

Appendix G

Noise Supporting Documentation

Appendix G.1 - Noise

County of San Bernardino Development Code Noise Section

COUNTY OF SAN BERNARDINO

2007 DEVELOPMENT CODE

Prepared for:

County of San Bernardino
Land Use Services Division
385 North Arrowhead Avenue, 1st Floor
San Bernardino, CA 92415-0182

Adopted March 13, 2007
Effective April 12, 2007
Amended January 15, 2009

83.01.080 Noise

This Section establishes standards concerning acceptable noise levels for both noise-sensitive land uses and for noise-generating land uses.

(a) Noise measurement. Noise shall be measured:

- (1) At the property line of the nearest site that is occupied by, and/or zoned or designated to allow the development of noise-sensitive land uses;
- (2) With a sound level meter that meets the standards of the American National Standards Institute (ANSI Section SI4 1979, Type 1 or Type 2);
- (³) Using the "A" weighted sound pressure level scale in decibels (ref. pressure = 20 micronewtons per meter squared). The unit of measure shall be designated as dB(A).

(b) Noise impacted areas. Areas within the County shall be designated as "noise-impacted" if exposed to existing or projected future exterior noise levels from mobile or stationary sources exceeding the standards listed in Subsection (d) (Noise standards for stationary noise sources) and Subsection (e) (Noise standards for adjacent mobile noise sources), below. New development of residential or other noise-sensitive land uses shall not be allowed in noise-impacted areas unless effective mitigation measures are incorporated into the project design to reduce noise levels to these standards. Noise-sensitive land uses shall include residential uses, schools, hospitals, nursing homes, religious institutions, libraries, and similar uses.

(c) Noise standards for stationary noise sources.

- (1) Noise standards.** Table 83-2 (Noise Standards for Stationary Noise Sources) describes the noise standard for emanations from a stationary noise source, as it affects adjacent properties:

<p align="center">Table 83-2 Noise Standards for Stationary Noise Sources</p>		
Affected Land Uses (Receiving Noise)	7 am-10 pm Leq	10 pm-7 am Leq
Residential	55 dB(A)	45 dB(A)
Professional Services	55 dB(A)	55 dB(A)
Other Commercial	60 dB(A)	60 dB(A)
Industrial	70 dB(A)	70 dB(A)

Leq = (Equivalent Energy Level). The sound level corresponding to a steady-state sound level containing the same total energy as a *time-varying* signal over a given sample period, typically 1, 8 or 24 hours.

dB(A) = (A-weighted Sound Pressure Level). The sound pressure level, in decibels, as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound, placing greater emphasis on those frequencies within the sensitivity range of the human ear.

Ldn = (Day-Night Noise Level). The average equivalent A-weighted sound level during a 24-hour day obtained by adding 10 decibels to the hourly noise levels measured during the night (from 10 pm to 7 am). In this way Ldn takes into account the lower tolerance of people for noise during nighttime periods.

(2) **Noise limit categories.** No person shall operate or cause to be operated a source of sound at a location or allow the creation of noise on property owned, leased, occupied, or otherwise controlled by the person, which causes the noise level, when measured on another property, either incorporated or unincorporated, to exceed any one of the following:

- (A) The noise standard for the receiving land use as specified in Subsection B (Noise-impacted areas), above, for a cumulative period of more than 30 minutes in any hour.
- (B) The noise standard plus 5 dB(A) for a cumulative period of more than 15 minutes in any hour.
- (C) The noise standard plus 10 dB(A) for a cumulative period of more than five minutes in any hour.
- (D) The noise standard plus 15 dB(A) for a cumulative period of more than one minute in any hour.
- (E) The noise standard plus 20 dB(A) for any period of time.

(d) **Noise standards for adjacent mobile noise sources.** Noise from mobile sources may affect adjacent properties adversely. When it does, the noise shall be mitigated for any new development to a level that shall not exceed the standards described in the following Table 83-3 (Noise Standards for Adjacent Mobile Noise Sources).

Table 83-3 Noise Standards for Adjacent Mobile Noise Sources			
Land Use		Ldn (or CNEL)	dB(A) Exterior ⁽²⁾
Categories	Uses		
Residential	Single and multi-family, duplex, mobile homes	45	60 ⁽³⁾
Commercial	Hotel, motel, transient housing	45	60 ⁽³⁾
	Commercial retail, bank, restaurant	50	N/A
	Office building, research and development, professional offices	45	65
	Amphitheater, concert hall, auditorium, movie theater	45	N/A
Institutional/Public	Hospital, nursing home, school classroom, religious institution, library	45	65
Open Space	Park	N/A	65
<p>Notes:</p> <p>(1) The indoor environment shall exclude bathrooms, kitchens, toilets, closets and corridors.</p> <p>(2) The outdoor environment shall be limited to:</p> <ul style="list-style-type: none"> • Hospital/office building patios • Hotel and motel recreation areas • Mobile home parks • Multi-family private patios or balconies • Park picnic areas • Private yard of single-family dwellings • School playgrounds <p>(3) An exterior noise level of up to 65 dB(A) (or CNEL) shall be allowed provided exterior noise levels have been substantially through a reasonable application of the best available noise reduction technology, and interior noise exposure does not exceed 45 (or CNEL) with windows and doors closed. Requiring that windows and doors remain closed to achieve an acceptable interior noise shall necessitate the use of air conditioning or mechanical ventilation.</p> <p>CNEL = (Community Noise Equivalent Level). The average equivalent A-weighted sound level during a 24-hour day, obtained after approximately five decibels to sound levels in the evening from 7 p.m. to 10 a.m. and 10 decibels to sound levels in the night before 7 a.m. and 10 p.m.</p>			

(e) Increases in allowable noise levels. If the measured ambient level exceeds any of the first four noise limit categories in Subsection (d)(2), above, the allowable noise exposure standard shall be increased to reflect the ambient noise level. If the ambient noise level exceeds the fifth noise limit category in Subsection (d)(2), above, the maximum allowable noise level under this category shall be increased to reflect the maximum ambient noise level.

(f) Reductions in allowable noise levels. If the alleged offense consists entirely of impact noise or simple tone noise, each of the noise levels in Table 83-2 (Noise Standards for Stationary Noise Sources) shall be reduced by 5 dB(A).

(g) **Exempt noise.** The following sources of noise shall be exempt from the regulations of this Section:

- (1) Motor vehicles not under the control of the commercial or industrial use.
- (2) Emergency equipment, vehicles, and devices.
- (3) Temporary construction, maintenance, repair, or demolition activities between 7:00 a.m. and 7:00 p.m., except Sundays and Federal holidays.

(h) **Noise standards for other structures.** All other structures shall be sound attenuated against the combined input of all present and projected exterior noise to not exceed the criteria.

Typical Uses	12-Hour Equivalent Sound Level (Interior) in dBA Ldn
Educational, institutions, libraries, meeting facilities, etc.	45
General office, reception, etc.	50
Retail stores, restaurants, etc.	55
Other areas for manufacturing, assembly, testing, warehousing, etc.	65

In addition, the average of the maximum levels on the loudest of intrusive sounds occurring during a 24-hour period shall not exceed 65 dBA interior.

Adopted Ordinance 4011 (2007)

83.01.090 Vibration

- (a) **Vibration standard.** No ground vibration shall be allowed that can be felt without the aid of instruments at or beyond the lot line, nor shall any vibration be allowed which produces a particle velocity greater than or equal to two-tenths (0.2) inches per second measured at or beyond the lot line.
- (b) **Vibration measurement.** Vibration velocity shall be measured with a seismograph or other instrument capable of measuring and recording displacement and frequency, particle velocity, or acceleration. Readings shall be made at points of maximum vibration along any lot line next to a parcel within a residential, commercial and

industrial land use zoning district.

(c) **Exempt vibrations.** The following sources of vibration shall be exempt from the regulations of this Section.

- (1) Motor vehicles not under the control of the subject use.
- (2) Temporary construction, maintenance, repair, or demolition activities between 7:00 a.m. and 7:00 p.m., except Sundays and Federal holidays.

Adopted Ordinance 4011 (2007)

San Bernardino County Development Code

General Performance Standards

83.01

Source:

http://www.co.san-bernardino.ca.us/landuseservices/DevCode/2007_Development_Code_01-15-09.pdf

Appendix G.2 - Noise

Discussion of Harper Lake Wind Conditions

Introduction

Due to the preponderance of notable wind during the May 2009 ambient noise survey, additional research was conducted to better understand the seasonal history for wind velocities in the Harper Lake area.

Background

'Excess' wind – that is, wind velocities above industry standards for outdoor measurements¹ – can have a significant influence on surveyed ambient sound levels. These effects range from increased or decreased sound levels from distant noise sources due to refraction and diffraction (bending of sound); wind-induced noise (rustling of leaves in trees or wind through grasses or brush), or noise from wind interaction with structures (such as the transmission line towers or large buildings).

