

# **Gilman Springs Mine**

NOISE IMPACT ANALYSIS COUNTY OF RIVERSIDE

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11381-13 Noise Study



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## LIST OF ABBREVIATED TERMS

(1)	Reference
ADT	Average Daily Traffic
ANSI	American National Standards Institute
Calveno	California Vehicle Noise
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent Level
dBA	A-weighted decibels
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
I-215	Interstate 215
INCE	Institute of Noise Control Engineering
ISEE	International Society of Explosives Engineers
L <sub>eq</sub>	Equivalent continuous (average) sound level
L <sub>max</sub>	Maximum level measured over the time interval
L <sub>min</sub>	Minimum level measured over the time interval
mph	Miles per hour
MTPY	Million tons per year
OSMRE	Office of Surface Mining and Reclamation Enforcement
PPV	Peak Particle Velocity
Project	Gilman Springs Mine
REMEL	Reference Energy Mean Emission Level
RMS	Root-mean-square
SR-60	State Route 60
SR-79	State Route 79
TPD	Tons per day
ТРҮ	Tons per year
USBM	United States Bureau of Mines
VdB	Vibration Decibels



## **EXECUTIVE SUMMARY**

Urban Crossroads, Inc. has prepared this noise study to determine the noise potential impacts and the necessary noise mitigation measures, if any, for the proposed Gilman Springs Mine development ("Project"). The Project site is located on the northeast side of Gilman Springs Road and south of Bridge Street in unincorporated County of Riverside. The Project is proposing a mining permit that would allow for 24-hour operations 7 days a week, including holidays and mining activity of up to 1,000,000 tons per year (TPY). Historical data indicates actual average mining activity of 377,675 TPY over the past 15-years.

This study has been prepared consistent with County of Riverside noise standards and significance criteria based on guidance provided by Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (1)

#### OFF-SITE TRAFFIC NOISE ANALYSIS

Traffic generated by the operation of the Project will influence the traffic noise levels in surrounding off-site areas. To quantify the off-site traffic noise increases on the surrounding off-site areas, the changes in traffic noise levels on six roadway segments surrounding the Project site were calculated based on the change in the average daily traffic (ADT) volumes. The traffic noise levels provided in this analysis are based on the traffic forecasts found in *Gilman Springs Mine Traffic Impact Analysis* and the *Gilman Springs Mine Supplemental Traffic Assessment* prepared by Urban Crossroads, Inc. (2)

To assess the off-site noise level impacts associated with the proposed Project, noise contour boundaries were developed for Existing (2019), Existing plus Ambient Growth (EA) (2019), and EA plus Cumulative Development (EAC) (2019) conditions traffic conditions. The analysis shows that the unmitigated Project-related traffic noise level increases under all with Project traffic scenarios are considered *less than significant* impacts at land uses adjacent to the study area roadway segments.

#### **OPERATIONAL NOISE ANALYSIS**

Using reference noise levels to represent the expected noise sources within Gilman Springs Mine site, this analysis estimates the Project-related stationary-source noise levels at the nearby sensitive receiver locations. The typical activities associated with the proposed Gilman Springs Mine are anticipated to include crushing and screening activities, loader activities and backup alarms, haul truck loading and pass-by events in combination with heavy equipment and dozer activity.

The operational noise analysis shows that the Project-related stationary source noise levels at all receiver locations will satisfy the County of Riverside daytime and nighttime exterior noise level standards at the nearby receiver locations in the Project study area. Further, this analysis demonstrates that the Project-related noise level increases to the existing noise environment at all noise-sensitive receiver locations would be less than the Federal Interagency Committee on



Noise (FICON) guidance for noise level increases and are considered *less than significant* during daytime and nighttime hours. Therefore, the stationary source noise level impacts associated with the proposed Project activities, such as the crushing and screening activities, loader activities and backup alarms, haul truck loading and pass-by events in combination with heavy equipment and dozer activity will be *less than significant*.

#### **BLASTING ANALYSIS**

Blasting is a component of existing operations within the Project site. Existing blasting activities include, on average, between six to nine blasts per year, which vary in location, size, and purpose depending on production needs, benching, pit development, and drilling equipment available. Project blasting is expected to continue to be conducted on-site in a planned and intermittent basis at a maximum of 15 blasts per year. The blasting operations are required to be conducted at a time and manner so that disturbance or distraction would be minimized by and to any sensitive receivers that would or could be proximate to the blasting area. Further, the mining operator is required to obtain blasting permit(s) from the State, and to notify Riverside County Sheriff's Department within 24 hours of planned blasting events.

To assess the potential Project blasting impacts, the worst-case airblast and vibration levels were calculated based on a 1,500 pound maximum charge weight using the closest distance of 2,450 feet (including the 50-foot off-set for blasting) from receiver location R3 to a worst-case Project blasting location, consistent with the methodology provided in the International Society of Explosives Engineers (ISEE's) *Blasters' Handbook*. The worst-case airblast and vibration levels are shown to satisfy the Office of Surface Mining and Reclamation Enforcement (OSMRE) airblast and vibration level thresholds without accounting for any additional attenuation provided by intervening topography in the Project study area. Therefore, since airblast and vibration levels at the closest receiver location would remain below the airblast and vibration level thresholds based on reference ISEE data, Project-related blasting impacts are considered *less than significant*.

Further, the mining operator is required to design all blasts such that they remain below the significance thresholds identified by the USBM and OSMRE in addition to the permitting requirements of the State and Riverside County Sheriff's Department. Therefore, impacts related to Project blasting activities are considered *less than significant*.

#### SUMMARY OF CEQA SIGNIFICANCE FINDINGS

The results of this Gilman Springs Mine Noise Impact Analysis are summarized below based on the significance criteria in Section 4 of this report consistent with Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (1). Table ES-1 shows the findings of significance for each potential noise and/or vibration impact under CEQA before and after any required mitigation measures described below.





Anghais	Report	Significance Findings				
Analysis	Section	Unmitigated	Mitigated			
Off-Site Traffic Noise Levels	7	Less Than Significant	n/a			
Operational Noise Levels		Less Than Significant	n/a			
Operational Vibration Levels	9	Less Than Significant	n/a			
Blasting Airblast & Vibration Levels		Less Than Significant	n/a			

#### TABLE ES-1: SUMMARY OF CEQA SIGNIFICANCE FINDINGS



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## 1 INTRODUCTION

This noise analysis has been completed to determine the noise impacts associated with the development of the proposed Gilman Springs Mine ("Project"). The existing mine consists of excavated land located northeast of Gilman Springs Road. Existing operations include a primary crushing and crushed aggregate production location in the northern portion of the site, with crushing, washing, and sizing capable of making both crushed aggregates and washed aggregates. Secondary production activities take place in the eastern portion of the site which includes processing equipment for crushing, washing, and sizing of aggregate material.

This noise study briefly describes the proposed Project, provides information regarding noise fundamentals, describes the local regulatory setting, provides the study methods and procedures for traffic noise analysis, and evaluates the future exterior noise environment. In addition, this study includes an analysis of the potential Project-related long-term operational noise and short-term blasting airblast and vibration impacts.

### **1.1** SITE LOCATION

The proposed Gilman Springs Mine Project is located on the northeast side of Gilman Springs Road and south of Bridge Street in unincorporated County of Riverside, as shown on Exhibit 1-A. State Route 79 (SR-79) is located approximately 1.2 miles southeast of the Project site, State Route 60 (SR-60) is located approximately 4.0 miles north of the Project site, and Interstate 215 (I-215) is located approximately 11.7 miles west of the Project site. Existing agricultural uses are located west and south of the Project site; vacant land is located north of the Project site; and the Lamb Canyon Landfill is located roughly 1.5 miles east of the Project site.

### **1.2 PROJECT DESCRIPTION**

The Project is proposing a mining permit that would allow for 24-hour operations 7 days a week, including holidays and continue to support mining activity of up to 1,000,000 tons per year (TPY). The Project's historic tonnage average is 377,675 tons per year (TPY) based on a 15-year average of historical data. For impact calculations that rely on annual tonnage, the net increase over the baseline (i.e., 377,675 TPY) will be evaluated as part of the analysis. When compared to the proposed permitted maximum annual production quantity of the 1.0 million tons per year (MTPY) results in a net increase of 622,235 TPY, or a 62.22-percent share of the total permitted annual production quantity. As such, the high-end estimate of daily tonnage at the site is approximately 4,000 tons per day (TPD), with approximately 1,511 TPD associated with the mine's existing operations (i.e., baseline) and 2,489 TPD attributable to the proposed Project (62.22-percent of 4,000 TPD). The Project is anticipated to be in operation by the end of 2019.

Exhibit 1-B shows the proposed Project mining operations and physical disturbance boundaries. The on-site Project-related noise sources are expected to include: crushing and screening activities, loader activities and backup alarms, haul truck loading and pass-by events in combination with heavy equipment and dozer activity. This noise analysis is intended to describe noise level impacts associated with the expected typical operational activities at the Project site.



Additional analysis is provided for short-term blasting events associated with Project mining operations.

#### **1.3 PROJECT TRIP GENERATION**

According to the *Gilman Springs Mine Traffic Impact Analysis* and the *Gilman Springs Mine Supplemental Traffic Assessment* prepared by Urban Crossroads, Inc. the Project is expected to generate a net total of approximately 350 trip-ends per day (actual vehicles). (2) The Project trip generation includes 320 truck trip-ends per day. This noise study relies on the actual Project trips (as opposed to the passenger car equivalents) to accurately account for the effect of individual truck trips on the study area roadway network.





EXHIBIT 1-A: LOCATION MAP





EXHIBIT 1-B: PROPOSED PHYSICAL DISTURBANCE PLAN



## 2 FUNDAMENTALS

Noise has been simply defined as "unwanted sound." Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm or when it has adverse effects on health. Noise is measured on a logarithmic scale of sound pressure level known as a decibel (dB). A-weighted decibels (dBA) approximate the subjective response of the human ear to broad frequency noise source by discriminating against very low and very high frequencies of the audible spectrum. They are adjusted to reflect only those frequencies which are audible to the human ear. Exhibit 2-A presents a summary of the typical noise levels and their subjective loudness and effects that are described in more detail below.

COMMON OUTDOOR ACTIVITIES	COMMON INDOOR ACTIVITIES	A - WEIGHTED SOUND LEVEL dBA	SUBJECTIVE LOUDNESS	EFFECTS OF NOISE
THRESHOLD OF PAIN		140		
NEAR JET ENGINE		130	INTOLERABLE OR	
		120	DEAFENING	HEARING LOSS
JET FLY-OVER AT 300m (1000 ft)	VER AT 300m (1000 ft) ROCK BAND 110			
LOUD AUTO HORN		100		
GAS LAWN MOWER AT 1m (3 ft)		90		
DIESEL TRUCK AT 15m (50 ft), at 80 km/hr (50 mph)	FOOD BLENDER AT 1m (3 ft)	80		
NOISY URBAN AREA, DAYTIME	VACUUM CLEANER AT 3m (10 ft)	70	LOUD	SPEECH INTERFERENCE
HEAVY TRAFFIC AT 90m (300 ft)	NORMAL SPEECH AT 1m (3 ft)	60		
QUIET URBAN DAYTIME	LARGE BUSINESS OFFICE	50	MODERATE	SIEED
QUIET URBAN NIGHTTIME	THEATER, LARGE CONFERENCE ROOM (BACKGROUND)	40		DISTURBANCE
QUIET SUBURBAN NIGHTTIME	LIBRARY	30		
QUIET RURAL NIGHTTIME	BEDROOM AT NIGHT, CONCERT HALL (BACKGROUND)	20	FAINT	
	BROADCAST/RECORDING STUDIO	10		NO EFFECT
LOWEST THRESHOLD OF HUMAN HEARING	LOWEST THRESHOLD OF HUMAN HEARING	0	0 VERY FAINT	

#### EXHIBIT 2-A: TYPICAL NOISE LEVELS

### 2.1 RANGE OF NOISE

Since the range of intensities that the human ear can detect is so large, the scale frequently used to measure intensity is a scale based on multiples of 10, the logarithmic scale. The scale for measuring intensity is the decibel scale. Each interval of 10 decibels indicates a sound energy ten times greater than before, which is perceived by the human ear as being roughly twice as loud. (3) The most common sounds vary between 40 dBA (very quiet) to 100 dBA (very loud). Normal conversation at three feet is roughly at 60 dBA, while loud jet engine noises equate to 110 dBA at approximately 100 feet, which can cause serious discomfort. (4) Another important aspect of noise is the duration of the sound and the way it is described and distributed in time.

## 2.2 NOISE DESCRIPTORS

Environmental noise descriptors are generally based on averages, rather than instantaneous, noise levels. The most commonly used figure is the equivalent level ( $L_{eq}$ ). Equivalent sound levels are not measured directly but are calculated from sound pressure levels typically measured in A-weighted decibels (dBA). The equivalent sound level ( $L_{eq}$ ) represents a steady state sound level containing the same total energy as a time varying signal over a given sample period and is commonly used to describe the "average" noise levels within the environment.

Peak hour or average noise levels, while useful, do not completely describe a given noise environment. Noise levels lower than peak hour may be disturbing if they occur during times when quiet is most desirable, namely evening and nighttime (sleeping) hours. To account for this, the Community Noise Equivalent Level (CNEL), representing a composite 24-hour noise level is utilized. The CNEL is the weighted average of the intensity of a sound, with corrections for time of day, and averaged over 24 hours. The time of day corrections require the addition of 5 decibels to dBA  $L_{eq}$  sound levels in the evening from 7:00 p.m. to 10:00 p.m., and the additions are made to account for the noise sensitive time periods during the evening and night hours when sound appears louder. CNEL does not represent the actual sound level heard at any time, but rather represents the total sound exposure. The County of Riverside relies on the 24-hour CNEL level to assess land use compatibility with transportation related noise sources.

### 2.3 SOUND PROPAGATION

When sound propagates over a distance, it changes in level and frequency content. The way noise reduces with distance depends on the following factors.

### 2.3.1 GEOMETRIC SPREADING

Sound from a localized source (i.e., a stationary point source) propagates uniformly outward in a spherical pattern. The sound level attenuates (or decreases) at a rate of 6 dB for each doubling of distance from a point source. Highways consist of several localized noise sources on a defined path and hence can be treated as a line source, which approximates the effect of several point sources. Noise from a line source propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of 3 dB for each doubling of distance from a line source. (3)

### 2.3.2 GROUND ABSORPTION

The propagation path of noise from a highway to a receiver is usually very close to the ground. Noise attenuation from ground absorption and reflective wave canceling adds to the attenuation associated with geometric spreading. Traditionally, the excess attenuation has also been expressed in terms of attenuation per doubling of distance. This approximation is usually sufficiently accurate for distances of less than 200 ft. For acoustically hard sites (i.e., sites with a reflective surface between the source and the receiver, such as a parking lot or body of water), no excess ground attenuation is assumed. For acoustically absorptive or soft sites (i.e., those



sites with an absorptive ground surface between the source and the receiver such as soft dirt, grass, or scattered bushes and trees), an excess ground attenuation value of 1.5 dB per doubling of distance is normally assumed. When added to the cylindrical spreading, the excess ground attenuation results in an overall drop-off rate of 4.5 dB per doubling of distance from a line source. (5)

#### 2.3.3 ATMOSPHERIC EFFECTS

Receivers located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels. Sound levels can be increased at large distances (e.g., more than 500 feet) due to atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors such as air temperature, humidity, and turbulence can also have significant effects. (3)

#### 2.3.4 SHIELDING

A large object or barrier in the path between a noise source and a receiver can substantially attenuate noise levels at the receiver. The amount of attenuation provided by shielding depends on the size of the object and the frequency content of the noise source. Shielding by trees and other such vegetation typically only has an "out of sight, out of mind" effect. That is, the perception of noise impact tends to decrease when vegetation blocks the line-of-sight to nearby residents. However, for vegetation to provide a substantial, or even noticeable, noise reduction, the vegetation area must be at least 15 feet in height, 100 feet wide and dense enough to completely obstruct the line-of sight between the source and the receiver. This size of vegetation may provide up to 5 dBA of noise reduction. The FHWA does not consider the planting of vegetation to be a noise abatement measure. (5)

### 2.4 NOISE CONTROL

Noise control is the process of obtaining an acceptable noise environment for an observation point or receiver by controlling the noise source, transmission path, receiver, or all three. This concept is known as the source-path-receiver concept. In general, noise control measures can be applied to these three elements.

### **2.5** Noise Barrier Attenuation

Effective noise barriers can reduce noise levels by up to 10 to 15 dBA, cutting the loudness of traffic noise in half. A noise barrier is most effective when placed close to the noise source or receiver. Noise barriers, however, do have limitations. For a noise barrier to work, it must be high enough and long enough to block the path of the noise source. (5)

### 2.6 LAND USE COMPATIBILITY WITH NOISE

Some land uses are more tolerant of noise than others. For example, schools, hospitals, churches, and residences are more sensitive to noise intrusion than are commercial or industrial developments and related activities. As ambient noise levels affect the perceived amenity or





livability of a development, so too can the mismanagement of noise impacts impair the economic health and growth potential of a community by reducing the area's desirability as a place to live, shop and work. For this reason, land use compatibility with the noise environment is an important consideration in the planning and design process. The FHWA encourages State and Local government to regulate land development in such a way that noise-sensitive land uses are either prohibited from being located adjacent to a highway, or that the developments are planned, designed, and constructed in such a way that noise impacts are minimized. (6)

### 2.7 COMMUNITY RESPONSE TO NOISE

Community responses to noise may range from registering a complaint by telephone or letter, to initiating court action, depending upon everyone's susceptibility to noise and personal attitudes about noise. Several factors are related to the level of community annoyance including:

- Fear associated with noise producing activities;
- Socio-economic status and educational level;
- Perception that those affected are being unfairly treated;
- Attitudes regarding the usefulness of the noise-producing activity;
- Belief that the noise source can be controlled.

Approximately ten percent of the population has a very low tolerance for noise and will object to any noise not of their making. Consequently, even in the quietest environment, some complaints will occur. Another twenty-five percent of the population will not complain even in very severe noise environments. Thus, a variety of reactions can be expected from people exposed to any given noise environment. (7) Surveys have shown that about ten percent of the people exposed to traffic noise of 60 dBA will report being highly annoyed with the noise, and each increase of one dBA is associated with approximately two percent more people being highly annoyed. When traffic noise exceeds 60 dBA or aircraft noise exceeds 55 dBA, people may begin to complain. (7) Despite this variability in behavior on an individual level, the population can be expected to exhibit the following responses to changes in noise levels as shown on Exhibit 2-B. A change of 3 dBA are considered *barely perceptible*, and changes of 5 dBA are considered *readily perceptible*. (5)





EXHIBIT 2-B: NOISE LEVEL INCREASE PERCEPTION

### 2.8 EXPOSURE TO HIGH NOISE LEVELS

The Occupational Safety and Health Administration (OSHA) sets legal limits on noise exposure in the workplace. The permissible exposure limit (PEL) for a worker over an eight-hour day is 90 dBA. The OSHA standard uses a 5 dBA exchange rate. This means that when the noise level is increased by 5 dBA, the amount of time a person can be exposed to a certain noise level to receive the same dose is cut in half. The National Institute for Occupational Safety and Health (NIOSH) has recommended that all worker exposures to noise should be controlled below a level equivalent to 85 dBA for eight hours to minimize occupational noise induced hearing loss. NIOSH also recommends a 3 dBA exchange rate so that every increase by 3 dBA doubles the amount of the noise and halves the recommended amount of exposure time. (8)

OSHA has implemented requirements to protect all workers in general industry (e.g. the manufacturing and the service sectors) for employers to implement a Hearing Conservation Program where workers are exposed to a time weighted average noise level of 85 dBA or higher over an eight-hour work shift. Hearing Conservation Programs require employers to measure noise levels, provide free annual hearing exams and free hearing protection, provide training, and conduct evaluations of the adequacy of the hearing protectors in use unless changes to tools, equipment and schedules are made so that they are less noisy and worker exposure to noise is less than the 85 dBA. This noise study does not evaluate the noise exposure of workers within a project or construction site based on CEQA requirements, and instead, evaluates Project-related operational and construction noise levels at the nearby sensitive receiver locations in the Project study area.

### 2.9 VIBRATION

Per the Federal Transit Administration (FTA) *Transit Noise Impact and Vibration Assessment* (9), vibration is the periodic oscillation of a medium or object. The rumbling sound caused by the vibration of room surfaces is called structure-borne noise. Sources of ground-borne vibrations include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) or human-made causes (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous, such as factory machinery, or transient, such as explosions. As is the case with airborne sound, ground-borne vibrations may be described by amplitude and frequency.



There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings but is not always suitable for evaluating human response (annoyance) because it takes some time for the human body to respond to vibration signals. Instead, the human body responds to average vibration amplitude often described as the root mean square (RMS). The RMS amplitude is defined as the average of the squared amplitude of the signal and is most frequently used to describe the effect of vibration on the human body. Decibel notation (VdB) is commonly used to measure RMS. Decibel notation (VdB) serves to reduce the range of numbers used to describe human response to vibration. Typically, ground-borne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration. Sensitive receivers for vibration include structures (especially older masonry structures), people (especially residents, the elderly, and sick), and vibration-sensitive equipment and/or activities.

The background vibration-velocity level in residential areas is generally 50 VdB. Ground-borne vibration is normally perceptible to humans at approximately 65 VdB. For most people, a vibration-velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels. Typical outdoor sources of perceptible ground-borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the ground-borne vibration is rarely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration-velocity level, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings. Exhibit 2-C illustrates common vibration sources and the human and structural response to ground-borne vibration.

### 2.10 BLASTING FUNDAMENTALS

The intensity of the noise and vibration impacts associated with rock blasting depends on location, size, material, shape of the rock, and the methods used to crack it. While a blasting contractor can design the blasts to stay below a given vibration level that could cause damage to nearby structures, it is difficult to design blasts that produce noise levels which are not perceptible to receivers near the blast site. (10) The noise produced by blasting activities is referred to as air overpressure, or an "airblast," which is generated when explosive energy in the form of gases escape from the detonating blast holes. Much like a point source, airblasts radiate outward in a spherical pattern and attenuate with each doubling of distance from the blast location, depending on the design of the blast and amount of containment.

Blasting activities generally include: the pre-drilling of holes in the hard rock area; preparation and placement of the charges in the drilled holes; a pre-blast horn signal; additional pre-blast horn signals immediately prior to the blast; and the blast itself. An additional horn signal is sounded to indicate the "all clear" after the blast and the blasting contractor has inspected the blasting area. The noise from the blast itself starts with a cracking sound from the detonator, located at a distance from the charges, and ends with the low crackling sound from each charge as they are subsequently set off. Blasts typically occur for only a few seconds, depending on their design. It is important to note that no other equipment will be operating during each blast in the blast area but will commence operation once the blasting contractor indicates it is safe to do so. The blasting information provided herein is based on the 18<sup>th</sup> Edition of the International Society of Explosives Engineers' (ISEE's) *Blasters' Handbook*. (11)

Human/Structural Response		Veloci Level	ty *	Typical Sources (50 ft from source)
Threshold, minor cosmetic damage fragile buildings		100	-	Blasting from construction projects
Difficulty with tasks such as reading a VDT screen	-	90	•	Bulldozers and other heavy tracked construction equipment
			-	Commuter rail, upper range
Residential annoyance, infrequent events (e.g. commuter rail)		80	-	Rapid transit, upper range
инеериние из 2000 концикалание и концикала и концикалание и концикалание и концикалание и концикалание и конци			-	Commuter rail, typical
Residential annoyance, frequent events (e.g. rapid transit)		70	÷	Bus or truck over bump Rapid transit, typical
Limit for vibration sensitive equipment. Approx. threshold for human perception of vibration		60	•	Bus or truck, typical
		50	-	Typical background vibration
		$\bigcirc$		

#### EXHIBIT 2-C: TYPICAL LEVELS OF GROUND-BORNE VIBRATION

\* RMS Vibration Velocity Level in VdB relative to 10<sup>-6</sup> inches/second

Source: Federal Transit Administration (FTA) Transit Noise Impact and Vibration Assessment.



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## **3 REGULATORY SETTING**

To limit population exposure to physically and/or psychologically damaging as well as intrusive noise levels, the federal government, the State of California, various county governments, and most municipalities in the state have established standards and ordinances to control noise. In most areas, automobile and truck traffic is the major source of environmental noise. Traffic activity generally produces an average sound level that remains constant with time. Air and rail traffic, and commercial and industrial activities are also major sources of noise in some areas. Federal, state, and local agencies regulate different aspects of environmental noise. Federal and state agencies generally set noise standards for mobile sources such as aircraft and motor vehicles, while regulation of stationary sources is left to local agencies.

### 3.1 STATE OF CALIFORNIA NOISE REQUIREMENTS

The State of California regulates freeway noise, sets standards for sound transmission, provides occupational noise control criteria, identifies noise standards, and provides guidance for local land use compatibility. State law requires that each county and city adopt a General Plan that includes a Noise Element which is to be prepared per guidelines adopted by the Governor's Office of Planning and Research (OPR). (12) The purpose of the Noise Element is to *limit the exposure of the community to excessive noise levels*. In addition, the California Environmental Quality Act (CEQA) requires that all known environmental effects of a project be analyzed, including environmental noise impacts.

#### 3.2 COUNTY OF RIVERSIDE GENERAL PLAN NOISE ELEMENT

The County of Riverside has adopted a Noise Element of the General Plan to control and abate environmental noise, and to protect the citizens of County of Riverside from excessive exposure to noise. (13) The Noise Element specifies the maximum allowable exterior noise levels for new developments impacted by transportation noise sources such as arterial roads, freeways, airports and railroads. In addition, the Noise Element identifies several polices to minimize the impacts of excessive noise levels throughout the community and establishes noise level requirements for all land uses. To protect County of Riverside residents from excessive noise, the Noise Element contains the following policies related to the Project:

- N 1.1 Protect noise-sensitive land uses from high levels of noise by restricting noise-producing land uses from these areas. If the noise-producing land use cannot be relocated, then noise buffers such as setbacks, landscaping, or block walls shall be used.
- N 1.3 Consider the following uses noise-sensitive and discourage these uses in areas in excess of 65 CNEL:
  - Schools
  - Hospitals
  - Rest Homes
  - Long Term Care Facilities
  - Mental Care Facilities
  - Residential Uses



- Libraries
- Passive Recreation Uses
- Places of Worship
- N 1.5 Prevent and mitigate the adverse impacts of excessive noise exposure on the residents, employees, visitors, and noise-sensitive uses of Riverside County.
- *N* 4.1 *Prohibit facility-related noise, received by any sensitive use, from exceeding the following worst-case noise levels:* 
  - a. 45 dBA 10-minute  $L_{eq}$  between 10:00 p.m. and 7:00 a.m.;
  - b. 65 dBA 10-minute  $L_{eq}$  between 7:00 a.m. and 10:00 p.m.
- N 13.1 Minimize the impacts of construction noise on adjacent uses within acceptable standards.
- N 13.2 Ensure that construction activities are regulated to establish hours of operation in order to prevent and/or mitigate the generation of excessive or adverse impacts on surrounding areas.
- N 13.3 Condition subdivision approval adjacent to developed/occupied noise-sensitive land uses (see policy N 1.3) by requiring the developer to submit a construction-related noise mitigation plan to the [County] for review and approval prior to issuance of a grading permit. The plan must depict the location of construction equipment and how the noise from this equipment will be mitigated during construction of this project, through the use of such methods as:
  - *i.* Temporary noise attenuation fences;
  - ii. Preferential location and equipment; and
  - *iii.* Use of current noise suppression technology and equipment.
- N 16.3 Prohibit exposure of residential dwellings to perceptible ground vibration from passing trains as perceived at the ground or second floor. Perceptible motion shall be presumed to be a motion velocity of 0.01 inches/second over a range of 1 to 100 Hz.

To ensure noise-sensitive land uses are protected from high levels of noise (N 1.1), Table N-1 of the Noise Element identifies guidelines to evaluate proposed developments based on exterior and interior noise level limits for land uses and requires a noise analysis to determine needed mitigation measures if necessary. The Noise Element identifies residential use as a noise-sensitive land use (N 1.3) and discourages new development in areas with 65 CNEL or greater existing ambient noise levels. To prevent and mitigate noise impacts for its residents (N 1.5), County of Riverside requires noise attenuation measures for sensitive land use exposed to noise levels higher than 65 CNEL.

Policy N 4.1 of the Noise Element sets a stationary-source exterior noise limit not to be exceeded for a cumulative period of more than ten minutes in any hour of 65 dBA  $L_{eq}$  for daytime hours of 7:00 a.m. to 10:00 p.m., and 45 dBA  $L_{eq}$  during the noise-sensitive nighttime hours of 10:00 p.m. to 7:00 a.m. (13) To prevent high levels of construction noise from impacting noise-sensitive land uses, policies N 13.1 through 13.3 identify construction noise mitigation requirements for new development located near existing noise-sensitive land uses. Policy 16.3 establishes the vibration perception threshold for rail-related vibration levels, used in this analysis as a threshold for determining potential vibration impacts due to Project construction. (13)



#### **3.3.1** LAND USE COMPATIBILITY

The noise criteria identified in the County of Riverside Noise Element (Table N-1) are guidelines to evaluate the land use compatibility of transportation related noise. The compatibility criteria, shown on Exhibit 3-A, provides the County with a planning tool to gauge the compatibility of land uses relative to existing and future exterior noise levels.

The Land Use Compatibility for Community Noise Exposure matrix describes categories of compatibility and not specific noise standards. The mining use of the Project is considered *normally acceptable* with unmitigated exterior noise levels of less than 70 dBA CNEL based on the *Industrial, Manufacturing, Utilities, Agriculture* land use compatibility criteria shown on Exhibit 3-A. Residential designated land uses in the Project study area are considered *normally acceptable* with exterior noise levels below 60 dBA CNEL, and *conditionally acceptable* with exterior noise levels below 60 dBA CNEL, and *conditionally acceptable* with exterior noise levels below 60 dBA CNEL. For *conditionally acceptable* exterior noise levels approaching 75 dBA CNEL for Project land uses, *new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and the needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice. (13)* 



LAND USE CATEGORY	COMMUNITY	Y NOI	SE EX	POSURI	E LEVEI	L Ldn or	CNEL, dBA
	5	55	60	65	70	75	80
Pasidantial I aw Dansity	-	I	-1	1	1	1	1
Single Family, Dunley, Mobile	Homes	1					
Single Failing, Duplex, Mobile	momes		T				
Decidential Multiple Family				_			
Residential-Multiple Family		1			1		1
							_
Transient Ledeine Matele Her		I					
Transient Lodging-Motels, Ho		ľ			ij		
						1	
Sahoola Librarias Churabas I	Ucenitele		_				
Nursing Homes	nospitais,	1					
						Т	
Auditoriums, Concert Halls, A	mphitheaters	1	1	1			
				() and ()	T	Ŷ	1
Sports Arena, Outdoor Spectat	tor Sports	I	1		1		
					-	-	i i
Playgrounds, Neighborhood Pa	arks		-		_		
					T		
Golf Courses, Riding Stables, V	Water Recreation,	1	1		-		_
Cemeteries						1	
Office Puildings Pusinesses	ommoraial	L					
and Professional		I	1	1			_
Industrial, Manufacturing, Uti	lities,						
Agriculture		r	1	-			_
Legend:		1	I		1	1	
Normally Acceptable:	Conditionally Acceptable:	Nor	mally Unac	ceptable:	l annamilte	Clearly U	Inacceptable:
the assumption that any buildings involved are of normal conventional construction, without	New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and	be dis does p	couraged. If no proceed, a detail	w construction or c led analysis of the r	levelopment joise	generally not costs to make	ction or development should be undertaken. Construction e the indoor environment
any special noise insulation requirements.	needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply	reduct noise Outde	tion requirement insulation featu- sor areas must b	its must be made wi res included in the se shielded.	th needed design,	acceptable w outdoor envi	ould be prohibitive and the ronment would not be usable.
Source: California Office of Noise Control	systems or air conditioning will normally suffice. Outdoor environment will seem noisy						

#### EXHIBIT 3-A: LAND USE COMPATIBILITY FOR COMMUNITY NOISE EXPOSURE

Source: County of Riverside General Plan Noise Element, Table N-1.



### **3.3 OPERATIONAL NOISE STANDARDS**

The County of Riverside has set exterior noise limits to control community noise impacts from non-transportation noise sources (such as playgrounds, trash compactors, air-conditioning units, etc.). Policy N 4.1 of the Noise Element sets an exterior noise limit not to be exceeded for a cumulative period of more than ten minutes in any hour of 65 dBA  $L_{eq}$  for daytime hours of 7:00 a.m. to 10:00 p.m., and 45 dBA  $L_{eq}$  during the noise-sensitive nighttime hours of 10:00 p.m. to 7:00 a.m. (13) These stationary-source noise level standards, shown on Table 3-1, are consistent with the County of Riverside Office of Industrial Hygiene guidelines for noise studies within the County. (14)

Jurisdiction Land Use		Time Period	Noise Level Standard (dBA L <sub>eq</sub> ) <sup>2</sup>
County of	Desidential <sup>1</sup>	Daytime (7:00 a.m 10:00 p.m.)	65
Riverside <sup>1</sup>	Residential	Nighttime (10:00 p.m 7:00 a.m.)	45

#### TABLE 3-1: OPERATIONAL NOISE STANDARDS

<sup>1</sup> Source: County of Riverside General Plan Noise Element, Table N-2.

<sup>2</sup> L<sub>eq</sub> represents a steady state sound level containing the same total energy as a time varying signal over a given sample period.

#### **3.4 VIBRATION STANDARDS**

The County of Riverside does not have vibration standards for temporary construction, but the County's General Plan Noise Element does contain the human reaction to typical vibration levels. Vibration levels with peak particle velocity of 0.0787 inches per second are considered readily perceptible and above 0.1968 in/sec are considered annoying to people in buildings. Further, County of Riverside General Plan Policy N 16.3 identifies a motion velocity perception threshold for vibration due to passing trains of 0.01 inches per second (in/sec) over the range of one to 100 Hz, which is used in this noise study to assess potential impacts due to Project operational vibration levels. (13)

#### **3.5** BLASTING REGULATIONS

The mining operator is required to obtain blasting permit(s) from the State, and to notify Riverside County Sheriff's Department within 24 hours of planned blasting events. Further, blasting operations are required to satisfy the maximum airblast and vibration levels identified by the U.S. Bureau of Mines (USBM) and Office of Surface Mining and Reclamation Enforcement (OSMRE).

#### **3.5.1** AIRBLAST LIMITS

The OSMRE *Blasting Performance Standards* (Chapter 30 of the Code of Federal Regulations) identifies the maximum air overpressure and vibration levels at the *location of any dwelling, public building, school, church, or community or institutional building.* (15) Section 816.64



indicates that blasting shall be restricted to between sunrise and sunset per OSMRE standards, *unless nighttime blasting is approved by the regulatory authority based upon a showing by the operator that the public will be protected from adverse noise and other impacts*. Section 816.67 identifies maximum airblast limits, in linear dB (L), based on different frequency levels. For this noise study, the lowest limit of 129 dB (L) is used as a conservative threshold for analyzing blasting airblasts related to Project mining operations.

#### 3.5.2 VIBRATION LIMITS

Vibration level limits are also identified in the OSMRE *Blasting Performance Standards*. Section 816.67(d)(2) identifies maximum vibration levels allowed at distance ranges from the blasting site. From zero to 300 feet, the maximum vibration level shall not exceed 1.25 inches per second (in/sec) PPV. Between 301 to 5,000 feet, maximum vibration levels shall not exceed 1.0 in/sec PPV, and at distances greater than 5,001 feet, the OSMRE maximum vibration level standard is 0.75 in/sec PPV. (15)

While additional blasting regulations can be imposed by the permitting agency, the OSMRE blasting regulations represent conservative thresholds for the purposes of this noise study to determine potential impacts related to blasting at nearby sensitive uses, based on the lowest OSMRE airblast limit of 129 dB (L), and 0.75 in/sec PPV for vibration, to present a conservative approach.



## 4 SIGNIFICANCE CRITERIA

The following significance criteria are based on currently adopted guidance provided by Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (1) For the purposes of this report, impacts would be potentially significant if the Project results in or causes:

- A. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?
- B. Generation of excessive ground-borne vibration or ground-borne noise levels?
- C. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

While the County of Riverside General Plan Guidelines provide direction on noise compatibility and establish noise standards by land use type that are sufficient to assess the significance of noise impacts, they do not define the levels at which increases are considered substantial for use under Guideline A. CEQA Appendix G Guideline C applies to nearby public and private airports, if any, and the Project's land use compatibility.

#### CEQA GUIDELINES NOT FURTHER ANALYZED

The Project site is not located within two miles of a public airport or within an airport land use plan. The closest potential private airstrip is the Gilman Springs Flyers airstrip located roughly 1.5 miles west of the Project site, south of Gilman Springs Road. However, this airstrip is limited to remote controlled model airplanes and does not represent a major aircraft-related noise source capable of exposing people within the Project site to excessive noise levels. As such, the Project site would not be exposed to excessive noise levels from airport operations, and therefore, impacts are considered *less than significant*, and no further noise analysis is conducted in relation to Guideline C.

### 4.1 NOISE-SENSITIVE RECEIVERS

Noise level increases resulting from the Project are evaluated based on the Appendix G CEQA Guidelines described above at the closest sensitive receiver locations. Under CEQA, consideration must be given to the magnitude of the increase, the existing ambient noise levels, and the location of noise-sensitive receivers to determine if a noise increase represents a significant adverse environmental impact. This approach recognizes *that there is no single noise increase that renders the noise impact significant.* (16)

Unfortunately, there is no completely satisfactory way to measure the subjective effects of noise or of the corresponding human reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance and differing individual experiences with noise. Thus, an important way of determining a person's subjective reaction to



a new noise is the comparison of it to the existing environment to which one has adapted—the so-called *ambient* environment.

In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will typically be judged. The Federal Interagency Committee on Noise (FICON) (17) developed guidance to be used for the assessment of project-generated increases in noise levels that consider the ambient noise level. The FICON recommendations are based on studies that relate aircraft noise levels to the percentage of persons highly annoyed by aircraft noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, these recommendations are often used in environmental noise impact assessments involving the use of cumulative noise exposure metrics, such as the average-daily noise level (CNEL) and equivalent continuous noise level ( $L_{eq}$ ).

As previously stated, the approach used in this noise study recognizes *that there is no single noise increase that renders the noise impact significant*, based on a 2008 California Court of Appeal ruling on Gray v. County of Madera. (16) For example, if the ambient noise environment is quiet (<60 dBA) and the new noise source greatly increases the noise levels, an impact may occur if the noise criteria may be exceeded. Therefore, for this analysis, FICON identifies a *readily perceptible* 5 dBA or greater project-related noise level increase is considered a significant impact when the noise criteria for a given land use is exceeded. Per the FICON, in areas where the without project noise levels range from 60 to 65 dBA, a 3 dBA *barely perceptible* noise level increase appears to be appropriate for most people. When the without project noise levels already exceed 65 dBA, any increase in community noise louder than 1.5 dBA or greater is considered a significant impact if the noise criteria for a given land use is exceeded, since it likely contributes to an existing noise exposure exceedance. Table 4-1 below provides a summary of the potential noise impact significance criteria, based on guidance from FICON.

Without Project Noise Level	Potential Significant Impact
< 60 dBA	5 dBA or more
60 - 65 dBA	3 dBA or more
> 65 dBA	1.5 dBA or more

TABLE 4-1:	SIGNIFICANCE	<b>OF NOISE IMPACTS</b>	AT NOISE-SENSITIVE RECEIVERS

Federal Interagency Committee on Noise (FICON), 1992.



### 4.2 NON-NOISE-SENSITIVE RECEIVERS

The County of Riverside General Plan Noise Element, Table N-1, *Land Use Compatibility for Community Noise Exposure* was used to establish the satisfactory noise levels of significance for non-noise-sensitive land uses in the Project study area. As previously shown on Exhibit 3-A, the *normally acceptable* exterior noise levels for non-noise-sensitive land uses is 70 dBA CNEL. Noise levels greater than 70 dBA CNEL are considered *conditionally acceptable* per the *Land Use Compatibility for Community Noise Exposure*. (13)

To determine if Project-related traffic noise level increases are significant at off-site non-noisesensitive land uses, a *readily perceptible* 5 dBA and *barely perceptible* 3 dBA criteria were used. When the without Project noise levels at the non-noise-sensitive land uses are below the *normally acceptable* 70 dBA CNEL compatibility criteria, a *readily perceptible* 5 dBA or greater noise level increase is considered a significant impact. When the without Project noise levels are greater than the *normally acceptable* 70 dBA CNEL land use compatibility criteria, a *barely perceptible* 3 dBA or greater noise level increase is considered a significant impact since the noise level criteria is already exceeded. The noise level increases used to determine significant impacts for non-noise-sensitive land uses is generally consistent with the FICON noise level increase thresholds s for noise-sensitive land uses but instead rely on the County of Riverside General Plan Noise Element, Table N-1, *Land Use Compatibility for Community Noise Exposure normally acceptable* 70 dBA CNEL exterior noise level criteria.

#### 4.3 SIGNIFICANCE CRITERIA SUMMARY

Noise impacts shall be considered significant if any of the following occur as a direct result of the proposed development. Table 4-2 shows the significance criteria summary matrix.

#### OFF-SITE TRAFFIC NOISE

- When the noise levels at existing and future noise-sensitive land uses (e.g. residential, etc.):
  - are less than 60 dBA CNEL and the Project creates a *readily perceptible* 5 dBA CNEL or greater Project-related noise level increase; or
  - range from 60 to 65 dBA CNEL and the Project creates a *barely perceptible* 3 dBA CNEL or greater Project-related noise level increase; or
  - already exceed 65 dBA CNEL, and the Project creates a community noise level increase of greater than 1.5 dBA CNEL (FICON, 1992).
- When the noise levels at existing and future non-noise-sensitive land uses (e.g. office, commercial, industrial):
  - are less than the County of Riverside General Plan Noise Element, Table N-1, normally acceptable 70 dBA CNEL and the Project creates a readily perceptible 5 dBA CNEL or greater Project related noise level increase; or
  - are greater than the County of Riverside General Plan Noise Element, Table N-1, normally acceptable 70 dBA CNEL and the Project creates a barely perceptible 3 dBA CNEL or greater Project noise level increase.



#### **OPERATIONAL NOISE & VIBRATION**

- If Project-related operational (stationary source) noise levels exceed the exterior 65 dBA L<sub>eq</sub> daytime or 45 dBA L<sub>eq</sub> nighttime noise level standards at nearby sensitive receiver locations in the County of Riverside (County of Riverside General Plan Noise Element, Table N-2).
- If the existing ambient noise levels at the nearby noise-sensitive receivers near the Project site:
  - $\circ~$  are less than 60 dBA  $L_{eq}$  and the Project creates a *readily perceptible* 5 dBA  $L_{eq}$  or greater Project-related noise level increase; or
  - $\circ$  range from 60 to 65 dBA L<sub>eq</sub> and the Project creates a *barely perceptible* 3 dBA L<sub>eq</sub> or greater Project-related noise level increase; or
  - $\circ~$  already exceed 65 dBA  $L_{eq}$ , and the Project creates a community noise level increase of greater than 1.5 dBA  $L_{eq}$  (FICON, 1992).
- If Project generated operational vibration levels exceed the County of Riverside acceptable vibration standard of 0.01 in/sec RMS at sensitive receiver locations (County of Riverside General Plan, Policy N 16.3).

#### BLASTING AIRBLASTS AND VIBRATION

- If blasting within the Project site boundaries results in:
  - $\circ$   $\;$  airblasts exceeding OSMRE standards of 129 dB (L); or
  - vibration levels exceeding OSMRE standards of 0.75 in/sec PPV (OSMRE Blasting Performance Standards).



