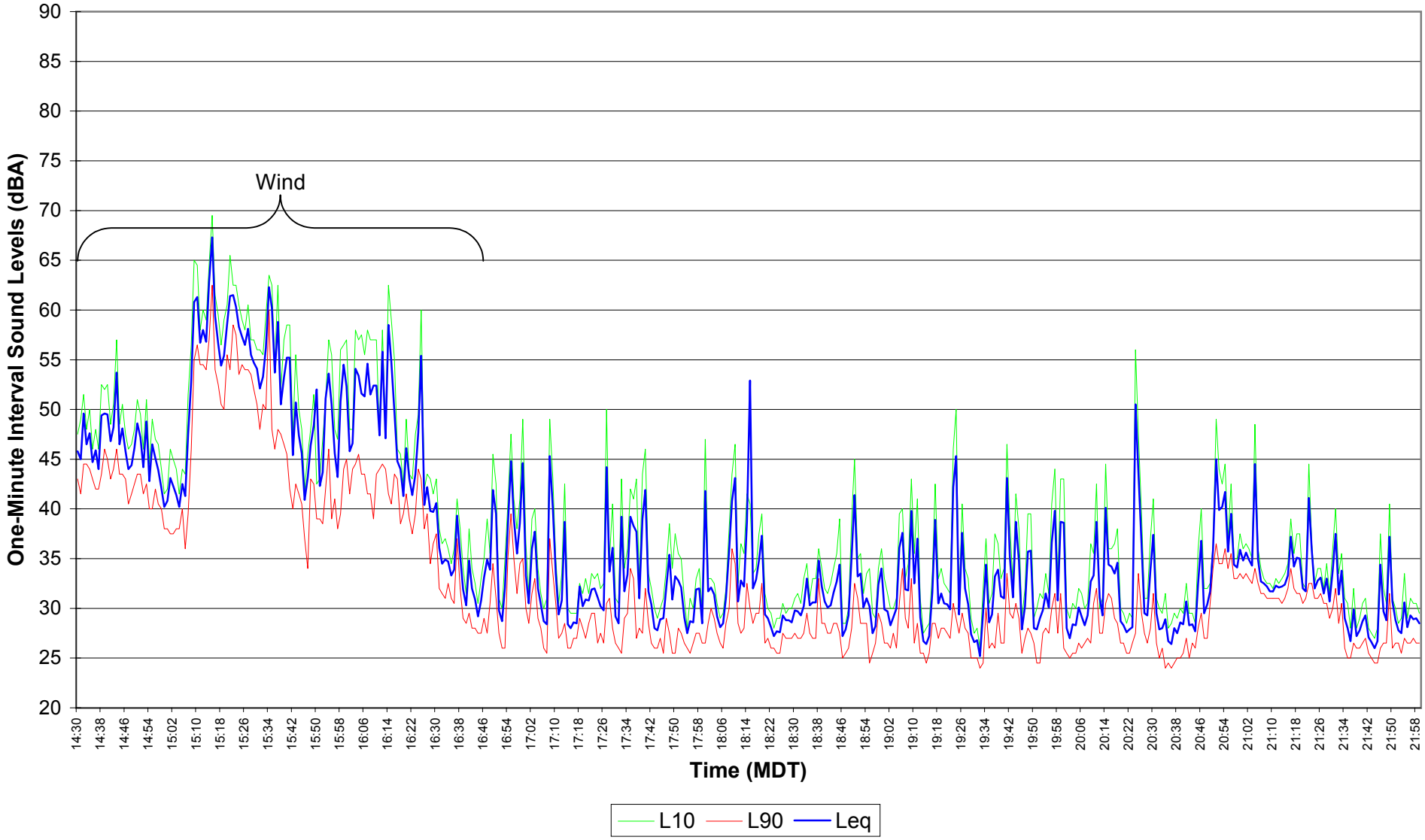


Figure E6.81
EnCana Rosebud
Site 6 Noise Survey
Dec. 19, 2004 - Dec. 20, 2004 22:00 - 06:59

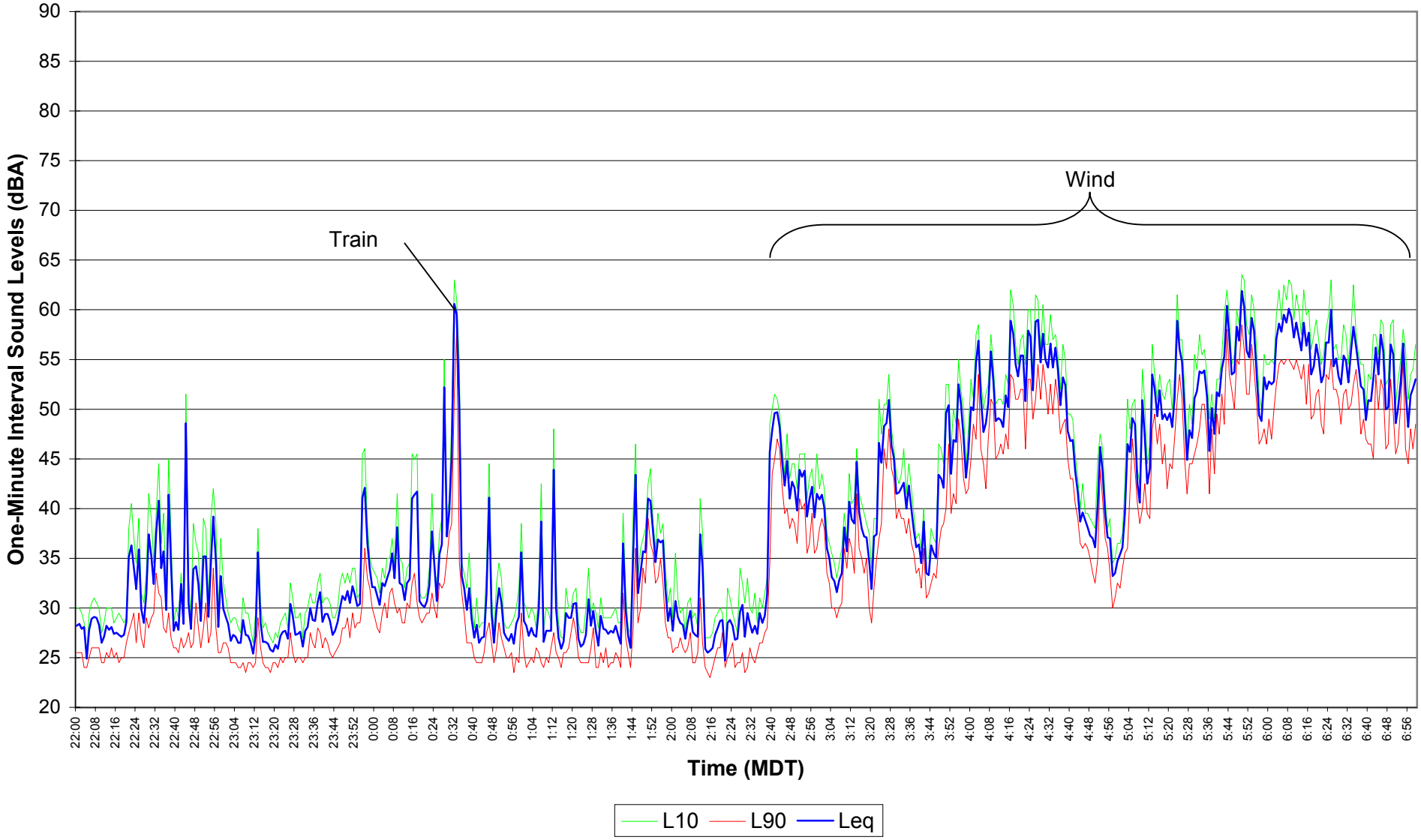
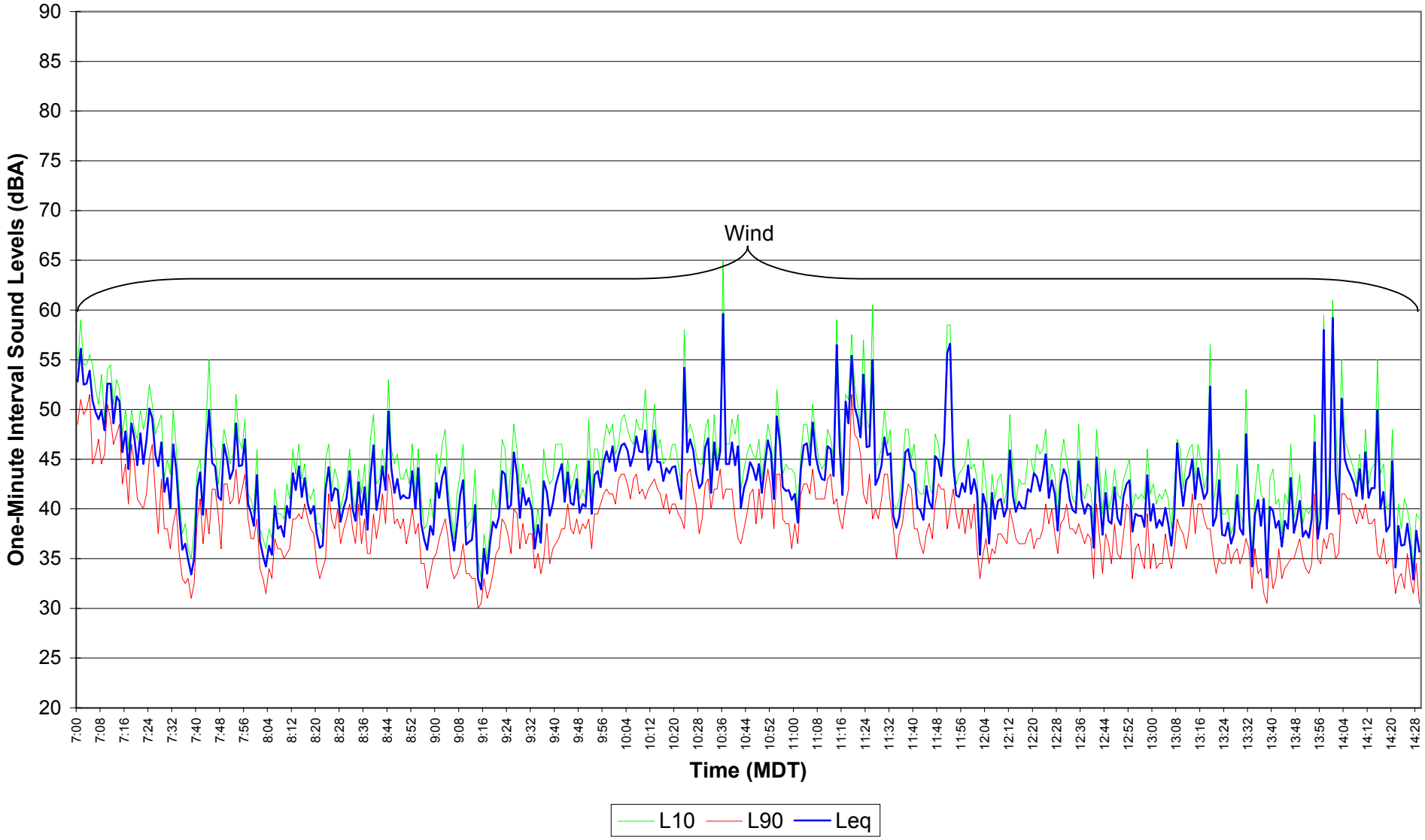


Figure E6.82
EnCana Rosebud
Site 6 Noise Survey
Dec. 20, 2004 07:00 - 14:29



APPENDIX E7

Measurement Results
Graphs of 1-Minute L_{eq}, L_{10} and L_{90} Data
Site 7

Patching Associates Acoustical Engineering Ltd.

Consultants in Acoustics, Noise Control and Vibrations

Table E7.1
EnCana Rosebud
Site 7 Noise Survey
Daily Leq Values

Date	Time	Figure #	Measured		Residual	
			Leq	Hours	Leq	Hours
Nov. 26, 2004	07:00 - 21:59	N/A, 11	35.3	4.4	33.8	4.3
Nov. 26, 2004 - Nov. 27, 2004	**22:00 - 06:59**	**12**	**43.6**	**9.0**	**31.5**	**8.8**
Nov. 27, 2004	07:00 - 21:59	13, 14	35.5	15.0	34.8	14.9
Nov 27, 2004 - Nov 28, 2004	**22:00 - 06:59**	**15**	**43.2**	**9.0**	**31.6**	**8.8**
Nov. 28, 2004	07:00 - 21:59	16, 17	34.7	15.0	34.5	15.0
Nov. 28, 2004 - Nov. 29, 2004	**22:00 - 06:59**	**18**	**41.0**	**9.0**	**32.2**	**8.8**
Nov. 29, 2004	07:00 - 21:59	19, 20	37.4	15.0	35.1	14.7
Nov 29, 2004 - Nov 30, 2004	**22:00 - 06:59**	**21**	**49.0**	**8.9**	**31.0**	**8.6**
Nov. 30, 2004	07:00 - 21:59	22, 23	38.1	15.0	35.4	14.8
Nov. 30, 2004 - Dec. 01, 2004	**22:00 - 06:59**	**24**	**41.1**	**9.0**	**30.5**	**8.7**
Dec. 01, 2004	07:00 - 21:59	25, 26	39.2	15.0	35.8	14.7
Dec. 01, 2004 - Dec. 02, 2004	**22:00 - 06:59**	**27**	**42.6**	**9.0**	**36.6**	**8.7**
Dec. 02, 2004	07:00 - 21:59	28, 29	52.9	15.0	37.2	10.1
Dec. 02, 2004 - Dec. 03, 2004	**22:00 - 06:59**	**30**	**41.9**	**9.0**	**37.1**	**8.3**
Dec. 03, 2004	07:00 - 21:59	31, 32	42.5	14.9	39.0	13.1
Dec. 03, 2004 - Dec. 04, 2004	**22:00 - 06:59**	**33**	**50.3**	**9.0**	**35.6**	**7.7**
Dec. 04, 2004	07:00 - 21:59	34, 35	51.5	15.0	37.5	7.5
Dec. 04, 2004 - Dec. 05, 2004	**22:00 - 06:59**	**36**	**47.5**	**9.0**	**40.9**	**5.6**
Dec. 05, 2004	07:00 - 21:59	37, 38	39.6	15.0	36.9	14.0
Dec. 05, 2004 - Dec. 06, 2004	**22:00 - 06:59**	**39**	**37.4**	**9.0**	**31.3**	**8.9**
Dec. 06, 2004	07:00 - 21:59	40, 41	37.5	14.8	32.9	14.6
Dec. 06, 2004 - Dec. 07, 2004	**22:00 - 06:59**	**42**	**34.6**	**9.0**	**27.3**	**9.0**
Dec. 07, 2004	07:00 - 21:59	43, 44	36.9	15.0	34.0	14.6
Dec. 07, 2004 - Dec. 08, 2004	**22:00 - 06:59**	**45**	**37.7**	**9.0**	**33.0**	**8.8**
Dec. 08, 2004	07:00 - 21:59	46, 47	39.5	15.0	36.9	14.4
Dec. 08, 2004 - Dec. 09, 2004	**22:00 - 06:59**	**48**	**43.1**	**9.0**	**31.3**	**8.7**
Dec. 09, 2004	07:00 - 21:59	49, 50	38.0	15.0	36.6	14.8
Dec. 09, 2004 - Dec. 10, 2004	**22:00 - 06:59**	**51**	**40.8**	**9.0**	**30.7**	**8.8**
Dec. 10, 2004	07:00 - 21:59	52, 53	60.6	14.9	38.4	5.5
Dec. 10, 2004 - Dec. 11, 2004	**22:00 - 06:59**	**54**	**54.1**	**9.0**	**35.9**	**5.3**
Dec. 11, 2004	07:00 - 21:59	55, 56	58.2	15.0	37.9	5.3
Dec. 11, 2004 - Dec. 12, 2004	**22:00 - 06:59**	**57**	**47.8**	**9.0**	**37.3**	**6.8**
Dec. 12, 2004	07:00 - 21:59	58, 59	35.4	15.0	33.9	14.8
Dec. 12, 2004 - Dec. 13, 2004	**22:00 - 06:59**	**60**	**38.5**	**9.0**	**30.7**	**8.9**
Dec. 13, 2004	07:00 - 21:59	61, 62	62.6	9.4	36.7	4.3
Dec. 13, 2004 - Dec. 14, 2004	**22:00 - 06:59**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Dec. 14, 2004	07:00 - 21:59	N/A	N/A	N/A	N/A	N/A
Dec. 14, 2004 - Dec. 15, 2004	**22:00 - 06:59**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Dec. 15, 2004	07:00 - 21:59	N/A, 68	36.4	6.2	35.3	6.1
Dec. 15, 2004 - Dec. 16, 2004	**22:00 - 06:59**	**69**	**43.6**	**9.0**	**31.5**	**8.7**
Dec. 16, 2004	07:00 - 21:59	70, 71	42.6	15.0	38.0	13.0
Dec. 16, 2004 - Dec. 17, 2004	**22:00 - 06:59**	**72**	**51.7**	**9.0**	**37.4**	**5.2**
Dec. 17, 2004	07:00 - 21:59	73, 74	43.5	14.8	37.8	12.2
Dec. 17, 2004 - Dec. 18, 2004	**22:00 - 06:59**	**75**	**43.4**	**9.0**	**30.8**	**8.8**
Dec. 18, 2004	07:00 - 21:59	76, 77	47.6	15.0	38.3	9.7
Dec 18, 2004 - Dec 19, 2004	**22:00 - 06:59**	**78**	**42.7**	**9.0**	**35.7**	**8.5**
Dec. 19, 2004	07:00 - 21:59	79, 80	63.9	15.0	35.8	6.7
Dec. 19, 2004 - Dec. 20, 2004	**22:00 - 06:59**	**81**	**62.1**	**9.0**	**37.1**	**4.1**
Dec. 20, 2004	07:00 - 21:59	82, 83	60.7	8.6	40.2	0.6

Figure E7.11
EnCana Rosebud
Site 7 Noise Survey
Nov. 26, 2004 14:30 - 21:59

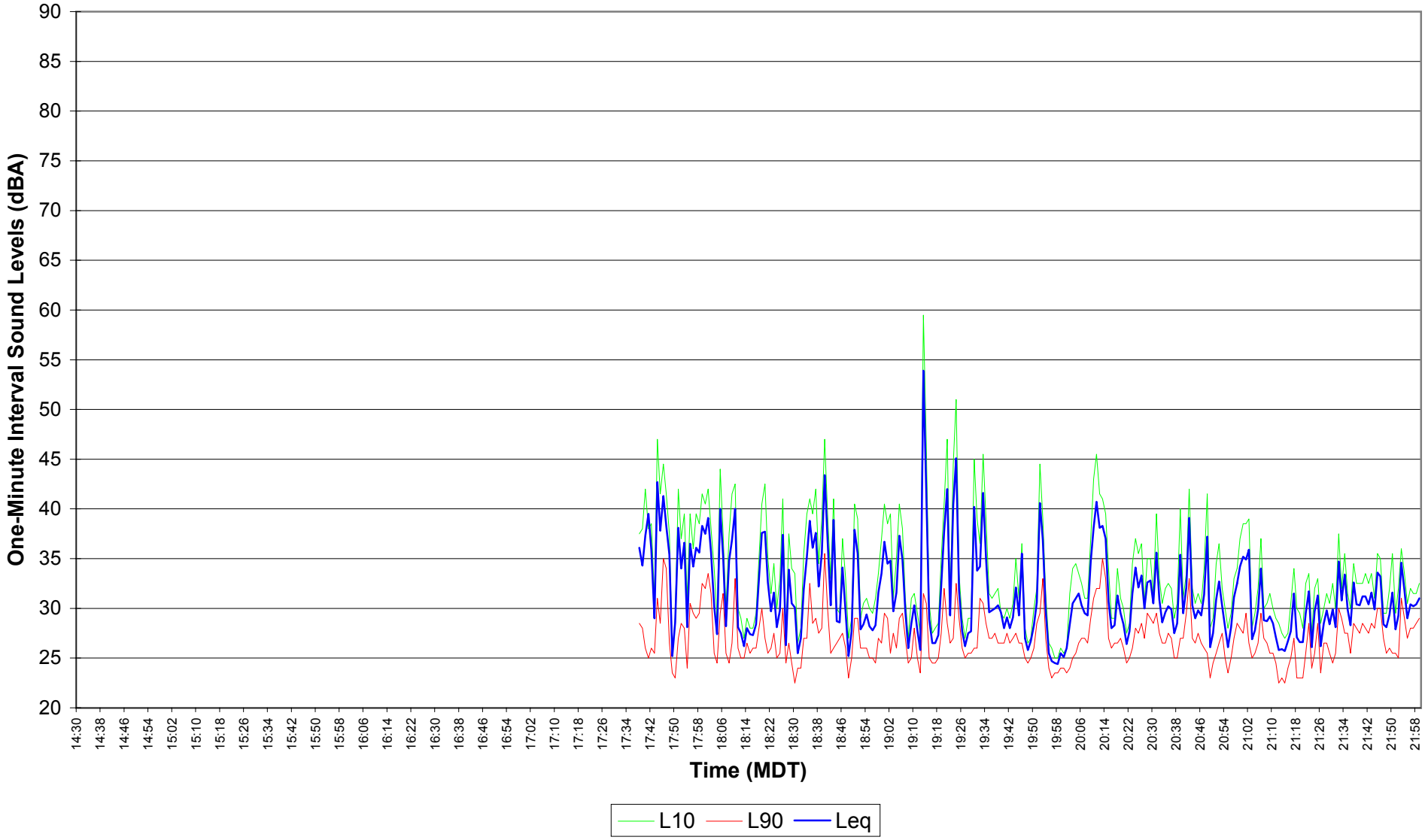


Figure E7.12
EnCana Rosebud
Site 7 Noise Survey
Nov. 26, 2004 - Nov. 27, 2004 22:00 - 06:59

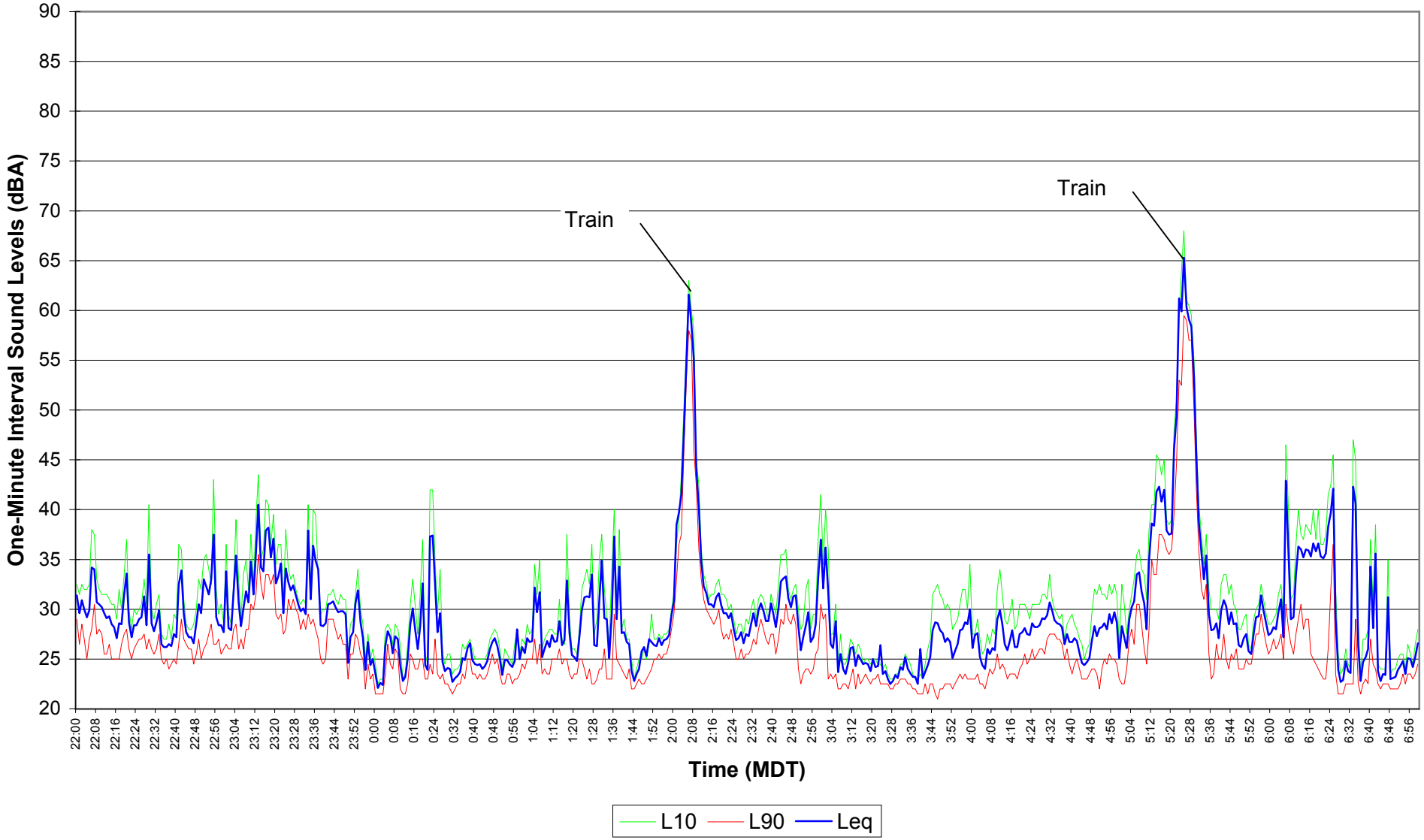


Figure E7.13
EnCana Rosebud
Site 7 Noise Survey
Nov. 27, 2004 07:00 - 14:29

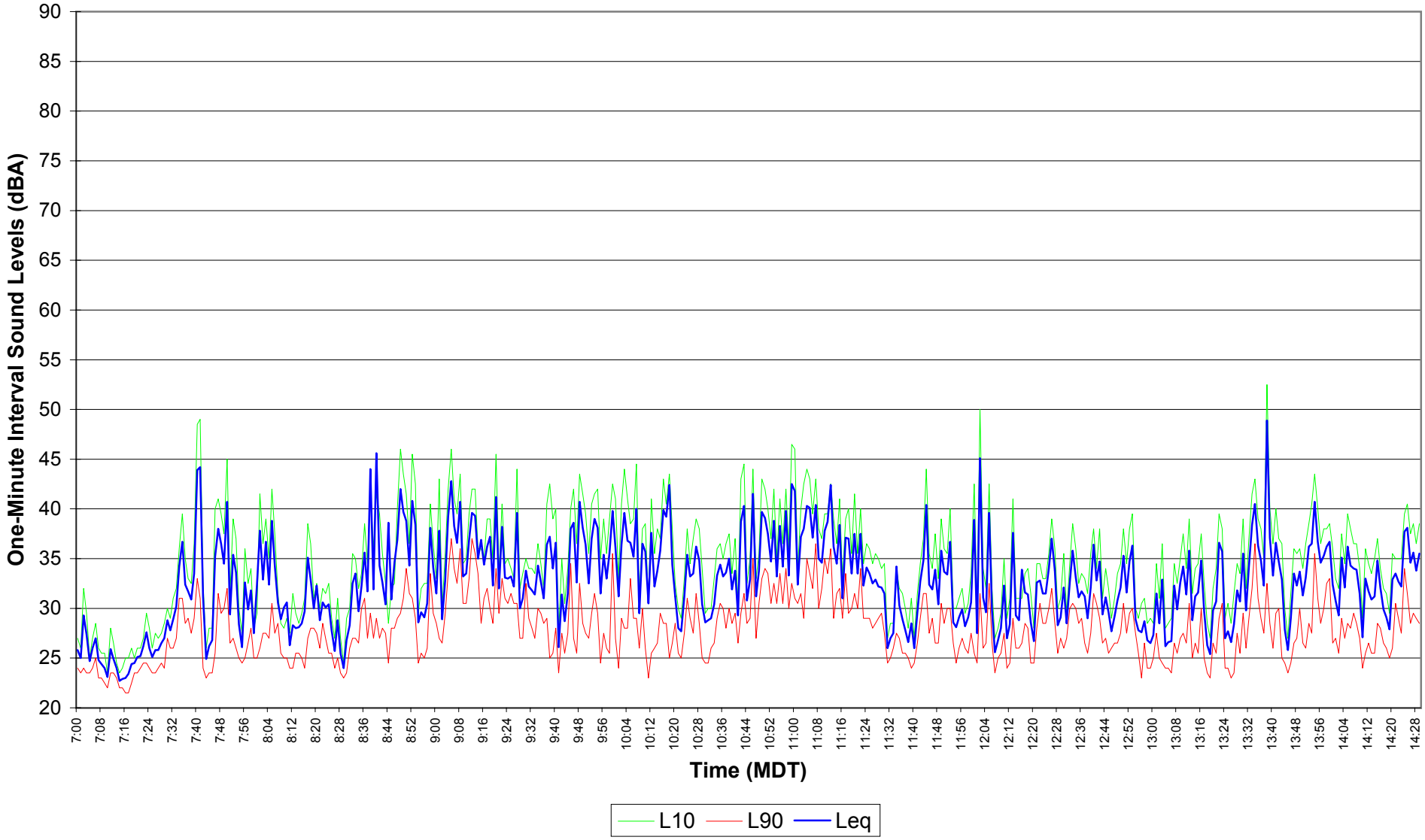


Figure E7.14
EnCana Rosebud
Site 7 Noise Survey
Nov. 27, 2004 14:30 - 21:59

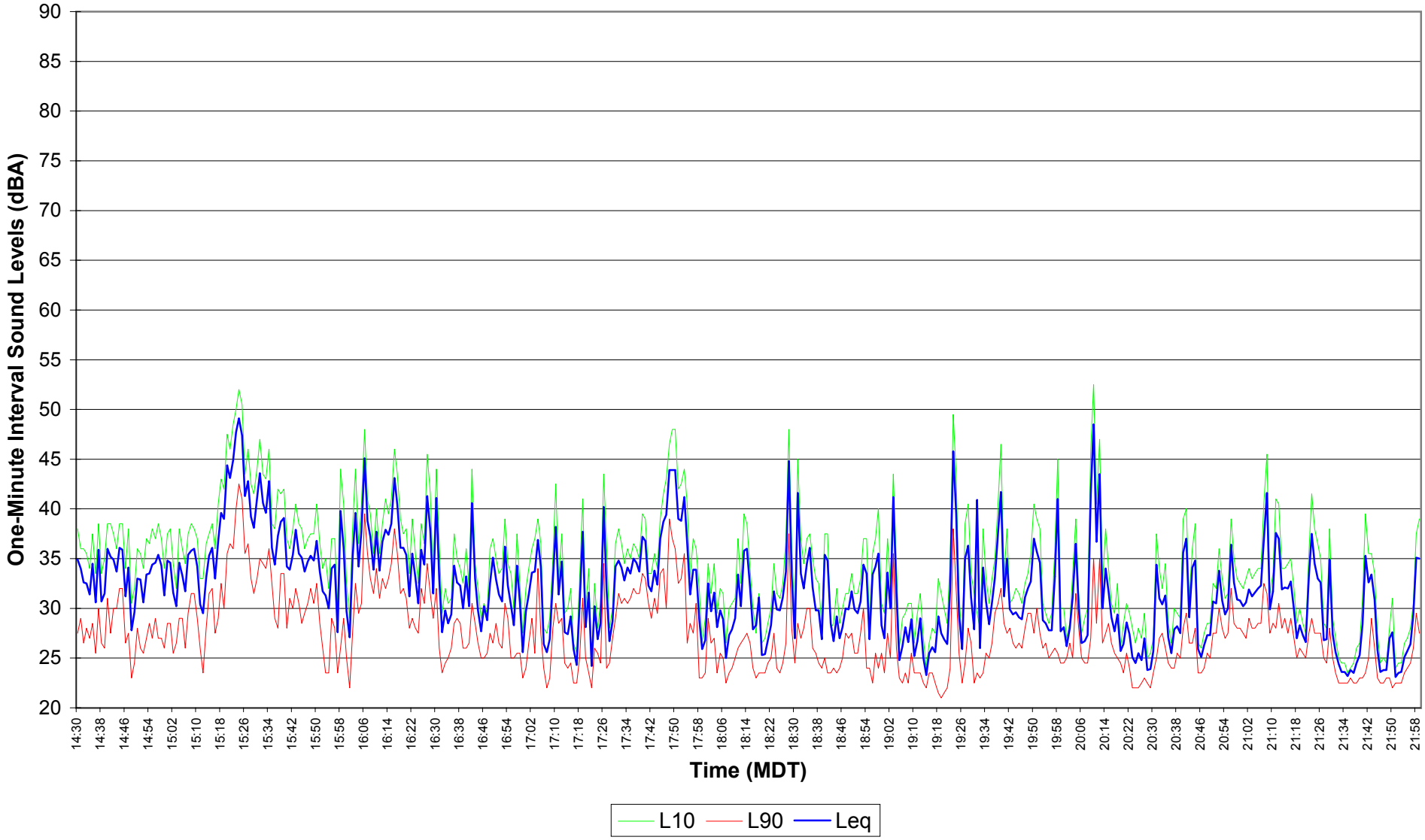


Figure E7.15
EnCana Rosebud
Site 7 Noise Survey
Nov 27, 2004 - Nov 28, 2004 22:00 - 06:59

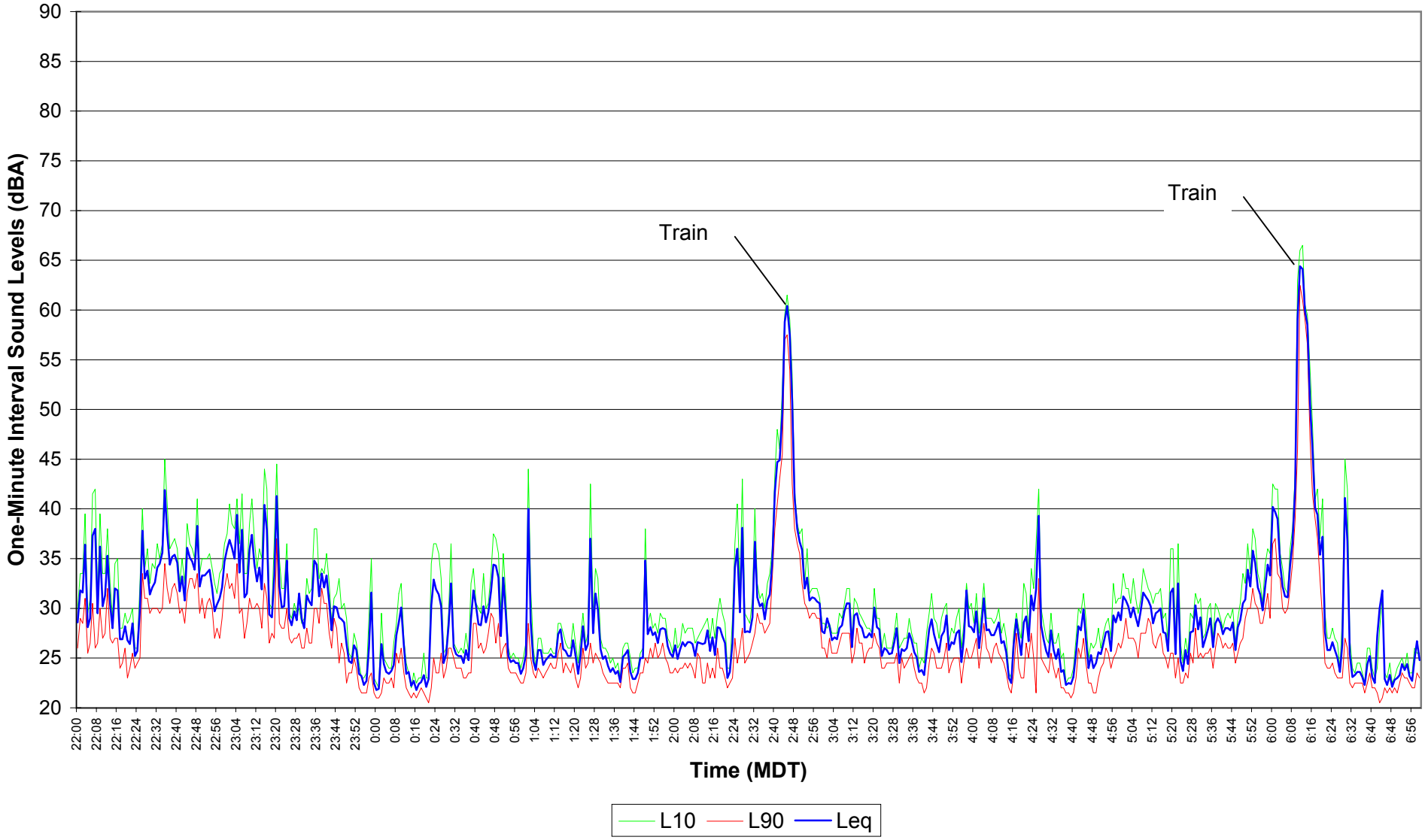


Figure E7.16
EnCana Rosebud
Site 7 Noise Survey
Nov. 28, 2004 07:00 - 14:29

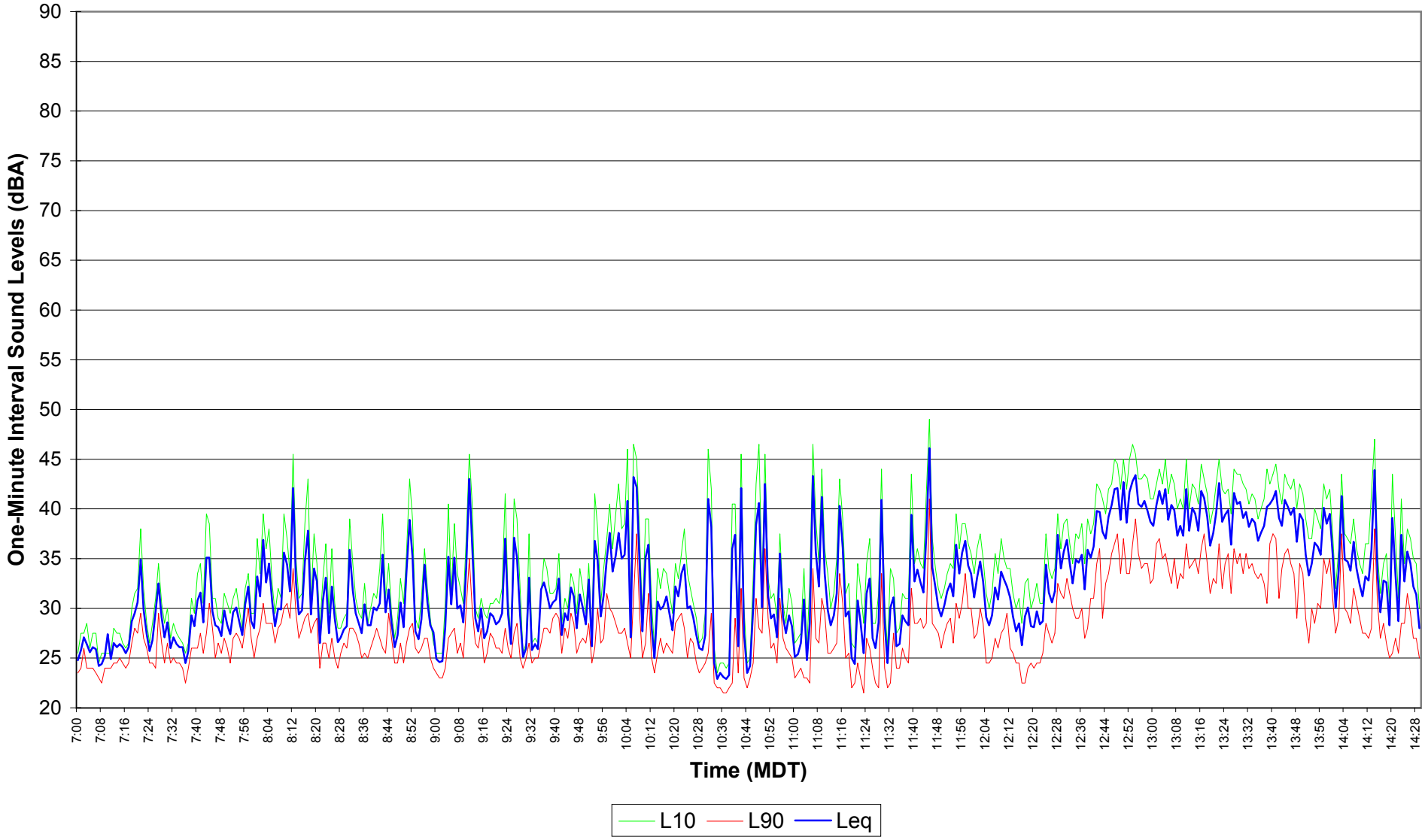


Figure E7.17
EnCana Rosebud
Site 7 Noise Survey
Nov. 28, 2004 14:30 - 21:59

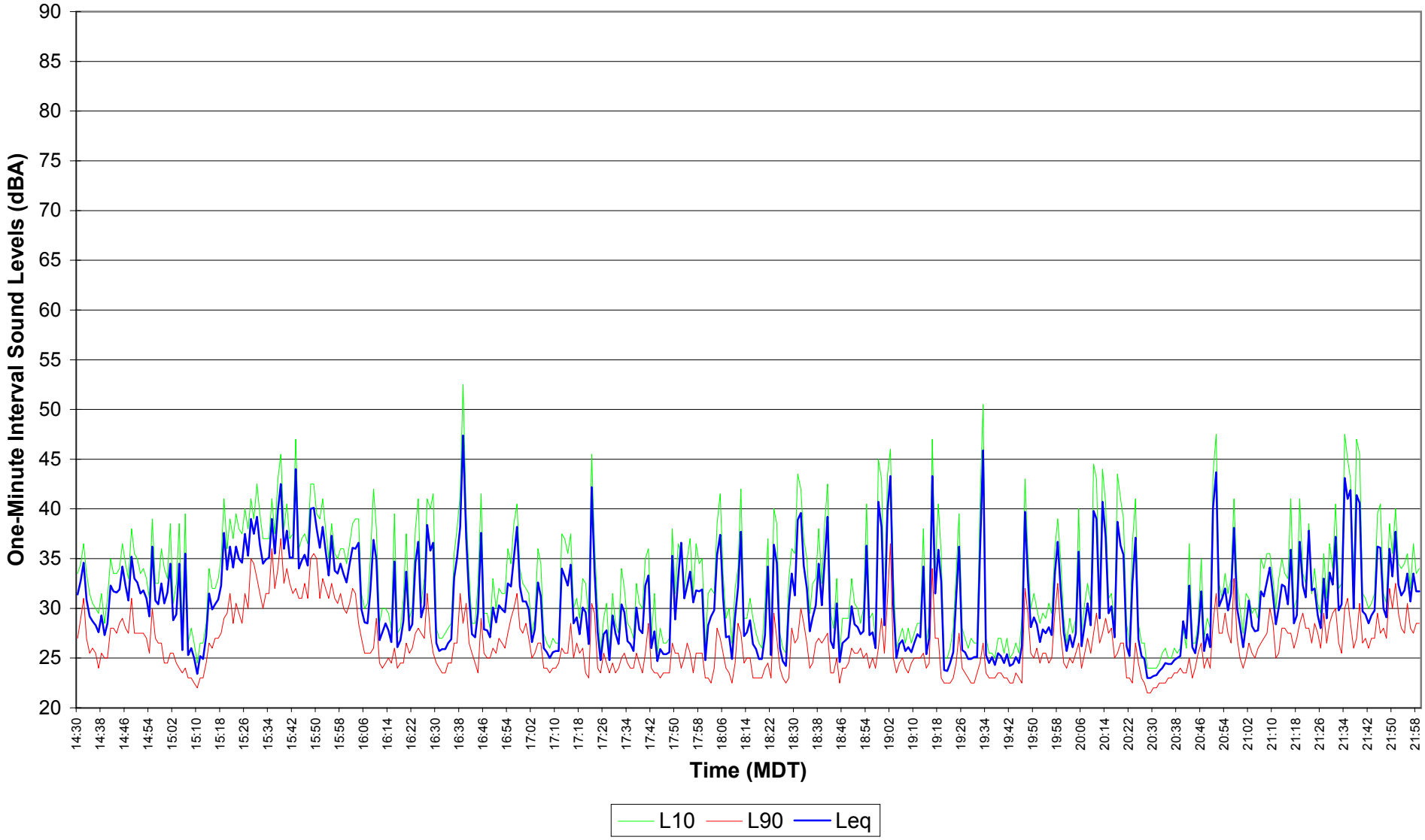


Figure E7.18
EnCana Rosebud
Site 7 Noise Survey
Nov. 28, 2004 - Nov. 29, 2004 22:00 - 06:59

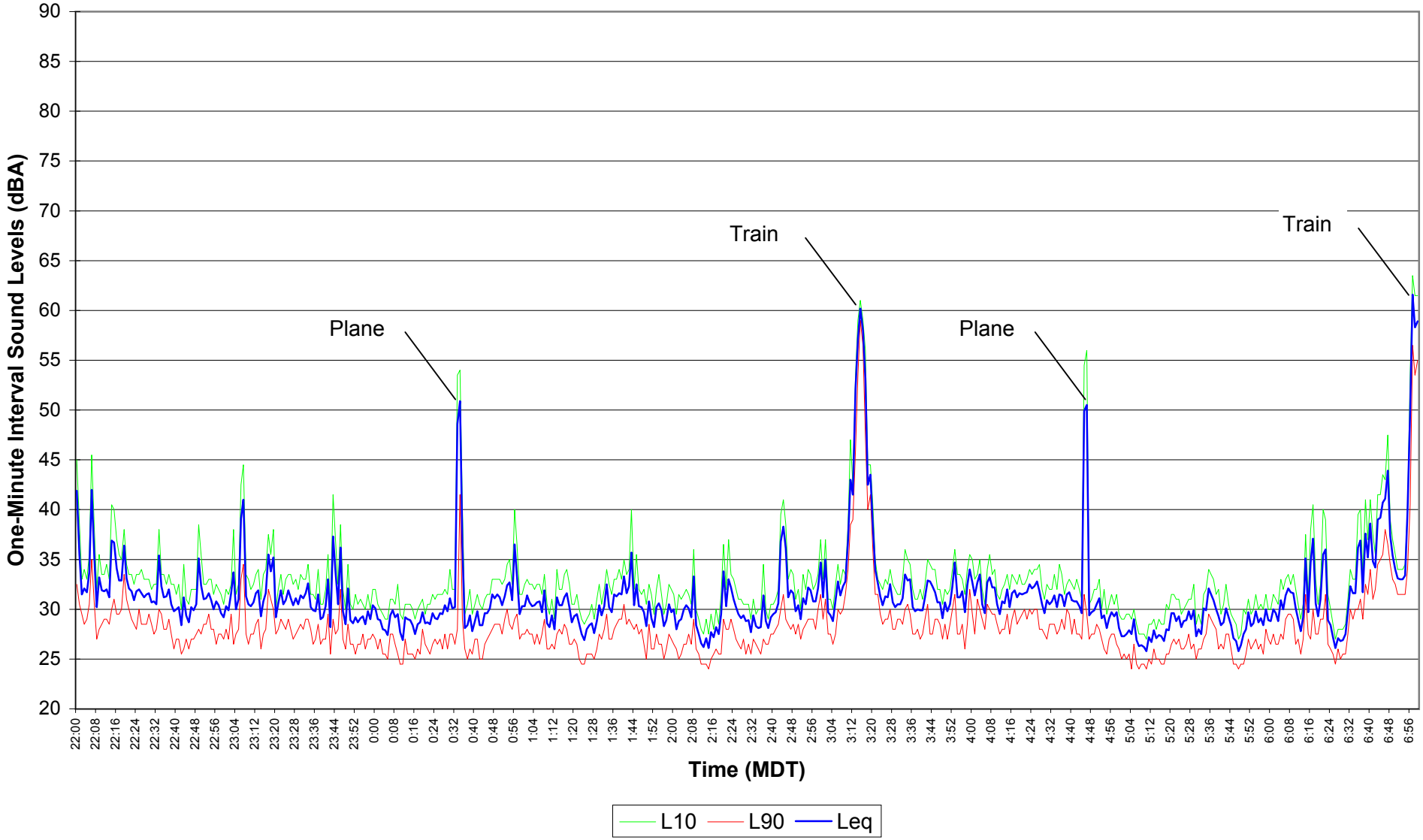


Figure E7.19
EnCana Rosebud
Site 7 Noise Survey
Nov. 29, 2004 07:00 - 14:29

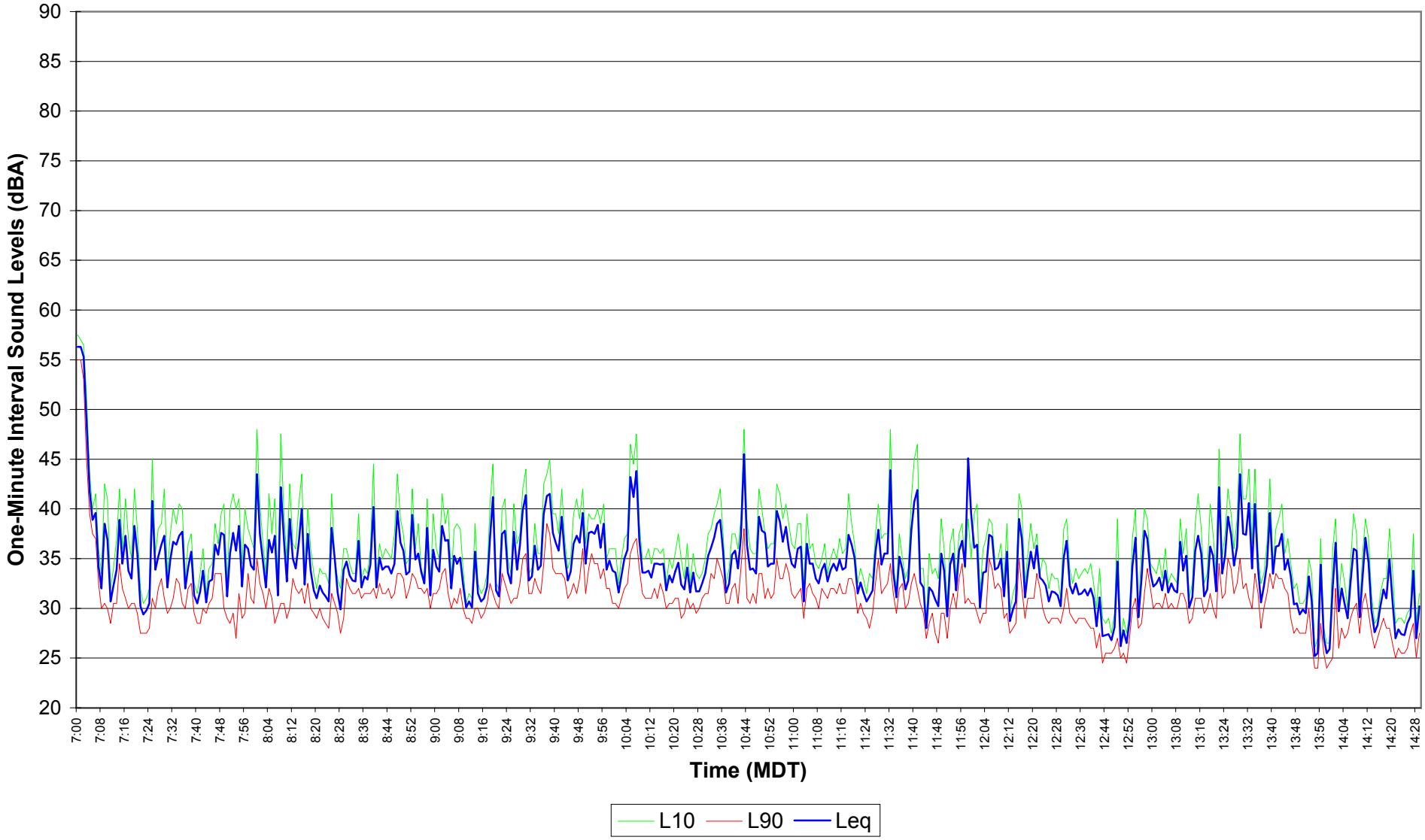


Figure E7.20
EnCana Rosebud
Site 7 Noise Survey
Nov. 29, 2004 14:30 - 21:59

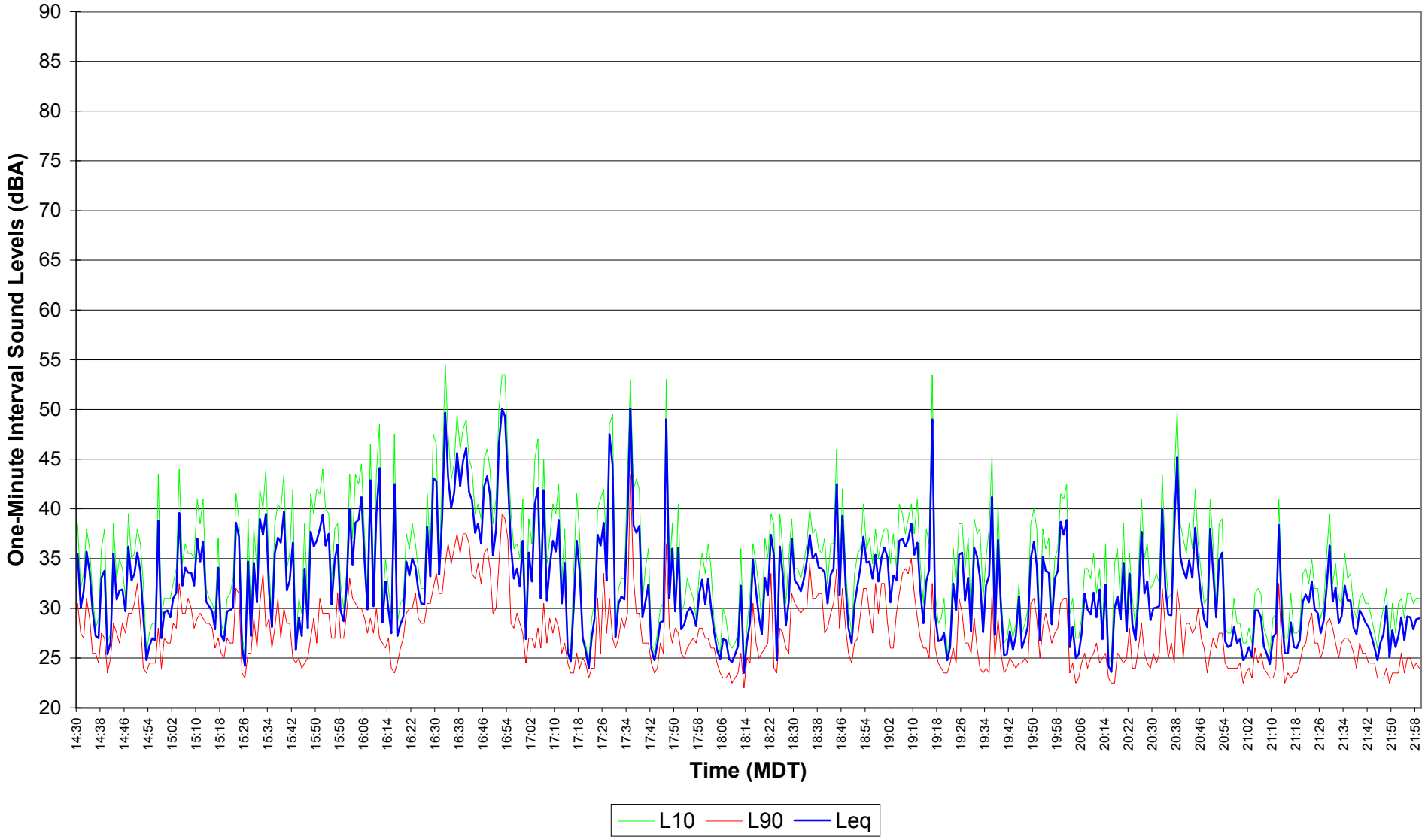


Figure E7.21
EnCana Rosebud
Site 7 Noise Survey
Nov 29, 2004 - Nov 30, 2004 22:00 - 06:59

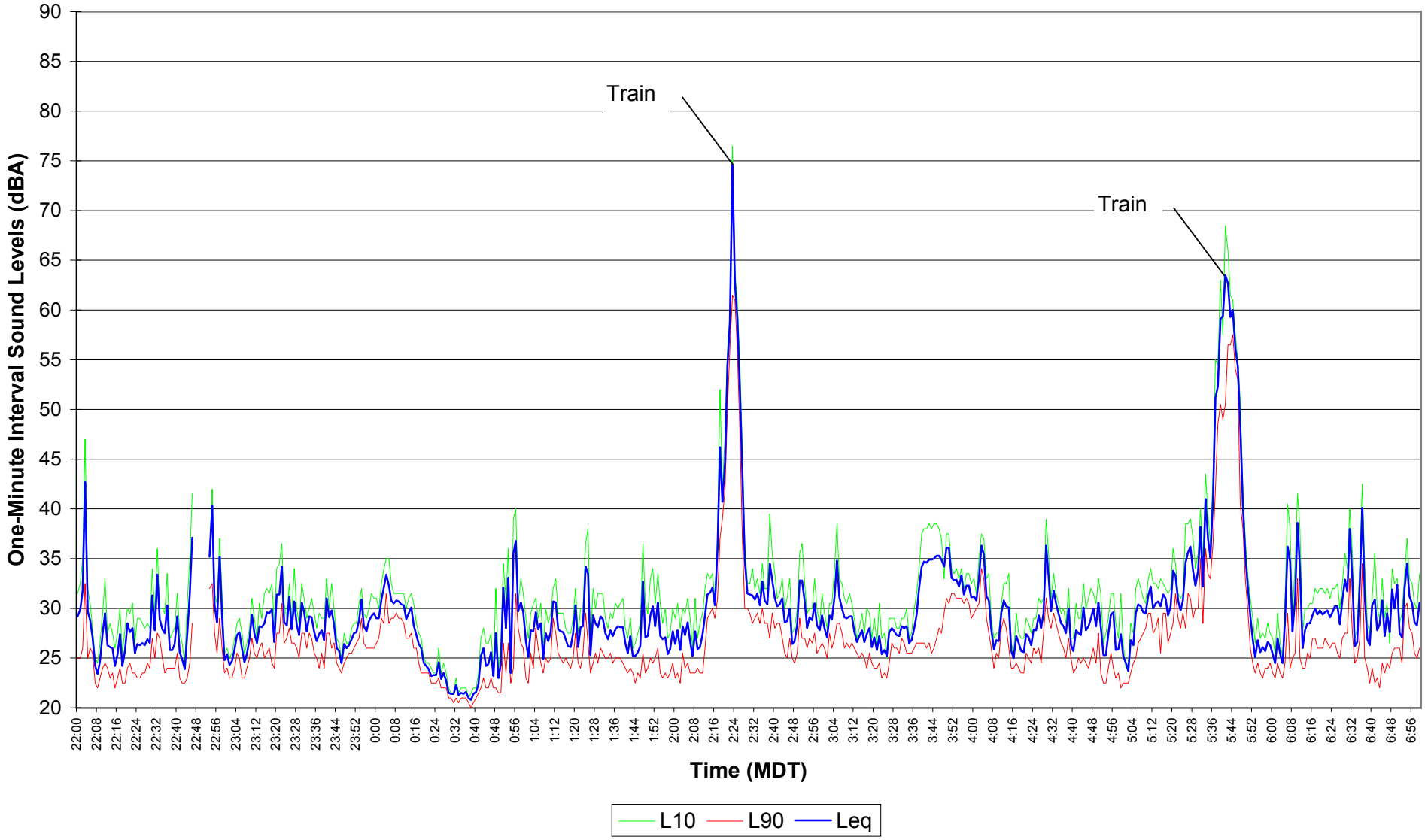


Figure E7.22
EnCana Rosebud
Site 7 Noise Survey
Nov. 30, 2004 07:00 - 14:29

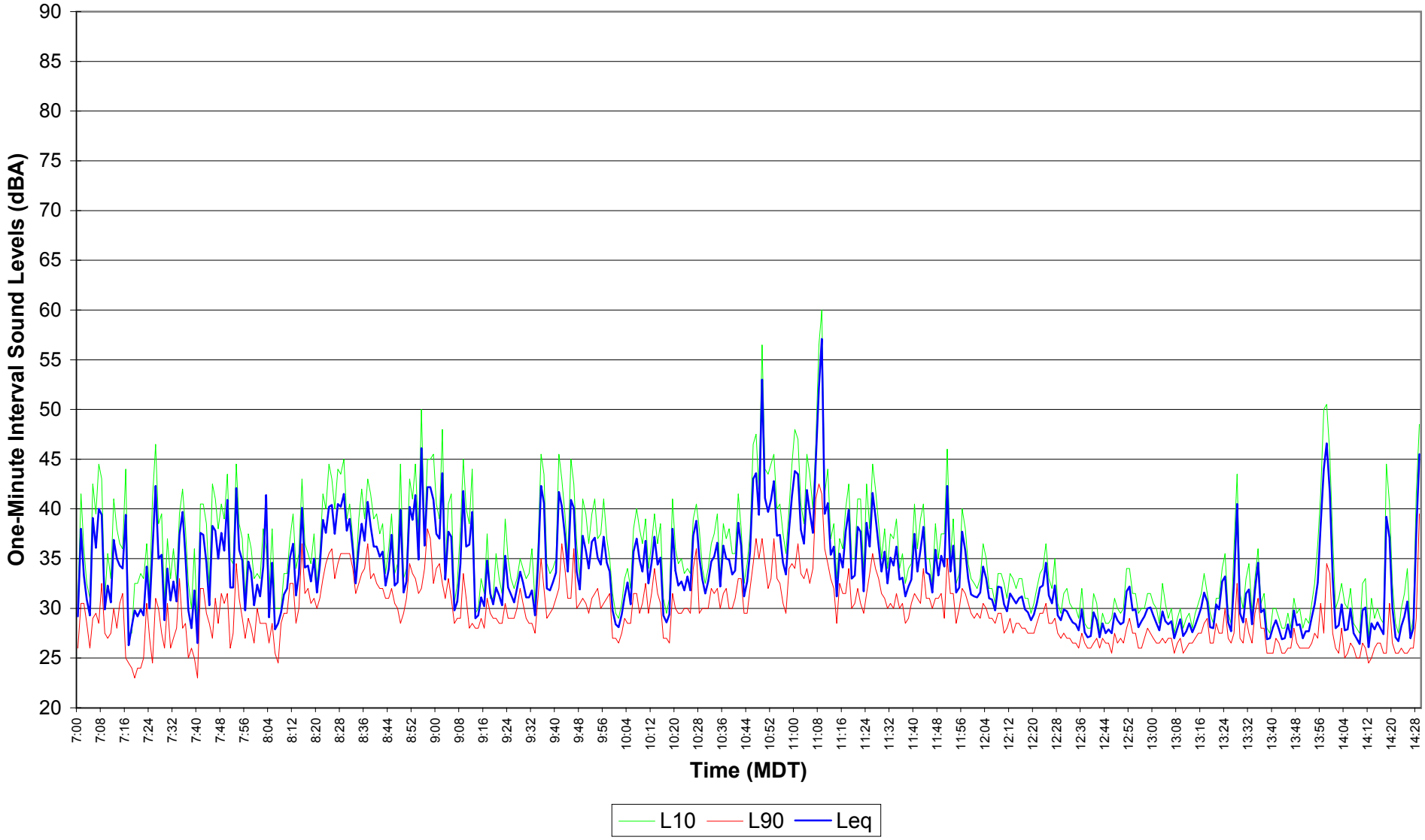


Figure E7.23
EnCana Rosebud
Site 7 Noise Survey
Nov. 30, 2004 14:30 - 21:59

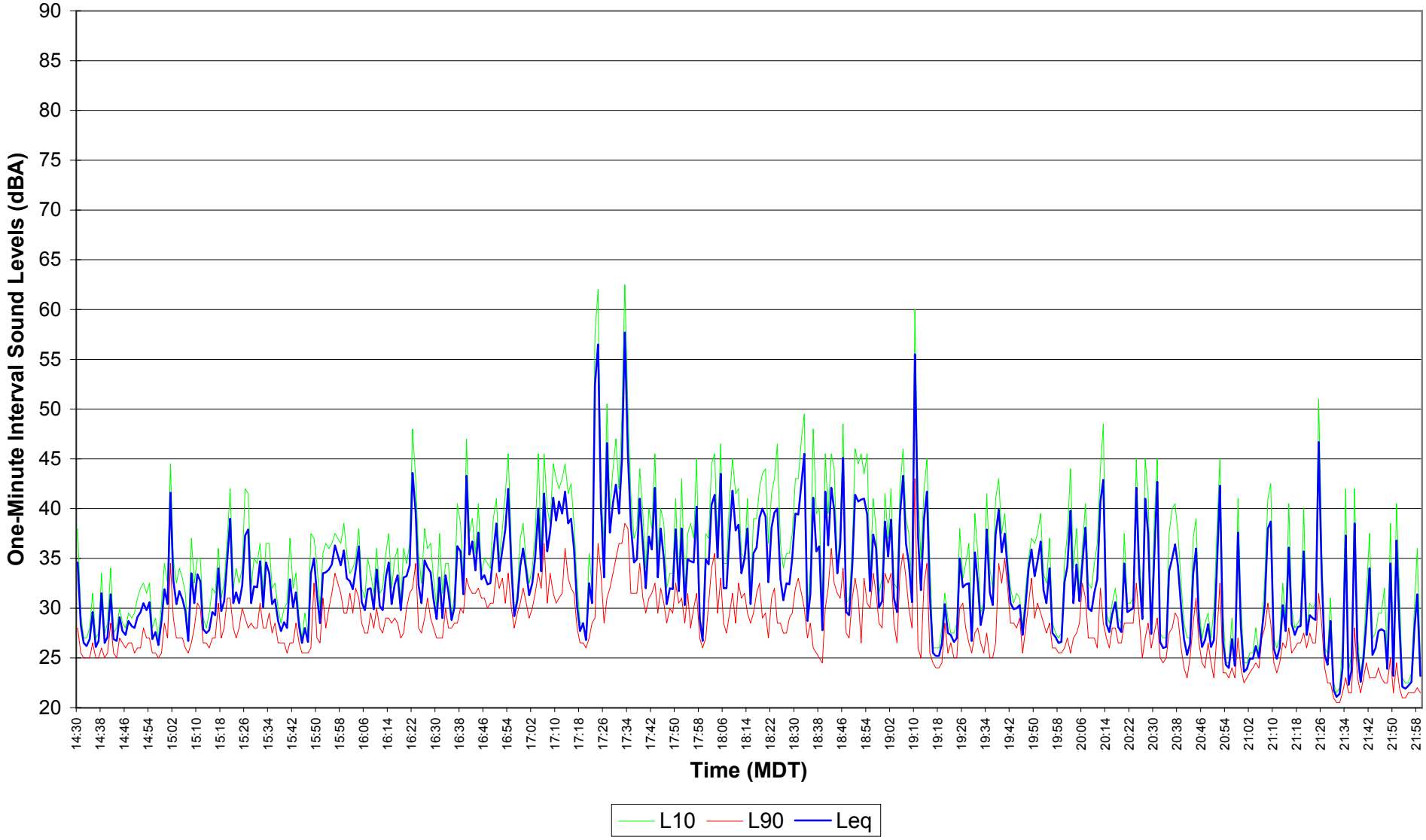


Figure E7.24
EnCana Rosebud
Site 7 Noise Survey
Nov. 30, 2004 - Dec. 01, 2004 22:00 - 06:59

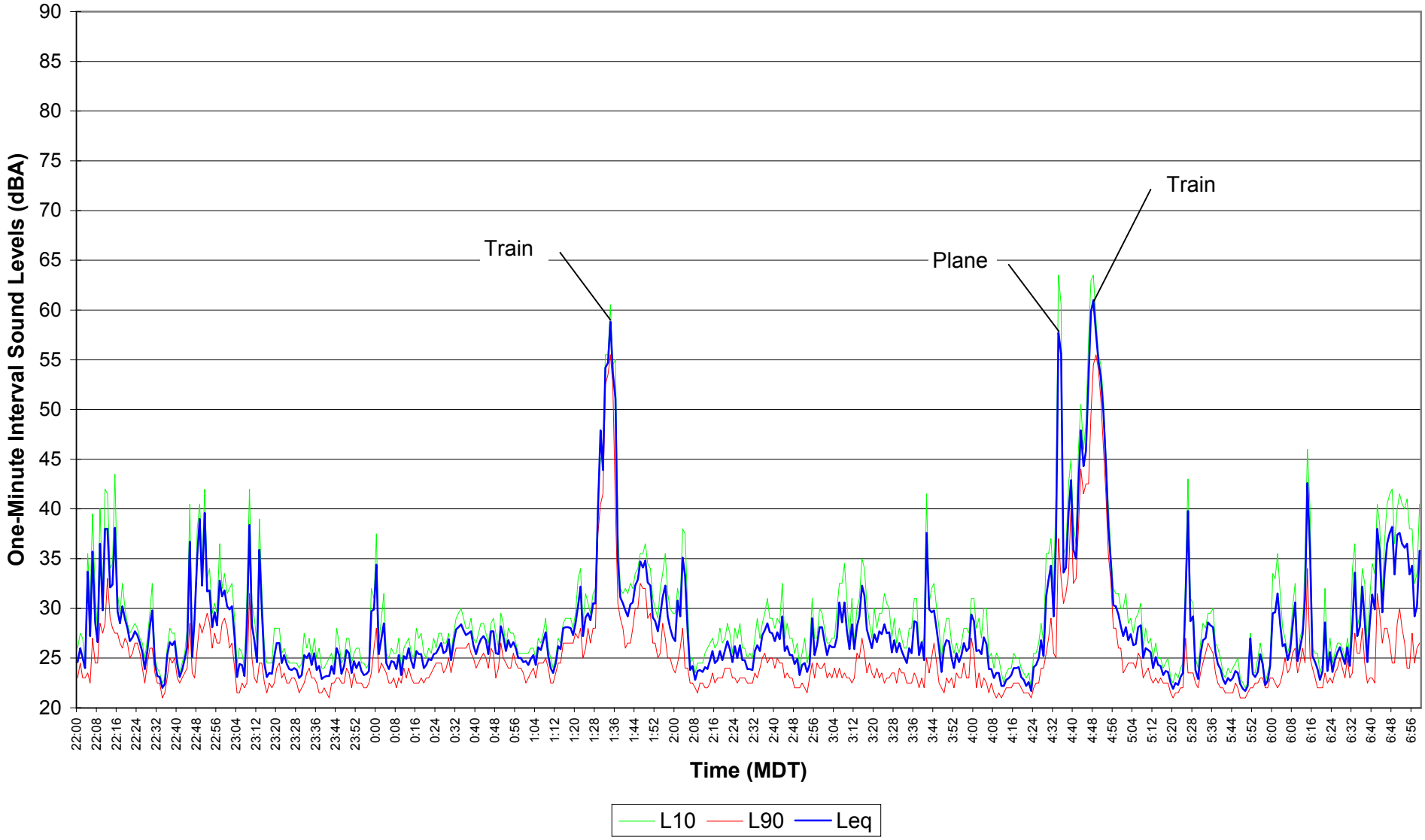


Figure E7.25

EnCana Rosebud

Site 7 Noise Survey

Dec. 01, 2004 07:00 - 14:29

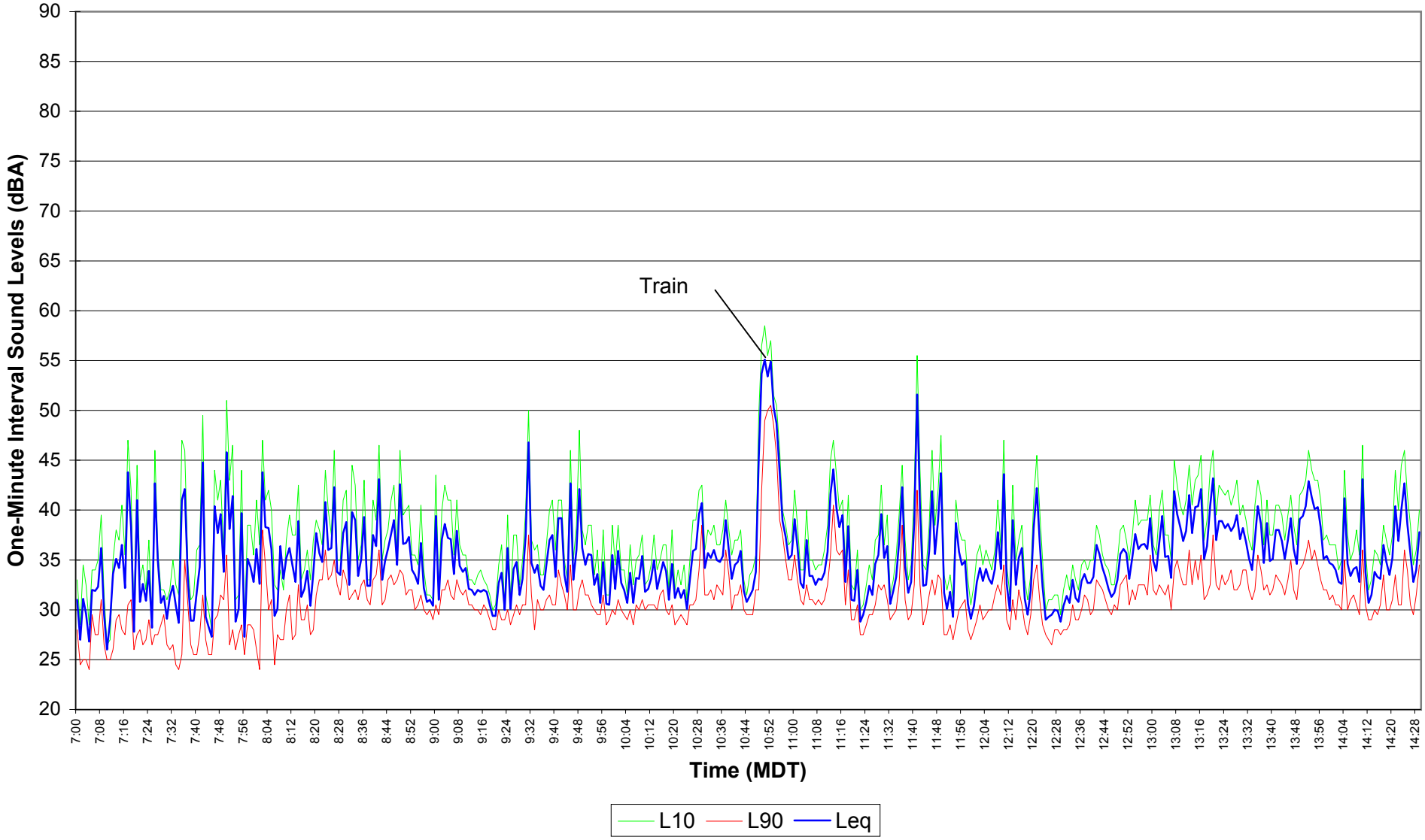


Figure E7.26
EnCana Rosebud
Site 7 Noise Survey
Dec. 01, 2004 14:30 - 21:59

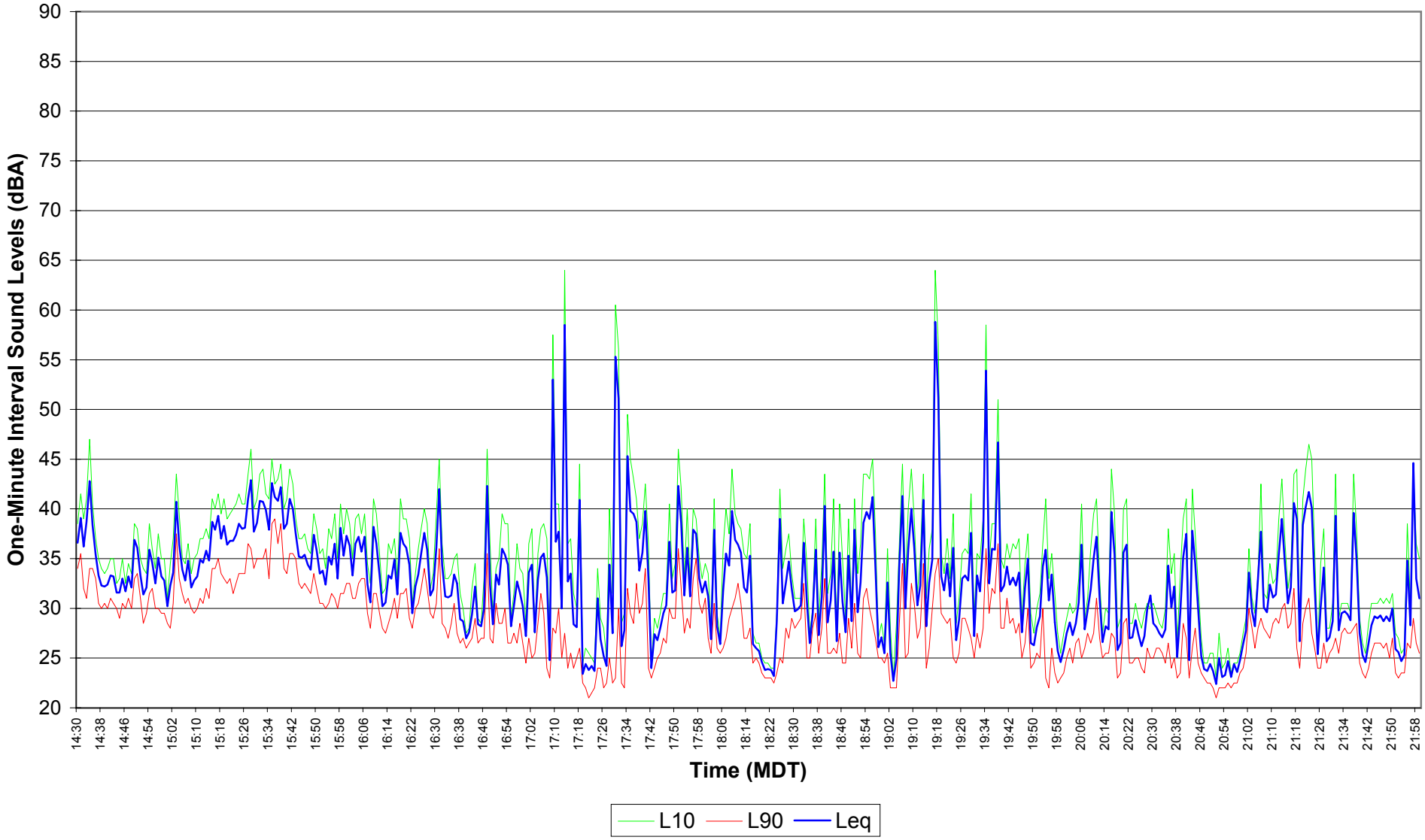


Figure E7.27
EnCana Rosebud
Site 7 Noise Survey
Dec. 01, 2004 - Dec. 02, 2004 22:00 - 06:59

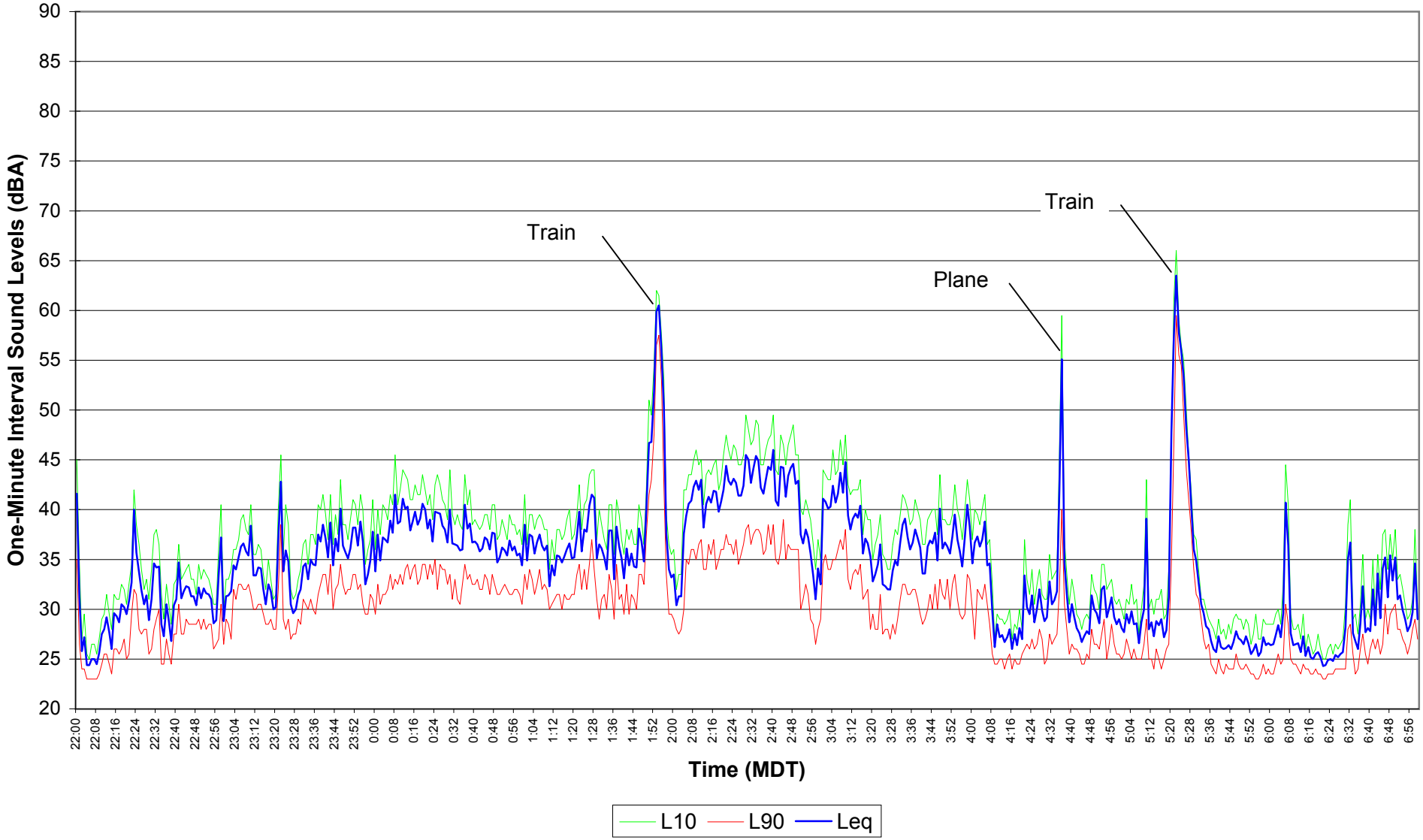


Figure E7.28
EnCana Rosebud
Site 7 Noise Survey
Dec. 02, 2004 07:00 - 14:29

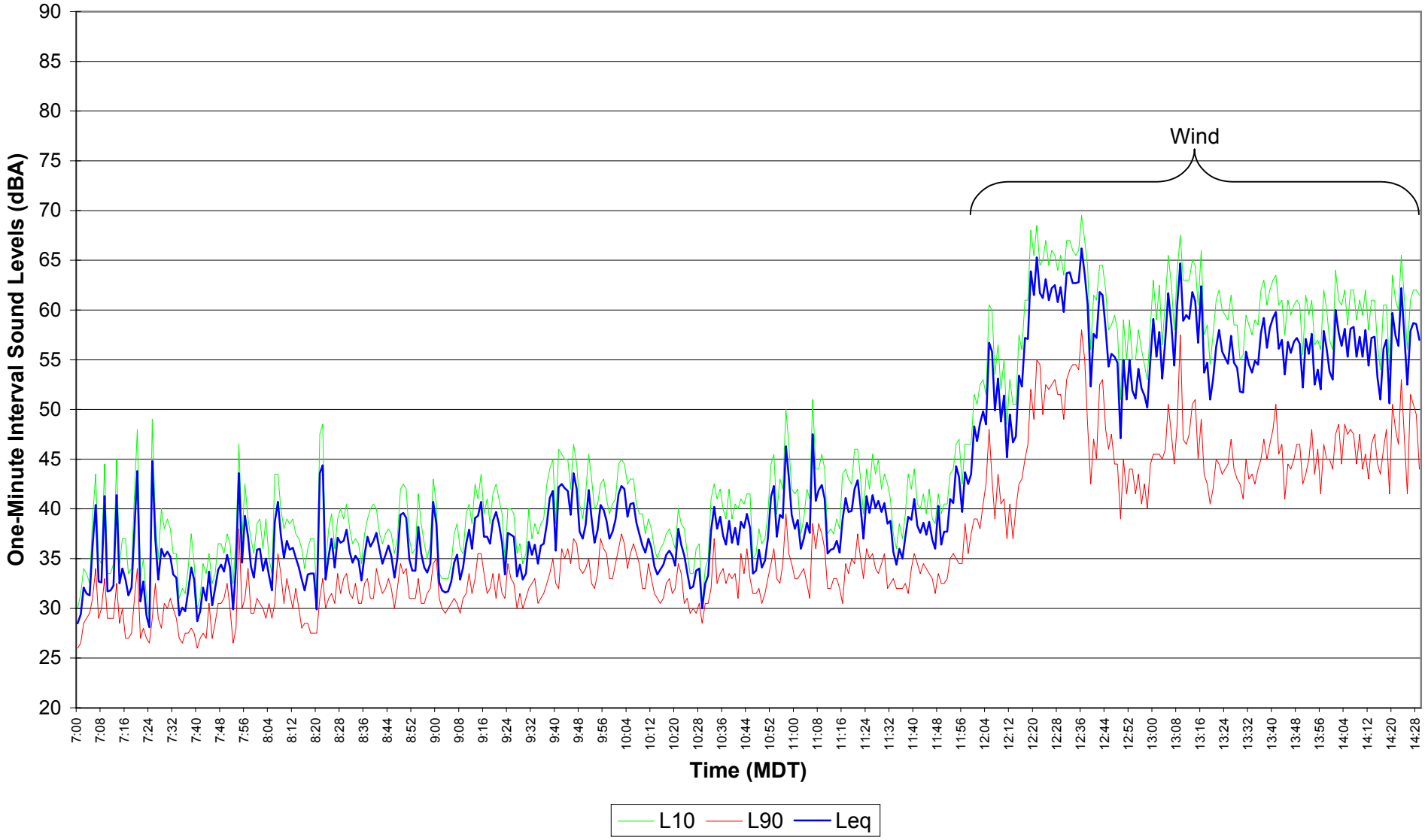


Figure E7.29
EnCana Rosebud
Site 7 Noise Survey
Dec. 02, 2004 14:30 - 21:59

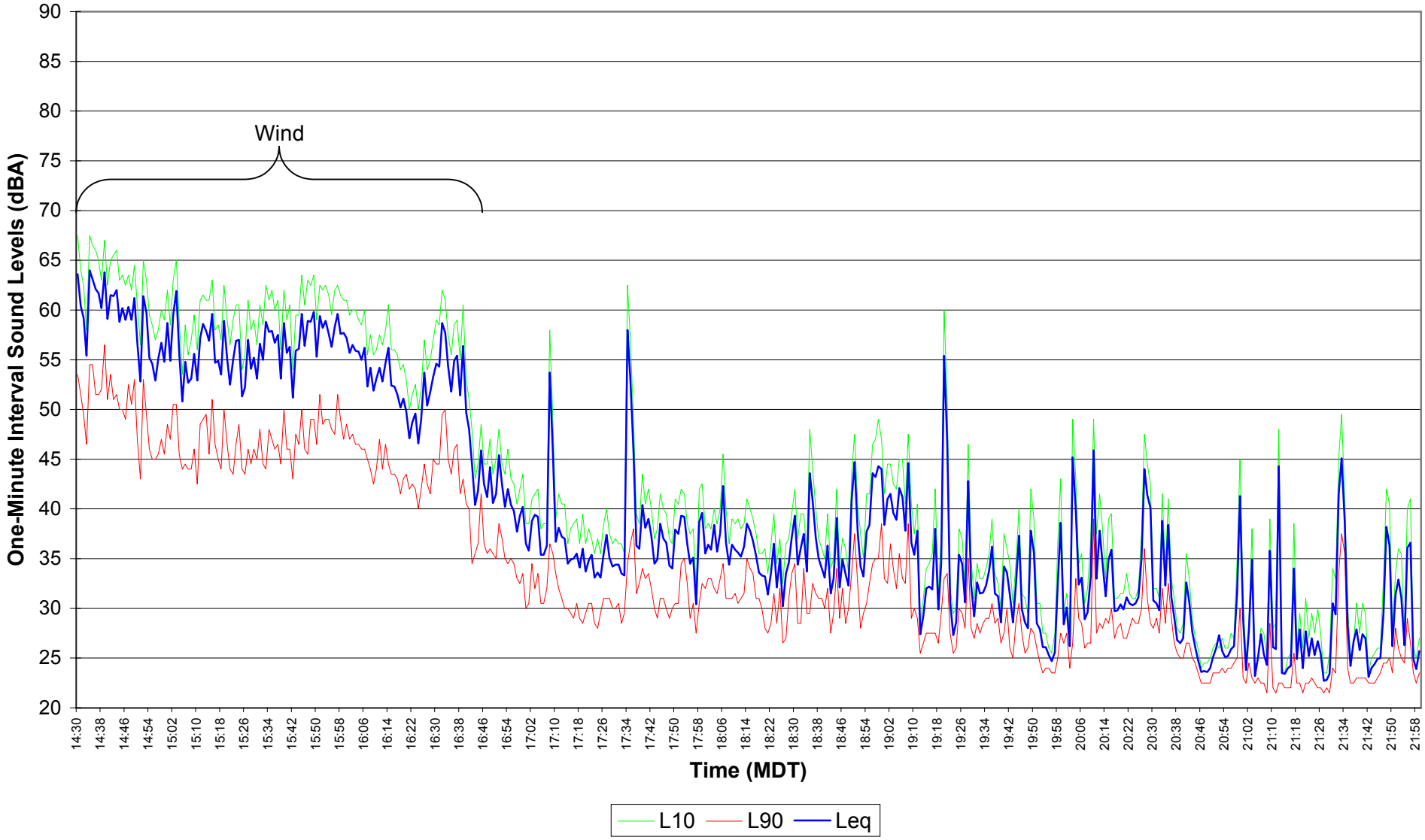


Figure E7.30
EnCana Rosebud
Site 7 Noise Survey
Dec. 02, 2004 - Dec. 03, 2004 22:00 - 06:59

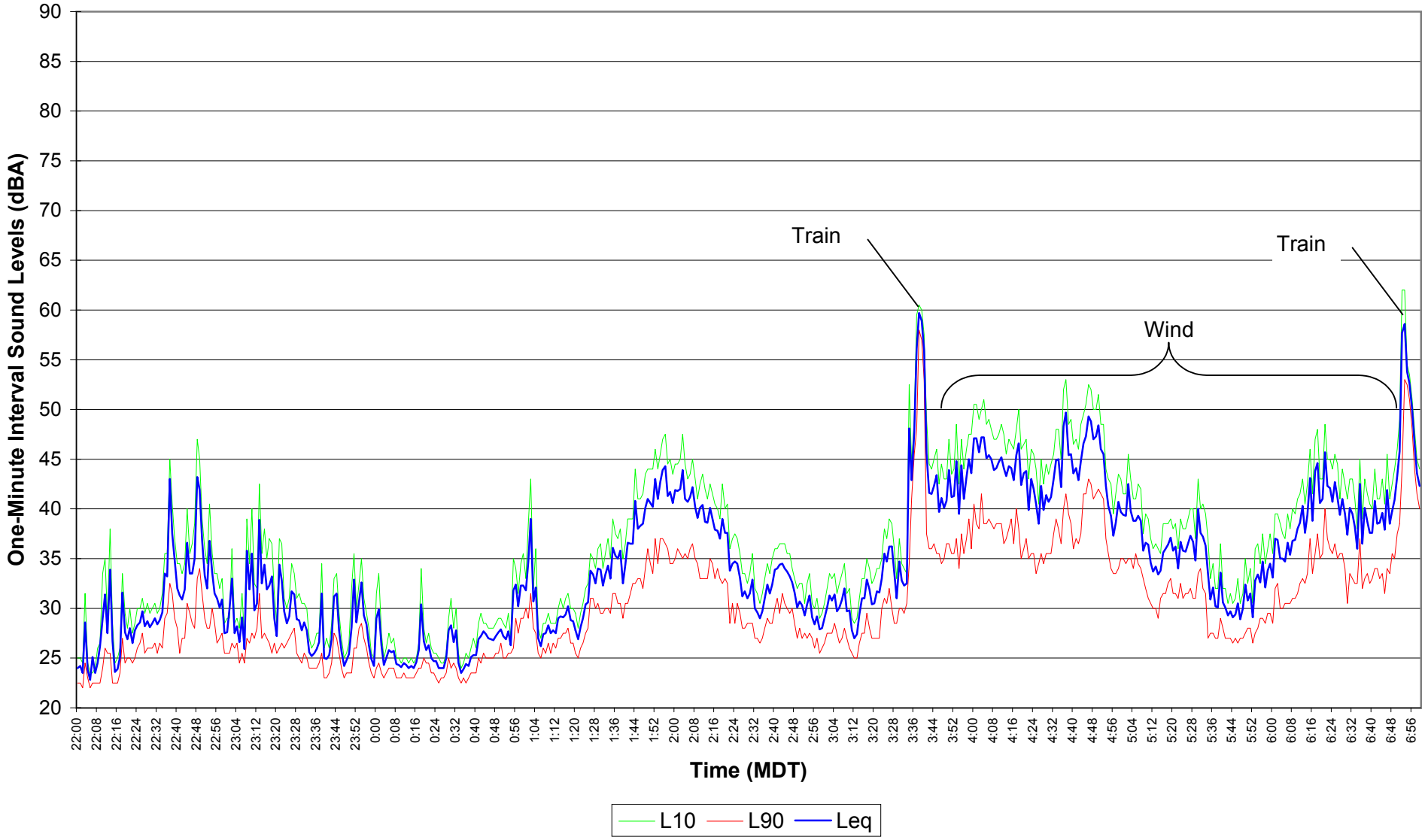


Figure E7.31
EnCana Rosebud
Site 7 Noise Survey
Dec. 03, 2004 07:00 - 14:29

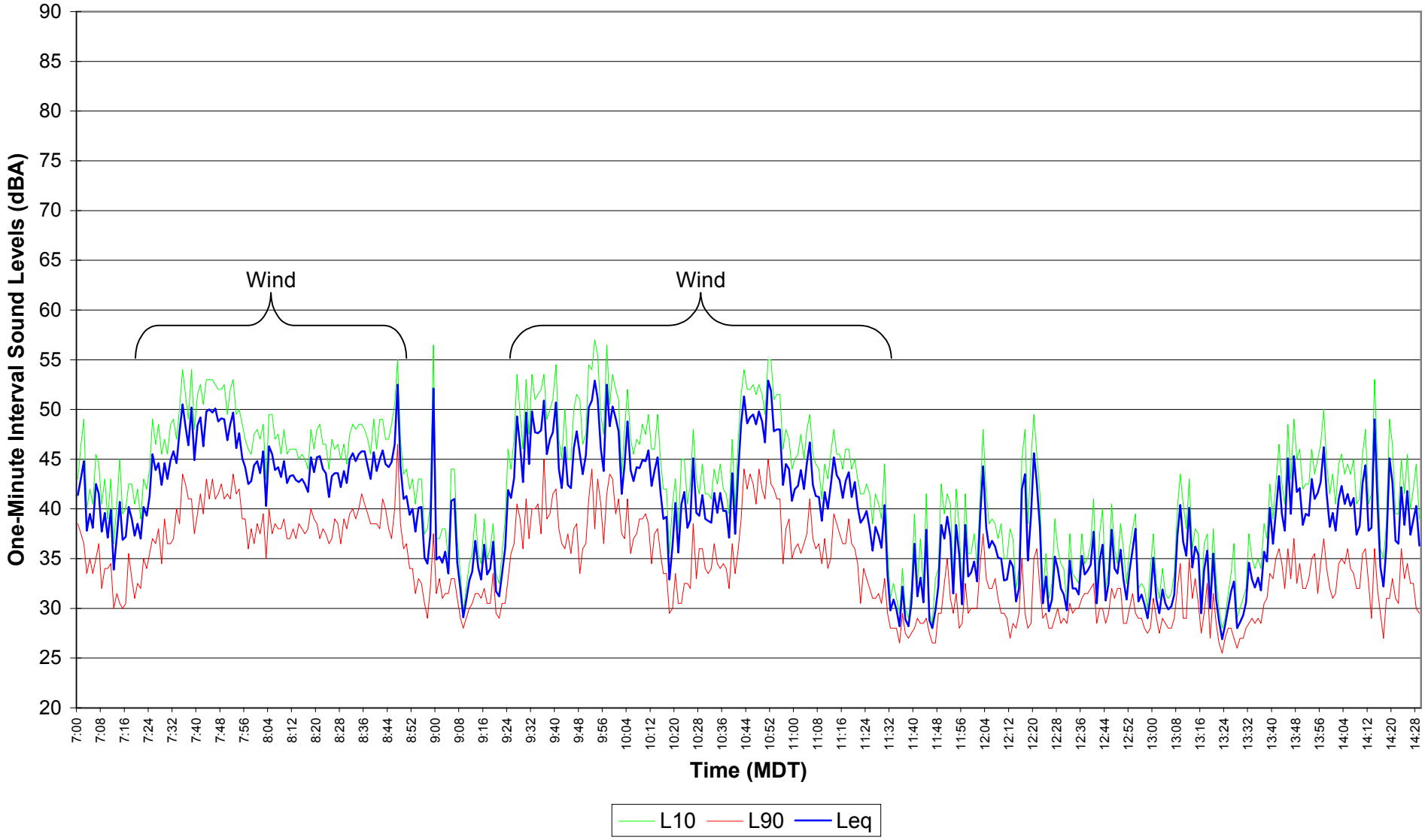


Figure E7.32
EnCana Rosebud
Site 7 Noise Survey
Dec. 03, 2004 14:30 - 21:59

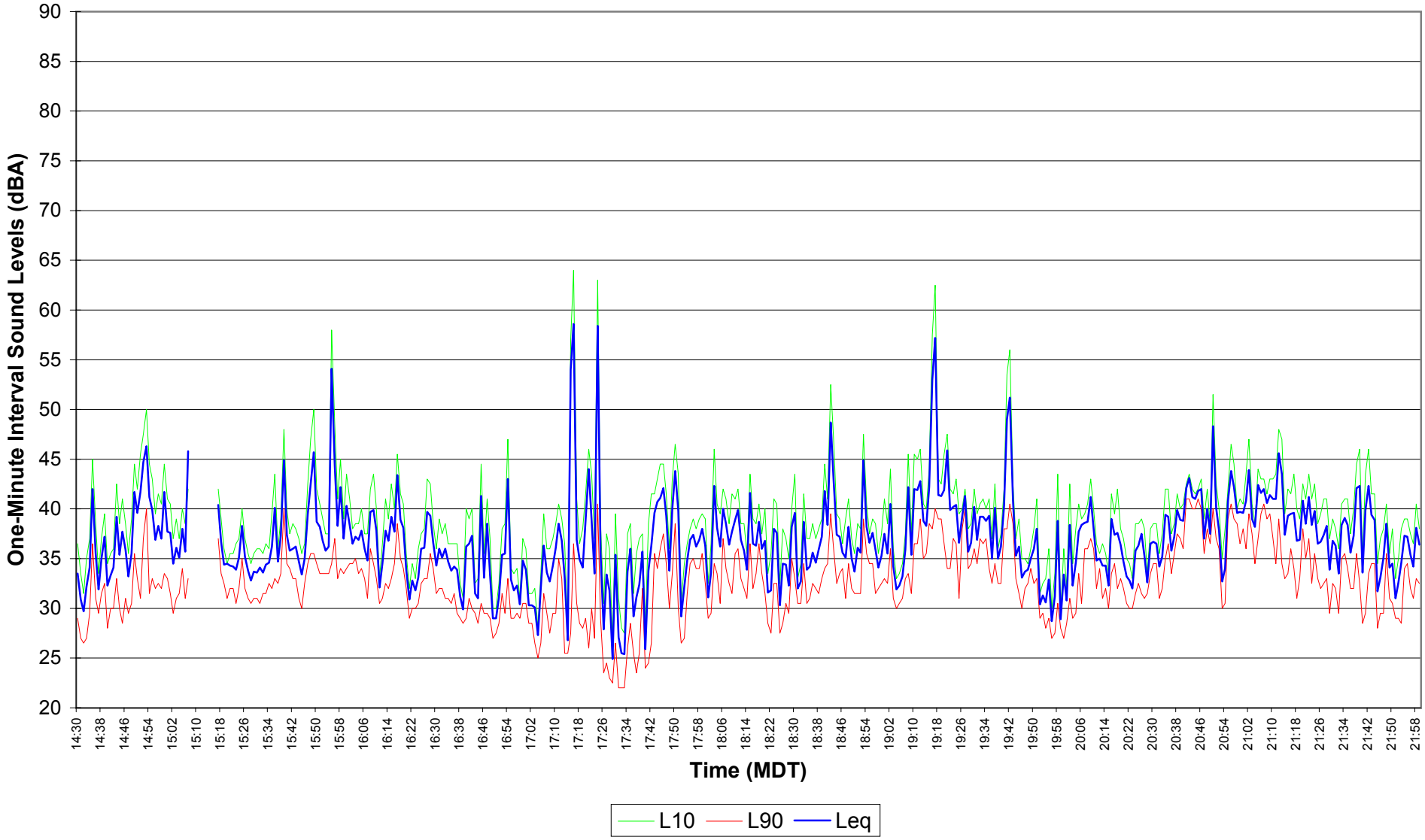


Figure E7.33
EnCana Rosebud
Site 7 Noise Survey
Dec. 03, 2004 - Dec. 04, 2004 22:00 - 06:59

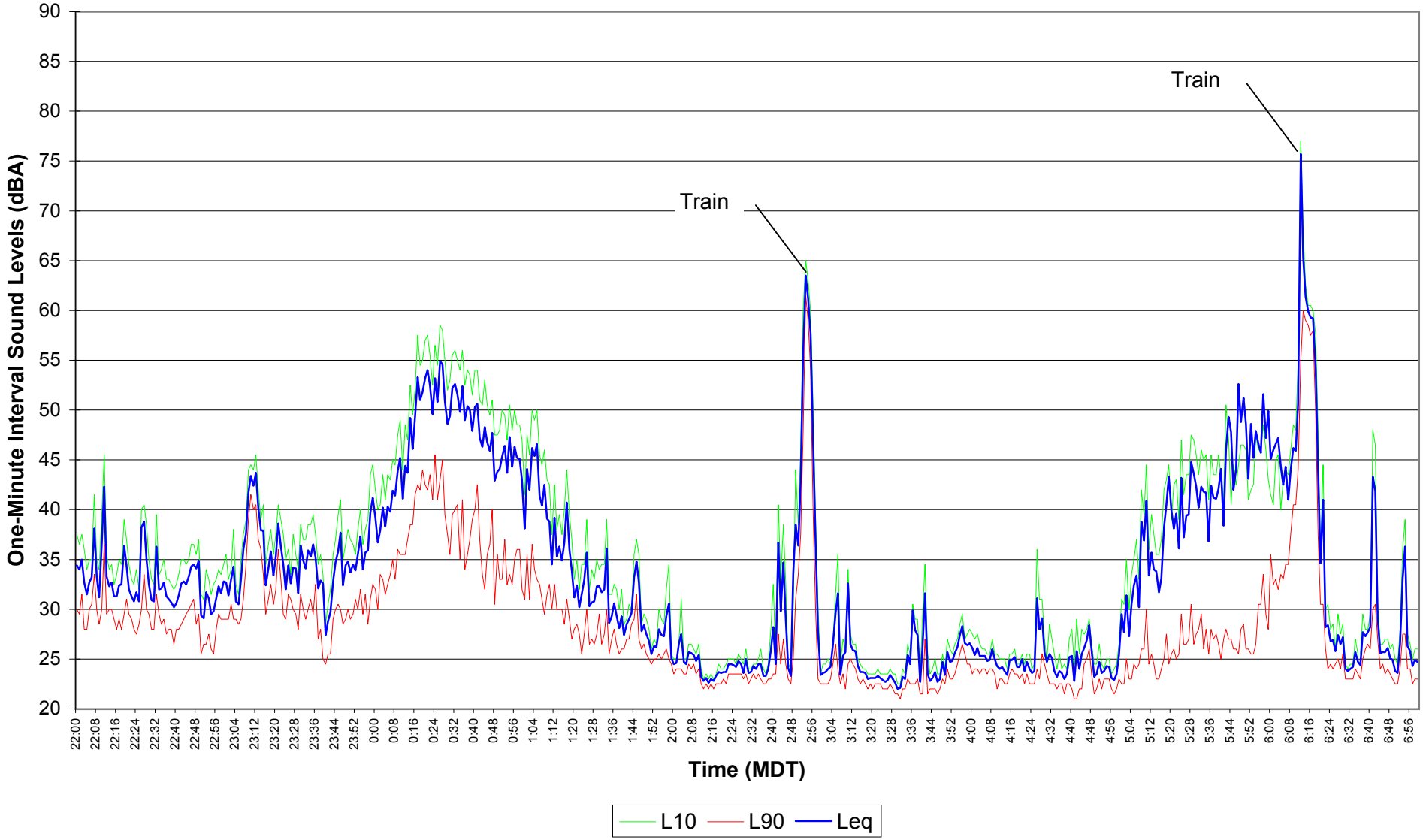


Figure E7.34
EnCana Rosebud
Site 7 Noise Survey
Dec. 04, 2004 07:00 - 14:29

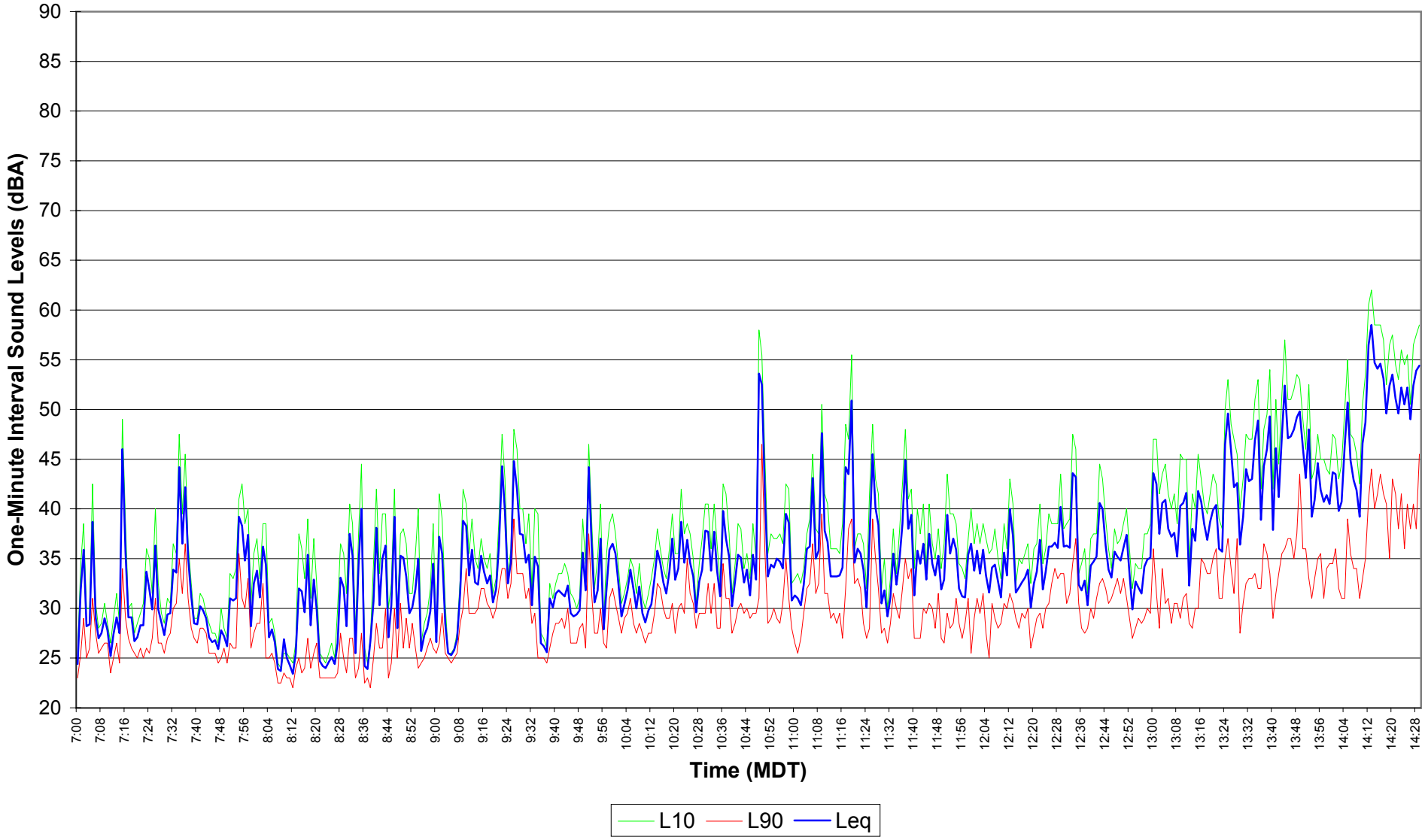


Figure E7.35
EnCana Rosebud
Site 7 Noise Survey
Dec. 04, 2004 14:30 - 21:59

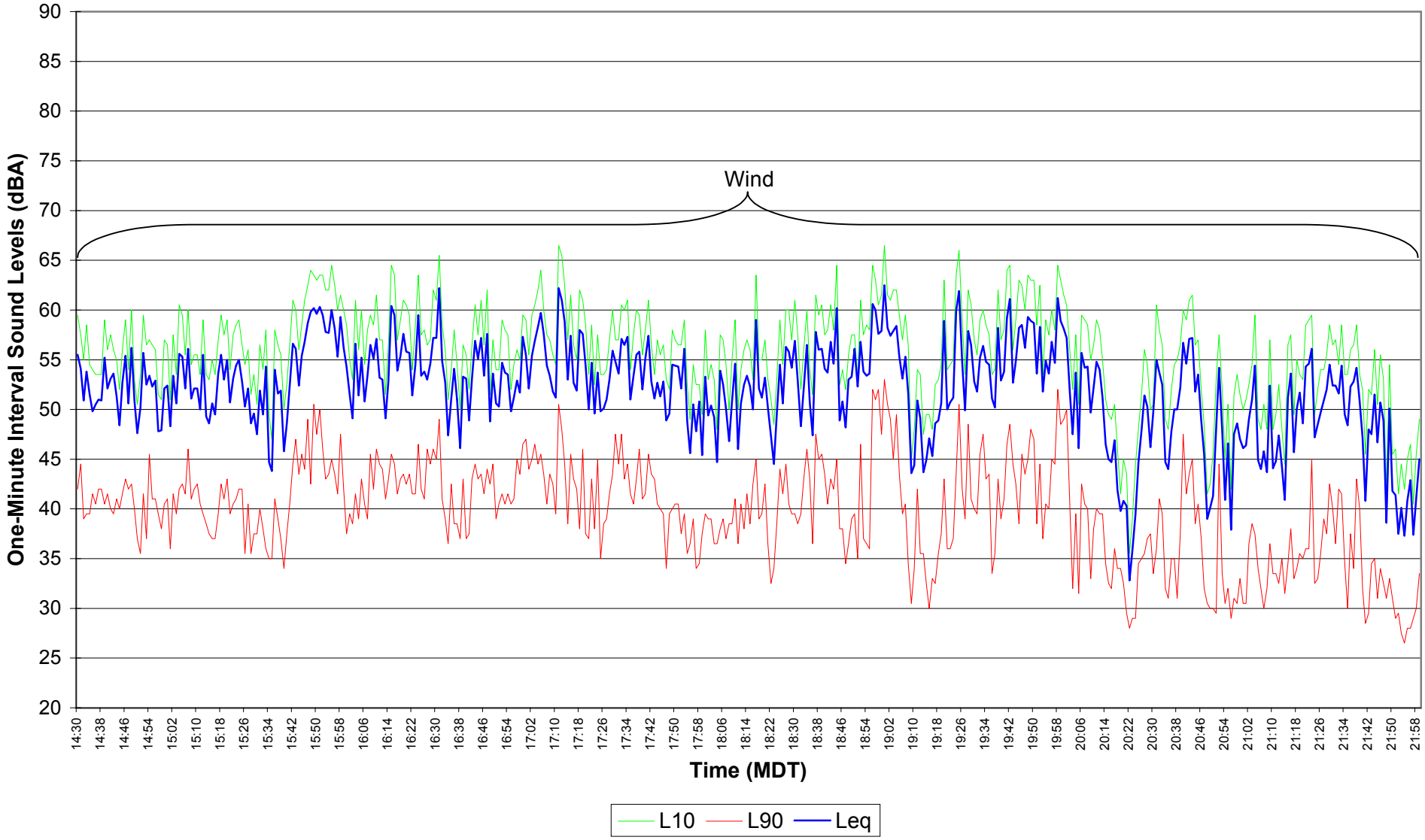


Figure E7.36
EnCana Rosebud
Site 7 Noise Survey
Dec. 04, 2004 - Dec. 05, 2004 22:00 - 06:59

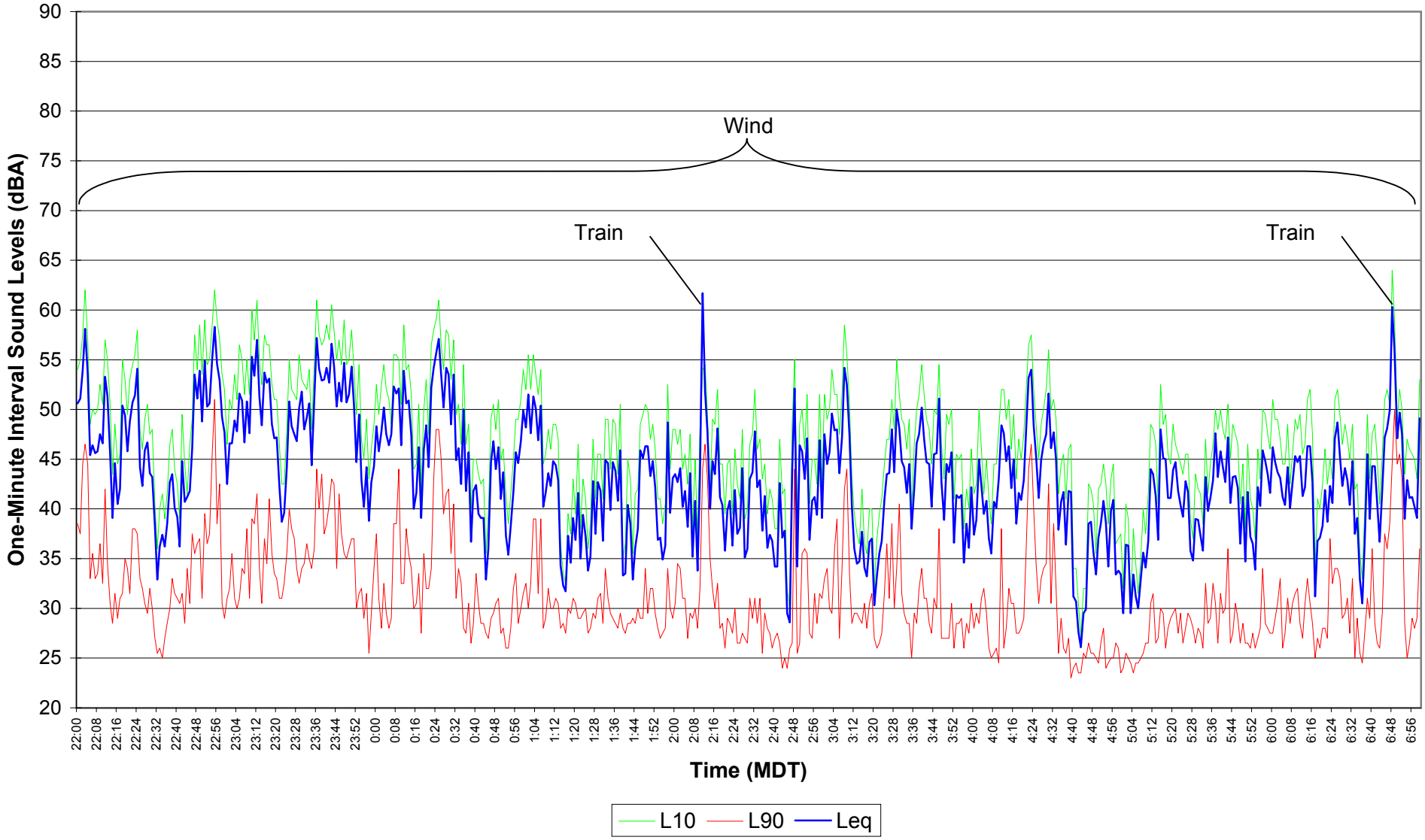


Figure E7.37
EnCana Rosebud
Site 7 Noise Survey
Dec. 05, 2004 07:00 - 14:29

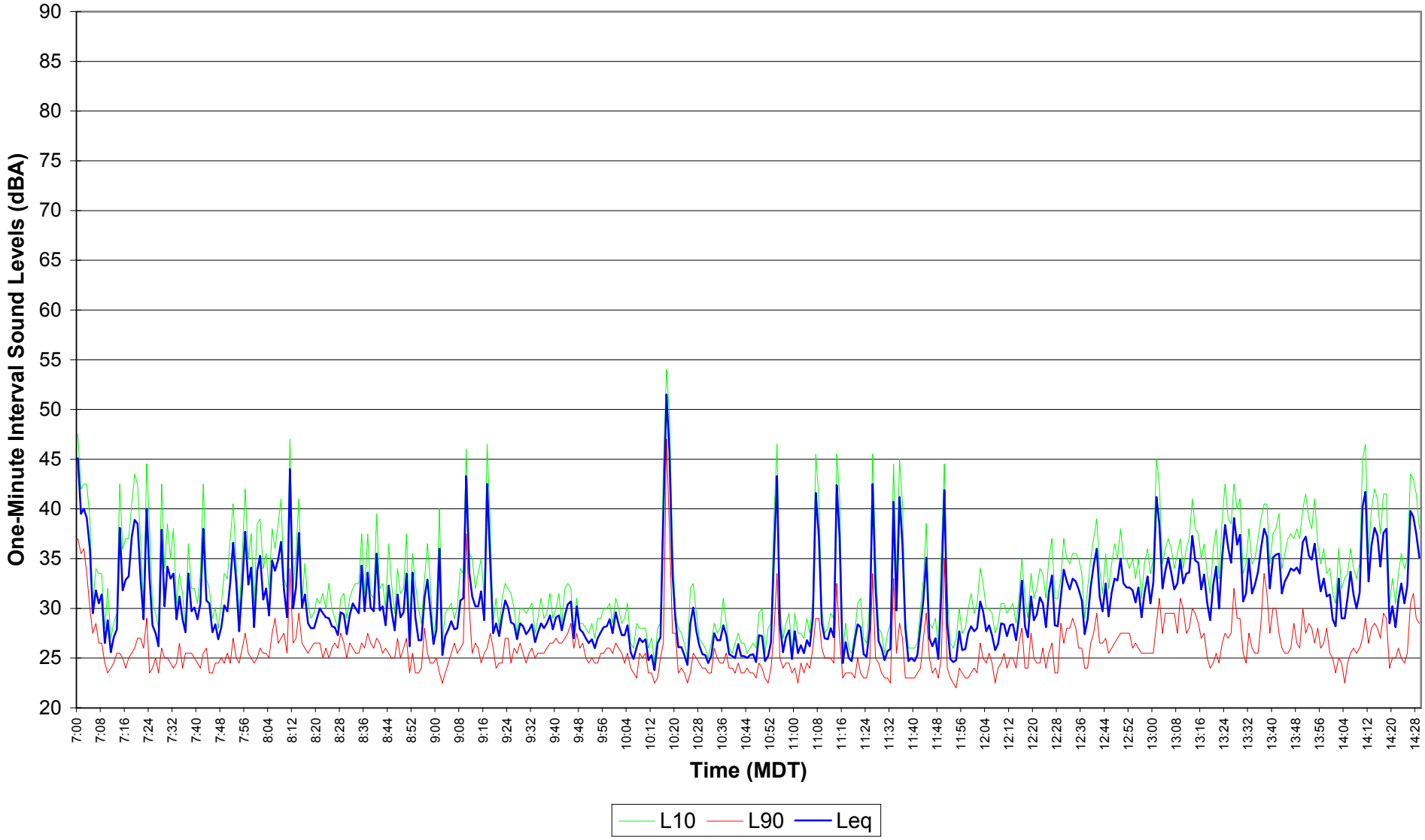


Figure E7.38
EnCana Rosebud
Site 7 Noise Survey
Dec. 05, 2004 14:30 - 21:59

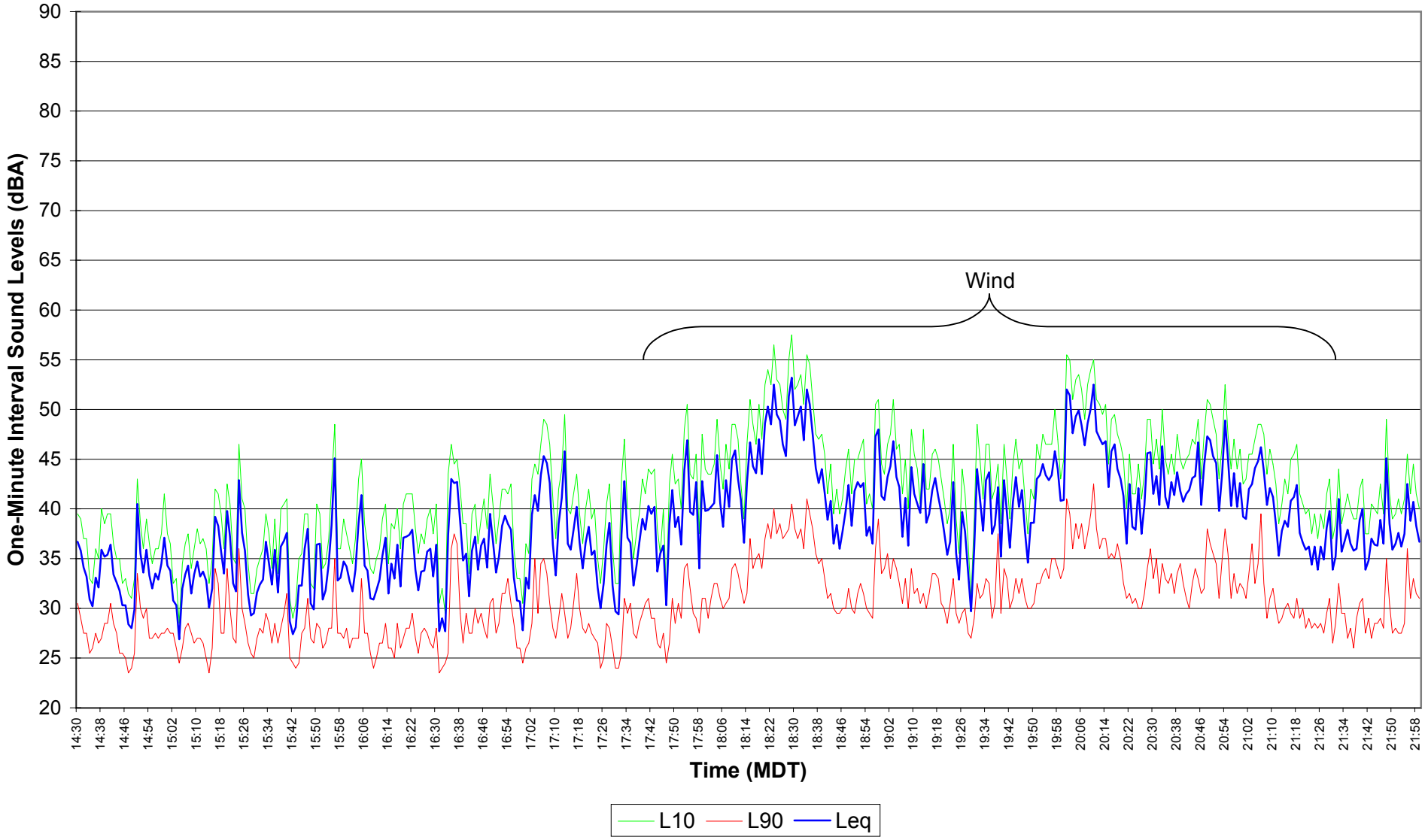


Figure E7.39
EnCana Rosebud
Site 7 Noise Survey
Dec. 05, 2004 - Dec. 06, 2004 22:00 - 06:59