¹ For example, the American National Standards Institute (ANSI) sets a guideline for wind speeds conducive for making outdoor sound level measurements at ≤ 6 meters/ sec (or 13.4 miles/hour). This is found in ANSI S1.13. "Methods for the Measurement of Sound Pressure Levels", Section 3.4.2.4, Atmospheric Conditions.

For situations wherein blowing winds are typically present most or a majority of the time over a reasonably long timeframe, the aforementioned sound-related effects can be considered as being part of the natural environment. That is, consistent winds would generate wind noise that is part and parcel of the existing noise environment and is a viable noise source; just as would be a nearby busy roadway or an adjacent industrial facility.

However, noise caused by wind interactions with the microphone apparatus would be considered as a non-natural artifact of the measurement process. While some work is available in the literature for quantifying this measurement apparatus artifact, it would be exceedingly difficult, if not practically impossible to make accurate adjustments for measurement artifacts on a moment-by-moment or sample-by-sample basis, given the variability of wind speeds and interaction geometries. Thus, no attempt was made herein to estimate these potential adjustment factors.

Analysis

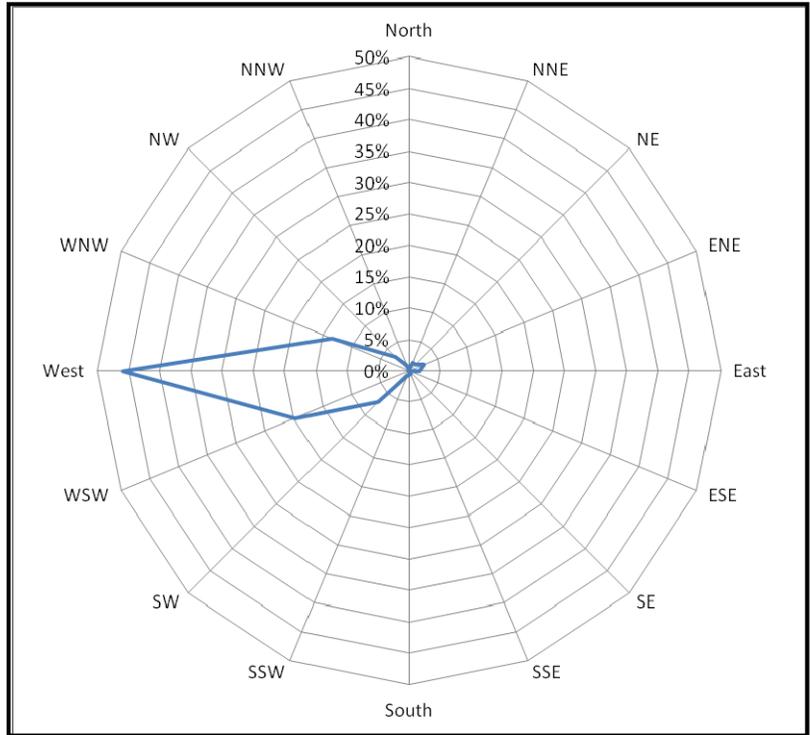
The internet weather website www.wunderground.com was reviewed for wind frequency, duration, magnitude, and direction for the month immediately preceding the noise survey. The closest permanent meteorological monitor station with long-term data was the station at the Barstow-Daggett Airport. While this location is approximately 32 miles from the ambient survey area near the Project Site, the generally flat topography of the overall Mojave area indicates that the wind conditions at the airport would be reasonably representative of the conditions around Harper Lake.

For the Harper Lake area, first-hand field observations (which were corroborated in discussions with local residents) found that it is very typical for the wind to pick up in the mid- to late-morning hours, increase in velocity during the daytime, continue through the evening hours, and then taper off in the early nighttime. There can be calm conditions overnight or there may also be residual breezes or light winds into the morning hours

when the diurnal pattern tends to repeat. The Barstow-Daggett Airport weather data repository showed that the meteorological conditions for the month preceding the ambient noise survey were consistent with these general trends.

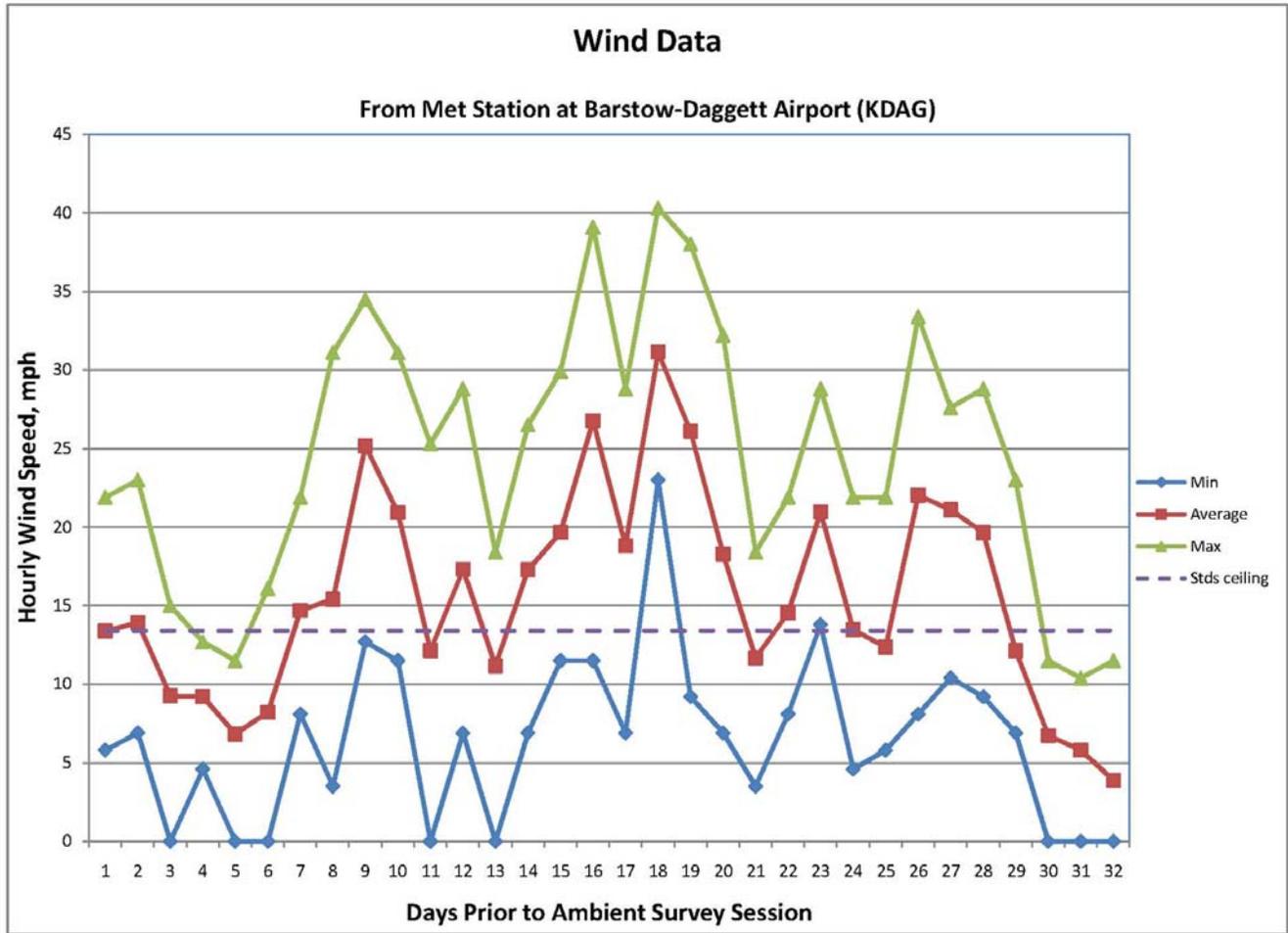
Specifically, the predominant wind direction is from the west in that 79% of the time, winds are from the WNW, due-West, or WSW, as shown in the chart to the right.

The wind speeds over the month before the ambient survey were also researched to ascertain patterns or trends. Hourly-average wind velocities were summarized by finding the minimum, maximum, and average (mean) for each day prior to the survey. These results are shown in the summary chart on the following page.



The chart shows the daily maxima are often in the 20 to 30 mph range, with hourly winds sometimes going as high as 40 mph. [Note: these speeds are sustained wind velocities, not gust speeds.]. On the other hand, daily minima at zero mph were only recorded on eight of the researched 32 days. The average of the hourly records, shown by the red line, is typically at or above the ANSI standard criterion of 13.4 mph. In short, the historical data show that this is a relatively windy area and that the winds are consistently noteworthy for the season studied.

Given this research, it is concluded that the observed windy conditions are part of the natural environment for the Project vicinity and that wind-related noise should be considered as part of the normal, ambient noise environment.



