Awa Koura Mining Limited

Proposed Sandy Point Gold Mine

Technical Air Quality Assessment

Our Reference: NZ006910.3761-REP-AQL-001-RevB

April 2026

Confidential

Proposed Sandy Point Gold Mine

Technical Air Quality Assessment

Awa Koura Mining Limited

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Rev	Date	Details
A	April 21 2026	Technical Air Quality Assessment

	Name	Date
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Approved by:	Fergus Boughton	April 21, 2026

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1 Introduction

1.1 Background and Scope

Awa Koura Mining Limited is proposing to undertake an alluvial gold mining operation “the Project’, for a period of up to three years on farmland located along the Clutha River/Mata-Au terraces, north of Queensberry and southeast of Luggate in Central Otago, ‘the site’. The Project is proposed to commence at the southern end of the proposed area, progressively moving northward and restoring the land, so that residential development may begin immediately thereafter. This document provides a dust risk assessment to support the consent application.

The following sections provide an overview of the site activities and identify potential sources of dust and potential sensitive receptors. Results of a qualitative FIDOL (frequency, intensity, duration, offensiveness and location) assessment for dust risk, and a consideration of PM_{10} for human health related concerns are presented along with recommended consent conditions.

This assessment considers worst case scenarios for volume of earthworks, areas of exposed surface, number of heavy vehicles and machinery, and number of sensitive receptors, providing a conservative estimate of the potential for dust impacts.

1.2 Legislative and Policy Context

The Project site is located in an area known as ‘Sandy Point’ which falls under the Central Otago District Council and the Otago Regional Council Rules.

Dust from land and soil disturbance associated with construction activities or subdivision development, gravel extraction and mining, unsealed roads, and natural sources such as dry riverbeds or sand dunes fall under the category of ‘Area Sources’. Relevant Objectives, Policies and Rules related to these activities have been stated below.

Otago Regional Council

10.1 Policy for dust from area sources

10.1.1 The Otago Regional Council will encourage:

(a) People undertaking land use activities to adopt management practices to avoid, remedy or mitigate any adverse effects of dust beyond the boundary of the property; and

(b) City and district councils to use land use planning mechanisms and other land management techniques to manage land use activities which have the potential to result in dust beyond the boundary of the property.

The Otago Regional Council effectively transfers responsibility over to the city and district councils to regulate dust emissions.

Central Otago District Council

12.4.7 Policy - Management of Nuisance Effects

Cross Reference: Objective 12.3.4, Methods 12.5.5,

To encourage resource users to adopt management practices that avoid, remedy or mitigate the adverse effects of:

a. odour,

b. lightspill and glare,

c. dust, and

d. electrical interference,

on the use and enjoyment of neighbouring properties.

12.3.4 Objective - Avoidance, Remedying or Mitigation of Nuisances

To ensure that activities avoid, remedy or mitigate nuisance to adjoining properties from odour, dust, lightspill, glare and electrical interference.

12.5.5 Method Odour and Dust

Resource users are expected to manage and control their activities to keep dust generation to a minimum (having regard to the particular operational requirements or characteristics of the activity) and to adopt the best practicable option in respect of odour being discernible beyond the boundaries of the site.

It should be noted that activities that emit odour and dust may require resource consent from the Otago Regional Council. The District Council also has the ability to utilise the abatement (section 322) and enforcement (section 314) provisions of the Act and the provisions of the Health Act where odour is or becomes a nuisance.

Odour and dust emissions may also be subject to control through conditions of resource consents.

Reason

Odour and dust can adversely affect the use and enjoyment of neighbouring properties. Those who create odour or dust should be responsible for avoiding, remedying or mitigating such effects.

The councils' requirements are that operations undertaking works that may produce dust, also have the responsibility to adopt management practices to avoid, remedy or mitigate any adverse effects of dust beyond the site boundary. The development and implementation of a Dust Management Plan for the site satisfies this policy requirement, and therefore one has been developed alongside this assessment.

2 Description of Site Activities

2.1 Site Activities

The mining process will commence with an initial cut and the stripping and stockpiling of topsoil to create the active mining area, which will comprise of approximately 1,250 m^2 for the screening pond, 1,000 m^2 of working bench and 2,500 m^2 of land stripped of topsoil. Water will infill the excavation area for the screening pond and a floating screen will be introduced. Tailings from the screen will be piled up behind the pond over an area of approximately 750 m^2, this will be levelled and re-covered with topsoil as the active site moves, covering an area of approximately 5,000 m^2.

