

Appendix A
Noise Monitoring

Section 1: Pictures of Monitoring Locations

APPENDIX A

Section 1: Pictures of Monitoring Locations

Site #1 – Looking east toward Centex Homes from monitoring location near Centex Homes



Site #1 – Looking west and up from monitoring location near Centex Homes



Site #1 – Looking southeast toward river from monitoring location near Centex Homes



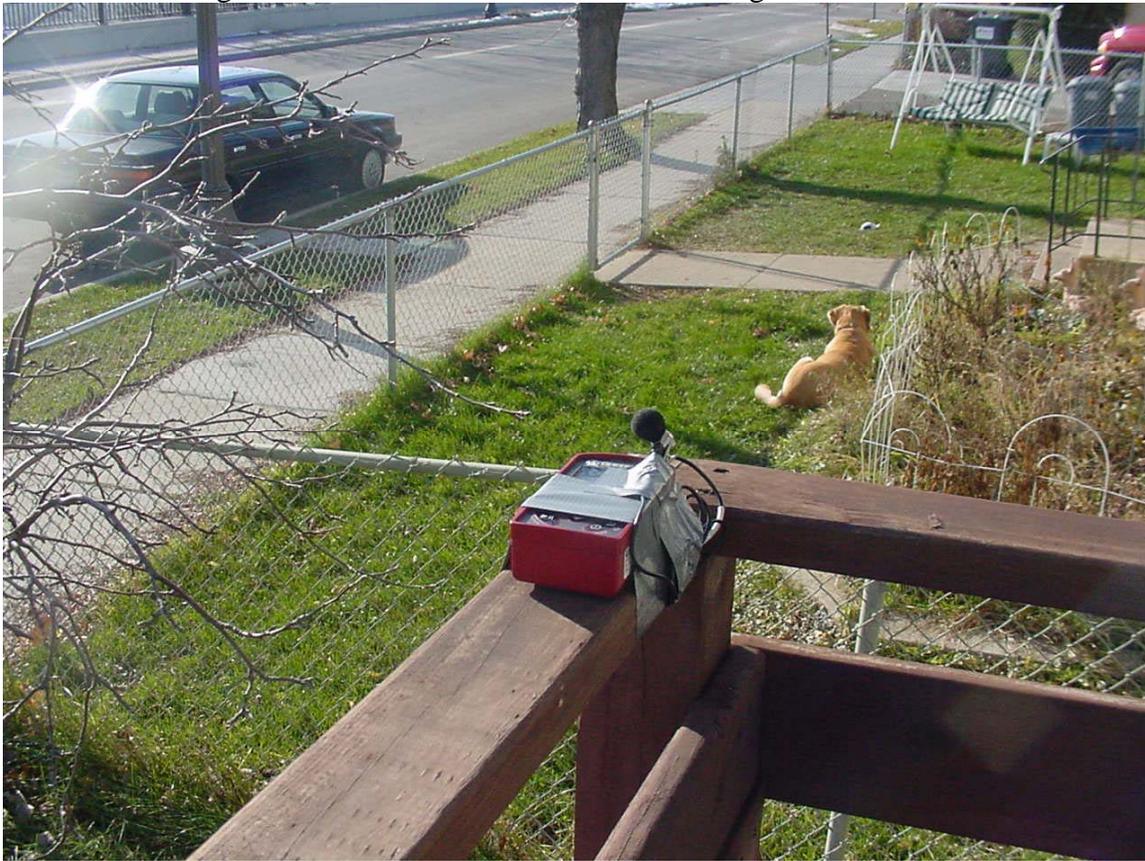
Site #1 – Looking west from monitoring location near Centex Homes toward Plant



Site #1 – Looking east from Plant towards monitoring location and Centex Homes



Site #2 – Looking west toward Cliff Street from monitoring location



Site #2 – Looking south toward Plant from monitoring location near Cliff Street



Site #2 – Looking south toward Plant, Shepard Road and train tracks from Cliff Street overlook



Site #3 – Looking north toward Plant and river from monitoring location by Cherokee Avenue



Site #3 – Looking northwest toward monitoring location and river by Cherokee Avenue



Site #3 – Looking southeast from sidewalk near monitoring location toward Cherokee Avenue



Site #4 – Looking northeast from monitoring site on Island Station toward Plant



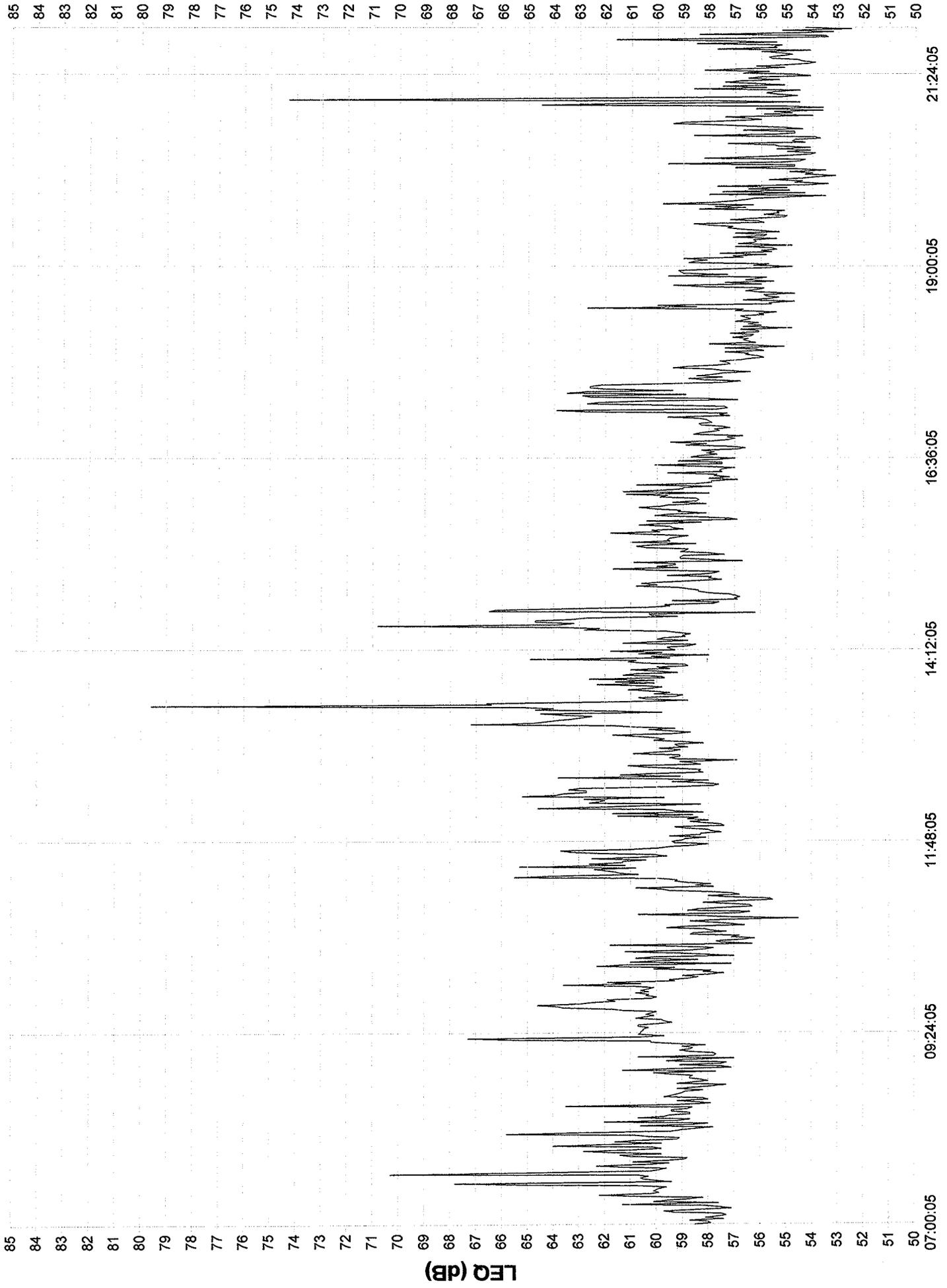
Site #4 – Looking west from monitoring site on Island Station toward old Plant



Appendix A
Noise Monitoring

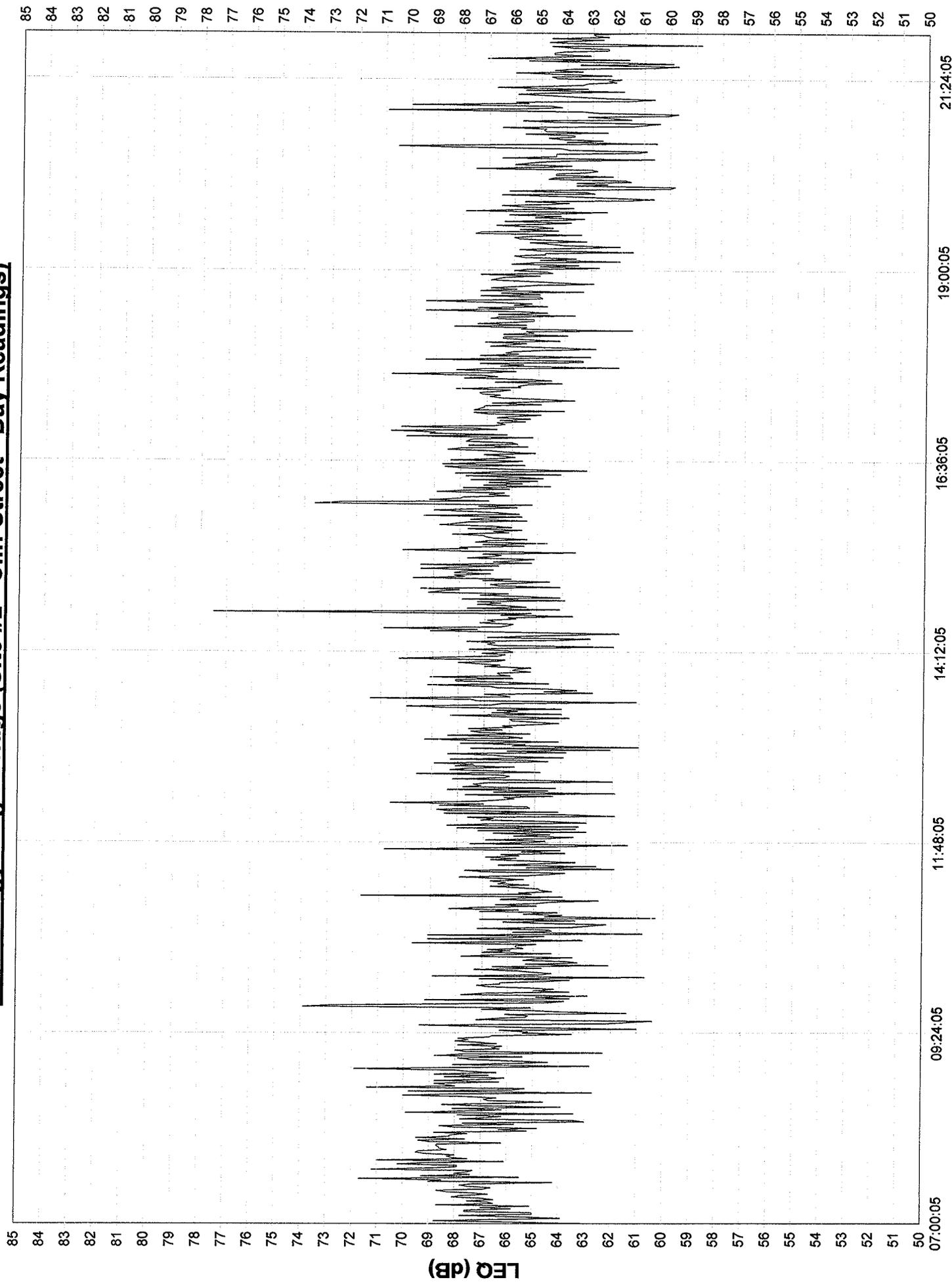
Section 2: Noise Dosimeter Monitoring Data

Xcel Energy - High Bridge (Site #1 - Centex Homes - Day Readings)



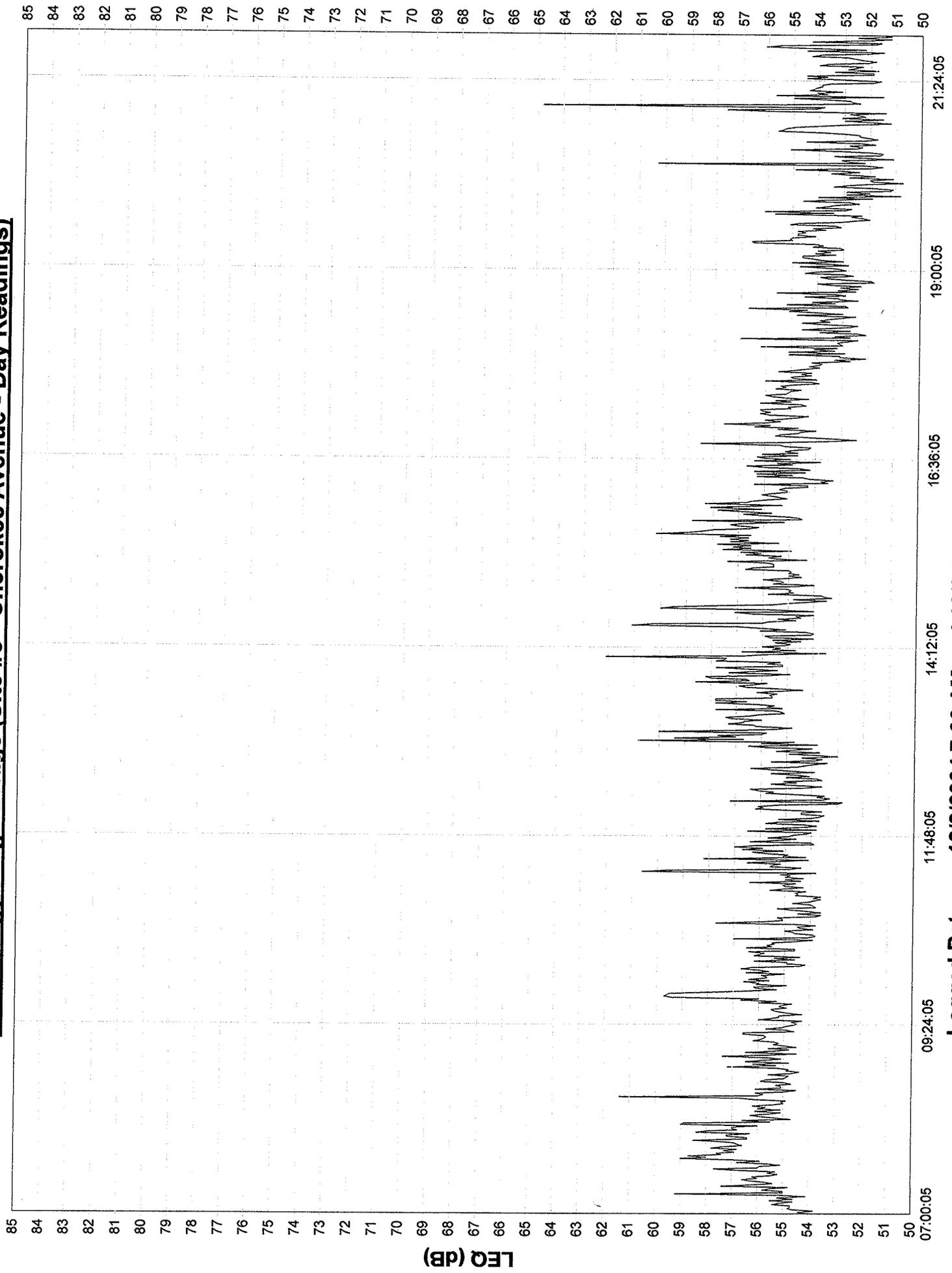
Logged Between 12/8/2004 7:00 AM and 12/8/2004 10:00 PM at 1 Min. Intervals

Xcel Energy - High Bridge (Site #2 - Cliff Street - Day Readings)