Appendix G.3 - Noise

Details on Ambient Survey Results

Selected Photo Records from Ambient Measurement Survey



View of Location **ST-1**, looking northward toward Proposed Alpha Power Block



Panoramic View of Location **ST-2**, looking northward toward Project Site
(Roy Road is to left; Lucy Residence is to right)



Panoramic View of Location **ST-3**, looking mostly northward toward Project Site
(Entrance to abandoned Boys' Oasis to far left; Harper Lake Road is to far right)



View of Two Houses near Location **LT-1**
(looking ESE)



Panoramic View of Location **LT-1**, looking mostly to NW toward Project Site
(Edie Road is to far left; houses are behind this viewpoint)



Panoramic View of Location **LT-2**, looking mostly to west toward residential property (Harper Lake Road is behind this viewpoint; Project Site to beyond view to the right)



Panoramic View of Location **LT-2**, looking mostly to north toward Project Site (residence is behind this viewpoint; Harper Lake Road to beyond view to the right)



View of Habitat Viewing Kiosk at **BLM-2** (looking NW)



View of Typical Abandoned Structures



View of Existing SEGS Facilities

Sound Level Meter Intervals

File Translated: G:\Projects\Abengoa\Harper Lake AFC\Data\Harper_LT-1.slmdl
 Model Number: 814
 Serial Number: A0153
 Firmware Rev: 1.026
 Software Version: 1.07
 Name: Alliance Acoustical Consulting
 Descr1: 216 Technology Dr., Suite G
 Descr2: Irvine, CA 92618-2416

Location: **Abengoa - Harper Lake**

Note 1: **LT-1**

Note 2: **Ramirez house at 15563 Edie Rd**

Rec #	Date	Time	Duration	Leq	SEL	Min	Max	Peak-1	Peak-2	L1.67	L8.33	L25	L50	L90	L99	Hrly Leq
1	19-May-09	13:23:13	0:06:46	55.2	81.3	42.4	68.0	106.6	100.2	65.0	59.2	54.2	51.4	45.7	44.0	
2	19-May-09	13:30:00	0:15:00	52.4	81.9	31.2	68.2	105.4	88.1	61.6	57.0	52.2	46.6	35.3	31.7	
3	19-May-09	13:45:00	0:15:00	49.5	79.1	31.1	64.3	103.4	83.0	59.6	53.5	48.0	43.9	34.3	31.6	
4	19-May-09	14:00:00	0:15:00	67.2	96.8	32.1	89.2	110.1	106.2	77.3	62.4	56.6	50.1	37.9	32.8	61.8
5	19-May-09	14:15:00	0:15:00	56.2	85.8	33.7	77.7	123.0	97.0	63.1	59.0	55.7	52.7	43.6	35.7	61.8
6	19-May-09	14:30:00	0:15:00	52.7	82.3	35.1	67.8	109.7	86.0	62.2	57.1	51.8	47.3	39.7	36.5	61.8
7	19-May-09	14:45:00	0:15:00	51.3	80.8	38.3	67.0	106.9	84.5	59.8	55.8	50.6	46.7	41.6	39.8	61.8
8	19-May-09	15:00:00	0:15:00	57.9	87.5	42.7	70.9	111.9	90.5	67.0	62.8	57.5	53.0	46.9	43.6	58.4
9	19-May-09	15:15:00	0:15:00	55.1	84.6	37.5	69.9	109.7	91.8	65.3	59.5	53.3	49.7	44.6	39.0	58.4
10	19-May-09	15:30:00	0:15:00	57.3	86.8	38.1	72.9	112.2	93.0	66.8	61.7	56.8	51.8	43.9	39.0	58.4
11	19-May-09	15:45:00	0:15:00	61.2	90.8	42.6	78.5	117.8	101.7	72.2	64.6	57.9	54.3	47.7	43.4	58.4
12	19-May-09	16:00:00	0:15:00	56.9	86.4	38.5	76.3	106.9	88.4	65.9	59.7	53.9	50.1	44.1	40.0	55.6
13	19-May-09	16:15:00	0:15:00	53.4	83.0	40.9	68.1	110.8	86.9	62.0	57.0	53.1	50.4	44.8	41.8	55.6
14	19-May-09	16:30:00	0:15:00	57.8	87.4	43.3	74.3	113.3	99.0	67.6	62.6	56.5	51.8	46.7	44.5	55.6
15	19-May-09	16:45:00	0:15:00	51.2	80.8	40.8	66.4	111.2	87.0	59.9	53.3	50.7	49.0	45.1	42.2	55.6
16	19-May-09	17:00:00	0:15:00	54.3	83.8	42.3	68.3	112.1	89.8	63.6	58.0	53.6	50.3	45.0	43.1	52.6
17	19-May-09	17:15:00	0:15:00	52.5	82.0	43.9	67.9	109.3	85.6	60.0	55.4	52.6	50.0	46.7	44.6	52.6
18	19-May-09	17:30:00	0:15:00	50.4	80.0	40.8	65.4	106.9	85.7	55.6	53.0	51.2	49.5	45.4	42.3	52.6
19	19-May-09	17:45:00	0:15:00	52.3	81.8	39.0	65.3	107.5	86.2	61.6	55.9	51.7	48.8	44.2	40.6	52.6
20	19-May-09	18:00:00	0:15:00	51.5	81.1	41.9	65.9	110.1	83.2	60.1	54.8	51.2	48.8	45.7	42.8	51.5
21	19-May-09	18:15:00	0:15:00	51.1	80.7	42.3	64.1	107.8	84.3	58.9	54.1	51.6	49.1	45.1	43.2	51.5
22	19-May-09	18:30:00	0:15:00	49.8	79.4	41.2	63.3	105.3	82.4	57.2	52.8	50.5	48.1	43.8	41.7	51.5
23	19-May-09	18:45:00	0:15:00	53.0	82.5	42.4	68.1	106.8	89.2	61.8	56.8	52.2	49.6	45.7	43.9	51.5
24	19-May-09	19:00:00	0:15:00	49.8	79.4	40.6	64.8	105.0	85.0	58.4	52.4	49.7	47.6	43.3	41.3	47.1
25	19-May-09	19:15:00	0:15:00	47.6	77.1	36.6	59.6	104.1	79.5	54.0	50.9	48.3	46.1	41.7	38.9	47.1
26	19-May-09	19:30:00	0:15:00	45.1	74.6	37.5	57.8	100.9	77.4	51.4	48.2	45.6	43.5	40.3	38.5	47.1
27	19-May-09	19:45:00	0:15:00	42.9	72.5	36.1	51.2	95.3	71.7	47.8	45.7	44.0	41.9	39.1	37.3	47.1
28	19-May-09	20:00:00	0:15:00	40.2	69.8	34.8	50.8	95.5	74.4	46.6	42.4	40.7	39.2	36.7	35.4	39.1