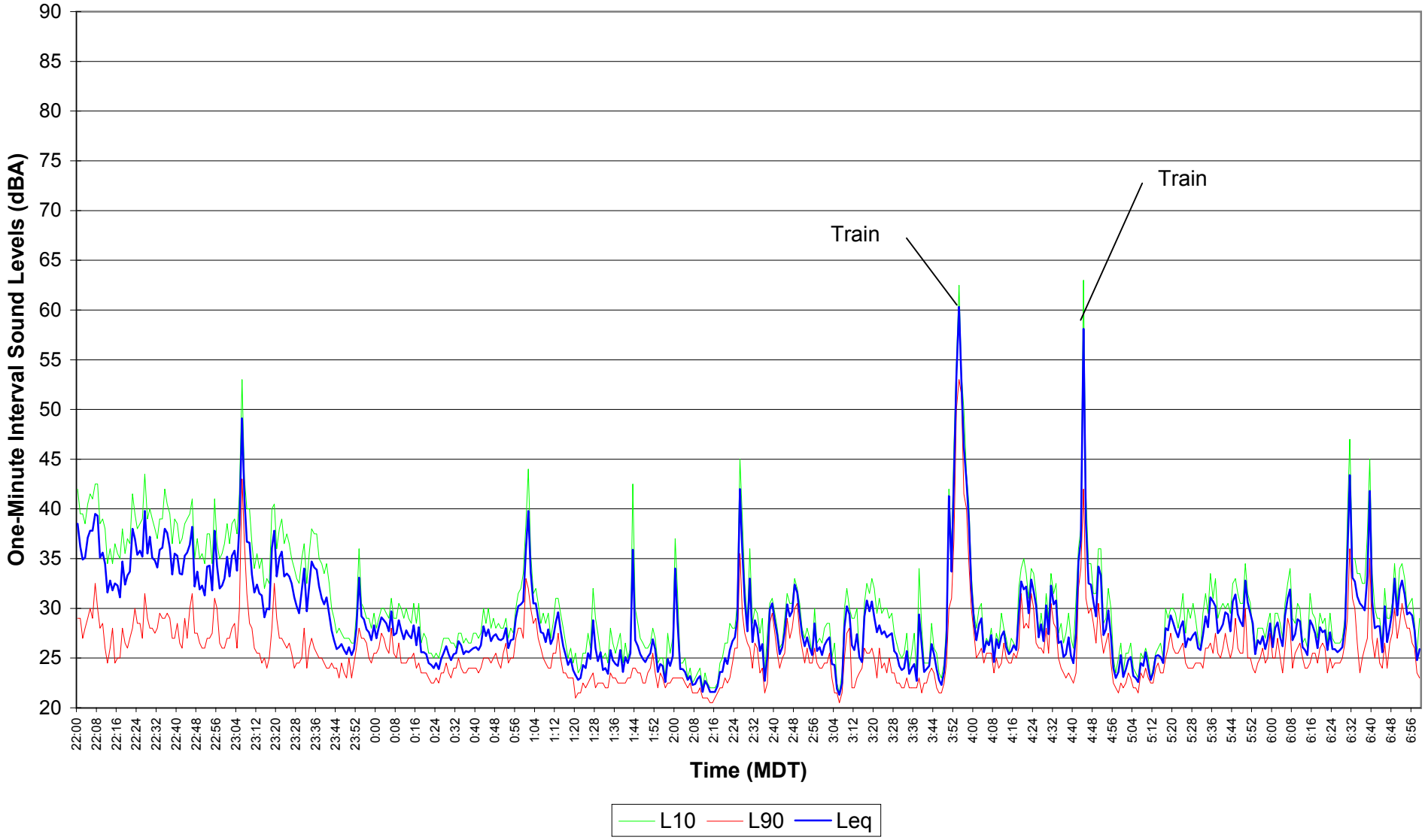


Figure E7.40

EnCana Rosebud

Site 7 Noise Survey

Dec. 06, 2004 07:00 - 14:29

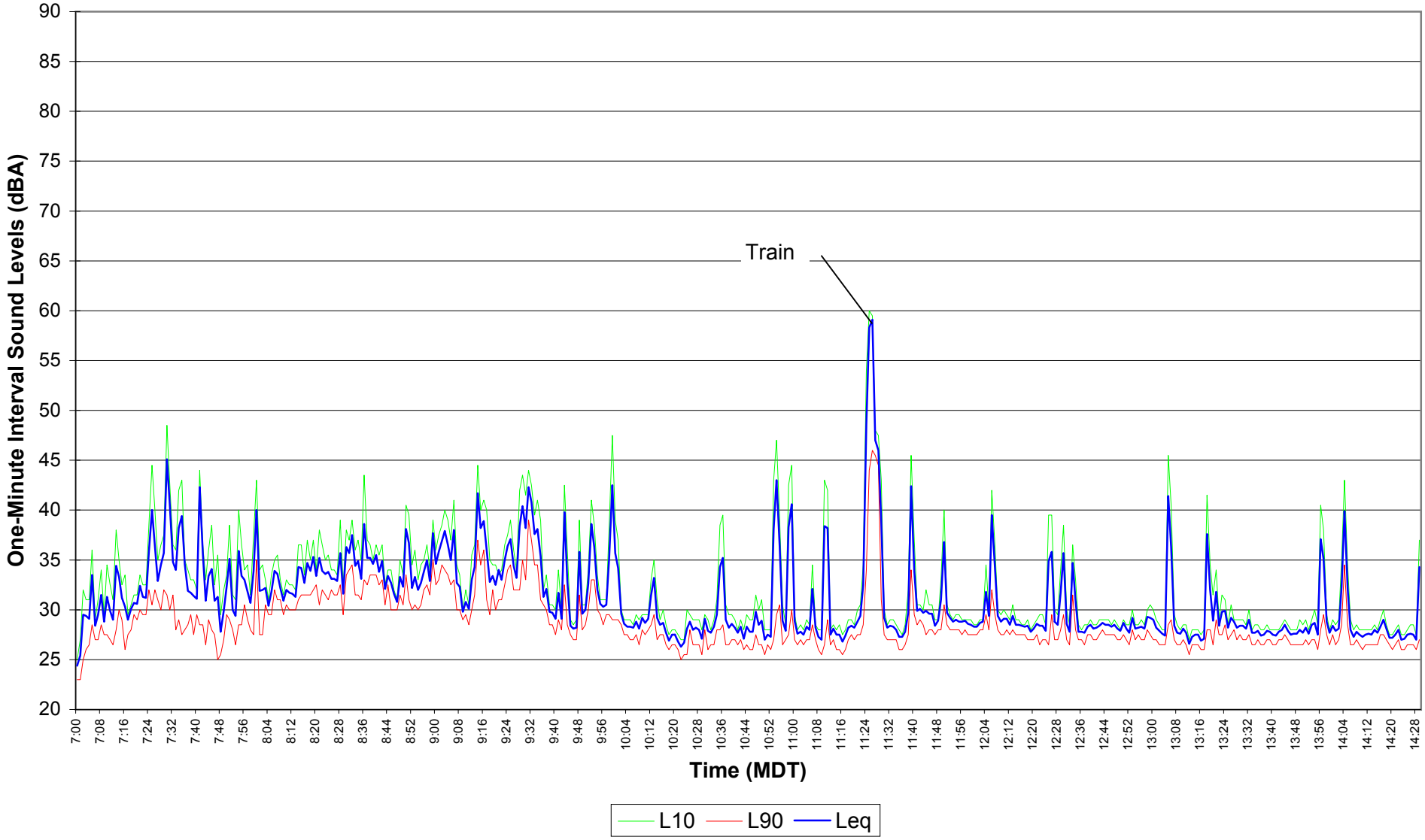


Figure E7.41
EnCana Rosebud
Site 7 Noise Survey
Dec. 06, 2004 14:30 - 21:59

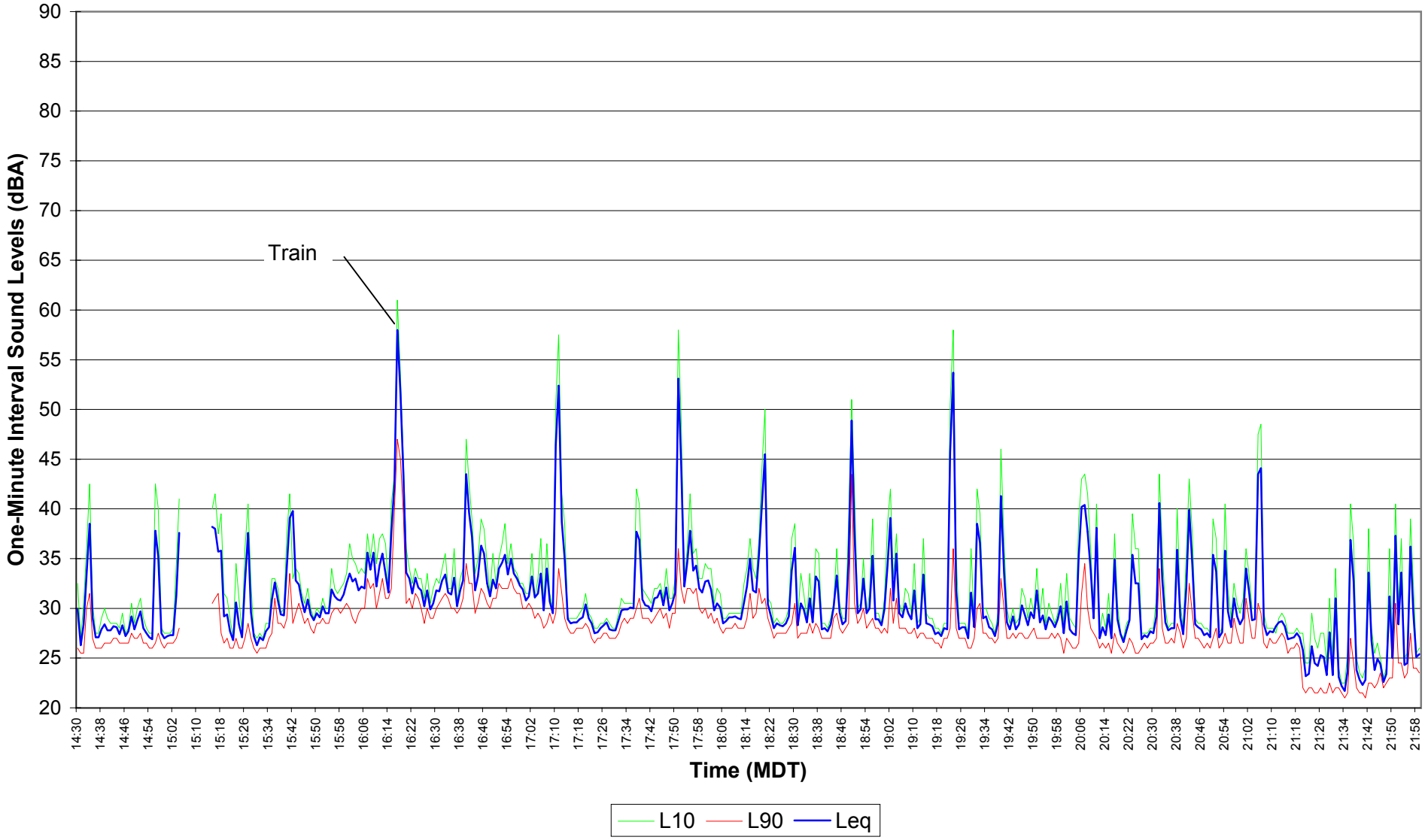


Figure E7.42
EnCana Rosebud
Site 7 Noise Survey
Dec. 06, 2004 - Dec. 07, 2004 22:00 - 06:59

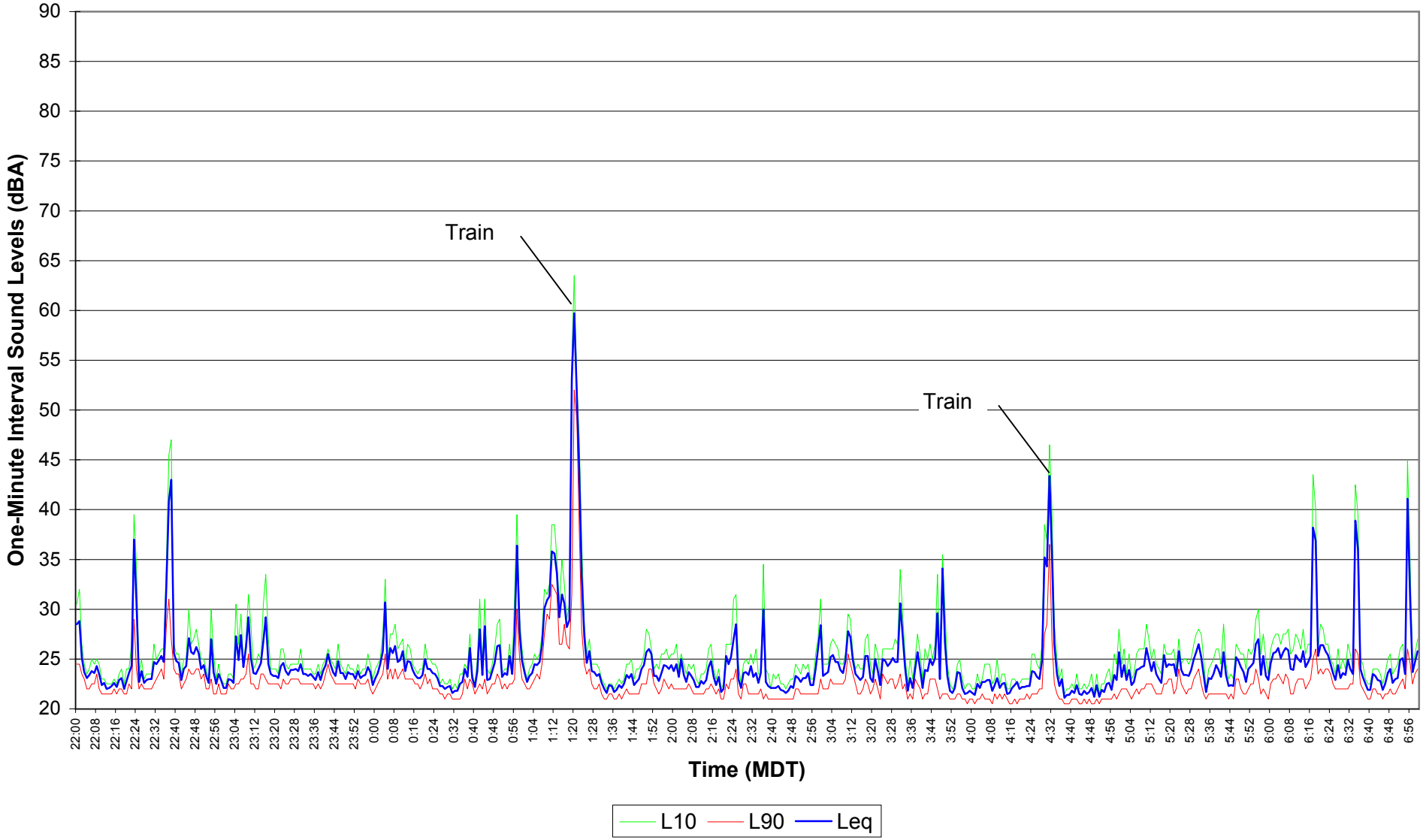


Figure E7.43
EnCana Rosebud
Site 7 Noise Survey
Dec. 07, 2004 07:00 - 14:29

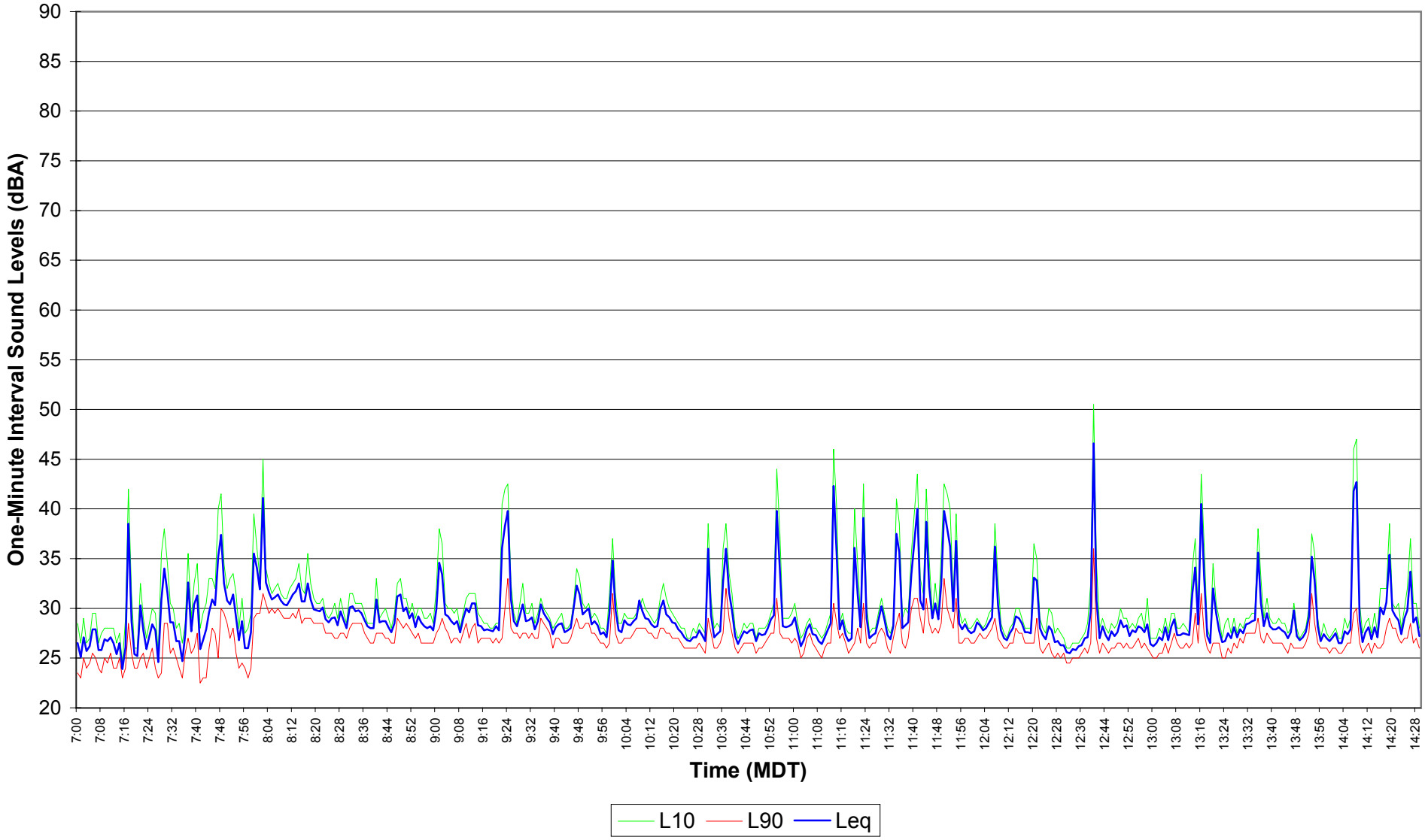


Figure E7.44
EnCana Rosebud
Site 7 Noise Survey
Dec. 07, 2004 14:30 - 21:59

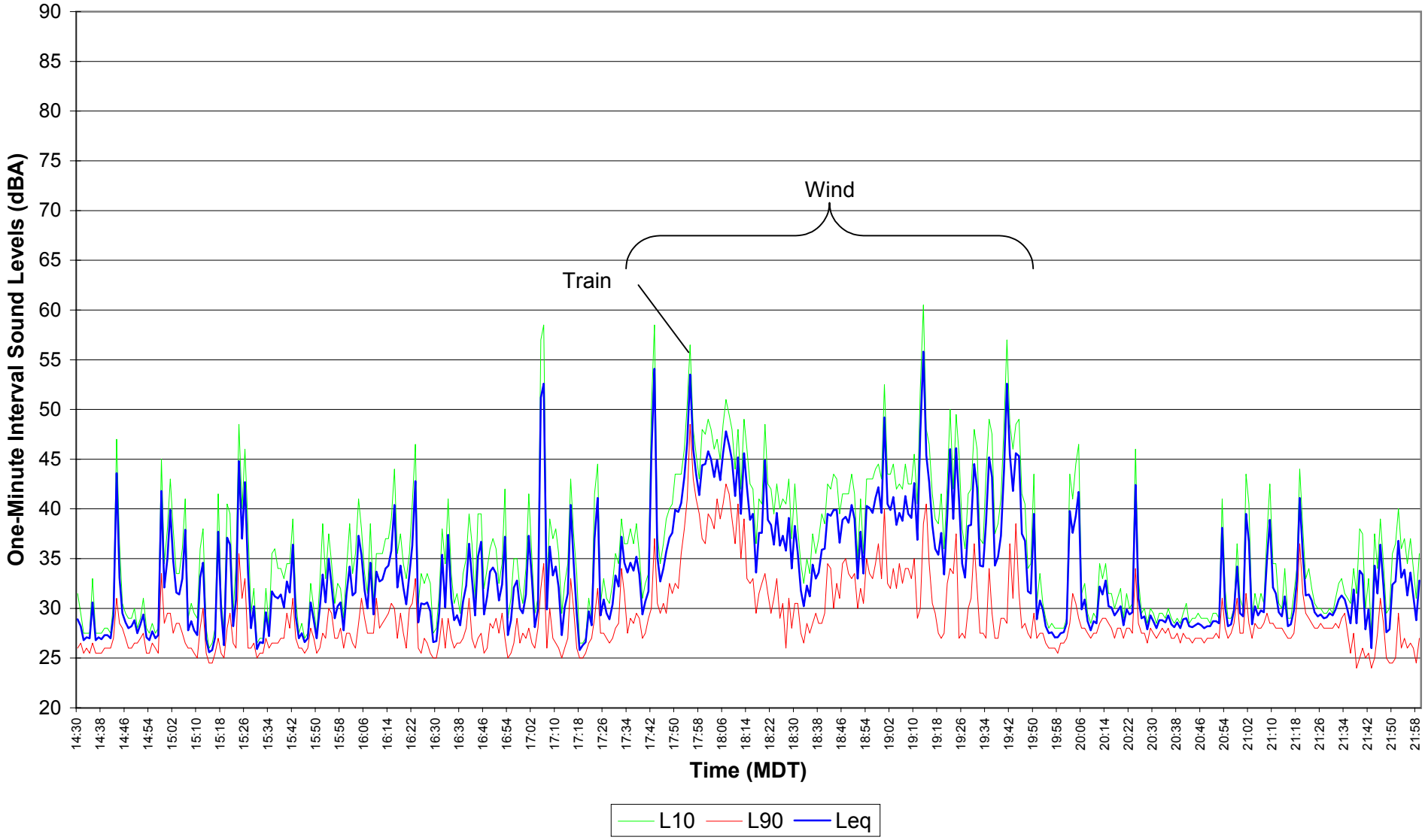


Figure E7.45
EnCana Rosebud
Site 7 Noise Survey
Dec. 07, 2004 - Dec. 08, 2004 22:00 - 06:59

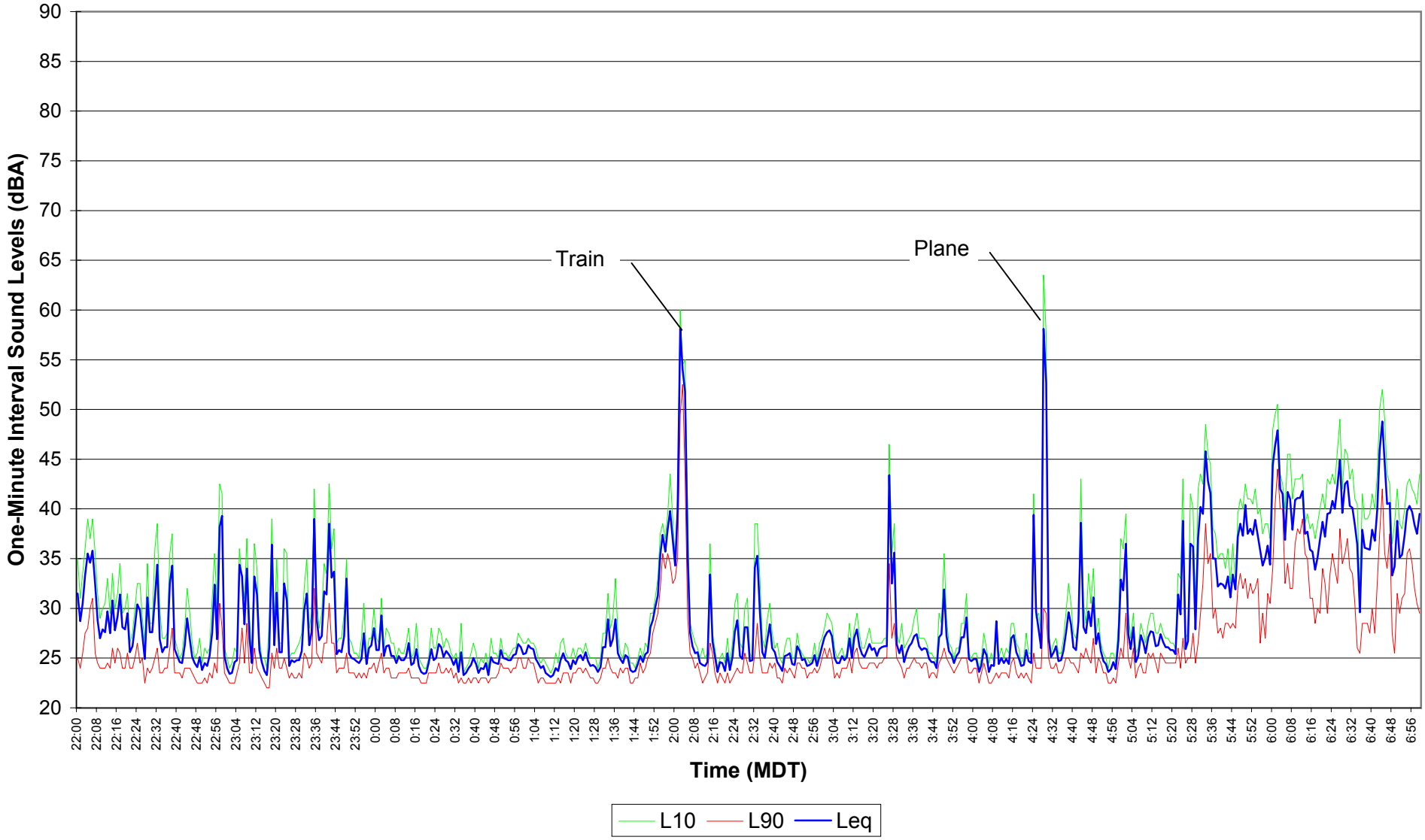


Figure E7.46
EnCana Rosebud
Site 7 Noise Survey
Dec. 08, 2004 07:00 - 14:29

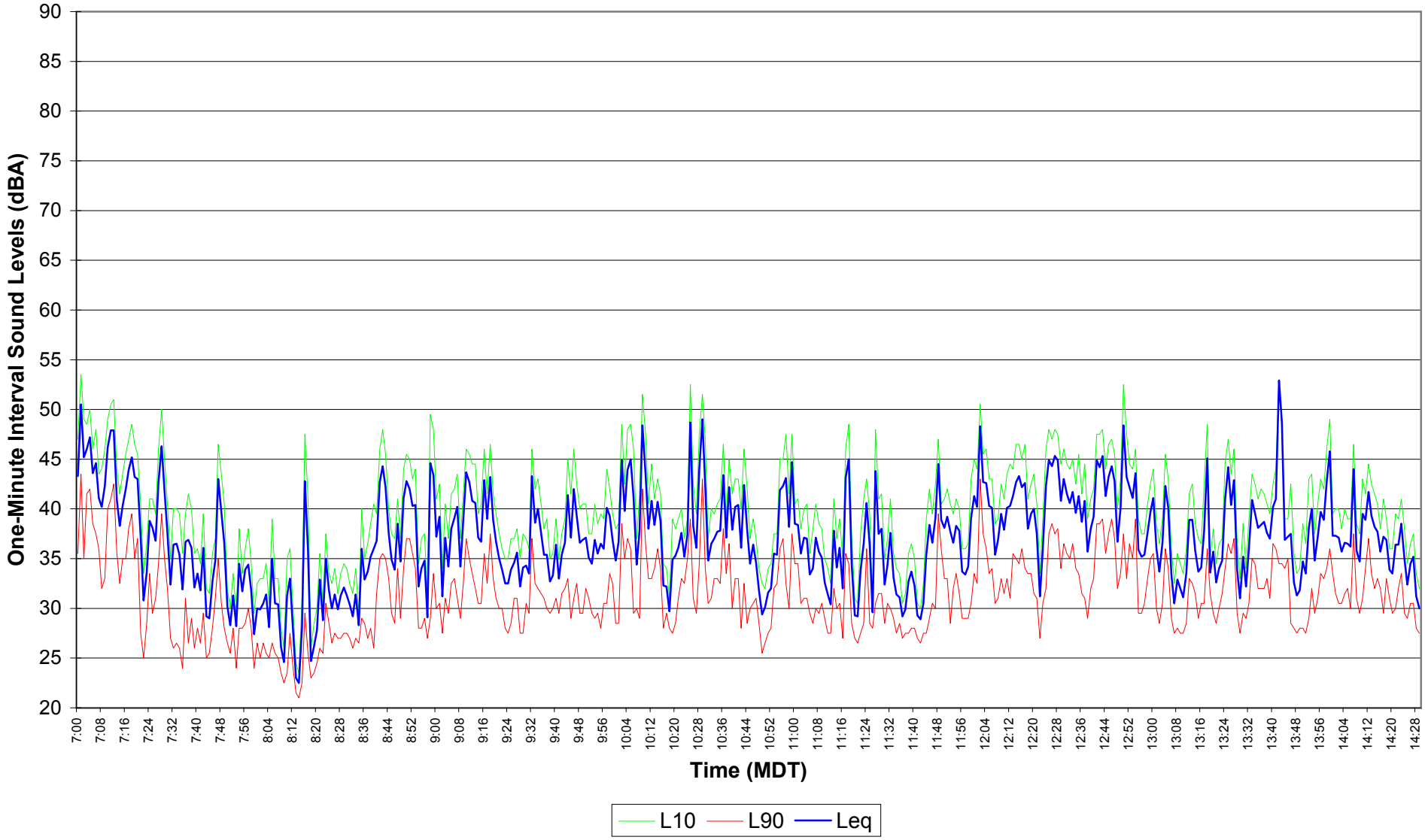


Figure E7.47
EnCana Rosebud
Site 7 Noise Survey
Dec. 08, 2004 14:30 - 21:59

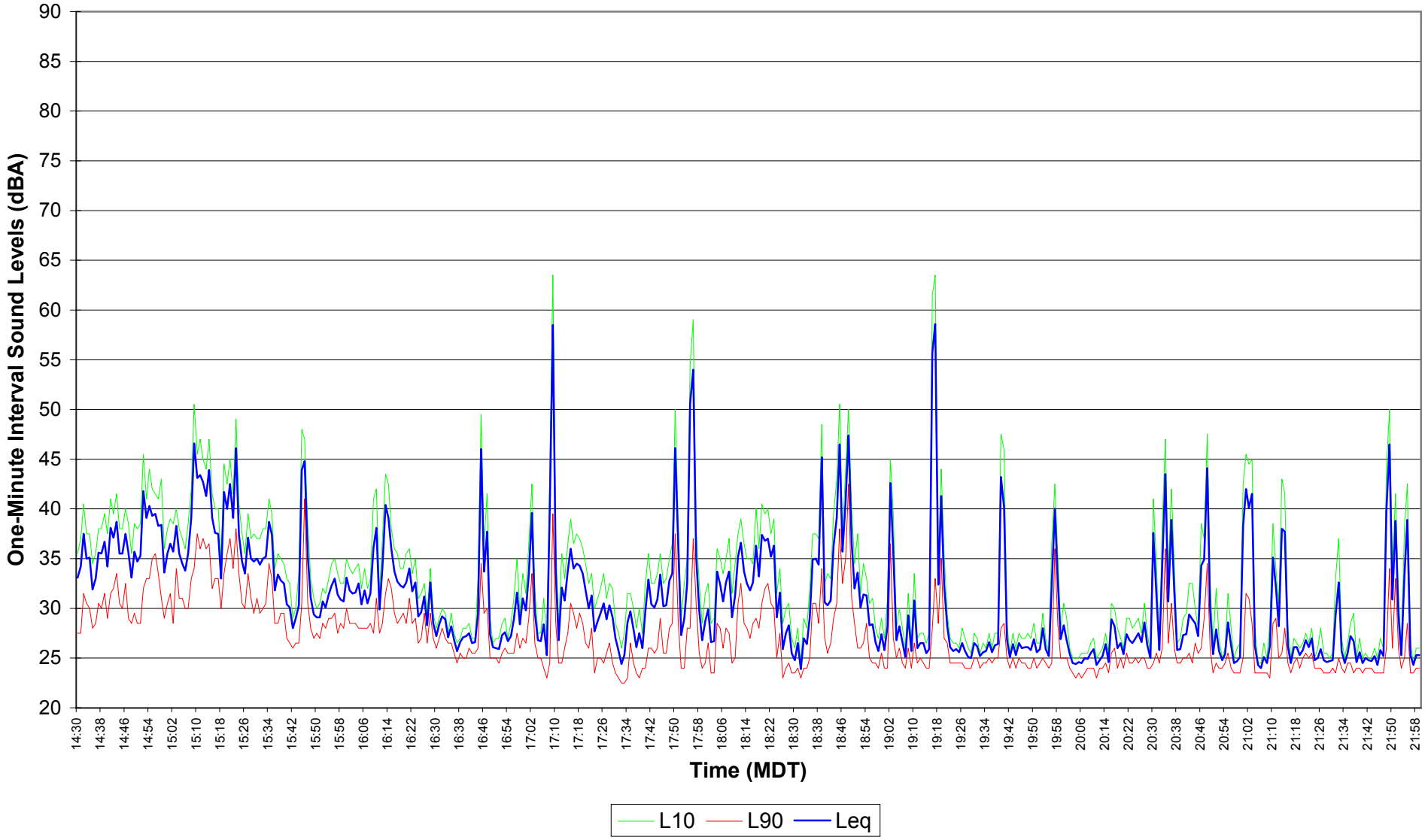


Figure E7.48
EnCana Rosebud
Site 7 Noise Survey
Dec. 08, 2004 - Dec. 09, 2004 22:00 - 06:59

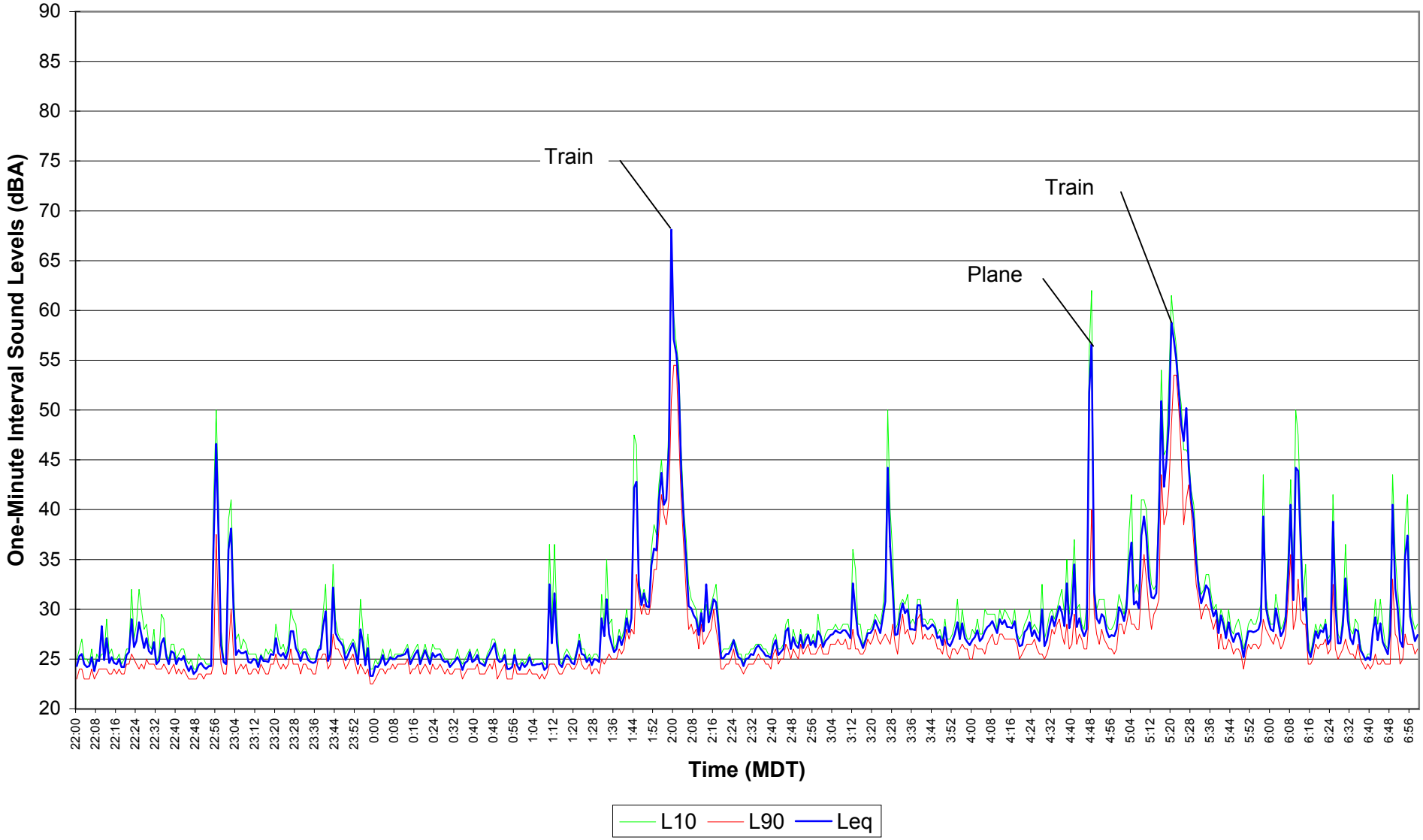


Figure E7.49
EnCana Rosebud
Site 7 Noise Survey
Dec. 09, 2004 07:00 - 14:29

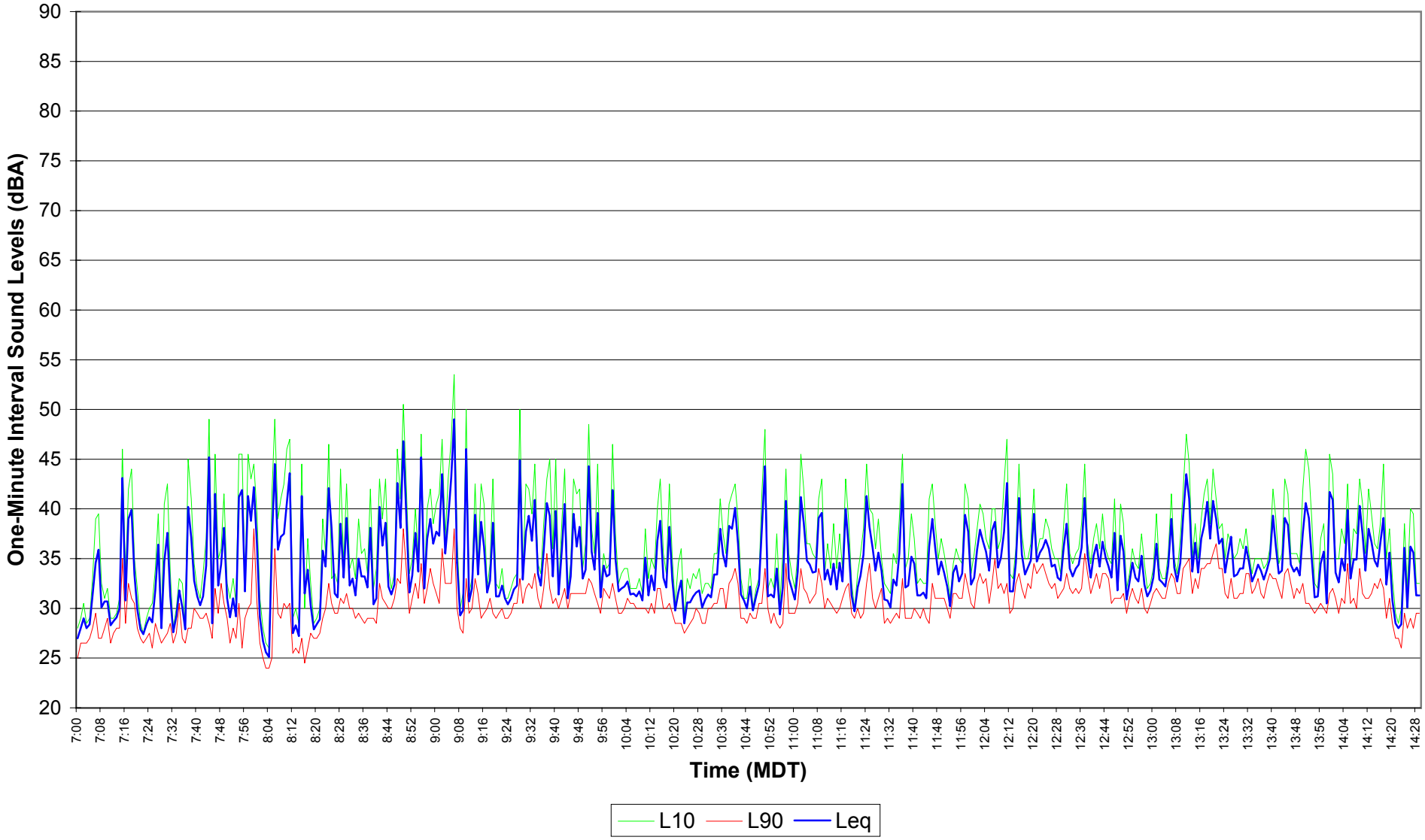


Figure E7.50
EnCana Rosebud
Site 7 Noise Survey
Dec. 09, 2004 14:30 - 21:59

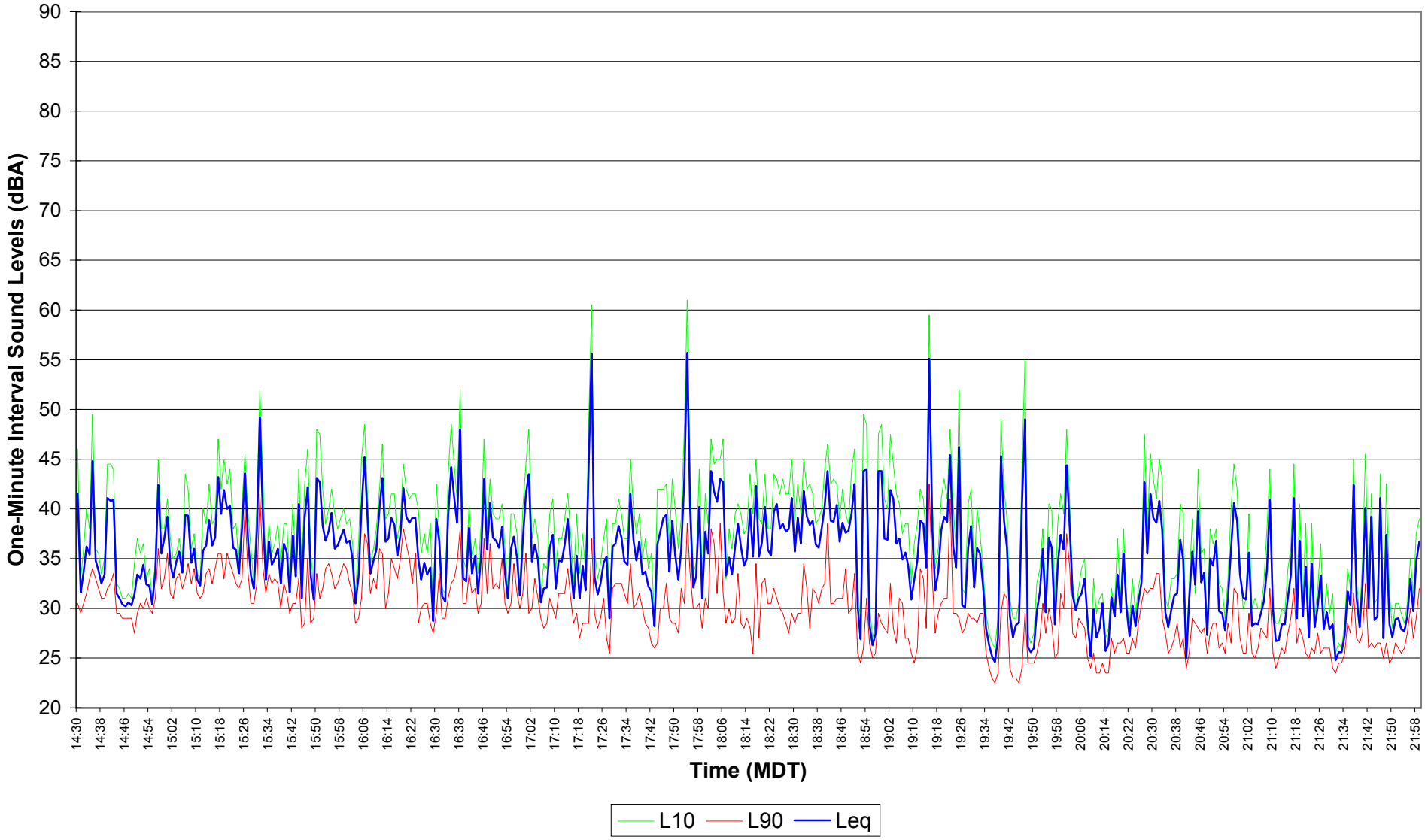


Figure E7.51
EnCana Rosebud
Site 7 Noise Survey
Dec. 09, 2004 - Dec. 10, 2004 22:00 - 06:59

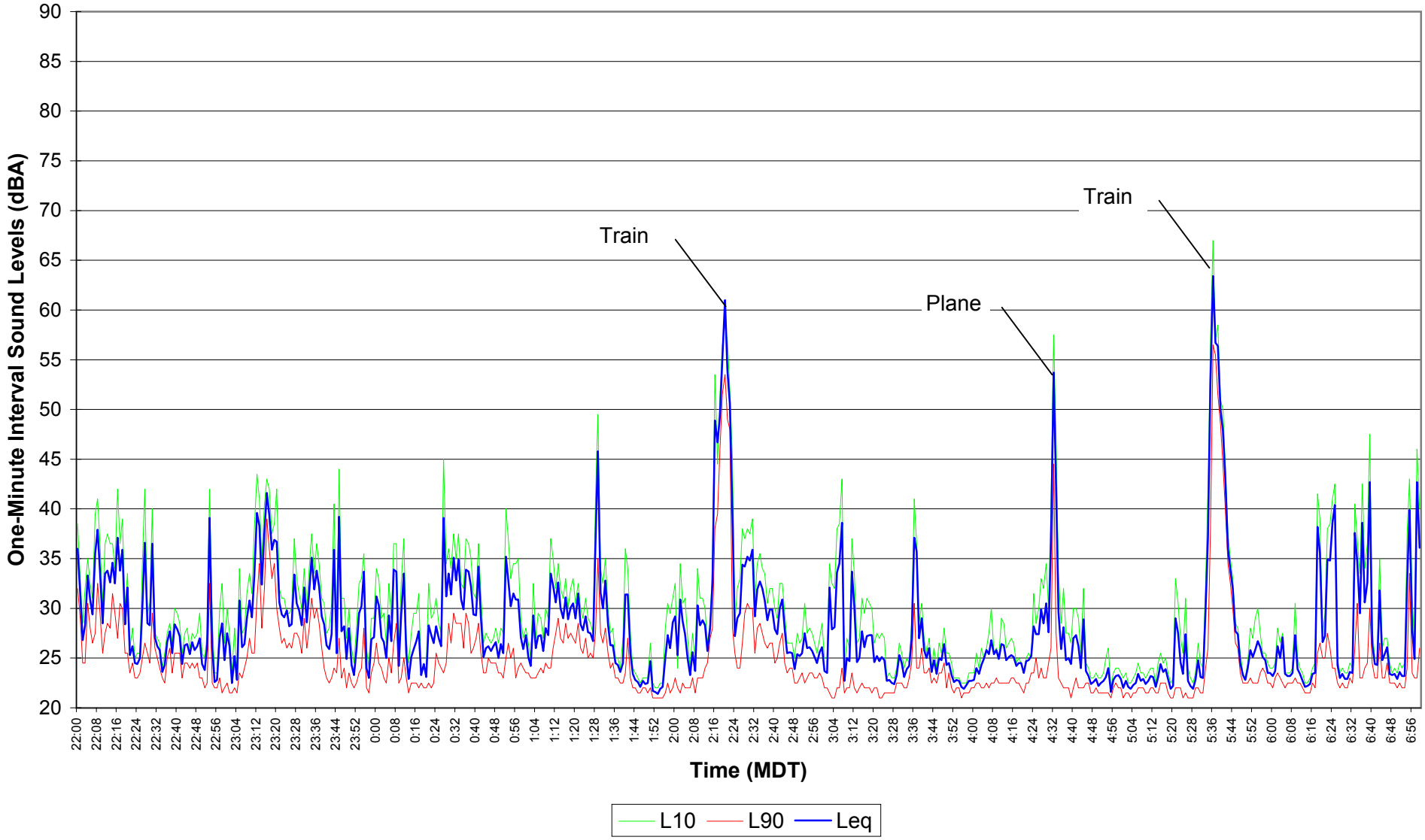


Figure E7.52
EnCana Rosebud
Site 7 Noise Survey
Dec. 10, 2004 07:00 - 14:29

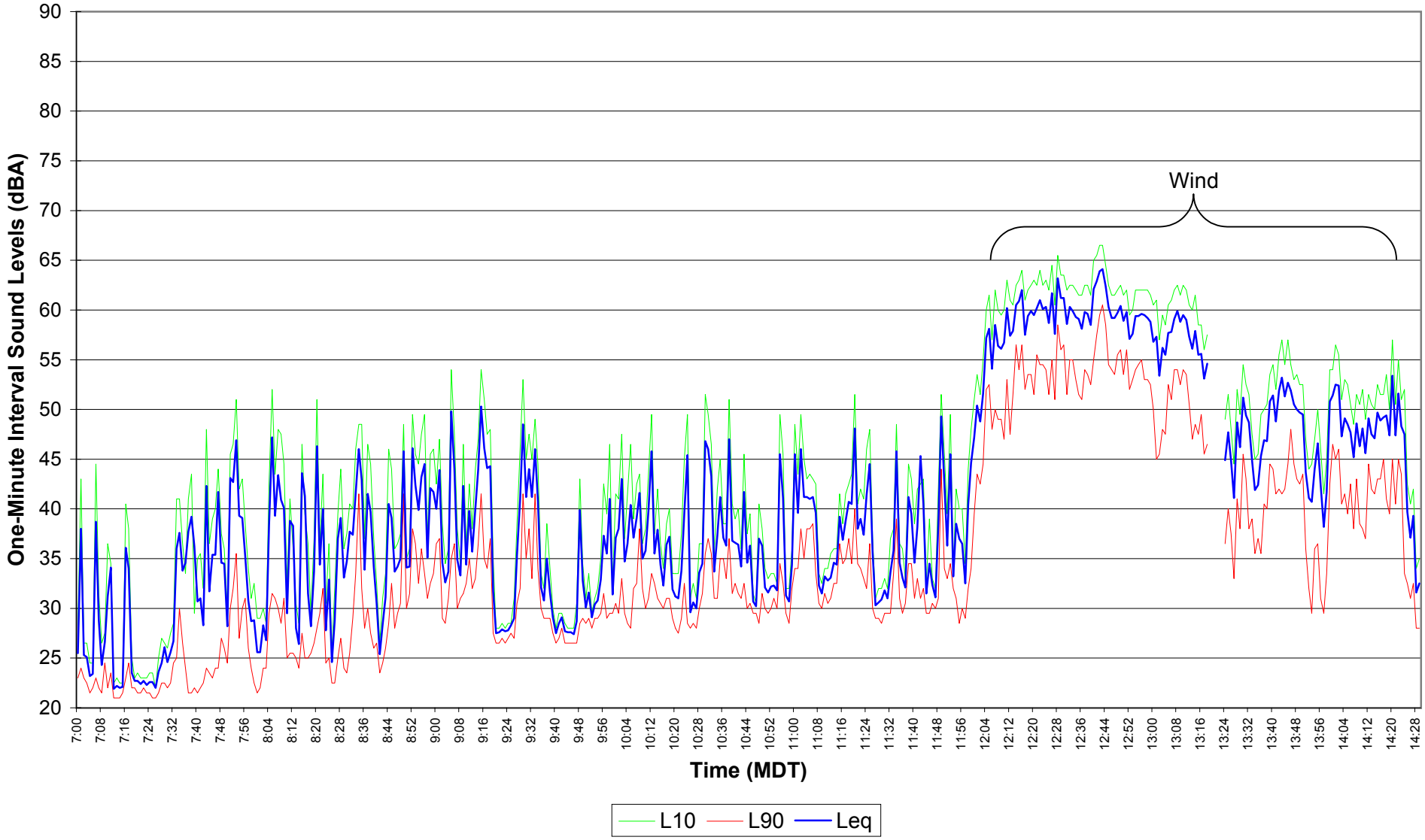


Figure E7.53
EnCana Rosebud
Site 7 Noise Survey
Dec. 10, 2004 14:30 - 21:59

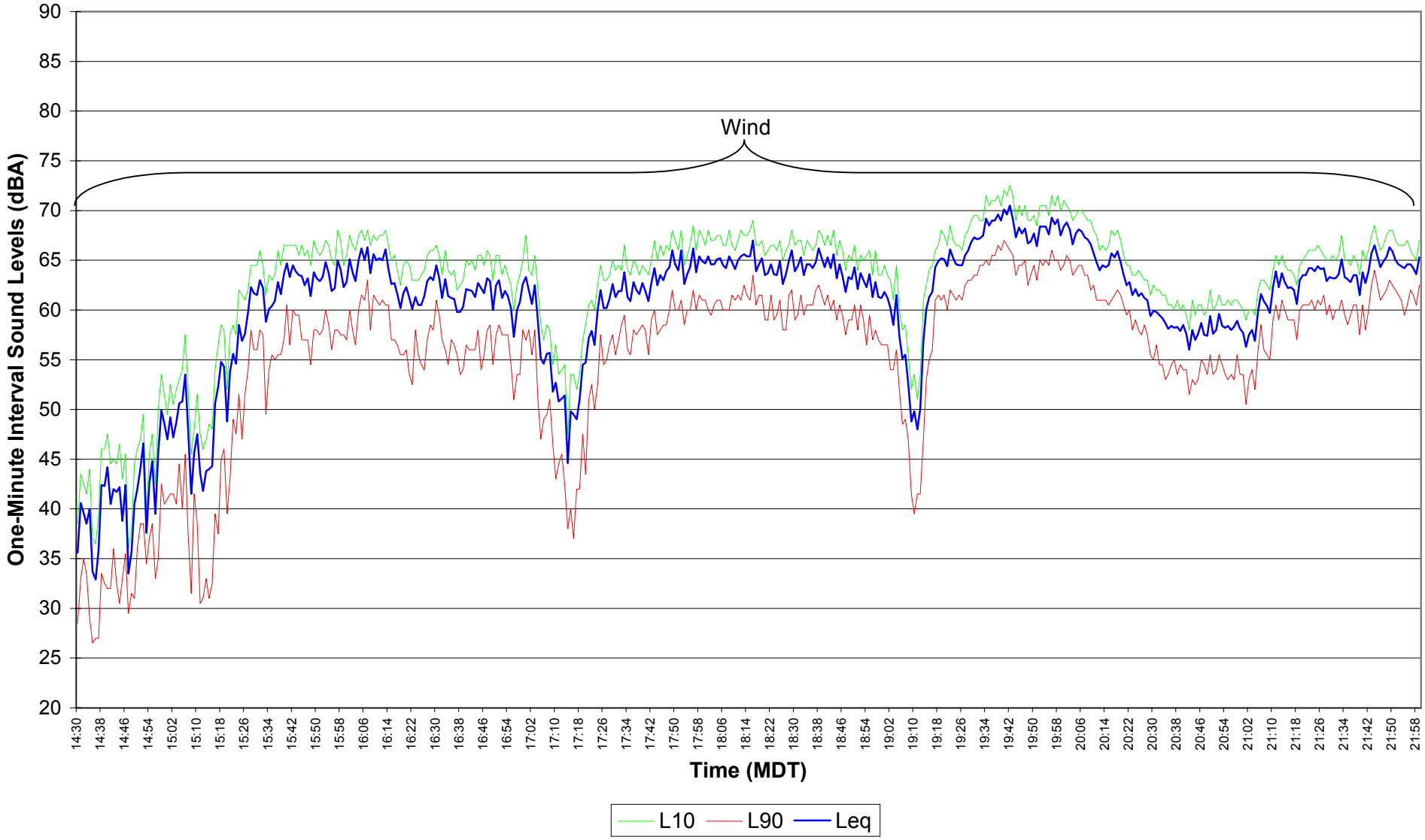


Figure E7.54
EnCana Rosebud
Site 7 Noise Survey
Dec. 10, 2004 - Dec. 11, 2004 22:00 - 06:59

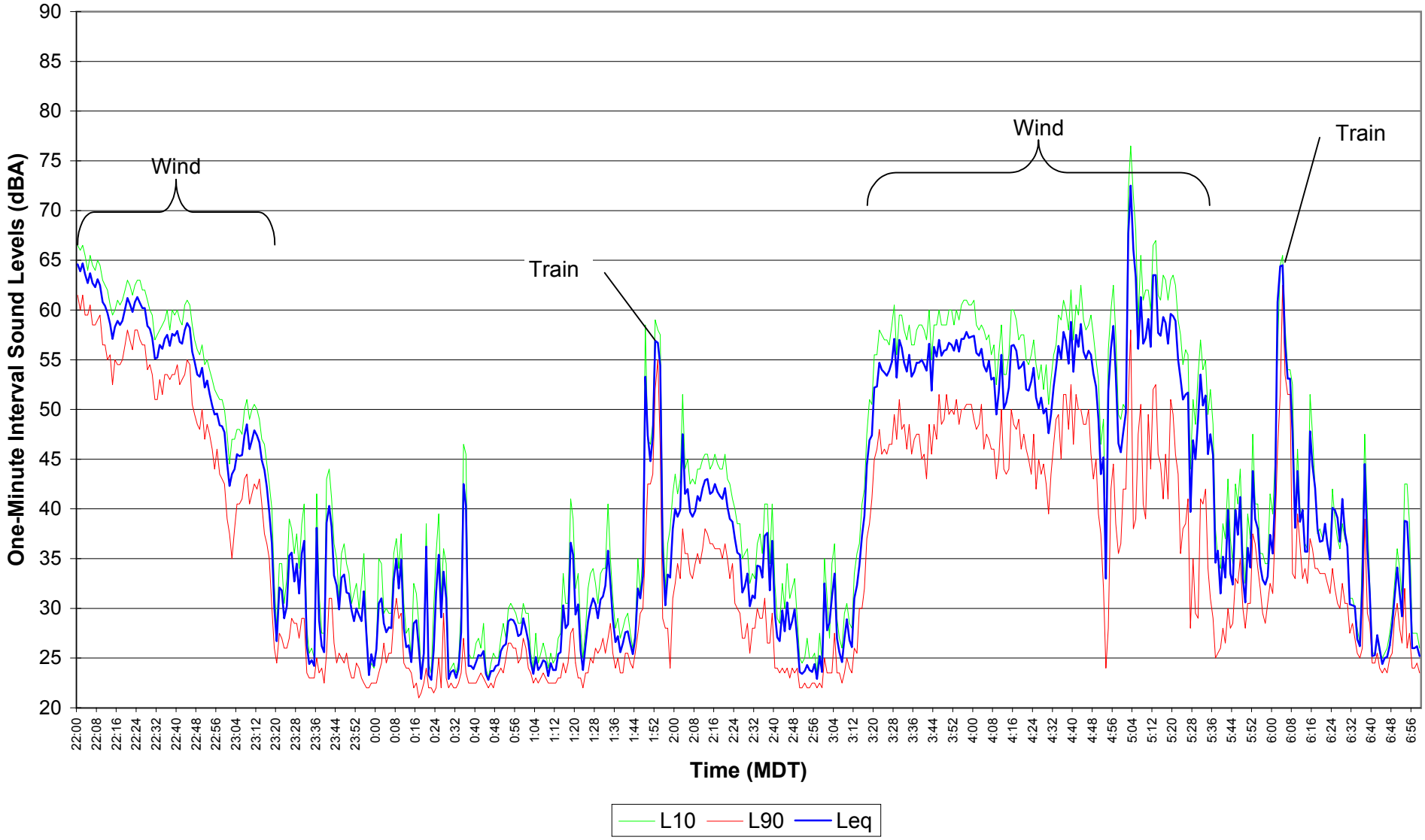


Figure E7.55

EnCana Rosebud

Site 7 Noise Survey

Dec. 11, 2004 07:00 - 14:29

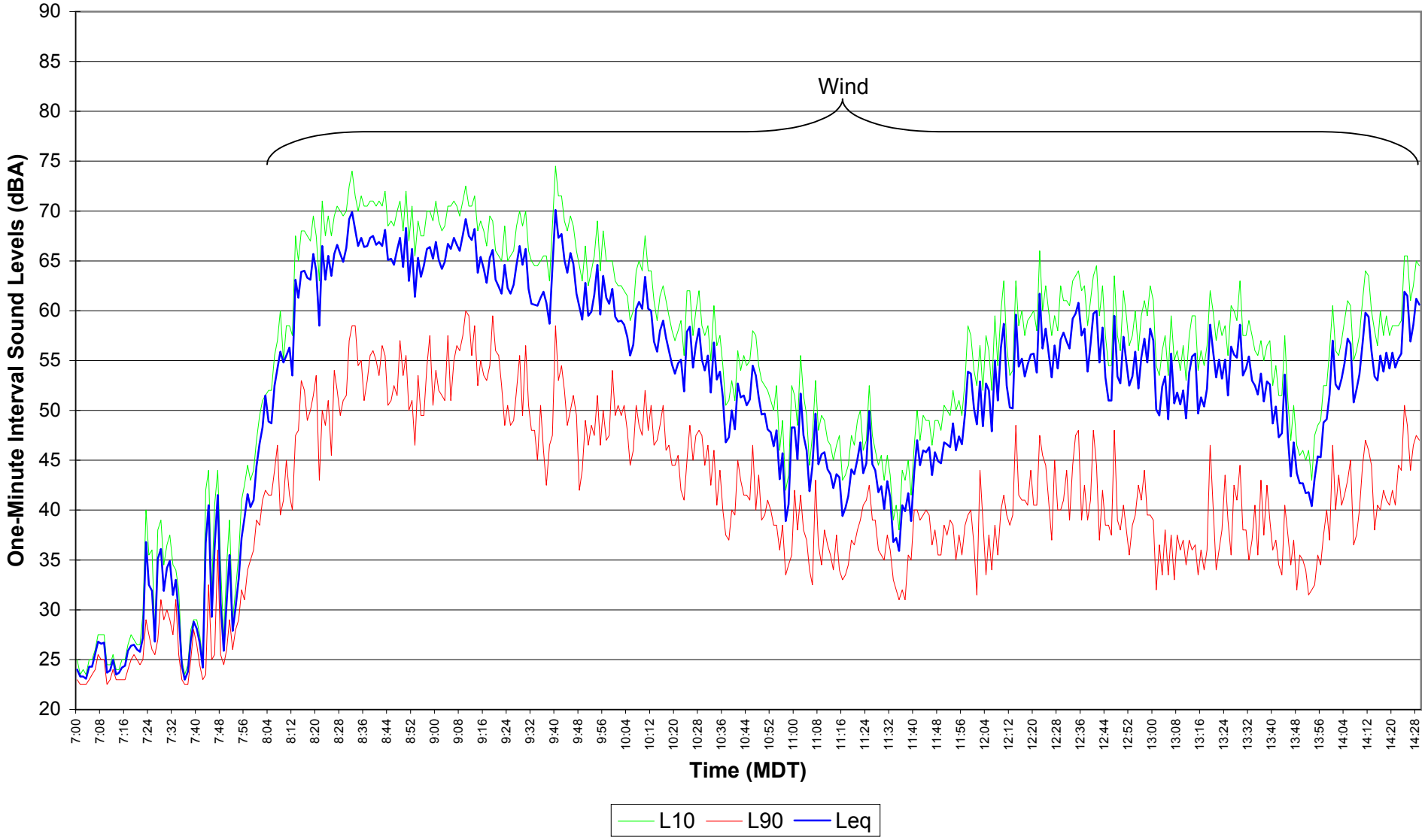


Figure E7.56
EnCana Rosebud
Site 7 Noise Survey
Dec. 11, 2004 14:30 - 21:59

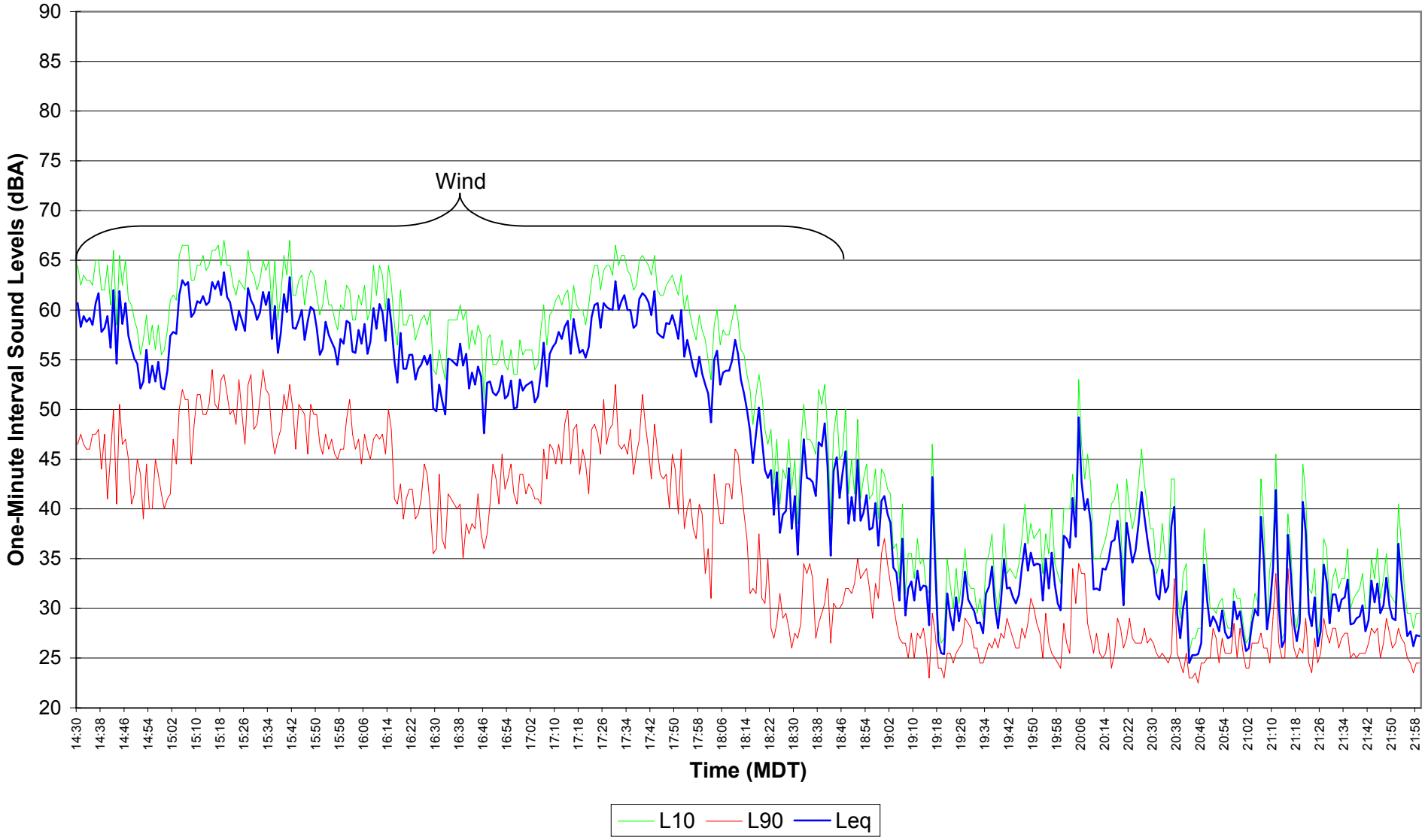


Figure E7.57
EnCana Rosebud
Site 7 Noise Survey
Dec. 11, 2004 - Dec. 12, 2004 22:00 - 06:59

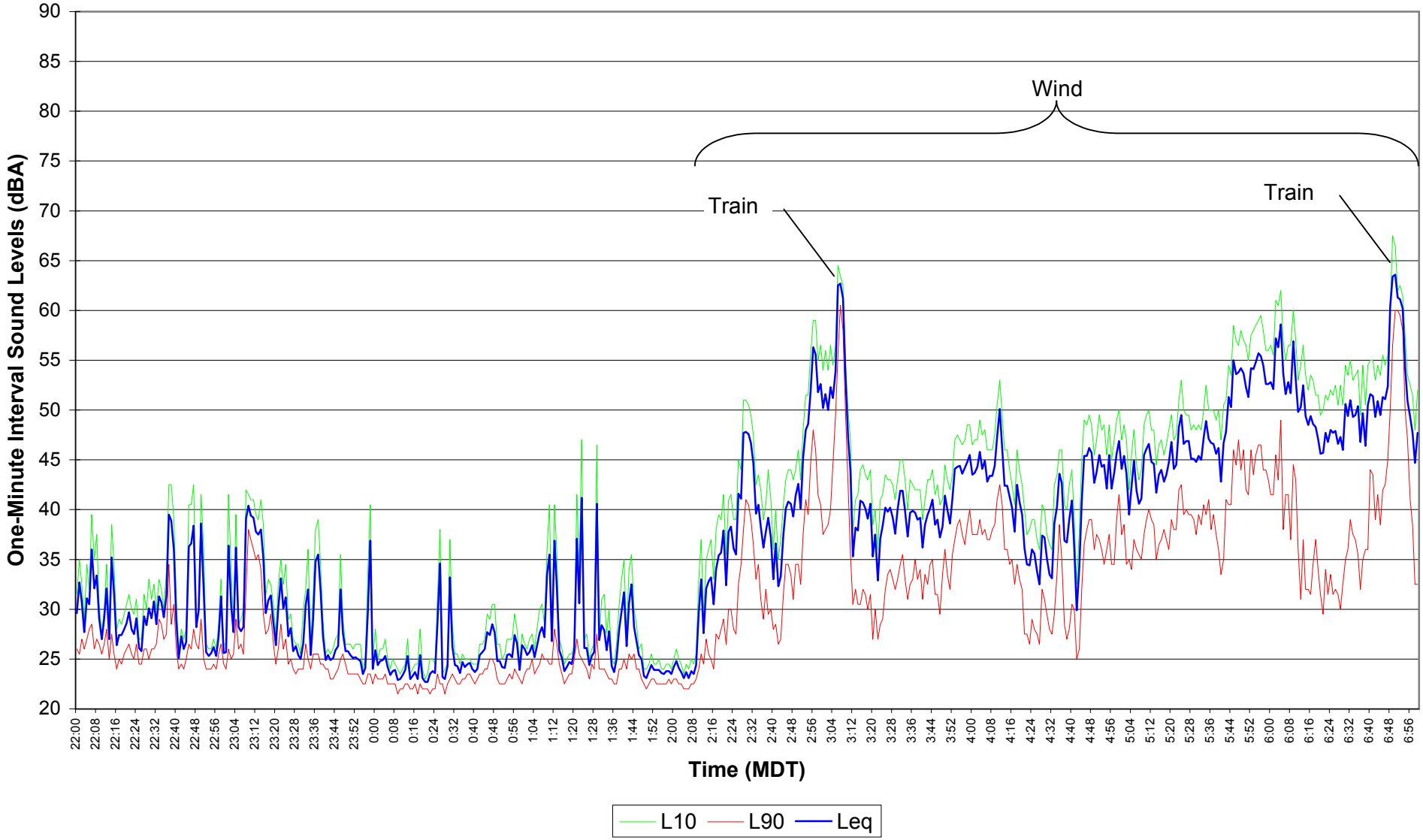


Figure E7.58
EnCana Rosebud
Site 7 Noise Survey
Dec. 12, 2004 07:00 - 14:29

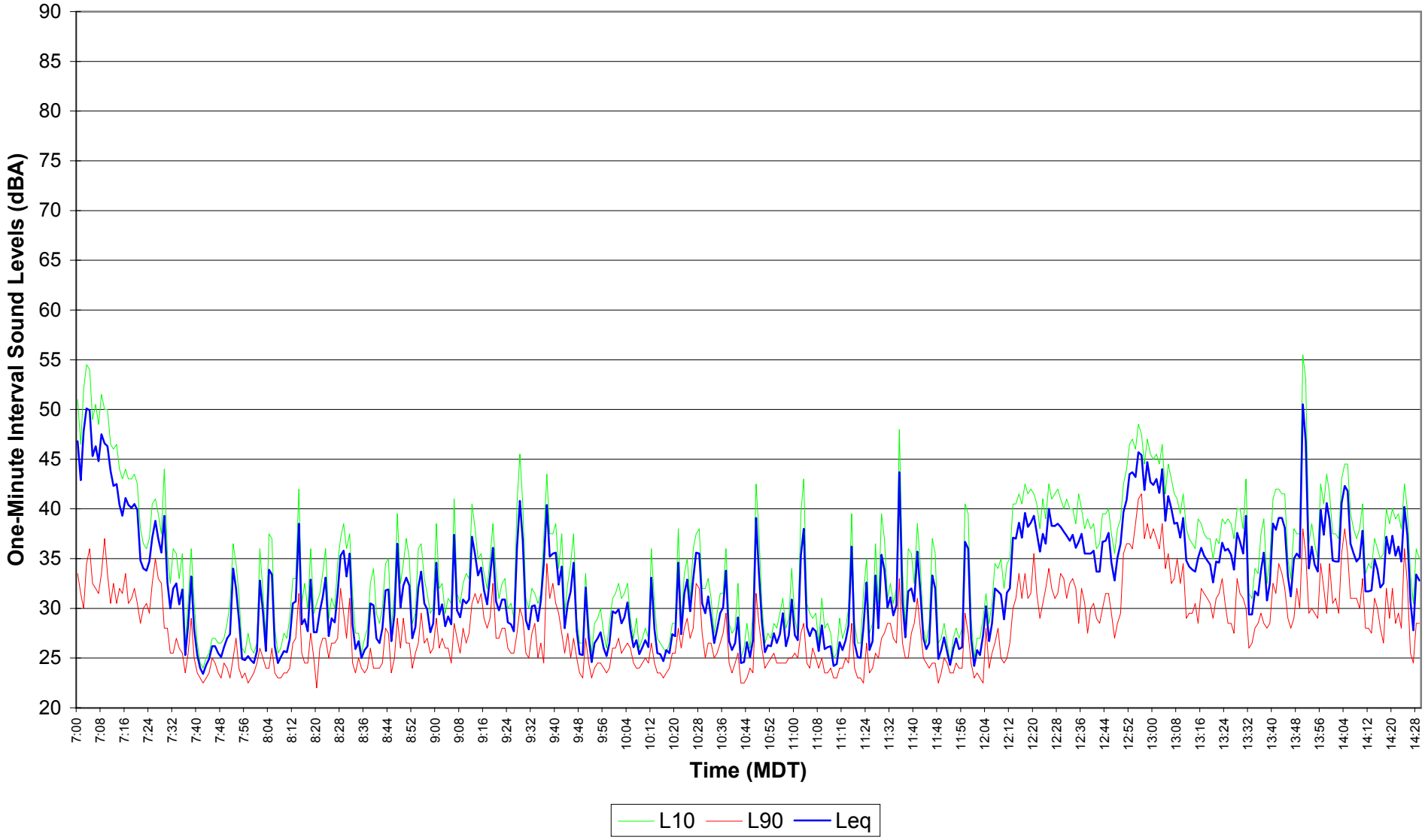


Figure E7.59
EnCana Rosebud
Site 7 Noise Survey
Dec. 12, 2004 14:30 - 21:59

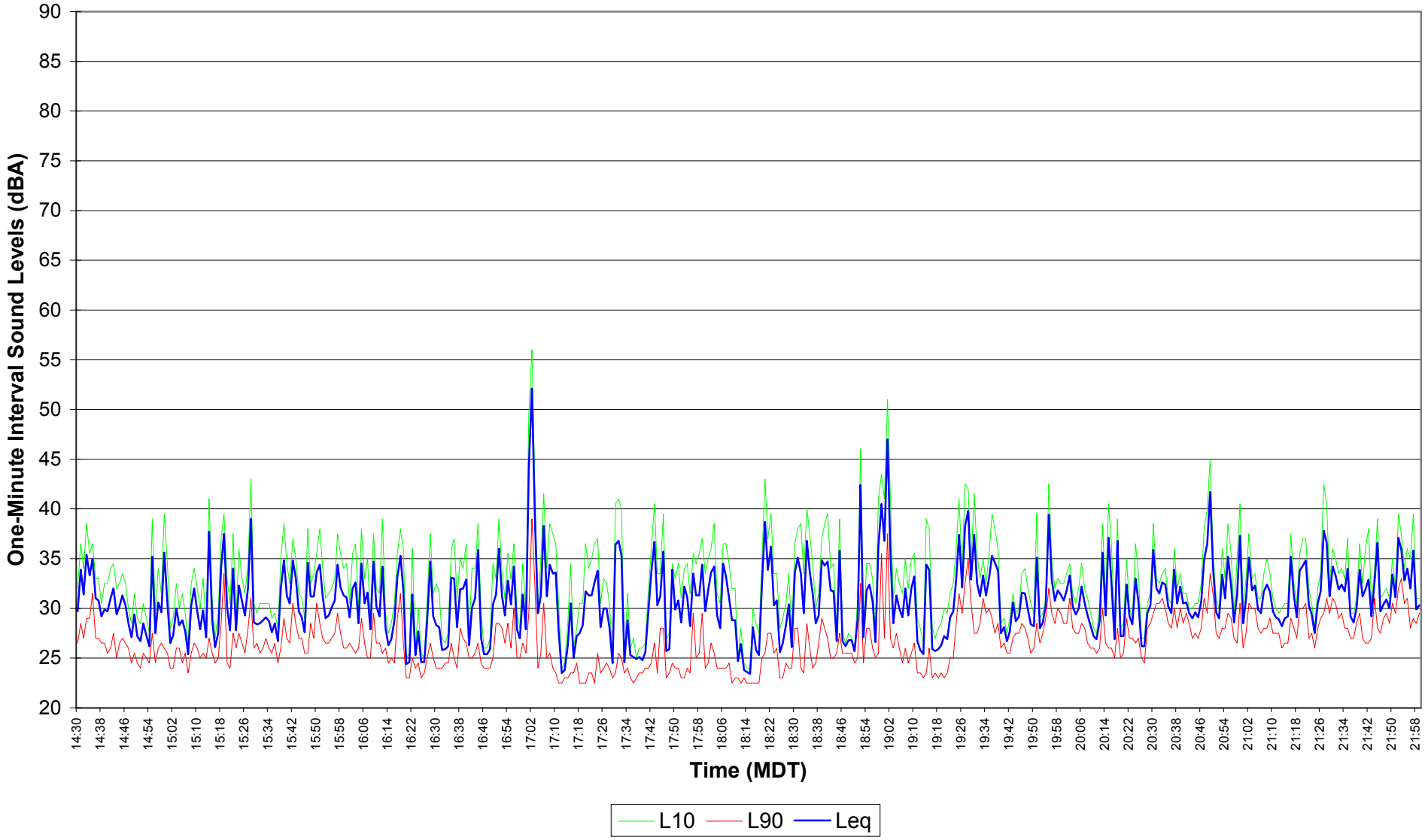


Figure E7.60
EnCana Rosebud
Site 7 Noise Survey
Dec. 12, 2004 - Dec. 13, 2004 22:00 - 06:59

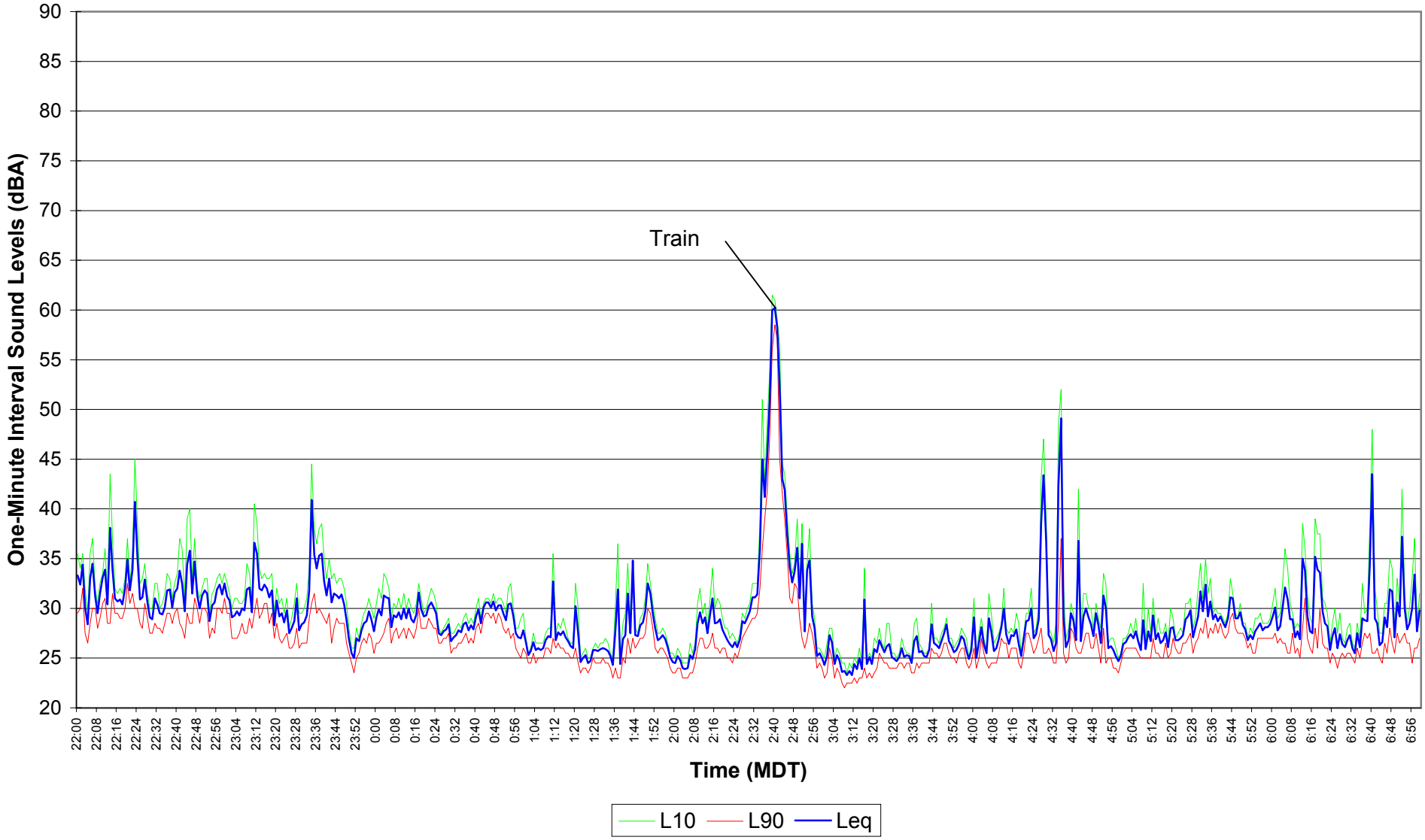


Figure E7.61
EnCana Rosebud
Site 7 Noise Survey
Dec. 13, 2004 07:00 - 14:29

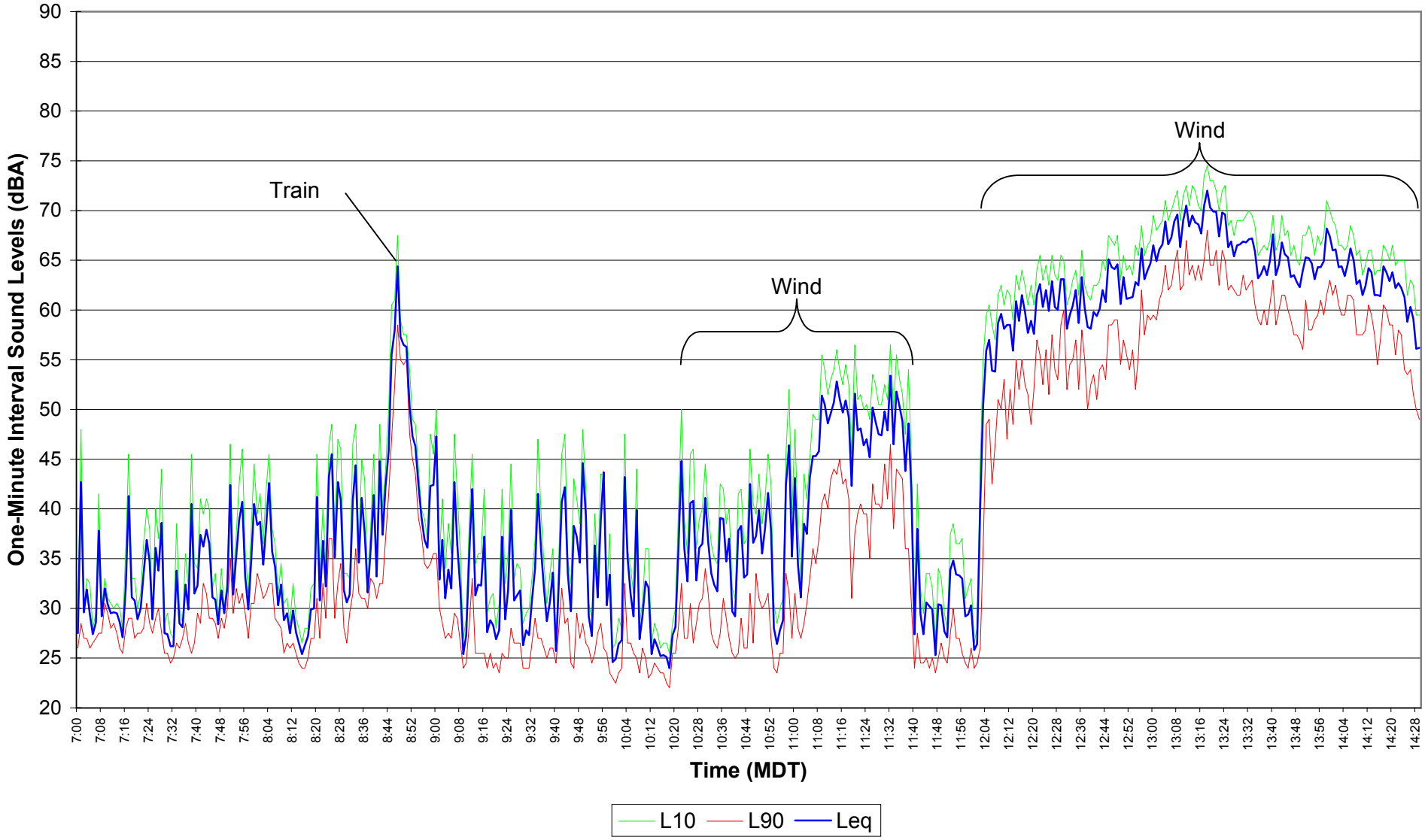


Figure E7.62
EnCana Rosebud
Site 7 Noise Survey
Dec. 13, 2004 14:30 - 21:59

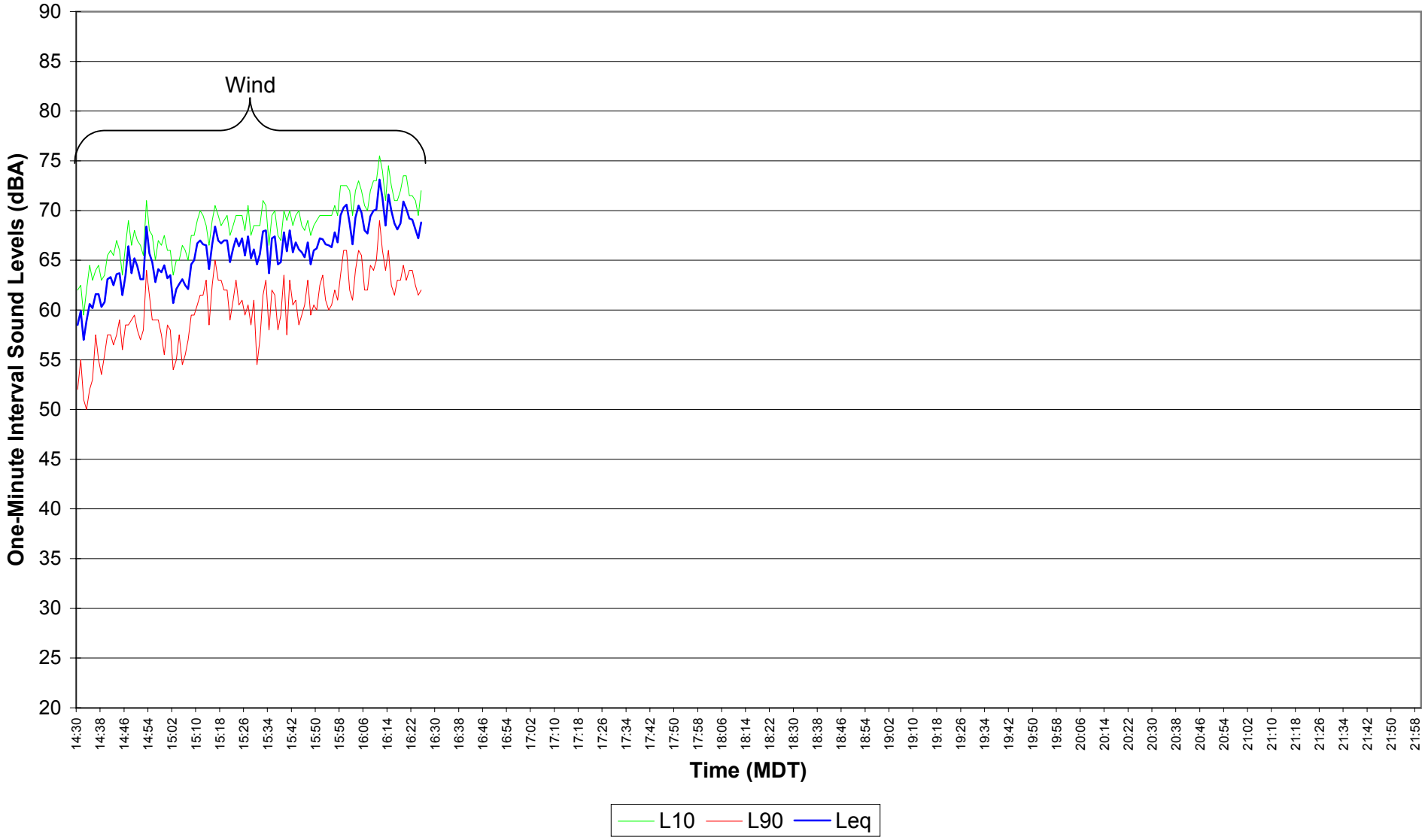


Figure E7.68
EnCana Rosebud
Site 7 Noise Survey
Dec. 15, 2004 14:30 - 21:59

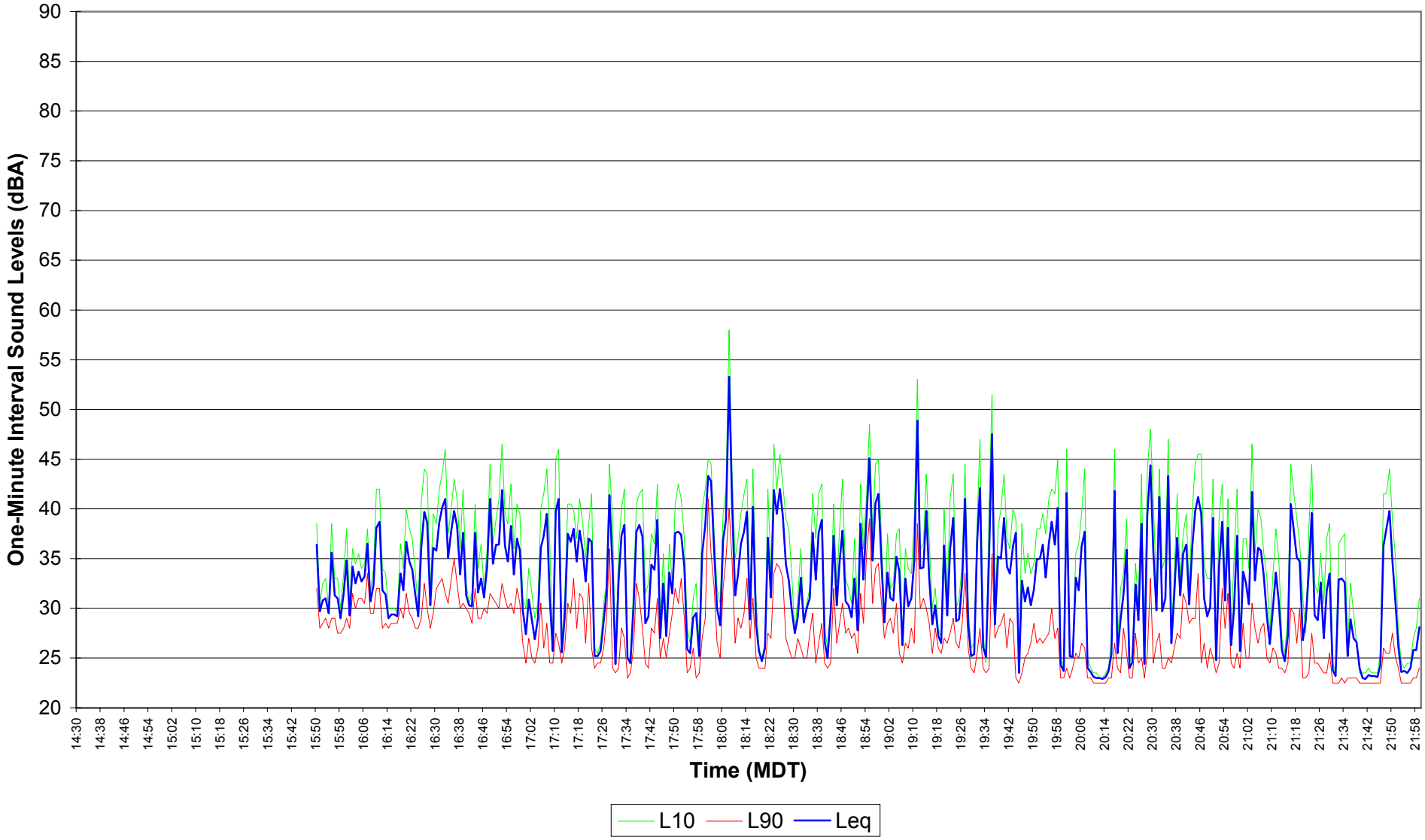


Figure E7.69
EnCana Rosebud
Site 7 Noise Survey
Dec. 15, 2004 - Dec. 16, 2004 22:00 - 06:59

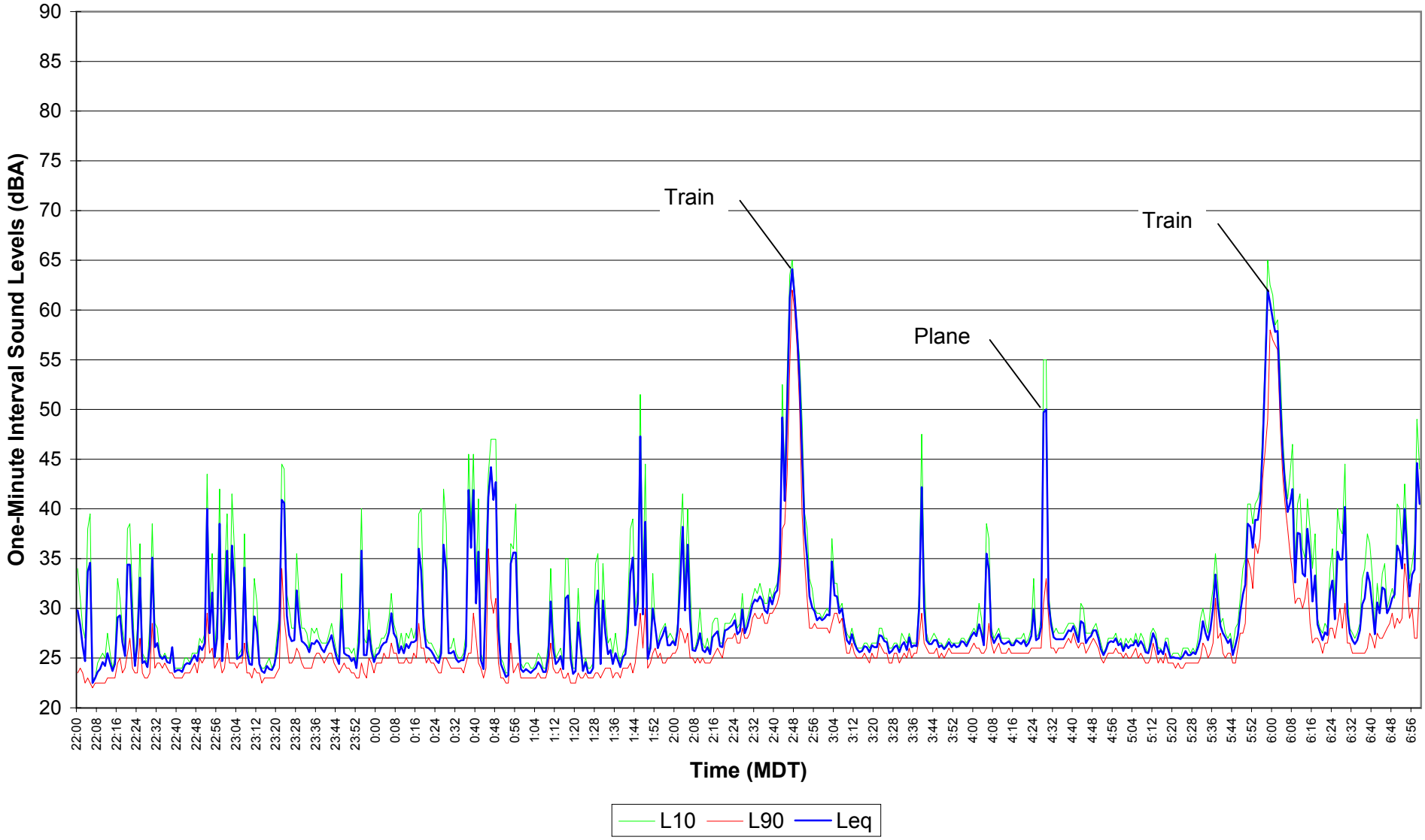


Figure E7.70
EnCana Rosebud
Site 7 Noise Survey
Dec. 16, 2004 07:00 - 14:29

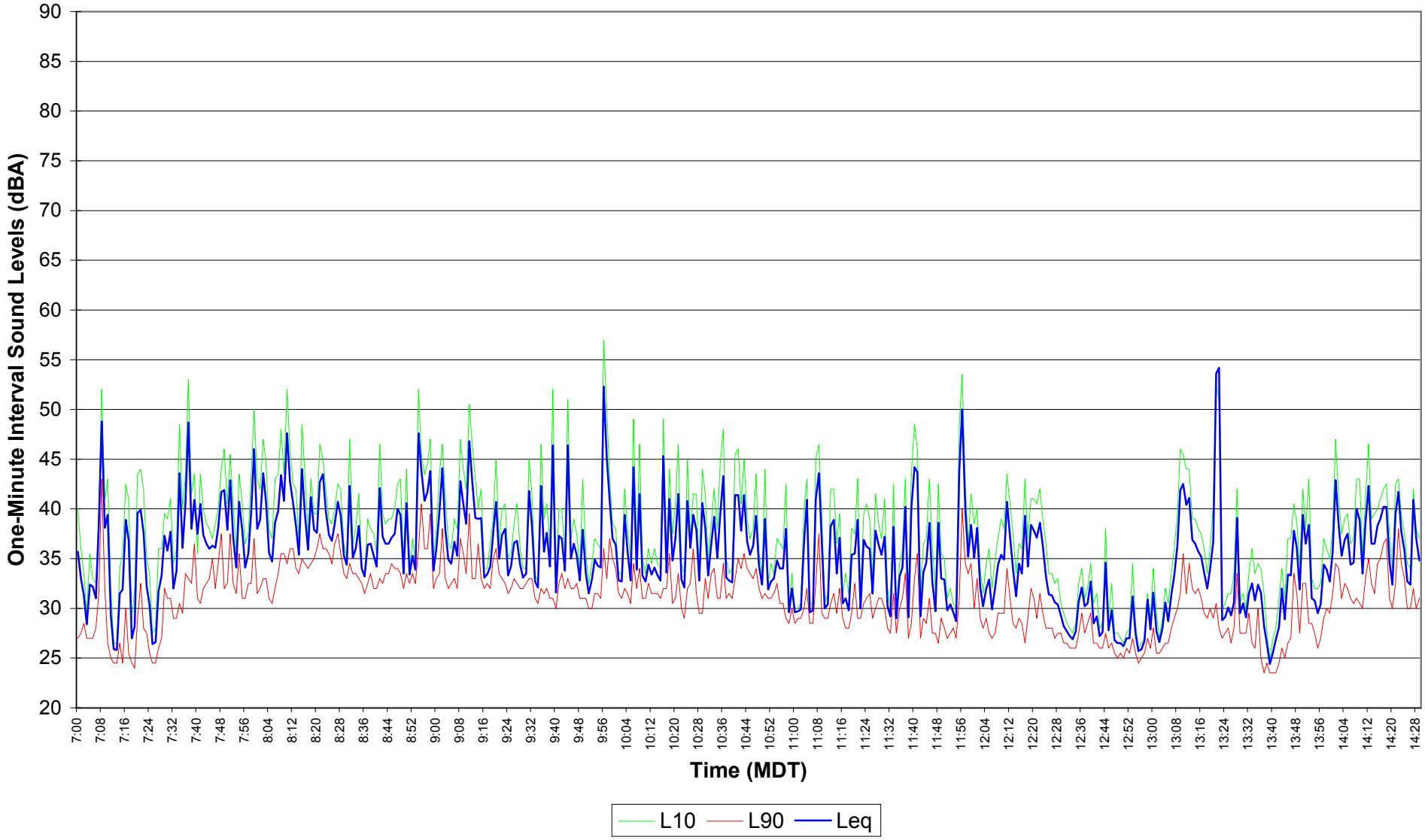


Figure E7.71
EnCana Rosebud
Site 7 Noise Survey
Dec. 16, 2004 14:30 - 21:59

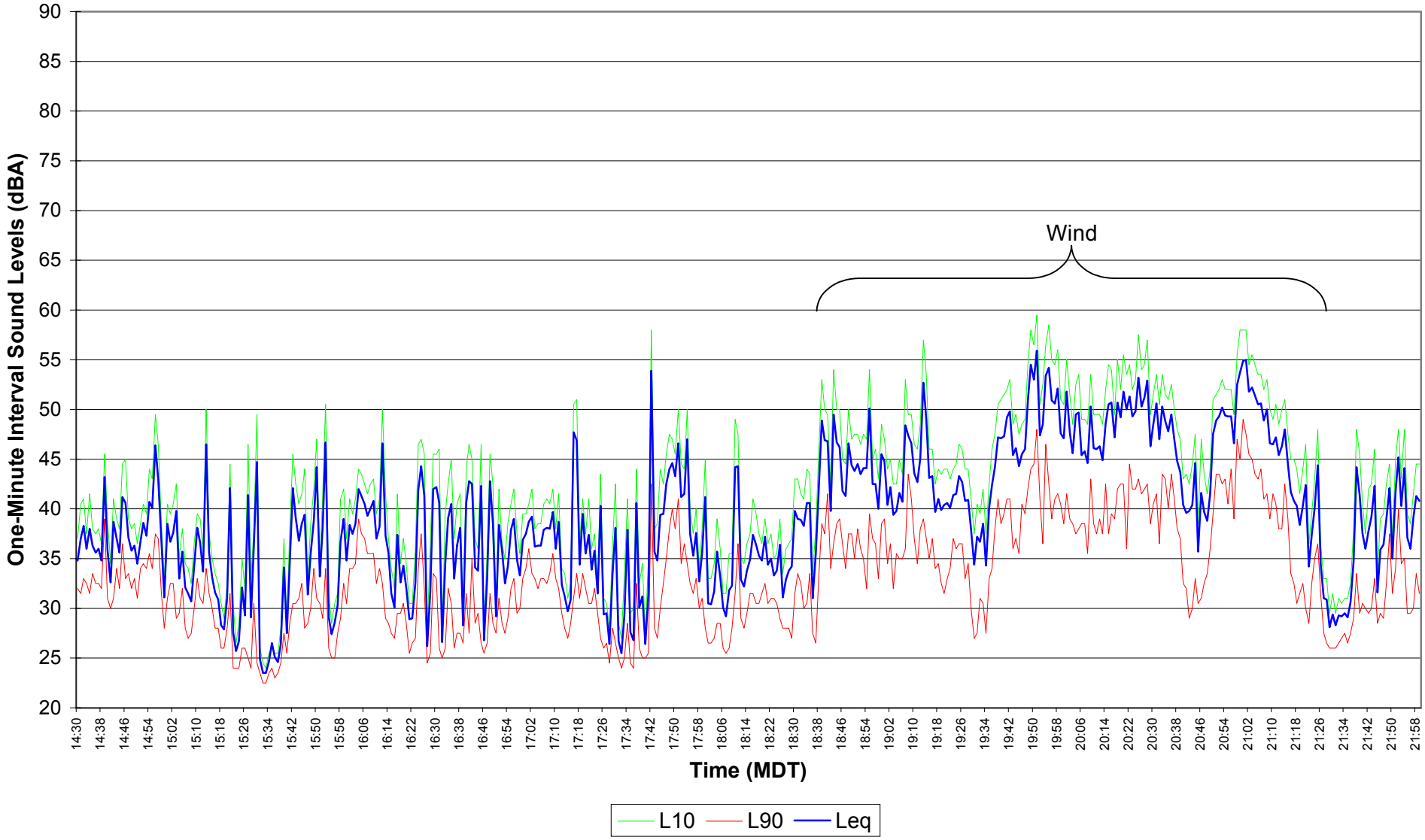


Figure E7.72
EnCana Rosebud
Site 7 Noise Survey
Dec. 16, 2004 - Dec. 17, 2004 22:00 - 06:59

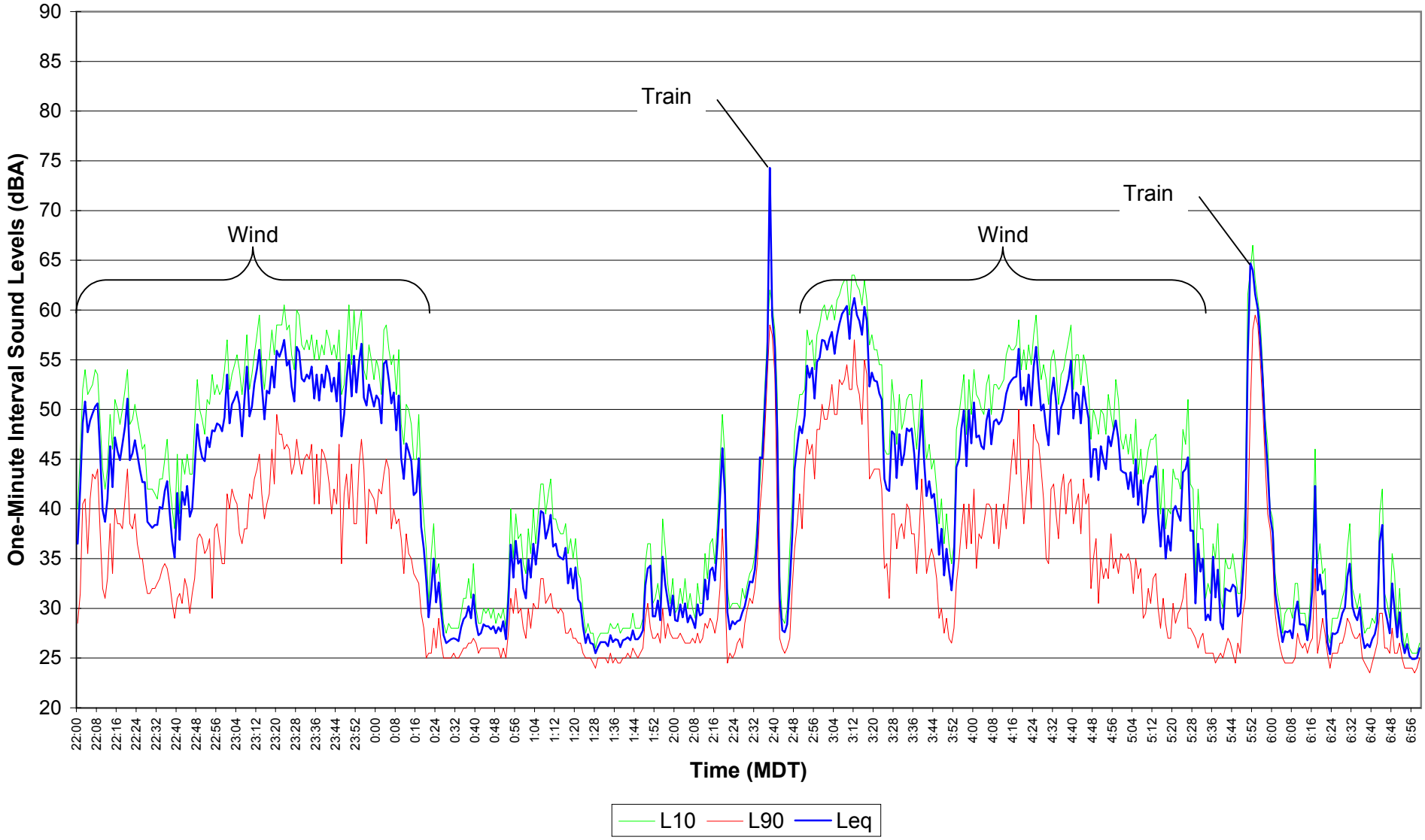


Figure E7.73

EnCana Rosebud

Site 7 Noise Survey

Dec. 17, 2004 07:00 - 14:29

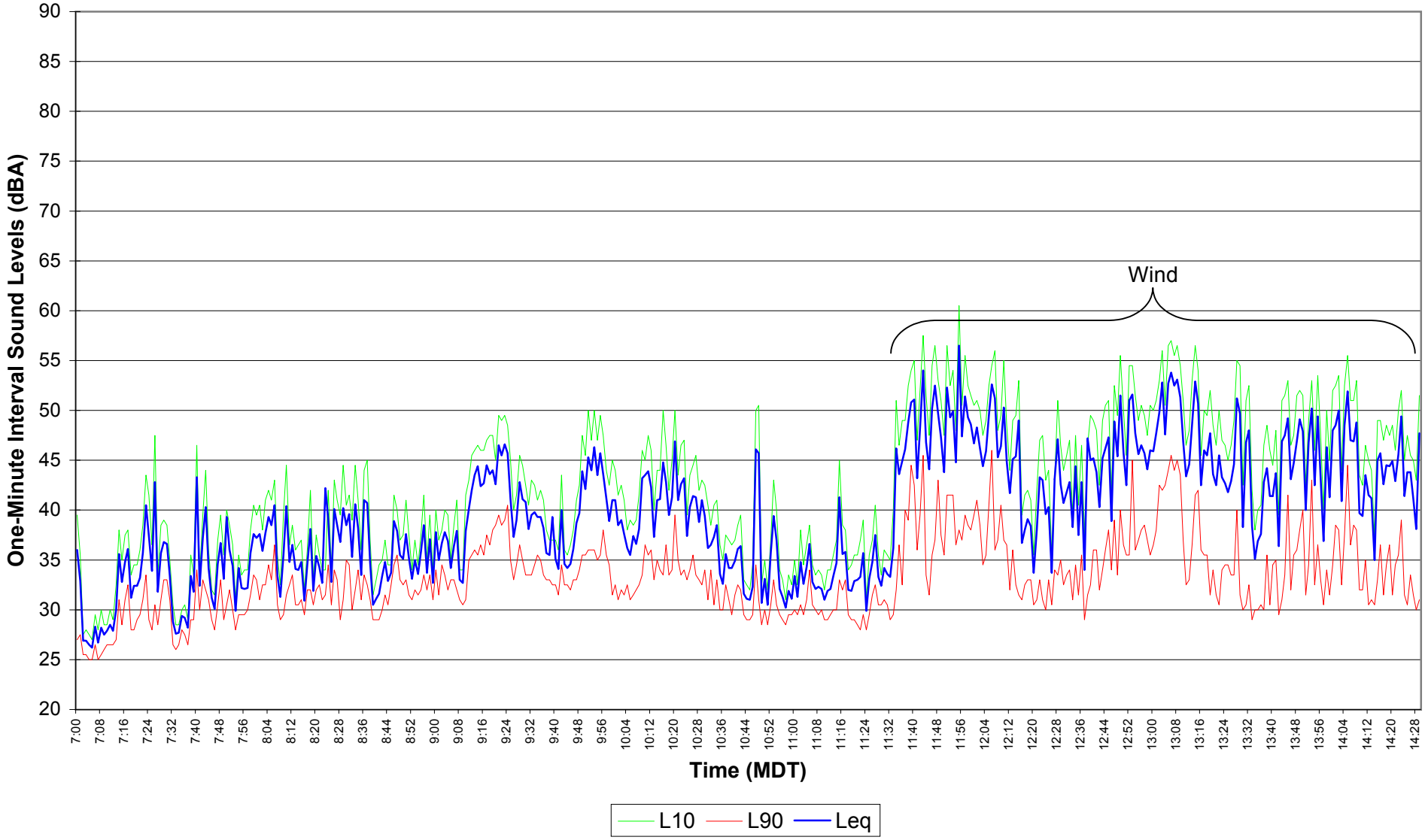


Figure E7.74
EnCana Rosebud
Site 7 Noise Survey
Dec. 17, 2004 14:30 - 21:59

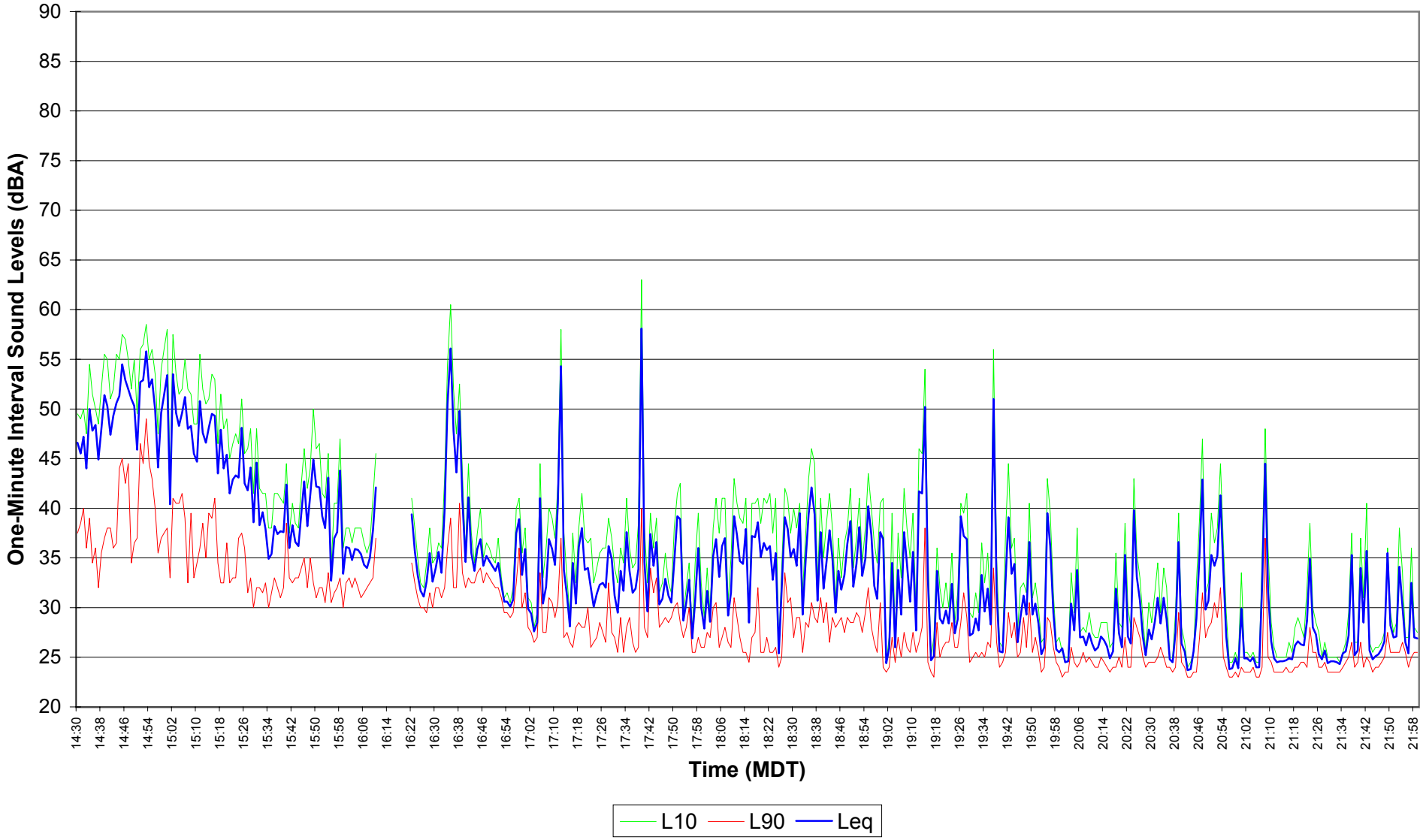


Figure E7.75
EnCana Rosebud
Site 7 Noise Survey
Dec. 17, 2004 - Dec. 18, 2004 22:00 - 06:59

