



OceanaGold New Zealand Ltd

Second Quarter 2019 - Summary Report

Noise Levels in Waihi

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1. Summary

Compliance against the consented noise limit(s) and New Zealand Standards was achieved during the second quarter of 2019. Four mean corrected noise levels (MCNL) assessments were made during the period; two had all the contributory readings in suitable meteorological conditions as required by the measurement Standards and were compliant.

34 single compliance readings were made during the quarter. 19 single corrected measurement levels (SCML) were taken in suitable met conditions and were compliant.

Adverse wind conditions (>3 m/s), as recorded at the meteorological station on Barry Rd, occurred on 21% of the monitoring occasions.

No noise complaints were received by OceanaGold during the period; down from three in the previous quarter. The lack of complaints, along with no marginal or non-compliant measurements, meant that no yellow or red assessments (as per the Noise Management Plan – Noise Mitigation) were determined during the quarter.

Five night-time measurements for the Mill were recorded in the reporting period. The measurements were compliant, with the mill barely audible and levels dominated by traffic at 31 to 36 dB. No measurement was mine-dominant.

Three compliance measurements were made of surface-related activities (e.g. stockpiling and ventilation) supporting underground operations during the quarter. All measurements were compliant; levels ranged from 43 to 46 dB and were dominated by residential activities and traffic.

Compliance monitoring of the noise generated from the new pit portal fans was completed during the period. The fans were inaudible outside the pit during daytime monitoring. During night-time monitoring, a hum (that may have been the fans) was only audible when noise levels dropped below 34dB. All measurements were compliant with noise limits.

2. Introduction

This report provides a summary of noise measurements and assessments undertaken by OceanaGold (NZ) Ltd Waihi Operations (OceanaGold) for the second quarter of 2019. The report is prepared to comply with the requirements of five consents:

- Under the Hauraki District Council (HDC) Land Use Consent (LUC) for Project Martha (LUC 202.2018.857.1, condition 26A) OceanaGold is required to submit quarterly summary reports to Council on representative noise levels.
- Under the Noise Conditions of the LUC for the Favona Underground Mine (No. 85.050.326.E, condition 9) a summary report is required at the end of each 3-month period from commencement to completion of work.
- Under the Noise Conditions of the LUC for the Trio Underground Mine (RC-15774, condition 6d) a summary report is required at the end of each 3-month period from commencement to completion of work.
- Under the Noise Conditions of the LUC for the Correnso Underground Mine (RC-202.2012, condition 11d) a summary report is required at the end of each 3-month period from commencement to completion of work.
- Under the Noise Conditions of the LUC for the Martha Drill Drive Project (MDDP) (LUSE-202.2017.664.001, condition 11d) a summary report is required at the end of each 3-month period from commencement to completion of work.

For exploration drilling operations, the conditions set out in section 8.3.1 of the Hauraki District Plan apply. Any monitoring of these activities is also included in this report.

3. Methodology

Sound measurements and assessments by OceanaGold comply with the consent conditions and the New Zealand Standards *NZS 6801:2008 Acoustics - Measurement of Environmental Sound and 6802:2008 Acoustics - Environmental Noise*.

Compliance noise is measured for a minimum of 15 minutes as required under the consent conditions. Compliance readings cannot always be made on every site visit or check due to excessive wind conditions (i.e. greater than 5 m/s).

Monitoring checks are made in response to complaints whenever necessary; initially to verify the noise level and subsequently (if necessary) to determine the effectiveness of any mitigating actions and/or the effect of changing wind conditions (changing wind strength or direction influences noise transmission between the mine and the receiver).

OceanaGold uses noise monitoring procedures to ensure conformance to the above standards and consent conditions, and has also implemented a noise mitigation plan for the Martha Mine. The Martha Mine Noise Mitigation Plan requires daily review of wind conditions that could potentially result in noise levels generating complaints. Monitoring has shown that wind speeds (measured at the OceanaGold meteorological station) over 3 m/s are likely to increase mine noise downwind of the activity to levels that generate complaints. When such wind conditions occur, OceanaGold implements mitigating actions to reduce noise levels where practicable. During periods when high frequency sounds such as birds, cicadas and crickets become the controlling noise, a filter can be applied to noise measurements at four and eight kilo-hertz to enable analysis of the lower frequency noise levels (i.e. those associated with mine operations).