The depth of the screening pond will be a maximum of three meters. The average depth of the topsoil that will need to be removed to access the gold containing materials is approximately 10 cm, up to a maximum of 30 cm. As such, the volume removed during the initial set up of the active mining operation will be approximately 5,500 m^3 of soil which will be moved to a single stockpile and revegetated as soon as practicable. This commissioning period is estimated to take one week.

Normal work hours will be Monday to Friday for up to 10 hours a day, at a screening throughput of 200 m^3 per hour. As the operation progresses, mechanical excavators will be positioned on the working bench area to feed material into the floating shaker plant, where the gold product will be separated from the rock and finer material. Tailings in the form of washed rocks will accumulate behind the screening pond before being periodically levelled. Once or twice per month, topsoil will be stripped and relocated from in front of the screen to the reclaimed areas behind it.

Figure 2-1 below shows the extent of the mining operation. Mining will be undertaken following a zig-zag pattern starting at the southern end and moving northward. In general, the active area will be limited to no more than two hectares at any one time. During the winter months, re-establishment of pasture cover may be delayed due to cold conditions, resulting in up to four hectares of disturbed ground that is not fully restored. Once the active site has been remediated, the lifestyle block development works will follow behind.

Plant and equipment used on site will be limited and purpose-specific. A single floating screening plant will operate continuously, primarily loaded by one large (50–60 tonne) excavator. Two smaller excavators (20 and 30 tonnes) will be present but will operate intermittently for topsoil handling, tailings levelling and reclamation works, with the 30-tonne machine mainly retained on standby to maintain continuous screening operations during servicing or greasing of the larger excavator. Contractor trucks will be used infrequently (approximately 1–2 days per month). A bulldozer may be used occasionally for levelling topsoil but will not be permanently based on site.