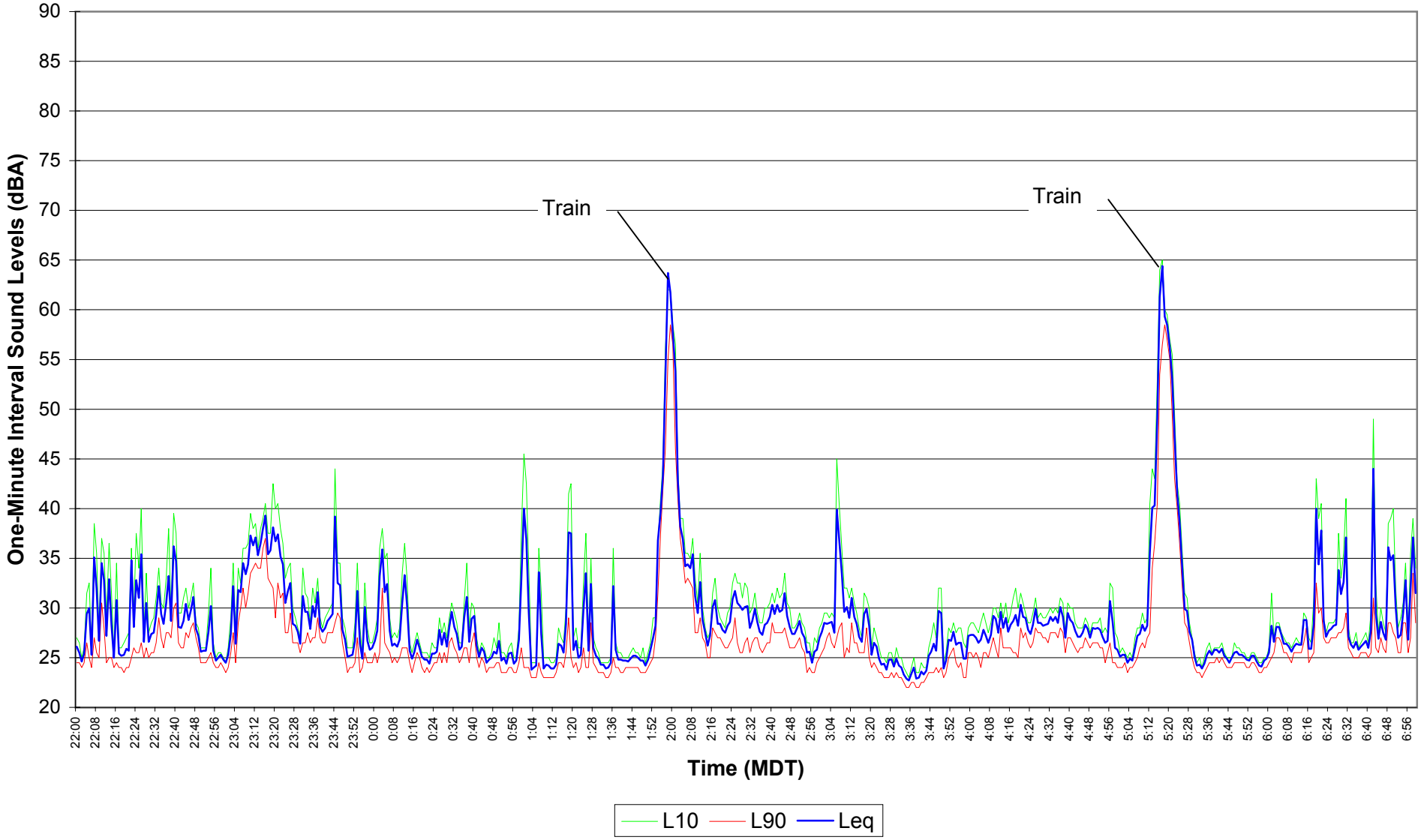


Figure E7.76
EnCana Rosebud
Site 7 Noise Survey
Dec. 18, 2004 07:00 - 14:29

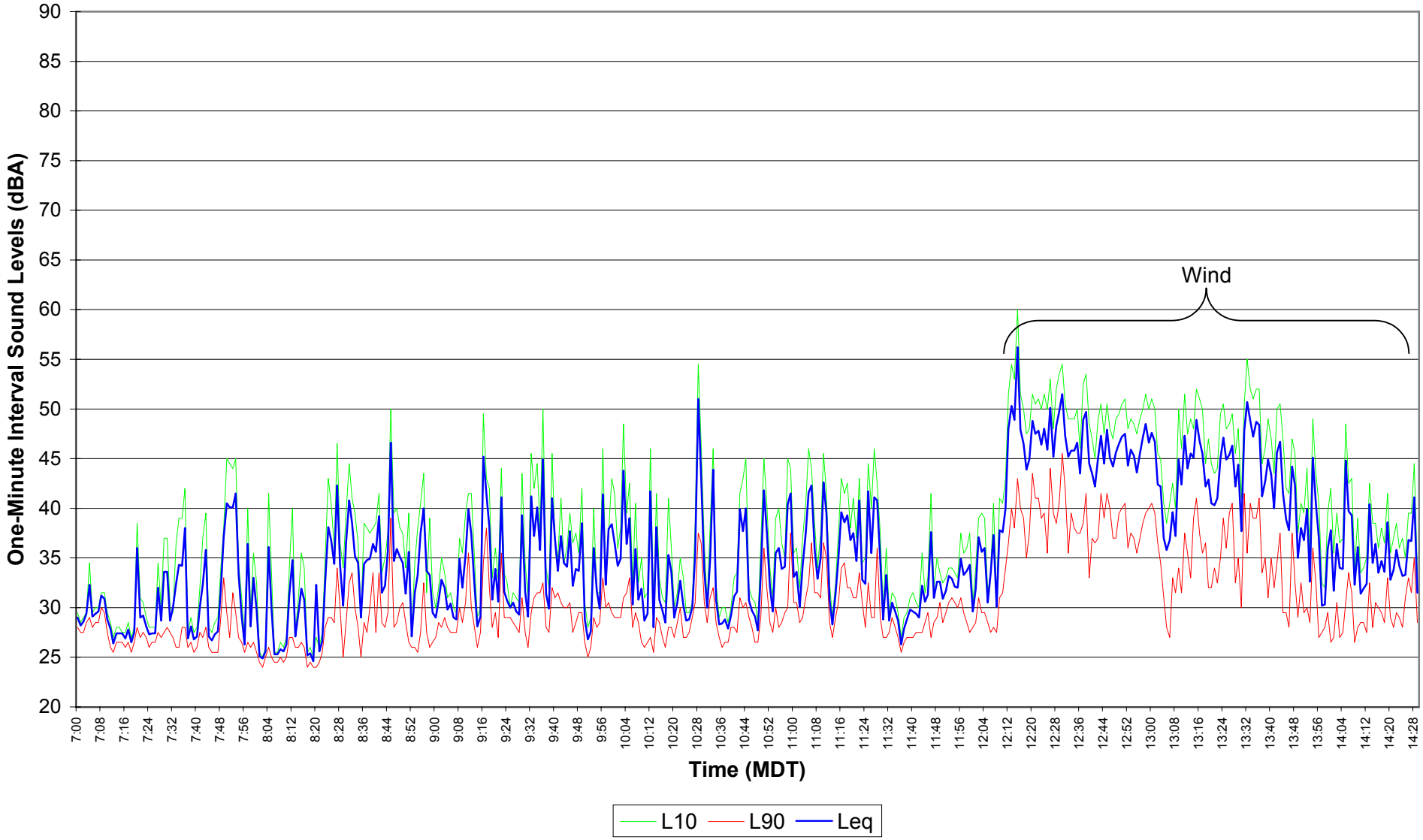


Figure E7.77
EnCana Rosebud
Site 7 Noise Survey
Dec. 18, 2004 14:30 - 21:59

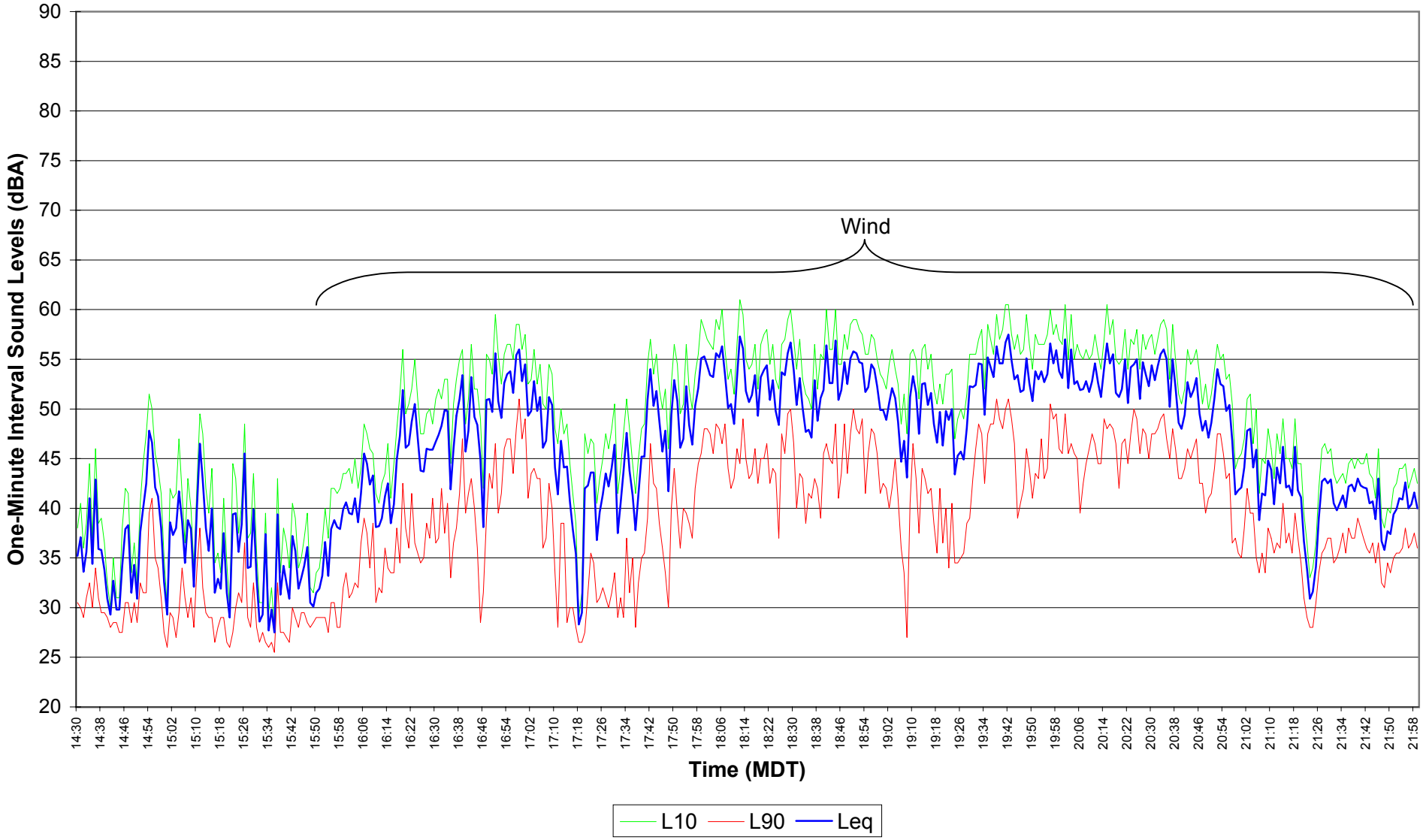


Figure E7.78
EnCana Rosebud
Site 7 Noise Survey
Dec 18, 2004 - Dec 19, 2004 22:00 - 06:59

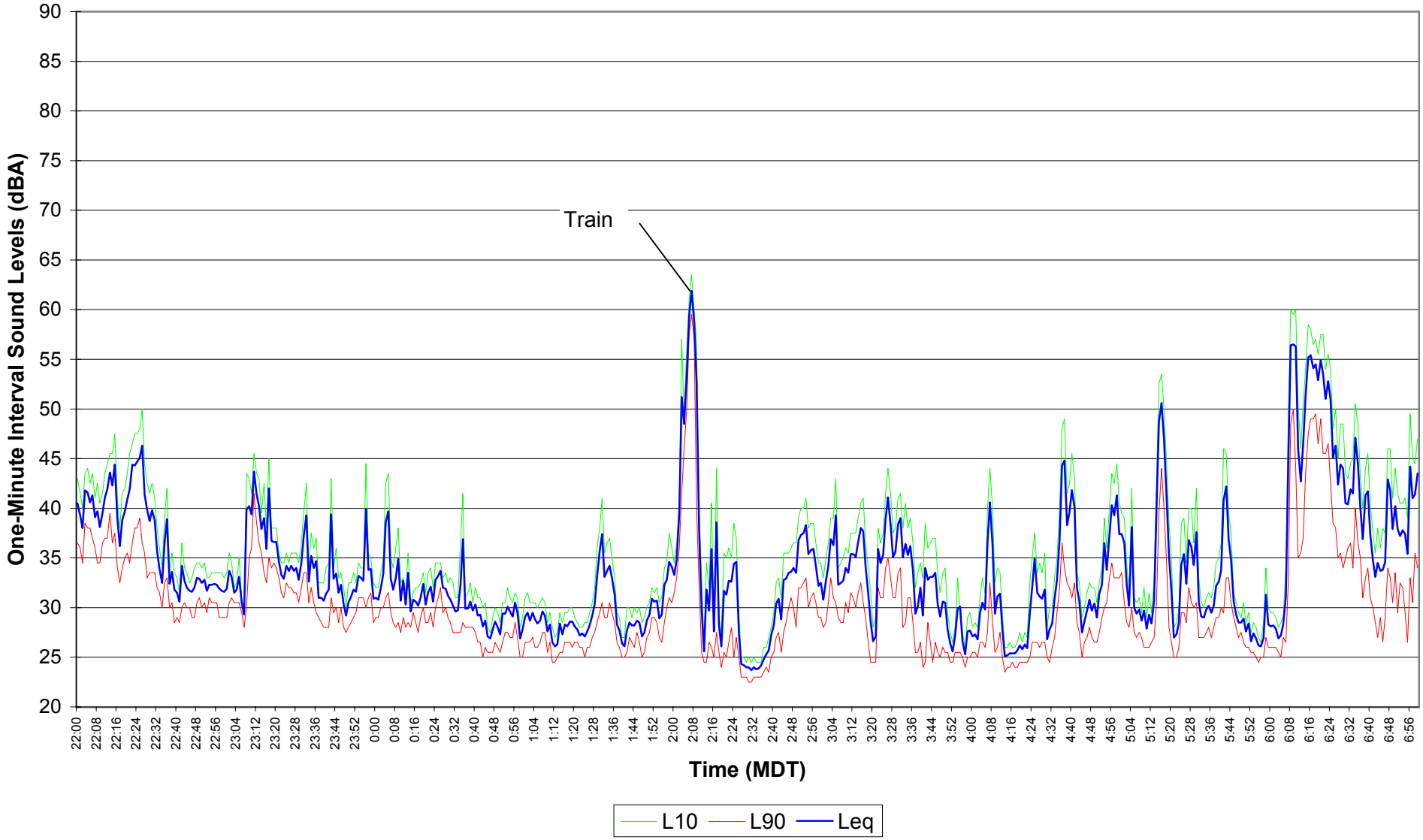


Figure E7.79
EnCana Rosebud
Site 7 Noise Survey
Dec. 19, 2004 07:00 - 14:29

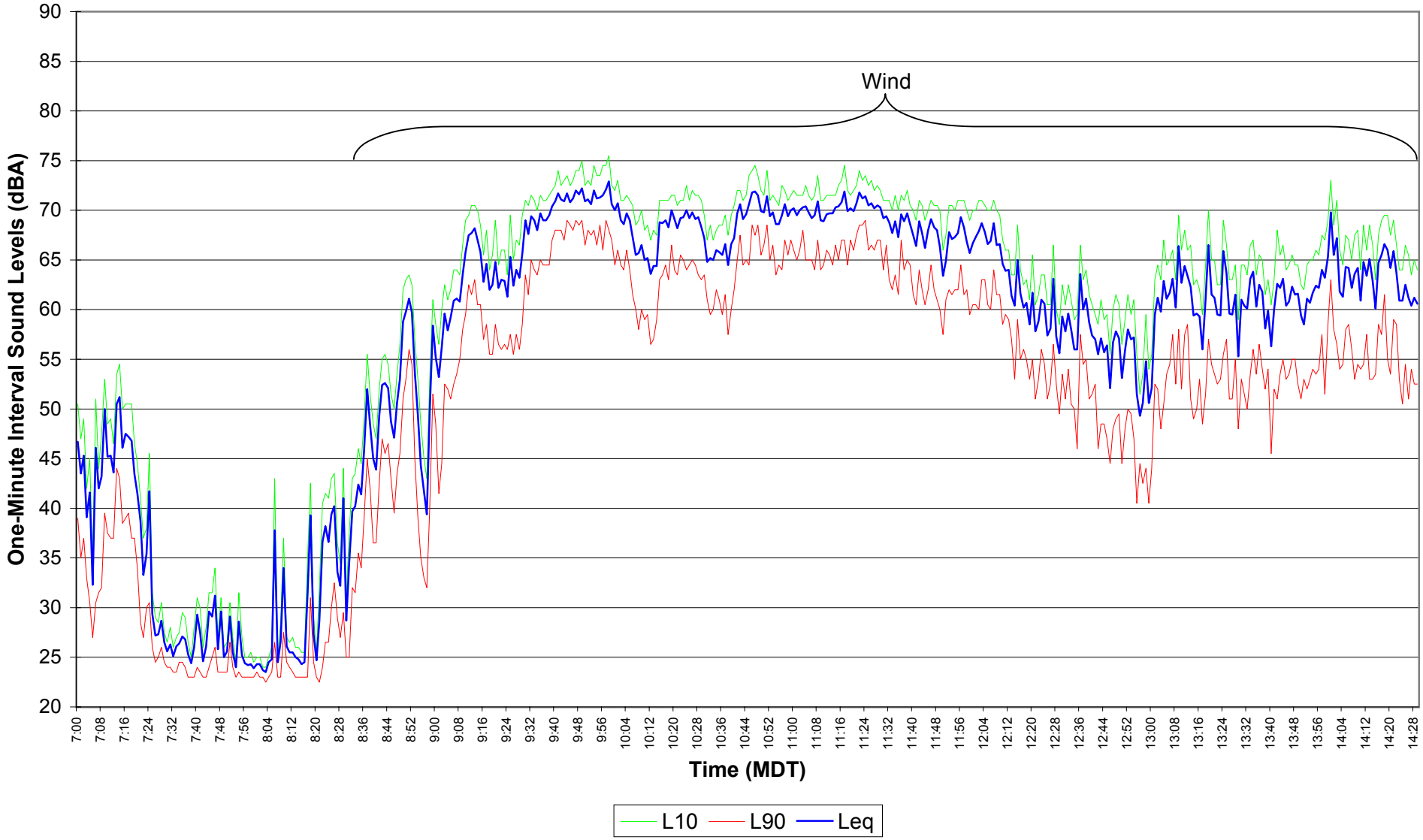


Figure E7.80
EnCana Rosebud
Site 7 Noise Survey
Dec. 19, 2004 14:30 - 21:59

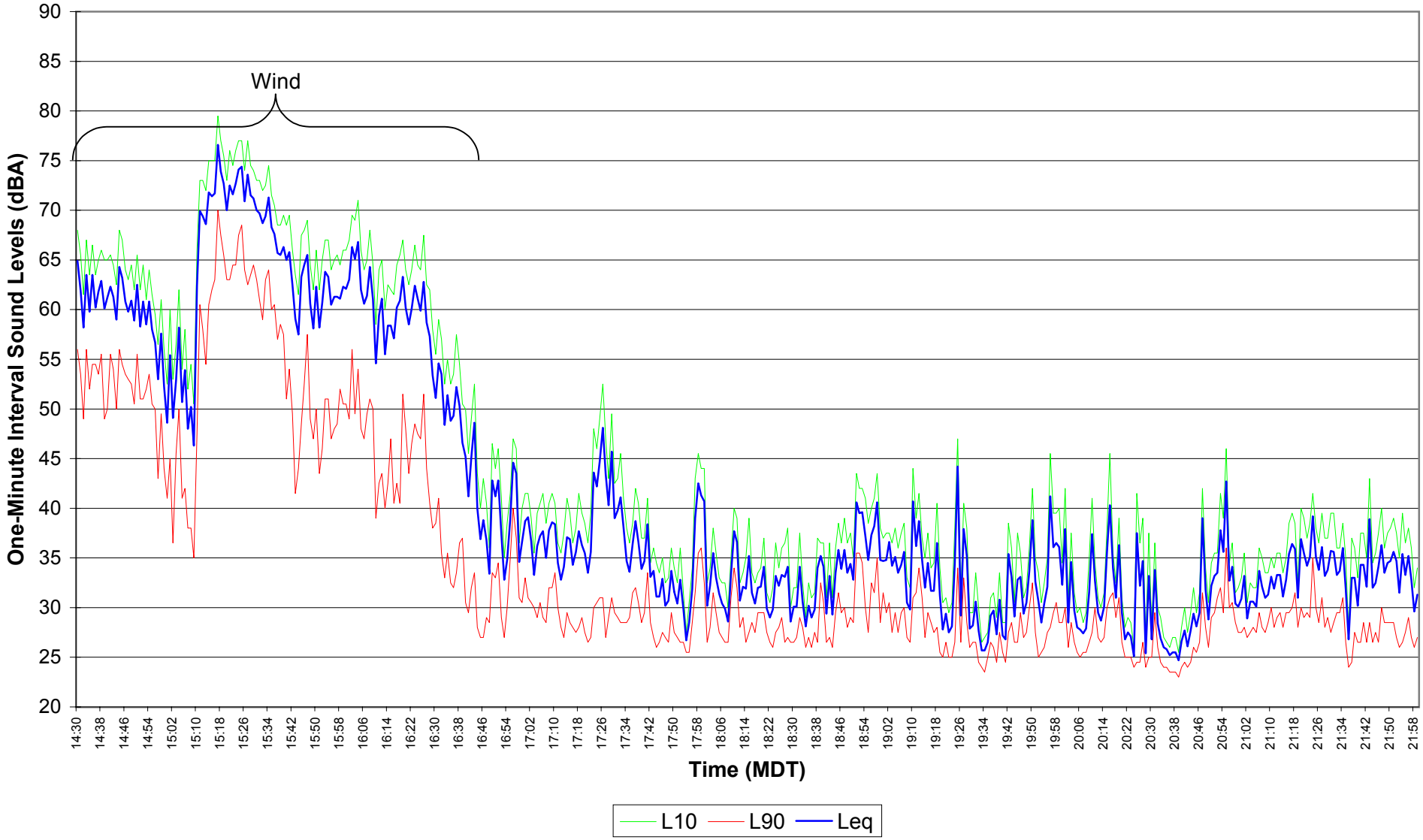


Figure E7.81
EnCana Rosebud
Site 7 Noise Survey
Dec. 19, 2004 - Dec. 20, 2004 22:00 - 06:59

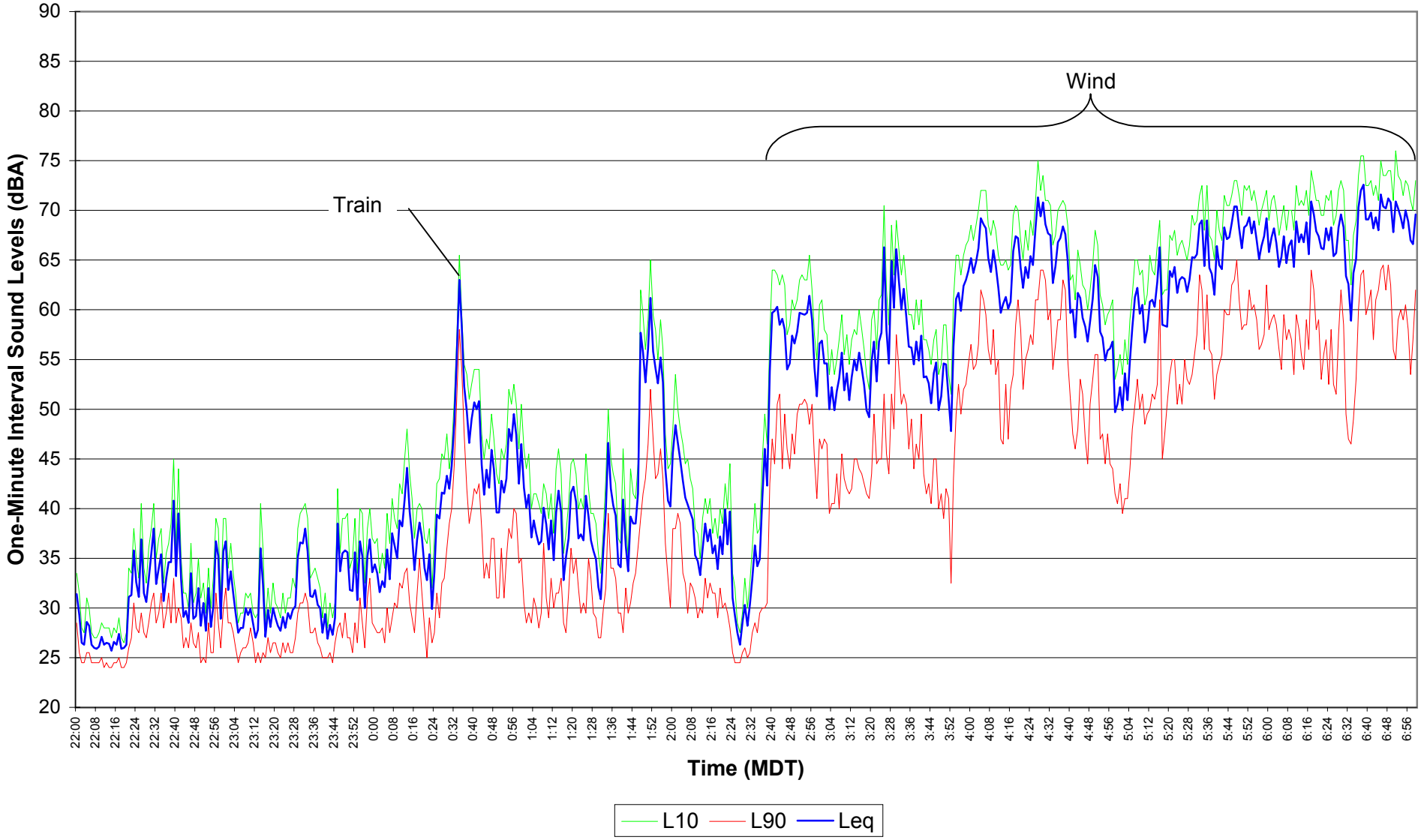


Figure E7.82
EnCana Rosebud
Site 7 Noise Survey
Dec. 20, 2004 07:00 - 14:29

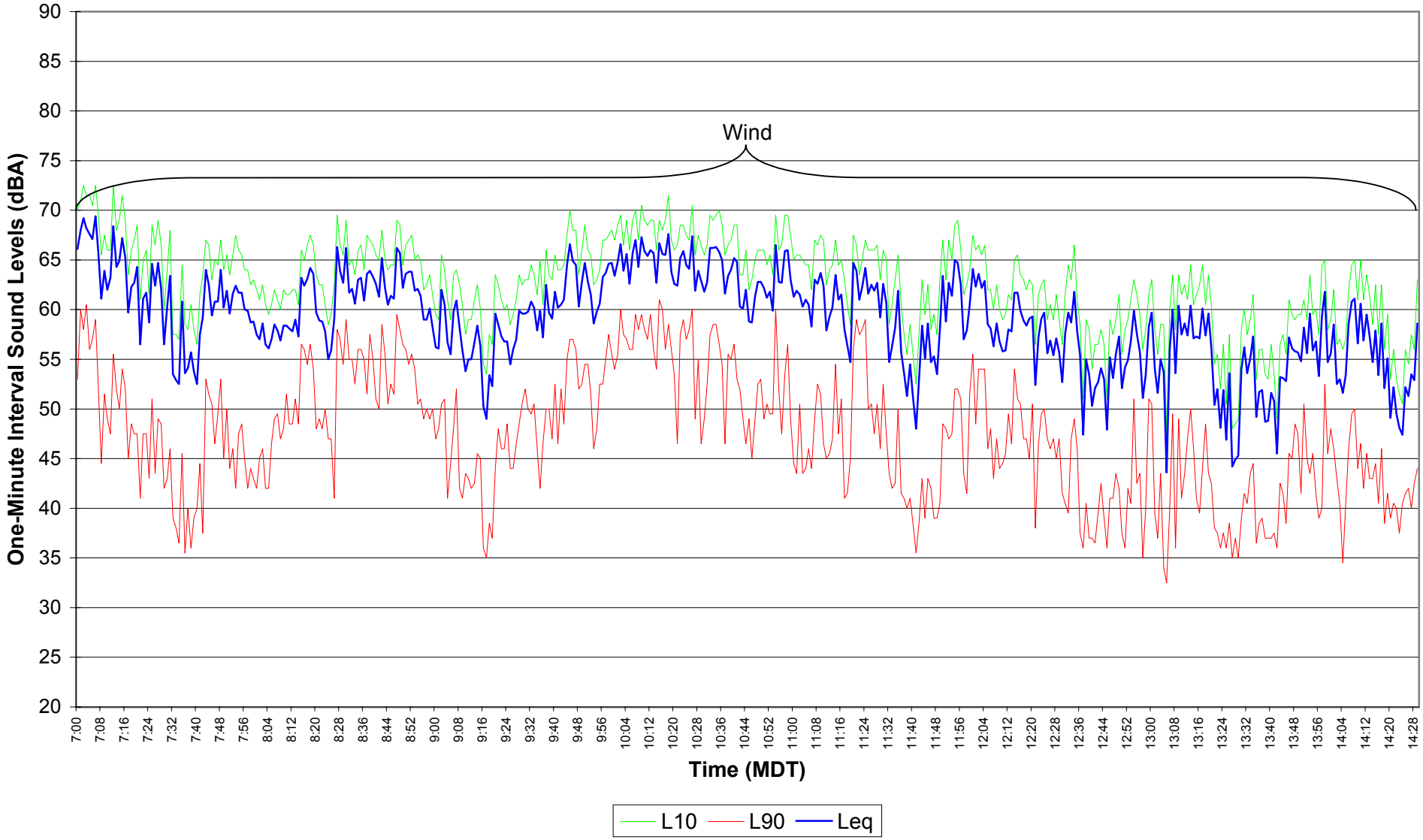
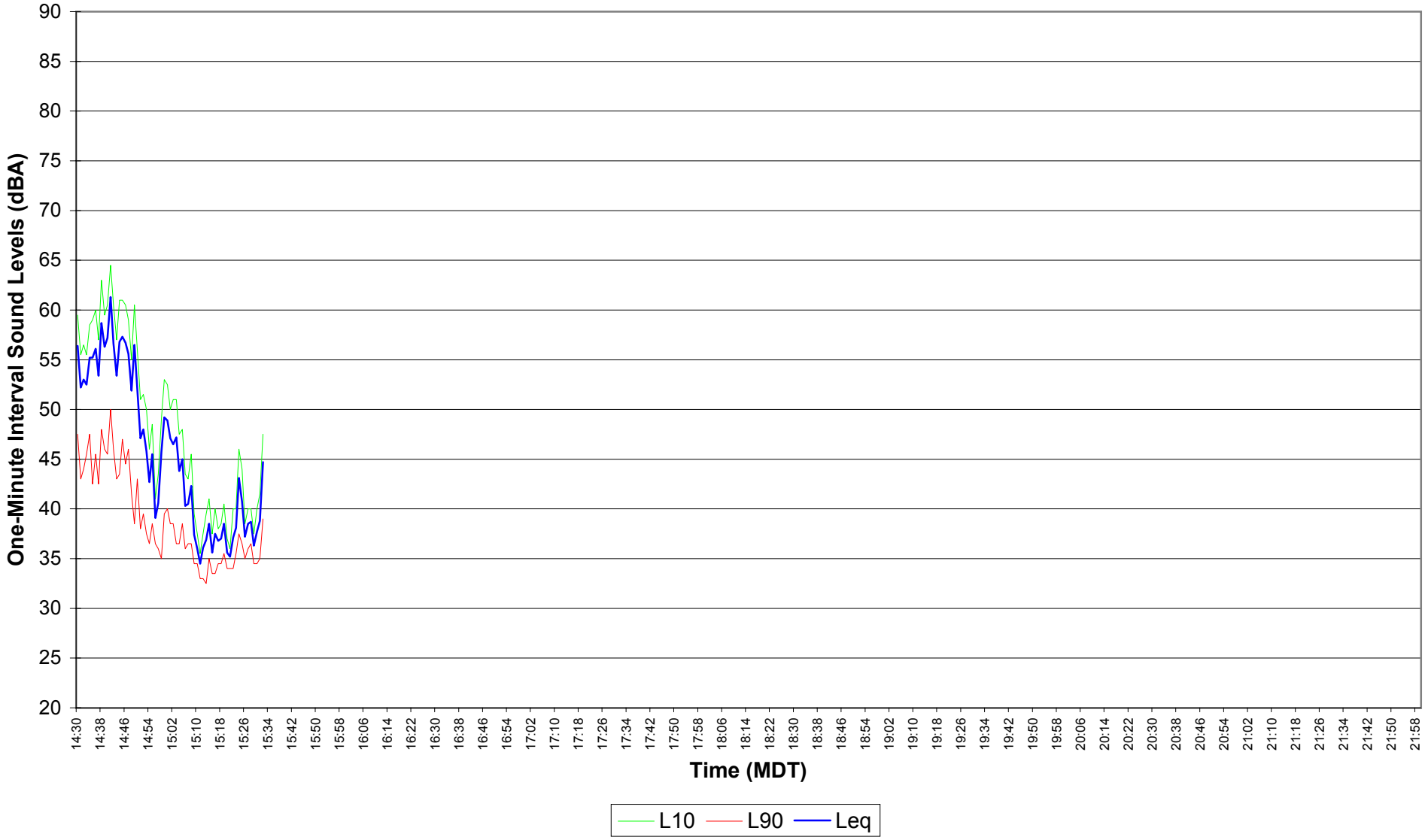


Figure E7.83
EnCana Rosebud
Site 7 Noise Survey
Dec. 20, 2004 14:30 - 21:59



APPENDIX E8

Measurement Results
Graphs of 1-Minute L_{eq}, L_{10} and L_{90} Data
Site 8

Patching Associates Acoustical Engineering Ltd.

Consultants in Acoustics, Noise Control and Vibrations

Table E8.1
EnCana Rosebud
Site 8 Noise Survey
Daily Leq Values

Date	Time	Figure #	Measured		Residual	
			Leq	Hours	Leq	Hours
Nov. 26, 2004	07:00 - 21:59	N/A, 11	35.3	4.0	32.9	3.9
Nov. 26, 2004 - Nov. 27, 2004	**22:00 - 06:59**	**12**	**47.9**	**9.0**	**30.4**	**8.7**
Nov. 27, 2004	07:00 - 21:59	13, 14	34.9	15.0	34.2	14.9
Nov 27, 2004 - Nov 28, 2004	**22:00 - 06:59**	**15**	**47.8**	**9.0**	**30.0**	**8.8**
Nov. 28, 2004	07:00 - 21:59	16, 17	38.6	15.0	37.4	14.3
Nov. 28, 2004 - Nov. 29, 2004	**22:00 - 06:59**	**18**	**43.5**	**9.0**	**31.8**	**8.7**
Nov. 29, 2004	07:00 - 21:59	19, 20	40.0	15.0	39.0	14.4
Nov 29, 2004 - Nov 30, 2004	**22:00 - 06:59**	**21**	**49.3**	**5.1**	**41.8**	**4.3**
Nov. 30, 2004	07:00 - 21:59	N/A	N/A	N/A	N/A	N/A
Nov. 30, 2004 - Dec. 01, 2004	**22:00 - 06:59**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Dec. 01, 2004	07:00 - 21:59	N/A	N/A	N/A	N/A	N/A
Dec. 01, 2004 - Dec. 02, 2004	**22:00 - 06:59**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Dec. 02, 2004	07:00 - 21:59	N/A	N/A	N/A	N/A	N/A
Dec. 02, 2004 - Dec. 03, 2004	**22:00 - 06:59**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Dec. 03, 2004	07:00 - 21:59	N/A, 32	46.6	6.4	42.9	3.7
Dec. 03, 2004 - Dec. 04, 2004	**22:00 - 06:59**	**33**	**47.6**	**9.0**	**41.0**	**5.9**
Dec. 04, 2004	07:00 - 21:59	34, 35	55.5	15.0	42.1	3.6
Dec. 04, 2004 - Dec. 05, 2004	**22:00 - 06:59**	**36**	**48.6**	**9.0**	**42.8**	**3.3**
Dec. 05, 2004	07:00 - 21:59	37, 38	46.7	15.0	40.8	10.5
Dec. 05, 2004 - Dec. 06, 2004	**22:00 - 06:59**	**39**	**45.2**	**9.0**	**41.6**	**7.1**
Dec. 06, 2004	07:00 - 21:59	40, 41	40.2	14.7	36.1	13.6
Dec. 06, 2004 - Dec. 07, 2004	**22:00 - 06:59**	**42**	**32.1**	**9.0**	**32.0**	**9.0**
Dec. 07, 2004	07:00 - 21:59	43, 44	38.1	15.0	34.7	14.5
Dec. 07, 2004 - Dec. 08, 2004	**22:00 - 06:59**	**45**	**38.7**	**9.0**	**36.7**	**8.8**
Dec. 08, 2004	07:00 - 21:59	46, 47	39.7	15.0	35.5	14.5
Dec. 08, 2004 - Dec. 09, 2004	**22:00 - 06:59**	**48**	**42.2**	**9.0**	**31.5**	**8.7**
Dec. 09, 2004	07:00 - 21:59	49, 50	39.4	15.0	37.2	14.4
Dec. 09, 2004 - Dec. 10, 2004	**22:00 - 06:59**	**51**	**40.8**	**9.0**	**34.6**	**8.4**
Dec. 10, 2004	07:00 - 21:59	52, 53	59.5	14.8	38.2	5.2
Dec. 10, 2004 - Dec. 11, 2004	**22:00 - 06:59**	**54**	**58.8**	**9.0**	**39.0**	**3.5**
Dec. 11, 2004	07:00 - 21:59	55, 56	54.7	15.0	37.7	6.4
Dec. 11, 2004 - Dec. 12, 2004	**22:00 - 06:59**	**57**	**45.8**	**9.0**	**35.6**	**7.9**
Dec. 12, 2004	07:00 - 21:59	58, 59	43.7	15.0	37.1	12.8
Dec. 12, 2004 - Dec. 13, 2004	**22:00 - 06:59**	**60**	**37.0**	**9.0**	**32.1**	**8.9**
Dec. 13, 2004	07:00 - 21:59	61, 62	60.1	14.8	38.1	5.1
Dec. 13, 2004 - Dec. 14, 2004	**22:00 - 06:59**	**63**	**46.1**	**2.0**	**36.7**	**1.4**
Dec. 14, 2004	07:00 - 21:59	N/A	N/A	N/A	N/A	N/A
Dec. 14, 2004 - Dec. 15, 2004	**22:00 - 06:59**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Dec. 15, 2004	07:00 - 21:59	N/A	N/A	N/A	N/A	N/A
Dec. 15, 2004 - Dec. 16, 2004	**22:00 - 06:59**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Dec. 16, 2004	07:00 - 21:59	N/A	N/A	N/A	N/A	N/A
Dec. 16, 2004 - Dec. 17, 2004	**22:00 - 06:59**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Dec. 17, 2004	07:00 - 21:59	N/A, 74	39.6	6.0	34.7	5.8
Dec. 17, 2004 - Dec. 18, 2004	**22:00 - 06:59**	**75**	**42.1**	**9.0**	**30.7**	**8.8**
Dec. 18, 2004	07:00 - 21:59	76, 77	53.5	15.0	38.4	9.3
Dec 18, 2004 - Dec 19, 2004	**22:00 - 06:59**	**78**	**52.0**	**9.0**	**39.9**	**4.3**
Dec. 19, 2004	07:00 - 21:59	79, 80	65.4	15.0	39.4	5.8
Dec. 19, 2004 - Dec. 20, 2004	**22:00 - 06:59**	**81**	**57.0**	**9.0**	**40.4**	**3.0**
Dec. 20, 2004	07:00 - 21:59	82, 83	56.0	8.2	42.7	0.5

Figure E8.11
EnCana Rosebud
Site 8 Noise Survey
Nov. 26, 2004 14:30 - 21:59

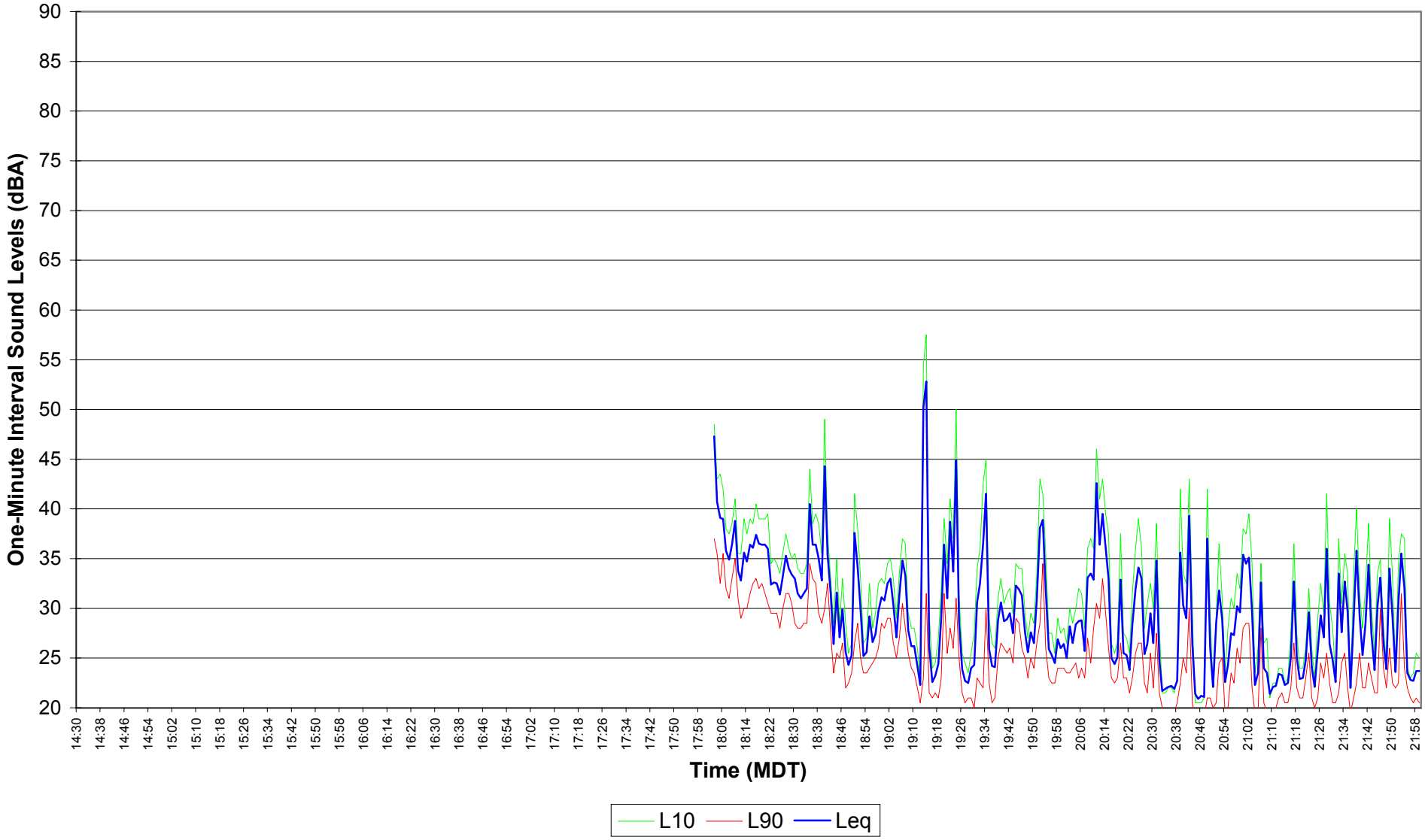


Figure E8.12
EnCana Rosebud
Site 8 Noise Survey
Nov. 26, 2004 - Nov. 27, 2004 22:00 - 06:59

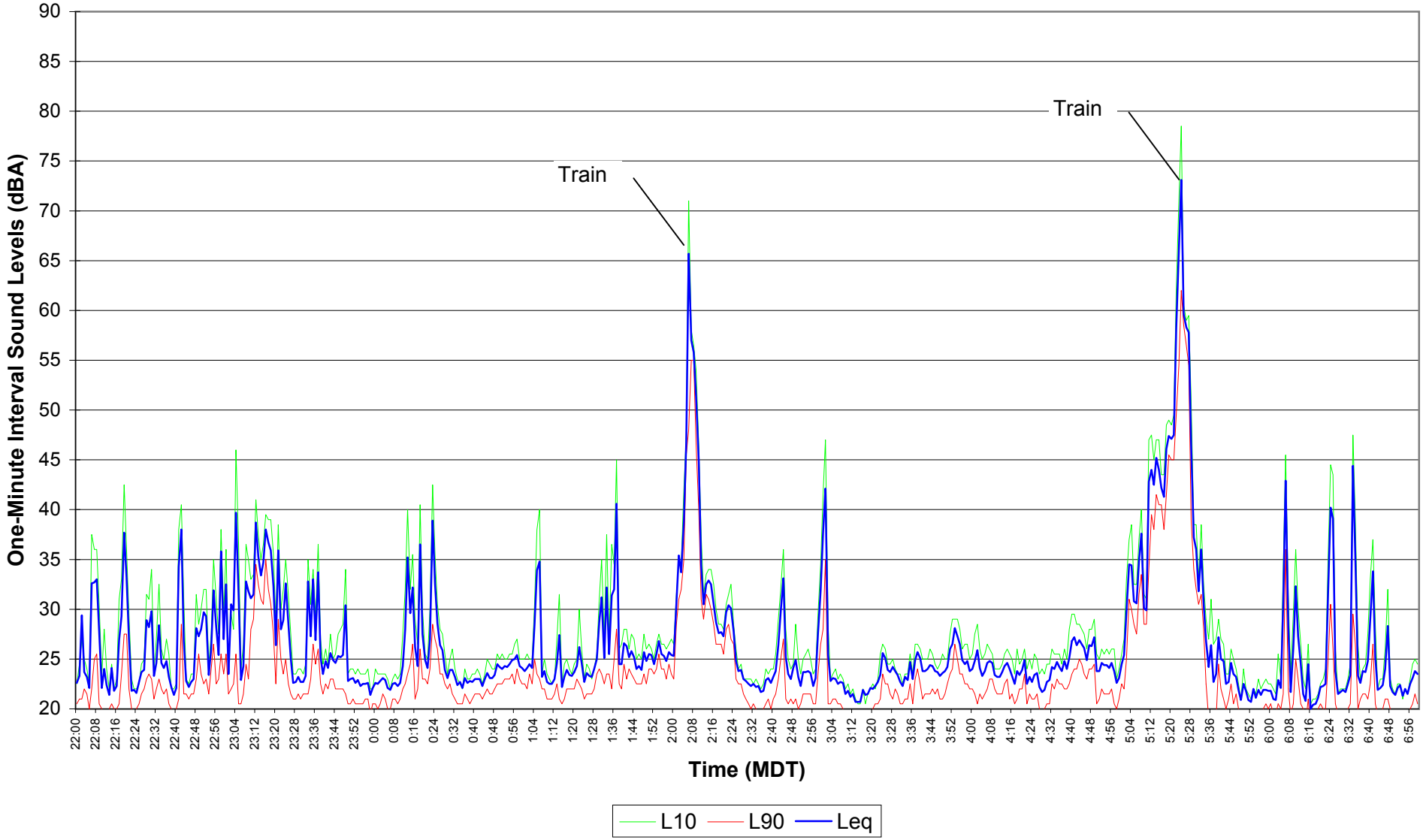


Figure E8.13
EnCana Rosebud
Site 8 Noise Survey
Nov. 27, 2004 07:00 - 14:29

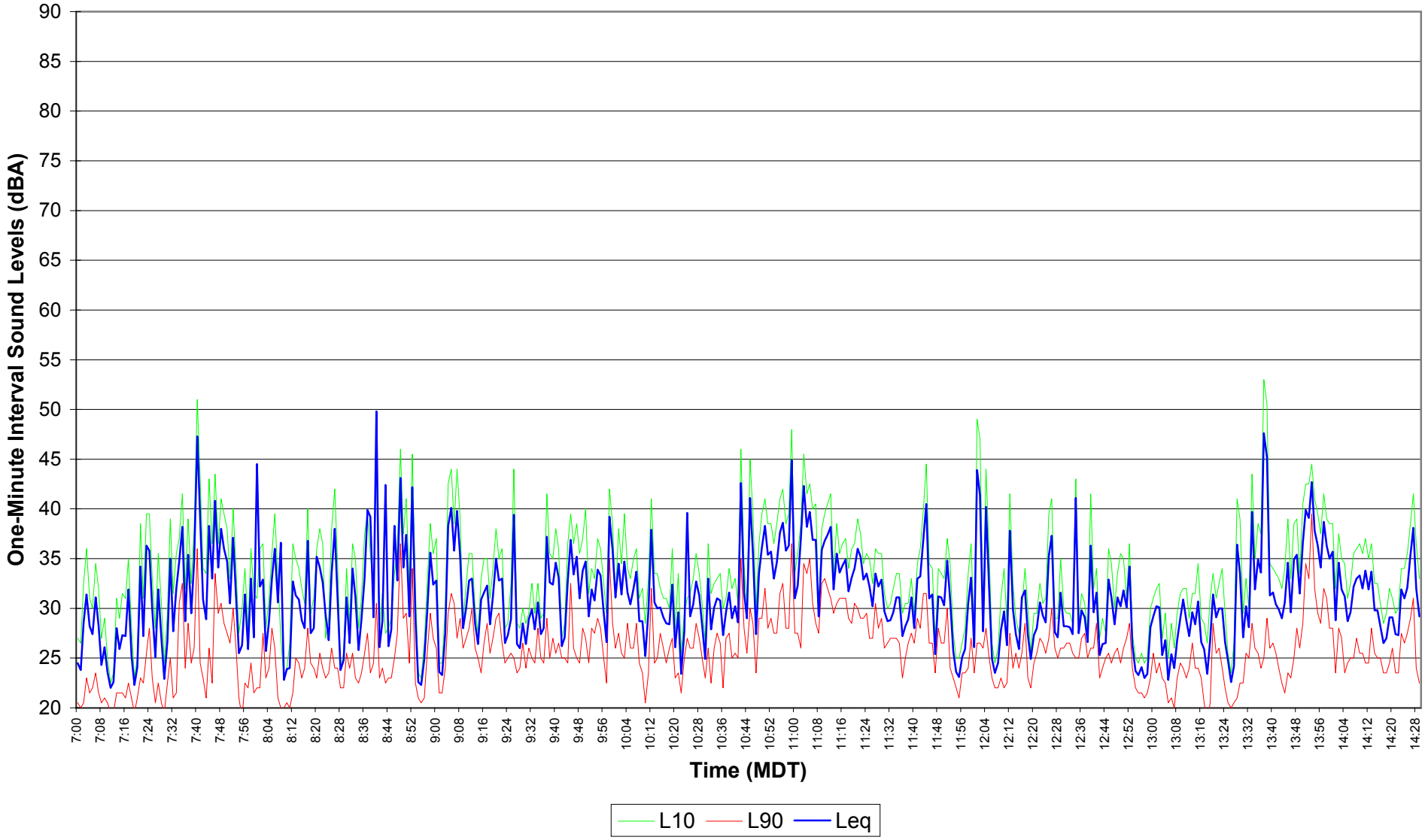


Figure E8.14
EnCana Rosebud
Site 8 Noise Survey
Nov. 27, 2004 14:30 - 21:59

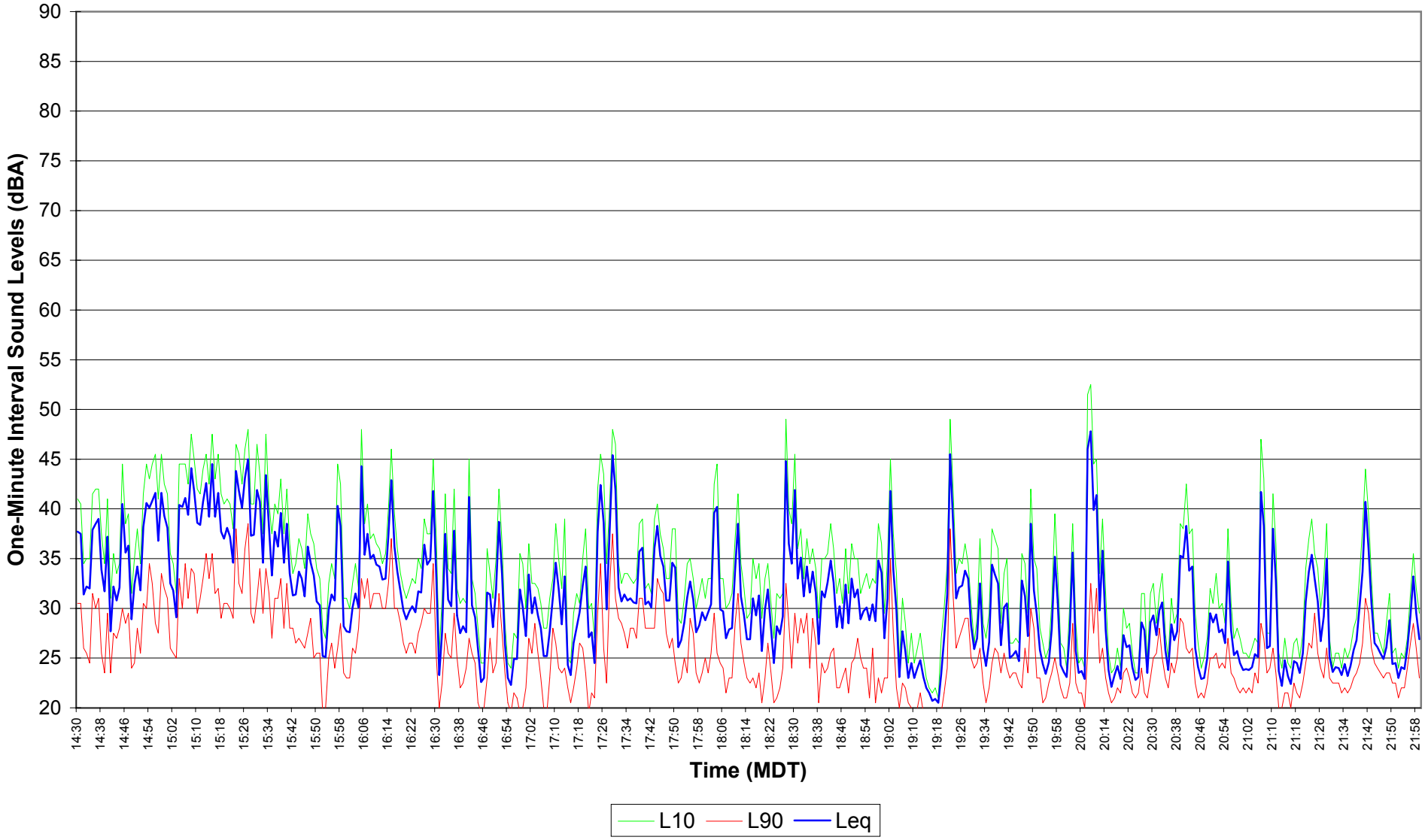


Figure E8.15
EnCana Rosebud
Site 8 Noise Survey
Nov 27, 2004 - Nov 28, 2004 22:00 - 06:59

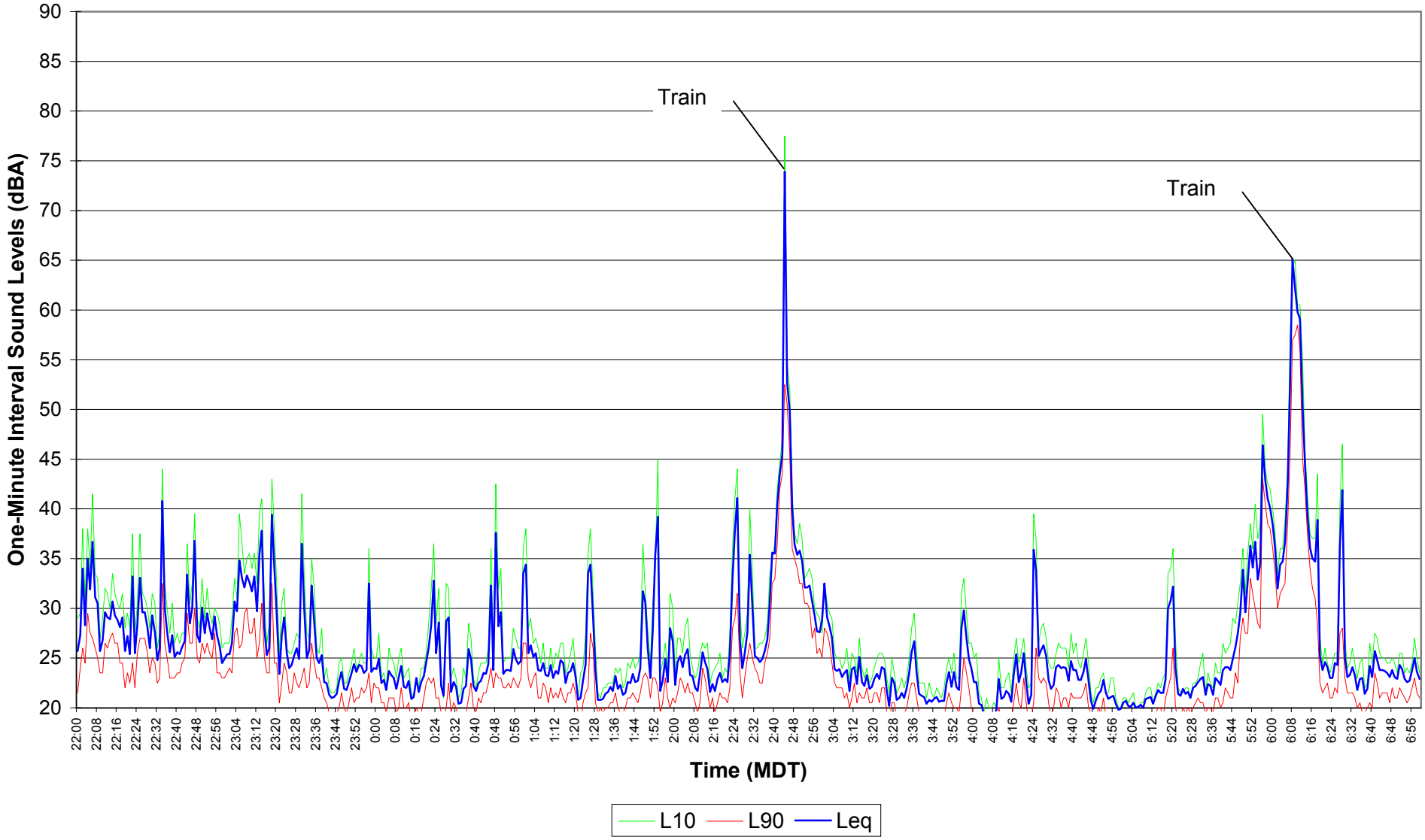


Figure E8.16
EnCana Rosebud
Site 8 Noise Survey
Nov. 28, 2004 07:00 - 14:29

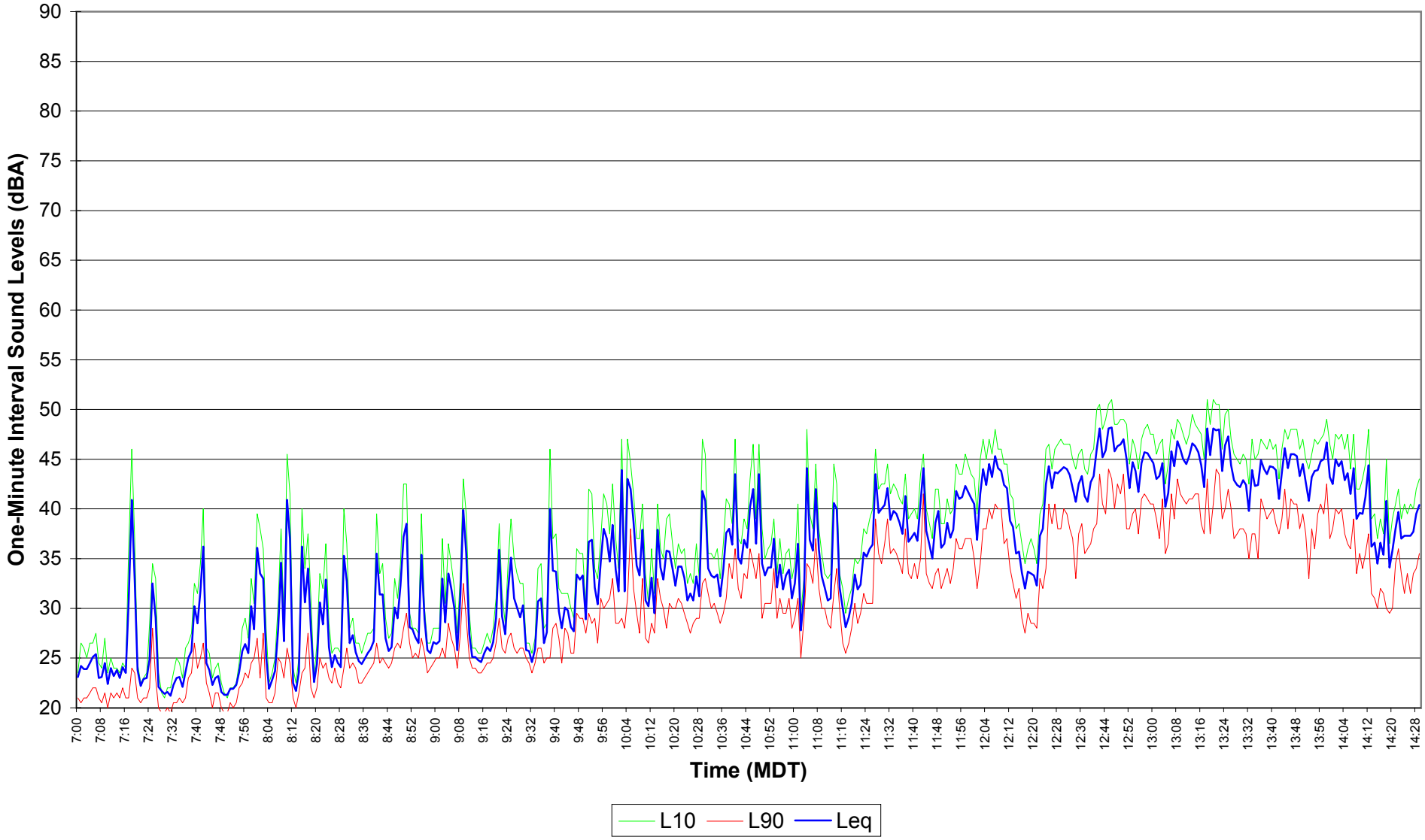


Figure E8.17
EnCana Rosebud
Site 8 Noise Survey
Nov. 28, 2004 14:30 - 21:59

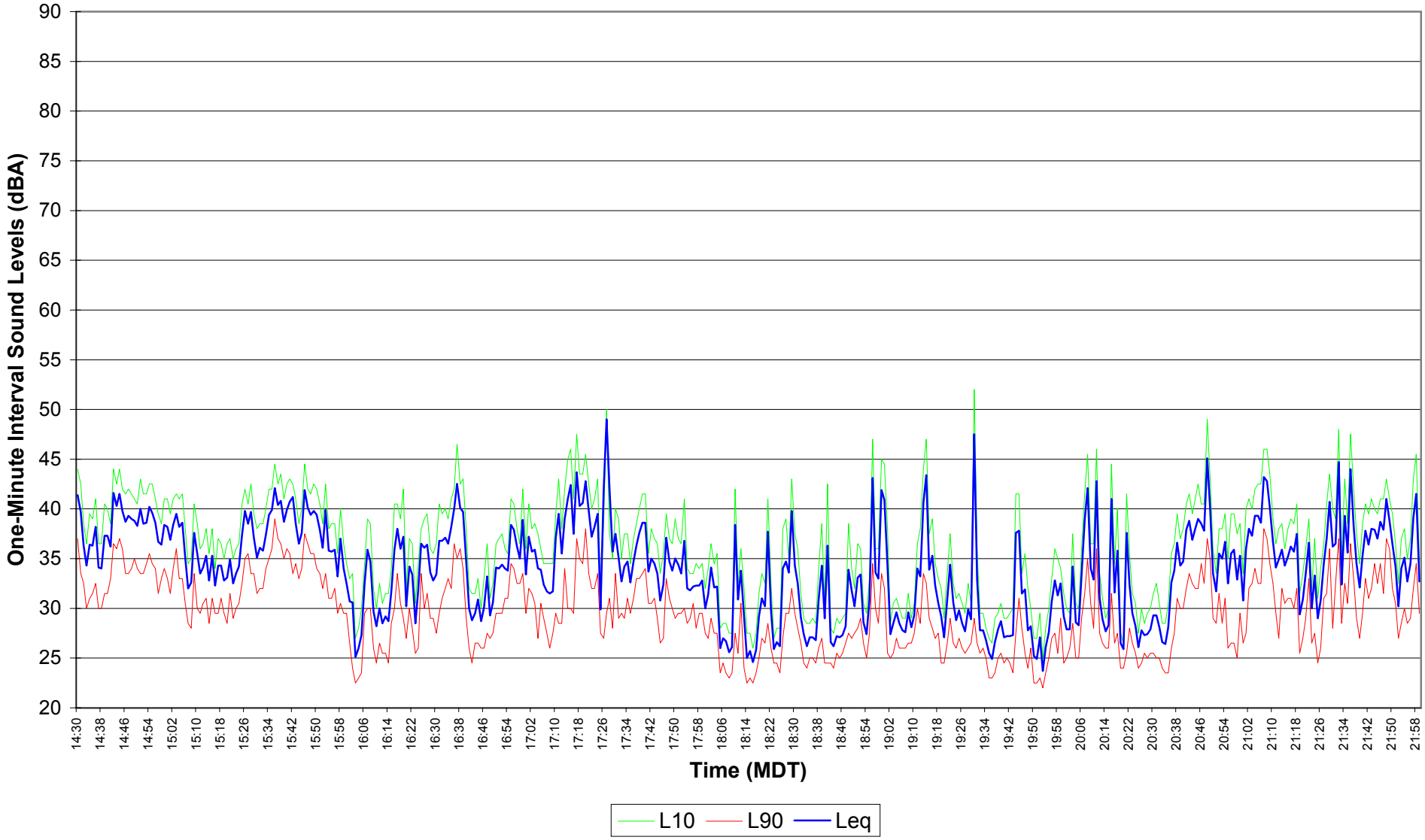


Figure E8.18
EnCana Rosebud
Site 8 Noise Survey
Nov. 28, 2004 - Nov. 29, 2004 22:00 - 06:59

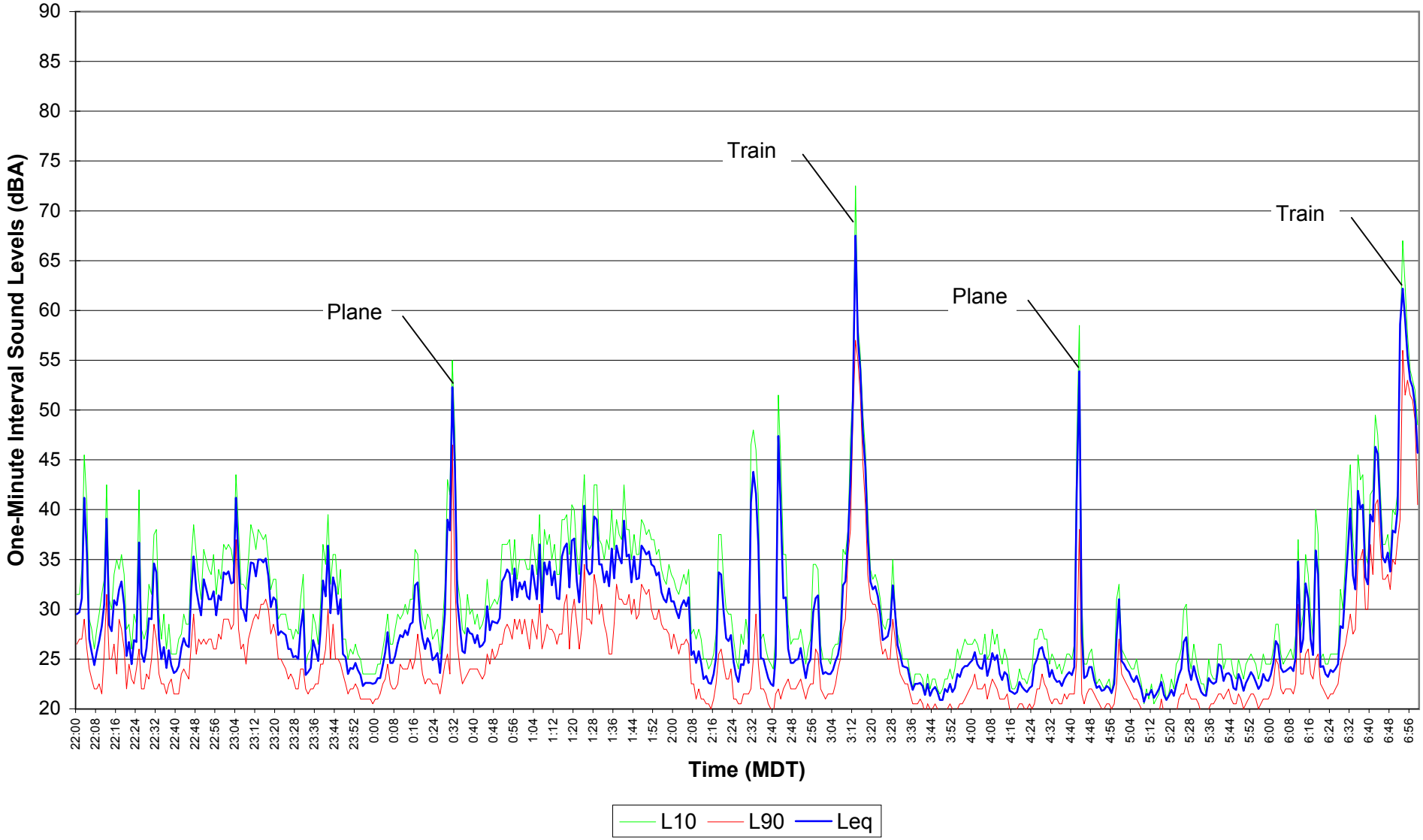


Figure E8.19
EnCana Rosebud
Site 8 Noise Survey
Nov. 29, 2004 07:00 - 14:29

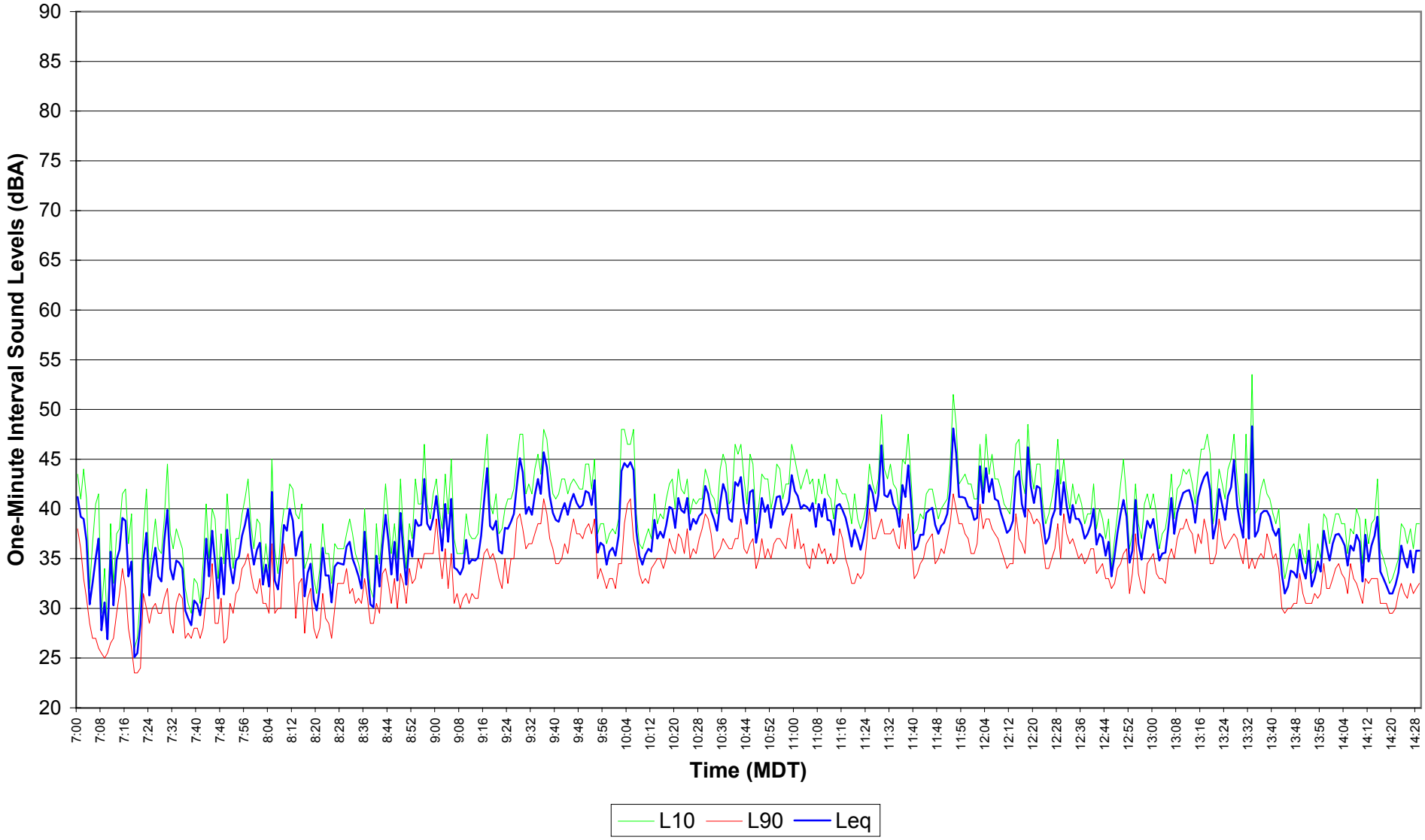


Figure E8.20
EnCana Rosebud
Site 8 Noise Survey
Nov. 29, 2004 14:30 - 21:59

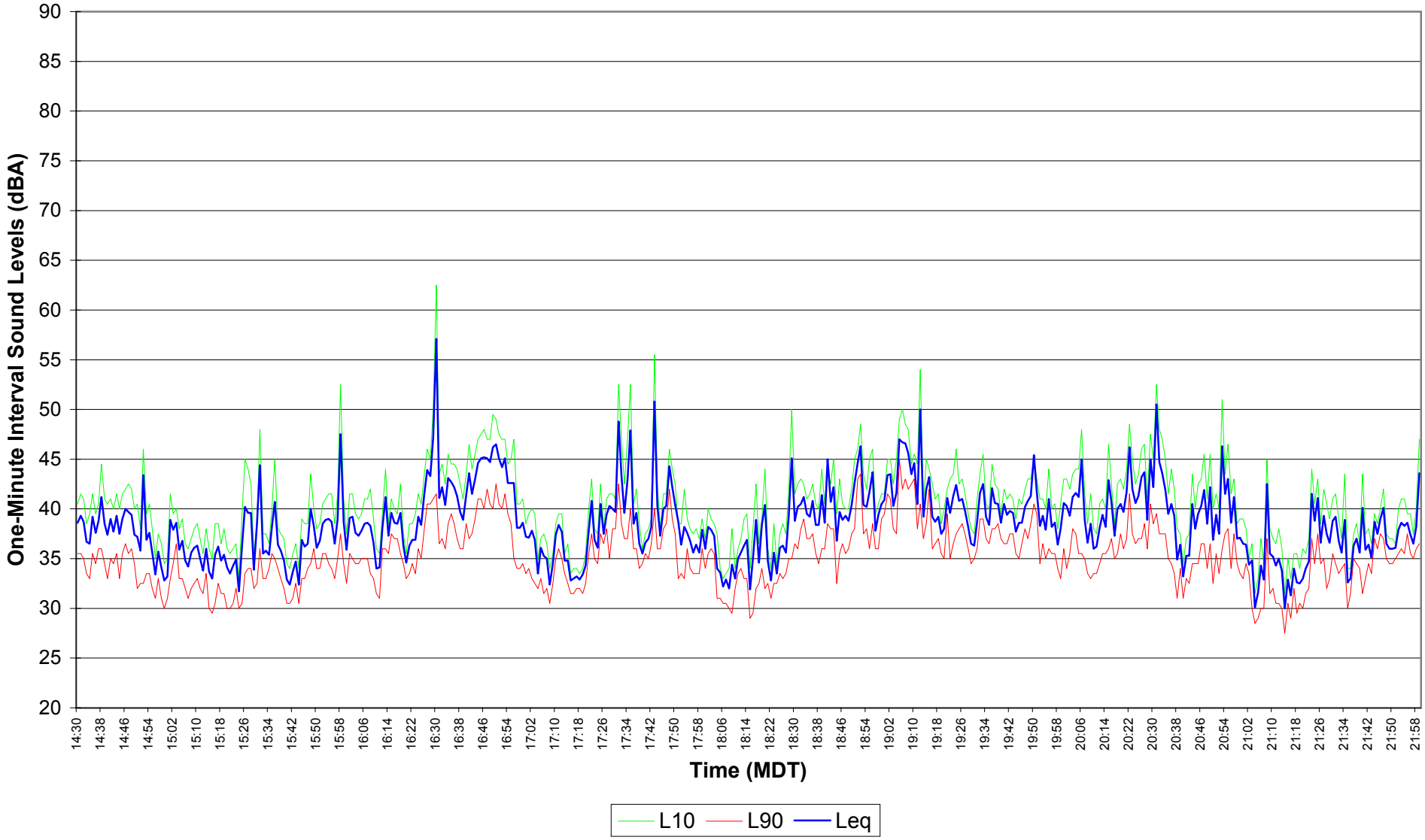


Figure E8.21
EnCana Rosebud
Site 8 Noise Survey
Nov 29, 2004 - Nov 30, 2004 22:00 - 06:59

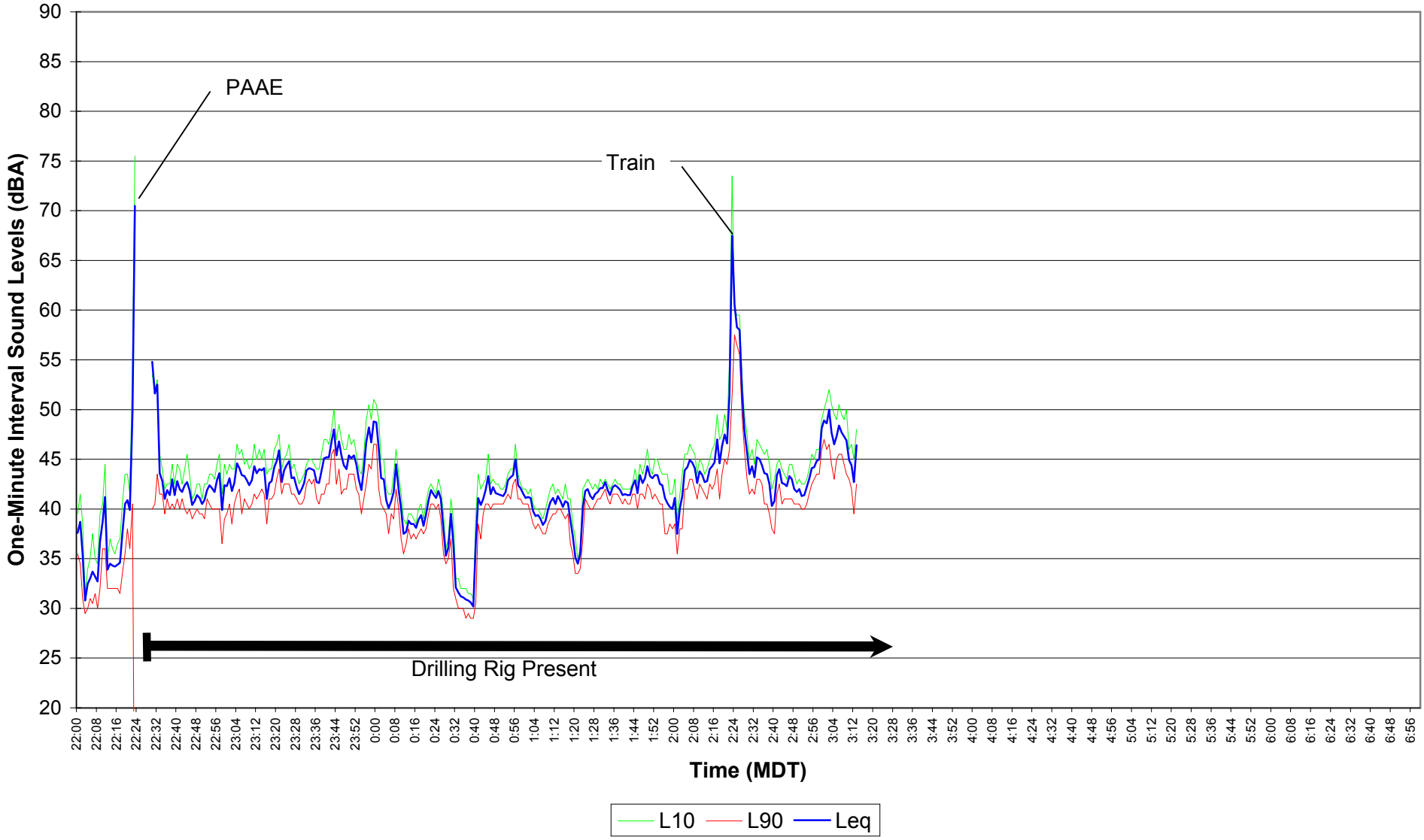


Figure E8.32
EnCana Rosebud
Site 8 Noise Survey
Dec. 03, 2004 14:30 - 21:59

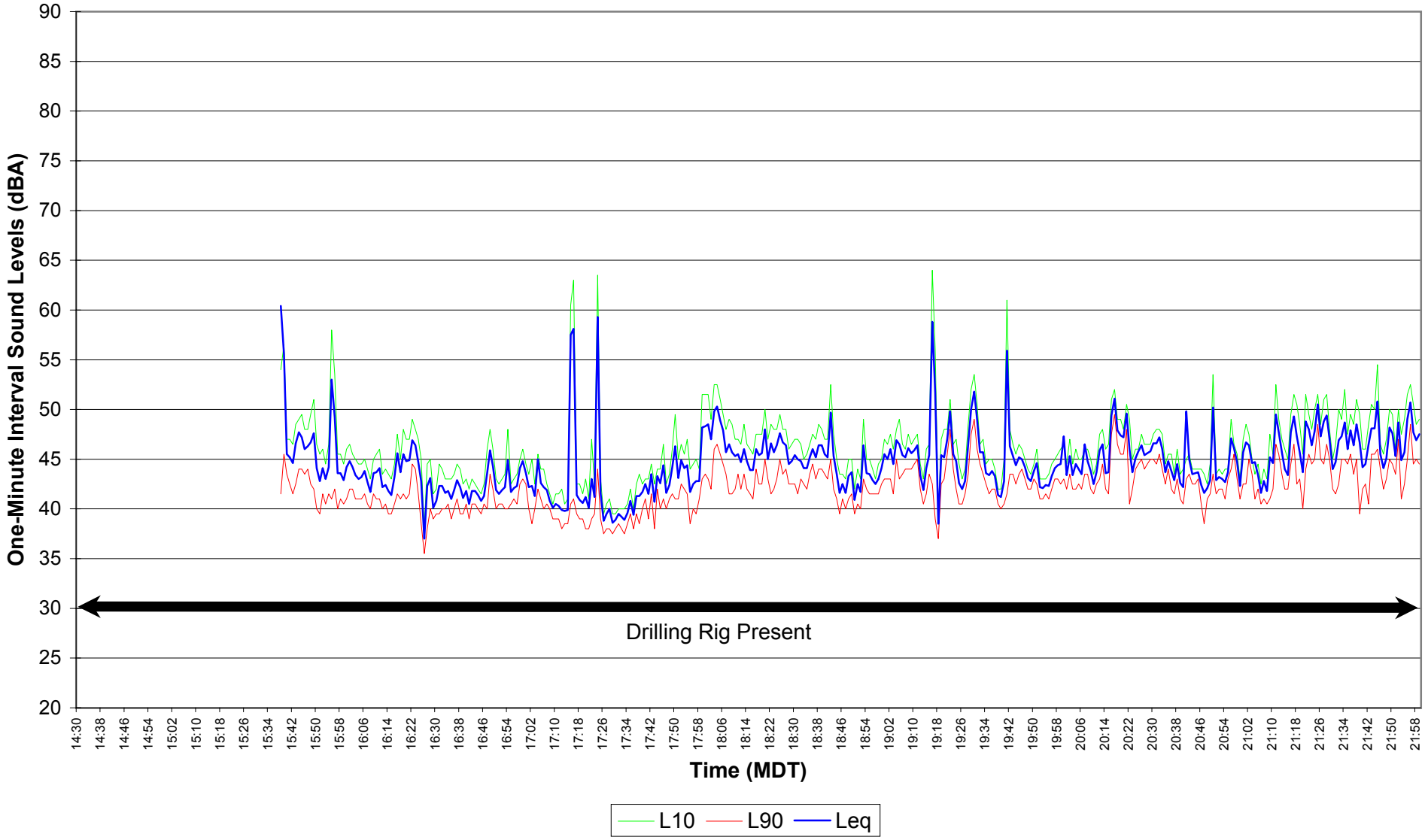


Figure E8.33
EnCana Rosebud
Site 8 Noise Survey
Dec. 03, 2004 - Dec. 04, 2004 22:00 - 06:59

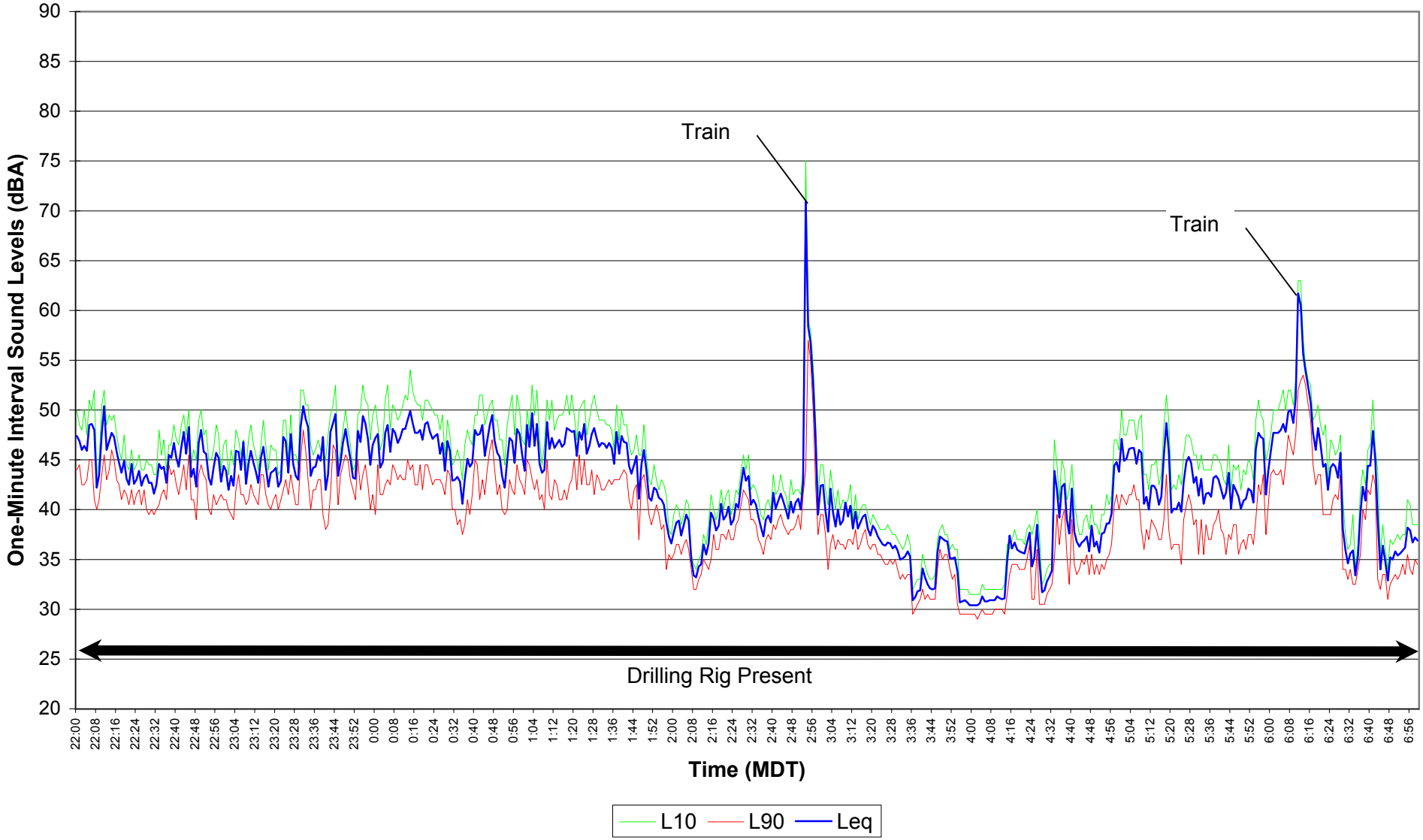


Figure E8.34
EnCana Rosebud
Site 8 Noise Survey
Dec. 04, 2004 07:00 - 14:29

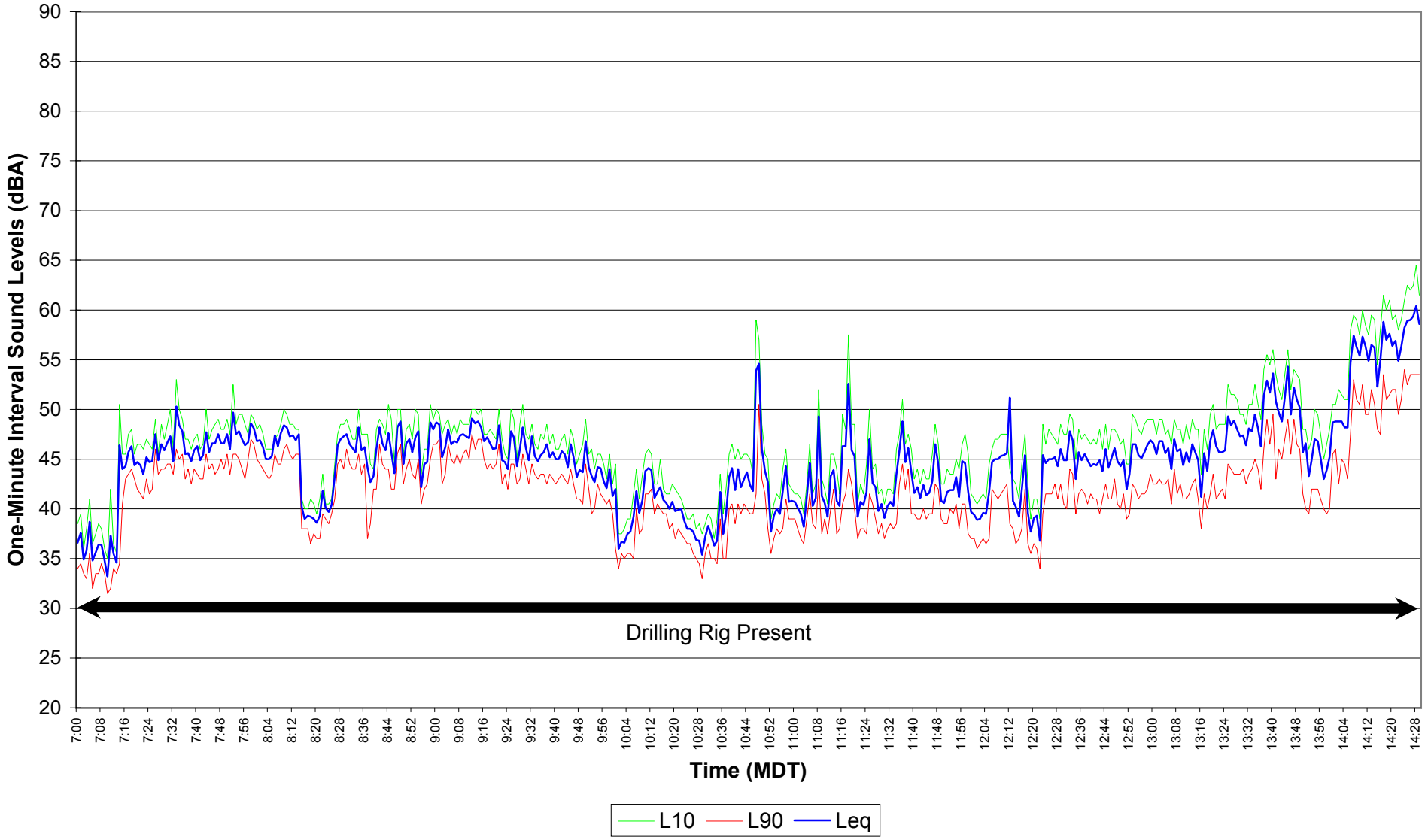


Figure E8.35
EnCana Rosebud
Site 8 Noise Survey
Dec. 04, 2004 14:30 - 21:59

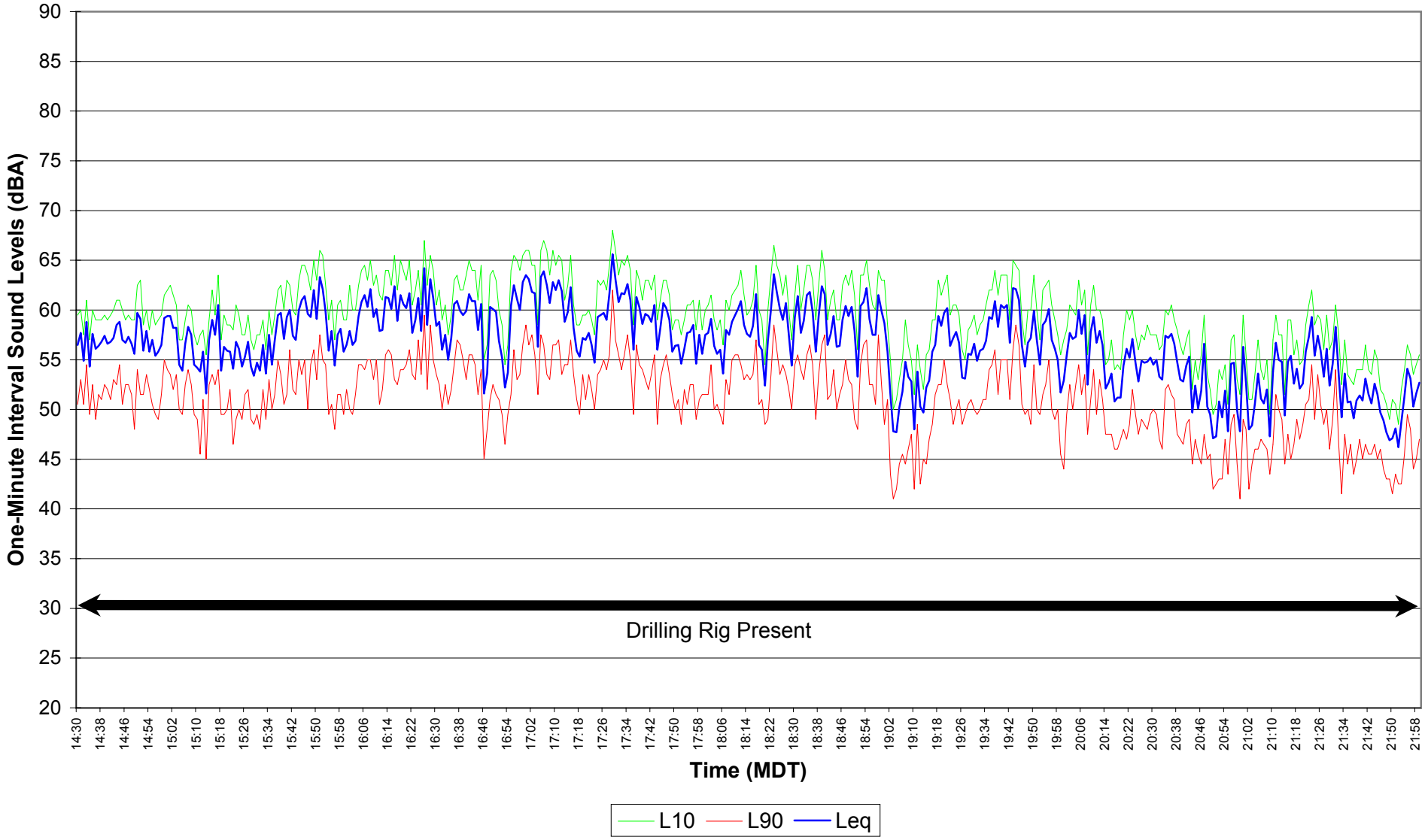


Figure E8.36
EnCana Rosebud
Site 8 Noise Survey
Dec. 04, 2004 - Dec. 05, 2004 22:00 - 06:59

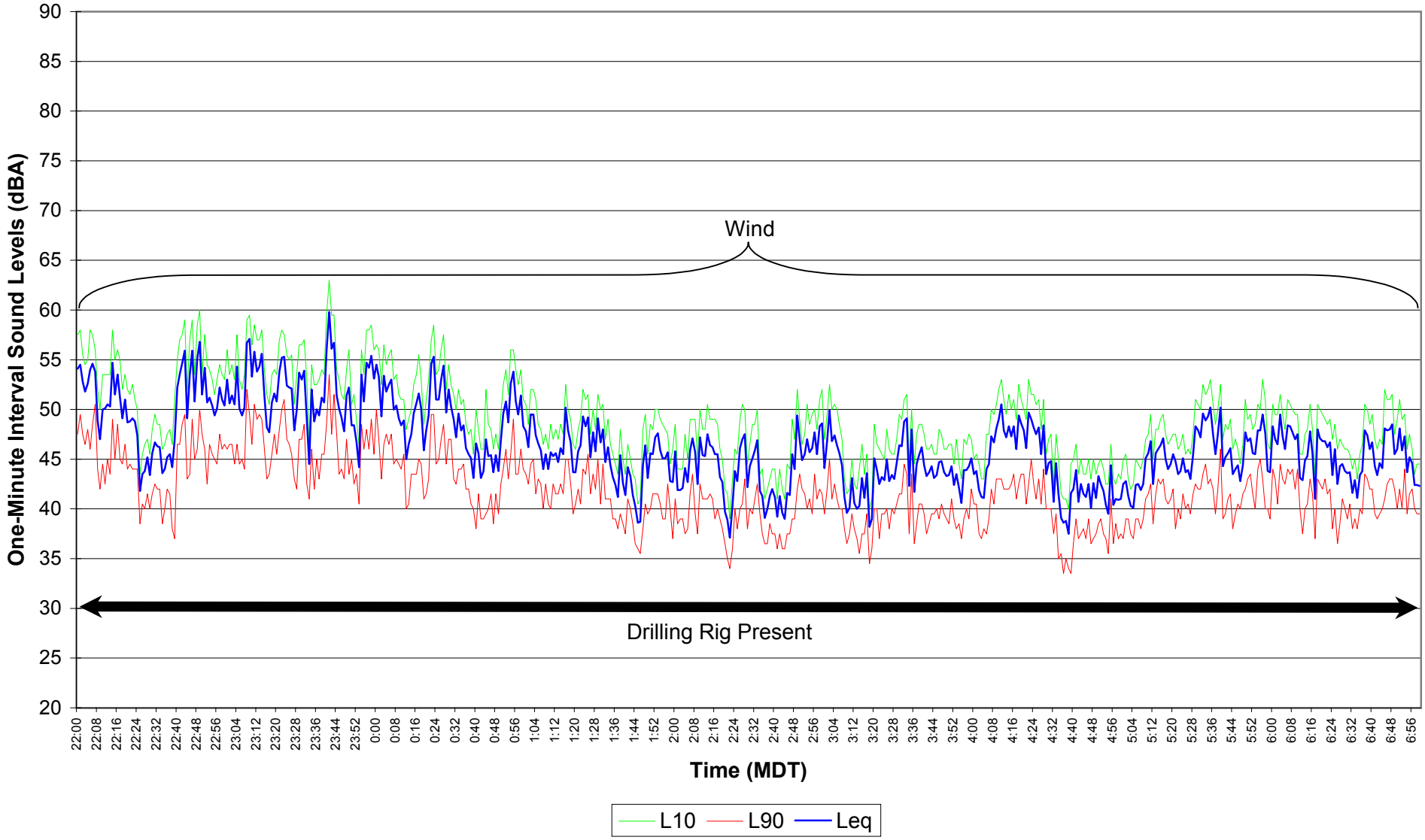


Figure E8.37
EnCana Rosebud
Site 8 Noise Survey
Dec. 05, 2004 07:00 - 14:29

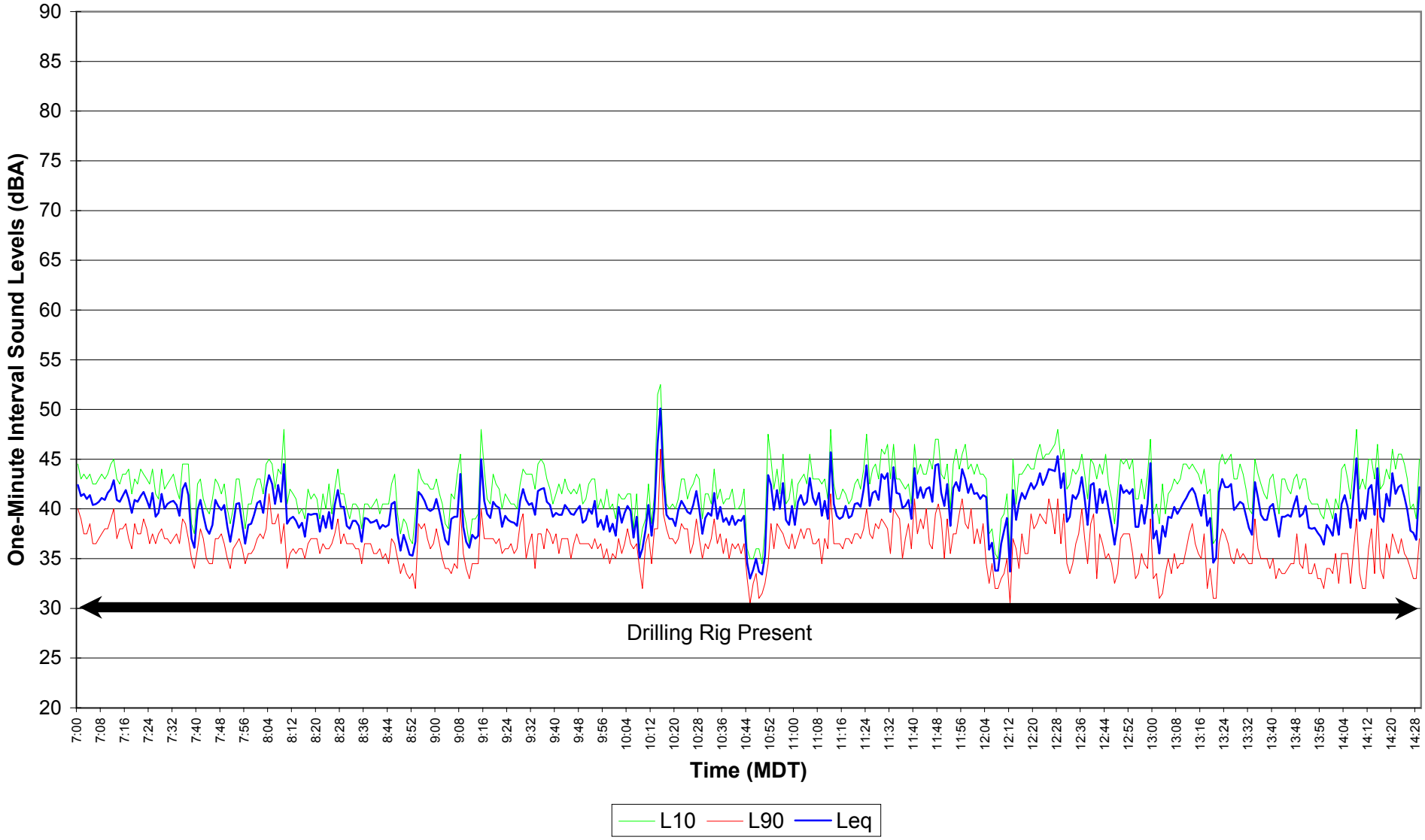


Figure E8.38
EnCana Rosebud
Site 8 Noise Survey
Dec. 05, 2004 14:30 - 21:59

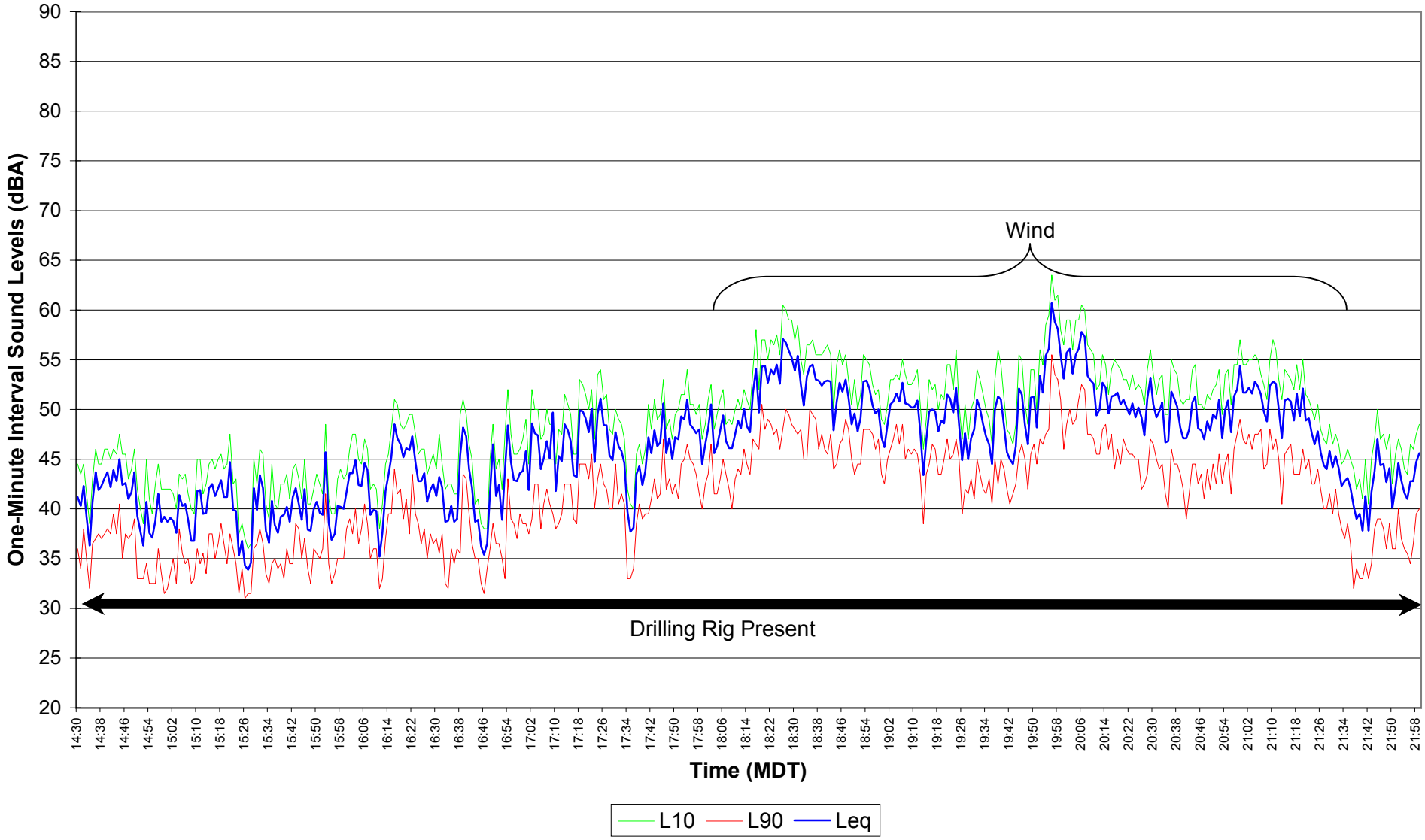


Figure E8.39
EnCana Rosebud
Site 8 Noise Survey
Dec. 05, 2004 - Dec. 06, 2004 22:00 - 06:59

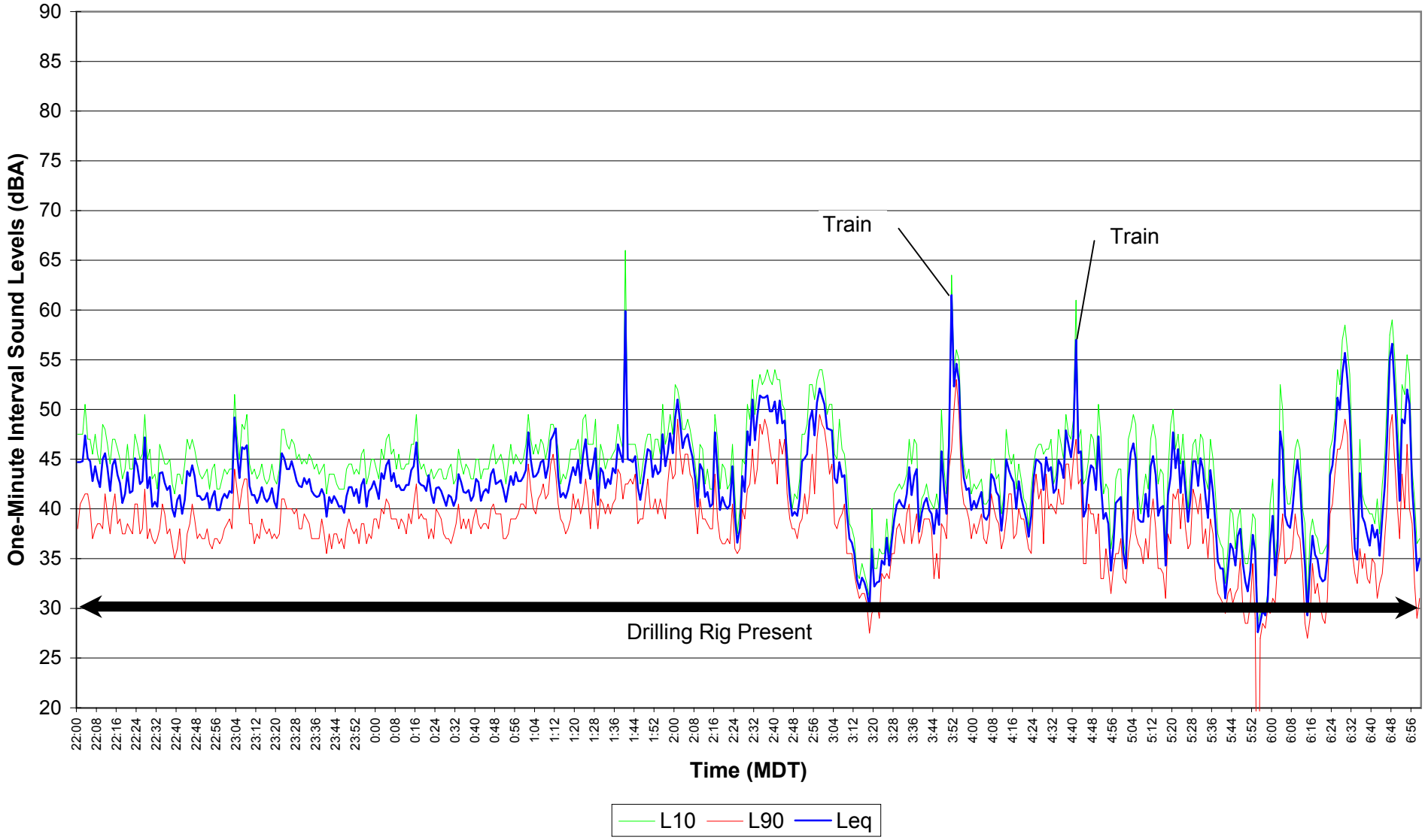


Figure E8.40

EnCana Rosebud

Site 8 Noise Survey

Dec. 06, 2004 07:00 - 14:29

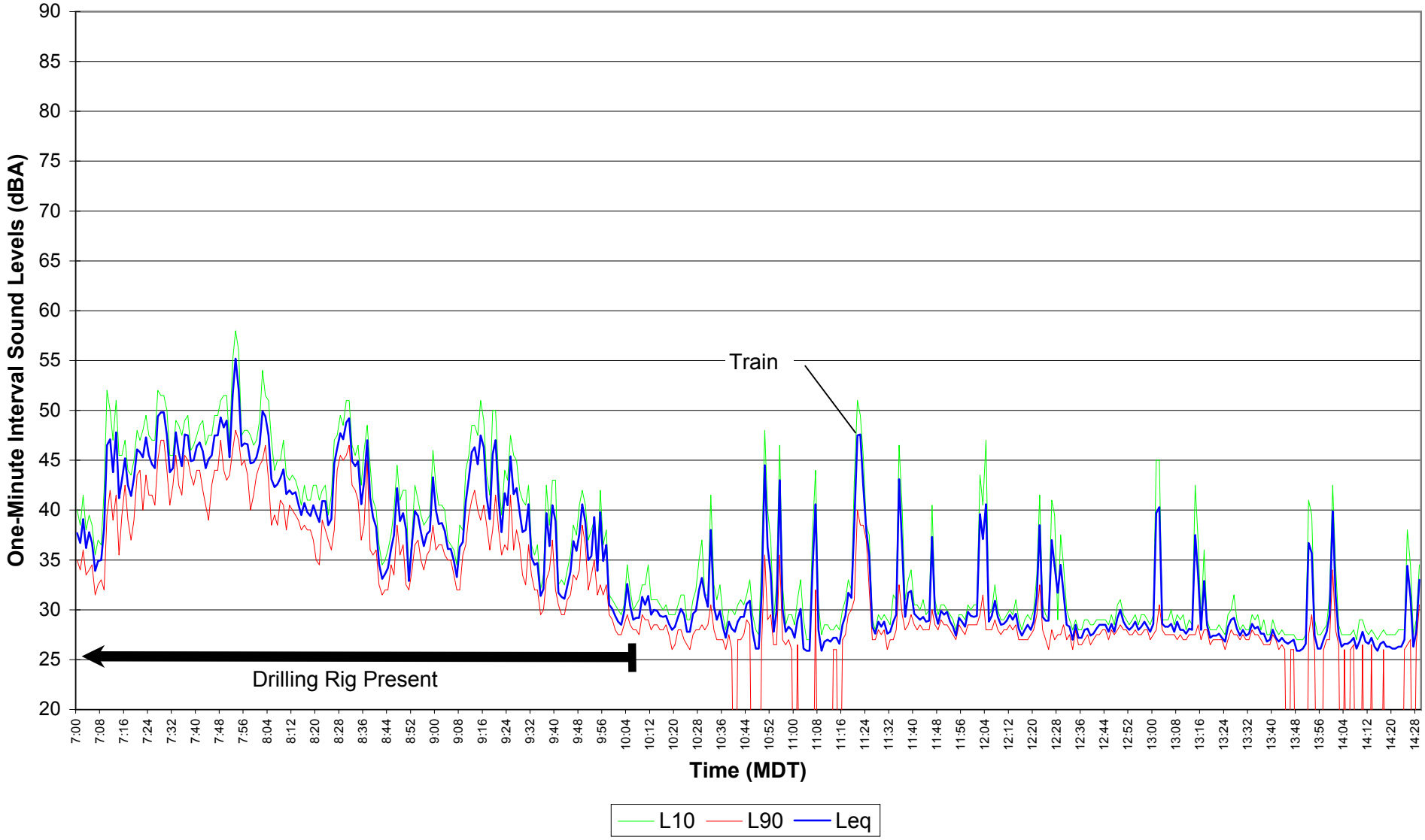


Figure E8.41
EnCana Rosebud
Site 8 Noise Survey
Dec. 06, 2004 14:30 - 21:59

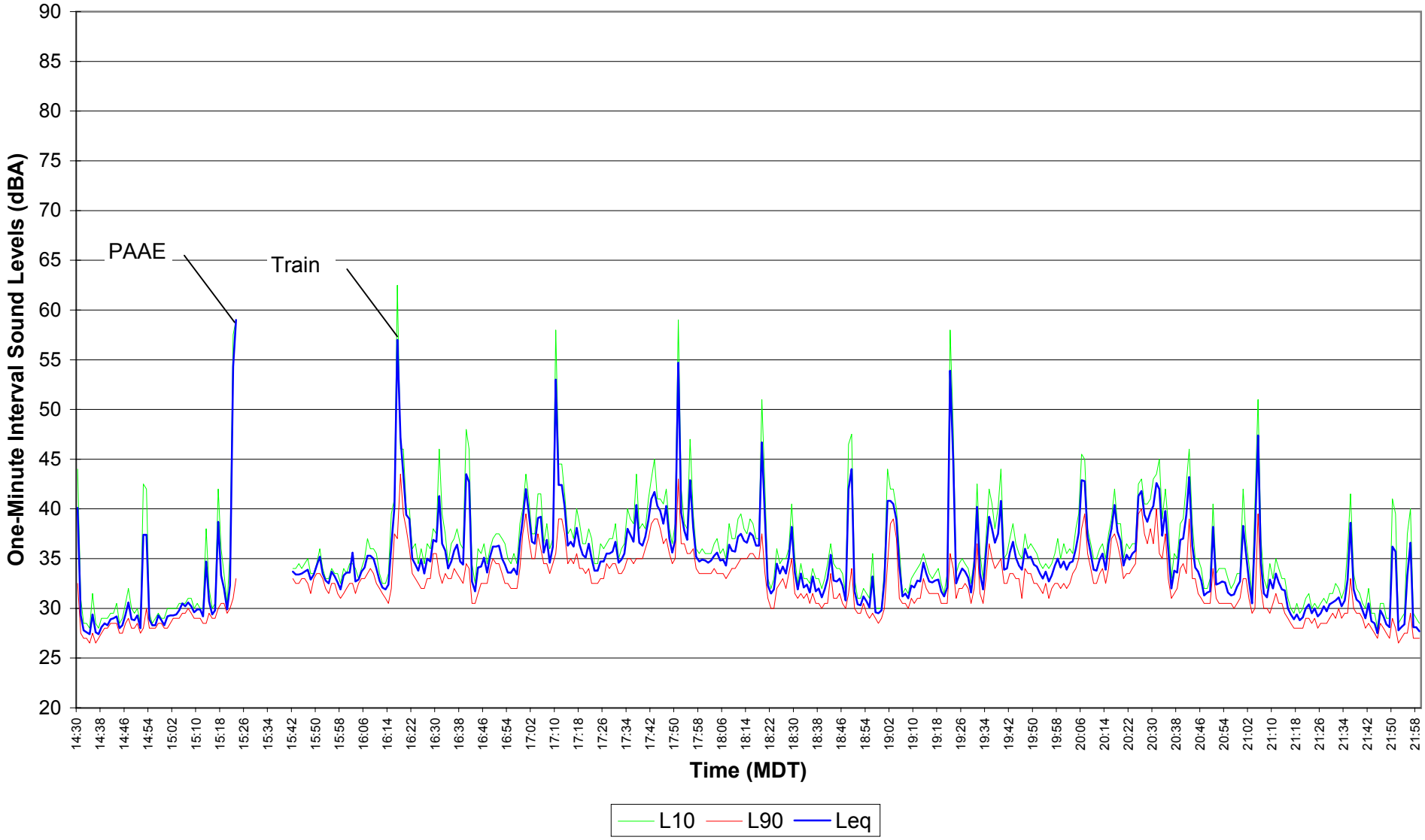


Figure E8.42
EnCana Rosebud
Site 8 Noise Survey
Dec. 06, 2004 - Dec. 07, 2004 22:00 - 06:59