29	19-May-09	20:15:00	0:15:00	38.9	68.5	33.5	47.1	92.6	65.4	43.7	41.6	39.7	38.2	35.4	34.1			39.1	
30	19-May-09	20:30:00	0:15:00	38.7	68.2	33.5	45.2	89.5	74.4	43.0	41.3	39.7	37.9	35.4	34.1			39.1	
31	19-May-09	20:45:00	0:15:00	38.5	68.1	33.0	45.1	94.3	63.0	42.7	41.4	39.9	37.7	34.5	33.2			39.1	
32	19-May-09	21:00:00	0:15:00	44.1	73.7	33.2	67.2	100.5	102.4	52.0	43.9	39.6	37.6	35.3	33.9			41.4	
33	19-May-09	21:15:00	0:15:00	37.8	67.4	32.6	50.0	91.6	69.4	42.6	39.8	38.4	36.8	34.5	33.2			41.4	
34	19-May-09	21:30:00	0:15:00	40.0	69.6	35.1	50.1	94.8	70.1	44.6	42.3	40.7	39.3	37.4	36.0			41.4	
35	19-May-09	21:45:00	0:15:00	41.4	70.9	36.3	47.3	94.4	63.7	45.7	43.6	42.2	40.9	38.4	36.8			41.4	
36	19-May-09	22:00:00	0:15:00	39.5	69.0	34.1	51.0	95.1	70.0	43.8	41.9	40.0	38.5	36.3	35.1			39.4	
37	19-May-09	22:15:00	0:15:00	38.1	67.7	33.5	53.3	95.3	69.4	43.9	39.8	38.0	37.1	35.5	34.2			39.4	
38	19-May-09	22:30:00	0:15:00	38.6	68.2	33.7	53.6	99.8	72.8	46.0	40.8	38.5	37.0	35.0	34.1			39.4	
39	19-May-09	22:45:00	0:15:00	41.0	70.5	34.5	55.4	98.7	74.0	48.5	43.6	40.9	38.6	36.2	35.1		4-hr	39.4	
40	19-May-09	23:00:00	0:15:00	38.8	68.3	33.2	57.5	97.6	76.5	45.3	41.0	38.4	36.9	35.1	33.6		running	38.5	
41	19-May-09	23:15:00	0:15:00	39.7	69.3	32.3	58.6	92.8	74.3	46.5	40.4	38.3	36.8	34.7	33.2		avg L90	38.5	
42	19-May-09	23:30:00	0:15:00	36.5	66.1	29.0	48.3	92.8	68.7	43.3	39.7	36.8	35.0	32.1	30.2		25.2	38.5	
43	19-May-09	23:45:00	0:15:00	38.6	68.2	32.1	51.3	93.7	68.9	46.3	42.2	38.4	36.2	34.1	32.7		24.5	38.5	
44	20-May-09	0:00:00	0:15:00	40.0	69.6	33.9	53.8	95.8	70.7	47.4	43.5	40.0	37.9	35.6	34.3		23.7	36.4	
45	20-May-09	0:15:00	0:15:00	36.0	65.5	31.8	46.5	91.8	66.9	41.0	37.9	36.4	35.3	33.5	32.4		1-hr	22.8	36.4
46	20-May-09	0:30:00	0:15:00	32.2	61.8	25.1	40.1	81.9	59.7	36.3	34.7	33.4	32.1	27.3	25.7		running	22.0	36.4
47	20-May-09	0:45:00	0:15:00	32.3	61.9	21.2	46.3	68.6	61.6	41.2	35.1	31.7	30.1	24.2	21.3		avg L90	21.5	36.4
48	20-May-09	1:00:00	0:15:00	27.1	56.6	20.7	31.9	75.5	59.8	30.9	29.9	28.8	27.1	22.3	21.0		22.5	21.2	28.2
49	20-May-09	1:15:00	0:15:00	30.9	60.4	21.5	48.3	89.3	67.0	39.1	34.0	29.6	26.6	23.7	21.9		22.3	21.2	28.2
50	20-May-09	1:30:00	0:15:00	26.6	56.1	21.3	40.2	65.1	54.0	29.9	28.8	27.8	26.4	22.1	21.3		21.8	21.3	28.2
51	20-May-09	1:45:00	0:15:00	26.4	56.0	20.4	33.5	65.2	50.7	30.5	28.7	27.7	26.6	22.0	20.4		21.6	21.4	28.2
52	20-May-09	2:00:00	0:15:00	23.5	53.0	20.3	28.1	67.5	46.3	27.6	25.6	23.8	22.9	21.5	20.3		21.2	21.3	24.7
53	20-May-09	2:15:00	0:15:00	25.6	55.2	20.5	38.3	74.1	69.1	28.9	28.3	27.4	24.3	21.6	20.5		21.2	21.3	24.7
54	20-May-09	2:30:00	0:15:00	25.0	54.6	20.4	28.9	66.3	53.5	28.2	27.8	27.1	23.9	21.1	20.4		20.9	21.3	24.7
55	20-May-09	2:45:00	0:15:00	24.6	54.1	20.0	50.0	77.3	78.6	24.7	23.6	22.6	21.7	20.5	20.1		20.9	21.5	24.7
56	20-May-09	3:00:00	0:15:00	25.8	55.3	20.7	31.0	68.2	45.1	29.5	28.7	27.5	24.7	21.6	20.9		21.1	21.7	25.0
57	20-May-09	3:15:00	0:15:00	23.6	53.1	20.2	37.3	72.3	53.7	30.0	26.3	22.9	22.0	20.5	20.2		20.9	21.8	25.0
58	20-May-09	3:30:00	0:15:00	23.8	53.4	20.4	32.6	65.1	61.4	29.1	27.1	24.4	22.2	21.0	20.4		21.1	21.9	25.0
59	20-May-09	3:45:00	0:15:00	26.1	55.6	20.0	34.3	80.5	50.6	29.9	28.8	27.9	25.2	21.4	20.2		20.6	22.1	25.0
60	20-May-09	4:00:00	0:15:00	23.7	53.2	19.8	30.8	66.8	44.4	29.2	26.8	24.0	22.6	20.6	19.8		20.2	22.3	24.6
61	20-May-09	4:15:00	0:15:00	24.6	54.1	20.4	34.6	65.0	50.1	28.4	27.6	26.5	22.7	21.2	20.4		20.3	22.4	24.6
62	20-May-09	4:30:00	0:15:00	21.7	51.2	19.0	34.5	74.0	51.9	27.0	23.8	22.0	20.3	19.2	19.0		21.5	22.4	24.6
63	20-May-09	4:45:00	0:15:00	26.9	56.5	19.1	41.8	72.4	56.6	39.1	29.1	23.6	20.9	19.6	19.1		22.4	22.6	24.6
64	20-May-09	5:00:00	0:15:00	36.3	65.8	19.4	49.3	69.3	70.6	43.9	41.3	37.8	28.5	21.3	19.4		22.8	22.7	37.7
65	20-May-09	5:15:00	0:15:00	39.9	69.4	21.1	55.8	72.9	68.2	48.9	44.2	38.7	34.1	25.8	22.5		22.6	22.9	37.7
66	20-May-09	5:30:00	0:15:00	35.7	65.2	19.6	51.9	66.3	64.3	46.6	39.6	32.9	28.6	22.8	20.1		21.8	22.6	37.7
67	20-May-09	5:45:00	0:15:00	37.8	67.3	19.3	52.8	70.9	66.0	48.8	42.7	33.6	27.6	21.4	19.3		22.2	22.7	37.7
68	20-May-09	6:00:00	0:15:00	33.7	63.3	19.5	58.8	76.6	77.7	41.8	34.7	29.7	24.8	20.5	19.5		22.7	22.8	33.6
69	20-May-09	6:15:00	0:15:00	30.9	60.5	20.2	44.3	71.4	72.9	41.1	34.9	29.3	27.4	22.6	20.6		23.2	23.0	33.6
70	20-May-09	6:30:00	0:15:00	37.1	66.6	21.7	58.3	86.8	77.8	45.4	36.0	31.4	28.4	24.3	22.3		23.1	23.1	33.6
71	20-May-09	6:45:00	0:15:00	26.8	56.3	22.3	45.3	71.9	62.3	32.8	29.0	26.7	25.3	23.2	22.3		23.1	22.9	33.6
72	20-May-09	7:00:00	0:15:00	53.9	83.4	20.7	71.7	94.0	84.8	65.0	55.8	49.7	29.5	22.7	21.0			23.4	47.9