Wind has a significant influence on sound propagation. Sound measurement and assessment must take the effect of wind into account. Sound measurements are taken in conditions ranging from nil wind up to 5 m/s at the receiver (*NZS 6801:2008 Acoustics - Measurement of Environmental Sound*). Wind greater than 5 m/s is generally unacceptable for monitoring due to wind noise effects on the microphone.

Downwind, wind speeds of 3 - 5 m/s are considered marginal due to propagation of sound by wind from source to receiver. Conditions akin to those for which the compliance limits are set generally occur when wind speeds are less than 3 m/s (*Hegley, 2003: Evidence of Nevil Hegley – Favona Underground Project 2003 Final – 11/11/03*).

Wind speeds are recorded at the OceanaGold met stations at Barry Rd and at the Development Site. These wind readings are assumed to represent the general wind conditions across Waihi and at the noise source (e.g. the mine).

Other meteorological factors influencing the overall sound environment include solar radiation, cloud cover, sunrise and sunset times, wind direction and the direction from source to receiver. These factors were also measured to derive a meteorological stability rating at the time of monitoring. Meteorological stability categories of 4 (neutral) or 5 (slightly positive) are considered suitable meteorological influences on sound propagation and are used to determine noise compliance (*NZS 6801:2008 Acoustics - Measurement of Environmental Sound* (HDC LUC 97/98-105, Condition 3.8 (e))).

4. Results

4.1. General

Monitoring activity for the period is shown in Table 1.

Table 1: Noise monitoring activity

	Number of days checked	Number of days measured	Number of checks (compliance & other)	Number of complaint days	Number of complaint checks
April	5	5	17	0	0
May	2	2	7	0	0
June	4	4	10	0	0
QR Total	11	11	34	0	0

4.2. Wind

Adverse wind conditions occurred at the Barry Rd met station for 21% of the monitoring occasions (see Table 2). While it is the general prevailing wind condition as measured at the met station that primarily affects noise propagation, measurements may be made under adverse conditions if the wind at the receiver or at street level is generally more favourable for monitoring. Even then, representative noise measurements of mining activities are not always possible due to wind noise.

Periods of high wind strengths during monitoring were less frequent than the previous quarter (63% adverse).

Table 2: Percentage of monitoring time average wind speeds greater or equal to 3 m/s.

	Receiver	Met Station
April	6%	35%
May	14%	0%
June	0%	10%
QR Total	6%	21%

56% (19/34) of the compliance measurements made in the reporting period were in suitable met conditions (as measured at the met station). Other conditions (wind direction, solar radiation, and cloud cover) also influence suitable met assessments. Monitoring in suitable met conditions occurred on the same number of occasions during this reporting period as the previous quarter.

4.3. Compliance

No mine-dominated SCMLs exceeded compliance levels in suitable met conditions during the reporting period (see Table 3).

Table 3: Summary of Single Corrected Measured Levels (SCML).

	Total SCML calculations	Mine-dominated SCML over (limit + 5 dB)	SCML in suitable met	Mine-dominated SCML over in suitable met
April	17	0	8	0
May	7	0	3	0
June	10	0	8	0
QR Total	34	0	19	0

Two MCNL assessments were made where all contributing measurements were in suitable met conditions this quarter (see Table 4); these measurements were compliant with the consented noise limit. Of the four MCNL readings undertaken during the period, none were over the limit due to mine-related activity.

Table 4: Summary of Mean Corrected Noise Levels (MCNL).

	Total MCNL calculations	Marginal MCNL	MCNL 5 dB over limit	MCNL in suitable met	MCNL over limit in suitable met
April	2	0	0	1	0
May	1	0	0	0	0
June	1	0	0	1	0
QR Total	4	0	0	2	0

4.4. Complaints

There were no complaints in relation to mining-related noise during the reporting period (note: blast related issues are documented in the quarterly vibration report). Active noise management and monitoring around newly placed drilling rigs has mitigated previous sources of complaint.

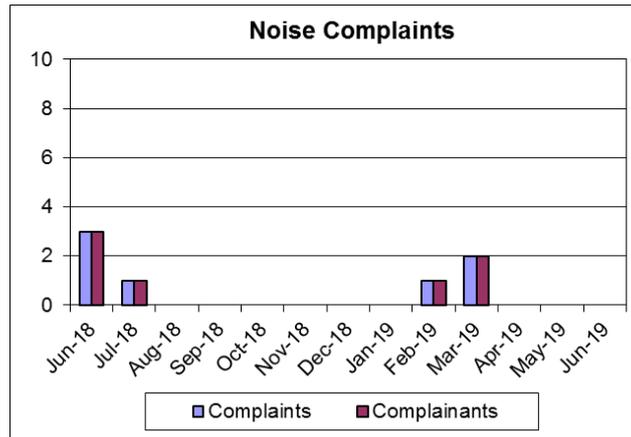


Figure 1: Noise complaint history

4.5. Operations Assessment

4.5.1. Martha Pit

No significant works were conducted in the pit during the quarter. The pit is essentially in 'lock-down' with only essential maintenance (drainage, weed control, and security) and low-impact geotechnical monitoring being undertaken.