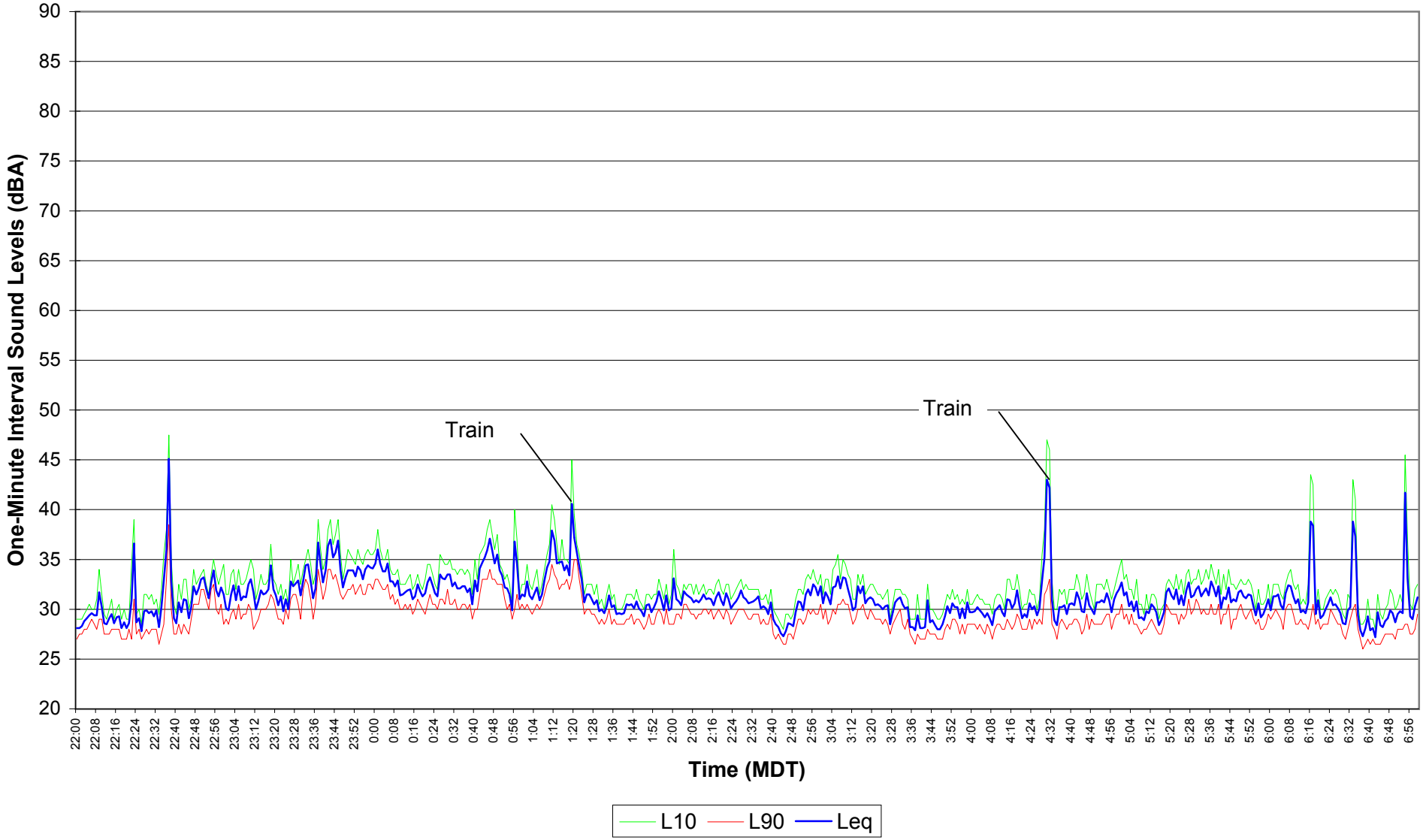


Figure E8.43
EnCana Rosebud
Site 8 Noise Survey
Dec. 07, 2004 07:00 - 14:29

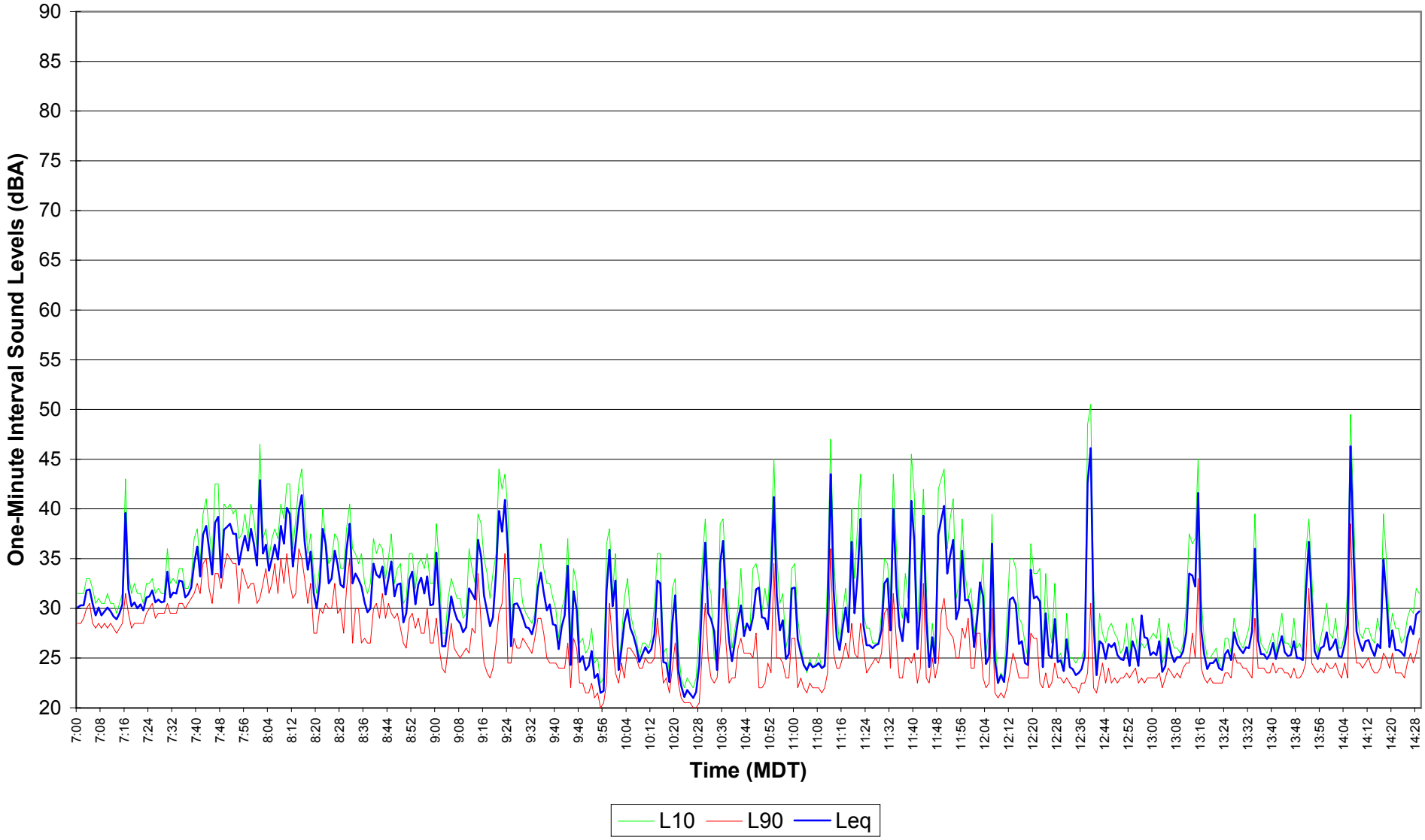


Figure E8.44
EnCana Rosebud
Site 8 Noise Survey
Dec. 07, 2004 14:30 - 21:59

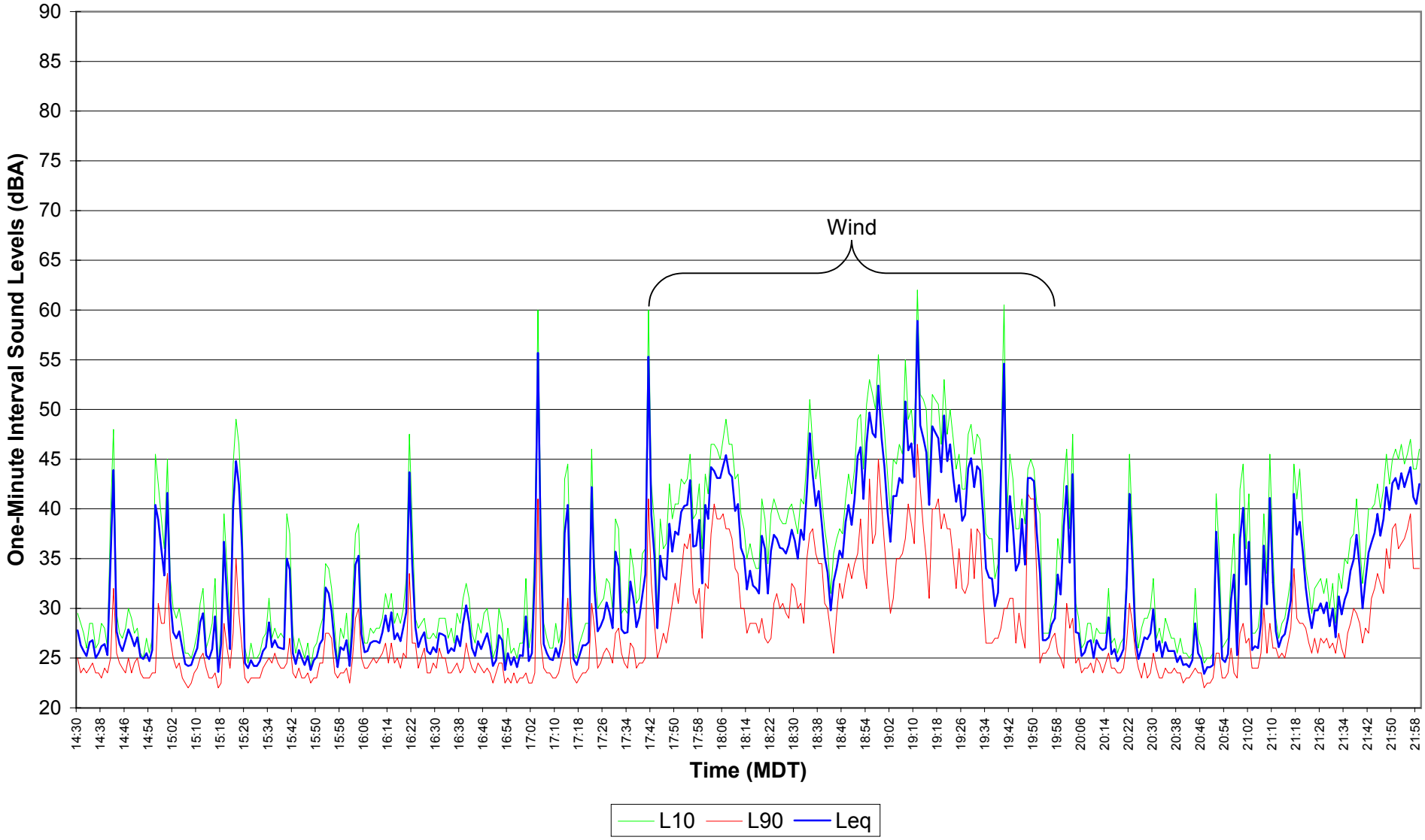


Figure E8.45
EnCana Rosebud
Site 8 Noise Survey
Dec. 07, 2004 - Dec. 08, 2004 22:00 - 06:59

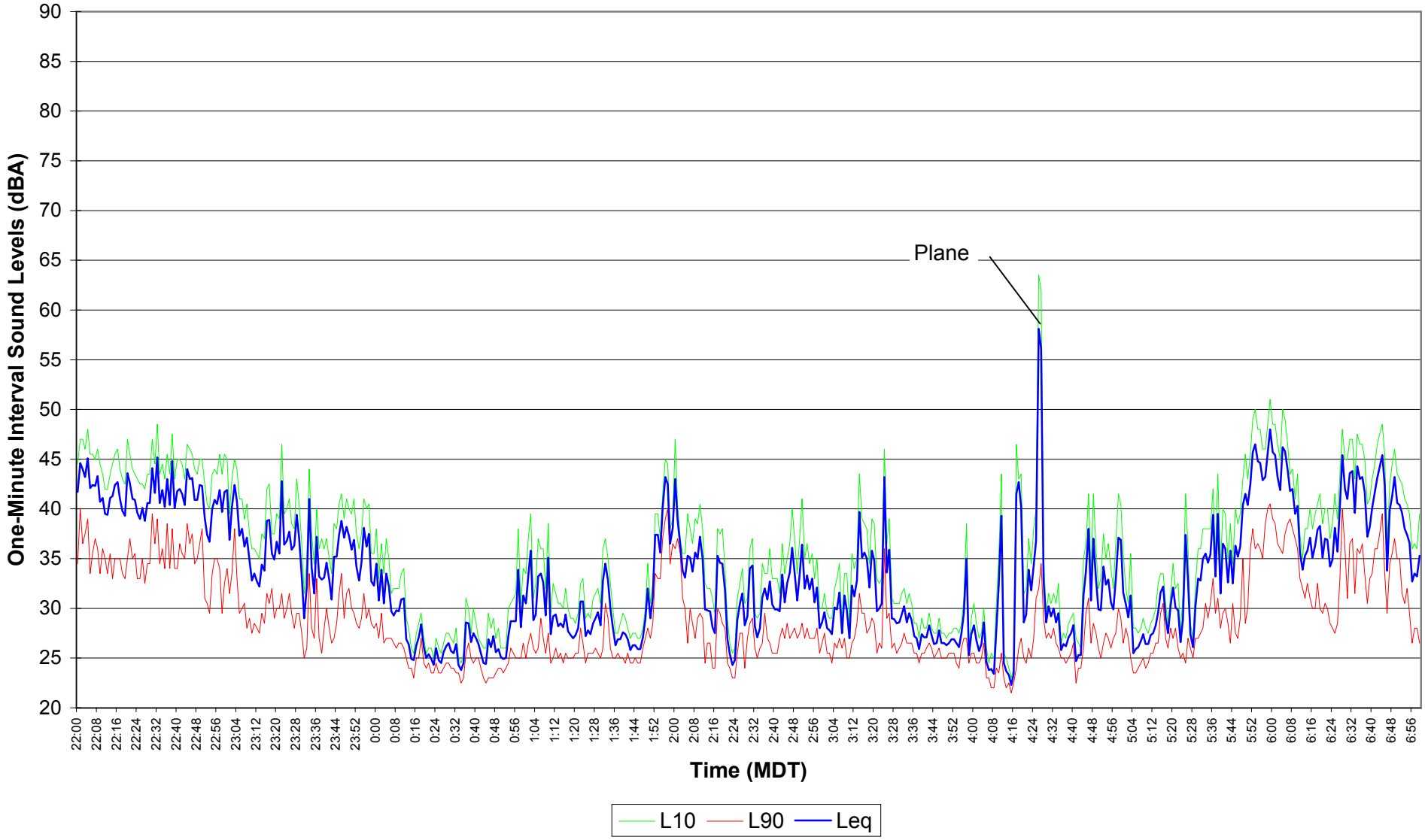


Figure E8.46
EnCana Rosebud
Site 8 Noise Survey
Dec. 08, 2004 07:00 - 14:29

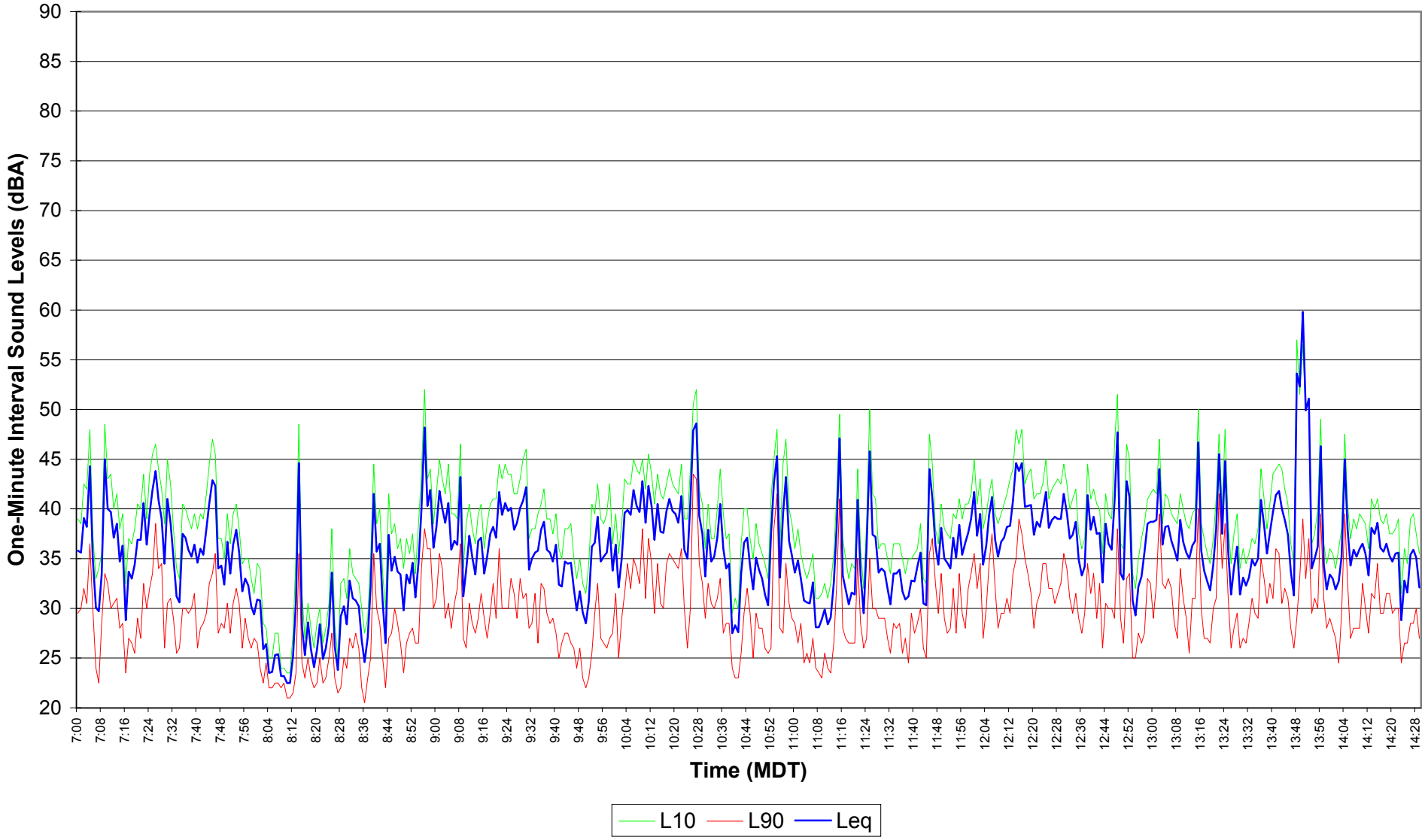


Figure E8.47
EnCana Rosebud
Site 8 Noise Survey
Dec. 08, 2004 14:30 - 21:59

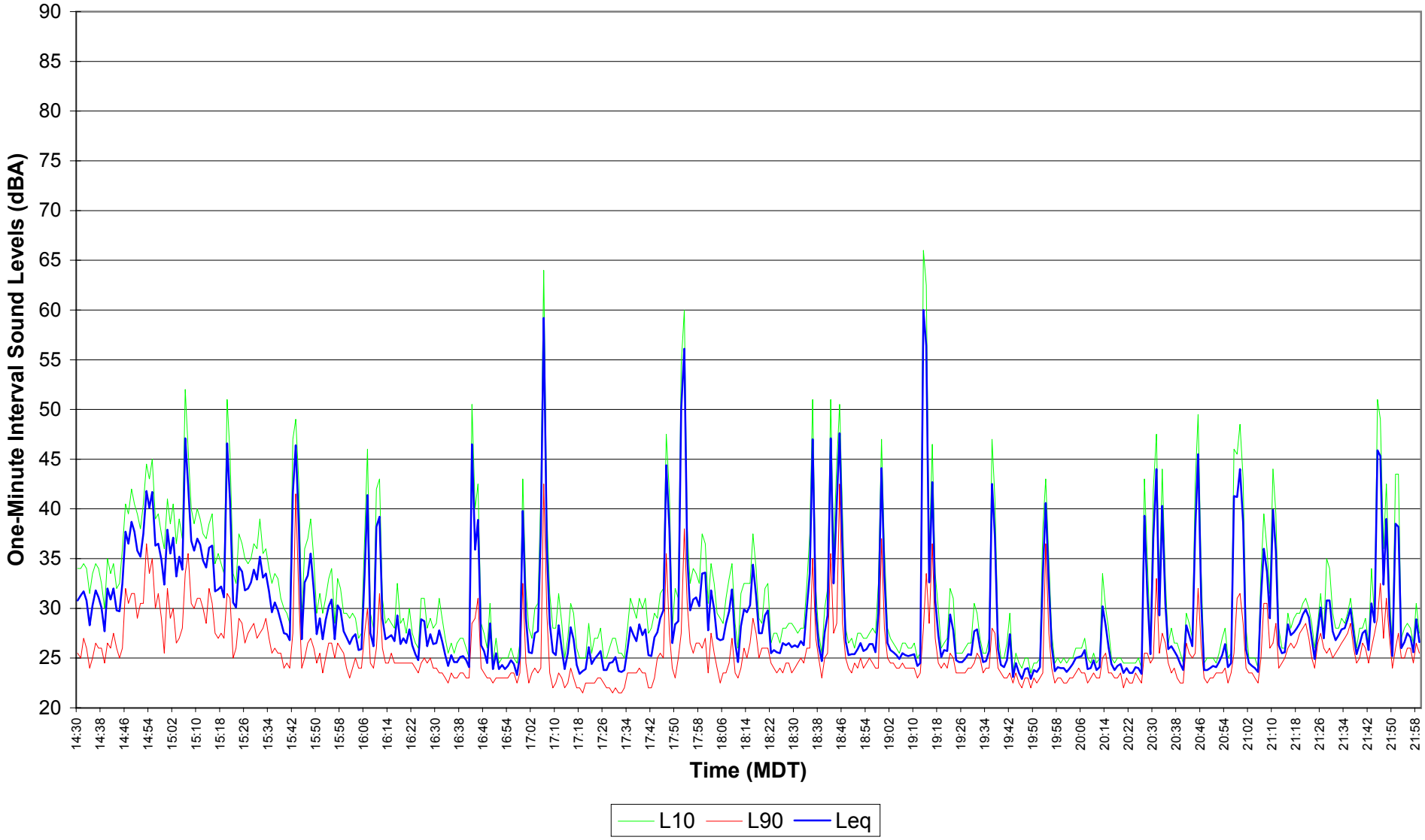


Figure E8.48
EnCana Rosebud
Site 8 Noise Survey
Dec. 08, 2004 - Dec. 09, 2004 22:00 - 06:59

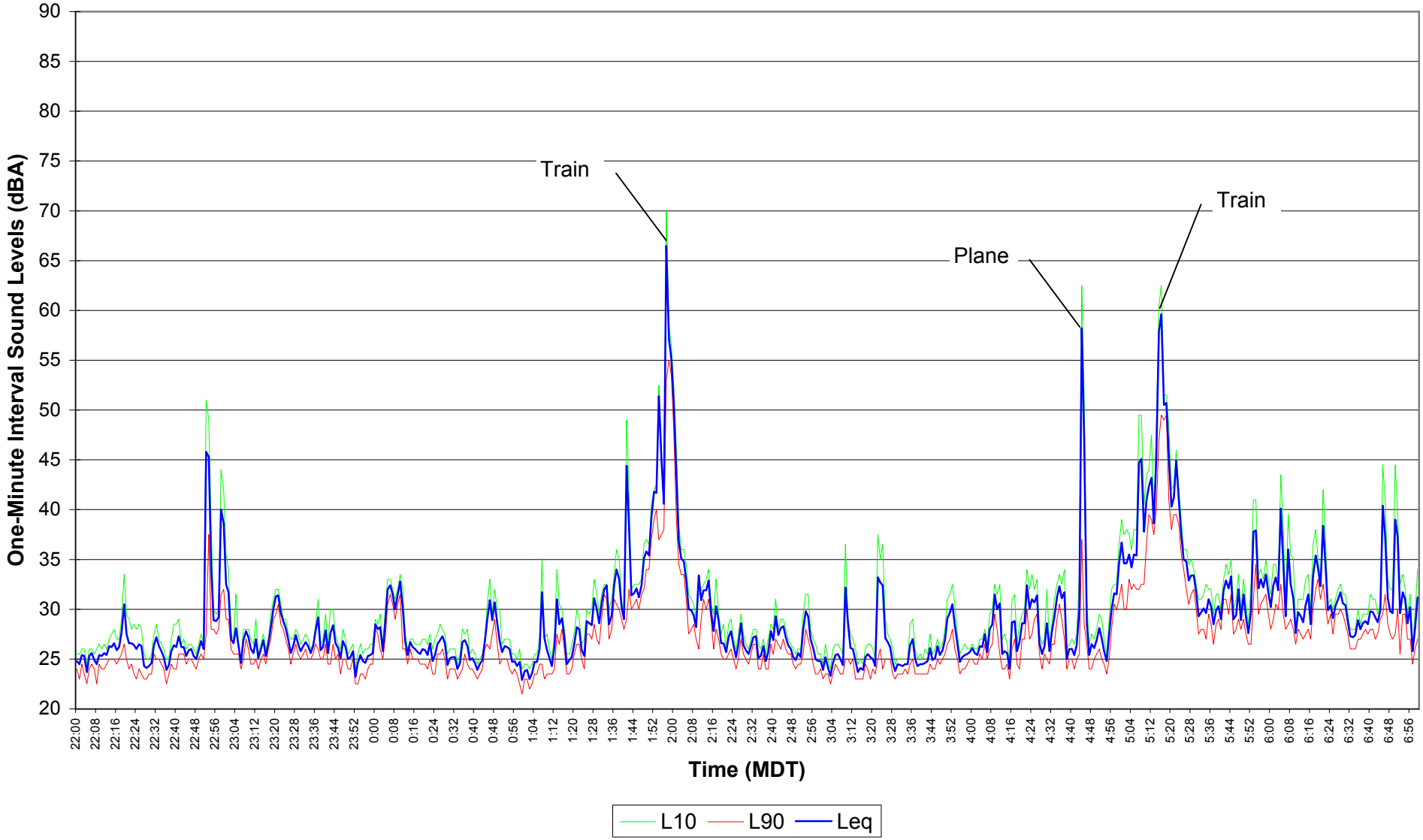


Figure E8.49
EnCana Rosebud
Site 8 Noise Survey
Dec. 09, 2004 07:00 - 14:29

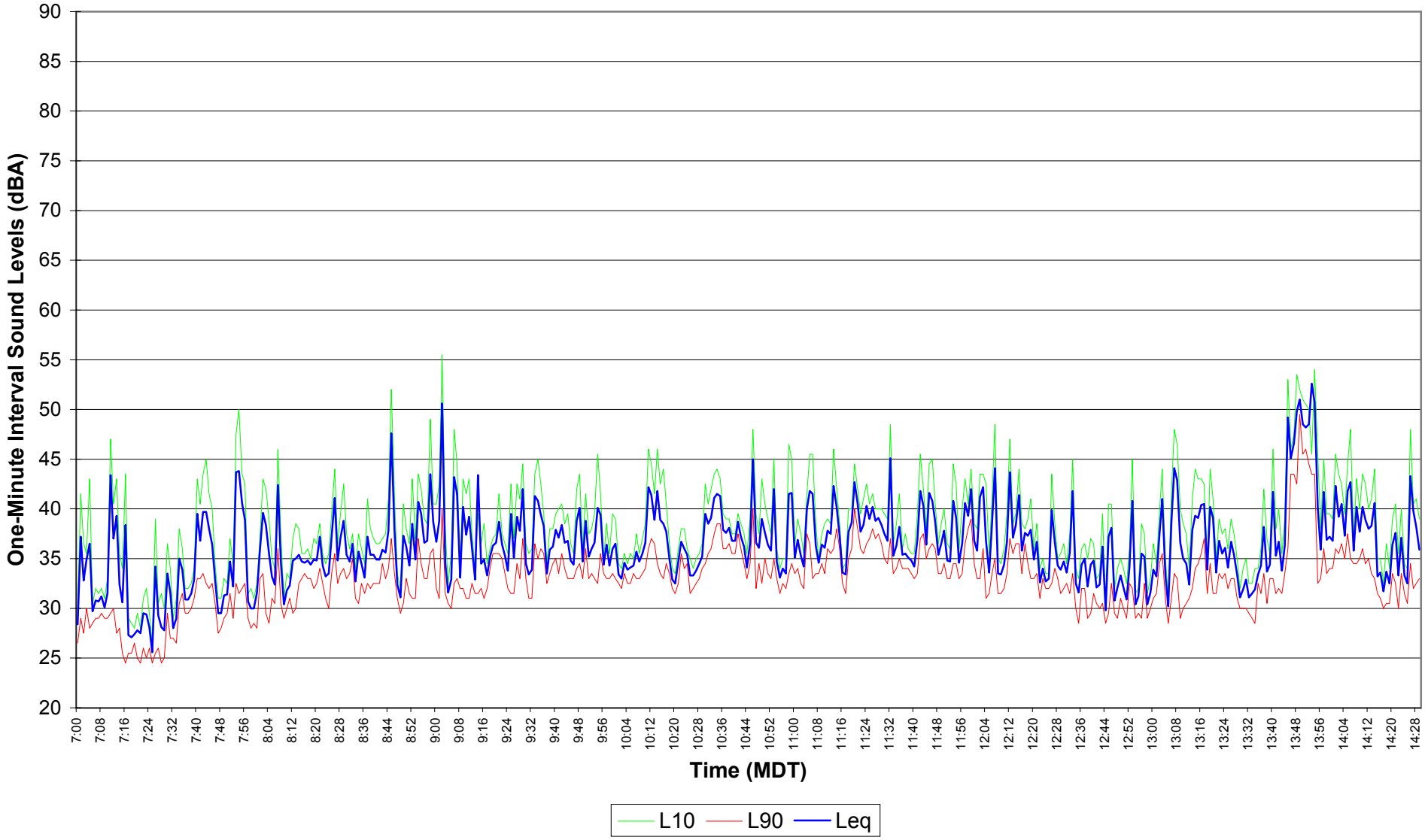


Figure E8.50
EnCana Rosebud
Site 8 Noise Survey
Dec. 09, 2004 14:30 - 21:59

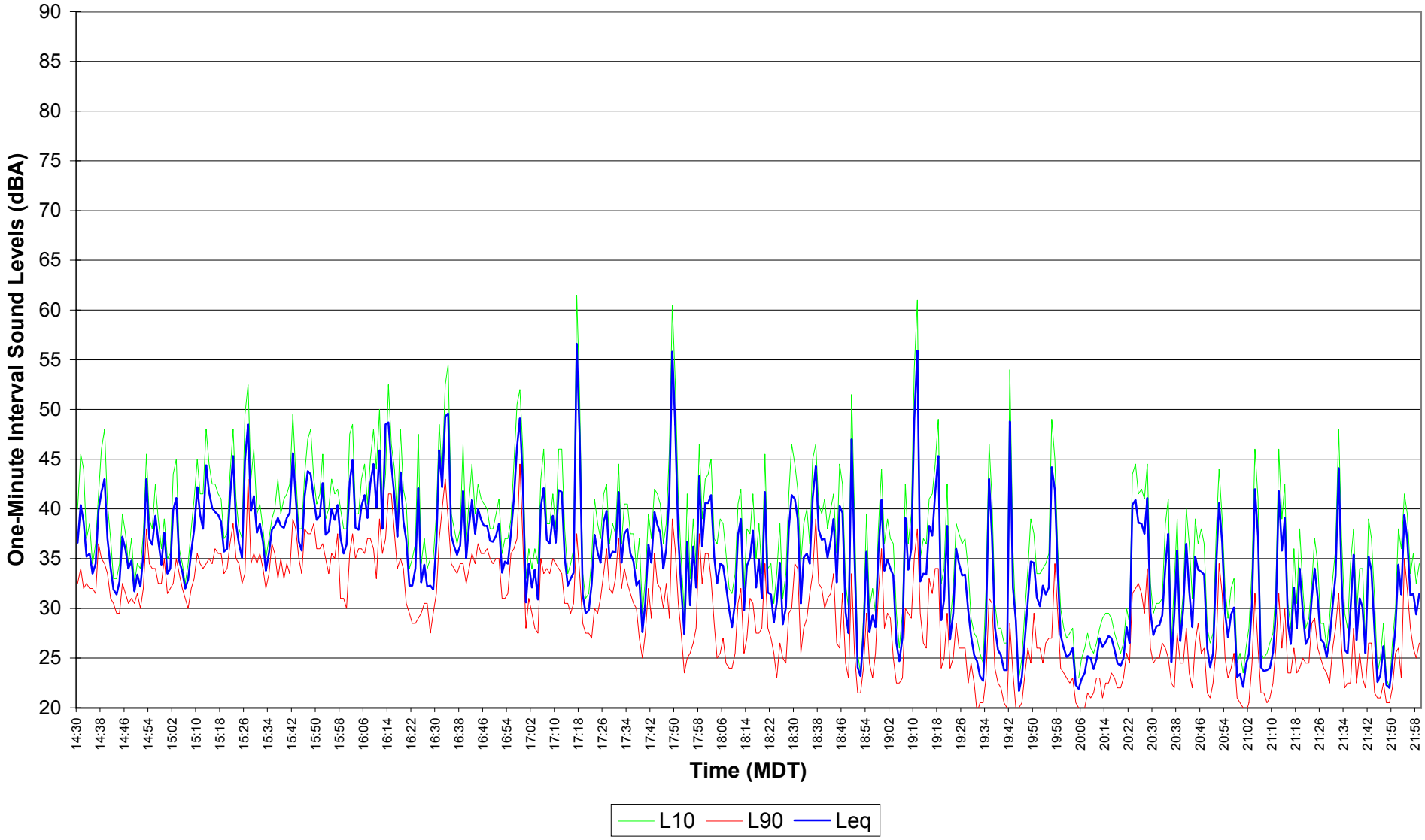


Figure E8.51
EnCana Rosebud
Site 8 Noise Survey
Dec. 09, 2004 - Dec. 10, 2004 22:00 - 06:59

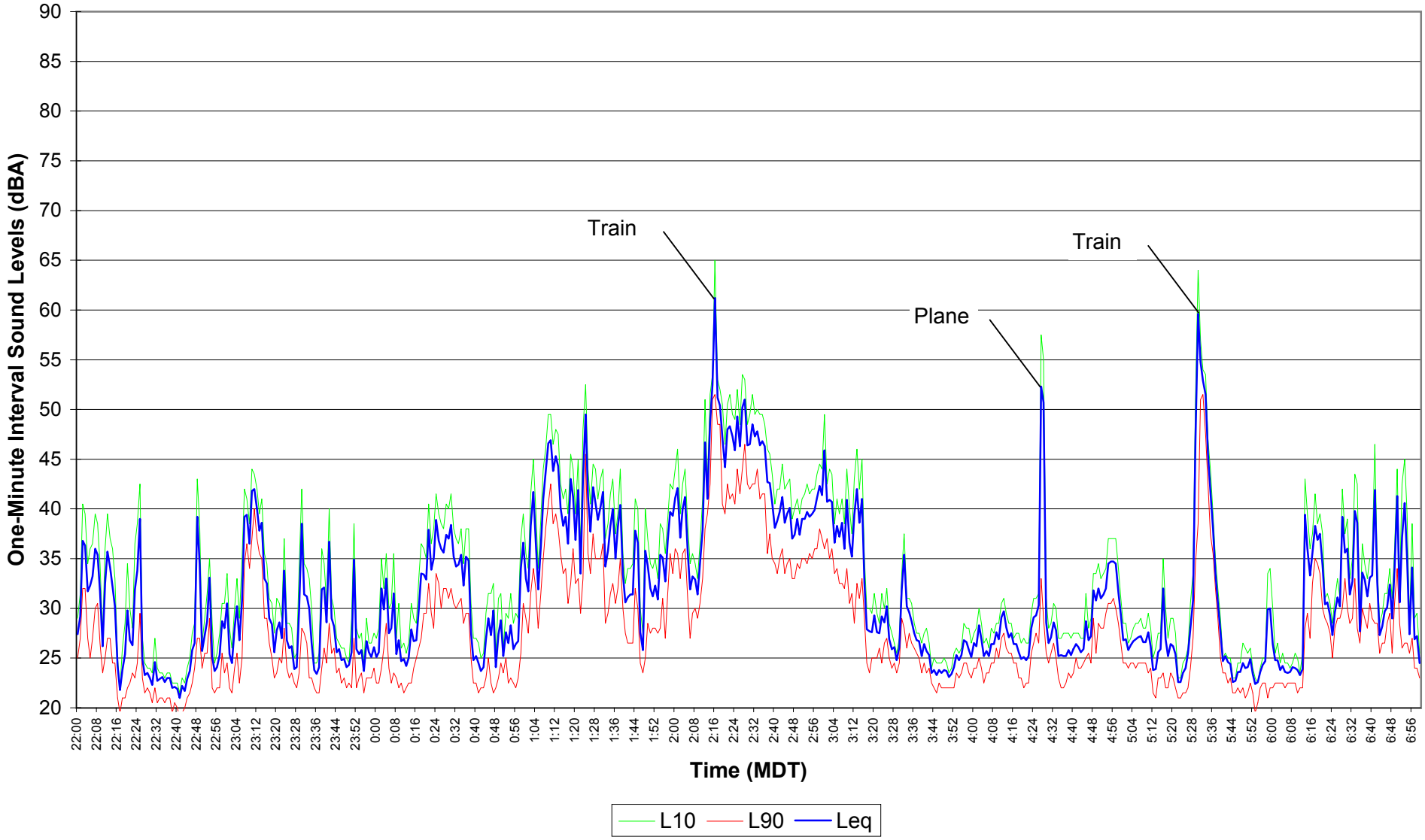


Figure E8.52
EnCana Rosebud
Site 8 Noise Survey
Dec. 10, 2004 07:00 - 14:29

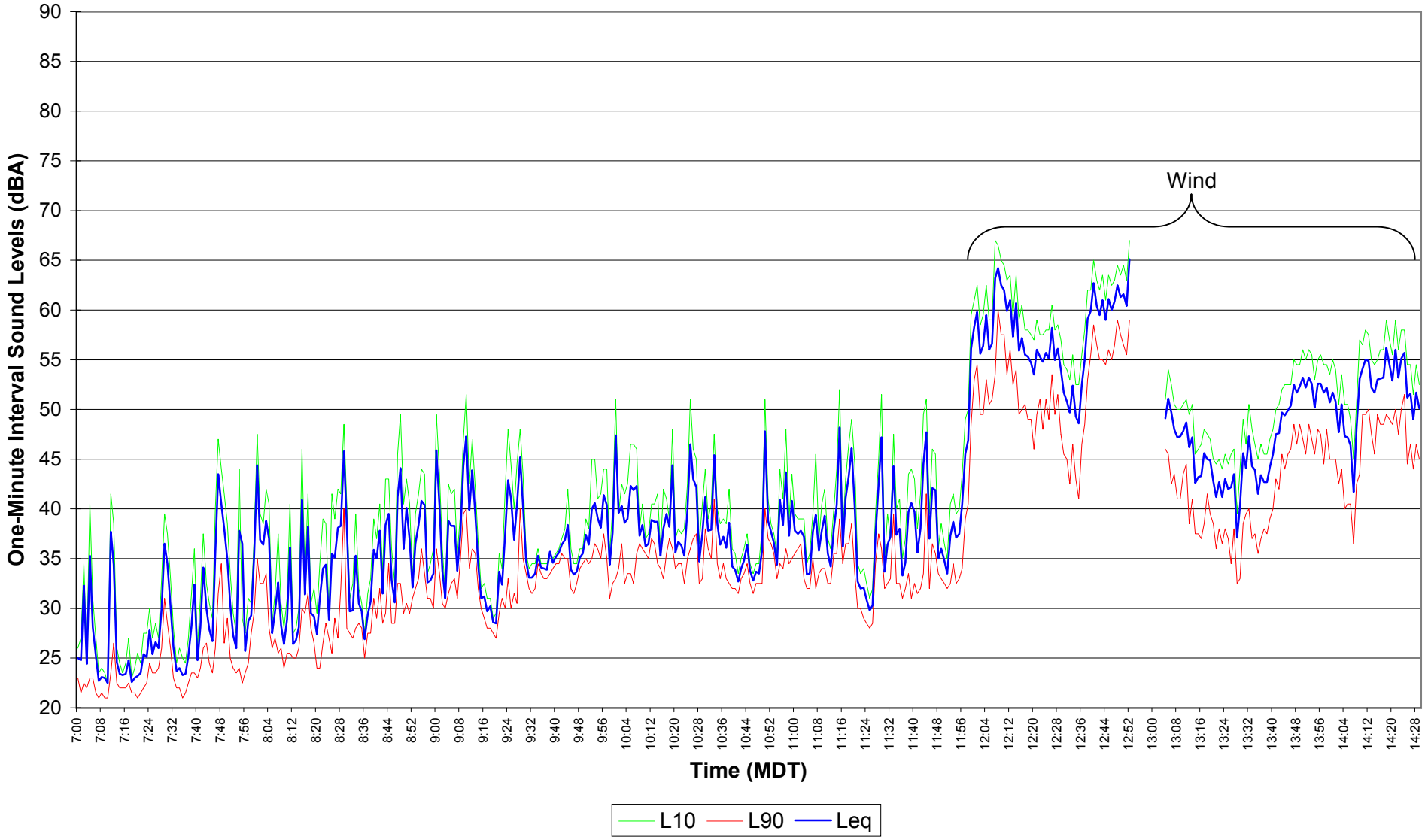


Figure E8.53
EnCana Rosebud
Site 8 Noise Survey
Dec. 10, 2004 14:30 - 21:59

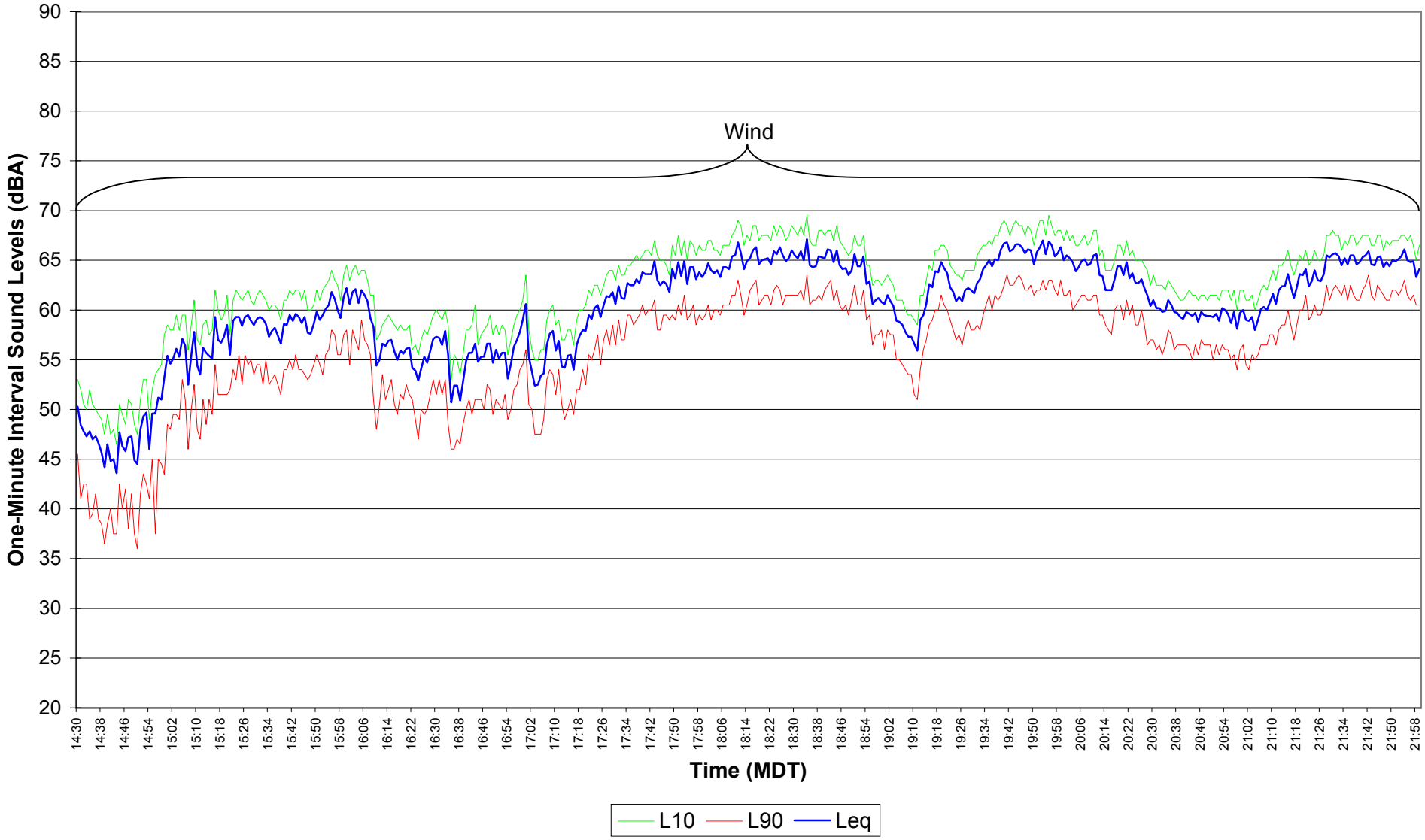


Figure E8.54
EnCana Rosebud
Site 8 Noise Survey
Dec. 10, 2004 - Dec. 11, 2004 22:00 - 06:59

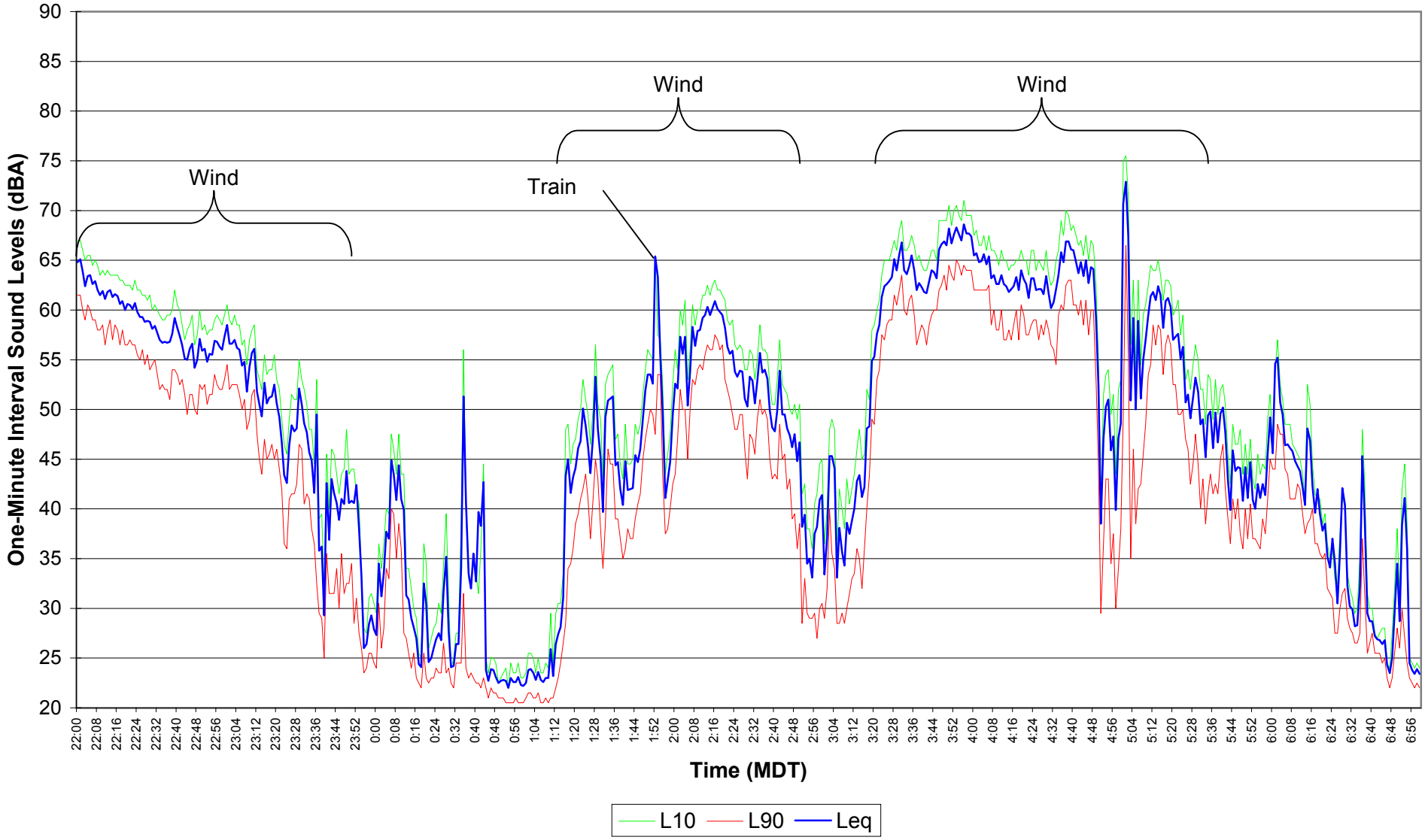


Figure E8.55

EnCana Rosebud

Site 8 Noise Survey

Dec. 11, 2004 07:00 - 14:29

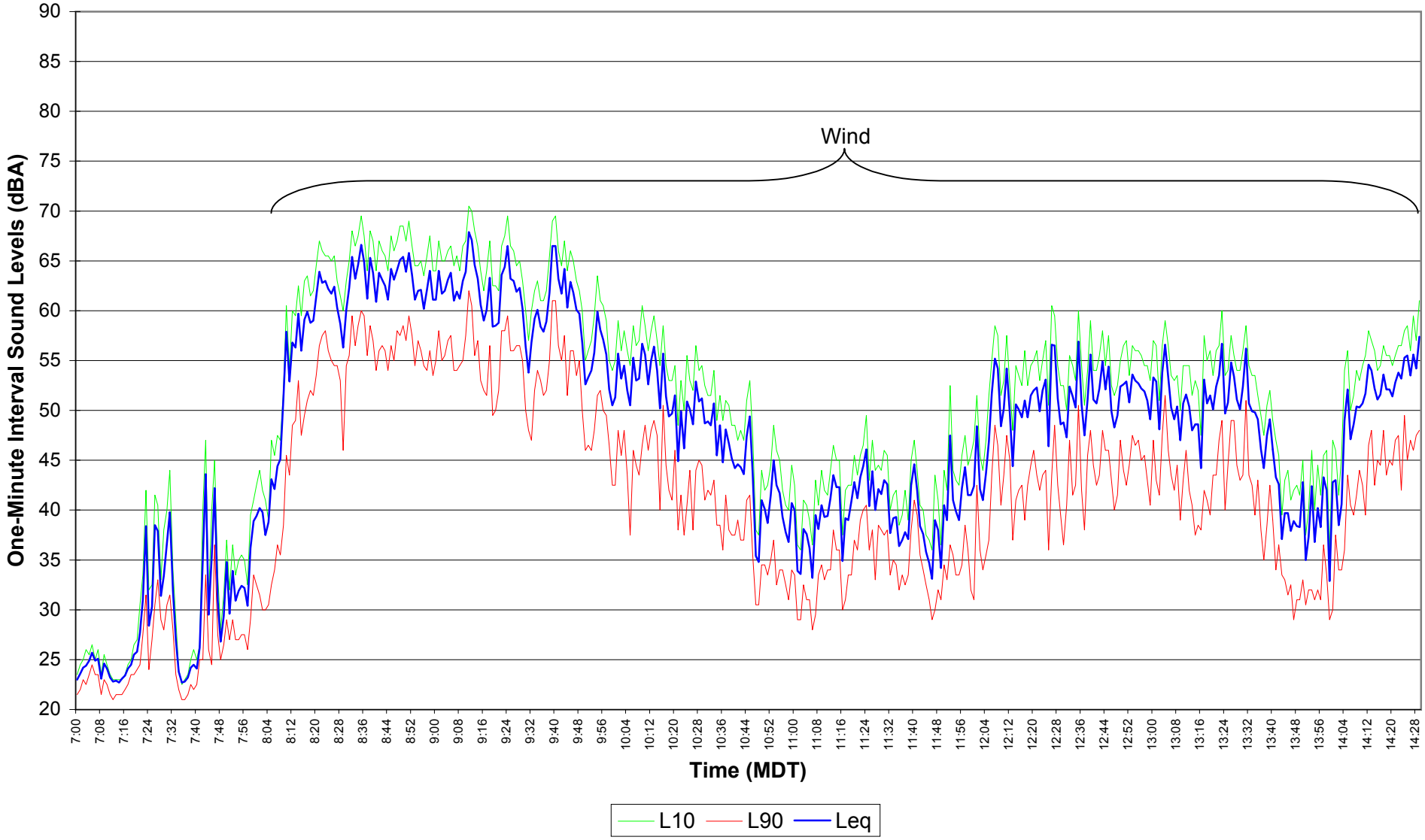


Figure E8.56
EnCana Rosebud
Site 8 Noise Survey
Dec. 11, 2004 14:30 - 21:59

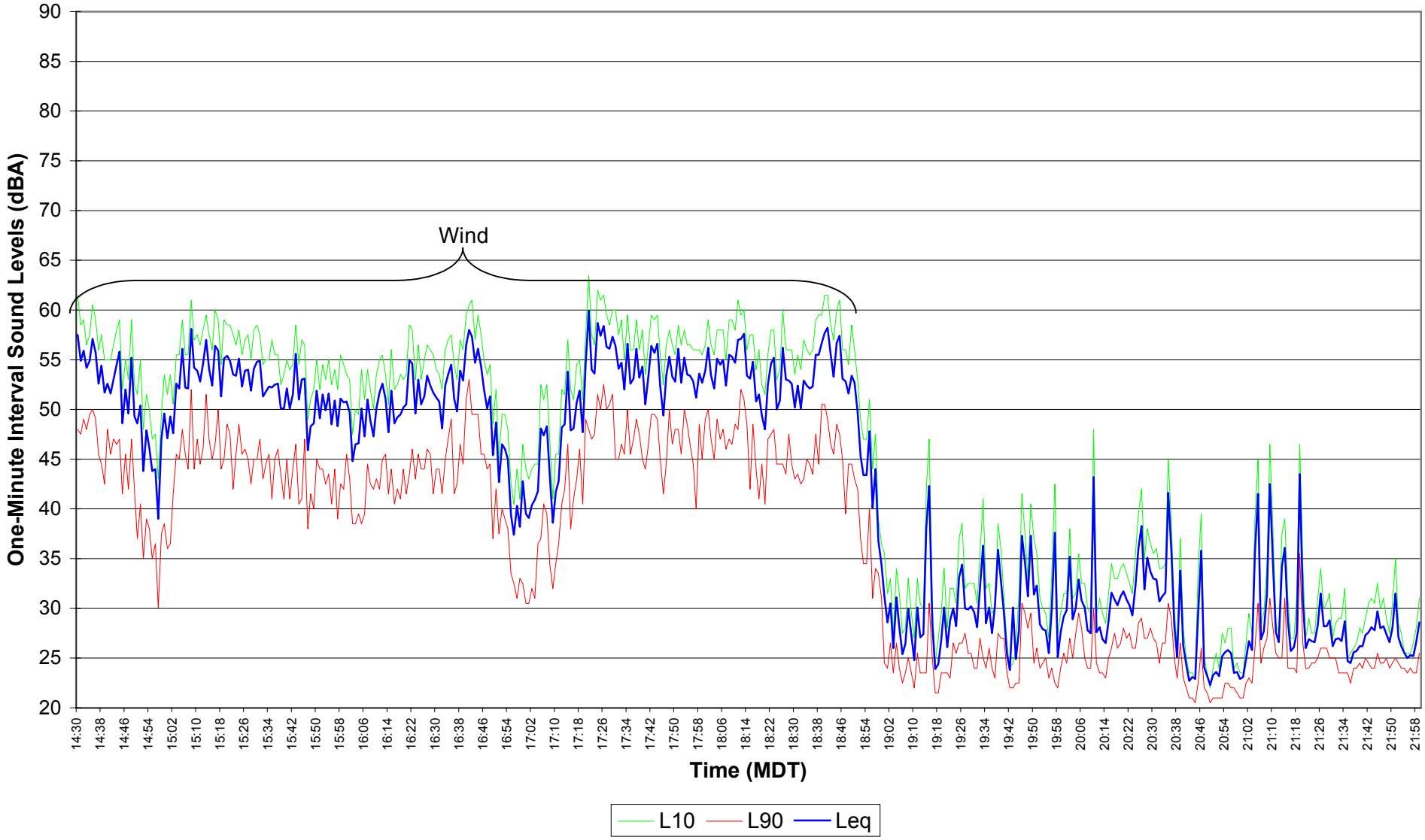


Figure E8.57
EnCana Rosebud
Site 8 Noise Survey
Dec. 11, 2004 - Dec. 12, 2004 22:00 - 06:59

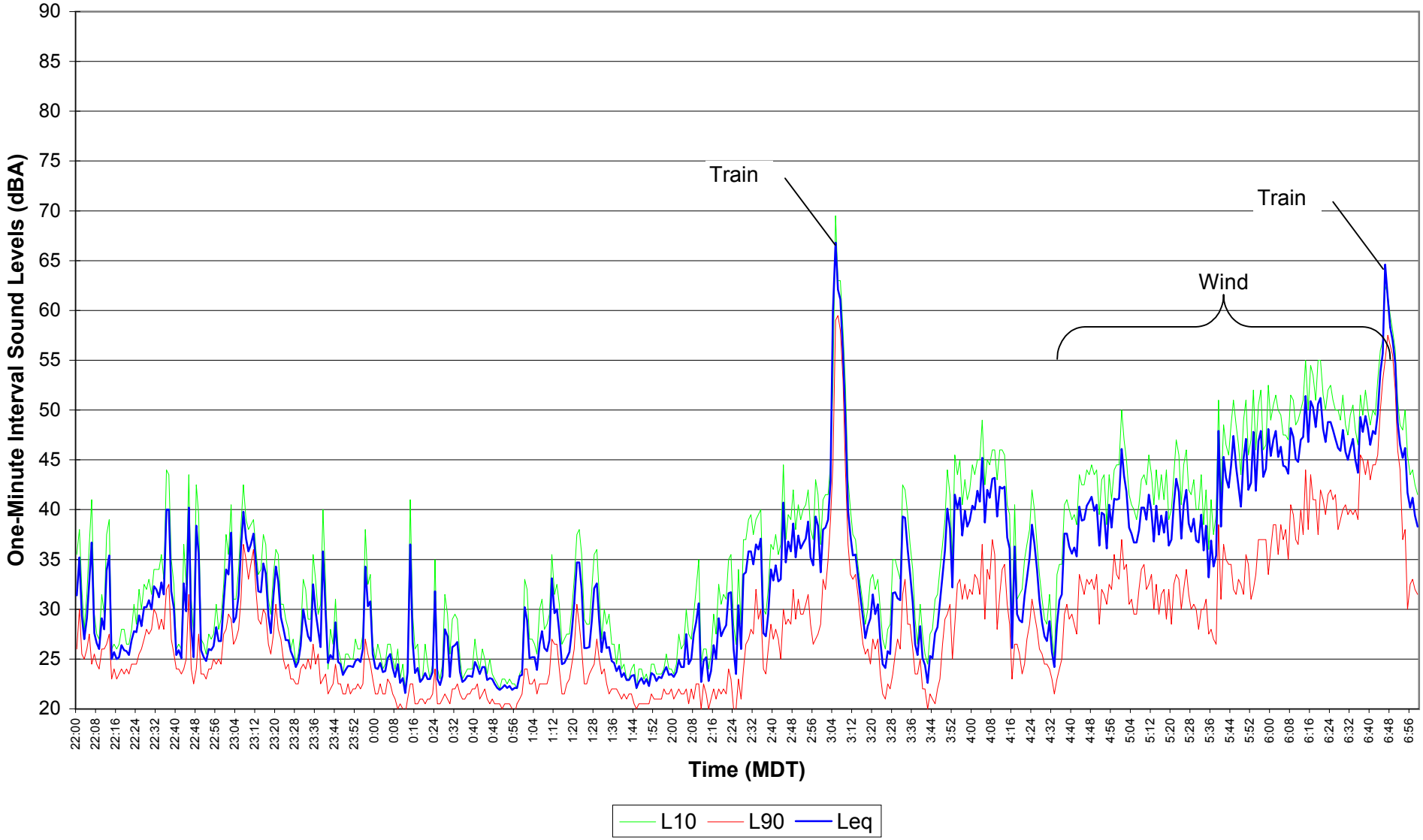


Figure E8.58
EnCana Rosebud
Site 8 Noise Survey
Dec. 12, 2004 07:00 - 14:29

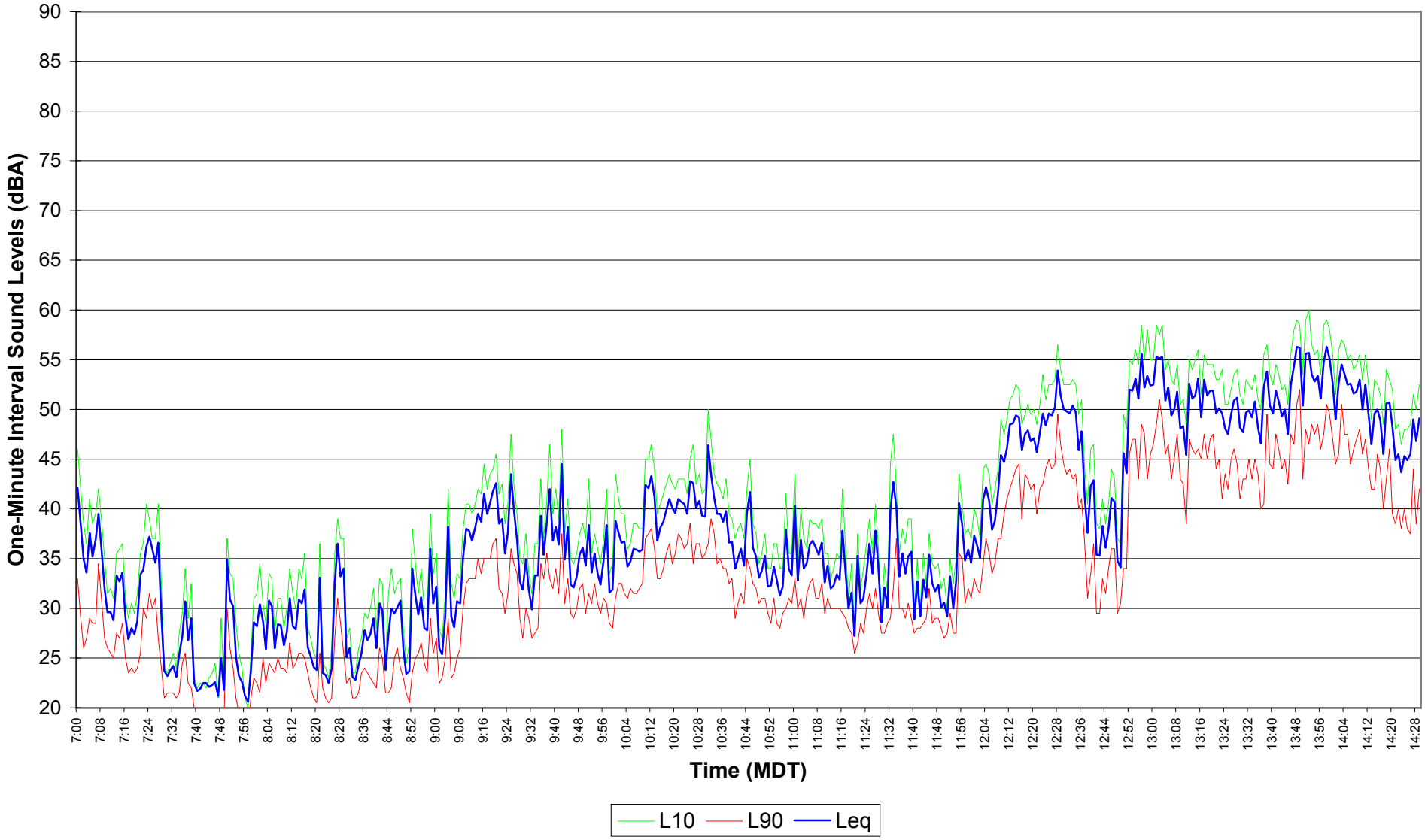


Figure E8.59
EnCana Rosebud
Site 8 Noise Survey
Dec. 12, 2004 14:30 - 21:59

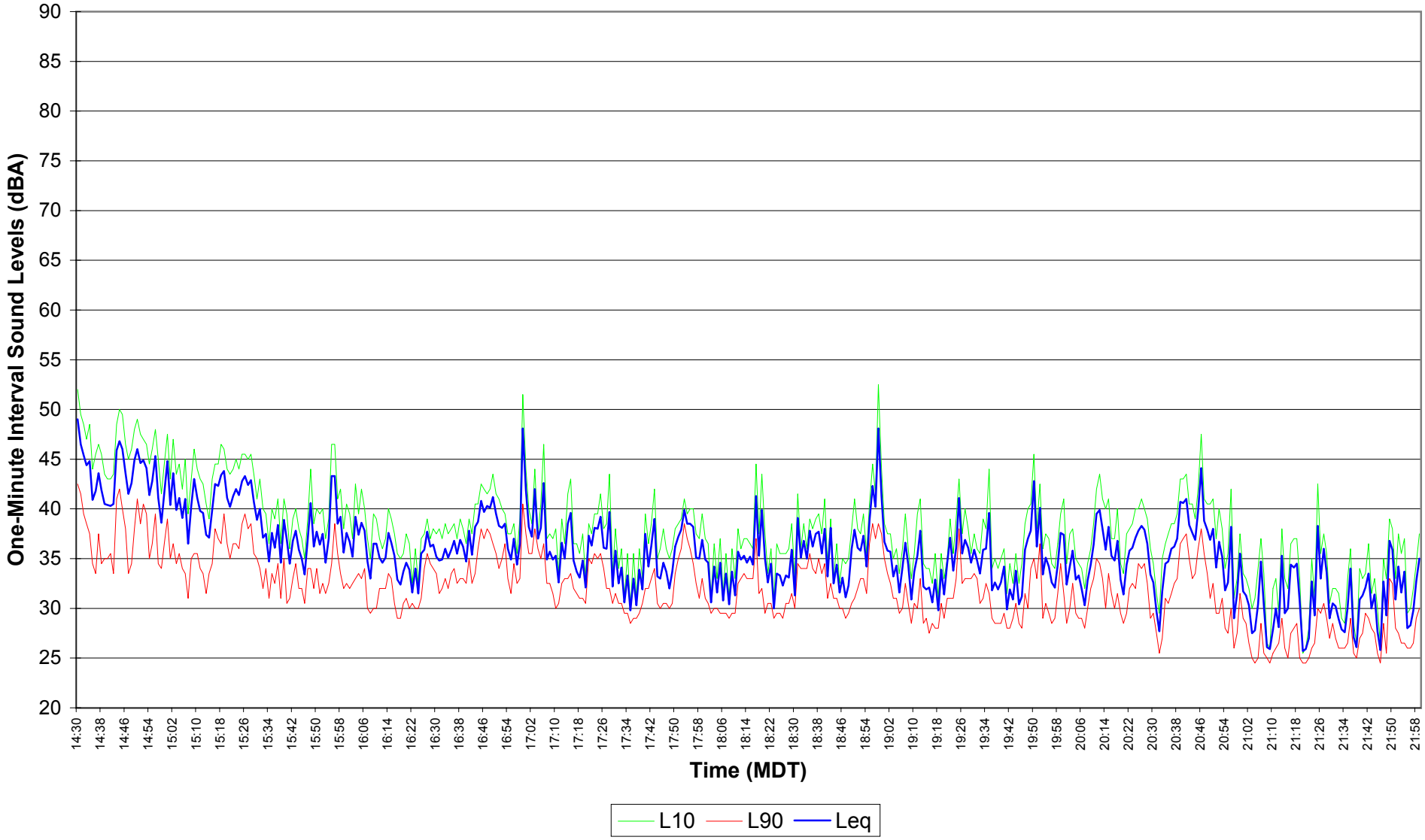


Figure E8.60
EnCana Rosebud
Site 8 Noise Survey
Dec. 12, 2004 - Dec. 13, 2004 22:00 - 06:59

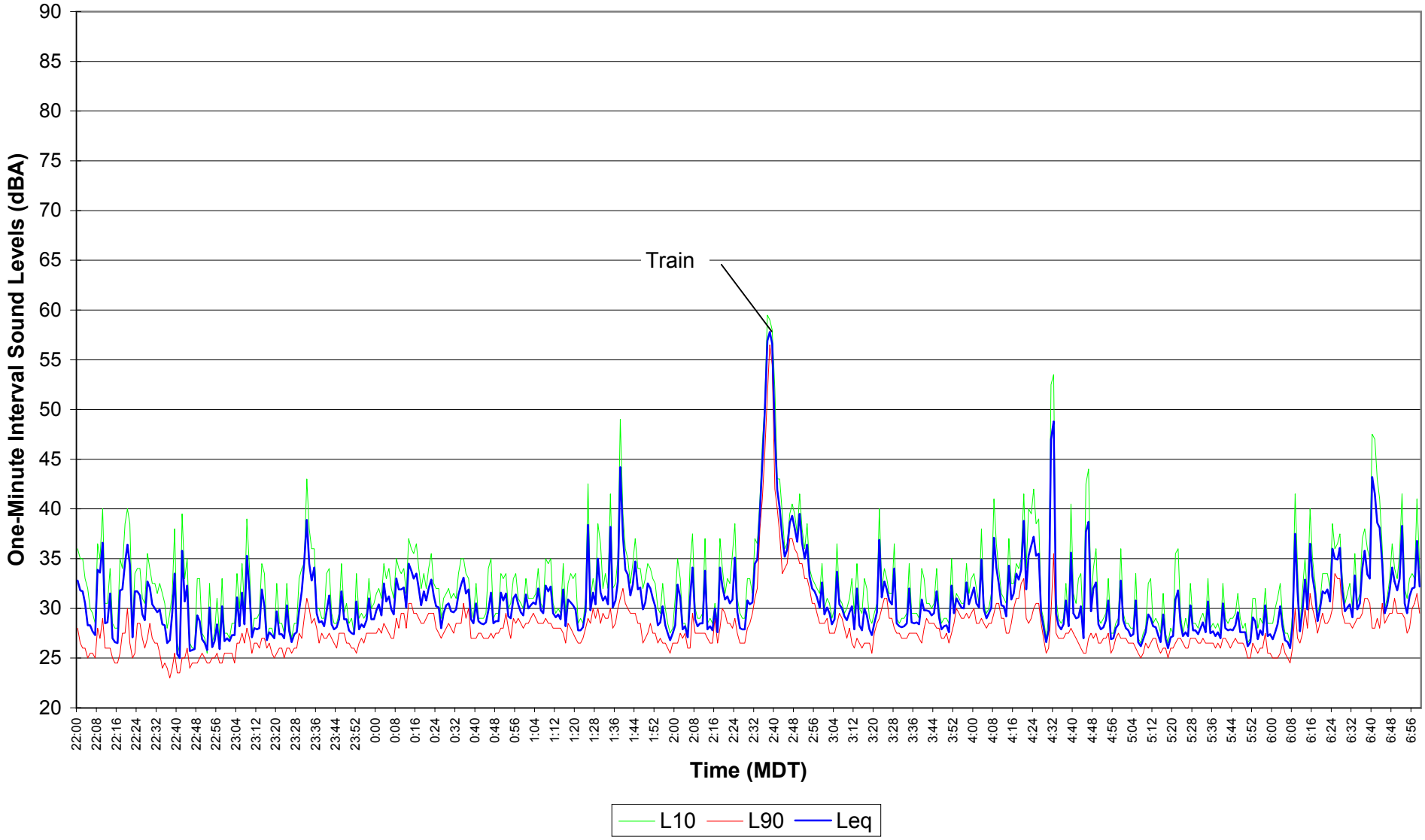


Figure E8.61
EnCana Rosebud
Site 8 Noise Survey
Dec. 13, 2004 07:00 - 14:29

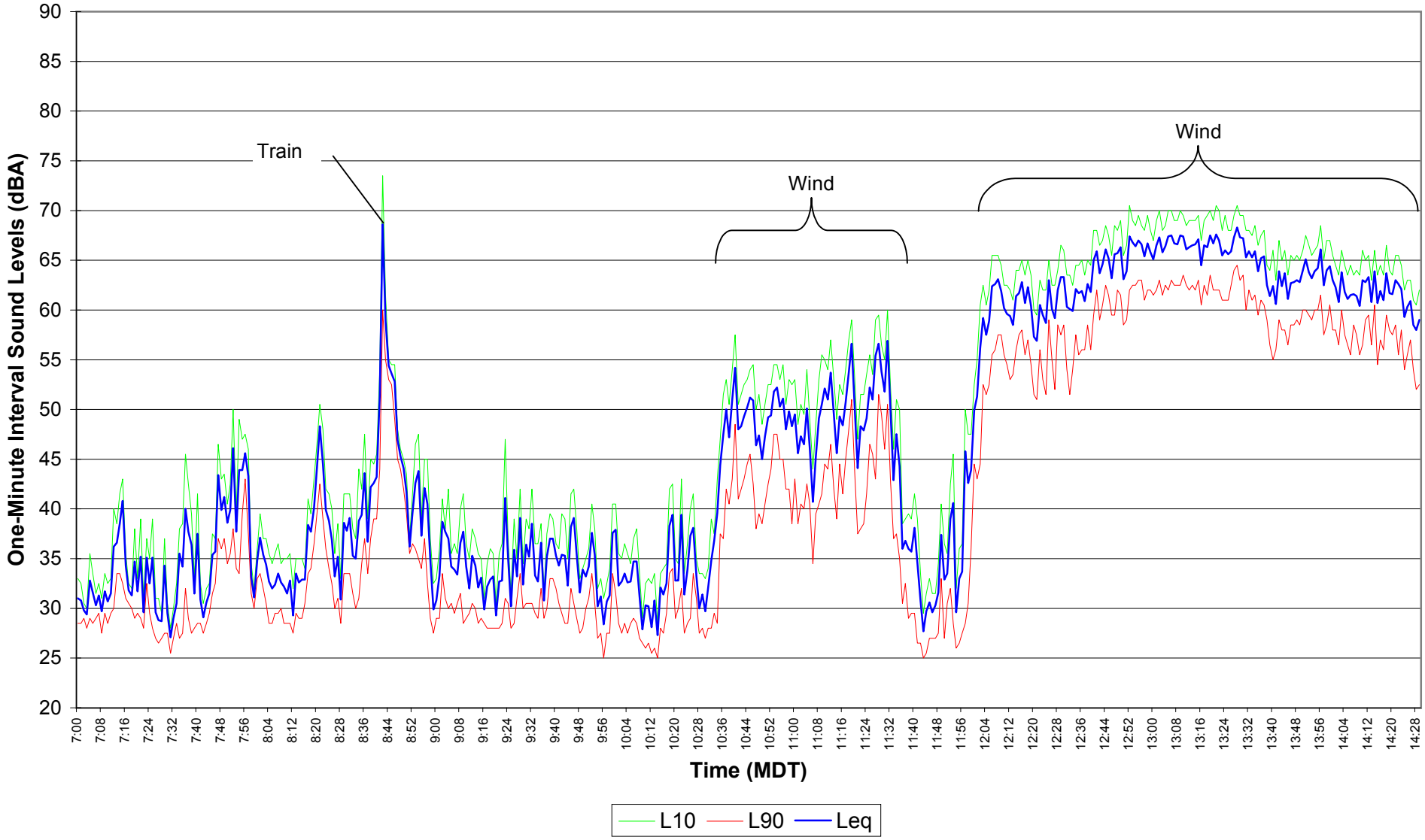


Figure E8.62
EnCana Rosebud
Site 8 Noise Survey
Dec. 13, 2004 14:30 - 21:59

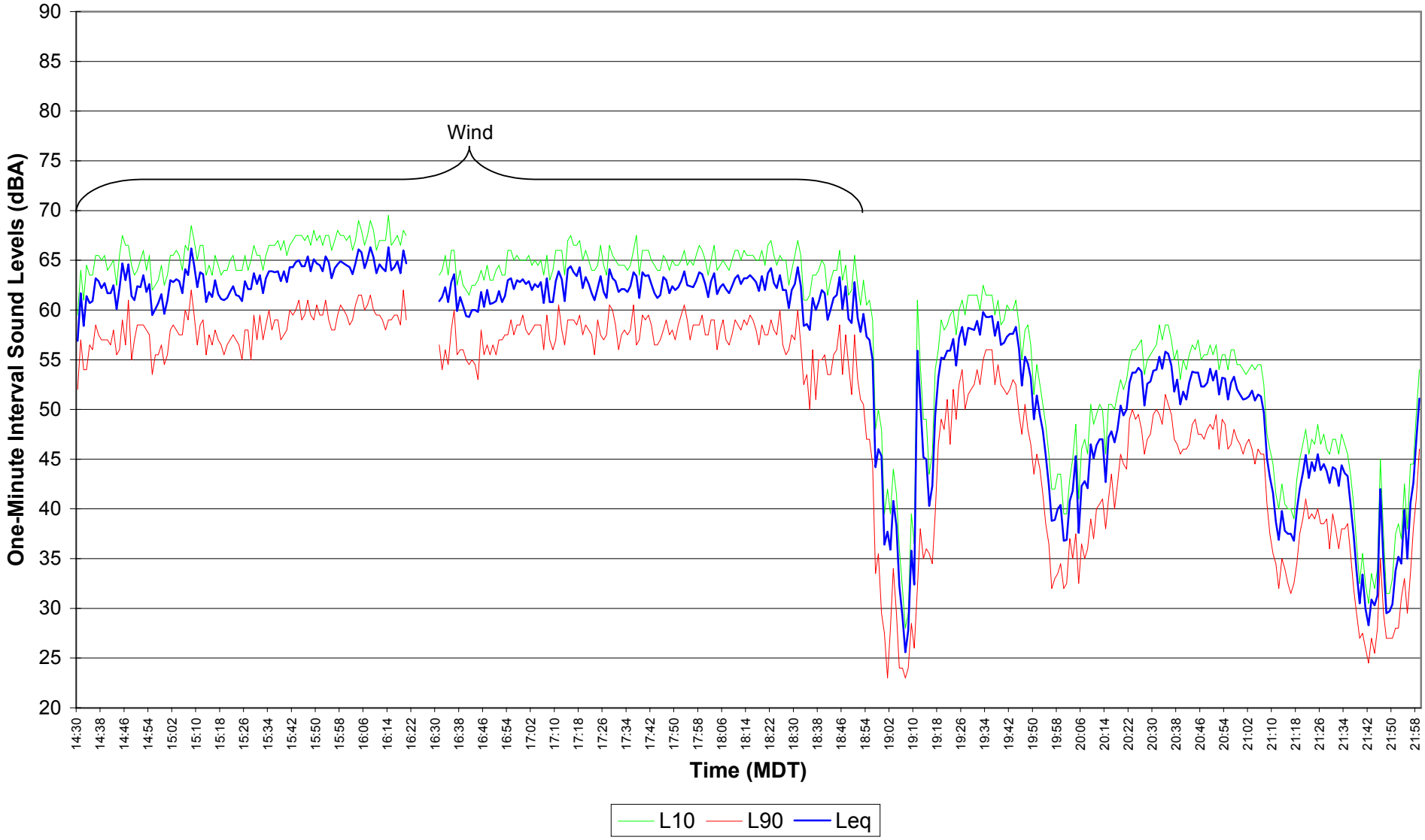


Figure E8.63
EnCana Rosebud
Site 8 Noise Survey
Dec. 13, 2004 - Dec. 14, 2004 22:00 - 06:59

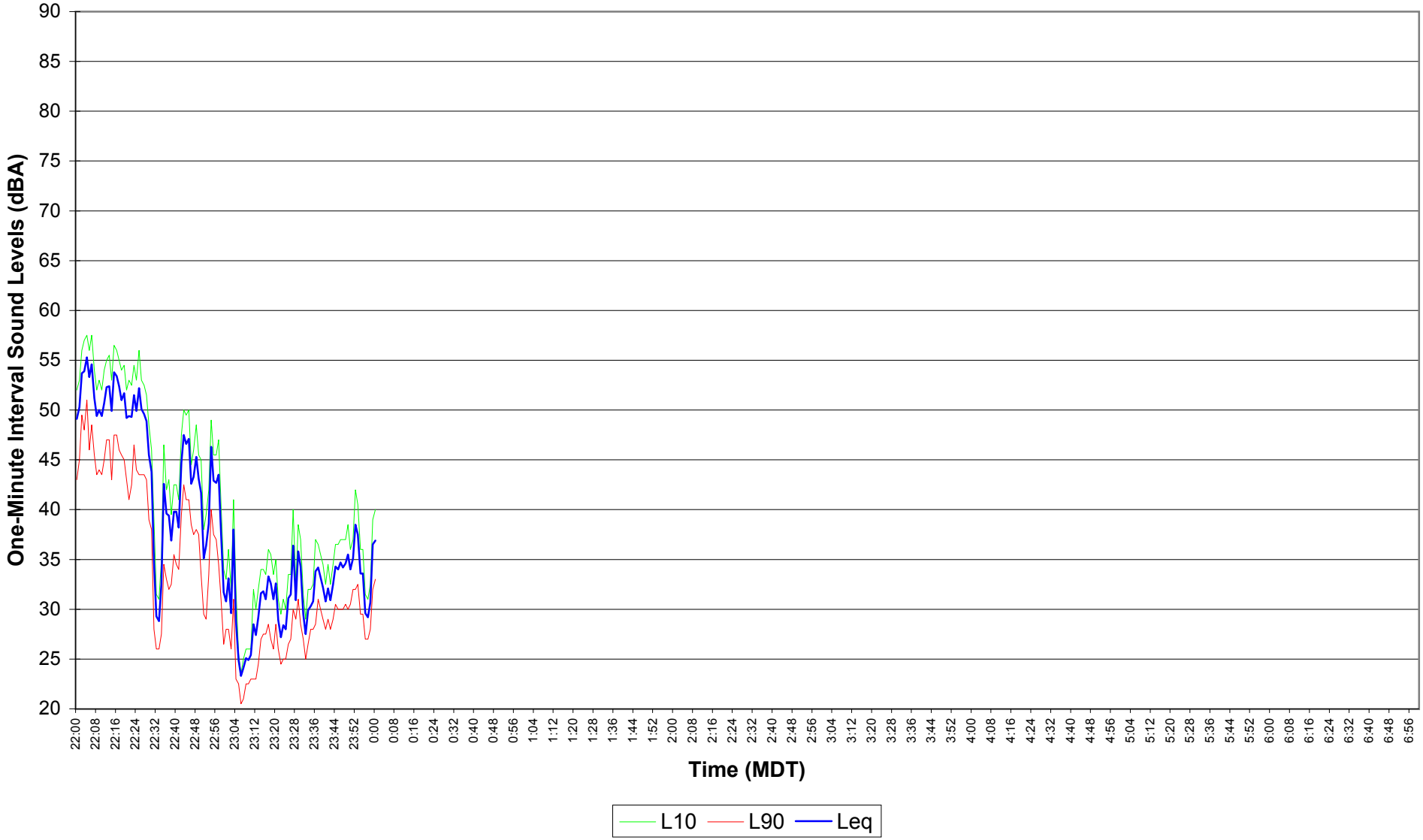


Figure E8.74
EnCana Rosebud
Site 8 Noise Survey
Dec. 17, 2004 14:30 - 21:59

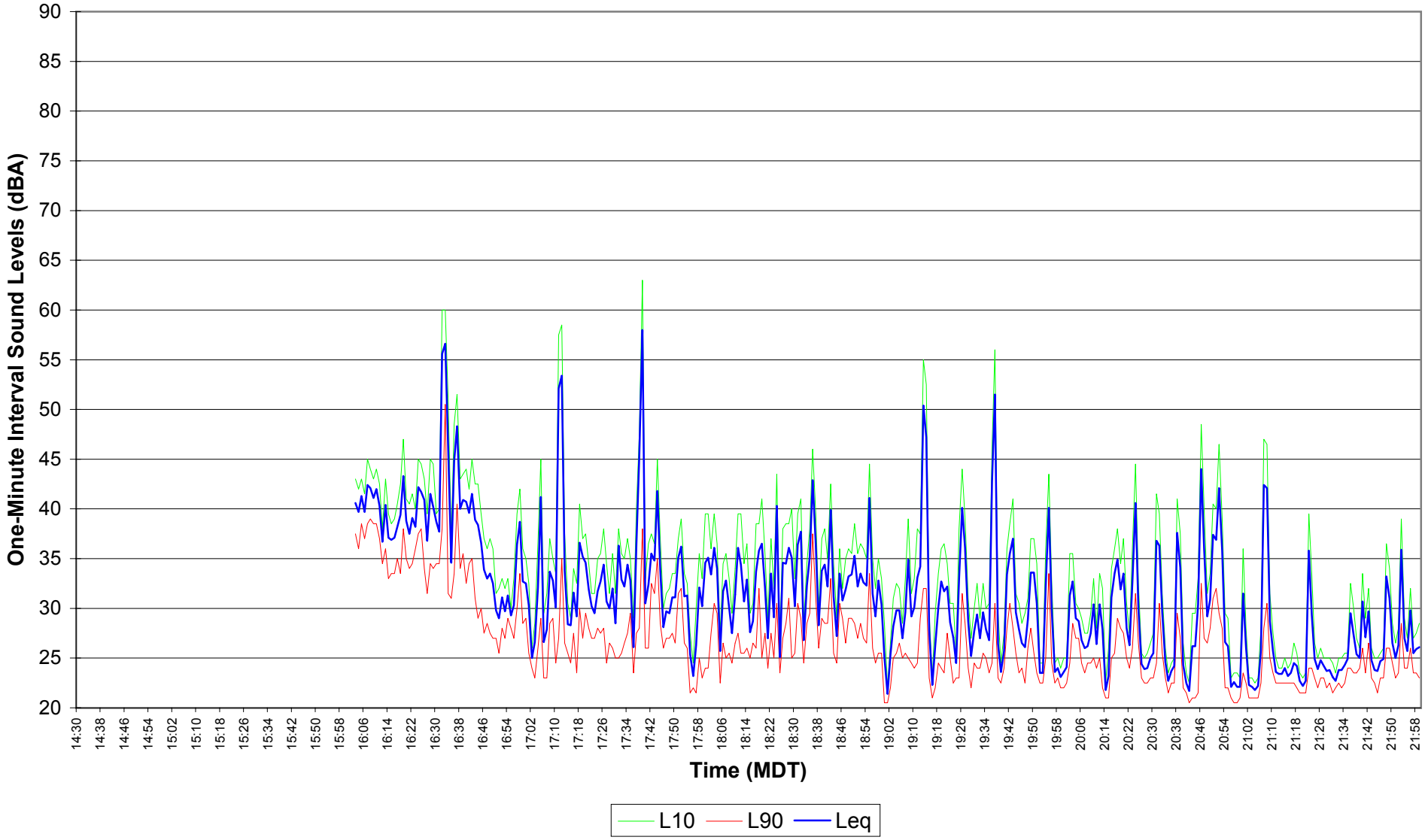


Figure E8.75
EnCana Rosebud
Site 8 Noise Survey
Dec. 17, 2004 - Dec. 18, 2004 22:00 - 06:59

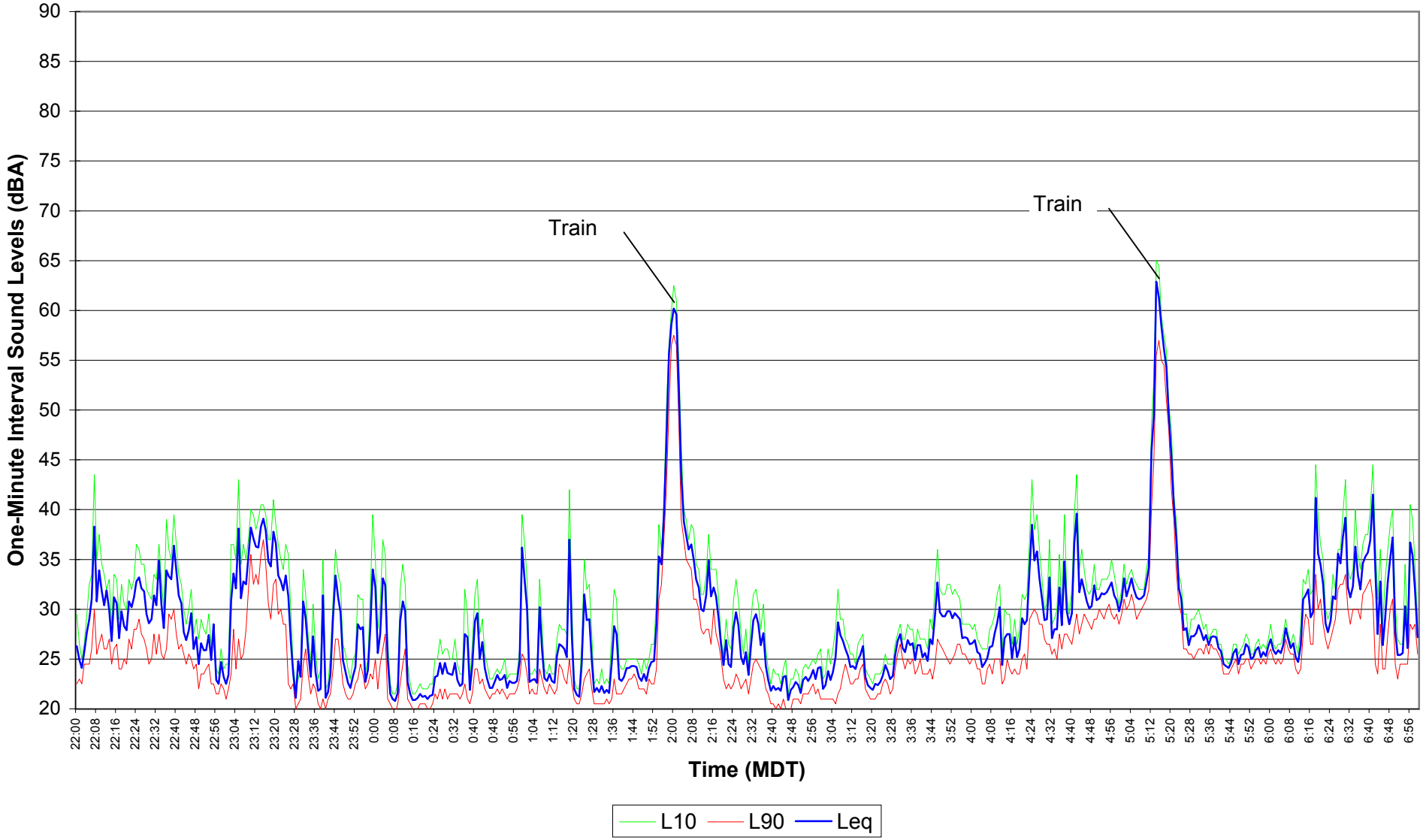


Figure E8.76
EnCana Rosebud
Site 8 Noise Survey
Dec. 18, 2004 07:00 - 14:29

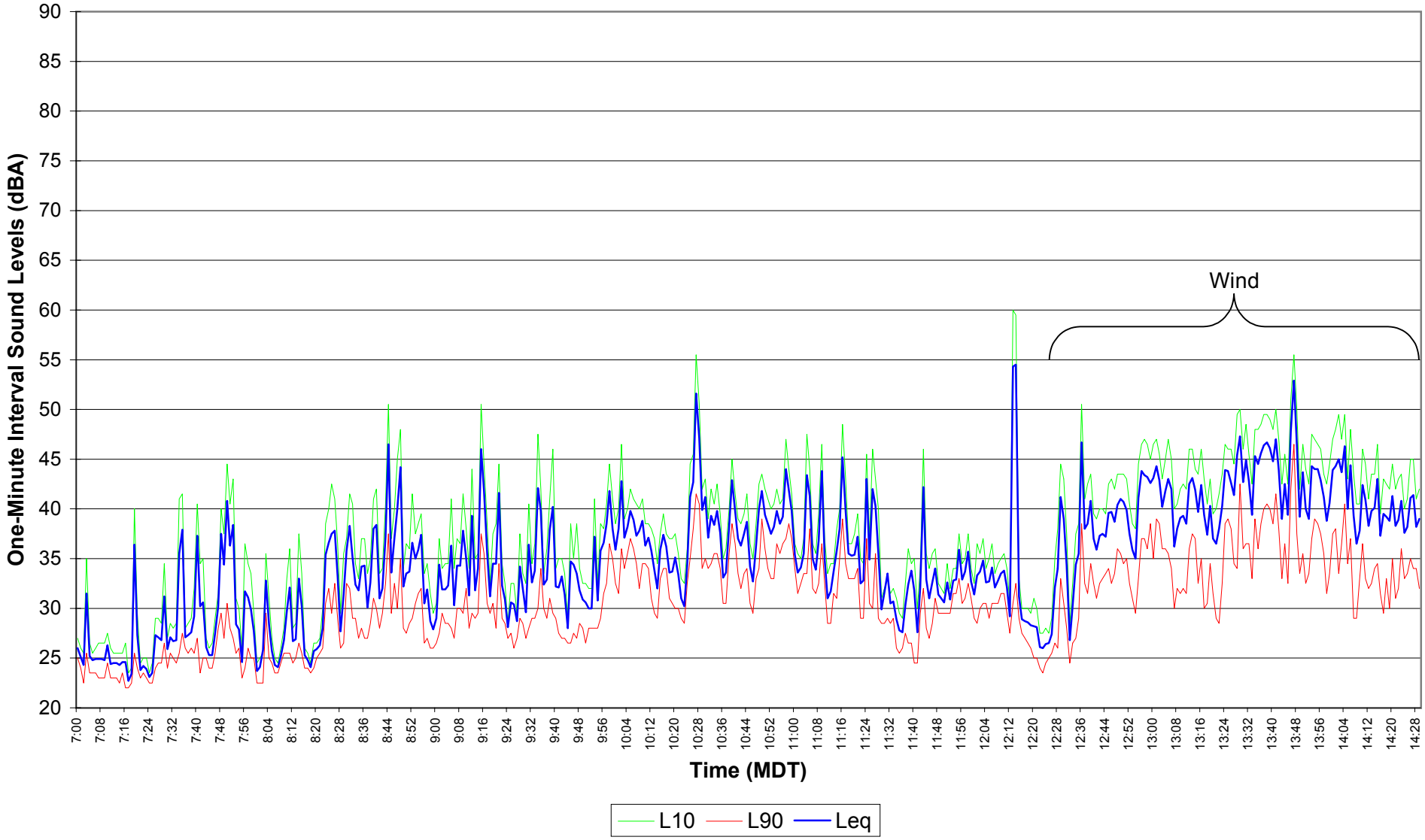


Figure E8.77
EnCana Rosebud
Site 8 Noise Survey
Dec. 18, 2004 14:30 - 21:59

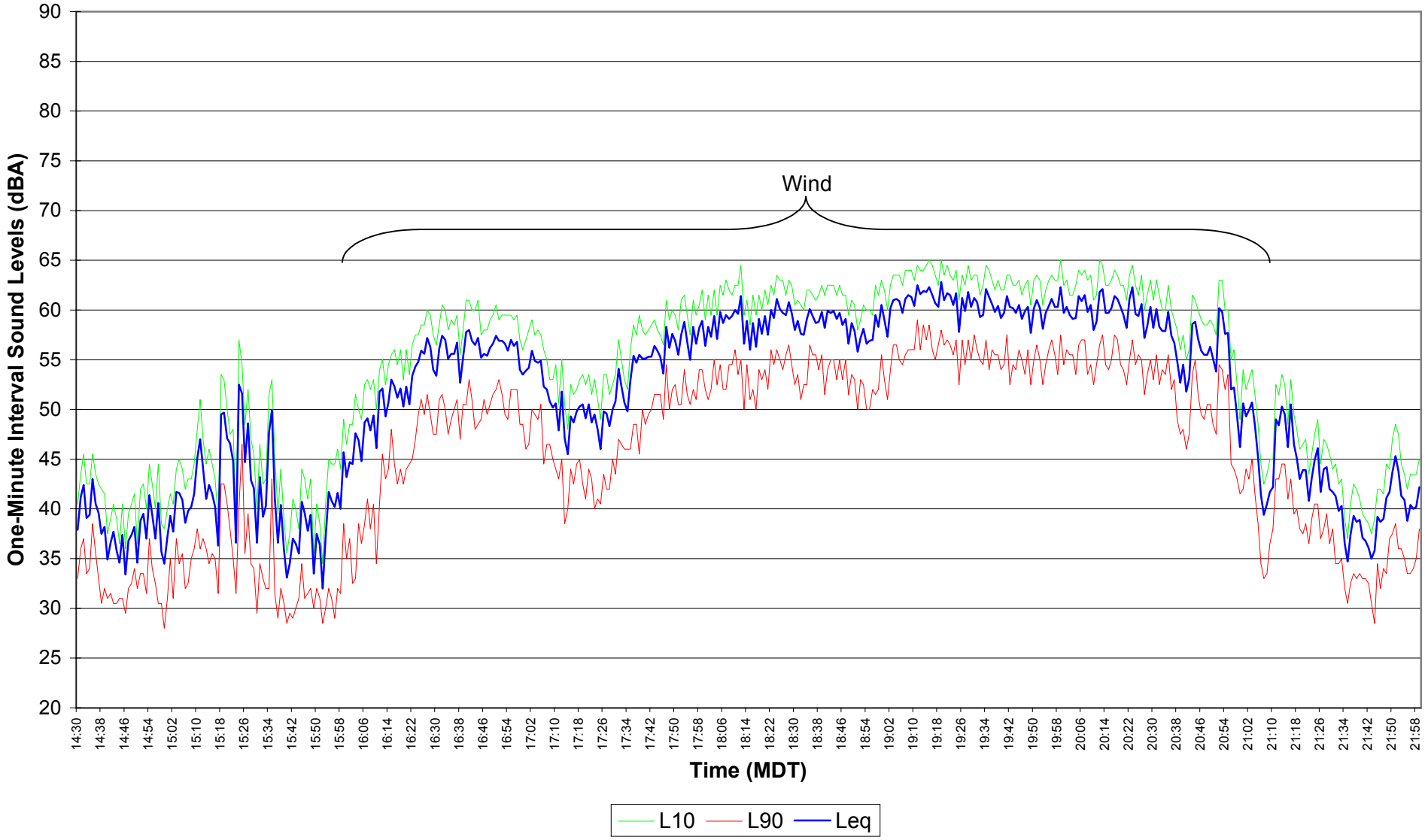


Figure E8.78
EnCana Rosebud
Site 8 Noise Survey
Dec 18, 2004 - Dec 19, 2004 22:00 - 06:59

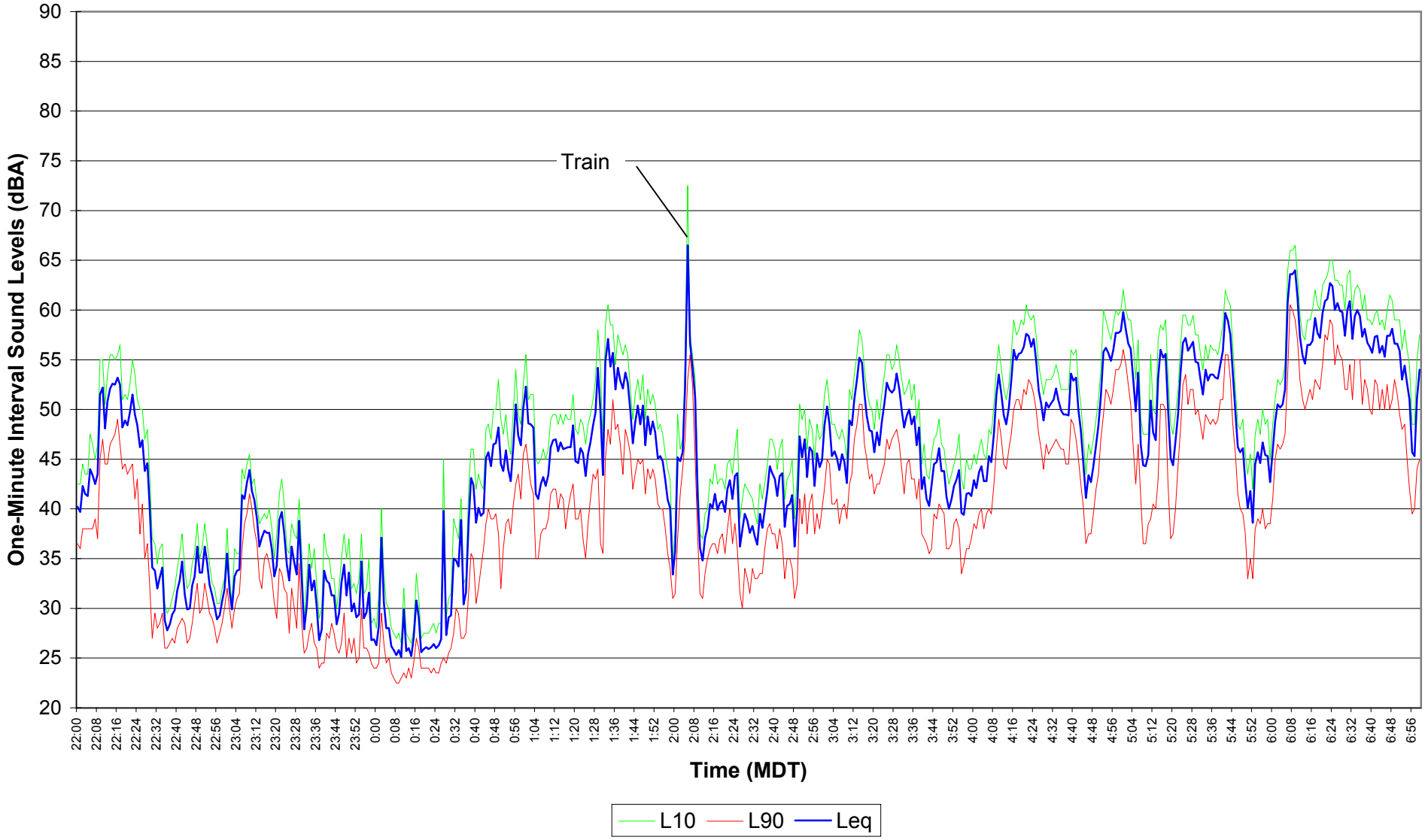


Figure E8.79
EnCana Rosebud
Site 8 Noise Survey
Dec. 19, 2004 07:00 - 14:29

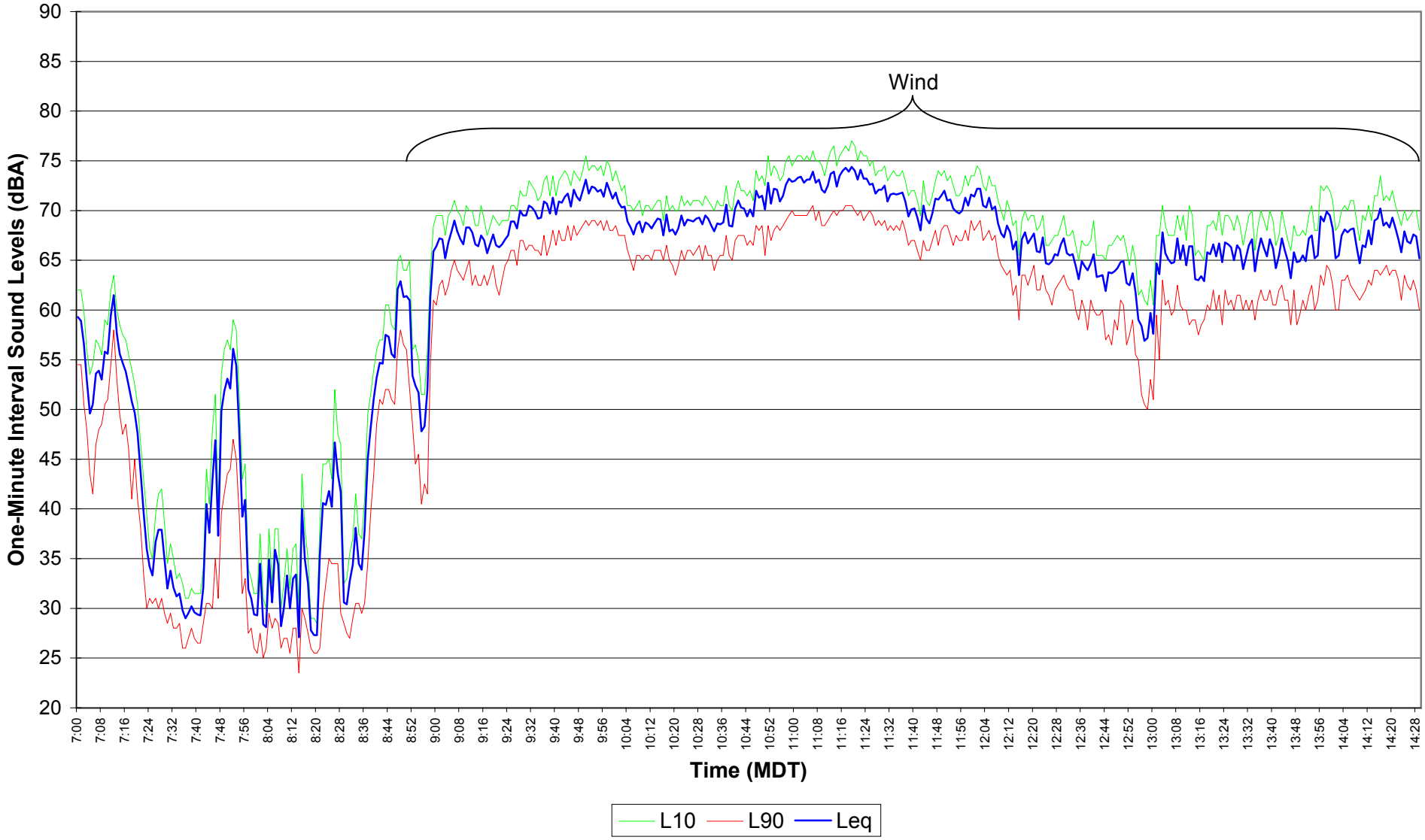


Figure E8.80
EnCana Rosebud
Site 8 Noise Survey
Dec. 19, 2004 14:30 - 21:59

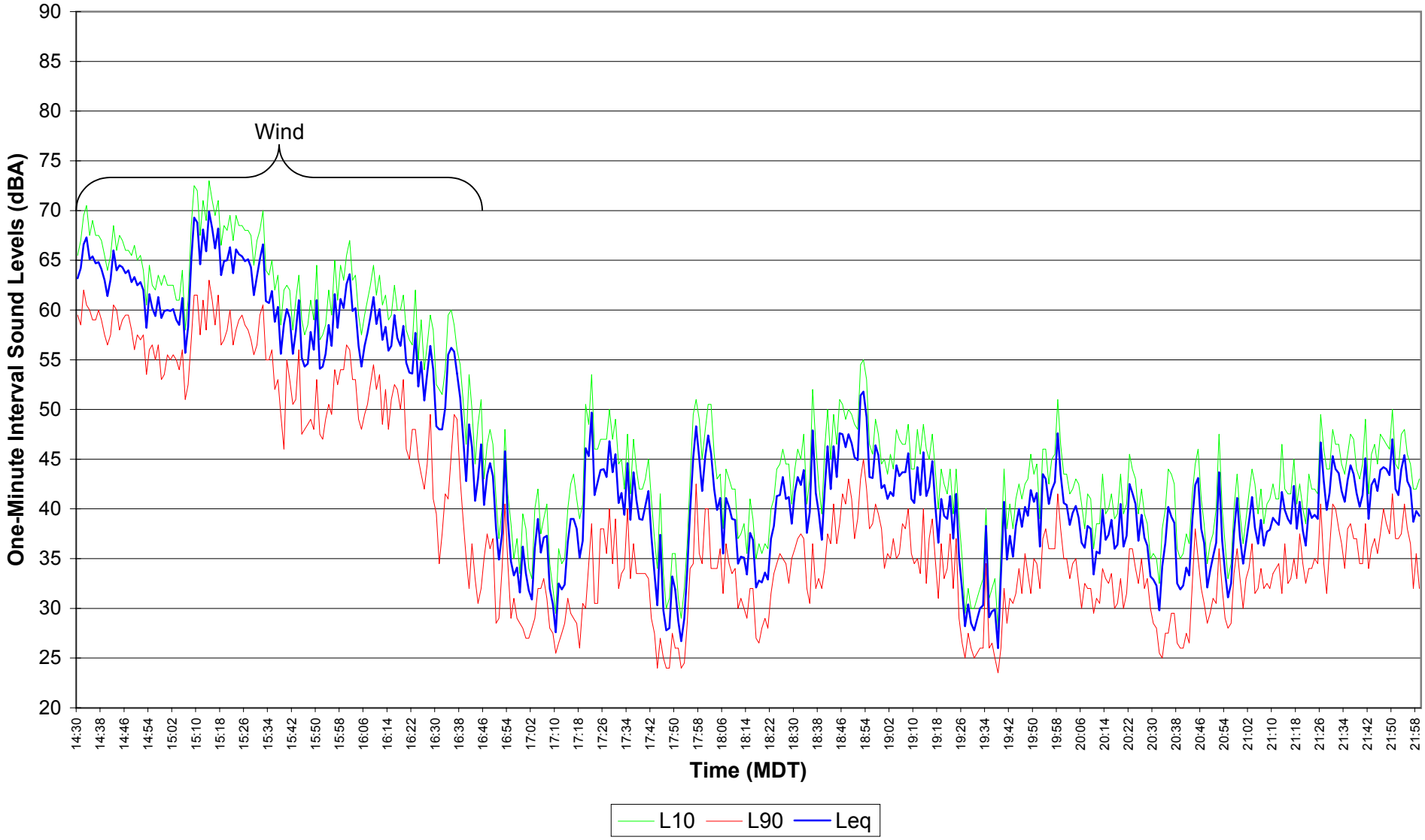


Figure E8.81
EnCana Rosebud
Site 8 Noise Survey
Dec. 19, 2004 - Dec. 20, 2004 22:00 - 06:59

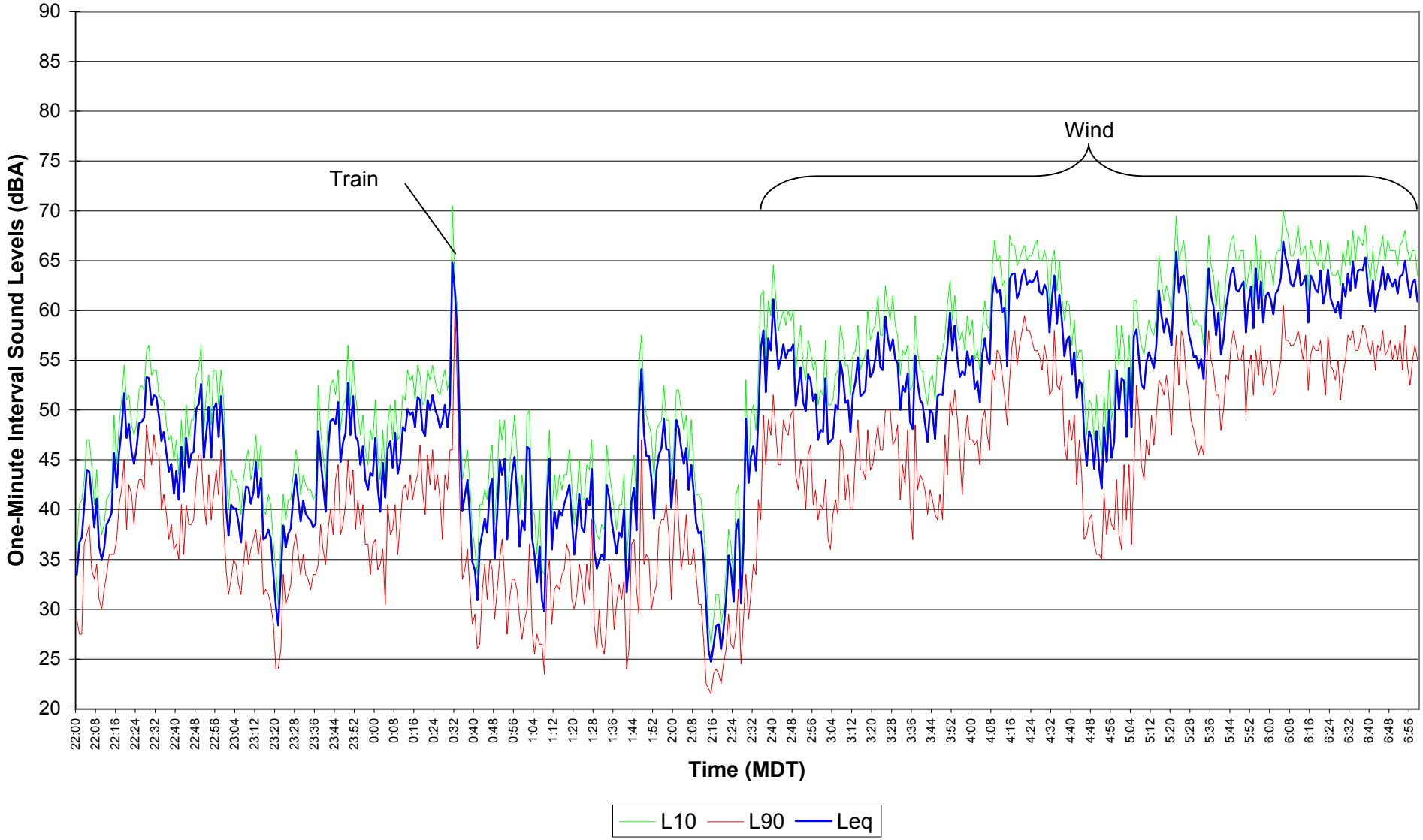


Figure E8.82
EnCana Rosebud
Site 8 Noise Survey
Dec. 20, 2004 07:00 - 14:29

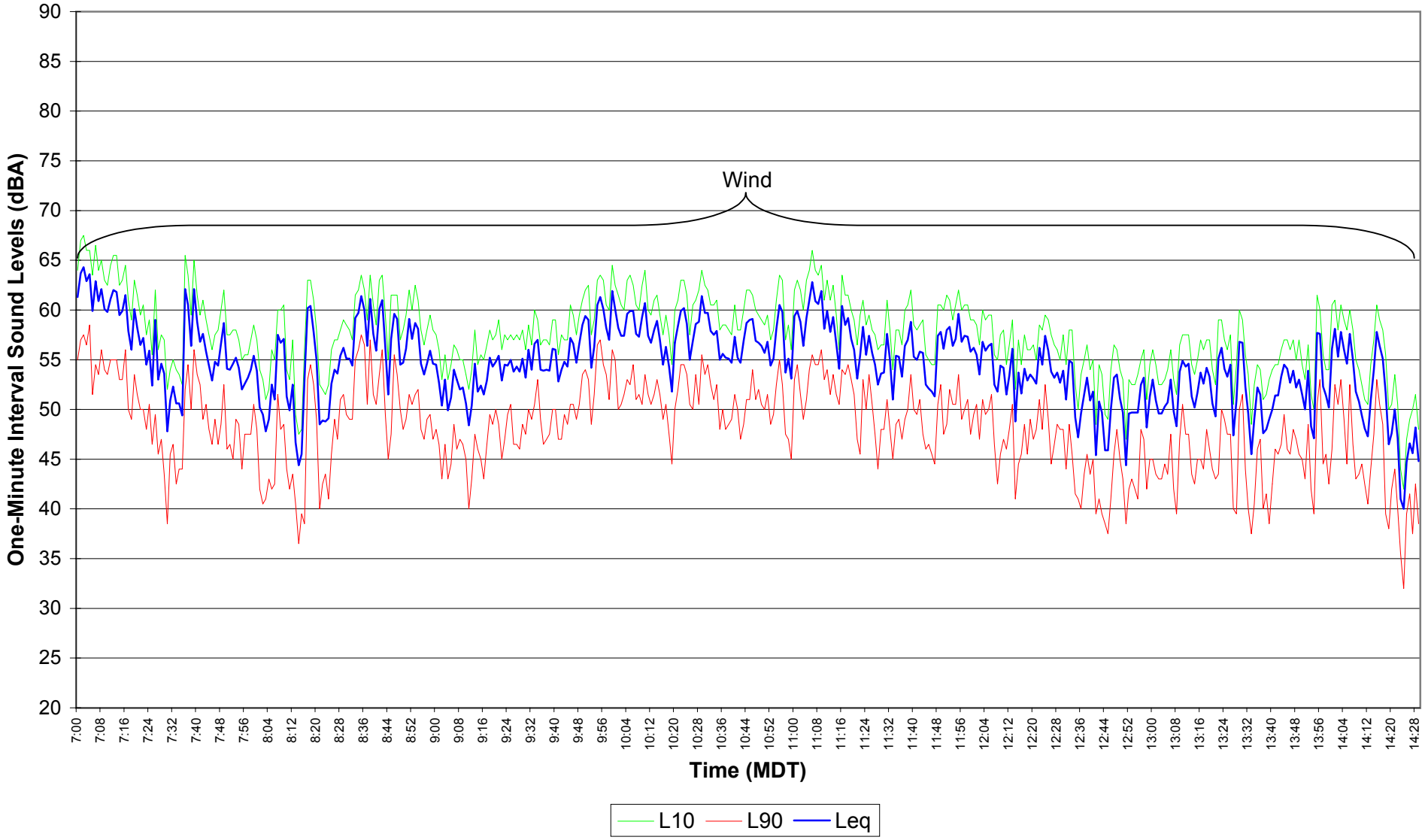
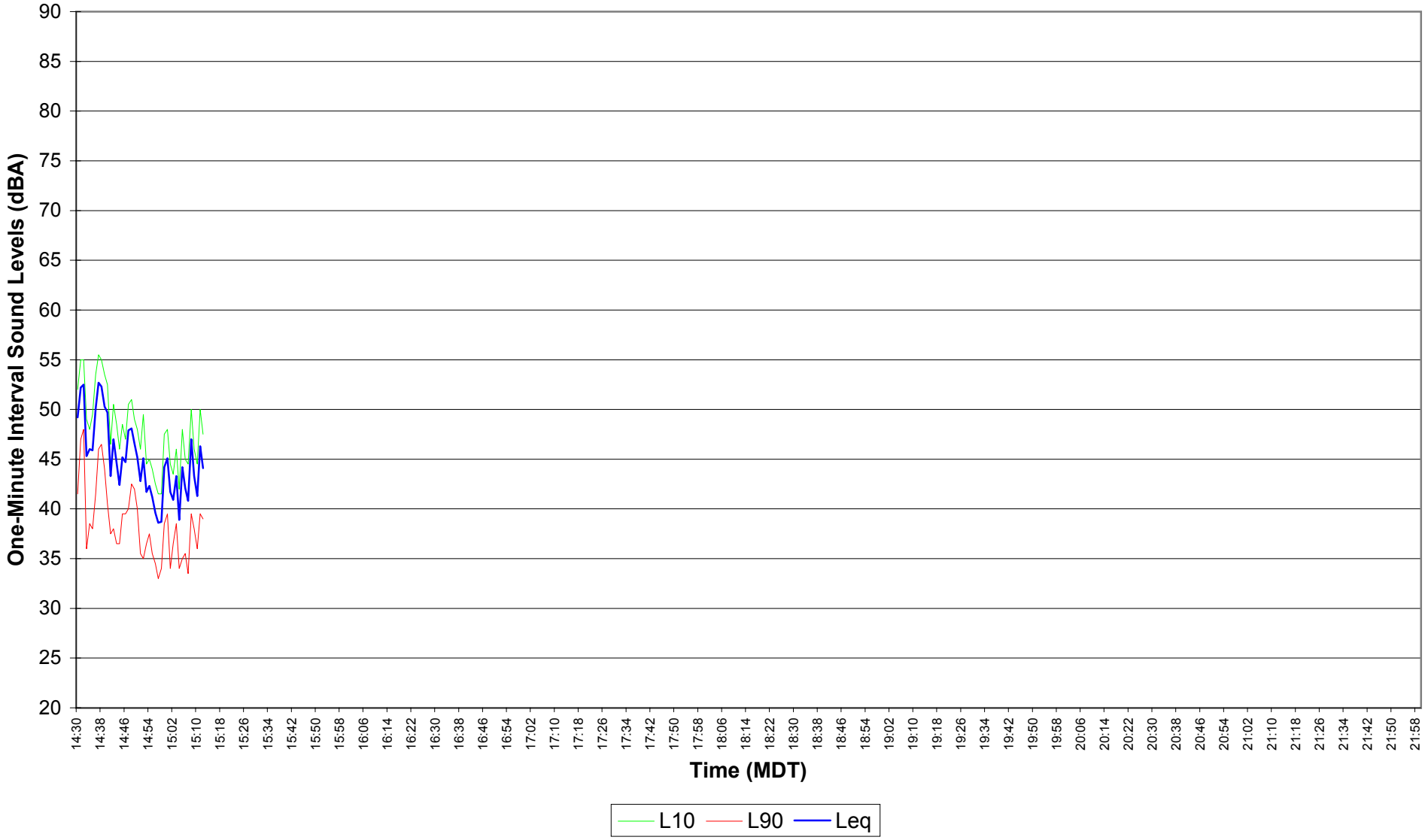


Figure E8.83
EnCana Rosebud
Site 8 Noise Survey
Dec. 20, 2004 14:30 - 21:59



APPENDIX E9

Measurement Results
Graphs of 1-Minute L_{eq}, L_{10} and L_{90} Data
Site 9

Patching Associates Acoustical Engineering Ltd.