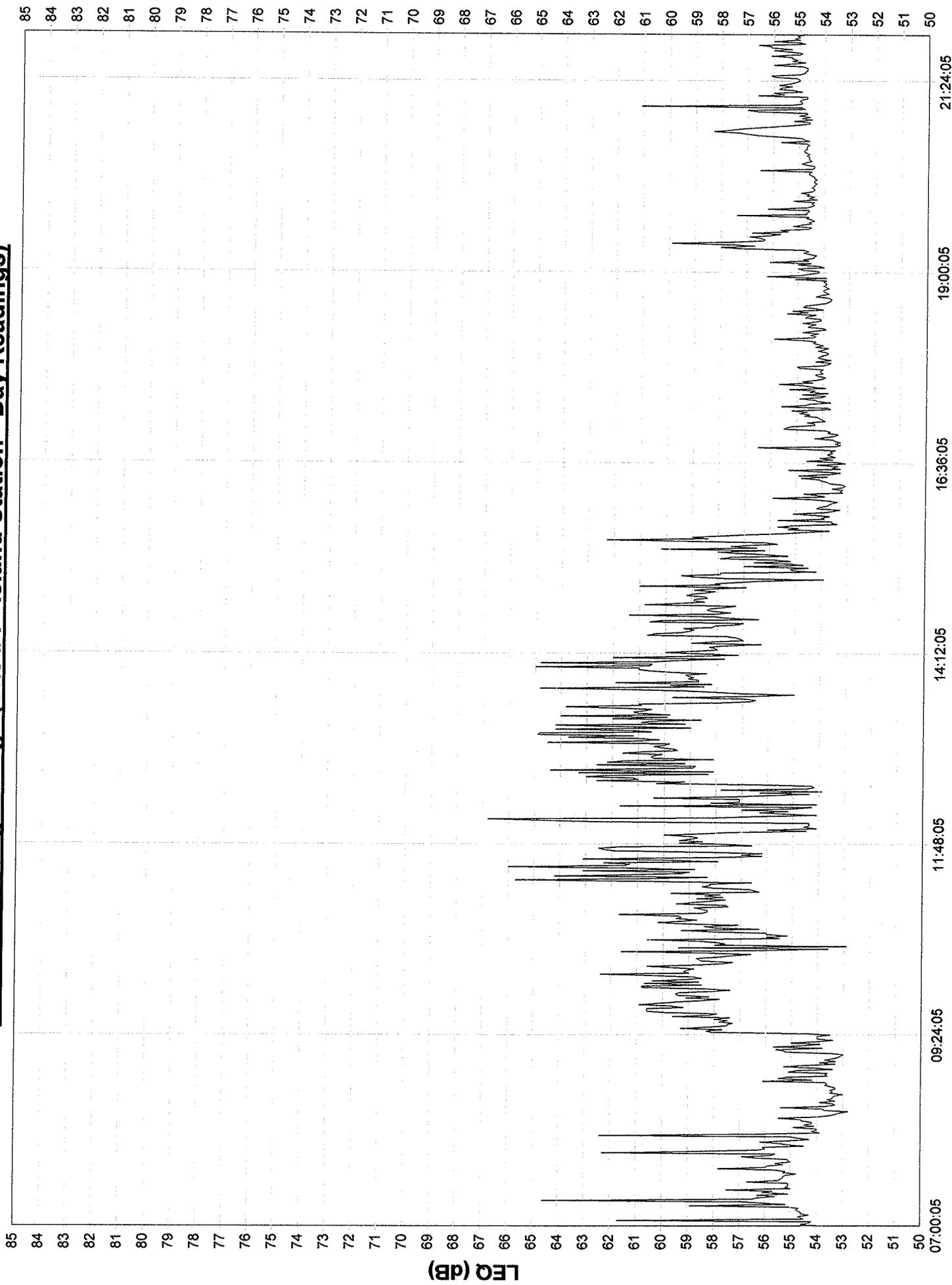
Logged Between 12/8/2004 7:00 AM and 12/8/2004 10:00 PM at 1 Min. Intervals

Xcel Energy - High Bridge (Site #3 - Cherokee Avenue - Day Readings)



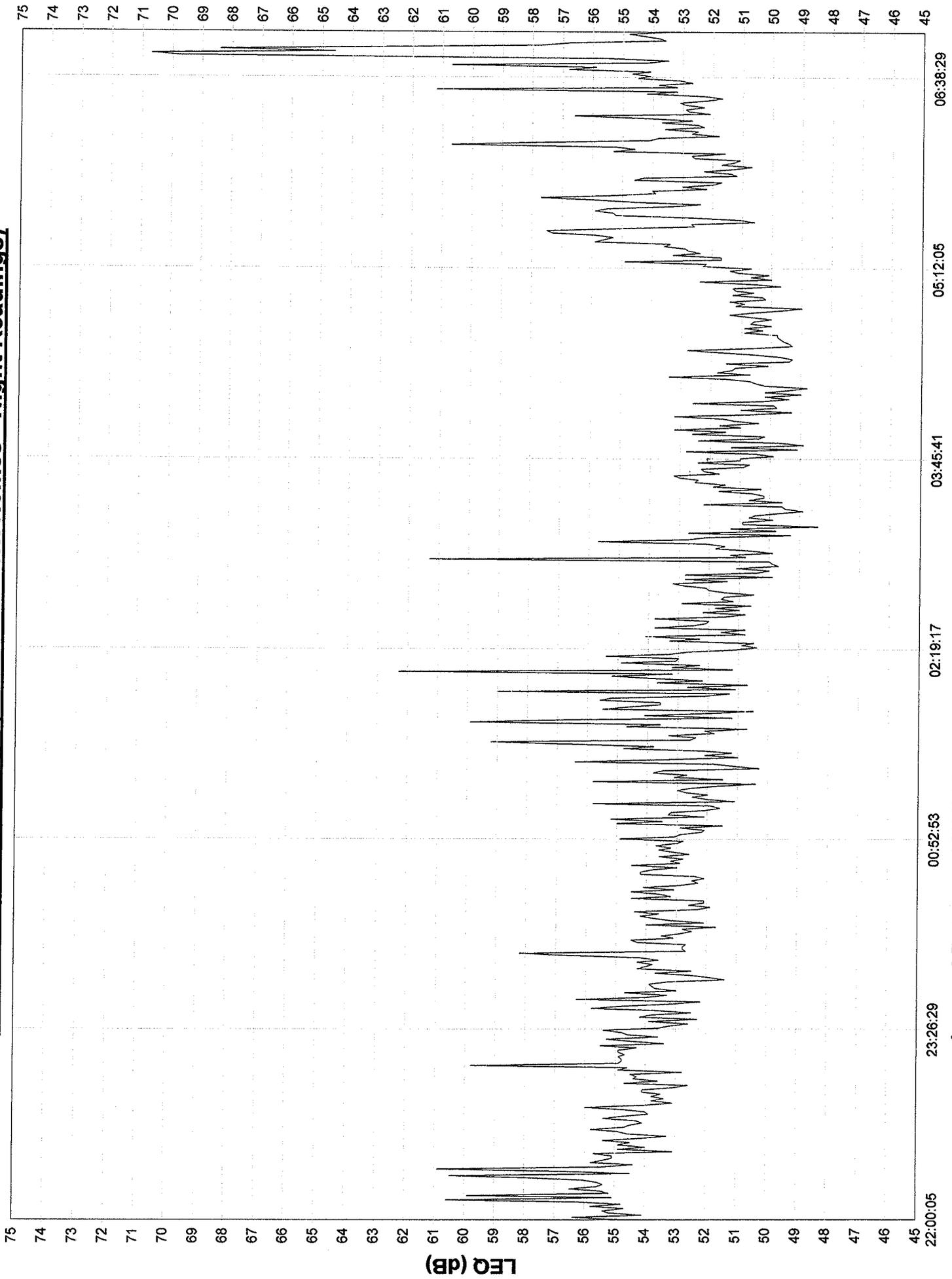
Logged Between 12/8/2004 7:00 AM and 12/8/2004 10:00 PM at 1 Min. Intervals

Xcel Energy - High Bridge (Site #4 - Island Station - Day Readings)



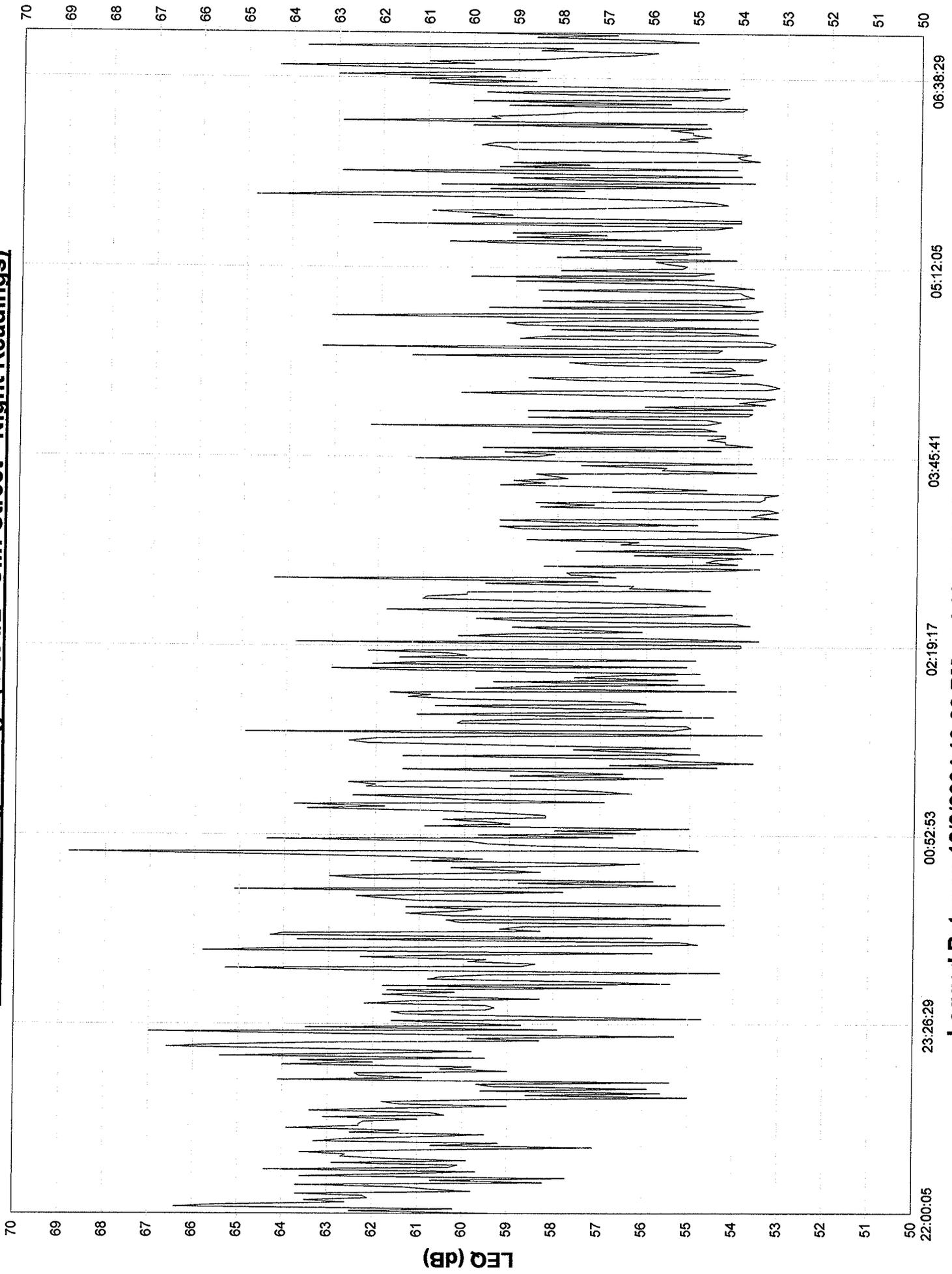
Logged Between 12/8/2004 7:00 AM and 12/8/2004 10:00 PM at 1 Min. Intervals

Xcel Energy - High Bridge (Site #1 - Centex Homes - Night Readings)



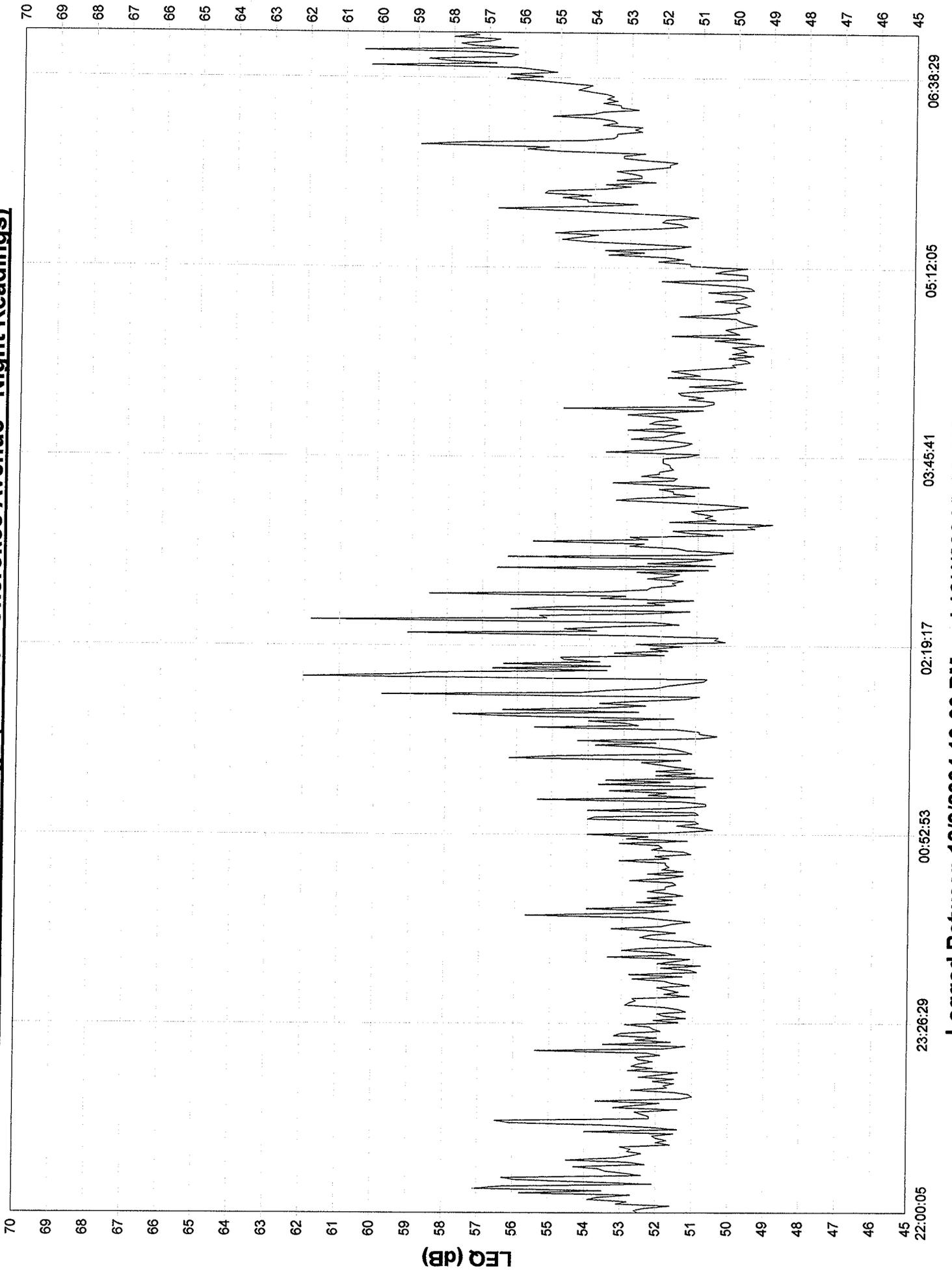
Logged Between 12/3/2004 10:00 PM and 12/4/2004 7:00 AM at 1 Min. Intervals

Xcel Energy - High Bridge (Site #2 - Cliff Street - Night Readings)



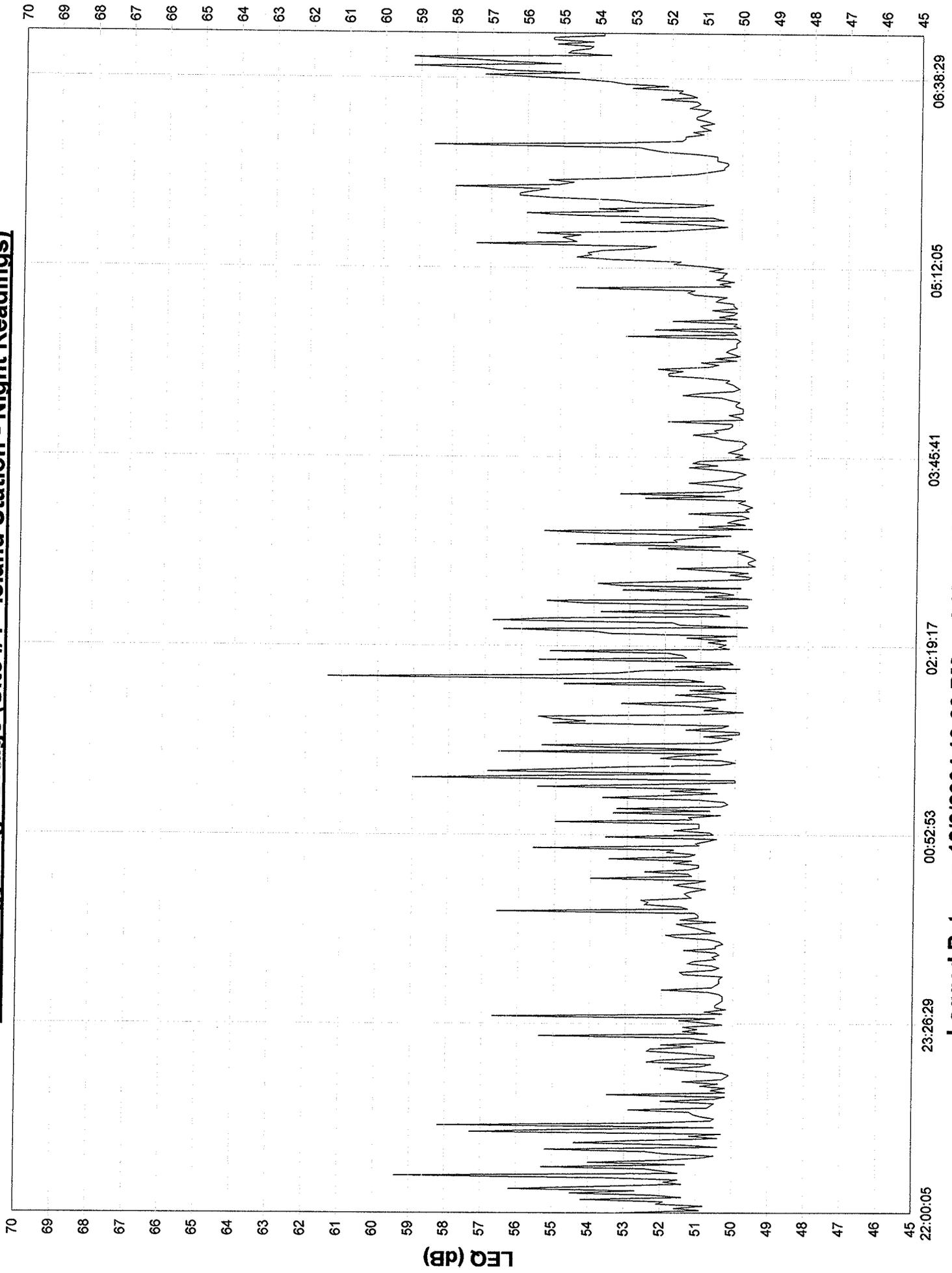
Logged Between 12/3/2004 10:00 PM and 12/4/2004 7:00 AM at 1 Min. Intervals

