BAYHORSE SILVER USA INC

Noise Baseline Report

July 2024

Prepared for: Bayhorse Silver USA Inc.

Prepared by: Creative Acoustics Northwest, Inc.

2265 Hideaway Ct., Eugene, Oregon 97401

BAYHORSE MINE PROJECT - EXISTING ENVIRONMENT – NOISE BASELINE REPORT in support of an Operating Permit under MLRR Division 35, OAR 632-035-0025. Oregon Mined Land Reclamation Act, Placer Mines, Coal Mines, And Metal Mines Using Only Gravity Separation.

TABLE OF CONTENTS

1 INTRODUCTION .....5.

2 LOCATION 5

3 REGULATORY FRAMEWORK.....7

4 RESOURCE STUDY AREA..... 8

5 STUDY METHODOLOGY 9

6 Field Studies 12

7 Timing and Duration of Baseline Data Collection and Verification ....

8 Ambient Noise Monitoring Sites .....

9 BASELINE CHARACTERIZATION .....

10 Field Survey Results .....

11 BIBLIOGRAPHY .....

12 CONTACTS .....

13 LIST OF PREPARERS .....

14 LIST OF TABLES

Table 1: Maximum Permissible Project Noise Levels at Noise-Sensitive Properties

Table 2: Maximum Permissible Project Noise Levels in Quiet Areas .....

Table 3: Maximum Permissible Project Impulsive Noise Levels .....

Table 4: SLM Self-Noise Test Results (dBA) .....

Table 5: Ambient Noise Summary (dBA) .....

Table 6: Representative Ambient Noise Levels Measured at Noise Sensitive Properties

Table 7: Proposed Ambient Noise Levels for the Project .....

LIST OF FIGURES

Figure 1: General Location Map 6

Figure 2: Permit Area Map 7

Figure 3: Resource Study Area Map 8

Figure 5: Noise Sensitive Study Area 9

Figure 4: Topographic Location.....10

Figure 6: Ambient Noise Measurement Site .....

LIST OF APPENDICES

Appendix A: Ambient Data, Data Sheets, and Photographs

LIST OF ABBREVIATIONS AND ACRONYMS

ANSI American National Standards Institute

BLM Bureau of Land Management

dB Decibel

dBA A-weighted decibel

dBC C-weighted decibel

DEQ Department of Environmental Quality

DOGAMI Department of Geology and Mineral Industries

L1 fast A-weighted sound level exceeded 1 percent of the time

L10 fast A-weighted sound level exceeded 10 percent of the time

L33 fast A-weighted sound level exceeded 33 percent of the time

L50 fast A-weighted sound level exceeded 50 percent of the time

L67 fast A-weighted sound level exceeded 67 percent of the time

L90 fast A-weighted sound level exceeded 90 percent of the time

Ldn day-night average noise levels

Leq average sound level

Lmax maximum A-weighted sound level during an event

Lmax, slow maximum C-weighted, slow time constant, sound level

Lmin minimum A-weighted sound level during an event

Lpeak maximum value reached by sound pressure

OAR Oregon Administrative Rules

ORS Oregon Revised Statutes

Project Bayhorse Mine Project

SLM Sound Level Meter

NOISE BASELINE REPORT

INTRODUCTION

The purpose of this noise baseline report is to document existing ambient noise levels at a representative location in the study area prior to the start of mining operations at the Bayhorse Silver Mine Project (Project) located between mile 320 and 321 of the Snake River Brownlee Reservoir (Brownlee), eight miles north of the town of Huntington, Baker County, Oregon. The Brownlee is part of the Hells Canyon Complex (HCC) that is nearing the end of a relicensing application by Idaho Power Corporation (IPC).

The Project, that lies entirely within the Idaho Power Corporation Baseline Study Area for the renewal of its Hells Canyon Hells Canyon Dam Complex relicensing; and that has been approved by the State of Oregon as of the date of this study. The Project is zoned by Baker County as ME (Mineral Extraction) and is located at 31690 Snake River Road, approximately 8 miles north of Huntington, Baker County, Oregon, 97907, which is 4 miles off US Interstate I-84 exit 26, and 30 miles north-west of the city of Ontario on the State Boundary Line with Idaho Oregon (Figure 1, Figure 2).