Consultants in Acoustics, Noise Control and Vibrations

Table E9.1
EnCana Rosebud
Site 9 Noise Survey
Daily Leq Values

Date	Time	Figure #	Measured		Residual	
			Leq	Hours	Leq	Hours
Dec. 06, 2004	07:00 - 21:59	N/A, 41	32.6	4.2	31.1	4.0
Dec. 06, 2004 - Dec. 07, 2004	**22:00 - 06:59**	**42**	**30.8**	**9.0**	**31.2**	**3.1**
Dec. 07, 2004	07:00 - 21:59	43, 44	37.8	15.0	31.0	14.6
Dec 07, 2004 - Dec 08, 2004	**22:00 - 06:59**	**45**	**40.7**	**9.0**	**31.3**	**8.1**
Dec. 08, 2004	07:00 - 21:59	46, 47	34.9	15.0	31.9	14.6
Dec. 08, 2004 - Dec. 09, 2004	**22:00 - 06:59**	**48**	**40.8**	**9.0**	**35.0**	**8.9**
Dec. 09, 2004	07:00 - 21:59	49, 50	60.9	15.0	36.1	13.7
Dec 09, 2004 - Dec 10, 2004	**22:00 - 06:59**	**51**	**39.6**	**9.0**	**33.5**	**8.8**
Dec. 10, 2004	07:00 - 21:59	52, 53	36.1	14.3	35.0	14.2
Dec. 10, 2004 - Dec. 11, 2004	**22:00 - 06:59**	**54**	**44.2**	**9.0**	**37.6**	**8.7**
Dec. 11, 2004	07:00 - 21:59	55, 56	44.9	15.0	41.1	13.8
Dec. 11, 2004 - Dec. 12, 2004	**22:00 - 06:59**	**57**	**42.8**	**9.0**	**37.4**	**8.8**
Dec. 12, 2004	07:00 - 21:59	58, 59	44.8	15.0	34.3	14.8
Dec. 12, 2004 - Dec. 13, 2004	**22:00 - 06:59**	**60**	**44.1**	**9.0**	**33.2**	**8.9**
Dec. 13, 2004	07:00 - 21:59	61, 62	48.7	14.8	35.5	14.1
Dec. 13, 2004 - Dec. 14, 2004	**22:00 - 06:59**	**63**	**38.5**	**9.0**	**35.1**	**8.9**
Dec. 14, 2004	07:00 - 21:59	64, 65	45.6	15.0	36.8	14.6
Dec. 14, 2004 - Dec. 15, 2004	**22:00 - 06:59**	**66**	**42.4**	**9.0**	**36.0**	**8.9**
Dec. 15, 2004	07:00 - 21:59	67, 68	51.7	15.0	36.4	14.4
Dec. 15, 2004 - Dec. 16, 2004	**22:00 - 06:59**	**69**	**40.9**	**9.0**	**33.0**	**6.8**
Dec. 16, 2004	07:00 - 21:59	70, 71	45.6	15.0	36.7	14.7
Dec. 16, 2004 - Dec. 17, 2004	**22:00 - 06:59**	**72**	**45.0**	**9.0**	**39.9**	**8.8**
Dec. 17, 2004	07:00 - 21:59	73, 74	39.2	14.8	38.6	14.7
Dec. 17, 2004 - Dec. 18, 2004	**22:00 - 06:59**	**75**	**42.6**	**9.0**	**35.0**	**8.8**
Dec. 18, 2004	07:00 - 21:59	76, 77	42.0	15.0	33.6	14.8
Dec. 18, 2004 - Dec. 19, 2004	**22:00 - 06:59**	**78**	**38.3**	**9.0**	**34.3**	**9.0**
Dec. 19, 2004	07:00 - 21:59	79, 80	51.7	15.0	41.0	12.3
Dec. 19, 2004 - Dec. 20, 2004	**22:00 - 06:59**	**81**	**50.1**	**9.0**	**41.2**	**6.6**
Dec. 20, 2004	07:00 - 21:59	82, 83	47.7	7.8	45.1	6.9

Figure E9.41
EnCana Rosebud
Site 9 Noise Survey
Dec. 06, 2004 14:30 - 21:59

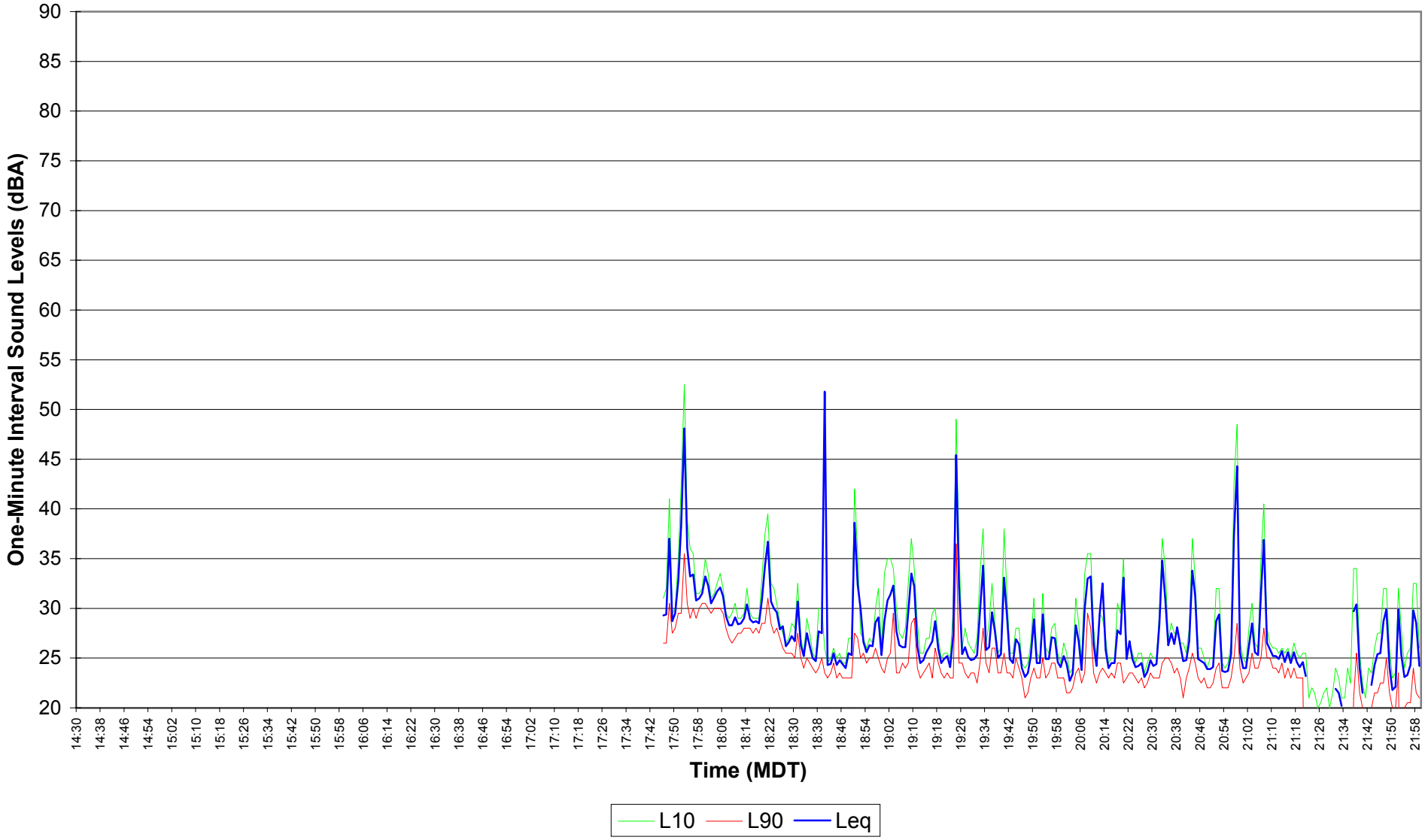


Figure E9.42
EnCana Rosebud
Site 9 Noise Survey
Dec. 06, 2004 - Dec. 07, 2004 22:00 - 06:59

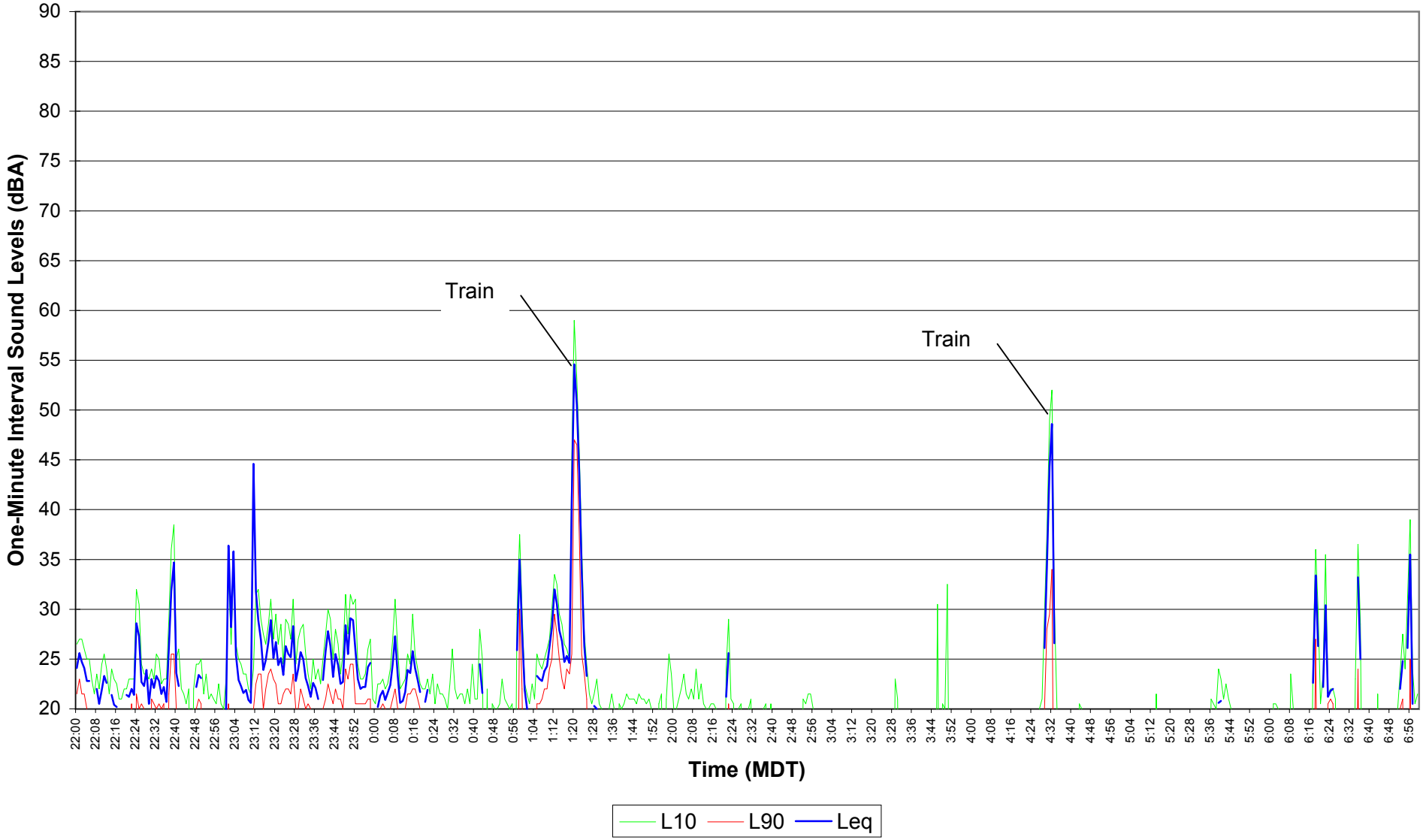


Figure E9.43
EnCana Rosebud
Site 9 Noise Survey
Dec. 07, 2004 07:00 - 14:29

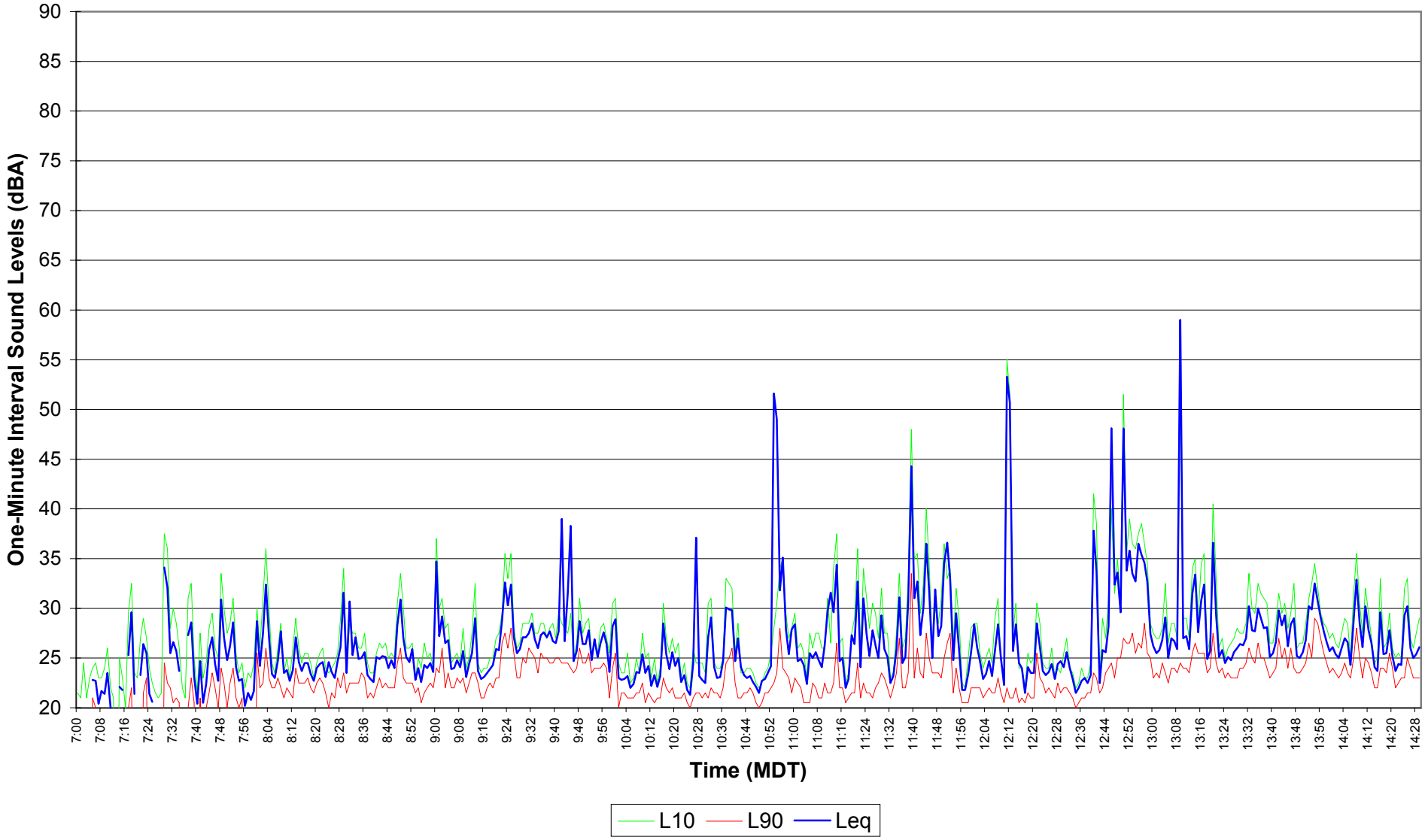


Figure E9.44
EnCana Rosebud
Site 9 Noise Survey
Dec. 07, 2004 14:30 - 21:59

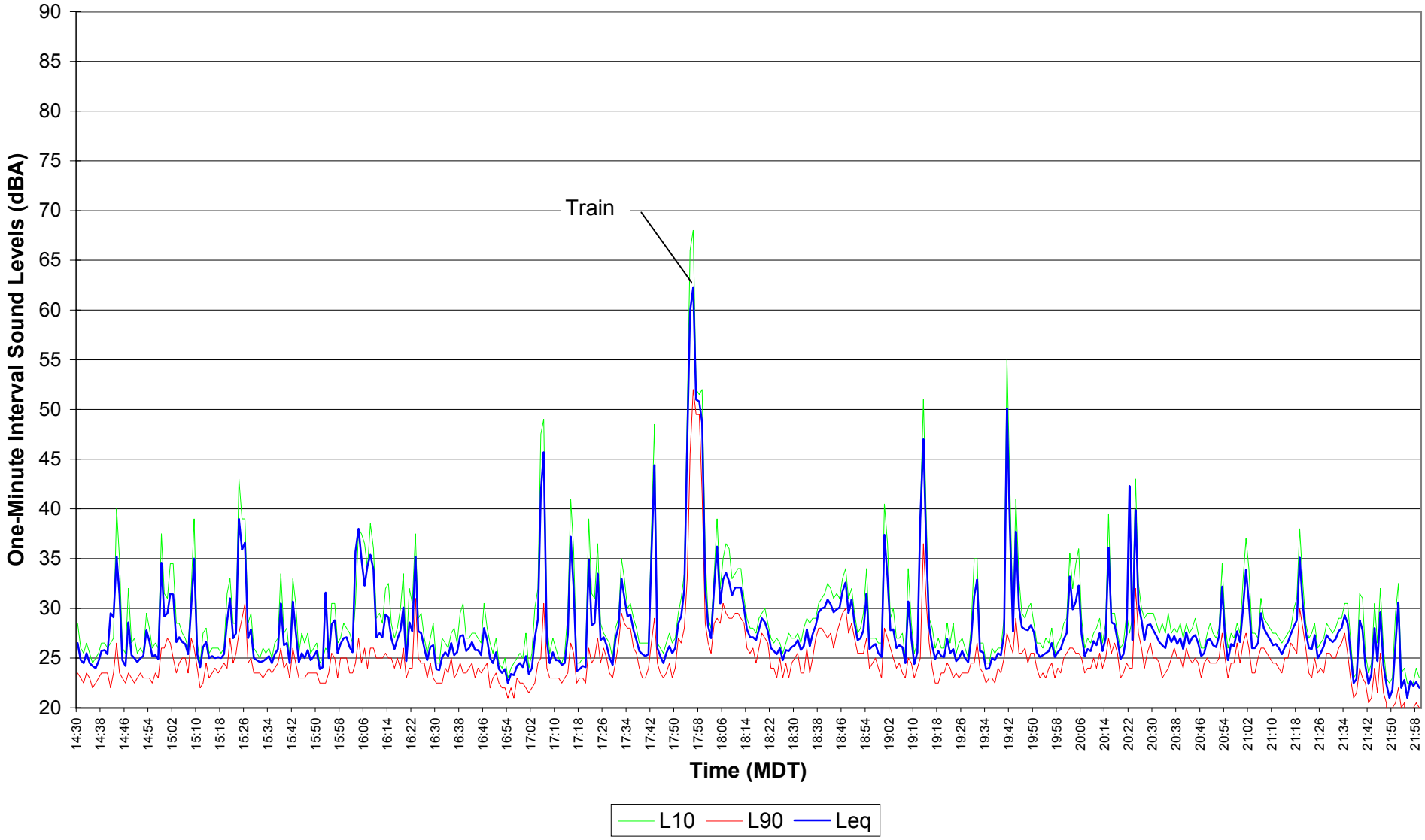


Figure E9.45
EnCana Rosebud
Site 9 Noise Survey
Dec 07, 2004 - Dec 08, 2004 22:00 - 06:59

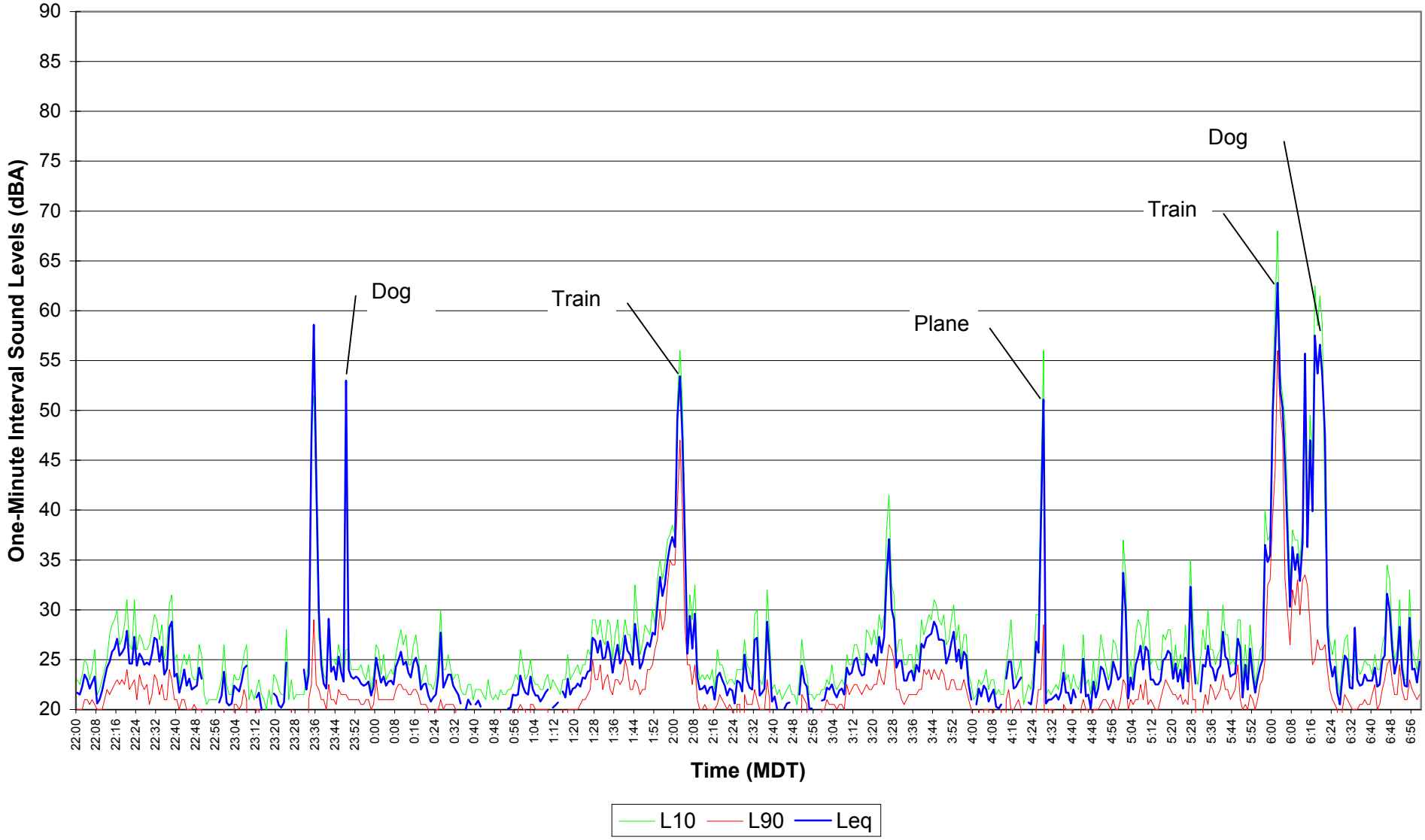


Figure E9.46
EnCana Rosebud
Site 9 Noise Survey
Dec. 08, 2004 07:00 - 14:29

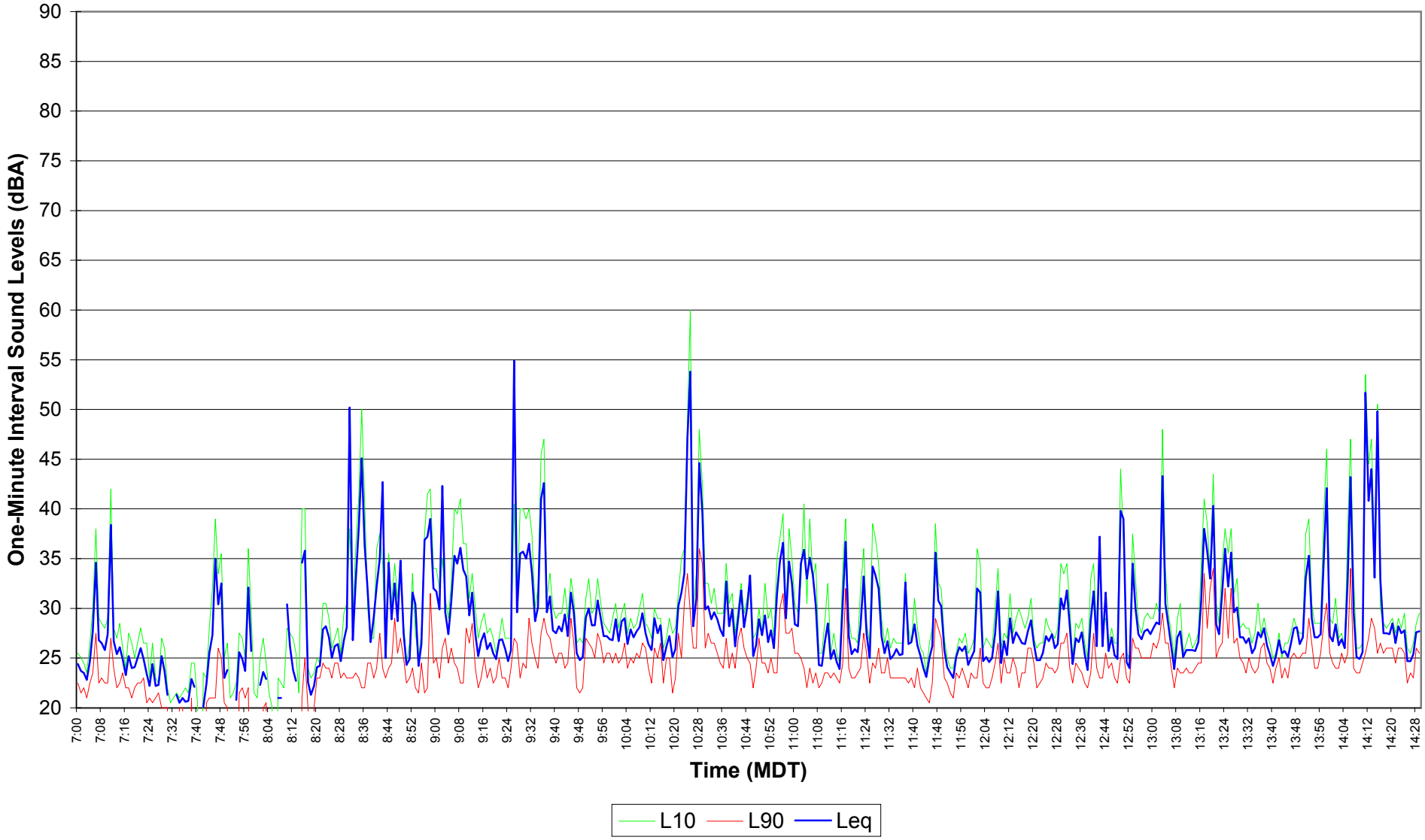


Figure E9.47
EnCana Rosebud
Site 9 Noise Survey
Dec. 08, 2004 14:30 - 21:59

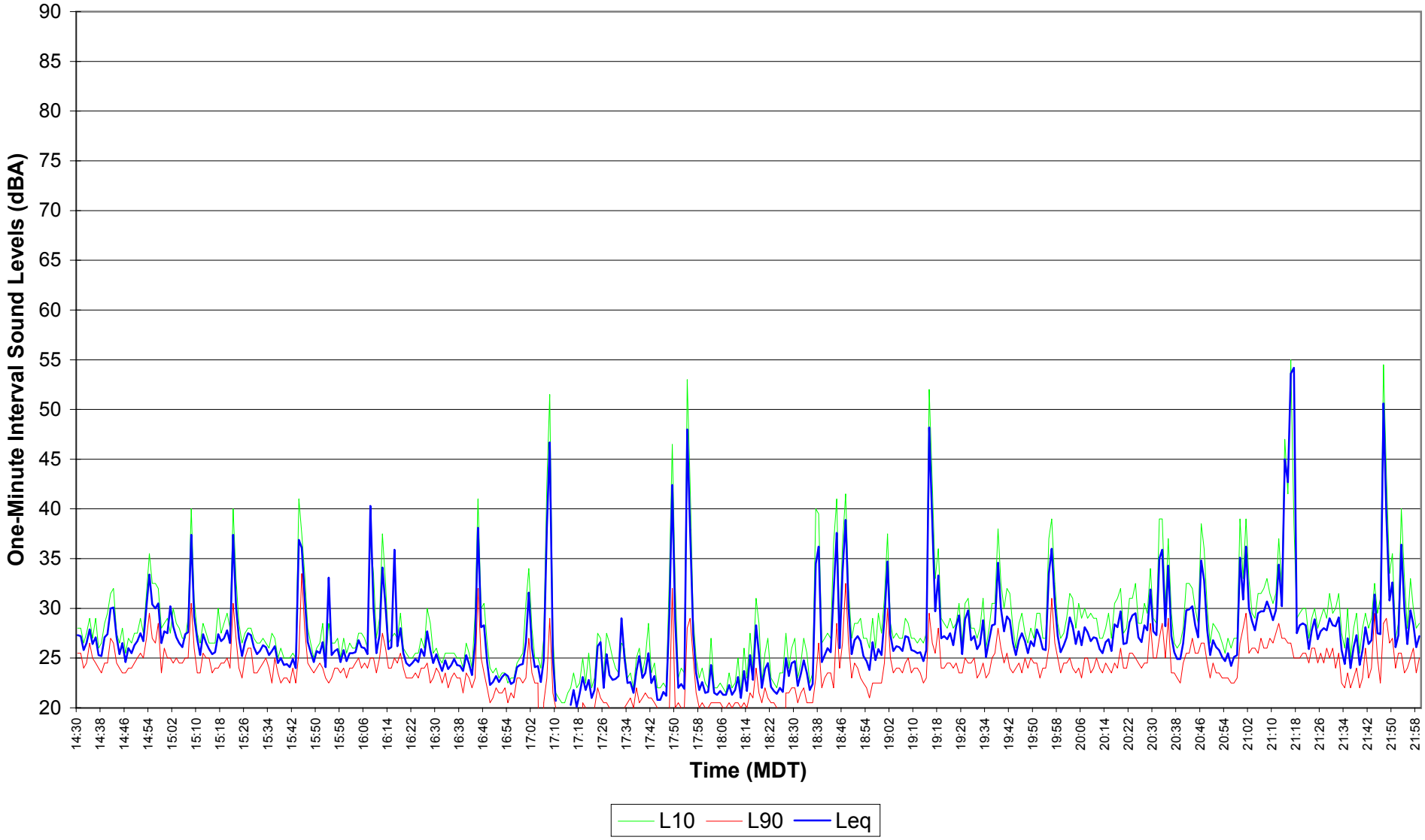


Figure E9.48
EnCana Rosebud
Site 9 Noise Survey
Dec. 08, 2004 - Dec. 09, 2004 22:00 - 06:59

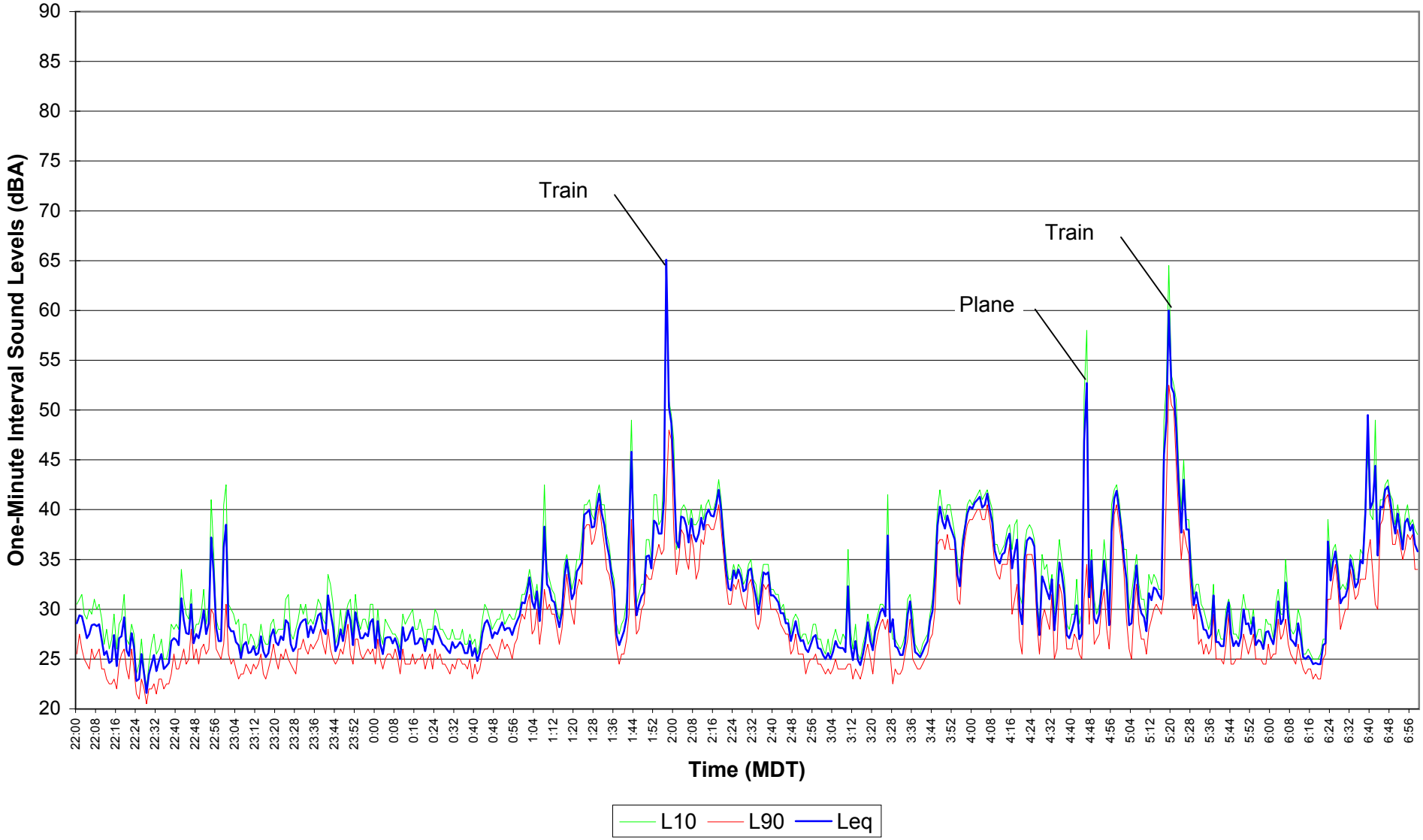


Figure E9.49
EnCana Rosebud
Site 9 Noise Survey
Dec. 09, 2004 07:00 - 14:29

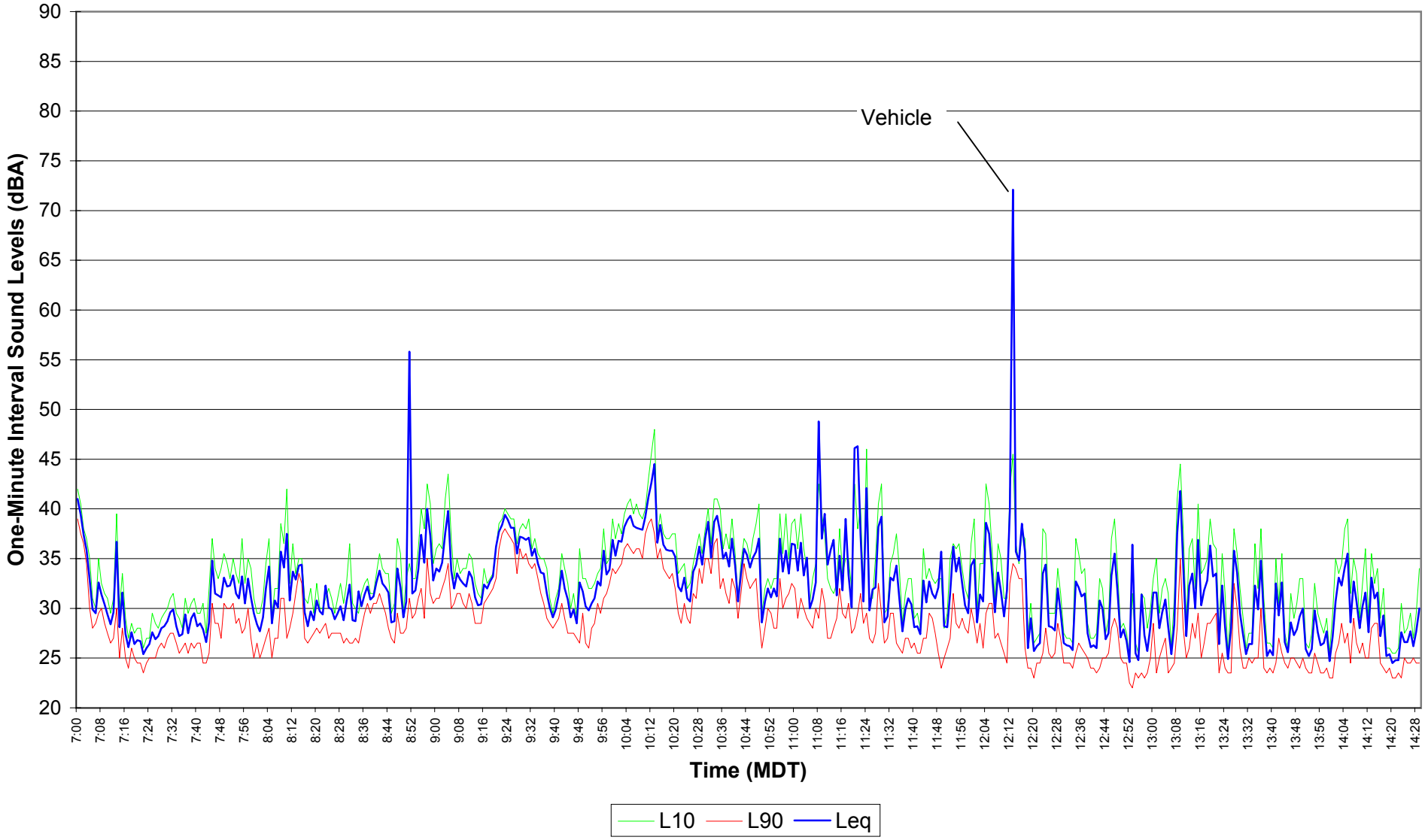


Figure E9.50
EnCana Rosebud
Site 9 Noise Survey
Dec. 09, 2004 14:30 - 21:59

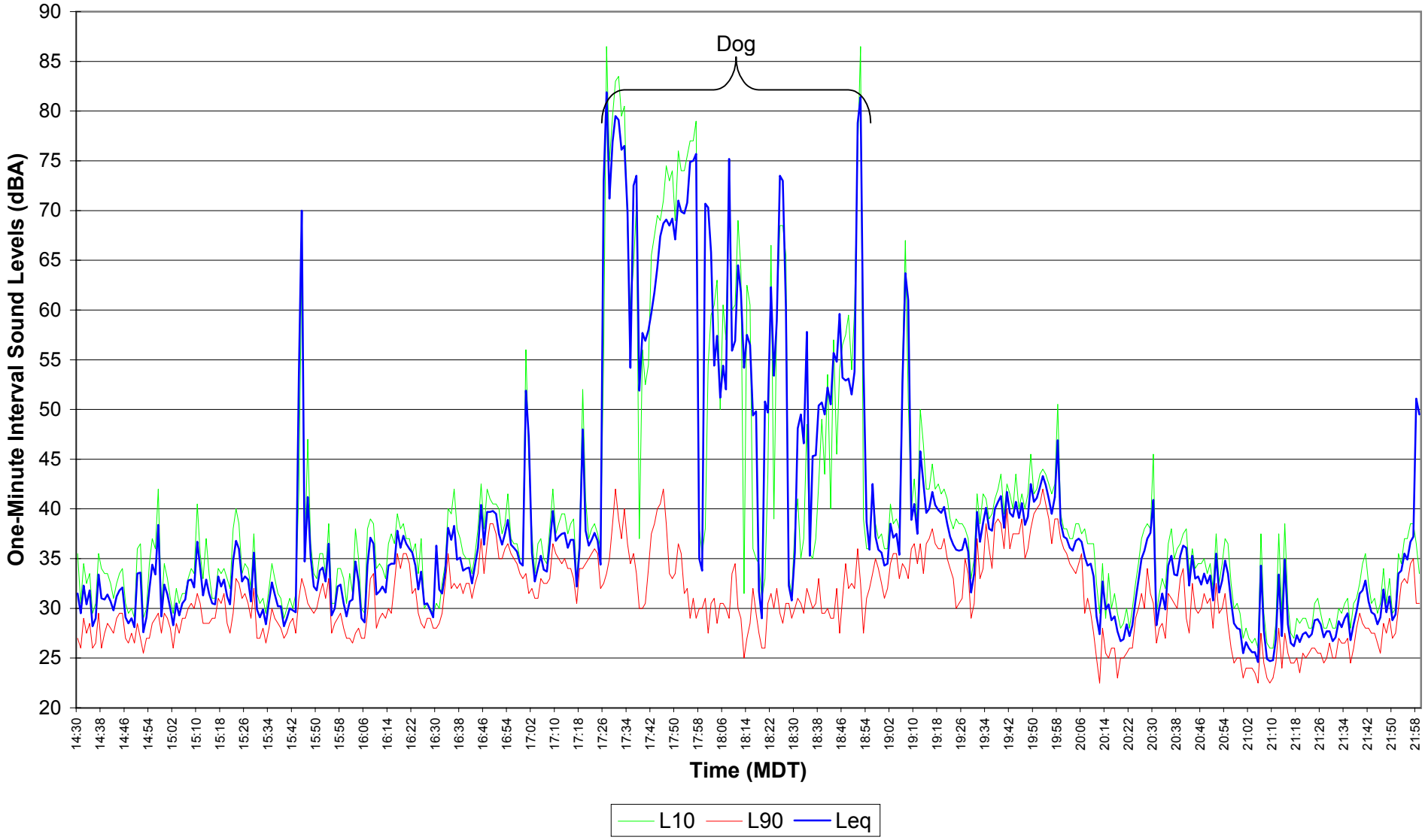


Figure E9.51
EnCana Rosebud
Site 9 Noise Survey
Dec 09, 2004 - Dec 10, 2004 22:00 - 06:59

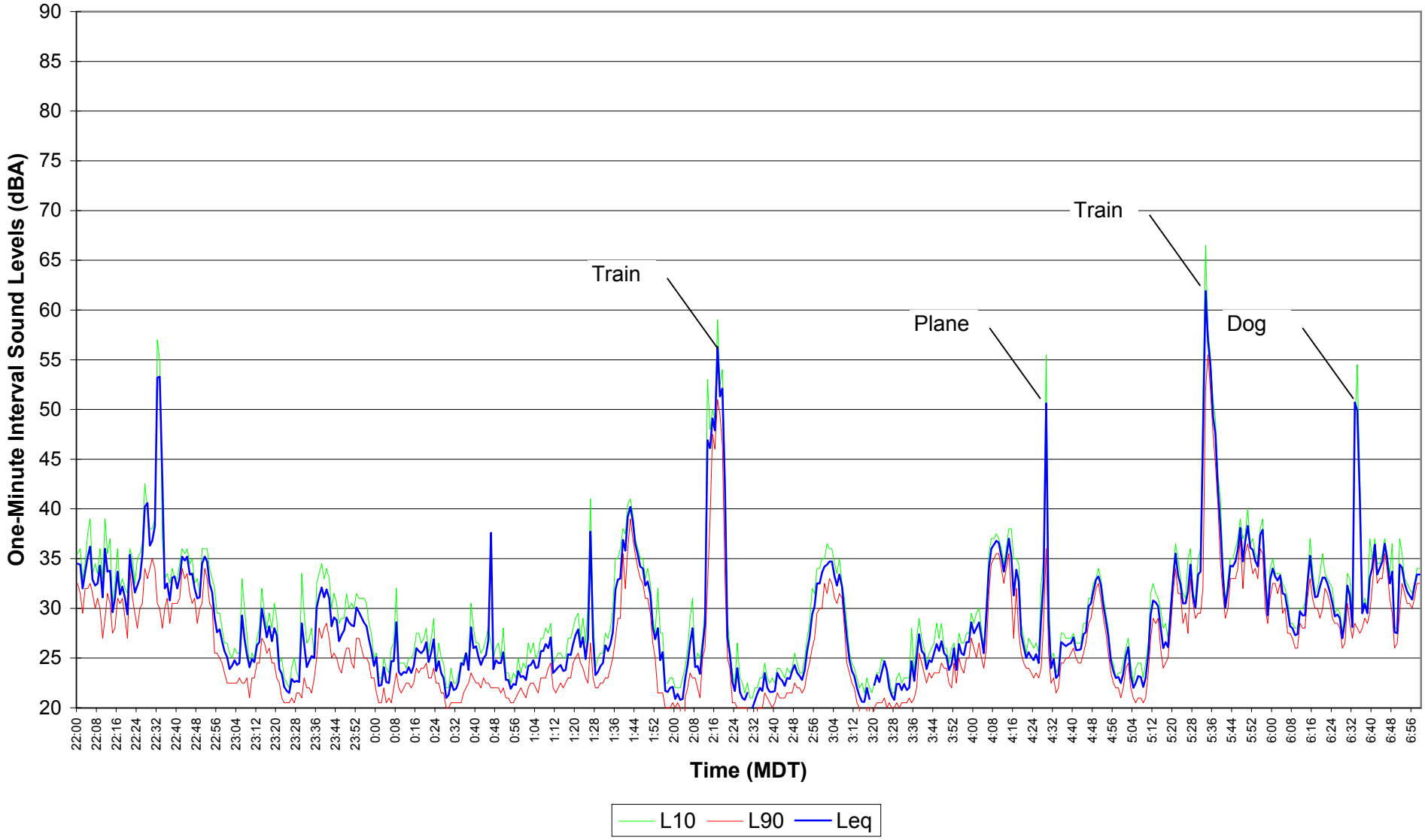


Figure E9.52
EnCana Rosebud
Site 9 Noise Survey
Dec. 10, 2004 07:00 - 14:29

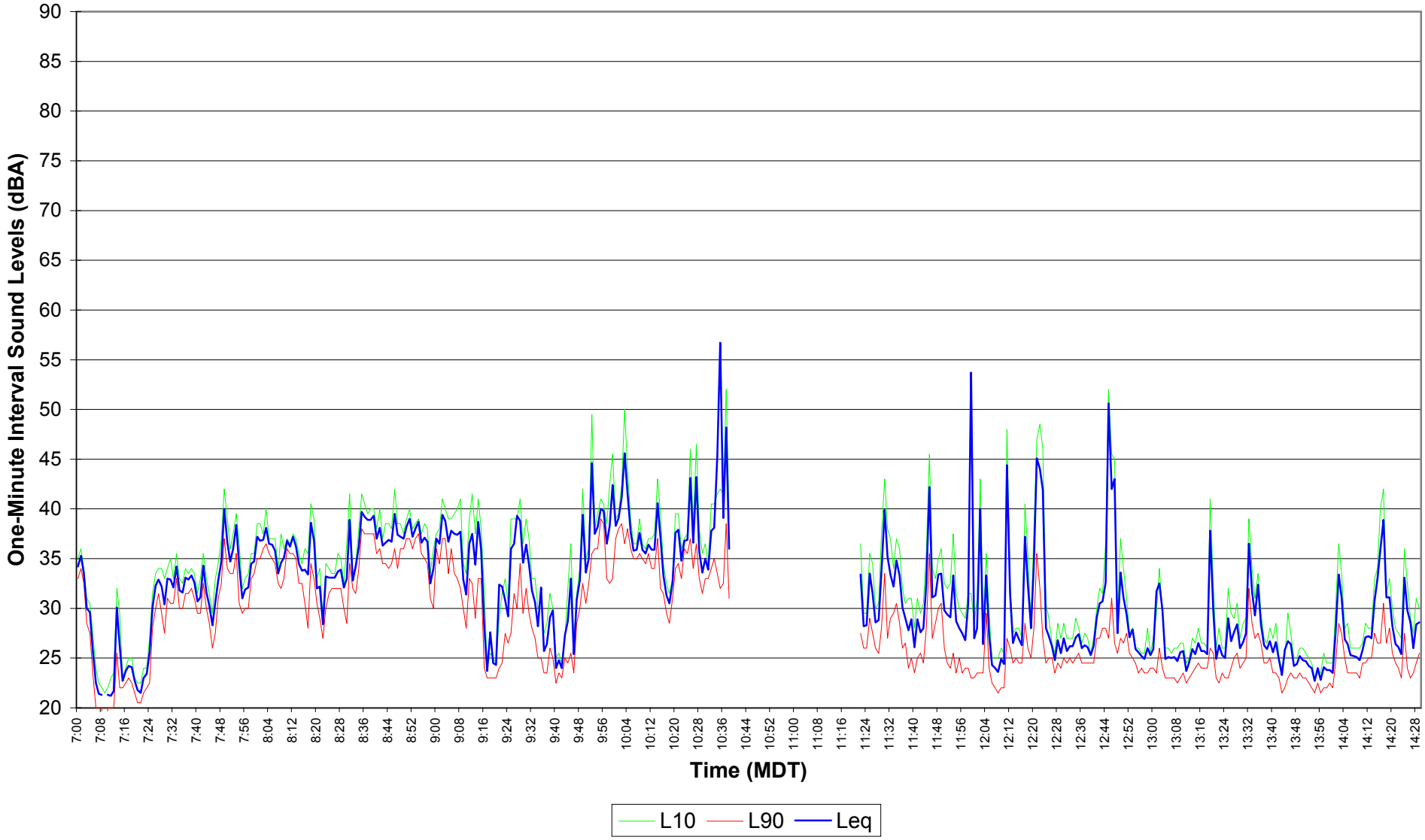


Figure E9.53
EnCana Rosebud
Site 9 Noise Survey
Dec. 10, 2004 14:30 - 21:59

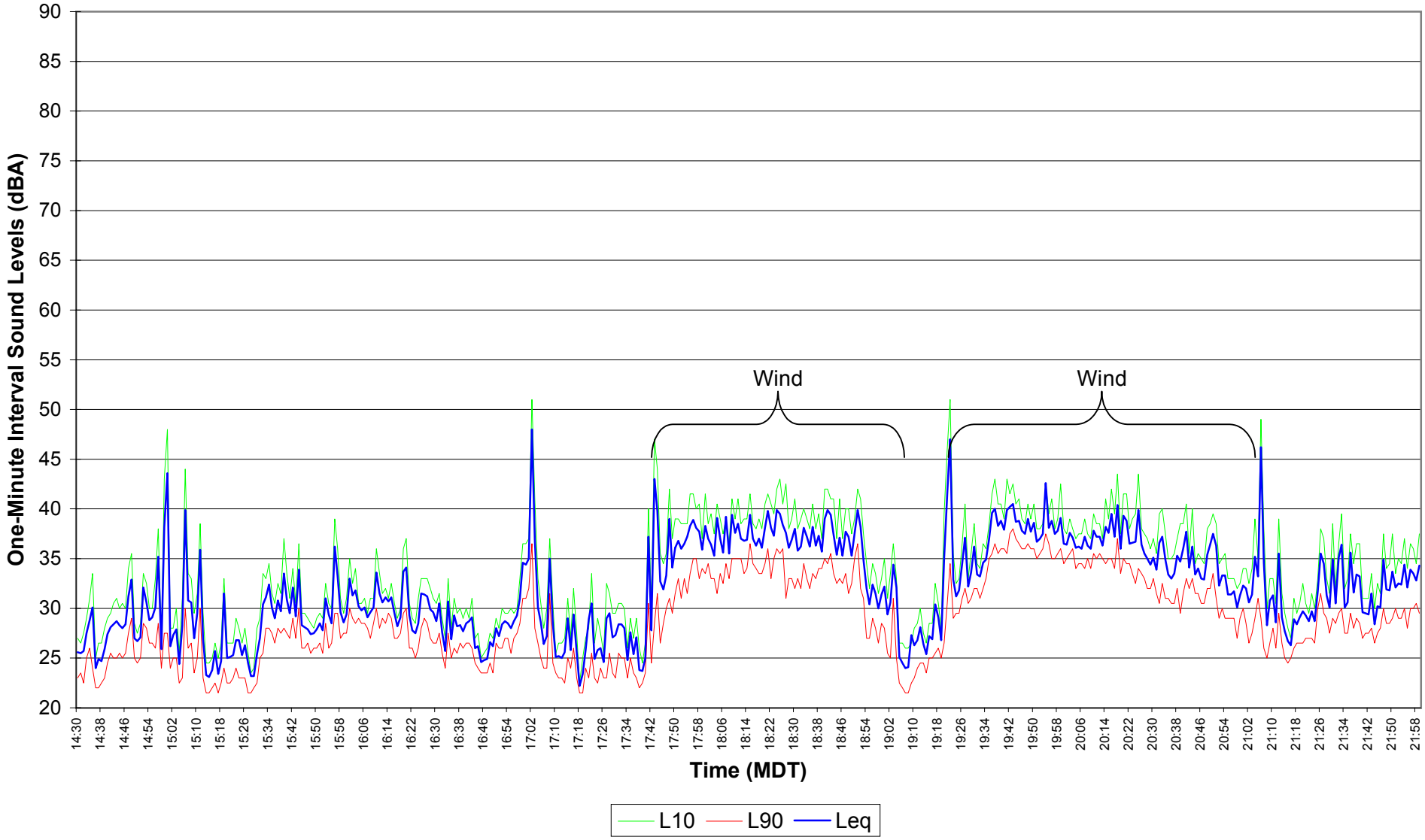


Figure E9.54
EnCana Rosebud
Site 9 Noise Survey
Dec. 10, 2004 - Dec. 11, 2004 22:00 - 06:59

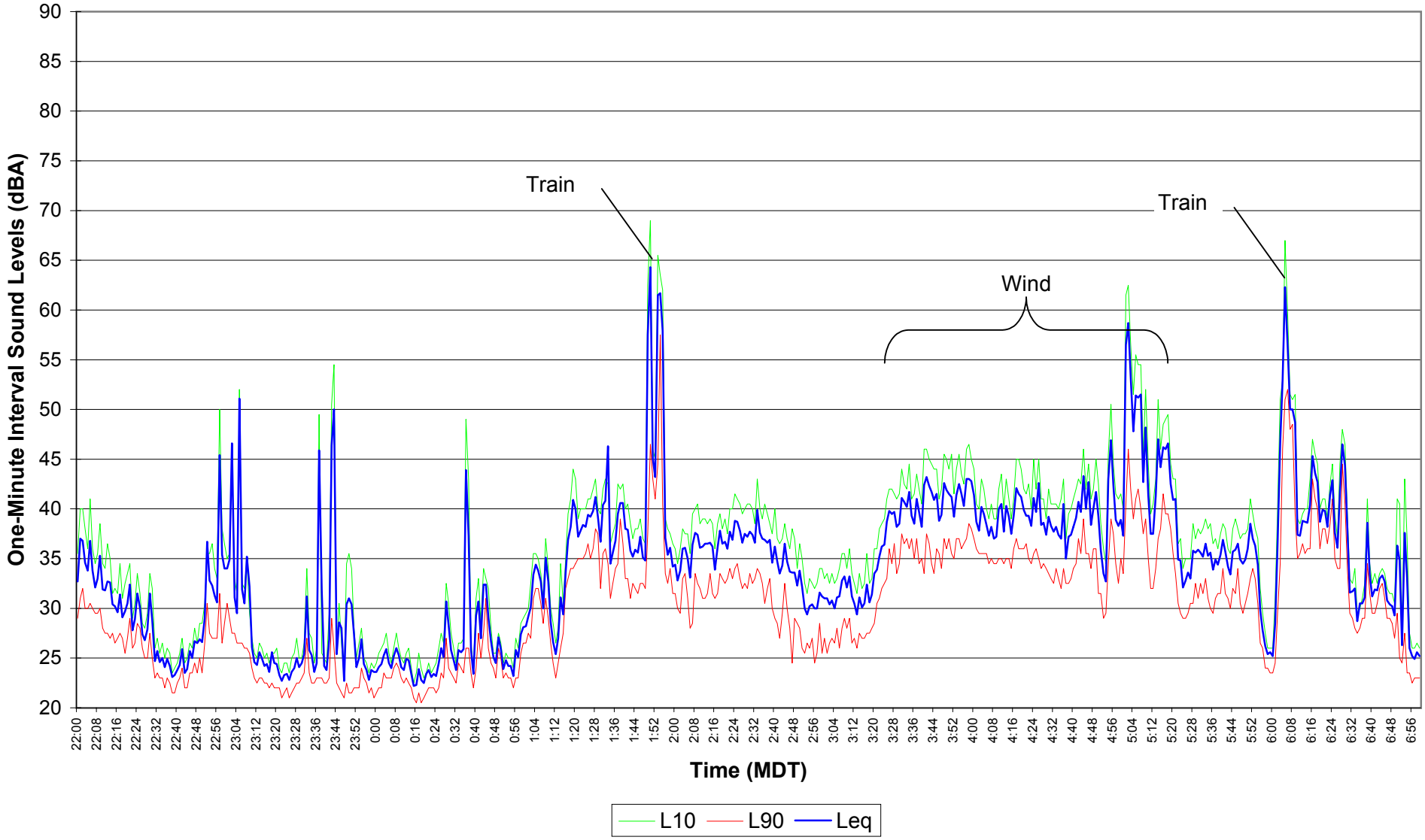


Figure E9.55

EnCana Rosebud

Site 9 Noise Survey

Dec. 11, 2004 07:00 - 14:29

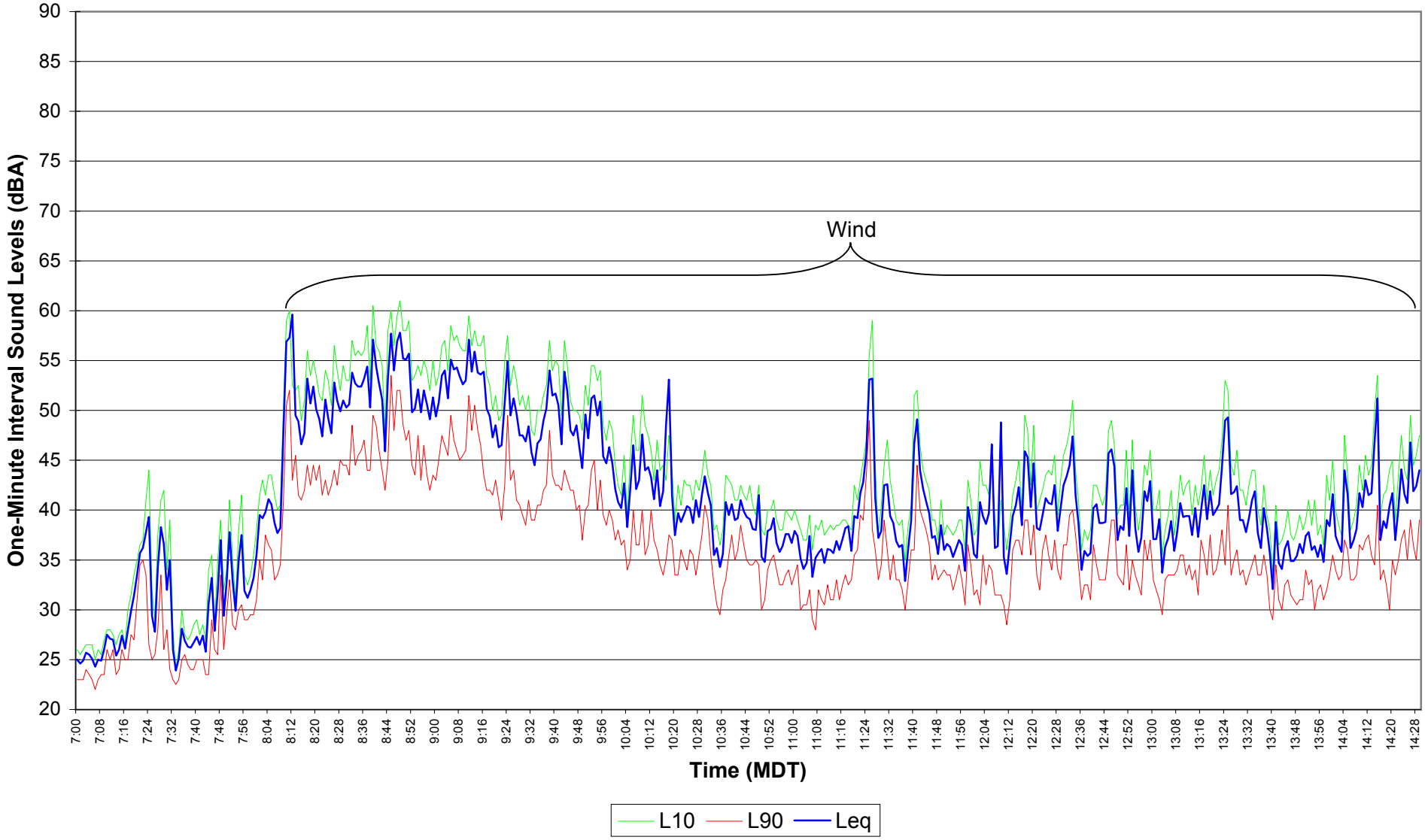


Figure E9.56
EnCana Rosebud
Site 9 Noise Survey
Dec. 11, 2004 14:30 - 21:59

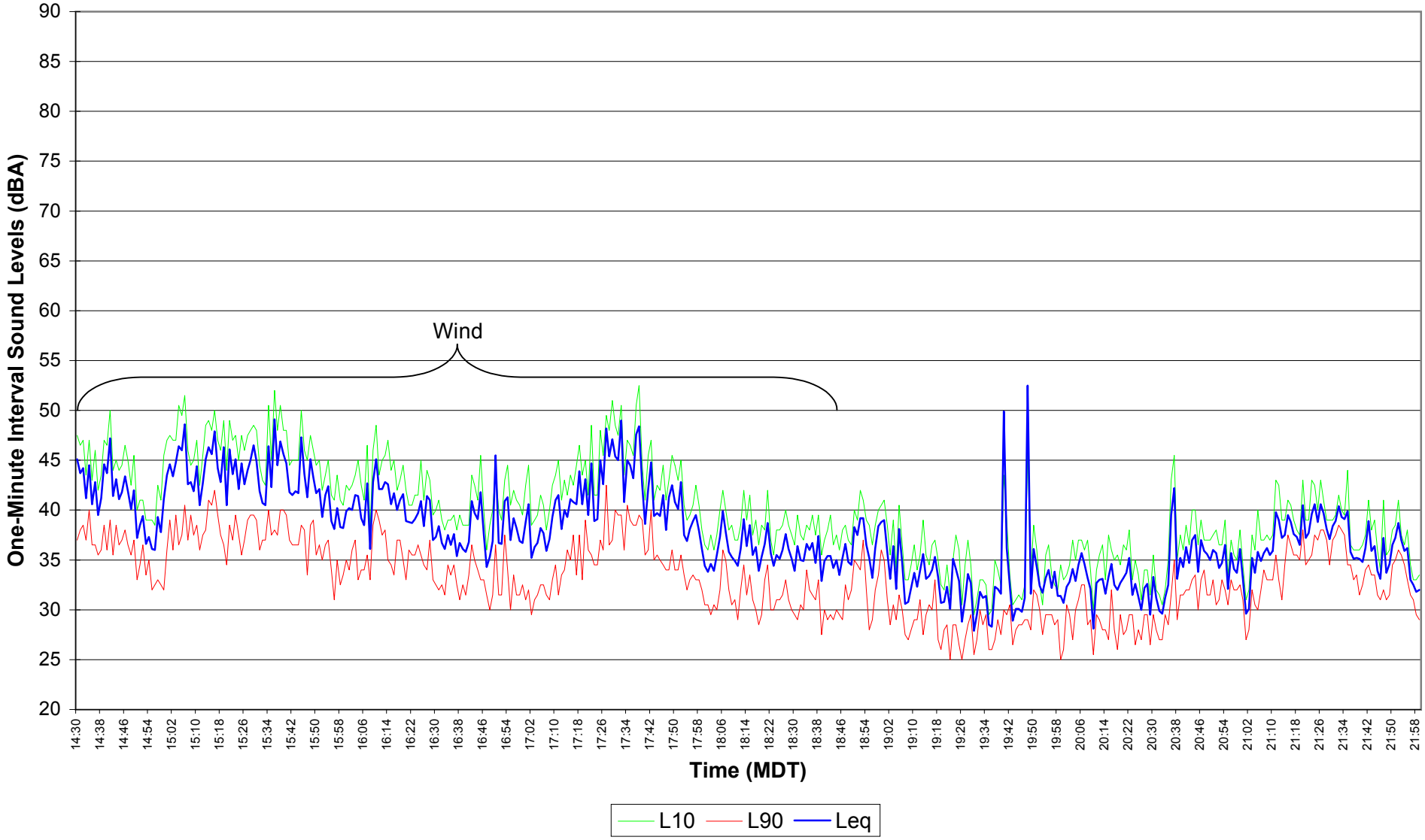


Figure E9.57
EnCana Rosebud
Site 9 Noise Survey
Dec. 11, 2004 - Dec. 12, 2004 22:00 - 06:59

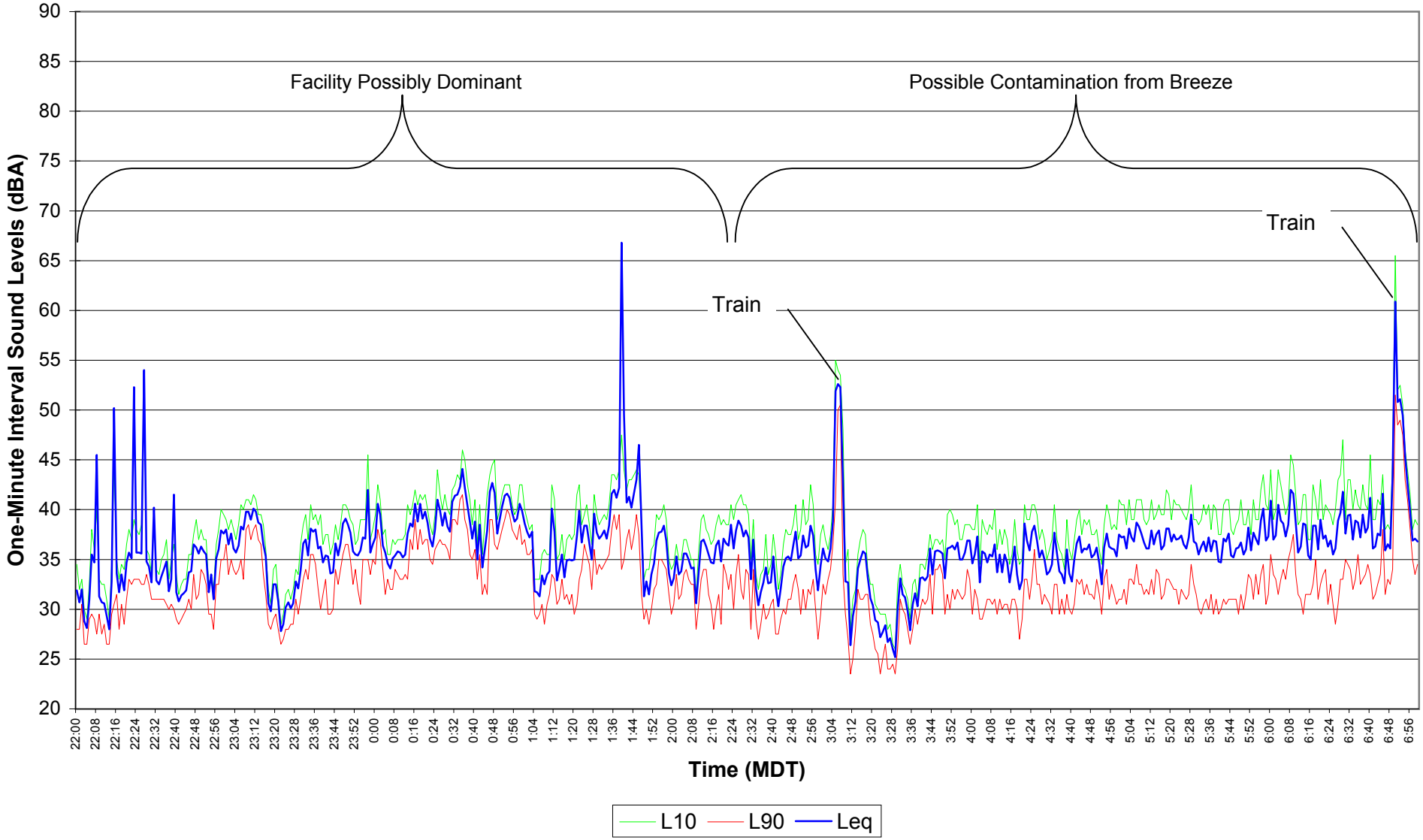


Figure E9.58
EnCana Rosebud
Site 9 Noise Survey
Dec. 12, 2004 07:00 - 14:29

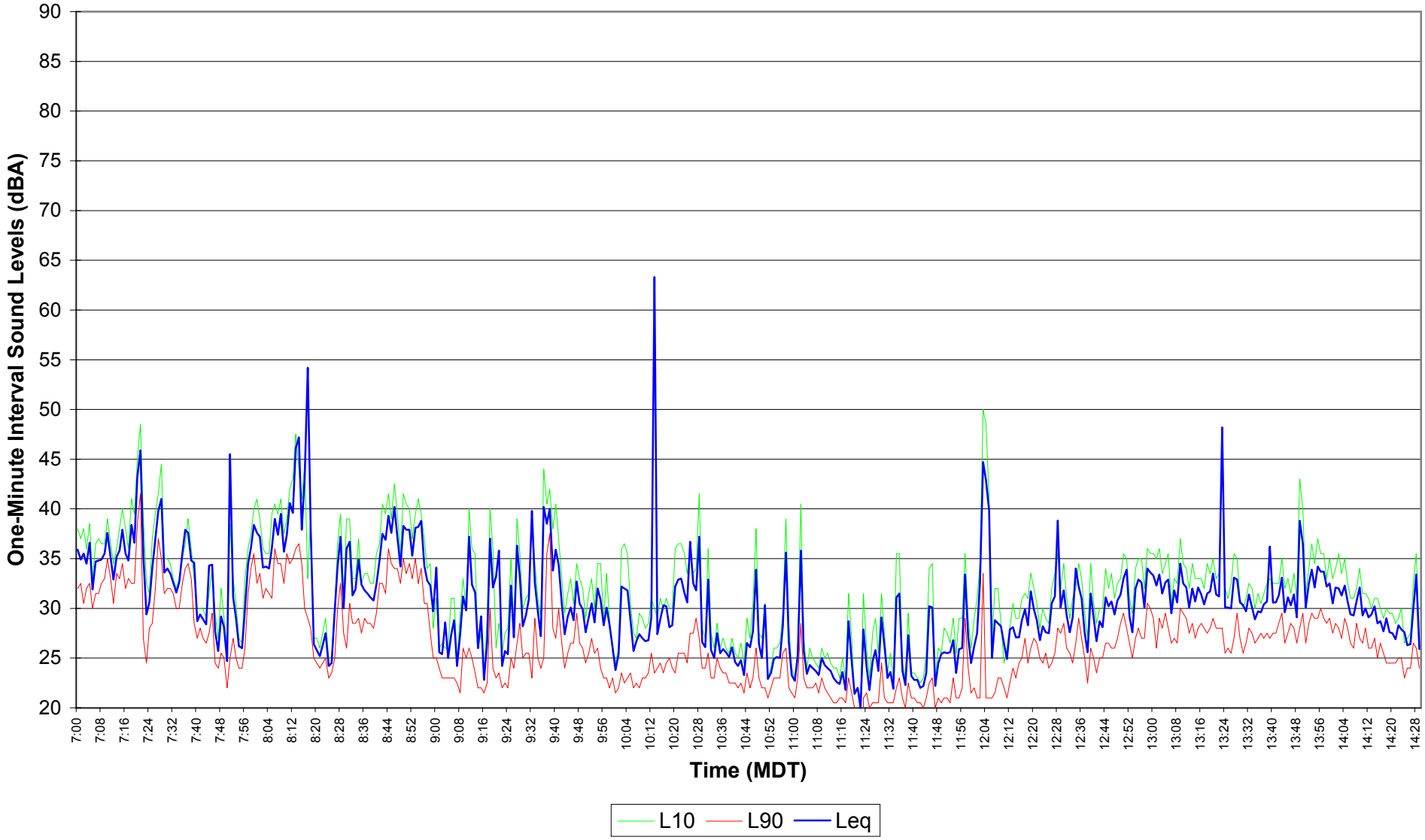


Figure E9.59
EnCana Rosebud
Site 9 Noise Survey
Dec. 12, 2004 14:30 - 21:59

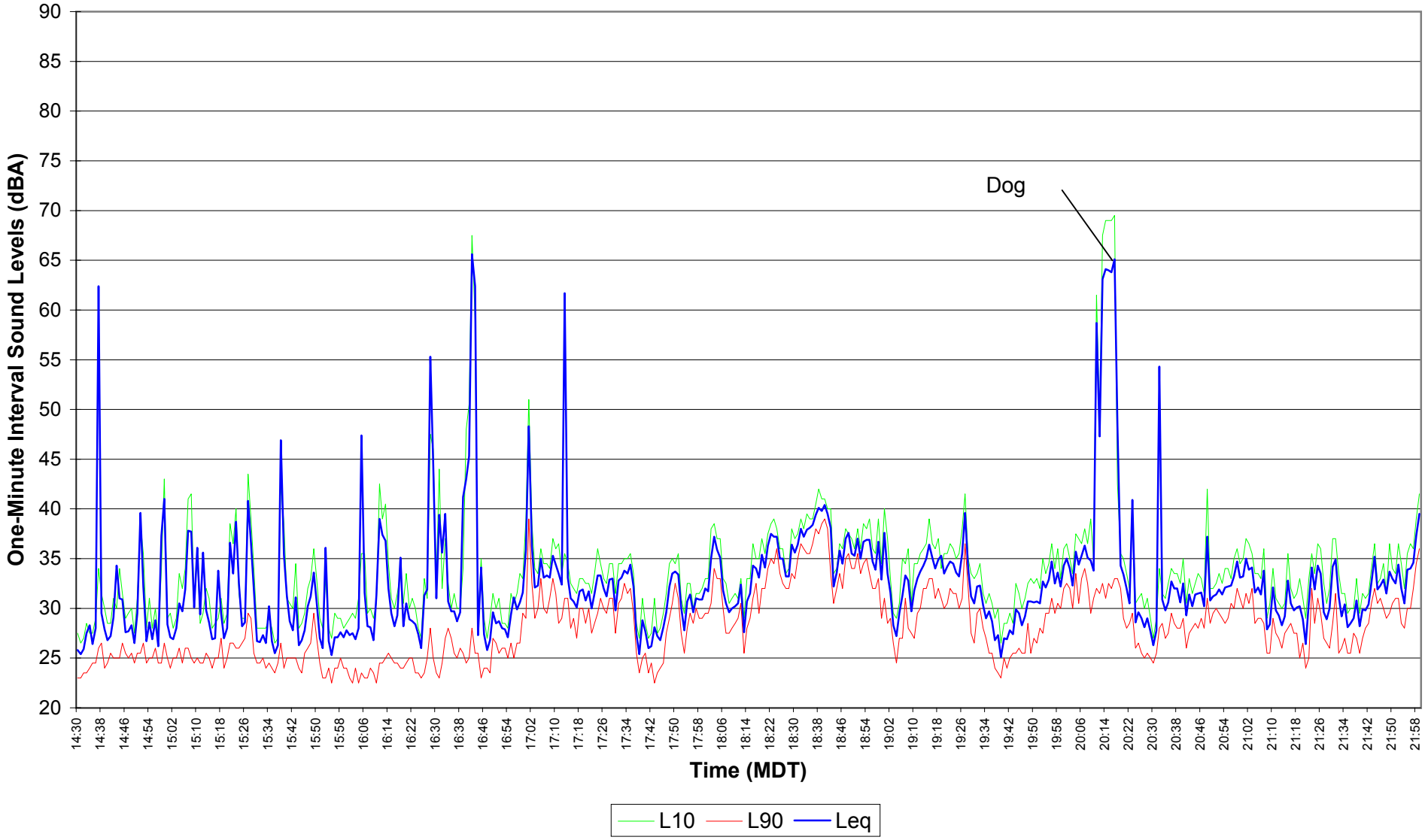


Figure E9.60
EnCana Rosebud
Site 9 Noise Survey
Dec. 12, 2004 - Dec. 13, 2004 22:00 - 06:59

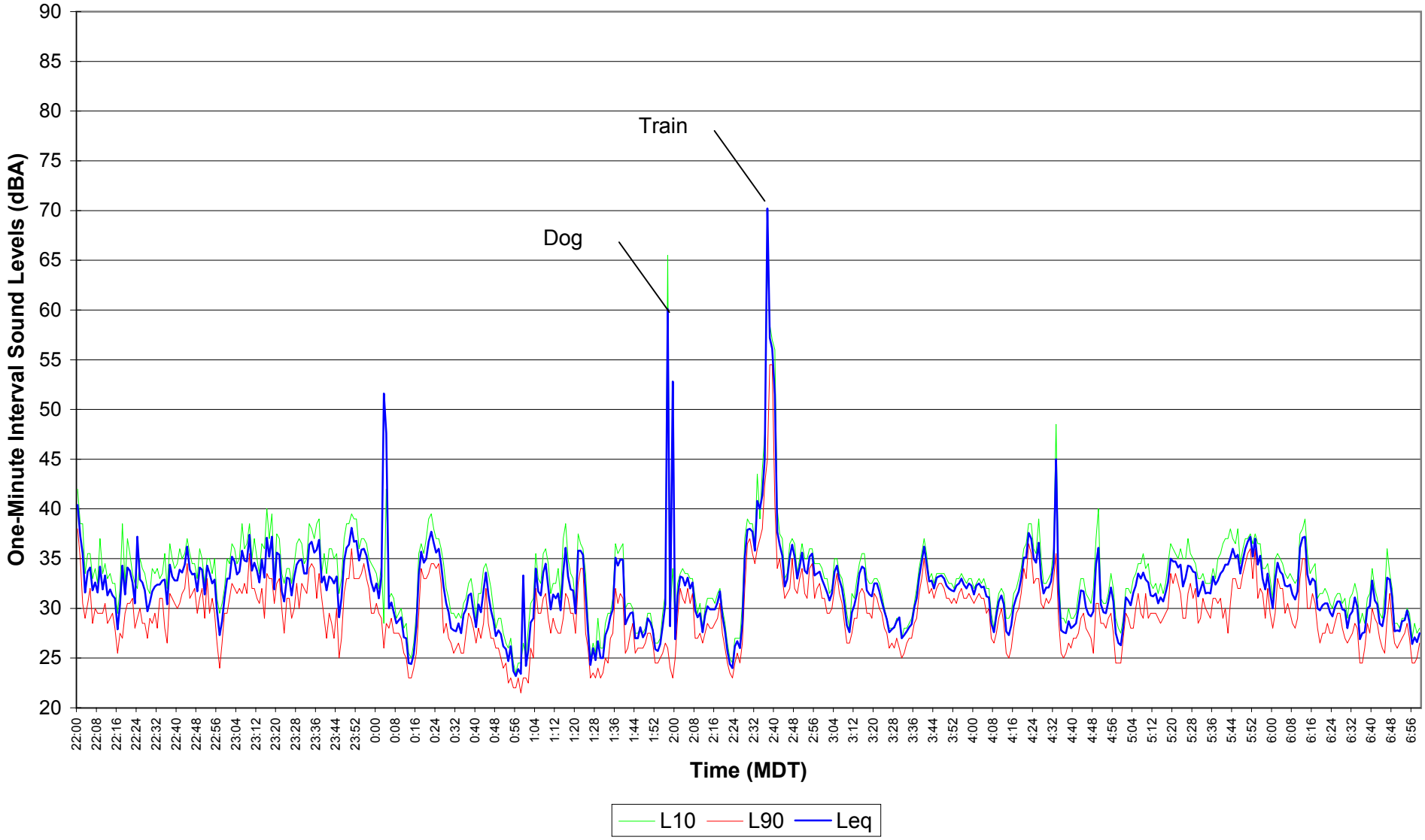


Figure E9.61
EnCana Rosebud
Site 9 Noise Survey
Dec. 13, 2004 07:00 - 14:29

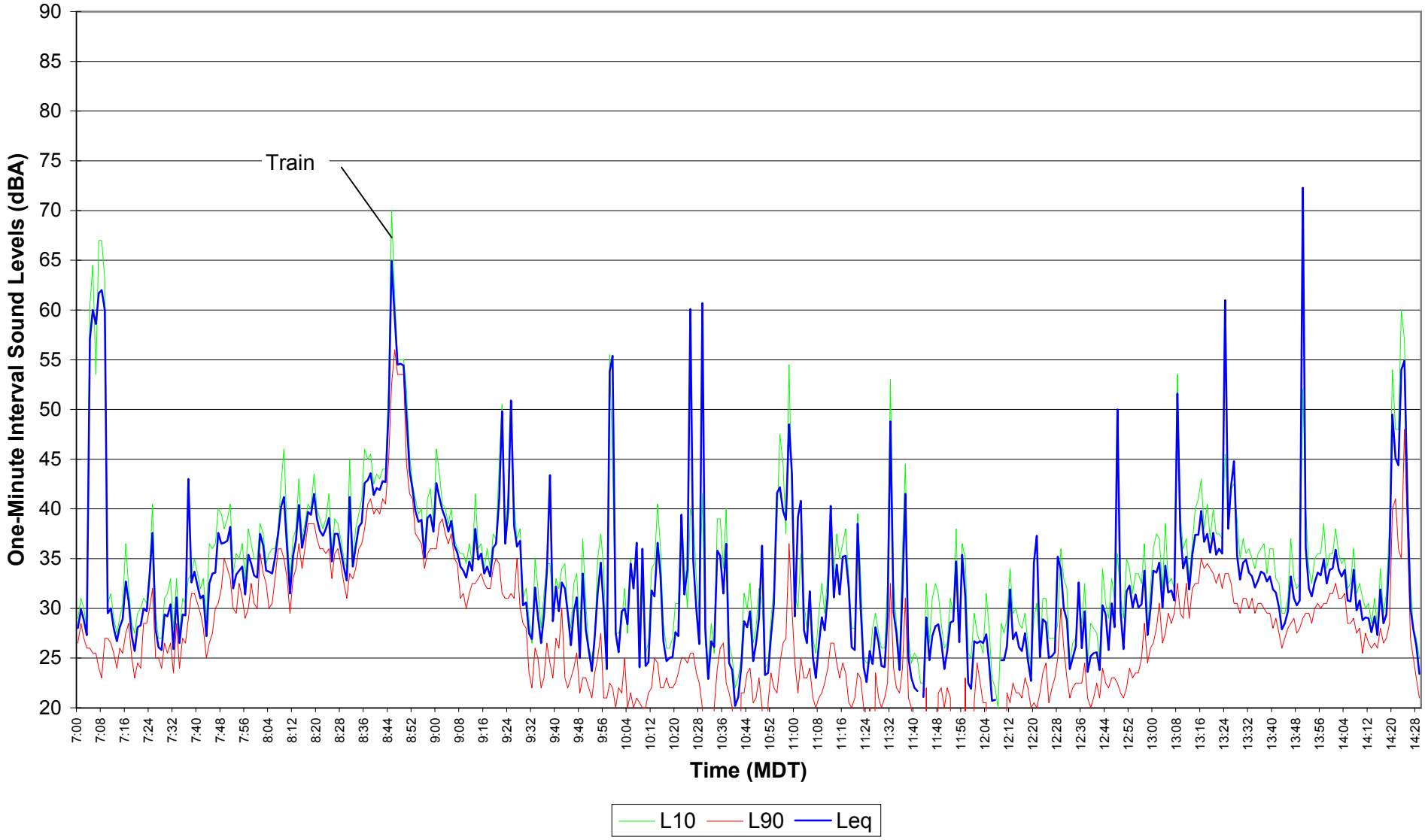


Figure E9.62
EnCana Rosebud
Site 9 Noise Survey
Dec. 13, 2004 14:30 - 21:59

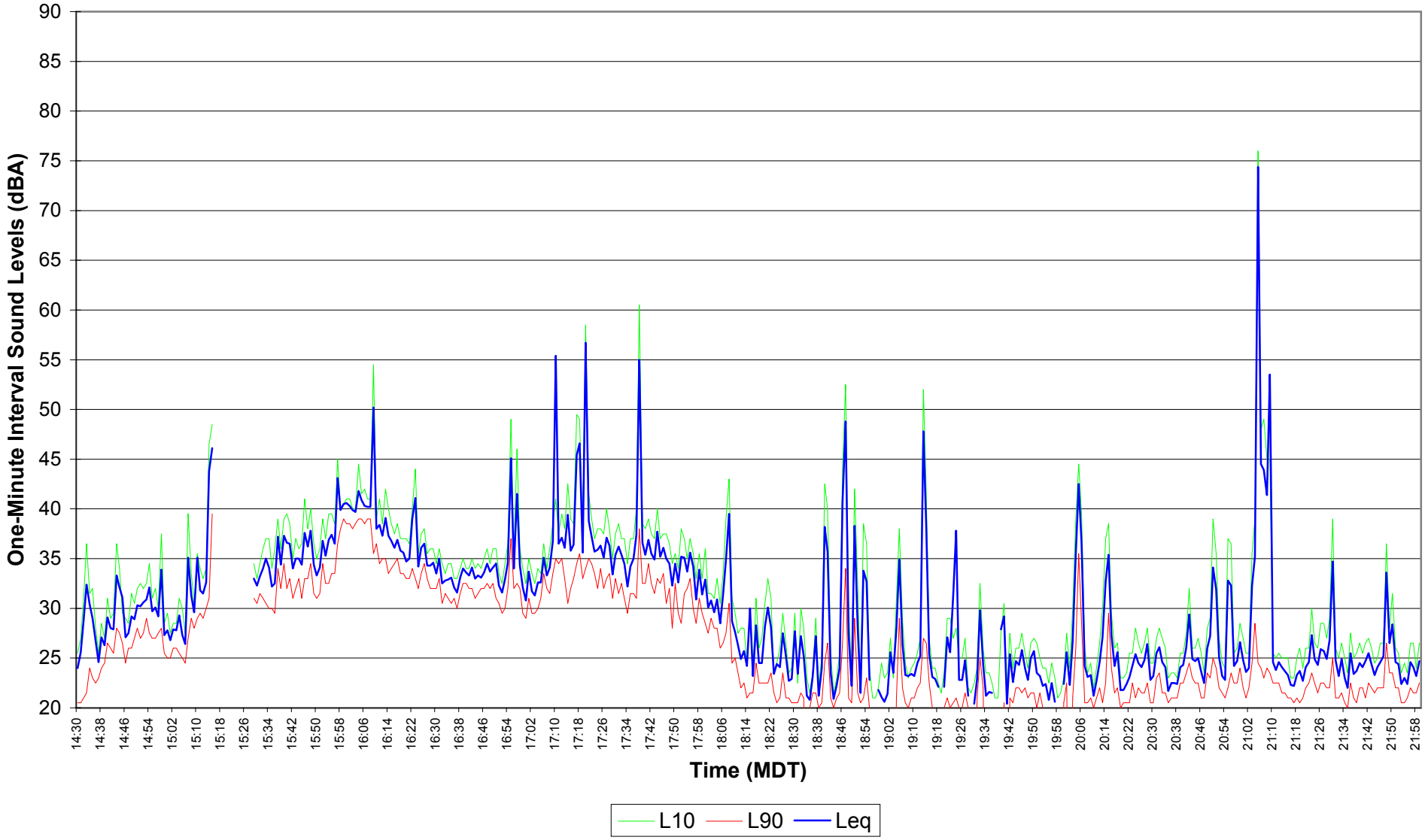


Figure E9.63
EnCana Rosebud
Site 9 Noise Survey
Dec. 13, 2004 - Dec. 14, 2004 22:00 - 06:59

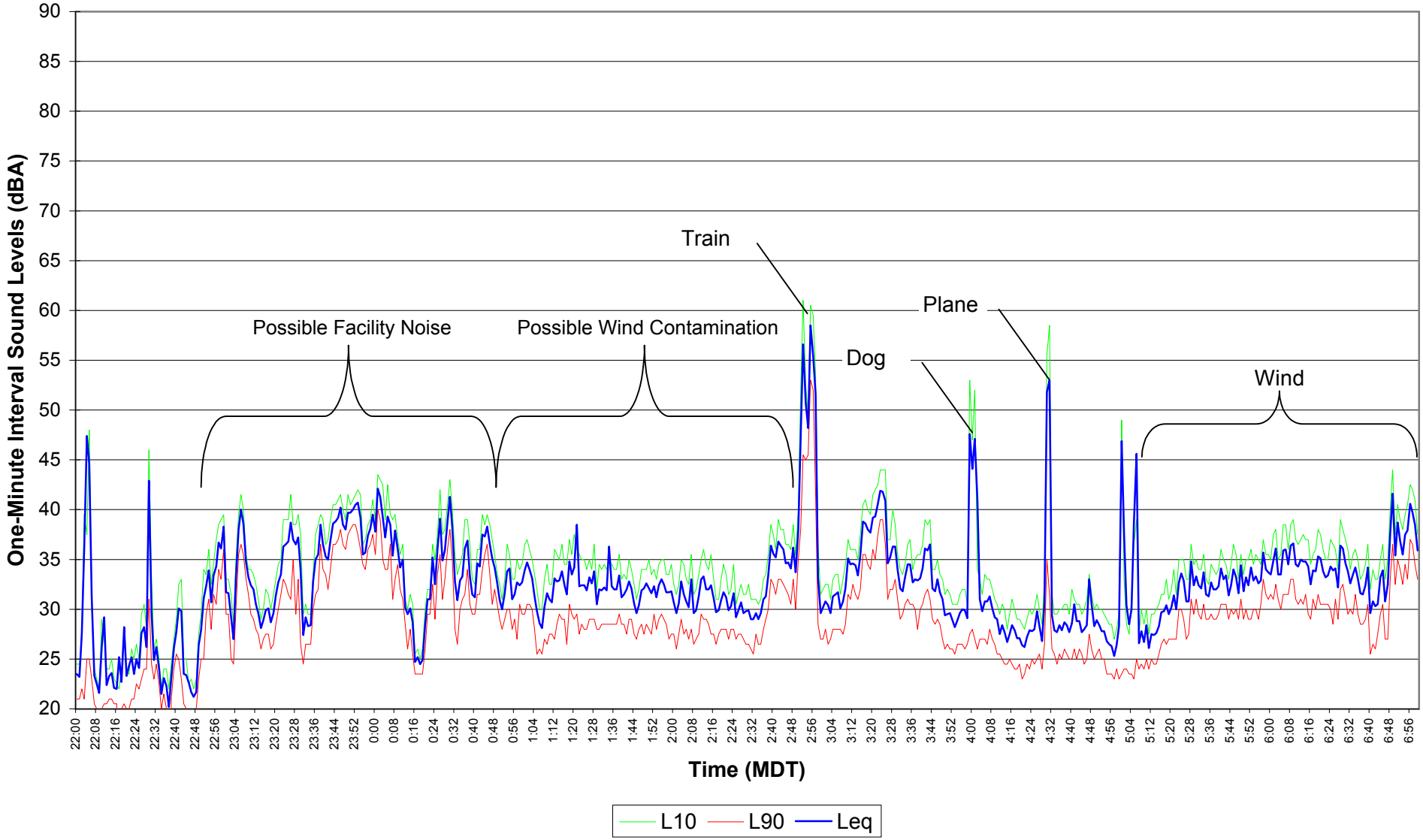


Figure E9.64
EnCana Rosebud
Site 9 Noise Survey
Dec. 14, 2004 07:00 - 14:29

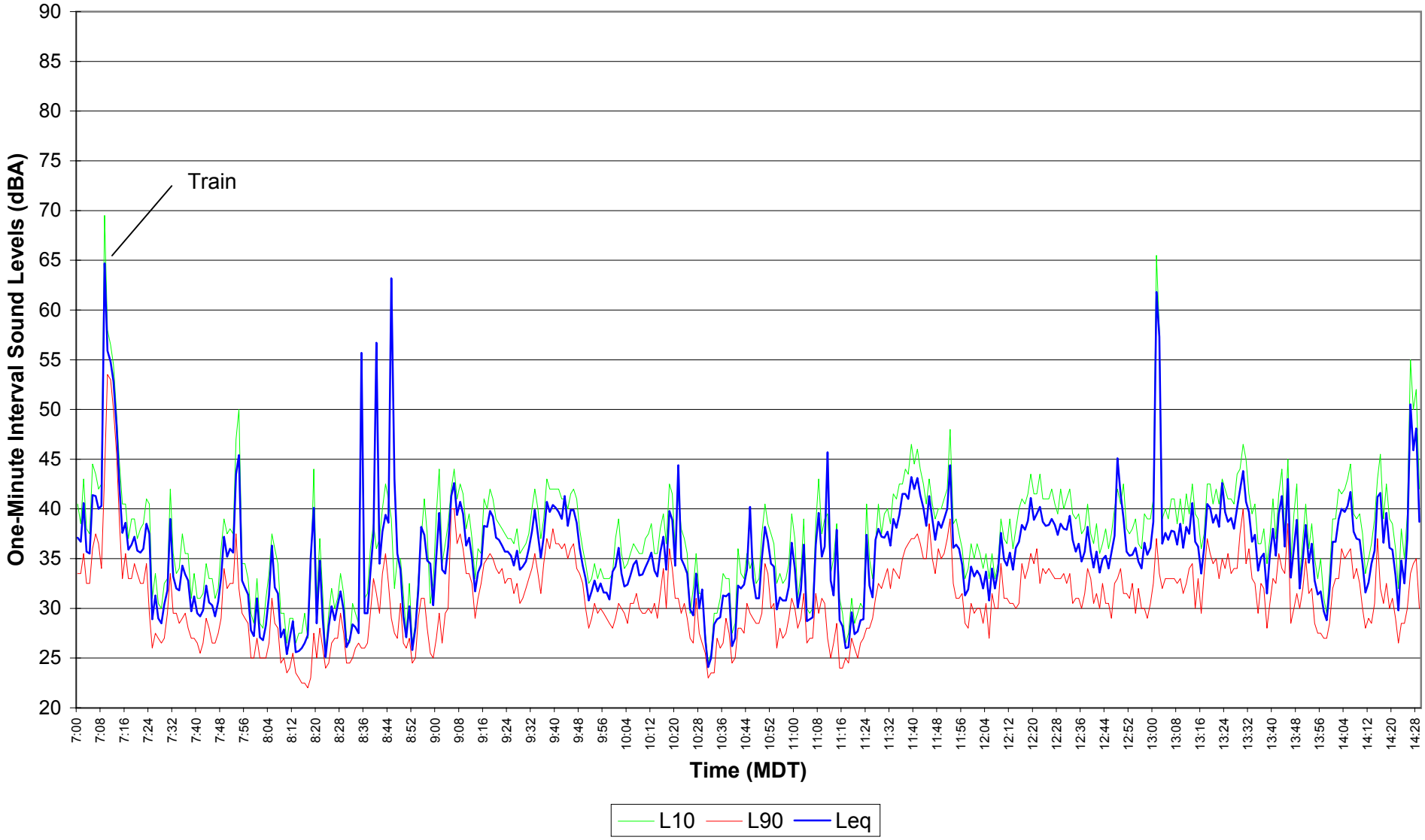


Figure E9.65
EnCana Rosebud
Site 9 Noise Survey
Dec. 14, 2004 14:30 - 21:59

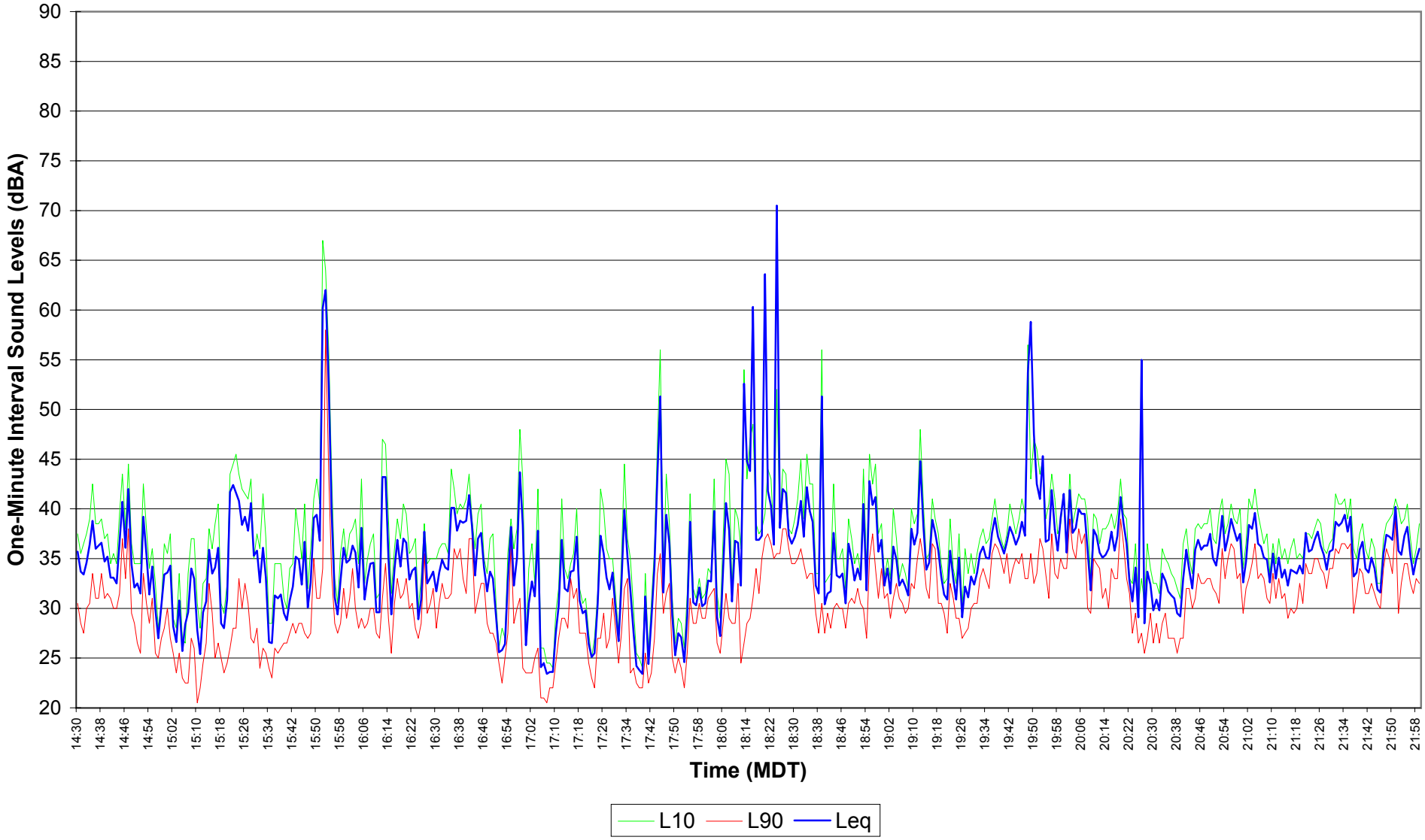


Figure E9.66
EnCana Rosebud
Site 9 Noise Survey
Dec. 14, 2004 - Dec. 15, 2004 22:00 - 06:59

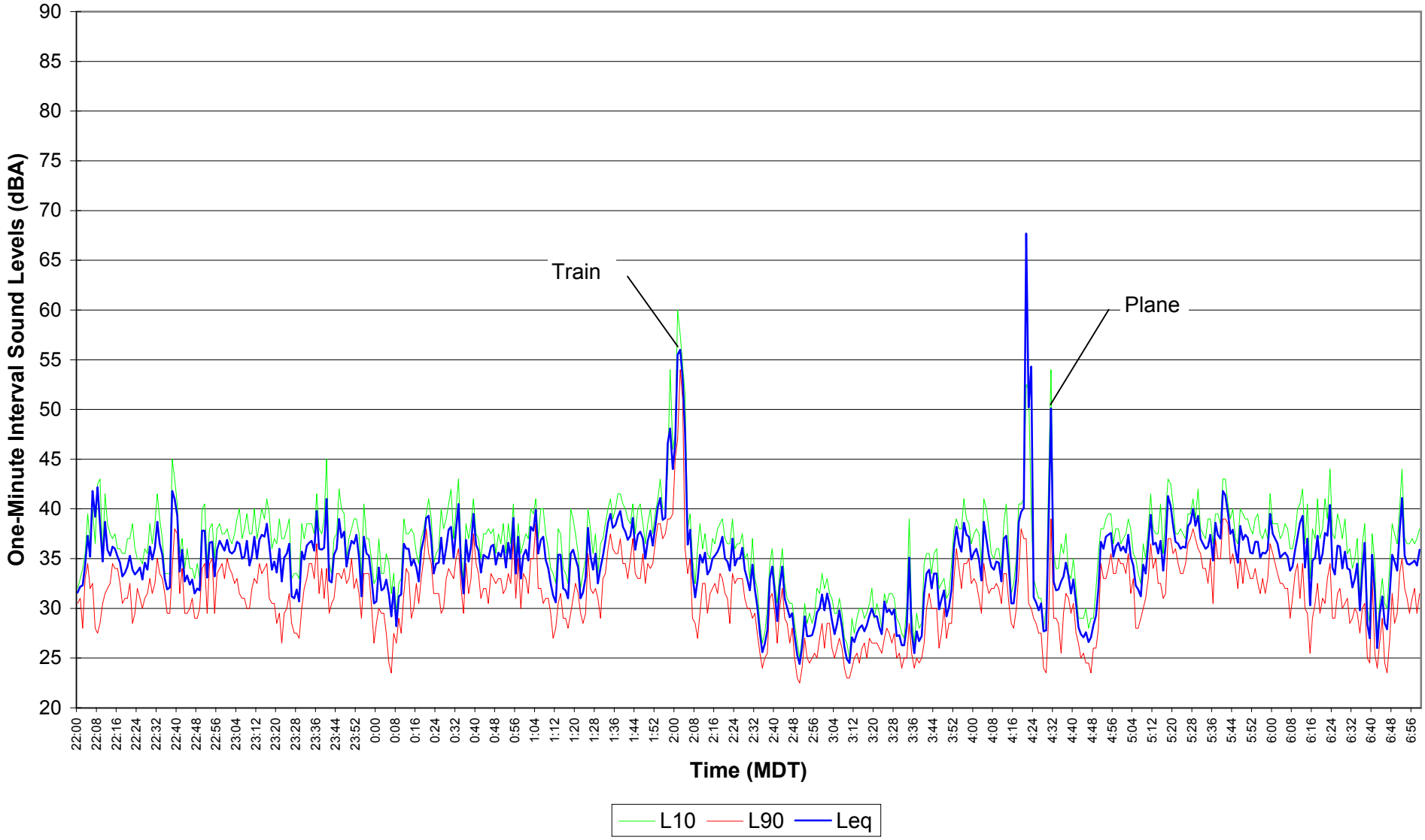


Figure E9.67
EnCana Rosebud
Site 9 Noise Survey
Dec. 15, 2004 07:00 - 14:29

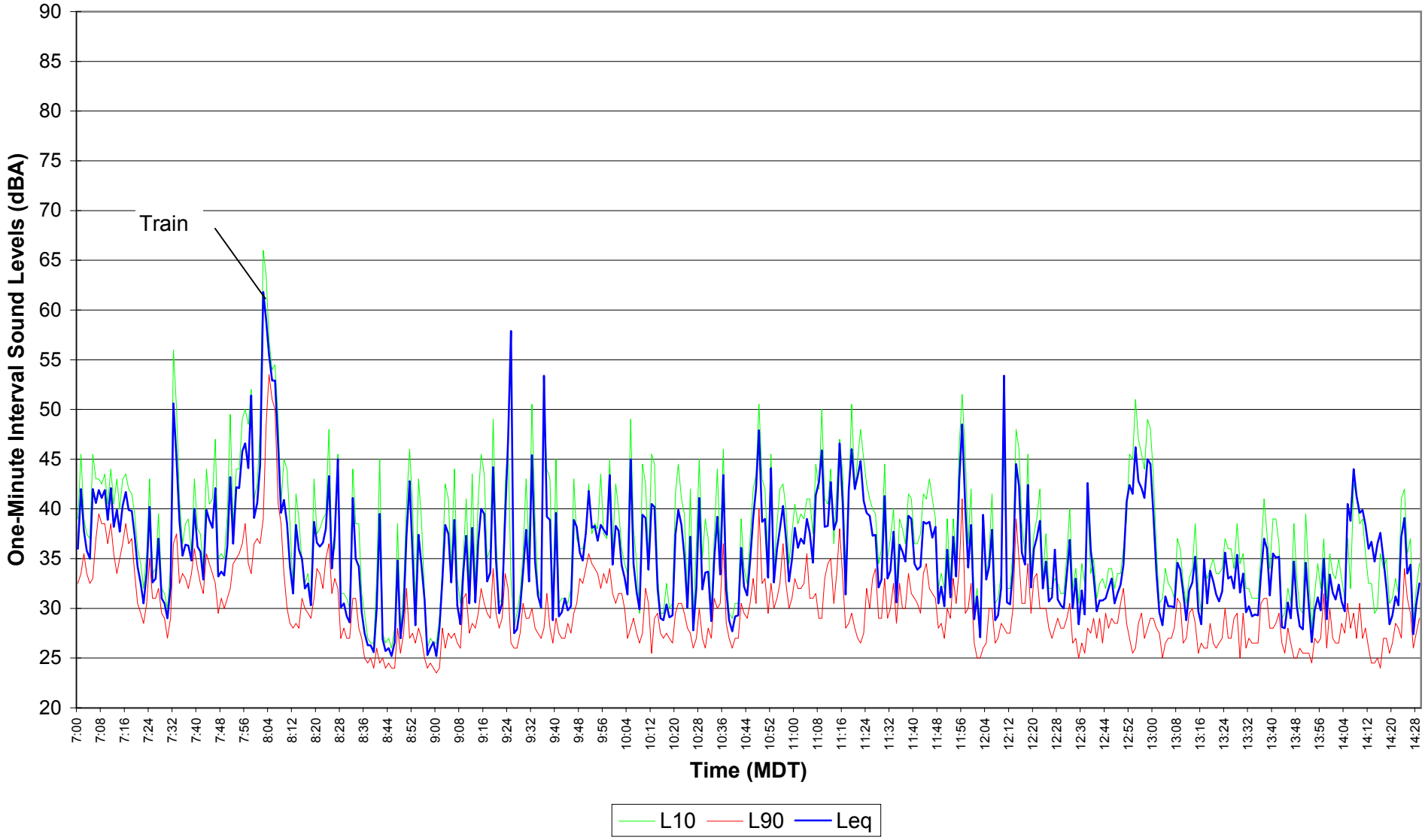


Figure E9.68
EnCana Rosebud
Site 9 Noise Survey
Dec. 15, 2004 14:30 - 21:59

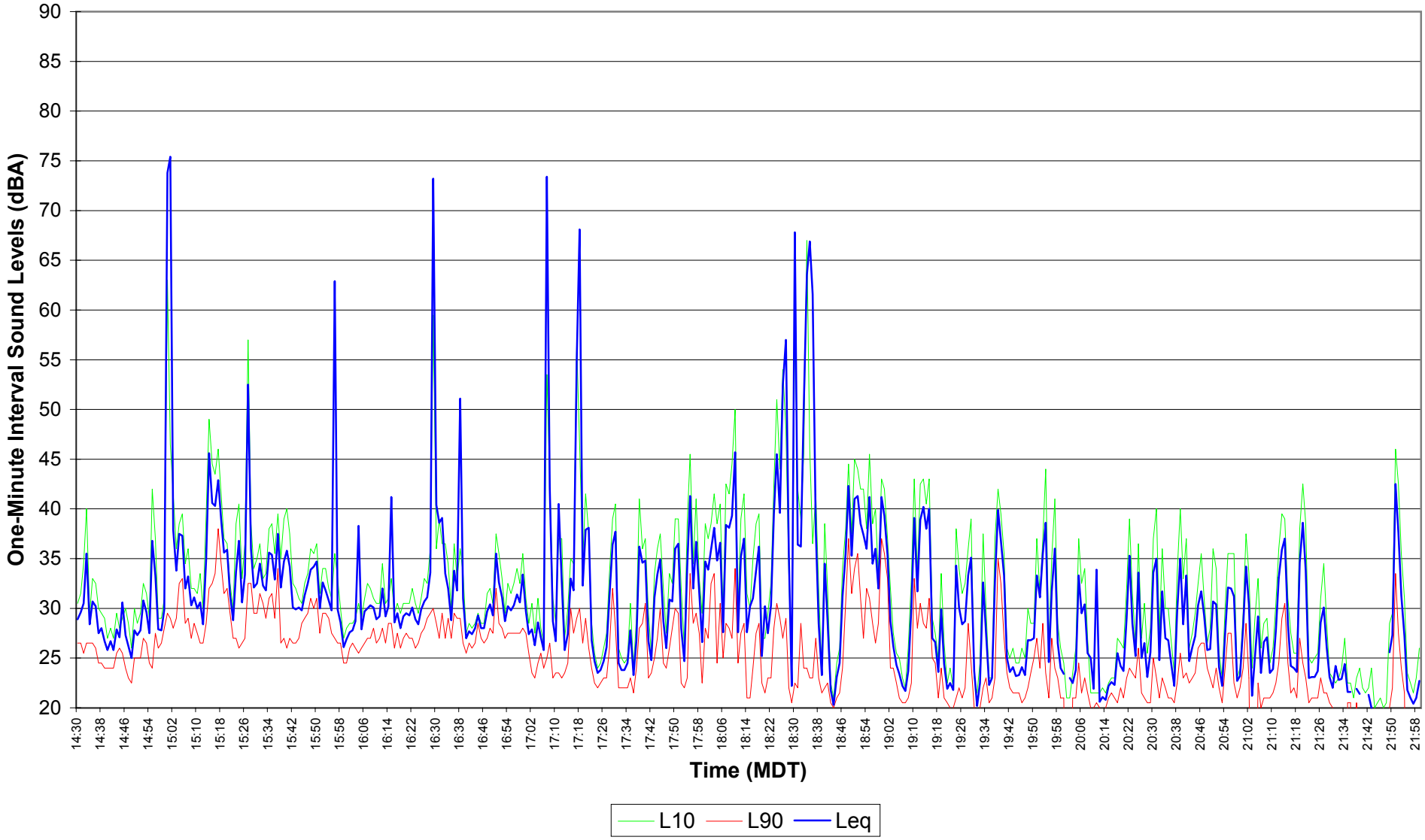


Figure E9.69
EnCana Rosebud
Site 9 Noise Survey
Dec. 15, 2004 - Dec. 16, 2004 22:00 - 06:59

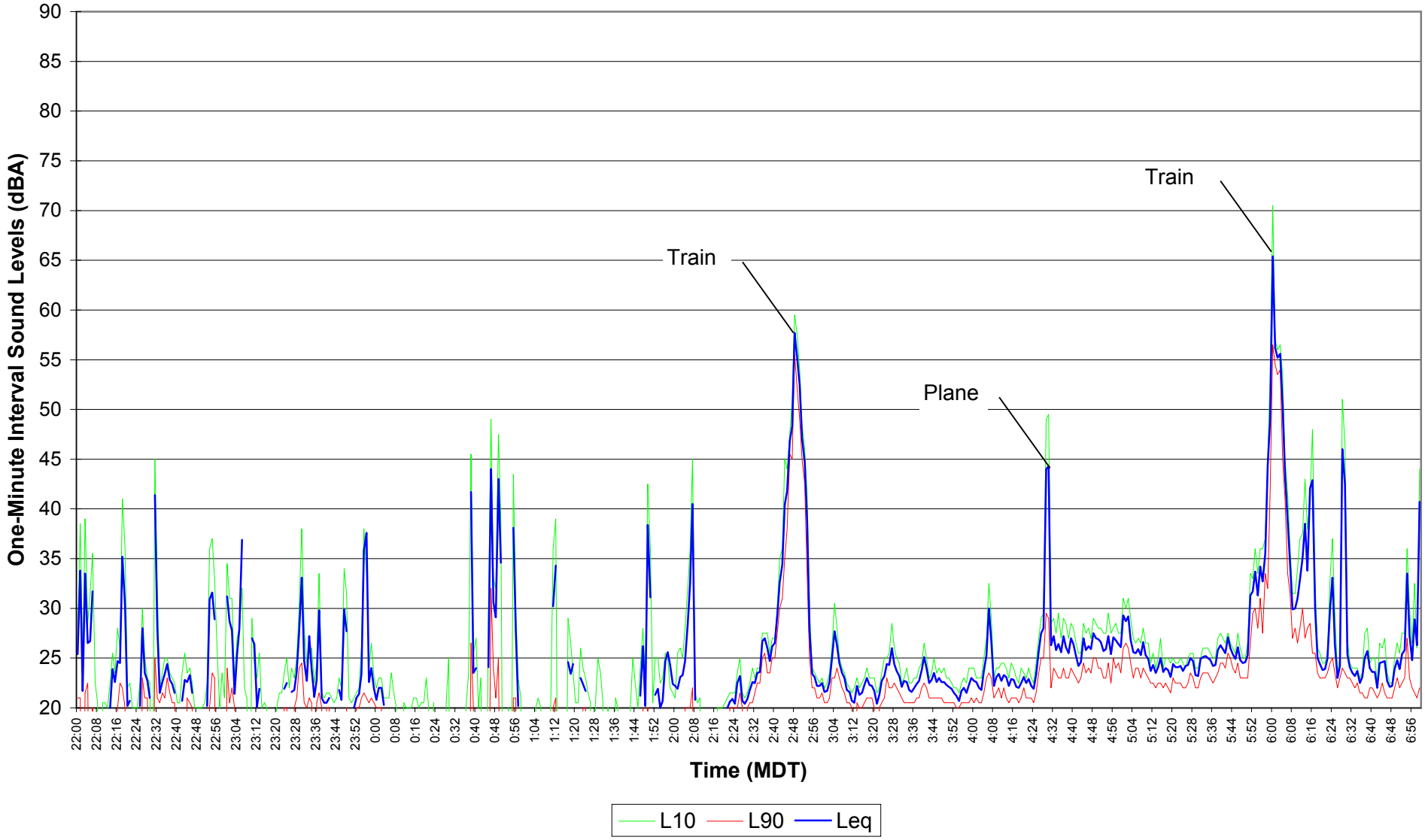


Figure E9.70

EnCana Rosebud

Site 9 Noise Survey

Dec. 16, 2004 07:00 - 14:29

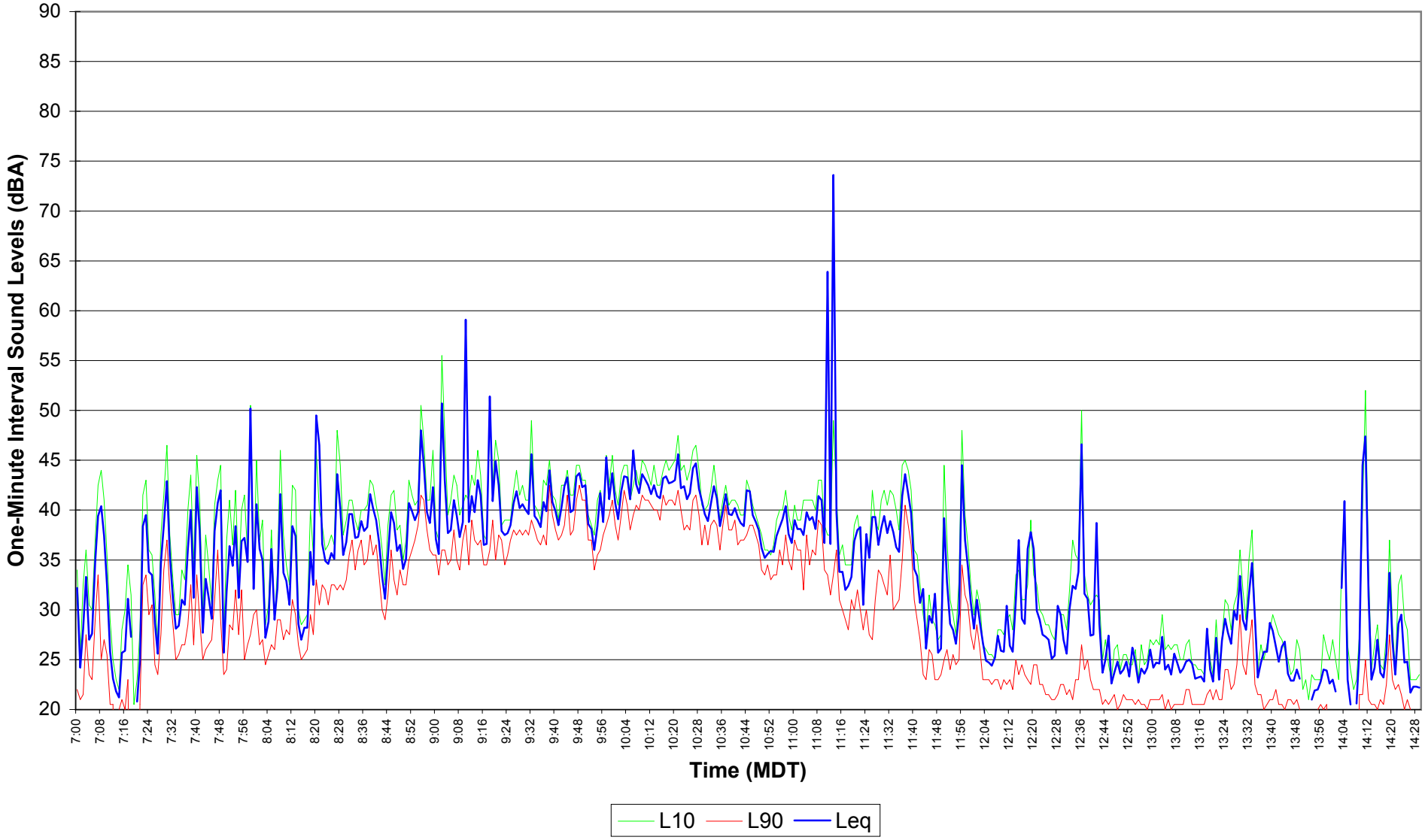


Figure E9.71
EnCana Rosebud
Site 9 Noise Survey
Dec. 16, 2004 14:30 - 21:59

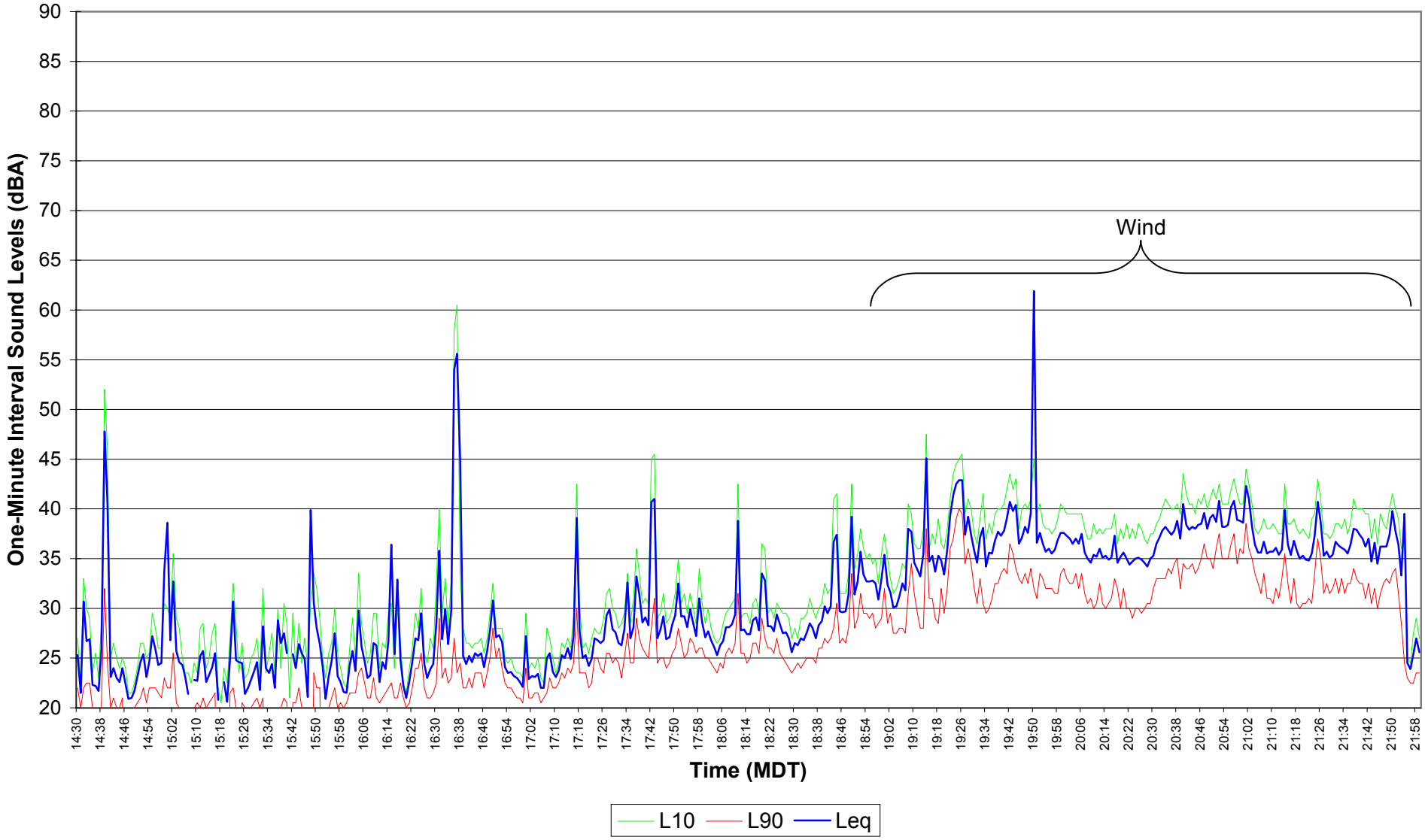


Figure E9.72
EnCana Rosebud
Site 9 Noise Survey
Dec. 16, 2004 - Dec. 17, 2004 22:00 - 06:59

