

CHAPTER 3.8 NOISE

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This section evaluates the acoustics and general noise characteristics in the areas that may be affected by the Proposed Project. This section provides a brief technical background on “sound” (noise pressure, exposure, existing environment, effect on people), as well as existing noise sources and levels within the Project vicinity. The following noise analysis considers the suitability of the Proposed Project area for the proposed mining and reclamation use and the effect of Proposed Project noise upon sensitive receptors in the area. This evaluation reviews applicable federal, State, and local noise regulations, followed by analysis of potential noise impacts associated with construction and operation of the Proposed Project. Where necessary, mitigation measures are recommended to reduce potential adverse noise impacts. This noise evaluation also includes a discussion of the residual and cumulative impacts of the Proposed Project.

3.8.1 EXISTING ENVIRONMENT

Technical Background

Sound is mechanical energy transmitted by pressure waves through a medium such as air. Noise is defined as unwanted sound. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). In particular, the sound pressure level has become the most common descriptor used to characterize the “loudness” of an ambient sound level. Sound pressure level is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain.

Sound pressure fluctuations can be measured in units of hertz (Hz), which correspond to the frequency of a particular sound. Typically, sound does not consist of a single frequency, but rather a broad band of frequencies varying in levels of magnitude (sound power). The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. As a consequence, when assessing potential noise impacts, sound is measured using an electronic filter that de-emphasizes the frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ear’s decreased sensitivity to low and extremely high frequencies. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA).¹ Frequency A-weighting follows an international standard methodology of frequency de-emphasis and is typically applied to community noise measurements.

¹ All noise levels reported herein reflect A-weighted decibels unless otherwise stated.

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Sample representative noise sources and their corresponding A-weighted noise levels are shown in **Table 3.8-1 Typical Noise Levels**.

Table 3.8-1 Typical Noise Levels

Noise Level (dBA)	Outdoor Activity	Indoor Activity
90+	Gas lawn mower at 3 feet, jet flyover at 1,000 feet	Rock Music Concert
80-90	Diesel truck at 50 feet	Loud television at 3 feet
70-80	Gas lawn mower at 100 feet, noisy urban area	Garbage disposal at 3 feet, vacuum cleaner at 10 feet
60-70	Commercial area	Normal speech at 3 feet
40-60	Quiet urban daytime, traffic at 300 feet	Large business office, dishwasher next room
20-40	Quiet rural, suburban nighttime	Concert hall (background), library, bedroom at night
10-20	Quiet rural nighttime	Broadcast / recording studio
0	Lowest threshold of human hearing	Lowest threshold of human hearing

Source: Modified from Caltrans Technical Noise Supplement, 1998

Noise Exposure and Community Noise

An individual's noise exposure is a measure of the noise experienced by the individual over a period of time. A noise level is a measure of noise at a given instant in time. The noise levels presented in **Table 3.8-1 Typical Noise Levels** represent noise measured at a given instant in time; however, noise levels rarely persist consistently over a long period of time. Rather, community noise varies continuously over time because of the contributing sound sources of the community noise environment. Community noise is primarily the product of many distant noise sources, which constitute a relatively stable background noise, with the individual contributors unidentifiable. The background noise level changes throughout a typical day, but does so gradually, corresponding with the addition and subtraction of distant noise sources such as traffic and wind. What makes community noise constantly variable throughout a day, besides the slowly changing background noise, is the addition of short duration single event noise sources (e.g., aircraft flyovers, motor vehicles, sirens), which are readily identifiable to the individual.

These successive additions of sound to the community noise environment varies the community noise level from instant to instant requiring the measurement of noise exposure over a period of time to accurately characterize a community noise environment and evaluate cumulative noise

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impacts. This time-varying characteristic of environmental noise is described using statistical noise descriptors. The most frequently used noise descriptors are summarized below:

Leq: The equivalent sound level is used to describe noise over a specified period of time, typically one hour, in terms of a single numerical value. The Leq is the constant sound level, which would contain the same acoustic energy as the varying sound level, during the same time period (i.e., the average noise exposure level for the given time period).

Lmax: The instantaneous maximum noise level for a specified period of time.

L50: The noise level that is equaled or exceeded 50 percent of the specified time. This is the median noise level during the specified time.

L90: The noise level that is equaled or exceeded 90 percent of the specified time. The L90 is often considered the background noise level averaged over the specified time.

Lx: The noise level that is equaled or exceeded x percent of the specified time.

DNL: The Day/Night Average Sound Level is the 24-hour day and night A-weighted noise exposure level, which accounts for the greater sensitivity of most people to nighttime noise by weighting noise levels at night. Noise between 10:00 p.m. and 7:00 a.m. is weighted (penalized) by adding 10 dBA to take into account the greater annoyance from nighttime noise. (Also referred to as “Ldn.”)

CNEL: Similar to the DNL, the Community Noise Equivalent Level (CNEL) adds a 5-dBA “penalty” for the evening hours between 7:00 p.m. and 10:00 p.m. in addition to a 10-dBA penalty between the hours of 10:00 p.m. and 7:00 a.m.

Effects of Noise on People

The effects of noise on people can be placed into three categories:

- Subjective effects of annoyance, nuisance, dissatisfaction;
- Interference with activities such as speech, sleep, learning; and
- Physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers in industrial plants generally experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise, or the corresponding reactions of annoyance and dissatisfaction. A wide variation exists in the individual thresholds of annoyance, and different tolerances to noise tend to develop based on an individual’s past experiences with noise. Thus, an important way of predicting a human reaction to a new noise environment is the way it

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compares to the existing environment to which one has adapted: the so called “ambient noise” level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur:

- Under controlled conditions in an acoustics laboratory, the trained healthy human ear is able to discern changes in sound levels of 1 dBA;
- Outside these controlled conditions, the trained ear can detect changes of 2 dBA in normal environmental noise;
- It is widely accepted that the average healthy ear, however, can barely perceive changes in the noise level of 3 dBA or less;
- A change in level of 5 dBA is a readily perceptible increase in noise level; and
- A 10 dBA change is recognized as twice as loud as the original source (Caltrans, 1998).

These relationships occur in part because of the logarithmic nature of sound and the decibel system. The human ear perceives sound in a non-linear fashion; hence, the decibel scale was developed. Because the decibel scale is based on logarithms, two noise sources do not combine in a simple additive fashion, rather logarithmically. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA.

Noise Attenuation

Stationary point sources of noise, including stationary mobile sources such as idling vehicles, attenuate (lessen) at a rate of 6 to 7.5 dBA per doubling of distance from the source, depending on the topography of the area and environmental conditions (i.e., atmospheric conditions and noise barriers, either landscaping or manufactured). Widely distributed noise, such as a large industrial facility spread over many acres or a street with moving vehicles (known as a “line” source), would typically attenuate at a lower rate, approximately 3 to 4.5 dBA each time the distance doubles from the source, which also depends on environmental conditions (Caltrans, 1998). Noise from large construction sites will exhibit characteristics of both “point” and “line” sources and attenuation will therefore generally range between 4.5 and 7.5 dBA each time the distance doubles. Exterior noises will attenuate between 20 and 25 dBA in interior spaces (Burn, 1994). Noise levels can also be reduced if large barriers are located between the source and receptors. Typical noise barriers in open-pit mine settings are berms, stockpiles, buildings, and mine faces.

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Existing Noise Sources and Levels

Short and Long Term Noise Level Measurements

In order to characterize the noise conditions in the Proposed Project vicinity, five short-term measurements were made in the Proposed Project area with concurrent observations recorded. The five noise monitoring locations near the Proposed Project are shown on **Figure 3.8-1 Noise Monitoring Location Map** and the noise measurements are summarized in **Table 3.8-2 Existing Noise Levels in the Proposed Project Area**. Typical background noise levels (L90) ranged from 43 to 61 dBA. Primary noise sources identified during the noise measurement locations included vehicle traffic, trains and train horns, and occasional birds and aircraft-related noise.

Three 24-hour noise measurements were also taken from noise measurement locations 1-3 for three consecutive days (refer to **Figure 3.8-1 Noise Monitoring Location Map**). The consecutive three day noise measurement readings are further summarized in **Table 3.8-2 Existing Noise Levels in the Proposed Project Area**. Complete charts of the 24-hour plots of the noise measurement data are provided in the Noise Appendix (Appendix E). Measurement Readings at Locations 1-3 over a 24-Hour Period include one-hour noise sampling for Leq, Lmax, L10, and L90, over three 24-hour periods at three different locations. The Ldn values for the 24-hour measurements were between 56 to 78 dBA. Existing noise levels throughout the Proposed Project area should be similar to the noise measurements and their corresponding distance to major roadways. Because the major noise source in the area is related to traffic along major roadway segments and train noise, actual noise levels would vary in loudness based upon the distance from these major roads.

Location 1 is just south of the Proposed Project site on the fence line approximately 36 feet north of the centerline of Los Angeles Street. Noise measurements and observations at this location indicate that current noise levels south of the Proposed Project are 75 to 78 dBA CNEL. The noise contours would be reduced approximately 4.5 dBA for each doubling of the reference distance (36 feet) from the center of Los Angeles Street. Locations near Los Angeles Street currently exceed the City of Baldwin Park General Plan exterior noise standards (at the south fence line) for Industrial land uses (70 dBA CNEL, as shown in **Table 3.8-4 City of Baldwin Park Interior and Exterior Noise Standards**).

Location 2 is just west of the Proposed Project site on the fence line approximately 35 feet east of the centerline of North Park Avenue. Location 2 noise measurements and observations indicate that current noise levels near the residential area west of the Proposed Project along North Park Avenue (57 to 60 dBA CNEL) currently comply with the City of Baldwin Park General Plan exterior noise standards for residential land uses (65 dBA CNEL, as shown in **Table 3.8-4 City of Baldwin Park Interior and Exterior Noise Standards**).