Arabusia	Receiving	Condition(a)	Significance Criteria	
Analysis	Land Use	Condition(s)	Daytime	Nighttime
Off-Site Traffic	Noise- Sensitive <sup>1</sup>	If ambient is < 60 dBA CNEL	≥ 5 dBA CNEL Project increase	
		If ambient is 60 - 65 dBA CNEL	≥ 3 dBA CNEL Project increase	
		If ambient is > 65 dBA CNEL	≥ 1.5 dBA CNEL Project increase	
	Non-Noise- Sensitive <sup>1,2</sup>	if ambient is < 70 dBA CNEL	≥ 5 dBA CNEL Project increase	
		if ambient is > 70 dBA CNEL	≥ 3 dBA CNEL Project increase	
Operational	Noise- Sensitive	Exterior Noise Level Standards <sup>3</sup>	65 dBA L <sub>eq</sub>	45 dBA L <sub>eq</sub>
		if ambient is < 60 dBA L <sub>eq</sub> <sup>1</sup>	$\geq$ 5 dBA L <sub>eq</sub> Project increase	
		if ambient is 60 - 65 dBA $L_{eq}^1$	≥ 3 dBA L <sub>eq</sub> Project increase	
		if ambient is > 65 dBA L <sub>eq</sub> <sup>1</sup>	≥ 1.5 dBA L <sub>eq</sub> Project increase	
		Vibration Level Threshold <sup>3</sup>	0.01 in/sec PPV	
Blasting <sup>4</sup>	Noise- Sensitive	Airblast Threshold	129 dB (L)	n/a
		Vibration Level Threshold	0.75 in/sec PPV	n/a

#### **TABLE 4-2: SIGNIFICANCE CRITERIA SUMMARY**

<sup>1</sup> Source: FICON, 1992.

<sup>2</sup> Source: County of Riverside General Plan Noise Element, Table N-1.

<sup>3</sup> Source: County of Riverside General Plan Noise Element, Table N-2 (stationary noise sources) and Policy N 16.3 (vibration).

<sup>4</sup> Sources: OSMRE Blasting Performance Standards (Chapter 30 of the Code of Federal Regulations) and the ISEE's Blasters' Handbook.

"Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.; "n/a" = nighttime blasting activities must be permitted by the regulatory authority; "PPV" = peak particle velocity.



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## 5 EXISTING NOISE LEVEL MEASUREMENTS

To assess the existing noise level environment, 24-hour noise level measurements were taken at six sensitive receiver locations in the Project study area. The receiver locations were selected to describe and document the existing noise environment within the Project study area. Exhibit 5-A provides the boundaries of the Project study area and the noise level measurement locations. To fully describe the existing noise conditions, noise level measurements were collected by Urban Crossroads, Inc. on Wednesday, December 12<sup>th</sup>, 2017. Appendix 5.1 includes study area photos.

### 5.1 MEASUREMENT PROCEDURE AND CRITERIA

To describe the existing noise environment, the hourly noise levels were measured during typical weekday conditions over a 24-hour period. By collecting individual hourly noise level measurements, it is possible to describe the daytime and nighttime hourly noise levels and calculate the 24-hour CNEL. The long-term noise readings were recorded using Piccolo Type 2 integrating sound level meter and dataloggers. The Piccolo sound level meters were calibrated using a Larson-Davis calibrator, Model CAL 150. All noise meters were programmed in "slow" mode to record noise levels in "A" weighted form. The sound level meters and microphones were equipped with a windscreen during all measurements. All noise level measurement equipment satisfies the American National Standards Institute (ANSI) standard specifications for sound level meters ANSI S1.4-2014/IEC 61672-1:2013. (18)

### 5.2 NOISE MEASUREMENT LOCATIONS

The long-term noise level measurements were positioned as close to the nearest sensitive receiver locations as possible to assess the existing ambient hourly noise levels surrounding the Project site. Both Caltrans and the FTA recognize that it is not reasonable to collect noise level measurements that can fully represent every part of a private yard, patio, deck, or balcony normally used for human activity when estimating impacts for new development projects. This is demonstrated in the Caltrans general site location guidelines which indicate that, sites must be free of noise contamination by sources other than sources of interest. Avoid sites located near sources such as barking dogs, lawnmowers, pool pumps, and air conditioners unless it is the express intent of the analyst to measure these sources. (3) Further, FTA guidance states, that it is not necessary nor recommended that existing noise exposure be determined by measuring at every noise-sensitive location in the project area. Rather, the recommended approach is to characterize the noise environment for clusters of sites based on measurements or estimates at representative locations in the community. (9) Based on recommendations of Caltrans and the FTA, it is not necessary to collect measurements at each individual building or residence, because each receiver measurement represents a group of buildings that share acoustical equivalence. (9) In other words, the area represented by the receiver shares similar shielding, terrain, and geometric relationship to the reference noise source. Receivers represent a location of noise sensitive areas and are used to estimate the future noise level impacts. Collecting reference ambient noise level measurements at the nearby sensitive receiver locations allows for a



comparison of the before and after Project noise levels and is necessary to assess potential noise impacts due to the Project's contribution to the ambient noise levels.







Previous Physical Disturbance
# 5.3 NOISE MEASUREMENT RESULTS

The noise measurements presented below focus on the average or equivalent sound levels ( $L_{eq}$ ). The equivalent sound level ( $L_{eq}$ ) represents a steady state sound level containing the same total energy as a time varying signal over a given sample period. Table 5-1 identifies the hourly daytime (7:00 a.m. to 10:00 p.m.) and nighttime (10:00 p.m. to 7:00 a.m.) noise levels at each noise level measurement location. Appendix 5.2 provides a summary of the existing hourly ambient noise levels described below:

- Location L1 represents the noise levels northwest of the Project site on Gilman Springs Road near existing vacant land and agricultural uses. The background ambient noise levels near this location consist primarily of vehicular traffic on Gilman Springs Road. The noise level measurements collected show an overall 24-hour exterior noise level of 66.2 dBA CNEL. The hourly noise levels measured at location L1 ranged from 56.5 to 62.4 dBA L<sub>eq</sub> during the daytime hours and from 55.1 to 63.2 dBA L<sub>eq</sub> during the nighttime hours. The energy (logarithmic) average daytime noise level was calculated at 59.8 dBA L<sub>eq</sub> with an average nighttime noise level of 59.6 dBA L<sub>eq</sub>.
- Location L2 represents the noise levels southwest of the Project site on Bridge Street near existing agricultural use. The primary source of background ambient noise in this rural agricultural area was from traffic noise on Bridge Street. The noise level measurements collected show an overall 24-hour exterior noise level of 67.3 dBA CNEL. The hourly noise levels measured at location L2 ranged from 59.8 to 65.9 dBA L<sub>eq</sub> during the daytime hours and from 54.2 to 64.6 dBA L<sub>eq</sub> during the nighttime hours. The energy (logarithmic) average daytime noise level was calculated at 62.6 dBA L<sub>eq</sub> with an average nighttime noise level of 59.9 dBA L<sub>eq</sub>.
- Location L3 represents the noise levels south of the Project site on Gilman Springs Road adjacent to the entrance gate for the Project. Located near the Gilman Spring Mine entrance gate, the existing noise environment at this location is attributed to background traffic noise on Gilman Springs Road. The 24-hour CNEL indicates that the overall exterior noise level is 68.8 dBA CNEL. At location L3 the background ambient noise levels ranged from 58.5 to 66.3 dBA L<sub>eq</sub> during the daytime hours to levels of 57.4 to 65.8 dBA L<sub>eq</sub> during the nighttime hours. The energy (logarithmic) average daytime noise level was calculated at 62.5 dBA L<sub>eq</sub> with an average nighttime noise level of 62.1 dBA L<sub>eq</sub>.
- Location L4 represents the noise levels south of the Project site on Gilman Springs Road near existing agricultural uses and the Victory Ranch Baptist Camp west of State Route 79. Traffic noise from Gilman Spring Road represents the primary source of background noise at this location. The noise level measurements collected show an overall 24-hour exterior noise level of 77.6 dBA CNEL. The hourly noise levels measured at location L4 ranged from 69.3 to 74.0 dBA L<sub>eq</sub> during the daytime hours and from 66.5 to 74.3 dBA L<sub>eq</sub> during the nighttime hours. The energy (logarithmic) average daytime noise level was calculated at 71.5 dBA L<sub>eq</sub> with an average nighttime noise level of 70.9 dBA L<sub>eq</sub>.
- Location L5 represents the noise levels southwest of the Project site adjacent to existing agricultural uses on Main Street. In addition to the background traffic noise on Main Street, the noise levels at this location include agriculture watering activities. The 24-hour CNEL indicates that the overall exterior noise level is 72.2 dBA CNEL. At location L5 the background ambient noise levels ranged from 63.2 to 69.7 dBA L<sub>eq</sub> during the daytime hours to levels of 56.7 to 71.0 dBA L<sub>eq</sub> during the nighttime hours. The energy (logarithmic) average daytime noise level was calculated at 66.7 dBA L<sub>eq</sub> with an average nighttime noise level of 65.4 dBA L<sub>eq</sub>.



 Location L6 represents the noise levels southwest of the Project site near existing agricultural uses on Bridge Street. Traffic noise from Ramona Expressway and Bridge Street represent the primary source of background ambient noise at this location. The noise level measurements collected show an overall 24-hour exterior noise level of 76.7 dBA CNEL. The hourly noise levels measured at location L6 ranged from 67.6 to 74.5 dBA Leq during the daytime hours and from 63.3 to 73.8 dBA Leq during the nighttime hours. The energy (logarithmic) average daytime noise level was calculated at 71.7 dBA Leq with an average nighttime noise level of 69.7 dBA Leq.

Table 5-1 provides the (energy average) noise levels used to describe the daytime and nighttime ambient conditions. These daytime and nighttime energy average noise levels represent the average of all hourly noise levels observed during these time periods expressed as a single number. Appendix 5.2 provides summary worksheets of the noise levels for each hour as well as the minimum, maximum, L<sub>1</sub>, L<sub>2</sub>, L<sub>5</sub>, L<sub>8</sub>, L<sub>25</sub>, L<sub>50</sub>, L<sub>90</sub>, L<sub>95</sub>, and L<sub>99</sub> percentile noise levels observed during the daytime and nighttime periods. The background ambient noise levels in the Project study area are dominated by the transportation-related noise associated with the arterial roadway network. The 24-hour existing noise level measurements shown on Table 5-1 present the existing ambient noise conditions.

Location <sup>1</sup>	Distance to Proposed Mining Limits	Description	Energy A Noise Leve	Average I (dBA L <sub>eq</sub> ) <sup>2</sup>	CNEL
	(Miles)		Daytime	Nighttime	
L1	1.6	Located northwest of the Project site on Gilman Springs Road near existing vacant land and agricultural uses.	59.8	59.6	66.2
L2	0.6	Located southwest of the Project site on Bridge Street near existing agricultural use.	62.6	59.9	67.3
L3	0.1	Located south of the Project site on Gilman Springs Road adjacent to the entrance gate for the Project.	62.5	62.1	68.8
L4	1.3	Located south of the Project site on Gilman Springs Road near existing agricultural uses and the Victory Ranch Baptist Camp west of State Route 79.	71.5	70.9	77.6
L5	2.7	Located southwest of the Project site adjacent to existing agricultural uses on Main Street.	66.7	65.4	72.2
L6	2.7	Located southwest of the Project site near existing agricultural uses on Bridge Street.	71.7	69.7	76.7

TABLE 5-1:	24-HOUR AMBIENT	NOISE LEVEL	MEASUREMENTS
ADEL J-1.			INILASON LIVILIAIS

<sup>1</sup> See Exhibit 5-A for the noise level measurement locations.

<sup>2</sup> Energy (logarithmic) average hourly levels. The long-term 24-hour measurement worksheets are included in Appendix 5.2.

"Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.



# 6 METHODS AND PROCEDURES

The following section outlines the methods and procedures used to model and analyze the future traffic noise environment.

# 6.1 FHWA TRAFFIC NOISE PREDICTION MODEL

The expected roadway noise level increases from vehicular traffic were calculated by Urban Crossroads, Inc. using a computer program that replicates the Federal Highway Administration (FHWA) Traffic Noise Prediction Model- FHWA-RD-77-108. (20) The FHWA Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). In California the national REMELs are substituted with the California Vehicle Noise (Calveno) Emission Levels. (21) Adjustments are then made to the REMEL to account for: the roadway classification (e.g., collector, secondary, major or arterial), the roadway active width (i.e., the distance between the center of the outermost travel lanes on each side of the roadway), the total average daily traffic (ADT), the travel speed, the percentages of automobiles, medium trucks, and heavy trucks in the traffic volume, the roadway grade, the angle of view (e.g., whether the roadway view is blocked), the site conditions ("hard" or "soft" relates to the absorption of the ground, pavement, or landscaping), and the percentage of total ADT which flows each hour throughout a 24-hour period. Research conducted by Caltrans has shown that the use of soft site conditions is appropriate for the application of the FHWA traffic noise prediction model used in this analysis. (22) This methodology is consistent with the County of Riverside Office of Industrial Hygiene Requirements for Determining and Mitigating Traffic Noise Impacts to Residential Structures, which specifically requires the FHWA RD-77-108 model to be used in analysis within the County's jurisdiction. (14)

# 6.2 OFF-SITE TRAFFIC NOISE PREDICTION MODEL INPUTS

Table 6-1 presents the roadway parameters used to assess the Project's off-site transportation noise impacts. Table 6-1 identifies the six study area roadway segments, the distance from the centerline to adjacent land use based on the functional roadway classifications per the County of Riverside and City of Moreno Valley General Plan Circulation Element, and the posted vehicle speeds. Where posted vehicle speeds are unavailable, the 40-mph speed identified in the County of Riverside Office of Industrial Hygiene Noise Study Guidelines is used. The ADT volumes used in this study are presented on Table 6-2 are based on the *Gilman Springs Mine Traffic Impact Analysis* and the *Gilman Springs Mine Supplemental Traffic Assessment* prepared by Urban Crossroads, Inc., for the following traffic scenarios: Existing (2019), Existing plus Ambient Growth (EA) (2019), and EA plus Cumulative Development (EAC) (2019) conditions. (2)

Per the *Gilman Springs Mine Traffic Impact Analysis* and the *Gilman Springs Mine Supplemental Traffic Assessment* prepared by Urban Crossroads, Inc. the Project is expected to generate a net total of approximately 350 trip-ends per day (actual vehicles). (2) The Project trip generation includes 320 truck trip-ends per day. This noise study relies on the actual Project trips (as opposed to the passenger car equivalents) to accurately account for the effect of individual truck trips on the study area roadway network.

The ADT volumes vary for each roadway segment based on the existing traffic volumes and the combination of project traffic distributions. The *General Plan Noise Element* (13) requires that future on-site traffic noise impacts be assessed using the maximum capacity design standard for highways and major roads. However, this analysis relies on a comparative analysis of the off-site traffic noise impacts, without and with project ADT traffic volumes from the Project traffic study. The use of the maximum capacity design standards is typically reserved for determining the future long-range on-site traffic noise impacts, not the comparative contributions associated with the off-site Project traffic noise level impacts.

To quantify the off-site noise levels, the Project related truck trips were added to the heavy truck category in the FHWA noise prediction model. The addition of the Project related truck trips increases the percentage of heavy trucks in the vehicle mix.

This approach recognizes that the FHWA noise prediction model is significantly influenced by the number of heavy trucks in the vehicle mix. Table 6-3 provides the time of day (daytime, evening, and nighttime) vehicle splits. The daily Project truck trip-ends were assigned to the individual off-site study area roadway segments based on the Project truck trip distribution percentages documented in the *Traffic Impact Analysis*. Using the Project truck trips in combination with the Project trip distribution, Urban Crossroads, Inc. calculated the number of additional Project truck trips and vehicle mix percentages for each of the study area roadway segments. Table 6-4 shows the traffic flow by vehicle type (vehicle mix) used for all without Project traffic scenarios, and Tables 6-5 to 6-7 show the vehicle mixes used for the with Project traffic scenarios.

ID	Roadway	Segment	Adjacent Planned (Existing if Different) Land Use <sup>1</sup>	Distance from Centerline to Nearest Adjacent Land Use (Feet) <sup>2</sup>	Vehicle Speed (mph) <sup>3</sup>
1	Gilman Springs Rd.	s/o SR-60	Residential/Business Park (Vacant)	50'	55
2	Gilman Springs Rd.	s/o Alessandro Bl.	Residential/Business Park (Vacant)	50'	55
3	Gilman Springs Rd.	s/o Jack Rabbit Tr.	Agriculture/Residential	64'	55
4	Gilman Springs Rd.	s/o Bridge St.	Agriculture	64'	55
5	Gilman Springs Rd.	n/o SR-79	Commercial/Agriculture	64'	55
6	Bridge St.	w/o Gilman Springs Rd.	Agriculture	50'	55

TABLE 6-1: OFF-SITE ROADWAY PARAMETERS

<sup>1</sup> Sources: County of Riverside Reche Canyon/Badlands and San Jacinto Valley Land Use Plans, and the City of Moreno Valley Land Use Map.

<sup>2</sup> Distance to adjacent land use is based upon the right-of-way distances for each functional roadway classification provided in the General Plan Circulation Elements of the County of Riverside and City of Moreno Valley.

<sup>3</sup> Source: Gilman Springs Mine Traffic Impact Analysis, April 2018.



				Ave	rage Daily T	raffic Volu	mes <sup>1</sup>				
ID	Roadway	Segment	Exis	Existing		Existing Ambie		Existing plus Ambient Growth (EA)		EA plus Cumulative Development (EAC)	
			Without Project	With Project	Without Project	With Project	Without Project	With Project			
1	Gilman Springs Rd.	s/o SR-60	24,989	25,195	25,488	25,694	26,262	26,468			
2	Gilman Springs Rd.	s/o Allesandro Bl.	29,420	29,629	30,608	30,817	30,892	31,101			
3	Gilman Springs Rd.	s/o Jack Rabbit Tr.	29,402	29,612	30,590	30,800	30,881	31,091			
4	Gilman Springs Rd.	s/o Bridge St.	25,484	25,726	26,513	26,755	26,677	26,919			
5	Gilman Springs Rd.	n/o SR-79	27,943	28,051	29,072	29,180	29,238	29,346			
6	Bridge St.	w/o Gilman Springs Rd.	2,507	2,539	2,608	2,640	2,852	2,884			

#### TABLE 6-2: AVERAGE DAILY TRAFFIC VOLUMES

<sup>1</sup> Source: Gilman Springs Mine Supplemental Traffic Assessment.

#### TABLE 6-3: TIME OF DAY VEHICLE SPLITS

Vahiele Ture		Time of Day Splits		Total of Time of
venicie Type	Daytime	Evening	Nighttime	Day Splits
Autos	66.90%	11.92%	21.17%	100.00%
Medium Trucks	64.84%	8.49%	26.68%	100.00%
Heavy Trucks	72.54%	4.69%	22.77%	100.00%

Based on an existing 24-hour vehicle count taken at Gilman Springs Road south of Bridge Street (Gilman Springs Mine Traffic Impact Analysis, April 2018.). Vehicle mix percentage values rounded to the nearest one-hundredth.

"Daytime" = 7:00 a.m. to 7:00 p.m.; "Evening" = 7:00 p.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.

#### TABLE 6-4: WITHOUT PROJECT CONDITIONS VEHICLE MIX

Classification		<b>Total % Traffic Flow</b>		Total
Classification	Autos	Medium Trucks	Heavy Trucks	TOTAL
All Segments	90.41%	7.53%	2.06%	100.00%

Based on an existing 24-hour vehicle count taken at Gilman Springs Road south of Bridge Street (Gilman Springs Mine Traffic Impact Analysis). Vehicle mix percentage values rounded to the nearest one-hundredth.



				With P	roject <sup>1</sup>		
ID	Roadway	Segment	Autos	Medium Trucks	Heavy Trucks	Total <sup>2</sup>	
1	Gilman Springs Rd.	s/o SR-60	89.73%	7.47%	2.80%	100.00%	
2	Gilman Springs Rd.	s/o Allesandro Bl.	89.83%	7.48%	2.69%	100.00%	
3	Gilman Springs Rd.	s/o Jack Rabbit Tr.	89.83%	7.48%	2.69%	100.00%	
4	Gilman Springs Rd.	s/o Bridge St.	89.63%	7.46%	2.91%	100.00%	
5	Gilman Springs Rd.	n/o SR-79	90.11%	7.50%	2.39%	100.00%	
6	Bridge St.	w/o Gilman Springs Rd.	89.27%	7.43%	3.29%	100.00%	

#### TABLE 6-5: EXISTING (2019) WITH PROJECT CONDITIONS VEHICLE MIX

<sup>1</sup> Source: Gilman Springs Mine Supplemental Traffic Assessment.

<sup>2</sup> Total of vehicle mix percentage values rounded to the nearest one-hundredth.

### TABLE 6-6: EA (2019) WITH PROJECT CONDITIONS VEHICLE MIX

				With P	roject <sup>1</sup>	
ID	Roadway	Segment	Autos	Medium Trucks	Heavy Trucks	Total <sup>2</sup>
1	Gilman Springs Rd.	s/o SR-60	89.74%	7.47%	2.79%	100.00%
2	Gilman Springs Rd.	s/o Allesandro Bl.	89.85%	7.48%	2.67%	100.00%
3	Gilman Springs Rd.	s/o Jack Rabbit Tr.	89.85%	7.48%	2.67%	100.00%
4	Gilman Springs Rd.	s/o Bridge St.	89.66%	7.46%	2.88%	100.00%
5	Gilman Springs Rd.	n/o SR-79	90.12%	7.50%	2.38%	100.00%
6	Bridge St.	w/o Gilman Springs Rd.	89.32%	7.44%	3.25%	100.00%

<sup>1</sup> Source: Gilman Springs Mine Supplemental Traffic Assessment.

<sup>2</sup> Total of vehicle mix percentage values rounded to the nearest one-hundredth.

### TABLE 6-7: EAC (2019) WITH PROJECT CONDITIONS VEHICLE MIX

				With P	roject <sup>1</sup>	
ID	Roadway	Segment	Autos	Medium Trucks	Heavy Trucks	Total <sup>2</sup>
1	Gilman Springs Rd.	s/o SR-60	89.76%	7.47%	2.77%	100.00%
2	Gilman Springs Rd.	s/o Allesandro Bl.	89.86%	7.48%	2.66%	100.00%
3	Gilman Springs Rd.	s/o Jack Rabbit Tr.	89.86%	7.48%	2.66%	100.00%
4	Gilman Springs Rd.	s/o Bridge St.	89.67%	7.46%	2.87%	100.00%
5	Gilman Springs Rd.	n/o SR-79	90.12%	7.50%	2.38%	100.00%
6	Bridge St.	w/o Gilman Springs Rd.	89.41%	7.45%	3.15%	100.00%

<sup>1</sup> Source: Gilman Springs Mine Supplemental Traffic Assessment.

<sup>2</sup> Total of vehicle mix percentage values rounded to the nearest one-hundredth.



# 7 OFF-SITE TRANSPORTATION NOISE IMPACTS

To assess the off-site transportation CNEL noise level impacts associated with development of the proposed Project, noise contours were developed based on *Gilman Springs Mine Traffic Impact Analysis* and the *Gilman Springs Mine Supplement Traffic Assessment*. (2) Noise contour boundaries represent the equal levels of noise exposure and are measured in CNEL from the center of the roadway. Noise contours were developed for the following traffic scenarios:

- <u>Existing Conditions (2019) Without / With Project</u>: This scenario refers to the existing presentday noise conditions without and with the proposed Project.
- <u>Existing plus Ambient Growth (EA) (2019) Without / With the Project</u>: This scenario refers to Existing plus Ambient Growth noise conditions without and with the proposed Project.
- <u>EA plus Cumulative Development (EAC) (2019) Without / With the Project</u>: This scenario refers to Existing plus Ambient Growth plus Cumulative Development noise conditions without and with the proposed Project. This scenario includes all cumulative projects identified in the Traffic Impact Analysis.

# 7.1 TRAFFIC NOISE CONTOURS

Noise contours were used to assess the Project's incremental traffic-related noise impacts at land uses adjacent to roadways conveying Project traffic. The noise contours represent the distance to noise levels of a constant value and are measured from the center of the roadway for the 70, 65, and 60 dBA noise levels. The noise contours do not consider the effect of any existing noise barriers or topography that may attenuate ambient noise levels. In addition, because the noise contours reflect modeling of vehicular noise on area roadways, they appropriately do not reflect noise contributions from the surrounding stationary noise sources within the Project study area. Tables 7-1 through 7-6 present a summary of the exterior traffic noise levels, without barrier attenuation, for the six study area roadway segments analyzed from the without Project to the with Project conditions in each of the following timeframes: Existing (2019), EA (2019), and EAC (2019) traffic conditions. Appendix 7.1 includes a summary of the traffic noise level contours for each of the traffic scenarios.



			Adjacent	CNEL at Nearest	Distar from C	nce to Co enterline	ontour e (Feet)
ID	Road	Segment	Planned (Existing) Land Use1Adjacent Land Use (dBA)27065dBA (dBA)2dBA CNELdBA CNELResidential/Business Park (Vacant)78.2176379Residential/Business Park (Vacant)78.9196423	60 dBA CNEL			
1	Gilman Springs Rd.	s/o SR-60	Residential/Business Park (Vacant)	78.2	176	379	817
2	Gilman Springs Rd.	s/o Allesandro Bl.	Residential/Business Park (Vacant)	78.9	196	423	911
3	Gilman Springs Rd.	s/o Jack Rabbit Tr.	Agriculture/Residential	76.7	180	387	834
4	Gilman Springs Rd.	s/o Bridge St.	Agriculture	76.1	163	352	758
5	Gilman Springs Rd.	n/o SR-79	Commercial/Agriculture	76.5	174	374	806
6	Bridge St.	w/o Gilman Springs Rd.	Agriculture	67.3	RW	72	154

### TABLE 7-1: EXISTING (2019) WITHOUT PROJECT CONDITIONS NOISE CONTOURS

<sup>1</sup> Sources: County of Riverside Reche Canyon/Badlands and San Jacinto Valley Land Use Plans, and the City of Moreno Valley Land Use Map.

<sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use.

"RW" = Location of the respective noise contour falls within the right-of-way of the road.

### TABLE 7-2: EXISTING (2019) WITH PROJECT CONDITIONS NOISE CONTOURS

			Adjacent	CNEL at Nearest	Distar from C	Distance to Contour from Centerline (Feet)		
ID	Road	Segment	Planned (Existing) Land Use <sup>1</sup>	Adjacent Land Use $(dBA)^2$ 7065dBA $(dBA)^2$ dBA CNELdBA CNELant)78.6186402	60 dBA CNEL			
1	Gilman Springs Rd.	s/o SR-60	Residential/Business Park (Vacant)	78.6	186	402	866	
2	Gilman Springs Rd.	s/o Allesandro Bl.	Residential/Business Park (Vacant)	79.2	206	444	957	
3	Gilman Springs Rd.	s/o Jack Rabbit Tr.	Agriculture/Residential	77.0	189	407	876	
4	Gilman Springs Rd.	s/o Bridge St.	Agriculture	76.5	174	376	809	
5	Gilman Springs Rd.	n/o SR-79	Commercial/Agriculture	76.7	178	384	828	
6	Bridge St.	w/o Gilman Springs Rd.	Agriculture	67.9	RW	79	169	

<sup>1</sup> Sources: County of Riverside Reche Canyon/Badlands and San Jacinto Valley Land Use Plans, and the City of Moreno Valley Land Use Map.

<sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use.

"RW" = Location of the respective noise contour falls within the right-of-way of the road.



			Adjacent	CNEL at Nearest	Distar from Co	ce to Contour enterline (Feet)	
ID 1 2	Road	Segment	Planned (Existing) Land Use <sup>1</sup>	Adjacent Land Use (dBA) <sup>2</sup>	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Gilman Springs Rd.	s/o SR-60	Residential/Business Park (Vacant)	78.3	178	384	828
2	Gilman Springs Rd.	s/o Allesandro Bl.	Residential/Business Park (Vacant)	79.1	202	434	936
3	Gilman Springs Rd.	s/o Jack Rabbit Tr.	Agriculture/Residential	76.9	185	398	857
4	Gilman Springs Rd.	s/o Bridge St.	Agriculture	76.3	168	361	779
5	Gilman Springs Rd.	n/o SR-79	Commercial/Agriculture	76.7	178	384	828
6	Bridge St.	w/o Gilman Springs Rd.	Agriculture	67.5	RW	74	158

### TABLE 7-3: EA (2019) WITHOUT PROJECT CONDITIONS NOISE CONTOURS

<sup>1</sup> Sources: County of Riverside Reche Canyon/Badlands and San Jacinto Valley Land Use Plans, and the City of Moreno Valley Land Use Map.

<sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use.

"RW" = Location of the respective noise contour falls within the right-of-way of the road.

### TABLE 7-4: EA (2019) WITH PROJECT CONDITIONS NOISE CONTOURS

			Adjacent	CNEL at Nearest	Distance to Contour from Centerline (Feet)		
ID	Road	Segment	Planned (Existing) Land Use <sup>1</sup>	Adjacent Land Use (dBA) <sup>2</sup>	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Gilman Springs Rd.	s/o SR-60	Residential/Business Park (Vacant)	78.7	189	407	876
2	Gilman Springs Rd.	s/o Allesandro Bl.	Residential/Business Park (Vacant)	79.4	211	455	981
3	Gilman Springs Rd.	s/o Jack Rabbit Tr.	Agriculture/Residential	77.2	193	417	898
4	Gilman Springs Rd.	s/o Bridge St.	Agriculture	76.7	179	385	829
5	Gilman Springs Rd.	n/o SR-79	Commercial/Agriculture	76.8	183	394	849
6	Bridge St.	w/o Gilman Springs Rd.	Agriculture	68.1	RW	80	173

<sup>1</sup> Sources: County of Riverside Reche Canyon/Badlands and San Jacinto Valley Land Use Plans, and the City of Moreno Valley Land Use Map.

<sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use.

"RW" = Location of the respective noise contour falls within the right-of-way of the road.



		Adjacent		CNEL at Nearest	Distar from C	nce to Co enterline	ontour e (Feet)
ID	Road	Segment	Planned (Existing) Land Use <sup>1</sup>	Adjacent Land Use (dBA) <sup>2</sup>	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Gilman Springs Rd.	s/o SR-60	Residential/Business Park (Vacant)	78.4	182	392	845
2	Gilman Springs Rd.	s/o Allesandro Bl.	Residential/Business Park (Vacant)	79.1	203	437	942
3	Gilman Springs Rd.	s/o Jack Rabbit Tr.	Agriculture/Residential	76.9	186	400	862
4	Gilman Springs Rd.	s/o Bridge St.	Agriculture	76.3	168	363	782
5	Gilman Springs Rd.	n/o SR-79	Commercial/Agriculture	76.7	179	386	831
6	Bridge St.	w/o Gilman Springs Rd.	Agriculture	67.9	RW	78	168

### TABLE 7-5: EAC (2019) WITHOUT PROJECT CONDITIONS NOISE CONTOURS

<sup>1</sup> Sources: County of Riverside Reche Canyon/Badlands and San Jacinto Valley Land Use Plans, and the City of Moreno Valley Land Use Map.

<sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use.

"RW" = Location of the respective noise contour falls within the right-of-way of the road.

### TABLE 7-6: EAC (2019) WITH PROJECT CONDITIONS NOISE CONTOURS

			Adjacent	CNEL at Nearest	Distance to Contour from Centerline (Feet)		
ID	Road	Segment	Planned (Existing) Adjacen Land Use <sup>1</sup> Land Us (dBA) <sup>2</sup>		70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Gilman Springs Rd.	s/o SR-60	Residential/Business Park (Vacant)	78.8	192	414	892
2	Gilman Springs Rd.	s/o Allesandro Bl.	Residential/Business Park (Vacant)	79.4	213	458	987
3	Gilman Springs Rd.	s/o Jack Rabbit Tr.	Agriculture/Residential	77.2	195	419	903
4	Gilman Springs Rd.	s/o Bridge St.	Agriculture	76.7	179	386	832
5	Gilman Springs Rd.	n/o SR-79	Commercial/Agriculture	76.9	184	396	852
6	Bridge St.	w/o Gilman Springs Rd.	Agriculture	68.4	RW	85	182

<sup>1</sup> Sources: County of Riverside Reche Canyon/Badlands and San Jacinto Valley Land Use Plans, and the City of Moreno Valley Land Use Map.

<sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use.

"RW" = Location of the respective noise contour falls within the right-of-way of the road.

### 7.2 EXISTING CONDITIONS PROJECT TRAFFIC NOISE LEVEL CONTRIBUTIONS

Table 7-1 shows the Existing (2019) without Project conditions CNEL noise levels. The without Project exterior noise levels are expected to range from 67.3 to 78.9 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-2 shows the Existing (2019) with Project conditions will range from 67.9 to 79.2 dBA CNEL. Table 7-7 shows that the Project off-site traffic noise level increases range from0.2 to 0.6 dBA CNEL on the study area roadway segments.



ID	Road	Segment	CNEL at Adjacent Land Use (dBA) <sup>1</sup> No With Project Project Project Addition		Noise- Sensitive Land	Threshold Exceeded? <sup>2</sup>	
					Use?		
1	Gilman Springs Rd.	s/o SR-60	78.2	78.6	0.4	Yes	No
2	Gilman Springs Rd.	s/o Allesandro Bl.	78.9	79.2	0.3	Yes	No
3	Gilman Springs Rd.	s/o Jack Rabbit Tr.	76.7	77.0	0.3	Yes	No
4	Gilman Springs Rd.	s/o Bridge St.	76.1	76.5	0.4	No	No
5	Gilman Springs Rd.	n/o SR-79	76.5	76.7	0.2	No	No
6	Bridge St.	w/o Gilman Springs Rd.	67.3	67.9	0.6	No	No

TABLE 7-7: UNMITIGATED EXISTING (2019) WITH PROJECT TRAFFIC NOISE INCREASES

<sup>1</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use. <sup>2</sup> Based on the off-site traffic noise level impact significance criteria (Section 4 of the NIA).

# 7.3 EA (2019) PROJECT TRAFFIC NOISE LEVEL CONTRIBUTIONS

Table 7-3 presents the Existing plus Ambient Growth (EA) (2019) without Project conditions CNEL noise levels. The EA (2019) without Project exterior noise levels are expected to range from 67.5 to 79.1 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-4 shows the EA (2019) with Project conditions will range from 68.1 to 79.4 dBA CNEL. Table 7-8 shows that the Project off-site traffic noise level increases will range from 0.2 to 0.6 dBA CNEL. Based on the significance criteria for off-site traffic noise presented in Table 4-2, land uses adjacent to the study area roadway segments would experience *less than significant* noise level impacts due to unmitigated Project-related traffic noise levels.

ID	Road	Segment	CNI Lai	EL at Adja nd Use (d	icent BA) <sup>1</sup>	Noise- Sensitive Land	Threshold Exceeded? <sup>2</sup>
			No Project	With Project	Project Addition	Use?	
1	Gilman Springs Rd.	s/o SR-60	78.3	78.7	0.4	Yes	No
2	Gilman Springs Rd.	s/o Allesandro Bl.	79.1	79.4	0.3	Yes	No
3	Gilman Springs Rd.	s/o Jack Rabbit Tr.	76.9	77.2	0.3	Yes	No
4	Gilman Springs Rd.	s/o Bridge St.	76.3	76.7	0.4	No	No
5	Gilman Springs Rd.	n/o SR-79	76.7	76.8	0.2	No	No
6	Bridge St.	w/o Gilman Springs Rd.	67.5	68.1	0.6	No	No

TABLE 7-8: UNMITIGATED EA (2019) WITH PROJECT TRAFFIC NOISE LEVEL INCREASES



<sup>1</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use. <sup>2</sup> Based on the off-site traffic noise level impact significance criteria (Section 4 of the NIA).

## 7.4 EAC (2019) TRAFFIC NOISE LEVEL CONTRIBUTIONS

Table 7-5 presents the Existing plus Ambient Growth plus Cumulative (EAC) (2019) without Project conditions CNEL noise levels. The EAC without Project exterior noise levels are expected to range from 67.9 to 79.1 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-6 shows the EAC (2019) with Project conditions will range from 68.4 to 79.4 dBA CNEL. Table 7-9 shows that the Project off-site traffic noise level increases will range from 0.2 to 0.5 dBA CNEL. Based on the significance criteria for off-site traffic noise presented in Table 4-2, land uses adjacent to the study area roadway segments would experience *less than significant* noise level impacts due to unmitigated Project-related traffic noise levels.

<b>TABLE 7-9:</b>	<b>UNMITIGATED</b>	EAC (2019) WITH	<b>PROJECT TRAFFIC</b>	NOISE LEVEL INCREASES
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ID	Road	Segment	CNI Lai	EL at Adja nd Use (d	acent BA) <sup>1</sup>	Noise- Sensitive Land	Threshold Exceeded? <sup>2</sup>
			No Project	With Project	Project Addition	Use?	
1	Gilman Springs Rd.	s/o SR-60	78.4	78.8	0.4	Yes	No
2	Gilman Springs Rd.	s/o Allesandro Bl.	79.1	79.4	0.3	Yes	No
3	Gilman Springs Rd.	s/o Jack Rabbit Tr.	76.9	77.2	0.3	Yes	No
4	Gilman Springs Rd.	s/o Bridge St.	76.3	76.7	0.4	No	No
5	Gilman Springs Rd.	n/o SR-79	76.7	76.9	0.2	No	No
6	Bridge St.	w/o Gilman Springs Rd.	67.9	68.4	0.5	No	No

<sup>1</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use. <sup>2</sup> Based on the off-site traffic noise level impact significance criteria (Section 4 of the NIA).



# 8 SENSITIVE RECEIVER LOCATIONS

To assess the potential for long-term operational noise impacts, the following four sensitive receiver locations as shown on Exhibit 8-A were identified as representative locations for analysis. Sensitive receivers are generally defined as locations where people reside or where the presence of unwanted sound could otherwise adversely affect the use of the land. Noise-sensitive land uses are generally considered to include schools, hospitals, single-family dwellings, mobile home parks, churches, libraries, and recreation areas. Moderately noise-sensitive land uses typically include multi-family dwellings, hotels, motels, dormitories, out-patient clinics, cemeteries, golf courses, country clubs, athletic/tennis clubs, and equestrian clubs. Land uses that are considered relatively insensitive to noise include business, commercial, and professional developments. Land uses that are typically not affected by noise include: industrial, manufacturing, utilities, agriculture, undeveloped land, parking lots, warehousing, liquid and solid waste facilities, salvage yards, and transit terminals.

Receiver locations are located in outdoor living areas (e.g., backyards) at 10 feet from any existing or proposed barriers or at the building façade, whichever is closer to the Project site, based on FHWA guidance, and consistent with additional guidance provided by Caltrans and the FTA, as previously described in Section 5.2. Sensitive receiver locations in the Project study area include residential uses, as described below. Other sensitive land uses in the Project study area that are located at greater distances than those identified in this noise study will experience lower noise levels than those presented in this report due to the additional attenuation from distance and the shielding of intervening structures.

- R1: Located approximately 8,070 feet west of the proposed mining limits, R1 represents an existing residential home located on Knoch Road. A 24-hour noise level measurement was taken near this location, L1, to describe the existing ambient noise environment.
- R2: Location R2 represents an existing residential home located approximately 3,670feet west of the proposed mining limits north of Gilman Springs Road. The lowest of the 24-hour ambient noise level measurements (location L1), previously shown on Table 5-1, is used to describe this location to present a conservative without Project condition for operational noise analysis.
- R3: Location R3 represents the existing agricultural use that includes an existing single-family residence located roughly 2,400 feet south of the proposed mining limits on Bridge Street. A 24-hour noise level measurement was taken near this location, L2, to describe the existing ambient noise environment.
- R4: Location R4 represents the existing Victory Ranch Baptist Church Camp located roughly 6,170 feet southeast of the proposed mining limits. A 24-hour noise level measurement was taken near this location, L4, to describe the existing ambient noise environment.







**EXHIBIT 8-A: SENSITIVE RECEIVER LOCATIONS** 



Receiver Locations

— Distance from receiver to Project site boundary (in feet)

**Existing Physical Disturbance** Proposed Physical Disturbance



# 9 OPERATIONAL NOISE IMPACTS

This section analyzes the potential stationary-source operational noise impacts at the nearby receiver locations, identified in Section 8, resulting from the operation of the proposed Gilman Springs Mine. Exhibit 9-A identifies the noise source locations used to assess the operational noise levels. Appendix 9.1 includes the detailed calculations for the Project operational noise levels presented in this section.

# 9.1 OPERATIONAL NOISE SOURCES

The on-site Project-related noise sources are expected to include: crushing and screening activities, loader activities and backup alarms, haul truck loading and pass-by events in combination with heavy equipment and dozer activity. This noise analysis is intended to describe noise level impacts associated with the expected typical operational activities at the Project site.

### 9.2 REFERENCE NOISE LEVELS

To estimate the Project operational noise impacts, reference noise level measurements were collected from similar types of activities to represent the noise levels expected with the development of the proposed Project. This section provides a detailed description of the reference noise level measurements shown on Table 9-1 used to estimate the Project operational noise impacts. It is important to note that the following projected noise levels assume the worst-case noise environment with the crushing and screening activities, loader activities and backup alarms, haul truck loading and pass-by events in combination with heavy equipment and dozer activity all operating continuously. These sources of noise activity will likely vary throughout the day. Appendix 9.2 provides reference measurement photos for each noise source.

### 9.2.1 MEASUREMENT PROCEDURES

The reference noise level measurements presented in this section were collected using a Larson Davis LxT Type 1 precisions sound level meter (serial number 01146). The LxT sound level meter was calibrated using a Larson-Davis calibrator, Model CAL 200, was programmed in "slow" mode to record noise levels in "A" weighted form and was located at approximately five feet above the ground elevation for each measurement. The sound level meters and microphones were equipped with a windscreen during all measurements. All noise level measurement equipment satisfies the American National Standards Institute (ANSI) standard specifications for sound level meters ANSI S1.4-2014/IEC 61672-1:2013. (18)





**EXHIBIT 9-A: OPERATIONAL NOISE SOURCE LOCATIONS** 



Heavy Equipment & Dozers

Haul Truck Loading and Pass-by Activity

Loader Activity & Backup Alarms 🔲 Worst-Case Blasting Location (50-Feet from Project Boundaries)





Notes Coursel	Duration	Ref.	Noise Source	Referen Level (c	ce Noise IBA L <sub>eq</sub> )
Noise Source <sup>2</sup>	(hh:mm:ss)	(Feet)	Height (Feet)	@ Ref. Dist.	@ 50 Feet
Crushing & Screening Activity <sup>1</sup>	00:00:20	30'	30'	72.7	68.3
Loader Activity & Backup Alarms <sup>1</sup>	00:00:10	30'	8'	79.8	75.4
Haul Truck Loading & Pass-bys <sup>1</sup>	00:00:10	50'	12'	62.1	62.1
Heavy Equipment & Dozers <sup>2</sup>	00:00:32	30'	8'	84.0	79.6

 TABLE 9-1:
 REFERENCE NOISE LEVEL MEASUREMENTS

<sup>1</sup> As measured by Urban Crossroads, Inc. on 10/27/2015 at the Robertson's quarry in the City of Banning.

<sup>2</sup> As measured by Urban Crossroads, Inc. on 10/20/2015 at a construction site located in Rancho Mission Viejo.

### 9.2.2 CRUSHING & SCREENING ACTIVITY

To assess the potential noise impacts created by the crushing and screening activities at the Project site, reference noise levels measurements were taken of the existing crushing and screening equipment on October 27<sup>th</sup>, 2015 in the City of Banning at the Robertson's quarry. During the mining operations, aggregate materials are separated by size into loose conical stockpiles near the crushing and screening equipment. Any coarse gravel or larger particles are crushed to produce graded sand and crushed-rock aggregates which are then transported using haul trucks. The reference crushing and screening equipment activities. At a uniform reference distance of approximately 50 feet from the crusher with a noise source height of roughly 30 feet, the exterior noise levels were measured at 68.3 dBA L<sub>eq</sub>. The crushing and screening activities are expected to occur for the full hour under peak operating conditions at the Project site.

### 9.2.3 LOADER ACTIVITY & BACKUP ALARMS

To assess the potential noise impacts created by loaders during mining operations within the Project site, a reference noise level measurement was taken at the Robertson's quarry in the City of Banning on October  $27^{th}$ , 2015. The reference noise level measurement represents the typical operation of a 988G Caterpillar wheel loader including forward and backward movements, and backup alarm noise. At a uniform reference distance of 50 feet from the loader, the reference noise level is 75.4 dBA L<sub>eq</sub>. The loader activity and backup alarms are estimated to occur for the full hour during the peak hour conditions.