Xcel Energy - High Bridge (Site #3 - Cherokee Avenue - Night Readings)



Logged Between 12/3/2004 10:00 PM and 12/4/2004 7:00 AM at 1 Min. Intervals

Xcel Energy - High Bridge (Site #4 - Island Station - Night Readings)



Logged Between 12/3/2004 10:00 PM and 12/4/2004 7:00 AM at 1 Min. Intervals

QuestSuite Professional-NXD030014-1-Centex-Day.ndat

NoisePro DLX Noise Logging Dosimeter

FW Version: R160 Serial Number: NXD030014
Name: December, 2004 Noise Monitoring
Company: Xcel Energy - High Bridge
WorkArea: Site #1 - Centex Homes
Description: Day Readings
Comments:

Dosimeter Calibration:

Pre-Survey	114.0 dB	12/7/2004 12:06:35PM
Periodic Check 1	113.9 dB	12/13/2004 10:41:21AM

Instrument Range: 40 - 110 dB

Measuring Parameters:

DOSIMETER 1

Setup Name: USER 2
Criterion: 84 dB
Exchange Rate: 3 dB
Threshold: 40 dB
Upper Limit: 114 dB
Weighting: SPL:A Pk:Z
Time Constant: Fast
Alert Level 1: 85 dB
Alert Level 2: 90 dB

DOSIMETER 2

Setup Name: DISABLE

DISABLED

DOSIMETER 3

Setup Name: DISABLE

DISABLED

Summary Data:

<u>Session Started</u>	<u>Session Stopped</u>	<u>Run Time</u>
12/8/2004 7:00:05AM	12/8/2004 10:00:05PM	15:00:00

DOSIMETER 1

Setup Name:	USER 2	
Peak Level:	107.0 dB	12/8/2004 1:30:26PM
Fast Max Level:	93.8 dB	12/8/2004 1:30:25PM
Fast Min Level:	50.0 dB	12/8/2004 9:58:36PM
UL Time:	00:00:00	
LEQ:	60.2 dB	
TWA:	62.9 dB	
TWA[8:00]:	60.2 dB	
Dose:	0.8 %	
Dose[8]:	0.4 %	
Dose[8:00]:	0.4 %	
SEL(3):	107.5 dB	
Exposure:	22.6 Pa2Sec	

DOSIMETER 2

Setup Name:	DISABLE
	DISABLED

Tests Summary:

DOSIMETER 1

Test: 1

Comments:

<u>Test Started</u>	<u>Test Stopped</u>	<u>Test Run Time</u>
12/8/2004 7:00:05AM	12/8/2004 10:00:05PM	15:00:00
Peak Level:	107.0 dB	12/8/2004 1:30:26PM
Fast Max Level:	93.8 dB	12/8/2004 1:30:25PM
Fast Min Level:	50.0 dB	12/8/2004 9:58:36PM
LEQ:	60.2 dB	
TWA:	62.9 dB	
TWA[8:00]:	60.2 dB	
Dose:	0.8 %	
Dose[8]:	0.4 %	
Dose[8:00]:	0.4 %	
SEL(3):	107.5 dB	
Exposure:	22.6 Pa2Sec	

QuestSuite Professional-NXD030014-1-Night.ndat

NoisePro DLX Noise Logging Dosimeter

FW Version: R160
Name: December, 2004 Noise Monitoring
Company: Xcel Energy - High Bridge
WorkArea: Site #1 - Centex Homes
Description: Night Readings
Comments:

Serial Number: NXD030014

Dosimeter Calibration:

Pre-Survey	114.0 dB	12/3/2004 2:52:19PM
Periodic Check 1	113.8 dB	12/5/2004 6:00:37PM

Instrument Range: 40 - 110 dB

Measuring Parameters:

DOSIMETER 1

Setup Name: USER 2
Criterion: 84 dB
Exchange Rate: 3 dB
Threshold: 40 dB
Upper Limit: 114 dB
Weighting: SPL:A Pk:Z
Time Constant: Fast
Alert Level 1: 85 dB
Alert Level 2: 90 dB

DOSIMETER 2

Setup Name: DISABLE

DISABLED

DOSIMETER 3

Setup Name: DISABLE

DISABLED

Summary Data:

<u>Session Started</u>	<u>Session Stopped</u>	<u>Run Time</u>
12/3/2004 10:00:05PM	12/4/2004 7:00:05AM	09:00:00

DOSIMETER 1

Setup Name:	USER 2		
Peak Level:	117.2 dB	12/4/2004	3:00:36AM
Fast Max Level:	86.3 dB	12/4/2004	2:09:20AM
Fast Min Level:	46.8 dB	12/4/2004	3:52:35AM
UL Time:	00:00:00		
LEQ:	54.7 dB		
TWA:	55.2 dB		
TWA[8:00]:	54.7 dB		
Dose:	0.1 %		
Dose[8]:	0.1 %		
Dose[8:00]:	0.1 %		
SEL(3):	99.8 dB		
Exposure:	3.8 Pa2Sec		

DOSIMETER 2

Setup Name:	DISABLE
	DISABLED

Tests Summary:

DOSIMETER 1

Test: 1

Comments:

<u>Test Started</u>	<u>Test Stopped</u>	<u>Test Run Time</u>
12/3/2004 10:00:05PM	12/4/2004 7:00:05AM	09:00:00
Peak Level:	117.2 dB	12/4/2004 3:00:36AM
Fast Max Level:	86.3 dB	12/4/2004 2:09:20AM
Fast Min Level:	46.8 dB	12/4/2004 3:52:35AM
LEQ:	54.7 dB	
TWA:	55.2 dB	
TWA[8:00]:	54.7 dB	
Dose:	0.1 %	
Dose[8]:	0.1 %	
Dose[8:00]:	0.1 %	
SEL(3):	99.8 dB	
Exposure:	3.8 Pa2Sec	

QuestSuite Professional-NXD030015-1-CliffStreet-Day.ndat

NoisePro DLX Noise Logging Dosimeter

FW Version: R160 Serial Number: NXD030015
Name: December, 2004 Noise Monitoring
Company: Xcel Energy - High Bridge
WorkArea: Site #2 - Cliff Street
Description: Day Readings
Comments:

Dosimeter Calibration:

Pre-Survey	114.0 dB	12/7/2004 11:59:52AM
Periodic Check 1	113.9 dB	12/13/2004 10:44:03AM

Instrument Range: 40 - 110 dB

Measuring Parameters:

DOSIMETER 1

Setup Name: USER 2
Criterion: 84 dB
Exchange Rate: 3 dB
Threshold: 40 dB
Upper Limit: 114 dB
Weighting: SPL:A Pk:Z
Time Constant: Fast
Alert Level 1: 85 dB
Alert Level 2: 90 dB

DOSIMETER 2

Setup Name: DISABLE

DISABLED

DOSIMETER 3

Setup Name: DISABLE

DISABLED

Summary Data:

<u>Session Started</u>	<u>Session Stopped</u>	<u>Run Time</u>
12/8/2004 7:00:05AM	12/8/2004 10:00:05PM	15:00:00

DOSIMETER 1

Setup Name:	USER 2	
Peak Level:	114.0 dB	12/8/2004 11:57:10AM
Fast Max Level:	93.9 dB	12/8/2004 11:08:17AM
Fast Min Level:	56.4 dB	12/8/2004 12:00:43PM
UL Time:	00:00:00	
LEQ:	66.6 dB	
TWA:	69.3 dB	
TWA[8:00]:	66.6 dB	
Dose:	3.4 %	
Dose[8]:	1.8 %	
Dose[8:00]:	1.8 %	
SEL(3):	113.9 dB	
Exposure:	97.1 Pa2Sec	

DOSIMETER 2

Setup Name:	DISABLE
	DISABLED

Tests Summary:

DOSIMETER 1

Test: 1

Comments:

<u>Test Started</u>	<u>Test Stopped</u>	<u>Test Run Time</u>
12/8/2004 7:00:05AM	12/8/2004 10:00:05PM	15:00:00
Peak Level:	114.0 dB	12/8/2004 11:57:10AM
Fast Max Level:	93.9 dB	12/8/2004 11:08:17AM
Fast Min Level:	56.4 dB	12/8/2004 12:00:43PM
LEQ:	66.6 dB	
TWA:	69.3 dB	
TWA[8:00]:	66.6 dB	
Dose:	3.4 %	
Dose[8]:	1.8 %	
Dose[8:00]:	1.8 %	
SEL(3):	113.9 dB	
Exposure:	97.1 Pa2Sec	

QuestSuite Professional-NXD030015-1-Night.ndat

NoisePro DLX Noise Logging Dosimeter

FW Version: R160 Serial Number: NXD030015
Name: December, 2004 Noise Monitoring
Company: Xcel Energy - High Bridge
WorkArea: Site #2 - Cliff Street
Description: Night Readings
Comments:

Dosimeter Calibration:

Pre-Survey	114.0 dB	12/3/2004 2:33:19PM
Periodic Check 1	113.8 dB	12/5/2004 6:03:58PM

Instrument Range: 40 - 110 dB

Measuring Parameters:

DOSIMETER 1

Setup Name: USER 2
Criterion: 84 dB
Exchange Rate: 3 dB
Threshold: 40 dB
Upper Limit: 114 dB
Weighting: SPL:A Pk:Z
Time Constant: Fast
Alert Level 1: 85 dB
Alert Level 2: 90 dB

DOSIMETER 2

Setup Name: DISABLE

DISABLED

DOSIMETER 3

Setup Name: DISABLE

DISABLED

Summary Data:

<u>Session Started</u>	<u>Session Stopped</u>	<u>Run Time</u>
12/3/2004 10:00:05PM	12/4/2004 7:00:05AM	09:00:00

DOSIMETER 1

Setup Name:	USER 2	
Peak Level:	119.5 dB	12/4/2004 12:45:08AM
Fast Max Level:	84.2 dB	12/4/2004 12:45:05AM
Fast Min Level:	52.2 dB	12/4/2004 3:00:51AM
UL Time:	00:00:00	
LEQ:	59.6 dB	
TWA:	60.1 dB	
TWA[8:00]:	59.6 dB	
Dose:	0.4 %	
Dose[8]:	0.4 %	
Dose[8:00]:	0.4 %	
SEL(3):	104.7 dB	
Exposure:	11.7 Pa2Sec	

DOSIMETER 2

Setup Name:	DISABLE
	DISABLED

Tests Summary:

DOSIMETER 1

Test: 1

Comments:

<u>Test Started</u>	<u>Test Stopped</u>	<u>Test Run Time</u>
12/3/2004 10:00:05PM	12/4/2004 7:00:05AM	09:00:00
Peak Level:	119.5 dB	12/4/2004 12:45:08AM
Fast Max Level:	84.2 dB	12/4/2004 12:45:05AM
Fast Min Level:	52.2 dB	12/4/2004 3:00:51AM
LEQ:	59.6 dB	
TWA:	60.1 dB	
TWA[8:00]:	59.6 dB	
Dose:	0.4 %	
Dose[8]:	0.4 %	
Dose[8:00]:	0.4 %	
SEL(3):	104.7 dB	
Exposure:	11.7 Pa2Sec	

QuestSuite Professional-NXD030013-1-Cherokee-Day.ndat

NoisePro DLX Noise Logging Dosimeter

FW Version: R160 Serial Number: NXD030013
Name: December, 2004 Noise Monitoring
Company: Xcel Energy - High Bridge
WorkArea: Site #3 - Cherokee Avenue
Description: Day Readings
Comments:

Dosimeter Calibration:

Pre-Survey	114.0 dB	12/7/2004 12:02:00PM
Periodic Check 1	114.2 dB	12/13/2004 10:40:33AM

Instrument Range: 40 - 110 dB

Measuring Parameters:

DOSIMETER 1

Setup Name: USER 2
Criterion: 84 dB
Exchange Rate: 3 dB
Threshold: 40 dB
Upper Limit: 114 dB
Weighting: SPL:A Pk:Z
Time Constant: Fast
Alert Level 1: 85 dB
Alert Level 2: 90 dB

DOSIMETER 2

Setup Name: DISABLE

DISABLED

DOSIMETER 3

Setup Name: DISABLE

DISABLED

Summary Data:

<u>Session Started</u>	<u>Session Stopped</u>	<u>Run Time</u>
12/8/2004 7:00:05AM	12/8/2004 10:00:05PM	15:00:00

DOSIMETER 1

Setup Name:	USER 2	
Peak Level:	104.0 dB	12/8/2004 9:09:49AM
Fast Max Level:	73.4 dB	12/8/2004 11:22:05AM
Fast Min Level:	49.0 dB	12/8/2004 8:12:52PM
UL Time:	00:00:00	
LEQ:	55.4 dB	
TWA:	58.1 dB	
TWA[8:00]:	55.4 dB	
Dose:	0.3 %	
Dose[8]:	0.1 %	
Dose[8:00]:	0.1 %	
SEL(3):	102.7 dB	
Exposure:	7.5 Pa2Sec	

DOSIMETER 2

Setup Name:	DISABLE
	DISABLED

Tests Summary:

DOSIMETER 1

Test: 1

Comments:

<u>Test Started</u>	<u>Test Stopped</u>	<u>Test Run Time</u>
12/8/2004 7:00:05AM	12/8/2004 10:00:05PM	15:00:00
Peak Level:	104.0 dB	12/8/2004 9:09:49AM
Fast Max Level:	73.4 dB	12/8/2004 11:22:05AM
Fast Min Level:	49.0 dB	12/8/2004 8:12:52PM
LEQ:	55.4 dB	
TWA:	58.1 dB	
TWA[8:00]:	55.4 dB	
Dose:	0.3 %	
Dose[8]:	0.1 %	
Dose[8:00]:	0.1 %	
SEL(3):	102.7 dB	
Exposure:	7.5 Pa2Sec	

QuestSuite Professional-NXD030013-1-Night.ndat

NoisePro DLX Noise Logging Dosimeter

FW Version: R160 Serial Number: NXD030013
Name: December, 2004 Noise Monitoring
Company: Xcel Energy - High Bridge
WorkArea: Site #3 - Cherokee Avenue
Description: Night Readings
Comments:

Dosimeter Calibration:

Pre-Survey	114.0 dB	12/3/2004 2:39:11PM
Periodic Check 1	113.8 dB	12/5/2004 5:59:09PM

Instrument Range: 40 - 110 dB

Measuring Parameters:

DOSIMETER 1

Setup Name: USER 2
Criterion: 84 dB
Exchange Rate: 3 dB
Threshold: 40 dB
Upper Limit: 114 dB
Weighting: SPL:A Pk:Z
Time Constant: Fast
Alert Level 1: 85 dB
Alert Level 2: 90 dB

DOSIMETER 2

Setup Name: DISABLE

DISABLED

DOSIMETER 3

Setup Name: DISABLE

DISABLED

Summary Data:

<u>Session Started</u>	<u>Session Stopped</u>	<u>Run Time</u>
12/3/2004 10:00:05PM	12/4/2004 7:00:05AM	09:00:00

DOSIMETER 1

Setup Name:	USER 2		
Peak Level:	106.1 dB	12/4/2004	1:50:37AM
Fast Max Level:	80.9 dB	12/4/2004	2:31:35AM
Fast Min Level:	46.8 dB	12/4/2004	2:52:21AM
UL Time:	00:00:00		
LEQ:	53.2 dB		
TWA:	53.7 dB		
TWA[8:00]:	53.2 dB		
Dose:	0.1 %		
Dose[8]:	0.1 %		
Dose[8:00]:	0.1 %		
SEL(3):	98.3 dB		
Exposure:	2.7 Pa2Sec		

DOSIMETER 2

Setup Name:	DISABLE
	DISABLED

Tests Summary:

DOSIMETER 1

Test: 1

Comments:

<u>Test Started</u>	<u>Test Stopped</u>	<u>Test Run Time</u>
12/3/2004 10:00:05PM	12/4/2004 7:00:05AM	09:00:00
Peak Level:	106.1 dB	12/4/2004 1:50:37AM
Fast Max Level:	80.9 dB	12/4/2004 2:31:35AM
Fast Min Level:	46.8 dB	12/4/2004 2:52:21AM
LEQ:	53.2 dB	
TWA:	53.7 dB	
TWA[8:00]:	53.2 dB	
Dose:	0.1 %	
Dose[8]:	0.1 %	
Dose[8:00]:	0.1 %	
SEL(3):	98.3 dB	
Exposure:	2.7 Pa2Sec	

QuestSuite Professional-NXD030008-1-IslandStation-Day.ndat

NoisePro DLX Noise Logging Dosimeter

FW Version: R160 Serial Number: NXD030008
Name: December, 2004 Noise Monitoring
Company: Xcel Energy - High Bridge
WorkArea: Site #4 - Island Station
Description: Day Readings
Comments:

Dosimeter Calibration:

Pre-Survey	114.0 dB	12/7/2004 12:05:05PM
Periodic Check 1	114.0 dB	12/13/2004 10:39:12AM

Instrument Range: 40 - 110 dB

Measuring Parameters:

DOSIMETER 1

Setup Name: USER 2
Criterion: 84 dB
Exchange Rate: 3 dB
Threshold: 40 dB
Upper Limit: 114 dB
Weighting: SPL:A Pk:Z
Time Constant: Fast
Alert Level 1: 85 dB
Alert Level 2: 90 dB

DOSIMETER 2

Setup Name: DISABLE

DISABLED

DOSIMETER 3

Setup Name: DISABLE

DISABLED

Summary Data:

<u>Session Started</u>	<u>Session Stopped</u>	<u>Run Time</u>
12/8/2004 7:00:05AM	12/8/2004 10:00:05PM	15:00:00

DOSIMETER 1

Setup Name:	USER 2	
Peak Level:	107.7 dB	12/8/2004 11:31:44AM
Fast Max Level:	81.7 dB	12/8/2004 12:23:20PM
Fast Min Level:	51.9 dB	12/8/2004 8:26:44AM
UL Time:	00:00:00	
LEQ:	57.5 dB	
TWA:	60.3 dB	
TWA[8:00]:	57.5 dB	
Dose:	0.4 %	
Dose[8]:	0.2 %	
Dose[8:00]:	0.2 %	
SEL(3):	104.8 dB	
Exposure:	12.2 Pa2Sec	

DOSIMETER 2

Setup Name:	DISABLE
	DISABLED

Tests Summary:

DOSIMETER 1

Test: 1

Comments:

<u>Test Started</u>	<u>Test Stopped</u>	<u>Test Run Time</u>
12/8/2004 7:00:05AM	12/8/2004 10:00:05PM	15:00:00
Peak Level:	107.7 dB	12/8/2004 11:31:44AM
Fast Max Level:	81.7 dB	12/8/2004 12:23:20PM
Fast Min Level:	51.9 dB	12/8/2004 8:26:44AM
LEQ:	57.5 dB	
TWA:	60.3 dB	
TWA[8:00]:	57.5 dB	
Dose:	0.4 %	
Dose[8]:	0.2 %	
Dose[8:00]:	0.2 %	
SEL(3):	104.8 dB	
Exposure:	12.2 Pa2Sec	

QuestSuite Professional-NXD030008-1-Night.ndat

NoisePro DLX Noise Logging Dosimeter

FW Version: R160 Serial Number: NXD030008
Name: December, 2004 Noise Monitoring
Company: Xcel Energy - High Bridge
WorkArea: Site #4 - Island Station
Description: Night Readings
Comments:

Dosimeter Calibration:

Pre-Survey	114.0 dB	12/3/2004 3:07:26PM
Periodic Check 1	113.8 dB	12/5/2004 6:03:05PM

Instrument Range: 40 - 110 dB

Measuring Parameters:

DOSIMETER 1

Setup Name: USER 2
Criterion: 84 dB
Exchange Rate: 3 dB
Threshold: 40 dB
Upper Limit: 114 dB
Weighting: SPL:A Pk:Z
Time Constant: Fast
Alert Level 1: 85 dB
Alert Level 2: 90 dB

DOSIMETER 2

Setup Name: DISABLE

DISABLED

DOSIMETER 3

Setup Name: DISABLE

DISABLED

Summary Data:

<u>Session Started</u>	<u>Session Stopped</u>	<u>Run Time</u>
12/3/2004 10:00:05PM	12/4/2004 7:00:05AM	09:00:00

DOSIMETER 1

Setup Name:	USER 2	
Peak Level:	107.8 dB	12/4/2004 2:05:50AM
Fast Max Level:	75.9 dB	12/4/2004 2:05:49AM
Fast Min Level:	48.6 dB	12/4/2004 2:56:44AM
UL Time:	00:00:00	
LEQ:	52.4 dB	
TWA:	52.9 dB	
TWA[8:00]:	52.4 dB	
Dose:	0.1 %	
Dose[8]:	0.1 %	
Dose[8:00]:	0.1 %	
SEL(3):	97.5 dB	
Exposure:	2.2 Pa2Sec	

DOSIMETER 2

Setup Name:	DISABLE
	DISABLED

Tests Summary:

DOSIMETER 1

Test: 1

Comments:

<u>Test Started</u>	<u>Test Stopped</u>	<u>Test Run Time</u>
12/3/2004 10:00:05PM	12/4/2004 7:00:05AM	09:00:00
Peak Level:	107.8 dB	12/4/2004 2:05:50AM
Fast Max Level:	75.9 dB	12/4/2004 2:05:49AM
Fast Min Level:	48.6 dB	12/4/2004 2:56:44AM
LEQ:	52.4 dB	
TWA:	52.9 dB	
TWA[8:00]:	52.4 dB	
Dose:	0.1 %	
Dose[8]:	0.1 %	
Dose[8:00]:	0.1 %	
SEL(3):	97.5 dB	
Exposure:	2.2 Pa2Sec	

Appendix A
Noise Monitoring

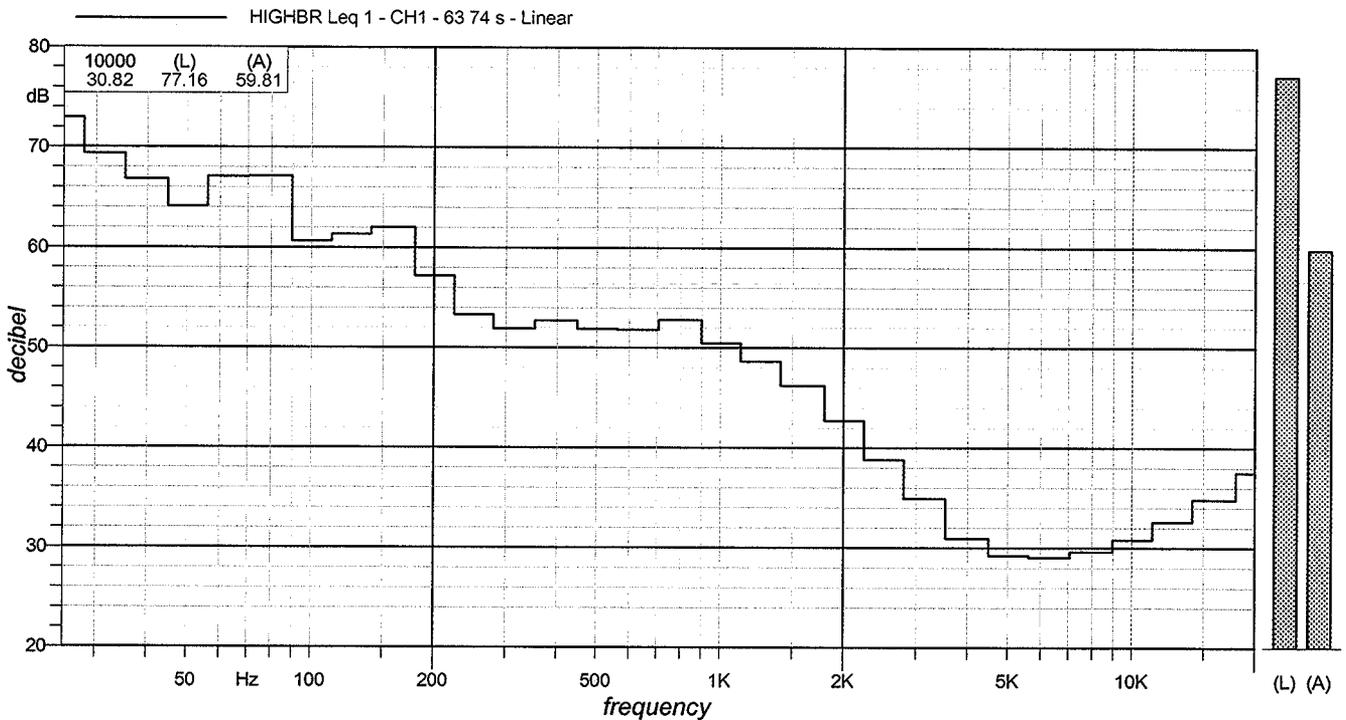
Section 3: Sound Level Meter Data

Xcel Energy Noise Program

HIGHBR Leq 1 CH1 - 63.74 s Linear	
Hz	dB
25	72.97
31.5	69.37
40	66.82
50	64.07
63	67.07
80	67.14
100	60.64
125	61.30
160	62.01
200	57.16
250	53.28
315	51.90
400	52.71
500	51.88
630	51.81
800	52.77
1000	50.47
1250	48.65
1600	46.22
2000	42.71
2500	38.80
3150	34.90
4000	30.94
5000	29.20
6300	29.03
8000	29.58
10000	30.82
12500	32.59
16000	34.80
20000	37.52

Measurement's name: HIGHBR Leq 1
 Measurement site: 1
 Date: 12/1/2004
 Instrument: LD 2800
 Time: 10:45.45 AM

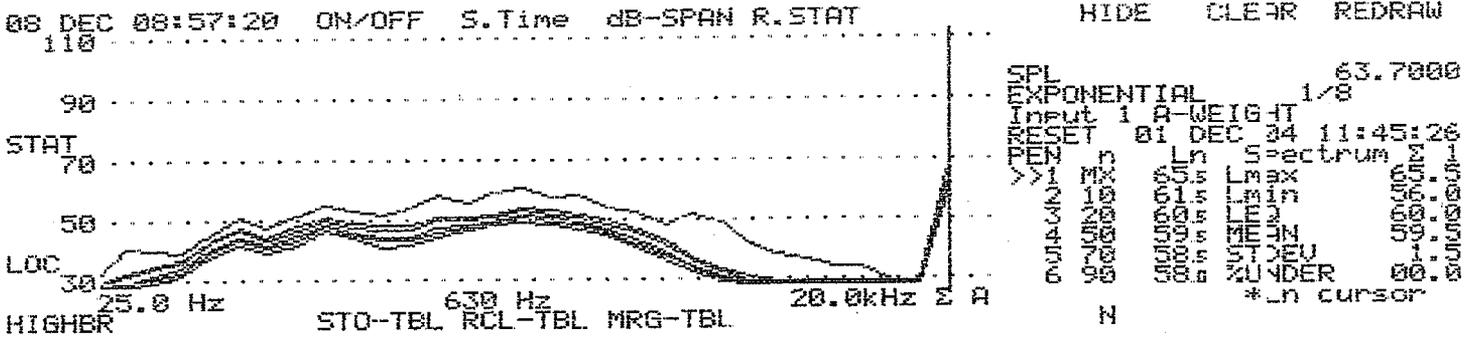
 Notes
 Centex Homes



Monitoring Site 1. Centex Homes

===== LARSON-DAVIS ===== 2800 RTA B5.18
 =====

Date and Time: 08 DEC 04 08:57
 Data Type: Selected Ln curves

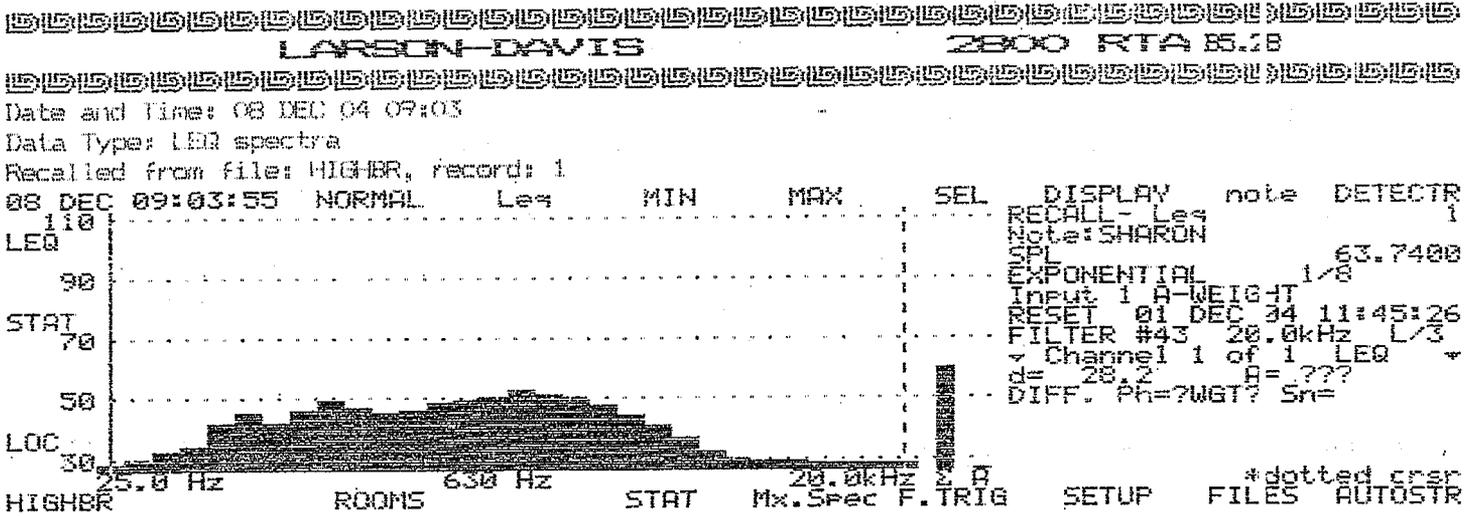


===== Data Type: Selected Ln curves =====

Note: SHARON
 DATA FOR CHANNEL 1
 Sample Time: 0.1000 sec
 dB-SPAN: 20.0 / 140.0 dB

#	FREQUENCY	Lmax	Lmin	LEG	MEAN	STDEV	ZUNDR	Lmax	L10	L20	L50	L70	L90
14	25.0 Hz	31.5	26.5	28.5	28.2	0.5	100.	31.5	28.5	28.5	28.0	28.0	27.5
15	31.5 Hz	40.0	27.5	30.0	29.4	1.8	99.	40.0	32.0	31.0	28.5	28.5	28.0
16	40.0 Hz	39.5	27.5	32.0	31.7	2.0	96.	39.5	34.5	33.5	31.5	30.5	29.0
17	50.0 Hz	39.0	28.0	34.0	33.3	2.1	84.	39.0	36.5	35.0	33.5	32.0	31.0
18	63.0 Hz	45.0	32.0	41.0	40.3	2.3	03.	45.0	43.0	42.5	40.5	39.5	37.5
19	80.0 Hz	50.5	38.5	44.5	44.0	2.2	00.	50.5	47.0	46.0	44.0	43.0	41.0
20	100 Hz	47.0	36.0	41.5	41.0	1.8	00.	47.0	43.5	42.5	41.0	40.0	38.5
21	125 Hz	51.5	38.0	45.0	44.5	2.4	00.	51.5	47.5	46.5	44.5	43.0	41.5
22	160 Hz	54.5	43.5	48.5	48.3	1.7	00.	54.5	50.5	49.5	48.0	47.5	46.5
23	200 Hz	53.0	40.0	46.0	45.7	1.3	00.	53.0	48.5	47.0	45.5	44.5	43.5
24	250 Hz	51.5	37.0	44.5	43.7	2.7	00.	51.5	48.0	46.0	43.5	42.5	40.5
25	315 Hz	54.0	39.0	45.5	44.4	2.5	00.	54.0	48.0	46.0	44.0	43.0	41.5
26	400 Hz	57.5	41.5	48.0	47.1	2.5	00.	57.5	50.5	49.5	47.0	45.5	44.0
27	500 Hz	55.5	44.0	48.5	48.2	1.8	00.	55.5	50.5	49.5	48.0	47.0	46.0
28	630 Hz	59.0	44.0	50.0	49.3	2.0	00.	59.0	51.5	50.5	49.0	48.5	47.5
29	800 Hz	60.5	45.5	52.0	51.2	2.3	00.	60.5	54.0	53.0	51.0	50.0	49.0
30	1.00kHz	57.0	45.0	50.5	50.0	1.8	00.	57.0	52.5	51.5	50.0	49.0	48.0
31	1.25kHz	57.5	44.0	49.5	48.7	2.0	00.	57.5	51.5	50.0	48.5	47.5	46.5
32	1.60kHz	53.5	41.5	47.0	46.7	2.0	00.	53.5	49.5	48.0	46.5	45.5	44.5
33	2.00kHz	52.0	38.0	44.0	43.1	2.3	00.	52.0	46.5	45.0	42.5	41.5	40.5
34	2.50kHz	48.0	34.5	40.0	39.2	2.5	05.	48.0	43.0	41.0	38.5	37.5	36.5
35	3.15kHz	51.0	29.5	36.0	34.5	2.4	76.	51.0	37.0	36.0	34.0	33.5	32.0
36	4.00kHz	48.5	28.0	32.0	30.8	2.3	96.	48.5	33.0	32.0	30.0	29.5	29.0
37	5.00kHz	41.0	28.0	30.0	28.9	2.0	97.	41.0	30.0	29.0	28.5	28.0	28.0
38	6.30kHz	37.5	28.0	29.0	28.5	1.4	98.	37.5	29.0	28.5	28.0	28.0	28.0
39	8.00kHz	36.0	28.0	28.5	28.3	0.8	100.	36.0	28.5	28.5	28.0	28.0	28.0
40	10.0kHz	34.0	27.5	28.5	28.2	0.5	100.	34.0	28.5	28.5	28.0	28.0	28.0
41	12.5kHz	34.0	28.0	28.5	28.5	0.5	100.	34.0	28.5	28.5	28.0	28.0	28.0
42	16.0kHz	29.0	28.0	28.0	28.0	0.0	100.	29.0	28.5	28.0	28.0	28.0	28.0
43	20.0kHz	28.5	28.0	28.0	28.0	0.0	100.	28.5	28.5	28.0	28.0	28.0	28.0
SUM		65.3	56.0	60.0	59.5	1.5	00.	65.3	61.5	60.5	59.5	58.5	55.0