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Location 3 is just north of the Proposed Project site on the fence line approximately 35 feet south of the centerline of Olive Street. Location 3 noise measurements and observations indicate that current noise levels near the residential area north of the Proposed Project along Olive Street (67 dBA CNEL) currently exceed the City of Baldwin Park General Plan exterior noise standards (65 dBA CNEL), shown in **Table 3.8-4 City of Baldwin Park Interior and Exterior Noise Standards**).

Table 3.8-2 Existing Noise Levels in the Proposed Project Area

Location Description	Time Period	Noise Levels (dBA)	Noise Sources and Observations – Noise Levels (dBA)
Location 1 Fence line of Proposed Project, 36 feet north of the centerline of Los Angeles St.	Tuesday - Thursday, May 20-22, 2014	CNELs: 75, 76, 78 Hourly Average Leq's: 59–82 Hourly L90's: 43–61	Long-term measurements do not identify specific noise sources.
	Monday, May 19, 2014: 3:40 p.m.– 3:50 p.m.	5- minute sampling Leq's: 70, 70 L90's: 57, 56	Vehicle traffic along Los Angeles St. (dBA): 68, 70, 76, 77, 76, 75, 77.
	Monday, May 19, 2014: 5:22 p.m.– 5:32 p.m.	5- minute sampling Leq's: 71, 80 L90's: 52, 53	Vehicle traffic along Los Angeles St. (dBA): 71, 73, 75, 78, 78, 86, 78. Train Horn (dBA): 100.
	Tuesday, May 20, 2014: 8:09 a.m.– 8:19 a.m.	5- minute sampling Leq's: 71, 69 L90's: 55, 55	Vehicle traffic along Los Angeles St. (dBA): 74, 75, 77.
Location 2 Fence line of Proposed Project, 35 feet east of the centerline of N Park Ave. across from the 4525 N Park Ave. Residence.	Tuesday - Thursday, May 20-22, 2014	CNELs: 60, 58, 57 Hourly Average Leq's: 44–66 Hourly L90's: 43-50	Long-term measurements do not identify specific noise sources.
	Monday, May 19, 2014: 2:55 p.m.– 3:05 p.m.	5- minute sampling Leq's: 55, 57 L90's: 46, 45	Vehicle traffic along N Park Ave. (dBA): 61, 66. Train Horn (dBA): 58. Train Engine Noise (dBA): 58. Birds chirping and strong winds at times. Rattling of a nearby flagpole.
	Monday, May 19, 2014: 5:07 p.m.– 5:17 p.m.	5- minute sampling Leq's: 53, 54 L90's: 46, 45	Vehicle traffic along N Park Ave. (dBA): 63. Train Horn (dBA): 61. Airplane Flyover (dBA): <50. Train Engine Noise (dBA): 53. Landscaping Noise (dBA): 63. Birds chirping and strong winds at times. Rattling of a nearby flagpole.

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Location Description	Time Period	Noise Levels (dBA)	Noise Sources and Observations – Noise Levels (dBA)
	Tuesday, May 20, 2014: 8:23 a.m.– 8:33 a.m.	5- minute sampling Leq's: 50, 51 L90's: 45, 46	Train Horn (dBA): 57. Train Engine Noise (dBA): 60. Birds chirping and occasional rooster. Calm, very little wind.
Location 3 Fence line of Proposed Project, 35 feet south of the centerline of Olive St. across from the 15017 Olive St. Residence.	Tuesday - Thursday, May 20-22, 2014	CNELs: 67, 67, 67 Hourly Average Leq's: 50–67 Hourly L90's: 43-56	Long-term measurements do not identify specific noise sources.
	Monday, May 19, 2014: 3:20 p.m.– 3:30 p.m.	5- minute sampling Leq's: 64, 63 L90's: 50, 48	Vehicle traffic along Olive St. (dBA): 71, 74, 75 (bus). Birds chirping.
	Monday, May 19, 2014: 4:50 p.m.– 5:00 p.m.	5- minute sampling Leq's: 65, 66 L90's: 53, 50	Vehicle traffic along Olive St. (dBA): 70, 75 (Semi-Truck). Train Horn (dBA): <60. Birds Chirping.
	Tuesday, May 20, 2014: 7:38 a.m.– 7:48 a.m.	5- minute sampling Leq's: 65, 66 L90's: 55, 54	Vehicle traffic along Olive St. (dBA): 69, 71, 74, 74, 75. Birds chirping.
Location 4 Corner of Nubia St. and Azusa Canyon Rd. 25 feet from centerline of Nubia St. and 50 feet from centerline of Azusa Canyon Rd.	Monday, May 19, 2014: 4:05 p.m.– 4:15 p.m.	5- minute sampling Leq's: 67, 67 L90's: 55, 52	Vehicle traffic along Azusa Canyon Rd. (dBA): 65, 68, 74, 78, 79 (Semi-Truck). Lots of industrial trucks and buses.
	Tuesday, May 20, 2014: 7:53 a.m.– 8:03 a.m.	5- minute sampling Leq's: 70, 68 L90's: 60, 59	Vehicle traffic along Azusa Canyon Rd. (dBA): 75, 75, 76, 76 (Semi-Truck). Dog barking.
Location 5 Corner of Arrow Hwy. and Elton St across from Ted's Truck and Auto Parts (on the dam side). Approximately 40 feet from centerline of Arrow Hwy.	Monday, May 19, 2014: 4:23 p.m.– 4:33 p.m.	5- minute sampling Leq's: 72, 74 L90's: 63, 66	Vehicle traffic along Arrow Hwy. (dBA): 80, 80, 80, 81, 83, 84. Lots of garbage trucks, semi-trucks, and dump trucks.
	Tuesday, May 20, 2014: 7:23 a.m.– 7:33 a.m.	5- minute sampling Leq's: 75, 75 L90's: 68, 69	Vehicle traffic along Arrow Hwy. (dBA): 78, 81, 81, 83. Lots of semi-trucks. Helicopter overhead.

Source: RCH Group, 2014

Figure 3.8-1 Noise Monitoring Locations

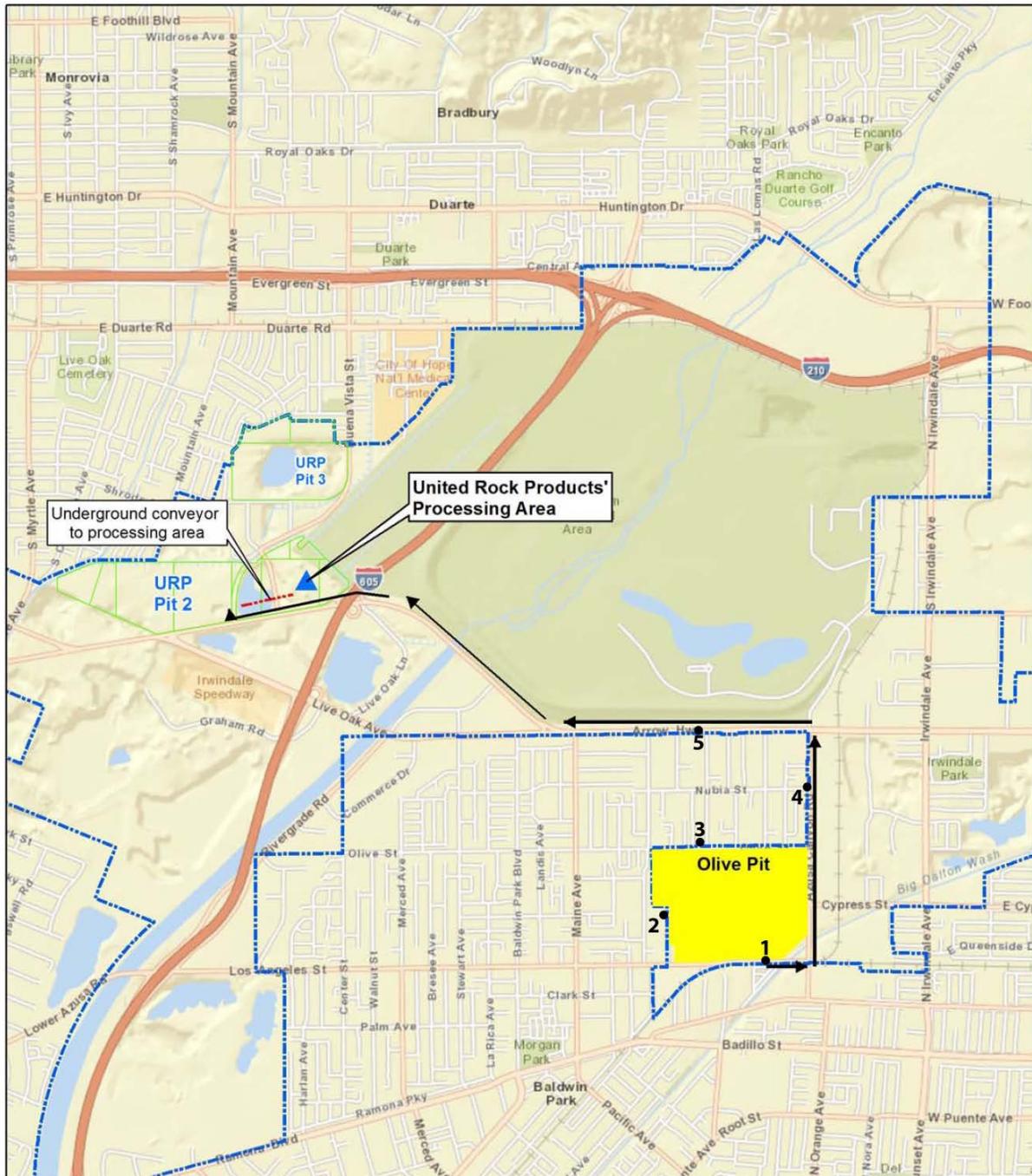
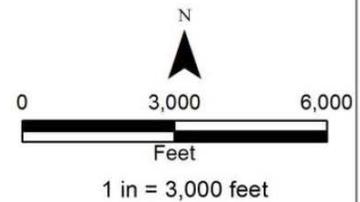