This baseline report will be included in the Division 35 Operating Permit Application submitted to the Oregon Department of Geology and Mineral Industries (DOGAMI). The format of this report primarily follows other historical noise baseline reports submitted to DOGAMI for other Mine Permitting. The results are included in this report.

The Mine and underground workings are located on Tax Lot 500 and an adjacent unpatented lode mining claim (BH7, land administered by the Bureau of Land Management). Access to the Mine is located on Tax Lot 400 that commences on Snake River (Baker County) Road in Township 13 South Range 45 East W.M., Baker County, Oregon. Together the Property covers an estimated 40 acres.

The Bayhorse Project is designed as a minimal environmental mining project using dry electronic (gravity) to separate mineralized from unmineralized material. Water is used solely for dust suppression purposes, both inside the mine and at the dry sorting location. All historic mining related disturbances, and proposed mining activity will occur on the private, “deeded” ground, with some historic existing underground workings extending under the unpatented lode mining claim BH7. No surface disturbances are anticipated, or planned, on BLM ground.

LOCATION

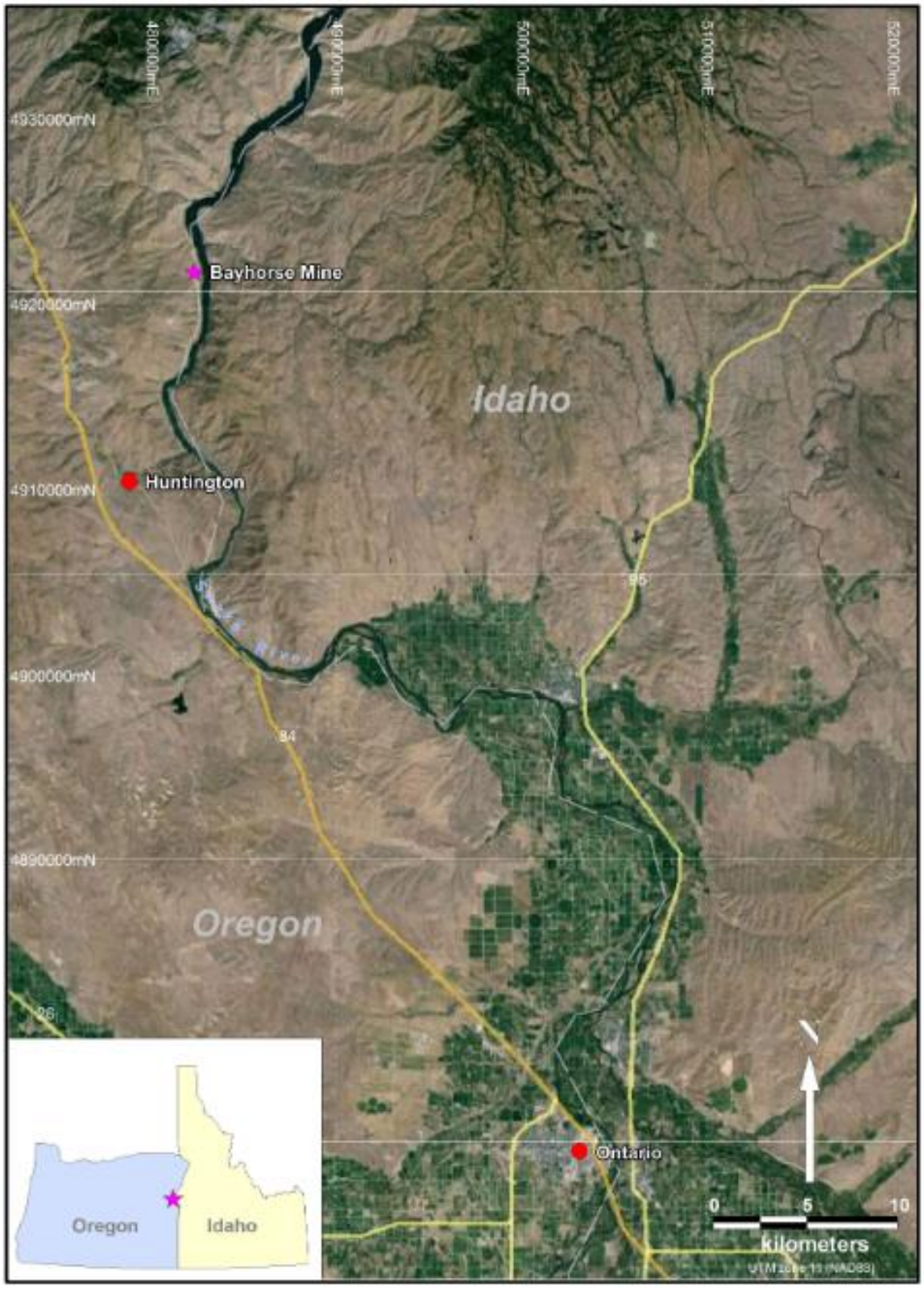


Figure 1. Mine general location.