4.5.2. Mill

Five night-time measurements for the mill were recorded in the reporting period. The measurements were compliant, with the mill barely audible and levels dominated by traffic at 31 to 36 dB. No measurement was mine-dominant.

4.5.3. Underground (Favona/Trio) & Correnso

Three compliance measurements were made of surface-related activities (e.g. stockpiling and ventilation) supporting underground operations during the quarter. All measurements were compliant; levels ranged from 43 to 46 dB and were dominated by residential activities and traffic.

Pit Portal Vent Monitoring

Monitoring of the noise generated from the pit portal fans (as required by MDDP c11(a(ii))) was completed during the period. 15 compliance readings in total were undertaken (10 in February and 5 in April).

The two measurements during day-time hours were dominated by non-mine related noise (mostly cicadas), with levels of 49 and 57dB. The fans were inaudible from the opposite side of the pit.

Night-time measurement for the pit portal fans occurred over three nights with 13 measurements taken. All measurements were compliant; levels ranged from 31 to 41 dB and were dominated by cicadas and traffic. On four occasions, the fans were possibly audible (there was a hum noticed that might be attributable to the fans) but the measurements in these instances were all 34dB or less.

4.5.4. Exploration/Drilling

Near-mine exploration and geotechnical drilling during the quarter continued in various locations: underground, farmland north of the processing plant, and around the outside of the pit. The sites were generally where rigs had been established before and compliance determined. Drilling near to residences has been kept to daytime-only drilling, recognising the activity was unlikely to comply with night-time noise restrictions. Some night-time drilling was achievable at sites more distant from residences, but this required additional noise mitigation measures and a preparedness to return to daytime-only if issues arise.

The use of proprietary noise blankets installed on security fences around the pit rigs was common practice during the period. In more sensitive areas, the use of double-stacked shipping containers still proved more effective.

Monitoring was also undertaken in relation to a regional exploration site near Ohui. Monitoring at this site returned 35dB, indicating compliance with consent requirements of 40dB.

5. Mitigation

5.1. Mine & Exploration

Commitment to the management and mitigation of mine noise was sustained during the reporting period. As there were no complaints and all monitoring was compliant, no yellow or red assessments (as per the Noise Management Plan – Noise Mitigation) were made during the quarter.

5.2. Contractor Assistance

During the period, discretionary reassurance monitoring was undertaken at the new private yard of OceanaGold's main drilling contractor off Victoria Street. This monitoring was to determine the noise levels that existed overnight at the yard and what practices the contractor might need to put in place to ensure compliance and avoid neighbour conflict. Even though monitoring was conducted within the yard complex, all measurements were compliant with night-time noise limits outside the yard. In addition, the contractor has established good practices to further mitigate noise (e.g. backing vehicles into parking spots prior to the evening, so the backing beepers do not sound if a vehicle is called out in the night).

Appendices

A. Martha Noise Consent Conditions

Relevant noise conditions detailed in the Land Use Consent follow.

3.8 NOISE

- (a) Construction (refer to the definition in Condition 3.3)

With the exception of Waihi Central School where the construction noise limit shall be 55 dB L_{Aeq} at any point at or within the boundary of the school during school hours, all construction activities provided for by this consent shall not exceed the following limits:

Monday - Friday	Saturdays	dB L_{Aeq}	dB L_{AFmax}
0630 – 0730		60	70
0730 – 1800	0730 – 1800	75	90
1800 – 2000		70	85

At all other times, including Sundays and Public Holidays, the noise level (L_{10}) shall not exceed 40 dB L_{Aeq} .

All noise shall be measured within or close to the boundary of any residentially zoned site or the notional boundary of any occupied rural dwelling site not owned by the consent holder or related Company or not subject to an agreement with the consent holder or related Company.

In the event that a property is sold and ceases to be subject to an agreement between the consent holder (or related Company) and the purchaser, or in the event that there is no longer an agreement between the consent holder (or related Company) and the landowner, the location for the measurement of noise shall revert to being on or close to the boundary of that residentially zoned site or the notional boundary of the occupied rural site.