Figure 3.8-1

Noise Measurement Locations

- # Measurement Locations
- ▭ United Rock Parcels
- ▭ City of Irwindale Boundary
- ▭ Olive Pit Project

Notes: May 2014
Source: ESRI



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Sensitive Receptors

Some land uses are considered more sensitive to ambient noise levels than others because of the amount of noise exposure, in terms of both duration and insulation from noise, and the types of activities typically involved. Residences, motels and hotels, schools, libraries, churches, hospitals, nursing homes, auditoriums, and parks and other outdoor recreation areas generally are more sensitive to noise than are commercial and industrial land uses. The Proposed Project site is bounded by Olive Street to the north, Azusa Canyon Road to the east, Los Angeles Street to the south, North Park Avenue, and residential land on the west. Residential land uses are situated approximately 120 feet south of the property line (mobile home park in West Covina), approximately 80 feet north of the property line (Baldwin Park) and adjacent to the property line on the west (Baldwin Park). Geddes Elementary School and Pleasant View Elementary School are approximately 200 feet west and 700 feet north of the property line, respectively.

3.8.2 REGULATORY SETTING

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. Local regulation of noise involves implementation of general plan policies and noise ordinance standards. Local general plans identify general principles intended to guide and influence development plans; local noise ordinances establish standards and procedures for addressing specific noise sources and activities.

Occupational Safety and Health Act of 1970

Federal codes, primarily the Occupational Safety and Health Act of 1970 (OSHA), govern worker exposure to noise levels. These regulations would be applicable to all phases of the Proposed Project and are designed to limit worker exposure to noise levels of 85 dBA or lower over an 8-hour period (Title 29, Code of Federal Regulations [CFR], Section 1910.95).

United States Environmental Protection Agency

The United States Environmental Protection Agency (U.S. EPA) has established general guidelines for noise levels in sensitive areas in order to provide state and/or local governments' guidance in establishing local laws, ordinances, rules, or standards. The U.S. EPA guidelines suggest that the average residential outdoor noise level be 55 dBA, and the indoor level be 45 dBA (U.S. EPA, 1974). The indoor level also applies to sensitive noise receptors such as hospitals and schools. Most metropolitan areas in the U.S. have outdoor noise levels above the 55 dBA guideline.

Federal regulations have established noise limits for medium and heavy trucks (more than 4.5 tons, gross vehicle weight rating) under Title 40 Code of Federal Regulations (CFR) Part 205,

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Subpart B. The federal truck pass-by noise standard is 80 dBA at 15 meters from the centerline of the vehicle pathway. These standards are implemented through regulatory controls on truck manufacturers.

U.S. Department of Labor, Mine Safety and Health Administration (MSHA)

The mission of the Mine Safety and Health Administration (MSHA) is to administer the provisions of the Federal Mine Safety and Health Act of 1977 (Mine Act) and to enforce compliance with mandatory safety and health standards as a means to eliminate fatal accidents; to reduce the frequency and severity of nonfatal accidents; to minimize health hazards; and, to promote improved safety and health conditions in the Nation's mines. MSHA carries out the mandates of the Mine Act at all mining and mineral processing operations in the United States, regardless of size, number of employees, commodity mined, or method of extraction (U.S. DOL, 2000).

MSHA's new noise standards (1999) require mine operators to monitor workplace noise exposure and provide for miners and their representatives to observe the monitoring. The standards establish several levels requiring mine operators to take action:

- Miners exposed to an average sound level of 85 decibels (85 dBA) or more over an 8-hour period must be enrolled in a hearing protection program, which will include special training, hearing tests, and hearing protection.
- If workplace noise levels reach 90 dBA or more over an 8-hour period, mine operators must use feasible engineering and administrative controls to reduce noise levels. Hearing protectors are required to be provided and worn if the permissible exposure level cannot be achieved using feasible engineering and administrative controls.
- At workplace noise levels of 105 dBA or more over an 8-hour period, mine operators must ensure the use of both ear plug and earmuff type hearing protectors.
- At no time during the work shift may noise levels exceed 115 dBA.

California Noise Exposure Regulations and Title 8, CCR, Section 5095

State of California regulations (California Noise Exposure Regulations and Title 8, CCR, Section 5095) address worker exposure to noise levels. These regulations limit worker exposure to noise levels of 85 dBA or lower over an 8-hour period. The State has not established noise levels for various non-work-related environments.

The State of California established noise limits for vehicles licensed to operate on public roads. The pass-by standard for heavy trucks is consistent with the federal limit of 80 dBA. The pass-by standard for light trucks and passenger cars (less than 4.5 tons, gross vehicle rating) is also 80 dBA at 15 meters from the centerline. These standards are implemented through controls on

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vehicle manufacturers and by legal sanctions on vehicle operators by State and local law enforcement officials.

City of Irwindale General Plan – Public Safety Element

The City of Irwindale 2020 General Plan – Public Safety Element establishes policies relative to the reduction and mitigation of natural and manmade hazards, such as noise, that must be considered in future planning and decision-making (City of Irwindale, 2008). The City’s policies related to noise issues stress the importance of protecting residents from excessive noise and reducing the high levels of noise exposure associated with the existing development and transportation facilities in the City. Specific policies include:

- *Safety Element Policy 5.* The City of Irwindale will work towards reducing noise exposure in the City by considering noise and land use compatibility in land use planning.
- *Safety Element Policy 6.* The City of Irwindale will continue to investigate strategies that will be effective in reducing the community’s exposure to harmful noise levels.

The City’s General Plan recognizes the State Office of Noise Control’s Guidelines for the Preparation and Content of Noise Elements of General Plans, which is a guide for compatibility of noise-sensitive land uses in areas subject to noise levels of 55 to 80 dBA CNEL or Ldn. Residential uses are normally unacceptable in areas exceeding 70 dBA CNEL; and conditionally acceptable between 55-70 dBA CNEL for low-density single-family dwelling units, duplexes, and mobile homes, and between 60-70 dBA CNEL for multiple-family units. Schools, libraries, hospitals, and nursing homes are treated as noise-sensitive land uses, requiring acoustical studies within areas exceeding 60 dBA CNEL. Commercial/professional office buildings and industrial land uses are normally unacceptable in areas exceeding 75 dBA CNEL, and are conditionally acceptable within 67 to 78 dBA CNEL (for commercial and professional offices only). While the City’s General Plan does not specifically acknowledge the State’s noise guidelines for playgrounds and neighborhood parks, these land uses are normally unacceptable in areas exceeding 70 dBA CNEL, and are clearly unacceptable in areas exceeding 75 dBA CNEL.

In general, mining operations in the City of Irwindale are not considered to be significant stationary noise sources. Because noise travels in a line-of-sight manner and attenuates with distance, the depth of the quarries provides significant separation and the pit walls serve as a barrier around the operating equipment (City of Irwindale, 2008).

Irwindale Municipal Code

The City of Irwindale regulates noise through enforcement of its noise ordinance, Irwindale Municipal Code (IMC) Chapter 9.28 Noise Regulation (City of Irwindale, 2009). Per IMC Section 9.28.030, if the ambient noise level is less than designated in **Table 3.8-3 City of**

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Irwindale Ambient Base Noise Levels below, the ambient base noise level in **Table 3.8-3** shall govern.

Table 3.8-3 City of Irwindale Ambient Base Noise Levels

Zone	10 p.m. to 7 a.m.	7 a.m. to 10 p.m.
Residential	45 dBA	50 dBA
Commercial	50 dBA	55 dBA
Industrial	60 dBA	70 dBA

Source: Irwindale Municipal Code, Chapter 9.28.030

Per IMC Section 9.28.040, it is unlawful for any person to willfully make or continue, or cause to be made or continued any noise at a level which exceeds by more than five dBA the ambient or the ambient base level as set forth in Section 9.28.030, whichever is greater, when measured at any boundary line of the property from which the noise emanates.

IMC Section 9.28.110 states it is unlawful for any person within a residential zone, or within a radius of five hundred feet therefrom, to operate equipment or perform any outside construction or repair work on buildings, structures, or projects or to operate any pile driver, steam shovel, pneumatic hammer, derrick, steam or electric hoist or other construction type device on a development requiring a city permit, in such a manner that noise is produced which would exceed the ambient or the ambient base noise level by more than five (5) dBA when measured at any boundary line of the property from which the noise emanates, unless beforehand authorization therefore has been duly obtained from the building inspector. Such activity is unlawful without a permit during all hours on Sunday. All construction governed by this Section of the IMC is limited to occur between seven (7) a.m. and seven (7) p.m.

IMC Section 9.28.230 Exclusions to chapter applicability, states the provisions of this chapter shall not apply to:

- A. Sound produced by motor vehicles as regulated by sound limitation provisions of the California Vehicle Code when such vehicle is located or operated on any public street, right-of-way or highway;
- B. Aircraft operated in conformity with federal law;
- C. Public and private schools, organized activities including sports, carnivals, assemblies and other regular activities;
- D. Construction, operation, maintenance and repairs of equipment, apparatus or facilities of park and recreation departments, public works projects or essential public services and facilities, including those of public utilities subject to the regulatory jurisdiction of the California Public Utilities Commission;

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- E. Activities of the federal, state or local government;
- F. Any noise continuing for less than thirty seconds at intervals greater than once in three hours.