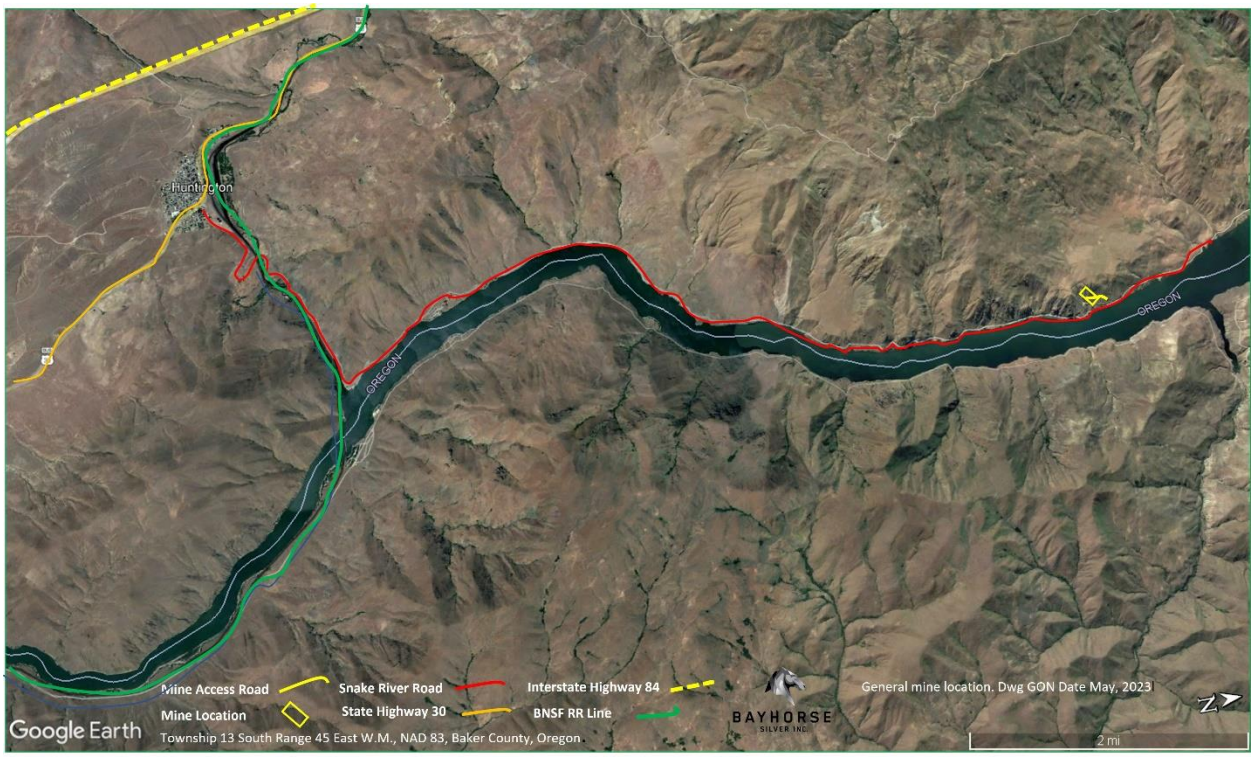


Figure 2. Mine location.

REGULATORY FRAMEWORK

Oregon Revised Statutes (ORS) Chapter 467, Noise Control, describes state policy for noise emissions. ORS 467.120 describes the state policy regarding agricultural, forestry, mining, or rock processing operations. Mining or rock processing noise sources are not exempt from state enforcement within one-half mile of noise-sensitive areas. Oregon Administrative Rules (OAR) Chapter 340, Division 35, contains the noise control regulations and programs applicable to mining operations (OAR 340-035-0035).