Construction noise shall be managed, measured and assessed in accordance with New Zealand Standard NZS6803:1999 Acoustics – Construction Noise.

- (b) Operations

- i) Activities Within Area B

The noise level (L_{Aeq}) at any point outside the 55 dB and 50 dB control boundaries shown in Plan 2 (copy attached in Appendix E) arising from mining and related activities when measured within or close to the boundary of any residentially zoned site or the notional boundary of any occupied dwelling in the Rural Zone not owned by the Company or not subject to an agreement with the Company or related Company shall not exceed the limits specified below:

		55 dB Control Boundary	50 dB Control Boundary
Monday – Friday	0700-2100	55 dB	50 dB
Saturday	0700-1200	55 dB	50 dB
All other times		40 dB	40 dB

In the event that a property is sold and ceases to be subject to an agreement between the consent holder (or related Company) and the purchaser, or in the event that there is no longer an agreement between the consent holder (or related Company) and the landowner, the location for the measurement of noise shall revert to being within or close to the boundary of that residentially zoned site or the notional boundary of the occupied rural site.

- ii) Activities Within Areas C & D

The noise level (L_{Aeq}) measured within or close to the boundary of any Residential or Low Density Residential zoned site, or the notional boundary of any occupied rural dwelling site within the Rural zone not owned by the Company or not subject to an agreement with the Company or related Company shall not exceed the following limits:

Monday – Friday	0700-2100	55 dB
Saturday	0700-1200	55 dB
All other times		40 dB

In the event that a property is sold and ceases to be subject to an agreement between the consent holder (or related Company) and the purchaser, or in the event that there is no longer an agreement between the consent holder (or related Company) and the landowner, the location for the measurement of noise shall revert to being within or close to the boundary of that residentially zoned site or the notional boundary of the occupied rural site.

iii) Activities Within Areas E, F, H, I, & K

The provisions of Rule 8.3.1.3 of the Operative Hauraki District Plan 2014 shall apply.

In considering the action to be taken as a result of any breach of the noise limits, Council shall have regard to the following factors:

- 1) The total time duration for which the noise exceeded the limit
- 2) The time of the day at which the breach occurred
- 3) Whether the breach occurred as a result of factors beyond the control of the consent holder or contractor
- 4) The amount by which the noise limit was exceeded
- 5) The likelihood that the breach will recur
- 6) The actions taken to prevent recurrence of the breach
- 7) Action taken to mitigate the noise and whether the best practicable option for the circumstances was adopted

For the purposes of 4) above, a breach of the noise limit by 5dB or less shall be considered marginal. The Council will seek an explanation of the reasons for a marginal breach, and will seek that action be taken to avoid a recurrence if practical. The Council will not take enforcement action in respect of a marginal breach to achieve compliance where this would impose unreasonable restrictions on mine operations, such breach being one that will not impose anything more than minor adverse effects upon the residential areas in the vicinity of the mine. The Council may pursue enforcement action if the breach persists unduly in the circumstances or if the best practicable option is not being adopted.

- (e) Noise shall be measured in accordance with the provisions of New Zealand Standard NZS6801:2008 Acoustics – Measurement of Environmental Sound and assessed in accordance with the provisions of NZS 6802:2008 Acoustics – Environmental Noise.

3.9 Monitoring and Reporting on Noise Levels

- (a) The consent holder shall at weekly intervals during construction activities (as defined in Condition 3.3) and at intervals not exceeding six (6) months during operational activities, assess and record representative noise levels generated by mining operations.
- (b) Representative noise levels during construction and operation activities shall be measured and assessed in accordance with the methods specified in Condition 3.8.
- (c) The consent holder shall, unless otherwise directed to do so by the Council following consultation with the consent holder, provide a summary report to the Council at the end of each February, May, August and November on the representative noise levels.
- (d) The consent holder shall prepare a Noise Management Plan. This Management Plan shall be submitted to and approved by Hauraki District Council. The objective of this plan is to detail the methods to be used to comply with condition 3.8.

B. Favona Noise Consent Conditions

5. All noise associated with the construction and use of the Favona Underground Mine Project (including associated activities of stockpiling and construction works) shall be measured within or at the boundary of any residentially zoned site or the notional boundary of any occupied rural dwelling site not owned by the consent holder or related Company, or not subject to an agreement with the consent holder or related Company as shown on Figure 2-3 of the Assessment of Environmental Effects (attached to this consent as Attachment A). In the event that a property is sold, and is not subject to an agreement between the consent holder (or related Company) and the purchaser, or in the event that there is no longer an agreement between the consent holder (or related Company) and the occupier, the measurement of noise shall revert to being measured at any point within or at the boundary of the residentially zoned site or the notional boundary of the occupied rural site.