### 9.2.4 HAUL TRUCK LOADING ACTIVITY

To describe the potential noise level impacts associated with haul truck loading of aggregate materials, a reference noise level measurement was collected on October  $27^{th}$ , 2015 at the Robertson's quarry in the City of Banning. The reference noise level measurement includes the movement of aggregate material on an overhead conveyor belt into a metal bin, the loading of haul truck trailers beneath the bin, and haul truck pass-by events. At 50 feet from the noise source, a reference noise level of 62.1 dBA L<sub>eq</sub> was measured. The haul truck loading activities are estimated to occur for the full hour during the peak hour conditions.



### 9.2.5 HEAVY EQUIPMENT & DOZER ACTIVITY

On Tuesday, October 20<sup>th</sup>, 2015, Urban Crossroads, Inc. collected short-term construction noise level measurements to describe rough grading activities in unincorporated area of Rancho Mission Viejo within the County of Orange. The reference noise level measurements describe a combination heavy equipment that includes several dozers, scrapers, water trucks and other rough grading activities. All reference measurements were taken at approximately 30 feet from the noise source. During peak activity, a reference noise level of 84.0 dBA L<sub>eq</sub> was measured.

## 9.3 **PROJECT OPERATIONAL NOISE LEVELS**

Using the reference noise levels to represent the proposed Project operations that include crushing and screening activities, loader activities and backup alarms, haul truck loading and pass-by events in combination with heavy equipment and dozer activity, Urban Crossroads, Inc. calculated the operational source noise levels that are expected to be generated at the Project site and the Project-related noise level increases that would be experienced at each of the sensitive receiver locations. The operational noise level calculations shown on Table 9-2 account for the distance attenuation provided due to geometric spreading, when sound from a localized stationary source (i.e., a point source) propagates uniformly outward in a spherical pattern. Hard site conditions are used in the operational noise analysis which result in noise levels that attenuate (or decrease) at a rate of 6 dBA for each doubling of distance from a point source. The basic noise attenuation equation shown below is used to calculate the distance attenuation based on a reference noise level (SPL<sub>1</sub>):

$$SPL_2 = SPL_1 - 20log(D_2/D_1)$$

Where  $SPL_2$  is the resulting noise level after attenuation,  $SPL_1$  is the source noise level,  $D_2$  is the distance to the reference sound pressure level ( $SPL_1$ ), and  $D_1$  is the distance to the receiver location.



Receiver Location <sup>1</sup>	Noise Source <sup>2</sup>	Project Operational Noise Levels (dBA L <sub>eq</sub> ) <sup>3</sup>
	Crushing & Screening Activity	23.8
	Loader Activity & Backup Alarms	31.1
R1	Heavy Equipment & Dozers	35.3
	Haul Truck Loading & Pass-bys	16.3
	Combined Noise Level:	37.0
	Crushing & Screening Activity	30.8
	Loader Activity & Backup Alarms	37.9
R2	Heavy Equipment & Dozers	42.1
	Haul Truck Loading & Pass-bys	21.4
	Combined Noise Level:	43.8
	Crushing & Screening Activity	30.6
	Loader Activity & Backup Alarms	37.4
R3	Heavy Equipment & Dozers	41.6
	Haul Truck Loading & Pass-bys	28.1
	Combined Noise Level:	43.4
	Crushing & Screening Activity	24.1
	Loader Activity & Backup Alarms	31.6
R4	Heavy Equipment & Dozers	35.8
	Haul Truck Loading & Pass-bys	20.0
	Combined Noise Level:	37.5

TABLE 9-2: UNMITIGATED PROJECT OPERATIONAL NOISE LEVELS

<sup>1</sup> See Exhibit 9-A for the receiver and noise source locations.

<sup>2</sup> Reference noise sources as shown on Table 9-1.

<sup>3</sup> Operational noise level calculations are provided in Appendix 9.3.

Table 9-2 shows the individual operational noise levels of each noise source at each of the nearby sensitive receiver locations. As indicated on Table 9-2, the Project-only operational noise levels will range from 37.0 to 43.8 dBA  $L_{eq}$  at the sensitive receiver locations. The Project operational noise level calculations include the attenuation provided by the difference in elevation between the Project noise sources and receiver locations, where applicable. To present a conservative approach, both Loader Activity and Backup Alarms as well as the Heavy Equipment and Dozers truck unloading/docking activity have been combined and placed near the boundary.

To demonstrate compliance with local noise regulations, the Project-only operational noise levels are evaluated against exterior noise level thresholds based on the County of Riverside exterior noise level standards at nearby noise-sensitive receiver locations. Table 9-3 shows the operational noise levels associated with Gilman Springs Mine Project will satisfy the exterior noise level standards at all nearby receiver locations. Therefore, operational noise impacts are considered *less than significant* at the nearby noise-sensitive receiver location.



		Threshold I	Exceeded? <sup>3</sup>
Receiver Location <sup>1</sup>	Noise Level at Receiver Locations (dBA L <sub>eq</sub> ) <sup>2</sup>	Daytime (65 dBA L <sub>eq</sub> )	Nighttime (45 dBA L <sub>eq</sub> )
R1	37.0	No	No
R2	43.8	No	No
R3	43.4	No	No
R4	37.5	No	No

TABLE 9-3: UNMITIGATED OPERATIONAL NOISE LEVEL COMPLIANCE

<sup>1</sup> See Exhibit 9-A for the receiver and noise source locations.

<sup>2</sup> Estimated Project operational noise levels as shown on Table 9-2.

<sup>3</sup> Do the estimated Project operational noise levels meet the operational noise level standards (Table 3-1)?

"Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.

### 9.4 PROJECT OPERATIONAL NOISE LEVEL CONTRIBUTIONS

To describe the Project operational noise level contributions, the Project operational noise levels are combined with the existing ambient noise levels measurements for nearby receiver locations potentially impacted by Project operational noise sources. Since the units used to measure noise, decibels (dB), are logarithmic units, the Project-operational and existing ambient noise levels cannot be combined using standard arithmetic equations. (3) Instead, they must be logarithmically added using the following base equation:

 $SPL_{Total} = 10log_{10}[10^{SPL1/10} + 10^{SPL2/10} + \dots 10^{SPLn/10}]$ 

Where "SPL1," "SPL2," etc. are equal to the sound pressure levels being combined, or in this case, the Project-operational and existing ambient noise levels. The difference between the combined Project and ambient noise levels describe the Project noise level contributions to the existing ambient noise environment. Noise levels that would be experienced at receiver locations when Project-source noise is added to the daytime and nighttime ambient conditions are presented on Tables 9-4 and 9-5, respectively.

As indicated on Table 9-4 the Project will generate an unmitigated daytime operational noise level increase of up to 0.1 dBA  $L_{eq}$  at the nearby receiver locations. Table 9-5 indicates that the Project will generate an unmitigated nighttime operational noise level increase of up to 0.1 dBA  $L_{eq}$  at the nearby receiver locations. Since the Project-related operational noise level contributions will satisfy the operational noise level increase significance criteria presented in Table 4-2, the increases at the sensitive receiver locations will be *less than significant*. The operational noise analysis supports the continuous 24-hour operation of the Project.



Receiver Location <sup>1</sup>	Total Project Operational Noise Level <sup>2</sup>	Measurement Location <sup>3</sup>	Reference Ambient Noise Levels <sup>4</sup>	Combined Project and Ambient <sup>5</sup>	Project Contribution <sup>6</sup>	Threshold Exceeded? <sup>7</sup>
R1	37.0	L1	59.8	59.8	0.0	No
R2	43.8	L1	59.8	59.9	0.1	No
R3	43.4	L2	62.6	62.7	0.1	No
R4	37.5	L4	71.5	71.5	0.0	No

TABLE 9-4: DAYTIME OPERATIONAL NOISE LEVEL CONTRIBUTIONS

<sup>1</sup> See Exhibit 9-A for the sensitive receiver locations.

<sup>2</sup> Total Project operational noise levels as shown on Table 9-3.

<sup>3</sup> Reference noise level measurement locations as shown on Exhibit 5-A.

<sup>4</sup> Observed daytime ambient noise levels as shown on Table 5-1.

<sup>5</sup> Represents the combined ambient conditions plus the Project activities.

<sup>6</sup> The noise level increase expected with the addition of the proposed Project activities.

<sup>7</sup> Significance Criteria as defined in Section 4.

#### TABLE 9-5: NIGHTTIME OPERATIONAL NOISE LEVEL CONTRIBUTIONS

Receiver Location <sup>1</sup>	Total Project Operational Noise Level <sup>2</sup>	Measurement Location <sup>3</sup>	Reference Ambient Noise Levels <sup>4</sup>	Combined Project and Ambient <sup>5</sup>	Project Contribution <sup>6</sup>	Threshold Exceeded? <sup>7</sup>
R1	37.0	L1	59.6	59.6	0.0	No
R2	43.8	L1	59.6	59.7	0.1	No
R3	43.4	L2	59.9	60.0	0.1	No
R4	37.5	L4	70.9	70.9	0.0	No

<sup>1</sup> See Exhibit 9-A for the sensitive receiver locations.

<sup>2</sup> Total Project operational noise levels as shown on Table 9-3.

<sup>3</sup> Reference noise level measurement locations as shown on Exhibit 5-A.

<sup>4</sup> Observed nighttime ambient noise levels as shown on Table 5-1.

<sup>5</sup> Represents the combined ambient conditions plus the Project activities.

<sup>6</sup> The noise level increase expected with the addition of the proposed Project activities.

<sup>7</sup> Significance Criteria as defined in Section 4.

### 9.5 **OPERATIONAL VIBRATION IMPACTS**

To assess the potential vibration impacts from truck haul trips associated with operational activities the County of Riverside threshold for vibration of 0.01 in/sec RMS is used. Truck vibration levels are dependent on vehicle characteristics, load, speed, and pavement conditions. According to the FTA *Transit Noise Impact and Vibration Assessment,* (9) trucks rarely create vibration that exceeds 70 VdB or 0.003 in/sec RMS (10) (unless there are bumps due to frequent potholes in the road. Trucks transiting on site will be travelling at very low speeds so it is expected that delivery truck vibration impacts at nearby homes will satisfy the County of Riverside vibration threshold of 0.01 in/sec RMS, and therefore, will be *less than significant*.



# 9.6 BLASTING IMPACTS

Blasting is a component of current operations within the Project site. Historically, the amount of blasting within the existing site has depended on production needs and development and has averaged approximately six to nine blasts per year. Blasting would be required to occur in areas of the Project site where vegetation has already been removed. Specifically, blasting would continue to be conducted on-site in a planned and intermittent basis at a maximum of 15 blasts per year, averaging between six and nine blasts per year. The relationship between tonnage production and number of blasts is not fixed. The number of blasts per year varies depending on production needs, benching and pit development, and drilling equipment availability. The blasting operations are required to be conducted at a time and manner so that disturbance or distraction would be minimized by and to any sensitive receivers that would or could be proximate to the blasting area. Further, the mining operator is required to obtain blasting permit(s) from the State, and to notify Riverside County Sheriff's Department within 24 hours of planned blasting events.

Based on information provided by the Project Applicant, the maximum charge weight of blasts within the proposed mining areas would be 1,500 pounds. In addition, blasting within the Project boundaries would take place at a minimum of 50 feet from the mining limits, previously shown on Exhibit 8-A. This analysis, therefore, calculates the worst-case airblast and vibration levels using the closest receiver distance of 2,400 feet, plus the additional 50-foot off-set for blasting, which results in a worst-case distance of 2,450 feet from receiver location R3, as shown on Exhibit 9-A. The methodology used herein is provided in the International Society of Explosives Engineer's (ISEE's) Blasters' Handbook. (11) As previously discussed in Section 3.4, blasting operations are required to satisfy the maximum airblast and vibration levels identified by the USBM and OSMRE. For this analysis the lowest airblast limit of 129 dB (L) is used as a conservative threshold for airblast analysis. In addition, the vibration level limit of 0.75 in/sec PPV is used. Since the actual specifications of each blast will vary in maximum charge weight, location, and other parameters required to calculate the actual airblast and vibration levels experienced at nearby sensitive receiver locations, this noise study describes potential impacts based on the worst-case maximum charge weight of 1,500 pounds at the worst-case blasting location of 50 feet from the mining limits, as indicated by the Project Applicant and as shown on Exhibit 9-A.

At 2,450 feet from the worst-case blasting location closest to receiver location R3, as shown on Exhibit 9-A, airblasts are shown to approach 128 dB (L), and vibration levels will approach 0.10 in/sec PPV. Therefore, the worst-case airblast and vibration levels at the closest sensitive receiver location will satisfy the airblast and vibration level thresholds of 129 dB (L) and 0.75 in/sec PPV, respectively. Further, the worst-case airblast and vibration levels do not include any additional attenuation provided by the existing topography (e.g., hills and berms) between the Project operational noise sources and the nearby receiver locations, and therefore, likely overstate airblast and vibration levels generated by Project blasting activities. The airblast and vibration calculations per ISEE guidance are provided in Appendix 9.3. At greater distances to the remaining sensitive receiver locations the airblast and vibration levels would likely be further

reduced due to the additional attenuation provided by the added distance and intervening topography and earthen berms in the Project study area.

Therefore, since the worst-case airblast and vibration levels at the closest receiver location would remain below the airblast and vibration level thresholds, Project-related blasting impacts are considered *less than significant*. In addition, the mining operator is required to design all blasts such that they remain below the thresholds identified by the USBM and OSMRE at the time of Project blasting activities and must satisfy the permitting requirements of the State and Riverside County Sheriff's Department. Therefore, impacts related to Project blasting activities are considered *less than significant*.

# 9.7 MSHCP NOISE LEVELS

The Multiple Species Habitat Conservation Plan (MSHCP) adopted by the Western Riverside County Regional Conservation Authority (22) requires that noise generating land uses affecting the MSHCP Conservation Area shall incorporate setbacks, berms or walls to minimize the effects of noise on MSHCP Conservation Area resources pursuant to applicable rules, regulations, and guidelines related to land use noise standards. For planning purposes, wildlife within the MSHCP Conservation Area should not be subject to noise that would exceed residential noise standards. The Project land use include the following several noise generating activities: crushing and screening activities, loader activities and backup alarms, haul truck loading and pass-by events in combination with heavy equipment and dozer activity.

To minimize the effects of noise on the nearby MSCHP Conservation Areas, this analysis relies on the 65 dBA Leq exterior noise level standard used by the County of Riverside to assess impacts for noise sensitive residential land use. (14) To describe the potential Project noise levels within the nearby MSHCP Conservation Areas, several MSHCP noise receiver locations were identified for further analysis. As shown on Exhibit 9-B, twelve MSHCP receiver locations are used to describe the Project operational noise levels from the Project mining boundaries to the nearby conservation areas within MSHCP Cells 1687, 1688, 1784 and 1785. The noise level calculations describe the noise levels associated with the peak Project mining activities with operations at the limits of the project site boundary.

Table 9-6 presents a summary of the estimated MSHCP noise levels at each of the twelve noise receiver locations. As shown on Table 9-6, the Project-related noise levels are expected to range from 62.0 to 64.9 dBA  $L_{eq}$  with the construction of the recommended 12-foot high berm near receiver locations R4 and R5. The 12-foot high berm would extend for 765 feet. The analysis shows that the Project-related operational noise levels will satisfy the 65 dBA  $L_{eq}$  exterior noise level threshold identified for the proposed MSHCP Conservation Areas. Accordingly, the Project's noise impacts to the adjacent MSHCP Conservation Area would be *less than significant*.





EXHIBIT 9-B: MSHCP CONSERVATION AREA NOISE RECEIVER LOCATIONS



Receiver Location <sup>1</sup>	Noise Level at Receiver Locations (dBA L <sub>eq</sub> ) <sup>2</sup>	Threshold <sup>3</sup>	Threshold Exceeded? <sup>4</sup>
R1_1687	60.7	65.0	No
R2_1687	52.4	65.0	No
R3_1687	51.5	65.0	No
R4_1687	53.7	65.0	No
R5_1688	60.8	65.0	No
R6_1785	51.8	65.0	No
R7_1785	42.0	65.0	No
R8_1785	27.8	65.0	No
R9_1784	57.1	65.0	No
R10_1784	58.4	65.0	No
R11_1784	62.4	65.0	No
R12_1784	58.3	65.0	No

TABLE 9-6: MSHCP CONSERVATION AREA NOISE LEVEL COMPLIANCE

<sup>1</sup> See Exhibit 9-B for the MSHCP Conservation Area cells, Project limits and receiver locations.

<sup>2</sup> Estimated exterior noise levels from peak Project mining operations with activity at the limits of the project site boundary.

<sup>3</sup> County of Riverside exterior noise threshold for noise sensitive residential land use.

<sup>4</sup> Do the estimated Project operational noise levels satisfy the noise level threshold?

11381-17 Noise Study



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# **10 REFERENCES**

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- 4. Environmental Protection Agency Office of Noise Abatement and Control. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. March 1974. EPA/ONAC 550/9/74-004.
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- 14. **County of Riverside, Office of Industrial Hygiene.** *Requirements for Determining and Mitigating Traffic Noise Impacts to Residential Structures.* April 2015.
- 15. Office of Surface Mining Reclamation and Enforcement. Blasting Performance Standards, Code of Federal Regulations Chapter 30.
- 16. California Court of Appeal. *Gray v. County of Madera, F053661.* 167 Cal.App.4th 1099; Cal.Rptr.3d, October 2008.
- 17. Federal Interagency Committee on Noise. Federal Agency Review of Selected Airport Noise Analysis Issues. August 1992.
- 18. American National Standards Institute (ANSI). Specification for Sound Level Meters ANSI S1.4-2014/IEC 61672-1:2013.
- 19. U.S. Department of Transportation, Federal Highway Administration. FHWA Highway Traffic Noise Prediction Model. December 1978. FHWA-RD-77-108.
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- 22. Western Riverside County Regional Conservation Authority. Western Riverside County Multiple Species Habitat Conservation Plan. August 2007.
- 23. City of Lake Elsinore. LEAP 2018-02/Lake Street Storage Project MSHCP Consistency Findings. November 2018.

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# **11 CERTIFICATION**

The contents of this noise study report represent an accurate depiction of the noise environment and impacts associated with the proposed Gilman Springs Mine Project. The information contained in this noise study report is based on the best available data at the time of preparation. If you have any questions, please contact me directly at (949) 336-5979.

Bill Lawson, P.E., INCE Principal URBAN CROSSROADS, INC. 260 E. Baker Street, Suite 200 Costa Mesa, CA 92626 (949) 336-5979 blawson@urbanxroads.com



# EDUCATION

Master of Science in Civil and Environmental Engineering California Polytechnic State University, San Luis Obispo • December, 1993

Bachelor of Science in City and Regional Planning California Polytechnic State University, San Luis Obispo • June, 1992

# **PROFESSIONAL REGISTRATIONS**

PE – Registered Professional Traffic Engineer – TR 2537 • January, 2009
AICP – American Institute of Certified Planners – 013011 • June, 1997–January 1, 2012
PTP – Professional Transportation Planner • May, 2007 – May, 2013
INCE – Institute of Noise Control Engineering • March, 2004

# **PROFESSIONAL AFFILIATIONS**

ASA – Acoustical Society of America ITE – Institute of Transportation Engineers

# **PROFESSIONAL CERTIFICATIONS**

Certified Acoustical Consultant – County of Orange • February, 2011 FHWA-NHI-142051 Highway Traffic Noise Certificate of Training • February, 2013



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APPENDIX 5.1:

**STUDY AREA PHOTOS** 



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L1\_E 33, 53' 22.830000", 117, 4' 14.060000"



L1\_N 33, 53' 22.900000", 117, 4' 14.090000"



L1\_S 33, 53' 22.900000", 117, 4' 14.090000"



33, 53' 22.900000", 117, 4' 14.090000"



L2\_E 33, 52' 9.180000", 117, 2' 42.300000"



L2\_N 33, 52' 9.210000", 117, 2' 42.210000"



L2\_S 33, 52' 9.180000", 117, 2' 42.300000"



L2\_W 33, 52' 9.140000", 117, 2' 42.080000"



L3\_E 33, 52' 1.380000", 117, 2' 1.540000"



33, 52' 1.340000", 117, 2' 1.620000"



L3\_S 33, 52' 1.340000", 117, 2' 1.620000"



L3\_W 33, 52' 1.340000", 117, 2' 1.620000"



L4\_E 33, 51' 23.160000", 117, 1' 5.670000"



L4\_N 33, 51' 23.150000", 117, 1' 5.590000"



L4\_S 33, 51' 23.160000", 117, 1' 5.670000"



L4\_W 33, 51' 23.150000", 117, 1' 5.590000"



L5\_E 33, 51' 3.690000", 117, 4' 37.490000"



L5\_N 33, 51' 3.810000", 117, 4' 37.430000"



L5\_S 33, 51' 3.520000", 117, 4' 37.460000"



L5\_W 33, 51' 3.810000", 117, 4' 37.430000"



L6\_E 33, 50' 24.630000", 117, 4' 8.950000"



L6\_N 33, 50' 24.180000", 117, 4' 9.500000"



L6\_S 33, 50' 24.630000", 117, 4' 8.950000"



L6\_W 33, 50' 24.540000", 117, 4' 9.060000"
APPENDIX 5.2:

**NOISE LEVEL MEASUREMENT WORKSHEETS** 





				2	4-Hour No	ise Level N	Aeasurem	ent Summ	ary				
F	Project Name:	Gilman Mine							JN:	11381	Energy Av	verage Leq	24-Hour
		11 - Located I	northwest of t	he Proiect sit	e on Gilman Sr	orings Road ne	ar existing		Analyst:	A. Wolfe	Day	Night	CNEL
	Location:	vacant land a	nd agricultura	ll uses.			ur existing		Date:	12/12/2017	59.8	59.6	66.2
110	DA Dandinga	(	-							,,			
Hourly Leq a	BA Readings (	(unaajustea)											
85.0 -													
<b>80.0</b> - <b>2</b> 75.0													
<b>5</b> 70.0													
<b>60.0</b> -													
<b>→</b> 55.0			1.3	<u> </u>	0.6	0.0	0.0	9.6	0.5	9.9	<u> </u>	v c	i.2
<b>6</b> 45.0	57	- <u>2</u>			9	9 9	-2	_ 00 _ 00 _	99		- <u>0</u> - 0	2 - 2 <sup>1</sup>	- <sup>22</sup> 6
<b>-</b> 40.0 - 35.0 -													
	0 1	2 3	4 5	6	7 8	9 10	11 12	13 14	15 16	17 18	19 20	) 21 2	2 23
						Но	our Beginning	g					
Time Period	Hour	Leq	Lmax	Lmin	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min Max	56.5 62.4	71.7 86 3	35.1 44 1	65.0 71.0	63.0 69.0	61.0 66.0	60.0 65.0	56.0 62.0	52.0 59.0	41.0 52.0	39.0 50.0	35.0 47.0
Energy	Average:	59.8	Ave	rage:	68.7	66.6	64.0	62.6	58.7	55.6	46.7	44.5	41.3
Night	Min	55.1	75.8	35.1	66.0	64.0	60.0	58.0	52.0	46.0	38.0	35.0	35.0
Energy	Average:	59.6	Ave	rage:	68.7	66.7	63.4	61.7	57.4	52.6	43.8	41.9	39.7
						Hourly S	Summary						
	0	57.5	83.3	35.1	67.0	65.0	60.0	58.0	53.0	47.0	38.0	37.0	35.0
	1	55.1 56.8	76.8 80.4	35.1 35.1	66.0 68.0	64.0 65.0	60.0 61.0	58.0 59.0	52.0 54.0	46.0 47.0	38.0 38.0	38.0 35.0	35.0 35.0
Night	3	59.3	76.5	35.1	69.0	67.0	64.0	63.0	59.0	54.0	43.0	41.0	38.0
	4	61.3	77.0	39.8	70.0	69.0	67.0	65.0	61.0	57.0	49.0	47.0	42.0
	6	63.2	79.7	44.0	70.0	70.0	68.0	66.0	63.0	61.0	51.0 54.0	49.0 51.0	47.0
	7	62.4	81.7	44.1	71.0	69.0	66.0	65.0	62.0	59.0	52.0	50.0	47.0
	8	60.6 60.0	81.8 79 3	41.0 38.0	70.0	68.0 67.0	65.0 65.0	64.0 64.0	60.0 59.0	57.0	49.0 45.0	47.0 43.0	44.0 39.0
	10	60.0	78.2	35.1	70.0	68.0	65.0	63.0	59.0	55.0	43.0	41.0	38.0
	11	60.0	78.4	35.1	70.0	68.0	65.0	63.0	59.0	55.0	44.0	41.0	38.0
	12	58.6	73.4	35.1 37.9	69.0	66.0	64.0 65.0	62.0	58.0 59.0	56.0	45.0 47.0	42.0	38.0 41.0
Day	14	59.4	75.4	37.5	68.0	67.0	64.0	63.0	59.0	56.0	48.0	46.0	43.0
	15	60.5	77.8	43.0	69.0	67.0	65.0	64.0	60.0	57.0	52.0	49.0	46.0
	16 17	60.5 59.9	80.7	41.1	69.0 69.0	67.0	65.0 64.0	63.0 63.0	59.0	57.0	52.0 51.0	49.0 49.0	46.0 46.0
	18	58.5	78.6	40.9	67.0	65.0	63.0	61.0	58.0	55.0	47.0	45.0	43.0
	19	56.7	74.7	38.1	65.0	63.0	61.0	60.0	57.0	54.0	44.0	42.0	39.0
	20	59.7	86.3 71.7	35.1 35.1	70.0	66.0 64.0	62.0 61.0	60.0 60.0	56.0 56.0	53.0 52.0	41.0 41.0	39.0 39.0	35.0 37.0
Night	22	57.2	75.8	35.1	68.0	65.0	62.0	60.0	56.0	51.0	42.0	40.0	38.0
	23	58.2	78.3	35.1	69.0	67.0	63.0	61.0	57.0	52.0	41.0	39.0	38.0



				2	4-Hour No	ise Level I	Measurem	ent Summ	ary				
ŀ	Project Name:	Gilman Mine							JN:	11381	Energy Av	verage Leq	24-Hour
		L2 - Located	southwest of	the Proiect sit	e on Bridge Sti	reet near exist	ting		Analyst:	A. Wolfe	Day	Night	CNEL
	Location:	agricultural u	ise.	<b>,</b>			0		Date:	12/12/2017	62.6	59.9	67.3
Hourly Lea d	RA Readinas	(unadiusted)											
nouny Leg u	DA Neualing5	unuujusteuj											
85.0													
<b>80.0</b>													
<b>9</b> 70.0													
<b>e</b> 60.0				<u> </u>		· · · · ·			- <u>o</u> - m	m	o		
<b>→</b> 55.0 · <b>→</b> 50.0 ·	- <del>4</del> - N	°.0	8.05	64 64	63.	61.6	62.	9.8	63.	61.8	90.7	62.	
<b>6</b> 45.0	54.	<u> </u>											й — Ю —
35.0													
	0 1	2 3	4 5	56	7 8	9 10	11 12	13 14	15 16	17 18	19 20	) 21 2	2 23
						Нс	our Beginnin	g					
Time Period	Hour	Leq	Lmax	Lmin	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Max	59.8 65.9	79.4 96.0	34.8 45.6	71.0 76.0	69.0 73.0	65.0 69.0	61.0 67.0	52.0 60.0	47.0 56.0	41.0 52.0	39.0 50.0	37.0 48.0
Energy	Average:	62.6	Ave	erage:	73.8	71.1	67.2	64.4	55.7	51.1	44.8	42.9	40.3
Night	Min Max	54.2 64.6	77.1 87.9	34.8	65.0 75.0	60.0 73.0	57.0 70.0	55.0 68.0	50.0 62.0	46.0 58.0	37.0 54.0	35.0 53.0	35.0
Energy	Average:	59.9	Ave	erage:	69.6	66.2	61.8	59.7	54.4	50.7	43.3	41.3	39.3
						Hourly	Summary						
	0	54.4	79.1	34.8	66.0	60.0	57.0	55.0	50.0	46.0	37.0	35.0	35.0
	1	54.2 55.2	77.1	34.8 34.8	66.0 65.0	62.0 61.0	57.0 58.0	55.0 57.0	50.0 52.0	46.0 47.0	37.0 38.0	35.0 36.0	35.0
Night	3	58.0	79.8	37.8	69.0	66.0	61.0	60.0	56.0	52.0	46.0	44.0	40.0
	4	60.8	81.1	39.0	73.0	70.0	65.0	62.0	57.0	54.0	49.0	47.0	43.0
	6	63.0 64.6	87.9 83.9	43.0 49.6	74.0	72.0	67.0 70.0	64.0 68.0	58.0 62.0	55.0	49.0 54.0	48.0 53.0	45.0 51.0
	7	63.1	86.3	45.6	73.0	71.0	69.0	67.0	60.0	56.0	52.0	50.0	48.0
	8	62.9	87.4	40.5	76.0	73.0	68.0	65.0	56.0	51.0	46.0	44.0	42.0
	9 10	61.6	85.7	39.4	74.0	70.0	66.0	64.0	53.0	48.0	42.0	41.0	40.0 39.0
	11	61.2	86.1	37.8	73.0	70.0	65.0	62.0	52.0	47.0	41.0	39.0	37.0
	12	62.6	86.7	37.5	75.0	72.0	68.0	65.0	54.0	48.0	41.0	39.0	37.0
Dav	13	61.2 50.8	81.7	37.8	74.0	71.0	67.0 66.0	64.0 64.0	55.0	51.0	44.0	42.0	39.0
Day	14	65.0	90.1	39.5	76.0	73.0	69.0	67.0	59.0	54.0	49.0	47.0	43.0
	16	63.3	84.0	39.1	74.0	72.0	69.0	67.0	60.0	54.0	49.0	47.0	42.0
	17	61.8	82.5	39.9	73.0	71.0	68.0	66.0	57.0	53.0	48.0	46.0	42.0
	18	61.8	83.2	37.8	73.0	71.0	68.0	65.0	57.0	53.0	47.0	45.0	41.0
	19	65.9	85.3 96.0	35.3 34.8	72.0	70.0	66.0	62.0	54.0 54.0	51.0	43.0 41.0	41.0	39.0
	20	62.2	86.6	37.8	74.0	71.0	66.0	63.0	55.0	51.0	43.0	41.0	38.0
Night	22	58.3	85.3	34.8	69.0	66.0	60.0	58.0	53.0	49.0	40.0	37.0	35.0
_	23	57.3	81.2	34.8	69.0	66.0	61.0	58.0	52.0	49.0	40.0	37.0	35.0



				2	4-Hour No	ise Level N	<b>Neasurem</b>	ent Summ	ary				
Р	Project Name:	Gilman Mine							JN:	11381	Energy Av	verage Leq	24-Hour
		13 - Located a	outh of the P	roiect site on	Gilman Spring	: Road adiace	nt to the		Analyst:	A. Wolfe	Day	Night	CNEL
	Location:	entrance gate	e for the Proje	ect.	Gillian Spring.				Date:	12/12/2017	62 5	62.1	68.8
		ت (اب میل از میل ا	,						Dute.	12/12/2017	02.5	02.1	00.0
Hourly Leq al	BA Redaings (	undajusted)											
85.0 -	1							1	1				
<b>9</b> 70.0 -					_							_	
<b>6</b> 65.0 -				o ∞	ю. — м —	ດ	m - N -						
	<u> </u>	51.8	64. 64.	6	66	64.	63.	62.8 0.1	1.2	0.4	0.4	0.4	
<b>6</b> 45.0 -	57	<u>8</u>								<u> </u>	0 28	<u> </u>	n
40.0 - 35.0 -													
	0 1	2 3	4 5	6	7 8	9 10	11 12	13 14	15 16	17 18	19 20	) 21 2	2 23
						Но	our Beginning	g					
Time Period	Hour	Leq	Lmax	Lmin	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min Max	58.5 66.3	71.7 88 /	36.5 43.3	65.0 75.0	64.0 72.0	62.0 70.0	62.0 69.0	59.0 66.0	57.0 64.0	45.0 57.0	41.0 54.0	36.0 48.0
Energy /	Average:	62.5	Ave	rage:	69.9	68.2	65.9	64.8	61.9	59.3	51.0	47.5	48.0
Night	Min	57.4	71.9	36.5	66.0	65.0	63.0	61.0	58.0	51.0	36.0	36.0	36.0
Energy	Average:	65.8	81.1 Ave	43.4 rage:	69.2	67.7	69.0	64.7	66.0	64.0 56.9	58.0 44.1	42.2	47.0 39.3
				Ŭ		Hourly	Summary						
	0	57.7	75.0	36.5	66.0	65.0	63.0	62.0	58.0	52.0	36.0	36.0	36.0
	1	57.4	75.2	36.5	67.0	65.0	63.0 64.0	61.0 62.0	58.0	51.0 52.0	36.0	36.0	36.0
Night	3	61.8	77.3	36.5	70.0	68.0	67.0	66.0	62.0	58.0	44.0	41.0	36.0
	4	64.4	78.9	41.2	71.0	70.0	68.0	68.0	65.0	62.0	53.0	50.0	44.0
	5	65.0 65.8	80.0 81 1	41.3 43.4	72.0	71.0 72.0	69.0 69.0	68.0 68.0	66.0 66.0	63.0 64.0	55.0 58.0	52.0 55.0	47.0 47.0
	7	66.3	82.8	41.3	75.0	72.0	70.0	69.0	66.0	64.0	57.0	54.0	48.0
	8	64.3	83.1	42.0	74.0	72.0	68.0	67.0	64.0	61.0	53.0	49.0	44.0
	9 10	63.1 64.9	77.5 88.4	40.9	72.0	70.0	68.0 68.0	66.0	63.0 63.0	60.0	53.0 52.0	50.0 48.0	45.0
	11	63.3	79.8	36.5	73.0	71.0	68.0	66.0	63.0	60.0	52.0	49.0	42.0
	12	62.7	83.2	36.5	70.0	69.0	67.0	66.0	63.0	60.0	52.0	48.0	41.0
Dav	13	62.8	85.2	36.5	71.0	69.0	66.0	65.0	62.0	59.0	51.0	47.0	37.0
Day	14	61.2	81.8	41.0	69.0	67.0	65.0	64.0	61.0	59.0	49.0 52.0	49.0	45.0
	16	61.2	79.3	43.3	68.0	67.0	65.0	64.0	61.0	59.0	54.0	51.0	47.0
	17	60.4	76.2	37.1	67.0	65.0	64.0	63.0	61.0	59.0	52.0	48.0	40.0
	18	59.9	74.8	36.5	67.0	66.0	64.0	63.0	60.0	58.0	50.0	48.0	42.0
	20	58.5 60.4	74.3 75.5	36.5	67.0	64.0 66.0	65.0	62.0	59.0 62.0	57.0	46.0 45.0	43.0 41.0	39.0
	21	60.4	71.7	36.5	67.0	66.0	64.0	64.0	61.0	58.0	47.0	43.0	36.0
Night	22	58.9	71.9	36.5	67.0	65.0	64.0	63.0	60.0	55.0	41.0	38.0	36.0
	23	59.3	74.9	36.5	69.0	67.0	64.0	63.0	59.0	54.0	38.0	30.0	36.0