The rules establish statewide maximum permissible environmental noise levels for new industrial uses at the nearest noise-sensitive property. A noise-sensitive property means real property normally used for sleeping, or normally used as schools, churches, hospitals or public libraries.

RESOURCE STUDY AREA

The Resource Study Area is between mile 320 and 321 (Figure 3) of the Snake River system in what is termed the Upper Reaches of the Brownlee Reservoir, created through the development of the Hells Canyon Dam Complex, which license expired in 2005. The relicensing Application was made to the FERC in 2003.

FERC issued a final environmental impact statement (EIS) for the project in 2007. Since then, it has worked with the states of Oregon and Idaho to receive water-quality certifications required to obtain a new FERC license. These certifications were granted in May 2019.

Until a new license is issued, Idaho Power operates the HCC on an annual license under the terms and conditions of the prior license, that Idaho Power Corporation anticipates that the relicensing will be completed by the end of 2024. All of these facilities operate under the same license (No. 1971) granted by FERC.

Due to licensing, and relicensing, requirements by Federal and State (Idaho/Oregon) Agencies for the Hells Canyon Dam Complexes, there have been numerous, comprehensive, Baseline Studies completed by and for Idaho Power Corporation, that have been reviewed and majorly approved by the Sate of Oregon. The Bayhorse Mine lies within the Idaho Power Baseline Study area.