Monitoring Site 1. Centex Homes



Data Type: LEQ spectra
 Recalled from file: HIGHER, record: 1
 Note: SHARON

CHANNEL	FREQ	DISP-dB	RMS-dB	FREQ	DISP-dB	RMS-dB	FREQ	DISP-dB	RMS-dB	FREQ	DISP-dB	RMS-dB			
14	25.0 Hz	28.3	28.3	15	31.5 Hz	29.9	29.9	16	40.0 Hz	32.2	32.2	17	50.0 Hz	33.9	33.9
18	63.0 Hz	40.9	40.9	19	80.0 Hz	44.6	44.6	20	100 Hz	41.4	41.4	21	125 Hz	45.2	45.2
22	160 Hz	48.6	48.6	23	200 Hz	46.3	46.3	24	250 Hz	44.7	44.7	25	315 Hz	45.3	45.3
26	400 Hz	47.9	47.9	27	500 Hz	48.7	48.7	28	630 Hz	49.9	49.9	29	800 Hz	52.0	52.0
30	1.00kHz	50.5	50.5	31	1.25kHz	49.2	49.2	32	1.60kHz	47.2	47.2	33	2.00kHz	43.9	43.9
34	2.50kHz	40.1	40.1	35	3.15kHz	36.1	36.1	36	4.00kHz	31.9	31.9	37	5.00kHz	29.8	29.8
38	6.30kHz	28.9	28.9	39	8.00kHz	28.5	28.5	40	10.0kHz	28.3	28.3	41	12.5kHz	28.3	28.3
42	16.0kHz	28.2	28.2	43	20.0kHz	28.2	28.2								
SUM		59.8	59.8												
A-WEIGHT		invalid													

Xcel Energy Noise Program

Measurement's name: HIGHBR Leq 2

Measurement site: 2

Date: 12/1/2004

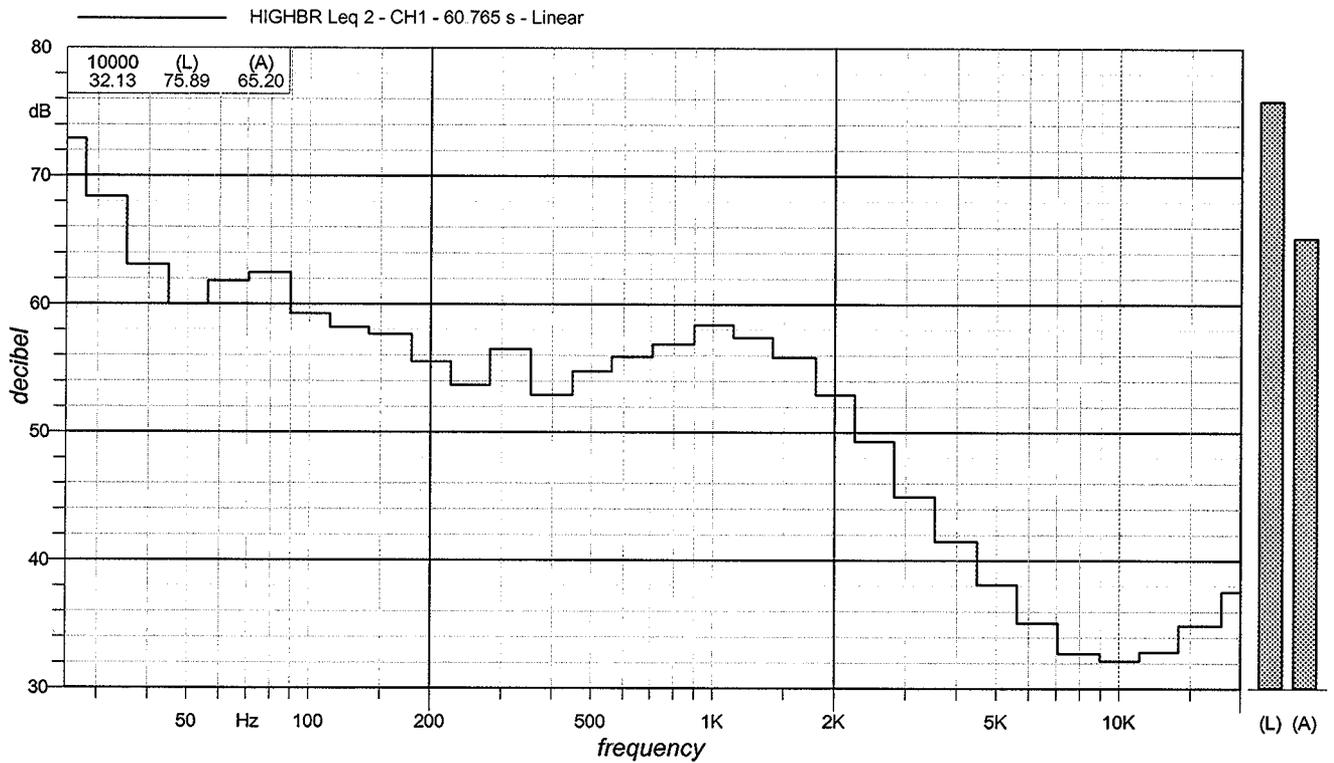
Instrument: LD 2800

Time: 11:22.22 AM

Notes

263 Cliff Street
Heavy traffic

HIGHBR Leq 2 CH1 - 60.765 s Linear	
Hz	dB
25	72.87
31.5	68.33
40	63.03
50	59.93
63	61.78
80	62.43
100	59.20
125	58.15
160	57.61
200	55.47
250	53.61
315	56.46
400	52.87
500	54.70
630	55.85
800	56.84
1000	58.35
1250	57.35
1600	55.82
2000	52.87
2500	49.24
3150	44.92
4000	41.43
5000	38.06
6300	35.05
8000	32.68
10000	32.13
12500	32.83
16000	34.87
20000	37.52



Xcel Energy Noise Program

Measurement's name: HIGHBR Leq 3

Measurement site: 3

Date: 12/1/2004

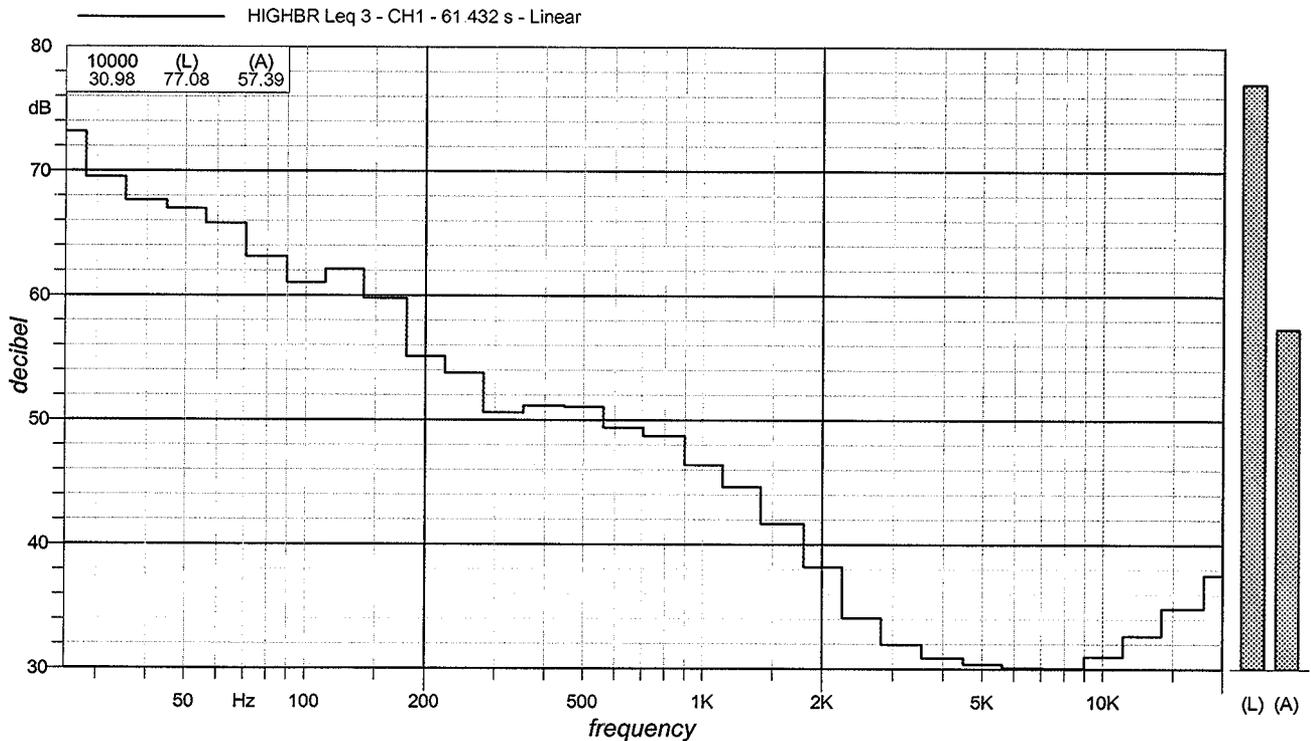
Instrument: LD 2800

Time: 11:37.57 AM

Notes

426 Cherokee Avenue
across the road from residence

HIGHBR Leq 3 CH1 - 61.432 s Linear	
Hz	dB
25	73.13
31.5	69.49
40	67.62
50	66.96
63	65.78
80	63.12
100	61.01
125	62.10
160	59.75
200	55.07
250	53.73
315	50.56
400	51.13
500	51.04
630	49.36
800	48.71
1000	46.35
1250	44.60
1600	41.66
2000	38.17
2500	34.07
3150	31.94
4000	30.87
5000	30.35
6300	30.06
8000	30.03
10000	30.98
12500	32.62
16000	34.82
20000	37.52

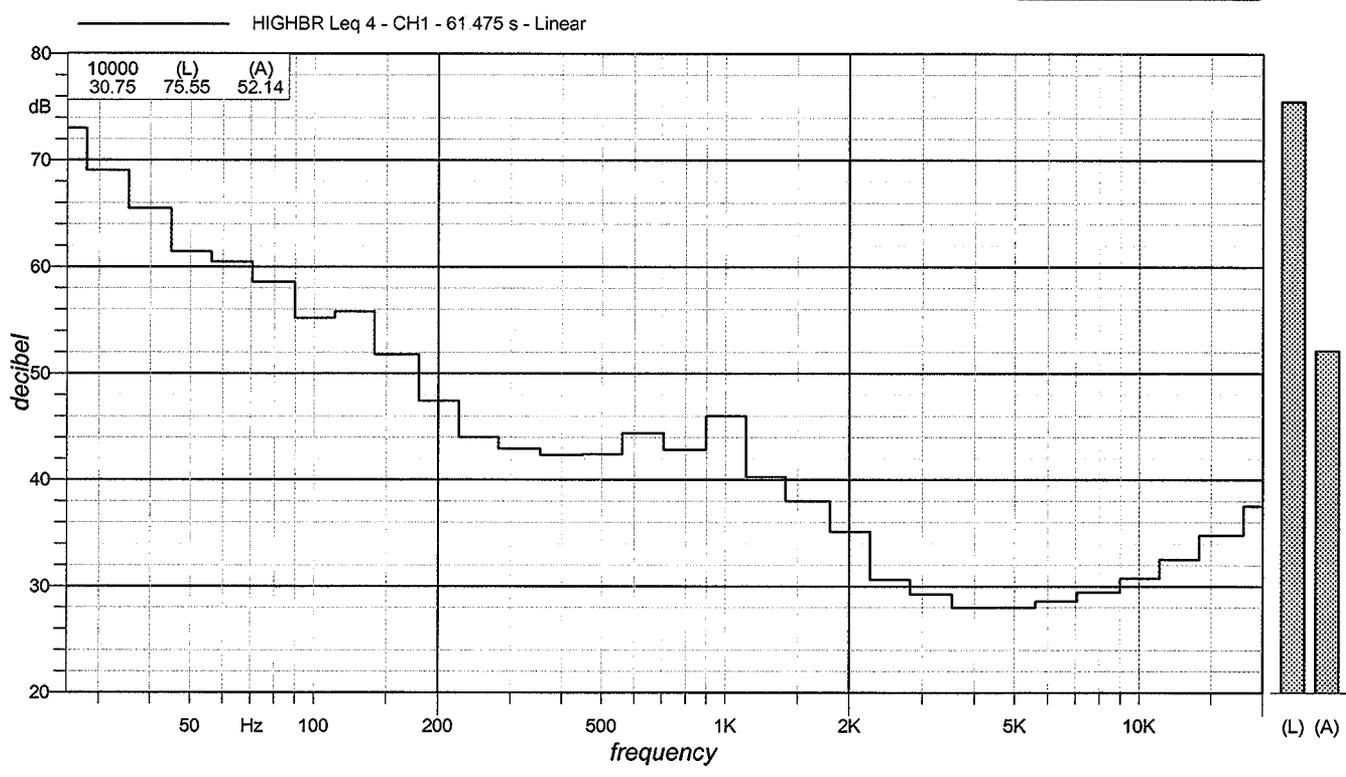


Xcel Energy Noise Program

Measurement's name: HIGHBR Leq 4
 Measurement site: 4
 Date: 12/1/2004
 Instrument: LD 2800 Time: 12:28.20 PM

Notes
 Island Station
 267 feet South of building

HIGHBR Leq 4 CH1 - 61.475 s Linear	
Hz	dB
25	72.99
31.5	69.06
40	65.50
50	61.43
63	60.47
80	58.58
100	55.21
125	55.82
160	51.78
200	47.42
250	44.02
315	42.94
400	42.33
500	42.45
630	44.40
800	42.85
1000	45.98
1250	40.27
1600	38.02
2000	35.14
2500	30.64
3150	29.26
4000	27.97
5000	28.02
6300	28.60
8000	29.44
10000	30.75
12500	32.55
16000	34.82
20000	37.52



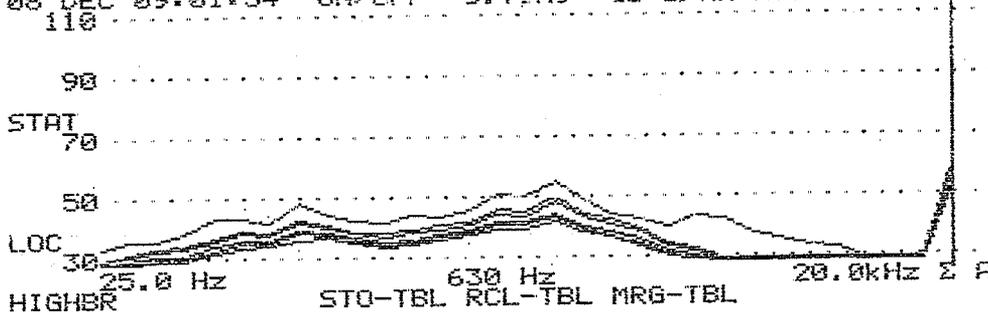
Monitoring Site 4. Island Station

===== LARSON-DAVIS 2800 RTA B.28 =====

Date and Time: 08 DEC 04 09:01
 Data Type: Selected Ln curves

08 DEC 09:01:54 ON/OFF S.Time dB-SPAN R.STAT
 110

HIDE CLEAR REDRAW



STAT 61.4000
 EXPONENTIAL 1/8
 Input 1 A-WEIGHT
 RESET 01 DEC 04 11:45:26
 Lm Spectrum
 Lm Lmax 49.00
 Lm Lmin 27.00
 Lm MEAN 31.40
 Lm STDEV 2.10
 Lm UNDER 99.00
 *Ln cursor