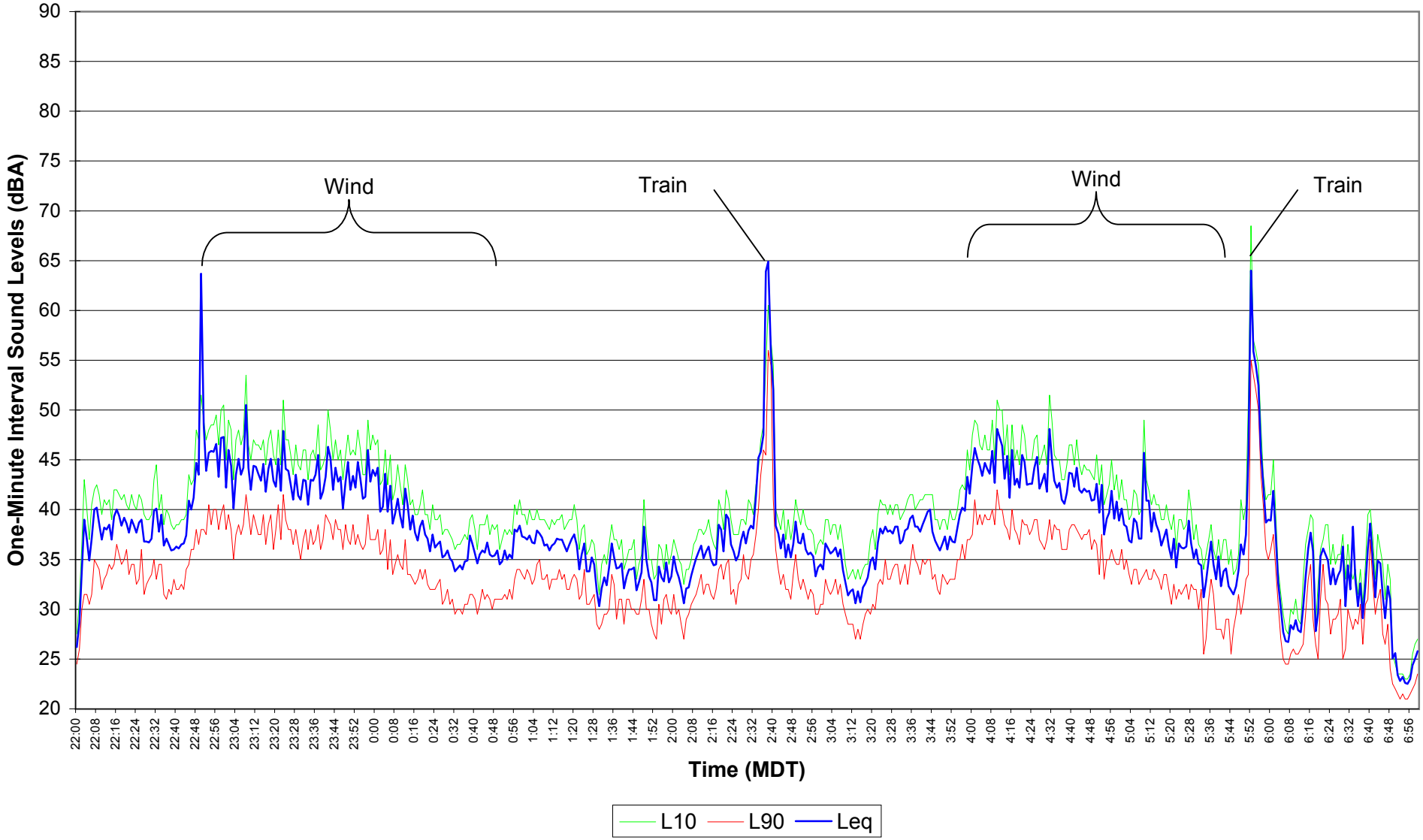


Figure E9.73
EnCana Rosebud
Site 9 Noise Survey
Dec. 17, 2004 07:00 - 14:29

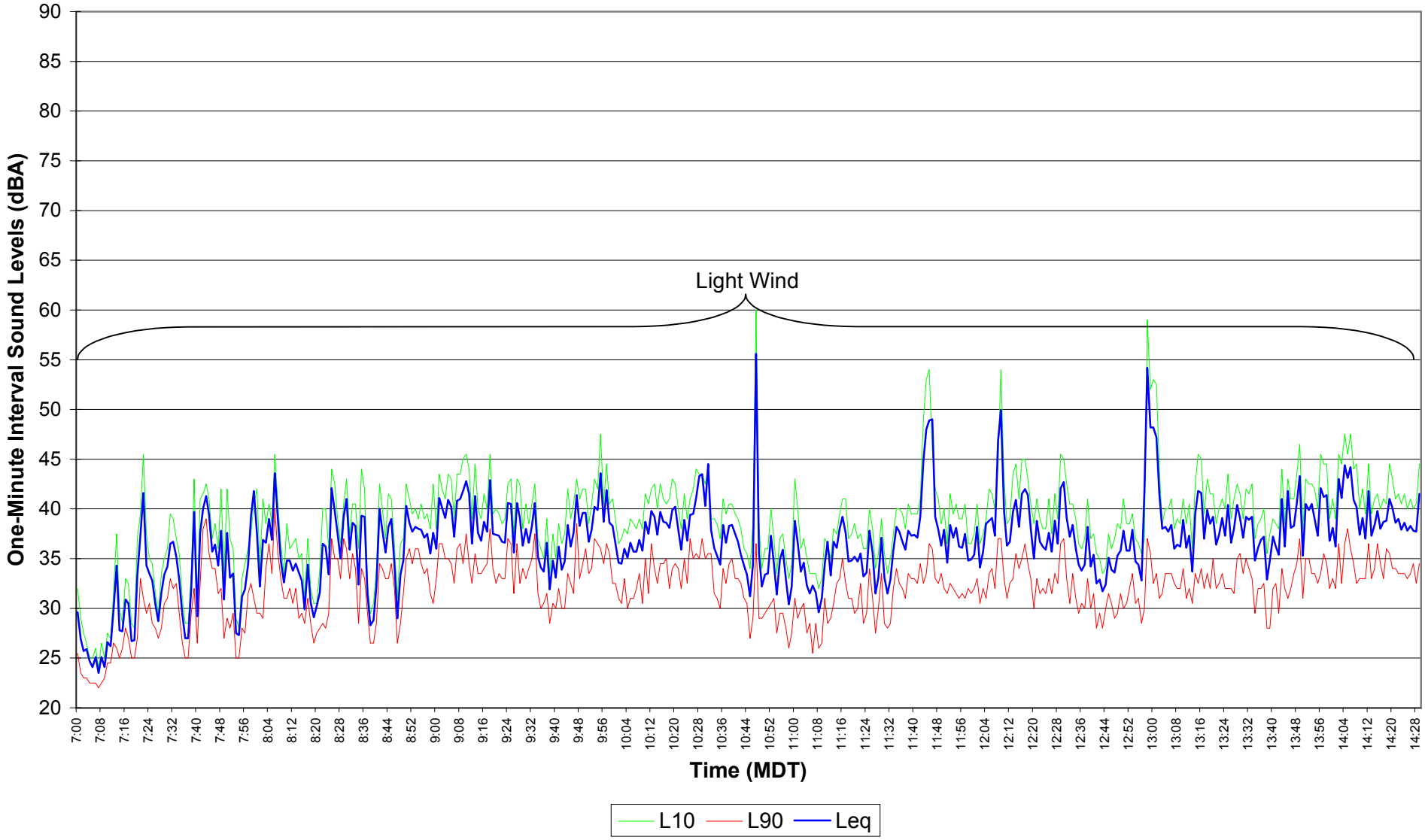


Figure E9.74
EnCana Rosebud
Site 9 Noise Survey
Dec. 17, 2004 14:30 - 21:59

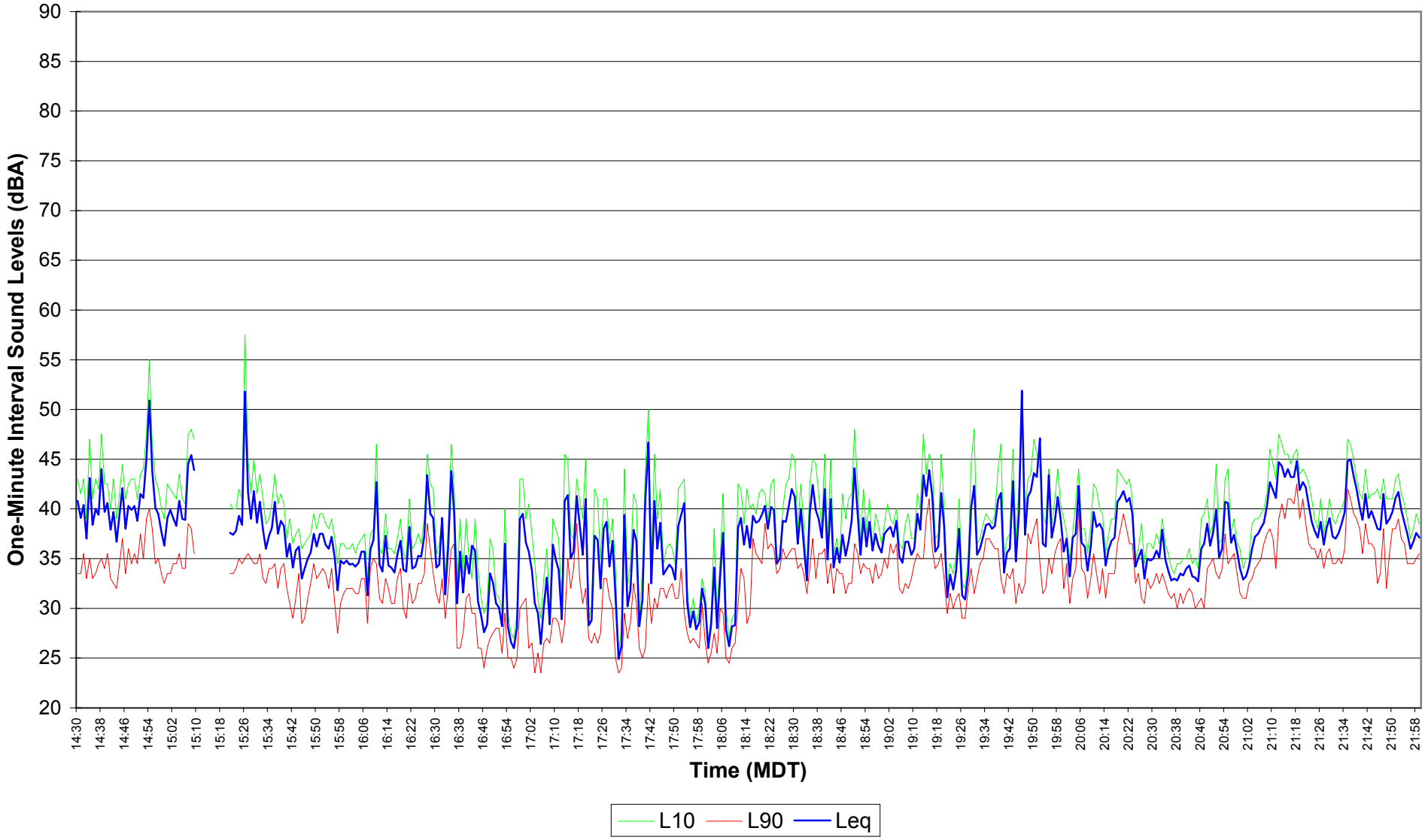


Figure E9.75
EnCana Rosebud
Site 9 Noise Survey
Dec. 17, 2004 - Dec. 18, 2004 22:00 - 06:59

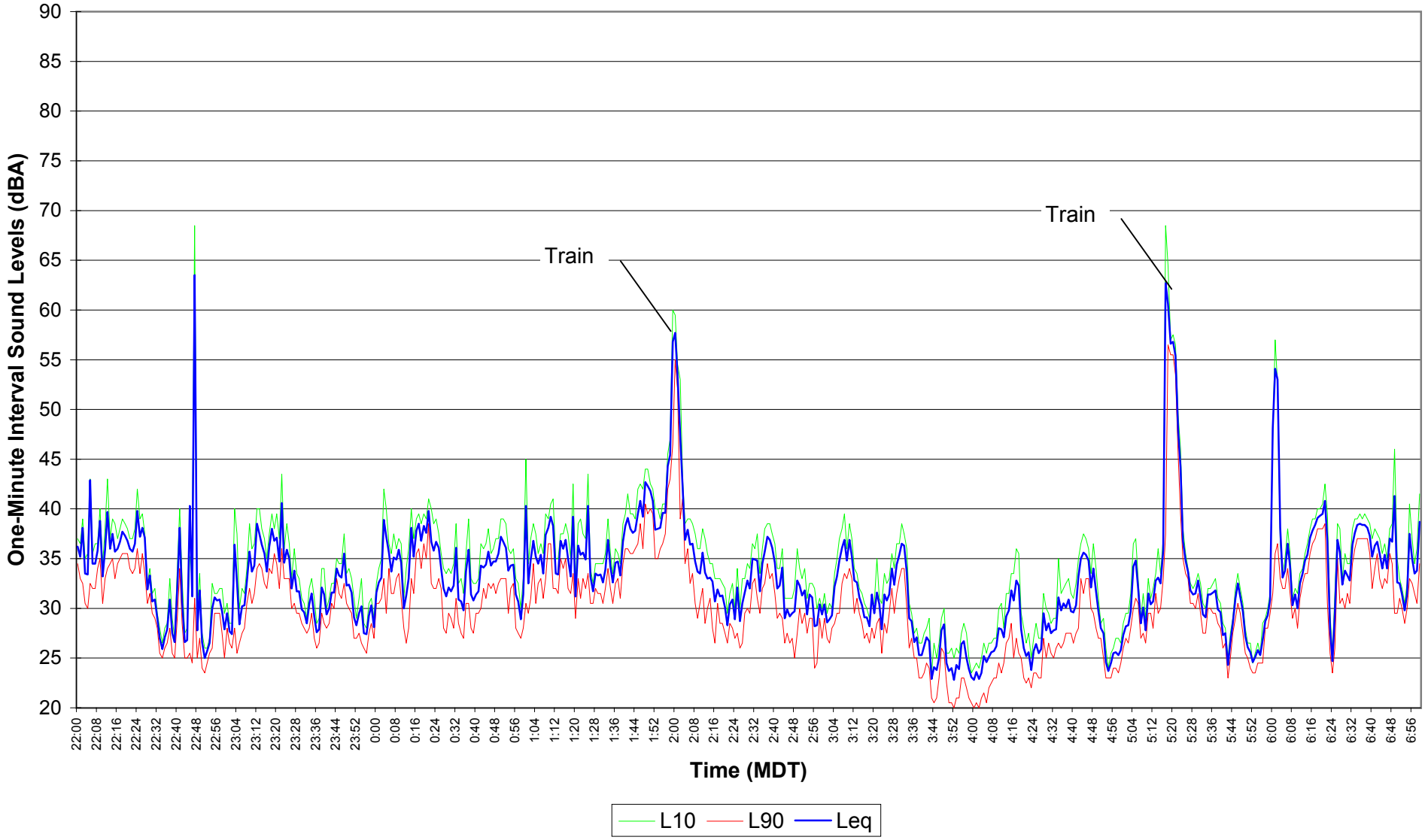


Figure E9.76
EnCana Rosebud
Site 9 Noise Survey
Dec. 18, 2004 07:00 - 14:29

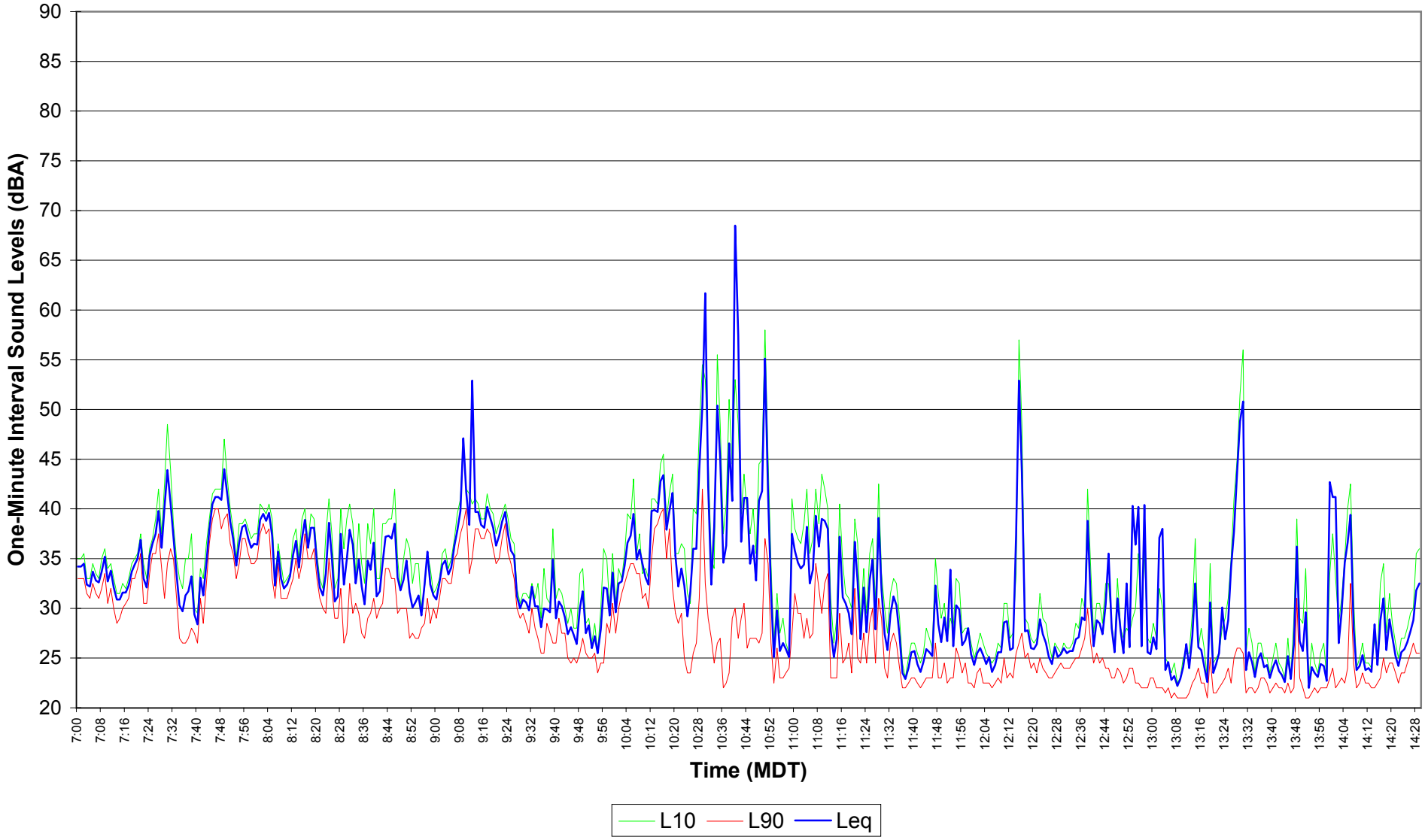


Figure E9.77
EnCana Rosebud
Site 9 Noise Survey
Dec. 18, 2004 14:30 - 21:59

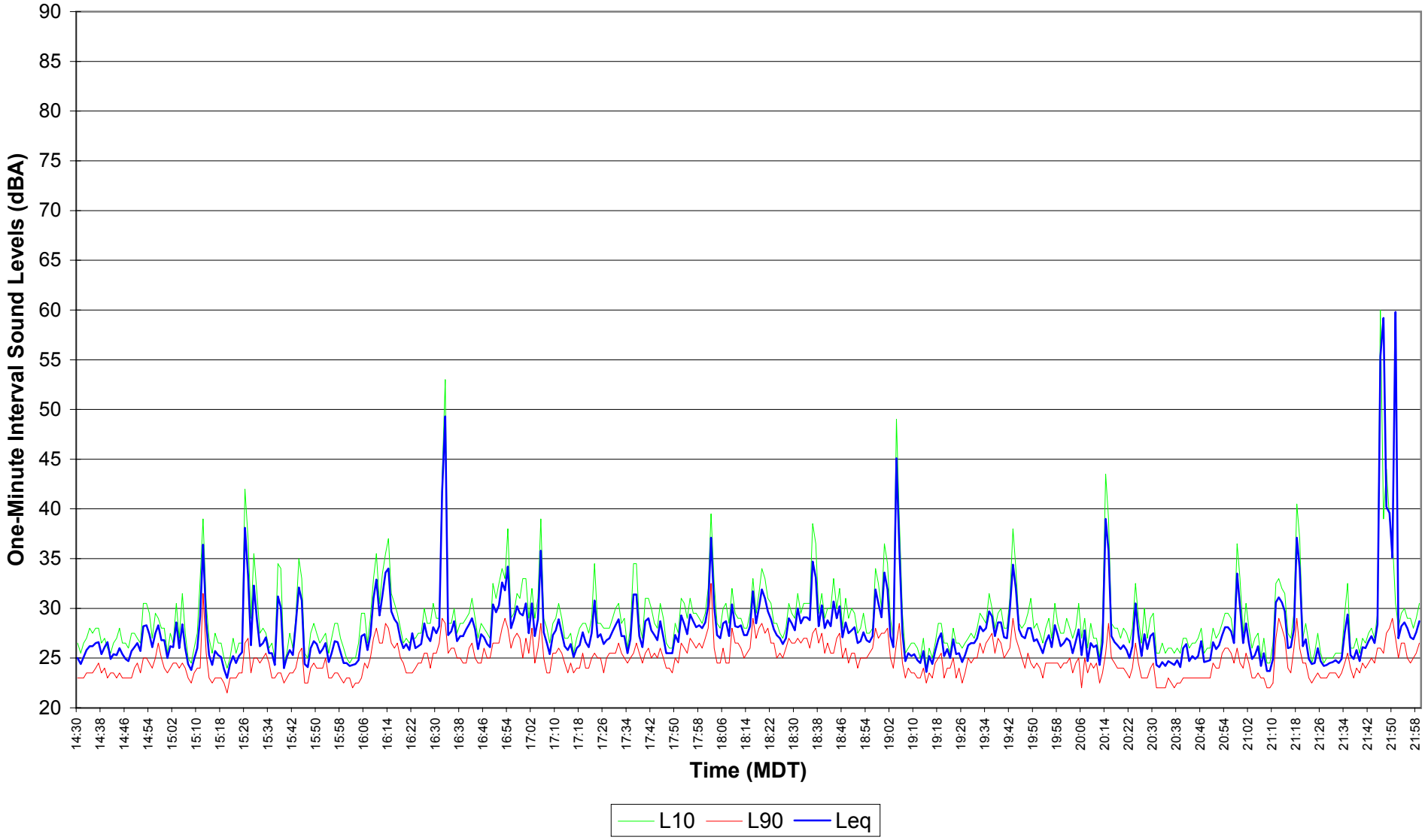


Figure E9.78
EnCana Rosebud
Site 9 Noise Survey
Dec. 18, 2004 - Dec. 19, 2004 22:00 - 06:59

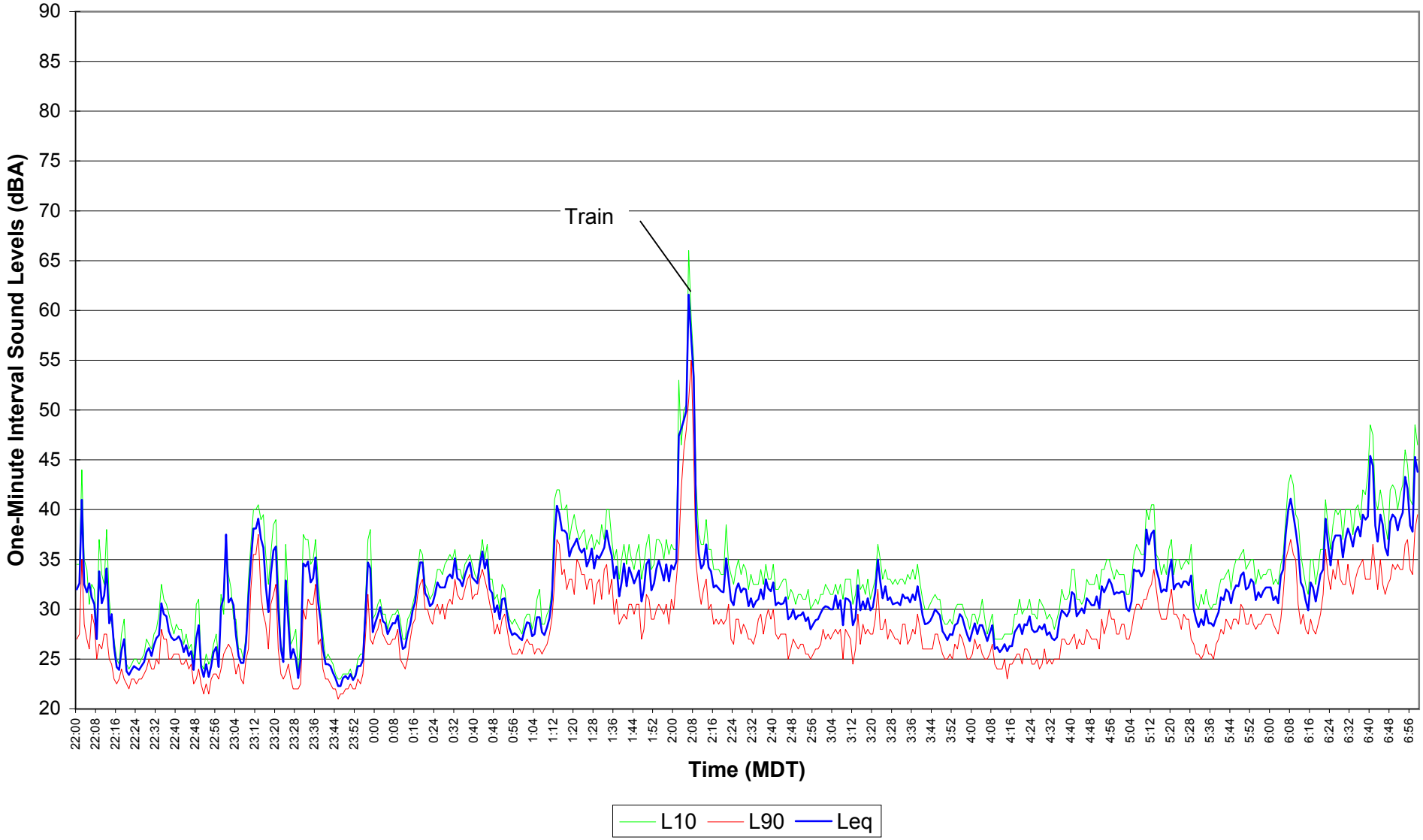


Figure E9.79
EnCana Rosebud
Site 9 Noise Survey
Dec. 19, 2004 07:00 - 14:29

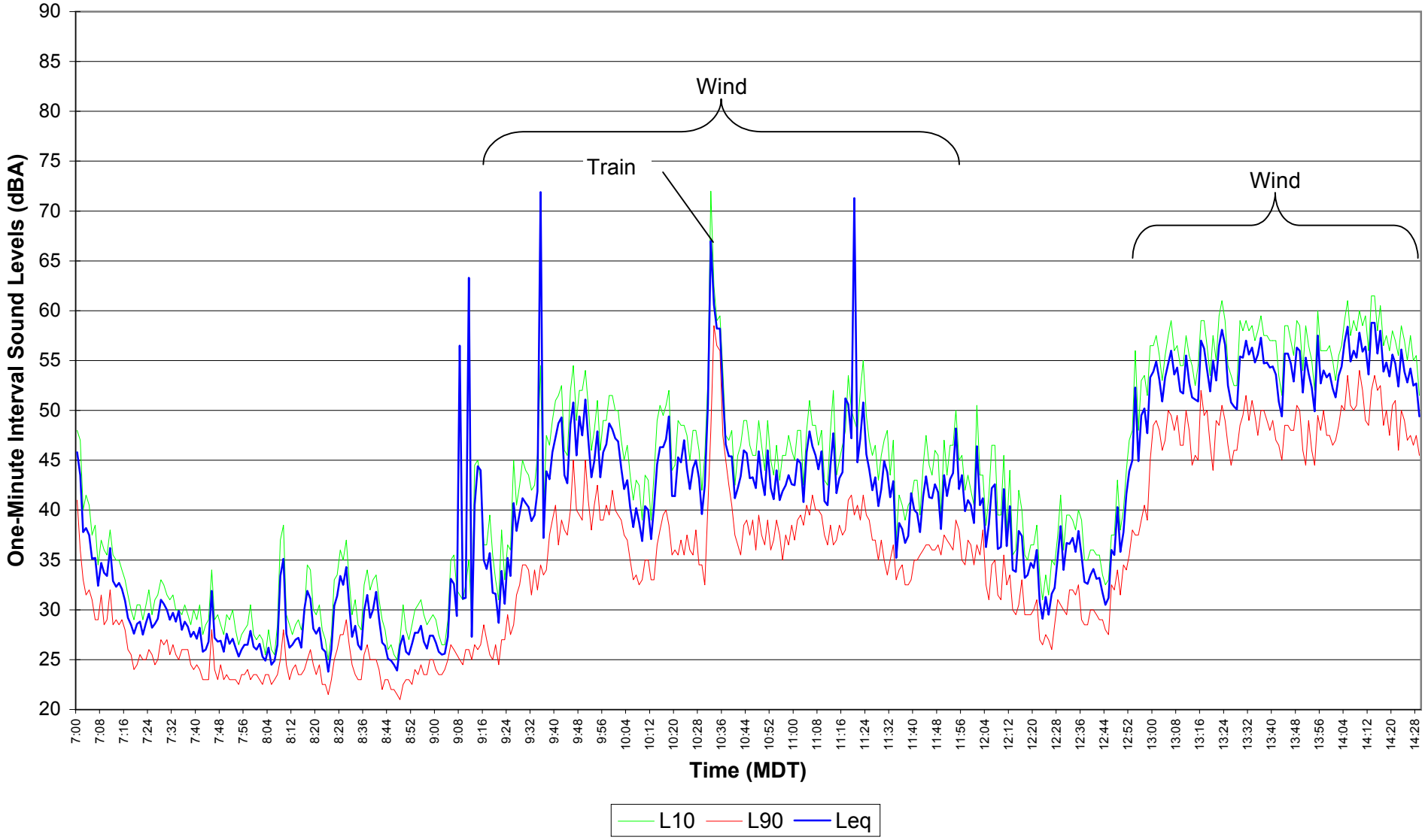


Figure E9.80
EnCana Rosebud
Site 9 Noise Survey
Dec. 19, 2004 14:30 - 21:59

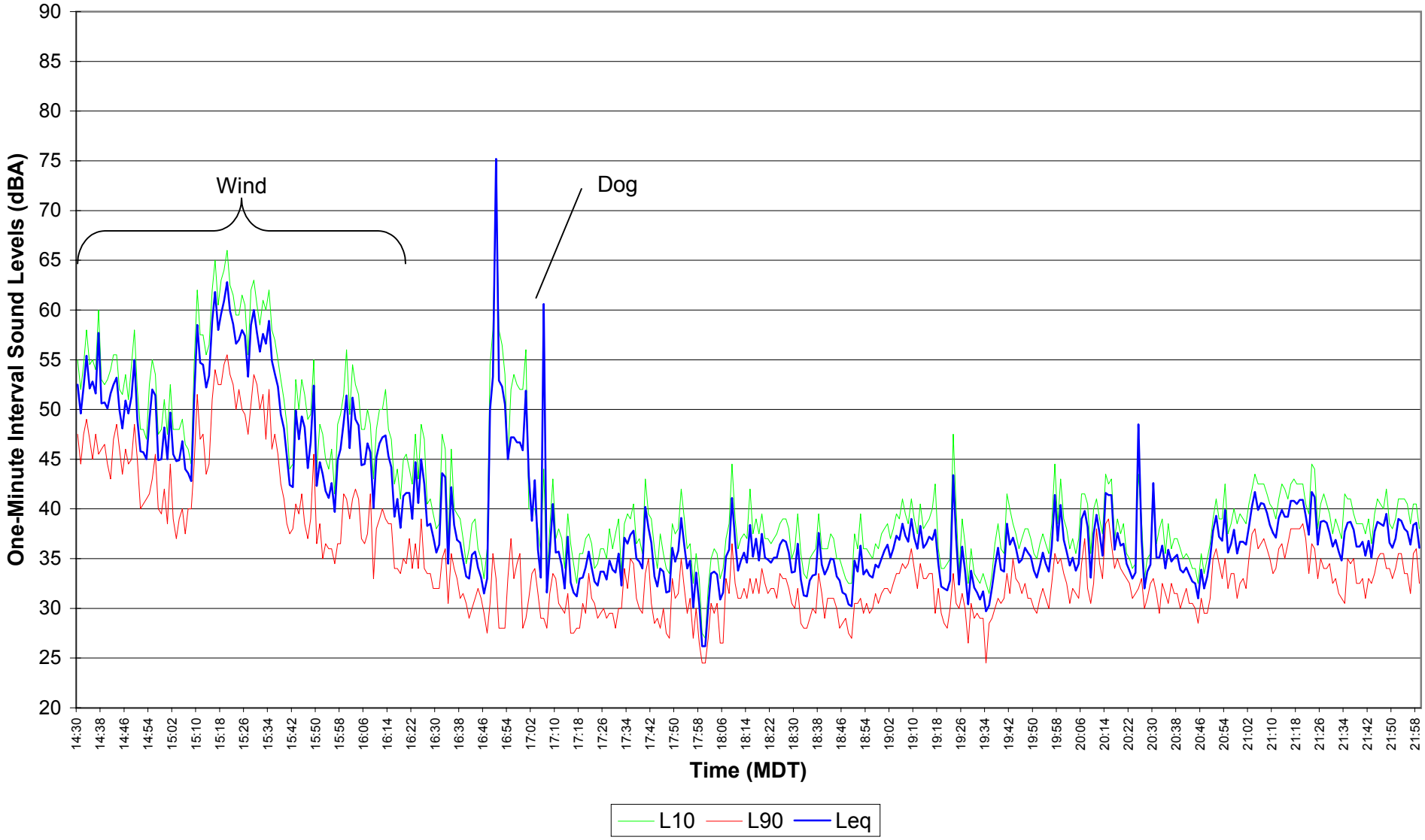


Figure E9.81
EnCana Rosebud
Site 9 Noise Survey
Dec. 19, 2004 - Dec. 20, 2004 22:00 - 06:59

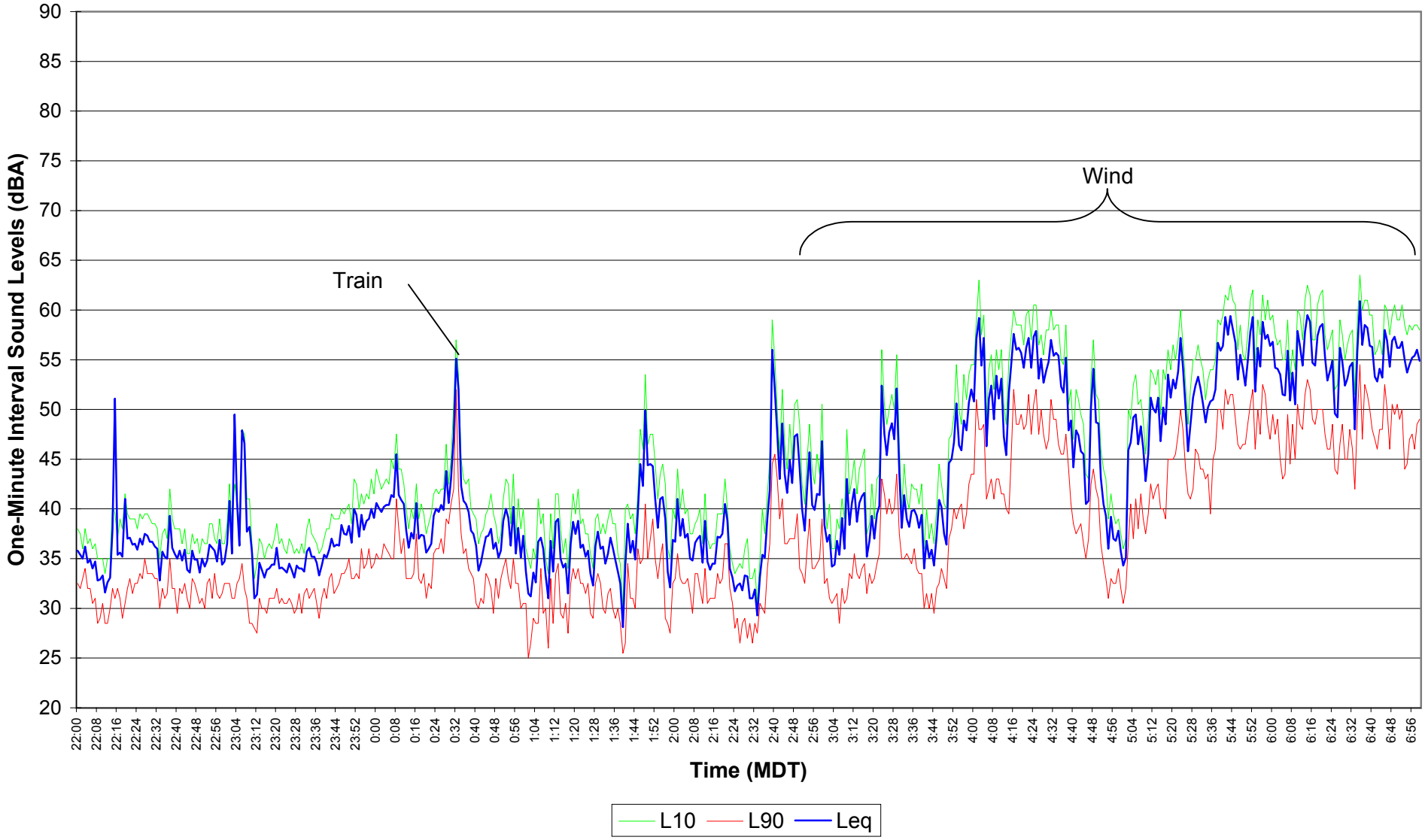


Figure E9.82
EnCana Rosebud
Site 9 Noise Survey
Dec. 20, 2004 07:00 - 14:29

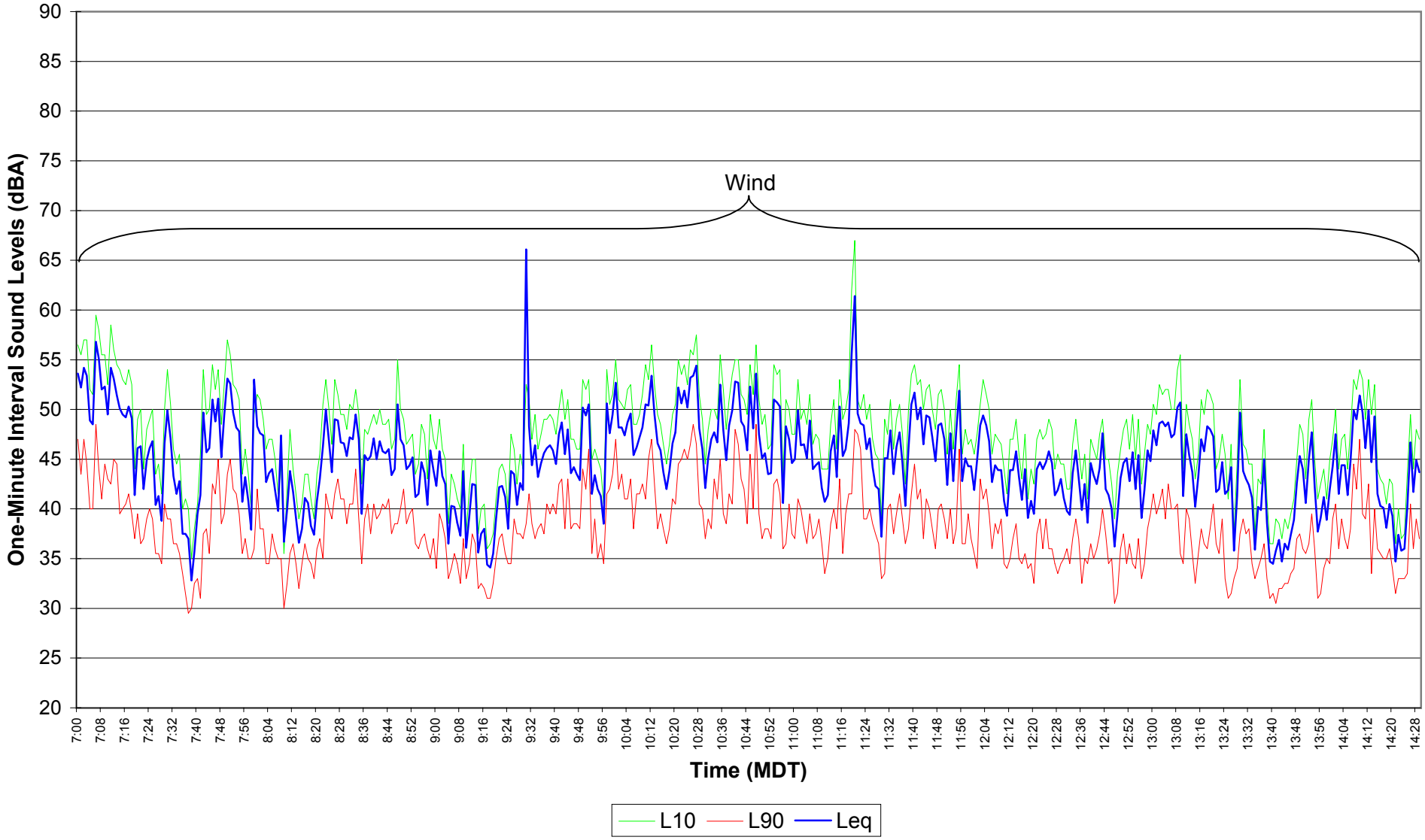
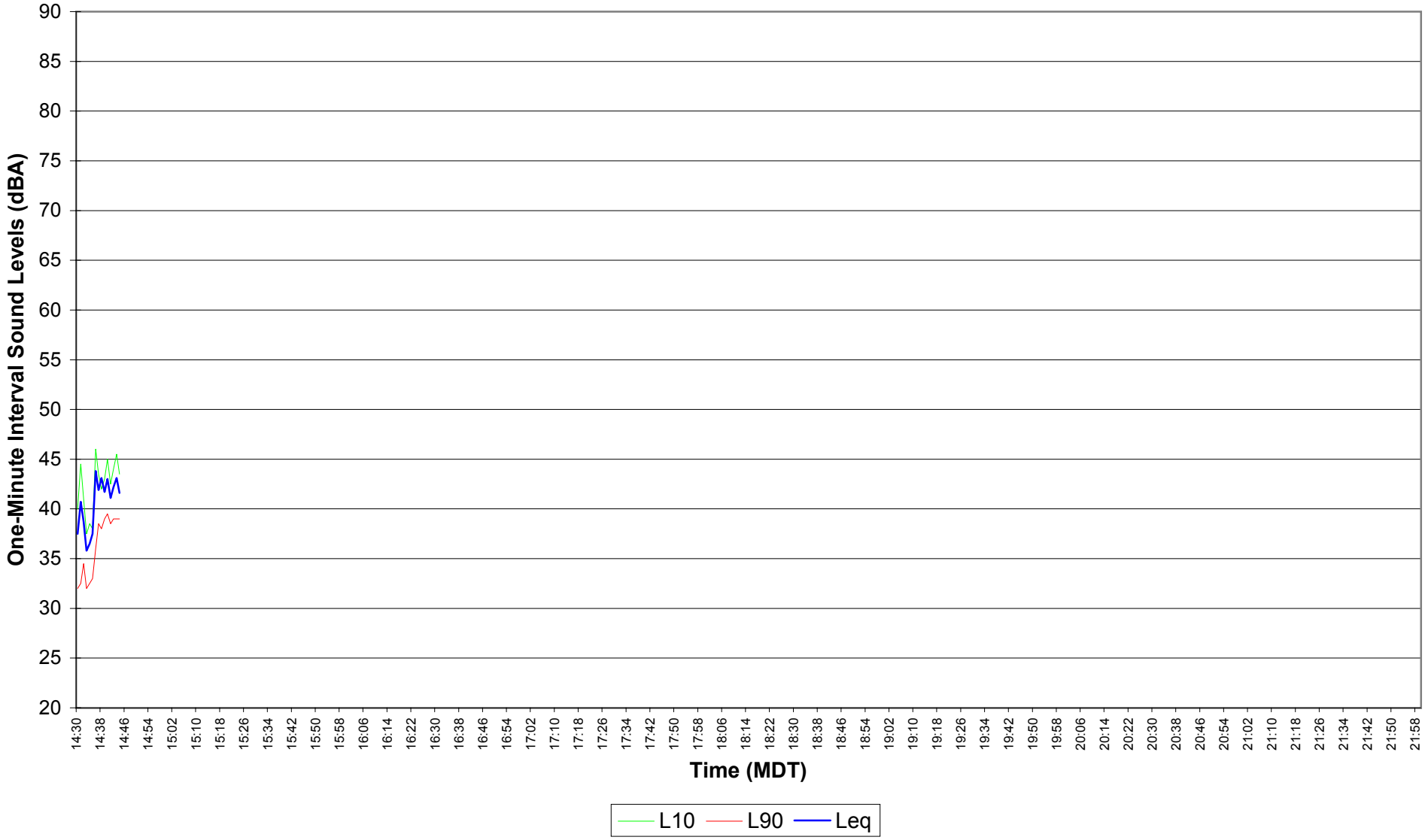


Figure E9.83
EnCana Rosebud
Site 9 Noise Survey
Dec. 20, 2004 14:30 - 21:59



APPENDIX F

Measurement Results
Graphs of 1-Minute L_{90},
1-Hour Moving Average Data
All Sites

Figure F.1

EnCana Rosebud

L90 1 Hour Moving Average

Nov. 23, 2004 07:00 - 14:29

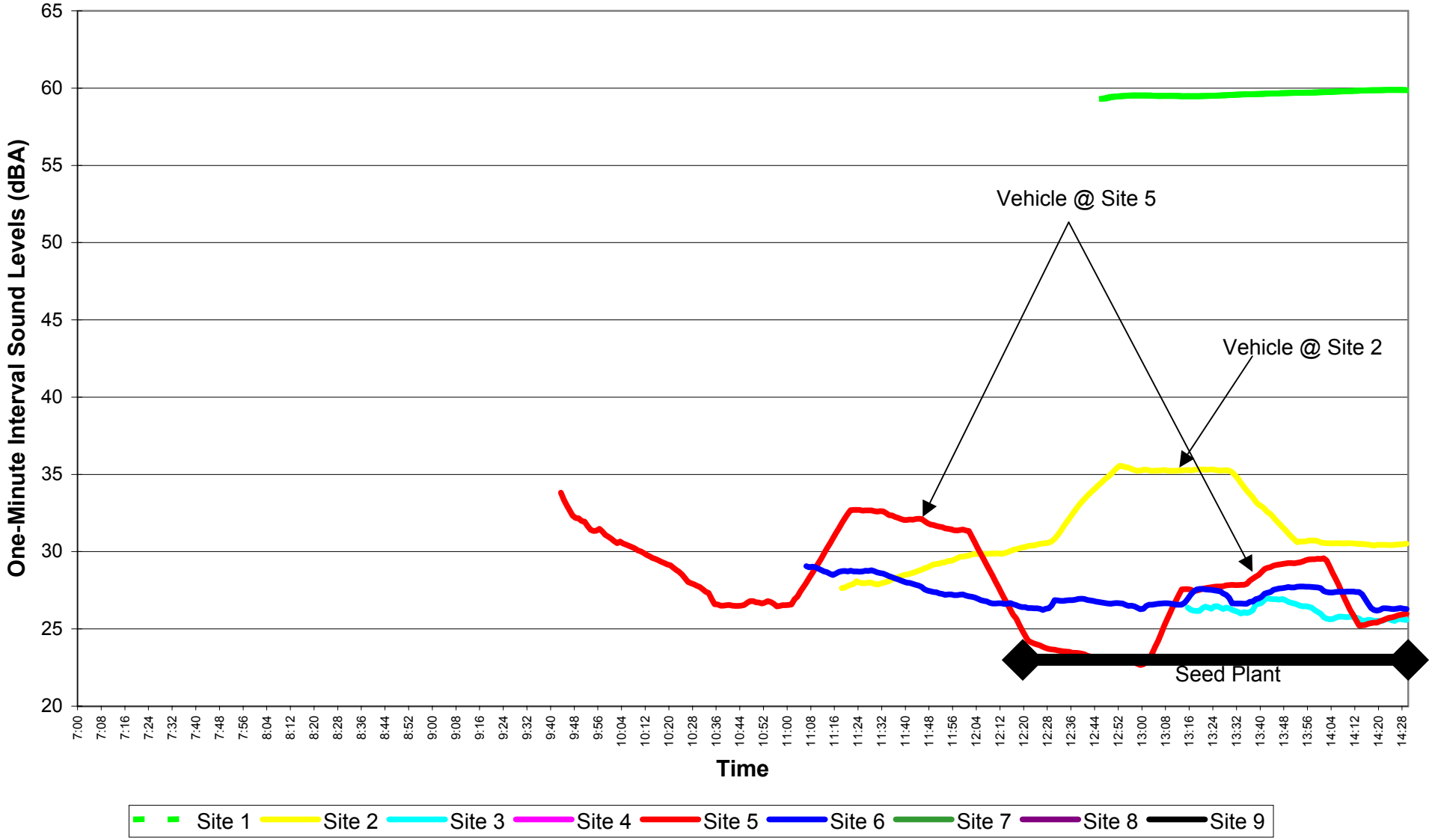


Figure F.2
EnCana Rosebud
L90 1 Hour Moving Average
Nov. 23, 2004 14:30 - 21:59

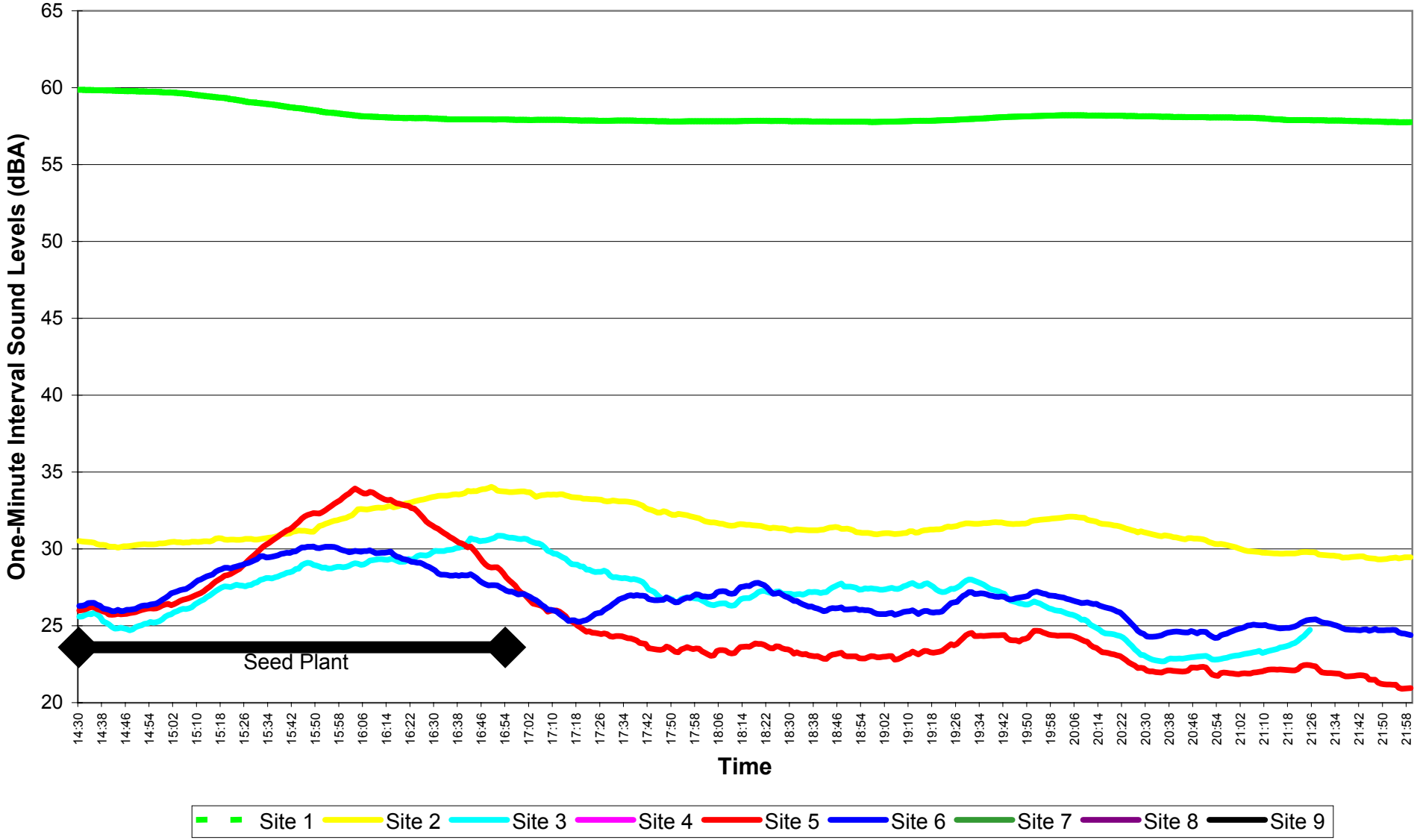


Figure F.3
EnCana Rosebud
L90 1 Hour Moving Average
Nov. 23, 2004 - Nov. 24, 2004 22:00 - 06:59

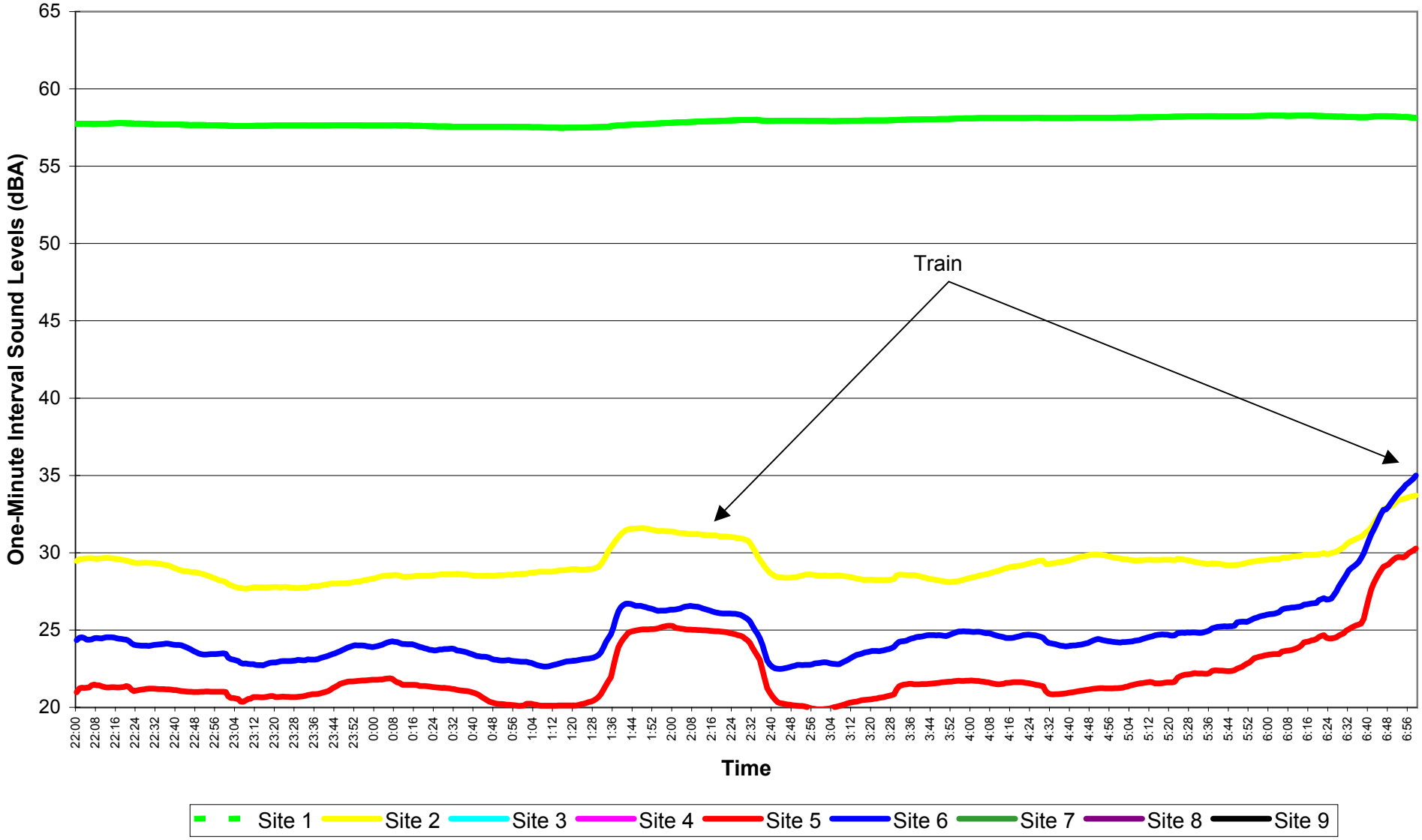


Figure F.4
EnCana Rosebud
L90 1 Hour Moving Average
Nov. 24, 2004 07:00 - 14:29

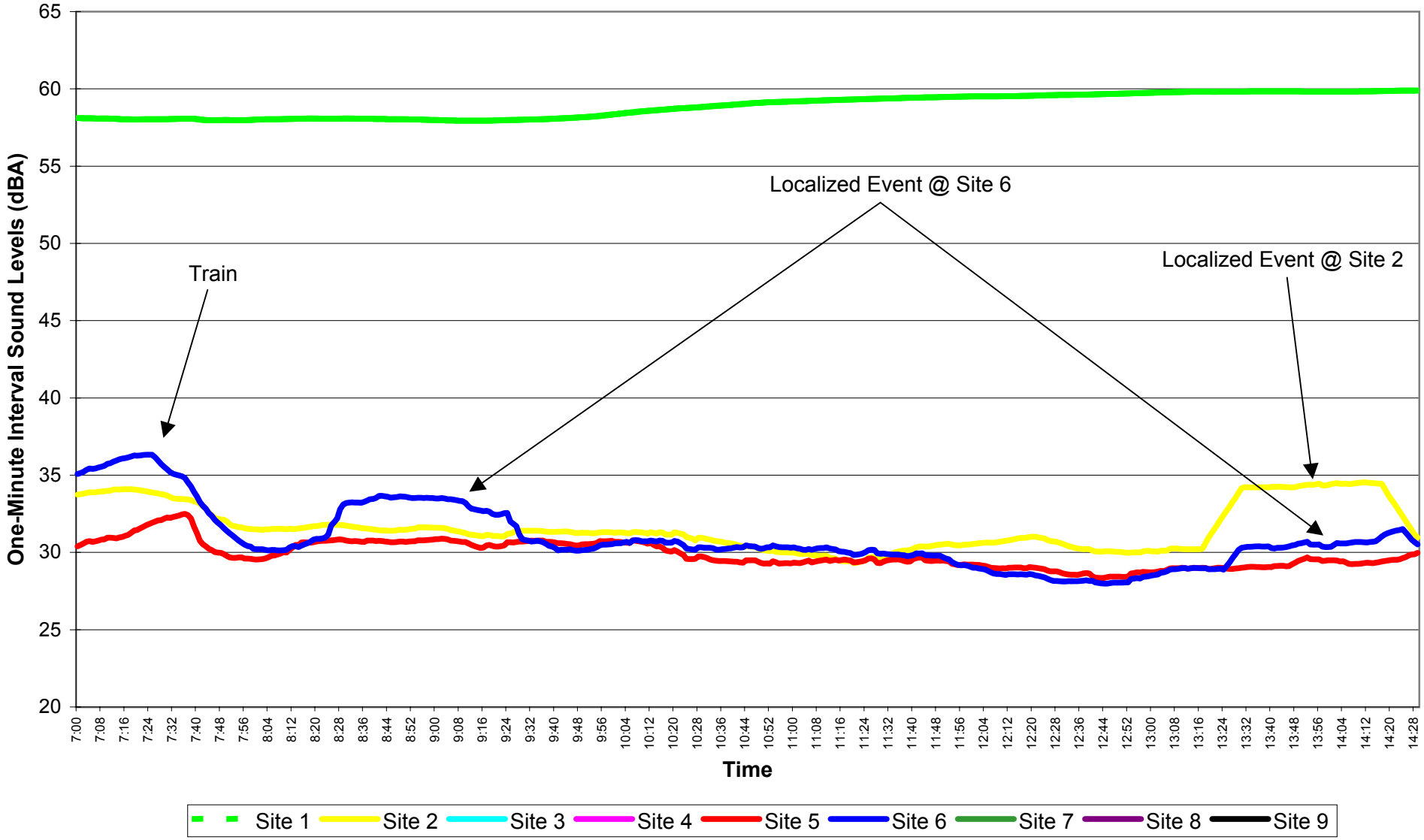


Figure F.5
EnCana Rosebud
L90 1 Hour Moving Average
Nov. 24, 2004 14:30 - 21:59

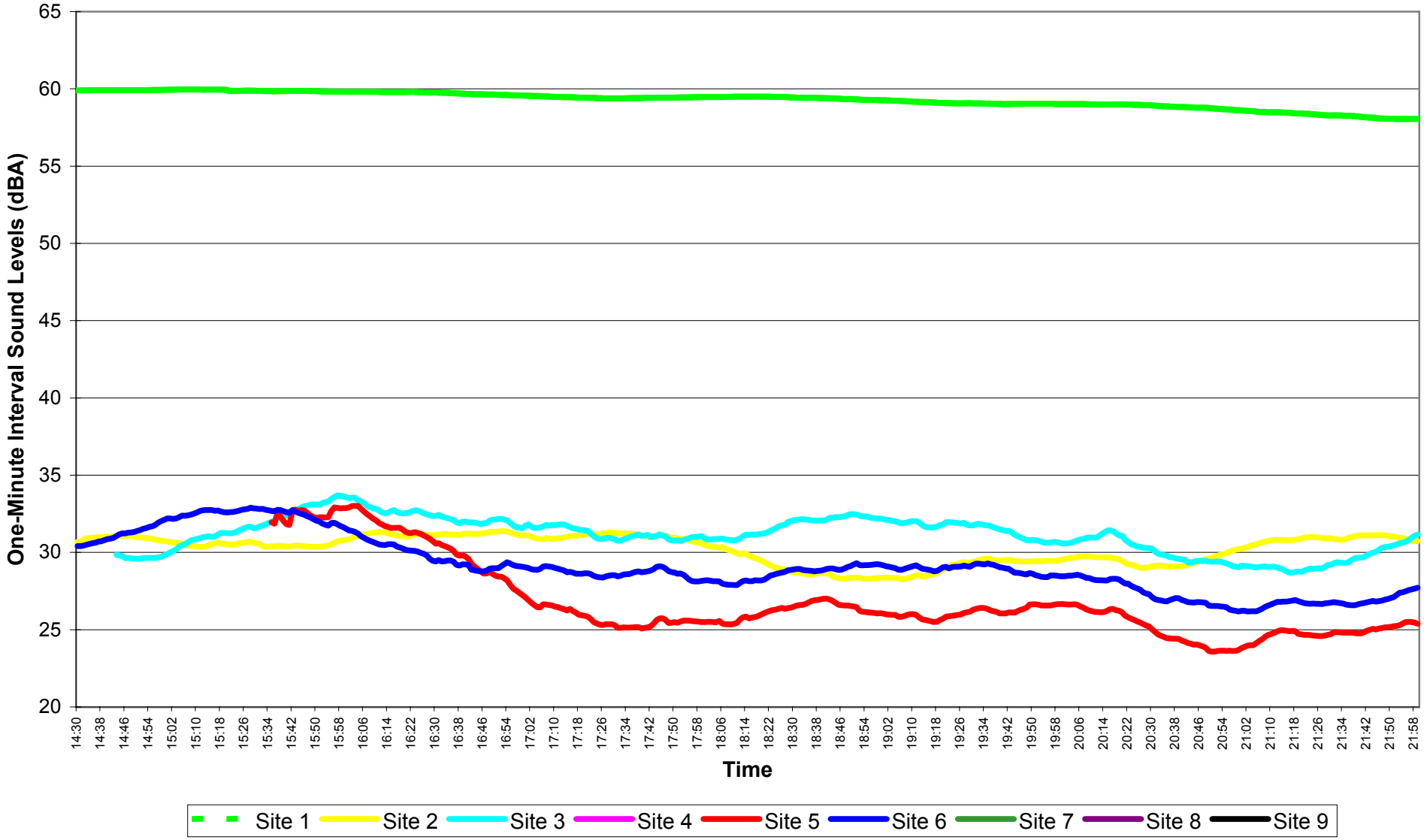


Figure F.6
EnCana Rosebud
L90 1 Hour Moving Average
Nov 24, 2004 - Nov 25, 2004 22:00 - 06:59

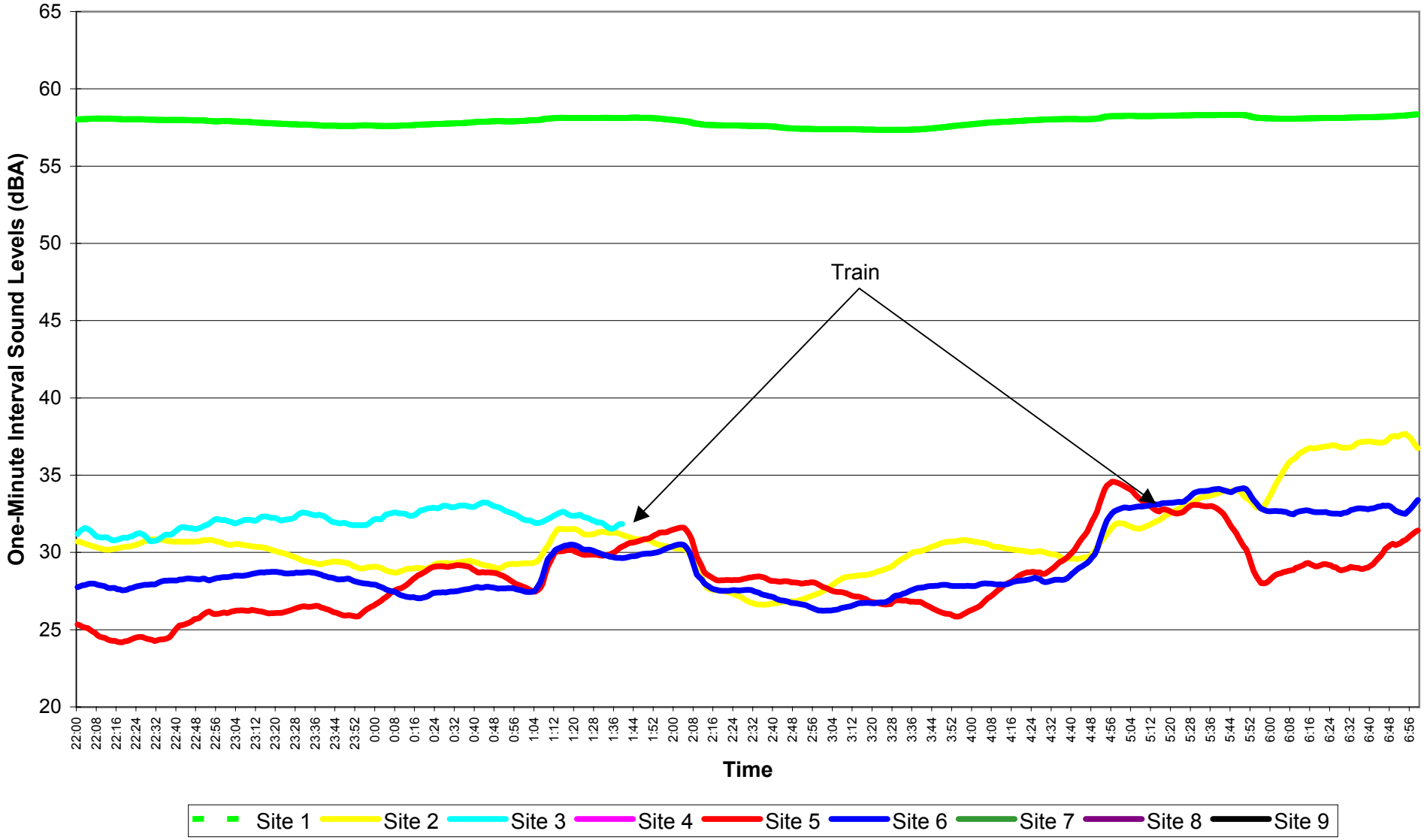


Figure F.7
EnCana Rosebud
L90 1 Hour Moving Average
Nov. 25, 2004 07:00 - 14:29

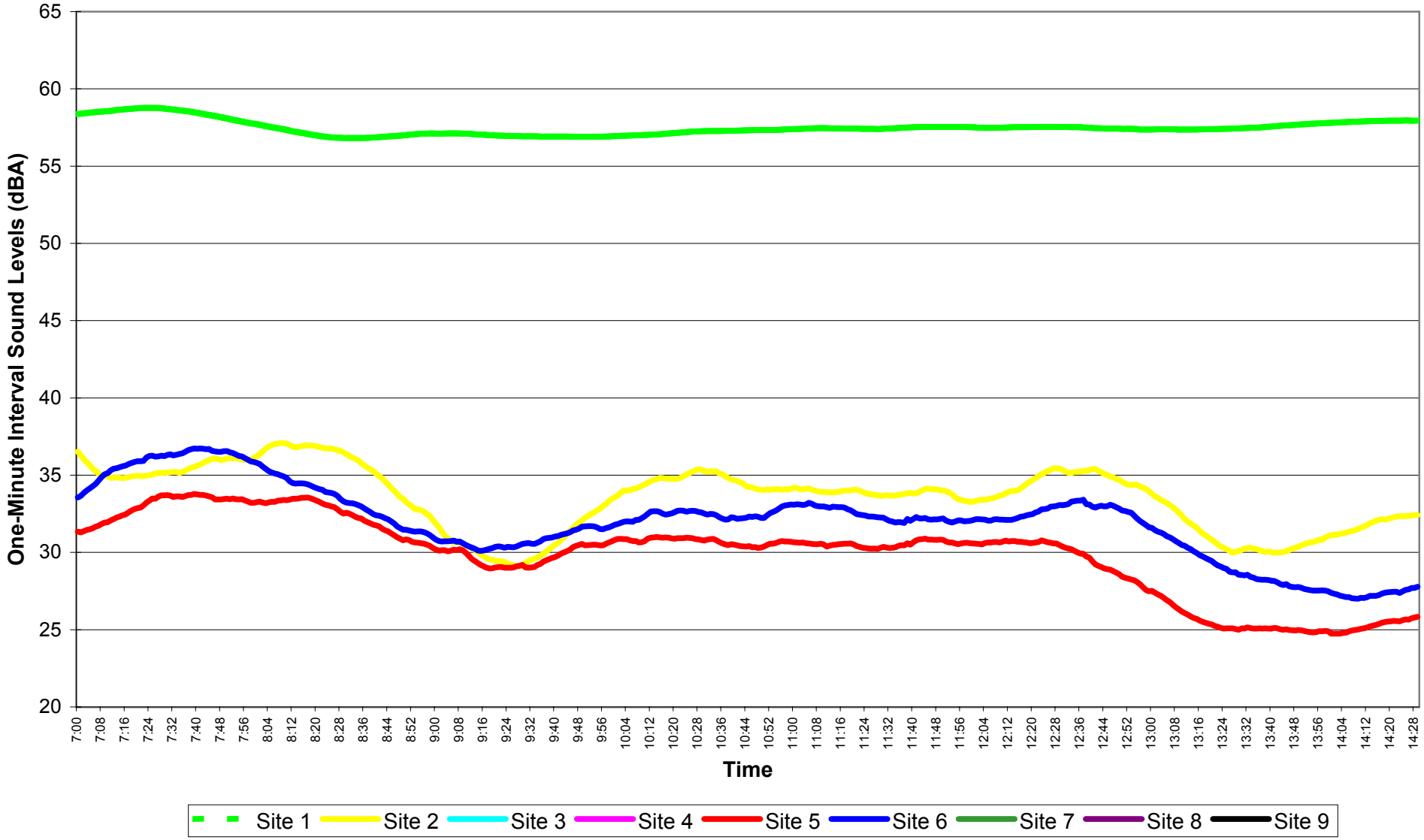


Figure F.8
EnCana Rosebud
L90 1 Hour Moving Average
Nov. 25, 2004 14:30 - 21:59

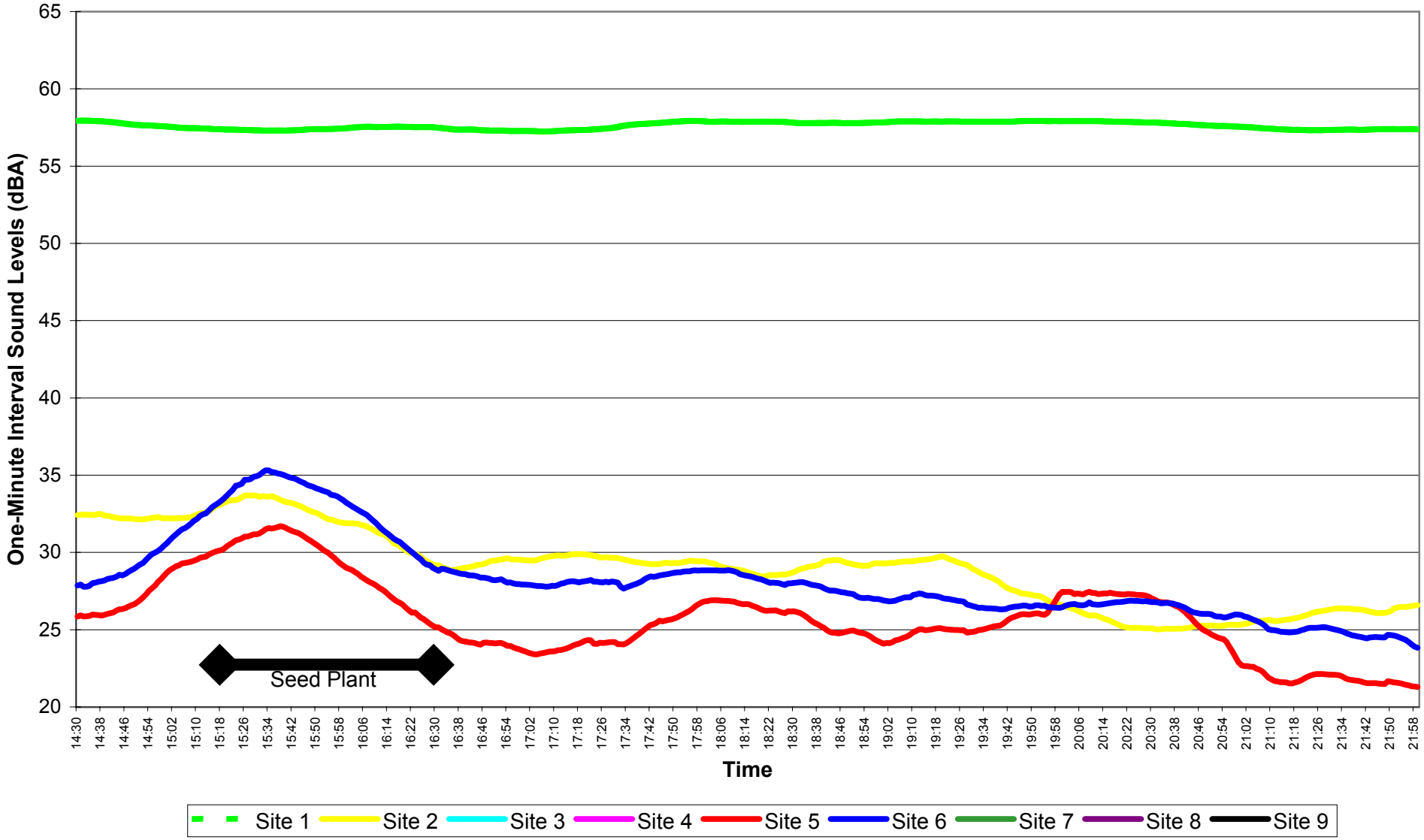


Figure F.9
EnCana Rosebud
L90 1 Hour Moving Average
Nov. 25, 2004 - Nov. 26, 2004 22:00 - 06:59

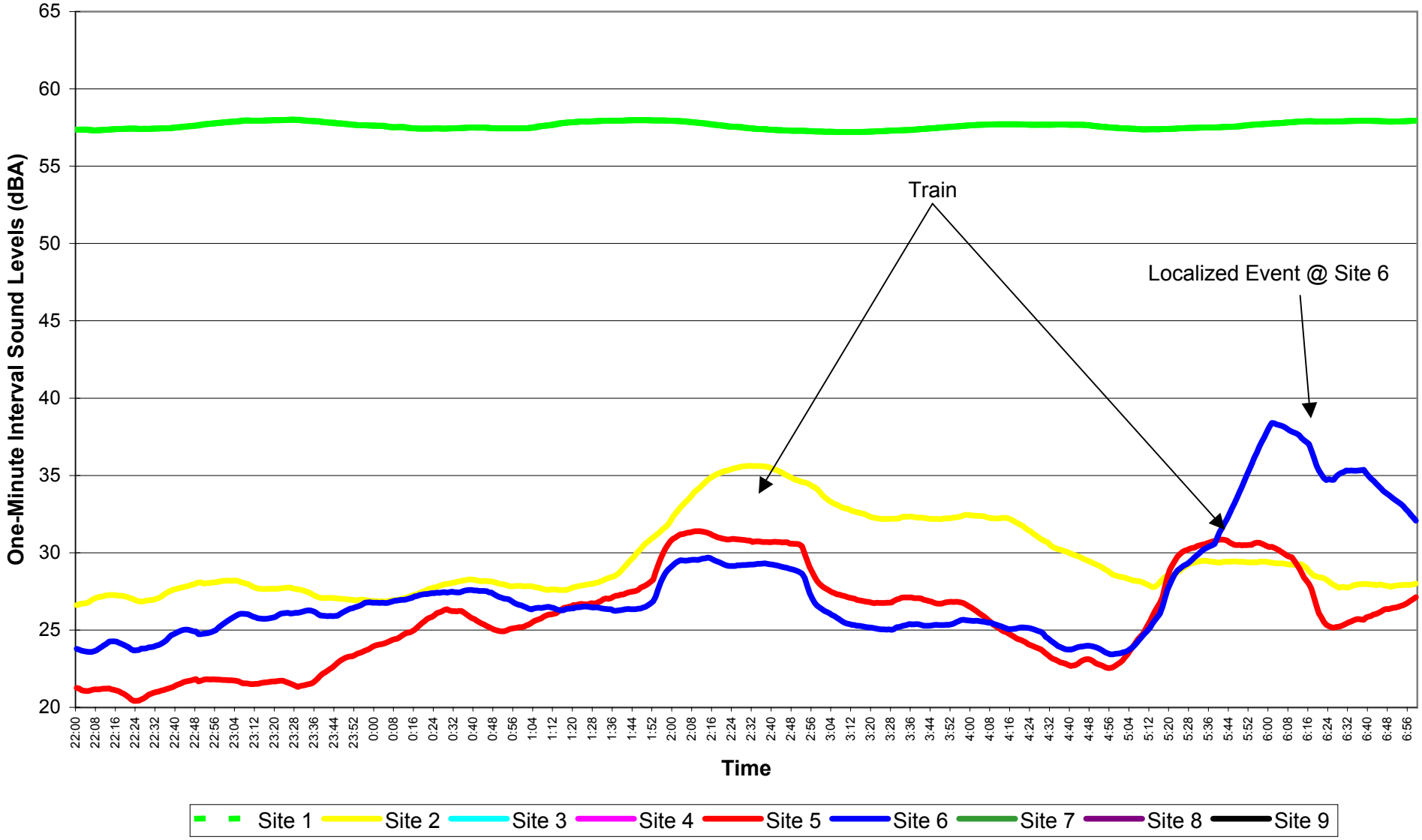


Figure F.10
EnCana Rosebud
L90 1 Hour Moving Average
Nov. 26, 2004 07:00 - 14:29

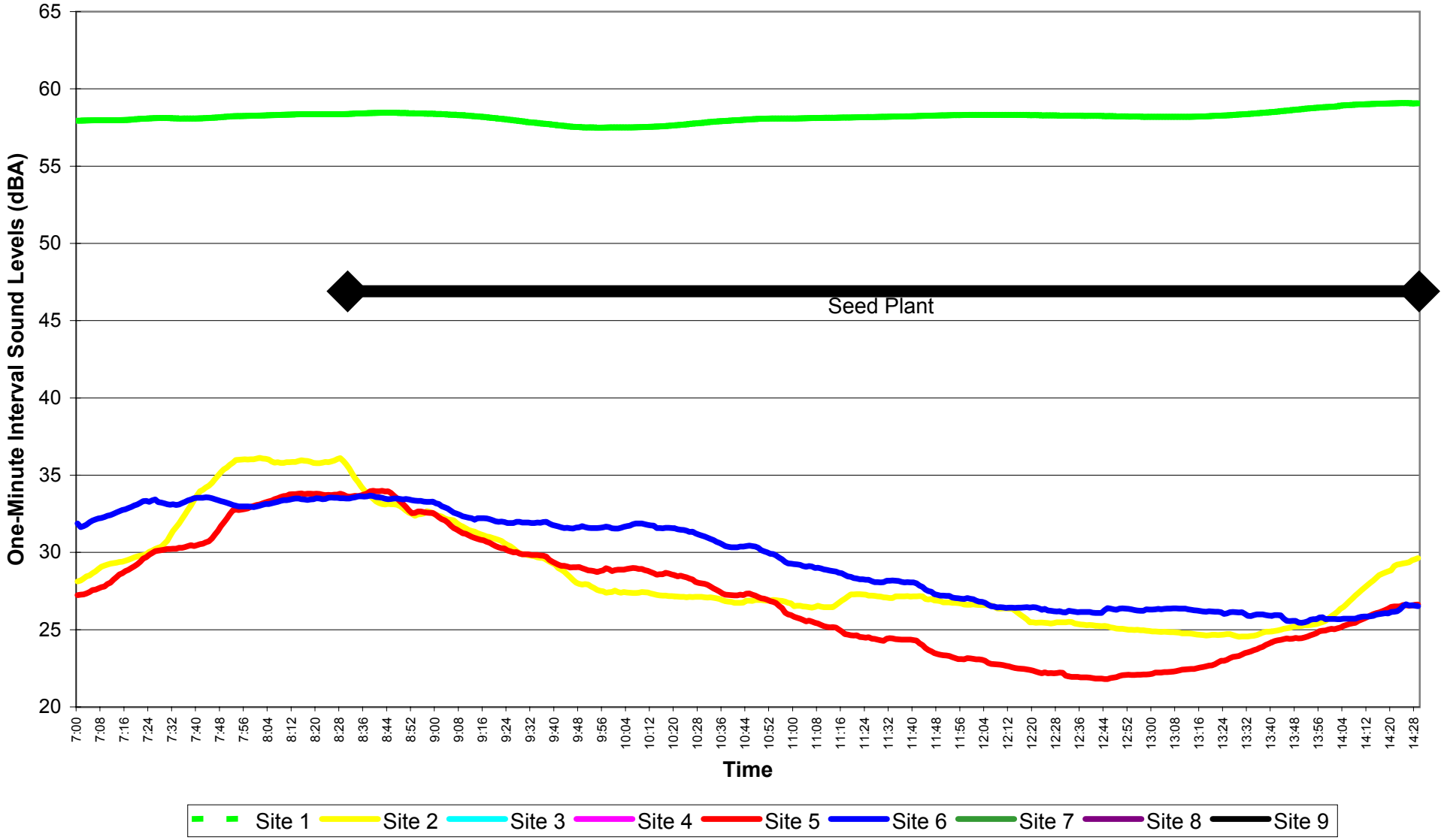


Figure F.11
EnCana Rosebud
L90 1 Hour Moving Average
Nov. 26, 2004 14:30 - 21:59

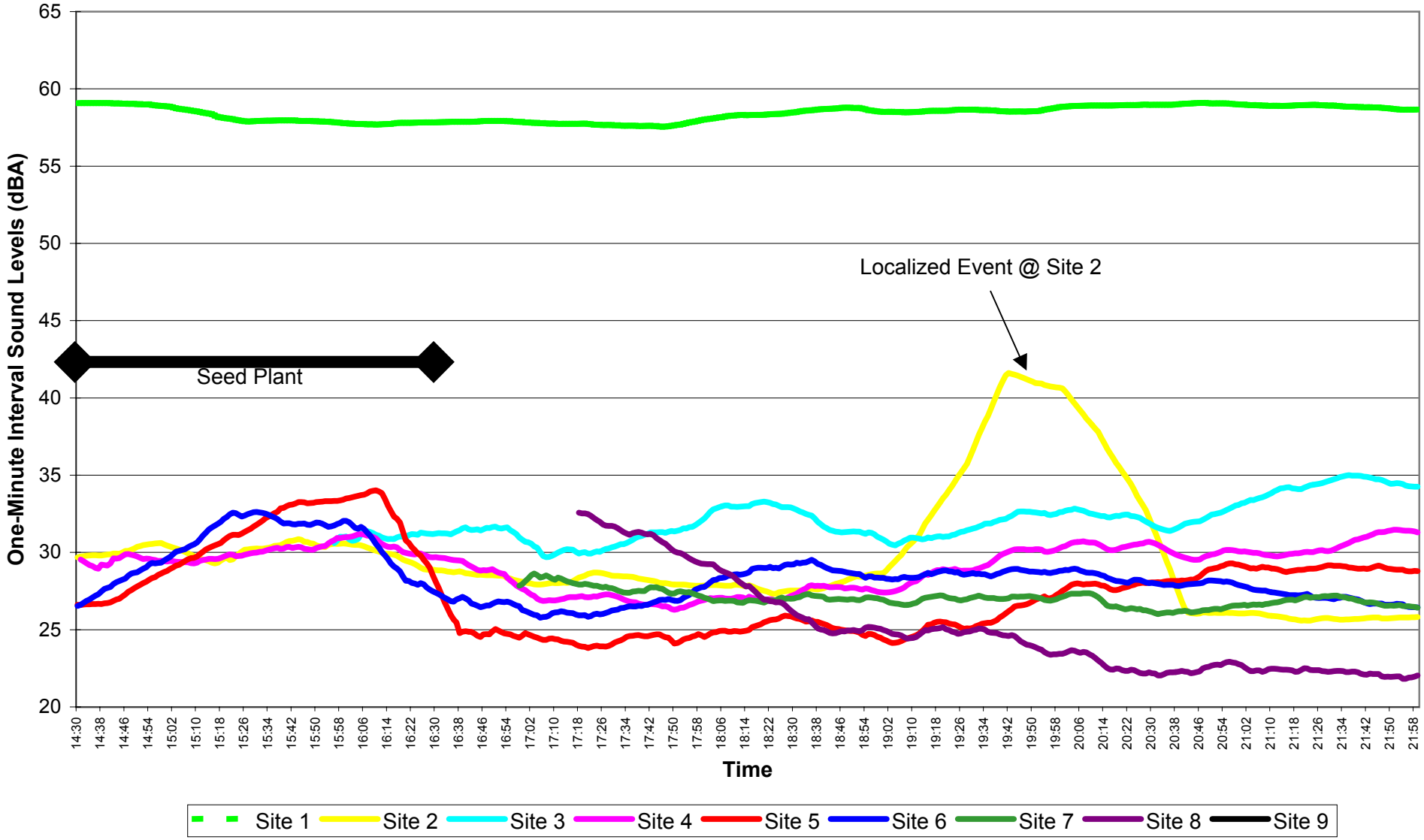


Figure F.12
EnCana Rosebud
L90 1 Hour Moving Average
Nov 26, 2004 - Nov 27, 2004 22:00 - 06:59

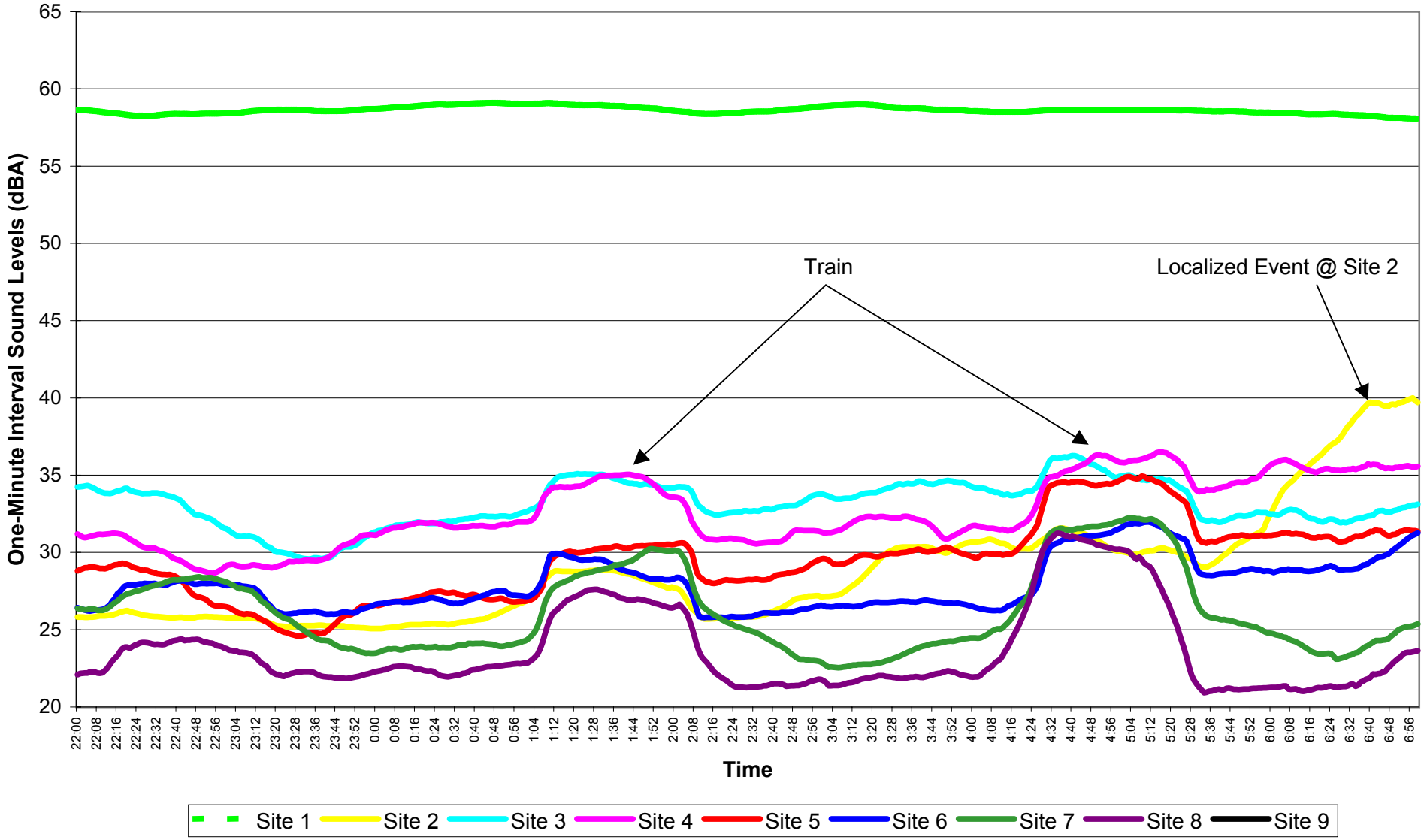


Figure F.13
EnCana Rosebud
L90 1 Hour Moving Average
Nov. 27, 2004 07:00 - 14:29

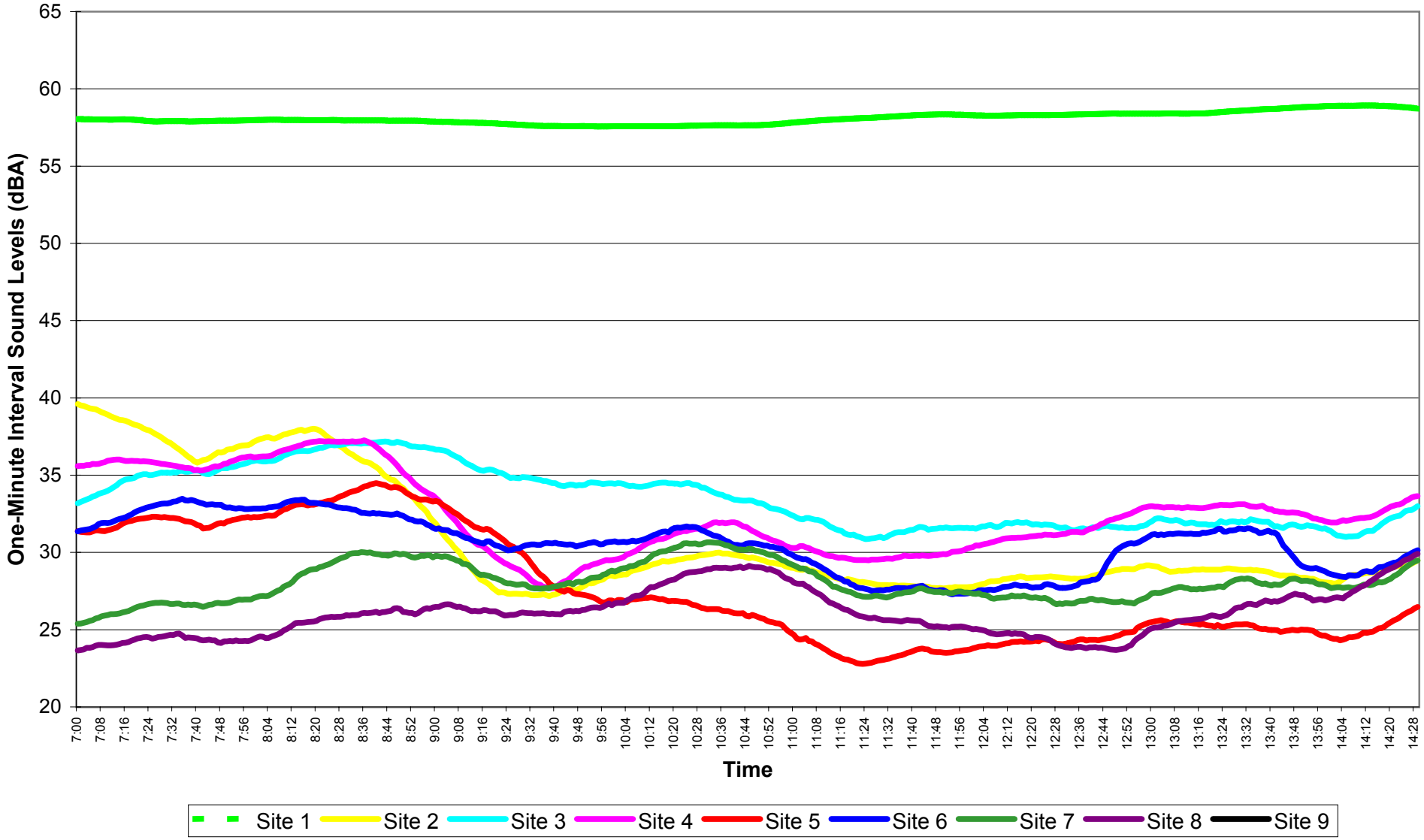


Figure F.14
EnCana Rosebud
L90 1 Hour Moving Average
Nov. 27, 2004 14:30 - 21:59

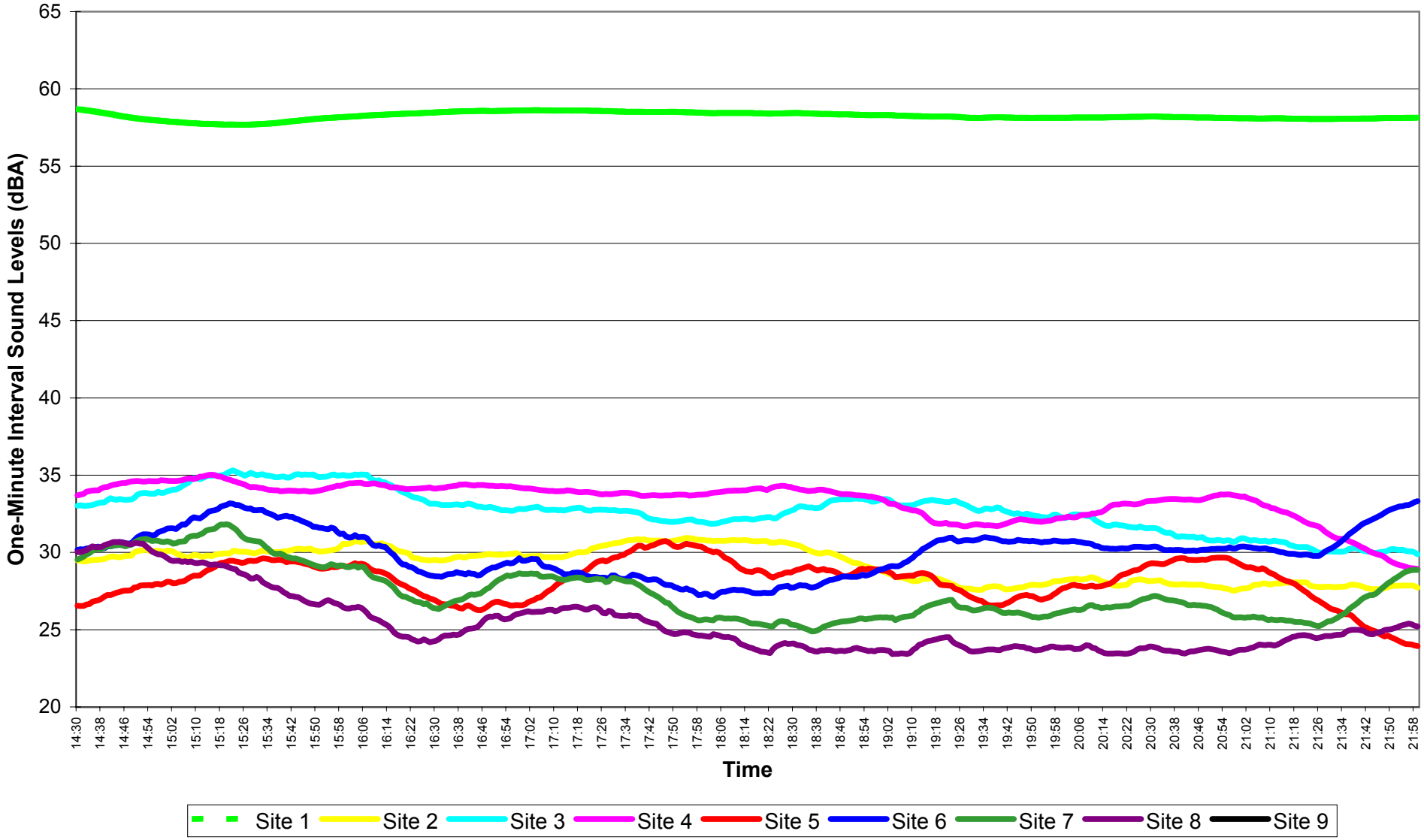


Figure F.15
EnCana Rosebud
L90 1 Hour Moving Average
Nov. 27, 2004 - Nov. 28, 2004 22:00 - 06:59

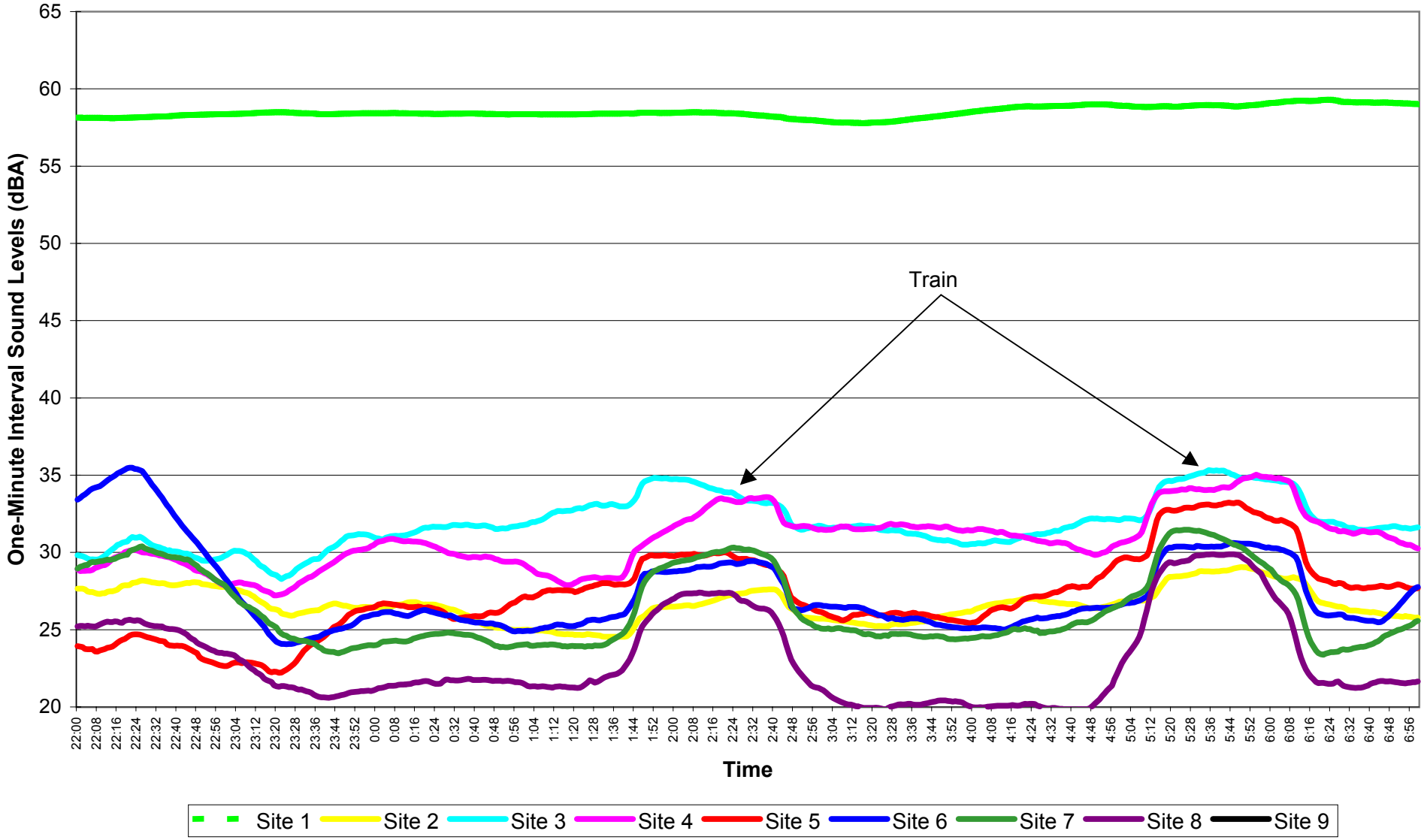


Figure F.16

EnCana Rosebud

L90 1 Hour Moving Average

Nov. 28, 2004 07:00 - 14:29

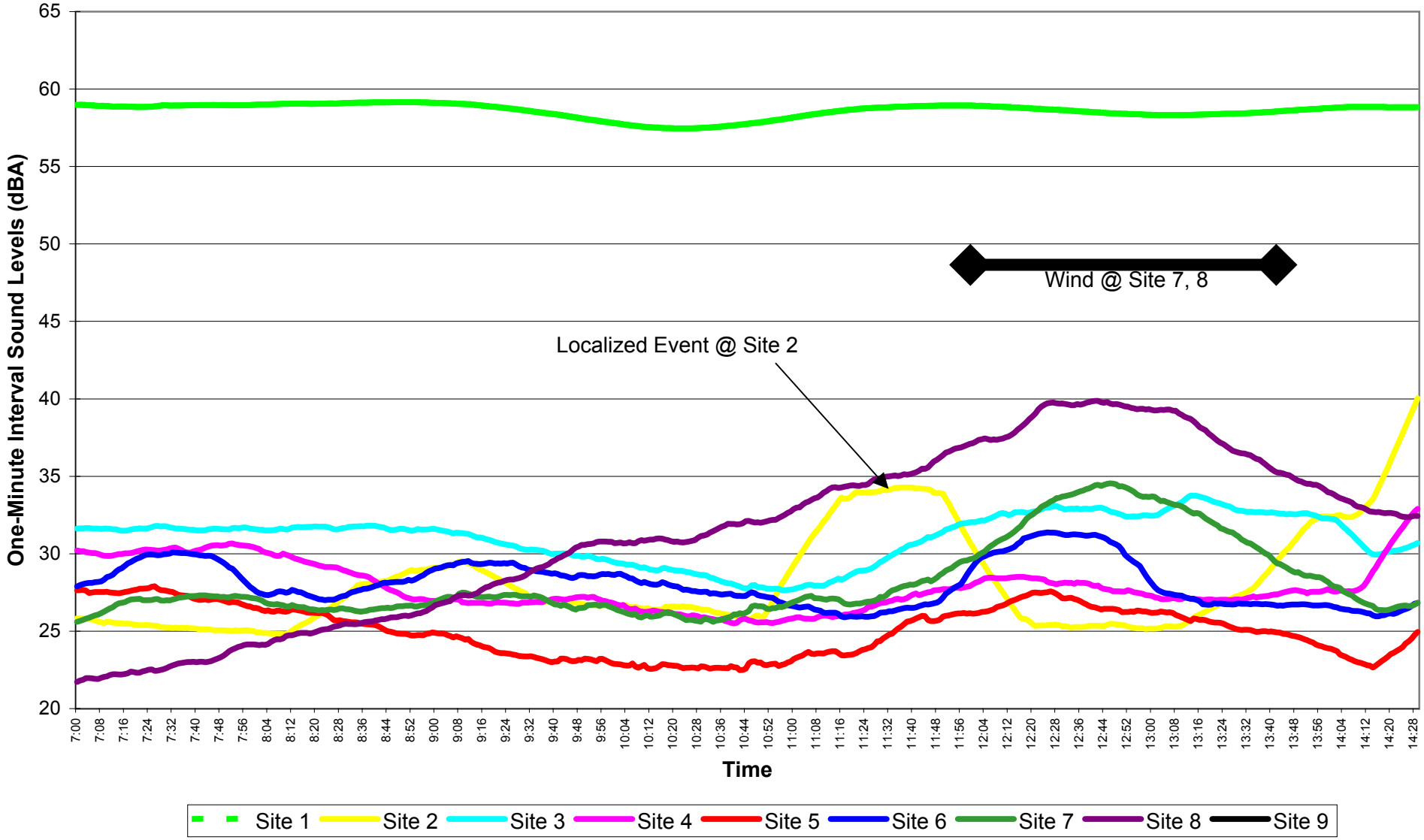


Figure F.17
EnCana Rosebud
L90 1 Hour Moving Average
Nov. 28, 2004 14:30 - 21:59

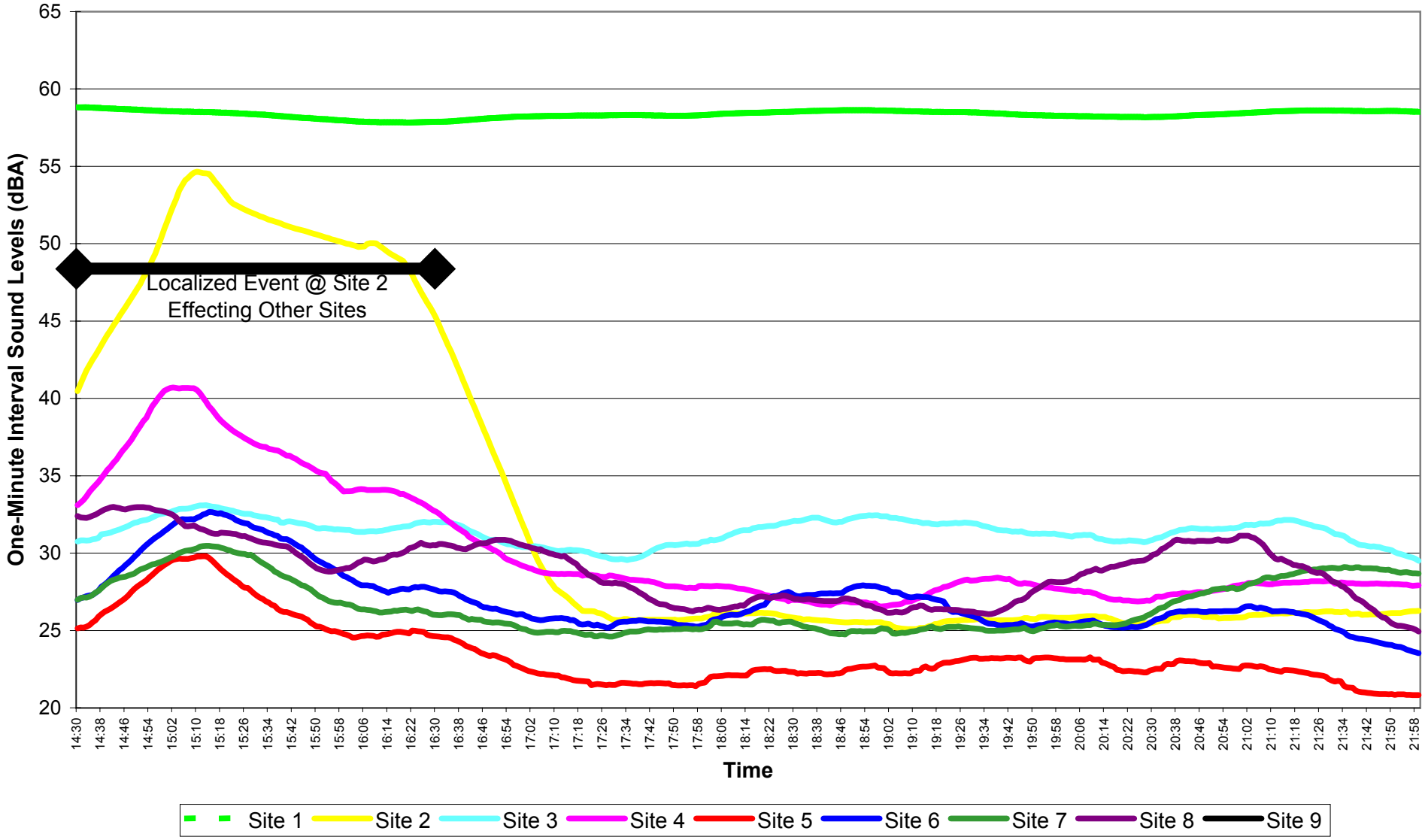


Figure F.18
EnCana Rosebud
L90 1 Hour Moving Average
Nov. 28, 2004 - Nov. 29, 2004 22:00 - 06:59

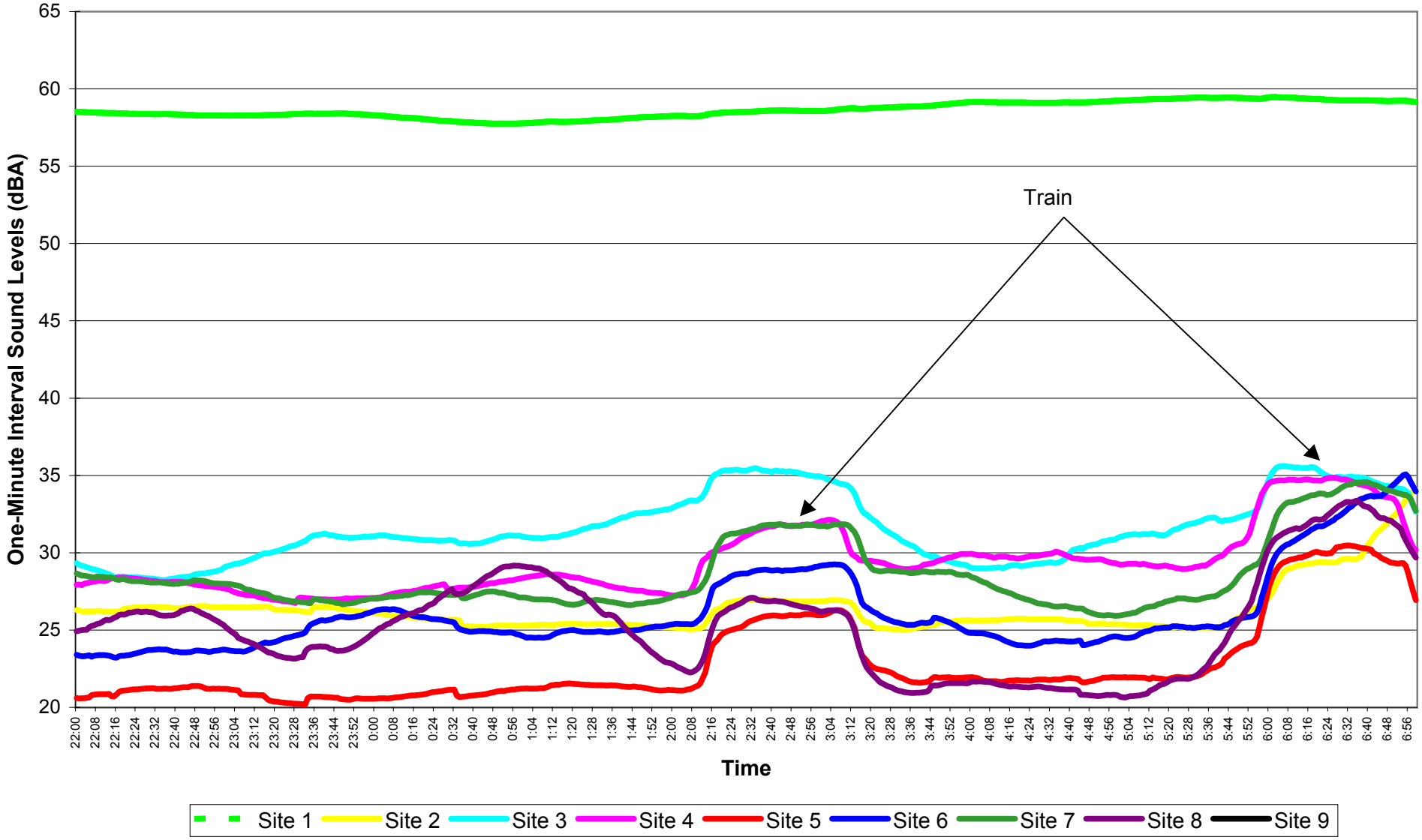


Figure F.19
EnCana Rosebud
L90 1 Hour Moving Average
Nov. 29, 2004 07:00 - 14:29

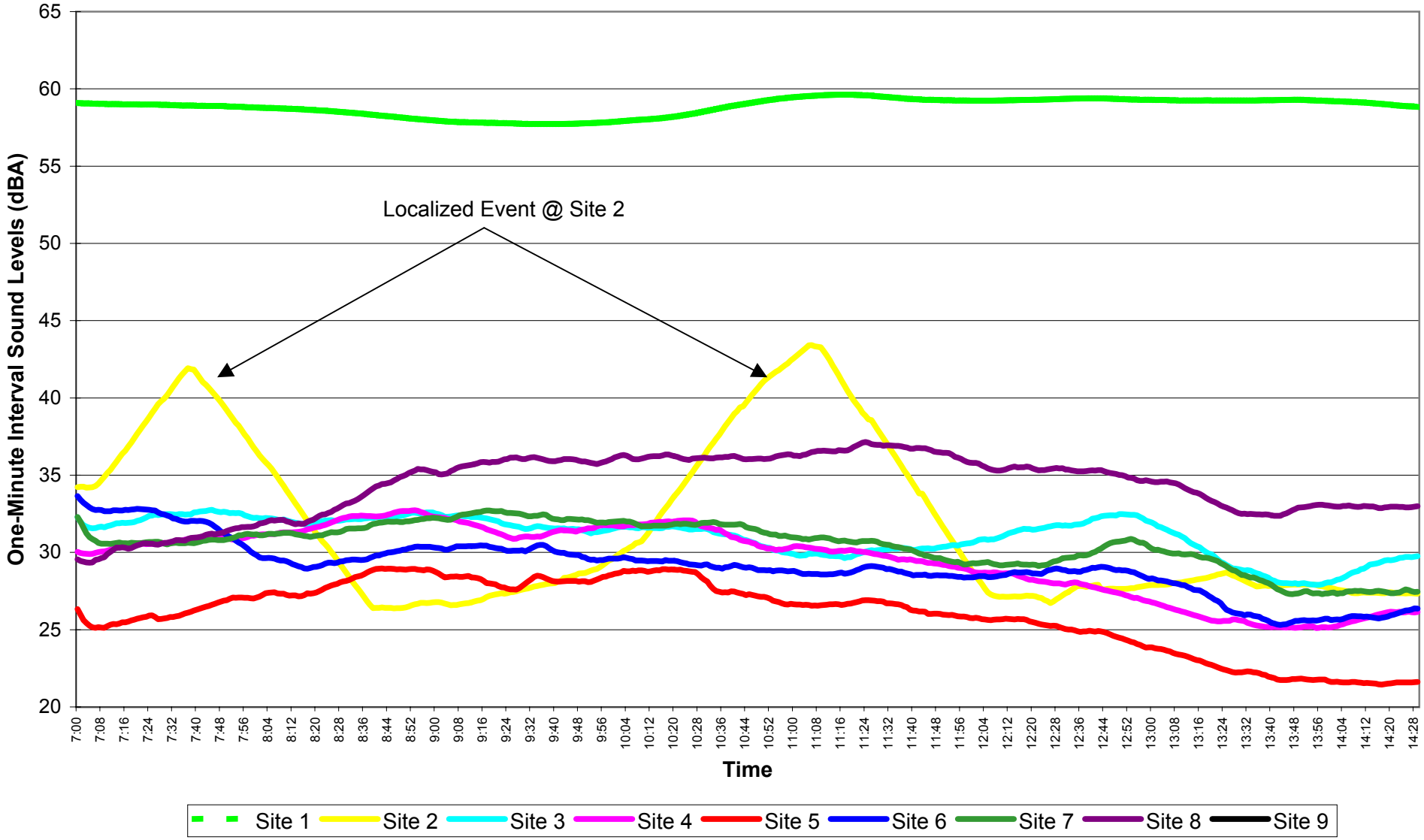


Figure F.20
EnCana Rosebud
L90 1 Hour Moving Average
Nov. 29, 2004 14:30 - 21:59

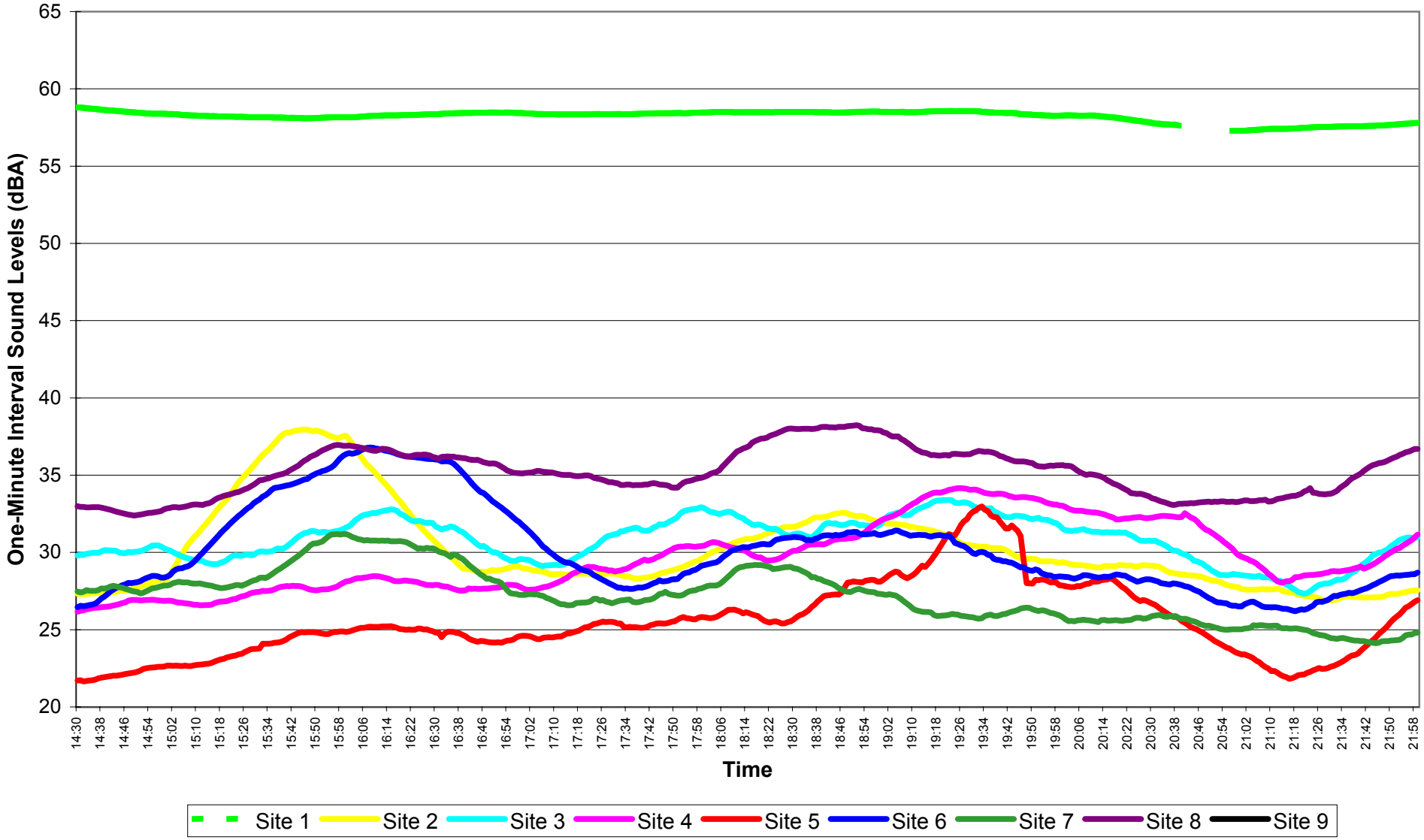


Figure F.21
EnCana Rosebud
L90 1 Hour Moving Average
Nov. 29, 2004 - Nov. 30, 2004 22:00 - 06:59