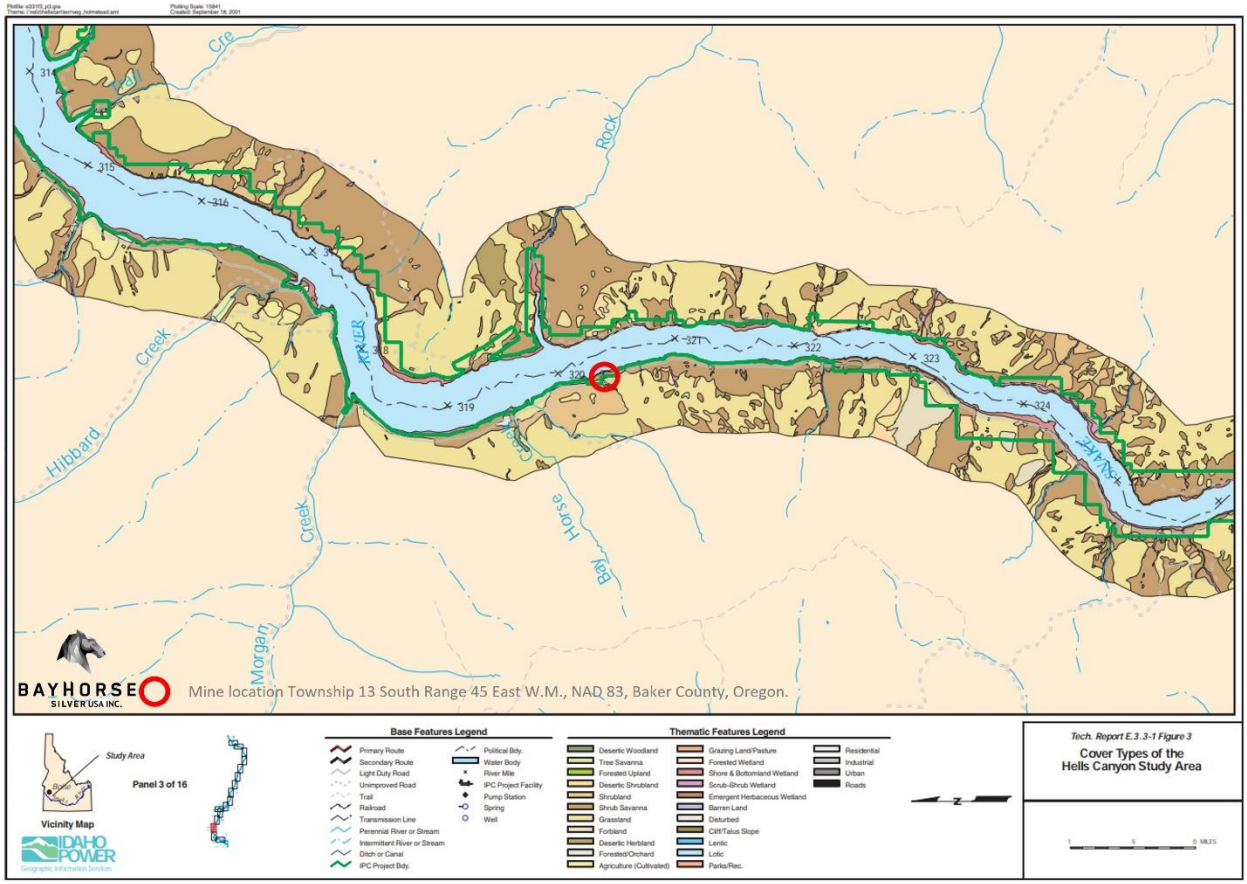


Figure 3 Resource Study Area.

STUDY METHODOLOGY

Noise Sensitive Properties and Quiet Areas

The nearest noise-sensitive property to the Bayhorse Mine is greater than one-half mile from the Mine Noise Source (0.68 mile) while a second noise-sensitive property the Company uses as sleeping accommodation for mine personnel, lies 1.4 miles north of the noise source.



Figure 4. Noise Source Location & Noise Sensitive Areas.

Noise Sensitive Areas

The closest Noise Sensitive Area lies 0.68 miles from the Noise Source. It is located on the other side of two intervening ridges that blocks noise generated by equipment at the mine site. The second closest noise-sensitive property lies 1.4 miles north of the noise source and is the location used for the background ambient noise measurement (Figure 4, Figure 5).

Property used for industrial or agricultural activities is not considered noise-sensitive property unless it meets the state criteria in more than an incidental manner. Since human hearing is not equally sensitive to all frequencies of sound, certain frequencies are typically given more or less "weight" in environmental noise analyses and measurements.

The A-weighted decibel (dBA) scale corresponds to the sensitivity range for human hearing was used for all measurements made and presented in this baseline study report, except where specifically indicated. OAR 340-035-0035 (1)(b)(B)(ii) states that "the ambient statistical noise level of a new industrial or commercial noise source on a previously unused industrial or commercial site shall include all noises generated or indirectly caused by or attributable to that source including all of its related.



Figure 5. Topographic setting.

The maximum permissible statistical noise levels at noise-sensitive properties from the Project's operations are shown in Table 1.

Table 1: Maximum Permissible Noise Levels at Noise-Sensitive Properties.

Noise Level Statistic	Day (7AM - 10PM)	Night (10PM - 7AM)
L50	55 dba	50 dba
L10	60 dba	55 dba
L1	75 dba	60 dba

L50 = noise levels exceeded for fifty percent of each hour L10 = noise levels exceeded for ten percent of each hour L1 = noise levels exceeded for one percent of each hour.

Quiet Areas.

No person owning or controlling an industrial or commercial noise source located either within the boundaries of a quiet area or outside its boundaries shall cause or permit the operation of that noise source if the statistical wise levels generated by that source exceed the levels specified in Table 9 as measured within the quiet area and not less than 400 feet (122 meters) from the noise source.

The maximum permissible environmental noise levels for new or existing industrial facilities as measured at nearby quiet areas are more restrictive (lower) than the levels shown in Table 1.

Quiet areas include wilderness areas, state parks, game reserves, wildlife breeding areas, and outdoor amphitheaters. There are no wilderness areas on the Brownlee Reservoir.

The nearest State Park is Farewell Bend, that abuts State Highway 30, and is 0.8 miles from an existing heavily trafficked Interstate I-84 highway weigh station and newly developed truck stop, and 0.45 miles from Interstate I-84, and 3.5 miles southeast from the town of Huntington, that is 8 miles southwest from the Mine Project.

For this Project, the nearest “quiet area” would be the Spring BLM campsite (Spring) located approximately 3.0 road miles north of Huntington, and approximately 6.0 road miles from the Permit Area, and separated acoustically by a bend in the Brownlee Reservoir, and its steep terrain.

Spring offers outdoor camping sites, and would normally be considered a quiet area, however, as it is a heavily trafficked boat launching area in the Spring, Summer and Fall, with numerous vehicular and boat traffic during the day, and more so on the weekends, that accesses the Brownlee Reservoir. It may only be considered a quiet area at nighttime. Snake River Road along the Brownlee Reservoir is also heavily travelled during the day during the Spring, Summer and Fall by this same vehicular traffic during the day, while the Brownlee itself, has regular boat traffic from early morning to late afternoon.