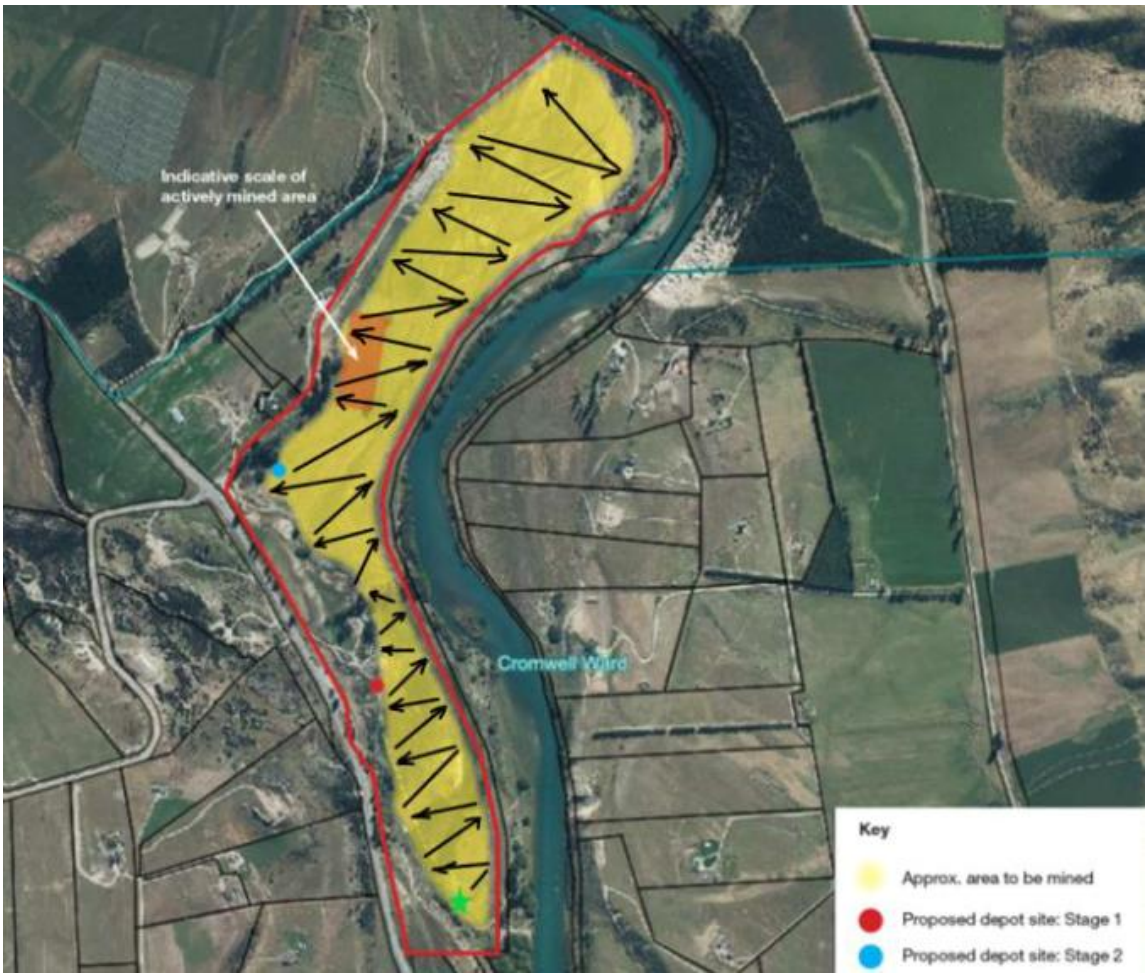


Figure 2-1: Estimated area to be mined and probable operation pathway

2.2 Potential for Dust Generation

An alluvial gold mining operation includes wet screening of materials, which substantially suppresses dust generation within the process. As a result, the primary sources of dust are associated with ancillary activities where materials are handled in a dry or partially dry state. These include topsoil stripping, loading and placement into vehicles for transport to back end of the operation; vehicle movements on unsealed access roads; handling and placement of oversize or tailings material following dewatering; and wind erosion from exposed surfaces and stockpiles.

Dust generation from these activities is influenced by material moisture content, vehicle activity, wind conditions, and the extent and duration of exposed surfaces. Accordingly, dust effects are expected to be driven predominantly by surface exposure and mobile plant activity rather than by the wet screening process itself.

3 Receiving Environment

3.1 Topography

The site at Sandy Point is a relatively flat area located within a predominantly rural and topographically complex environment. The surrounding area is characterised by mountainous terrain approximately 875 m to the east and 1,000 m to the south-west, which influences local wind patterns and the dispersion of airborne particulates. The Clutha River/Mata-Au bounds the site to the east, with several sections containing exposed beach-like areas with unconsolidated sediment deposits along its banks. These exposed surfaces have the potential to act as natural sources of wind-blown dust, particularly during dry and windy conditions.

In addition, the surrounding landscape includes an exposed escarpment which is actively weathering. These exposed surfaces are likely to generate natural dust during periods of elevated wind speeds. Collectively, the combination of mountainous terrain, exposed escarpment and river deposits contributes to an existing background level of naturally occurring dust in the area. This is discussed further in Section 3.3.

As stated above, land use is predominantly rural farmland, with ongoing grazing and agricultural activities also contributing to background dust levels in the area. Activities such as stock movement, grazing on dry pasture, cultivation, and vehicle movements on farm tracks and unsealed rural roads can generate intermittent dust emissions, particularly during dry conditions.

During periods of low soil moisture, surface disturbance from livestock and agricultural operations can increase the availability of loose material for wind entrainment. When combined with elevated wind speeds, particularly during spring and summer, these activities may contribute to short-term increases in airborne particulate matter. Such dust generation is a common and expected component of the existing rural environment and forms part of the baseline air quality conditions at the site.

3.2 Meteorology

The closest weather station to the site is located at Wanaka Airport approximately 7.5km to the northwest of the site. Data was obtained for this station from the NIWA publication ‘The Climate and Weather of Otago’. This data spans the 30-year period from 1981 to 2010[1]. Wind roses for nearby weather stations are presented in Figure 3-1 below.

[1] Macara, G.R. 2015. *The climate and weather of Otago*. NIWA Science and Technology Series 67, 44 pp