Project Name: Gilman Mine         J. 1. Colled south of the Project site on Gilman Springs Road near existing advices and the Victory Ranch Raprist Camp west of State Route 79.         J. J					2	4-Hour No	ise Level N	<b>Neasurem</b>	ent Summ	ary				
Analysis A. Wolfs agricultural uses and the Victory Banch Baptist Camp west of State Route 79.         Analysis A. Wolfs Dote: 12/12/2017         Opt Might         OPT         Neglit           Analysis A. Wolfs Dote: 12/12/2017         Opt: 12/12/20	Р	Project Name:	Gilman Mine							JN:	11381	Energy Av	verage Leq	24-Hour
Locotion:         Date: 12/12/2017         71.5         70.9         77.6           toury Leg dBA Readings (unadjusted)         Colspan="2">Date: 12/12/2017         71.5         70.9         77.6           Control of the Writtery Ranch Baptits Camp west of State Route 79.         Date: 12/12/2017         71.5         70.9         77.6           Control of the Writtery Ranch Baptits Camp west of State Route 79.         Date: 12/12/2017         71.5         To P           Writter dBA Readings (unadjusted)         To P         P         To P <td></td> <td></td> <td>14 - Located</td> <td>south of the P</td> <td>roiect site on (</td> <td>Gilman Springe</td> <td>s Road near ex</td> <td>visting</td> <td></td> <td>Analyst:</td> <td>A. Wolfe</td> <td>Day</td> <td>Night</td> <td>CNEL</td>			14 - Located	south of the P	roiect site on (	Gilman Springe	s Road near ex	visting		Analyst:	A. Wolfe	Day	Night	CNEL
Unit of the problem of the prob		Location:	agricultural u	ses and the Vi	ictory Ranch B	aptist Camp w	est of State R	oute 79.		Date:	12/12/2017	71.5	70.9	77.6
mean-leg unique control production           The device of the colspan="6">The second seco	Hourby Log d	PA Dondinas (	(unadjusted)		,					2010		, 110	, 0.0	
Wight         No.         No. </td <td>Houriy Leg al</td> <td>BA Redaings (</td> <td>unaajusteaj</td> <td></td>	Houriy Leg al	BA Redaings (	unaajusteaj											
Mark         V	85.0 -													
Image: space of the	80.0 - 75.0 -													
y         y	<b>b</b> 70.0 -			<u> </u>	. <u> </u>	?	o <u> </u>		4 0	P 4				
Image: Solution         Image: So	<b>e</b> 60.0	6.6 5.5	7.4	2.			70.7	71.	71.	71.	71.	69.8 69.5		8.3
Image: P       Image: P <t< td=""><td><u>&gt;</u> 55.0 - ב 50.0 -</td><td><u> </u></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>╈╹╈╹</td><td></td><td></td></t<>	<u>&gt;</u> 55.0 - ב 50.0 -	<u> </u>										╈╹╈╹		
35.0         0         1         2         3         4         5         6         7         8         9         10         11         12         13         14         15         16         17         18         19         20         21         22         23           Time Period         Hour         Legy         Lmin         L1%         L2%         L5%         L8%         L25%         L50%         L90%         L	<b>6</b> 45.0 -													
0         1         2         3         4         5         6         7         8         9         10         11         12         13         14         15         16         17         18         19         20         21         22         23           Time Period         Hour         Leq         Lmin         L1%         L2%         L5%         L50%         L50%         L90%         45.0         55.0         52.0         45.0         50.0         75.0         77.0         75.0	35.0 -													
Hour Beginning           Time Period         Hour         Lags         Linss         Liss		0 1	2 3	4 5	6	78	9 10	11 12	13 14	15 16	17 18	19 20	) 21 2	2 23
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$							Но	our Beginning	8					
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Time Period	Hour	Leq	Lmax	Lmin	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Day	Max	69.3 74.0	84.2 95.2	39.9 48.6	82.0	76.0 80.0	74.0	73.0	70.0	64.0 72.0	47.0 58.0	45.0 54.0	42.0 50.0
Night         Min         66.5         84.0         43.2         77.0         73.0 <th< td=""><td>Energy /</td><td>Average:</td><td>71.5</td><td>Ave</td><td>rage:</td><td>79.3</td><td>77.8</td><td>75.5</td><td>74.6</td><td>71.9</td><td>68.2</td><td>52.2</td><td>49.5</td><td>46.7</td></th<>	Energy /	Average:	71.5	Ave	rage:	79.3	77.8	75.5	74.6	71.9	68.2	52.2	49.5	46.7
Energy Average:         70.9         Average:         79.4         77.4         75.2         74.1         69.0         60.9         50.2         48.7         46.7           Hourly Summary         Hourly Summary         Hourly Summary         Hourly Summary         Hourly Summary         46.0         45.0         44.0         45.0         44.0           1         66.5         86.0         44.2         77.0         75.0         73.0         72.0         64.0         55.0         47.0         46.0         44.0           2         67.4         91.4         44.4         78.0         76.0         73.0         72.0         64.0         55.0         47.0         46.0         45.0         44.0           4         72.5         87.9         47.2         81.0         79.0         77.0         75.0         73.0         68.0         55.0         53.0         50.0 <td< td=""><td>Night</td><td>Min Max</td><td>66.5 74.3</td><td>84.0 92.0</td><td>43.2 48.9</td><td>77.0 82.0</td><td>75.0 80.0</td><td>73.0 78.0</td><td>71.0 77.0</td><td>62.0 75.0</td><td>51.0 72.0</td><td>45.0 59.0</td><td>45.0 55.0</td><td>44.0 51.0</td></td<>	Night	Min Max	66.5 74.3	84.0 92.0	43.2 48.9	77.0 82.0	75.0 80.0	73.0 78.0	71.0 77.0	62.0 75.0	51.0 72.0	45.0 59.0	45.0 55.0	44.0 51.0
Hourly Summary           0         66.6         84.0         44.2         77.0         75.0         73.0         72.0         64.0         53.0         46.0         45.0         44.0           1         66.5         86.2         43.2         78.0         76.0         73.0         72.0         64.0         53.0         46.0         45.0         44.0           2         67.4         91.4         44.4         78.0         76.0         73.0         72.0         64.0         55.0         47.0         46.0         45.0           4         72.5         87.9         47.2         81.0         79.0         76.0         75.0         71.0         62.0         49.0         48.0         46.0           5         73.7         92.0         48.3         81.0         80.0         78.0         77.0         75.0         71.0         57.0         54.0         50.0         51.0           8         72.7         92.6         46.7         82.0         80.0         77.0         75.0         72.0         58.0         54.0         52.0         45.0         47.0           9         72.0         95.2         45.7         80.0         <	Energy /	Average:	70.9	Ave	rage:	79.4	77.4	75.2	74.1	69.0	60.9	50.2	48.7	46.7
0         66.6         84.0         44.2         77.0         75.0         73.0         72.0         64.0         53.0         46.0         45.0         44.0           1         66.5         86.2         43.2         78.0         76.0         73.0         71.0         62.0         51.0         45.0         45.0         44.0           2         67.4         91.4         44.4         78.0         76.0         73.0         72.0         64.0         55.0         47.0         46.0         45.0           3         71.3         91.6         44.3         81.0         79.0         76.0         75.0         71.0         62.0         49.0         48.0         46.0           5         73.7         92.0         48.3         81.0         80.0         78.0         77.0         75.0         71.0         57.0         53.0         50.0           6         74.3         91.7         48.9         82.0         80.0         78.0         77.0         75.0         72.0         58.0         54.0         52.0         49.0           9         72.0         95.2         45.7         80.0         78.0         77.0         75.0         72.0							Hourly S	Summary						
1         00.5         00.2         43.2         78.0         76.0         73.0         71.0         02.0         51.0         43.0         44.0           Night         3         71.3         91.6         44.4         88.0         76.0         73.0         72.0         64.0         55.0         47.0         46.0         45.0           4         72.5         87.9         47.2         81.0         79.0         76.0         73.0         78.0         75.0         71.0         62.0         49.0         48.0         46.0           5         73.7         92.0         48.3         81.0         80.0         78.0         77.0         75.0         72.0         59.0         55.0         51.0           6         74.3         91.7         48.9         82.0         80.0         78.0         77.0         75.0         72.0         58.0         54.0         50.0         51.0           8         72.7         92.6         46.7         82.0         80.0         77.0         75.0         72.0         58.0         51.0         48.0         47.0           10         70.7         87.4         45.3         79.0         78.0         75.0		0	66.6	84.0	44.2	77.0	75.0	73.0	72.0	64.0	53.0	46.0	45.0	44.0
Night         3         71.3         91.6         44.3         81.0         79.0         76.0         75.0         71.0         62.0         49.0         48.0         46.0           4         72.5         87.9         47.2         81.0         79.0         77.0         76.0         73.0         68.0         55.0         53.0         50.0           5         73.7         92.0         48.3         81.0         80.0         78.0         77.0         75.0         72.0         59.0         55.0         51.0           6         74.3         91.7         48.9         82.0         80.0         78.0         77.0         75.0         72.0         58.0         54.0         50.0           8         72.7         92.6         46.7         82.0         80.0         77.0         75.0         72.0         58.0         54.0         90.0           9         72.0         95.2         45.7         80.0         79.0         76.0         75.0         72.0         68.0         51.0         48.0         47.0           10         70.7         87.4         45.3         79.0         78.0         75.0         72.0         68.0         51.0		2	67.4	86.2 91.4	43.2 44.4	78.0	76.0	73.0	71.0	62.0 64.0	51.0	45.0 47.0	45.0 46.0	44.0 45.0
4         72.5         87.9         47.2         81.0         79.0         77.0         76.0         73.0         68.0         55.0         53.0         50.0           5         73.7         92.0         48.3         81.0         80.0         78.0         77.0         75.0         71.0         57.0         55.0         53.0         50.0           6         74.3         91.7         48.9         82.0         80.0         78.0         77.0         75.0         72.0         55.0         53.0         50.0           8         72.7         92.6         46.7         82.0         80.0         77.0         75.0         72.0         58.0         54.0         50.0           9         72.0         95.2         45.7         80.0         79.0         76.0         73.0         69.0         54.0         52.0         49.0           10         70.7         87.4         45.3         79.0         78.0         75.0         74.0         71.0         67.0         48.0         44.0           11         71.1         90.6         44.8         80.0         78.0         75.0         72.0         68.0         51.0         44.0         46.0	Night	3	71.3	91.6	44.3	81.0	79.0	76.0	75.0	71.0	62.0	49.0	48.0	46.0
6         73.7         92.0         48.3         81.0         80.0         78.0         77.0         75.0         71.0         57.0         59.0         55.0         51.0           7         74.0         87.1         47.9         82.0         80.0         78.0         77.0         75.0         72.0         59.0         55.0         51.0           8         72.7         92.6         46.7         82.0         80.0         77.0         75.0         72.0         58.0         54.0         52.0         49.0           9         72.0         95.2         45.7         80.0         77.0         75.0         72.0         68.0         51.0         48.0         47.0           10         70.7         87.4         45.3         79.0         78.0         75.0         72.0         68.0         51.0         48.0         46.0           11         71.1         85.6         43.4         80.0         78.0         75.0         72.0         68.0         51.0         47.0         45.0           12         71.1         85.6         43.4         80.0         78.0         75.0         72.0         68.0         51.0         47.0         45.0		4	72.5	87.9	47.2	81.0	79.0	77.0	76.0	73.0	68.0	55.0	53.0	50.0
Night         0         110         100         110         100         110         100         110         100         110         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         58.0         54.0         50.0         90         52.0         49.0         49.0           9         72.0         95.2         45.7         80.0         79.0         76.0         75.0         72.0         68.0         51.0         48.0         47.0           10         70.7         87.4         45.3         79.0         78.0         75.0         74.0         71.0         67.0         49.0         48.0         46.0           11         71.1         85.6         43.4         80.0         78.0         76.0         75.0         72.0         68.0         51.0         47.0         45.0           12         71.1         85.6         43.4         80.0         78.0         76.0         75.0         72.0         68.0         51.0         47.0         47.0           13         71.4		5	73.7	92.0	48.3 48.9	81.0 82.0	80.0 80.0	78.0 78.0	77.0	75.0	71.0	57.0 59.0	54.0 55.0	50.0
8         72.7         92.6         46.7         82.0         80.0         77.0         76.0         73.0         69.0         54.0         52.0         49.0           9         72.0         95.2         45.7         80.0         79.0         76.0         75.0         72.0         68.0         51.0         48.0         47.0           10         70.7         87.4         45.3         79.0         78.0         75.0         74.0         71.0         67.0         50.0         49.0         46.0           11         71.1         90.6         44.8         80.0         78.0         75.0         74.0         71.0         67.0         49.0         48.0         46.0           12         71.1         85.6         43.4         80.0         78.0         76.0         75.0         72.0         68.0         51.0         47.0         45.0           13         71.4         91.7         45.1         79.0         78.0         75.0         72.0         68.0         53.0         49.0         46.0           13         71.7         88.2         47.0         79.0         78.0         75.0         74.0         72.0         68.0         53.0		7	74.0	87.1	47.9	82.0	80.0	78.0	77.0	75.0	72.0	58.0	54.0	50.0
9         72.0         95.2         45.7         80.0         79.0         76.0         75.0         72.0         68.0         51.0         48.0         47.0           10         70.7         87.4         45.3         79.0         78.0         75.0         74.0         71.0         67.0         50.0         49.0         46.0           11         71.1         90.6         44.8         80.0         78.0         76.0         74.0         71.0         67.0         49.0         46.0           12         71.1         90.6         44.8         80.0         78.0         76.0         75.0         72.0         68.0         51.0         47.0         45.0           13         71.4         91.7         45.1         79.0         78.0         76.0         75.0         72.0         68.0         53.0         49.0         47.0           Day         14         71.0         85.4         44.8         79.0         78.0         75.0         74.0         72.0         68.0         53.0         49.0         46.0           15         71.7         88.2         47.0         79.0         78.0         75.0         73.0         71.0         57.0		8	72.7	92.6	46.7	82.0	80.0	77.0	76.0	73.0	69.0	54.0	52.0	49.0
10         70.7         87.4         45.3         79.0         78.0         75.0         74.0         71.0         67.0         50.0         49.0         46.0           11         71.1         90.6         44.8         80.0         78.0         76.0         74.0         71.0         67.0         49.0         48.0         46.0           12         71.1         85.6         43.4         80.0         78.0         76.0         72.0         68.0         51.0         47.0         45.0           13         71.4         91.7         45.1         79.0         78.0         76.0         75.0         72.0         68.0         53.0         49.0         46.0           Day         14         71.0         85.4         44.8         79.0         78.0         75.0         74.0         72.0         68.0         53.0         49.0         46.0           15         71.7         88.2         47.0         79.0         78.0         76.0         75.0         72.0         68.0         53.0         49.0         46.0           16         72.4         88.0         48.6         80.0         78.0         76.0         75.0         73.0         71.0		9	72.0	95.2	45.7	80.0	79.0	76.0	75.0	72.0	68.0	51.0	48.0	47.0
11         111		10	70.7	87.4 90.6	45.3 44.8	79.0	78.0 78.0	75.0	74.0	71.0	67.0	50.0 49.0	49.0 48.0	46.0 46.0
13         71.4         91.7         45.1         79.0         78.0         76.0         75.0         72.0         69.0         52.0         49.0         47.0           Day         14         71.0         85.4         44.8         79.0         78.0         75.0         74.0         72.0         68.0         53.0         49.0         46.0           15         71.7         88.2         47.0         79.0         78.0         76.0         75.0         72.0         68.0         53.0         49.0         46.0           16         72.4         88.0         48.6         80.0         78.0         76.0         75.0         72.0         70.0         55.0         52.0         49.0           16         72.4         88.0         48.6         80.0         78.0         76.0         75.0         73.0         71.0         57.0         54.0         50.0           17         71.7         92.3         47.4         79.0         77.0         75.0         74.0         72.0         69.0         55.0         52.0         50.0           18         70.9         88.1         46.6         78.0         76.0         74.0         71.0         67.0		12	71.1	85.6	43.4	80.0	78.0	76.0	75.0	72.0	68.0	51.0	47.0	45.0
Day         14         71.0         85.4         44.8         79.0         78.0         75.0         74.0         72.0         68.0         53.0         49.0         46.0           15         71.7         88.2         47.0         79.0         78.0         76.0         75.0         72.0         68.0         53.0         49.0         46.0           16         72.4         88.0         48.6         80.0         78.0         76.0         75.0         72.0         70.0         55.0         52.0         49.0           16         72.4         88.0         48.6         80.0         78.0         76.0         75.0         73.0         71.0         57.0         54.0         50.0           17         71.7         92.3         47.4         79.0         77.0         75.0         74.0         72.0         69.0         55.0         52.0         50.0           18         70.9         88.1         46.6         78.0         77.0         75.0         74.0         71.0         67.0         48.0         48.0         42.0           19         69.8         84.2         41.4         77.0         76.0         74.0         71.0         64.0		13	71.4	91.7	45.1	79.0	78.0	76.0	75.0	72.0	69.0	52.0	49.0	47.0
15         71.7         88.2         47.0         79.0         78.0         76.0         75.0         72.0         70.0         55.0         52.0         49.0           16         72.4         88.0         48.6         80.0         78.0         76.0         75.0         73.0         71.0         57.0         54.0         50.0           17         71.7         92.3         47.4         79.0         77.0         75.0         74.0         72.0         70.0         55.0         52.0         50.0           18         70.9         88.1         46.6         78.0         77.0         75.0         74.0         72.0         69.0         55.0         52.0         50.0           18         70.9         88.1         46.6         78.0         77.0         75.0         74.0         71.0         67.0         48.0         48.0           19         69.8         84.2         41.4         77.0         76.0         74.0         71.0         67.0         48.0         46.0         42.0           20         69.5         86.9         39.9         78.0         76.0         74.0         71.0         64.0         48.0         46.0         42.0	Day	14	71.0	85.4	44.8	79.0	78.0	75.0	74.0	72.0	68.0	53.0	49.0	46.0
16         72.4         88.0         48.6         80.0         78.0         76.0         75.0         73.0         71.0         57.0         54.0         50.0           17         71.7         92.3         47.4         79.0         77.0         75.0         74.0         72.0         70.0         55.0         52.0         50.0           18         70.9         88.1         46.6         78.0         77.0         75.0         74.0         72.0         69.0         55.0         51.0         48.0           19         69.8         84.2         41.4         77.0         76.0         74.0         71.0         67.0         48.0         46.0         42.0           20         69.5         86.9         39.9         78.0         76.0         74.0         71.0         64.0         47.0         45.0         42.0           21         69.3         85.1         41.3         77.0         76.0         74.0         73.0         70.0         64.0         48.0         46.0         44.0           Night         22         68.9         84.8         44.9         79.0         76.0         75.0         74.0         69.0         59.0         47.0 <td></td> <td>15</td> <td>71.7</td> <td>88.2</td> <td>47.0</td> <td>79.0</td> <td>78.0</td> <td>76.0</td> <td>75.0</td> <td>72.0</td> <td>70.0</td> <td>55.0</td> <td>52.0</td> <td>49.0</td>		15	71.7	88.2	47.0	79.0	78.0	76.0	75.0	72.0	70.0	55.0	52.0	49.0
17         71.7         52.3         47.4         75.0         77.0         75.0         74.0         72.0         70.0         55.0         52.0         50.0           18         70.9         88.1         46.6         78.0         77.0         75.0         74.0         72.0         69.0         55.0         51.0         48.0           19         69.8         84.2         41.4         77.0         76.0         74.0         71.0         67.0         48.0         46.0         42.0           20         69.5         86.9         39.9         78.0         76.0         74.0         71.0         64.0         47.0         45.0         42.0           21         69.3         85.1         41.3         77.0         76.0         74.0         73.0         70.0         64.0         47.0         45.0         42.0           Night         22         68.9         84.8         44.9         79.0         76.0         75.0         74.0         69.0         59.0         47.0         46.0         45.0           10         69.3         85.1         41.3         77.0         75.0         74.0         69.0         59.0         47.0         46.0 <td></td> <td>16 17</td> <td>72.4</td> <td>88.0</td> <td>48.6</td> <td>80.0</td> <td>78.0 77.0</td> <td>76.0</td> <td>75.0</td> <td>73.0</td> <td>/1.0</td> <td>57.0</td> <td>54.0</td> <td>50.0</td>		16 17	72.4	88.0	48.6	80.0	78.0 77.0	76.0	75.0	73.0	/1.0	57.0	54.0	50.0
19         69.8         84.2         41.4         77.0         76.0         74.0         74.0         71.0         67.0         48.0         46.0         42.0           20         69.5         86.9         39.9         78.0         76.0         74.0         74.0         71.0         67.0         48.0         46.0         42.0           21         69.3         85.1         41.3         77.0         76.0         74.0         73.0         70.0         64.0         47.0         45.0         42.0           Night         22         68.9         84.8         44.9         79.0         76.0         75.0         74.0         59.0         47.0         46.0         45.0		18	70.9	88.1	46.6	78.0	77.0	75.0	74.0	72.0	69.0	55.0	51.0	48.0
20         69.5         86.9         39.9         78.0         76.0         74.0         74.0         71.0         64.0         47.0         45.0         42.0           21         69.3         85.1         41.3         77.0         76.0         74.0         73.0         70.0         64.0         47.0         45.0         44.0           Night         22         68.9         84.8         44.9         79.0         76.0         75.0         74.0         69.0         59.0         47.0         46.0         45.0		19	69.8	84.2	41.4	77.0	76.0	74.0	74.0	71.0	67.0	48.0	46.0	42.0
21         69.3         85.1         41.3         77.0         76.0         74.0         73.0         70.0         64.0         48.0         46.0         44.0           Night         22         68.9         84.8         44.9         79.0         76.0         75.0         74.0         69.0         59.0         47.0         46.0         45.0		20	69.5	86.9	39.9	78.0	76.0	74.0	74.0	71.0	64.0	47.0	45.0	42.0
Night 22 68.9 84.8 44.9 79.0 76.0 75.0 74.0 69.0 59.0 47.0 46.0 45.0		21	69.3	85.1	41.3	77.0	76.0	74.0	73.0	70.0	64.0	48.0	46.0	44.0
	Night	22	68.9 68.3	84.8 86.6	44.9 45.1	79.0 78.0	76.0 76.0	75.0 74.0	74.0 73.0	69.0 68.0	59.0 57.0	47.0 47.0	46.0 46.0	45.0 45.0



				2	4-Hour No	ise Level N	Aeasurem	ent Summa	ary				
P	Project Name:	Gilman Mine							JN:	11381	Energy Av	verage Leq	24-Hour
		15 - Located	southwest of	the Project site	adiacent to e	existing agricul	ltural uses on		Analyst:	A. Wolfe	Day	Night	CNEL
	Location:	Main Street.	Southwest of	the moject site					Date:	12/12/2017	66 7	65.4	72.2
11	DA Dandinana	(							24(0)		0017	0011	/
Hourly Leq al	BA Readings (	unaajustea)											
85.0 -													
80.0 -													
<b>b</b> 70.0 -													
<b>e</b> 60.0 -		6.6	- 00 C	21. 21.	°. □ □ □		7.8	6.9	6.1	.2	5.3 2.3		
<u></u> 55.0 - ב 50.0 -	51.0	eee	<u>. 8</u>	S `		90 <u>6</u>		<u>6</u>	63.	64	ee 63	2 2 3	
<b>6</b> 45.0 -													
35.0 -													
	0 1	2 3	4 5	6	78	9 10	11 12	13 14	15 16	17 18	19 20	) 21 2	2 23
						Но	our Beginning	3					
Time Period	Hour	Leq	Lmax	Lmin 47 5	L1%	<b>L2%</b>	L5%	L8%	L25%	L50%	<b>L90%</b>	L95%	L99%
Day	Max	69.7	92.1	57.3	80.0	75.0	71.0	69.0	65.0	63.0	61.0	60.0	59.0
Energy /	Average:	66.7	Ave	rage:	74.7	70.5	65.8	63.9	60.4	58.8	56.3	55.5	54.5
Night	Min Max	56.7	65.6 96.3	50.2	60.0 83.0	60.0 78.0	59.0 71.0	58.0 69.0	57.0 65.0	56.0 63.0	54.0 60.0	53.0 59.0	53.0 58.0
Energy	Average:	65.4	Ave	rage:	70.2	66.9	63.7	62.2	60.2	58.7	56.1	55.7	54.8
						Hourly S	Summary	_	_				
	0	61.0	92.2	50.2	64.0	62.0	60.0	59.0	58.0	56.0	54.0	54.0	53.0
	2	63.4	93.4	50.8	70.0	65.0	61.0	60.0	57.0	57.0	54.0 54.0	53.0	53.0
Night	3	66.6	96.3	51.9	74.0	70.0	65.0	63.0	61.0	59.0	56.0	56.0	55.0
	4	63.8	93.2	53.3	70.0	67.0	65.0	64.0	62.0	60.0	57.0	57.0	56.0
	5	66.3	92.6	55.0	76.0	70.0	66.0	64.0	62.0	61.0	59.0	58.0	57.0
	7	68.6	96.5	57.3	77.0	78.0	71.0	69.0	65.0	63.0	61.0	60.0	59.0
	8	65.5	92.1	57.2	72.0	70.0	67.0	66.0	64.0	63.0	61.0	60.0	59.0
	9	66.1	92.5	56.2	75.0	71.0	66.0	65.0	63.0	62.0	60.0	59.0	59.0
	10	65.3	94.6	55.2	73.0	69.0	65.0	64.0	61.0	60.0	58.0	58.0	57.0
	11	67.8	96.9	54.6	76.0	72.0	66.0	64.0	61.0	60.0	58.0	58.0	57.0
	12	66.9	98.2	51.7	79.0	74.0	68.0 66.0	63.0	61.0	59.0	57.0	56.0	55.0
Dav	13	65.2	95.8	50.5	73.0	69.0	65.0	63.0	60.0	58.0	56.0	55.0	53.0
,	15	68.1	94.9	54.1	76.0	72.0	67.0	65.0	62.0	61.0	58.0	58.0	57.0
	16	63.6	93.6	50.8	70.0	66.0	64.0	63.0	62.0	60.0	55.0	54.0	53.0
	17	64.2	93.1	49.3	73.0	70.0	65.0	62.0	57.0	55.0	53.0	52.0	51.0
	18	69.7	98.1	49.3	80.0	75.0	68.0	65.0	59.0	56.0	53.0	53.0	52.0
	19	63.2	92.4	48.2	70.0	66.0 70.0	62.0	60.0	55.0	54.0	52.0	51.0	50.0
	20	64.5	96.4	47.5 51.0	75.0	69.0	63.0	62.0	59.0	57.0	55.0	54.0	53.0
Night	22	62.9	90.7	51.6	70.0	68.0	65.0	63.0	60.0	58.0	55.0	55.0	54.0
	23	60.8	91.1	51.9	65.0	62.0	61.0	60.0	59.0	58.0	56.0	55.0	54.0



				2	4-Hour No	ise Level N	Aeasurem	ent Summa	ary				
Р	Project Name:	Gilman Mine							JN:	11381	Energy Av	verage Leq	24-Hour
		L6 - Located	southwest of	the Proiect site	e near existing	agricultural u	ses on Bridge		Analyst:	A. Wolfe	Day	Night	CNEL
	Location:	Street.		· · · <b>,</b> · · · ·	0				Date:	12/12/2017	71.7	69.7	76.7
Hourly Lea di	RA Readinas	(unadiusted)											
	britteadings	anaajasteaj											
85.0 -													
<b>8</b> 75.0													
י 70.0 <b>פ</b> 70.0 - ה 65.0 -		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	9. 5		6.	o: 4	<b>%</b> 4	.2 4.5	2.2	0 m			
<b>e</b> 60.0 -	r. m	<b>5.5</b>		< <u> </u>	≈	69.4	<u>6</u> <u>6</u>	11	_~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	20.	69.2	69.	
<b>5</b> 50.0	63 63	9											0
<b>5</b> 45.0 - <b>H</b> 40.0 -													
35.0 -													
	0 1	2 3	4 5	6	7 8	9 10 Ho	11 12 Sur Beginning	13 14 7	15 16	17 18	19 20	) 21 2	2 23
Time Period	Hour	lea	Imax	I min	11%	12%		18%	125%	150%	190%	195%	199%
Dav	Min	67.6	85.1	38.9	77.0	75.0	73.0	72.0	67.0	61.0	49.0	47.0	42.0
Day	Max	74.5	102.2	53.4	83.0	81.0	78.0	77.0	73.0	70.0	61.0	58.0	55.0
Energy	Average: Min	63.3	81.2	erage: 38.9	80.6	78.6	75.7	74.3 68.0	70.3	65.4 52.0	54.3 43.0	51.7 42.0	47.7
Night	Max	73.8	96.2	54.3	82.0	80.0	78.0	77.0	74.0	71.0	61.0	59.0	56.0
Energy /	Average:	69.7	Ave	erage:	78.1	76.2	73.8	72.0	66.3	60.0	50.0	48.2	45.4
	0	63.7	83.8	40.7	75.0	T3 0		68.0	59.0	52.0	44.0	42.0	/1 0
	1	63.3	81.2	40.7	75.0	73.0	70.0	68.0	60.0	53.0	44.0	43.0	41.0
N.C Le I	2	65.5	85.4	40.7	77.0	75.0	72.0	70.0	61.0	53.0	44.0	43.0	42.0
Night	3	69.2 71.6	90.5	43.0	79.0	77.0	75.0	73.0	68.0 72.0	60.0 66.0	50.0	47.0	45.0
	5	73.1	96.2	50.9	81.0	80.0	77.0	76.0	73.0	69.0	58.0	56.0	53.0
	6	73.8	94.7	54.3	82.0	80.0	78.0	77.0	74.0	71.0	61.0	59.0	56.0
	7	73.4	94.3	53.4	82.0	81.0	78.0	77.0	73.0	69.0	59.0	58.0	55.0
	8	71.9	89.2	46.7	82.0	80.0	77.0	75.0	71.0	65.0 63.0	55.0 51.0	53.0	49.0
	10	69.4	89.8	43.6	79.0	77.0	75.0	73.0	68.0	62.0	50.0	48.0	45.0
	11	70.8	95.8	41.8	81.0	79.0	75.0	73.0	69.0	63.0	49.0	47.0	45.0
	12	70.4	93.2	42.9	80.0	78.0	75.0	74.0	70.0	64.0	50.0	47.0	44.0
D	13	74.5	102.2	43.9	83.0	80.0	77.0	75.0	71.0	67.0	53.0	50.0	46.0
Day	14	/1.2	88.3	44.4	81.0	79.0	76.0	75.0	71.0	66.0 68.0	56.0	54.0	49.0
	15	73.2	89.0	49.0	83.0	81.0	78.0	76.0	73.0	70.0	61.0	58.0	52.0
	17	72.3	89.4	47.9	81.0	79.0	77.0	76.0	73.0	69.0	60.0	56.0	51.0
	18	70.6	85.5	40.6	80.0	78.0	75.0	74.0	71.0	67.0	56.0	52.0	45.0
	19	69.1	87.5	38.9	78.0	76.0	74.0	73.0	69.0	64.0	51.0	48.0	42.0
	20	67.6 69.7	85.1	39.0	77.0	75.0	73.0	72.0	67.0	61.0 62.0	51.0 52.0	49.0	45.0
Nielet	22	68.0	89.3	44.9	78.0	76.0	74.0	72.0	66.0	60.0	49.0	47.0	43.0
Night	23	64.7	83.7	38.9	75.0	73.0	71.0	69.0	64.0	56.0	47.0	45.0	41.0



APPENDIX 7.1:

**OFF-SITE TRAFFIC NOISE LEVEL CONTOURS** 





	FHV	VA-RD-77-108	HIGHW	AY NC	ISE P	REDICTIC	N MOD	EL			
Scenan Road Nam Road Segmei	io: Existing Wit ne: Gilman Spri nt: s/o SR-60	thout Project ings Rd.				Project N Job Nui	lame: G nber: 1	iilman 1381	Mine		
SITE	SPECIFIC IN	PUT DATA				NC	DISE M	ODEL			
Highway Data				Si	te Cor	nditions (H	lard = 1	0, So	ft = 15)		
Average Daily	Traffic (Adt):	24,989 vehicle	es				Α	utos:	15		
Peak Hour	Percentage:	10%			Me	edium Truc	ks (2 A)	des):	15		
Peak H	lour Volume:	2,499 vehicles	6		He	avy Truck	s (3+ A)	des):	15		
Ve	hicle Speed:	55 mph		Ve	hicle	Mix					
Near/Far La	ne Distance:	58 feet		-	Veł	nicleType	Γ	)av	Evenina	Niaht	Dailv
Site Data						AL	itos: 6	6.9%	11.9%	21.2%	90.41%
Bai	rrier Height	0.0 feet			М	edium Tru	cks: 6	4.8%	8.5%	26.7%	7.53%
Barrier Type (0-W	(all. 1-Berm):	0.0			į	Heavy Tru	cks: 7	2.5%	4.7%	22.8%	2.06%
Centerline Dis	st. to Barrier:	50.0 feet		AL	oioo C	ourse Ele	votiono	lin fa	<b>c</b> 4)		
Centerline Dist.	to Observer:	50.0 feet		///	Jise 3	Autoor	vauons	(III 1e	el)		
Barrier Distance	to Observer:	0.0 feet			Madiu	Autos.	0.00	JU 77			
Observer Height (	Above Pad):	5.0 feet			Hoo	a Trucks:	2.2	57 34	Grade Adii	istment	0.0
Pa	ad Elevation:	0.0 feet			nea	ly muchs.	0.00	J4	erade ridje	iounion.	0.0
Roa	ad Elevation:	0.0 feet		Lá	ane Eq	uivalent L	Distance	e (in f	eet)		
	Road Grade:	0.0%				Autos:	41.0	37			
	Left View:	-90.0 degree	es		Mediu	m Trucks:	40.8	20			
	Right View:	90.0 degree	es		Hear	vy Trucks:	40.8	41			
FHWA Noise Mode	el Calculation:	5									
VehicleType	REMEL	Traffic Flow	Distar	се	Finite	Road	Fresne	el 1	Barrier Atte	n Ber	m Atten
Autos:	71.78	0.83		1.18		-1.20		4.65	0.0	00	0.000
Medium Trucks:	82.40	-9.96		1.22		-1.20		4.87	0.0	00	0.000
Heavy Trucks:	86.40	-15.59		1.21		-1.20	-	5.43	0.0	00	0.000
Unmitigated Noise	e Levels (with	out Topo and	barrier a	attenua	ation)						
VehicleType	Leq Peak Hou	r Leq Day	Le	eq Eve	ening	Leq N	ight		Ldn	C	VEL
Autos:	72.	.6	70.1		68.6		66.3		73.4		73.8
Medium Trucks:	72.	.5	59.8		67.0		67.2		74.0		74.2
Heavy Trucks:	70.	8	58.6		62.8		64.8		71.9		72.0
Vehicle Noise:	76	.8	74.3		71.5		71.0		77.9		78.2
Centerline Distant	ce to Noise Co	ontour (in feet	)								
				70 dE	BA	65 dl	BA	6	0 dBA	55	dBA
			Ldn:	169		365	5		786	1,	693
		CI	VEL:	176		379	)		817	1,	761

	FRM	A-RD-77-108			ISE PF	EDICTIO		<u>, F</u>			
Scenari Road Nam Road Segmer	o: Existing Wit e: Gilman Spri nt: s/o Allesand	hout Project ngs Rd. Iro Bl.				Project N Job Nur	ame: 0 nber: 1	Gilman 1381	Mine		
SITE	SPECIFIC IN	ΡΠΤ ΠΑΤΑ				NO	ISE M	ODE		\$	
Highway Data	er con ro m	01 0/1/1		Si	te Con	ditions (H	lard =	10, So	ft = 15)		
Average Daily Peak Hour Peak H Peak H Ve. Near/Far La	Traffic (Adt): Percentage: our Volume: hicle Speed: ne Distance:	29,420 vehicle 10% 2,942 vehicles 55 mph 58 feet	5	V	Mei Hei ehicle I	dium Truci avy Truck: Mix	A ks (2 A s (3+ A	utos: xles): xles):	15 15 15		
	io Diotanoo.	00 1001			Vehi	cleType		Day	Evening	Night	Daily
Site Data Bar Barrier Type (0-W	<b>rier Height:</b> all. 1-Berm):	0.0 feet			Me F	Au dium Truc leavy Truc	tos: 6 cks: 6 cks: 1	36.9% 34.8% 72.5%	11.9% 8.5% 4.7%	21.2% 26.7% 22.8%	90.41% 7.53% 2.06%
Centerline Dis	st. to Barrier:	50.0 feet		N	oise So	ource Elev	ations	(in fe	et)		
Centerline Dist. Barrier Distance Observer Height ( Pa	to Observer: to Observer: Above Pad): ad Elevation:	50.0 feet 0.0 feet 5.0 feet 0.0 feet			Mediur Heav	Autos: n Trucks: y Trucks:	0.0 2.2 8.0	00 97 04	Grade Adj	iustment:	0.0
Roa	ad Elevation:	0.0 feet		Lä	ane Equ	livalent L	ustanc	e (IN 1	eet)		
1	Left View: Right View:	-90.0 degree 90.0 degree	5 5		Mediur Heav	n Trucks: y Trucks:	40.8 40.8	20 41			
FHWA Noise Mode	el Calculations	i									
VehicleType	REMEL	Traffic Flow	Distar	ice	Finite	Road	Fresne	el i	Barrier Att	en Ber	m Atten
Autos: Medium Trucks: Heavy Trucks:	71.78 82.40 86.40	1.54 -9.26 -14.89		1.18 1.22 1.21		-1.20 -1.20 -1.20	-	4.65 4.87 5.43	0.0 0.0 0.0	100 100 100	0.000
Unmitigated Noise	e Levels (with	out Topo and I	arrier a	ttenu	ation)						
VehicleType	Leg Peak Hou	r Leq Day	Le	g Eve	ening	Leq Ni	ght		Ldn	CI	VEL
Autos:	73.	3 7	0.8		69.3		67.0		74.1		74.5
Medium Trucks:	73.	2 7	0.5		67.7		67.9		74.7	,	74.9
Heavy Trucks:	71.	56	9.3		63.5		65.6		72.6	6	72.7
Vehicle Noise:	77.	5 7	5.0		72.2		71.7		78.7	, ,	78.9
Centerline Distant	ce to Noise Co	ntour (in feet)	-	70.17							10.4
				70 dE	\$A	65 dE	\$A	6	U dBA	55	aBA
			C101-						8/0	11	887

Wednesday, April 17, 2019

	FHV	NA-RD-77-108 H	HIGHW	AY N	OISE PF	REDICTIO	ом мс	DEL				
Scenari Bood Norm	io: Existing Wi	ithout Project				Project I	Vame:	Gilma	n Mine			
Road Segme	nt: s/o Jack Ra	abbit Tr.				JOD INL	mber.	11381				
SITE	SPECIFIC IN			1		N	DISE	MODE		ITS		
Highway Data	0. 2011 10 11	01 5/1/1		s	ite Con	ditions (	Hard =	= 10, S	oft = 15)			
Average Daily	Traffic (Adt):	29,402 vehicles	5					Autos:	15			-
Peak Hour	Percentage:	10%			Me	dium Tru	cks (2	Axles):	15			
Peak H	lour Volume:	2,940 vehicles			He	avy Truci	ks (3+	Axles):	15			
Ve	hicle Speed:	55 mph		V	ahicle I	Mix						
Near/Far La	ne Distance:	58 feet		F	Vehi	cleTvpe		Dav	Evenin	a N	iaht	Dailv
Site Data						A	utos:	66.9%	11.9	% 2	1.2%	90.41%
Bai	rrier Height:	0.0 feet			Me	edium Tru	icks:	64.8%	8.5	% 2	6.7%	7.53%
Barrier Type (0-W	all, 1-Berm):	0.0			ŀ	leavy Tru	icks:	72.5%	4.7	% 2	2.8%	2.06%
Centerline Dis	st. to Barrier:	64.0 feet			loise Sc	ource Ele	vatior	ns (in f	eet)			
Centerline Dist.	to Observer:	64.0 feet		-		Autos	. 0	000				
Barrier Distance	to Observer:	0.0 feet			Mediur	n Trucks	: 2	297				
Observer Height (	Above Pad):	5.0 feet			Heav	y Trucks	: 8	.004	Grade	Adjust	ment:	0.0
Pa	ad Elevation:	0.0 feet					Distan		6 43			
Roa	ad Elevation:	0.0 feet		L	ane Equ	livalent	Distan	ice (in	reet)			
	Road Grade:	0.0%				Autos.	: 57	.271				
	Left View:	-90.0 degrees	5		Mediur	n Trucks	: 57	.117				
	Right View:	90.0 degrees	5		Heav	y Trucks.	: 57	.132				
FHWA Noise Mod	el Calculation	s									-	-
VehicleType	REMEL	Traffic Flow	Distar	nce	Finite	Road	Fres	nel	Barrier .	Atten	Ber	m Atten
Autos:	71.78	1.54		-0.99		-1.20		-4.70		0.000		0.000
Medium Trucks:	82.40	-9.26		-0.97		-1.20		-4.88		0.000		0.000
Heavy Trucks:	86.40	-14.89		-0.97		-1.20		-5.31		0.000		0.000
Unmitigated Noise	e Levels (with	out Topo and b	arrier a	attenu	uation)							
Vehicle I ype	Leq Peak Hou	Ir Leq Day	L	eq Ev	ening	Leq N	light		Ldn		CI	JEL TO A
Autos:	/1	.1 6	8.6		67.1		64.	8		2.0		72.3
Wealum Trucks:	71	.0 0	8.3 7.0		61.2		60.	1	7	2.5		72.7
Vehicle Noise:	75	3 7	7.Z 2.8		70.0		69	4 5	7	0.4 6.5		70.5
Controlling Distant			2.0		70.0		00.	0	,	0.0		10.1
Centeriine Distand	ce lo Noisé Co	uniour (in reet)		70 d	BA	65 d	BA		60 dBA		55	dBA
		L	dn:	173	3	37	2	-1	802		1,1	728
		CN	EL:	180	0	38	7		834		1,1	797

	FH	WA-RD-77-108	HIGHW	AY NO	DISE PI	REDICTIO	ON MO	DEL			
Scenai Road Nan Road Segme	rio: Existing W ne: Gilman Sp nt: s/o Bridge	ithout Project rings Rd. St.				Project I Job Nu	Vame: mber:	Gilmai 11381	n Mine		
SITE	SPECIFIC IN	IPUT DATA				N	DISE N	<b>IODE</b>	L INPUT	s	
Highway Data				S	ite Con	ditions (	Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt):	25,484 vehicle	s					Autos:	15		
Peak Hour	Percentage:	10%			Me	dium Tru	cks (2 A	(xles	15		
Peak H	lour Volume:	2,548 vehicles	5		He	avy Truck	ks (3+ A	Axles):	15		
Ve	hicle Speed:	55 mph		V	ehicle	Mix					
Near/Far La	ne Distance:	58 feet		-	Veh	icleType		Day	Evening	Night	Daily
Site Data						A	utos:	66.9%	11.9%	21.2	% 90.41%
Ba	rrier Height	0.0 feet			Me	edium Tru	icks:	64.8%	8.5%	26.79	% 7.53%
Barrier Type (0-V	Vall, 1-Berm):	0.0			ŀ	leavy Tru	icks:	72.5%	4.7%	22.89	% 2.06%
Centerline Di	ist. to Barrier:	64.0 feet		N	laisa Sr	ource Ele	vation	s (in f	oot)		
Centerline Dist.	to Observer:	64.0 feet			0/30 00	Autos	0	000			
Barrier Distance	to Observer:	0.0 feet			Mediu	n Trucks	. 2	297			
Observer Height	(Above Pad):	5.0 feet			Heav	v Trucks	8.	004	Grade Ad	liustmei	nt: 0.0
P	ad Elevation:	0.0 feet				,					
Ro	ad Elevation:	0.0 feet		L	ane Eq	uivalent	Distan	ce (in	feet)		
	Road Grade:	0.0%				Autos.	57.	271			
	Left View:	-90.0 degree	s		Mediu	m Trucks.	57.	117			
	Right View:	90.0 degree	s		Heav	y Trucks.	57.	132			
FHWA Noise Mod	lel Calculation	IS		_							
VehicleType	REMEL	Traffic Flow	Distar	ice	Finite	Road	Fresr	nel	Barrier At	ten B	erm Atten
Autos:	71.78	0.92		-0.99		-1.20		-4.70	0.0	000	0.000
Medium Trucks:	82.40	-9.88		-0.97		-1.20		-4.88	0.0	000	0.000
Heavy Trucks:	86.40	-15.51		-0.97		-1.20		-5.31	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier a	ttenu	ation)						
VehicleType	Leq Peak Ho	ur Leq Day	Le	eq Eve	ening	Leq N	light		Ldn		CNEL
Autos:	70	0.5	68.0		66.5		64.2	2	71.	3	71.7
Medium Trucks:	70	).4 (	57.7		64.9		65.1		71.	9	72.1
Heavy Trucks:	68	3.7	6.5		60.7		62.7	'	69.	8	69.9
Vehicle Noise:	74	.7	72.2		69.4		68.9	)	75.	В	76.1
Centerline Distan	ce to Noise C	ontour (in feet,	)								
				70 dl	BA	65 d	BA	(	60 dBA	5	5 dBA
			Ldn:	157	7	33	8		729		1,570
		CI	IEL:	163	3	35	2		758		1,634

Wednesday, April 17, 2019

	FHW	/A-RD-77-108	HIGHW	AY NO	ISE P	REDICTIC	ON MOI	DEL			
Scenar Road Nam Road Segmei	io: Existing Wit ne: Gilman Spri nt: n/o SR-79	hout Project ngs Rd.				Project N Job Nui	lame: ( mber: '	Gilma 11381	n Mine		
SITE	SPECIFIC IN	PUT DATA				NC	DISE N	IODE	L INPUTS	5	
Highway Data				Si	te Cor	ditions (H	Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt):	27,943 vehicle	s					Autos:	15		
Peak Hour	Percentage:	10%			Me	dium Truc	:ks (2 A	(xles)	15		
Peak H	lour Volume:	2,794 vehicles	5		He	avy Truck	is (3+ A	xles):	15		
Ve	hicle Speed:	55 mph		Ve	hicle	Mix					
Near/Far La	ne Distance:	58 feet		-	Veh	icleTvpe		Dav	Evenina	Niaht	Dailv
Site Data						AL	itos:	66.9%	5 11.9%	21.29	6 90.41%
Bai	rrier Heiaht:	0.0 feet			М	edium Tru	cks:	64.8%	8.5%	26.79	6 7.53%
Barrier Type (0-W	(all, 1-Berm):	0.0			1	Heavy Tru	cks:	72.5%	4.7%	22.89	6 2.06%
Centerline Dis	st. to Barrier:	64.0 feet		No	oise Se	ource Ele	vation	s (in f	eet)		
Centerline Dist.	to Observer:	64.0 feet				Autos:	0.0	000			
Barrier Distance	to Observer:	0.0 feet			Mediu	m Trucks:	2.2	97			
Observer Height (	Above Pad):	5.0 feet			Heav	v Trucks:	8.0	004	Grade Adj	ustmer	ot: 0.0
Pa	ad Elevation:	0.0 feet		-							
Roa	ad Elevation:	0.0 feet		Lá	ine Eq	uivalent L	Jistand	ce (in	teet)		
	Road Grade:	0.0%				Autos:	57.2	2/1			
	Left View:	-90.0 degree	:S		Mediu	m Trucks:	57.1	117			
	Right view:	90.0 degree	'S		neat	ly TTUCKS.	57.	132			
FHWA Noise Mode	el Calculations	6									
VehicleType	REMEL	Traffic Flow	Distan	ice	Finite	Road	Fresn	el	Barrier Atte	en Be	erm Atten
Autos:	71.78	1.32		-0.99		-1.20		-4.70	0.0	00	0.000
Medium Trucks:	82.40	-9.48		-0.97		-1.20		-4.88	0.0	00	0.000
Heavy Trucks:	86.40	-15.11		-0.97		-1.20		-5.31	0.0	00	0.000
Unmitigated Noise	e Levels (witho	out Topo and	barrier a	ttenu	ation)						
VehicleType	Leq Peak Hou	r Leq Day	Le	eq Eve	ning	Leq N	ïght		Ldn	(	ONEL
Autos:	70.	9 (	58.4		66.9		64.6		71.7		72.1
Medium Trucks:	70.	8 (	58.1		65.3		65.5		72.3		72.5
Heavy Trucks:	69.	1 (	6.9		61.1		63.1		70.2		70.3
Vehicle Noise:	75.	1	/2.6		69.8		69.3		76.2		76.5
Centerline Distant	ce to Noise Co	ntour (in feet,								-	
			ட	70 dE	8A	65 dl	BA	1	50 dBA	5	5 dBA
		~	Lan:	167		360	)		/75		1,670
		Cl	IEL:	174		374	ł		806		1,737