73	20-May-09	7:15:00	0:15:00	24.7	54.3	20.7	32.2	76.8	50.8	29.3	27.1	25.4	23.9	22.1	21.0	lowest	24.1	47.9
74	20-May-09	7:30:00	0:15:00	29.2	58.8	21.9	39.8	80.0	63.4	34.3	32.1	30.5	28.3	24.2	22.3	avg L90	24.7	47.9
75	20-May-09	7:45:00	0:15:00	29.8	59.4	23.2	42.4	83.5	60.1	35.4	32.9	30.6	28.5	25.3	24.0	hourly	25.3	47.9
76	20-May-09	8:00:00	0:15:00	25.0	54.6	21.0	36.6	80.2	56.0	30.9	27.7	25.4	23.8	22.0	21.1	20.6	26.2	26.3
77	20-May-09	8:15:00	0:15:00	26.5	56.1	21.1	37.2	76.7	51.4	31.0	29.7	27.9	25.0	22.1	21.1	in bold	27.1	26.3
78	20-May-09	8:30:00	0:15:00	24.7	54.3	20.6	44.3	76.3	62.5	29.5	26.2	23.9	22.4	21.2	20.6	above	28.0	26.3
79	20-May-09	8:45:00	0:15:00	28.2	57.7	21.3	48.7	75.9	69.4	37.6	29.0	27.3	24.7	22.2	21.3		29.2	26.3
80	20-May-09	9:00:00	0:15:00	36.3	65.8	21.8	62.2	80.7	82.7	38.5	30.8	28.6	26.5	23.2	22.1		30.2	36.6
81	20-May-09	9:15:00	0:15:00	41.1	70.7	21.4	57.2	84.0	69.8	54.5	42.8	29.3	27.1	22.4	21.4	lowest		36.6
82	20-May-09	9:30:00	0:15:00	27.5	57.1	21.8	40.0	72.2	59.0	35.0	29.7	28.3	25.8	23.1	22.1	contiguous		36.6
83	20-May-09	9:45:00	0:15:00	25.9	55.4	22.0	35.6	69.8	62.9	30.2	28.4	26.5	25.0	23.2	22.2	4-hr		36.6
84	20-May-09	10:00:00	0:15:00	27.9	57.5	21.0	40.0	77.4	69.1	34.2	30.1	28.3	27.3	23.4	21.5	avg L90		40.8
85	20-May-09	10:15:00	0:15:00	31.9	61.4	22.1	41.7	79.8	65.0	38.7	35.8	33.4	29.2	24.2	23.1	21.2		40.8
86	20-May-09	10:30:00	0:15:00	34.4	64.0	21.1	50.4	96.9	67.9	44.0	39.3	31.4	25.9	22.5	21.3	in bold		40.8
87	20-May-09	10:45:00	0:15:00	46.3	75.9	23.5	63.8	105.0	81.7	55.9	51.3	44.4	37.9	30.9	25.4	above		40.8
88	20-May-09	11:00:00	0:15:00	48.4	78.0	26.7	64.7	105.8	83.6	57.8	53.0	47.3	42.7	33.9	28.3			48.5
89	20-May-09	11:15:00	0:15:00	45.5	75.1	23.5	62.3	102.5	79.8	54.9	49.6	44.7	40.2	32.1	25.8			48.5
90	20-May-09	11:30:00	0:15:00	47.0	76.5	26.7	60.7	100.9	78.3	55.7	52.2	46.4	40.6	33.6	29.2			48.5
91	20-May-09	11:45:00	0:15:00	51.0	80.6	33.2	68.7	106.9	100.6	59.5	55.6	50.8	46.2	38.5	34.2			48.5
92	20-May-09	12:00:00	0:15:00	47.8	77.3	31.5	64.2	104.8	81.4	56.5	52.4	47.0	42.5	36.8	34.3			52.2
93	20-May-09	12:15:00	0:15:00	43.4	73.0	35.1	57.0	101.3	80.6	51.2	47.7	43.1	40.5	37.4	35.4			52.2
94	20-May-09	12:30:00	0:15:00	52.7	82.2	36.0	71.9	108.7	88.8	61.1	55.9	51.0	46.2	39.8	37.2			52.2
95	20-May-09	12:45:00	0:15:00	55.9	85.5	33.8	71.0	108.8	90.2	64.9	60.6	55.6	50.9	38.8	34.4			52.2
96	20-May-09	13:00:00	0:15:00	47.0	76.6	33.9	60.9	101.3	74.0	56.3	49.9	46.7	43.4	38.5	34.6			52.4
97	20-May-09	13:15:00	0:15:00	50.1	79.6	32.6	63.4	112.6	81.0	59.0	54.9	49.7	45.2	38.2	34.8			52.4
98	20-May-09	13:30:00	0:15:00	52.8	82.4	34.6	70.5	111.7	89.2	62.8	57.9	49.9	45.4	39.2	35.5			52.4
99	20-May-09	13:45:00	0:15:00	55.5	85.1	35.3	70.5	110.3	88.9	65.4	59.8	54.9	50.1	39.0	35.9			52.4
100	20-May-09	14:00:00	0:15:00	57.8	87.4	39.2	76.1	105.8	90.0	65.8	60.8	56.4	52.1	45.2	40.8			
101	20-May-09	14:15:00	0:15:00	58.8	88.4	34.2	71.1	111.9	91.0	67.9	64.5	58.4	51.3	41.1	36.4			
102	20-May-09	14:30:00	0:15:00	58.0	87.5	32.4	71.6	113.4	89.5	66.7	63.1	57.9	53.0	45.4	33.5			
103	20-May-09	14:45:00	0:15:00	55.2	84.7	37.9	68.4	109.4	88.7	64.3	59.2	55.0	51.1	45.7	40.7			
104	20-May-09	15:00:00	0:02:25	48.1	69.8	40.4	59.4	96.9	86.1	57.8	52.3	46.4	44.0	42.1	40.7			
			<<min>>	21.7	51.2	19.0	28.1	65.0	44.4	24.7	23.6	22.0	20.3	19.2	19.0	<<min>>		24.6
			<<max>>	67.2	96.8	43.9	89.2	123.0	106.2	77.3	64.6	58.4	54.3	47.7	44.6	<<max>>		61.8

Leq SEL Min Max Peak-1 Peak-2 L1.67 L8.33 L25 L50 L90 L99

END of LT-1 Data

Sound Level Meter Intervals

G:\Projects\WAbengoa\Harper Lake AFC\Data\Harper_LT-

File Translated: 2.slmdl

Model: 814

Number: A0156

Serial Number: 1.026

Firmware Rev: 1.07

Software Ver: Alliance Acoustical Consulting

Name: 216 Technology Dr., Suite G

Descr1: Irvine, CA 92618-2416

Abengoa - Harper

Location: **Lake**

LT-2

Grieder house at 41234 Harper Lake Rd

Rec #	Date	Time	Duration	Leq	SEL	Min	Max	Peak-1	Peak-2	L1.67	L8.33	L25.00	L50.00	L90.00	L99.00	Hrly Leq
1	19-May-09	13:37:57	0:07:02	49.7	76.0	29.8	68.2	93.4	95.1	61.3	50.6	45.0	40.8	35.6	31.3	
2	19-May-09	13:45:00	0:15:00	39.0	68.6	30.1	52.2	88.5	72.2	44.6	42.2	40.1	37.8	33.7	31.8	
3	19-May-09	14:00:00	0:15:00	55.4	84.9	31.4	78.3	109.8	95.1	66.8	48.4	44.7	41.0	36.0	32.9	50.4
4	19-May-09	14:15:00	0:15:00	47.0	76.6	34.7	68.0	106.7	85.1	54.0	49.2	46.3	44.4	39.6	36.1	50.4
5	19-May-09	14:30:00	0:15:00	43.7	73.2	34.4	53.4	98.0	72.3	49.5	47.2	44.8	42.4	37.2	34.9	50.4
6	19-May-09	14:45:00	0:15:00	41.3	70.9	30.7	57.1	94.8	71.6	47.4	44.4	42.0	39.8	35.6	31.5	50.4
7	19-May-09	15:00:00	0:15:00	42.8	72.3	35.8	53.5	100.2	70.6	49.1	45.1	43.5	41.7	38.3	36.6	45.1
8	19-May-09	15:15:00	0:15:00	42.0	71.6	35.3	50.4	91.9	81.3	47.3	44.5	42.9	41.3	37.8	36.0	45.1
9	19-May-09	15:30:00	0:15:00	48.6	78.1	32.1	70.4	97.8	83.2	56.3	49.6	45.3	40.6	35.6	33.6	45.1
10	19-May-09	15:45:00	0:15:00	43.3	72.8	34.3	61.2	93.2	76.3	52.6	46.3	42.0	39.4	36.4	34.8	45.1
11	19-May-09	16:00:00	0:15:00	46.1	75.6	36.2	63.9	93.7	81.6	57.2	46.6	43.9	41.7	39.0	37.4	44.4
12	19-May-09	16:15:00	0:15:00	42.9	72.5	35.0	56.0	99.1	72.3	49.9	45.9	43.0	41.1	38.1	35.7	44.4
13	19-May-09	16:30:00	0:15:00	44.1	73.6	37.9	51.6	93.0	67.6	48.0	46.3	45.0	43.8	40.9	38.9	44.4
14	19-May-09	16:45:00	0:15:00	43.8	73.4	37.0	54.6	86.0	71.1	51.3	46.1	44.1	42.4	39.8	37.9	44.4
15	19-May-09	17:00:00	0:15:00	42.1	71.6	34.1	48.7	91.7	65.0	46.2	44.8	43.0	41.6	38.2	35.7	44.7