BNSF Railroad runs within 1 mile from the BLM Spring Campsite, with up to 30 rail movements per day.

Idaho Air National Guard and the USAF, regularly use the Brownlee Reservoir, as a practise area, and low flying jets, often with their jet engine noise is common traversing along the 55 mile reservoir length during daylight hours.

The maximum permissible noise levels from the proposed Project noise levels in quiet areas are shown in Table 2.

Table 2: Maximum Permissible Noise Levels at Quiet Areas.

Noise Level Statistic	Day (7AM - 10PM)	Night (10PM - 7AM)
L50	50 dba	45 dba
L10	65 dba	50 dba
L1	60 dba	55 dba

L50 = noise levels exceeded for fifty percent of each hour L10 = noise levels exceeded for ten percent of each hour L1 = noise levels exceeded for one percent of each hour.

L10 is **the level exceeded for 10% of the time**. For 10% of the time, the sound or noise has a sound pressure level above L10. For the rest of the time, the sound or noise has a sound pressure level at or below L10. These higher sound pressure levels are probably due to sporadic or intermittent events.

The noise limits specified in Table 1 and Table 2 must not be exceeded in any, one-hour period of the day. In addition to meeting the maximum permissible project noise levels specified in Table 1 and Table 2, OAR 340-35-035 also requires that noise generated by the Project not cause the ambient noise levels (L50 and L10) to increase by more than ten dBA in any one hour.

As a result, determining the pre-existing ambient noise levels is very important to show compliance with OAR 340-35-035. OAR 340-35-035 also imposes special noise limits on impulsive noise. The noise level limits for impulsive noise are not A-weighted, are lower at night than during the day, and the limits apply equally to noise sensitive properties and quiet areas.

Table 3 presents the maximum permissible project impulsive noise levels at nearby noise-sensitive properties and quiet areas.

Table 3

Source	Noise Level Statistic	Day (7AM - 10PM)	Night (10PM - 7AM)
Blasting	Lmax, slow	98 dBC	93dBC
Other Impulsive	Lpeak	100dB	80dB

Note that the level, frequency weighting, and time weighting are different for blasting noise when compared to other impulsive sounds. For blasting noise, the C-weighting filter is used with a slow time response. For other impulsive sounds, there is no frequency weighting (sometimes called linear weighting).

FIELD STUDY

Field Studies: The data presented in this report were collected in July and August of 2023. The existing statistical ambient noise levels were measured at one location. All the following protocols were used during the measurements:

 All measurement procedures as stated in OAR 340-035-0035 (Noise Control Regulations for Industry and Commerce), including Sound Measurement Procedures Manual (NPCS-1) and Requirements for Sound Measuring Instruments and Personnel (NPCS-2). Specific protocols spelled out in the NPCS-1 that were followed included: Site Selection; Equipment Set-Up; Weather Conditions; Meter Speed (the Fast meter response was used for all measurements); dBA Weighting Scale (used for all measurements); Statistical Noise (L1, L10, L50, and noise levels exceeded for 90 percent of each hour [L90]) were measured directly with no post-processing computations; Noise levels exceeded for 33 and 67 percent of each hour (L33 and L67, respectively) were interpolated; and Ambient Noise Determination.

 All measurements as stated in the American National Standards Institute (ANSI) S12.9-1992/Part 2 American National Standard Quantities and Procedures for Description and Measurement of Environmental Sound, Part 2: Measurement of Long-Term, Wide-Area Sound (ANSI 1992); and

 A Sound Level Meter (SLM) and accompanying accessories (calibrator, windscreen, and proprietary data transfer software) conforming to ANSI S1.4 (1983) Specifications for Sound Level Meters were used for all measurements. The specific SLM used for all measurements was a Bruel & Kjaer 2270 (Serial Number 2706889), ½-inch Microphone 4190 (Serial Number 2408813), and Calibrator 4231 (Serial Number 3001166), all with valid annual calibration certificates. This is comparable to a Larson Davis Model 820, as outlined in the Work Plan (EMS 2017). The SLM was calibrated both before and after each measurement transition and was found to be within acceptable operating parameters.

The SLM for self-noise limit was checked prior to starting measurements by running the meter in a sealed container in a quiet area.

d prior to starting measurements by running the meter in a sealed container in a quiet area.