			IIGHWA				5L _			
Scenar	io: Existing Wit	thout Project			Project N	lame: G	ilmar	Mine		
Road Nam	e: Bridge St.				Job Nu	mber: 1	1381			
Road Segme	nt: w/o Gilman	Springs Rd.								
SITE	SPECIFIC IN	PUT DATA			NC	DISE M	ODE	L INPUT	s	
Highway Data				Site Col	nditions (l	Hard = 1	0, Sc	oft = 15)		
Average Daily	Traffic (Adt):	2,507 vehicles	6			A	utos:	15		
Peak Hour	Percentage:	10%		Me	edium Truc	ks (2 A)	des):	15		
Peak H	lour Volume:	251 vehicles		He	eavy Truck	:s (3+ A)	des):	15		
Ve	hicle Speed:	55 mph		Vehicle	Mix					
Near/Far La	ne Distance:	36 feet		Vel	nicleType	E	)av	Evenina	Niaht	Daily
Site Data					AL	itos: 6	6.9%	11.9%	21.2%	90.41%
Pa	rrior Hoight	0.0 foot		M	ledium Tru	cks: 6	4.8%	8.5%	26.7%	7.53%
Barrier Type (0-W	all 1-Borm)	0.0 1001			Heavy Tru	cks: 7	2.5%	4.7%	22.8%	2.06%
Centerline Di	all, 1-berrin). st to Barrier:	50.0 feet								
Centerline Dist.	to Observer:	50.0 feet		Noise S	ource Ele	vations	(in fe	eet)		
Barrier Distance	to Observer:	0.0 feet			Autos:	0.00	00			
Observer Height (	Above Pad):	5.0 feet		Mediu	m Trucks:	2.29	97			
g( Pi	ad Elevation:	0.0 feet		Hea	vy Trucks:	8.00	04	Grade Adj	ustment.	0.0
Ro	ad Elevation:	0.0 feet		Lane Ec	uivalent l	Distance	e (in i	feet)		
	Road Grade:	0.0%			Autos:	46.9	15	,		
	Left View:	-90.0 degrees		Mediu	m Trucks:	46.7	26			
	Right View:	90.0 degrees	6	Hea	vy Trucks:	46.7	44			
FHWA Noise Mod	el Calculation:	s								
FHWA Noise Mod VehicleType	el Calculation REMEL	s Traffic Flow	Distand	e Finite	Road	Fresne	1	Barrier Att	en Ber	m Atten
FHWA Noise Mode VehicleType Autos:	el Calculation REMEL 71.78	s Traffic Flow -9.16	Distanc	e <i>Finite</i> 0.31	Road -1.20	Fresne	1 4.65	Barrier Atte 0.0	en Ber	<i>m Atten</i> 0.000
FHWA Noise Mod VehicleType Autos: Medium Trucks:	REMEL 71.78 82.40	s Traffic Flow -9.16 -19.95	Distand	e <i>Finite</i> 0.31 0.34	e Road -1.20 -1.20	Fresne 	1 4.65 4.87	Barrier Atte 0.0 0.0	en Ber 100	<i>m Atten</i> 0.000 0.000
FHWA Noise Mod VehicleType Autos: Medium Trucks: Heavy Trucks:	el Calculation REMEL 71.78 82.40 86.40	s Traffic Flow -9.16 -19.95 -25.58	Distanc	e <i>Finite</i> 0.31 0.34 0.34	<i>Road</i> -1.20 -1.20 -1.20	Fresne 	4.65 4.87 5.43	Barrier Atte 0.0 0.0 0.0	en Ber 100 100	<i>m Atten</i> 0.000 0.000 0.000
FHWA Noise Mod VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise	el Calculation REMEL 71.78 82.40 86.40 e Levels (with	s Traffic Flow -9.16 -19.95 -25.58 out Topo and b	Distanc	e <i>Finite</i> 0.31 0.34 0.34 tenuation)	-1.20 -1.20 -1.20 -1.20	Fresne  	4.65 4.87 5.43	Barrier Atte 0.0 0.0 0.0	en Ber 100 100	m Atten 0.000 0.000 0.000
FHWA Noise Mod VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType	el Calculation: REMEL 71.78 82.40 86.40 e Levels (without Leg Peak Hout	s Traffic Flow -9.16 -19.95 -25.58 Dut Topo and b r Leq Day	Distance marrier at	e Finite 0.31 0.34 0.34 tenuation) g Evening	e Road -1.20 -1.20 -1.20 -1.20	Fresne  	4.65 4.87 5.43	Barrier Atte 0.0 0.0 0.0 0.0	en Ber 000 000 000 Cl	m Atten 0.000 0.000 0.000
FHWA Noise Mod VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos:	el Calculations REMEL 71.78 82.40 86.40 e Levels (without Leg Peak Hout 61.	s Traffic Flow -9.16 -19.95 -25.58 out Topo and b r Leq Day 7 5	Distance marrier at Lee 9.2	e Finite 0.31 0.34 0.34 0.34 tenuation) g Evening 57.7	e Road -1.20 -1.20 -1.20 -1.20 Leq N	Fresne       	4.65 4.87 5.43	Barrier Atte 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	en Ber 100 100 100 100 100 100	m Atten 0.000 0.000 0.000 VEL 62.9
FHWA Noise Mod VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noiss VehicleType Autos: Medium Trucks:	El Calculations REMEL 71.78 82.40 86.40 E Levels (with Leq Peak Hou 61. 61.	s Traffic Flow -9.16 -19.95 -25.58 out Topo and b r Leq Day 7 5 6 5	Distance parrier at Lee 9.2 8.9	e Finite 0.31 0.34 0.34 0.34 tenuation) 7 Evening 57.7 56.1	e Road -1.20 -1.20 -1.20 -1.20 Leq N	Fresne          -	4.65 4.87 5.43	Barrier Atte 0.0 0.0 0.0 0.0 <i>Ldn</i> 62.6 63.1	en Ber 000 000 000 000 Cl	m Atten 0.000 0.000 0.000 VEL 62.9 63.3
FHWA Noise Mod VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks:	el Calculation: <u>REMEL</u> 71.78 82.40 86.40 e Levels (with Leq Peak Hou 61. 61. 60.	s Traffic Flow -9.16 -19.95 -25.58 out Topo and b r Leq Day 7 5 6 5 0 5	Distance marrier at 9.2 8.9 7.8	e Finite 0.31 0.34 0.34 0.34 τenuation) γ Evening 57.7 56.1 51.9	e Road -1.20 -1.20 -1.20 -1.20 Leq N	Fresne 	4.65 4.87 5.43	Barrier Atte 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 62.6 63.1 61.0	en Ber 1000 1000 1000 1000 <i>Cl</i>	<u>m Atten</u> 0.000 0.000 0.000 <u>VEL</u> 62.9 63.3 61.1
FHWA Noise Mod VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	el Calculation: <u>REMEL</u> 71.78 82.40 86.40 e Levels (with Leq Peak Hou 61. 61. 60. 65	s           Traffic Flow           -9.16           -19.95           -25.58           but Topo and b           r         Leq Day           7         5           6         5           0         5           9         6	Distance arrier at Lee 9.2 8.9 7.8 3.4	re Finite 0.31 0.34 0.34 tenuation) q Evening 57.7 56.1 51.9 60.6	e Road -1.20 -1.20 -1.20 Leq N	Fresne 	4.65 4.87 5.43	Barrier Atte 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 63.1 61.0 67.1	en Ber 100 100 100 100 100 100	m Atten 0.000 0.000 0.000 VEL 62.9 63.3 61.1 67.3
FHWA Noise Mode VehicleType Autos: Medium Trucks: Heavy Trucks: VehicleType Autos: Medium Trucks: Vehicle Noise: Centerline Distant	el Calculation: <u>REMEL</u> 71.78 82.40 86.40 e Levels (with Leq Peak Hou 61 61 60 65 ce to Noise Cc	s           Traffic Flow         -9.16           -19.95         -25.58           Dut Topo and b         -19.95           r         Leq Day           7         5           6         5           0         5           9         6	Distance arrier at 9.2 8.9 7.8 3.4	xe         Finite           0.31         0.34           0.34         0.34           tenuation)         g Evening           57.7         56.1           51.9         60.6	e Road -1.20 -1.20 -1.20 Leg N	Fresne 	4.65 4.87 5.43	Barrier Atte 0.0 0.0 0.0 <i>Ldn</i> 62.6 63.1 61.0 67.1	en Ber 000 000 CI 3	m Atten 0.000 0.000 0.000 VEL 62.9 63.3 61.1 67.3
FHWA Noise Mod VehicleType Autos: Medium Trucks: Heavy Trucks: Umnitgated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Centerline Distant	el Calculations <u>REMEL</u> 71.78 82.40 86.40 <b>2 Levels (with</b> Leq Peak Hou 61 61 65 55 to Noise Co	S           Traffic Flow           -9.16           -19.95           -25.58           Dut Topo and B           r           Leg Day           7           5           0           5           9           6           5           9           6           10           10           10           10           10           10           10           10           10           10           11           12           13           14           15           15           16           17           18           10           10           10           10           10           11           12           13           14           15           16           17           18           19           10           10	Distance parrier at 9.2 8.9 7.8 3.4	e Finite 0.31 0.34 0.34 tenuation) 9 Evening 57.7 56.1 51.9 60.6	e Road -1.20 -1.20 -1.20 Leg N	Fresne 	4.65 4.87 5.43	Barrier Atto 0.0 0.0 0.0 0.0 0.0 0.0 0 0 dBA	en Ber 1000 1000 1000 1000 1000 1000 1000 10	m Atten 0.000 0.000 0.000 VEL 62.9 63.3 61.1 67.3 dBA
FHWA Noise Mod VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Vehicle Noise Centerline Distance	el Calculation: <u>REMEL</u> 71.78 82.40 86.40 e Levels (withough the constraints) 61 61 60 65 Ce to Noise Constraints)	s Traffic Flow -9.16 -9.16 -19.95 -25.58 but Topo and b r Leq Day 7 5 6 5 0 5 9 6 but Control (in feet) L	Distance marrier att 9.2 8.9 7.8 3.4 dn:	e Finite 0.31 0.34 0.34 tenuation) η Evening 57.7 56.1. 51.9 60.6 70 dBA 32	e Road -1.20 -1.20 -1.20 Leq N 65 dl 65 dl	Fresne 	4.65 4.87 5.43	Barrier Att 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	en Ber 1000 100	<i>m Atten</i> 0.000 0.000 0.000 <i>VEL</i> 62.9 63.3 61.1 67.3 <i>dBA</i> 19

Wednesday, April 17, 2019

Scenario: Existing + Project Project Name: Gilr		
Road Name: Gilman Springs Rd. Job Number: 113 Road Segment: s/o SR-60	nan Mine 81	
SITE SPECIFIC INPUT DATA NOISE MO	DEL INPUTS	
Highway Data Site Conditions (Hard = 10,	Soft = 15)	
Average Daily Traffic (Adt): 25,195 vehicles Aut	os: 15	
Peak Hour Percentage: 10% Medium Trucks (2 Axle	s): 15	
Peak Hour Volume: 2,519 vehicles Heavy Trucks (3+ Axle	s): 15	
Vehicle Speed: 55 mph Vehicle Mix		
Near/Far Lane Distance: 58 feet Vehicle Type Da	v Evening N	light Daily
Site Data Autos: 66	9% 11.9%	21.2% 89.73%
Berview Heimhte 0.0 feet Medium Trucks: 64.	8% 8.5%	26.7% 7.47%
Parrier Ture (0 Wall 1 Perm): 0.0 Heavy Trucks: 72.	5% 4.7%	22.8% 2.80%
Centerline Dist to Barrier: 50.0 feet		
Centerline Dist. to Observer: 50.0 feet	n feet)	
Barrier Distance to Observer: 0.0 feet Autos: 0.000		
Observer Height (Above Pad): 5.0 feet	Orregela Artici	
Pad Elevation: 0.0 feet Heavy Trucks: 8.004	Grade Adjus	stment: 0.0
Road Elevation: 0.0 feet Lane Equivalent Distance (	in feet)	
Road Grade: 0.0% Autos: 41.037		
Left View: -90.0 degrees Medium Trucks: 40.820		
Right View: 90.0 degrees Heavy Trucks: 40.841		
FHWA Noise Model Calculations		
VehicleType REMEL Traffic Flow Distance Finite Road Fresnel	Barrier Atten	Berm Atten
Autos: 71.78 0.83 1.18 -1.20 -4.4	65 0.000	0.00
Medium Trucks: 82.40 -9.96 1.22 -1.20 -4.6	37 0.000	0.00
Heavy Trucks: 86.40 -14.22 1.21 -1.20 -5.4	43 0.000	0.00
Unmitigated Noise Levels (without Topo and barrier attenuation)		
VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night	Ldn	CNEL
Autos: 72.6 70.1 68.6 66.3	73.4	73.
Medium Trucks: 72.5 69.8 67.0 67.2	74.0	74.3
Heavy Trucks: 72.2 70.0 64.1 66.2	73.2	73.
Vehicle Noise: 77.2 74.7 71.7 71.4	78.3	78.
Centerline Distance to Noise Contour (in feet)		
70 dBA 65 dBA	60 dBA	55 dBA
Ldn: 180 387	833	1,795
CNEL: 196 402	866	1,865

	FH	WA-RD-77-10	8 HIG	HWAY N	NOISE PF	REDICTIO	N MODEL			
Scenai Road Nan Road Segme	rio: Existing + ne: Gilman Sp nt: s/o Allesar	Project rings Rd. idro Bl.				Project N Job Nur	ame: Gilm nber: 1138	an Mine 1		
SITE	SPECIFIC II	NPUT DATA				NO	ISE MOD	EL INPUT	S	
Highway Data					Site Con	ditions (H	lard = 10, S	Soft = 15)		
Average Daily	Traffic (Adt):	29,629 vehi	cles				Autos	s: 15		
Peak Hour	Percentage:	10%			Me	dium Truc	ks (2 Axles	): 15		
Peak H	lour Volume:	2,963 vehic	les		He	avy Truck	s (3+ Axles	): 15		
Ve	ehicle Speed:	55 mph		-	Vehicle I	Mix				
Near/Far La	ne Distance:	58 feet			Veh	icleType	Day	Evening	Night	Daily
Site Data						Au	tos: 66.9	% 11.9%	21.2%	89.83%
Ba	rrier Heiaht:	0.0 feet			Me	edium True	cks: 64.8	% 8.5%	26.7%	7.48%
Barrier Type (0-V	Vall, 1-Berm):	0.0			ŀ	leavy Tru	cks: 72.5	% 4.7%	22.8%	2.69%
Centerline Di	ist. to Barrier:	50.0 feet		-	Noise Sc	ource Elev	vations (in	feet)		
Centerline Dist.	to Observer:	50.0 feet		-		Autos:	0.000	,		
Barrier Distance	to Observer:	0.0 feet			Mediur	n Trucks:	2.297			
Observer Height	(Above Pad):	5.0 feet			Heav	v Trucks:	8.004	Grade Ad	iustment.	0.0
P	ad Elevation:	0.0 feet		_						
Ro	ad Elevation:	0.0 feet		_	Lane Eq	uivalent L	oistance (in	1 feet)		
	Road Grade:	0.0%				Autos:	41.037			
	Left View:	-90.0 degr	ees		Mediur	n Trucks:	40.820			
	Right View:	90.0 degr	ees		Heav	y Trucks:	40.841			
FHWA Noise Mod	lel Calculation	IS								-
VehicleType	REMEL	Traffic Flow	Di	istance	Finite	Road	Fresnel	Barrier Att	en Ber	m Atten
Autos:	71.78	1.5	4	1.1	8	-1.20	-4.65	5 0.0	000	0.000
Medium Trucks:	82.40	-9.2	6	1.2	2	-1.20	-4.87	7 0.0	000	0.000
Heavy Trucks:	86.40	-13.6	9	1.2	1	-1.20	-5.43	3 0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo an	d barr	ier atter	nuation)					-
VehicleType	Leq Peak Ho	ur Leq Da	ay	Leq E	vening	Leq Ni	ght	Ldn	CI	VEL
Autos:	73	3.3	70.8		69.3		67.0	74.1		74.5
Medium Trucks:	73	3.2	70.5		67.7		67.9	74.7	,	74.9
Heavy Trucks:	72	2.7	70.5		64.7		66.8	73.8	3	73.9
Vehicle Noise:	77	7.8	75.4		72.4		72.0	79.0	)	79.2
Centerline Distan	ce to Noise C	ontour (in fe	et)							
			[	70	dBA	65 dE	BA	60 dBA	55	dBA
			Ldn:	19	98	428		921	1,	985
			CNEL:	20	06	444		957	2,	062

Wednesday, April 17, 2019

	FH	WA-RD-77-108	B HIGHWA	AY NOIS	SE P	REDICT	ION MO	DEL			
Scena Road Nar Road Segme	rio: Existing + me: Gilman Sp ent: s/o Jack R	Project rings Rd. abbit Tr.				Project Job N	Name: umber:	Gilma 11381	n Mine		
SITE	SPECIFIC IN	NPUT DATA				N	IOISE N	IODE	L INPUT	5	
Highway Data				Site	Cor	nditions	(Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt):	29,612 vehic	es				,	Autos.	15		
Peak Hou	r Percentage:	10%			Me	dium Tri	ucks (2 A	xles).	: 15		
Peak I	Hour Volume:	2,961 vehicle	s		He	avy Tru	cks (3+ A	xles).	: 15		
Ve	ehicle Speed:	55 mph		Voh	iclo	Mix					
Near/Far La	ane Distance:	58 feet		ven	Voh			Dav	Evening	Niaht	Daily
Site Data					ven	icic i ypc	Autos:	66 9%	6 11.9%	21.2	% 89.83%
Brite Bull	wriar Haight	0.0 feet			М	edium Ti	rucks:	64.8%	6 8.5%	26.7	% 7.48%
Barrior Tupo (0.1	Moll 1 Porm):	0.0 1001			1	Heavy T	rucks:	72.5%	6 4.7%	22.8	% 2.69%
Centerline D	ist to Barrier	64.0 feet				,					
Centerline Dist	to Observer:	64.0 feet		Nois	se S	ource El	evation	s (in f	eet)		
Barrier Distance	to Observer:	0.0 feet				Auto	s: 0.0	000			
Observer Height	(Above Pad):	5.0 feet		M	lediu	m Truck	s: 2.2	297			
F	Pad Elevation:	0.0 feet			Heav	y Truck	s: 8.0	004	Grade Adj	ustme	nt: 0.0
Ro	ad Elevation:	0.0 feet		Lan	e Eq	uivalen	t Distand	e (in	feet)		
	Road Grade:	0.0%				Auto	s: 57.2	271			
	Left View:	-90.0 degre	es	M	lediu	m Truck	s: 57.	117			
	Right View:	90.0 degre	es		Heav	y Truck	s: 57.	132			
FHWA Noise Mod	lel Calculation	IS									
VehicleType	REMEL	Traffic Flow	Distan	ce F	inite	Road	Fresn	el	Barrier Atte	en B	erm Atten
Autos	71.78	1.54		-0.99		-1.20		4.70	0.0	000	0.000
Medium Trucks	: 82.40	-9.26		-0.97		-1.20		-4.88	0.0	000	0.000
Heavy Trucks:	86.40	-13.69		-0.97		-1.20		-5.31	0.0	00	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier a	ttenuat	ion)					-	
VehicleType	Leq Peak Ho	ur Leq Da	y Le	q Eveni	ing	Leq	Night		Ldn		CNEL
Autos:	: 71	1.1	68.6		67.1		64.8		72.0	1	72.3
Medium Trucks	: 71	.0	68.3		65.5		65.7		72.5	<i>;</i>	72.7
Heavy Trucks	. 70	).5	68.3		62.5		64.6		71.6	i	71.7
Vehicle Noise.	: 75	5.7	73.2		70.2		69.8		76.8	\$	77.0
Centerline Distan	ice to Noise C	ontour (in fee	t)							1	
				70 dBA		65	dBA		60 dBA	5	55 dBA
			Ldn:	182		3	91		843		1,817
		C	NEL:	189		4	07		876		1,887

Scenar	io: Existing + F	Project				Project N	lame: G	ilmar	n Mine		
Road Narr	ie: Gilman Spr	ings Rd.				Job Nu	mber: 1	1381			
Road Segme	nt: s/o Bridge \$	St.									
SITE	SPECIFIC IN	IPUT DATA				NC	DISE M	ODE	L INPUT	S	
Highway Data				S	Site Con	ditions (l	lard = 1	0, Sc	oft = 15)		
Average Daily	Traffic (Adt):	25,726 vehicle	es				Α	utos:	15		
Peak Hour	Percentage:	10%			Med	lium Truc	:ks (2 A)	des):	15		
Peak H	lour Volume:	2,573 vehicles	6		Hea	avy Truck	s (3+ A)	des):	15		
Ve	hicle Speed:	55 mph		٧	/ehicle N	lix					
Near/Far La	ne Distance:	58 feet			Vehi	cleType	E	Day	Evening	Night	Daily
Site Data						AL	itos: 6	6.9%	11.9%	21.2%	89.63%
Ba	rrier Height:	0.0 feet			Me	dium Tru	cks: 6	4.8%	8.5%	26.7%	7.46%
Barrier Type (0-W	/all. 1-Berm);	0.0			h	leavy Tru	cks: 7	2.5%	4.7%	22.8%	2.91%
Centerline Di	st. to Barrier:	64.0 feet			Voico So	urco Elo	vations	(in fe	not)		
Centerline Dist.	to Observer:	64.0 feet		-	10/36 30	Autos:	0.00	00			
Barrier Distance	to Observer:	0.0 feet			Modium	Autos.	2.20	JU 37			
Observer Height (	(Above Pad):	5.0 feet			Hoav	/ Trucks:	8.00	57 74	Grade Ad	iustment	0.0
P	ad Elevation:	0.0 feet			neav,	indexs.	0.00	,4	,		0.0
Roi	ad Elevation:	0.0 feet		L	ane Equ	ivalent l	Distance	e (in :	feet)		
	Road Grade:	0.0%				Autos:	57.2	71			
	Left View:	-90.0 degree	es		Mediun	n Trucks:	57.1	17			
	Right View:	90.0 degree	es		Heav	/ Trucks:	57.13	32			
FHWA Noise Mod	el Calculation	s									
14 1 1 1 <b>T</b>											
venicie i ype	REMEL	Traffic Flow	Distar	ice	Finite	Road	Fresne	1	Barrier Att	en Ber	m Atten
Venicle I ype Autos:	REMEL 71.78	Traffic Flow 0.92	Distar	oce -0.99	Finite	Road -1.20	Fresne	4.70	Barrier Atte 0.0	en Ber	<i>m Atten</i> 0.000
Venicle Lype Autos: Medium Trucks:	REMEL 71.78 82.40	Traffic Flow 0.92 -9.88	Distar	-0.99 -0.97	Finite	Road -1.20 -1.20	Fresne	4.70 4.88	Barrier Atte 0.0 0.0	en Ber 100 100	m Atten 0.000 0.000
Venicle Type Autos: Medium Trucks: Heavy Trucks:	REMEL 71.78 82.40 86.40	Traffic Flow 0.92 -9.88 -13.97	Distar	-0.99 -0.97 -0.97	Finite	Road -1.20 -1.20 -1.20	Fresne  	4.70 4.88 5.31	Barrier Atte 0.0 0.0 0.0	en Ben 100 100 100	<u>m Atten</u> 0.000 0.000 0.000
Venicle I ype Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise	REMEL 71.78 82.40 86.40 e Levels (with	Traffic Flow 0.92 -9.88 -13.97 out Topo and	Distar barrier a	-0.99 -0.97 -0.97 -0.97	Finite	Road -1.20 -1.20 -1.20	Fresne  	4.70 4.88 5.31	Barrier Att 0.0 0.0 0.0	en Ben 100 100 100	m Atten 0.000 0.000 0.000
Venicle i ype Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType	REMEL 71.78 82.40 86.40 e Levels (with Leq Peak Hou	Traffic Flow           0.92           -9.88           -13.97           out Topo and           Ir         Leq Day	Distar barrier a	-0.99 -0.97 -0.97 -0.97 attenu eq Ev	Finite	Road -1.20 -1.20 -1.20 Leq N	Fresne    ight	4.70 4.88 5.31	Barrier Atte 0.0 0.0 0.0 0.0	en Ben 100 100 100 100 <i>Cl</i>	<u>m Atten</u> 0.000 0.000 0.000
Venicle I ype Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois Vehicle Type Autos:	REMEL 71.78 82.40 86.40 e Levels (with Leq Peak Hou 70	Traffic Flow           0.92           -9.88           -13.97           out Topo and           ir         Leq Day           .5	Distar	-0.99 -0.99 -0.97 -0.97 attent eq Ev	Finite uation) rening 66.5	Road -1.20 -1.20 -1.20 Leq N	Fresne     ight 64.2	4.70 4.88 5.31	Barrier Atte 0.0 0.0 0.0 0.0 0.0 71.3	en Ben 100 100 100 100 100 <i>CI</i>	<u>m Atten</u> 0.000 0.000 0.000 <u>0.000</u> <u>VEL</u> 71.7
Venicle Type Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise Vehicle Type Autos: Medium Trucks:	REMEL 71.78 82.40 86.40 e Levels (with Leq Peak Hou 70 70	Traffic Flow           0.92           -9.88           -13.97           out Topo and           ir         Leq Day           .5           .4	Distar barrier a 68.0 67.7	-0.99 -0.97 -0.97 -0.97 attenu eq Ev	Finite uation) rening 66.5 64.9	Road -1.20 -1.20 -1.20 <i>Leq N</i>	Fresne         -	4.70 4.88 5.31	Barrier Atti 0.0 0.0 0.0 0.0 Ldn 71.3 71.9	en Ben 000 000 000 C/ 3 9	<u>m Atten</u> 0.000 0.000 0.000 VEL 71.7 72.1
Venicle Type Autos: Medium Trucks: Heavy Trucks: Unmitigated Noiss VehicleType Autos: Medium Trucks: Heavy Trucks:	REMEL           71.78           82.40           86.40           e Levels (with           Leq Peak Hou           70           70           70           70           70           70	Traffic Flow           0.92           -9.88           -13.97           out Topo and           rr           Leq Day           .5           .4           .3	Distar barrier a 58.0 67.7 68.1	-0.99 -0.97 -0.97 <b>attenu</b> eq Ev	Finite uation) rening 66.5 64.9 62.2	Road -1.20 -1.20 -1.20 <i>Leq N</i>	Fresne 	4.70 4.88 5.31	Barrier Atti 0.0 0.0 0.0 0.0 0.0 71.3 71.3 71.3 71.3	en Ben 000 000 000 000 CI 3 3	<u>m Atten</u> 0.000 0.000 0.000 <u>0.000</u> <u>VEL</u> 71.7 72.1 71.4
Venicle type Autos: Medium Trucks: Heavy Trucks: VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	REMEL           71.78           82.40           86.40           e Levels (with           Leq Peak Hou           70           70           70           75	Traffic Flow           0.92           -9.88           -13.97           out Topo and           rr         Leq Day           .5           .4           .3           .1	Distar barrier a 68.0 67.7 68.1 72.7	-0.99 -0.97 -0.97 <b>attenu</b> eq Ev	Finite : uation) rening 66.5 64.9 62.2 69.6	Road -1.20 -1.20 -1.20 <i>Leq N</i>	Fresne 	4.70 4.88 5.31	Barrier Atte 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 71.3 71.3 71.3 76.3	en Ber 1000 100	<u>m Atten</u> 0.000 0.000 0.000 <u>VEL</u> 71.7 72.1 71.4 76.5
Venicle type Autos: Medium Trucks: Heavy Trucks: Vehicle Type Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Centerline Distant	REMEL           71.78         82.40           86.40         86.40           e Levels (with Leq Peak Hou         70           70         70           70         70           75         75           76         to Noise Co	Traffic Flow           0.92           -9.88           -13.97           out Topo and           ir         Leq Day           .5           .4           .3           .1           ontour (in feet)	Distar barrier a 68.0 67.7 68.1 72.7	-0.99 -0.97 -0.97 attent eq Ev	Finite uation) rening 66.5 64.9 62.2 69.6	Road -1.20 -1.20 -1.20 Leq N	Fresne 	4.70 4.88 5.31	Barrier Atte 0.0 0.0 0.0 0.0 0.0 71.3 71.3 71.3 71.3 76.3	en Ben 000 000 000 CI 3 3 3 3	M Atten 0.000 0.000 0.000 VEL 71.7 72.1 71.4 76.5
Vehicle type Autos: Medium Trucks: Heavy Trucks: Vehicle Type Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Centerline Distance	REMEL           71.78           82.40           86.40           e Levels (with           Leq Peak Hou           70           70           70           70           75           ce to Noise Co	Traffic Flow           0.92           -9.88           -13.97           out Topo and           Ir         Leq Day           5           .4           .3           .1           ontour (in feet)	Distar barrier a 68.0 67.7 68.1 72.7	0.ce -0.99 -0.97 -0.97 attent ≥q Ev 70 d	Finite uation) rening 66.5 64.9 62.2 69.6 IBA	Road -1.20 -1.20 -1.20 Leq N 65 di	Fresne 	4.70 4.88 5.31	Barrier Atte 0.0 0.0 0.0 0.0 0.0 71.3 71.3 71.3 76.3 76.3	en Ben 000 000 CI 3 3 3 55	m Atten 0.000 0.000 0.000 VEL 71.7 72.1 71.4 76.5 dBA
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Centerline Distance	REMEL           71.78         82.40           86.40         86.40           e Levels (with         Leq Peak Hou           70         70           70         75           ce to Noise Co         Co	Traffic Flow           0.92           -9.88           -13.97           Out Topo and           r           Leq Day           .5           .4           .3           .1           Dontour (in feet)	Distar barrier a 68.0 68.1 72.7 ) Ldn:	-0.99 -0.97	Finite           Prinite           Prinite	Road -1.20 -1.20 -1.20 Leq N 65 di 362	Fresne 	4.70 4.88 5.31	Barrier Att. 0.0 0.0 0.0 71.3 71.3 71.3 76.3 76.3 76.3 76.3	en Ber 1000 100	<u>m Atten</u> 0.000 0.000 0.000 <u>VEL</u> 71.7 72.1 71.4 76.5 <i>dBA</i> 679

Scenar	FH io: Existing +	WA-RD-7 Project	'7-108 HIG	HWAY	NOISE P	REDICTIO Project N	N MODEL	an Mine		
Road Nam Road Segme	e: Gilman Sp nt: n/o SR-79	rings Rd.				Job Nur	nber: 1138	1		
SITE	SPECIFIC I	NPUT D	АТА			NC	ISE MOD	el input	S	
Highway Data					Site Cor	nditions (H	lard = 10, \$	Soft = 15)		
Average Daily	Traffic (Adt):	28,051	vehicles				Auto	s: 15		
Peak Hour	Percentage:	10%			Me	edium Truc	ks (2 Axles	): 15		
Peak H	lour Volume:	2,805 v	ehicles		He	eavy Truck	s (3+ Axles	): 15		
Ve	hicle Speed:	55 m	nph		Vehicle	Mix				
Near/Far La	ne Distance:	58 fe	eet		Vel	nicleType	Dav	Evenina	Night	Daily
Site Data						Au	tos: 66.9	% 11.9%	21.2%	90.11%
			6		M	ledium Tru	cks: 64.8	% 8.5%	26.7%	7.50%
Barrier Type (0-W	all, 1-Berm):	0.0	reet			Heavy Tru	cks: 72.5	% 4.7%	22.8%	2.39%
Centerline Di	st. to Barrier:	64.0	feet		Noise S	ource Elev	vations (in	feet)		
Centerline Dist.	to Observer:	64.0	feet			Autos	0.000	1000		
Barrier Distance	to Observer:	0.0	feet		Modiu	m Trucke	2 297			
Observer Height (	Above Pad):	5.0	feet		Hea	w Trucks:	8 004	Grade Ad	liustment	0.0
Pa	ad Elevation:	0.0	feet			ry maono.	0.001		,	
Roa	ad Elevation:	0.0	feet		Lane Eq	uivalent L	Distance (ii	1 feet)		
	Road Grade:	0.0%	6			Autos:	57.271			
	Left View:	-90.0	degrees		Mediu	m Trucks:	57.117			
	Right View:	90.0	degrees		Hea	vy Trucks:	57.132			
FHWA Noise Mod	el Calculation	15								
VehicleType	REMEL	Traffic I	Flow D	listance	Finite	Road	Fresnel	Barrier At	ten Bei	rm Atten
Autos:	71.78	1	1.32	-0.	99	-1.20	-4.70	0 0.	000	0.000
Medium Trucks:	82.40	)	-9.48	-0.	97	-1.20	-4.88	3 0.	000	0.000
Heavy Trucks:	86.40	) -	14.44	-0.	97	-1.20	-5.3	0.	000	0.000
Unmitigated Nois	e Levels (witi	nout Top	o and bar	rier atte	enuation)					
VehicleType	Leq Peak Ho	ur Le	eq Day	Leq	Evening	Leq Ni	ight	Ldn	С	NEL
Autos:	7	0.9	68.4		66.9		64.6	71.	7	72.1
Medium Trucks:	7	D.8	68.1		65.3		65.5	72.	3	72.5
Heavy Trucks:	6	9.8	67.6		61.7		63.8	70.	8	71.0
Vehicle Noise:	7	5.3	72.8		69.9	1	69.5	76.	4	76.7
Centerline Distant	ce to Noise C	ontour (i	n feet)							
				70	) aBA	65 dE	3A	60 dBA	55	aBA
			Ldn.		1/2	370		796	1,	/15
			CNEL.		178	384		828	1,	/84

	FH\	NA-RD-77-108	HIGHWA	AY NI	OISE PH	REDICI	ION MO	DEL				
Scena	rio: Existing + I	Project				Projec	t Name:	Gilma	n Mine			
Road Nar	ne: Bridge St.	-				Job N	lumber:	11381				
Road Segme	ent: w/o Gilmar	Springs Rd.										
SITE	SPECIFIC IN	IPUT DATA				ſ	NOISE	NODE		s		
Highway Data				S	Site Con	ditions	(Hard =	10, S	oft = 15)			
Average Daily	/ Traffic (Adt):	2,539 vehicle	s					Autos:	15			
Peak Hou	r Percentage:	10%			Me	dium Tr	ucks (2 A	Axles):	15			
Peak	Hour Volume:	254 vehicles			He	avy Tru	cks (3+ A	Axles):	15			
V	ehicle Speed:	55 mph		1	(obiclo l	Miv						
Near/Far Li	ane Distance:	36 feet		-	Veh	icleTvn	•	Dav	Evenina	Nic	tht	Daily
Site Data				-		0.01.90	Autos:	66.9%	11.9%	21	2%	89.27%
	arrior Hoight	0.0 foot			Me	edium T	rucks:	64.8%	8.5%	26	.7%	7.43%
Barrier Type (0-1	Nall 1-Berm)	0.0			F	leavy T	rucks:	72.5%	4.7%	22	.8%	3.29%
Centerline D	ist. to Barrier:	50.0 feet		-								
Centerline Dist	to Observer:	50.0 feet		Λ	loise Sc	ource E	levation	s (in f	eet)			
Barrier Distance	to Observer:	0.0 feet				Auto	is: 0.0	000				
Observer Height	(Above Pad):	5.0 feet			Mediur	n Truck	(S: 2.)	297				
F	Pad Elevation:	0.0 feet			Heav	y Truck	(S. 8.)	004	Grade Ad	justn	nent:	0.0
R	ad Elevation:	0.0 feet		L	ane Eq	uivalen	t Distan	ce (in	feet)			
	Road Grade:	0.0%				Auto	s: 46.	915				
	Left View:	-90.0 degree	5		Mediur	n Truck	s: 46.	726				
	Right View:	90.0 degree	5		Heav	y Truck	s: 46.	744				
FHWA Noise Mor	el Calculation	s										
VehicleType	REMEL	Traffic Flow	Distan	се	Finite	Road	Fresr	nel	Barrier Att	en	Bern	n Atten
Autos	: 71.78	-9.16		0.31		-1.20		-4.65	0.0	000		0.000
Medium Trucks	: 82.40	-19.95		0.34		-1.20		-4.87	0.0	000		0.000
Heavy Trucks	86.40	-23.49		0.34		-1.20		-5.43	0.0	000		0.000
Unmitigated Nois	se Levels (with	out Topo and I	arrier a	ttenı	uation)							
VehicleType	Leq Peak Hou	Ir Leq Day	Le	q Ev	ening	Leq	Night		Ldn	Т	CN	IEL
Autos	: 61	.7 5	9.2		57.7		55.5	5	62.6	ò		62.9
Medium Trucks	: 61	.6 5	8.9		56.1		56.3	3	63.1	I I		63.3
Heavy Trucks	: 62	.0 5	9.9		54.0		56.1		63.1	1		63.2
Vehicle Noise	: 66	6.6 6	4.1		61.0		60.7	7	67.7	7		67.9
Centerline Distar	nce to Noise C	ontour (in feet)										
				70 d	BA	65	dBA	(	60 dBA		55 c	:IBA
		L	.dn:	35	5		76		163		35	j1
		CN	EL:	36	5		79		169		36	<u>j</u> 4

Wednesday, April 17, 2019

Wednesday, April 17, 2019

	FH	WA-RD-77-108	HIGHW	AY NO	ISE P	REDICTIO	N MOI				
Scenario Road Name Road Segmen	o: EA e: Gilman Sp nt: s/o SR-60	rings Rd.				Project N Job Nur	ame: ( nber: 1	Gilmar 1381	I Mine		
SITE S	SPECIFIC IN	NPUT DATA				NC	ISE N	IODE	L INPUT	5	
Highway Data				Sit	e Cor	nditions (H	lard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	25,488 vehicl	es				A	Autos:	15		
Peak Hour I	Percentage:	10%			Ме	edium Truc	ks (2 A	xles):	15		
Peak Ho	our Volume:	2,549 vehicle	s		He	avy Truck	s (3+ A	xles):	15		
Veh	nicle Speed:	55 mph		Vo	hiclo	Mix					
Near/Far Lar	ne Distance:	58 feet			Veh	nicleTyne		Dav	Evenina	Niaht	Daily
Site Data					10/1	Au	tos:	66.9%	11.9%	21.2%	6 90.41%
Par	rior Hoight:	0.0 foot			М	edium Tru	cks:	64.8%	8.5%	26.7%	6 7.53%
Barrier Type (0-Wa	all 1-Rorm)	0.0 1001			1	Heavy Tru	cks:	72.5%	4.7%	22.8%	6 2.06%
Centerline Dis	t. to Barrier:	50.0 feet									
Centerline Dist. t	o Observer:	50.0 feet		No	ise S	ource Ele	ations	s (in fe	eet)		
Barrier Distance t	o Observer:	0.0 feet				Autos:	0.0	00			
Observer Height (/	Above Pad);	5.0 feet			Mediu	m Trucks:	2.2	97	0		
Pa	d Elevation:	0.0 feet			Heav	vy Trucks:	8.0	104	Grade Adj	ustmen	t: 0.0
Roa	d Elevation:	0.0 feet		La	ne Eq	uivalent L	Distanc	e (in t	feet)		
F	Road Grade:	0.0%				Autos:	41.0	)37			
	Left View:	-90.0 degre	es	1	Mediu	m Trucks:	40.8	320			
	Right View:	90.0 degre	es		Heav	vy Trucks:	40.8	841			
FHWA Noise Mode	Calculation	IS									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresn	el	Barrier Atte	en Be	erm Atten
Autos:	71.78	0.92		1.18		-1.20		4.65	0.0	00	0.000
Medium Trucks:	82.40	-9.88		1.22		-1.20		4.87	0.0	00	0.000
Heavy Trucks:	86.40	-15.51		1.21		-1.20		5.43	0.0	00	0.000
Unmitigated Noise	Levels (with	out Topo and	barrier	attenua	tion)						
VehicleType	Leq Peak Ho	ur Leq Daj	/ L	eq Evei	ning	Leq N	ight		Ldn	C	ONEL
Autos:	72	2.7	70.1		68.7		66.4		73.5	5	73.9
Medium Trucks:	72	2.5	69.9		67.1		67.3		74.1		74.3
Heavy Trucks:	70	).9	68.7		62.8		64.9		71.9	)	72.1
Vehicle Noise:	76	3.9	74.4		71.6		71.1		78.0	)	78.3
Centerline Distanc	e to Noise C	ontour (in fee	t)	-							
				70 dB.	A	65 dE	BA	6	i0 dBA	55	5 dBA
			Ldn:	172		370	)		796	1	,715
		C	NEL:	178		384			828	1	,784

FHW	/A-RD-77-108 H	IIGHW/	NY NC	DISE PF	REDICTIC	N MOL	DEL			
o: EA					Project N	lame: 0	Gilmar	Mine		
e: Gilman Spri	ngs Rd.				Job Nu	mber: 1	1381			
nt: s/o Allesand	ro Bl.									
SPECIFIC IN	PUT DATA				NC	DISE N	ODE		S	
			Si	ite Con	ditions (l	lard =	10, Sc	oft = 15)		
Traffic (Adt):	30,608 vehicles					A	utos:	15		
Percentage:	10%			Me	dium Truc	:ks (2 A	xles):	15		
our Volume:	3,061 vehicles			Hea	avy Truck	's (3+ A	xles):	15		
hicle Speed:	55 mph		V	ehicle I	Mix					
ne Distance:	58 feet		-	Vehi	icleType		Day	Evening	Night	Daily
				-	AL	itos: (	6.9%	11.9%	21.2%	90.41%
rior Hoight	0.0 feet			Me	edium Tru	cks: (	64.8%	8.5%	26.7%	7.53%
all. 1-Berm):	0.0			F	leavy Tru	cks:	72.5%	4.7%	22.8%	2.06%
st. to Barrier:	50.0 feet						1	- 41		
to Observer:	50.0 feet		N	oise So	ource Ele	vations	(IN TE	et)		
to Observer:	0.0 feet				Autos:	0.0	00			
Above Pad):	5.0 feet			Mediur	n Trucks:	2.2	97	Crada Ad		
d Elevation:	0.0 feet			Heav	y Trucks:	8.0	04	Grade Adj	usimeni.	0.0
ad Elevation:	0.0 feet		Lá	ane Equ	uivalent l	Distanc	e (in i	feet)		
Road Grade:	0.0%				Autos:	41.0	37			
Left View:	-90.0 degrees			Mediur	n Trucks:	40.8	20			
Right View:	90.0 degrees			Heav	y Trucks:	40.8	41			
el Calculations	;									
REMEL	Traffic Flow	Distan	се	Finite	Road	Fresn	el	Barrier Att	en Ber	m Atten
71.78	1.71		1.18		-1.20		4.65	0.0	000	0.000
82.40	-9.08		1.22		-1.20		4.87	0.0	000	0.000
86.40	-14.71		1.21		-1.20		5.43	0.0	000	0.000
e Levels (witho	out Topo and b	arrier a	ttenu	ation)						
Leq Peak Hou	r Leq Day	Le	q Eve	ening	Leq N	ight		Ldn	CI	VEL
73.	5 7	).9		69.5		67.2		74.3	3	74.7
73.	3 7	).7		67.9		68.1		74.9	)	75.1
71.	7 6	9.5		63.6		65.7		72.7	,	72.9
	7 7	5.2		72.4		71.9		78.8	3	79.1
77.	, ,									
77. ce to Noise Co	ntour (in feet)									
77. ce to Noise Co	ntour (in feet)		70 dE	BA	65 di	BA	6	i0 dBA	55	dBA
77. ce to Noise Co	ntour (in feet)	dn:	70 dE 194	BA	65 di 418	BA B	6	0 dBA 899	55 1,	<i>dBA</i> 938
	EHW C: EA C: EA C: Carlow and Control of the second C: Carlow and C: Carlow and Control of the second C: Carlow and C: Carlow a	FHWA-RD-77-108 H         o: EA         o: IEA         o: Signame         e: Gilman Springs Rd.         ht: s/o Allesandro BI.         SPECIFIC INPUT DATA         Traffic (Adt): 30,608 vehicles         Percentage: 10%         our Volume: 3,061 vehicles         pedication         icle Speed: 55 mph         ne Distance: 58 feet         rier Height: 1, -Berni: 0.0 feet         al, 1-Berni: 50.0 feet         to Observer: 50.0 feet         to Observer: 0.0 feet         Above Pad): 5.0 feet         to Elevation: 0.0 feet         Right View: -90.0 degrees         el Calculations         REMEL       Traffic Flow         71.78       1.71         82.40       -9.08         86.40       -14.71         Pevels (without Topo and b)         Lag Peak Hour       Leg Day         73.5       77	EHWA-RD-77-108 HIGHW/           o: EA           o: E Gilman Springs Rd.           it: s/o Allesandro BI.           SPECIFIC INPUT DATA           Traffic (Ad):           30,608 vehicles           Percentage:           10%           our Volume:           3,061 vehicles           icle Speed:           Traffic (Ad):           3,061 vehicles           percentage:           10%           our Volume:           3,061 vehicles           rier Height:           0.0 feet           to Dserver:           50.0 feet           to Observer:           50.0 feet           do Elevation:           0.0 feet           Road Grade:           0.0%           Left View:           90.0 degrees           d' Calculations           REMEL         Traffic Flow           Valuet         1.71           82.40         -9.08           86.40         -14.71           Sevets (without Topo and barrier a           Leg Peak Hour         Leg Day           Leg Day         Leg           73.3         70.7 <td>EHWA-RD-77-103 HIGHWAY NC           o: EA         :: Gilman Springs Rd.           it: s/o Allesandro BI.         :: SPECIFIC INPUT DATA           SPECIFIC INPUT DATA         Straffic (Act):           SPECIFIC INPUT DATA         Straffic (Act):           SPECIFIC INPUT OF DATA         Straffic (Act):           Straffic (Act):         30,608 vehicles           Percentage:         10%           Data Straffic Figure         Straffic (Act):           Straffic Intermediation:         0.0 feet           Above Pad):         5.0 feet           Straffic Figure         90.0 degrees           Right View:         -90.0 degrees           Id Elevation:         0.0 feet           Id Elevation:         0.0 degrees           Id Elevations:         Traffic Flow         Distance           T1.78         1.71         1.18           82.40         -9.08         1.22           86.40         -14.71         1.2</td> <td>FHWARD-77-108 HIGHWAY NOISE PI           FIRMAR NOISE PI           Site Con           Site Con           Traffic (Adt): 30,608 vehicles           Percentage: 10%           Me           Out Volume: 3,061 vehicles           Me           Vehicles           Me           Noise Steet           Vehicle I           Noise Steet           Me           Add Elevation: 0.0 feet           Above Pad): 5.0 feet         Mediur           Read Grade: 0.0%         Mediur           Above Pad): 5.0 feet         Me           REMEL</td> <td>FHWA-RD-77-103 HIGHWAY NOISE PREDICTIC           c: EA         Project N.           c: Gilman Springs Rd.         Job Nu           it: sio Allesandro BI.         Job Nu           SPECIFIC INPUT DATA         NC           Brain Contractions         Medium Truc           Relight:         0.0 feet         Autos:           Noise Source Ele         Autos:           Above Pad):         5.0 feet         Heavy Trucks:           Ad Elevation:         0.0 feet         Autos:           Right View:         90.0 degrees         Medium Trucks:           Ad</td> <td>FHWA-RD-77-105 HIGHWAY NOISE PREDICTION MODE           o: EA         Project Name: O           o: E Gilman Springs Rd.         Job Number: 1           it: s/o Allesandro BI.         Job Number: 1           SPECIFIC INPUT DATA         NOISE M           SPECIFIC INPUT DATA         NOISE M           Fraditions (Hard =)         Traffic (Act):           Traffic (Act):         30,608 vehicles           Percentage:         10%           aur Volume:         3,061 vehicles           hele Speed:         55 mph           helice Speed:         55 mph           helice Speed:         55 mph           int: Is barrier:         50.0 feet           holos Deserver:         50.0 feet           Above Pad):         5.0 feet           Above Pad):         5.0 feet           Heavy Trucks:         8.0           of Elevation:         0.0 feet           Addium Trucks:         40.8           right View:         90.0 degrees           if addiutions         Family Calculations           REMEL         Traffic Flow         Distance           if addiutions         filte Readiut           if addiutions         filte Readiut           REMEL         Traffic</td> <td>FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL           c: EA         Project Name: Gilmar           c: Gilman Springs Rd.         Job Number: 11381           it: s/o Allesandro Bl.         Site Conditions (Hard = 10, Sc           SPECIFIC INPUT DATA         NOISE MODE           Traffic (Adt):         30,601 vehicles           bill control         Medium Trucks (2 Avles):           heavy Trucks:         60.9%           rier Height:         0.0 feet           Above Pad):         5.0 feet           heavy Trucks:         0.000           Medium Trucks:         2.297           Heavy Trucks:         8.004           Above Pad):         5.0 feet           Ab</td> <td>FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL           c: EA         Project Name: Gilman Mine           c: Gilman Springs Rd.         Job Number: 11381           it: s/o Allesandro BI.         Job Number: 11381           SPECIFIC INPUT DATA         NOISE MODEL INPUT:           SPECIFIC INPUT DATA         NOISE MODEL INPUT:           Fraffic (Adt):         30,608 vehicles           Percentage:         10%           aut volume:         3,061 vehicles           biole Speed:         Ste Conditions (Hard = 10, Soft = 15)           Autos:         66.9%           me Distance:         55 mph           rise rheight:         0.0 feet           Altos:         66.9%           Medium Trucks:         72.5%           Autos:         0.00 feet           Above Pad):         5.0 feet</td> <td>FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL           c: EA         Project Name: Gilman Mine           c: Gilman Springs Rd.         Job Number: 11381           it: s/o Allesandro BI.         Job Number: 11381           SPECIFIC INPUT DATA         NOISE MODEL INPUTS           SPECIFIC INPUT DATA         NOISE MODEL INPUTS           Ste Conditions (Hard = 10, Soft = 15)         Autos: 15           Traffic (Adt):         30,608 vehicles           Percentage:         10%           aur Volume:         3,061 vehicles           icle Speed:         55 mph           reb Distance:         58 feet           VehicleType         Day           Autos::         66.9%           Medium Trucks:         04.8%           Autos::         66.9%           Noise Source Elevations (in feet)           Noise Source Elevations (in feet)           Medium Trucks:         2.04           Autos::         60.9%           Noise Source Elevations (in feet)           Noise Source Elevations (in feet)           Molegenes         Medium Trucks:           Right View:         90.0 degrees           Right View:         90.0 degrees           Remet         Traffic Flow         Distance     <!--</td--></td>	EHWA-RD-77-103 HIGHWAY NC           o: EA         :: Gilman Springs Rd.           it: s/o Allesandro BI.         :: SPECIFIC INPUT DATA           SPECIFIC INPUT DATA         Straffic (Act):           SPECIFIC INPUT DATA         Straffic (Act):           SPECIFIC INPUT OF DATA         Straffic (Act):           Straffic (Act):         30,608 vehicles           Percentage:         10%           Data Straffic Figure         Straffic (Act):           Straffic Intermediation:         0.0 feet           Above Pad):         5.0 feet           Straffic Figure         90.0 degrees           Right View:         -90.0 degrees           Id Elevation:         0.0 feet           Id Elevation:         0.0 degrees           Id Elevations:         Traffic Flow         Distance           T1.78         1.71         1.18           82.40         -9.08         1.22           86.40         -14.71         1.2	FHWARD-77-108 HIGHWAY NOISE PI           FIRMAR NOISE PI           Site Con           Site Con           Traffic (Adt): 30,608 vehicles           Percentage: 10%           Me           Out Volume: 3,061 vehicles           Me           Vehicles           Me           Noise Steet           Vehicle I           Noise Steet           Me           Add Elevation: 0.0 feet           Above Pad): 5.0 feet         Mediur           Read Grade: 0.0%         Mediur           Above Pad): 5.0 feet         Me           REMEL	FHWA-RD-77-103 HIGHWAY NOISE PREDICTIC           c: EA         Project N.           c: Gilman Springs Rd.         Job Nu           it: sio Allesandro BI.         Job Nu           SPECIFIC INPUT DATA         NC           Brain Contractions         Medium Truc           Relight:         0.0 feet         Autos:           Noise Source Ele         Autos:           Above Pad):         5.0 feet         Heavy Trucks:           Ad Elevation:         0.0 feet         Autos:           Right View:         90.0 degrees         Medium Trucks:           Ad	FHWA-RD-77-105 HIGHWAY NOISE PREDICTION MODE           o: EA         Project Name: O           o: E Gilman Springs Rd.         Job Number: 1           it: s/o Allesandro BI.         Job Number: 1           SPECIFIC INPUT DATA         NOISE M           SPECIFIC INPUT DATA         NOISE M           Fraditions (Hard =)         Traffic (Act):           Traffic (Act):         30,608 vehicles           Percentage:         10%           aur Volume:         3,061 vehicles           hele Speed:         55 mph           helice Speed:         55 mph           helice Speed:         55 mph           int: Is barrier:         50.0 feet           holos Deserver:         50.0 feet           Above Pad):         5.0 feet           Above Pad):         5.0 feet           Heavy Trucks:         8.0           of Elevation:         0.0 feet           Addium Trucks:         40.8           right View:         90.0 degrees           if addiutions         Family Calculations           REMEL         Traffic Flow         Distance           if addiutions         filte Readiut           if addiutions         filte Readiut           REMEL         Traffic	FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL           c: EA         Project Name: Gilmar           c: Gilman Springs Rd.         Job Number: 11381           it: s/o Allesandro Bl.         Site Conditions (Hard = 10, Sc           SPECIFIC INPUT DATA         NOISE MODE           Traffic (Adt):         30,601 vehicles           bill control         Medium Trucks (2 Avles):           heavy Trucks:         60.9%           rier Height:         0.0 feet           Above Pad):         5.0 feet           heavy Trucks:         0.000           Medium Trucks:         2.297           Heavy Trucks:         8.004           Above Pad):         5.0 feet           Ab	FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL           c: EA         Project Name: Gilman Mine           c: Gilman Springs Rd.         Job Number: 11381           it: s/o Allesandro BI.         Job Number: 11381           SPECIFIC INPUT DATA         NOISE MODEL INPUT:           SPECIFIC INPUT DATA         NOISE MODEL INPUT:           Fraffic (Adt):         30,608 vehicles           Percentage:         10%           aut volume:         3,061 vehicles           biole Speed:         Ste Conditions (Hard = 10, Soft = 15)           Autos:         66.9%           me Distance:         55 mph           rise rheight:         0.0 feet           Altos:         66.9%           Medium Trucks:         72.5%           Autos:         0.00 feet           Above Pad):         5.0 feet	FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL           c: EA         Project Name: Gilman Mine           c: Gilman Springs Rd.         Job Number: 11381           it: s/o Allesandro BI.         Job Number: 11381           SPECIFIC INPUT DATA         NOISE MODEL INPUTS           SPECIFIC INPUT DATA         NOISE MODEL INPUTS           Ste Conditions (Hard = 10, Soft = 15)         Autos: 15           Traffic (Adt):         30,608 vehicles           Percentage:         10%           aur Volume:         3,061 vehicles           icle Speed:         55 mph           reb Distance:         58 feet           VehicleType         Day           Autos::         66.9%           Medium Trucks:         04.8%           Autos::         66.9%           Noise Source Elevations (in feet)           Noise Source Elevations (in feet)           Medium Trucks:         2.04           Autos::         60.9%           Noise Source Elevations (in feet)           Noise Source Elevations (in feet)           Molegenes         Medium Trucks:           Right View:         90.0 degrees           Right View:         90.0 degrees           Remet         Traffic Flow         Distance </td