All noise associated with the construction and use of the Favona Underground Mine Project shall be measured cumulatively with other noise emanating from the Exploration Decline (should this be operated simultaneously), all operations within the process plant, operations within the waste and tailings area, and the conveyor and associated activities over the periods specified below, and shall not exceed the following limits:

Monday – Friday	0700-2100	55 dBA L ₁₀
Saturday	0700-1200	55 dBA L ₁₀
All other times		40 dBA L ₁₀
All nights	2100-0700 (the following day)	70 dBA L _{max}

The measurement periods to determine the daytime L₁₀ shall be representative of any single working day (ie 0700 – 2100 Monday to Friday and 0700 – 1200 Saturday) and shall consist of at least three measurement periods of at least 15 minutes duration each, in any non-consecutive 60-minute periods spread over the working day.

The mean corrected noise level shall be calculated on an energy basis from the measurements and no single corrected measured level shall exceed the permitted mean level by more than 5 dBA.

(Note: The term ‘related Company’ includes Waihi Mines Limited, Welcome Gold Mines Limited, Auag Resources Limited, Martha Mining Limited, Waihi Gold Mining Company Limited, and Waihi Gold Company Nominees Limited).

6. Subject to the express provisions of Condition 5, the noise levels shall be measured and assessed in accordance with the requirements of the New Zealand Standards NZS 6801:1999 Measurement of Environmental Sound and NZS 6802:1991 Assessment of Environmental Sound.
7. Before and operations take place on or in association with the polishing pond stockpile between the hours of 2100 hrs and 0700 hrs the following day the consent holder shall demonstrate in practice, to the satisfaction of the Manager – Planning and Environmental Services, that it is able to comply with Condition 5. The process proposed to demonstrate compliance shall be included in the Noise Management Plan (Condition 10) and will require Council to obtain a report from the liaison office appointed under Condition 40 as to complaints received and the steps taken in response.
8. The consent holder shall establish maximum sound power levels for individual items of Favona Mine equipment and record these in the noise management plan. All equipment and machinery shall be regularly maintained to ensure compliance with the noise levels in Condition 5.
9. Monitoring and Reporting
- Unless it can be demonstrated that adverse weather conditions prevented noise monitoring on each day of the seven day period, the consent holder shall monitor noise levels at weekly interval during any construction of buildings, haul and access roads, any noise bunds and the vent shaft riser and during stockpile site preparation works. In addition and unless it can be determined that adverse weather conditions prevented noise monitoring on each day of the seven day period, the consent holder shall monitor noise levels at weekly intervals for the first six months of production operations and, if the monitoring demonstrates compliance with the noise limits, thereafter at intervals not exceeding 3 months. In the event that noise limits are exceeded then monitoring shall continue at

weekly intervals while steps are undertaken to remedy the situation. Such measures shall be implemented immediately.

Records of all noise monitoring shall be maintained and provided to Council on request.

Representative noise levels shall be measured and assessed in accordance with the methods specified in Condition 6, and as set out in the Noise Management Plan (Condition 10).

The consent holder shall, unless otherwise directed to do so by Council following consultation with the consent holder, provide a summary report to the Council at the end of each 3 month period from commencement of work to completion of the project (ie once all rehabilitation has been completed) on the following:

- i) Results of the noise monitoring;
- ii) Any complaints received during the previous 3 month period, action taken by the consent holder and the resolution (if any); and
- iii) Any other matters of concern raised with the consent holder.

10. Noise Management Plan

The consent holder shall, 1 month prior to the exercising of this consent, prepare a noise management plan to the satisfaction of the Manager Environment and Planning. The objective of this plan is to detail the methods to be used to comply with Conditions 5, 6, 7, 8, & 9.

C. Trio Underground Mine Noise Consent Conditions

Noise

5. All noise associated with the Trio Underground Mine Project shall be measured on or close to the boundary of any residentially zoned site or the notional boundary of any occupied rural dwelling site not owned by the consent holder or related company or not subject to an agreement with the consent holder or related company. In the event that a property is sold and ceases to be subject to an agreement between the consent holder (or related company) and the purchaser, or in the event that there is no longer an agreement between the consent holder (or related company) and the landowner, the measurement of noise shall revert to being on or close to the boundary of the residentially zoned site or the notional boundary of the occupied rural site.