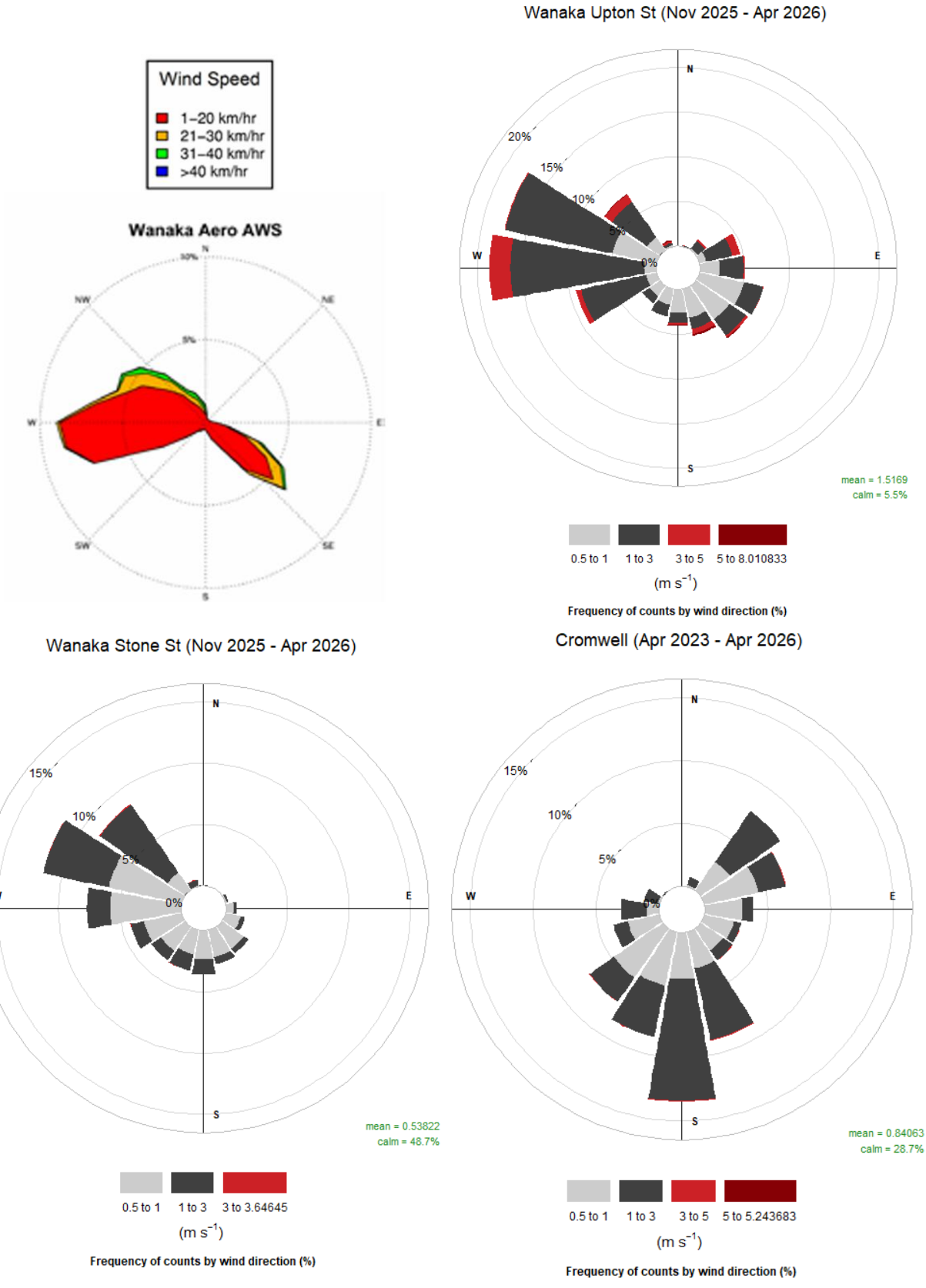


Figure 3-1: Annual Wind Roses. Top Left – Wanaka Aero Automatic Weather Station (AWS), Top Right – Wanaka Upton Street, Bottom Left – Wanaka Stone Street, Bottom Right – Cromwell.

Mean annual wind speeds at Wanaka Airport are approximately 11.8 km/h (3.3 m/s). Wind speeds are seasonally variable, with the lowest average speeds occurring during June–July (approximately 8 km/h or 2.2 m/s) and the highest during December–January (approximately 14.9 km/h or 4.2 m/s). Strong winds (>30 km/h; >8.3 m/s) are most frequent during summer (40%) and spring (39%), with lower occurrences in autumn (14%) and winter (7%).

The site experiences a cool-temperate climate and generally low rainfall, characteristic of the Central Otago region with an annual average of 594mm. Average monthly temperatures range from 4°C in July to 17°C in January. Rainfall is fairly evenly distributed across the year.