=====

Data Type: Selected Ln curves

Note: SHARON

DATA FOR CHANNEL 1

Sample Time: 0.1000 sec
 dB-SPAN: 20.0 / 140.0 dB

#	FREQUENCY	Lmax	Lmin	LED	MEAN	STDEV	UNDER	Lmax	L10	L20	L50	L70	L90
14	25.0 Hz	32.5	27.0	28.5	28.2	0.7	100.	32.5	28.5	28.5	28.0	28.0	27.5
15	31.5 Hz	35.5	27.5	29.5	29.3	1.5	100.	35.5	31.5	30.5	28.5	28.5	28.0
16	40.0 Hz	35.5	27.5	31.0	30.6	1.6	100.	35.5	32.5	32.0	30.5	29.5	28.5
17	50.0 Hz	38.0	27.5	31.0	30.8	1.8	99.	38.0	33.5	32.5	30.5	29.5	28.5
18	63.0 Hz	42.5	28.0	34.0	33.5	2.3	82.	42.5	36.5	35.5	33.5	32.0	31.0
19	80.0 Hz	42.5	29.5	36.0	35.5	2.1	59.	42.5	38.5	37.5	35.5	34.5	32.5
20	100 Hz	41.5	31.0	36.0	35.6	1.7	50.	41.5	38.0	37.0	35.5	34.5	33.5
21	125 Hz	48.0	31.5	39.5	38.7	2.6	09.	48.0	42.0	41.0	38.5	37.5	35.5
22	160 Hz	44.0	33.0	38.5	38.0	1.8	07.	44.0	40.5	39.5	38.0	37.0	36.0
23	200 Hz	42.0	31.5	36.5	36.2	1.5	35.	42.0	38.0	37.5	36.0	35.5	34.5
24	250 Hz	41.5	29.5	35.5	34.9	2.0	64.	41.5	37.5	36.5	34.5	34.0	32.5
25	315 Hz	43.5	32.5	36.5	35.9	1.9	49.	43.5	38.5	37.5	35.5	34.5	34.0
26	400 Hz	42.5	33.5	37.5	37.2	1.7	16.	42.5	40.0	38.5	37.0	36.0	35.0
27	500 Hz	45.0	35.0	39.0	38.9	1.6	00.	45.0	41.0	40.5	39.0	38.0	37.0
28	630 Hz	50.5	37.5	42.5	41.6	2.4	00.	50.5	45.5	43.5	41.0	40.0	39.0
29	800 Hz	49.5	37.5	42.0	41.4	2.1	00.	49.5	44.5	42.5	41.0	40.0	39.0
30	1.00kHz	54.5	40.0	46.0	44.6	3.1	00.	54.5	49.5	48.0	43.5	42.5	41.5
31	1.25kHz	49.0	35.5	41.0	40.0	2.5	00.	49.0	44.0	42.5	39.5	38.5	37.5
32	1.60kHz	44.0	34.5	39.0	38.4	2.3	06.	44.0	42.0	40.5	38.0	36.5	36.0
33	2.00kHz	42.0	30.5	36.5	35.6	2.5	49.	42.0	39.0	38.0	35.5	33.5	32.5
34	2.50kHz	39.5	28.0	32.0	31.4	2.0	97.	39.5	34.0	33.0	31.0	30.0	29.5
35	3.15kHz	43.0	28.0	30.5	29.9	1.8	98.	43.0	32.0	31.0	29.5	29.0	28.5
36	4.00kHz	42.0	28.0	29.0	28.6	1.3	99.	42.0	29.0	28.5	28.5	28.0	28.0
37	5.00kHz	37.0	28.0	28.5	28.4	1.1	100.	37.0	28.5	28.5	28.0	28.0	28.0
38	6.30kHz	35.5	28.0	28.5	28.3	1.0	100.	35.5	28.5	28.5	28.0	28.0	28.0
39	8.00kHz	33.0	28.0	28.5	28.2	0.5	100.	33.0	28.5	28.5	28.0	28.0	28.0
40	10.0kHz	32.0	28.0	28.0	28.2	0.5	100.	32.0	28.5	28.5	28.0	28.0	28.0
41	12.5kHz	29.0	28.0	28.0	28.2	0.0	100.	29.0	28.5	28.5	28.0	28.0	28.0
42	16.0kHz	28.5	28.0	28.0	28.0	0.0	100.	28.5	28.5	28.0	28.0	28.0	28.0
43	20.0kHz	28.5	28.0	28.0	28.1	0.0	100.	28.5	28.5	28.0	28.0	28.0	28.0
SUM		57.0	49.0	52.0	51.7	1.9	00.	57.0	54.5	53.5	51.0	50.5	50.0

Monitoring Site 4. Island Station

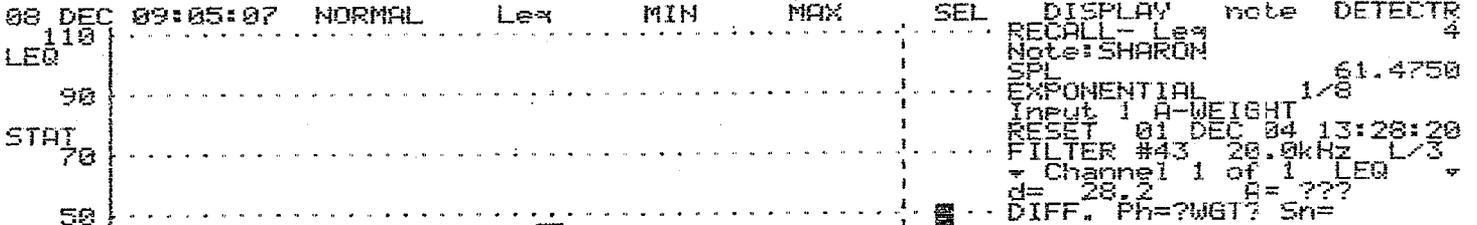
===== LARSON-DAVIS 2800 RTA B.28 =====

=====

Date and Time: 08 DEC 04 09:05

Data Type: LEQ spectra

Recalled from file: HIGHER, record: 4



HIGHER 25.0 Hz ROOMS 6.30 Hz STAT Mx.Spec F.TRIG SETUP FILES AUTOSTR #dotted crsr

=====

Data Type: LEQ spectra

Recalled from file: HIGHER, record: 4

Note: SHARON

CHANNEL	FREQ	DISP-dB	RMS-dB	FREQ	DISP-dB	RMS-dB	FREQ	DISP-dB	RMS-dB	FREQ	DISP-dB	RMS-dB			
14	25.0 Hz	28.3	28.3	15	31.5 Hz	29.6	29.6	16	40.0 Hz	30.9	30.9	17	50.0 Hz	31.2	31.2
18	63.0 Hz	34.3	34.3	19	80.0 Hz	36.1	36.1	20	100 Hz	36.0	36.0	21	125 Hz	39.7	39.7
22	160 Hz	38.4	38.4	23	200 Hz	36.5	36.5	24	250 Hz	35.4	35.4	25	315 Hz	36.3	36.3
26	400 Hz	37.5	37.5	27	500 Hz	39.3	39.3	28	630 Hz	42.5	42.5	29	800 Hz	42.1	42.1
30	1.00kHz	46.0	46.0	31	1.25kHz	40.9	40.9	32	1.60kHz	39.0	39.0	33	2.00kHz	36.3	36.3
34	2.50kHz	31.9	31.9	35	3.15kHz	30.5	30.5	36	4.00kHz	29.0	29.0	37	5.00kHz	28.6	28.6
38	6.30kHz	28.5	28.5	39	8.00kHz	28.3	28.3	40	10.0kHz	28.2	28.2	41	12.5kHz	28.2	28.2
42	16.0kHz	28.2	28.2	43	20.0kHz	28.2	28.2								
SUM		52.1	52.1												
A-WEIGHT		invalid													

Appendix A
Noise Monitoring

Section 4: Plant Operations Logs

#3 BOILER IN FULL LOAD.
 #6 BOILER IN THREE MILL LOAD.
 SYSTEM CONDITION GREEN.
 GAS AVAILABLE.
 1200-#5P 293 LINE BACK IN SERVICE.

12/3/2004 1:35:48PM PLND01

Operations - Lead Operator 850 - 12/03/2004 13:35:48
 --CHECKED STATION AND R/O.

--SWITCHED SOFTENERS ON MIDNIGHTS, "B" IS IN SERVICE. REGENERATED "B". (V. BUCKLEY).

--JON K. BLEW OUT THE #41 MILL BIAS CONTROLLER, AND THE FLASHING "8-" IS GONE.
 --UNHELD #31 & #32 BFP'S.

--HELD #2 REJECT WATER PUMP AND K. ALBOLD FREED UP THE PUMP. WE WIRED IT UP AND TRIED RUNNING IT, BUT THE PUMP DOES NOT PUT OUT ENOUGH TO OVERCOME THE SERVICE WATER PRESSURE. IT PUTS OUT ABOUT 75 LBS., AND THE SERVICE WATER PRESSURE IS CURRENTLY 78 LBS. K. ALBOLD ALSO FIXED THE COOLING FINS ON #1 REJECT WATER TANK AND IT IS RUNNING FINE. IT PUTS OUT ABOUT 140 LBS PRESSURE. IT HAS TWO MORE STAGES AND IS A 15 HP MOTOR, COMPARED TO A 10 HP MOTOR ON #2.
 --PUT #1 BURNER IN ON #4 BOILER.

12/3/2004 2:48:56PM JCKM01

Operations - Lead Operator 1800 - 12/03/2004 14:48:56

Checked station/demin-3 mills on coal 5 and 6 boilers. Gas available
 Pulling ash 4,5 and 6 boilers

Fire line pipe burst in C-belt take up. MWR in. Isolated and drained. Afternoon maint. to work on it.
 C-belt fire line repaired and returned to service. Fire watch complete.
 62 mill had amp spike and dip. Checked out, seems OK.
 Demin went out on 3 bed silica. Start regen of demin.

12/3/2004 4:56:59PM LRLM01

Operations - Shift Engineer - 12/03/2004 16:56:59

#3 boiler - vented

#4 boiler in service for the rock-tenn steam line

#5 unit on line, available for full load & AGC

#6 unit on line, available for full load with gas topping (#61 mill held out)
 system condition green

1500 -- fire line for C belt broke, MWR submitted - fire watch started

12/3/2004 4:59:05PM BHMB02

Operations - Turbine Operator - 12/03/2004 16:59:05

1. fire system for c belt is held. Hold card in valve house 2 and in the breaker building.
 2. checked station and screen house.

12/3/2004 5:02:03PM GLSJ03

Operations - Lead Operator 850 - 12/03/2004 17:02:03

checked boiler room/ro

Amine pump on manual to see if the influent ph will come up faster.

Softener discharge back to sewer.

12/3/2004 9:27:12PM GLSJ03

Operations - Lead Operator 850 - 12/03/2004 21:27:12

Blew tubes on 4 blr.

12/4/2004 4:45:03AM FNTM01

Operations - Shift Engineer - 12/04/2004 04:45:03

#3 boiler vented

#3 boiler - in service
 #4 boiler - in service for steam line
 #5 unit - on line & available for full load/AGC
 #6 unit - on line & available for full load w/gas topping
 #61 pulv. out (PA fan high vibration)
 system condition - green

12/4/2004 4:46:41AM KPPR04

Operations - Turbine Operator - 12/04/2004 04:46:41
 checked station, screen house and sub yard.
 released on fire system for C belt, cleared all alarms.

12/4/2004 4:59:29AM BCKV01

Operations - Lead Operator 850 - 12/04/2004 04:59:29
 CHECKED STATION AND RO.
 SET UP FOR BIOCID
 SAFETY MEETING
 WO# IN ON 850 ELEVATOR
 AMINE PUMP IN MANUAL
 BLEW TUBES

12/4/2004 5:01:34AM JCKM01

Operations - Lead Operator 1800 - 12/04/2004 05:01:34
 Checked station/demin-demin back on line. 3 mills on 5 and 6
 pulled ash 4,5 and 6

12/4/2004 6:20:39AM RSKD01

Operations - Lead Operator 1800 - 12/04/2004 06:20:39
 Units 5 and 6 on line and available for full load and AGC load control. PA fan 61 out for maintenance.
 Natural gas available at dispatcher's request. System condition GREEN normal. Will pull flyash on 4,5
 and 6 boilers.

12/4/2004 1:23:48PM PLND01

Operations - Lead Operator 850 - 12/04/2004 13:23:48
 --CHECKED STATION AND R/O.
 --PERFORMED A BIOCID ON THE R/O SYSTEM.
 --CURRENTLY DRAINING HYDRONEUMATIC TANK.
 --ELEVATOR WORKS PERIODICALLY.

12/4/2004 1:48:44PM CRRG02

Operations - Turbine Operator - 12/04/2004 13:48:44
 Checked station, screen house and yard.

12/4/2004 6:48:37PM BHMB02

Operations - Turbine Operator - 12/04/2004 18:48:37
 1. #1 fan on west bank of 5 trx not running wow.
 2. Checked station and screen house.

12/4/2004 8:08:21PM SWNG08

Operations - Lead Operator 1800 - 12/04/2004 20:08:21
 checked boiler room/demin
 monitoring noise levels in plant for test everything has been ok no sot blower relief lifting
 gas topping on 6 @ 1630
 pulled ash 4,6,5 blrs
 5&6 in local available for full load and agc

12/4/2004 9:04:15PM FNTM01

Operations - Shift Engineer - 12/04/2004 21:04:15
 #3 boiler - vented
 #4 boiler - in service for steam line

Appendix A
Noise Monitoring

Section 5: Weather Conditions

Past Weather for Saint Paul, MN (55102)

Yesterday Current Weekend 10-Day Month

Yesterday's Hourly Conditions as reported at St. Paul, MN

Yesterday ▼ [Back to previous page](#)

Time	Condition	Felt like	Dew Point	Humid.	Visib.	Press.	Wind
Sunrise at 7:32 AM							
Sunset at 4:32 PM							
12:53 AM	 Cloudy 21°F	11°F	15°F	73%	10.0 miles	30.00 ↓	From SE 8mph
1:53 AM	 Cloudy 21°F	12°F	15°F	73%	10.0 miles	29.99 ↓	From S 7mph
2:53 AM	 Cloudy 21°F	10°F	15°F	73%	10.0 miles	29.99 →	From S 10mph
3:53 AM	 Partly Cloudy 21°F	9°F	15°F	73%	10.0 miles	29.95 ↓	From SSE 13mph
4:53 AM	 Partly Cloudy 21°F	11°F	15°F	73%	10.0 miles	29.94 ↓	From SSE 9mph
5:53 AM	 Partly Cloudy 20°F	9°F	15°F	77%	10.0 miles	29.92 ↓	From SSE 10mph
6:53 AM	 Fair 20°F	9°F	15°F	77%	10.0 miles	29.90 ↓	From SSE 9mph
7:53 AM	 Mostly Cloudy 21°F	11°F	15°F	73%	10.0 miles	29.88 ↓	From SSE 8mph
8:53 AM	 Partly Cloudy 23°F	12°F	17°F	73%	10.0 miles	29.86 ↓	From SSE 12mph
9:53 AM	 Fair 26°F	16°F	19°F	70%	9.0 miles	29.85 ↓	From SSE 12mph
10:53 AM	 Fair 31°F	23°F	23°F	67%	10.0 miles	29.85 →	From S 9mph
11:53 AM	 Partly Cloudy 33°F	25°F	25°F	72%	10.0 miles	29.80 ↓	From S 10mph
12:53 PM	 Partly Cloudy 36°F	28°F	26°F	67%	10.0 miles	29.75 ↓	From S 12mph
1:53 PM	 Partly Cloudy 38°F	31°F	26°F	62%	10.0 miles	29.73 ↓	From S 9mph
2:53	Mostly						From SW

PM	 Cloudy 38°F	30°F	26°F	62%	10.0 miles	29.75 ↑	12mph
3:15 PM	 Cloudy 37°F	31°F	27°F	65%	10.0 miles	29.75 →	From SW 9mph
3:53 PM	 Cloudy 37°F	32°F	27°F	67%	10.0 miles	29.73 ↓	From S 6mph
4:14 PM	 Cloudy 37°F	31°F	27°F	65%	10.0 miles	29.72 ↓	From SSW 8mph
4:41 PM	 Cloudy 37°F	31°F	28°F	70%	10.0 miles	29.73 ↑	From S 8mph
4:53 PM	 Cloudy 37°F	31°F	28°F	70%	10.0 miles	29.73 →	From S 8mph
5:53 PM	 Cloudy 35°F	28°F	29°F	78%	10.0 miles	29.70 ↓	From S 9mph
6:35 PM	 Cloudy 36°F	29°F	28°F	75%	10.0 miles	29.70 →	From S 8mph
6:53 PM	 Cloudy 36°F	30°F	30°F	79%	10.0 miles	29.69 ↓	From S 7mph
7:53 PM	 Cloudy 35°F	29°F	30°F	82%	10.0 miles	29.65 ↓	From S 8mph
8:53 PM	 Mostly Cloudy 36°F	31°F	31°F	82%	10.0 miles	29.64 ↓	From S 6mph
9:53 PM	 Partly Cloudy 39°F	33°F	31°F	73%	10.0 miles	29.61 ↓	From SSW 8mph
10:53 PM	 Mostly Cloudy 40°F	33°F	30°F	68%	10.0 miles	29.58 ↓	From SW 10mph
11:53 PM	 Partly Cloudy 39°F	33°F	31°F	73%	10.0 miles	29.55 ↓	From SW 9mph

Past Weather for Saint Paul, MN (55102)