	FHV	VA-RD-77-108	HIGHWA	Y NOISE I	PREDICTIO	N MODEL			
Scenar Road Narr Road Segme	rio: EA ne: Gilman Spri nt: s/o Jack Ra	ings Rd. Ibbit Tr.			Project Na Job Nurr	ame: Gilma nber: 1138	an Mine 1		
SITE	SPECIFIC IN	PUT DATA			NO	ISE MOD	EL INPUT	s	
Highway Data				Site Co	onditions (H	ard = 10, S	Soft = 15)		
Average Daily	Traffic (Adt):	30,590 vehicle	s			Autos	s: 15		
Peak Hour	Percentage:	10%		M	ledium Truck	s (2 Axles	): 15		
Peak H	lour Volume:	3,059 vehicles	5	H	leavy Trucks	(3+ Axles	): 15		
Ve	hicle Speed:	55 mph		Vehicle	Mix				
Near/Far La	ne Distance:	58 feet		Venicie	hicleType	Day	Evening	Night	Daily
Site Data					Aut	os: 66.9	% 11.9%	21.2%	90.41%
Ba	rrier Height:	0.0 feet		/	Aedium Truc	ks: 64.8	% 8.5%	26.7%	7.53%
Barrier Type (0-W	Vall, 1-Berm):	0.0			Heavy Truc	ks: 72.5	% 4.7%	22.8%	2.06%
Centerline Di	ist. to Barrier:	64.0 feet		Noise	Source Flev	ations (in	foot)		
Centerline Dist.	to Observer:	64.0 feet		10130 0	Autor:	0.000	1000		
Barrier Distance	to Observer:	0.0 feet		Modi	um Trucke:	2 207			
Observer Height	(Above Pad):	5.0 feet		Heat	an Trucks.	8 004	Grade Ad	liustment	. 0.0
P	ad Elevation:	0.0 feet		1100	ivy mucho.	0.004	0/000/10	Juoumoni	. 0.0
Ro	ad Elevation:	0.0 feet		Lane E	quivalent D	istance (ir	i feet)		
	Road Grade:	0.0%			Autos:	57.271			
	Left View:	-90.0 degree	es	Medi	um Trucks:	57.117			
	Right View:	90.0 degree	es	Hea	avy Trucks:	57.132			
FHWA Noise Mod	el Calculation:	5							
VehicleType	REMEL	Traffic Flow	Distanc	e Finit	e Road	Fresnel	Barrier Att	en Ber	m Atten
Autos:	71.78	1.71	-0	).99	-1.20	-4.70	) 0.0	000	0.000
Medium Trucks:	82.40	-9.09	-(	).97	-1.20	-4.88	8 0.0	000	0.000
Heavy Trucks:	86.40	-14.72	-(	0.97	-1.20	-5.31	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier at	tenuation	)				
VehicleType	Leq Peak Hou	r Leq Day	Leq	Evening	Leq Nig	ght	Ldn	C	NEL
Autos:	71.	.3 (	58.8	67.	3	65.0	72.	1	72.5
Medium Trucks:	71.	.1 (	68.5	65.	7	65.9	72.	7	72.9
Heavy Trucks:	69.	.5 (	57.3	61.	4	63.5	70.	5	70.7
Vehicle Noise:	75.	.5	73.0	70.	2	69.7	76.	6	76.9
Centerline Distan	ce to Noise Co	ontour (in feet)	)		-				
			7	'0 dBA	65 dB	A	60 dBA	55	dBA
			Ldn:	177	382		823	1,	774
		CI	IEL:	185	398		857	- 1,	845

	FH	WA-RD-77-108	HIGHW	AY N	IOISE PF	REDICTI	ON MC	DEL				
Scenar Road Nam Road Segmei	io: EA le: Gilman Sp nt: s/o Bridge	rings Rd. St.				Project Job N	Name: umber:	Gilma 11381	n Mine			
SITE	SPECIFIC II	NPUT DATA				N	OISE	MODE	L INPU	JTS		
Highway Data				÷	Site Con	ditions	(Hard =	= 10, S	oft = 15,	)		
Average Daily	Traffic (Adt):	26,513 vehicle	s					Autos:	15			
Peak Hour	Percentage:	10%			Me	dium Tru	icks (2	Axles).	15			
Peak H	lour Volume:	2,651 vehicles			He	avy Truc	:ks (3+	Axles).	15			
Ve	hicle Speed:	55 mph			Vehicle I	Mix						
Near/Far La	ne Distance:	58 feet		F	Veh	icleType		Day	Evenir	ng Ni	ght	Daily
Site Data						A	lutos:	66.9%	6 11.9	% 21	1.2%	90.41%
Ba	rrier Heiaht	0.0 feet			Me	edium Tr	ucks:	64.8%	6 8.5	% 26	6.7%	7.53%
Barrier Type (0-W	/all, 1-Berm):	0.0			ŀ	leavy Tr	ucks:	72.5%	6 4.7	% 22	2.8%	2.06%
Centerline Dis	st. to Barrier:	64.0 feet			Noise Sr	urce El	ovation	ns (in f	oot)			
Centerline Dist.	to Observer:	64.0 feet		H	10/30 00	Autos	. 0	000	000			
Barrier Distance	to Observer:	0.0 feet			Modiur	n Truck	s. 0.	207				
Observer Height (	Above Pad):	5.0 feet			Heav	v Trucks	s. 2. s. 8	004	Grade	Adiusti	ment	0.0
Pa	ad Elevation:	0.0 feet		L	mour	y maone	. 0			,		
Roa	ad Elevation:	0.0 feet		1	Lane Eq	uivalent	Distar	ice (in	feet)			
1	Road Grade:	0.0%				Autos	s: 57	.271				
	Left View:	-90.0 degree	s		Mediur	n Trucks	s: 57	.117				
	Right View:	90.0 degree	s		Heav	y Trucks	s: 57	.132				
FHWA Noise Mod	el Calculation	าร										
VehicleType	REMEL	Traffic Flow	Distar	nce	Finite	Road	Fres	nel	Barrier	Atten	Ben	m Atten
Autos:	71.78	1.09		-0.9	9	-1.20		-4.70		0.000		0.000
Medium Trucks:	82.40	9.71		-0.9	7	-1.20		-4.88		0.000		0.000
Heavy Trucks:	86.40	-15.34		-0.9	7	-1.20		-5.31		0.000		0.000
Unmitigated Noise	e Levels (with	hout Topo and	barrier a	atten	uation)						-	
VehicleType	Leq Peak Ho	ur Leq Day	Le	eq E	vening	Leq	Night		Ldn		CI	VEL
Autos:	70	0.7	68.1		66.7		64.	4	7	71.5		71.9
Medium Trucks:	70	0.5	67.9		65.0		65.	2	7	2.0		72.3
Heavy Trucks:	68	8.9 (	6.7		60.8		62.	9	6	69.9		70.1
Vehicle Noise:	74	4.9	72.4		69.6		69.	1	7	76.0		76.3
Centerline Distant	ce to Noise C	contour (in feet,										
				70 0	dBA	65 (	dBA		60 dBA		55	dBA
			.dn:	16	61	34	17		748		1,6	312
		CI	IEL:	16	58	36	51		779		1.6	378

Wednesday, April 17, 2019

Wednesday, April 17, 2019

	FHV	VA-RD-77-108	HIGHWA	AY NO	ISE P	REDICT	ION MO	DEL			
Scenari Road Nam Road Segmer	io: EA e: Gilman Spr nt: n/o SR-79	ings Rd.				Project Job N	Name: umber:	Gilma 11381	n Mine		
SITE S	SPECIFIC IN	IPUT DATA				N	IOISE N	/ODE	L INPUT	S	
Highway Data				Si	te Cor	nditions	(Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt):	29,072 vehicl	es					Autos:	15		
Peak Hour	Percentage:	10%			Me	edium Tru	ucks (2 A	Axles):	15		
Peak H	our Volume:	2,907 vehicle	s		He	avy Truc	cks (3+ A	(xles	15		
Vel	hicle Speed:	55 mph		Ve	hicle	Mix					
Near/Far Lar	ne Distance:	58 feet		<u> </u>	Veh	nicleTvpe		Dav	Evening	Niah	t Dailv
Site Data						A	Autos:	66.9%	5 11.9%	21.2	% 90.41%
Bar	rier Height:	0.0 feet			М	edium Ti	rucks:	64.8%	8.5%	26.7	% 7.53%
Barrier Type (0-W	all, 1-Berm):	0.0				Heavy Ti	rucks:	72.5%	4.7%	22.8	% 2.06%
Centerline Dis	st. to Barrier:	64.0 feet		No	oise S	ource El	levation	s (in f	eet)		
Centerline Dist.	to Observer:	64.0 feet				Autos	s: 0.0	000	,		
Barrier Distance	to Observer:	0.0 feet			Mediu	m Truck	s: 2.5	297			
Observer Height (J	Above Pad):	5.0 feet			Hea	vy Truck	s: 8.0	004	Grade Adj	iustme	ent: 0.0
Pa	ad Elevation:	0.0 feet					Distant	(!			
Roa	ad Elevation:	0.0 feet		Lá	ane Eq	uivalent	Distan	ce (in	feet)		
-	Road Grade:	0.0%			1 4 m - 10 -	Autos	s: 57.	2/1			
	Left View:	-90.0 degre	es		Mediu	m Truck	S: 57.	117			
	Right view.	90.0 degre	es		nea	ly much	5. 37.	132			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distan	се	Finite	Road	Fresr	iel 🛛	Barrier Atte	en E	Berm Atten
Autos:	71.78	1.49		-0.99		-1.20		-4.70	0.0	00	0.000
Medium Trucks:	82.40	-9.31		-0.97		-1.20		-4.88	0.0	00	0.000
Heavy Trucks:	86.40	-14.94		-0.97		-1.20		-5.31	0.0	00	0.000
Unmitigated Noise	e Levels (with	out Topo and	barrier a	ttenu	ation)						
VehicleType	Leq Peak Hou	ir Leq Day	/ Le	eq Eve	ning	Leq	Night		Ldn		CNEL
Autos:	71	.1	68.5		67.1		64.8	5	71.9	)	72.3
Medium Trucks:	70	.9	68.3		65.4		65.6	5	72.4	ł	72.7
Heavy Trucks:	69 75	.3	67.1 72.8		61.2 70.0		63.3	5	70.3	1	70.5
Contorlino Distanc	n to Noiso C		1		70.0		03.0		70.4		10.1
Centernine Distance	Se to NOISE CO	un dur (in feet	/	70 dE	BA	65	dBA		60 dBA		55 dBA
			Ldn:	171		36	69		796		1,715
		Ci	NEL:	178		38	84		828		1,784

Scenar	io: EA					Project	Vame:	Gilma	n Mine		
Road Nan	ie: Bridge St.					Job Ni	imber:	11381			
Road Segme	nt: w/o Gilman	Springs Rd.									
SITE	SPECIFIC IN	IPUT DATA				N	DISE I	NODE	L INPUT	S	
Highway Data				5	Site Con	ditions (	Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt):	2,608 vehicle	es					Autos:	15		
Peak Hour	Percentage:	10%			Me	dium Tru	cks (2 )	Axles):	15		
Peak F	lour Volume:	261 vehicle	s		Hea	avy Truc	ks (3+ )	Axles):	15		
Ve	hicle Speed:	55 mph		١	Vehicle I	Nix					
Near/Far La	ne Distance:	36 feet		-	Vehi	cleType		Day	Evening	Night	Daily
Site Data						A	utos:	66.9%	11.9%	21.2%	90.41%
Ba	rrier Height	0.0 feet			Me	edium Tri	icks:	64.8%	8.5%	26.7%	7.53%
Barrier Type (0-V	Vall. 1-Berm):	0.0			H	leavy Tri	icks:	72.5%	4.7%	22.8%	2.06%
Centerline Di	ist. to Barrier:	50.0 feet						- // 6	41		
Centerline Dist.	to Observer:	50.0 feet		,	voise So	ource Ele	evation	s (In t	eet)		
Barrier Distance	to Observer:	0.0 feet				Autos	: 0.	000			
Observer Height	(Above Pad):	5.0 feet			Mediur	n Trucks	: 2.	297	Crada Ad		
P	ad Elevation:	0.0 feet			Heav	y Trucks	: 8.	004	Grade Adj	usimeni	0.0
Ro	ad Elevation:	0.0 feet		L	Lane Equ	uivalent	Distan	ce (in	feet)		
	Road Grade:	0.0%				Autos	: 46.	915			
	Left View:	-90.0 degree	es		Mediur	n Trucks	: 46.	726			
	Right View:	90.0 degree	es		Heav	y Trucks	: 46.	744			
FHWA Noise Mod	el Calculation	s									
VehicleType			Dista								
	REMEL	Traffic Flow	Distal	nce	Finite	Road	Fresi	nel	Barrier Att	en Ber	m Atten
Autos:	REMEL 71.78	Traffic Flow -8.98	Distai	nce 0.31	Finite	Road -1.20	Fresi	nel -4.65	Barrier Atte 0.0	en Ber 100	<i>m Atten</i> 0.000
Autos: Medium Trucks:	REMEL 71.78 82.40	Traffic Flow -8.98 -19.78	Distai	0.31 0.34	Finite	Road -1.20 -1.20	Fresi	nel -4.65 -4.87	Barrier Atte 0.0 0.0	en Ber 100 100	m Atten 0.000 0.000
Autos: Medium Trucks: Heavy Trucks:	REMEL 71.78 82.40 86.40	Traffic Flow -8.98 -19.78 -25.41	Distar	0.31 0.34 0.34	Finite	Road -1.20 -1.20 -1.20	Fresi	-4.65 -4.87 -5.43	Barrier Atte 0.0 0.0 0.0	en Ber 100 100 100	<u>m Atten</u> 0.000 0.000 0.000
Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Nois</b>	REMEL 71.78 82.40 86.40 e Levels (with	Traffic Flow -8.98 -19.78 -25.41 out Topo and	barrier a	0.31 0.34 0.34 0.34	Finite	Road -1.20 -1.20 -1.20	Fresi	nel -4.65 -4.87 -5.43	Barrier Atti 0.0 0.0 0.0	en Ber 100 100 100	m Atten 0.000 0.000 0.000
Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Nois</b> VehicleType	REMEL 71.78 82.40 86.40 e Levels (with Leg Peak Hou	Traffic Flow           -8.98           -19.78           -25.41           out Topo and           ir         Leq Day	barrier a	0.31 0.34 0.34 0.34 atten eq Ev	Finite Finite Uation	Road -1.20 -1.20 -1.20 Leq I	Fresi	nel -4.65 -4.87 -5.43	Barrier Atti 0.0 0.0 0.0 0.0	en Ber 100 100 100 000 <i>Cl</i>	<u>m Atten</u> 0.000 0.000 0.000
Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos:	REMEL 71.78 82.40 86.40 e Levels (with Leq Peak Hou 61	Traffic Flow           -8.98           -19.78           -25.41           out Topo and           ir         Leq Day           .9	barrier a	nce 0.31 0.34 0.34 atteni eq Ev	Finite Finite Uation Finite Fi	Road -1.20 -1.20 -1.20 Leq I	Fresi light 55.0	-4.65 -4.87 -5.43	Barrier Atte 0.0 0.0 0.0 0.0 Ldn 62.7	en Ber 1000 1000 1000 1000 Cl	<u>m Atten</u> 0.000 0.000 0.000 <u>0.000</u> <u>VEL</u> 63.1
Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Nois</b> VehicleType Autos: Medium Trucks:	REMEL 71.78 82.40 86.40 e Levels (with Leg Peak Hou 61 61	Traffic Flow           -8.98           -19.78           -25.41           out Topo and rr         Leq Day           .9           .8	<i>barrier a</i> / Lo 59.4 59.1	nce 0.31 0.34 0.34 atteni eq Ev	Finite 1 1 1 1 1 1 1 1 1 1 1 1 1	Road -1.20 -1.20 -1.20 Leg N	Fresi light 55.0 56.1	-4.65 -4.87 -5.43	Barrier Atte 0.0 0.0 0.0 <u>Ldn</u> 62.7 63.3	en Ber 000 000 000 Cl	<u>m Atten</u> 0.000 0.000 0.000 VEL 63.1 63.5
Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks:	REMEL 71.78 82.40 86.40 e Levels (with Leg Peak Hou 61 61 61	Traffic Flow           -8.98           -19.78           -25.41           out Topo and ur           Leq Day           .9           .8           .1	barrier a / Lo 59.4 59.1 57.9	nce 0.31 0.34 0.34 atteni eq Ev	Finite 1 4 4 4 4 4 4 4 4 7 7.9 56.3 52.1	Road -1.20 -1.20 -1.20 <i>Leq I</i>	Fresi light 55.0 56.1 54.2	nel -4.65 -4.87 -5.43	Barrier Atte 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	en Ber 000 000 000 C/ 2	<u>m Atten</u> 0.000 0.000 0.000 <u>VEL</u> 63.1 63.5 61.3
Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	REMEL 71.78 82.40 86.40 e Levels (with Leq Peak Hou 61 61 60 60 66	Traffic Flow         -8.98           -19.78         -25.41           out Topo and         Image: Comparison of the second se	barrier a / Lu 59.4 59.1 57.9 63.6	nce 0.31 0.34 0.34 atteni eq Ev	Finite Finite Uation) vening 57.9 56.3 52.1 60.8	Road -1.20 -1.20 -1.20 <i>Leq I</i>	Fresi light 55.0 56.1 54.2 60.1	-4.65 -4.87 -5.43	Barrier Atte 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	en Ber 100 100 100 100 100 100 100 10	m Atten 0.000 0.000 0.000 VEL 63.1 63.5 61.3 67.5
Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Centerline Distan	REMEL 71.78 82.40 86.40 e Levels (with Leq Peak Hou 61 61 60 66 66 66 66 66	Traffic Flow         -8.98           -19.78         -25.41           out Topo and         rr         Leq Day           .9         .8         .1           .1         .1         .1	barrier a	nce 0.31 0.34 0.34 atteni eq Ev	Finite 1 4 4 4 4 4 4 4 4 4 4 57.9 56.3 52.1 60.8	Road -1.20 -1.20 -1.20 Leq I	Fresi light 55.0 56.3 54.2 60.3	-4.65 -4.87 -5.43	Barrier Atte 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 63.3 61.2 67.3	en Ber 1000 100	M Atten 0.000 0.000 0.000 VEL 63.1 63.5 61.5 67.5
Autos: Medium Trucks: Heavy Trucks: Unnitigated Noiss VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Centerline Distan	REMEL 71.78 82.40 86.40 e Levels (with Leq Peak Hou 61 61 60 66 66 ce to Noise Co	Traffic Flow         -8.98         -19.78         -25.41         -000000000000000000000000000000000000	barrier a <u>barrier a</u> <u>barrier a</u> 59.4 59.1 57.9 63.6 )	100 0.31 0.34 0.34 atteni eq Ev	Finite I I I I I I I I I I I I I I I I I I I	Road -1.20 -1.20 -1.20 Leq N	Fresi light 55.0 56.3 54.2 60.3	-4.65 -4.87 -5.43	Barrier Atte 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	en Ber 1000 100	m Atten 0.000 0.000 0.000 VEL 63.1 63.5 61.3 67.5 dBA
Autos: Medium Trucks: Heavy Trucks: Unnitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Centerline Distan	REMEL           71.78         82.40           86.40         640           e Levels (with         61           61         61           60         66           ce to Noise Co         64	Traffic Flow           -8.98           -19.78           -25.41           out Topo and ur           Leq Day           .9           .8           .1           ontour (in feet)	barrier a <u>barrier a</u> <u>barrier a barrier a</u> <u>barrier a</u> <u>barrier a barrier a barrier a barri</u>	100 0.31 0.34 0	Finite           I           I           I           I           I           I           I           I           I           I           I           I           I           I           I           I           IIII           IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Road -1.20 -1.20 -1.20 Leq N 65 c 7'	Fresi light 55.0 54.2 60.3 1 BA	nel -4.65 -4.87 -5.43	Barrier Att. 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	en Ber 100 100 100 100 100 100 100 10	m Atten 0.000 0.000 0.000 VEL 63.1 63.5 61.3 67.5 67.5 67.5 67.5 67.5

Wednesday, April 17, 2019

	FHV	VA-RD-77-108 H	IIGHV	VAY N	OISE PF	REDICTI	ON MC	DEL				
Scenar	io: EAP					Project I	Name:	Gilma	n Mine			
Road Nam	ne: Gilman Spr	ings Rd.				Job NL	imber:	11381				
Road Segme	nt: s/o SR-60											
SITE	SPECIFIC IN	IPUT DATA				N	OISE	MODE	L INPU	JTS	Night         1           21.2%         26.7%           22.8%         28.8%           istment:         1           00         00           CCN         00	
Highway Data				S	lite Con	ditions (	Hard =	= 10, S	oft = 15,	NPUTS           = 15)           15           1		
Average Daily	Traffic (Adt):	25,694 vehicles	;					Autos:	15			
Peak Hour	Percentage:	10%			Me	dium Tru	cks (2	Axles):	15	INPUTS           1= 15)           15           15           15           15           15           15           16           17           18           19           212% 89.7           8.5% 26.7% 7.4           4.7% 22.8% 2.7           0           Grade Adjustment: 0.0           et/           arrier Atten           Berm Att           0.000           0.75.5           7           73.3		
Peak H	lour Volume:	2,569 vehicles			He	avy Truc	ks (3+	Axles):	15			
Ve	hicle Speed:	55 mph		v	ehicle l	Mix						
Near/Far La	ne Distance:	58 feet		-	Veh	icleType		Day	Evenir	g N	ight	Daily
Site Data						A	utos:	66.9%	11.9	% 2	1.2%	89.74%
Ba	rrier Heiaht:	0.0 feet			Me	edium Tri	ucks:	64.8%	8.5	% 2	6.7%	7.47%
Barrier Type (0-W	/all, 1-Berm):	0.0			ŀ	leavy Tri	ucks:	72.5%	4.7	% 2	2.8%	2.79%
Centerline Di	st. to Barrier:	50.0 feet		^	loise So	ource Ele	evatior	ıs (in f	eet)			
Centerline Dist.	to Observer:	50.0 feet				Autos	: 0	000	,			
Barrier Distance	to Observer:	0.0 feet			Mediu	n Trucks	2	297				
Observer Height (	(Above Pad):	5.0 feet			Heav	v Trucks	: 8	.004	Grade	Adjust	ment:	0.0
Pa	ad Elevation:	0.0 feet			_					,	Night         L           21.2%         8:           26.7%         22.8%           22.8%         2           ustment:         0           000         000           000         000           000         000           55 dB         1811	
Roa	ad Elevation:	0.0 feet		L	ane Eq	uivalent	Distar	ice (in	feet)			
	Road Grade:	0.0%				Autos	: 41	.037				
	Left View:	-90.0 degrees	5		Mediui	n Trucks	: 40	.820				
	Right View:	90.0 degrees	5		Heav	y Trucks	: 40	.841				
FHWA Noise Mod	el Calculation	s										
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fres	nel	Barrier	Atten	Ber	m Atten
Autos:	71.78	0.92		1.18		-1.20		-4.65		0.000		0.000
Medium Trucks:	82.40	-9.88		1.22		-1.20		-4.87		0.000		0.000
Heavy Trucks:	86.40	-14.16		1.21		-1.20		-5.43		0.000		0.000
Unmitigated Noise	e Levels (with	out Topo and b	arrier	attenu	uation)							
VehicleType	Leq Peak Hou	ır Leq Day	1	Leq Ev	ening	Leq N	Vight		Ldn		CI	VEL
Autos:	72	.7 70	D.1		68.7		66.	4	7	3.5		73.9
Medium Trucks:	72	.5 6	9.9		67.1		67.	3	7	4.1		74.3
Heavy Trucks:	72	.3 70	0.1		64.2		66.	3	7	3.3		73.4
Vehicle Noise:	77	.3 74	4.8		71.8		71.	4	7	8.4		78.7
Centerline Distant	ce to Noise Co	ontour (in feet)										
				70 d	BA	65 a	<i>iBA</i>	1	60 dBA		55	dBA
		L	dn:	182	2	39	1		843		1,8	317
		CNI	EL:	189	9	40	7		876		1,8	388

	FH\	NA-RD-77-108	HIGHW	AY NO	DISE PF	REDICTI	ON MC	DEL				
Scenar	io: EAP					Project	Name:	Gilma	n Mine			
Road Nan Road Segme	nt: s/o Allesan	dro Bl.				JOD IVL	imber:	11381				
SITE	SPECIFIC IN	IPUT DATA				N	OISE	MODE	L INPU	тs		
Highway Data				S	ite Con	ditions (	'Hard =	= 10, S	oft = 15)			
Average Daily	Traffic (Adt):	30,817 vehicl	es					Autos:	15			
Peak Hour	Percentage:	10%			Mee	dium Tru	cks (2	Axles):	15			
Peak H	lour Volume:	3,082 vehicle	s		Hea	avy Truc	ks (3+	Axles):	15			
Ve	hicle Speed:	55 mph		V	ehicle I	Mix						-
Near/Far La	ne Distance:	58 feet		-	Vehi	icleType		Day	Evening	Nig	ht	Daily
Site Data						A	utos:	66.9%	5 11.9%	21.	.2%	89.85%
Ba	rrier Height:	0.0 feet			Me	edium Tri	ucks:	64.8%	8.5%	26.	.7%	7.48%
Barrier Type (0-W	/all, 1-Berm):	0.0			ŀ	leavy Tri	ucks:	72.5%	4.7%	22.	.8%	2.67%
Centerline Di	st. to Barrier:	50.0 feet		N	oise Sc	ource Ele	vatio	ns (in f	eet)			-
Centerline Dist.	to Observer:	50.0 feet				Autos	: 0	000				
Barrier Distance	to Observer:	0.0 feet			Mediur	n Trucks	: 2	.297				
Observer Height	(Above Pad):	5.0 feet			Heav	v Trucks	: 8	.004	Grade A	djustm	ient:	0.0
P	ad Elevation:	0.0 feet			_					,		
Ro	ad Elevation:	0.0 feet		L	ane Equ	uivalent	Distar	ice (in	feet)			
	Road Grade:	0.0%				Autos	: 41	.037				
	Left View:	-90.0 degre	es		Mediur	n Trucks	: 40	.820				
	Right View:	90.0 degre	es		Heav	y Trucks	: 40	.841				
FHWA Noise Mod	el Calculation	s										
VehicleType	REMEL	Traffic Flow	Distar	nce	Finite	Road	Fres	nel	Barrier A	tten	Bern	1 Atten
Autos:	71.78	1.71		1.18		-1.20		-4.65	C	.000		0.000
Medium Trucks:	82.40	-9.08		1.22		-1.20		-4.87	C	.000		0.000
Heavy Trucks:	86.40	-13.56		1.21		-1.20		-5.43	C	.000		0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier a	attenu	ation)							
VehicleType	Leq Peak Hou	ur Leq Day	/ L	eq Eve	ening	Leq I	Vight		Ldn		CN	EL
Autos:	73	.5	70.9		69.5		67.	2	74	.3		74.7
Medium Trucks:	73	.3	70.7		67.9		68.	1	74	.9		75.1
Heavy Trucks:	72	9	70.7		64.8		66.	9	73	.9		74.0
Vehicle Noise:	78	.0	75.5		72.5		72.	2	79	.1		79.4
Centerline Distan	ce to Noise C	ontour (in feet	)									
			ட	70 dl	BA	65 0	IBA		50 dBA		55 0	IBA
		~	Ldn:	203	5	43	8		944		2,0	34
		C	VEL:	211	I	45	э		981		2,1	13

Wednesday, April 17, 2019

	FHV	VA-RD-77-108	HIGHW	AY NC	DISE P	REDICT	ION MO	DEL				
Scenari Road Nam Road Segmer	o: EAP e: Gilman Spr nt: s/o Jack Ra	ings Rd. abbit Tr.				Project Job N	Name: ( umber:	Gilma 11381	n Mine			
SITE S	SPECIFIC IN	IPUT DATA				N	IOISE N	IODE	L INPUT	s		
Highway Data				Si	ite Cor	nditions	(Hard =	10, S	oft = 15)			
Average Daily	Traffic (Adt):	30,800 vehicl	es					Autos:	15			
Peak Hour	Percentage:	10%			Me	edium Tri	ucks (2 A	(xles)	15			
Peak H	our Volume:	3,080 vehicle	s		He	avy Tru	cks (3+ A	xles):	15			
Vel	hicle Speed:	55 mph		V	ehicle	Mix						
Near/Far Lar	ne Distance:	58 feet		-	Veh	nicleTvpe		Dav	Evenina	Nia	ht	Dailv
Site Data							Autos:	66.9%	5 11.9%	21.	2% 8	39.85%
Bar	rier Height:	0.0 feet			М	edium T	rucks:	64.8%	8.5%	26.	7%	7.48%
Barrier Type (0-W	all, 1-Berm):	0.0				Heavy Ti	rucks:	72.5%	4.7%	22.	8%	2.67%
Centerline Dis	st. to Barrier:	64.0 feet		N	oise S	ource E	levation	s (in f	eet)			
Centerline Dist.	to Observer:	64.0 feet		-		Auto	s: 0.0	000				
Barrier Distance	to Observer:	0.0 feet			Mediu	m Truck	s: 2.2	97				
Observer Height (J	Above Pad):	5.0 feet			Hea	v Truck	s: 8.0	004	Grade Ad	justm	ent: (	0.0
Pa	ad Elevation:	0.0 feet					Distant	//	6			
Roa	ad Elevation:	0.0 feet		Lá	ane Eq	uivalen	Distant	ce (in	teet)			
ŀ	Road Grade:	0.0%				Auto	s: 57.2	2/1				
	Left View:	-90.0 degre	es		Mediu	m Truck	S: 57.	117				
	Right view:	90.0 degre	es		пеа	y muck	5. 57.	132				
FHWA Noise Mode	el Calculation	s										
VehicleType	REMEL	Traffic Flow	Distan	се	Finite	Road	Fresn	el	Barrier Att	en	Berm	Atten
Autos:	71.78	1.71		-0.99		-1.20		-4.70	0.0	000		0.000
Medium Trucks:	82.40	-9.09		-0.97		-1.20		-4.88	0.0	000		0.000
Heavy Trucks:	86.40	-13.56		-0.97		-1.20		-5.31	0.0	000		0.000
Unmitigated Noise	e Levels (with	out Topo and	barrier a	ttenu	ation)					1		
VehicleType	Leq Peak Hou	ır Leq Da	v Le	eq Eve	ening	Leq	Night		Ldn		CNE	EL
Autos:	71	.3	68.8		67.3		65.0		72.1	1		72.5
Medium Trucks:	/1	.1	68.5		65.7		65.9		72.	7		72.9
Heavy Trucks:	70	.7	68.5 73.3		62.6 70.4		64.7 70.0		71.	/ )		71.8
Contorlino Distanc	n to Noiso C	ontour (in foo	10.0		70.4		70.0		11.3	, 		11.2
Centenine Distant	e to moise co	uniour (III lee	9	70 dE	BA	65	dBA	1	60 dBA	1	55 d	BA
			Ldn:	186	;	4	01		864		1,86	62
		С	NEL:	193		4	17		898		1,93	84

	FHV	VA-RD-77-108	HIGHWA							
Scenar	io: EAP				Projec	t Name:	Gilma	n Mine		
Road Nam	e: Gilman Spr	ings Rd.			Job	Vumber:	11381			
Road Segme	nt: s/o Bridge \$	St.								
SITE	SPECIFIC IN	IPUT DATA				NOISE	NODE	L INPUTS	6	
Highway Data				Si	te Condition:	6 (Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt):	26,755 vehicl	es				Autos:	15	PUTS           5)           ing         Night         Dai           9%         21.2%         89.6           5%         26.7%         2.8%           2         2.8%         2.8           a         Adjustment:         0.0           0.000         0.1           0.000         0.1           0.000         0.1           71.5         7           72.0         7           71.4         7           76.4         7	
Peak Hour	Percentage:	10%			Medium T	rucks (2 )	Axles):	15		
Peak H	lour Volume:	2,676 vehicle	s		Heavy Tri	ıcks (3+ )	Axles):	15		
Ve	hicle Speed:	55 mph		Ve	hicle Mix					
Near/Far La	ne Distance:	58 feet			VehicleTyp	е	Day	Evening		Daily
Site Data						Autos:	66.9%	11.9%		89.66%
Bai	rrier Height	0.0 feet			Medium	rucks:	64.8%	8.5%		7.46%
Barrier Type (0-W	all. 1-Berm):	0.0			Heavy	rucks:	72.5%	4.7%	22.8%	2.88%
Centerline Di	st. to Barrier:	64.0 feet					- // 4	41		
Centerline Dist.	to Observer:	64.0 feet		NC	oise Source I	evation		eet)		
Barrier Distance	to Observer:	0.0 feet			Auto Auto	DS: 0.	000		g         Night         D.0           %         21.2%         89.           %         22.7%         7.           %         22.8%         2.           Adjustment:         0.0           0.000         C           0.000         C           0.000         C           0.000         C           1.5         2.0           1.4         6.4           55 dBA	
Observer Height (	Above Pad):	5.0 feet			Mealum Truc	KS: 2.	297	Grada Adi		0.0
Pa	ad Elevation:	0.0 feet			Heavy Truc	KS: 8.	004	Graue Auj	usunem.	0.0
Roa	ad Elevation:	0.0 feet		La	ne Equivale	nt Distan	ce (in	feet)		
1	Road Grade:	0.0%			Aut	os: 57.	271			
	Left View:	-90.0 degre	es		Medium Truc	ks: 57.	117		Night         E           21.2%         85           26.7%         7           22.8%         2           ustment:         0.           iustment:         0.           000         000           000         000           55 dB.         55 dB.	
	Right View:	90.0 degre	es		Heavy Truc	ks: 57.	132			
FHWA Noise Mod	el Calculation	s								
VehicleType	REMEL	Traffic Flow	Distan	æ	Finite Road	Fresi	nel	Barrier Atte	en Ber	m Atten
Autos:	71.78	1.09	-	0.99	-1.20		-4.70	0.0	00	0.000
Medium Trucks:	82.40	-9.71	-	0.97	-1.20		-4.88	0.0	00	0.000
Heavy Trucks:	86.40	-13.84		0.97	-1.20		-5.31	0.0	00	0.000
I for my life on the of Min In-		out Tono and	barrier a	tenua	ation)					
Unmitigated Noise	e Levels (with	out ropo una							CI	VEL
VehicleType	e Levels (with Leq Peak Hou	r Leq Day	/ Le	q Eve	ning Lea	Night		Ldn	01	
VehicleType Autos:	e Levels (with Leq Peak Hou 70	r Leq Day .7	/ Le 68.1	q Eve	ning Leo 66.7	Night 64.4	4	Ldn 71.5	0/	71.9
VehicleType Autos: Medium Trucks:	e Levels (with Leq Peak Hou 70 70	r Leq Day .7 .5	/ Le 68.1 67.9	q Eve	ning Leo 66.7 65.0	Night 64.4 65.2	4	Ldn 71.5 72.0		71.9 72.3
VehicleType Autos: Medium Trucks: Heavy Trucks:	e Levels (with Leq Peak Hou 70 70 70	.7 .7 .4	/ Le 68.1 67.9 68.2	q Eve	ning Leo 66.7 65.0 62.3	<u>Night</u> 64.4 65.2 64.4	4 2 4	Ldn 71.5 72.0 71.4	PUTS           5)           bing         Night           9%         21.2% &           5%         26.7%           7%         22.8%           e         Adjustment: (r           er         Atten           Berm         0.000           0.000         0.000           0.000         0.000           0.000         0.000           71.5         72.0           71.4         76.4           4         55 cl	71.9 72.3 71.6
Vehicle Type Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	e Levels (with Leq Peak Hou 70 70 70 70 75	.7 .5 .4 .3	Le           68.1           67.9           68.2           72.8	q Eve	ning Lee 66.7 65.0 62.3 69.8	Night 64.4 65.2 64.4 69.3	4 2 4 5	Ldn 71.5 72.0 71.4 76.4		71.9 72.3 71.6 76.7
VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Centerline Distance	e Levels (with Leq Peak Hou 70 70 70 70 75 ce to Noise Co	r Leq Day 7 .5 .4 .3 ontour (in feet	/ Le 68.1 67.9 68.2 72.8	q Eve	ning Leo 66.7 65.0 62.3 69.8	Night 64.4 65.2 64.4 69.3	4 2 4 5	Ldn 71.5 72.0 71.4 76.4		71.9 72.3 71.6 76.7
VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Centerline Distance	e Levels (with Leq Peak Hou 70 70 70 70 75 ce to Noise Co	In Leq Day .7 .5 .4 .3 ontour (in feet	/ Le 68.1 67.9 68.2 72.8	q Eve 70 dB	ning Lea 66.7 65.0 62.3 69.8 A 65	Night 64.4 65.2 64.4 69.3	4 2 4 5	Ldn 71.5 72.0 71.4 76.4 60 dBA	55	71.9 72.3 71.6 76.7 dBA
Vehicle Type Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Centerline Distance	e Levels (with Leg Peak Hou 70 70 70 75 ce to Noise Co	.7 .7 .5 .4 .3 ontour (in feet	/ Le 68.1 67.9 68.2 72.8 ) Ldn:	70 dB	ning Lee 66.7 65.0 62.3 69.8 A 65	Night 64.4 65.2 64.4 69.3 6 dBA 370	4 2 4 5 0	Ldn 71.5 72.0 71.4 76.4 60 dBA 798	55	71.9 72.3 71.6 76.7 dBA 719