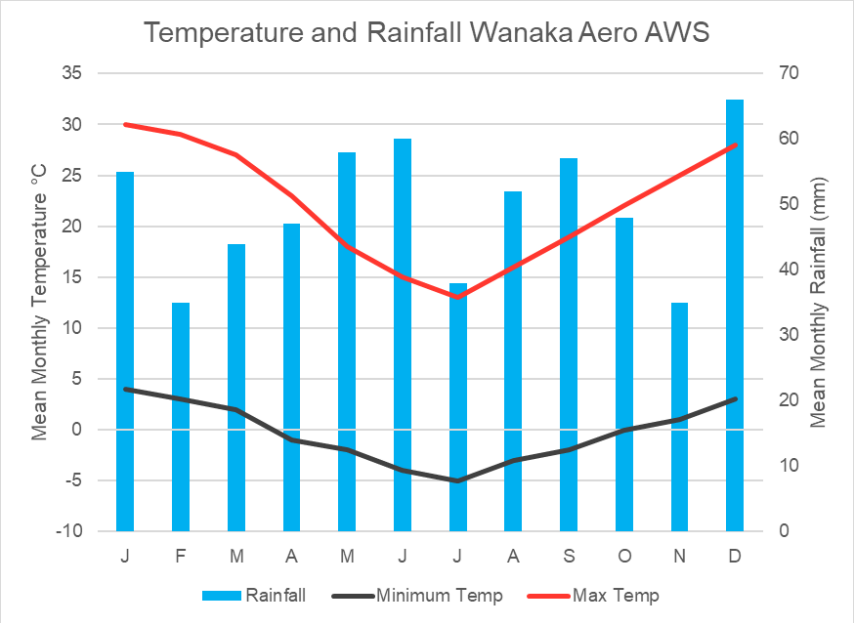


Figure 3-2: Temperature and Rainfall Data from Wanaka Aero AWS Weather station

The meteorology stations located within the region can only be considered as broadly representative of the site, as the surrounding terrain is complex and can alter the wind speed and direction. For example, predominant westerlies recorded by weather stations in Wanaka (see Figure 3-1) would be impacted as they travel through the surrounding hills and south along the valley, resulting in slightly different conditions at the site to the monitored locations. These predominant westerlies are expected to channel down the valley system, resulting in north and north westerlies at the site. Similarly, the Cromwell weather station records predominant low speed southerlies, these may travel up the valley system resulting in southerlies at the site. In the absence of site-specific monitoring, these assumptions have been used in order to estimate wind conditions at the site.

3.3 Existing Air Quality

Air quality in the Otago region typically declines during the winter months due to increased use of solid-fuel burners for domestic heating, with particulate matter (PM_{10} and $PM_{2.5}$) being the primary pollutants of concern.

There are no publicly available ambient air quality monitoring stations located in the immediate vicinity of the site. As a result, background air quality has been characterised using estimated concentrations published by Waka Kotahi NZ Transport Agency (NZTA) for census area units (CAUs) across New Zealand.

The site is located within the Dunstan CAU, for which the estimated 24-hour average PM_{10} concentration is 15.9 µg/m³. This is well below the relevant National Environmental Standards for Air Quality (NESAQ) 24-hour PM_{10} standard of 50 µg/m³. The estimated annual average PM_{10} concentration is 5.6 µg/m³.

While no annual PM_{10} standard is specified under the NESAQ, the New Zealand Ambient Air Quality Guidelines[2] recommend an annual guideline concentration of 20 µg/m³. The estimated background concentration is comfortably below this guideline. On this basis, the surrounding area is considered to have relatively good background air quality.

The site area experiences a relatively dry climate with low rainfall, which can increase the potential for dust generation during dry periods. The site is located within a valley system, where local winds can be channelled along valley axes, influencing the dispersion of airborne particulates. As a result, dust effects may be more pronounced during dry and windy conditions, particularly when winds align with the valley orientation.

In addition to regional background particulate sources, the local environment surrounding the site is inherently dusty due to natural geomorphological processes associated with the adjacent river system and exposed landforms. During high-flow and flood events, fine sediments (including silts and clays) are deposited along the riverbanks. As river levels recede and deposited sediments dry, these exposed surfaces become readily susceptible to wind erosion, resulting in intermittent resuspension of fine particulate matter under dry and windy conditions. Figure 3-3 below shows the extent of these existing dust sources.

This process is a well-established natural source of windblown dust within river valley environments and contributes to elevated background dust levels that are independent of site activities. Dust mobilisation from riverbank sediment deposits is most pronounced during prolonged dry periods, particularly when wind speeds increase and vegetation cover is limited.