Yesterday Current Weekend 10-Day Month

Yesterday's Hourly Conditions as reported at St Paul, MN

Yesterday [Back to previous page](#)

Time	Condition	Felt like	Dew Point	Humid	Visib.	Press.	Wind
Sunrise at 7:33 AM							
Sunset at 4:31 PM							
12:53 AM	Partly Cloudy 42°F	35°F	31°F	65%	10.0 miles	29.50 ↓	From WSW 15mph
1:53 AM	Cloudy 42°F	34°F	30°F	62%	10.0 miles	29.52 ↑	From WSW 16mph
2:53 AM	Cloudy 42°F	36°F	30°F	62%	10.0 miles	29.52 →	From WSW 12mph
3:53 AM	Cloudy 41°F	36°F	30°F	65%	10.0 miles	29.51 ↓	From W 8mph
4:53 AM	Cloudy 41°F	35°F	29°F	62%	10.0 miles	29.51 →	From WSW 10mph
5:53 AM	Fair 40°F	34°F	29°F	65%	10.0 miles	29.54 ↑	From WNW 8mph
6:53 AM	Cloudy 41°F	36°F	29°F	62%	10.0 miles	29.56 ↑	From W 8mph
7:53 AM	Mostly Cloudy 40°F	36°F	29°F	65%	10.0 miles	29.59 ↑	From W 6mph
8:53 AM	Mostly Cloudy 41°F	35°F	30°F	65%	10.0 miles	29.62 ↑	From W 10mph
9:53 AM	Mostly Cloudy 43°F	36°F	31°F	62%	10.0 miles	29.66 ↑	From W 13mph
10:53 AM	Mostly Cloudy 44°F	38°F	32°F	63%	10.0 miles	29.69 ↑	From WNW 12mph
11:53 AM	Mostly Cloudy 45°F	37°F	31°F	58%	10.0 miles	29.72 ↑	From WNW 18mph
12:53 PM	Mostly Cloudy 46°F	40°F	29°F	51%	10.0 miles	29.73 ↑	From WNW 15mph
1:53 PM	Partly Cloudy 46°F	39°F	30°F	54%	10.0 miles	29.75 ↑	From NW 17mph
2:53	Partly						From NW

PM	 Cloudy 43°F	35°F	26°F	51%	10.0 miles	29.80 ↑	17mph
3:53 PM	 Mostly Cloudy 40°F	33°F	26°F	58%	10.0 miles	29.85 ↑	From NW 13mph
4:53 PM	 Mostly Cloudy 36°F	28°F	25°F	64%	10.0 miles	29.88 ↑	From NW 10mph
5:53 PM	 Partly Cloudy 34°F	26°F	24°F	67%	10.0 miles	29.92 ↑	From NW 10mph
6:53 PM	 Partly Cloudy 31°F	23°F	24°F	71%	10.0 miles	29.95 ↑	From NNW 9mph
7:53 PM	 Partly Cloudy 28°F	20°F	23°F	77%	10.0 miles	29.97 ↑	From NNW 8mph
8:53 PM	 Fair 30°F	24°F	23°F	70%	10.0 miles	30.01 ↑	From NW 6mph
9:53 PM	 Partly Cloudy 29°F	20°F	22°F	70%	10.0 miles	30.04 ↑	From NNW 9mph
10:53 PM	 Partly Cloudy 29°F	22°F	20°F	63%	10.0 miles	30.07 ↑	From N 7mph
11:53 PM	 Mostly Cloudy 28°F	21°F	19°F	63%	10.0 miles	30.10 ↑	From N 7mph

Past Weather for Saint Paul, MN (55102)

Yesterday Current Weekend 10-Day Month

Yesterday's Hourly Conditions as reported at St. Paul, MN

Yesterday [Back to previous page](#)

Time	Condition	Felt like	Dew Point	Humid.	Visib.	Press.	Wind
Sunrise at 7:37 AM							
Sunset at 4:31 PM							
12:53 AM	 Cloudy 34°F	34°F	28°F	79%	10.0 miles	29.94 →	From SSW 3mph
1:53 AM	 Cloudy 33°F	27°F	28°F	82%	9.0 miles	29.95 ↑	From SSW 7mph
2:53 AM	 Cloudy 33°F	27°F	28°F	82%	9.0 miles	29.96 ↑	From SSW 7mph
3:22 AM	 Cloudy 34°F	25°F	28°F	81%	9.0 miles	29.95 ↓	From S 12mph
3:53 AM	 Cloudy 32°F	24°F	28°F	85%	8.0 miles	29.94 ↓	From S 9mph
4:53 AM	 Cloudy 33°F	26°F	29°F	85%	8.0 miles	29.94 →	From SSE 8mph
5:53 AM	 Cloudy 33°F	24°F	29°F	85%	9.0 miles	29.92 ↓	From SSE 13mph
6:53 AM	 Mostly Cloudy 33°F	24°F	29°F	85%	9.0 miles	29.92 →	From SSE 13mph
7:53 AM	 Mostly Cloudy 33°F	24°F	29°F	85%	6.0 miles	29.91 ↓	From SSE 12mph
8:53 AM	 Cloudy 33°F	25°F	30°F	89%	6.0 miles	29.91 →	From SSE 9mph
9:53 AM	 Cloudy 35°F	28°F	31°F	85%	6.0 miles	29.91 →	From SSE 9mph
10:53 AM	 Cloudy 37°F	29°F	31°F	79%	7.0 miles	29.90 ↓	From S 12mph
11:53 AM	 Cloudy 38°F	32°F	32°F	79%	8.0 miles	29.87 ↓	From S 8mph
12:53 PM	 Cloudy 39°F	32°F	32°F	76%	8.0 miles	29.84 ↓	From S 12mph
1:53 PM	 Cloudy 40°F	34°F	32°F	73%	8.0 miles	29.82 ↓	From S 8mph

2:53 PM	 Cloudy 40°F	34°F	32°F	73%	8.0 miles	29.83 ↑	From S 8mph
3:53 PM	 Cloudy 40°F	33°F	33°F	77%	6.0 miles	29.82 ↓	From SSE 12mph
4:53 PM	 Cloudy 39°F	35°F	33°F	79%	6.0 miles	29.82 →	From SSE 6mph
5:53 PM	 Cloudy 38°F	33°F	33°F	83%	8.0 miles	29.82 →	From SSE 7mph
6:53 PM	 Cloudy 36°F	31°F	33°F	89%	7.0 miles	29.81 ↓	From SSE 6mph
7:53 PM	 Mostly Cloudy 37°F	31°F	33°F	86%	7.0 miles	29.80 ↓	From SSE 8mph
8:53 PM	 Partly Cloudy 36°F	30°F	33°F	89%	6.0 miles	29.78 ↓	From SSE 7mph
9:53 PM	 Partly Cloudy 35°F	30°F	33°F	92%	6.0 miles	29.78 →	From SSE 6mph
10:53 PM	 Partly Cloudy 36°F	29°F	33°F	89%	6.0 miles	29.77 ↓	From SSE 9mph
11:53 PM	 Fair 35°F	28°F	33°F	92%	6.0 miles	29.75 ↓	From SSE 9mph

Appendix A Noise Monitoring

Section 6: MPCA Method Compliance

Noise monitoring conducted for the High Bridge Plant complied with the MN measurement methodology rules with sections of variation noted.

7030.0060 MEASUREMENT METHODOLOGY.

Subpart 1. Measurement location. Measurement of sound must be made at or within the applicable NAC at the point of human activity which is nearest to the noise source. All measurements shall be made outdoors.

Noise readings collected from the following measurement locations were compared to NAC 1 noise standards even though the measurement locations are not classified as NAC 1.

Site 3: Because permission was not granted for Xcel Energy to place a monitor on residential property on Cherokee Avenue, the monitor was located in NAC 2 (park area) across the street from residential homes.

Site 4: Monitor was located in NAC 4 (undeveloped and unused land area) due to the fact that the Island Station location is expected to become NAC 1 in the future.

*Subp. 4. **Measurement procedures.** The following procedures must be used to obtain representative sound level measurements:*

A. Measurements must be made at least three feet off the ground or surface and away from natural or artificial structures which would prevent an accurate measurement.

Measurements were made in some locations where structures may have affected measurement. These were as follows:

Site 2: Because the monitor had to be placed close to the residence's home on Cliff Street, sound reflecting off the residence's home may have prevented accurate measurements.

Site 3: Numerous trees located along Cherokee Avenue may have prevented accurate measurements.

Noise Monitoring Summary Sheet (As per Minn. Rule 7030.0060 Subp. 5)

- A. date; See Appendix A, Sec. 2 & 3
- B. time; See Appendix A, Sec. 2 & 3
- C. locations; As set forth in Noise Monitoring and Modeling Report
- D. noise source; Xcel Energy High Bridge Plant
- E. wind speed and direction; See Appendix A, Sec. 5
- F. temperature; See Appendix A, Sec. 5
- G. humidity; See Appendix A, Sec 5
- H. make, model, and serial number of measuring equipment;

Quest Technologies NoisePro DLX dosimeters (Serial #: NXD030008, NXD030013, NXD030014, NXD300015)

Larson Davis 2800 Sound Level Meter (Serial #0555)

- I. field calibration results;

See Appendix A, Sec. 2

- J. monitored levels; and

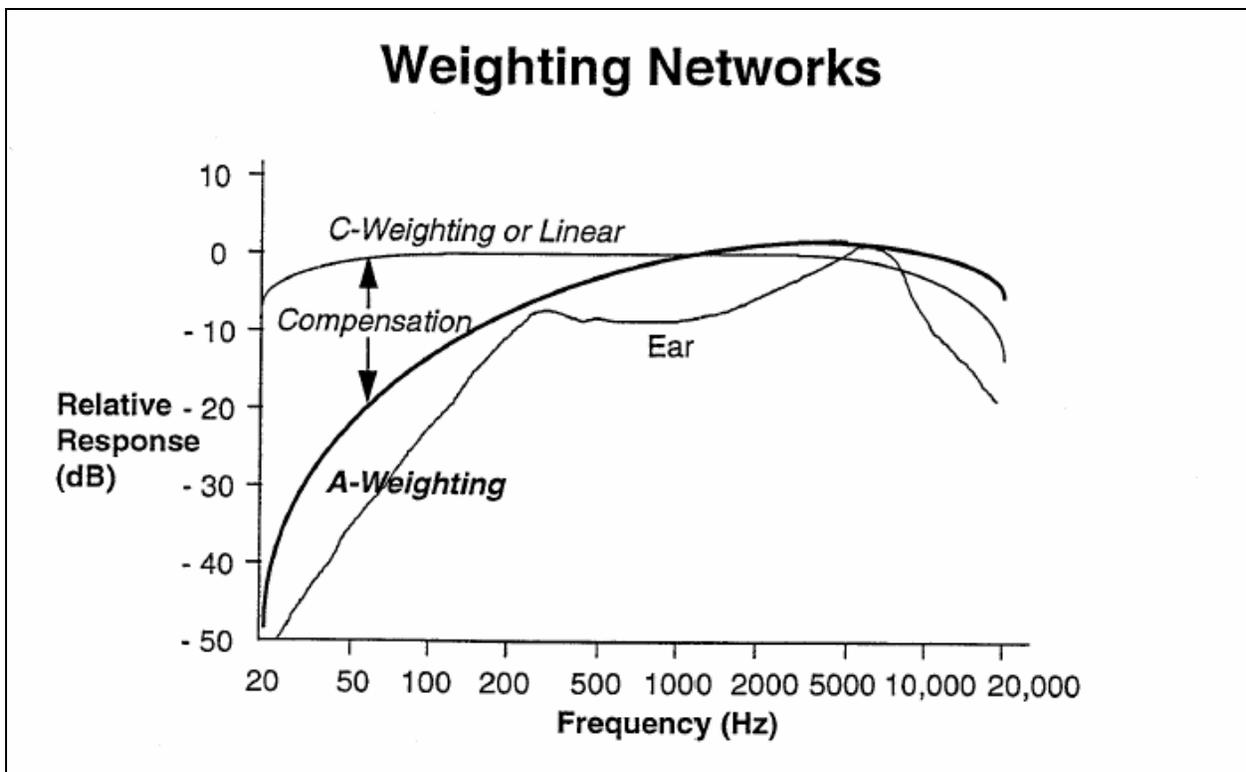
The Monitoring level ranges were set at 40-110 dB for the dosimeters and 20-140 dB for the noise level meter. See also Appendix A, Sec. 2

- K. site sketch indicating noise source, measurement location, directions, distances, and obstructions.

Figure 3-1 of the Noise Monitoring and Modeling Summary report gives an aerial view of the area. Photographs from the monitoring sites are found in Appendix A, Sec.1.

Appendix A Noise Monitoring

Section 7: Sound Weighting Curves



(A Guide to Noise Control in Minnesota: Acoustical Properties, Measurement, Analysis, Regulation: Minnesota Pollution Control Agency. March 1999)

Appendix B

Noise Modeling

Section 1: HBCC Modeling Assumptions and Simplifications

1. SPM 9613 Software Model cannot model sources within the turbine hall and calculate the transmission loss of the hall.
 - a. The hall will be modeled as a three-dimensional source with points on each surface (except the bottom)
 - b. ATCO's Transmission Loss Table (Table 4.2 of the ATCO report) was applied to the sound level inside the building and the resulting values used as the values for the walls and roof of the building.
 - c. To model the Turbine Hall, it was broken down into sections to be modeled.
 - i. Each wall was modeled separately
 - ii. The two roof sections were modeled separately.
 - iii. To determine the Power Level at each building face, methods specified in the SPM9613 Users Manual were used.
 1. The surface area (SA) of each face was calculated.
 2. The sound power level (L_w , in dB) for each face was found using the equation:

$$L_{w(N)} = L_{w(TOTAL)} + 10 * \log_{10} (SA_{(N)} / SA_{(TOTAL)})$$

2. The modeling of "Ventilation Exhaust" sources used the data from Table 1 (Provided by ATCO) for "2 Exhaust Compartment Vent Fans".
 - a. The values were reduced by 3 dB to reflect the levels of a single fan.
 - b. These exhausts are assumed to be to the outside of the building, as ATCO lists them as a source in their Major Noise Contributor Listing (Table 5.3, ATCO report).
3. Fans Labeled as "CT 1 [or 2] Vent Fans" are modeled as "Turbine Compartment Vent Fan each (total 8 fans ducted outside)" from Table 2 provided by ATCO.
4. No cooling towers are shown on the current plan, and are left out of the model.
5. The "Water Treatment Building," mentioned by ATCO in Table 2 – UE Sources Outside Turbine Hall, is not present or is unmarked in the current plans. It was not included in the model.
6. The "...HVAC opening[s] of Turbine Hall" have only an overall dB(A) value and cannot be entered into the model. These possible sources are left out of the model.
7. The HRSG stacks are modeled as point sources at the elevation of the top of the stack.
 - a. The ATCO report lists these as 90 degree directional sources.

- i. Without a complete table of directionality data, SPM9613 cannot adequately model a directional source.
 - ii. ATCO provided some directionality information but it was not compatible with the SPM9613 directionality inputs
 8. Attenuation effects of the stack upon the noise level were initially assumed to have been incorporated into ATCO's stack output data.
 - a. Conversations with Tony Witkowski, Utility Engineering, questioned whether this data did account for attenuation by the stack and its linings.
 - i. The dB(A) level for HRSG body exit and for stack exit are the same (110 dB(A)).
 - ii. The octave band levels however, are different.
 - iii. Assuming the stack data is correct from ATCO is likely conservative but is the only useful data on the stack output.
 - b. Contacted ATCO regarding this
 - i. First table received was without silencing data
 - ii. Silencer data was provided and used for modeling
 9. Environmental Conditions
 - a. Ambient temperature of 15 degrees C
 - b. Relative Humidity of 80%
 10. SPM9613 assumes favorable downwind sound transmission conditions

All dimensions used in the model are in meters. Locations of sources, observers, and other simulation elements were all given with (X,Y) coordinates in meters. The origin of the coordinate system used was arbitrarily set at the northwest corner of the plant's access road. A large printout of the plant site was prepared, with the plant drawing overlaid with elevation data. The noise source and observer locations were calculated with GIS, each point plotted on the site map. The mapping of these coordinates was originally in feet, converted to meters for use with the model.