Although the City of Irwindale believes that the exemption for “Activities of the federal, state or local government” in IMC section 9.28.230 applies as the City is the land owner and United Rock is the proposed operator for the City, for purposes of conservatively analyzing impacts, the application of the exemption was not considered.

The Proposed Project is located within the City of Irwindale, in close proximity to boundaries of the City of Baldwin Park on the north and west, and the City of West Covina on the south; therefore, the noise policies and ordinances of both of these cities are also considered below.

City of Baldwin Park General Plan – Noise Element

The City of Baldwin Park has included noise goals and policies in their 2020 General Plan – Noise Element to ensure that Baldwin Park residents will be protected from excessive noise (City of Baldwin Park, 2002). Specific goals include:

- *Goal 2.0:* Minimize noise spillover from commercial and industrial uses into nearby residential neighborhoods.
- *Goal 4.0:* Reduce noise impacts from transportation noise impacts.
- *Goal 5.0:* Develop measures to control excessive noise citywide.

The City of Baldwin Park has developed noise standards for various types of land uses. These standards are shown in **Table 3.8-4 City of Baldwin Park Interior and Exterior Noise Standards**.

Baldwin Park Code of Ordinances

Sections 130.30 through 130.44 of the Baldwin Park Code of Ordinances establish the City’s noise control. Per Section 130.34, it is unlawful for any person within the City to make, cause or allow to be produced noise which is received on property occupied by another person within the designated zone, in excess of the following levels, except as expressly provided otherwise as shown in **Table 3.8-5 City of Baldwin Park Ambient Base Noise Levels**.

Section 130.37(E) states: It is unlawful for any person within a residential zone, or within a radius of 500 feet therefrom, to operate equipment or perform any outside construction or repair work on buildings, structures, or projects to operate any pile driver, power shovel, pneumatic hammer, derrick, power hoist, or any other construction type device (between the hours of 7 p.m. of one day and 7 a.m. of the next day) in such a manner that a reasonable person of normal sensitiveness residing in the area is caused discomfort or annoyance unless beforehand a permit therefor has been duly obtained from the Department of Public Works.

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Table 3.8-4 City of Baldwin Park Interior and Exterior Noise Standards

Land Use	Interior Noise Standards	Exterior Noise Standards
Residential	CNEL 45 dB	CNEL 65 dB
Private Offices, Churches, Libraries, etc.	Leq(12) 45 dBA	--
Schools	Leq(12) 45 dBA	Leq(12) 67 dBA
General Offices, clerical, etc.	Leq(12) 50 dBA	--
Bank, Lobby, Retail, etc.	Leq(12) 55 dBA	--
Manufacturing, Warehousing, etc.	Leq(12) 65 dBA	--
Parks, Playgrounds	--	CNEL 65 dB
Golf Course, Outdoor Spectator Sports, etc.	--	CNEL 70 dB

CNEL: Community noise equivalent level
 Leq(12): The A-weighted equivalent sound level averaged over a 12-hour period (usually the hours of operations)

Source: City of Baldwin Park, 2020 General Plan, Noise Element, 2008

Table 3.8-5 City of Baldwin Park Ambient Base Noise Levels

Zone	7 a.m. to 7 p.m.	7 p.m. to 7 a.m.
Residential – Single Family	55 dBA	45 dBA
Residential – Multi Family	60 dBA	55 dBA
Commercial	65 dBA	60 dBA
Industrial	70 dBA	70 dBA

Note: At the boundary line between a residential property and a commercial and manufacturing property, the noise level of the quieter zone shall be used.
 (B) Corrections to noise limits. The numerical limits given in the table shall be adjusted by the following corrections, where appropriate (Based on the following noise conditions):
 Noise Condition 1: Repetitive impulsive noise, pure tones, and sound with cyclically varying amplitude. (Correction = -5 dBA)
 Noise Condition 2: Steady whine, screech or hum (Correction = -5 dBA)
 Noise Condition 3: Noise occurring more than 5 but less than 15 minutes per hour. (Correction = +2 dBA)
 Noise Condition 4: Noise occurring more than 1 but less than 5 minutes per hour. (Correction = +5 dBA)
 Noise Condition 5: Noise occurring less than 1 minute per hour. (Correction = +7 dBA)

Source: Baldwin Park Code of Ordinances, Section 130.30,

[http://www.amlegal.com/nxt/gateway.dll/California/baldwin/cityofbaldwinparkcaliforniacodeofordinan?f=templates\\$fn=default.htm\\$3.0\\$vid=amlegal:baldwinpark_ca; last accessed 6/10/14](http://www.amlegal.com/nxt/gateway.dll/California/baldwin/cityofbaldwinparkcaliforniacodeofordinan?f=templates$fn=default.htm$3.0$vid=amlegal:baldwinpark_ca; last accessed 6/10/14)

CHAPTER 3.8 NOISE

City of West Covina General Plan – Noise Element

The City of West Covina has included noise goals and policies in their 1985 General Plan – Noise Element (City of West Covina, 1985). Specific goals include:

- Ensure that all areas of the city are free from excessive noise and that appropriate maximum levels be adopted for residential, commercial, and industrial areas.
- Reduce new noise sources to the maximum extent possible.
- Reduce to the maximum extent possible, the impact of noise within the city.
- Ensure that land uses are compatible with the related noise characteristics of those uses.

West Covina Code of Ordinances

Section 15-95 (A) states: Regulation: Between the hours of 8 p.m. of one day and 7 a.m. of the next day, it shall be unlawful for any person within a residential zone, or within a radius of five hundred (500) feet therefrom, to operate equipment or perform any outside construction or repair work on buildings, structures, or projects or to operate any pile driver, steam shovel, pneumatic hammer, derrick, steam or electric hoist, or other construction type device in such manner as to create any noise which causes the noise level at the property line to exceed the ambient noise level by more than five (5) decibels unless a permit therefor has been duly obtained in accordance with paragraph (b) of this section. No permit shall be required to perform emergency work as defined in section 15-83 of this article.

Section 15-95 (B) states: Permit procedure: A permit may be issued authorizing noises prohibited by this section whenever it is found that the public interest will be served thereby. Applications for permits shall be in writing, shall be accompanied by an application fee in the amount of five dollars (\$5.00), and shall set forth in detail facts showing that the public interest will be served by the issuance of such permit. Applications shall be made to the building director, provided, however, that, with respect to work upon or involving the use of a public street, alley, building, or other public place under the jurisdiction of the engineering department, applications shall be made to the city engineer. Anyone dissatisfied with the denial of a permit may appeal to the council (City of West Covina).

3.8.3 IMPACT ANALYSIS AND MITIGATION

Methodology

This section evaluates the potential environmental impacts of noise from the Proposed Project extraction and reclamation operations. Impacts were evaluated by measuring the existing noise levels in the Proposed Project area and determining the noise compatibility of the area. Traffic data and a Federal Highway Administration (FHWA) noise model were used to estimate future impacts of traffic-related noise.

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To gather background data and comparable site use data, a site visit was conducted on May 23, 2014 at the Applicant's URP Pit No. 3 located in the City of Irwindale. During the site visit, short-term noise measurements were taken for operating equipment that would have equivalent noise levels to the mining operations of the Proposed Project.

Threshold of Significance

The significance of potential impacts from the Proposed Project on existing noise levels was determined based upon the State CEQA Guidelines Appendix G. Using the criteria listed below, the Proposed Project would be considered to have a significant adverse noise impact if it were to:

- A. Expose persons to or generate noise levels in excess of standards established in the local General Plan or noise ordinance, or applicable standard of other agencies.
- B. Expose persons to or generate excessive ground-borne vibrations or ground-borne noise levels.
- C. Result in substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
- D. Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.
- E. Be located within an airport land use plan or, where such plan has been adopted, within two miles of a public airport and therefore expose people residing or working in the project areas to excess noise levels.
- F. Be located within the vicinity of a private airstrip and therefore expose people residing or working in the project area to excessive noise levels.

For purposes of analyzing subsection a., the Cities of Irwindale, Baldwin Park, and West Covina have adopted the following thresholds of significance:

Temporary Impacts (Access Road Construction)

With temporary noise impacts (construction of a new on-site access road), identification of "substantial increases" depends upon the duration of the impact, the temporal daily nature of the impact, and the absolute change in decibel levels. Per the City of Irwindale noise ordinance, if construction activities are within 500 feet of a residential zone, construction activities exceeding 75 dBA ambient base noise levels between 7 a.m. and 7 p.m. at the property boundary of an industrial zone would be considered a significant impact, unless authorization has been duly obtained beforehand from the building inspector. Per the City of Baldwin Park, if within a radius of 500 feet of a residential zone, construction activities occurring between the hours of 7 p.m. of one day and 7 a.m. of the next day would be considered a significant impact. Per the City of West Covina, if within a radius of 500 feet of a residential zone, construction activities occurring

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between the hours of 8 p.m. of one day and 7 a.m. of the next day would be considered a significant impact.

Operational Impacts (Extraction and Reclamation)

For extraction and reclamation noise impacts, per the City of Irwindale noise ordinance, operational-related noise levels at the property boundary exceeding 75 dBA ambient base noise levels between 7 a.m. and 10 p.m. or 65 dBA between 10 p.m. and 7 a.m. would be considered a significant impact, unless higher noise levels are specifically authorized by permit from the City. Per City of Baldwin Park, operational-related noise levels exceeding the levels shown in **Table 3.8-4 City of Baldwin Park Interior and Exterior Noise Standards** would be considered significant.