The steep exposed escarpment located in the vicinity of the site covers an area of approximately 2.4 hectares. This feature comprises sparsely vegetated, weathered material that is vulnerable to erosion through both wind and gravity-driven processes. Ongoing surface weathering and episodic slumping expose fine material that can be entrained by wind, representing a large area of persistent natural dust source in the local area.

Together, riverbank sediment deposits and the exposed escarpment represent notable contributors to the existing dusty environment. These natural sources contribute to baseline dust conditions and the potential for intermittent dust plumes that are not attributable to the proposed activities. Consequently, any assessment of dust effects associated with the proposal must be considered within the context of this environment of naturally elevated background dust.

[2] Ministry for the Environment. 2002. *Ambient Air Quality Guidelines: 2002 Update*. Wellington: Ministry for the Environment

Legend

- Site Boundary
- 350m Buffer from Site Boundary
- Existing Natural Dust Sources (ha)

3D Inset Source: Google Earth Pro satellite imagery, © Google, accessed April 2026.

NOTES:
1. Aerial image: Contains data sourced from the LINZ Data Service and licensed for reuse under CC BY 4.0
2. Projection: EPSG:2193 - NZGD2000/ New Zealand Map Grid

CLIENT:
Awa Koura Mining Ltd.

PROJECT:
Sandy Point Gold Mine -
Technical Air Quality Assessment

TITLE:
Locations and approximate area of natural dust sources near the site.

FIGURE No.:	REV:
Figure 3-3	1.0

REV DATE: 20/04/2026	
PREPARED BY:	AC
REVIEWED BY:	RD
APPROVED BY:	FB

3.4 Sensitive Receptors

The Ministry for the Environment (MfE) Good Practice Guide[3] requires consideration of potentially sensitive receptors in the vicinity of dust-generating activities but does not prescribe a specific assessment distance. In the absence of a distance defined by MfE, the Clean Air Society of Australia and New Zealand (CASANZ) Good Practice Guide[4]—adapted for New Zealand conditions from the United Kingdom Institute of Air Quality Management (IAQM) guidance[5]—has been applied. This guidance recommends consideration of sensitive receptors located within 350m of the site boundary based on the distance within which perceptible impacts might be expected to occur. Accordingly, potential dust impacts at receptors within this distance have been assessed.

There are 28 properties located within 350m of the site's property boundary; rural residential receptors are considered moderate to high sensitivity receptors based on the MfE GPG[3]. 12 of these properties have dwellings that are within 350m of the site boundary, the rest have dwellings that are between 350 to 600m from the site boundary.

As the guidance states that all rural residential receptors should be considered moderate to high sensitivity they have been assessed as such, accounting for the potential for owners to use any portion of land within their property. In reality the majority of the dwellings, where people would be expected to be present for any extended periods of time, are located further than 350m from the site and so are unlikely to experience dust effects relating to the Project. Additionally, given that the existing environment is already dusty due to natural sources from the riverbanks and exposed escarpment, the receptors are expected to be used to dusty conditions.

Finally, due to the presence of Department of Conservation (DOC) land and predetermined setbacks, the mining activity will not extend to the site's boundary and some of the receptors considered in the assessment will therefore be further than 350m away from mining activity.

The inclusion of receptors up to 350m, the additional distance to receptors due to setbacks from DOC land and the existing dusty environment within which these receptors reside, mean that this assessment can be considered inherently conservative.

Table 3-1 summarises the assessed receptors. Figure 3-4 below illustrates these receptors locations.