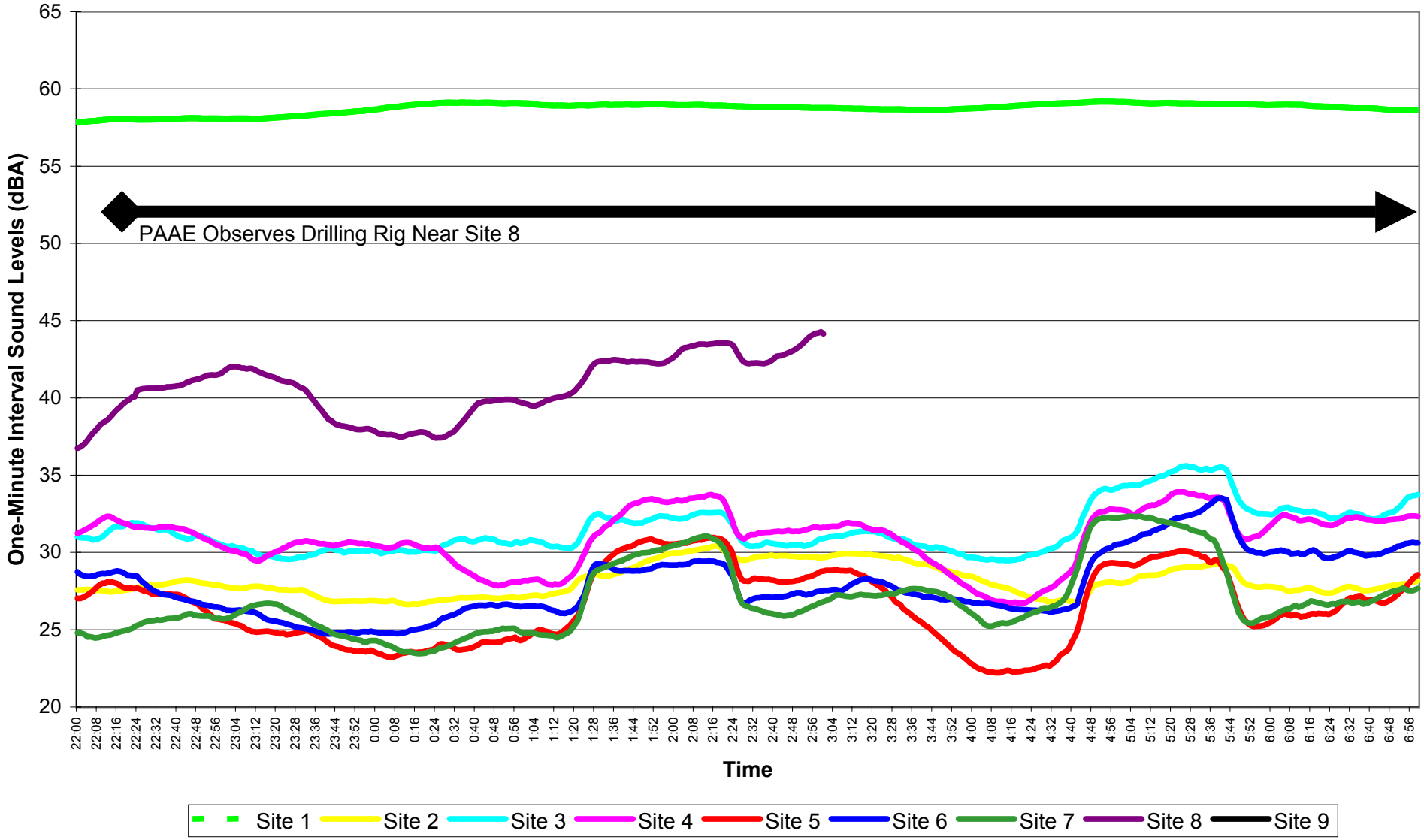


Figure F.22

EnCana Rosebud

L90 1 Hour Moving Average

Nov. 30, 2004 07:00 - 14:29

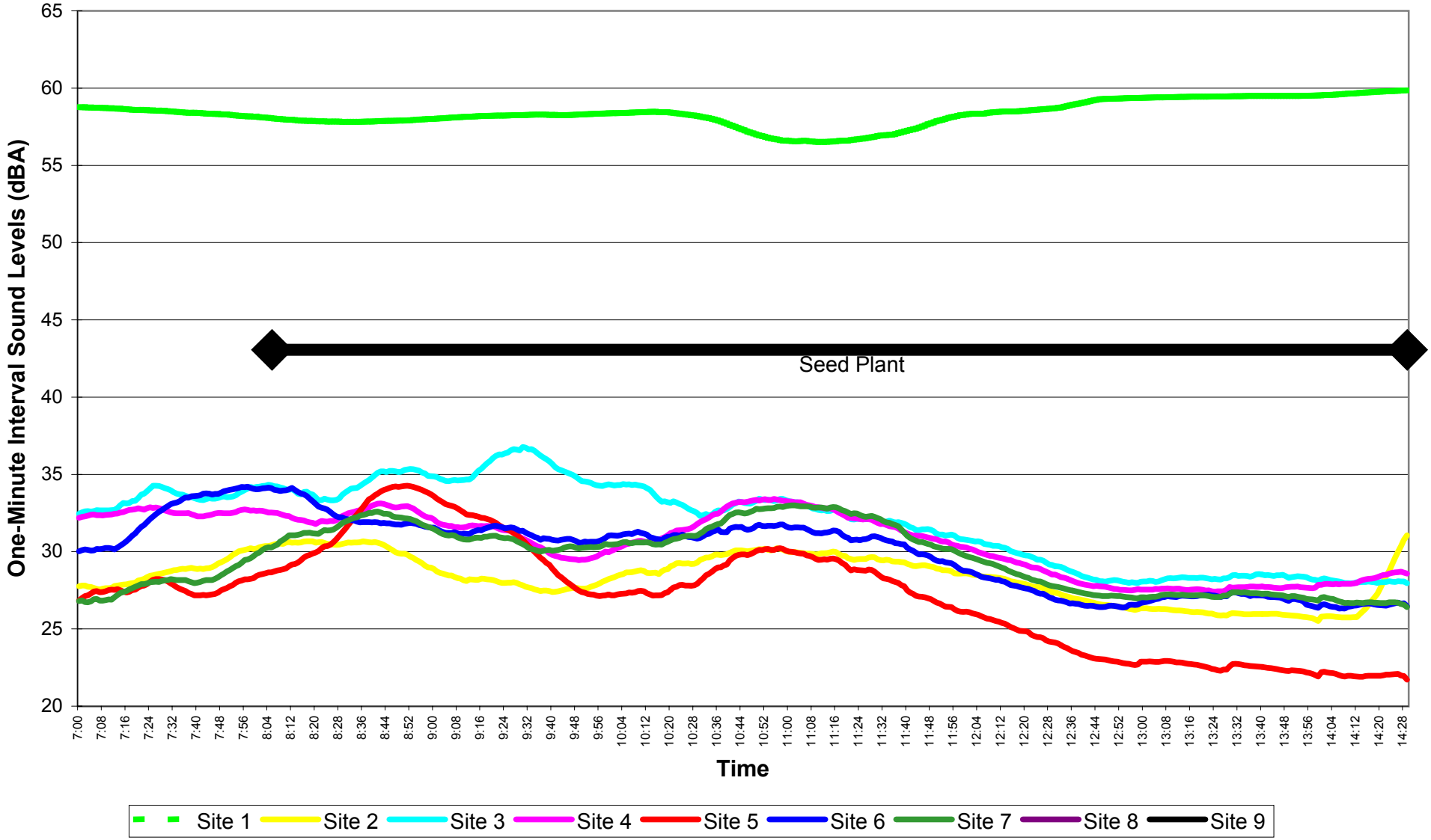


Figure F.23
EnCana Rosebud
L90 1 Hour Moving Average
Nov. 30, 2004 14:30 - 21:59

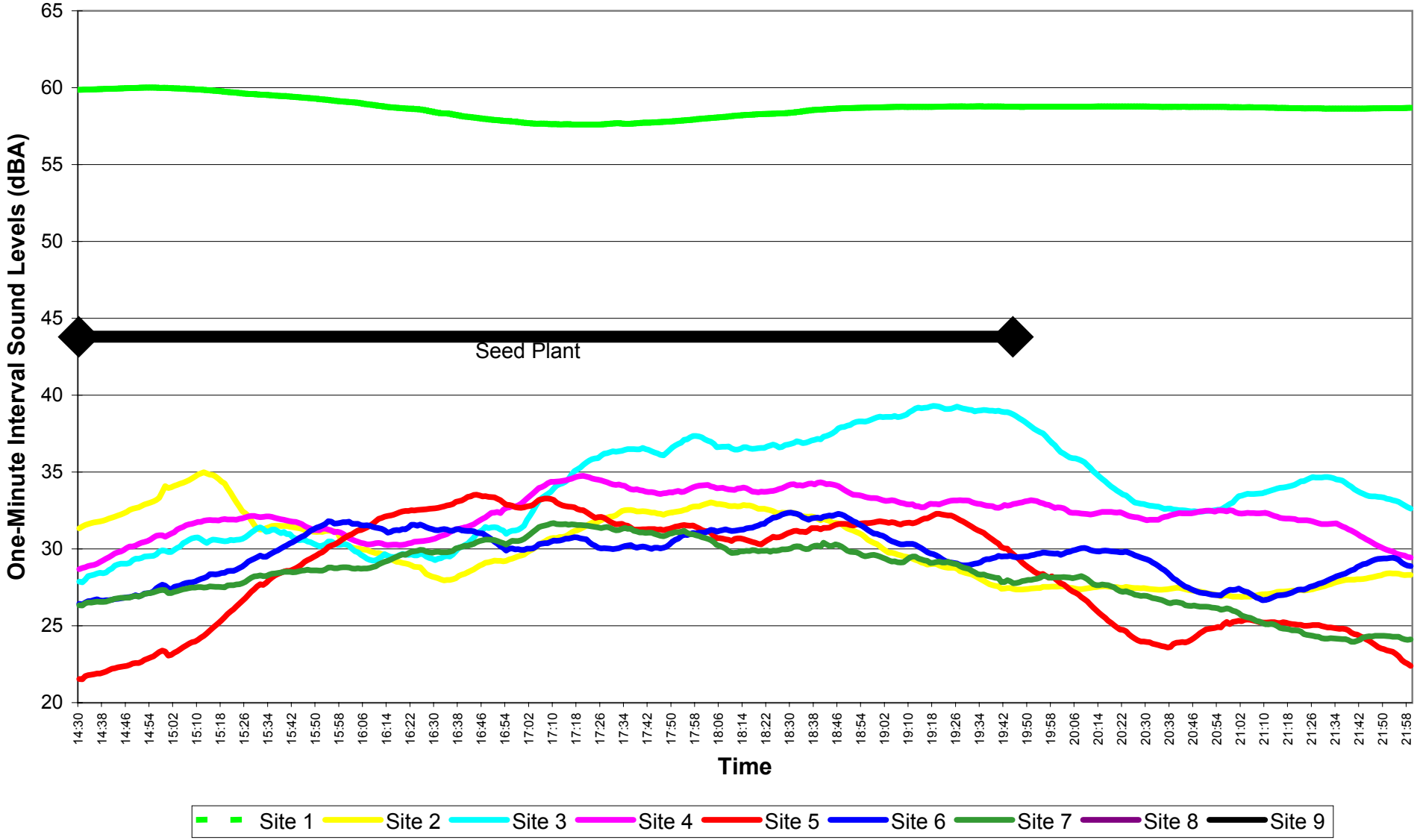


Figure F.24
EnCana Rosebud
L90 1 Hour Moving Average
Nov.30,2004 - Dec.01.2004 22:00 - 06:59

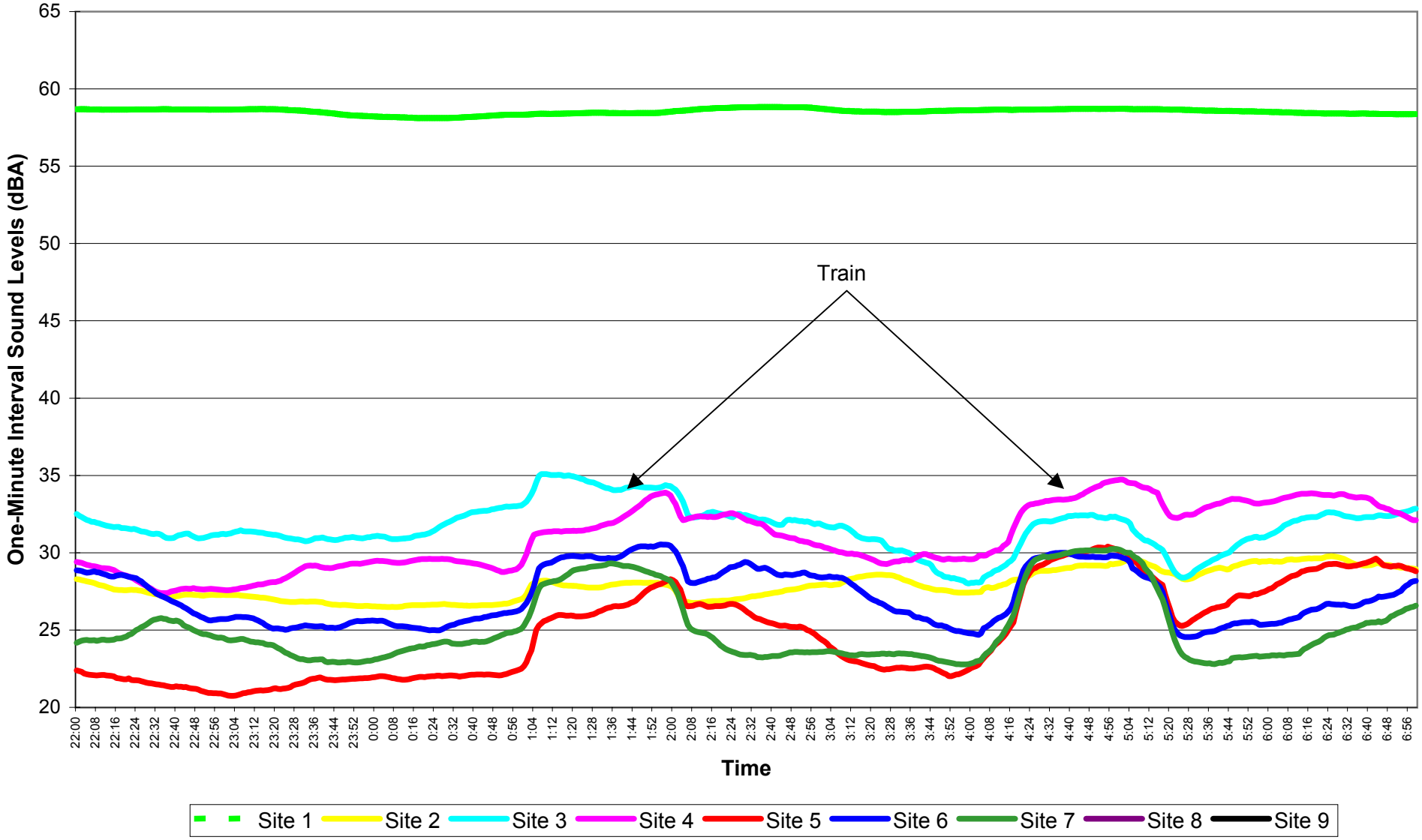


Figure F.25
EnCana Rosebud
L90 1 Hour Moving Average

Dec. 01, 2004 07:00 - 14:29

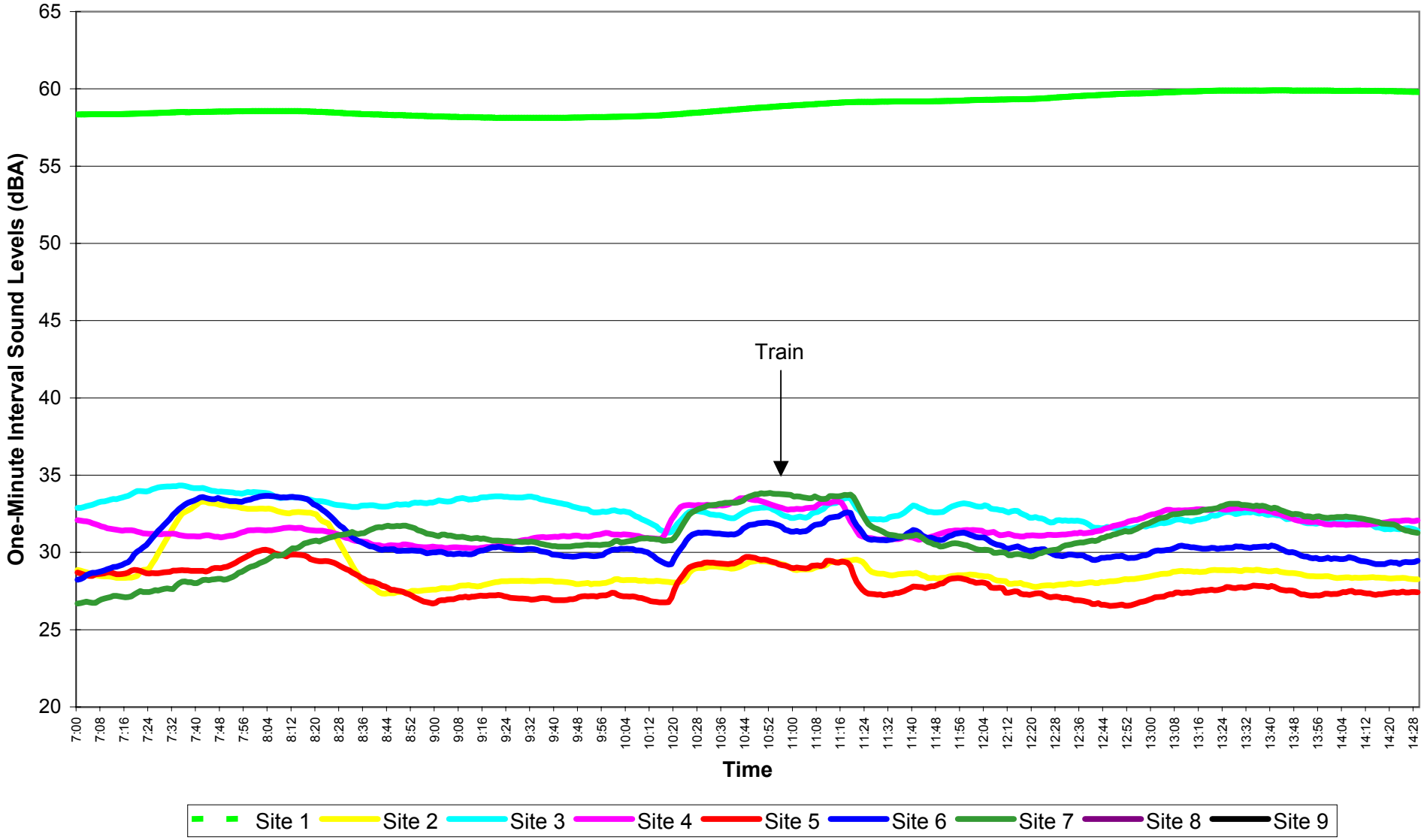


Figure F.26
EnCana Rosebud
L90 1 Hour Moving Average
Dec. 01, 2004 14:30 - 21:59

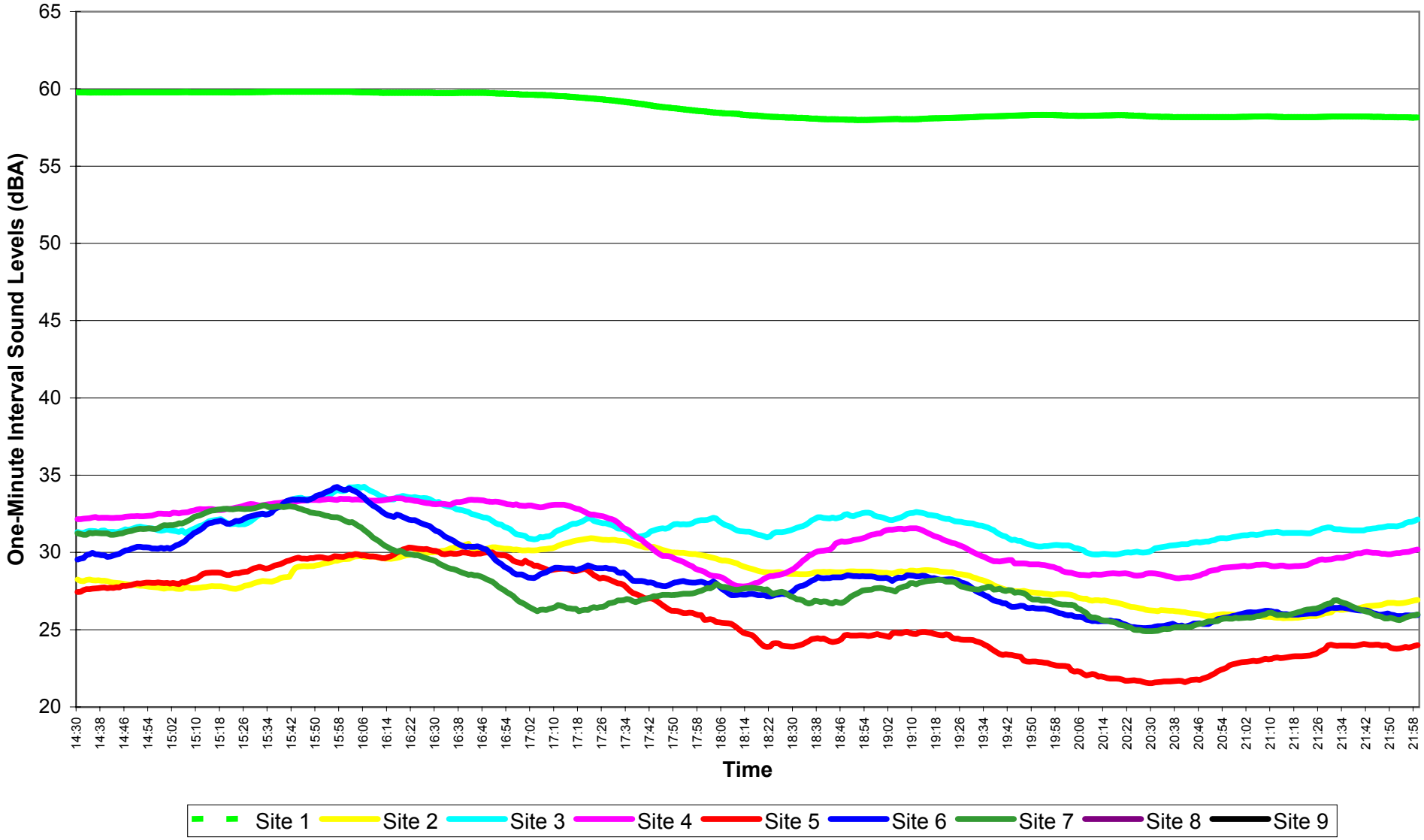


Figure F.27
EnCana Rosebud
L90 1 Hour Moving Average
Dec.01,2004 - Dec.02.2004 22:00 - 06:59

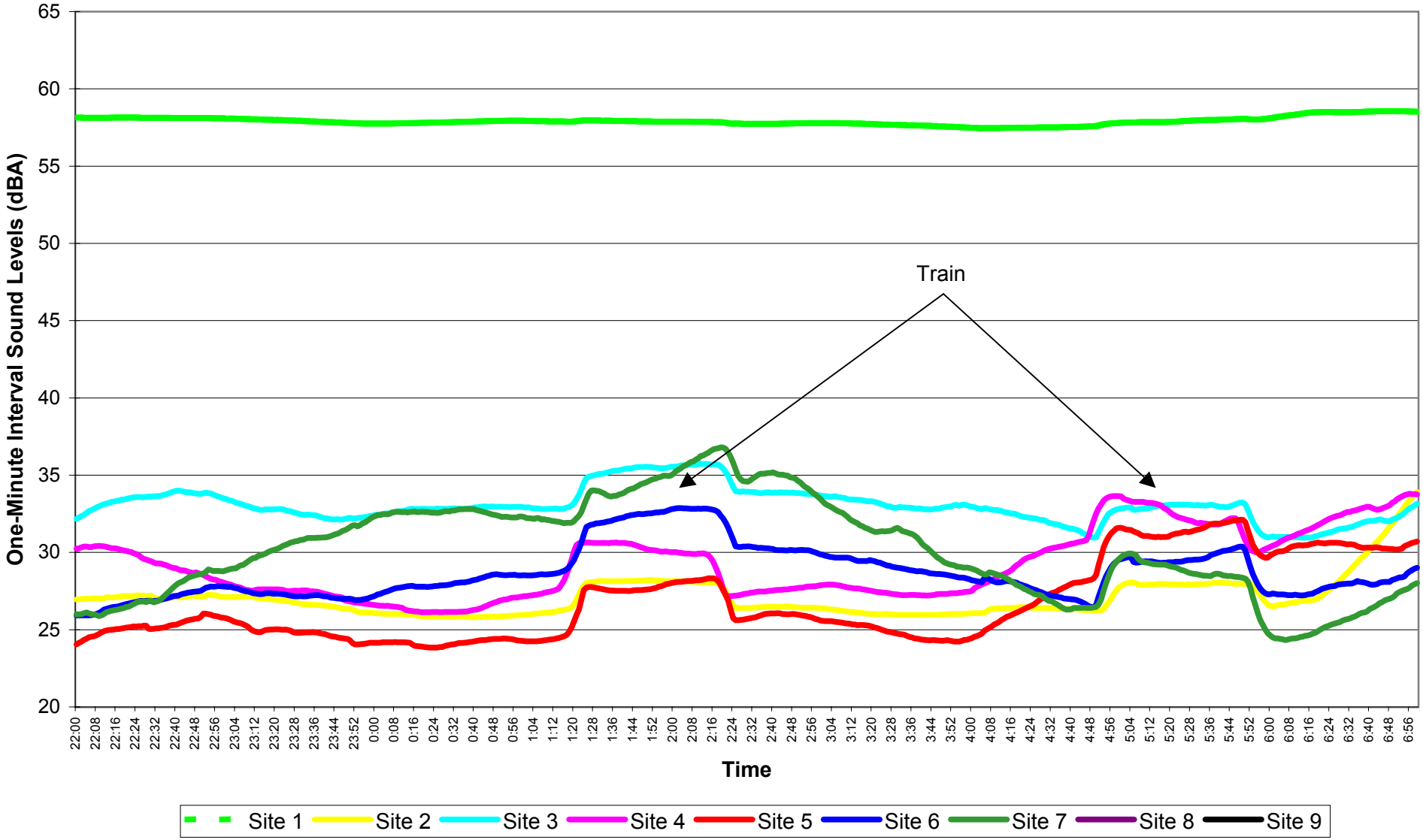


Figure F.28
EnCana Rosebud
L90 1 Hour Moving Average
Dec. 02, 2004 07:00 - 14:29

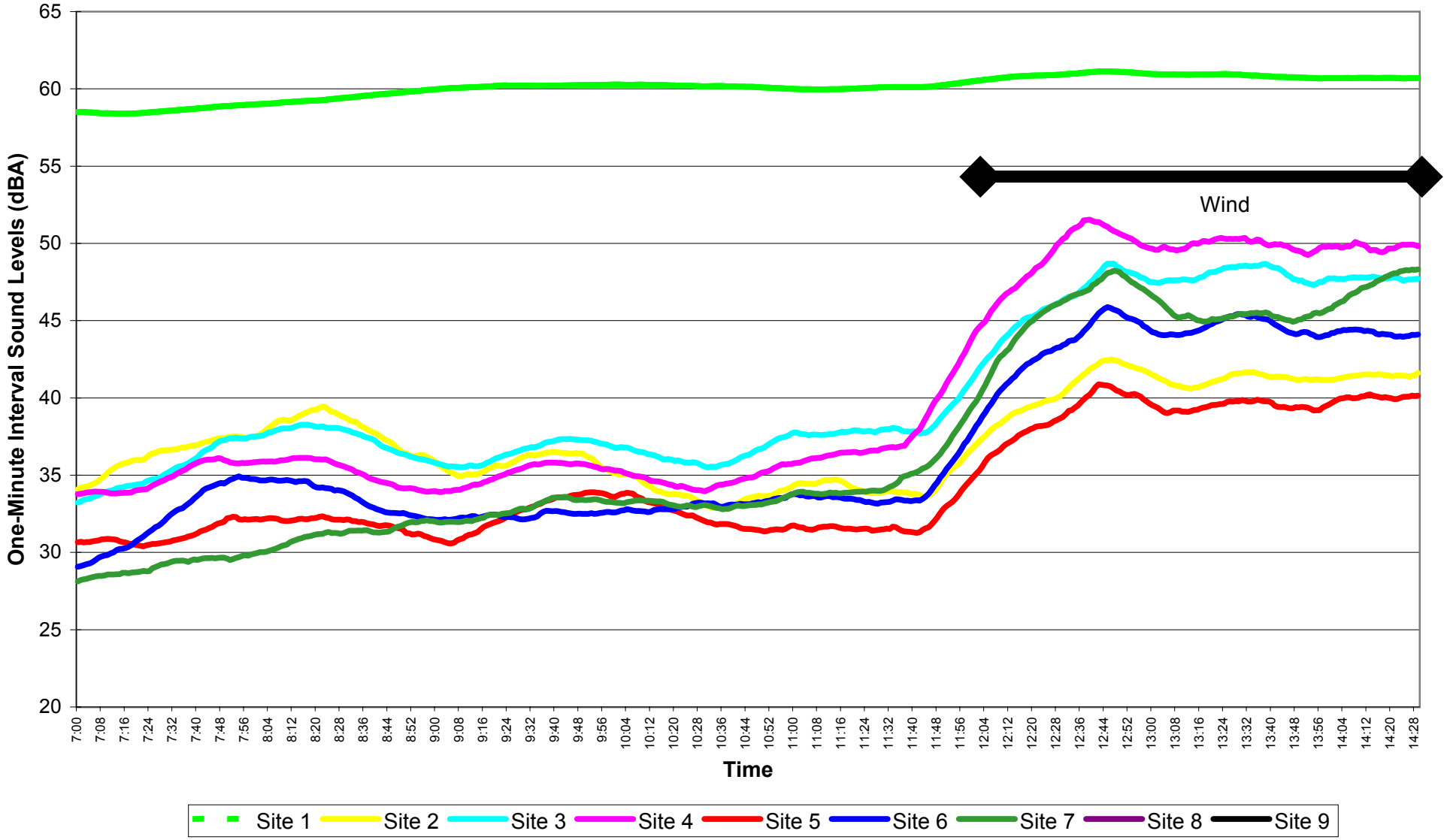


Figure F.29
EnCana Rosebud
L90 1 Hour Moving Average
Dec. 02, 2004 14:30 - 21:59

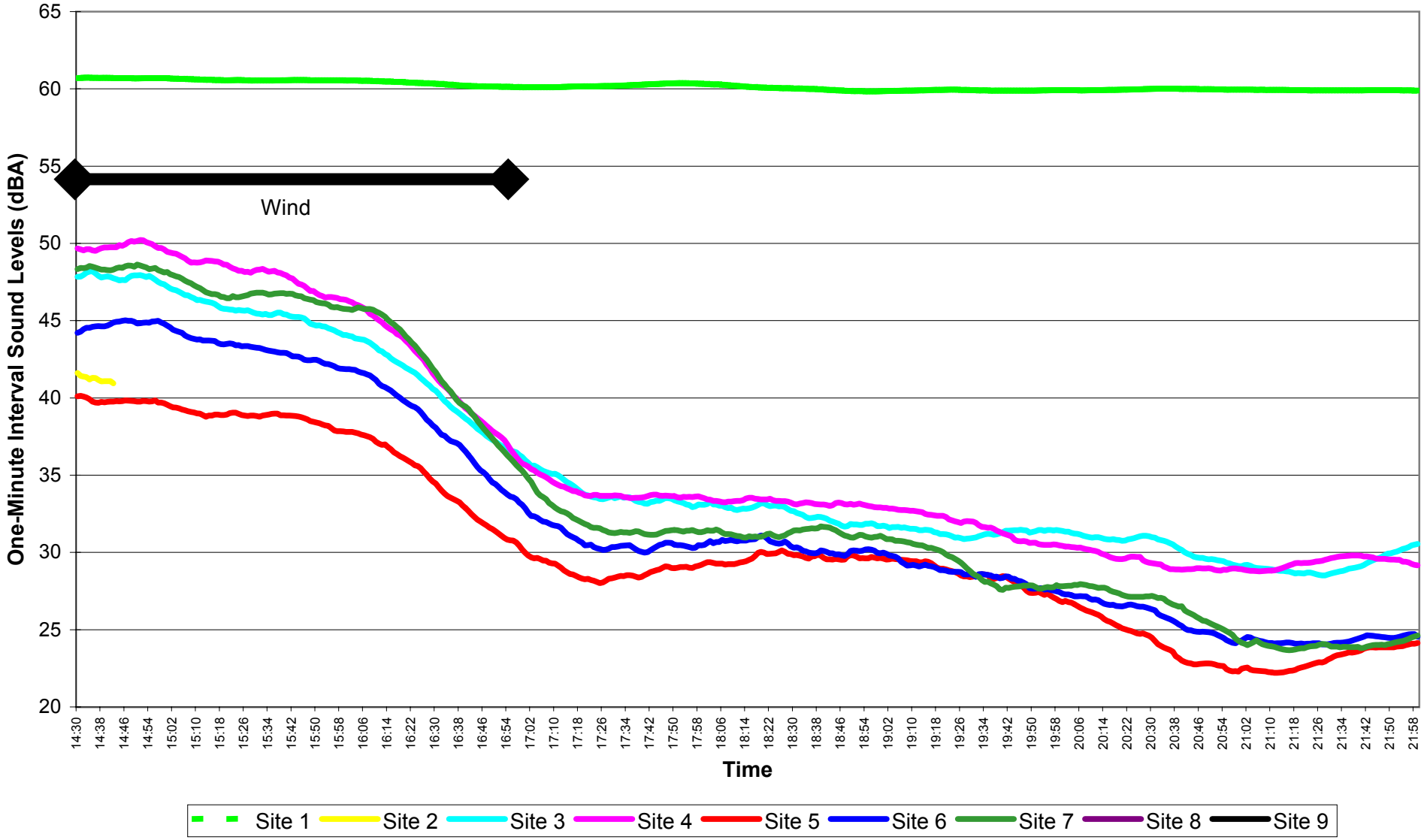


Figure F.30
EnCana Rosebud
L90 1 Hour Moving Average
Dec.02,2004 - Dec.03.2004 22:00 - 06:59

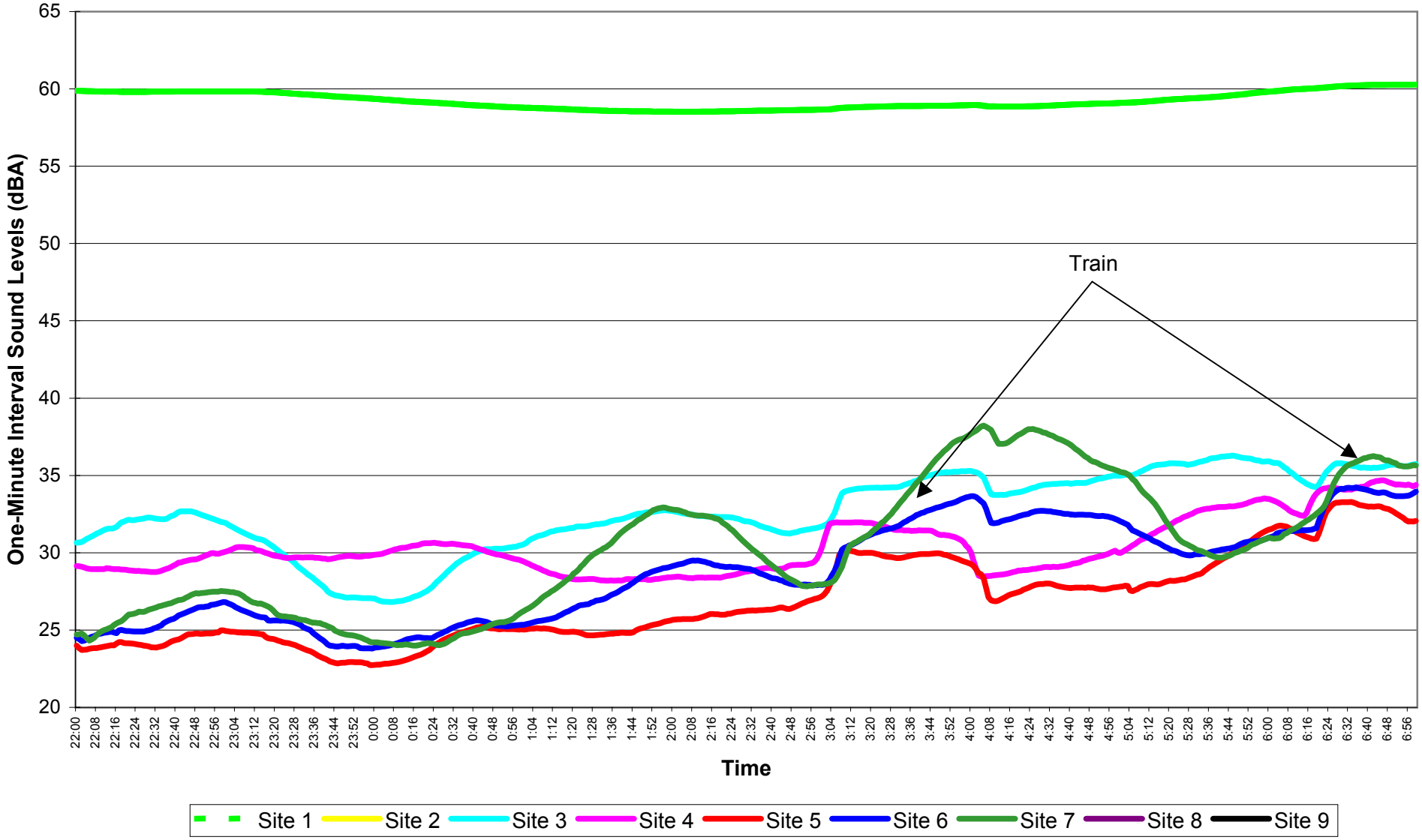


Figure F.31
EnCana Rosebud
L90 1 Hour Moving Average
Dec. 03, 2004 07:00 - 14:29

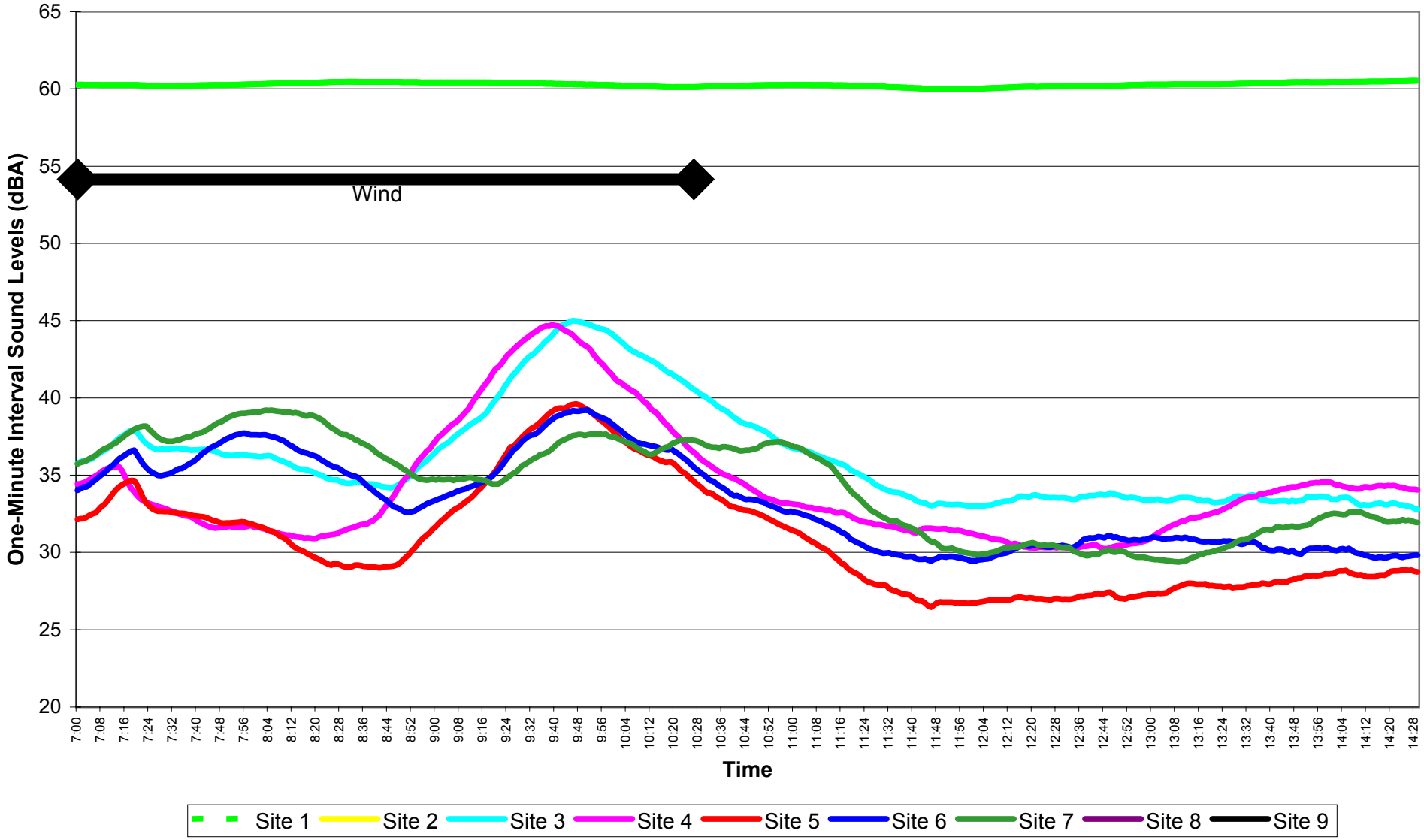


Figure F.32
EnCana Rosebud
L90 1 Hour Moving Average
Dec. 03, 2004 14:30 - 21:59

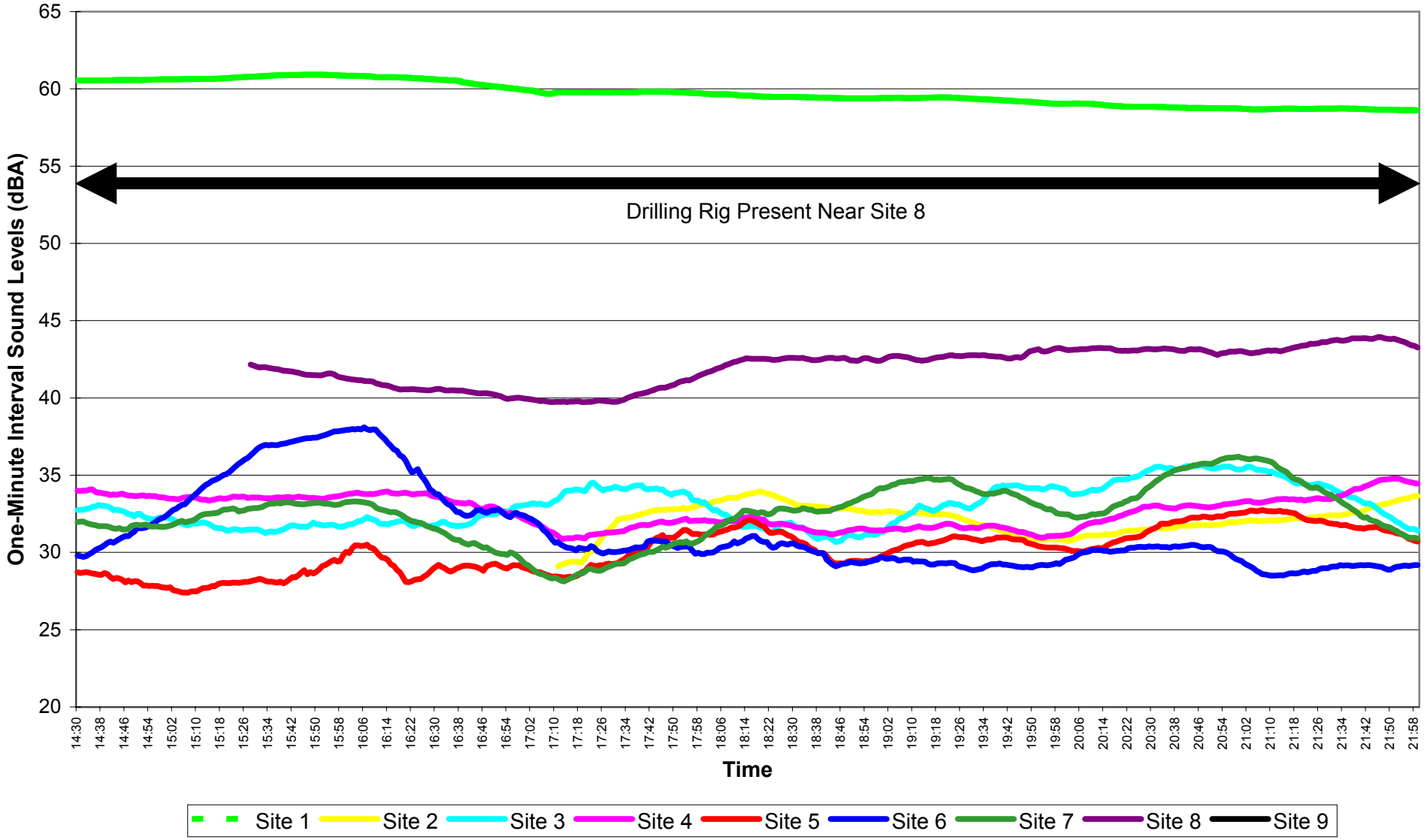


Figure F.33
EnCana Rosebud
L90 1 Hour Moving Average
Dec.03,2004 - Dec.04.2004 22:00 - 06:59

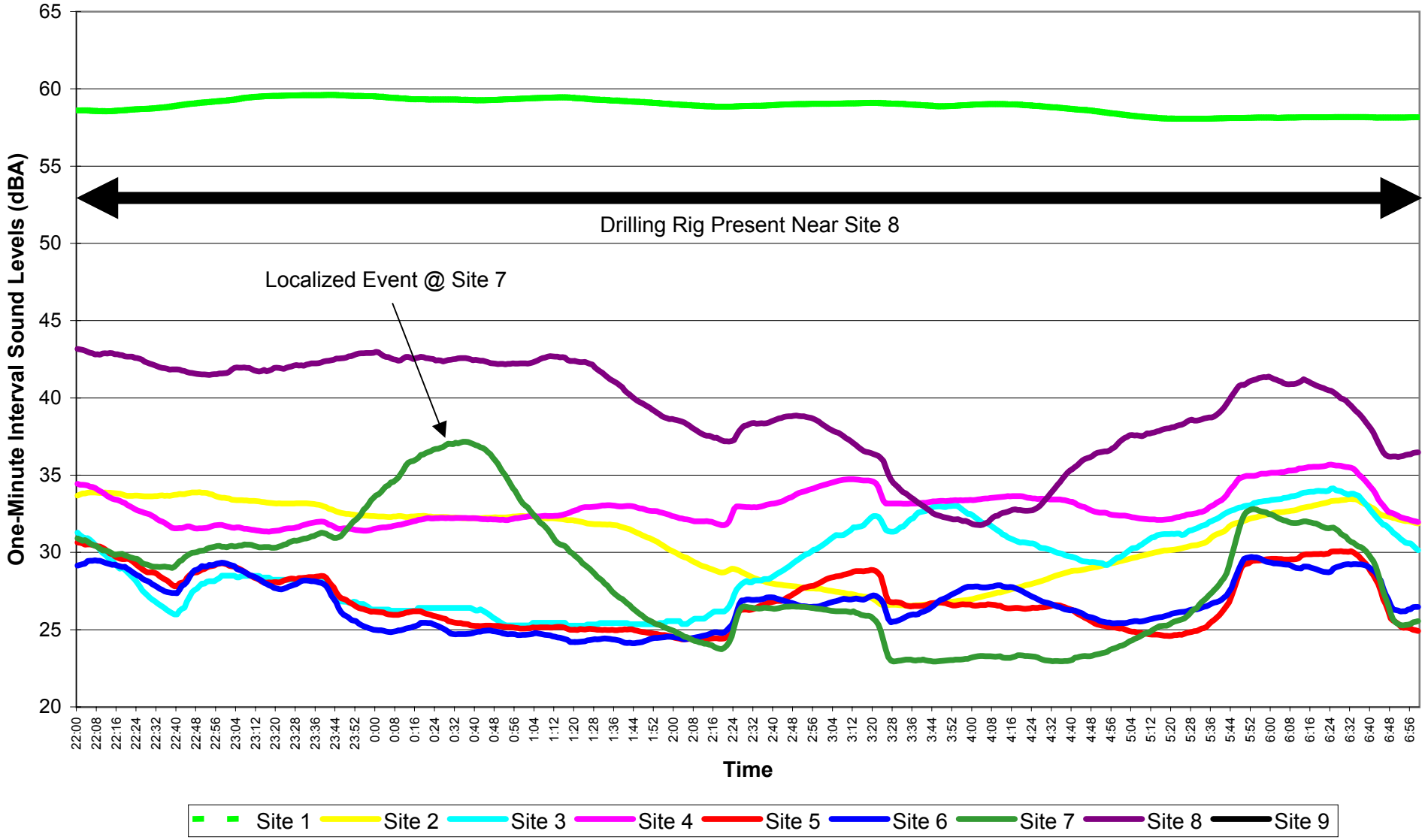


Figure F.34
EnCana Rosebud
L90 1 Hour Moving Average
Dec. 04, 2004 07:00 - 14:29

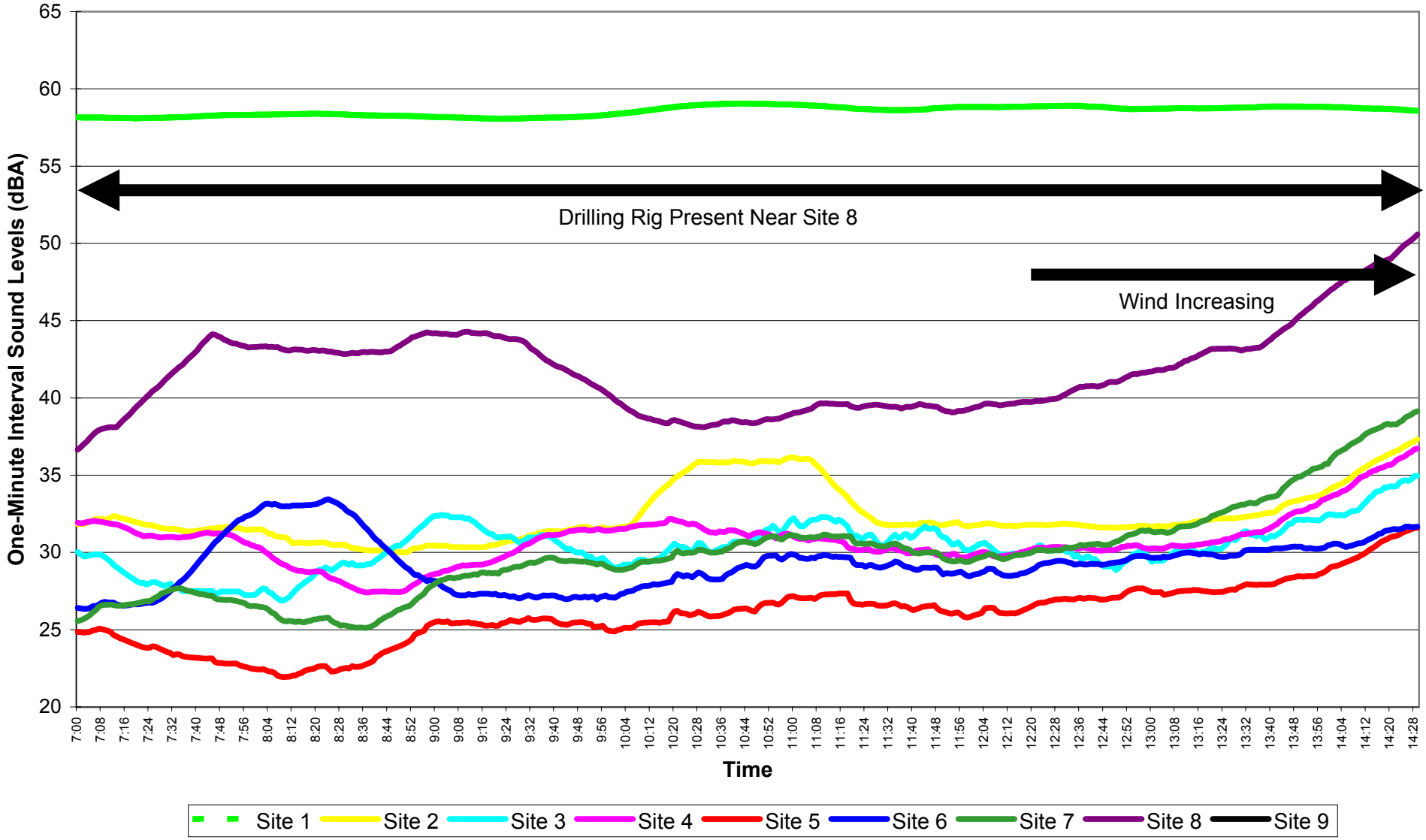


Figure F.35
EnCana Rosebud
L90 1 Hour Moving Average
Dec. 04, 2004 14:30 - 21:59

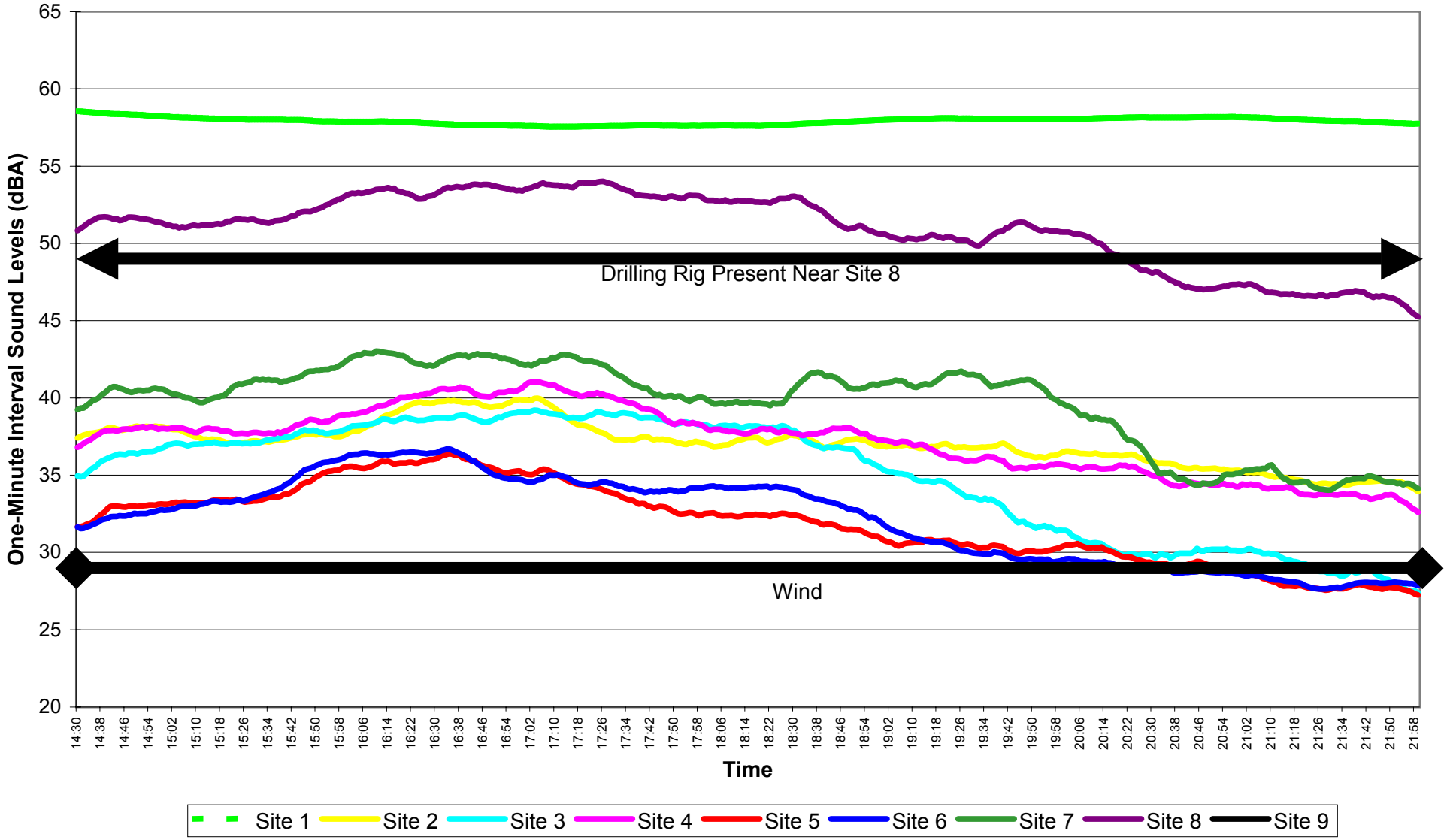


Figure F.36
EnCana Rosebud
L90 1 Hour Moving Average
Dec.04,2004 - Dec.05.2004 22:00 - 06:59

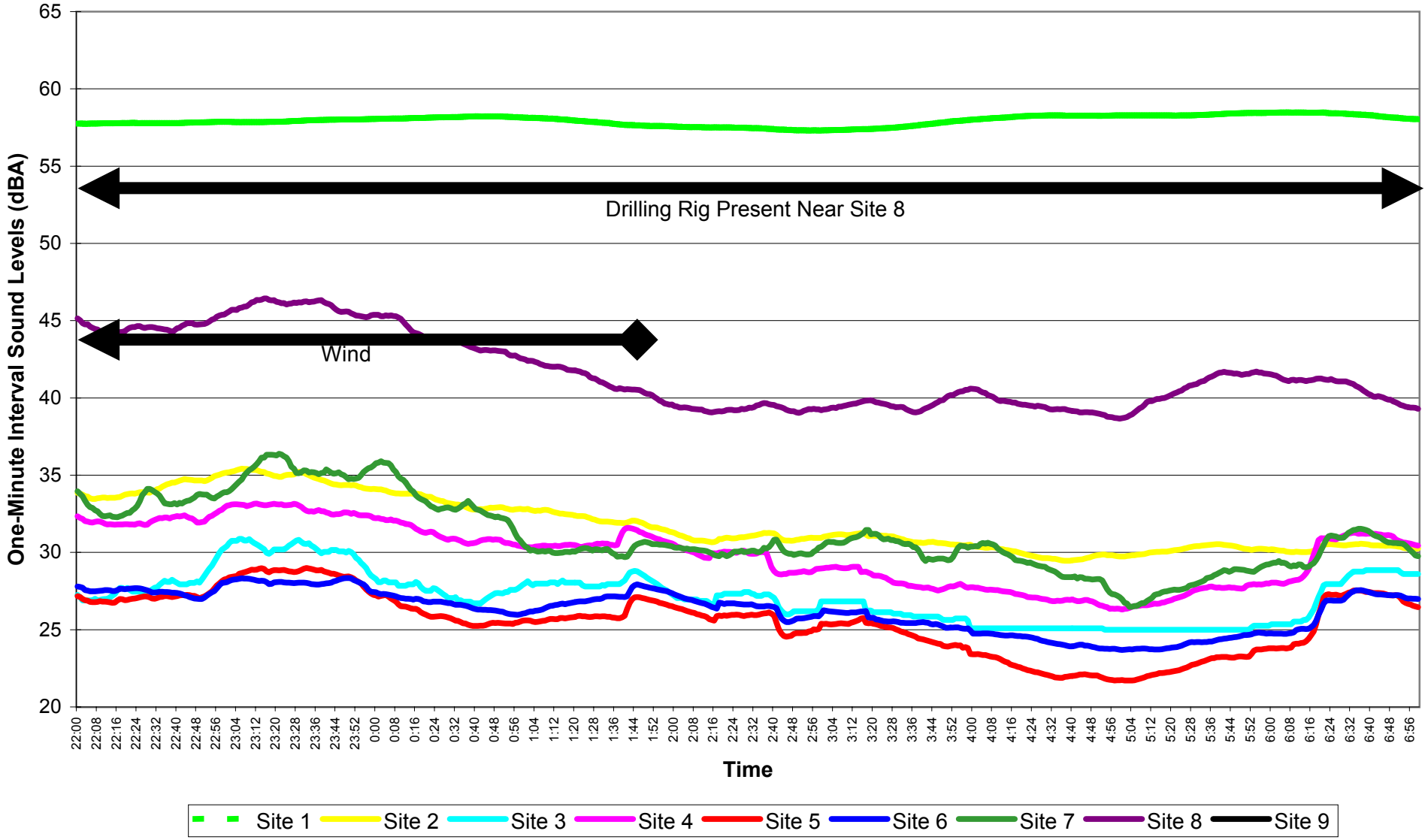


Figure F.37

EnCana Rosebud

L90 1 Hour Moving Average

Dec. 05, 2004 07:00 - 14:29

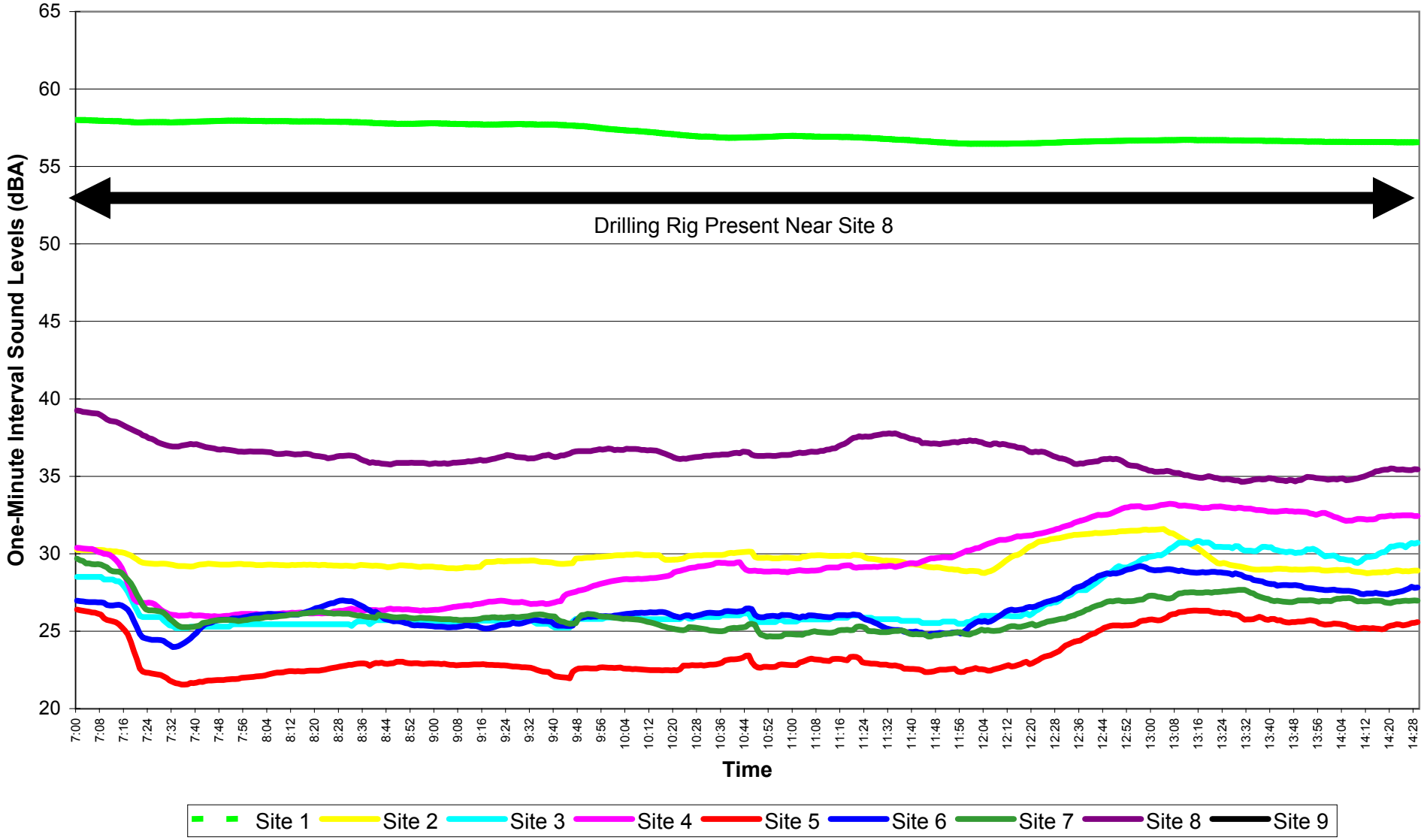


Figure F.38
EnCana Rosebud
L90 1 Hour Moving Average
Dec. 05, 2004 14:30 - 21:59

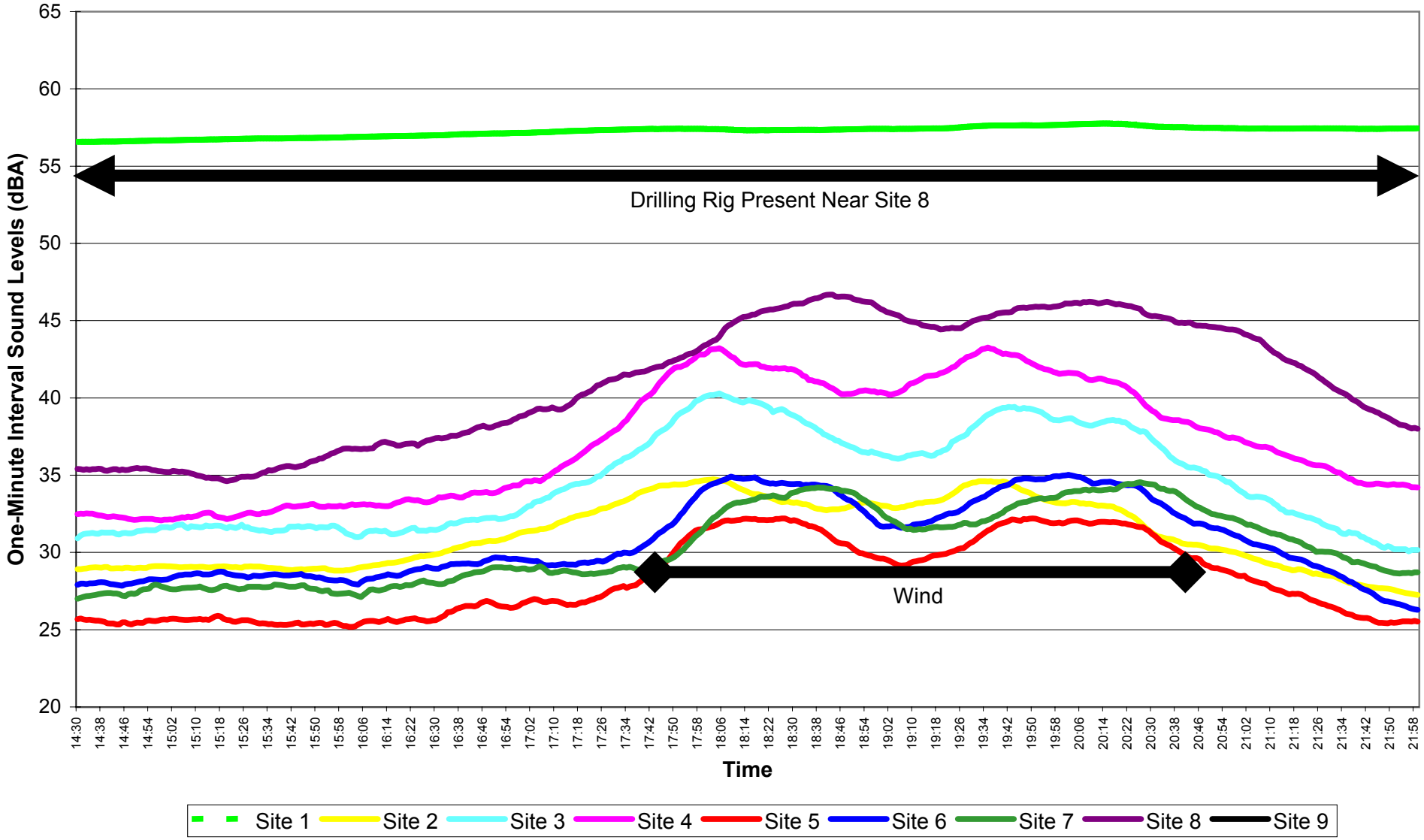


Figure F.39
EnCana Rosebud
L90 1 Hour Moving Average
Dec.05,2004 - Dec.06.2004 22:00 - 06:59

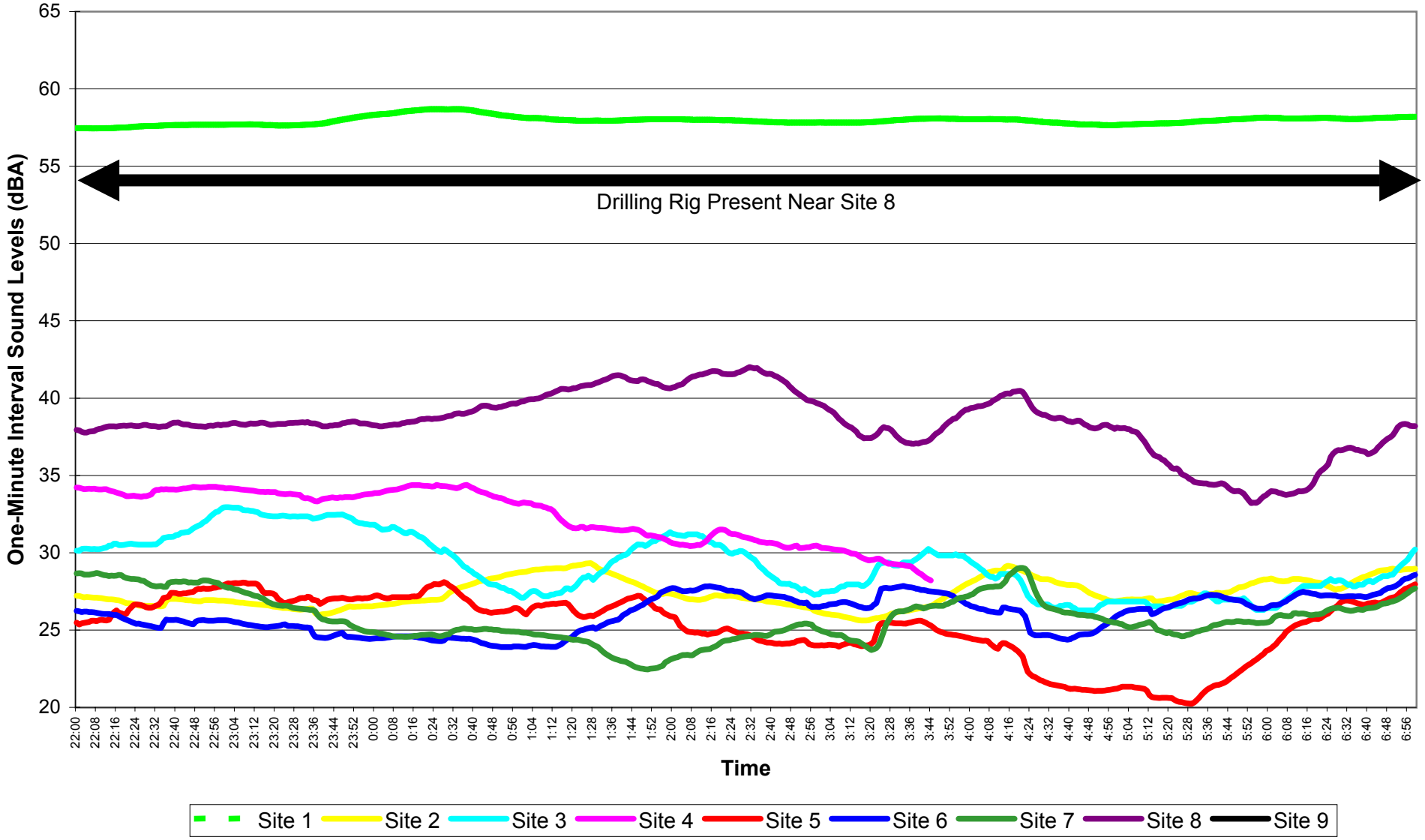


Figure F.40
EnCana Rosebud
L90 1 Hour Moving Average
Dec. 06, 2004 07:00 - 14:29

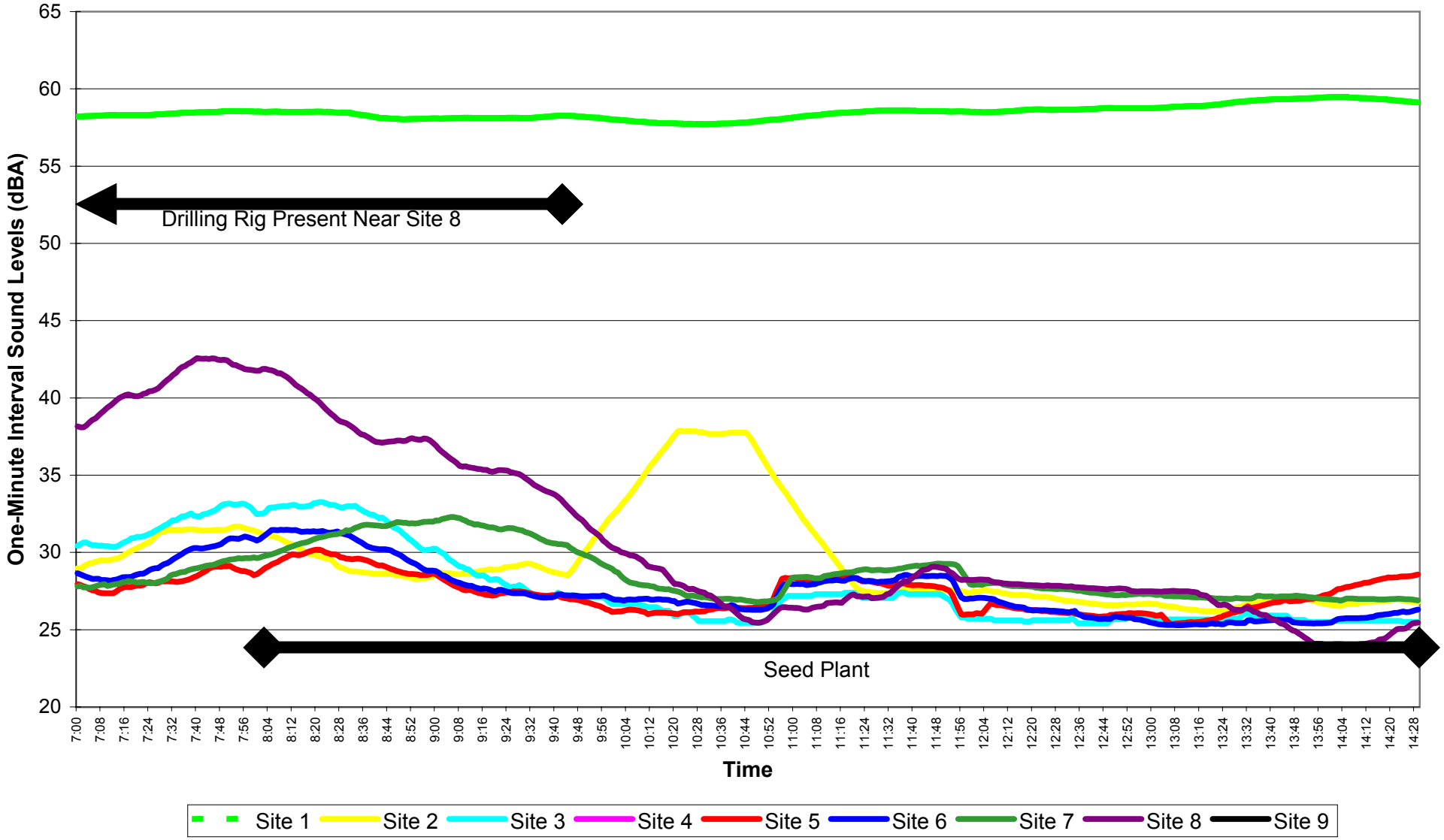


Figure F.41
EnCana Rosebud
L90 1 Hour Moving Average
Dec. 06, 2004 14:30 - 21:59

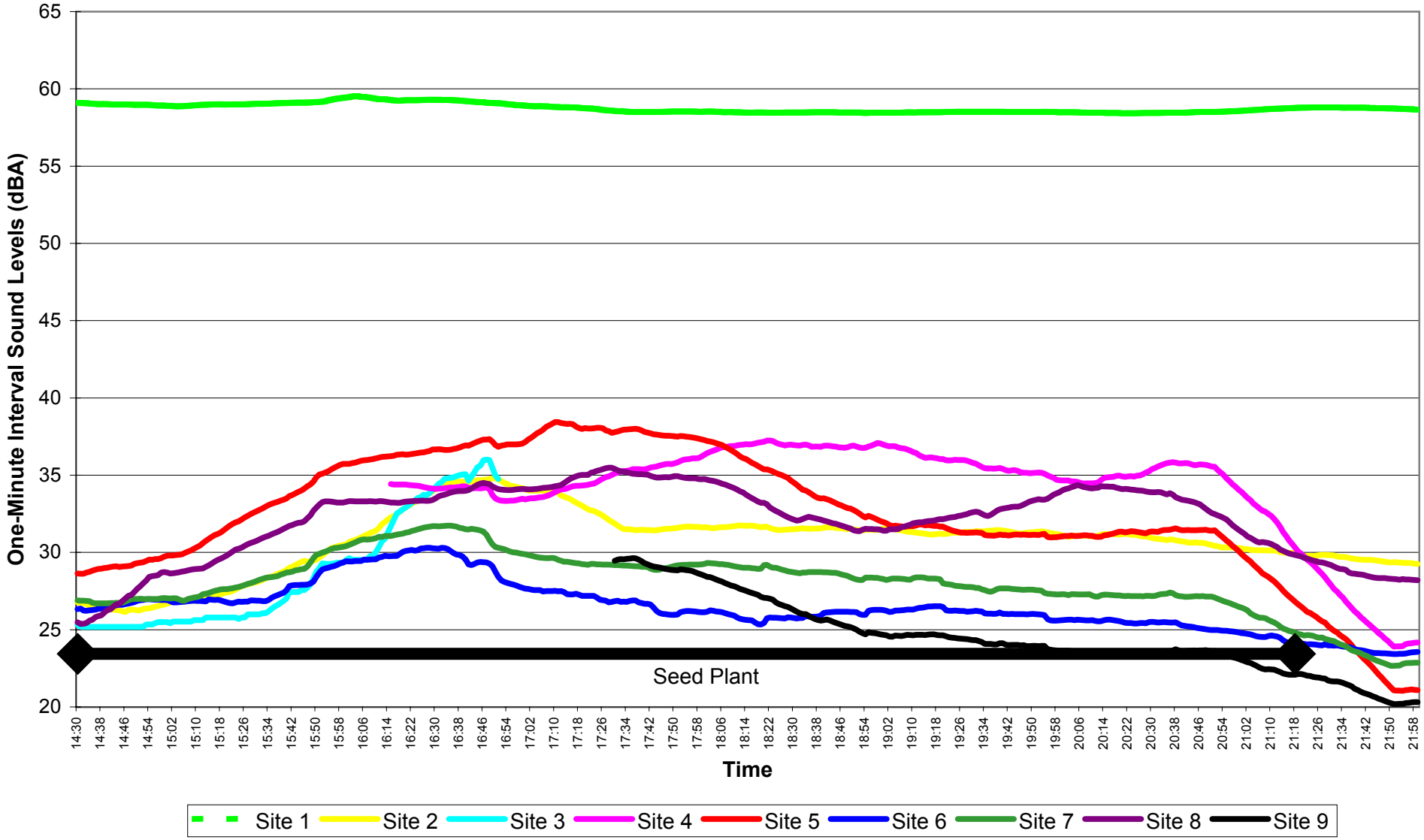


Figure F.42
EnCana Rosebud
L90 1 Hour Moving Average
Dec.06,2004 - Dec.07.2004 22:00 - 06:59

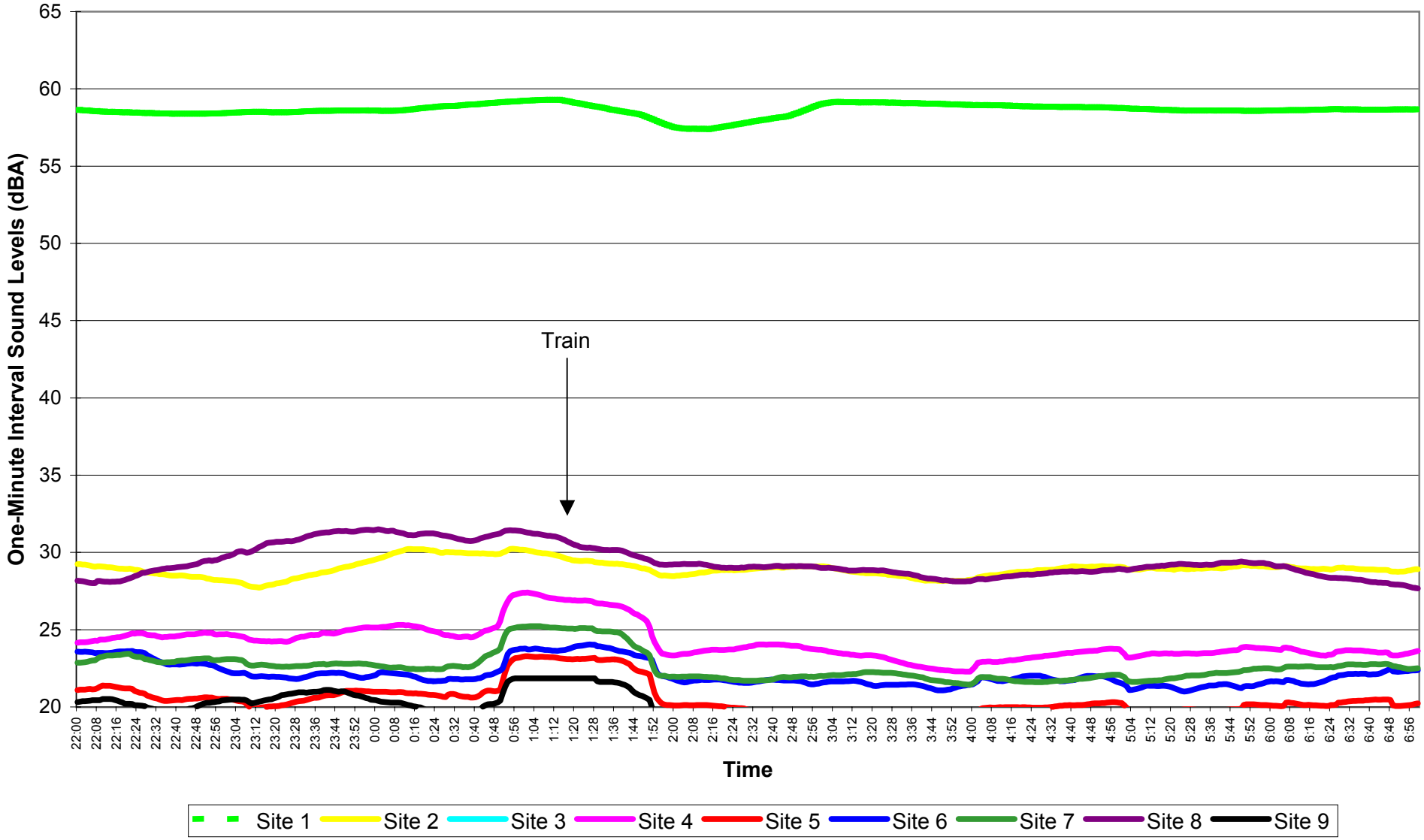


Figure F.43

EnCana Rosebud

L90 1 Hour Moving Average

Dec. 07, 2004 07:00 - 14:29

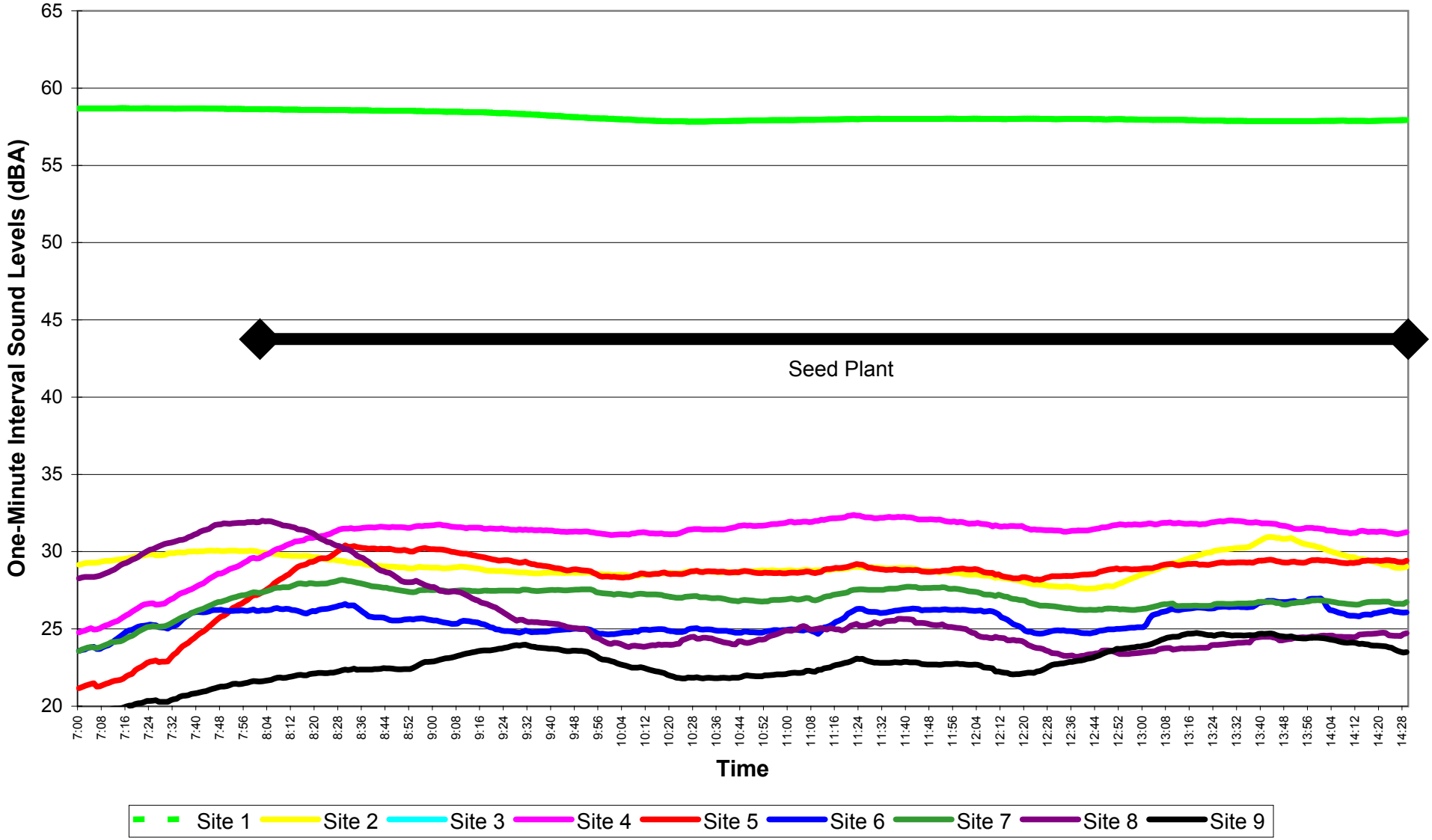


Figure F.44
EnCana Rosebud
L90 1 Hour Moving Average
Dec. 07, 2004 14:30 - 21:59

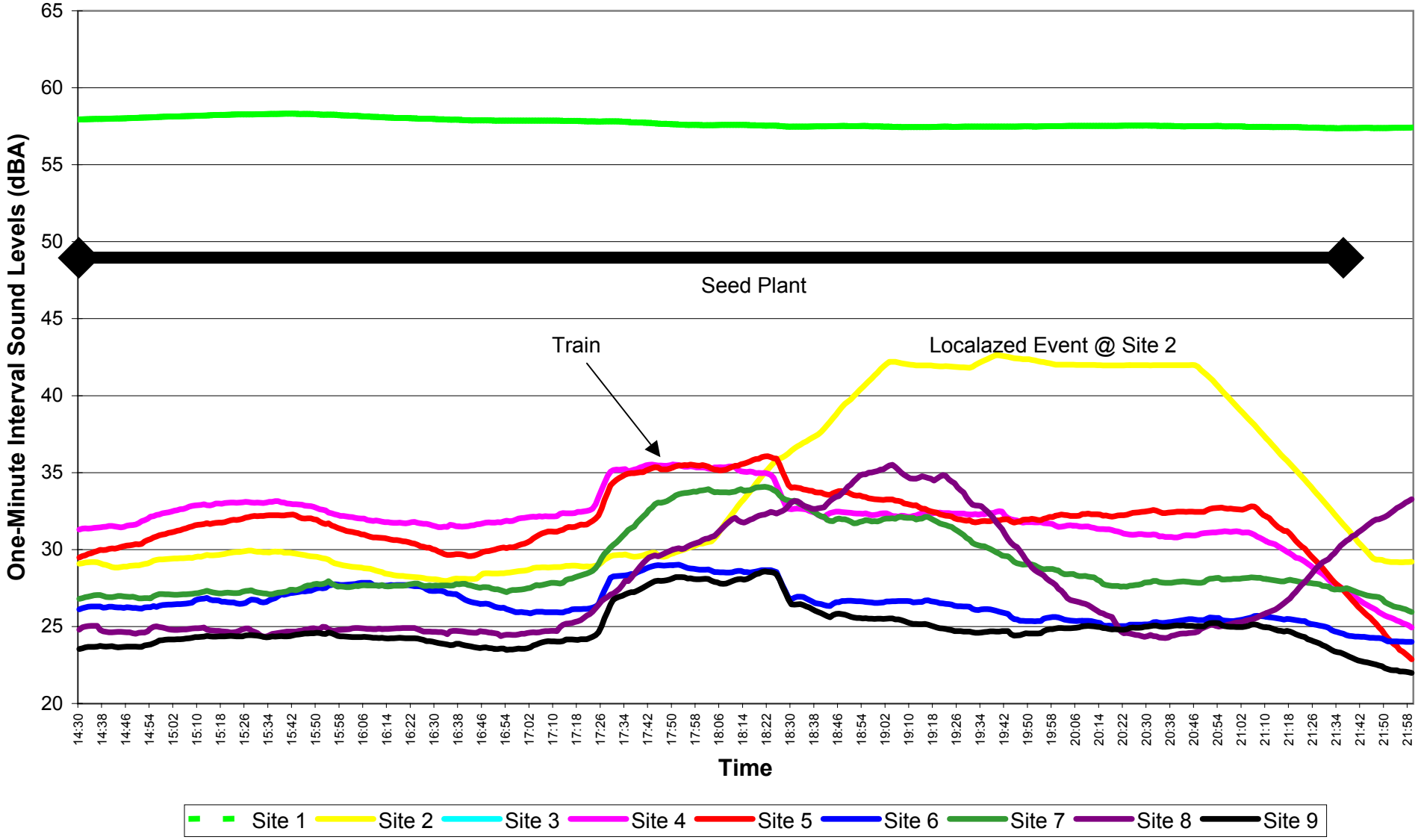


Figure F.45
EnCana Rosebud
L90 1 Hour Moving Average
Dec.07,2004 - Dec.08.2004 22:00 - 06:59

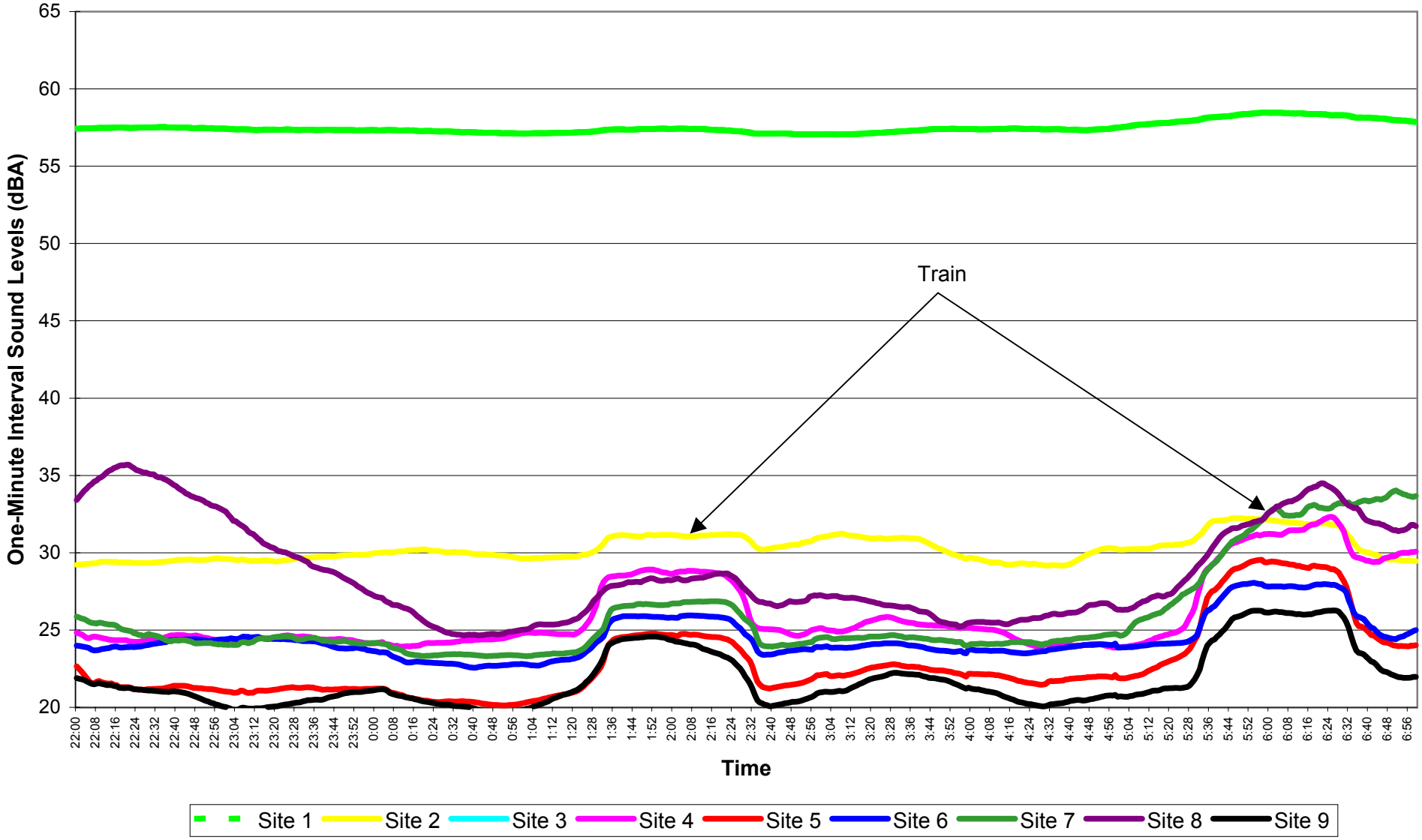


Figure F.46
EnCana Rosebud
L90 1 Hour Moving Average
Dec. 08, 2004 07:00 - 14:29

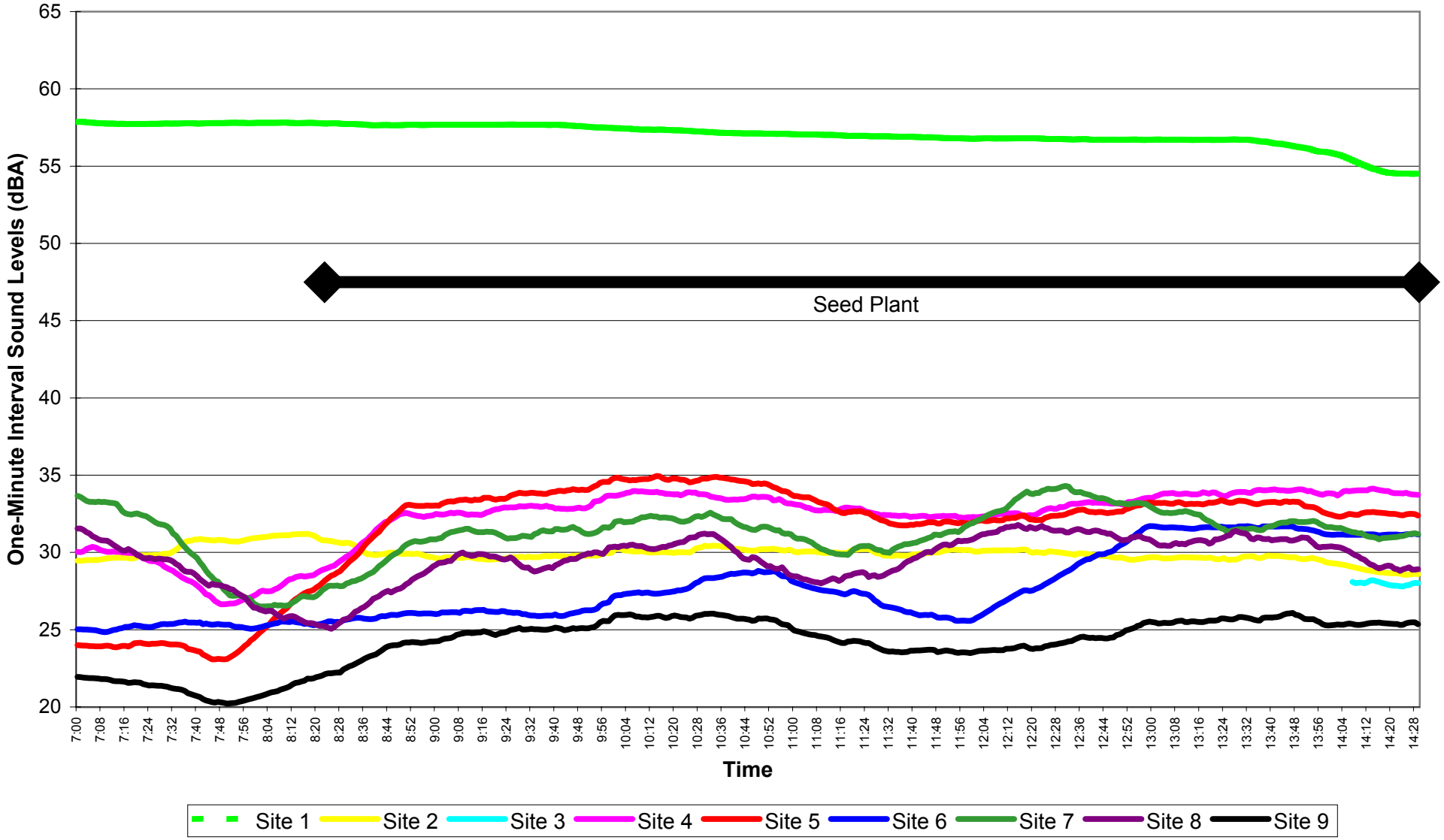


Figure F.47
EnCana Rosebud
L90 1 Hour Moving Average
Dec. 08, 2004 14:30 - 21:59

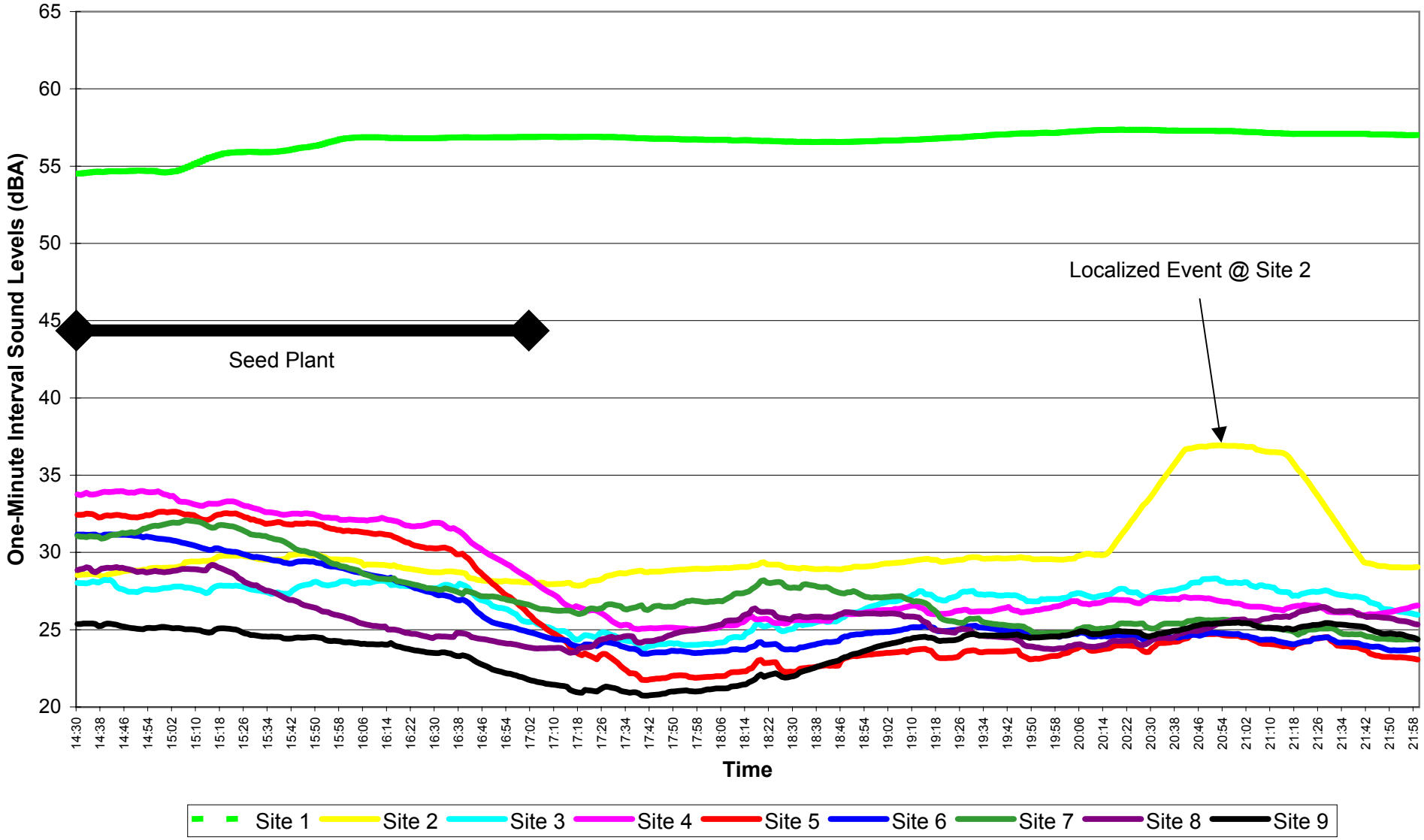


Figure F.48
EnCana Rosebud
L90 1 Hour Moving Average
Dec.08,2004 - Dec.09.2004 22:00 - 06:59

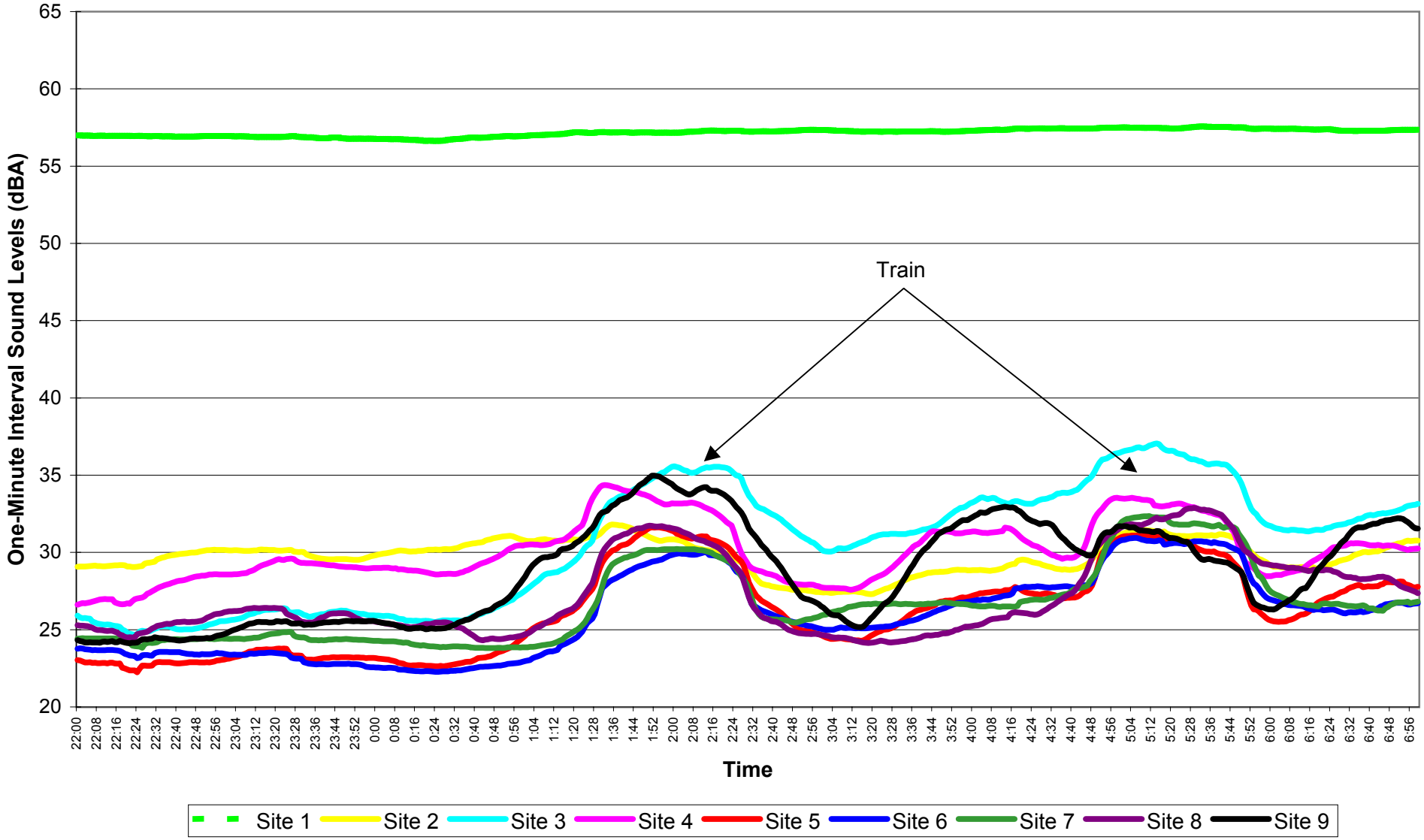


Figure F.49
EnCana Rosebud
L90 1 Hour Moving Average
Dec. 09, 2004 07:00 - 14:29

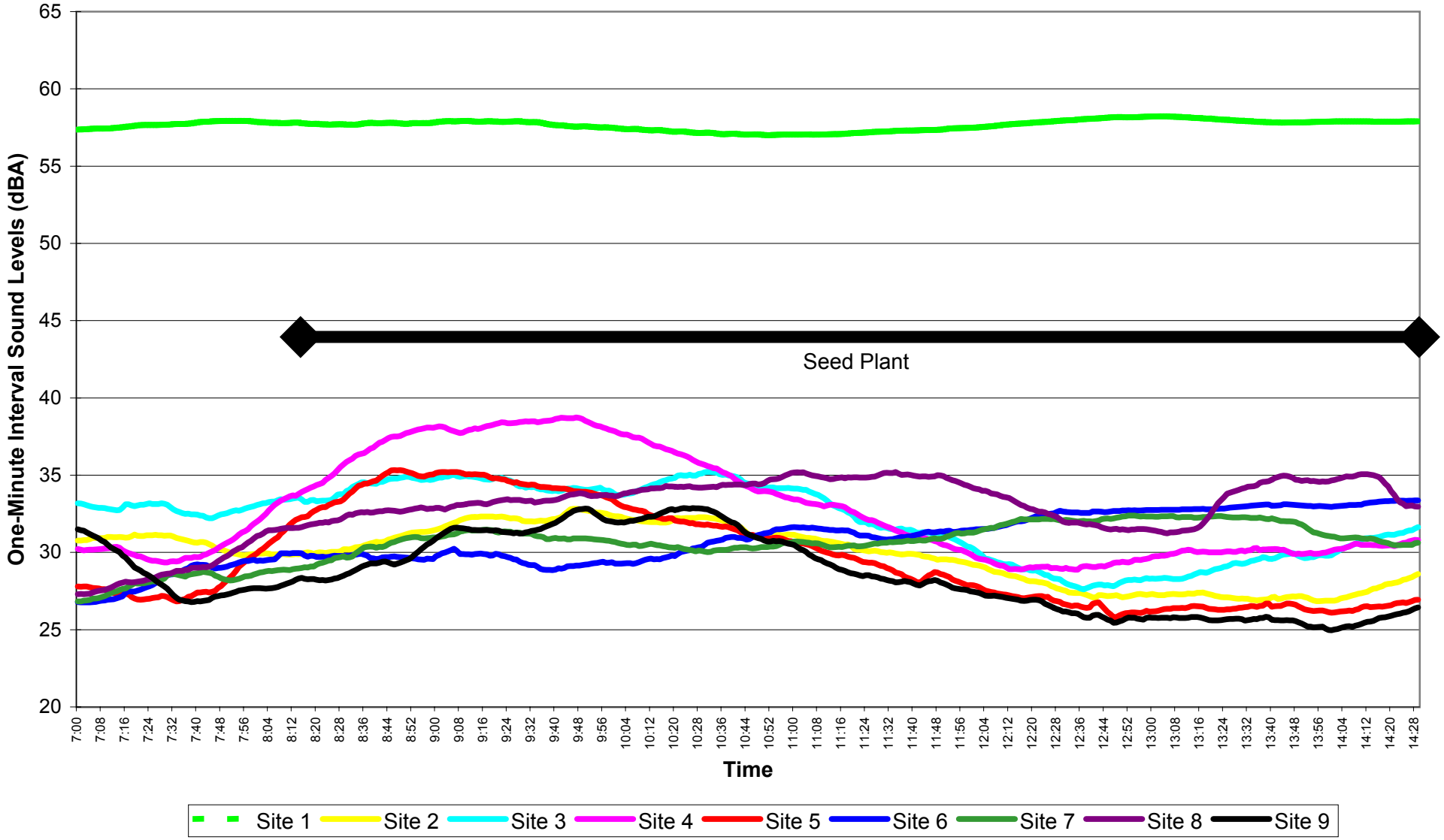


Figure F.50
EnCana Rosebud
L90 1 Hour Moving Average
Dec. 09, 2004 14:30 - 21:59

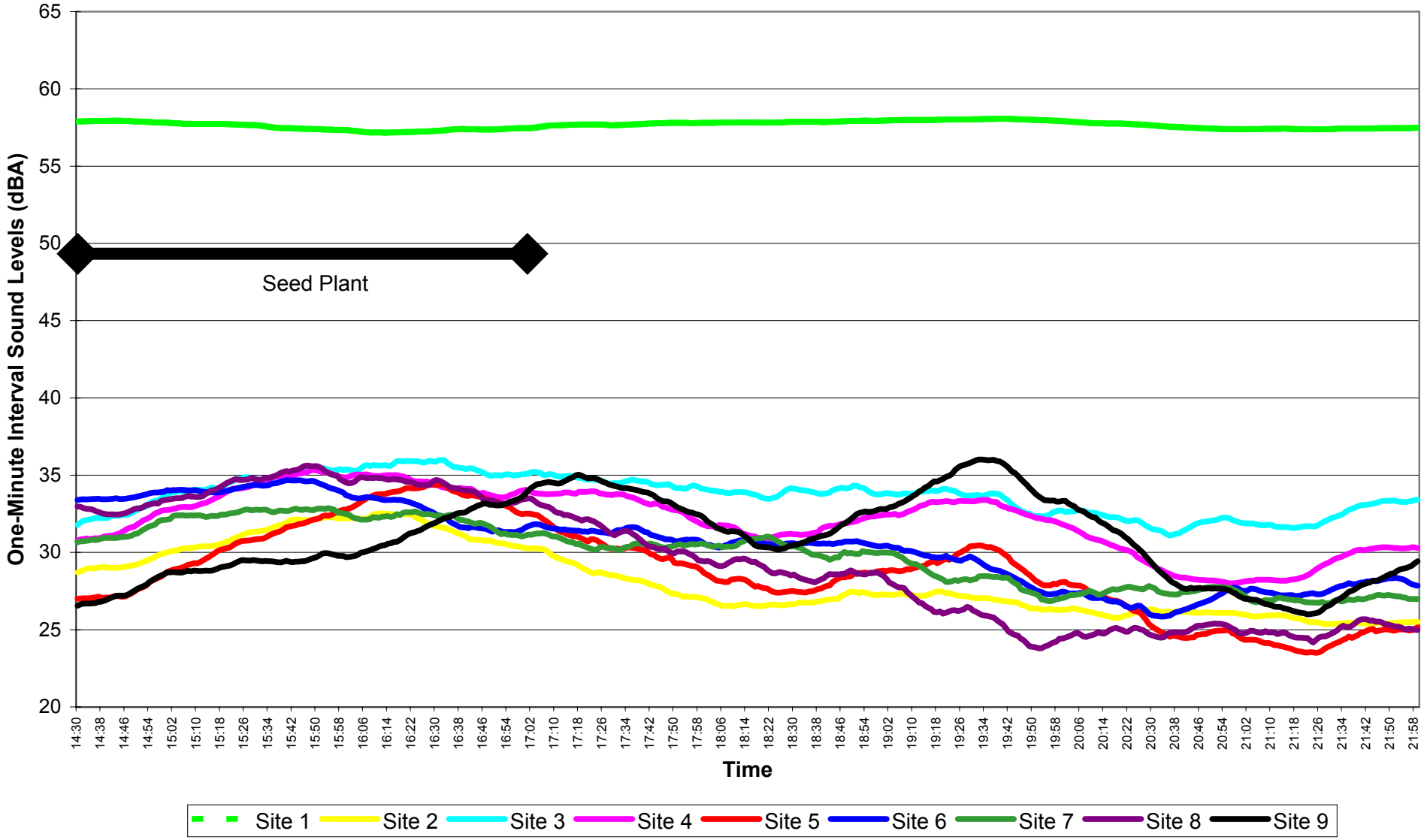


Figure F.51
EnCana Rosebud
L90 1 Hour Moving Average
Dec.09,2004 - Dec.10.2004 22:00 - 06:59