	FH	WA-RD-77-10	8 HIGH	IWAY I	NOISE P	REDICTI	ION MO	DDEL			
Scena Road Na	ario: EAP me: Gilman Sp anti p/o SB 70	orings Rd.				Project Job N	Name: umber:	Gilmar 11381	n Mine		
Road Seym	ent. 11/0 SR-79										
SITE	SPECIFIC I	NPUT DATA			Site Cor	N	OISE	MODE		S	
Average Dail	y Traffic (Adt):	29,180 vehic	les		Site Cor	attions	(Hara :	Autos:	15		
Peak Hou	Ir Percentage:	10%			Me	edium Tru	ıcks (2	Axles):	15		
Peak	Hour Volume:	2,918 vehicle	es		He	eavy Truc	cks (3+	Axles):	15		
۱	ehicle Speed:	55 mph		F	Vehicle	Mix					
Near/Far L	ane Distance:	58 feet			Veh	icleType		Day	Evening	Night	Daily
Site Data						A	Autos:	66.9%	11.9%	21.29	6 90.12%
B	arrier Height	0.0 feet			М	edium Tr	ucks:	64.8%	8.5%	26.79	6 7.50%
Barrier Type (0-	Wall, 1-Berm):	0.0				Heavy Tr	ucks:	72.5%	4.7%	22.89	% 2.38%
Centerline L	Dist. to Barrier:	64.0 feet			Noise S	ource El	evatio	ns (in f	eet)		
Centerline Dis	t. to Observer:	64.0 feet				Autos	s: 0	.000			
Barrier Distanc	e to Observer:	0.0 feet			Mediu	m Trucks	s: 2	.297			
Observer Heigh	t (Above Pad):	5.0 feet			Hear	vy Trucks	s: 8	.004	Grade Ad	justmei	nt: 0.0
	Pad Elevation:	0.0 feet		-	Long Ea	uivelent	Dista	nee (in	fact)		
R	oad Elevation:	0.0 teet		ŀ	Lane Eq	uivaient	Distai		ieel)		
	Road Grade:	0.0%			14-16	Autos	5: 57	.2/1			
	Left View:	-90.0 degre	es		Wealu	m Trucks	5: 57	.117			
	Right View:	90.0 degre	es		Hea	vy Trucks	5: 57	.132			
FHWA Noise Mo	del Calculation	ns	1								
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fres	nel	Barrier Att	en B	erm Atten
Autos	: 71.78	3 1.49	)	-0.9	9	-1.20		-4.70	0.0	000	0.000
Medium Trucks	82.40	) -9.31		-0.9	7	-1.20		-4.88	0.0	000	0.000
Heavy Trucks	86.40	) -14.29		-0.9	7	-1.20		-5.31	0.0	000	0.000
Unmitigated Noi	se Levels (with	hout Topo and	l barrie	er atter	nuation)			-		1	0.1/5/
Venicle I ype	Leq Peak Ho	our Leq Da	<i>y</i>	Leq E	vening	Leq	Night	_	Lan		JNEL
Autos	1: 	1.1	68.5		67.1		64.	8	/1.5		72.3
Medium Trucks	. /	0.9	68.3		65.4		65.	6	72.4	1	72.7
Vehicle Noise	e: 0	9.9 5.4	73.0		70.1		69.	.6	71.0	3	71.1
Centerline Dista	nce to Noise C	Contour (in fee	t)								
		1	<i>.</i>	70	dBA	65 0	dBA	(	60 dBA	5	5 dBA
			Ldn:	1	76	37	79		817	· · · ·	1,760
		C	NEL:	1	83	39	94		849		1,829

	FH	WA-RD-77-108	B HIGH	WAY N	IOISE PI	REDICTIC	ON MOE	DEL			
Scenar	io: EAP					Project N	lame: 0	Silmar	Mine		-
Road Nan	ne: Bridge St.					Job Nu	mber: 1	1381			
Road Segme	nt: w/o Gilmai	n Springs Rd.									
SITE	SPECIFIC II	NPUT DATA				NC	DISE M	ODE	L INPUTS	5	
Highway Data				;	Site Con	ditions (l	Hard = '	10, Sc	oft = 15)	Night         L           21.2%         8           26.7%         2           22.8%         2           djustment:         0.           djustment:         0.           0000         000           0000         000           3.2         2	
Average Daily	Traffic (Adt):	2,640 vehicl	es				A	utos:	15		
Peak Hour	Percentage:	10%			Me	dium Truc	ks (2 A	xles):	15		
Peak H	lour Volume:	264 vehicle	s		He	avy Truck	is (3+ A	xles):	15		
Ve	hicle Speed:	55 mph		5	Vehicle	Mix					
Near/Far La	ne Distance:	36 feet		-	Veh	icleTvpe	1	Dav	Evenina	Niaht	Dailv
Site Data				-		AL	itos: 6	6.9%	11.9%	21.2%	89.32%
Ba	rrier Height	0.0 feet			Me	edium Tru	cks: 6	64.8%	8.5%	26.7%	7.44%
Barrier Type (0-V	Vall. 1-Berm):	0.0			ŀ	leavy Tru	cks: 7	72.5%	4.7%	22.8%	3.25%
Centerline Di	ist. to Barrier:	50.0 feet		-	Noiso Se	ourco Elo	vations	(in fe	not)		
Centerline Dist.	to Observer:	50.0 feet		-	10/36 30	Autos:	0.0	00	el)		
Barrier Distance	to Observer:	0.0 feet			Modiu	n Trucke:	2.0	00			
Observer Height	(Above Pad):	5.0 feet			Hoov	n Trucks: n Trucks:	8.0	04	Grade Adi	ustmen	t· 0.0
P	ad Elevation:	0.0 feet			neuv	y mucho.	0.0		0/000/10	Night         L           21.2%         8           26.7%         2           22.8%         2           justment:         0.           000         000           000         000           000         000           000         000           000         000           000         000           000         000           000         000           000         000	0.0
Ro	ad Elevation:	0.0 feet		1	Lane Eq	uivalent l	Distanc	e (in i	feet)		
	Road Grade:	0.0%				Autos:	46.9	15			
	Left View:	-90.0 degre	es		Mediu	m Trucks:	46.7	26			
	Right View:	90.0 degre	es		Heav	y Trucks:	46.7	44			
FHWA Noise Mod	lel Calculation	15									
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fresne	el	Barrier Atte	en Be	rm Atten
Autos:	71.78	-8.98		0.31	1	-1.20	-	4.65	0.0	00	0.000
Medium Trucks:	82.40	-19.78		0.34	4	-1.20	-	4.87	0.0	00	0.000
Heavy Trucks:	86.40	-23.38		0.34	4	-1.20	-	5.43	0.0	00	0.000
Unmitigated Nois	e Levels (with	nout Topo and	barrie	r atten	uation)					-	-
VehicleType	Leq Peak Ho	ur Leq Da	y	Leg Ev	vening	Leq N	light		Ldn	С	NEL
Autos:	6	1.9	59.4		57.9		55.6		62.7		63.1
Medium Trucks:	6	1.8	59.1		56.3		56.5		63.3	i	63.5
Heavy Trucks:	62	2.2	60.0		54.1		56.2		63.2	:	63.3
Vehicle Noise:	60	5.7	64.3		61.1		60.9		67.8	i .	68.1
Centerline Distan	ce to Noise C	ontour (in fee	t)								
				70 c	'BA	65 di	BA	6	i0 dBA	55	i dBA
			Ldn:	3	6	77			167	3	359
		С	NEL:	3	7	80			173	3	373

Wednesday, April 17, 2019

Wednesday, April 17, 2019

	FH\	WA-RD-77-10	B HIGHV	VAY NO	ISE P	REDICTIO	ON MOI	DEL			
Scenario Road Name Road Segmen	b: EAC e: Gilman Spi t: s/o SR-60	rings Rd.				Project I Job Nu	Vame: ( imber: 1	Gilmaı 1381	n Mine		
SITE S	PECIFIC IN	NPUT DATA				N	DISE N	IODE	L INPUTS	5	
Highway Data				Si	te Cor	ditions (	Hard =	10, Se	oft = 15)		
Average Daily T	raffic (Adt):	26,262 vehic	les				A	Autos:	15		
Peak Hour F	Percentage:	10%			Me	dium True	cks (2 A	xles):	15		
Peak Ho	our Volume:	2,626 vehicle	es		He	avy Truck	ks (3+ A	xles):	15		
Veh	icle Speed:	55 mph		14	hiclo	Mix					
Near/Far Lan	e Distance:	58 feet		Ve	Voh	icleTyne		Dav	Evening	Niaht	Daily
Site Data					ven	A	utos:	56.9%	11.9%	21.29	6 90.41%
Bar	rior Hoight:	0.0 foot			М	edium Tru	icks:	64.8%	8.5%	26.7%	6 7.53%
Barrior Tupo (0. W/s	ll 1 Porm):	0.0 1001			1	Heavy Tru	icks:	72.5%	4.7%	22.8%	6 2.06%
Centerline Disi	t. to Barrier:	50.0 feet									
Centerline Dist. to	o Observer:	50.0 feet		No	oise S	ource Ele	evations	s (in f	eet)		
Barrier Distance to	o Observer:	0.0 feet				Autos:	: 0.0	00			
Observer Height (A	Above Pad);	5.0 feet			Mediu	m Trucks.	: 2.2	97	Ore de Arl		
Pa	d Elevation:	0.0 feet			Heav	/y Trucks:	: 8.0	104	Grade Adj	ustmen	t: 0.0
Road	d Elevation:	0.0 feet		La	ne Eq	uivalent	Distanc	e (in	feet)		
R	Road Grade:	0.0%				Autos:	: 41.0	)37			
	Left View:	-90.0 degre	es		Mediu	m Trucks.	: 40.8	320			
	Right View:	90.0 degre	es		Heav	y Trucks	40.8	841			
FHWA Noise Mode	Calculation	IS									
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresn	el	Barrier Atte	en Be	erm Atten
Autos:	71.78	1.05		1.18		-1.20		4.65	0.0	00	0.000
Medium Trucks:	82.40	-9.75		1.22		-1.20		4.87	0.0	00	0.000
Heavy Trucks:	86.40	-15.38		1.21		-1.20		-5.43	0.0	00	0.000
Unmitigated Noise	Levels (with	out Topo and	l barrier	attenua	ation)						
VehicleType	Leq Peak Hou	ur Leq Da	y I	Leq Eve	ning	Leq N	light		Ldn	(	ONEL
Autos:	72	2.8	70.3		68.8		66.5		73.6		74.0
Medium Trucks:	72	2.7	70.0		67.2		67.4		74.2		74.4
Heavy Trucks:	71	.0	68.8		63.0		65.1		72.1		72.2
Vehicle Noise:	77	7.0	74.5		71.7		71.2		78.2		78.4
Centerline Distance	e to Noise C	ontour (in fee	t)		-						
				70 dE	BA	65 d	BA	6	60 dBA	5	5 dBA
			Ldn:	175		37	7		812	1	,750
		C	NEL:	182		39	2		845	1	,820

	FHV	VA-RD-77-108 I	IIGHW.	AY N	OISE PF	REDICTIC		DEL			
Scenari	o: EAC					Project N	ame:	Gilma	n Mine		
Road Nam	e: Gilman Spr	ings Rd.				Job Nu	nber:	11381			
Road Segmer	nt: s/o Allesan	dro BI.									
SITE	SPECIFIC IN	IPUT DATA				NC	ISE I	/ODE	Mine  INPUTS  ft = 15)  15  15  15  15  15  5  Evening Night Da  11.9% 21.2% 90.  8.5% 26.7% 7.  4.7% 22.8% 2.3  et)  Grade Adjustment: 0.0  Grade Adjustment: 0.0  eet)  Barrier Atten Berrn Att 0.000 0  0.000 0  Ldn CNEL 74.3 74.9 72.8 78.9		
Highway Data				s	Site Con	Image: Silver Silver         Silver         Silver           Project Name: Gilman Mine Job Number: 11381         Image: Silver         Silver           Iditions (Hard = 10, Soft = 15)         Autos: 15         Silver           Autos: 15         Jatos: 15         Silver           ditions (Hard = 10, Soft = 15)         Autos: 15         Silver           ditum Trucks (2 Axles): 15         Silver         Silver           ditix         GleType         Day         Evening         Night         Daily           Autos: 66.9%         11.9%         21.2%         90.41%           adum Trucks: 64.8%         8.5%         26.7%         7.53%           adum Trucks: 0.000         n         Trucks: 2.287         y           y Trucks: 72.5%         4.7%         22.8%         2.06%           utos: 0.000         n         Trucks: 2.297         y         Trucks: 40.804           y Trucks: 8.004         Grade Adjustment: 0.0         Uivalent Distance (in feet)         Autos: 41.037           n Trucks: 40.820         y         y         Use         0.000         0.000           -120         -4.65         0.000         0.000         -1.20         -5.43         0.000         0.000         -1.20         -5.43					
Average Daily	Traffic (Adt):	30,892 vehicles	5					Autos:	15		
Peak Hour	Percentage:	10%			Me	dium Truc	ks (2 /	Axles):	15		
Peak H	our Volume:	3,089 vehicles			Hea	avy Truck	s (3+ )	(xles	15		
Ve	hicle Speed:	55 mph		ν	ehicle l	Mix					
Near/Far La	ne Distance:	58 feet			Vehi	icleType		Day	Evening	Night	Daily
Site Data						AL	tos:	66.9%	11.9%	21.2%	90.41%
Bai	rier Height:	0.0 feet			Me	edium Tru	cks:	64.8%	8.5%	26.7%	7.53%
Barrier Type (0-W	all. 1-Berm):	0.0			F	łeavy Tru	cks:	72.5%	4.7%	22.8%	2.06%
Centerline Dis	st. to Barrier:	50.0 feet			laiaa Ca	uree Ele	votion	o (in f	a a 41		
Centerline Dist.	to Observer:	50.0 feet		~	ioise su	Autoo	auon	s (III I	eel)		
Barrier Distance	to Observer:	0.0 feet			Madium	Autos.	0.	207			
Observer Height (	Above Pad):	5.0 feet			Hoov	n Trucks.	2.	201	Grade Ad	iustment	. 0 0
Pa	ad Elevation:	0.0 feet			neav	y mucho.	0.	-00	,		0.0
Roa	ad Elevation:	0.0 feet		L	Project varie: Gilman Mine Job Number: 11381           NOISE MODEL INPUTS           Site Conditions (Hard = 10, Soft = 15)           Autos:         15           Medium Trucks (2 Axles):         15           Vehicle Type         Day         Evening         Night         Daily           Vehicle Type         Day         Evening         Night         Daily           Vehicle Type         Day         Evening         Night         Daily           Autos:         66.9%         11.9%         21.2%         90.41           Medium Trucks:         64.8%         8.5%         26.7%         7.5           Heavy Trucks:         72.5%         4.7%         22.8%         2.06           Noise Source Elevations (in feet)         Autos:         0.00         Medium Trucks:         40.820           Heavy Trucks:         40.820         Heavy Trucks:         40.820         Heavy Trucks:         40.820           Heavy Trucks:         40.820         Heavy Trucks:         40.820         0.000         0.00           22         1.20         -4.65         0.000         0.00         2.2         1.20         -5.43         0.000         0.00           22         1.20         -5.43						
I	Road Grade:	0.0%				Autos:	41.	037			
	Left View:	-90.0 degrees	5		Mediur	n Trucks:	40.	820			
	Right View:	90.0 degree:	6		Heav	y Trucks:	40.	841			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distar	ice	Finite	Road	Fresr	nel	Barrier Att	en Ber	m Atten
Autos:	71.78	1.75		1.18		-1.20		-4.65	0.0	000	0.000
Medium Trucks:	82.40	-9.04		1.22		-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	86.40	-14.67		1.21		-1.20		-5.43	0.0	000	0.000
Unmitigated Noise	e Levels (with	out Topo and b	arrier a	attenu	uation)						
VehicleType	Leq Peak Hou	r Leq Day	Le	eq Ev	ening	Leq N	ight		Ldn	CI	VEL
Autos:	73	.5 7	1.0		69.5		67.2	2	74.3	3	74.7
Medium Trucks:	73	.4 7	0.7		67.9		68.1		74.9	)	75.1
Heavy Trucks:	71	.7 6	9.6		63.7		65.8	3	72.8	8	72.9
	77	.7 7	5.2		72.4		71.9	)	78.9	)	79.1
Vehicle Noise:											
Vehicle Noise: Centerline Distand	ce to Noise Co	ontour (in feet)						r			
Vehicle Noise: Centerline Distand	ce to Noise Co	ontour (in feet)		70 d	BA	65 di	BA		60 dBA	55	dBA
Vehicle Noise: Centerline Distand	ce to Noise Co	ontour (in feet)	dn:	70 d	BA 5	65 di 420	BA I	(	60 dBA 905	55	<i>dBA</i> 950

	FH\	WA-RD-77-108	HIGH	IWAY N	IOISE PI	REDICTI	ON MC	DEL			
Scenai Road Nan Road Segme	rio: EAC ne: Gilman Spi ent: s/o Jack Ri	rings Rd. abbit Tr.				Project Job Nu	Name: Imber:	Gilmar 11381	I Mine		
SITE	SPECIFIC IN	NPUT DATA				N	OISE	MODE		s	
Highway Data				4	Site Con	ditions (	'Hard =	: 10, Sc	oft = 15)		
Average Daily Peak Hour Peak F	Traffic (Adt): Percentage: Hour Volume:	30,881 vehicle 10% 3,088 vehicle	es s		Me He	dium Tru avy Truc	cks (2 . ks (3+ .	Autos: Axles): Axles):	15 15 15		
Ve	ehicle Speed:	55 mph			Vehicle	Mix					
Near/Far La	ane Distance:	58 feet		-	Veh	icleType		Day	Evening	Night	Daily
Site Data						A	utos:	66.9%	11.9%	21.2%	90.41%
Ba Barrier Type (0-V	<b>rrier Height:</b> Vall, 1-Berm):	0.0 feet 0.0			M	edium Tr Heavy Tr	ucks: ucks:	64.8% 72.5%	8.5% 4.7%	26.7% 22.8%	7.53% 2.06%
Centerline D	ist. to Barrier:	64.0 feet			Noise So	ource Ele	vation	s (in fe	et)		
Centerline Dist.	to Observer:	64.0 feet		F		Autos	. 0	000			
Barrier Distance	to Observer:	0.0 feet			Mediu	m Trucks	: 2	297			
Observer Height	(Above Pad):	5.0 feet			Heav	v Trucks	: 8.	004	Grade Ad	iustment	: 0.0
P	ad Elevation:	0.0 feet									
Ro	ad Elevation:	0.0 feet		1	Lane Eq	uivalent	Distan	ce (in i	'eet)		
	Road Grade:	0.0%				Autos	: 57.	.271			
	Left View: Right View:	-90.0 degree 90.0 degree	es es		Mediui Heav	m Trucks vy Trucks	: 57. : 57.	.117 .132			
FHWA Noise Mod	lel Calculation	IS									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fresi	nel	Barrier Att	en Ber	m Atten
Autos:	71.78	1.75		-0.99	9	-1.20		-4.70	0.0	000	0.000
Medium Trucks:	82.40	-9.04		-0.9	7	-1.20		-4.88	0.0	000	0.000
Heavy Trucks:	86.40	-14.68		-0.9	7	-1.20		-5.31	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrie	er atten	uation)						
VehicleType	Leq Peak Hou	ur Leq Day	/	Leq E	/ening	Leq I	Vight		Ldn	C	NEL
Autos:	71	.3	68.8		67.3		65.	1	72.2	2	72.5
Medium Trucks:	71	.2	68.5		65.7		65.	9	72.7	7	72.9
Heavy Trucks:	69	9.5	67.4		61.5		63.	6	70.6	3	70.7
Vehicle Noise:	75	5.5	73.0		70.2		69.	7	76.7	7	76.9
Centerline Distan	ce to Noise C	ontour (in feet	)								
			I	70 0	'IBA	65 c	IBA	6	0 dBA	55	dBA
			Ldn:	17	'9	38	5		829	1,	785
		CI	NEL:	18	36	40	0		862	1,	857

	FH\	NA-RD-77-108	HIGHW	AY NO	DISE PF	REDICT		DEL			
Scenar Road Narr Road Segme	io: EAC ne: Gilman Spi nt: s/o Bridge	rings Rd. St.				Project Job N	Name: ( umber: 1	Gilmai 1381	n Mine		
SITE	SPECIFIC IN	IPUT DATA				N	IOISE N	IODE	L INPUTS	;	
Highway Data				S	ite Con	ditions	(Hard =	10, S	oft = 15)		
Average Daily Peak Hour	Traffic (Adt): Percentage:	26,677 vehicl 10%	es		Me	dium Tru	ıcks (2 A	Autos: xles):	15 15		
Peak H	lour Volume:	2,668 vehicle	s		He	avy Truc	cks (3+ A	xles):	15		
Ve	hicle Speed:	55 mph		V	ehicle l	Mix					
Near/Far La	ne Distance:	58 feet			Veh	icleType		Day	Evening	Night	Daily
Site Data							Autos:	66.9%	11.9%	21.2%	6 90.41%
Ba	rrier Height:	0.0 feet			Me	edium Ti	rucks:	64.8%	8.5%	26.7%	6 7.53%
Barrier Type (0-W	/all, 1-Berm):	0.0			ŀ	leavy Ti	ucks:	72.5%	4.7%	22.8%	i 2.06%
Centerline Di	st. to Barrier:	64.0 feet		N	loise Sr	ource Fl	evations	: (in f	eet)		
Centerline Dist.	to Observer:	64.0 feet		-	0.00 00	Auto	s <sup>.</sup> 0.0	000	000		
Barrier Distance	to Observer:	0.0 feet			Modiu	n Truck	. 22	07			
Observer Height	(Above Pad):	5.0 feet			Heav	v Truck	s. 2.2 s. 80	04	Grade Adi	ustmen	t: 0.0
Pa	ad Elevation:	0.0 feet			mour	<i>y maon</i>	. 0.0				
Roi	ad Elevation:	0.0 feet		L	ane Eq	uivalent	Distanc	e (in:	feet)		
	Road Grade:	0.0%				Autos	s: 57.2	271			
	Left View:	-90.0 degre	es		Mediur	m Truck	s: 57.1	17			
	Right View:	90.0 degre	es		Heav	y Truck	s: 57.1	132			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distar	nce	Finite	Road	Fresn	el	Barrier Atte	en Be	erm Atten
Autos:	71.78	1.11		-0.99		-1.20		4.70	0.0	00	0.000
Medium Trucks:	82.40	-9.68		-0.97		-1.20		4.88	0.0	00	0.000
Heavy Trucks:	86.40	-15.31		-0.97		-1.20		-5.31	0.0	00	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier a	attenu	ation)						
VehicleType	Leq Peak Hou	Ir Leq Day	/ L	eq Eve	ening	Leq	Night		Ldn	C	NEL
Autos:	70	.7	68.2		66.7		64.4		71.5	-	71.9
Medium Trucks:	70	.6	67.9		65.1		65.3		72.1		72.3
Heavy Trucks:	68	.9	66.7		60.9		62.9		70.0		70.1
Vehicle Noise:	74	.9	72.4		69.6		69.1		76.0		76.3
Centerline Distan	ce to Noise C	ontour (in fee	t)								-
		1	, 	70 dl	BA	65	dBA	(	60 dBA	55	5 dBA
			Ldn:	162	2	34	49		752	1	,619
		С	NEL:	168	3	30	53		782	1	,684

Wednesday, April 17, 2019

Wednesday, April 17, 2019

FH	WA-RD-77-108	HIGHWA	Y NOISE F	PREDICTIO	ON MODEL		
Scenario: EAC Road Name: Gilman Sp Road Segment: n/o SR-79	rings Rd.			Project N Job Nu	lame: Giln mber: 113	nan Mine 81	
SITE SPECIFIC I	NPUT DATA			NO	DISE MOL	DEL INPUT	s
Highway Data			Site Co	nditions (l	Hard = 10,	Soft = 15)	
Average Daily Traffic (Adt):	29,238 vehicle	es			Auto	os: 15	
Peak Hour Percentage:	10%		М	edium Truc	cks (2 Axle	s): 15	
Peak Hour Volume:	2,924 vehicle	s	Н	eavy Truck	is (3+ Axle	s): 15	
Vehicle Speed:	55 mph		Vehicle	Mix			
Near/Far Lane Distance:	58 feet		Ve	hicleType	Dav	/ Evenina	Night Daily
Site Data				AL	itos: 66.9	9% 11.9%	21.2% 90.41%
Barrier Height:	0.0 feet		٨	ledium Tru	cks: 64.8	8% 8.5%	26.7% 7.53%
Barrier Type (0-Wall, 1-Berm):	0.0			Heavy Tru	icks: 72.	5% 4.7%	22.8% 2.06%
Centerline Dist. to Barrier:	64.0 feet		Noise S	Source Ele	vations (ir	1 feet)	
Centerline Dist. to Observer:	64.0 feet			Autos:	0.000		
Barrier Distance to Observer:	0.0 feet		Media	um Trucks:	2.297		
Observer Height (Above Pad):	5.0 feet		Hea	vy Trucks:	8.004	Grade Ad	justment: 0.0
Pad Elevation:	0.0 feet		Long E		Distance (	in fact)	
Road Elevation:	0.0 feet		Lane E	Autoo	57 074	in ieel)	
Loft View	0.0%		Modii	im Trucks	57 117		
Right View:	90.0 degree	es es	Hea	wy Trucks:	57.132		
FHWA Noise Model Calculation	15						
VehicleType REMEL	Traffic Flow	Distanc	e Finite	e Road	Fresnel	Barrier Att	en Berm Atten
Autos: 71.78	1.51	-1	0.99	-1.20	-4.7	0.0	0.000
Medium Trucks: 82.40	-9.28	-1	0.97	-1.20	-4.8	8 0.0	0.000
Heavy Trucks: 86.40	-14.91	-1	0.97	-1.20	-5.3	81 0.0	0.000
Unmitigated Noise Levels (with	nout Topo and	barrier at	tenuation)	)			
VehicleType Leq Peak Ho	ur Leq Day	/ Leo	q Evening	Leq N	light	Ldn	CNEL
Autos: 7	1.1	68.6	67.1	1	64.8	71.9	9 72.3
Medium Trucks: 7	1.0	68.3	65.5	5	65.7	72.	5 72.7
Heavy Trucks: 6	9.3	67.1	61.2	2	63.3	70.4	4 70.5
Venicie Noise: 7	5.3	/2.8	70.0	J	69.5	/6.4	4 /6./
Centerline Distance to Noise C	ontour (in feet	)	70 dBA	65 d	PA .	60 dBA	55 dPA
		I dn:	172	37	1	799	1 721
	CI	VEL:	179	386	3	831	1,791

Scenar	rio: EAC					Project I	lame:	Gilma	n Mine		
Road Nan	ne: Bridge St.					Job Nu	mber:	11381			
Road Segme	nt: w/o Gilman	Springs Rd.									
SITE	SPECIFIC IN	IPUT DATA				N	DISE	NODE	L INPUT	s	
Highway Data				S	Site Con	ditions (	Hard =	: 10, S	oft = 15)		
Average Daily	Traffic (Adt):	2,852 vehicle	es					Autos:	15	PUTS           5)           iing         Night         Da           9%         21.2%         90.           5%         26.7%         7.5           7%         22.8%         2.0           e Adjustment:         0.0         0.0           0.000         0.         0.000         0.           0.000         0.         0.000         0.           0.000         0.         0.000         0.           0.000         0.         0.000         0.           0.000         0.         0.000         0.           0.000         0.         0.         0.000         0.           0.000         0.         0.         0.000         0.           0.000         0.         0.         0.         0.           0.000         0.         0.         0.         0.           0.000         0.         0.         0.         0.           0.3.1         (         63.7         6           67.6         0.         0.         0.	
Peak Hour	Percentage:	10%			Med	lium Tru	cks (2 )	Axles).	15		
Peak H	lour Volume:	285 vehicles	S		Hea	avy Trucl	(3+ )	Axles).	15		
Ve	hicle Speed:	55 mph		V	/ehicle N	lix					
Near/Far La	ane Distance:	36 feet			Vehi	cleType		Day	Evening	PUTS           15)           5           5           5           109,9% 21,2% 90,4           15,5% 26,7% 7.5           1.7% 22,8% 2.0           2           de Adjustment: 0.0           er Atten           Berm Attt           0.000         0.0	Daily
Site Data						A	itos:	66.9%	11.9%		90.41%
Ba	rrier Height	0.0 feet			Me	dium Tru	icks:	64.8%	8.5%	26.7%	7.53%
Barrier Type (0-V	Vall. 1-Berm):	0.0			H	leavy Tru	icks:	72.5%	4.7%	22.8%	2.06%
Centerline Di	ist. to Barrier:	50.0 feet			1-i 0-			- // /	41		
Centerline Dist.	to Observer:	50.0 feet		N	voise So	urce Ele	vation	s (in t	eet)		
Barrier Distance	to Observer:	0.0 feet				Autos.	0.	000			
Observer Height	(Above Pad):	5.0 feet			Mediun	1 I rucks.	2.	297	Crada Ad	iuotmont	
P	ad Elevation:	0.0 feet			Heav	/ Trucks.	8.	004	Grade Adj	usuneni	0.0
Ro	ad Elevation:	0.0 feet		L	ane Equ	ivalent	Distan	ce (in	feet)		
	Road Grade:	0.0%				Autos.	46.	915			
	Left View:	-90.0 degree	es		Mediun	n Trucks.	46.	726		Night         Data           21.2%         90.           21.2%         90.           26.7%         7.           ustment:         0.0           000         (000)           000         (000)           000         (100)           000         (100)	
	Right View:	90.0 degree	es		Heav	/ Trucks.	46.	744			
FHWA Noise Mod	lel Calculation	s									
VehicleType	051454										
	REMEL	Traffic Flow	Distar	ice	Finite	Road	Fresi	nel	Barrier Att	en Ber	m Atten
Autos:	REMEL 71.78	Traffic Flow -8.60	Distar	0.31	Finite	Road -1.20	Fresi	nel -4.65	Barrier Atte 0.0	en Ber 000	<i>m Atten</i> 0.000
Autos: Medium Trucks:	REMEL 71.78 82.40	Traffic Flow -8.60 -19.39	Distar	0.31 0.34	Finite	Road -1.20 -1.20	Fresi	nel -4.65 -4.87	Barrier Atte 0.0 0.0	en Ber )00 )00	m Atten 0.000 0.000
Autos: Medium Trucks: Heavy Trucks:	REMEL 71.78 82.40 86.40	Traffic Flow -8.60 -19.39 -25.02	Distar	0.31 0.34 0.34	Finite	Road -1.20 -1.20 -1.20	Fresi	nel -4.65 -4.87 -5.43	Barrier Atte 0.0 0.0 0.0	en Ber 000 000 000	<u>m Atten</u> 0.000 0.000 0.000
Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Nois</b>	71.78 82.40 86.40 e Levels (with	Traffic Flow -8.60 -19.39 -25.02 out Topo and	Distar barrier a	0.31 0.34 0.34 0.34	Finite	Road -1.20 -1.20 -1.20	Fresi	nel -4.65 -4.87 -5.43	Barrier Att 0.0 0.0 0.0	en Ber 000 000 000	<u>m Atten</u> 0.000 0.000 0.000
Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Nois</b> VehicleType	REMEL 71.78 82.40 86.40 e Levels (with Leg Peak Hou	Traffic Flow           -8.60           -19.39           -25.02           out Topo and           r           Leq Day	Distar barrier a	0.31 0.34 0.34 0.34 0.34	Finite	Road -1.20 -1.20 -1.20 -1.20	Fresi	nel -4.65 -4.87 -5.43	Barrier Atte 0.0 0.0 0.0 0.0 0.0	en Ber 000 000 000 000 Cl	<u>m Atten</u> 0.000 0.000 0.000 VEL
Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos:	REMEL 71.78 82.40 86.40 e Levels (with Leg Peak Hou 62	Traffic Flow           -8.60           -19.39           -25.02           out Topo and           r           Leq Day           .3	Distar barrier a y Le 59.8	0.31 0.34 0.34 0.34 attenu eq Ev	Finite uation) rening 58.3	Road -1.20 -1.20 -1.20 Leq N	Fresi light 56.0	nel -4.65 -4.87 -5.43	Barrier Atte 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	en Ber 000 000 000 Cl	<u>m Atten</u> 0.000 0.000 0.000 <u>0.000</u> <u>VEL</u> 63.5
Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks:	REMEL 71.78 82.40 86.40 e Levels (with Leg Peak Hou 62 62	Traffic Flow         -8.60         -19.39         -25.02         out Topo and         r         Leq Day         .3         .2	Distar barrier a <u>/ Le</u> 59.8 59.5	0.31 0.34 0.34 0.34 0.34	Finite uation) rening 58.3 56.7	Road -1.20 -1.20 -1.20 <i>Leq N</i>	Fresi light 56.9	nel -4.65 -4.87 -5.43	Barrier Atte 0.0 0.0 0.0 <u>Ldn</u> 63.1 63.7	en Ber 000 000 000 000 000 C/	<u>m Atten</u> 0.000 0.000 0.000 VEL 63.5 63.5
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noiss VehicleType Autos: Medium Trucks: Heavy Trucks:	REMEL 71.78 82.40 86.40 e Levels (with Leg Peak Hou 62 62 62	Traffic Flow           -8.60           -19.39           -25.02           out Topo and           r           Leq Day           .3           .2           .5	Distar barrier a y Le 59.8 59.5 58.3	0.31 0.34 0.34 0.34 attenu	Finite uation) rening 58.3 56.7 52.4	Road -1.20 -1.20 -1.20 <i>Leq N</i>	Fresi light 56.9 54.9	nel -4.65 -4.87 -5.43	Barrier Atti 0.0 0.0 0.0 <u>Ldn</u> 63.1 63.7 61.6	e  PUTS  15)  5  5  5  19% 21.2% 90 3.5% 26.7%  3.5% 26.7%  4.7% 22.8% 2   de Adjustment: 0.   er Atten Berm A  0.000 0.	<u>m Atten</u> 0.000 0.000 0.000 <u>VEL</u> 63.5 63.5 63.5
Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois Vehicle Type Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	REMEL 71.78 82.40 86.40 <b>e Levels (with</b> Leq Peak Hou 62 62 60 60 66	Traffic Flow         -8.60         -19.39         -25.02         Out Topo and         Image: Topo and transmission of the topo and transmission of the topo and transmission of topo and transmission of topo and transmission of topo and transmission of topo and	Distar barrier a y Le 59.8 59.5 58.3 64.0	0.31 0.34 0.34 0.34 attenu	Finite uation) rening 58.3 56.7 52.4 61.2	Road -1.20 -1.20 -1.20 <i>Leq N</i>	Fresi light 56.0 56.9 54.9 60.7	nel -4.65 -4.87 -5.43	Barrier Atte 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.		<u>m Atten</u> 0.000 0.000 0.000 <u>VEL</u> 63.9 63.9 61.7 67.9
Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Centerline Distan	REMEL         71.78           71.78         82.40           86.40         86.40           e Levels (with         62           62         62           60         66           ce to Noise Ca         66	Traffic Flow         -8.60         -19.39         -25.02         -2	Distar barrier a 59.8 59.5 58.3 64.0	0.31 0.34 0.34 attenu eq Ev	Finite : uation) rening 58.3 56.7 52.4 61.2	Road -1.20 -1.20 -1.20 Leq N	Fresi light 56.0 54.3 60.7	nel -4.65 -4.87 -5.43 0 0 5 7	Barrier Atte 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.		M Atten 0.000 0.000 0.000 VEL 63.5 63.5 63.5 63.5 63.5 63.5
Autos: Medium Trucks: Heavy Trucks: VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Centerline Distan	REMEL 71.78 82.40 86.40 re Levels (with Leg Peak Hou 62 62 60 66 66 66 ce to Noise Co	Traffic Flow         -8.60           -19.39         -25.02           out Topo and         Image: Control of the co	Distar barrier a 59.8 59.5 58.3 64.0	0.31 0.34 0.34 0.34 0.34 0.34 0.34 0.34	Finite : uation) rening 58.3 56.7 52.4 61.2 BA	Road -1.20 -1.20 -1.20 Leq N	Fresi light 56.0 56.9 54.9 60.1 BA	nel -4.65 -4.87 -5.43	Barrier Atte 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	en Ber 000 000 CI 1 7 3 5 55	m Atten 0.000 0.000 0.000 VEL 63.5 63.9 61.7 67.9 dBA
Autos: Medium Trucks: Heavy Trucks: Unmitgated Nois VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Centerline Distan	REMEL 71.78 82.40 86.40 62 62 62 60 66 ce to Noise Co	Traffic Flow         -8.60           -19.39         -25.02           out Topo and         r         Leq Day           3         -2         -5           -5         -5         -5           mtour (in feet)         -5         -5	Distar barrier a 59.8 59.5 58.3 64.0 ) Ldn:	0.31 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34	Finite Fi	Road -1.20 -1.20 -1.20 Leq N 65 d 75	Fresi light 56.0 54.3 60.7 BA	nel -4.65 -4.87 -5.43	Barrier Att. 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	en Ber 000 000 000 CI 1 7 5 5 3 3	m Atten 0.000 0.000 0.000 VEL 63.5 63.9 61.7 67.9 67.9 67.9 4BA

Wednesday, April 17, 2019

	FH\	VA-RD-77-108 I	HIGH	IWAY N	OISE PF	REDICTI	ON MC	DEL				
Scenar Road Nam Road Segme	io: EAPC ie: Gilman Spi nt: s/o SR-60	ings Rd.				Project Job Nu	Name: ımber:	Gilma 11381	n Mine			
SITE	SPECIFIC IN	IPUT DATA				N	OISE	MODE	L INP	UTS		
Highway Data				S	lite Con	ditions (	'Hard =	= 10, S	oft = 1	5)		
Average Daily Peak Hour Peak H	Traffic (Adt): Percentage: lour Volume:	26,468 vehicles 10% 2,647 vehicles	5		Me He	dium Tru avv Truc	cks (2 ks (3+	Autos. Axles). Axles).	: 15 : 15 : 15			
Ve	hicle Sneed	55 mph					. (.	,				
Near/Far I a	ne Distance:	58 feet		v	ehicle l	Mix						
	Diotanico.	00 1001			Veh	cle l ype		Day	Even	ing N	light	Daily
Site Data						, A	utos:	66.9%	6 11.	9% 2	21.2%	89.76%
Ba	rrier Height:	0.0 feet			Me	aium Tr	UCKS:	64.8%	o 8.	5% 2	26.7%	7.47%
Barrier Type (0-W	/all, 1-Berm):	0.0			ŀ	leavy In	ucks:	72.5%	6 4.	7% 2	22.8%	2.77%
Centerline Di	st. to Barrier:	50.0 feet		Λ	loise So	ource Ele	evatior	ıs (in f	eet)			
Centerline Dist.	to Observer:	50.0 feet				Autos	: 0	.000	,			
Barrier Distance	to Observer:	0.0 feet			Mediur	n Trucks	: 2	.297				
Observer Height (	Above Pad):	5.0 feet			Heav	v Trucks	: 8	.004	Grade	e Adjus	tment.	0.0
Pa	ad Elevation:	0.0 feet								,		
Roa	ad Elevation:	0.0 feet		L	ane Eq	uivalent	Distar	ice (in	feet)			
	Road Grade:	0.0%				Autos	: 41	.037				
	Left View:	-90.0 degrees	3		Mediur	n Trucks	: 40	.820				
	Right View:	90.0 degrees	5		Heav	y Trucks	: 40	.841				
FHWA Noise Mod	el Calculation	s										
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite	Road	Fres	nel	Barrie	r Atten	Ber	m Atten
Autos:	71.78	1.05	-	1.18		-1.20		-4.65		0.000	)	0.000
Medium Trucks:	82.40	-9.75		1.22		-1.20		-4.87		0.000	)	0.000
Heavy Trucks:	86.40	-14.06		1.21		-1.20		-5.43		0.000	)	0.000
Unmitigated Nois	e Levels (with	out Topo and b	arrie	er attenu	uation)							
VehicleType	Leg Peak Hou	Ir Leg Day		Leg Ev	ening	Leg I	Vight	1	Ldn		CI	VEL
Autos:	. 72	.8 7	0.3		68.8		66.	5		73.6		74.0
Medium Trucks:	72	.7 7	0.0		67.2		67.	4		74.2		74.4
Heavy Trucks:	72	.4 7	0.2		64.3		66.	4		73.4		73.5
Vehicle Noise:	77	.4 7	4.9		71.9		71.	6		78.5		78.8
Centerline Distan	ce to Noise Ce	ontour (in feet)										
				70 d	BA	65 c	<i>IBA</i>		60 dBA		55	dBA
		L	.dn:	18	5	39	9		859	I	1,	851
		CN	EL:	192	2	41	4		892		1,	923

	FH\	NA-RD-77-108	HIGHW	AY NO	OISE PF	REDICTI	ON MC	DDEL				
Scenar	io: EAPC					Project	Name:	Gilma	n Mine			
Road Nam	e: Gilman Spi	rings Rd.				Job N	umber:	11381				
Road Segme	nt: s/o Allesan	dro Bl.										
SITE	SPECIFIC IN	IPUT DATA			NOISE MODEL INPUTS							
Highway Data				S	Site Conditions (Hard = 10, Soft = 15)							
Average Daily	Traffic (Adt):	31,101 vehicle	es					Autos:	15			
Peak Hour	Percentage:	10%			Me	dium Tru	ıcks (2	Axles).	15			
Peak H	lour Volume:	3,110 vehicles	6		Hea	avy Truc	:ks (3+	Axles).	15			
Ve	hicle Speed:	55 mph		v	ehicle l	Nix						
Near/Far La	ne Distance:	58 feet		-	Vehi	cleType		Day	Evening	Nigl	ht	Daily
Site Data						A	Autos:	66.9%	6 11.9%	21.	2%	89.86%
Ba	rrier Height:	0.0 feet			Me	edium Tr	ucks:	64.8%	6 8.5%	26.	7%	7.48%
Barrier Type (0-W	/all, 1-Berm):	0.0			F	leavy Tr	ucks:	72.5%	5 4.7%	22.	8%	2.66%
Centerline Di	st. to Barrier:	50.0 feet		A	loise Sc	urce Fl	evatio	ns (in f	eet)			
Centerline Dist.	to Observer:	50.0 feet		-	0.00 00	Autos	· 0	000	000			
Barrier Distance	to Observer:	0.0 feet			Mediur	n Truck	·· 2	297				
Observer Height	Above Pad):	5.0 feet			Heav	v Trucks	. 8	004	Grade A	diustm	ent:	0.0
Pi	ad Elevation:	0.0 feet			mour	y maone	. 0			-)		
Road Elevation: 0.0 feet				L	ane Equ	uivalent	Distar	nce (in	feet)			
	Road Grade:	0.0%				Autos	s: 41	.037				
	Left View:	-90.0 degree	es		Mediur	n Trucks	s: 40	.820				
	Right View:	90.0 degree	es		Heav	y Trucks	s: 40	.841				
FHWA Noise Mod	el Calculation	s										
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fres	nel	Barrier A	tten	Bern	n Atten
Autos:	71.78	1.75		1.18		-1.20		-4.65	0	.000		0.000
Medium Trucks:	82.40	-9.04		1.22		-1.20		-4.87	0	.000		0.000
Heavy Trucks:	86.40	-13.53		1.21		-1.20		-5.43	0	.000		0.000
Unmitigated Noise	e Levels (with	out Topo and	barrier	attenu	uation)							
VehicleType	Leq Peak Hou	ır Leq Day	L	eq Ev	ening	Leq	Night		Ldn		CN	EL
Autos:	73	.5	71.0		69.5		67.	2	74	.3		74.7
Medium Trucks:	73	.4	70.7		67.9		68.	1	74	.9		75.1
Heavy Trucks:	72	.9	70.7		64.8		66.	9	73	.9		74.1
Vehicle Noise:	78	.0	75.6		72.6		72.	2	79	.2		79.4
Centerline Distan	ce to Noise C	ontour (in feet	)									
				70 di	BA	65 (	dBA		60 dBA		55 c	IBA
			Ldn:	205	5	44	11		949		2,0	46
		CI	VEL:	213	3	45	58		987		2,1	26