16	19-May-09	17:15:00	0:15:00	46.7	76.3	37.1	63.7	89.8	80.8	58.5	46.5	44.4	42.4	39.8	38.4		44.7
17	19-May-09	17:30:00	0:15:00	43.5	73.1	36.4	59.8	88.7	75.1	48.4	45.5	43.6	42.1	39.7	38.1		44.7
18	19-May-09	17:45:00	0:15:00	45.3	74.8	36.2	60.2	90.3	73.7	53.2	50.3	44.1	42.4	39.6	37.5		44.7
19	19-May-09	18:00:00	0:15:00	43.0	72.5	36.6	53.0	87.3	67.8	48.9	45.7	43.6	41.9	39.2	37.7		42.5
20	19-May-09	18:15:00	0:15:00	43.1	72.6	36.5	56.4	96.9	73.2	51.9	44.7	42.7	41.3	38.8	37.6		42.5
21	19-May-09	18:30:00	0:15:00	42.6	72.1	34.5	56.9	91.4	73.0	50.3	44.6	42.4	41.0	38.1	36.0		42.5
22	19-May-09	18:45:00	0:15:00	41.0	70.6	34.7	54.8	85.0	69.9	45.4	43.3	41.7	40.1	37.3	35.4		42.5
23	19-May-09	19:00:00	0:15:00	39.8	69.4	33.3	54.7	82.4	70.9	45.7	42.3	40.3	38.6	35.6	34.1		39.1
24	19-May-09	19:15:00	0:15:00	40.0	69.6	32.6	47.8	82.5	63.0	43.9	42.6	41.3	39.7	35.6	33.5		39.1
25	19-May-09	19:30:00	0:15:00	39.5	69.1	31.2	49.2	82.6	66.0	44.1	41.9	40.5	39.2	34.2	31.7		39.1
26	19-May-09	19:45:00	0:15:00	35.9	65.5	28.6	50.4	81.1	69.3	40.3	38.2	36.6	34.9	31.3	29.5		39.1
27	19-May-09	20:00:00	0:15:00	34.5	64.0	28.5	54.7	85.4	87.6	39.7	36.3	34.3	32.6	29.9	28.9		34.2
28	19-May-09	20:15:00	0:15:00	36.1	65.7	28.4	55.0	84.7	85.2	44.2	35.9	33.8	32.3	29.9	28.6		34.2
29	19-May-09	20:30:00	0:15:00	32.8	62.4	29.7	36.6	75.9	51.4	35.8	34.7	33.5	32.5	31.0	30.1		34.2
30	19-May-09	20:45:00	0:15:00	32.5	62.0	29.0	37.9	74.5	51.5	36.1	34.2	33.0	32.1	30.7	29.6		34.2
31	19-May-09	21:00:00	0:15:00	32.5	62.1	29.3	37.5	78.2	50.9	36.4	34.2	33.1	32.2	30.6	29.6		34.5
32	19-May-09	21:15:00	0:15:00	33.8	63.3	30.2	37.8	77.7	52.6	37.3	36.0	34.5	33.3	31.4	30.5		34.5
33	19-May-09	21:30:00	0:15:00	35.6	65.1	33.2	47.2	78.2	62.2	38.2	36.9	36.0	35.2	34.1	33.5		34.5
34	19-May-09	21:45:00	0:15:00	35.4	64.9	32.0	38.8	75.9	52.5	38.2	37.1	36.1	35.1	33.6	32.6		34.5
35	19-May-09	22:00:00	0:15:00	35.0	64.5	30.2	55.6	76.2	70.6	38.0	35.3	34.2	33.3	31.5	30.5		32.8
36	19-May-09	22:15:00	0:15:00	31.7	61.3	29.0	34.5	73.6	53.1	34.0	33.1	32.3	31.6	30.5	29.5		32.8
37	19-May-09	22:30:00	0:15:00	32.0	61.6	27.2	52.2	78.1	69.5	34.1	32.2	31.2	30.1	28.6	27.6		32.8
38	19-May-09	22:45:00	0:15:00	31.2	60.7	28.8	35.3	72.4	51.1	33.3	32.4	31.8	31.0	29.7	28.8	4-hr	32.8
39	19-May-09	23:00:00	0:15:00	32.4	61.9	29.7	37.4	77.2	51.8	34.9	33.7	32.8	32.1	31.2	30.4	running	31.6
40	19-May-09	23:15:00	0:15:00	32.6	62.2	29.3	51.3	71.8	66.8	36.0	33.0	32.1	31.4	30.5	29.6	avg L90	31.6
41	19-May-09	23:30:00	0:15:00	30.5	60.0	27.4	33.6	71.4	49.0	32.3	31.8	31.1	30.4	28.9	27.6	27.6	31.6
42	19-May-09	23:45:00	0:15:00	30.6	60.2	27.7	36.4	70.5	49.9	32.4	31.8	31.1	30.6	29.4	28.5	27.4	31.6
43	20-May-09	0:00:00	0:15:00	30.5	60.1	28.3	36.4	77.4	51.8	32.2	31.3	31.0	30.5	29.6	28.7	27.3	30.3
44	20-May-09	0:15:00	0:15:00	30.4	60.0	28.0	32.8	65.3	48.6	32.2	31.4	31.0	30.3	29.5	28.5	1-hr	30.3
45	20-May-09	0:30:00	0:15:00	30.0	59.5	27.5	32.5	69.2	48.4	31.9	31.2	30.4	29.9	28.8	28.0	running	30.3
46	20-May-09	0:45:00	0:15:00	30.1	59.7	28.2	31.7	60.9	47.7	31.4	31.1	30.6	30.1	29.3	28.5	avg L90	26.8
47	20-May-09	1:00:00	0:15:00	29.4	59.0	26.9	36.7	55.7	50.8	32.3	31.0	30.0	29.1	27.9	27.4	27.2	28.6
48	20-May-09	1:15:00	0:15:00	28.7	58.3	26.4	32.3	56.1	50.2	31.1	30.1	29.3	28.6	27.2	26.5	26.7	28.6
49	20-May-09	1:30:00	0:15:00	27.8	57.4	25.4	31.4	58.4	50.6	30.3	29.3	28.3	27.6	26.5	25.6	26.6	28.6

50	20-May-09	1:45:00	0:15:00	28.3	57.8	26.0	31.1	55.0	46.4	30.3	29.4	28.7	28.1	27.2	26.5	26.5	28.8	28.6
51	20-May-09	2:00:00	0:15:00	27.0	56.6	25.2	29.1	60.1	49.9	28.8	28.0	27.3	26.9	26.0	25.4	26.2	29.2	27.4
52	20-May-09	2:15:00	0:15:00	27.4	57.0	25.8	29.9	65.1	47.2	29.3	28.5	27.9	27.3	26.5	25.8	26.5	29.8	27.4
53	20-May-09	2:30:00	0:15:00	27.9	57.4	25.2	31.1	57.6	51.7	30.3	29.3	28.6	27.7	26.1	25.4	26.4	30.1	27.4
54	20-May-09	2:45:00	0:15:00	27.4	56.9	25.2	30.3	54.5	46.4	29.4	28.9	27.9	27.1	26.0	25.5	26.3	30.3	27.4
55	20-May-09	3:00:00	0:15:00	31.7	61.3	26.1	49.0	68.6	65.1	41.1	30.1	29.1	28.5	27.5	26.5	26.4	30.6	29.2
56	20-May-09	3:15:00	0:15:00	27.8	57.3	25.0	38.5	59.7	57.3	29.9	29.0	28.3	27.6	25.8	25.1	26.2	30.6	29.2
57	20-May-09	3:30:00	0:15:00	27.8	57.3	24.7	34.6	72.8	51.9	29.8	29.2	28.6	27.8	25.7	24.7	26.4	31.0	29.2
58	20-May-09	3:45:00	0:15:00	28.0	57.6	24.9	32.4	66.0	50.5	30.5	29.2	28.5	27.9	26.6	25.5	26.6	31.4	29.2
59	20-May-09	4:00:00	0:15:00	28.6	58.1	25.5	39.3	62.4	53.3	32.1	30.2	29.2	28.0	26.5	25.5	28.9	31.5	36.7
60	20-May-09	4:15:00	0:15:00	29.5	59.1	24.5	35.3	66.9	56.6	33.9	32.4	30.2	28.7	26.6	24.7	30.0	32.1	36.7
61	20-May-09	4:30:00	0:15:00	33.3	62.8	23.8	45.9	66.0	66.5	42.9	35.3	32.8	30.3	26.6	24.7	33.3	32.6	36.7
62	20-May-09	4:45:00	0:15:00	41.7	71.2	27.4	54.1	74.3	68.7	48.8	44.2	42.4	40.3	35.9	29.7	35.8	32.8	36.7
63	20-May-09	5:00:00	0:15:00	43.3	72.8	26.0	59.4	80.4	74.8	54.0	45.9	42.1	38.3	30.8	27.5	35.5	32.4	44.3
64	20-May-09	5:15:00	0:15:00	45.5	75.1	36.5	58.6	81.0	71.6	54.3	48.6	45.0	42.5	39.8	38.5	36.5	32.4	44.3
65	20-May-09	5:30:00	0:15:00	44.3	73.9	30.4	56.8	75.7	72.9	53.4	49.7	42.5	40.5	36.7	32.3	34.4	31.9	44.3
66	20-May-09	5:45:00	0:15:00	43.9	73.4	28.4	59.6	83.2	75.7	53.6	47.5	42.9	39.2	34.6	31.5	32.6	31.7	44.3
67	20-May-09	6:00:00	0:15:00	42.9	72.5	28.5	56.2	74.6	71.7	51.7	46.7	42.6	40.0	34.7	31.6	31.7	31.5	46.5
68	20-May-09	6:15:00	0:15:00	51.7	81.3	25.8	76.5	92.3	93.0	61.1	45.3	41.5	38.4	31.7	27.8	29.8	31.3	46.5
69	20-May-09	6:30:00	0:15:00	38.7	68.2	23.9	55.4	74.5	69.4	47.7	41.7	38.2	35.2	29.4	26.1	30.0	31.2	46.5
70	20-May-09	6:45:00	0:15:00	37.2	66.7	25.1	48.7	66.9	67.4	44.0	40.3	38.1	35.6	30.9	27.1	30.6	31.3	46.5
71	20-May-09	7:00:00	0:15:00	39.3	68.9	22.8	59.4	81.2	73.6	46.4	40.6	36.8	33.2	27.3	23.9		31.4	40.3
72	20-May-09	7:15:00	0:15:00	42.5	72.1	25.6	64.1	80.2	80.9	51.9	40.7	38.3	36.3	32.4	27.9	lowest	31.7	40.3
73	20-May-09	7:30:00	0:15:00	40.3	69.8	27.2	55.1	77.2	69.2	50.0	43.2	39.7	36.7	31.6	29.3	avg L90	31.5	40.3
74	20-May-09	7:45:00	0:15:00	38.0	67.6	25.1	56.0	75.6	72.7	47.1	40.8	37.6	34.2	28.8	26.4	hourly	31.6	40.3
75	20-May-09	8:00:00	0:15:00	41.0	70.5	28.3	55.3	78.2	70.3	48.0	43.6	41.2	39.3	35.2	31.4	26.3	31.9	42.0
76	20-May-09	8:15:00	0:15:00	41.2	70.7	28.7	53.1	75.8	69.5	48.2	45.3	41.2	39.2	35.0	31.7	in bold	31.7	42.0
77	20-May-09	8:30:00	0:15:00	38.9	68.4	25.6	56.6	76.9	71.8	46.2	42.1	39.3	36.5	30.2	26.8	above	31.5	42.0
78	20-May-09	8:45:00	0:15:00	44.8	74.4	23.9	66.0	80.8	81.6	54.6	40.0	36.7	34.0	28.8	25.2		31.6	42.0
79	20-May-09	9:00:00	0:15:00	37.4	67.0	26.9	52.2	70.9	67.7	43.2	40.3	37.7	35.4	31.8	29.4		31.8	39.1
80	20-May-09	9:15:00	0:15:00	39.9	69.4	28.0	52.5	79.2	66.8	48.7	43.6	39.7	36.6	31.8	29.4		lowest	39.1
81	20-May-09	9:30:00	0:15:00	40.4	69.9	28.8	61.5	87.6	73.7	45.0	41.7	38.6	36.3	32.7	30.5		contiguous	39.1
82	20-May-09	9:45:00	0:15:00	38.2	67.7	26.3	50.5	70.5	66.4	44.8	41.9	39.0	36.4	31.9	29.2		4-hr	39.1
83	20-May-09	10:00:00	0:15:00	38.8	68.4	26.9	59.1	78.6	76.5	44.9	40.4	38.3	36.1	31.7	28.5		avg L90	38.0