Table 4 summarizes the self-noise test results.

Table 4: SLM Self-Noise Test Results (dBA).

Date/Time	Leq	Lmin	Lmax	L1	L10	L33*	L50	L67*	L90
7/20/2023	17.43	17.09	19.53	17.84	17.63	17.38	17.34	17.2	17.17

Leq = Hourly average levels Lmin = Hourly minimum levels Lmax = Hourly maximum levels
*- The L33 and L67 results were not taken when the other test results were obtained. The L33 metric was interpolated from the L10 and L50 data; the L67 metric was interpolated from the L50 and L90 data. L33 metric interpolation formula: =20*LOG(((((20µpascals*10^(L10/20))-(20µpascals*10^(L50/20)))*(0.133333))+(20µpascals*10^(L50/20)))/20µpascals) L67 metric

interpolation formula: =20*LOG(((((20µpascals*10^(L50/20))-(20µpascals*10^(L90/20)))*(0.166667))+(20µpascals*10^(L90/20)))/20µpascals)

pascals*10^(L90/20)))*(0.166667))+(20µpascals*10^(L90/20)))/20µpascals)

Table 4 shows that the self-noise limit for the SLM is approximately 18 dBA. The Bruel & Kjaer specifications for the 2270 SLM with a Model 4190 microphone have a range of 14.6 to 146 dB (Bruel & Kjaer 2009).

4.2.1 Timing and Duration of Baseline Data Collection and Verification At the measurement location, ambient noise monitoring was conducted by taking hourly measurements for a minimum period of 72 hours (two weekdays and one weekend day) to capture diurnal, as well as typical day-to-day ambient noise levels. All measurements took place between July 22, 2023, and August 3, 2023.

The following noise metrics were measured: Leq; Lmax; Lmin; L1; L10; L50; and L90. Leq noise levels were also used for the residential site to calculate the existing day-night noise levels (Ldn).

Ambient Noise Monitoring Sites

The measurement location is the second closest noise-sensitive property to the Project as mentioned earlier under Noise Sensitive Properties and Quiet Areas. As the conducted measurement is primarily intended to capture data regarding the existing background ambient noise environment, strict adherence to the measurement location guidelines outlined in NPCS-1 around meter placement and buildings is not needed. However, adherence to all other guidelines (meter height, distance from the road, etc.) was complied with. The meter was placed at the west end of the corral slightly over 700' from Snake River Road. The specific GPS coordinates for the meter were:

Latitude: 44° 28' 8.28" N

Longitude: 117° 13' 43.63" W

The closest noise-sensitive property to the mine project was not selected as the measurement location due to a lack of access, it was currently occupied, and had very close proximity to both the surface of the Brownlee Reservoir (boat traffic) and Snake River Road (auto/truck traffic).

It should be noted that the Brownlee Reservoir beside which the Noise Measurements were taken is 55 miles long and between 0.2 and 0.4 miles wide, and the canyon walls rise from the reservoir level of +/- 2080 feet to heights of 2800 to 3900 feet. With the large body of water and narrowness of the reservoir and temperature differentials between night and day creating a wind tunnel effect, the 10 mph wind limit restrictions for the Noise Baseline are rarely consistently achieved.

The following activities were conducted at the measurement location: 1) a global positioning system unit was used to record the coordinates; 2) photographs were taken of the equipment at the site to

document the environment around each site; 3) a field data sheet was completed at the location to document the site; 4) observed noise sources present at the start of each measurement were observed and documented; and 5) potential sources of noise present at each site were also documented. At the measurement location, for each one-hour interval, weather data including temperature, wind speed, wind direction, barometric pressure, precipitation, and humidity were recorded. Those data are included with the statistical ambient noise levels. During the course of the measurement, there were several occasions where the wind would increase to greater than 10 mph, which, according to DEQ regulations, invalidates the measurement at that point in time.

During all measurements, the windscreen for the SLM was installed. A person was occasionally present near the sound level meter, monitoring the environmental conditions and meter readings to ensure that the conditions of NPCS-1 were met. In the moments when the wind speed exceeded ten miles per hour, one or the other of the following two strategies was employed:

1. The SLM was paused and momentary data were excluded from the hour duration measurement. For all the occasions where the SLM was paused to ignore wind noise, the total pause duration did not exceed seven minutes and 30 seconds in any given hour. Within a full 60-minute duration, this leaves 52 minutes and 30 seconds, which should adequately characterize the measured ambient levels.