All noise associated with the Trio Underground Mine Project shall be over the periods specified below, and shall not exceed the Noise Level limits specified below:

Time Period	Noise Limits
Monday – Friday 0700-2100	55 L ₁₀
Saturday 0700-1200	55 L ₁₀
All other times	40 L ₁₀
On all nights 2100-0700 (the following day)	70 L _{max}

The noise shall be measured cumulatively with other noise emanating from the Martha Mine and Favona Underground Mine (should there be simultaneous sources of noise generation), all operations within the process plant, operations within the waste and tailings area, and the conveyor and associated activities

The day time measurement periods to determine the L₁₀ noise level shall be representative of any single working day and shall consist of at least three measurement periods of at least 15 minutes duration each, in any non-consecutive 60-minute periods spread over the working day.

The mean corrected noise level shall be calculated on an energy basis from the measurements and no single corrected measured level shall exceed the permitted mean level by more than 5dBA.

Subject to the express provisions in the table in this condition, the noise levels shall be measured and assessed in accordance with the requirements of the New Zealand Standards NZS6801:1999 Measurement of Environmental Sound and NZS6802:1991 Assessment of Environmental Sound

Noise Monitoring and Reporting

6. a) Noise monitoring to confirm compliance with the noise levels in Condition 5 shall be undertaken as follows:
- Unless it can be demonstrated that adverse weather conditions prevented noise monitoring on each day of the seven day period, the consent holder shall monitor noise levels for the site at weekly intervals for 6 weeks from the commencement of Trio Underground mining operations, and if the monitoring demonstrates compliance with the noise limits, thereafter at intervals not exceeding three months.

In the event that noise limits are exceeded then monitoring shall continue at weekly intervals while steps are undertaken to comply with Condition 5. Such measures to comply with Condition 5 shall be implemented immediately.

Note: Such ongoing monitoring may be undertaken in conjunction with the Favona Land Use Consent (85.050326E) and the Martha Mining Licence (ML 322388).

- b) Records of all noise monitoring shall be maintained and provided to Council on request.

- c) Representative noise levels shall be measured and assessed in accordance with the methods specified in Condition 5, and as set out in the Noise Management Plan (Condition 7).

- d) The consent holder shall, unless otherwise directed to do so by Council following consultation with the consent holder, provide a summary report to the Council at the end of each 3 month period from commencement of work Trio Underground mining operations to completion on the following:
 - (i) Results of the noise monitoring that is of direct relevance to the Trio Underground Mine Project;

 - (ii) All complaints received during the previous 3 month period, action taken by the consent holder and the resolution (if any); and

 - (iii) Any other matters of concern raised with the consent holder.

Noise Management Plan

- 7. The consent holder shall, 1 month prior to the exercise of this consent, prepare a noise management plan for the Trio Underground Mine Project for the written approval of the Manager Environment and Planning, Hauraki District Council. The objective of this plan is to detail the methods to be used to comply with Conditions 5 and 6 of this consent.

D. Correnso Underground Mine Noise Consent Conditions

Noise

7 All noise associated with the use of existing facilities and infrastructure by the Correnso Underground Mine provided for under ML32 2388 and the Extended Project and Favona and Trio land use consents referenced in Condition 2 above and identified in Schedule A of this consent shall not exceed the applicable Noise Level limits contained in the existing licences and consents identified in Schedule A of this consent.

8 The mean corrected noise level (L10) arising from the construction, operation and decommissioning of the Correnso Underground Mine vent shaft shall not exceed the limits shown in Figure 2 – Noise Monitoring Sites attached to this consent and specified below:

		55 dBA Control Boundary	50 dBA Control Boundary
Monday – Friday	0700-2100	55 dBA	50 dBA
Saturday	0700-1200	55 dBA	50 dBA
All other times		40 dBA	40 dBA

9 The mean corrected noise level (L10) arising from the construction, operation and decommissioning of the Correnso Underground Mine cemented aggregate fill plant at any point measured on the boundary of any Residential, Rural Residential, Reserve (Passive), Industrial (Light) zoned site or the notional boundary of any occupied rural dwelling site within the Rural Zone shall not exceed the limits specified below:

Monday - Friday	0700-2100	55 dBA
Saturday	0700-1200	55 dBA
All other times		40 dBA

10 Except as provided for in Condition 8, all noise associated with the Correnso Underground Mine shall be measured within or close to the boundary of any residentially zoned site or the notional boundary of any occupied rural dwelling site not owned by the consent holder or related company, or not subject to an agreement with the consent holder or related company. In the event that a property is sold and ceases to be subject to an agreement between the consent holder (or related company) and the purchaser, or in the event that there is no longer an agreement between the consent holder (or related company) and the landowner, the measurement of noise shall revert to being on or close to the boundary of that residentially zoned site or the notional boundary of the occupied rural site.