In addition to the thresholds adopted by the cities above, for traffic noise, an increase in noise levels of 5 dBA is considered significant where existing noise levels are less than 60 dBA Ldn (Federal Interagency Committee on Noise [FICON] 1992). In addition, an increase in noise of 3 dBA or more is considered significant for existing noise levels between 60 and 65 dBA Ldn, and an increase in noise by 1.5 dBA or more is considered significant for existing noise levels greater than 65 dBA Ldn.

Analysis

THRESHOLD N-1

Would the project cause exposure of persons to or generation of noise levels in excess of standards established in the local General Plan or noise ordinance, or applicable standard of other agencies?

Less than Significant Impact (Construction, Phase I Extraction, Phase II Reclamation)

Less than Significant Impact with Mitigation Incorporated (Phase II Extraction and Phase I Reclamation)

Less than Significant Impact with Mitigation Incorporated (Traffic Noise)

The Proposed Project would include construction of a new on-site access road. The Proposed Project would occur in two extraction phases and two reclamation phases. Phase I reclamation would begin at the conclusion of Phase I extraction. Phase II extraction would occur simultaneously with Phase I reclamation. Phase II reclamation would begin at the conclusion of Phase II extraction.

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Access Road Construction

The Proposed Project would require construction of a new on-site access road and the paving of a half-acre pad on the five-acre loading area. Construction of the new on-site access road and half-acre pad would take place within 500 feet of City of Baldwin Park and City of West Covina residential zones. The access road would ascend from the bottom of the pit along the southern edge of the property to the southeastern corner of the site where it would exit Los Angeles Street. Beginning at Los Angeles Street, the first 200 feet of the access road onto the Proposed Project site would be paved. The half-acre paved pad would be located in the southeast corner in the five-acre loading area.

The noise levels generated by construction equipment vary greatly depending upon factors such as the type and specific model of the equipment, the operation being performed, the condition of the equipment and the prevailing wind direction. The maximum noise levels for various types of construction equipment that typically would be required for the initial construction are provided below in **Table 3.8-6**.

Table 3.8-6: Typical Noise Levels from Construction Equipment (Lmax)

Construction Equipment	Noise Level (dBA at 50 feet)
Dump Truck	88
Portable Air Compressor	81
Concrete Mixer (Truck)	85
Scraper	88
Pump	76
Jackhammer	88
Dozer	87
Paver	89
Generator	76
Backhoe	85

Notes: dBA = A-weighted decibel; Lmax = maximum sound level

Source: Federal Transit Administration, 2006

The values in **Table 3.8-6** are maximum noise levels that would occur intermittently throughout each day of construction and average noise levels from construction would be much lower. As shown above in **Table 3.8-6**, paving would be the loudest noise source taking place during the construction phase. Construction activities would take place approximately 400 feet away from Baldwin Park residences to the west of the Proposed Project site. Since paving would only take place on the first 200 feet of the access road, the loudest noise source would be a scraper (88 dBA Lmax at 50 feet). Based on noise attenuation by distance over hard site conditions (a 6 dBA

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reduction for every doubling of distance), maximum construction noise levels at Baldwin Park residences to the west would be approximately 70 dBA L_{max} at 400 feet. According to Table 3.8-2 and pages 4, 5, and 6 of Noise Appendix E, existing noise levels on N Park Avenue range from 57-60 dBA CNEL and 67-87 dBA L_{max} during construction hours. However, most of the construction would occur well below street level and the pit face would provide a substantial noise barrier reduction. Construction activities would take place approximately 120 feet away from West Covina residences to the south of the Proposed Project site. Based on noise attenuation by distance over hard site conditions (a 6 dBA reduction for every doubling of the reference distance), maximum construction noise levels at West Covina residences to the south would be approximately 81 dBA L_{max} at 120 feet when occurring at street level. According to Table 3.8-2 and pages 1, 2, and 3 of the Noise Appendix E, existing noise levels on Los Angeles Street range from 75-78 dBA CNEL and 82-111 dBA L_{max} during construction hours. Even when paving takes place near street level, intermittent construction noise would be masked by traffic noise on Los Angeles Street.

Per the City of Irwindale noise ordinance, if construction activities are within a radius of 500 feet of a residential zone, construction activities exceeding 75 dBA ambient base noise levels between 7 a.m. and 7 p.m. at the property boundary of an industrial zone would be considered a significant impact, unless authorization therefore has been duly obtained beforehand from the building inspector. Per the City of Baldwin Park and West Covina, if within a radius of 500 feet of a residential zone, construction activities occurring between the hours of 7:00 p.m. of one day and 7:00 a.m. of the next day would be considered a significant impact.

By limiting construction hours to 7 a.m. to 7 p.m. (as identified in Irwindale Municipal Code Section 9.28.110), the Proposed Project would be in compliance with the recommended hours for construction for the Cities of Irwindale, Baldwin Park and West Covina. The Project construction activities (access road construction) are not anticipated to operate outside of 7 a.m. to 7 p.m. based on the fact that it would be a violation of the City of Irwindale's Code and subject to enforcement, including fines, as well as any agreement between the City and United Rock. Based on this, the impact from construction noise is not expected to violate adopted standards and is expected to be less than significant.

Phase I Extraction

Phase I extraction mining activities would involve excavation, earth movement, and loading operations. These activities would require the use of an excavator, three rock trucks (capacity of 32 cubic yards), a water truck, a blade, a utility loader, a sweeper, a conveyor, and loading hoppers. Hours of operation for mining activities would take place from Monday through Saturday from 6:00 a.m. to 6:00 p.m. (12 hours per day).

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Extraction activity noise levels in the Proposed Project area would fluctuate depending on the particular type, number, and duration of use of extraction equipment. Refer to **Table 3.8-7 Typical Noise Levels from Excavation and Reclamation Equipment**.

Table 3.8-7 Typical Noise Levels from Excavation and Reclamation Equipment (Lmax)

Equipment	Noise Level (dBA Lmax at 50 ft.)
Excavator	85
Rock Truck	86
Water Truck	84
Utility Loader	80
Sweeper	85
Conveyor	69
Hopper	85
Dragline/ Dredge	86
Blade	82

Notes: dBA = A-weighted decibel; Lmax = maximum sound level

*Source: Federal Highway Administration (FHWA) Roadway Construction Noise Model User's Guide, 2006.
Continental Placer Inc., 2013.*

The following mining equipment noise levels were obtained at a site visit on May 23, 2014 at the Applicant's URP Pit No. 3. The mining equipment noise levels are shown in **Table 3.8 -8** below.

Table 3.8-8 Mining Equipment Noise Levels (Leq)

Equipment	Noise Level (dBA Leq)	Reference Distance (feet)
Excavator + Truck	66	162
Loader + Truck + Hopper+ Conveyor	76	90

Source: RCH Group, 2014

Based upon applying noise attenuation by distance over hard site conditions (a 6 dBA reduction for every doubling of distance) to the values in **Table 3.8-7 and Table 3.8-8**, excavation noise levels are expected to be approximately 70 to 75 dBA Leq at 100 feet. When excavation activities take place close to the surface, noise levels would have a greater potential to impact nearby residences; as the mined pit becomes deeper, noise levels would drop off since there would be no clear line of sight between the source and the receptor. The barrier noise reduction formula is discussed below for use in identifying noise reduction inside the Olive Pit Mine.

Noise levels can be reduced if large barriers are located between the source and receptors. Typical noise barriers in mine settings are berms, stockpiles, buildings, and mine faces. The most

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effective use of noise barriers is to operate the equipment in the mine using the faces as a natural barrier. Formulas have been derived which take into account the noise reduction due to barriers in the path of propagating sound. The Barrier Noise Reduction Formula (see Noise Appendix) is used in this analysis to calculate the noise reduction due to the pit walls (Continental Placer Inc., 2013).

Using the Barrier Noise Reduction Formula, Phase I excavation noise levels were calculated. Pit faces are as high as 100 to 125 feet in some areas of the pit. The noise level estimates below are considered very conservative because they assume a pit face height of 50 feet because the bottom of the pit is uneven and represents extraction patterns of the previous mining activities. The estimates are conservative because excavation equipment noise frequency would be consistent with the front-end loader engine noise (500 Hz); however, a frequency of 250 Hz was used in the calculations in case any lower noise frequencies would be present. Furthermore, the estimates do not assume any noise reductions from attenuation by distance. Indoor noise levels were calculated by assuming at least a 20 dBA reduction due to structures with closed windows (Burn, 1994). Sensitive receptor locations are shown below in **Table 3.8-9 Estimated Phase I Excavation Noise Levels at Sensitive Receptor Locations**.

Table 3.8-9 Estimated Phase I Excavation Noise Levels at Sensitive Receptor Locations (dBA Leq)

Sensitive Receptor	Distances (feet)	Noise Level (dBA Leq) (Outdoors)	Noise Level (dBA Leq) (Indoors)
N Park Avenue Residences (Baldwin Park)	330, 515	53, 55	33, 35
Olive Street Residences (Baldwin Park)	265, 375	51, 53	31, 33
Los Angeles Street (Mobile Home Park)	230, 455	56, 60	36, 40

Note: Significance thresholds used were 65 dBA CNEL for outdoor noise and 45 dBA CNEL for indoor noise (See Table 3.8-4 City of Baldwin Park Interior and Exterior Noise Standards).