2. The data was collected and recorded and during data post-processing, any data collected during excessive wind speed events was disallowed. Overall, a total of 2 weekend days and 6 weekday days worth of data was collected, of which approximately one quarter to one third of that data was deleted. The one valid weekend days worth of data (Sunday July 23) was collected in it's entirety without any excessive wind speed. However, the two weekday days (Monday July 24 and Tuesday August 1) had several excessive wind speed events where the data was disallowed. Comparable data collected from a different weekday day with the same time of day and no excessive wind was inserted into the presented data. No data was duplicated.

5 BASELINE CHARACTERIZATION 5.1 Field Survey Results

Table 5 summarizes the ambient noise results. Appendix A includes a full summary of the ambient measured data. Appendix A also shows graphs of the average Leq, Lmax, and L50 for each hour for each site, which show a more simplified view of the pattern of observed noise levels.

Table 5: Ambient Noise Summary (dBA)

Metric	Leq	Lmax	Lmin	L1	L10	L50
Daytime Minimum	22.6	45.8	17.6	34.2	22.2	18.7
Daytime Average	32.3	57.9	20	42.7	32.7	26
Daytime Maximum	45.7	75.8	25.4	60.5	44.3	36.3
Nighttime Minimum	26.2	51.4	17.5	35.1	25.1	19.9
Nighttime Average	44.6	62.8	25.3	51.9	47.4	40.8
Nighttime Maximum	57	74.1	35.3	60.8	59.7	57.3

Daytime = 7:00 A.M. to 10:00 P.M. Nighttime = 10:00 P.M. to 7:00 A.M.

At the measurement site, along Snake River Road, the primary noise contributors included atmospheric (wind) movement, vegetation movement caused by the wind, occasional vehicular traffic, and bird activity (song and movement), cattle (calls and movement), and boating activity on the lake. At night, an added contributor was insect activity around the lake and although audible, was not excessive in loudness nor duration and should not have an impact on the proposed ambient noise limits (Table 6). Although not necessarily quantifiable by the weather data obtained at ground level, some fluctuations in measurement data can be explained by upper atmospheric wind gusts/ turbulence.

The results show there is both diurnal variability and a reasonable amount of general variability from hour to hour within both the daytime and nighttime periods at the site. Lmax levels are typically higher during the daytime, indicating that the loudest noise sources are likely to be man-made sounds. Average daytime and nighttime observed L50 levels at the site range from approximately 26 dBA to 40 dBA. Generally, noise levels at the measurement location are low with Leq levels at 57 dBA or below at all times, except for occasional nighttime spikes along Snake River Road from vehicular traffic or wind gusts. A review of the lowest measured ambient noise levels indicates that only a few measured values approach the self-noise limits of the SLM. Table 4 shows the SLM self-noise limit is approximately 18 dBA. At the monitoring location, the lowest nighttime L50 measured was between 19.9. This value approaches the self-noise limit of the SLM; therefore, actual ambient sound levels could have been quieter than the data indicate during those periods. The representative ambient noise levels measured at the noise-sensitive site is summarized in Table 6. The values in Table 6 were obtained using the statistical 5th percentile in each data category. The statistical 5th percentile was used rather than the Lmin in each data category so that the representative levels would approach the lowest levels measured at the site without being biased by outlying quiet hours that occurred over the three-day measurement

period. The proposed limits are the representative ambient noise levels with the ten dBA increase described in the DEQ regulations.

Table 6: Representative Ambient Noise Levels Measured at The Noise Sensitive Property Site.

Daytime		**Nighttime**	
L10	L50	L10	L50
26.2	20.2	30.2	23.6

Table 7: Proposed Ambient Noise Limits for the Project

Daytime		**Nighttime**	
L10	L50	L10	L50
36.2	30.2	40.2	33.6

BIBLIOGRAPHY

American National Standards Institute (ANSI). 1983.

Specifications for Sound Level Meters. S1.4.____ . 1992.

American National Standard Quantities and Procedures for Description and Measurement of Environmental Sound, Part 2:

Measurement of Long-Term, Wide-Area Sound. S12.9-1992/Part 2.