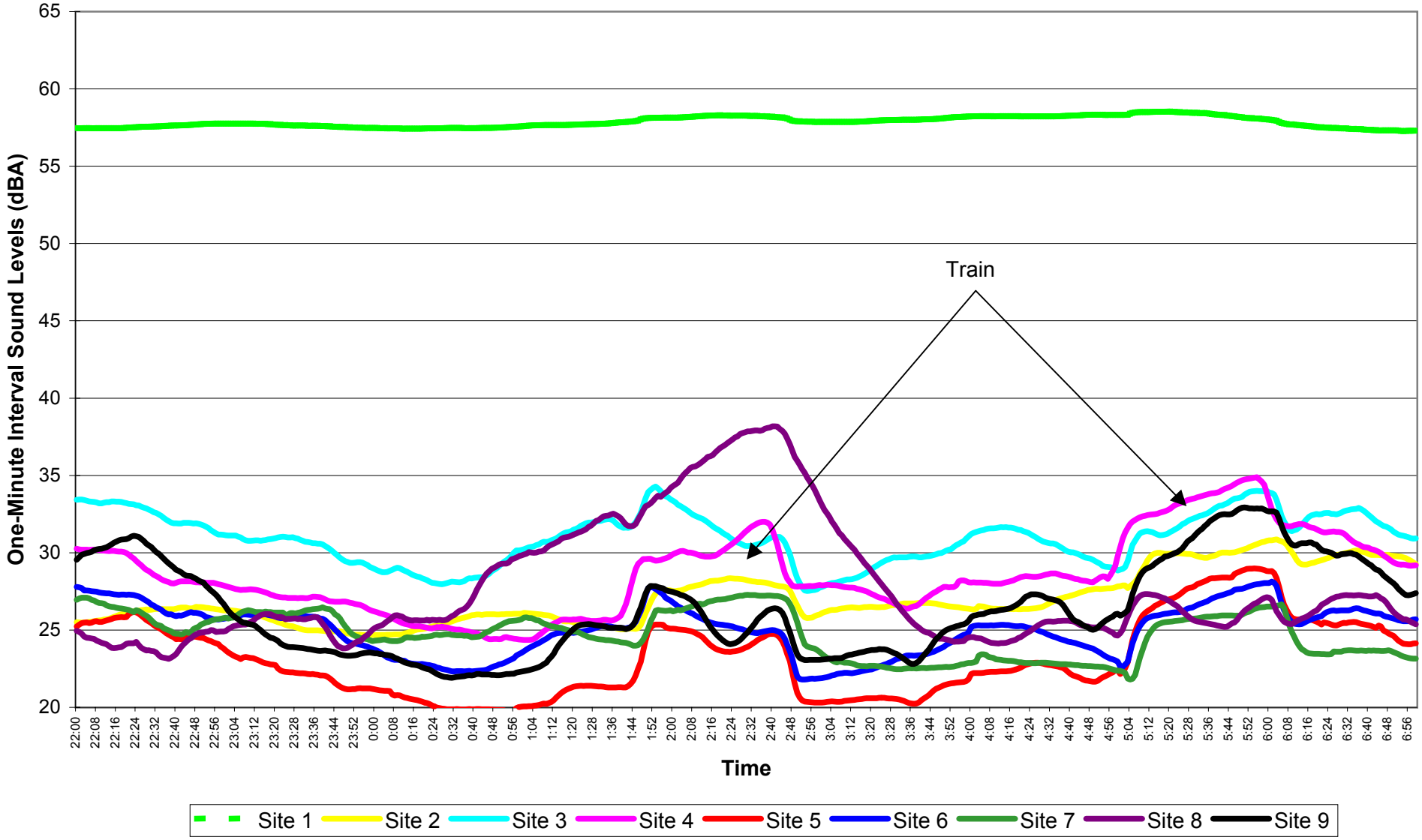


Figure F.52
EnCana Rosebud
L90 1 Hour Moving Average
Dec. 10, 2004 07:00 - 14:29

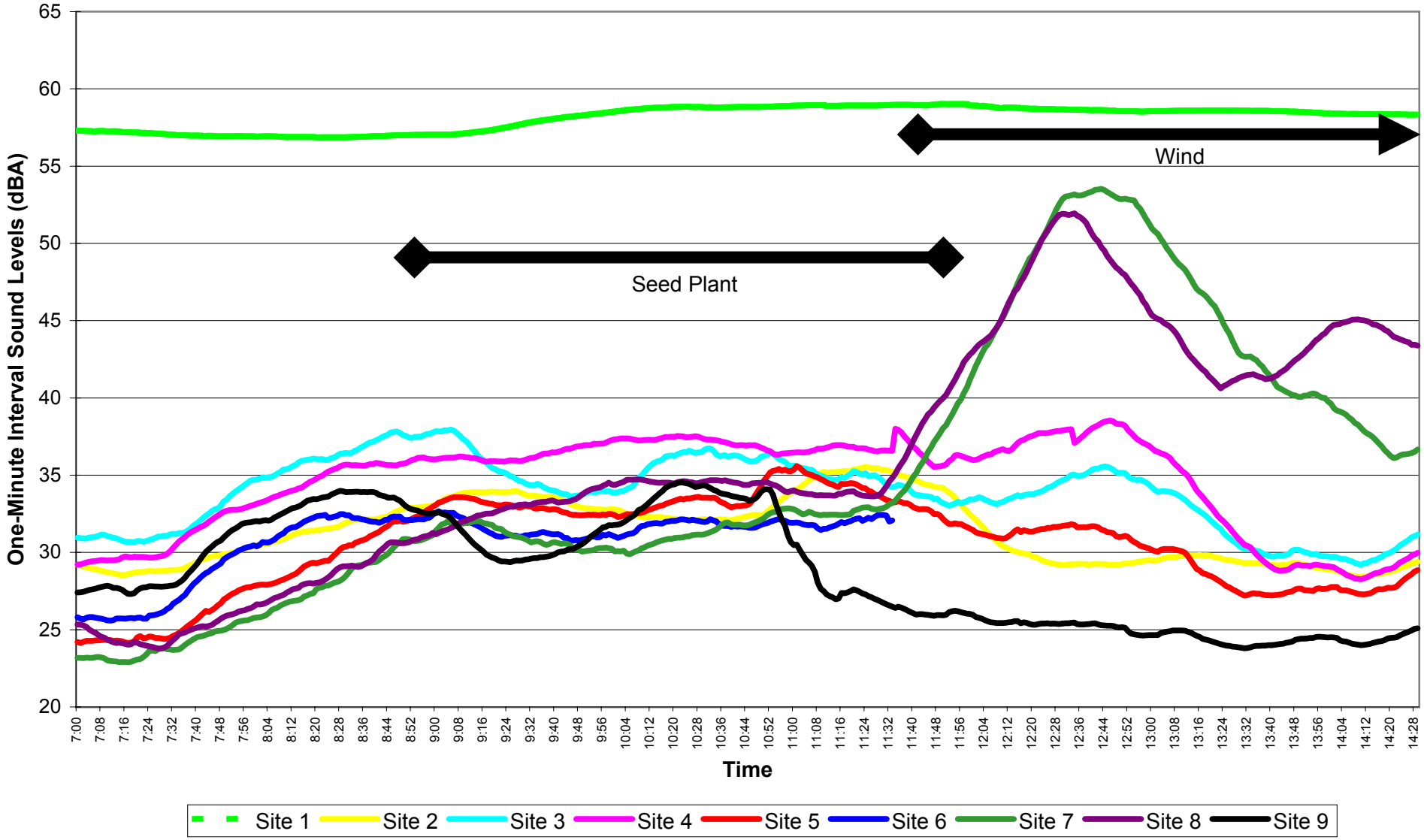


Figure F.53
EnCana Rosebud
L90 1 Hour Moving Average
Dec. 10, 2004 14:30 - 21:59

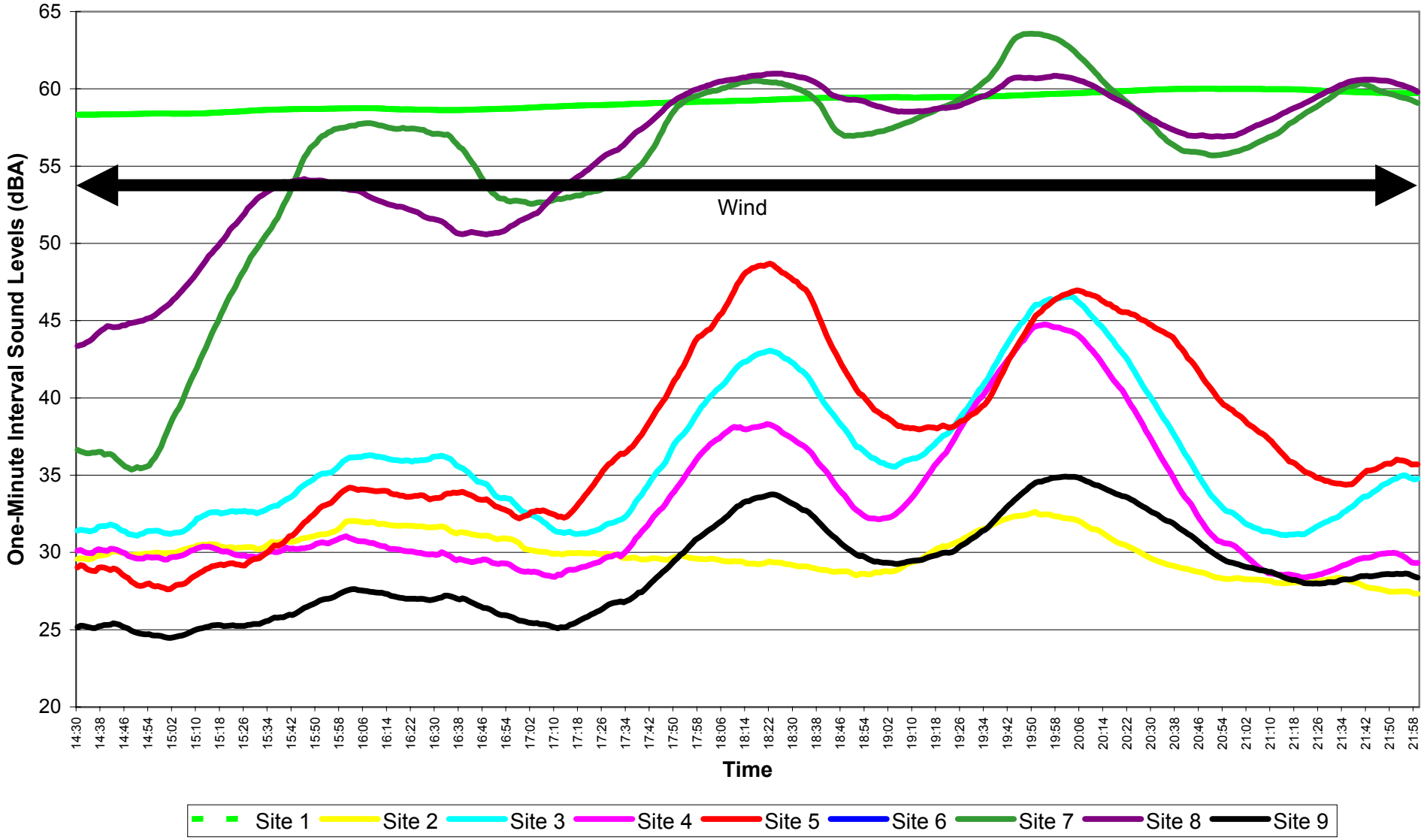


Figure F.54
EnCana Rosebud
L90 1 Hour Moving Average
Dec.10,2004 - Dec.11.2004 22:00 - 06:59

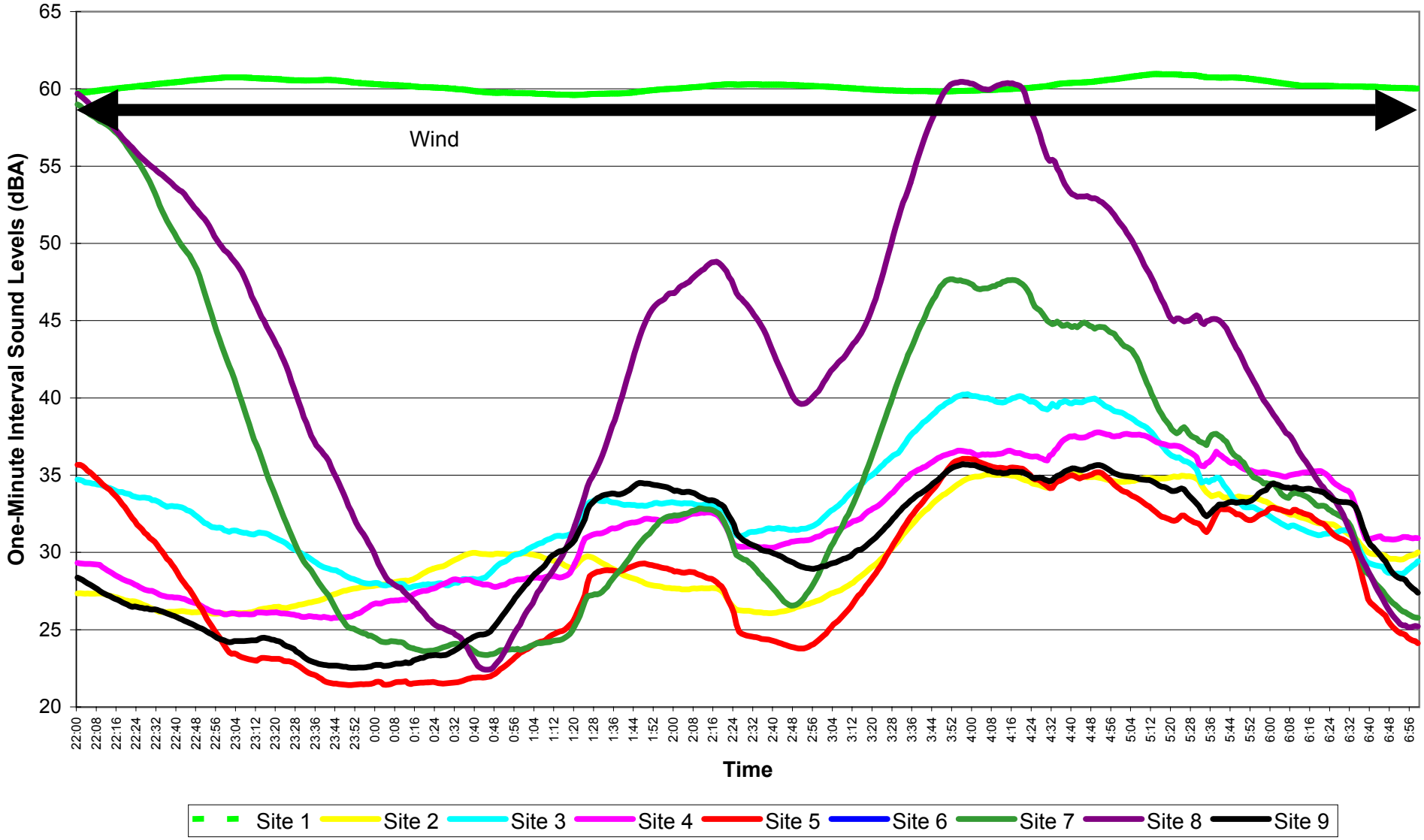


Figure F.55
EnCana Rosebud
L90 1 Hour Moving Average
Dec. 11, 2004 07:00 - 14:29

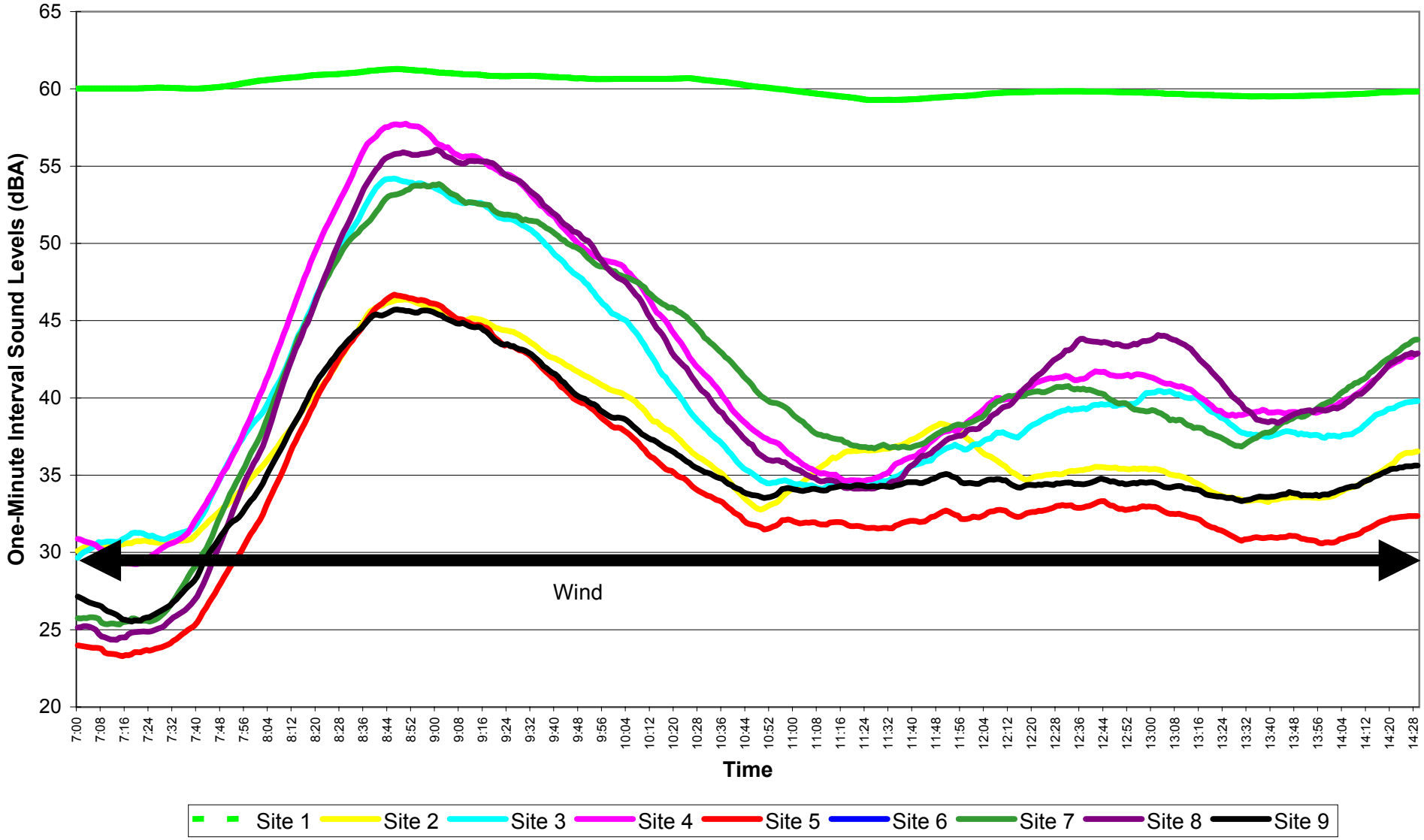


Figure F.56
EnCana Rosebud
L90 1 Hour Moving Average
Dec. 11, 2004 14:30 - 21:59

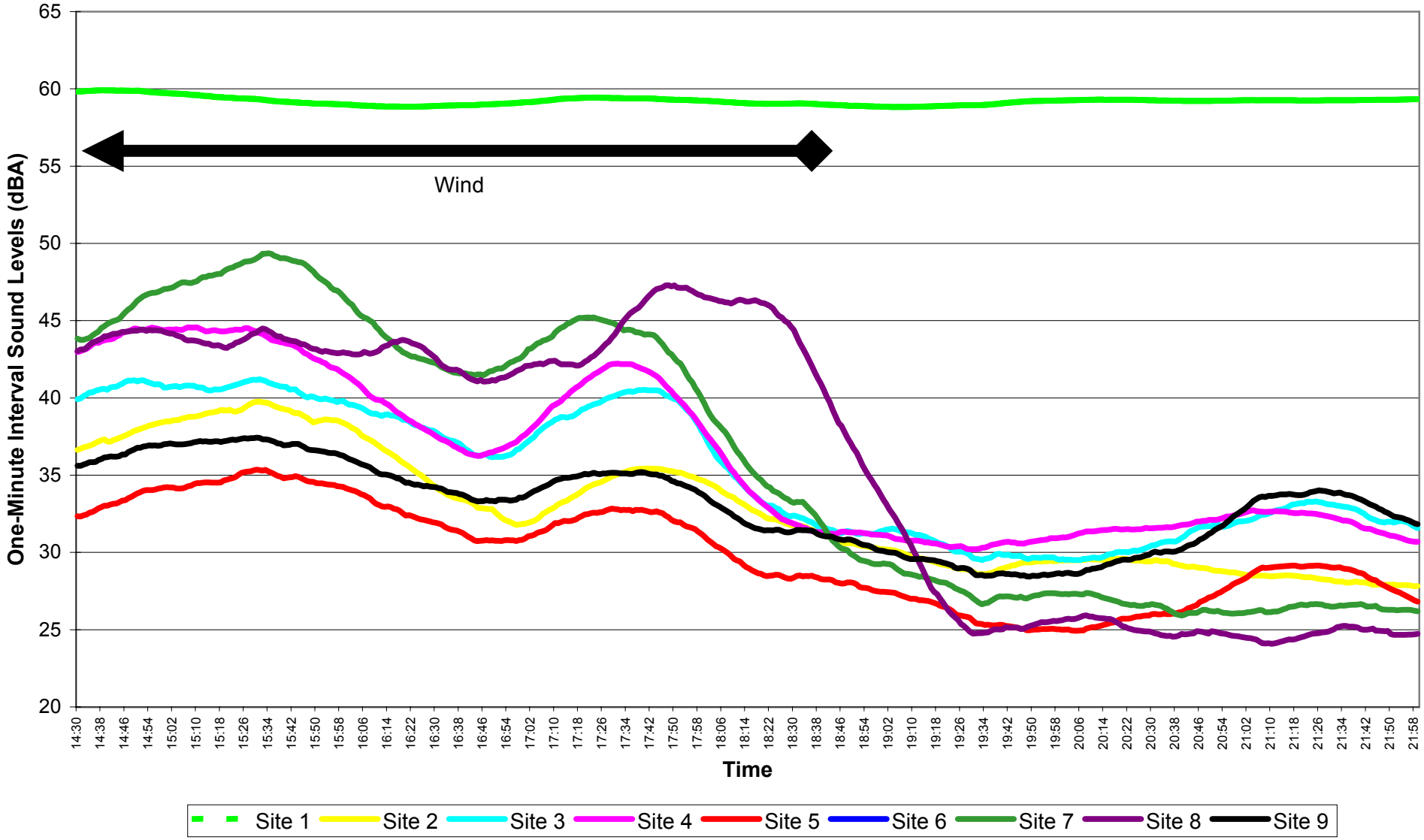


Figure F.57
EnCana Rosebud
L90 1 Hour Moving Average
Dec.11,2004 - Dec.12.2004 22:00 - 06:59

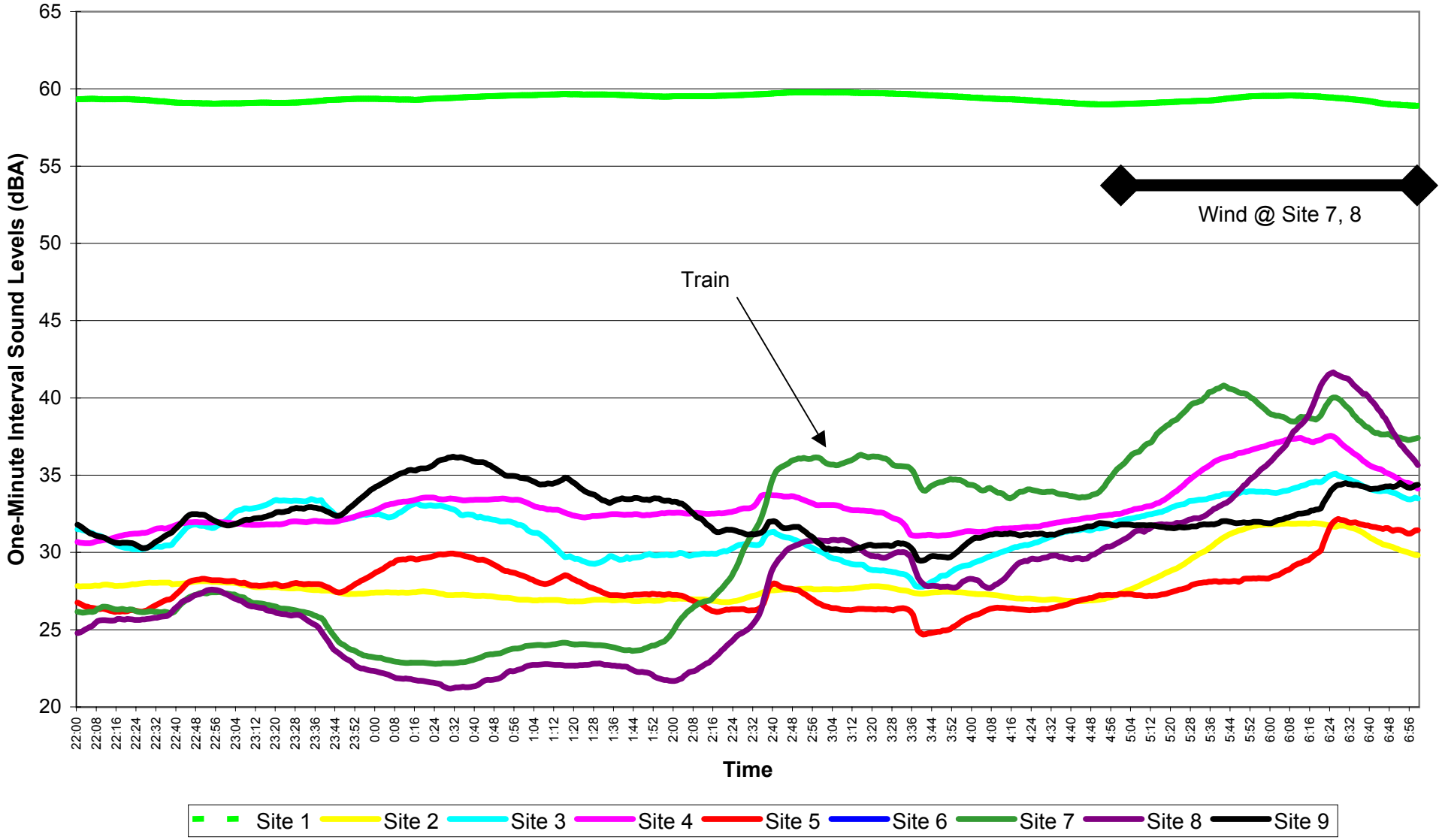


Figure F.58

EnCana Rosebud

L90 1 Hour Moving Average

Dec. 12, 2004 07:00 - 14:29

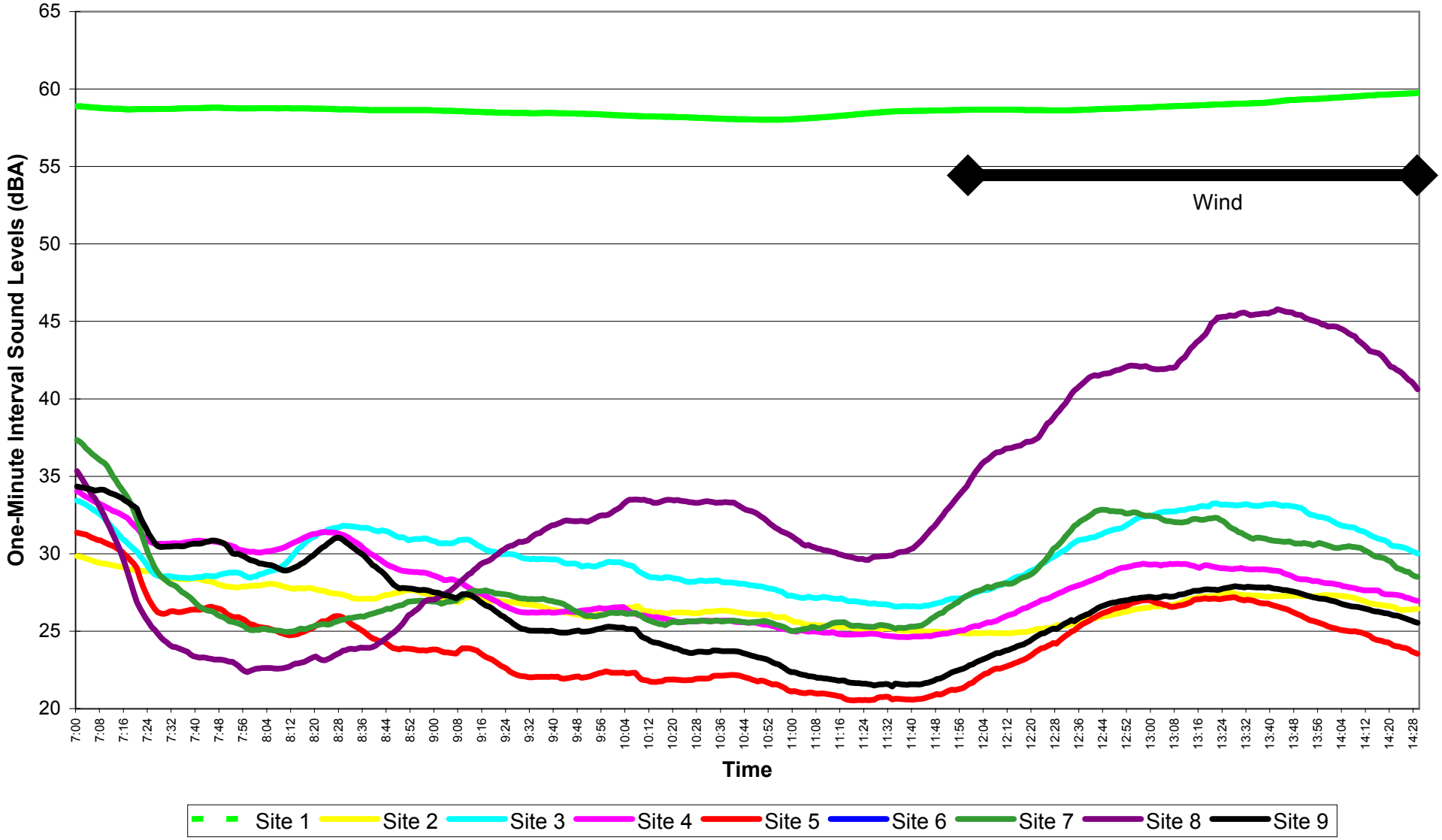


Figure F.59
EnCana Rosebud
L90 1 Hour Moving Average
Dec. 12, 2004 14:30 - 21:59

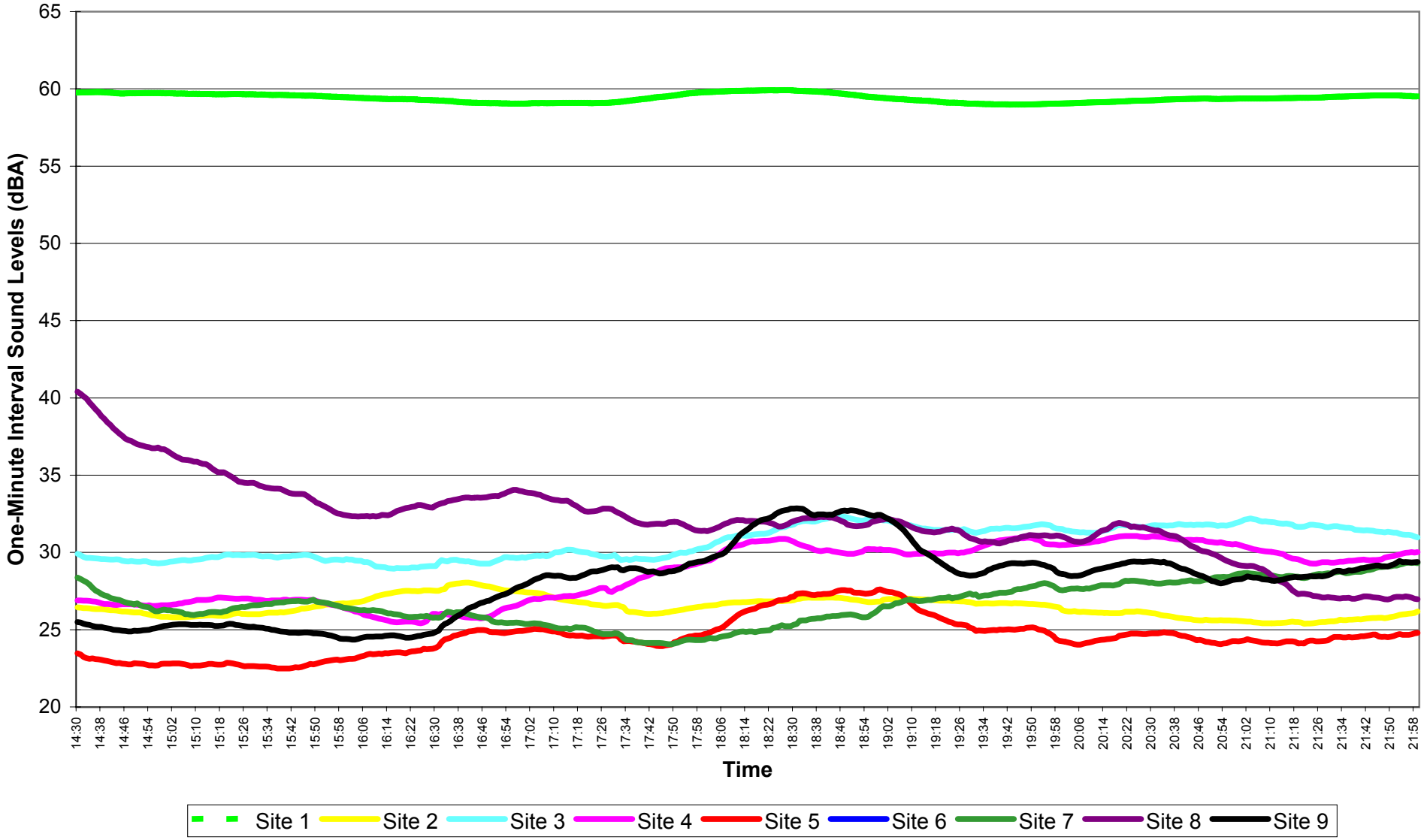


Figure F.60
EnCana Rosebud
L90 1 Hour Moving Average
Dec.12,2004 - Dec.13.2004 22:00 - 06:59

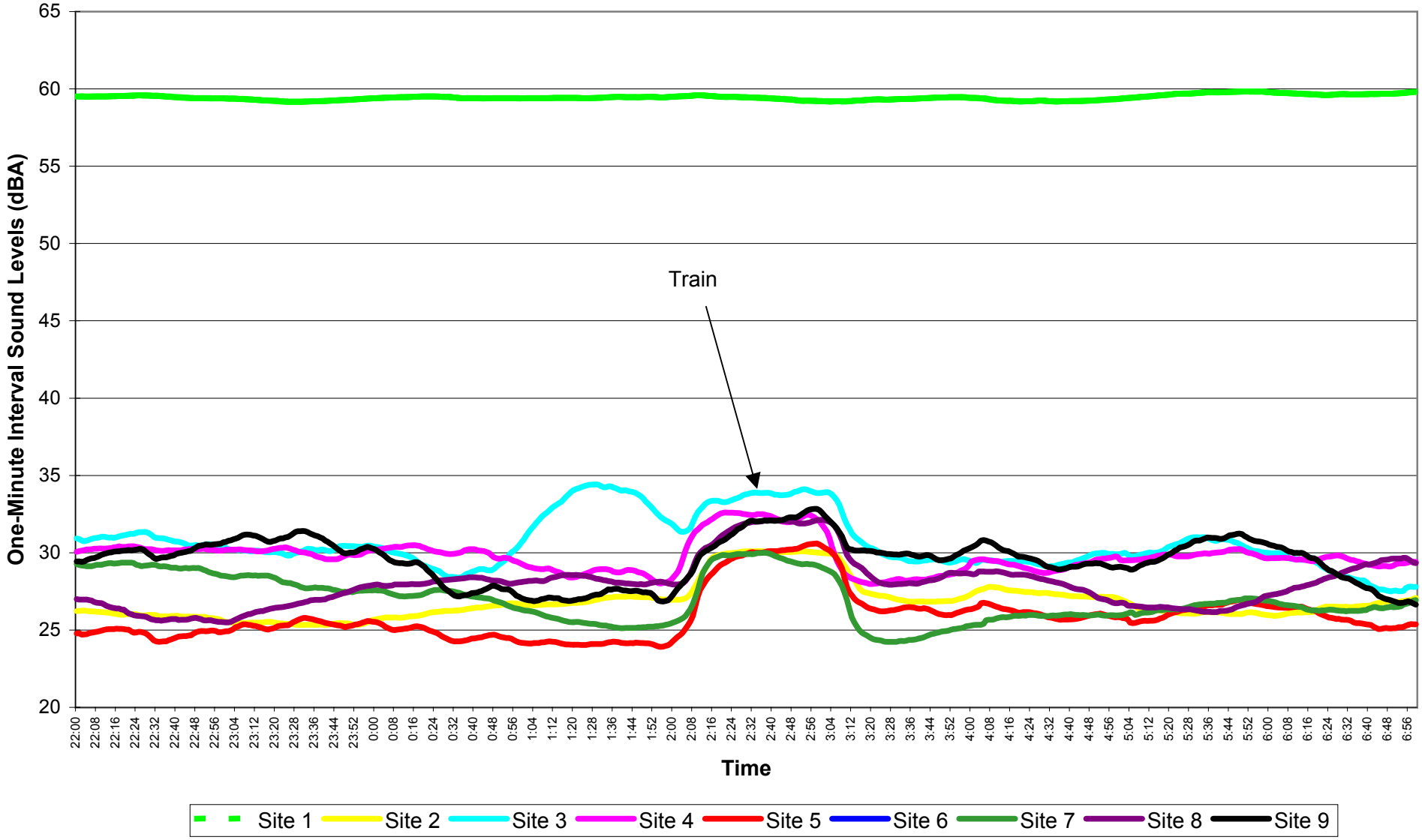


Figure F.61
EnCana Rosebud
L90 1 Hour Moving Average
Dec. 13, 2004 07:00 - 14:29

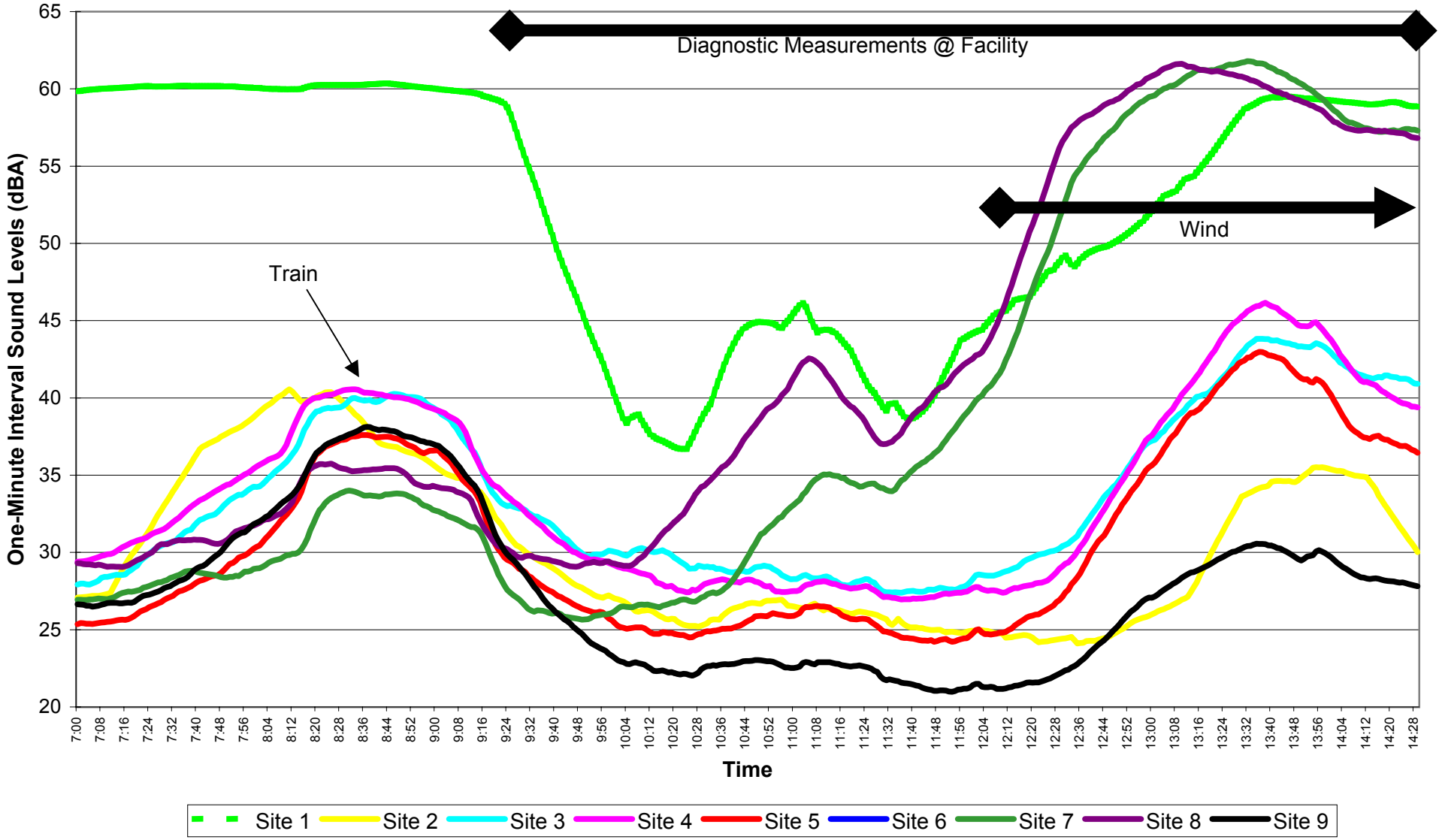


Figure F.62
EnCana Rosebud
L90 1 Hour Moving Average
Dec. 13, 2004 14:30 - 21:59

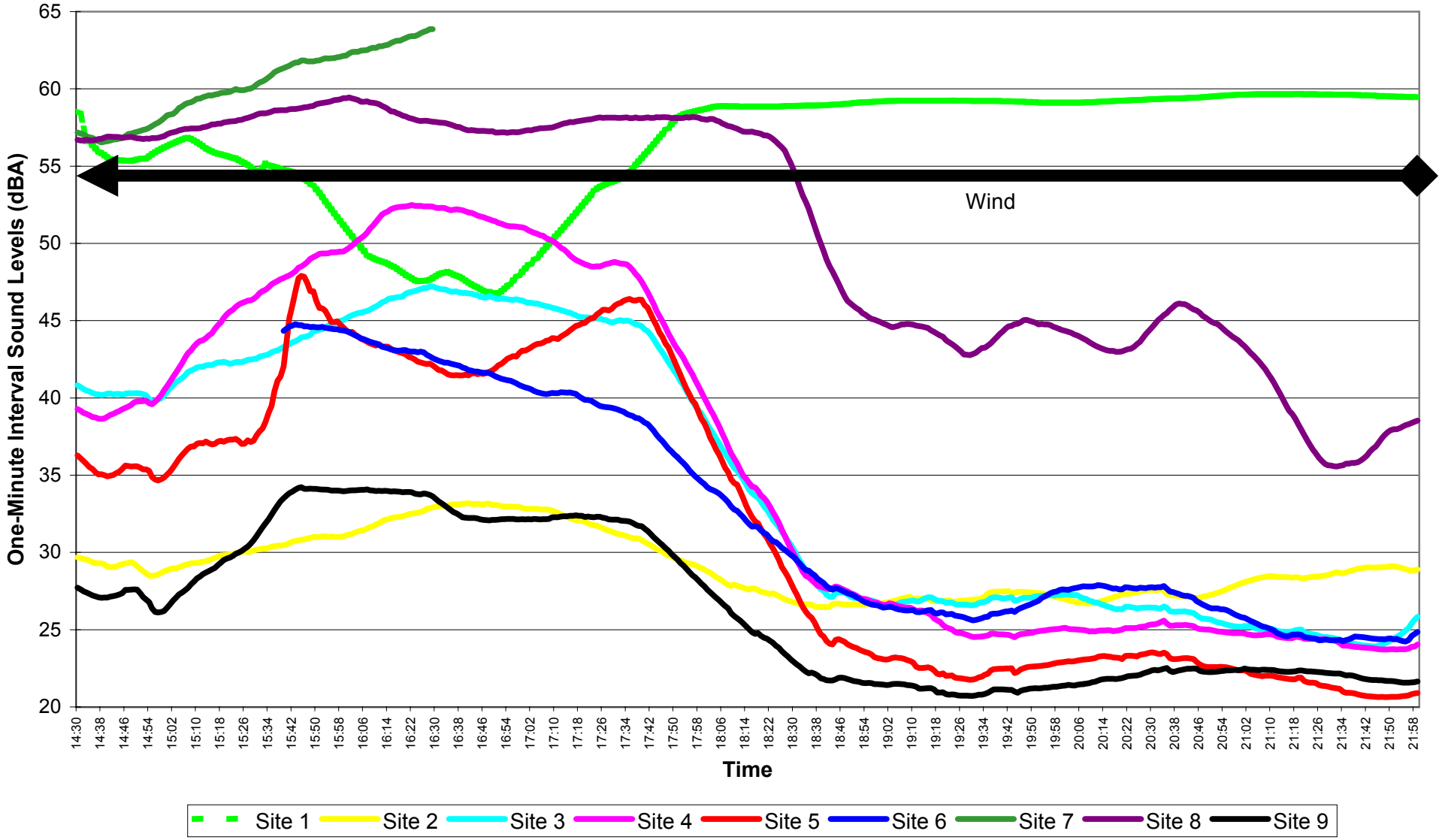


Figure F.63
EnCana Rosebud
L90 1 Hour Moving Average
Dec.13,2004 - Dec.14.2004 22:00 - 06:59

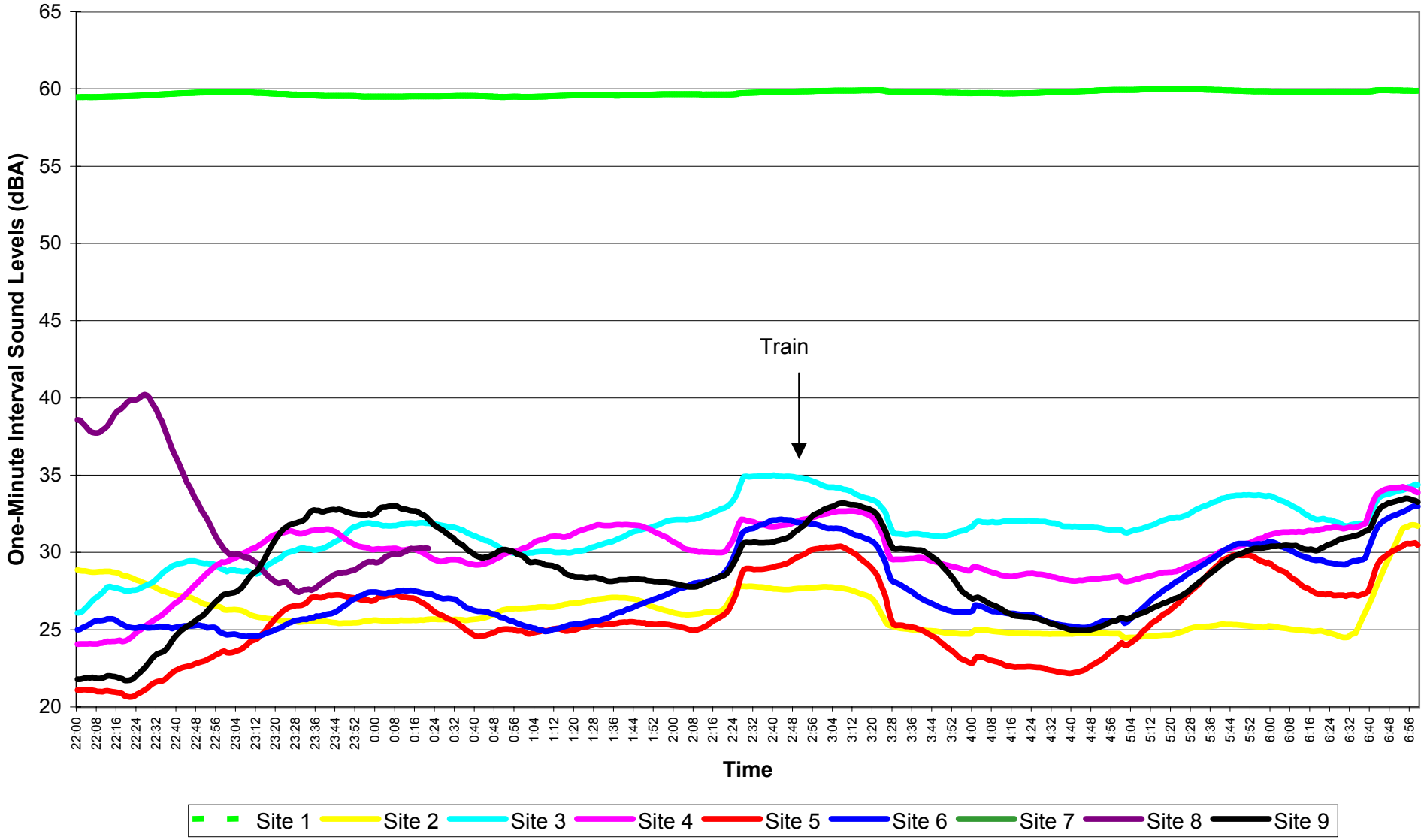


Figure F.64

EnCana Rosebud

L90 1 Hour Moving Average

Dec. 14, 2004 07:00 - 14:29

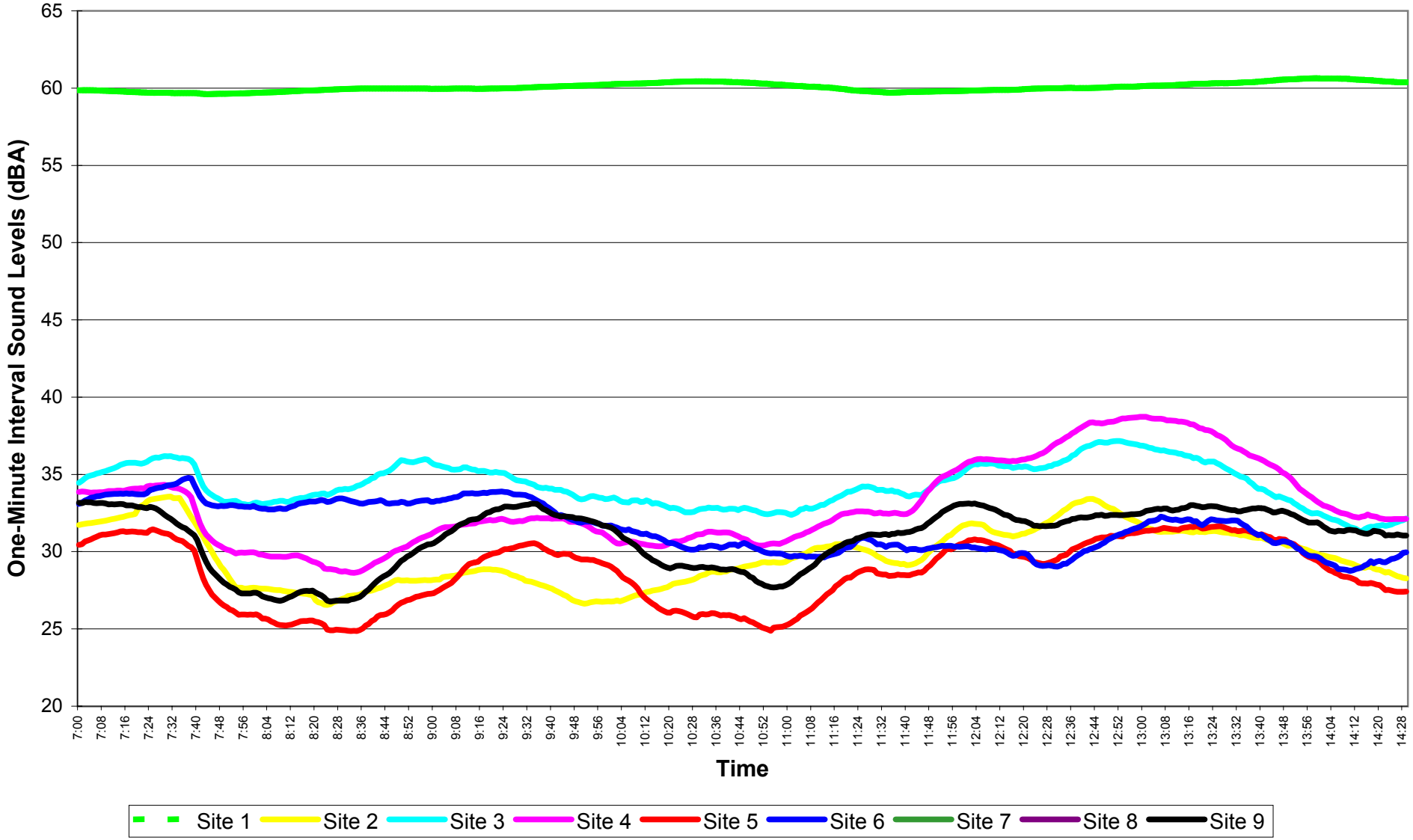


Figure F.65
EnCana Rosebud
L90 1 Hour Moving Average
Dec. 14, 2004 14:30 - 21:59

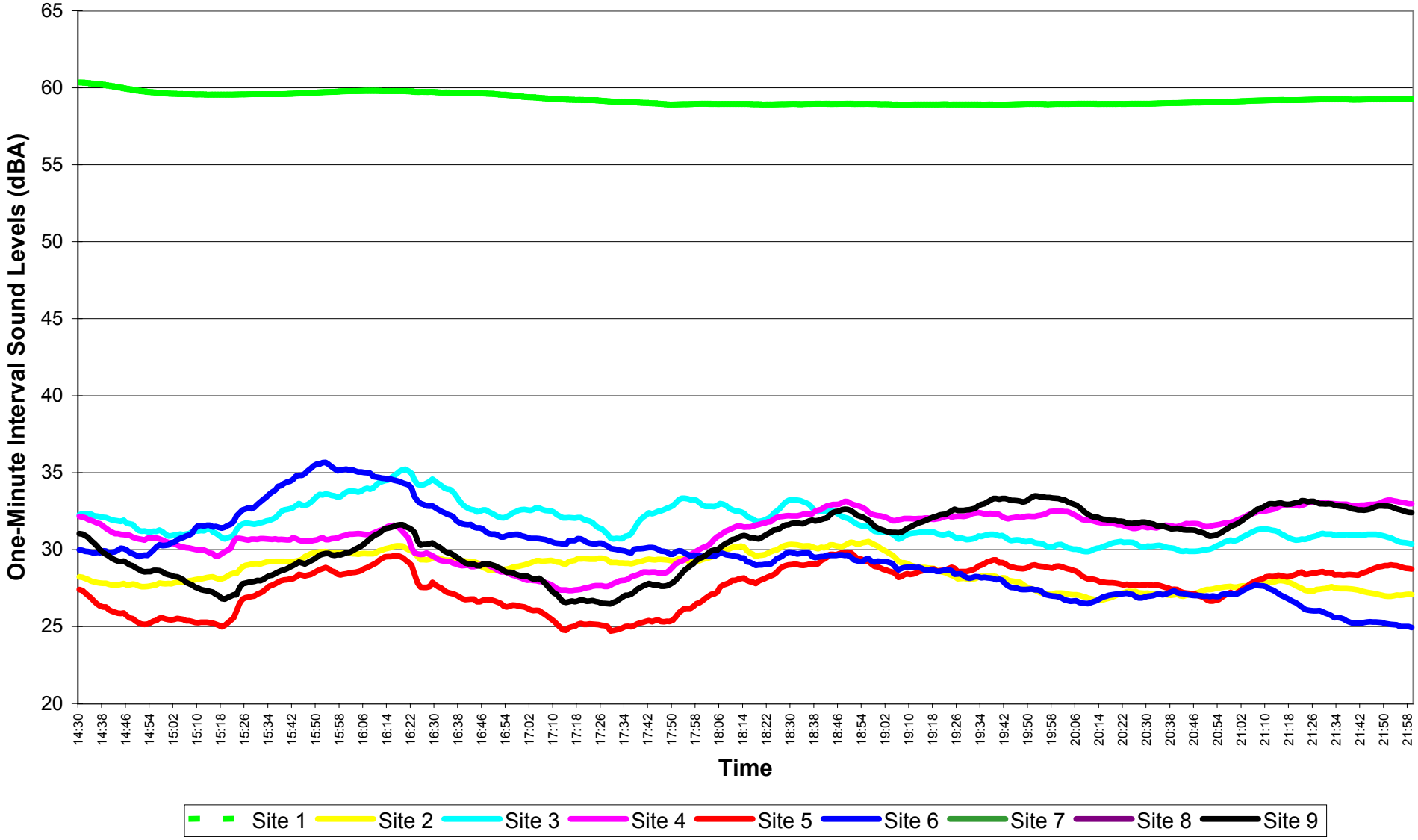


Figure F.66
EnCana Rosebud
L90 1 Hour Moving Average
Dec.14,2004 - Dec.15.2004 22:00 - 06:59

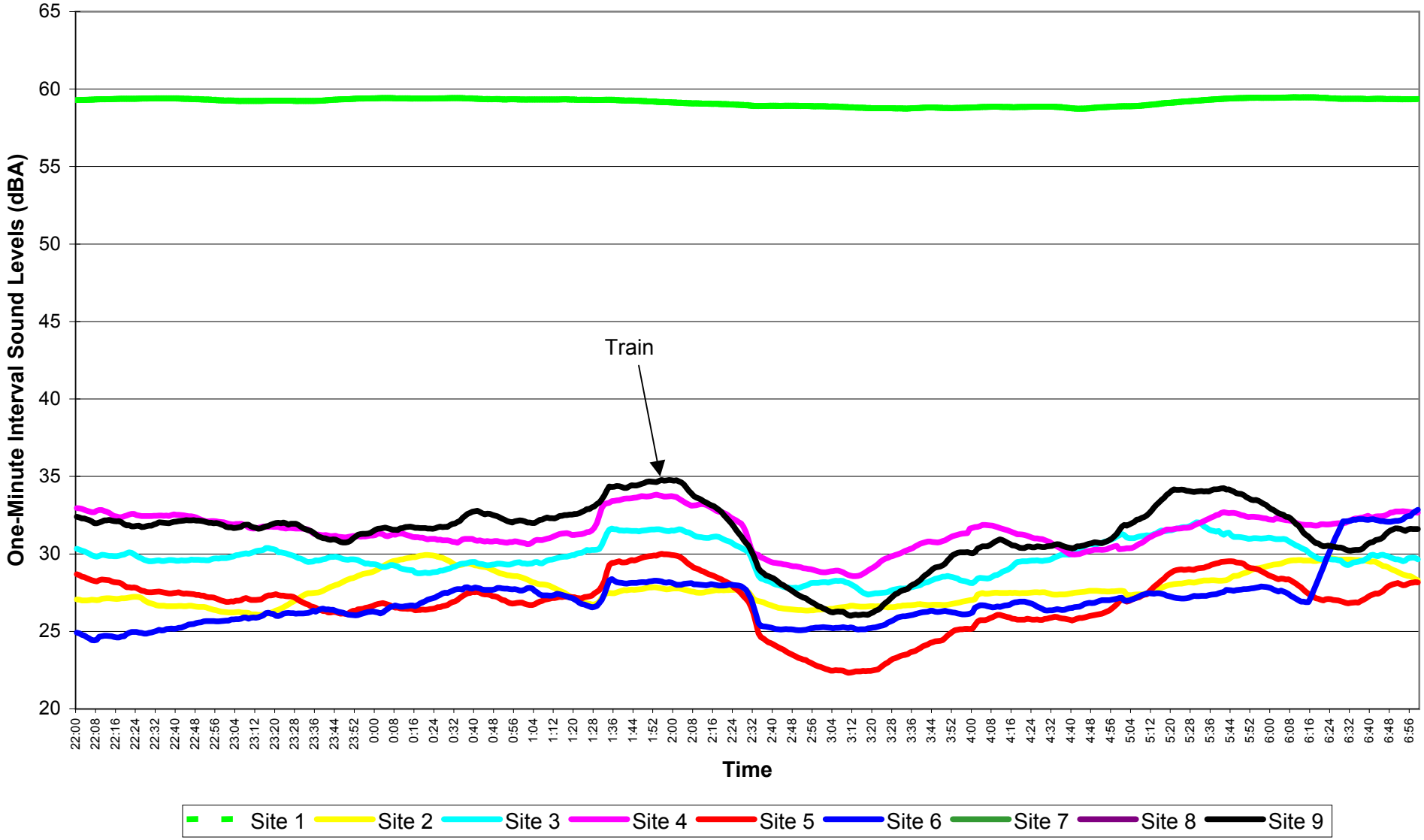


Figure F.67
EnCana Rosebud
L90 1 Hour Moving Average
Dec. 15, 2004 07:00 - 14:29

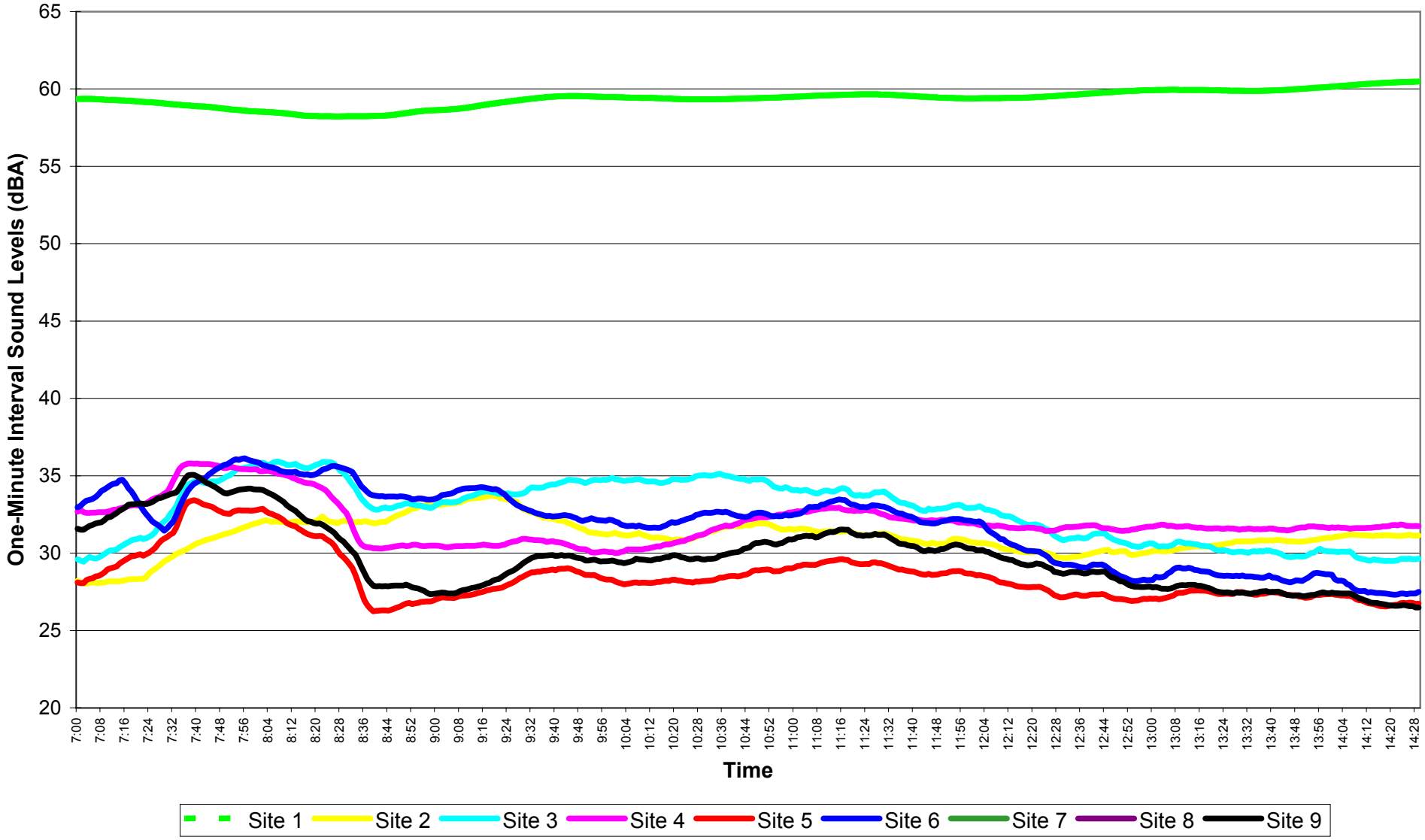


Figure F.68
EnCana Rosebud
L90 1 Hour Moving Average
Dec. 15, 2004 14:30 - 21:59

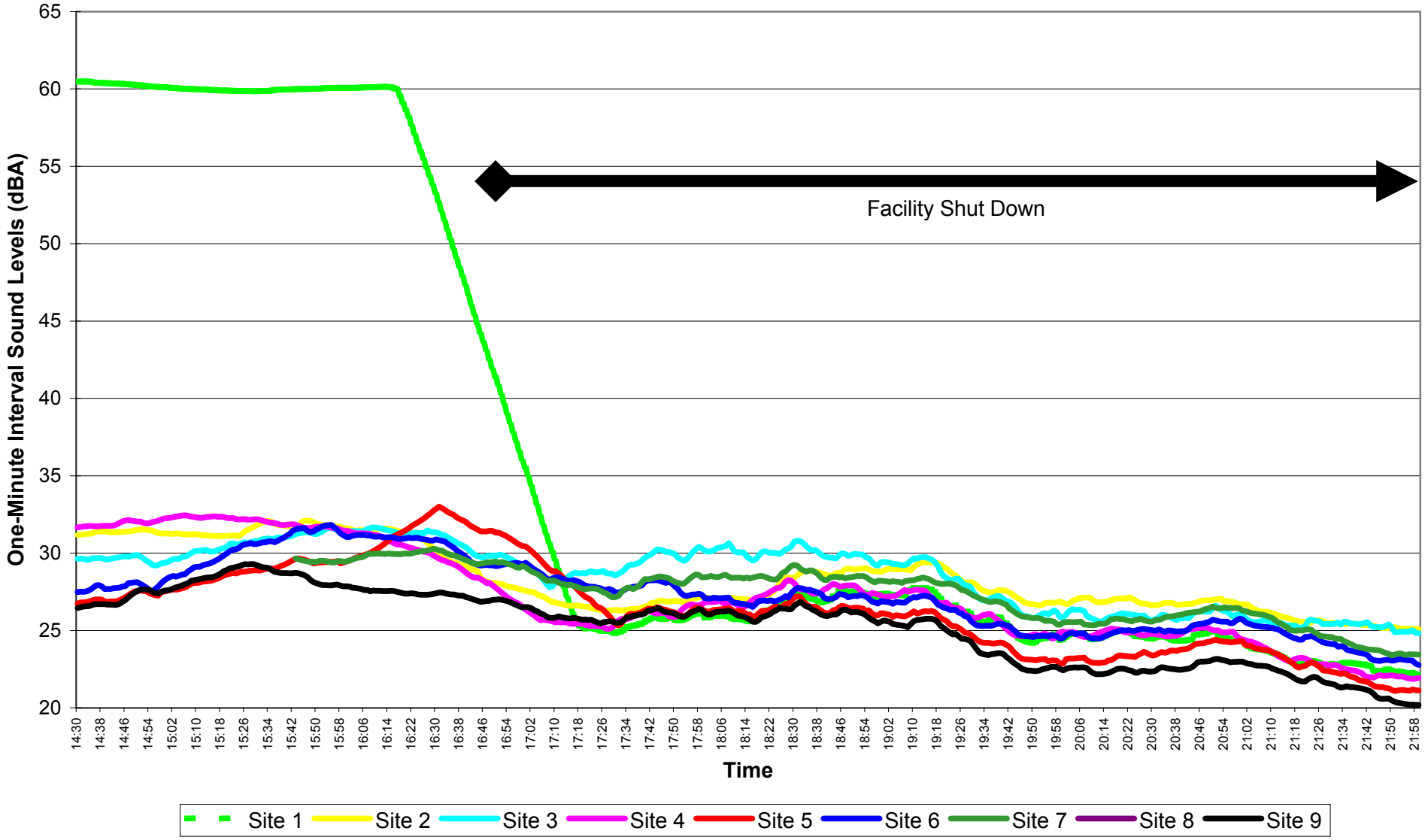


Figure F.69
EnCana Rosebud
L90 1 Hour Moving Average
Dec.15,2004 - Dec.16.2004 22:00 - 06:59

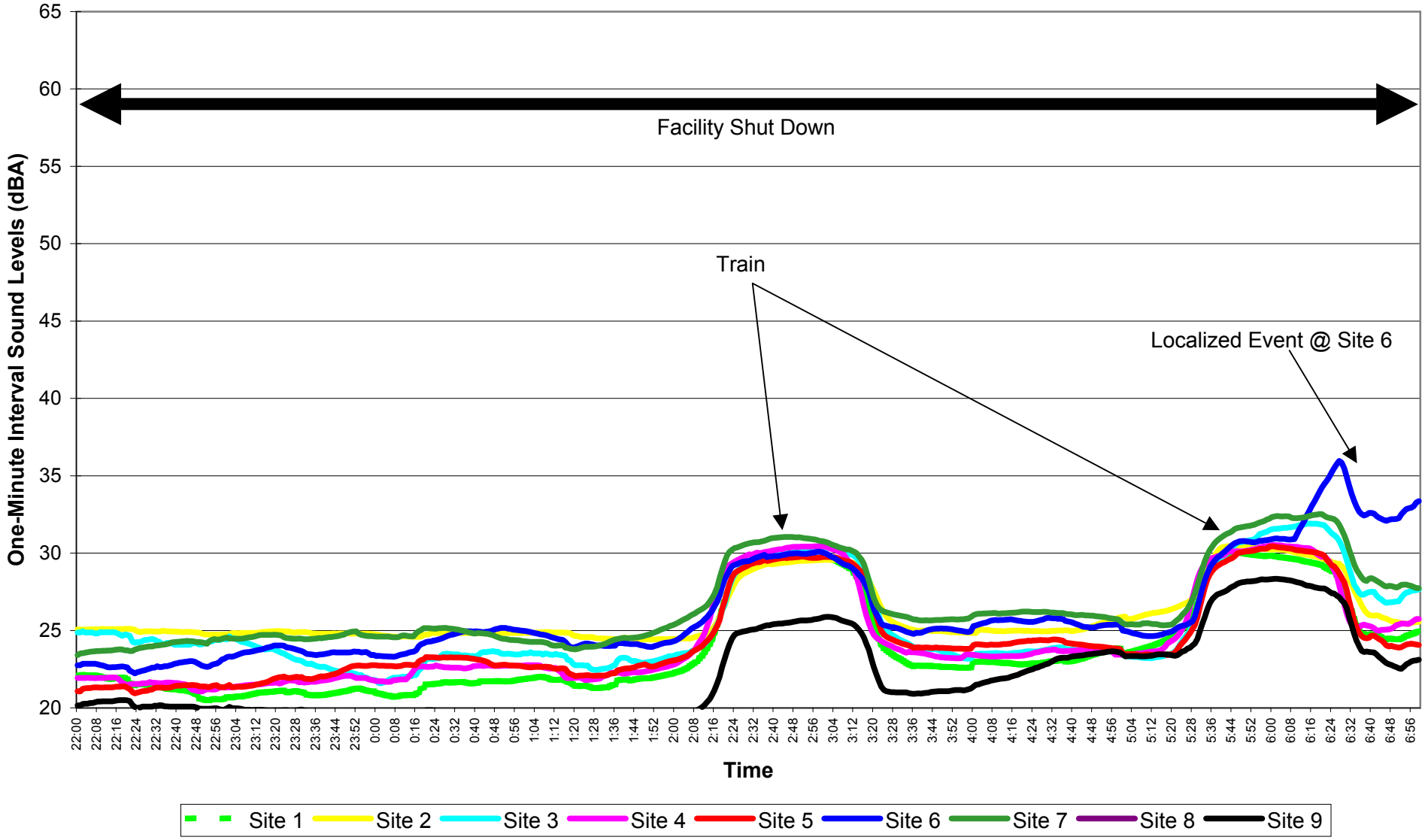


Figure F.70
EnCana Rosebud
L90 1 Hour Moving Average
Dec. 16, 2004 07:00 - 14:29

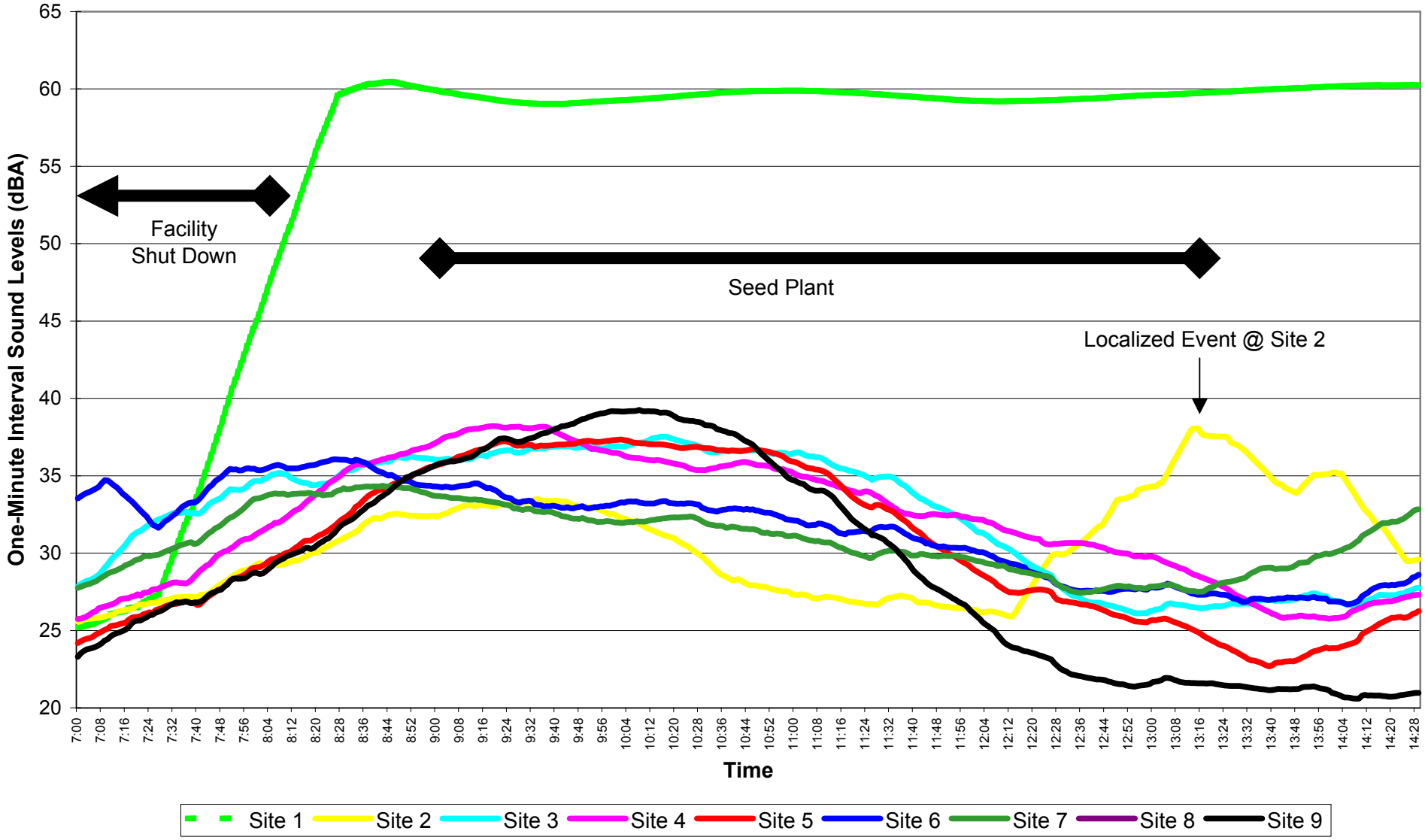


Figure F.71
EnCana Rosebud
L90 1 Hour Moving Average
Dec. 16, 2004 14:30 - 21:59

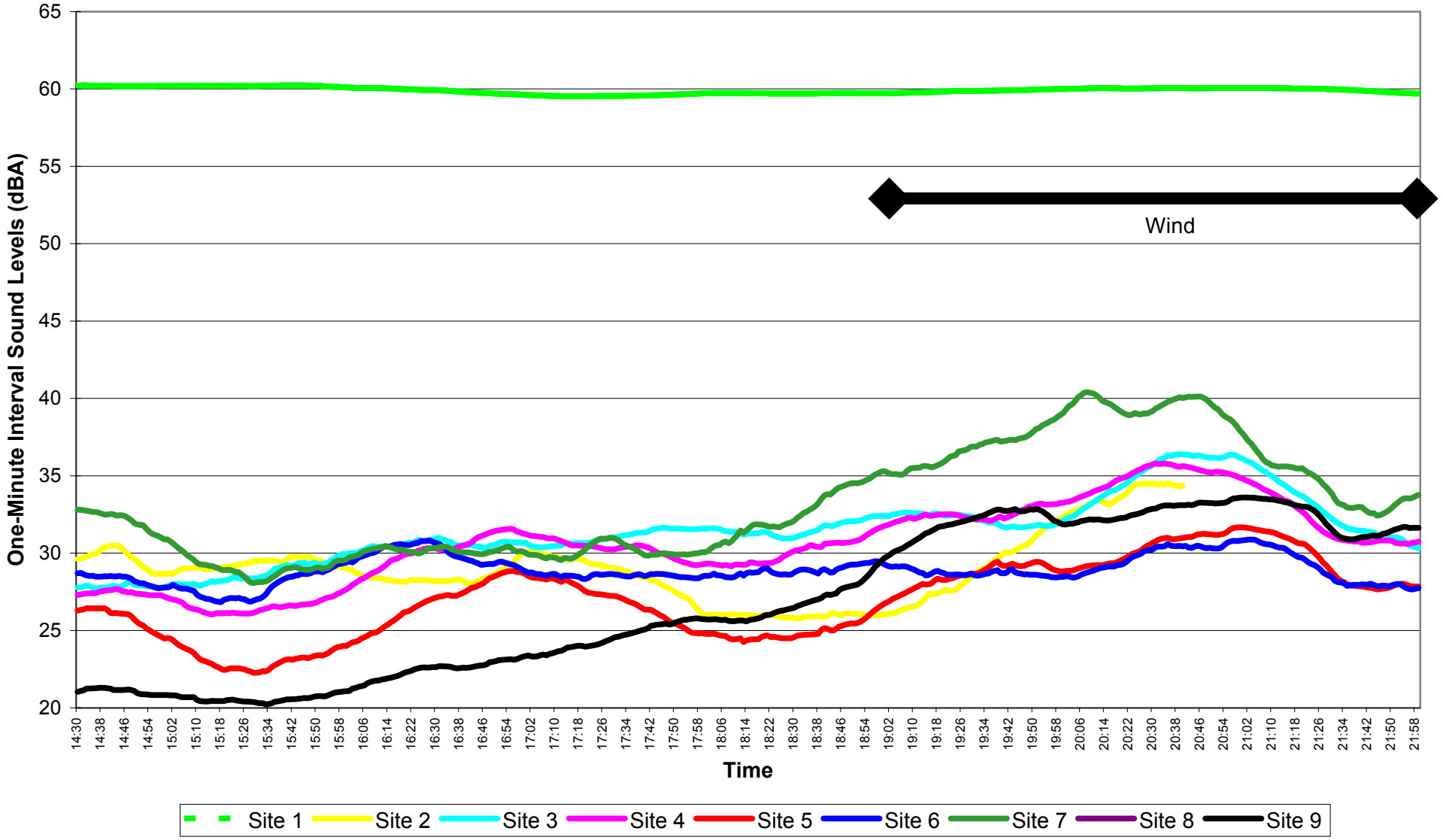


Figure F.72
EnCana Rosebud
L90 1 Hour Moving Average
Dec.16,2004 - Dec.17.2004 22:00 - 06:59

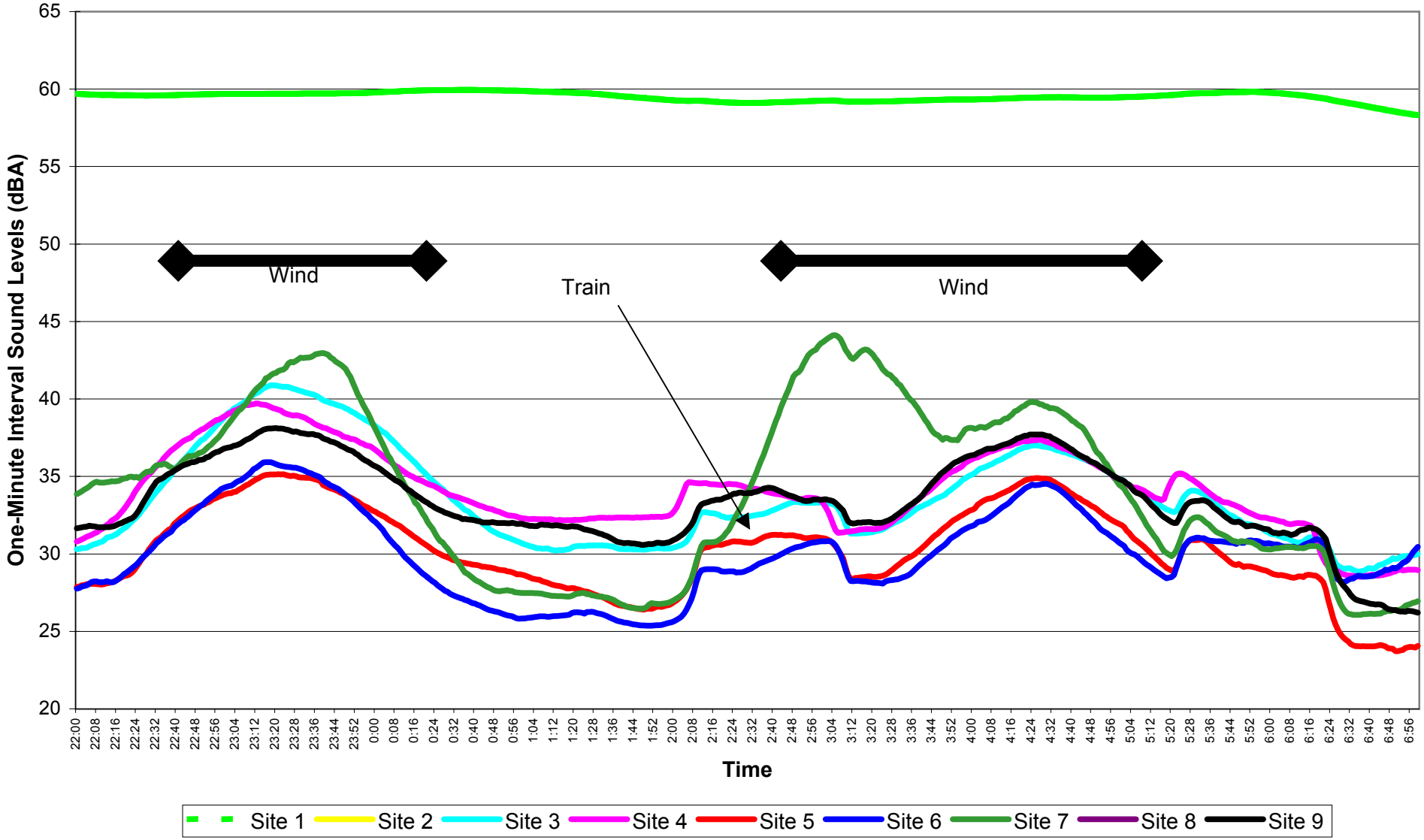


Figure F.73
EnCana Rosebud
L90 1 Hour Moving Average
Dec. 17, 2004 07:00 - 14:29

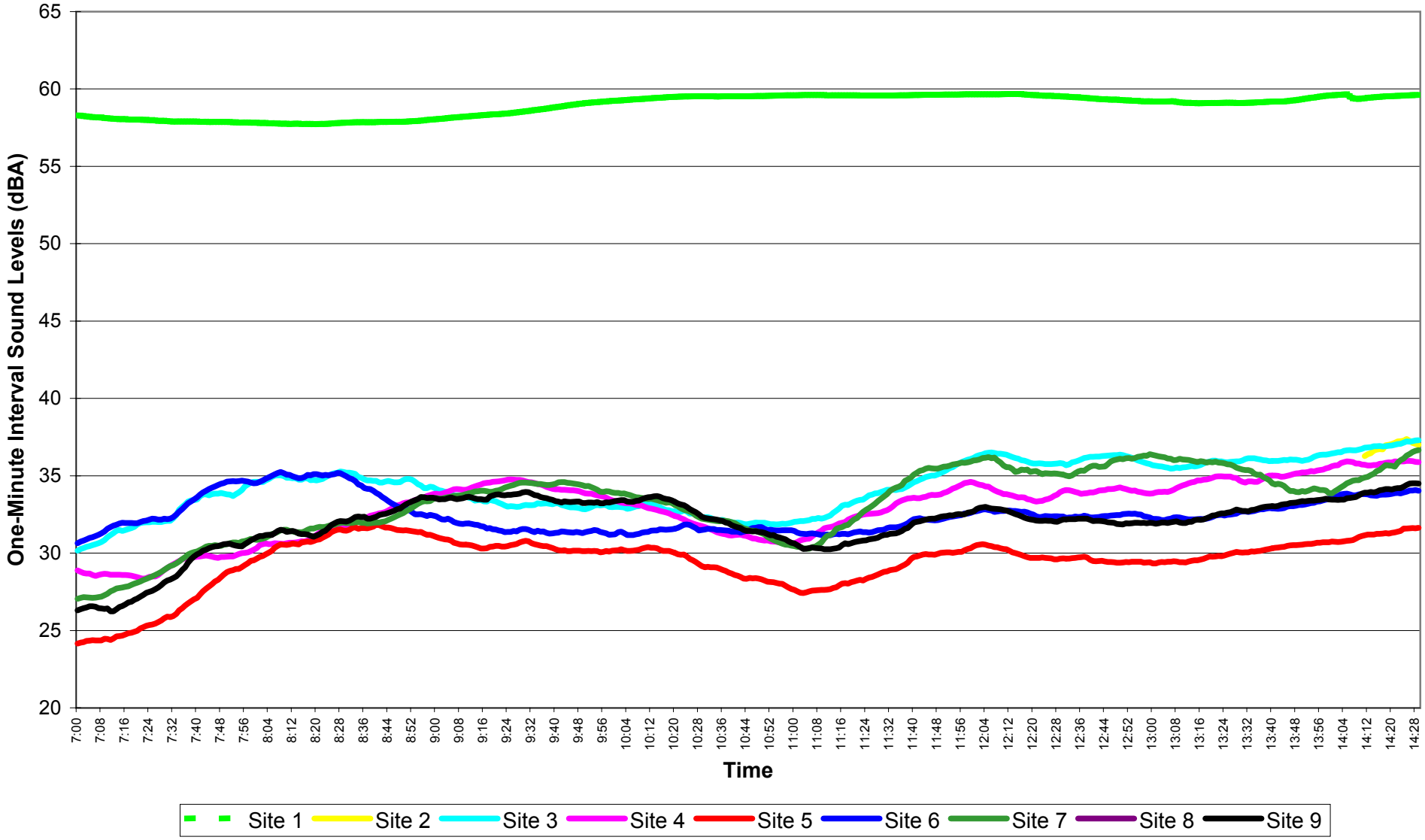


Figure F.74
EnCana Rosebud
L90 1 Hour Moving Average
Dec. 17, 2004 14:30 - 21:59

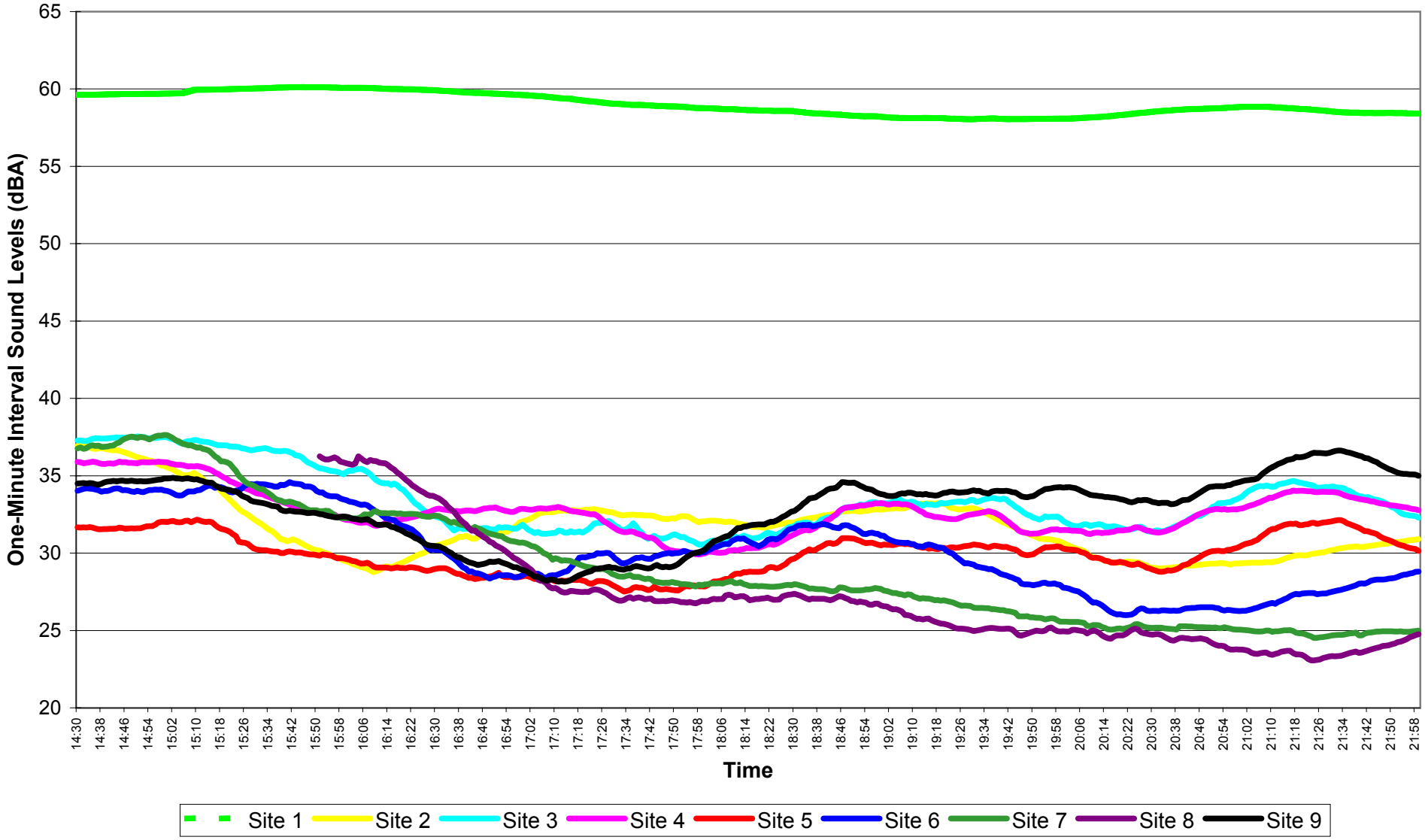


Figure F.75
EnCana Rosebud
L90 1 Hour Moving Average
Dec.17,2004 - Dec.18.2004 22:00 - 06:59

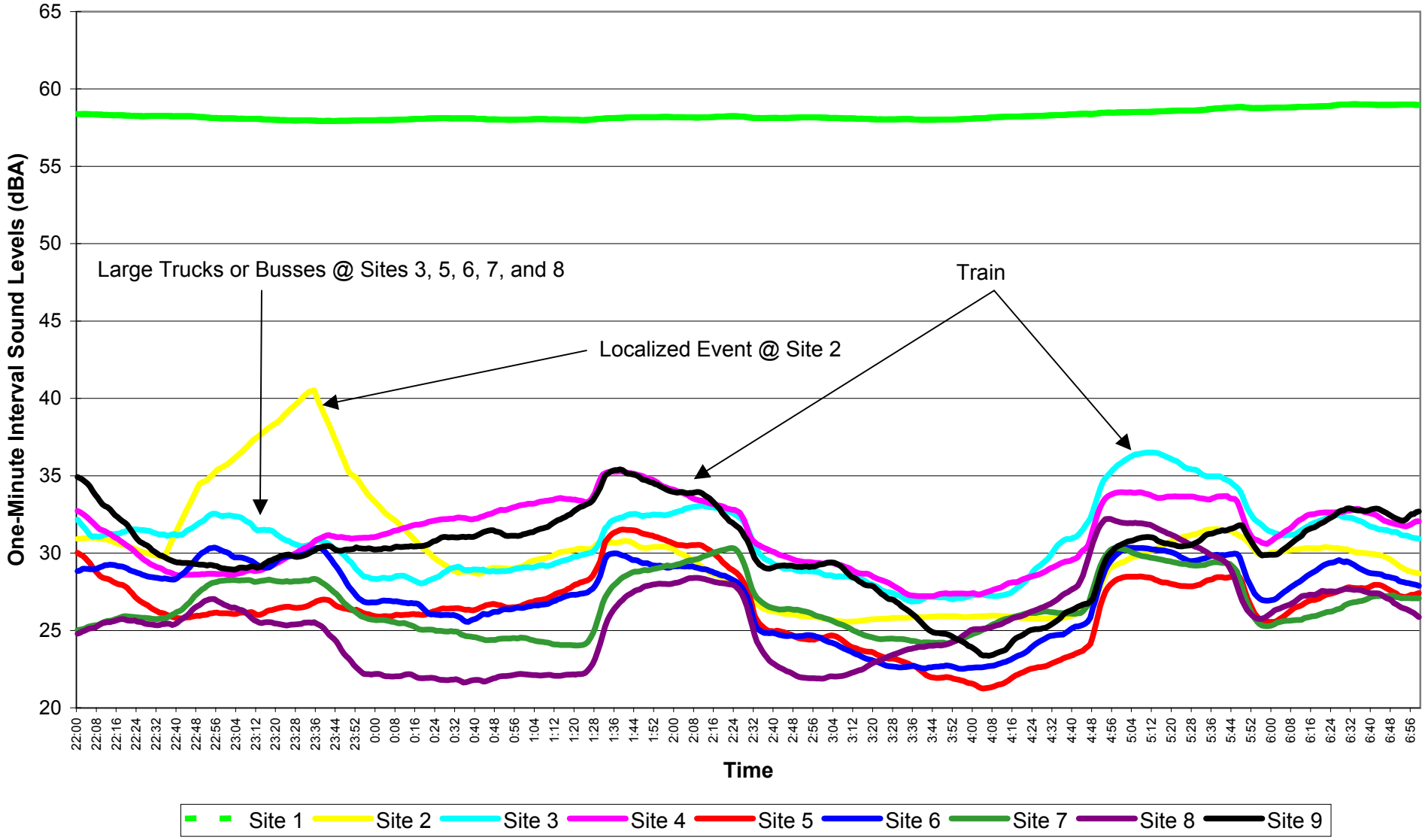


Figure F.76
EnCana Rosebud
L90 1 Hour Moving Average
Dec. 18, 2004 07:00 - 14:29

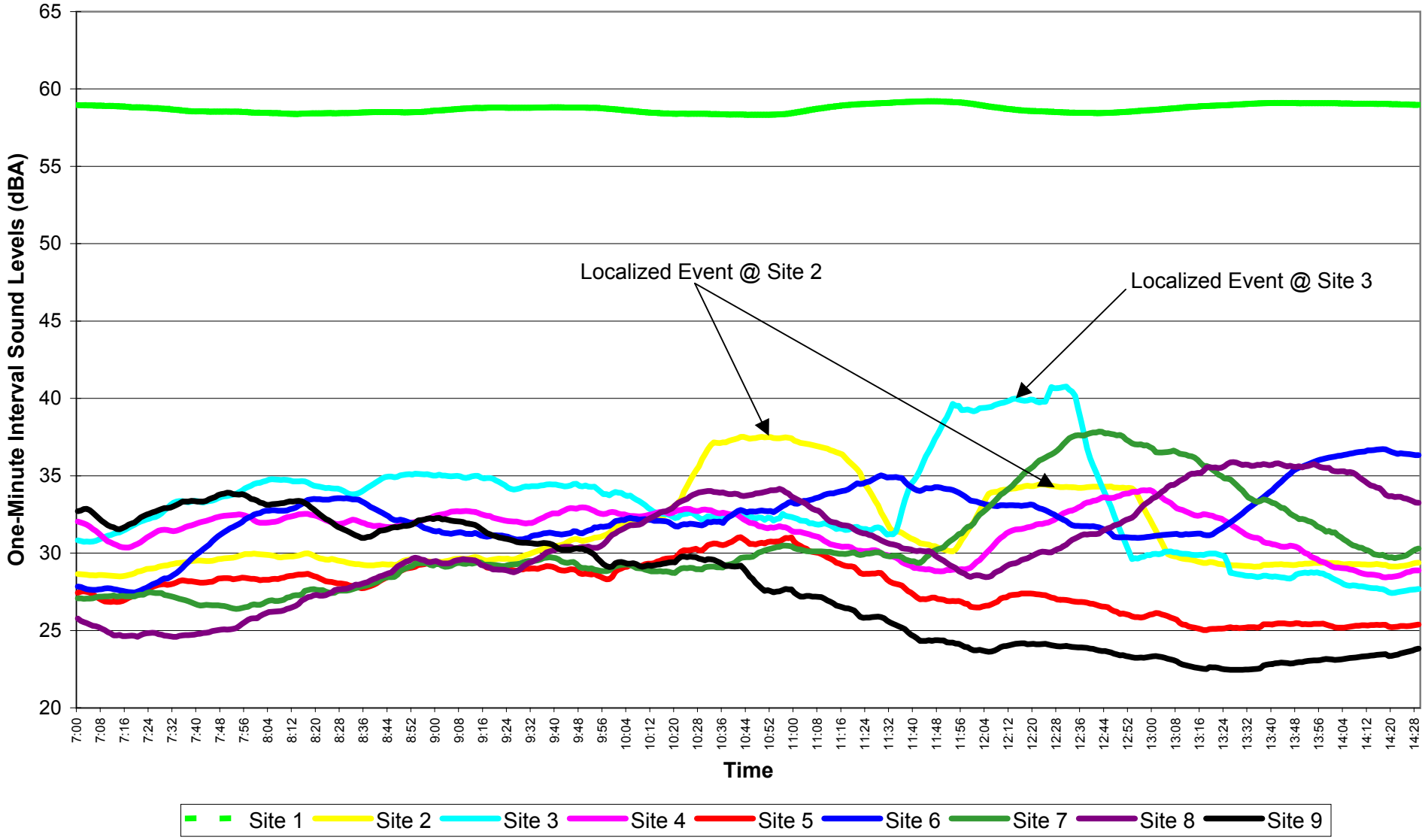


Figure F.77
EnCana Rosebud
L90 1 Hour Moving Average
Dec. 18, 2004 14:30 - 21:59

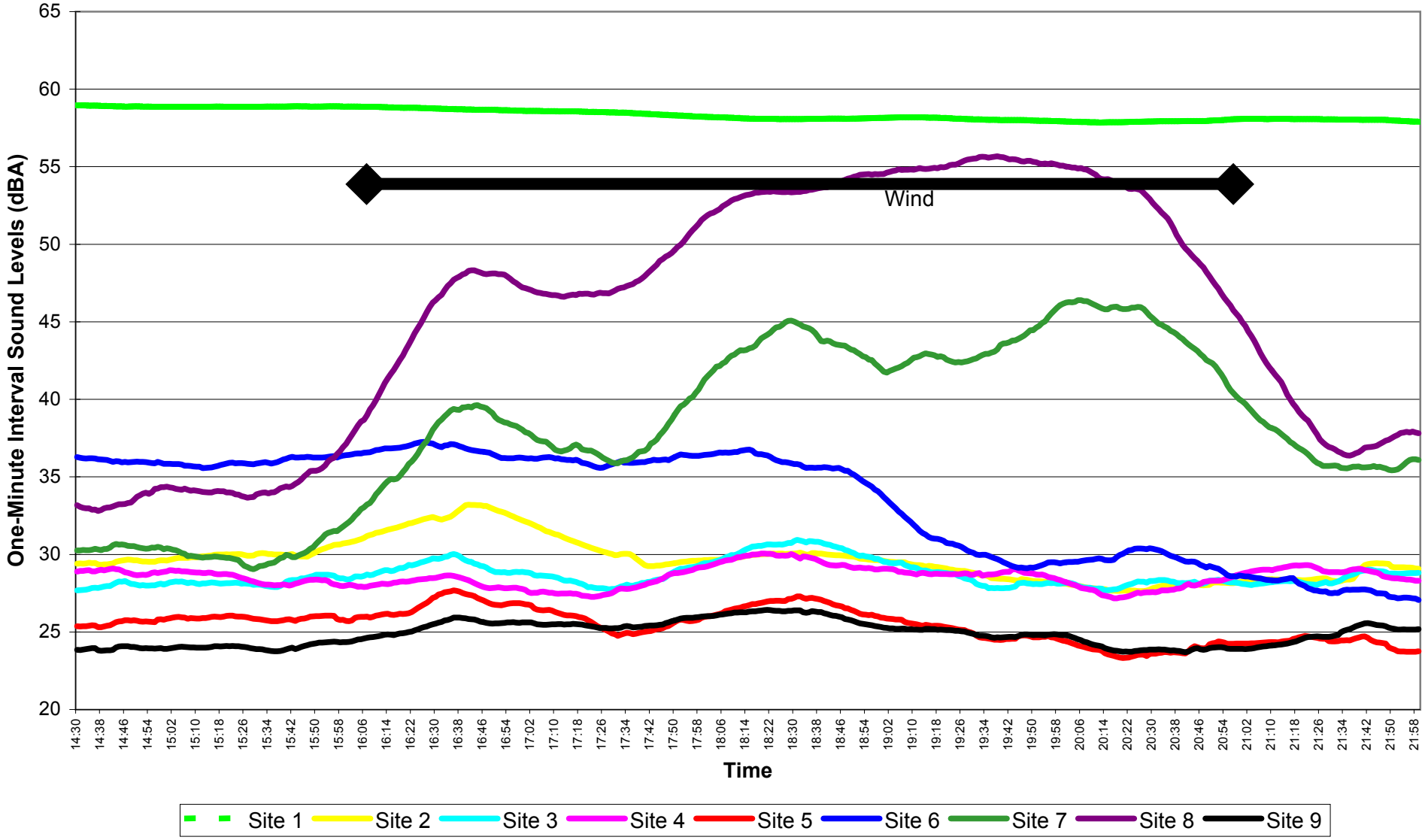


Figure F.78
EnCana Rosebud
L90 1 Hour Moving Average
Dec.18,2004 - Dec.19.2004 22:00 - 06:59

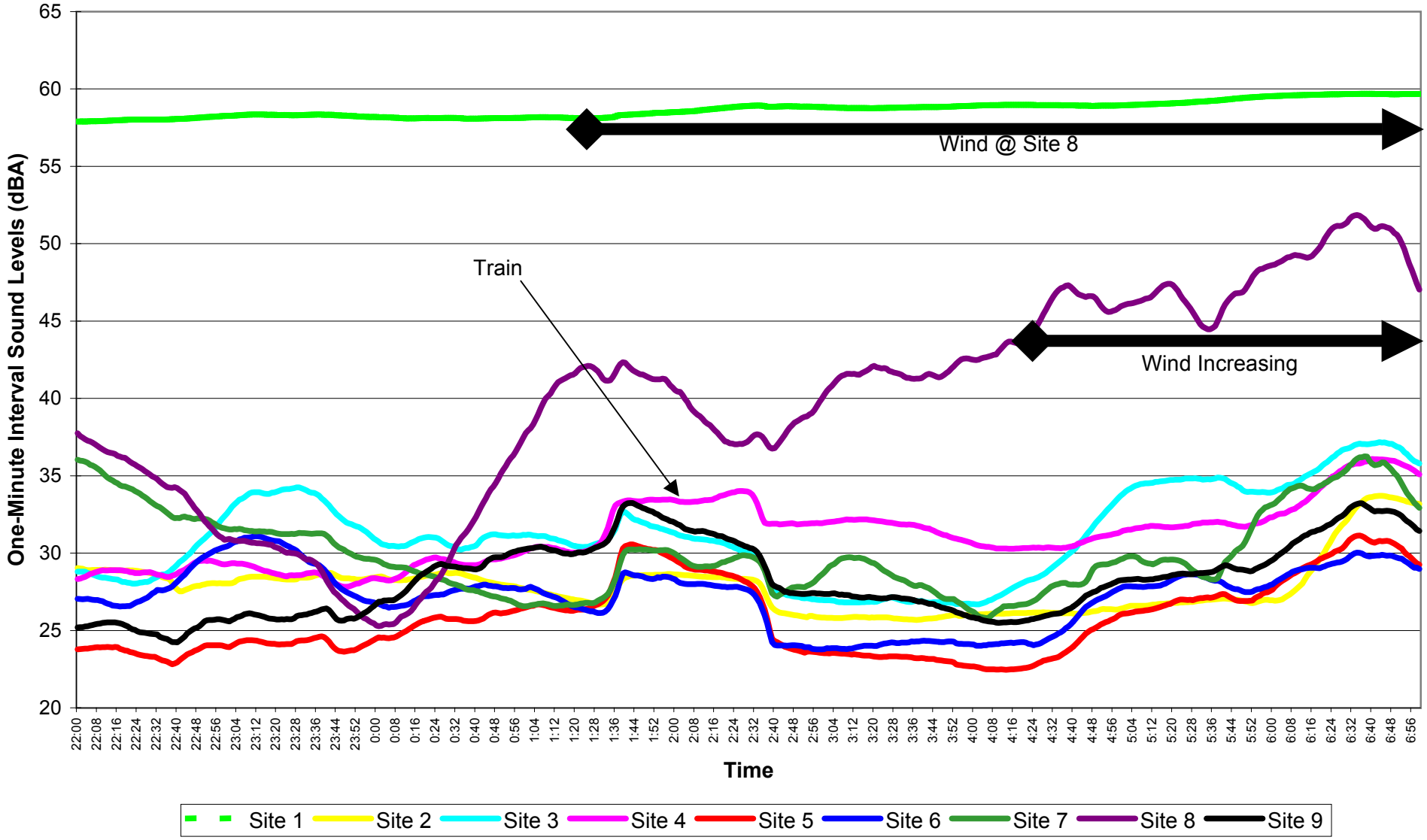


Figure F.79

EnCana Rosebud

L90 1 Hour Moving Average

Dec. 19, 2004 07:00 - 14:29

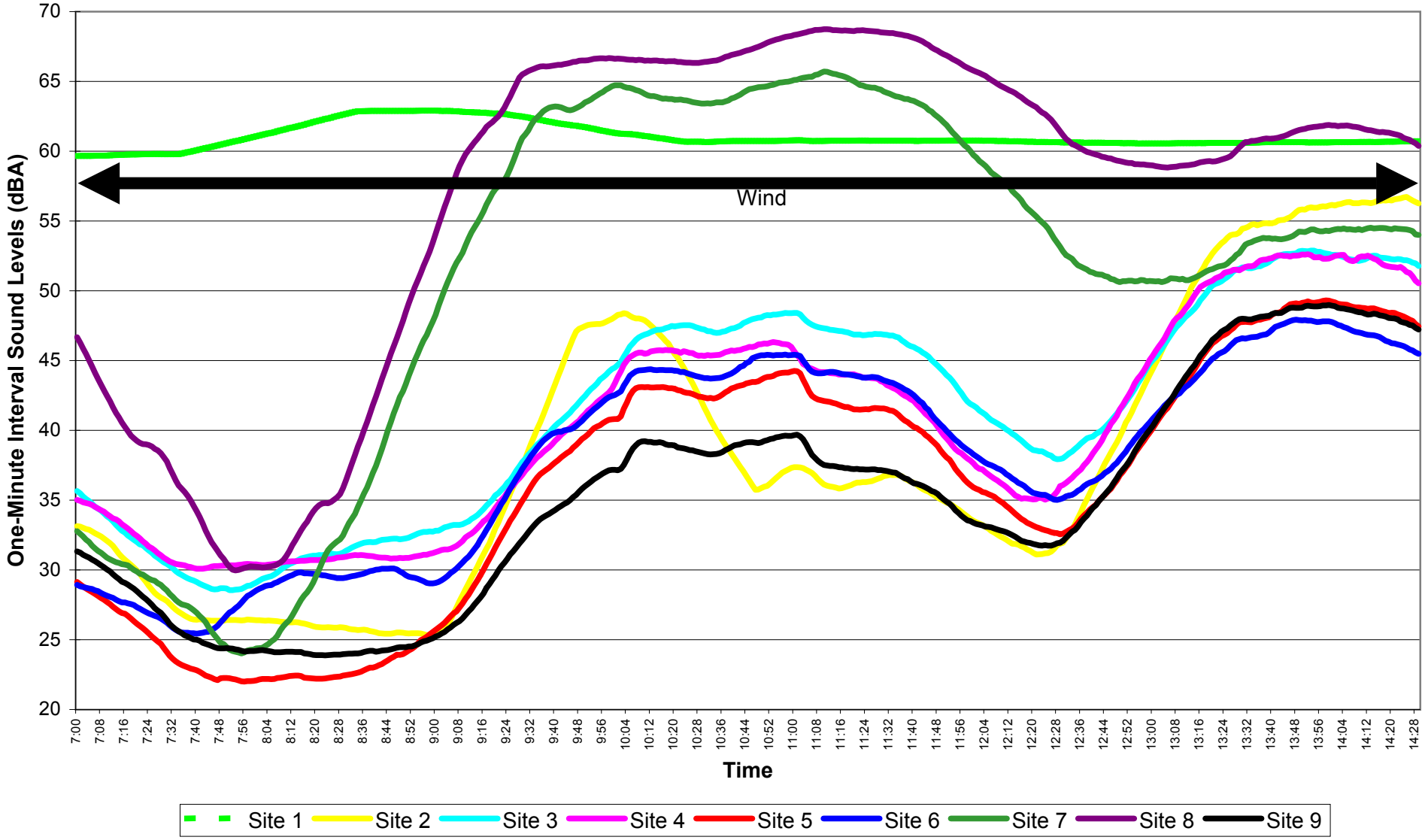


Figure F.80
EnCana Rosebud
L90 1 Hour Moving Average
Dec. 19, 2004 14:30 - 21:59

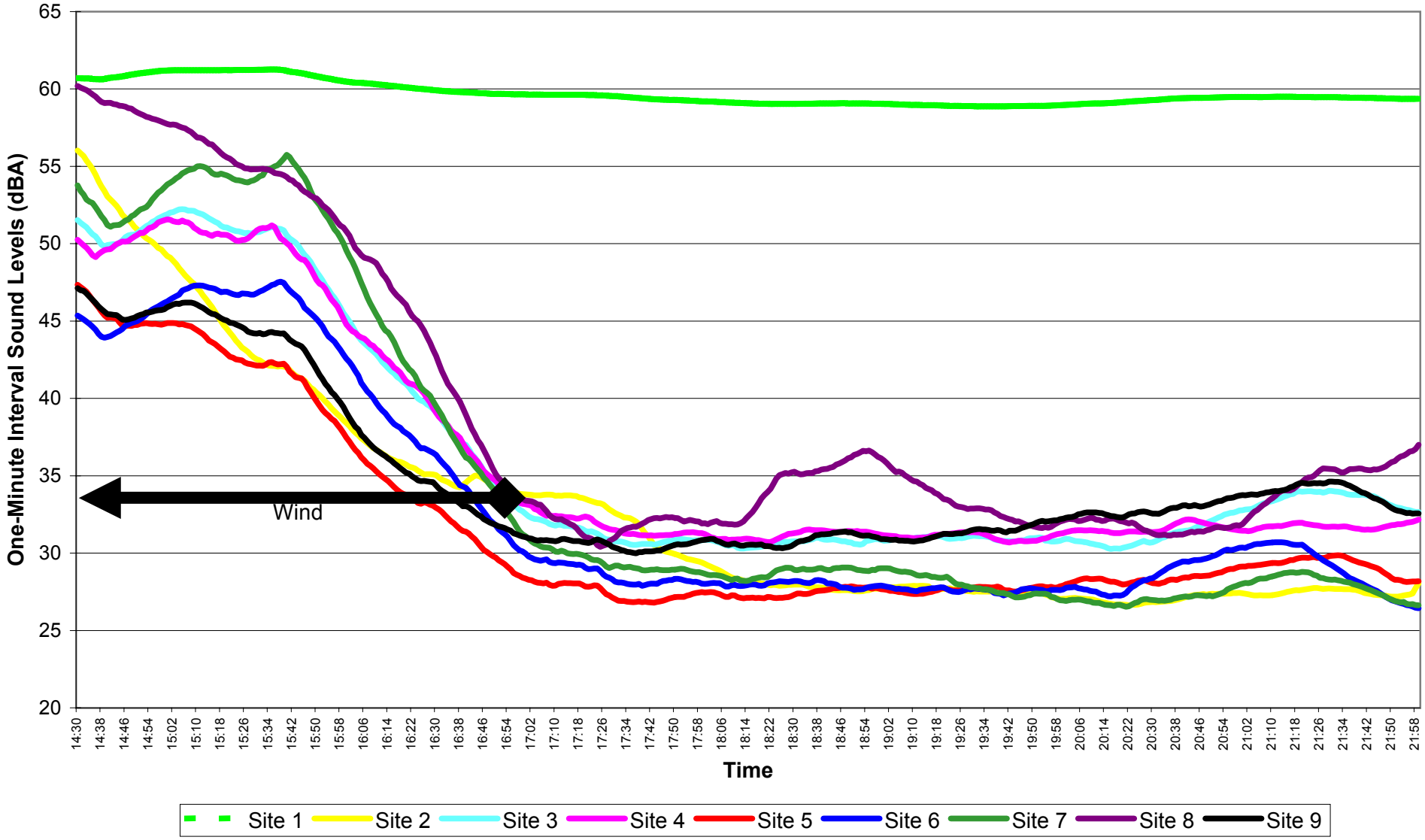


Figure F.81
EnCana Rosebud
L90 1 Hour Moving Average
Dec.19,2004 - Dec.20.2004 22:00 - 06:59

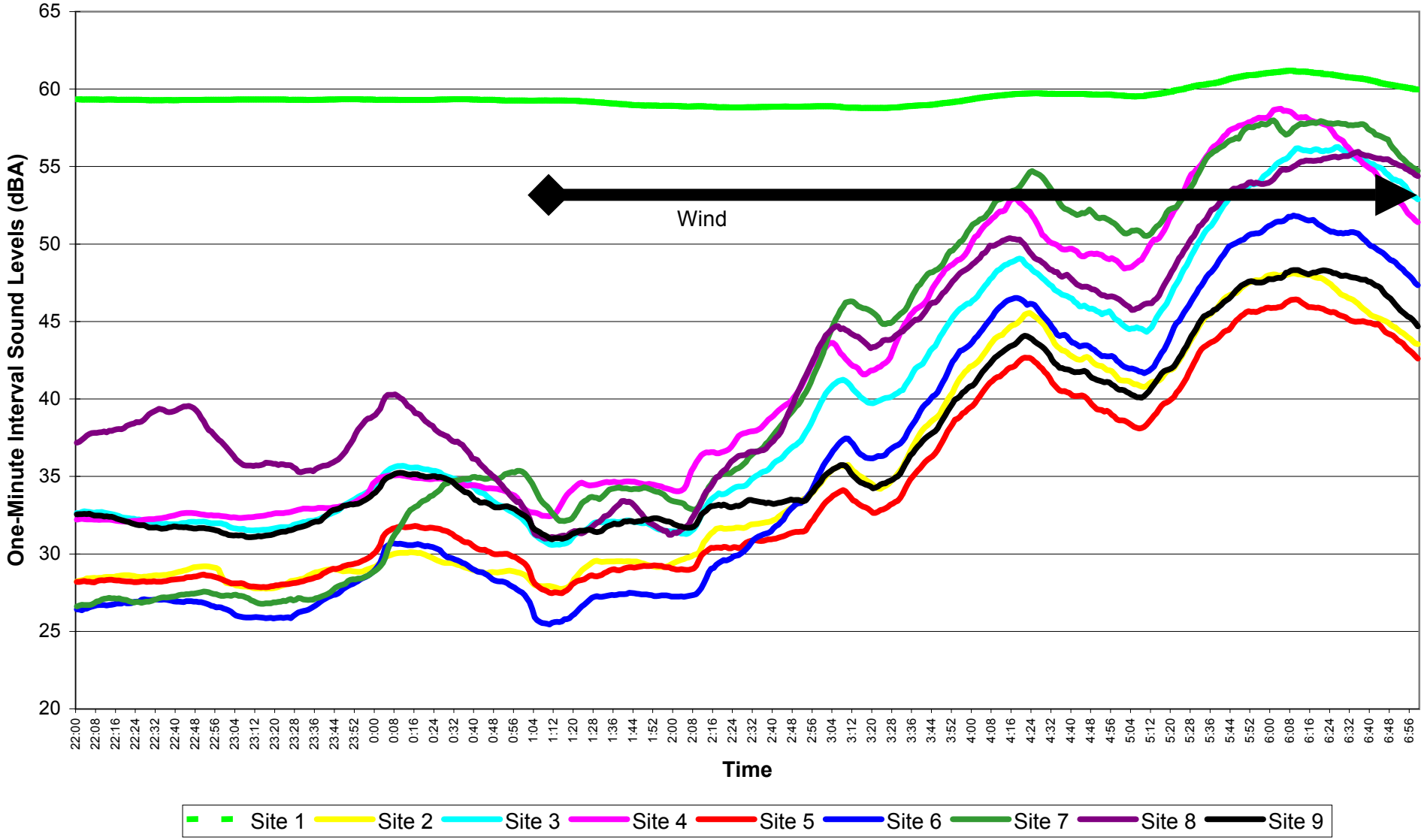
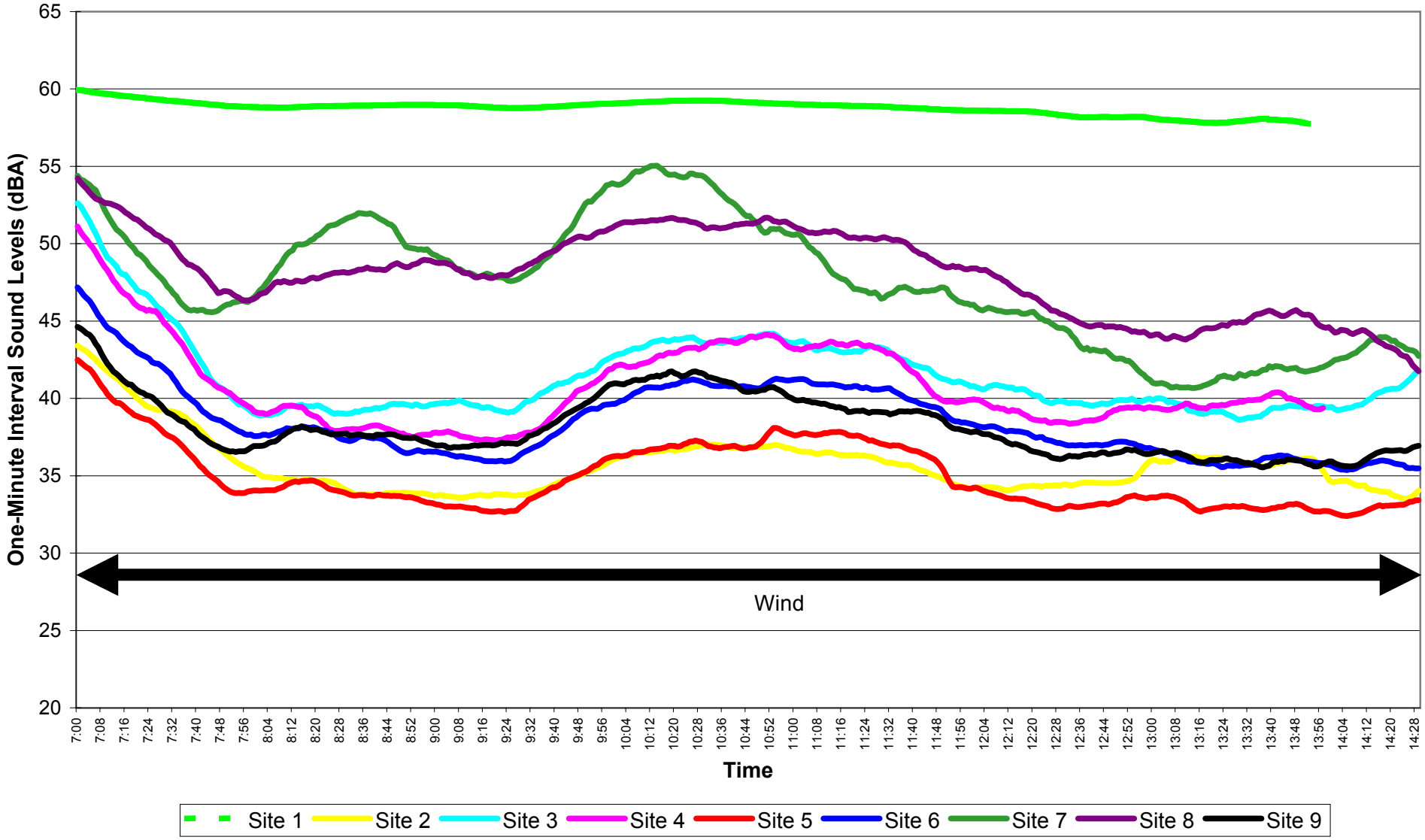



Figure F.82
EnCana Rosebud
L90 1 Hour Moving Average
Dec. 20, 2004 07:00 - 14:29