84	20-May-09	10:15:00	0:15:00	37.5	67.0	25.2	53.7	76.3	67.5	45.6	42.0	37.1	33.7	29.2	26.9	26.8	38.0
85	20-May-09	10:30:00	0:15:00	39.0	68.6	27.4	54.7	85.1	70.5	45.6	42.5	39.6	36.9	31.7	28.5	in bold	38.0
86	20-May-09	10:45:00	0:15:00	36.3	65.8	28.2	46.0	88.5	62.8	42.0	39.2	37.2	35.2	31.8	29.7	above	38.0
87	20-May-09	11:00:00	0:15:00	35.9	65.5	26.6	49.7	84.2	65.7	42.1	38.2	36.3	34.8	31.8	29.6		39.7
88	20-May-09	11:15:00	0:15:00	36.4	65.9	25.6	54.1	87.2	67.1	43.2	39.0	36.3	33.8	30.1	27.3		39.7
89	20-May-09	11:30:00	0:15:00	42.6	72.2	28.0	55.4	89.4	69.6	49.2	45.5	43.3	41.5	33.2	29.5		39.7
90	20-May-09	11:45:00	0:15:00	40.2	69.7	28.9	59.1	89.3	72.3	45.6	42.7	40.2	37.6	33.5	30.8		39.7
91	20-May-09	12:00:00	0:15:00	38.6	68.2	25.1	56.7	93.5	71.5	45.6	41.2	38.7	36.2	31.7	27.4		38.5
92	20-May-09	12:15:00	0:15:00	37.7	67.3	27.8	54.7	93.0	69.6	43.9	40.7	38.0	35.5	31.7	29.1		38.5
93	20-May-09	12:30:00	0:15:00	38.0	67.6	29.6	54.0	87.7	72.8	43.3	41.1	38.9	36.8	32.6	30.6		38.5
94	20-May-09	12:45:00	0:15:00	39.5	69.1	27.9	48.4	87.5	75.3	46.1	43.6	41.0	36.8	32.1	29.9		38.5
95	20-May-09	13:00:00	0:15:00	40.8	70.4	26.0	53.2	89.3	72.0	49.5	44.3	42.1	37.6	31.4	27.1		40.2
96	20-May-09	13:15:00	0:15:00	39.5	69.0	29.7	54.8	93.0	70.9	44.7	41.7	40.2	38.7	34.8	30.5		40.2
97	20-May-09	13:30:00	0:15:00	39.4	68.9	30.1	55.4	89.1	71.1	44.3	41.7	39.8	38.4	34.7	31.9		40.2
98	20-May-09	13:45:00	0:15:00	41.0	70.6	27.9	59.6	93.5	73.8	47.7	43.7	41.4	38.7	34.0	30.1		40.2
99	20-May-09	14:00:00	0:15:00	40.7	70.3	30.5	56.9	94.6	71.5	46.3	43.8	41.6	38.4	34.6	32.7		42.5
100	20-May-09	14:15:00	0:15:00	41.2	70.7	30.2	59.1	91.7	74.2	49.1	43.5	40.5	38.6	34.7	31.6		42.5
101	20-May-09	14:30:00	0:15:00	44.4	73.9	33.8	57.8	100.6	71.2	52.2	48.3	44.4	41.7	37.8	34.8		42.5
102	20-May-09	14:45:00	0:15:00	42.6	72.2	33.7	50.8	94.3	67.1	48.2	46.3	43.7	41.2	36.3	34.5		42.5
103	20-May-09	15:00:00	0:14:38	44.1	73.5	31.1	58.4	94.8	89.8	50.0	46.4	44.4	43.2	38.9	34.0		
			<<min>>	27.0	56.6	22.8	29.1	54.5	46.4	28.8	28.0	27.3	26.9	25.7	23.9	<<min>>	27.4
			<<max>>	55.4	84.9	37.9	78.3	109.8	95.1	66.8	50.3	46.3	44.4	40.9	38.9	<<max>>	50.4

Leq	SEL	Min	Max	Peak-1	Peak-2	L1.67	L8.33	L25	L50	L90	L99
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END of LT-2 Data

Appendix G.4 - Noise

Details on Predictive Noise Modeling Inputs

Modeling Inputs - Common

Receptors	X	Y	Z
ST-1	64607	90812	5
ST-2	64156	88190	5
ST-3	62126	84979	5
LT-1	63721	90150	5
LT-2	62093	87849	5
BLM view1	71501	91356	5
BLM view2	73818	90869	5
Alpha Plant Centroid	62522	92088	5
Beta Plant Centroid	70223	88226	5

Barriers - Alpha Plant

	X1	Y1	X2	Y2	HT
1AdminBldg-N	62308	92058	62416	92059	32
1AdminBldg-E	62416	92059	62421	91894	32
1AdminBldg-S	62421	91894	62310	91893	32
1AdminBldg-W	62310	91893	62307	92058	32
1Warehouse-W	62618	91663	62616	91835	17
1Warehouse-N	62616	91835	62696	91835	17
1STGBldg-N	62445	92055	62553	92055	73
1STGBldg-E	62553	92055	62554	91918	73
1STGBldg-S	62554	91918	62447	91917	73
1STGBldg-W	62447	91917	62445	92055	73

Barriers - Beta Plant

	X1	Y1	X2	Y2	HT
2AdminBldg-N	70008	88196	70117	88196	32
2AdminBldg-E	70117	88196	70122	88032	32
2AdminBldg-S	70122	88032	70011	88031	32
2AdminBldg-W	70011	88031	70008	88196	32
2Warehouse-W	70319	87801	70317	87973	17
2Warehouse-N	70317	87973	70397	87973	17
2STGbldg_N	70145	88193	70254	88193	73
2STGbldg_E	70254	88193	70255	88056	73
2STGbldg_S	70255	88056	70147	88055	73
2STGbldg_W	70147	88055	70145	88193	73