Source: RCH Group, 2014

Phase I excavation noise levels were calculated at two different distances away from sensitive receptor locations because excavation activities very close to the pit face could actually be less noisy than excavation activities further away due to barrier noise reduction from the pit face. Although the estimated noise levels above comply with the City of Baldwin Park Interior and Exterior Noise Standards, Phase I excavation activities would generate the highest decibel levels at the northeast corner of the Proposed Project site while excavating a high elevation area left from the extraction of previous mining activities. The closest activities would be approximately 240 feet away from Olive Street residences and would likely involve an excavator operating intermittently. Based on noise attenuation by distance, an excavator operating at 240 feet away would result in exterior noise levels of approximately 62 dBA Leq (Indoor noise level of 42 dBA

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Leq). These noise levels would be temporary and would only occur while they are excavating the high elevation areas in the northeast corner of the Proposed Project area. All other Phase I excavation activities would result in noise levels shown in **Table 3.8-9**.

Based upon this, Phase I extraction noises from the Proposed Project would comply with Baldwin Park operational-related noise levels shown in **Table 3.8-4 City of Baldwin Park Interior and Exterior Noise Standards**. Phase I extraction noises from the Proposed Project would comply with City of Irwindale standards as operational-related noise levels would not exceed the ambient base noise levels shown in **Table 3.8-3** and there are no sensitive receptors in the City of Irwindale in proximity of the Proposed Project. West Covina's general plan and noise ordinance does not contain operational-related noise standards and Phase I extraction sound levels at the mobile home park south of Los Angeles Street would be masked by traffic noise on Los Angeles Street and train noise.

Phase II Extraction and Phase I Reclamation

Phase II Extraction

Phase II extraction would involve excavation, earth movement, and loading operations. Phase II extraction activities would require the use of an excavator, three rock trucks (capacity of 32 cubic yards), a water truck, a blade, a utility loader, a sweeper, a conveyor and loading hoppers, however, a dredge or other method adapted for underwater mining (e.g., dragline, cutter head, or clam) would also be used to extract materials when the water table is encountered. Hours of operation for mining activities would take place from Monday through Saturday from 6:00 a.m. to 6:00 p.m. (12 hours per day).

Based upon the values in **Table 3.8-7 and Table 3.8-8**, excavation noise levels are expected to be approximately 70 to 75 dBA Leq at 100 feet. When excavation activities take place close to the surface, noise levels would have a greater potential to impact nearby residences; as the mined pit becomes deeper, noise levels would drop off since there would be no clear line of sight between the source and the receptor.

Using the Barrier Noise Reduction Formula, Phase II excavation noise levels were calculated. The calculations below were generated using the same conservative assumptions that were used to estimate Phase I excavation noise levels. Indoor noise levels were calculated by assuming at least a 20 dBA reduction due to structures with closed windows. Sensitive receptor locations are shown below in **Table 3.8-10 Estimated Phase II Excavation Noise Levels at Sensitive Receptor Locations**.

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Table 3.8-10 Estimated Phase II Excavation Noise Levels at Sensitive Receptor Locations (dBA Leq)

Sensitive Receptor	Distances (feet)	Noise Level (dBA Leq) (Outdoors)	Noise Level (dBA Leq) (Indoors)
N Park Avenue Residences (Baldwin Park)	190, 510	56, 60	36, 40
Olive Street Residences (Baldwin Park)	265, 550	51, 55	31, 35
Los Angeles Street (Mobile Home Park)	460, 635	55, 57	35, 37

Note: Significance thresholds used were 65 dBA CNEL for outdoor noise and 45 dBA CNEL for indoor noise (See Table 3.8-4 City of Baldwin Park Interior and Exterior Noise Standards).

Source: RCH Group, 2014

Phase II excavation noise levels were calculated at two different distances away from sensitive receptor locations because excavation activities very close to the pit face could actually be less noisy than excavation activities further away due to barrier noise reduction from the pit face. The estimated noise levels above comply with the City of Baldwin Park Interior and Exterior Noise Standards (**Table 3.8-4**). Phase II extraction noises from the Proposed Project would comply with City of Irwindale standards as operational-related noise levels would not exceed the ambient base noise levels shown in **Table 3.8-3** and there are no sensitive receptors in the City of Irwindale in proximity of the Proposed Project site. West Covina's general plan and noise ordinance does not contain operational-related noise standards and Phase II extraction sound levels at the mobile home park south of Los Angeles Street would be masked by traffic noise on Los Angeles Street and train noise.

Phase I Reclamation

Phase I reclamation would involve backfilling the eastern portion of the Olive Pit to be mined in Phase I extraction, resulting in a pad of approximately 32-acres. Phase I reclamation would use the same equipment used during Phase I excavation. Hours of operation for reclamation activities would take place from Monday through Saturday from 6:00 a.m. to 6:00 p.m. (12 hours per day).

Phase I reclamation activity noise levels in the Proposed Project area would fluctuate depending on the particular type, number, and duration of use of reclamation equipment. Since reclamation activities would use the same equipment used in Phase I excavation, noise levels from Phase I excavation (70 to 75 dBA Leq at 100 feet) are assumed for reclamation activity.

Noise from reclamation equipment would not become a significant noise source until the 32-acre pad rises in elevation close to the street level elevation. Once reclamation activities occur close to street level, the pit face would no longer be present to achieve a noise barrier reduction. Reclamation activities could come as close as 100 feet away from residences on Olive Street in the northeast corner of the Proposed Project area. At that distance, average noise levels would be

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approximately 70 to 75 dBA Leq, assuming all hard site conditions. The calculated noise levels would exceed the City of Baldwin Park Interior and Exterior Noise Standards

Based upon this, reclamation noise levels north of the Proposed Project site could be in excess of Baldwin Park operational-related noise levels shown in **Table 3.8-4 City of Baldwin Park Interior and Exterior Noise Standards**. Noise impacts from Phase I reclamation would be potentially significant. The following mitigation measure shall be imposed on the Proposed Project at the onset of the Phase I reclamation activities and be kept in place as long as needed:

MM N-1

Once reclamation backfill has been completed to within 10 feet of the existing street grade, the mine operator (United Rock) shall construct an earthen berm 20 feet in height along the entire length of the northern boundary of the backfilled 32 acre pad as a noise barrier to residences along Olive Street, extending west from Azusa Canyon Road. This earthen berm would be constructed of aggregate extracted from the Olive Pit or back-hauled materials from United Rock Products for development of Phase I reclamation and would essentially be a stockpile of material that is designed to function as a noise reduction buffer.

With imposition of MM N-1, the potential noise impacts from reclamation activities north of Olive Street would be reduced by a minimum of 10 dBA, which would result in average noise levels of approximately 60 to 65 dBA Leq, a level acceptable under the City of Baldwin Park Noise Standards. Per the FHWA Highway Traffic Noise: Analysis and Abatement Guidance document, a noise barrier can achieve a 5 dBA noise level reduction when it is tall enough to break the line-of-sight from the highway to the receiver and it can achieve an approximate 1 dBA additional noise level reduction for each 2 feet of height after it breaks the line-of-sight (FHWA, 2011). Therefore, by conservatively assuming that the 20 foot earthen berm would break the line-of-sight at 10 feet (a 5 dBA reduction), an additional 5 dBA reduction would be achieved by the 10 feet of additional height after breaking the line-of-sight (for a total reduction of 10 dBA). Assuming that the line-of-sight would be broken at 10 feet is conservative because the line-of-sight would generally be much less than 10 feet, because most noise emanating from equipment comes from the engine and the ground (due to movement and ground disturbance from excavation). The minimum 10 dBA reduction is also a conservative estimate because noise reduction from the earthen berm could be much greater depending on the location of Phase I reclamation activities and type of equipment used.

Noise levels from Phase I excavation would also exceed City of Irwindale standards as operational-related noise levels would exceed the ambient base noise level (75 dBA Leq) shown in **Table 3.8-3** at the Proposed Project's eastern property boundary. However, noise from reclamation equipment would not become a significant noise source until the 32-acre pad rises in

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elevation close to the street level elevation. Once reclamation activities occur close to street level, the pit face would no longer be present to achieve a noise barrier reduction.

It is not expected that this would create a significant impact despite exceeding City standards, because the eastern property boundary of the Proposed Project is adjacent to Azusa Canyon Road (a noisy roadway) and the only immediate activities to the east are industrial warehouse activities. The industrial warehouse activities to the east should not be negatively affected by any property boundary noise in excess of City of Irwindale standards. With that said, the City standards will be exceeded and as a conservative assessment, will be treated as a potentially significant impact. The following mitigation measure shall be implemented to insure noise levels along the eastern property boundary meet City standards and reduce any potential significant impact to less than significant.

MM N-2

The applicant shall prepare an operations plan to reduce noise level along the eastern property boundary to less than 75 dBA Leq during the completion of Phase I reclamation;

Or

The applicant shall obtain a permit from the City authorizing noise along the eastern property boundary in excess of City of Irwindale standards during the completion of Phase I reclamation.

With imposition of MM N-1 and MM N-2, the potential noise impacts from Phase I reclamation activities would be reduced to a level acceptable under the City of Baldwin Park and City of Irwindale Noise Standards. The impacts from Phase I reclamation activities would be less than significant with mitigation.

Phase II Reclamation

Phase II reclamation involves use of the site as open space, and possibly for a storm water retention, and/or flood control facility. Reclamation is expected to involve stabilization of the mined slopes, revegetation of the mined slopes using native species, and ensuring public safety through fencing and access restrictions. Phase II reclamation activity noise levels in the Proposed Project area would not be a significant source of noise in the Proposed Project Area, because of the location and attenuation provided by the pit face walls. The noise impacts from Phase II reclamation activities would be less than significant.