The noise shall be measured cumulatively with other noise emanating from the Martha Mine and the Favona and Trio Underground Mines (should there be simultaneous operations), all operations within the process plant area, operations within the waste and tailings area, and the conveyor and associated activities.

The daytime measurement periods to determine the L10 shall be representative of any single working day and shall consist of at least three measurement periods of at least 15 minutes duration each, in any non-consecutive 60-minute periods spread over the working day.

The mean corrected noise level shall be calculated on an energy basis from the measurements and no single corrected measured level shall exceed the permitted mean level by more than 5dBA. Subject to the express provisions in this condition, the noise levels shall be measured and assessed in accordance with the requirements of the New Zealand Standards NZS6801:1999, Measurement of Environmental Sound and NZS6802:1991, Assessment of Environmental Sound.

11 Noise Monitoring and Reporting

a) The consent holder shall undertake the monitoring required by these conditions at its cost. Noise monitoring to confirm compliance with the noise levels in Conditions 7, 8 and 9 shall be undertaken as follows:

- i) Unless it can be demonstrated that adverse weather conditions prevented noise monitoring on each day of the seven day period, the consent holder shall monitor noise levels for the site at weekly intervals for 6 weeks from:
 - Commencement of construction of the ventilation shaft in the Surface Facilities Area; and
 - Commencement of the Correnso Underground Mine.
 - ii) Monitoring of noise from the operation of the ventilation fan shall be undertaken on two separate nights. This monitoring shall be undertaken within 2 months of the ventilation fan being installed and operating.

If the monitoring required in i) and ii) above demonstrates compliance with the noise limits, noise monitoring shall be undertaken thereafter at intervals not exceeding three months for the duration of the activity identified above.

In the event that noise limits are exceeded then monitoring shall continue at weekly intervals while steps are undertaken to comply with Conditions 7, 8 and 9. Such measures to comply with Conditions 7, 8 and 9 shall be implemented immediately.
 - iii) Such ongoing monitoring shall be undertaken in conjunction with the Martha Mining Licence (ML 32 2388), the Extended Project Land Use Consent (97/98-105), the Favona Land Use Consent (85.050.326E) and the Trio Land Use Consent (RC-15774).
- b) Records of all noise monitoring shall be maintained and provided to Council on request.
 - c) Representative noise levels shall be measured and assessed in accordance with the methods specified in Condition 10, and as set out in the Noise Management Plan (Condition 12).
 - d) The consent holder shall, unless otherwise directed to do so by Council following consultation with the consent holder, provide a summary report to the Council at the end of each 3 month period from commencement of work to completion on the following:
 - i) Results of the noise monitoring that is of direct relevance to the Correnso Underground Mine; and
 - ii) All complaints received during the previous 3 month period, action taken by the consent holder and the resolution (if any); and
 - iii) Any other matters of concern raised with the consent holder.

12 Noise Management Plan

The consent holder shall prepare a Noise Management Plan for the written approval of the Council. The objective of the Plan is to detail the methods to be used to comply with Conditions 7, 8, 9, 10 and 11 of this consent. This Plan shall be submitted to the Council at least 1 month prior to the exercise of this consent and the consent shall not be exercised until the Noise Management Plan has been approved by the Council. The Noise Management Plan may be reviewed and amended from time to time, subject to the approval of Council but not in a manner inconsistent with these conditions.

Advice note:

The Noise Management Plan may be prepared in conjunction with Noise Management Plans prepared in accordance with the consent requirements applying to other mines in the Waihi Area.