Modeling Inputs – Daytime

Sources - Alpha Plant				Octave band data source	OA(A) data source	Modeling Sound Power Levels, OB Center Frequency, Hz								dBA
full name	X	Y	Z			63	125	250	500	1000	2000	4000	8000	
STG Transformer	62434	91876	15	AAC calc'd	AAC calc'd	104	106	101	101	95	90	85	78	101
Steam Boiler/Generator	62662	92031	8	AAC calc'd	AAC calc'd	112	105	100	95	92	91	91	92	100
Super Heater	62656	91997	8	AAC calc'd	AAC calc'd	112	105	100	95	92	91	91	92	100
Re-heater	62655	91981	8	AAC calc'd	AAC calc'd	112	105	100	95	92	91	91	92	100
Circulating Water Pumps (southern end of 12.1)	62492	92208	10	AAC pmp + mtr data for OA(A)	CT Depot: CFF-544834-8I-36	96	98	99	99	98	95	92	89	103
Closed Cooling Water System Pumps (13.1)	62510	92157	20	Gould's: 3498	Flowserve: 400-LNN-600-G1	85	86	85	86	86	87	84	81	89
Waste Water to Evap Ponds Pumps (left of 15)	62521	92313	3	Gould's: 3408	Flowserve: 8FRBH152-316	99	106	102	109	101	95	93	91	100
Cooling Tower	62452	92490	12	AAC calc'd	Siemens: SST700	116	112	104	93	90	89	89	88	101
Cooling Tower	62450	92435	12	AAC calc'd	Siemens: SST700	116	112	104	93	90	89	89	88	101
Cooling Tower	62451	92381	12	AAC calc'd	Siemens: SST700	116	112	104	93	90	89	89	88	101
Cooling Tower	62451	92328	12	AAC calc'd	Siemens: SST700	116	112	104	93	90	89	89	88	101
Cooling Tower	62452	92272	12	AAC calc'd	Siemens: SST700	116	112	104	93	90	89	89	88	101
Cooling Tower	62452	92218	12	AAC calc'd	Siemens: SST700	116	112	104	93	90	89	89	88	101
HTF Circulation Pumps (4)	62674	92163	6	AAC pmp + mtr data for OA(A)	Flowserve: 12HDX34D	108	110	111	111	110	107	104	101	115
HTF Circulation Pumps (4)	62676	92142	6	AAC pmp + mtr data for OA(A)	Flowserve: 12HDX34D	108	110	111	111	110	107	104	101	115
HTF Circulation Pumps (4)	62676	92122	6	AAC pmp + mtr data for OA(A)	Flowserve: 12HDX34D	108	110	111	111	110	107	104	101	115
HTF Circulation Pumps (4)	62675	92102	6	AAC pmp + mtr data for OA(A)	Flowserve: 12HDX34D	108	110	111	111	110	107	104	101	115
Bldg walls	62499	92061	49	AAC calc'd	AAC calc'd	108	98	88	81	74	65	63	67	118
Bldg walls	62560	91990	49	AAC calc'd	AAC calc'd	109	99	89	82	75	66	64	68	119
Bldg walls	62506	91913	49	AAC calc'd	AAC calc'd	108	98	88	81	74	65	63	67	118
Bldg walls	62441	91984	49	AAC calc'd	AAC calc'd	109	99	89	82	75	66	64	68	119
inside STG bldg														
Steam Turbine Body (8.1)	62482	92032		AAC calc'd	Flowserve: 4X11 DMX-A FPD-C6									
Steam Turbine Condenser (part of 8.1)	62484	91999		AAC calc'd	AAC calc'd									
Steam Turbine Generator (8.1)	62484	91976		AAC calc'd	AAC calc'd									
Deaerator	62521	92005	40	AAC calc'd	AAC calc'd	109	99	89	82	75	66	64	68	88
Pre-heater	62540	92019	7	AAC calc'd	AAC calc'd	108	98	88	81	74	65	63	67	87
Feed Water Pumps (7.1)	62524	91967		Gould's: VIC-T	Flowserve: 15EHY/EHM/5									
Condensate Pumps (7.1)	62500	91996		Flowserve: 42EPM-B30-FPD	Flowserve: 42EPM-B30-FPD									
Condensate Pumps (7.1)	62501	91986		Flowserve: 42EPM-B30-FPD	Flowserve: 42EPM-B30-FPD									
Condensate Pumps (7.1)	62515	91977		Flowserve: 42EPM-B30-FPD	Flowserve: 42EPM-B30-FPD									
Condensate Pumps (7.1)	62522	91951		Flowserve: 42EPM-B30-FPD	Flowserve: 42EPM-B30-FPD									
													Summation	126.3

Sources - Beta Plant				Octave band data source	OA(A) data source	Modeling Sound Power Levels, OB Center Frequency, Hz								dBA
full name	X	Y	Z			63	125	250	500	1000	2000	4000	8000	
STG Transformer	70135	88014	15	AAC calc'd	AAC calc'd	104	106	101	101	95	90	85	78	101
Steam Boiler/Generator	70363	88169	8	AAC calc'd	AAC calc'd	112	105	100	95	92	91	91	92	100

Super Heater	70356	88135	8	AAC calc'd	AAC calc'd	112	105	100	95	92	91	91	92	100
Re-heater	70355	88119	8	AAC calc'd	AAC calc'd	112	105	100	95	92	91	91	92	100
Circulating Water Pumps (southern end of 12.1)	70192	88346	10	AAC pmp + mtr data for OA(A)	CT Depot: CFF-544834-8I-36	96	98	99	99	98	95	92	89	103
Closed Cooling Water System Pumps (13.1)	70211	88295	20	Gould's: 3498	Flowserve: 400-LNN-600-G1	85	86	85	86	86	87	84	81	89
Waste Water to Evap Ponds Pumps (left of 15)	70222	88451	3	Gould's: 3408	Flowserve: 8FRBH152-316	99	106	102	109	101	95	93	91	100
Cooling Tower	70153	88628	12	AAC calc'd	Siemens: SST700	116	112	104	93	90	89	89	88	101
Cooling Tower	70151	88573	12	AAC calc'd	Siemens: SST700	116	112	104	93	90	89	89	88	101
Cooling Tower	70152	88518	12	AAC calc'd	Siemens: SST700	116	112	104	93	90	89	89	88	101
Cooling Tower	70152	88465	12	AAC calc'd	Siemens: SST700	116	112	104	93	90	89	89	88	101
Cooling Tower	70153	88410	12	AAC calc'd	Siemens: SST700	116	112	104	93	90	89	89	88	101
Cooling Tower	70153	88356	12	AAC calc'd	Siemens: SST700	116	112	104	93	90	89	89	88	101
HTF Circulation Pumps (4)	70375	88301	6	AAC pmp + mtr data for OA(A)	Flowserve: 12HDX34D	108	110	111	111	110	107	104	101	115
HTF Circulation Pumps (4)	70377	88280	6	AAC pmp + mtr data for OA(A)	Flowserve: 12HDX34D	108	110	111	111	110	107	104	101	115
HTF Circulation Pumps (4)	70376	88260	6	AAC pmp + mtr data for OA(A)	Flowserve: 12HDX34D	108	110	111	111	110	107	104	101	115
HTF Circulation Pumps (4)	70376	88240	6	AAC pmp + mtr data for OA(A)	Flowserve: 12HDX34D	108	110	111	111	110	107	104	101	115
Bldg walls	70199	88198	49	AAC calc'd	AAC calc'd	108	98	88	81	74	65	63	67	118
Bldg walls	70261	88128	49	AAC calc'd	AAC calc'd	109	99	89	82	75	66	64	68	119
Bldg walls	70206	88051	49	AAC calc'd	AAC calc'd	108	98	88	81	74	65	63	67	118
Bldg walls	70142	88122	49	AAC calc'd	AAC calc'd	109	99	89	82	75	66	64	68	119
inside STG bldg														
Steam Turbine Body (8.1)	70183	88170		AAC calc'd	Flowserve: 4X11 DMX-A FPD-C6									
Steam Turbine Condenser (part of 8.1)	70185	88137		AAC calc'd	AAC calc'd									
Steam Turbine Generator (8.1)	70185	88114		AAC calc'd	AAC calc'd									
Deaerator	70221	88143	40	AAC calc'd	AAC calc'd	109	99	89	82	75	66	64	68	88
Pre-heater	70240	88157	7	AAC calc'd	AAC calc'd	108	98	88	81	74	65	63	67	87
Feed Water Pumps (7.1)	70225	88105		Gould's: VIC-T	Flowserve: 15EHY/EHM/5									
Condensate Pumps (7.1)	70201	88134		Flowserve: 42EPM-B30-FPD	Flowserve: 42EPM-B30-FPD									
Condensate Pumps (7.1)	70202	88124		Flowserve: 42EPM-B30-FPD	Flowserve: 42EPM-B30-FPD									
Condensate Pumps (7.1)	70216	88115		Flowserve: 42EPM-B30-FPD	Flowserve: 42EPM-B30-FPD									
Condensate Pumps (7.1)	70223	88089		Flowserve: 42EPM-B30-FPD	Flowserve: 42EPM-B30-FPD									

Summation 126.3

Modeling Inputs - Nighttime

Sources - Alpha Plant				Octave band data source	OA(A) data source	Modeling Sound Power Levels, OB Center Frequency, Hz								dBA
full name	X	Y	Z			63	125	250	500	1000	2000	4000	8000	
Circulation Pump Set 1	62675	92078	3	AAC calc'd	AAC calc'd	79	81	82	82	81	78	75	72	86
Circulation Pump Set 2	62675	92088	3	AAC calc'd	AAC calc'd	79	81	82	82	81	78	75	72	86
Circulation Pump Set 3	62675	92098	3	AAC calc'd	AAC calc'd	79	81	82	82	81	78	75	72	86
Summation													90.6	

Sources - Beta Plant				Octave band data source	OA(A) data source	Modeling Sound Power Levels, OB Center Frequency, Hz								dBA
full name	X	Y	Z			63	125	250	500	1000	2000	4000	8000	
Circulation Pump Set 1	70375	88216	3	AAC calc'd	AAC calc'd	79	81	82	82	81	78	75	72	86
Circulation Pump Set 2	70375	88226	3	AAC calc'd	AAC calc'd	79	81	82	82	81	78	75	72	86
Circulation Pump Set 3	70375	88236	3	AAC calc'd	AAC calc'd	79	81	82	82	81	78	75	72	86
Summation													90.6	