Traffic-Related Noise

Based on the Federal Interagency Committee on Noise recommendations for transportation noise standards, a project would be considered to generate a significant impact if it resulted in a 1.5 dBA permanent increase in ambient noise levels in the project vicinity above existing noise levels greater than 65 dBA Ldn at existing residences. Noise levels were determined using the

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Federal Highway Administration (FHWA) Traffic Noise Model FHWA-RD-77-108 calculations and the turning movements in the Olive Pit Mining and Reclamation Project Traffic Impact Analysis (TIA) by Urban Crossroads (Urban Crossroads, 2014). The TIA included traffic scenarios including Existing (2014), Existing Plus Project (2014), Future Plus Project (2016), Future No Project (2035), and Future Plus Project (2035) conditions.

Extraction phases would involve over-the-road haul trucks traveling between the Proposed Project site and United Rock's existing processing plant. Extraction phases would result in 262 one-way truck trips (131 round trips) per day. Extraction transportation would be conducted Monday through Saturday during the hours of 7:00 a.m. to 5:00 p.m. The additional vehicles traveling to and from the site would increase noise levels adjacent to nearby roads.

Various intersections around the Proposed Project area were analyzed and the a.m. peak hour was chosen for the following analysis. Both the a.m. and p.m. peak hour had similar increases compared to their existing conditions, however, the a.m. peak hour has greater existing volumes and a greater increase in vehicle traffic with the Proposed Project. Road segments along the access route from the Proposed Project site to the processing area were analyzed during the a.m. peak hour to estimate project increases and resulting traffic-generated noise increases on roadway links affected by project-related traffic. Noise levels at other times would be lower. The resulting noise increases are shown in **Table 3.8-11**.

The fourth column of numbers in **Table 3.8-11**, which is identified as "B-A" compares the existing traffic in 2014 plus the Project traffic during the a.m. peak hour to the existing (2014) traffic noise. There would be significant project noise increase impacts on receptors adjacent to Roadway Segments 1, 3 and 4 (shown by bold and underline in the table).

The fifth column of numbers in **Table 3.8-11**, which is identified as "C-A", is similar to the fourth column but adds traffic growth in the area projected for 2016. With this additional traffic growth there would be significant project noise increase impacts on receptors adjacent to Roadway Segments 1, 3, 4, and 5 (shown by bold and underline in the table). Roadway Segments 1, 3, and 4 are significant contributions from the project traffic.

The last column of numbers in **Table 3.8-11**, which is identified as "E-A" compares the Project traffic during the a.m. peak hour plus traffic growth in the area projected for 2035 to the existing (2014) traffic noise. There would be significant project noise increase impacts on receptors adjacent to Roadway Segments 1, 3, 4, 5 and 6 (shown by bold and underline in the table).

The eighth column of numbers in **Table 3.8-11**, which is identified as "E-D", shows whether or not the Project is considered to be a cumulatively considerable contribution to the overall significant traffic impact shown in the last column ("E-A"). An increase of more than 1 dBA is considered to be a cumulatively considerable contribution to the overall cumulative traffic noise

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impact. Therefore, there would be cumulatively significant project noise increase impacts on receptors adjacent to Roadway Segments 1, 3 and 4 (shown by bold and underline in the table).

Based on all of the above, it is reasonably foreseeable that the Proposed Project would cause exposure of persons to or generation of noise levels in excess of standards established in the local General Plan or noise ordinance, or applicable standard of other agencies based on traffic related noise. Therefore, traffic related noise impacts are potentially significant and potentially cumulatively significant. The following mitigation measure shall be imposed upon the Proposed Project:

MM N-3

The applicant will include the following mitigation measures as part of the Proposed Project. The applicant shall ensure the following:

- All trucks shall be equipped with Diesel Particulate Filters or a resonator to reduce noise by 3 to 6 dBA.
- No Jake Brakes shall be used.
- All trucks shall be equipped with single exhaust, vertical straight stacks and no turndown.
- Trucks shall also be equipped with automatic transmissions to eliminate unnecessary engine revving.

With implementation of MM N-3 above, road segments along the access route from the Proposed Project site to the processing area would have noise levels shown in **Table 3.8-12** (above). The columns with significant impacts are “C-A” and “E-A”, which both include the impact of cumulative traffic growth not related to the project; and therefore, the overall increase in noise (from the cumulative traffic growth and the project traffic) would be a significant cumulative impact. Columns “B-A” and “E-D” are the project contributions to the near term and future cumulative traffic noise impacts. These increases in these project-contribution columns are 1.0 dBA or less in all cases. Since most people cannot perceive a 1 dBA increase in sound levels (unless in controlled conditions in an acoustics lab), the project contribution (of 1 dBA or less) is not considered to be a cumulatively considerable contribution to the overall cumulative traffic noise impact.

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**Table 3.8-11 Peak-Hour Traffic Noise Levels In the Project Vicinity
Existing (2014) Versus Future (2016 And 2035)**

A.M. Peak Hour Noise Levels, dBA, Leq									
Roadway Segment	(A) Existing (2014)	(B) Existing Plus Project (2014)	(C) Future Plus Project (2016)	(B-A) Change Existing Plus Project (2014) vs. Existing	(C-A) Change Future Plus Project (2016) vs. Existing	(D) Future No Project (2035)	(E) Future Plus Project (2035)	(E-D) Change Future + Project (2035) vs. Future No Project (2035)	(E-A) Change Future (2035) + Project vs. Existing (2014)
1. Azusa Canyon Rd. south of Arrow Hwy. ^{b,c}	67.5	69.2	69.4	<u>1.8</u>	<u>1.9</u>	67.9	69.6	<u>1.7</u>	<u>2.1</u>
2. Arrow Hwy. west of Azusa Canyon Rd. ^{b,c}	74.1	74.6	75.0	0.5	0.8	74.7	75.1	0.4	1.0
3. Azusa Canyon Rd. north of Los Angeles St. ^{b,c}	67.5	69.2	69.4	<u>1.7</u>	<u>1.9</u>	67.9	69.6	<u>1.6</u>	<u>2.1</u>
4. Los Angeles St. west of Azusa Canyon Rd. ^{b,c}	66.5	68.6	68.8	<u>2.1</u>	<u>2.3</u>	67.0	68.9	<u>2.0</u>	<u>2.4</u>
5. Arrow Hwy. east of Rivergrade Rd. ^{b,c}	72.2	73.0	74.0	0.8	<u>1.8</u>	73.6	74.2	0.6	<u>2.0</u>
6. Arrow Hwy. west of Rivergrade Rd. ^{b,c}	73.1	73.7	74.4	0.6	1.3	74.1	74.6	0.5	<u>1.5</u>
<p>a. Considered significant if the incremental increase in noise from traffic is greater than the existing ambient noise level by 1.5 dBA Leq if existing noise levels exceed 65 dBA, Ldn at existing residences, per Federal Interagency Committee on Noise standards for transportation noise. Violations are in bolded and underlined text.</p> <p>b. Road center to receptor distance is 15 meters (approximately 50 feet) for all roadway segments. Noise levels were determined using the Federal Highway Administration (FHWA) Traffic Noise Model FHWA-RD-77-108 calculations.</p> <p>c. The analysis considered the vehicle mix based on existing vehicle type counts and project trip generation by vehicle type. Existing heavy trucks are assumed to be 1% of auto vehicle mix. Traffic speeds for all vehicle classes were set at 40 mph on all roads except Arrow Highway, which is assumed to be 45 mph.</p>									

Source: RCH Group, Inc., 2014

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**Table 3.8-12 Mitigated Peak-Hour Traffic Noise Levels In the Project Vicinity
Existing (2014) Versus Future (2016 And 2035)**

A.M. Peak Hour Noise Levels, dBA, Leq									
Roadway Segment	(A) Existing (2014)	(B) Existing Plus Project (2014)	(C) Future Plus Project (2016)	(B-A) Change Existing Plus Project (2014) vs. Existing	(C-A) Change Future Plus Project (2016) vs. Existing	(D) Future No Project (2035)	(E) Future Plus Project (2035)	(E-D) Change Future + Project (2035) vs. Future No Project (2035)	(E-A) Change Future (2035) + Project vs. Existing (2014)
1. Azusa Canyon Rd. south of Arrow Hwy. ^{b,c,d}	67.5	68.4	68.6	0.9	1.1	67.9	68.8	0.9	1.3
2. Arrow Hwy. west of Azusa Canyon Rd. ^{b,c,d}	74.1	74.4	74.7	0.3	0.6	74.7	74.9	0.2	0.8
3. Azusa Canyon Rd. north of Los Angeles St. ^{b,c,d}	67.5	68.4	68.6	0.9	1.1	67.9	68.8	0.9	1.3
4. Los Angeles St. west of Azusa Canyon Rd. ^{b,c,d}	66.5	67.7	67.8	1.2	1.3	67.0	68.0	1.0	1.5
5. Arrow Hwy. east of Rivergrade Rd. ^{b,c,d}	72.2	72.6	73.7	0.4	1.5	73.6	73.9	0.3	1.7
6. Arrow Hwy. west of Rivergrade Rd. ^{b,c,d}	73.1	73.4	74.1	0.3	1.0	74.1	74.3	0.2	1.2
<p>a. Considered significant if the incremental increase in noise from traffic is greater than the existing ambient noise level by 1.5 dBA Leq if existing noise levels exceed 65 dBA, Ldn at existing residences, per Federal Interagency Committee on Noise standards for transportation noise. Violations are in bolded text.</p> <p>b. Road center to receptor distance is 15 meters (approximately 50 feet) for all roadway segments. Noise levels were determined using the Federal Highway Administration (FHWA) Traffic Noise Model FHWA-RD-77-108 calculations.</p> <p>c. The analysis considered the vehicle mix based on existing vehicle type counts and project trip generation by vehicle type. Existing heavy trucks are assumed to be 1% of auto vehicle mix. Traffic speeds for all vehicle classes were set at 40 mph on all roads except Arrow Highway, which is assumed to be 45 mph.</p> <p>d. The analysis assumed the noise reduction measures in MM N-3 were implemented. A conservative 3 dBA reduction was assumed for Proposed Project trucks.</p>									

Source: RCH Group, Inc., 2014

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THRESHOLD N-2

Would the project cause exposure of persons to or generation of excessive ground-borne vibrations or ground-borne noise levels?