E. Martha Drill Drive Project Noise Consent Conditions

Noise

- 8 Prior to the installation of the ventilation fan, the consent holder shall provide an acoustic report, prepared by a suitably qualified and experienced acoustical consultant to the Hauraki District Council for its certification. The acoustic report shall include the manufacturer's noise data for the ventilation fan the predicted noise levels at critical neighbouring sites, a recommendation on whether silencers are required to ensure compliance with the noise limits in condition 9 (on a cumulative basis), and the acoustic performance of any silencers, if required. Should the Council (in liaison with an independent, suitably qualified noise expert) refuse to certify the report, it will explain its reasons and the consent holder shall submit a revised report to Council. The fan shall not be operated until the report is certified.
- 9 Noise associated with the use of existing facilities and infrastructure by the MDDP provided for in the licences and consents identified in Schedule A of this consent shall not exceed the applicable noise level limits contained in the existing licences and consents identified in those licences and consents.
- 10 The mean corrected noise level (L_{Aeq}) arising from the construction, operation and decommissioning of the inlet ventilation portal and fan located in the south west wall of the Martha Pit shall not exceed the limits shown in Figure 2 – Noise Control Boundaries and specified below:

		55 dBA Control Boundary	50 dBA Control Boundary
Monday – Friday	0700-2100	55 dBLAeq	50 dBLAeq
Saturday	0700-1200	55 dBLAeq	50 dBLAeq
All other times		40 dBLAeq	40 dBLAeq

- 11 All noise associated with the MDDP shall be measured within or close to the boundary of any residentially zoned site or the notional boundary of any occupied rural dwelling site not owned by the consent holder or related company, or not subject to an agreement with the consent holder or related company. In the event that a property is sold and ceases to be subject to an agreement between the consent holder (or related company) and the purchaser, or in the event that there is no longer an agreement between the consent holder (or related company) and the landowner, the measurement of noise shall revert to being on or close to the boundary of that residentially zoned site or the notional boundary of the occupied rural site.
- The noise shall be measured cumulatively with other noise emanating from the Martha Mine and the underground mines of Favona, Trio, CEPPA and SUPA (should there be simultaneous operations), all operations within the process plant area, operations within the waste and tailings area, and the conveyor and associated activities.
- Subject to the express provisions in this condition, the noise levels shall be measured in accordance with the provisions of New Zealand Standard NZS6801:2008 Acoustics - Measurement of Environmental Sound and assessed in accordance with the provisions of NZS6802:2008 Acoustics - Environmental Noise.
- 12 Noise Monitoring and Reporting
- a. The consent holder shall undertake the monitoring required by these conditions at its cost. Noise monitoring to confirm compliance with the noise levels in conditions, 8, 9 and 10 shall be undertaken as follows:
- i. Unless it can be demonstrated that adverse weather conditions prevented noise monitoring on each day of the seven day period, the consent holder shall monitor noise levels for the site at weekly intervals throughout the period of construction of the ventilation portal.
 - ii. Monitoring of noise from the operation of the ventilation fan shall be undertaken on two separate nights. This monitoring shall be undertaken within two months of the ventilation fan being installed and operating.

- iii. If the monitoring required in i) and ii) above demonstrates compliance with the noise limits, noise monitoring shall be undertaken thereafter at intervals not exceeding three months for the duration of the activity identified above.
In the event that noise limits are exceeded then monitoring shall continue at weekly intervals while steps are undertaken to comply with conditions 8, 9 and 10. Such measures to comply with conditions 8, 9 and 10 shall be implemented immediately.
 - iv. Such ongoing monitoring shall be undertaken in conjunction with that required under the licences and consents identified in Schedule A of this consent.
- b. Records of all noise monitoring shall be maintained and provided to Council on request.
 - c. Representative noise levels shall be measured and assessed in accordance with the methods specified in condition 10, and as set out in the Noise Management Plan (condition 12).
 - d. The consent holder shall, unless otherwise directed to do so by Council following consultation with the consent holder, provide a summary report to the Council at the end of each three month period from commencement of work to completion on the following:
 - i. Results of the noise monitoring that are of direct relevance to the MDDP; and
 - ii. All complaints received during the previous three month period, action taken by the consent holder and the resolution (if any); and
 - iii. Any other matters of concern raised with the consent holder.

13 Noise Management Plan

The consent holder shall prepare a Noise Management Plan for the written approval of the Council. The objective of the Plan is to detail the methods to be used to comply with conditions 8 to 11 of this consent. This Plan shall be submitted to the Council at least two weeks prior to the exercise of this consent and the consent shall not be exercised until the Noise Management Plan has been approved by the Council. The Noise Management Plan may be reviewed and amended from time to time, subject to the approval of Council but not in a manner inconsistent with these conditions.

Advice note:

The Noise Management Plan may be prepared in conjunction with Noise Management Plans prepared in accordance with the consent requirements applying to other mines in the Waihi Area.