Appendix B
Noise Modeling

Section 2: Source Modeling Details

APPENDIX B, Section 2: Source Modeling Details

	7 FA Inlet (w/standard 8 ft. silencing)	7 FA Inlet #2 (w/ std. 8 ft. silencing)	Auxiliary Transformer 1	Auxiliary Transformer 2	Vent Exhaust Fan 1
Octave Band Frequency	dB	dB	dB	dB	dB
16	0	0	0	0	0
31.5	102	102	94	94	100
63	106	106	94	94	101
125	99	99	96	96	108
250	94	94	89	89	99
500	86	86	87	87	97
1000	78	78	85	85	94
2000	74	74	81	81	89
4000	82	82	77	77	88
8000	77	77	71	71	85
Source coordinates	meters	meters	meters	meters	meters
X1	85.5	85.5	103.9	103.9	78
Y1	-49	-90	-27.4	-99.36	-49
X2	85.5	85.5	103.9	103.9	78
Y2	-49	-90	-27.4	-99.36	-49
X3	85.5	85.5	103.9	103.9	78
Y3	-49	-90	-27.4	-99.36	-49
X4	85.5	85.5	103.9	103.9	78
Y4	-49	-90	-27.4	-99.36	-49
Z lower	0.762	0.762	0	0	0
Z upper	12.192	12.192	0	0	0
Ground Data					
Ground Elevation	226.77	226.77	216	216	250.23
Ground Hardness	0	0	0.2	0.2	0
Active Sides (0=active, 1=inactive)					
Top	0	0	0	0	0
Bottom	0	0	0	0	0
x1y1-->x2y2	0	0	0	0	0
x2y2-->x3y3	0	0	0	0	0
x3y3-->x4y4	0	0	0	0	0
x4y4-->x1y1	0	0	0	0	0

	Vent Exhaust Fan 2	Vent Exhaust Fan 3	Vent Exhaust Fan 4	Vent Exhaust Fan 5	Vent Exhaust Fan 6	Vent Exhaust Fan 7	Vent Exhaust Fan 8
Octave Band Frequency	dB						
16	0	0	0	0	0	0	0
31.5	100	100	100	100	100	100	100
63	101	101	101	101	101	101	101
125	108	108	108	108	108	108	108
250	99	99	99	99	99	99	99
500	97	97	97	97	97	97	97
1000	94	94	94	94	94	94	94
2000	89	89	89	89	89	89	89
4000	88	88	88	88	88	88	88
8000	85	85	85	85	85	85	85
Source coordinates	meters						
X1	74	64.9	29.87	45.1	31.1	50	15.85
Y1	-92	-128.9	-46	-46.9	-95.1	-95.1	-132.9
X2	74	64.9	29.87	45.1	31.1	50	15.85
Y2	-92	-128.9	-46	-46.9	-95.1	-95.1	-132.9
X3	74	64.9	29.87	45.1	31.1	50	15.85
Y3	-92	-128.9	-46	-46.9	-95.1	-95.1	-132.9
X4	74	64.9	29.87	45.1	31.1	50	15.85
Y4	-92	-128.9	-46	-46.9	-95.1	-95.1	-132.9
Z lower	0	0	0	0	0	0	0
Z upper	0	0	0	0	0	0	0
Ground Data							
Ground Elevation	250.23	250.23	250.23	250.23	250.23	250.23	250.23
Ground Hardness	0	0	0	0	0	0	0
Active Sides							
Top	0	0	0	0	0	0	0
Bottom	0	0	0	0	0	0	0
x1y1-->x2y2	0	0	0	0	0	0	0
x2y2-->x3y3	0	0	0	0	0	0	0
x3y3-->x4y4	0	0	0	0	0	0	0
x4y4-->x1y1	0	0	0	0	0	0	0

	Turbine Compartment 2 Vent Fan 1	Turbine Compartment 2 Vent Fan 2	Turbine Compartment 2 Vent Fan 3	Turbine Compartment 2 Vent Fan 4
Octave Band Frequency	dB	dB	dB	dB
16	0	0	0	0
31.5	99	99	99	99
63	99	99	99	99
125	107	107	107	107
250	98	98	98	98
500	95	95	95	95
1000	92	92	92	92
2000	91	91	91	91
4000	95	95	95	95
8000	92	92	92	92
Source coordinates	meters	meters	meters	meters
X1	92	92	92	92
Y1	-93.88	-93.88	-93.88	-93.88
X2	92	92	92	92
Y2	-93.88	-93.88	-93.88	-93.88
X3	92	92	92	92
Y3	-93.88	-93.88	-93.88	-93.88
X4	92	92	92	92
Y4	-93.88	-93.88	-93.88	-93.88
Z lower	0	0	0	0
Z upper	0	0	0	0
Ground Data				
Ground Elevation	216	216	216	216
Ground Hardness	0.2	0.2	0.2	0.2
Active Sides				
Top	0	0	0	0
Bottom	0	0	0	0
x1y1-->x2y2	0	0	0	0
x2y2-->x3y3	0	0	0	0
x3y3-->x4y4	0	0	0	0
x4y4-->x1y1	0	0	0	0

	Turbine Compartment 1 Vent Fan 1	Turbine Compartment 1 Vent Fan 2	Turbine Compartment 1 Vent Fan 3	Turbine Compartment 1 Vent Fan 4	Main Step-up Transformer 1
Octave Band Frequency	dB	dB	dB	dB	dB
16	0	0	0	0	0
31.5	99	99	99	99	94
63	99	99	99	99	98
125	107	107	107	107	100
250	98	98	98	98	95
500	95	95	95	95	95
1000	92	92	92	92	89
2000	91	91	91	91	84
4000	95	95	95	95	79
8000	92	92	92	92	71
Source coordinates	meters	meters	meters	meters	meters
X1	92	92	92	92	107
Y1	-52.1	-52.1	-52.1	-52.1	-38
X2	92	92	92	92	107
Y2	-52.1	-52.1	-52.1	-52.1	-38
X3	92	92	92	92	107
Y3	-52.1	-52.1	-52.1	-52.1	-38
X4	92	92	92	92	107
Y4	-52.1	-52.1	-52.1	-52.1	-38
Z lower	0	0	0	0	0
Z upper	0	0	0	0	0
Ground Data					
Ground Elevation	216	216	216	216	216
Ground Hardness	0.2	0.2	0.2	0.2	0.2
Active Sides					
Top	0	0	0	0	0
Bottom	0	0	0	0	0
x1y1-->x2y2	0	0	0	0	0
x2y2-->x3y3	0	0	0	0	0
x3y3-->x4y4	0	0	0	0	0
x4y4-->x1y1	0	0	0	0	0

	Main Step-up Transformer 2	Main Step-up Transformer 3	HRSG stack outlet unsilenced	HRSG stack outlet unsilenced #2	HRSG stack 15dB silencer #1	HRSG stack 15dB silencer #2
Octave Band Frequency	dB	dB	dB	dB	dB	dB
16	0	0	0	0	0	0
31.5	94	94	115	115	115	115
63	98	98	113	113	113	113
125	100	100	113	113	105.5	105.5
250	95	95	112	112	97	97
500	95	95	110	110	87.5	87.5
1000	89	89	103	103	80.5	80.5
2000	84	84	88	88	76	76
4000	79	79	84	84	79.5	79.5
8000	71	71	80	80	80	80
Source coordinates	meters	meters	meters	meters	meters	meters
X1	106	106	11.88	11.88	11.88	11.88
Y1	-79	-128	-50.9	-92	-50.9	-92
X2	106	106	11.88	11.88	11.88	11.88
Y2	-79	-128	-50.9	-92	-50.9	-92
X3	106	106	11.88	11.88	11.88	11.88
Y3	-79	-128	-50.9	-92	-50.9	-92
X4	106	106	11.88	11.88	11.88	11.88
Y4	-79	-128	-50.9	-92	-50.9	-92
Z lower	0	0	60.96	60.96	60.96	60.96
Z upper	0	0	60.96	60.96	60.96	60.96
Ground Data						
Ground Elevation	216	216	216.4	216.4	216.4	216.4
Ground Hardness	0.2	0.2	0.2	0.2	0.2	0.2
Active Sides						
Top	0	0	0	0	0	0
Bottom	0	0	1	1	1	1
x1y1-->x2y2	0	0	1	1	1	1
x2y2-->x3y3	0	0	1	1	1	1
x3y3-->x4y4	0	0	1	1	1	1
x4y4-->x1y1	0	0	1	1	1	1

Appendix B
Noise Modeling

Section 3: Turbine Hall Wall Output Calculations

APPENDIX B, Section 3: Turbine Hall Wall Output Calculations

$$Lw(N) = Lw(TOTAL) + 10 * \log_{10} (SA(n) / SA(total))$$

10 * log₁₀(SA(n)/SA(total)) is solved for as the correction factor, and then applied to the Turbine Hall output data.

Building Dimensions (ft.)	
Tall width	183
Tall height	111
Short width	62.3333
Short height	34
Length	390

Walls	Surface Area	L(w) correction factor	Wall Name
Wall 1	20313	-10.485	South High Wall
Wall 2	13260	-12.337	East Lower Wall
Wall 3	30030	-8.7871	East Upper Wall
Wall 4	20313	-10.485	North High Wall
Wall 5	43290	-7.1988	West Wall
Wall 6	71370	-5.0275	Upper Roof
Wall 7	24310	-9.7048	Lower Roof
Wall 8	2119.33	-20.301	South Low Wall
Wall 9	2119.33	-20.301	North Low Wall
Total	227125		

	Octave Band Frequency (Hz) / Sound Power Level(dB)								
	31.5	63	125	250	500	1000	2000	4000	8000
Total PWL inside hall	125	124	122	118	118	119	119	117	112
ATCO's Wall/Roof TL	5	9	14	19	29	38	46	52	58
Turbine Hall output	120	115	108	99	89	81	73	65	54

Turbine Hall Modeling - Excel Energy High Bridge Plant

	Corrected Octave Band Output (dB)								
	31.5	63	125	250	500	1000	2000	4000	8000
Wall 1	109.5	104.5	97.5	88.5	78.5	70.5	62.5	54.5	43.5
Wall 2	107.7	102.7	95.7	86.7	76.7	68.7	60.7	52.7	41.7
Wall 3	111.2	106.2	99.2	90.2	80.2	72.2	64.2	56.2	45.2
Wall 4	109.5	104.5	97.5	88.5	78.5	70.5	62.5	54.5	43.5
Wall 5	112.8	107.8	100.8	91.8	81.8	73.8	65.8	57.8	46.8
Wall 6	115.0	110.0	103.0	94.0	84.0	76.0	68.0	60.0	49.0
Wall 7	110.3	105.3	98.3	89.3	79.3	71.3	63.3	55.3	44.3
Wall 8	99.7	94.7	87.7	78.7	68.7	60.7	52.7	44.7	33.7
Wall 9	99.7	94.7	87.7	78.7	68.7	60.7	52.7	44.7	33.7

Wall Coordinates	X1(m)	Y1(m)	X2(m)	Y2(m)	X3(m)	Y3(m)	X4(m)	Y4(m)
Wall 1	18.288	-149.96	74.0664	-149.96				
Wall 2	92.049	-30.128	92.049	-149.96				
Wall 3	74.0664	-30.128	74.0664	-149.96				
Wall 4	18.288	-30.128	74.0664	-30.128				
Wall 5	18.288	-30.128	18.288	-149.96				
Wall 6	18.288	-30.128	18.288	-149.96	74.0664	-30.128	74.0664	-149.96
Wall 7	74.0664	-30.128	74.0664	-149.96	92.049	-30.128	92.049	-149.96
Wall 8	74.0664	-149.96	92.049	-149.96				
Wall 9	74.0664	-30.128	92.049	-30.128				

Wall barrier coordinates with corresponding source wall coordinates

Source X	Barrier X	Source Y	Barrier Y
18.288	18.3	-30.128	-30.15
74.0664	74	-149.9616	-149.9
92.049	92		

Wall Heights	(m)
Low walls	10.3632
High walls	33.83

Appendix B
Noise Modeling

Section 4: Sound Source Data Provided by ATCO

APPENDIX B, Section 4: Sound Source Data Provided by ATCO

High Bridge Generation Plant, Utility Engineering

Table 1 - UE Noise Sources Inside Turbine Hall

Item#	Ref#	Items	OCTAVE BAND CENTER FREQUENCY (Hz)/PWL (dB)								dBA	
			31.5	63	125	250	500	1000	2000	4000		8000
1	1	Combustion Turbine Generator (CTG) - 7FA (90 dBA package)										
2	1	Inlet Plenum	86	89	86	88	87	88	97	87	76	99
3	1	Turbine Compartment	108	110	104	103	100	98	103	99	94	107
4	1	Exhaust Diffuser	115	115	111	107	104	100	101	100	97	108
5	1	Load Compartment	103	105	105	100	95	93	96	93	86	101
6	1	Generator Compartment	107	114	112	107	104	105	104	100	97	110
7	1	Combustion Turbine Accessory Module	101	104	98	95	94	94	96	90	84	100
8	1	2 Exhaust Compartment Vent Fans	103	104	111	102	100	97	92	91	88	103
9	1	accessory compartment vent fan	97	94	90	84	84	86	93	94	88	98
10	1	load Compartment discharge	89	101	93	96	95	100	101	105	98	109
		Total PWL of one 7FA package	117	119	117	112	109	108	109	108	103	116
		Total PWL of 2 7FA packages	120	122	120	115	112	111	112	111	106	119
11	2	Steam Turbine Generator Summary	107	107	106	104	113	116	117	115	110	122
12	2	HRSG transition duct	119	115	111	107	104	101	99	95	89	107
13	2	HRSG body	112	113	111	109	105	103	103	103	97	110
		2 HRSG units	123	120	117	114	111	108	107	107	101	115
14	2	boiler water feed pump	95	98	96	100	106	106	104	92	88	110
		4 boiler water feed pumps	101	104	102	106	112	112	110	98	94	116
15	2	Air compressor	104	100	100	95	93	92	95	93	90	100
		Total PWL inside Turbine Hall (total)	125	124	122	118	118	119	119	117	112	125

- 1 GE Power Generation 7FA Sound Power Levels
2 ATCO database

Table 2 - UE Noise Sources Outside Turbine Hall

Item#	Ref#	Item	OCTAVE BAND CENTER FREQUENCY (Hz)/PWL (dB)								dBA	
			31.5	63	125	250	500	1000	2000	4000		8000
1	2	Main Step-up Transformer	94	98	100	95	95	89	84	79	71	95
2	2	Auxiliary Transformer	94	94	96	89	87	85	81	77	71	90
3	1	7 FA inlet (with 8' standard silencing)	102	106	99	94	86	78	74	82	77	91
4	1	HRSG exhaust stack outlet (w/ 90 degree directivity)	115	113	113	112	110	103	88	84	80	110
5	2	cooler fan (per cell)	107	108	110	104	100	95	89	82	74	102
6	2	cooling tower water fall (SPL at 3 ft)	61	66	63	64	67	70	74	78	80	83
7	2	PWL inside water treatment building	105	105	106	103	102	106	104	100	98	110
8	3	Each HVAC opening of turbine hall (total 14, no silencing)										98
	2	Cooling tower pump	87	86	92	91	90	90	86	78	76	94
9	1	Turbine Compartment Vent Fan each (total 8 fans ducted to outside)	99	99	107	98	95	92	91	95	92	101

- 1 GE Power Generation 7FA Sound Power Levels
2 ATCO database
3 Calculated based on UE information

Table 3 - Silencer Data

	OCTAVE BAND CENTER FREQUENCY (Hz)/DIL (dB)								
	31.5	63	125	250	500	1000	2000	4000	8000
<i>In the acoustic model, additional silencing DILs required to meet noise target:</i>									
Silencer DILs	0	0	5	10	15	15	8	3	0

Appendix B
Noise Modeling

Section 5: Contour Grid Details

APPENDIX B, Section 5: Contour Grid Details

		Contour Map Elevations (m)											
		Coordinates (m)											
		-250	-150	-50	50	150	250	350	450	550	650	750	
Coordinates (m)	400	240.792	234.696	234.696	234.696	234.696	213.36	213.36	213.36	213.36	213.36	210.312	
	300	234.696	237.744	237.744	228.6	213.36	213.36	213.36	213.36	213.36	210.312	210.312	
	200	237.744	237.744	216.408	213.36	213.36	213.36	213.36	213.36	213.36	210.312	210.312	
	100	237.744	216.408	213.36	213.36	213.36	213.36	213.36	213.36	210.312	210.312	210.312	
	0	216.408	213.36	213.36	213.36	213.36	213.36	213.36	210.312	210.312	210.312	213.36	
	-100	213.36	213.36	213.36	213.36	213.36	213.36	210.312	210.312	210.312	210.312	210.312	213.36
	-200	213.36	213.36	213.36	213.36	213.36	210.312	210.312	210.312	210.312	216.408	265.176	
	-300	213.36	213.36	213.36	213.36	210.312	210.312	210.312	210.312	228.6	268.224	274.32	
	-400	213.36	213.36	210.312	210.312	213.36	210.312	210.312	234.696	274.32	280.416	280.416	
	-500	213.36	210.312	213.36	216.408	210.312	210.312	222.504	265.176	283.464	283.464	283.464	
-600	213.36	213.36	213.36	210.312	210.312	213.36	252.984	283.464	283.464	286.512	283.464		

		Ground Hardness Values										
		Coordinates (m)										
		-250	-150	-50	50	150	250	350	450	550	650	750
Coordinates (m)	400	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
	300	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0	0
	200	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0	0
	100	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0	0	0
	0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0	0	0	0.2
	-100	0.2	0.2	0.2	0.2	0.2	0.2	0	0	0	0	0.2
	-200	0.2	0.2	0.2	0.2	0.2	0	0	0	0	0.2	0.2
	-300	0.2	0.2	0.2	0.2	0	0	0	0	0.2	0.2	0.2
	-400	0.2	0.2	0	0	0.2	0	0	0.2	0.2	0.2	0.2
	-500	0.2	0	0.2	0.2	0	0	0.2	0.2	0.2	0.2	0.2
-600	0.2	0.2	0.2	0	0	0.2	0.2	0.2	0.2	0.2	0.2	

Appendix B
Noise Modeling

Section 6: Octave Band Outputs

Modeled Plant Noise Spectra