Less than Significant Impact

Depending on the excavation or reclamation equipment used, ground-borne vibrations can be perceptible within 30 to 100 feet of a source. According to the California Department of Transportation's *Transportation and Construction-Induced Vibration Manual*, literature on the subject of adverse vibration effects shows that only blasting, pile driving, and pavement breaking have documented examples of potential damage to buildings. Structural damage from pile driving typically does not occur in buildings more than 50 feet from the location of the activity (Caltrans, 2004). Pile driving and blasting would not be required for excavation or reclamation of the site. In addition, neighboring buildings are more than 100 feet away from excavation activities and reclamation areas. With continuous vibrational events, such as the movement and operation of construction and excavation equipment, 0.1 Peak Particle Velocity (PPV) is the threshold where vibration begins to annoy people and 0.2 PPV is the threshold at which there can be damage to normal dwelling houses (Caltrans, 2004). Equipment used during the Proposed Project's construction and operations, such as loaders, excavators and haul trucks would generate a vibration level of approximately 0.09 PPV at 25 feet (Caltrans, 2004). Vibration levels from the Proposed Project would be below Caltrans vibrational thresholds at 25 feet, which means they would well below vibration thresholds at the closest residences, which are more than 100 feet away. Therefore, it is not reasonably foreseeable that the Proposed Project would result in substantial ground-borne vibrations or noise levels. Therefore, ground-borne vibrations and ground-borne noise impacts would be less than significant impacts.

THRESHOLD N-3

Would the project result in substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Potentially Significant Impact and Potentially Significant Cumulative Impact

As shown in **Table 3.8-2 Existing Noise Levels in the Proposed Project Area**, ambient noise levels are 75-78 dBA CNEL south of Proposed Project adjacent to Los Angeles Street, 57-60 dBA CNEL west of the Proposed Project adjacent to N Park Avenue, and 67 dBA CNEL north of the Proposed Project. Receptors to the north, east, and south of the Proposed Project area would not notice a substantial permanent increase in ambient noise levels with Proposed Project implementation due to the substantial traffic noise sources in between the Proposed Project site and the receptor locations. Olive Street, Azusa Canyon Road, and Los Angeles Street to the north, east, and south of the Proposed Project site produce substantial levels of traffic noise. However, N Park Avenue to the west of the Proposed Project site produces very little traffic

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noise. Therefore, the Proposed Project could potentially result in a substantial permanent increase in ambient noise levels to residences west of the Proposed Project site.

Approximately twenty residences are adjacent to the west of North Park Avenue. The residences closer to Los Angeles Street would most likely not notice a substantial permanent increase in ambient noise levels with Proposed Project implementation due to traffic noise on Los Angeles Street. However, residences further away from Los Angeles Street could notice a substantial permanent increase in ambient noise levels from the Proposed Project. Current ambient noise levels on North Park Avenue away from Los Angeles Street are 57-60 dBA CNEL. Phase I excavation noise levels at these residences would be approximately 53 to 55 dBA Leq. Phase I reclamation noise would not affect these residences because reclamation activities would only occur on the east side of the Proposed Project site. Phase II excavation noise levels at these residences would be approximately 56 to 60 dBA Leq. Therefore, the Proposed Project would not result in a substantial permanent increase in ambient noise levels to residences west of the Proposed Project site as existing measured noise levels are already as high as 66 dBA Leq during the Proposed Project's operational hours (see **Table 3.8-2**).

As noted earlier (Threshold N-1 discussion), implementation of MM N-3 would reduce traffic-related noise levels that would otherwise be a significant cumulative impact. However, the contribution of the Proposed Project would not be considered to be a cumulatively considerable contribution to the overall cumulative traffic noise impact. The unmitigated and mitigated traffic noise increases are shown in **Table 3.8-11 and 3.8-12**. Therefore, traffic-related noise would be considered less than significant with mitigation incorporated.

THRESHOLD N-4

Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Less Than Significant Impact

As noted earlier (Threshold N-1 discussion), construction-related noise levels from the construction of a new on-site access road and the paving of a half-acre pad on the five-acre loading area would take place within 500 feet of City of Baldwin Park and City of West Covina residential zones. By limiting construction hours to 7 a.m. to 7 p.m. (as identified in Irwindale Municipal Code Section 9.28.110), the Proposed Project would be in compliance with the recommended hours for construction for the Cities of Irwindale, Baldwin Park and West Covina.

Construction activities would take place approximately 400 feet away from Baldwin Park residences to the west of the Proposed Project site. Since paving would only take place on the first 200 feet of the access road, the loudest noise source would be a scraper (88 dBA L_{max} at 50 feet). Based on noise attenuation by distance over hard site conditions (a 6-dBA reduction for every doubling of distance), maximum construction noise levels at Baldwin Park residences to

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the west would be approximately 70 dBA Lmax at 400 feet. According to Table 3.8-2 and pages 4, 5, and 6 of Noise Appendix E, existing noise levels on N Park Avenue range from 57-60 dBA CNEL and 67-87 dBA Lmax during construction hours. Construction activities would also take place approximately 120 feet away from West Covina residences to the south of the Proposed Project site. Based on noise attenuation by distance over hard site conditions (a 6-dBA reduction for every doubling of the reference distance), maximum construction noise levels at West Covina residences to the south would be approximately 81 dBA Lmax at 120 feet when occurring at street level. According to Table 3.8-2 and pages 1, 2, and 3 of Noise Appendix E, existing noise levels on Los Angeles Street range from 75-78 dBA CNEL and 82-111 dBA Lmax during construction hours. While the construction activity could slightly increase Lmax noise levels or the frequency of Lmax noise events, it would not substantially change the Lmax noise levels experienced during construction hours at these locations. This would not be considered a substantial change because the noise would (1) be from the initial temporary construction, (2) the levels would not be substantially higher than existing Lmax levels, and (3) construction noise is exempt during the hours that it would occur. Therefore, noise impacts from construction activities would be less than significant.

THRESHOLD N-5

Would the project be located within an airport land use plan or, where such plan has been adopted, within two miles of a public airport and therefore expose people residing or working in the project areas to excess noise levels?

No Impact

The Proposed Project site is not located in an airport land use plan or within two miles of a public airport and therefore would not expose people working in the Proposed Project area to excess noise levels.

THRESHOLD N-6

Would the project be located within the vicinity of a private airstrip and therefore expose people residing or working in the project area to excessive noise levels?

No Impact

The Proposed Project is not located in the vicinity of a private airstrip and therefore would not expose people working in the Proposed Project areas to excessive noise levels.

Mitigation Program

Potentially significant noise impacts could occur at Baldwin Park residences and along the Proposed Project's property boundary during Phase I reclamation. Potentially significant cumulative noise impacts could also occur along the Proposed Project's access route to URP's

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processing area. As a result, the following mitigation measures have been developed to minimize these impacts.

MM N-1

Once reclamation backfill has been completed to within 10 feet of the existing street grade, the mine operator (United Rock) shall construct an earthen berm 20 feet in height along the entire length of the northern boundary of the backfilled 32 acre pad as a noise barrier to residences along Olive Street, extending west from Azusa Canyon Road. This earthen berm would be constructed of aggregate extracted from the Olive Pit or back-hauled materials from United Rock Products for development of Phase I reclamation and would essentially be a stockpile of material that is designed to function as a noise reduction buffer.

MM N-2

The applicant shall prepare an operations plan to reduce noise levels along the eastern property boundary to less than 75 dBA Leq during the completion of Phase I reclamation;

Or

The applicant shall obtain a permit from the City authorizing noise along the eastern property boundary in excess of City of Irwindale standards during the completion of Phase I reclamation.

MM N-3

The applicant has included the following mitigation measures as part of the Proposed Project. The applicant shall ensure the following:

- All trucks shall be equipped with Diesel Particulate Filters or a resonator to reduce noise by 3 to 6 dBA.
- No Jake Brakes shall be used.
- All trucks shall be equipped with single exhaust, vertical straight stacks and no turndown.
- Trucks shall also be equipped with automatic transmissions to eliminate unnecessary engine revving.

3.8.4 SIGNIFICANCE AFTER MITIGATION

After implementation of Mitigation Measures MM N-1, MM N-2, and MM N-3, all project-related noise impacts would be reduced to less than significant.

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3.8.5 CUMULATIVE IMPACTS

A list of all cumulative projects is provided in Chapter 3.0, *Environmental Setting and Impact Analysis*, above.

Would the Proposed Project, combined with other related cumulative projects, have a substantial adverse impact on noise?

Based on professional experience and industry standards, the City's senior noise expert concluded that the Proposed Project's contribution to the identified potentially significant noise impacts that exceed thresholds in **Table 3.8-12** are not cumulatively considerable because:

- The increases contributed by the project are 1.0 dBA or less in all cases. Since most people cannot perceive a 1 dBA increase in sound levels (unless in controlled conditions in an acoustics lab), the project contribution (of 1 dBA or less) is not considered to be a cumulatively considerable contribution to the overall cumulative traffic noise impact.
- The total cumulative impact (project traffic and traffic from other cumulative impacts) is just barely over the 1.5 dBA threshold.

Therefore, the cumulative traffic noise would be significant with the project traffic and traffic from other cumulative projects, but the contribution of the Proposed Project would not be cumulatively considerable (see traffic noise discussion under Threshold N-1 and **Tables 3.8-11** and **3.8-12**).