	FH\	NA-RD-77-108	HIGHW	AY NC	DISE P	REDICT	ION MO	DEL				
Scena Road Nar Road Segme	rio: EAPC ne: Gilman Sp ent: s/o Jack R	rings Rd. abbit Tr.				Project Job N	Name: lumber:	Gilma 11381	n Mine			
SITE	SPECIFIC IN	IPUT DATA				N	IOISE N	/IODE	L INPUT	s		
Highway Data				Si	ite Cor	nditions	(Hard =	10, S	oft = 15)			
Average Daily	Traffic (Adt):	31,091 vehicl	es					Autos	15			
Peak Hou	r Percentage:	10%			Me	eaium Tr	UCKS (2 A	(xies	: 15			
Peak	Hour Volume:	3,109 vehicle	s		He	eavy Tru	CKS (3+ A	axies)	: 15			
Ve	ehicle Speed:	55 mph		Ve	ehicle	Mix						
Near/Far La	ane Distance:	58 feet			Veh	nicleType	9	Day	Evening	Nig	tht	Daily
Site Data						,	Autos:	66.9%	6 11.9%	21	.2%	89.86%
Ba	arrier Height:	0.0 feet			М	ledium T	rucks:	64.8%	6 8.5%	26	.7%	7.48%
Barrier Type (0-V	Vall, 1-Berm):	0.0				Heavy T	rucks:	72.5%	6 4.7%	22	.8%	2.66%
Centerline D	ist. to Barrier:	64.0 feet		N	oise S	ource E	levation	s (in i	eet)			
Centerline Dist.	to Observer:	64.0 feet				Auto	s: 0.0	000	,			
Barrier Distance	e to Observer:	0.0 feet			Mediu	m Truck	s: 2.1	297				
Observer Height	(Above Pad):	5.0 feet			Hear	vy Truck	s: 8.0	004	Grade Ad	ljustn	nent:	0.0
F	Pad Elevation:	0.0 feet		-	-							
Ro	ad Elevation:	0.0 feet		Lá	ane Eq	uivalen	t Distan	ce (in	teet)			
	Road Grade:	0.0%				Auto	s: 57.	271				
	Left View:	-90.0 degre	es		Mediu	m Truck	s: 57.	117				
	Right View:	90.0 degre	es		Hea	vy Truck	s: 57.	132				
FHWA Noise Mod	lel Calculation	S										
VehicleType	REMEL	Traffic Flow	Distar	nce	Finite	Road	Fresr	iel	Barrier Att	en	Bern	n Atten
Autos:	71.78	1.75		-0.99		-1.20		-4.70	0.0	000		0.000
Medium Trucks	: 82.40	-9.04		-0.97		-1.20		-4.88	0.0	000		0.000
Heavy Trucks:	86.40	-13.53		-0.97		-1.20		-5.31	0.0	000		0.000
Unmitigated Nois	se Levels (with	out Topo and	barrier a	attenu	ation)							
VehicleType	Leq Peak Hou	ur Leq Daj	/ L	eq Eve	ening	Leq	Night		Ldn		CN	EL
Autos:	: 71	.3	68.8		67.3		65.1		72.3	2		72.5
Medium Trucks	: 71	.2	68.5		65.7		65.9	)	72.	7		72.9
Heavy Trucks	70	0.7	68.5		62.6		64.7		71.	7		71.9
Vehicle Noise.	: 75	5.9	73.4		70.4		70.0	)	77.	U		77.2
Centerline Distan	ice to Noise C	ontour (in fee	t)	70 -15	24	05	-10.4	1	00 -10 4	1		04
			L day	10 GE	,	60	02	1	00 UBA	_	1 0	DA 72
		0		107		4	10		003		1,8	13
		6	NEL:	195	)	4	19		903		1,9	40

	FHV	VA-RD-77-108	HIGHWA	AY NOISE		N MODE	L		
Scenari Road Nam	o: EAPC e: Gilman Spr	ings Rd.			Project N Job Nui	lame: Gilr mber: 113	man Mine 181		
Road Segmer	nt: s/o Bridge S	St.							
SITE	SPECIFIC IN	PUT DATA			NC	DISE MO	DEL INPUT	s	
Highway Data				Site C	Conditions (F	lard = 10,	Soft = 15)		
Average Daily	Traffic (Adt):	26,919 vehicle	s			Aut	os: 15		
Peak Hour	Percentage:	10%			Medium Truc	sks (2 Axle	es): 15		
Peak H	our Volume:	2,692 vehicles	6		Heavy Truck	s (3+ Axle	es): 15		
Vei	hicle Speed:	55 mph		Vehic	le Mix				
Near/Far Lar	ne Distance:	58 feet		1	/ehicleType	Da	y Evening	Night	Daily
Site Data					AL	itos: 66.	9% 11.9%	21.2%	89.67%
Bar	rier Height:	0.0 feet			Medium Tru	cks: 64.	8% 8.5%	26.7%	7.46%
Barrier Type (0-W	all, 1-Berm):	0.0			Heavy Tru	cks: 72.	5% 4.7%	22.8%	2.87%
Centerline Dis	st. to Barrier:	64.0 feet		Mala	0 <b>-</b> [		- ( 1)		
Centerline Dist.	to Observer:	64.0 feet		Noise	Source Ele	vations (i	n teet)		
Barrier Distance	to Observer:	0.0 feet			Autos:	0.000			
Observer Height (.	Above Pad):	5.0 feet		Me	aium Trucks:	2.297	Grado Ad	iustmont	0.0
Pa	ad Elevation:	0.0 feet		н	eavy Trucks:	8.004	Grade Au	usunem.	0.0
Roa	Road Elevation: 0.0 feet				Equivalent L	Distance (	(in feet)		
ŀ	Road Grade:	0.0%			Autos:	57.271			
	Left View:	-90.0 degree	s	Me	dium Trucks:	57.117	,		
	Right View:	90.0 degree	s	н	eavy Trucks:	57.132	2		
FHWA Noise Mode	el Calculation:	5							
VehicleType	REMEL	Traffic Flow	Distan	ce Fii	nite Road	Fresnel	Barrier Att	en Beri	m Atten
Autos:	71.78	1.12		-0.99	-1.20	-4.	70 0.0	000	0.000
Medium Trucks:	82.40	-9.68		0.97	-1.20	-4.	88 0.0	000	0.000
Heavy Trucks:	96.40	-13.83		0.97	-1.20	-5.	31 0.0	000	0.000
	00.40								
Unmitigated Noise	e Levels (with	out Topo and	barrier a	ttenuatio	n)				
Unmitigated Noise VehicleType	E Levels (with Leq Peak Hou	out Topo and	barrier a	ttenuatio	n) g Leq N	ight	Ldn	CI	IEL
Unmitigated Noise VehicleType Autos:	E Levels (with Leq Peak Hou 70.	out Topo and r Leq Day 7	barrier a Le 58.2	ttenuatio q Evenin 6	n) g Leq N 6.7	ight 64.4	Ldn 71.5	C/	VEL 71.9
Unmitigated Noise VehicleType Autos: Medium Trucks:	E Levels (with Leq Peak Hou 70. 70.	r Leq Day 7 6	barrier a Le 58.2 57.9	ttenuatio q Evenin 6 6	n) g Leq N 6.7 5.1	<i>ight</i> 64.4 65.3	Ldn 71.5 72.1	C/ 5	<i>IEL</i> 71.9 72.3
Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks:	E Levels (with Leq Peak Hou 70. 70. 70.	r Leq Day 7 6 4	barrier a Le 58.2 57.9 58.2	ttenuatio og Evening 6 6 6	n) g Leq N 6.7 5.1 2.3	<i>ight</i> 64.4 65.3 64.4	Ldn 71.5 72.1 71.4	C/ 5	<u>VEL</u> 71.9 72.3 71.6
Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	2 Levels (with Leq Peak Hou 70. 70. 75.	r Leq Day 7 Leq Day 6 4 9	barrier a Le 58.2 57.9 58.2 72.9	ttenuation of Evening 6 6 6 6	n) g Leq N 6.7 5.1 2.3 9.8	ight 64.4 65.3 64.4 69.5	Ldn 71.5 72.7 71.4 76.5	C/ 5 1 1 5	VEL 71.9 72.3 71.6 76.7
Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Centerline Distance	2 Levels (with Leg Peak Hou 70. 70. 70. 75. 20 to Noise Co	r Leq Day 7 Leq Day 6 4 3 mtour (in feet)	barrier a Le 58.2 57.9 58.2 72.9	ttenuatio og Evening 6 6 6 6	n) g Leq N 6.7 5.1 2.3 9.8	ight 64.4 65.3 64.4 69.5	Ldn 71.5 72.7 71.4 76.5	Ch 5 1 1 5	VEL 71.9 72.3 71.6 76.7
Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Centerline Distanc	2 Levels (with Leq Peak Hou 70. 70. 70. 75 ce to Noise Co	Dut Topo and       r     Leq Day       7     6       6     4       3     5       ontour (in feet,	barrier a Le 58.2 57.9 58.2 72.9	ttenuation og Evening 6 6 6 6 70 dBA	n) g Leq N 5.7 5.1 2.3 9.8 65 dt	ight 64.4 65.3 64.4 69.5 BA	Ldn 71.5 72. 71.2 76.5 60 dBA	C/ 5 1 5 5 55	VEL 71.9 72.3 71.6 76.7 dBA
Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Centerline Distanc	a Levels (with Leq Peak Hou 70. 70. 70. 75 te to Noise Co	out Topo and r Leq Day 7 6 4 3 3 ontour (in feet	barrier a Le 58.2 57.9 58.2 72.9 Ldn:	ttenuation og Evening 6 6 6 6 7 6 7 7 0 dBA 173	n) g Leq N 5.7 5.1 2.3 9.8 65 dl 372	ight 64.4 65.3 64.4 69.5 BA	Ldn 71.5 72.7 71.4 76.5 60 dBA 801	<i>CI</i> 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5	VEL 71.9 72.3 71.6 76.7 dBA 726

	FHV	VA-RD-77-108	HIGHWAY	NOISE P	REDICT	ION M	ODEL			
Scenari Road Nam Road Segmer	o: EAPC e: Gilman Spr nt: n/o SR-79	ings Rd.		Project Name: Gilman Mine Job Number: 11381						
SITE	SPECIFIC IN	IPUT DATA		NOISE MODEL INPUTS						
Highway Data				Site Cor	nditions	(Hard	= 10, So	oft = 15)		
Average Daily Peak Hour Peak H	Traffic (Adt): Percentage: our Volume:	29,346 vehicle 10% 2,935 vehicles	is s	Me He	edium Tru eavy Truc	ucks (2 cks (3+	Autos: Axles): Axles):	15 15 15		
Ve	hicle Speed:	55 mph		Vehicle	Mix					
Near/Far La	ne Distance:	58 feet		Veł	nicleType		Day	Evening	Night	Daily
Site Data					A	Autos:	66.9%	11.9%	21.2%	90.12%
Bar Barrier Type (0-W Centerline Dis Centerline Dist. Barrier Distance	rier Height: all, 1-Berm): st. to Barrier: to Observer: to Observer:	0.0 feet 0.0 64.0 feet 64.0 feet 0.0 feet		Noise S Mediu	ledium Ti Heavy Ti ource El Autos m Trucks	rucks: rucks: l <b>evatic</b> s: ( s: 2	64.8% 72.5% ons (in fe ).000 2.297	8.5% 4.7%	26.7% 22.8%	7.50% 2.38%
Pa Pa	ad Elevation:	0.0 feet		Hea	vy Truck: wivalent	s: 8 tDista	3.004 nce (in	Grade Ad	justment	: 0.0
I	Road Grade: Left View: Right View:	0.0 feet 0.0% -90.0 degree 90.0 degree	!S	Mediu Hea	Auto: m Truck: vy Truck:	s: 5 s: 5 s: 5	7.271 7.117 7.132	,		
FHWA Noise Mode	el Calculation	s								
VehicleType	REMEL	Traffic Flow	Distance	Finite	Road	Fre	snel	Barrier Att	en Bei	m Atten
Autos: Medium Trucks: Heavy Trucks:	71.78 82.40 86.40	1.51 -9.28 -14.27	9.0- 9.0- 9.0-	99 97 97 <b>nuation</b> )	-1.20 -1.20 -1.20		-4.70 -4.88 -5.31	0.0 0.0 0.0	000	0.000 0.000 0.000
VehicleType	Lea Peak Hou	r Lea Dav	leal	-venina	Lea	Niaht		l dn	C	NEI
Autos:	71	.1 (	58.6	67.1	Log	64	.8	71.9	9	72.3

Medium Trucks:	71.0	68.3	65.5	65.7	72.5	72.7			
Heavy Trucks:	70.0	67.8	61.9	64.0	71.0	71.1			
Vehicle Noise:	75.5	73.0	70.1	69.7	76.6	76.9			
Centerline Distance to Noise Contour (in feet)									
			70 dBA	65 dBA	60 dBA	55 dBA			
		Ldn:	177	380	820	1,766			
		CNEL:	184	396	852	1,836			

	FH\	WA-RD-77-108	HIGHWA	AY I	NOISE PF	REDICT	ION MC	DDEL			
Scenario. Road Name. Road Segment.	: EAPC : Bridge St. : w/o Gilmar	ı Springs Rd.				Project Job N	Name: lumber:	Gilma 11381	n Mine		
SITE S	PECIFIC IN	IPUT DATA			NOISE MODEL INPUTS						
Highway Data					Site Con	ditions	(Hard =	= 10, S	oft = 15)		
Average Daily Tr	raffic (Adt):	2,884 vehicle	s					Autos:	15		
Peak Hour P	ercentage:	10%			Me	dium Tr	ucks (2	Axles):	15		
Peak Ho	ur Volume:	288 vehicles			He	avy Tru	cks (3+	Axles):	15		
Vehi	icle Speed:	55 mph		H	Vehicle I	Mix					
Near/Far Lane	e Distance:	36 feet		ŀ	Veh	icleTvpe	9	Dav	Evenina	Niaht	Dailv
Site Data							Autos:	66.9%	11.9%	21.2%	89.41%
Barri	ier Heiaht:	0.0 feet			Me	edium T	rucks:	64.8%	8.5%	26.7%	7.45%
Barrier Type (0-Wa	II, 1-Berm):	0.0			ŀ	leavy T	rucks:	72.5%	4.7%	22.8%	3.15%
Centerline Dist.	to Barrier:	50.0 feet		ŀ	Noise Sc	wrce F	levatio	ns (in f	eet)		
Centerline Dist. to	Observer:	50.0 feet		ŀ		Auto	e' 0	000	000		
Barrier Distance to	Observer:	0.0 feet			Mediur	n Truck	s. 2	297			
Observer Height (A	bove Pad):	5.0 feet			Heav	v Truck	s: 8	.004	Grade Ad	iustmen	: 0.0
Pad	Elevation:	0.0 feet				,					
Road	Elevation:	0.0 feet			Lane Eq	uivalen	t Distar	nce (in	feet)		
Ro	oad Grade:	0.0%				Auto	s: 46	.915			
	Left View:	-90.0 degree	s		Mediur	n Truck	s: 46	.726			
ŀ	Right View:	90.0 degree	s		Heav	y Truck	s: 46	.744			
FHWA Noise Model	Calculation	s									
VehicleType	REMEL	Traffic Flow	Distan	ice	Finite	Road	Fres	nel	Barrier Att	en Be	m Atten
Autos:	71.78	-8.60		0.3	1	-1.20		-4.65	0.0	000	0.000
Medium Trucks:	82.40	-19.39		0.3	4	-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	86.40	-23.13		0.3	4	-1.20		-5.43	0.0	000	0.000
Unmitigated Noise	Levels (with	out Topo and I	barrier a	tter	nuation)						
VehicleType L	eq Peak Hou	ır Leq Day	Le	eq E	vening	Leq	Night		Ldn	C	NEL
Autos:	62		9.8		58.3		56.	0	63.1	1	63.
Medium Trucks:	62	.2 5	9.5		56.7		56.	9	63.	7	63.9
Heavy Trucks:	62	4 6	60.2		54.3		56.	4	63.4	1	63.6
Vehicle Noise:	67	.1 6	64.6		61.5		61.	2	68.3	2	68.4
Centerline Distance	to Noise C	ontour (in feet)						1			
			. L	70	dBA	65	dBA	(	50 dBA	55	dBA
		-	.an:	3	58	5	52		1/6	-	579
		CA	IEL:	- 3	99	5	50		182		593

Wednesday, April 17, 2019

Wednesday, April 17, 2019



APPENDIX 9.1:

**OPERATIONAL NOISE LEVEL CALCULATIONS** 





**Observer Location: R1** 

Source: Crushing & Screening Activity Condition: Operational

Project Name: Gilman Springs Mine Job Number: 11381 Analyst: B. Lawson

#### **NOISE MODEL INPUTS Barrier Height:** Noise Distance to Observer 8,406.0 feet 0.0 feet Noise Distance to Barrier: 8,406.0 feet

Barrier Distance to Observer: 0.0 feet Observer Elevation: 1,470.0 feet Noise Source Elevation: 2,005.0 feet Barrier Elevation: 2,005.0 feet

Noise Source Height: 30.0 feet **Observer Height:** 5.0 feet Barrier Type (0-Wall, 1-Berm): 0

Drop Off Coefficient: 20.0

20 = 6 dBA per doubling of distance 15 = 4.5 dBA per doubling of distance

11/5/2019

NOISE MODEL PROJECTIONS									
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax		
Reference (Sample)	30.0	72.7	0.0	0.0	0.0	0.0	0.0		
Distance Attenuation	8,406.0	-48.9	-48.9	-48.9	-48.9	-48.9	-48.9		
Shielding (Barrier Attenuation)	8,406.0	0.0	0.0	0.0	0.0	0.0	0.0		
Raw (Distance + Barrier)		23.8	-48.9	-48.9	-48.9	-48.9	-48.9		
60 Minute Hourly Adjustmer	nt	23.8	-48.9	-48.9	-48.9	-48.9	-48.9		

STATIONARY SOURCE NOISE PREDICTION MODEL								
Observer Location: R1	Project Name: Gilman Springs Mine							
Source: Loader Activity & Backup Alarms	Job Number: 11381							
Condition: Operational	Analyst: B. Lawson							
NOISE MO	DEL INPUTS							
Noise Distance to Observer 8,123.0 feet	Barrier Height:	0.0 feet						
Noise Distance to Barrier: 8,123.0 feet	Noise Source Height:	8.0 feet						
Barrier Distance to Observer: 0.0 feet	Observer Height:	5.0 feet						
Observer Elevation: 1,470.0 feet	Barrier Type (0-Wall, 1-Berm):	0						
Noise Source Elevation: 2,005.0 feet	Drop Off Coefficient:	20.0						
Barrier Elevation: 2,005.0 feet	20 = 6  dBA per doubling  d	of distance						

15 = 4.5 dBA per doubling of distance

NOISE MODEL PROJECTIONS								
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax	
Reference (Sample)	30.0	79.8	0.0	0.0	0.0	0.0	0.0	
Distance Attenuation	8,123.0	-48.7	-48.7	-48.7	-48.7	-48.7	-48.7	
Shielding (Barrier Attenuation)	8,123.0	0.0	0.0	0.0	0.0	0.0	0.0	
Raw (Distance + Barrier)		31.1	-48.7	-48.7	-48.7	-48.7	-48.7	
60 Minute Hourly Adjustmen	nt	31.1	-48.7	-48.7	-48.7	-48.7	-48.7	

#### **Observer Location: R1**

*Source:* Heavy Equipment & Dozers *Condition:* Operational

Project Name: Gilman Springs Mine Job Number: 11381 Analyst: B. Lawson

# NOISE MODEL INPUTS

Noise Distance to Observer8,123.0 feetNoise Distance to Barrier:8,123.0 feetBarrier Distance to Observer:0.0 feet

Observer Elevation: 1,470.0 feet Noise Source Elevation: 2,005.0 feet Barrier Elevation: 2,005.0 feet Barrier Height:0.0 feetNoise Source Height:8.0 feetObserver Height:5.0 feet

Barrier Type (0-Wall, 1-Berm): 0 Drop Off Coefficient: 20.0

> 20 = 6 dBA per doubling of distance 15 = 4.5 dBA per doubling of distance

NOISE MODEL PROJECTIONS									
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax		
Reference (Sample)	30.0	84.0	0.0	0.0	0.0	0.0	0.0		
Distance Attenuation	8,123.0	-48.7	-48.7	-48.7	-48.7	-48.7	-48.7		
Shielding (Barrier Attenuation)	8,123.0	0.0	0.0	0.0	0.0	0.0	0.0		
Raw (Distance + Barrier)		35.3	-48.7	-48.7	-48.7	-48.7	-48.7		
60 Minute Hourly Adjustmer	nt	35.3	-48.7	-48.7	-48.7	-48.7	-48.7		

STATIONARY SOURCE NOISE PREDICTION MODEL									
Observer Location: R1	Project Name: Gilman Springs Mine								
Source: Haul Truck Loading & Pass-bys	Job Number: 11381								
Condition: Operational	Analyst: B. Lawson								
NOISE MODEL INPUTS									
Noise Distance to Observer 9,753.0 feet	Barrier Height:	0.0 feet							
Noise Distance to Barrier: 9,753.0 feet	Noise Source Height:	12.0 feet							
Barrier Distance to Observer: 0.0 feet	Observer Height:	5.0 feet							
Observer Elevation: 1,470.0 feet Noise Source Elevation: 2,005.0 feet	Barrier Type (0-Wall, 1-Berm): Drop Off Coefficient:	0 20.0							

Barrier Elevation: 2,005.0 feet

20 = 6 dBA per doubling of distance 15 = 4.5 dBA per doubling of distance

NOISE MODEL PROJECTIONS							
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax
Reference (Sample)	50.0	62.1	0.0	0.0	0.0	0.0	0.0
Distance Attenuation	9,753.0	-45.8	-45.8	-45.8	-45.8	-45.8	-45.8
Shielding (Barrier Attenuation)	9,753.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		16.3	-45.8	-45.8	-45.8	-45.8	-45.8
60 Minute Hourly Adjustmer	nt	16.3	-45.8	-45.8	-45.8	-45.8	-45.8

11/5/2019

#### **Observer Location: R2**

*Source:* Crushing & Screening Activity *Condition:* Operational

Project Name: Gilman Springs Mine Job Number: 11381 Analyst: B. Lawson

# NOISE MODEL INPUTS Noise Distance to Observer 3,735.0 feet Barrier Height: 0.0 feet

Barrier Distance to Observer:0.0 feetObserver Elevation:1,503.0 feetNoise Source Elevation:2,005.0 feetBarrier Elevation:2,005.0 feet

Noise Distance to Barrier: 3,735.0 feet

Noise Source Height:0.0 feetObserver Height:5.0 feet

11/5/2019

Barrier Type (0-Wall, 1-Berm): 0 Drop Off Coefficient: 20.0

> 20 = 6 dBA per doubling of distance 15 = 4.5 dBA per doubling of distance

NOISE MODEL PROJECTIONS								
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax	
Reference (Sample)	30.0	72.7	0.0	0.0	0.0	0.0	0.0	
Distance Attenuation	3,735.0	-41.9	-41.9	-41.9	-41.9	-41.9	-41.9	
Shielding (Barrier Attenuation)	3,735.0	0.0	0.0	0.0	0.0	0.0	0.0	
Raw (Distance + Barrier)		30.8	-41.9	-41.9	-41.9	-41.9	-41.9	
60 Minute Hourly Adjustmer	nt	30.8	-41.9	-41.9	-41.9	-41.9	-41.9	

STATIONARY SOURCE NOISE PREDICTION MODEL 11/						
<b>Observer Location: R2</b> Source: Loader Activity & Backup Alarms <i>Condition:</i> Operational	Project Name: Gilman Springs Mine Job Number: 11381 Analyst: B. Lawson					
NOISE MO	DEL INPUTS					
Noise Distance to Observer 3,735.0 feet	Barrier Height:	0.0 feet				
Noise Distance to Barrier: 3,735.0 feet	Noise Source Height:	8.0 feet				
Barrier Distance to Observer: 0.0 feet	Observer Height:	5.0 feet				
Observer Elevation: 1,503.0 feet	Barrier Type (0-Wall, 1-Berm):	0				
Noise Source Elevation: 2,005.0 feet	Drop Off Coefficient:	20.0				
Barrier Elevation: 2,005.0 feet	20 = 6  dBA per doubling  d	of distance				

15 = 4.5 dBA per doubling of distance
PROJECTIONS

NOISE MODEL PROJECTIONS							
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax
Reference (Sample)	30.0	79.8	0.0	0.0	0.0	0.0	0.0
Distance Attenuation	3,735.0	-41.9	-41.9	-41.9	-41.9	-41.9	-41.9
Shielding (Barrier Attenuation)	3,735.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		37.9	-41.9	-41.9	-41.9	-41.9	-41.9
60 Minute Hourly Adjustmen	it	37.9	-41.9	-41.9	-41.9	-41.9	-41.9

#### **Observer Location: R2**

Source: Heavy Equipment & Dozers Condition: Operational

Project Name: Gilman Springs Mine Job Number: 11381 Analyst: B. Lawson

# **NOISE MODEL INPUTS**

Noise Distance to Observer 3,735.0 feet Noise Distance to Barrier: 3,735.0 feet Barrier Distance to Observer: 0.0 feet

> Observer Elevation: 1,503.0 feet Noise Source Elevation: 2,005.0 feet Barrier Elevation: 2,005.0 feet

**Barrier Height:** 0.0 feet Noise Source Height: 8.0 feet **Observer Height:** 5.0 feet

Barrier Type (0-Wall, 1-Berm): 0 Drop Off Coefficient: 20.0

> 20 = 6 dBA per doubling of distance 15 = 4.5 dBA per doubling of distance

NOISE MODEL PROJECTIONS							
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax
Reference (Sample)	30.0	84.0	0.0	0.0	0.0	0.0	0.0
Distance Attenuation	3,735.0	-41.9	-41.9	-41.9	-41.9	-41.9	-41.9
Shielding (Barrier Attenuation)	3,735.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		42.1	-41.9	-41.9	-41.9	-41.9	-41.9
60 Minute Hourly Adjustmer	nt	42.1	-41.9	-41.9	-41.9	-41.9	-41.9

STATIONARY SOURCE NOISE PREDICTION MODEL					
Observer Location: R2	Project Name: Gilman Springs Mine				
Source: Haul Truck Loading & Pass-bys	Job Number: 11381				
Condition: Operational	Analyst: B. Lawson				
NOISE MOD	EL INPUTS				
Noise Distance to Observer 5,412.0 feet	Barrier Height:	0.0 feet			
Noise Distance to Barrier: 5,412.0 feet	Noise Source Height:	12.0 feet			
Barrier Distance to Observer: 0.0 feet	Observer Height:	5.0 feet			
Observer Elevation: 1,503.0 feet	Barrier Type (0-Wall, 1-Berm):	0			
Noise Source Elevation: 2,005.0 feet	Drop Off Coefficient:	20.0			
Barrier Elevation: 2,005.0 feet	20 = 6  dBA per doubling  d	of distance			

20 = 6 dBA per doubling of distance 15 = 4.5 dBA per doubling of distance

NOISE MODEL PROJECTIONS							
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax
Reference (Sample)	50.0	62.1	0.0	0.0	0.0	0.0	0.0
Distance Attenuation	5,412.0	-40.7	-40.7	-40.7	-40.7	-40.7	-40.7
Shielding (Barrier Attenuation)	5,412.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		21.4	-40.7	-40.7	-40.7	-40.7	-40.7
60 Minute Hourly Adjustmen	nt	21.4	-40.7	-40.7	-40.7	-40.7	-40.7

11/5/2019

**Observer Location: R3** 

Source: Crushing & Screening Activity Condition: Operational

Project Name: Gilman Springs Mine Job Number: 11381 Analyst: B. Lawson

#### **NOISE MODEL INPUTS** Barrier Height: Noise Distance to Observer 3,842.0 feet 0.0 feet Noise Source Height: 30.0 feet Noise Distance to Barrier: 3,842.0 feet

Barrier Distance to Observer: 0.0 feet Observer Elevation: 1,458.0 feet Noise Source Elevation: 2,005.0 feet Barrier Elevation: 2,005.0 feet

**Observer Height:** 5.0 feet Barrier Type (0-Wall, 1-Berm): 0 Drop Off Coefficient: 20.0

20 = 6 dBA per doubling of distance 15 = 4.5 dBA per doubling of distance

11/5/2019

NOISE MODEL PROJECTIONS							
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax
Reference (Sample)	30.0	72.7	0.0	0.0	0.0	0.0	0.0
Distance Attenuation	3,842.0	-42.1	-42.1	-42.1	-42.1	-42.1	-42.1
Shielding (Barrier Attenuation)	3,842.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		30.6	-42.1	-42.1	-42.1	-42.1	-42.1
60 Minute Hourly Adjustme	nt	30.6	-42.1	-42.1	-42.1	-42.1	-42.1

STATIONARY SOURCE NOISE PREDICTION MODEL						
<b>Observer Location: R3</b> Source: Loader Activity & Backup Alarms Condition: Operational	Project Name: Gilman Springs Mine Job Number: 11381 Analyst: B. Lawson					
NOISE MO	DDEL INPUTS					
Noise Distance to Observer 3,970.0 feet	Barrier Height:	0.0 feet				
Noise Distance to Barrier: 3,970.0 feet	Noise Source Height:	8.0 feet				
Barrier Distance to Observer: 0.0 feet	Observer Height:	5.0 feet				
Observer Elevation: 1,458.0 feet	Barrier Type (0-Wall, 1-Berm):	0				
Noise Source Elevation: 2,005.0 feet	Drop Off Coefficient:	20.0				
Barrier Elevation: 2,005.0 feet	20 = 6  dBA per doubling  c	of distance				

per doubling of distance 15 = 4.5 dBA per doubling of distance

NOISE MODEL PROJECTIONS							
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax
Reference (Sample)	30.0	79.8	0.0	0.0	0.0	0.0	0.0
Distance Attenuation	3,970.0	-42.4	-42.4	-42.4	-42.4	-42.4	-42.4
Shielding (Barrier Attenuation)	3,970.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		37.4	-42.4	-42.4	-42.4	-42.4	-42.4
60 Minute Hourly Adjustmer	nt	37.4	-42.4	-42.4	-42.4	-42.4	-42.4

#### **Observer Location: R3**

*Source:* Heavy Equipment & Dozers *Condition:* Operational

Project Name: Gilman Springs Mine Job Number: 11381 Analyst: B. Lawson

## NOISE MODEL INPUTS

Noise Distance to Observer3,970.0 feetNoise Distance to Barrier:3,970.0 feetBarrier Distance to Observer:0.0 feet

Observer Elevation: 1,458.0 feet Noise Source Elevation: 2,005.0 feet Barrier Elevation: 2,005.0 feet Barrier Height:0.0 feetNoise Source Height:8.0 feetObserver Height:5.0 feet

Barrier Type (0-Wall, 1-Berm): 0 Drop Off Coefficient: 20.0

> 20 = 6 dBA per doubling of distance 15 = 4.5 dBA per doubling of distance

NOISE MODEL PROJECTIONS							
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax
Reference (Sample)	30.0	84.0	0.0	0.0	0.0	0.0	0.0
Distance Attenuation	3,970.0	-42.4	-42.4	-42.4	-42.4	-42.4	-42.4
Shielding (Barrier Attenuation)	3,970.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		41.6	-42.4	-42.4	-42.4	-42.4	-42.4
60 Minute Hourly Adjustmer	nt	41.6	-42.4	-42.4	-42.4	-42.4	-42.4

STATIONARY SOURCE NOISE PREDICTION MODEL						
Observer Location: R3	Project Name: Gilman Springs Mine					
Source: Haul Truck Loading & Pass-bys	Job Number: 11381					
Condition: Operational	Analyst: B. Lawson					
NOISE MODE	L INPUTS					
Noise Distance to Observer 2,500.0 feet	Barrier Height:	0.0 feet				
Noise Distance to Barrier: 2,500.0 feet	Noise Source Height:	12.0 feet				
Barrier Distance to Observer: 0.0 feet	Observer Height:	5.0 feet				
Observer Elevation: 1,458.0 feet Noise Source Elevation: 1,809.0 feet	Barrier Type (0-Wall, 1-Berm): Drop Off Coefficient:	0 20.0				

Barrier Elevation: 1,809.0 feet

20 = 6 dBA per doubling of distance 15 = 4.5 dBA per doubling of distance

NOISE MODEL PROJECTIONS							
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax
Reference (Sample)	50.0	62.1	0.0	0.0	0.0	0.0	0.0
Distance Attenuation	2,500.0	-34.0	-34.0	-34.0	-34.0	-34.0	-34.0
Shielding (Barrier Attenuation)	2,500.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		28.1	-34.0	-34.0	-34.0	-34.0	-34.0
60 Minute Hourly Adjustmer	nt	28.1	-34.0	-34.0	-34.0	-34.0	-34.0

11/5/2019

**Observer Location: R4** 

Source: Crushing & Screening Activity Condition: Operational

Project Name: Gilman Springs Mine Job Number: 11381 Analyst: B. Lawson

#### **NOISE MODEL INPUTS** Barrier Height: Noise Distance to Observer 8,041.0 feet 0.0 feet

Barrier Distance to Observer: 0.0 feet Observer Elevation: 1,579.0 feet Noise Source Elevation: 2,005.0 feet Barrier Elevation: 2,005.0 feet

Noise Distance to Barrier: 8,041.0 feet

Noise Source Height: 30.0 feet **Observer Height:** 5.0 feet

11/5/2019

Barrier Type (0-Wall, 1-Berm): 0 Drop Off Coefficient: 20.0

> 20 = 6 dBA per doubling of distance 15 = 4.5 dBA per doubling of distance

NOISE MODEL PROJECTIONS							
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax
Reference (Sample)	30.0	72.7	0.0	0.0	0.0	0.0	0.0
Distance Attenuation	8,041.0	-48.6	-48.6	-48.6	-48.6	-48.6	-48.6
Shielding (Barrier Attenuation)	8,041.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		24.1	-48.6	-48.6	-48.6	-48.6	-48.6
60 Minute Hourly Adjustmer	nt	24.1	-48.6	-48.6	-48.6	-48.6	-48.6

STATIONARY SOURCE NOISE PREDICTION MODEL 11/5/20						
Observer Location: R4	Project Name: Gilman Springs Mine					
Source: Loader Activity & Backup Alarms	Job Number: 11381					
Condition: Operational	Analyst: B. Lawson					
NOISE MO	DEL INPUTS					
Noise Distance to Observer 7,702.0 feet	Barrier Height:	0.0 feet				
Noise Distance to Barrier: 7,702.0 feet	Noise Source Height:	8.0 feet				
Barrier Distance to Observer: 0.0 feet	Observer Height:	5.0 feet				
Observer Elevation: 1,579.0 feet	Barrier Type (0-Wall, 1-Berm):	0				
Noise Source Elevation: 2,005.0 feet	Drop Off Coefficient:	20.0				
Barrier Elevation: 2,005.0 feet	20 = 6  dBA per doubling  c	of distance				

20 = 6 dBA per doubling of distance 15 = 4.5 dBA per doubling of distance

NOISE MODEL PROJECTIONS							
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax
Reference (Sample)	30.0	79.8	0.0	0.0	0.0	0.0	0.0
Distance Attenuation	7,702.0	-48.2	-48.2	-48.2	-48.2	-48.2	-48.2
Shielding (Barrier Attenuation)	7,702.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		31.6	-48.2	-48.2	-48.2	-48.2	-48.2
60 Minute Hourly Adjustmer	nt	31.6	-48.2	-48.2	-48.2	-48.2	-48.2

#### **Observer Location: R4**

*Source:* Heavy Equipment & Dozers *Condition:* Operational

Project Name: Gilman Springs Mine Job Number: 11381 Analyst: B. Lawson

# NOISE MODEL INPUTS

Noise Distance to Observer7,702.0 feetNoise Distance to Barrier:7,702.0 feetBarrier Distance to Observer:0.0 feet

Observer Elevation: 1,579.0 feet Noise Source Elevation: 2,005.0 feet Barrier Elevation: 2,005.0 feet Barrier Height:0.0 feetNoise Source Height:8.0 feetObserver Height:5.0 feet

Barrier Type (0-Wall, 1-Berm): 0 Drop Off Coefficient: 20.0

> 20 = 6 dBA per doubling of distance 15 = 4.5 dBA per doubling of distance

NOISE MODEL PROJECTIONS							
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax
Reference (Sample)	30.0	84.0	0.0	0.0	0.0	0.0	0.0
Distance Attenuation	7,702.0	-48.2	-48.2	-48.2	-48.2	-48.2	-48.2
Shielding (Barrier Attenuation)	7,702.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		35.8	-48.2	-48.2	-48.2	-48.2	-48.2
60 Minute Hourly Adjustmer	nt	35.8	-48.2	-48.2	-48.2	-48.2	-48.2

STATIONARY SOURCE NOISE PREDICTION MODEL							
Observer Location: R4	Project Name: Gilman Springs Mine						
Source: Haul Truck Loading & Pass-bys	Job Number: 11381						
Condition: Operational	Analyst: B. Lawson						
NOISE MODEL INPUTS							
Noise Distance to Observer 6,334.0 feet	Barrier Height:	0.0 feet					
Noise Distance to Barrier: 6,334.0 feet	Noise Source Height:	12.0 feet					
Barrier Distance to Observer: 0.0 feet	Observer Height:	5.0 feet					
Observer Elevation: 1,579.0 feet	Barrier Type (0-Wall, 1-Berm): Drop Off Coefficient:	0 20.0					
Noise Source Elevation: 1,5/9.0 feet							

Barrier Elevation: 1,579.0 feet

20 = 6 dBA per doubling of distance 15 = 4.5 dBA per doubling of distance

NOISE MODEL PROJECTIONS							
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax
Reference (Sample)	50.0	62.1	0.0	0.0	0.0	0.0	0.0
Distance Attenuation	6,334.0	-42.1	-42.1	-42.1	-42.1	-42.1	-42.1
Shielding (Barrier Attenuation)	6,334.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		20.0	-42.1	-42.1	-42.1	-42.1	-42.1
60 Minute Hourly Adjustmer	nt	20.0	-42.1	-42.1	-42.1	-42.1	-42.1

11/5/2019

APPENDIX 9.2:

**REFERENCE MEASUREMENT PHOTOS** 





## JN:11381 Gilman Springs Mine



1\_Crushing 33, 56' 34.102400"116, 51' 52.152100"

2\_Screening 33, 56' 30.476900"116, 51' 49.432900"





3\_Mining Equipment 33, 56' 31.973800"116, 51' 51.547800"

4\_Loader Pass-By 33, 56' 34.102400"116, 51' 52.152100"



5\_Loader Backup Alarm\_1 33, 55' 34.309300"116, 52' 3.852500" 6\_Loader Backup Alarm\_2 33, 56' 35.503200"116, 51' 52.454200"

## JN:11381 Gilman Springs Mine



7\_Haul Truck 33, 56' 30.325900"116, 51' 48.773800"

8\_Haul Truck 33, 56' 30.325900"116, 51' 48.773800"



9\_Dozer 33, 31' 16.660000"117, 37' 0.310000"



10\_Heavy Equipment 33, 31' 16.710000"117, 37' 0.530000"

APPENDIX 9.3:

**REFERENCE BLASTING CALCULATIONS** 


# **BLAST AT CLOSEST RECEIVER LOCATION**

### **Scaled Distance**

Source: ISEE's Blaster's Handbook, 2018 Edition.

#### **Square Root Scaled Distance**

#### $SD_2 = R / W^{1/2}$



Distance to closest receiver location as shown on Exhibit 9-A to the worst-case blast location. Maximum charge weight provided by the Project Applicant.



## **Peak Particle Velocity**





# PPV = 0.10 in/sec

Vibration Amplitude Equations For Various Blasting Industries							
Industry	Metric Equations mm/sec.	U.S. Equations in./sec.	Confidence level	Source			
General	PPV = 1,140(SD <sub>2</sub> )-1.6	PPV = 160(SD <sub>2</sub> )-1.6	Best Fit	DuPont			
Construction	PPV = 173(SD <sub>2</sub> )-1.6	$PPV = 24.2(SD_2)^{-1.6}$	Lower Bound	Oriard			
Construction	PPV = 1,730(SD <sub>2</sub> )-1.6	PPV = 242(SD <sub>2</sub> )-1.6	Upper Bound	Oriard (2005)			
Construction	$PPV = 4,320(SD_2)^{-1.6}$	$PPV = 605(SD_2)^{-1.6}$	Upper Bound - High Confinement	Oriard (2005)			
Construction	PPV = 53(SD <sub>2</sub> )-1.09	$PPV = 5(SD_2)^{-1.09}$	Best Fit	USBM RI 8507			
Quarries	PPV = 1,090(SD <sub>2</sub> ) <sup>-1.82</sup>	PPV = 182(SD <sub>2</sub> )-1.82	Best Fit	USBM Bulletin 656			
Coal Mines	$PPV = 905(SD_2)^{-1.52}$	PPV = 119(SD <sub>2</sub> )-1.52	Best Fit	USBM RI 8507			
Coal Mines	PPV = 3,330(SD <sub>2</sub> )-1.52	$PPV = 438(SD_2)^{-1.52}$	Upper bound	USBM RI 8507			
Coal - Low Frequency sites	PPV = 1,252(SD <sub>2</sub> ) <sup>-1.31</sup>	PPV = 138(SD <sub>2</sub> ) <sup>-1.31</sup>	Best Fit	USBM RI 9226			

## Air Overpressure/Airblast

#### **Cubed Root Scaled Distance**



**Air Overpressure Prediction** 

 $P = A * SD_{3}^{-B}$ 



## Project (Worst-Case)



Quarry Best Fit

P = 0.0072 psi

Air Overpressure Prediction Equations							
Blasting	Metric Equations mb	U.S. Equations psi	Statistical Type	Source			
Open air (no confinement)	$P = 3589 \times SD_3^{-1.38}$	$P = 187 \times SD_{3}^{-1.38}$	Best Fit	Perkins			
Coal mines (parting)	$P = 2596 \times SD_{3}^{-1.62}$	$P = 169 \times SD_3^{-1.62}$	Best Fit	USBM RI 8485			
Coal mines (highwall)	$P = 5.37 \times SD_{3}^{-0.79}$	$P = 0.162 \times SD_{3}^{-0.79}$	Best Fit	USBM RI 8485			
Quarry face	$P = 37.1 \times SD_{3}^{-0.97}$	$P = 1.32 \times SD_{3}^{-0.97}$	Best Fit	USBM RI 8485			
Metal Mine	$P = 14.3 \times SD_{3}^{-0.71}$	$P = 0.401 \times SD_{3}^{-0.71}$	Best Fit	USBM RI 8485			
Construction (average)	$P = 24.8 \times SD_{3}^{-1.1}$	$P = 1 \times SD_3^{-1.1}$	Best Fit	Oriard (2005)			
Construction (highly confined)	$P = 2.48 \times SD_{3}^{-1.1}$	$P = 0.1 \times SD_{3}^{-1.1}$	Best Fit	Oriard (2005)			
Buried (total confinement)	$P = 1.73 \times SD_{3}^{-0.96}$	$P = 0.061 \times SD_{3}^{-0.96}$	Best Fit	USBM RI 8485			

### Decibels (Linear)

# $P_{s} = 20 * log(P / P_{0})$

P = 0.0072 psi

 $P_0 = 2.9E-09$  pascals

Reference value: 2.9 \* 10<sup>-9</sup> lbs/inch<sup>2</sup>