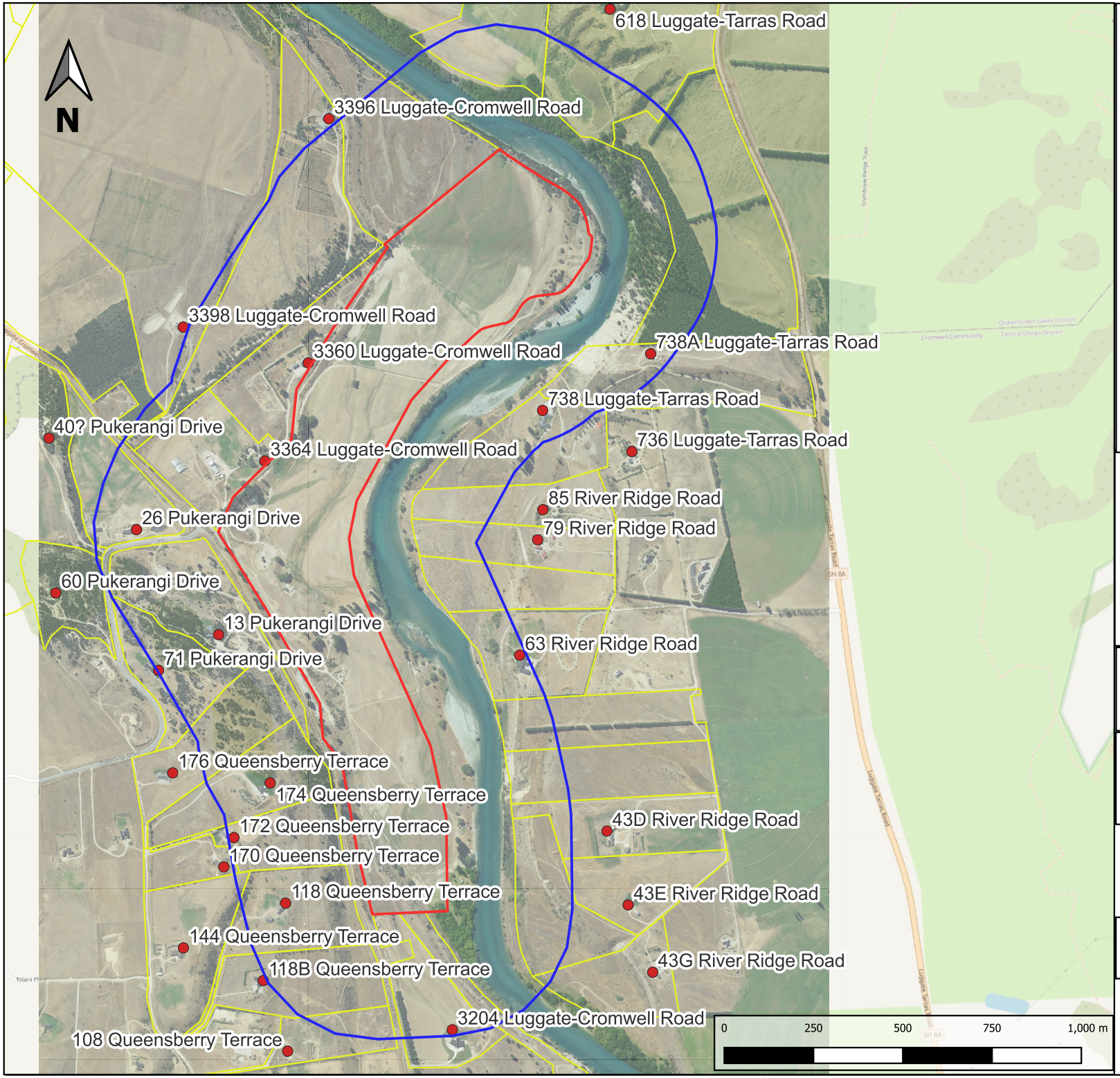
[3] Ministry for the Environment. 2016. *Good Practice Guide for Assessing and Managing* Dust. Wellington: Ministry for the Environment.

[4] Clean Air Society of Australia and New Zealand. 2023. *Good Practice Guide for the Assessment and Management of Air Pollution from Road Transport Projects*. https://www.casanz.org.au/resources/the-good-practice-guide/

[5] Institute of Air Quality Management. 2014. *Guidance on the assessment of dust from demolition and construction*. https://iaqm.co.uk/text/guidance/construction-dust-2014.pdf

Table 3-1: Sensitive receptors within 350m of the site boundary of the proposed gold mining operation.

Receptor ID	Receptor Type	Distance: Site to dwelling (m)	Distance: Site to property boundary (m)	Direction from Site
3364 Luggate-Cromwell Road	Residential	9	2	W
3360 Luggate-Cromwell Road	Residential	10	2	W
13 Pukerangi Drive	Residential	151	45	W
174 Queensberry Terrace	Residential	194	43	SW
26 Pukerangi Drive	Residential / Commercial	229	99	W
118 Queensberry Terrace	Residential	229	43	SW
738 Luggate-Tarras Road	Residential	265	147	E
738A Luggate-Tarras Road	Residential	298	175	E
63 River Ridge Road	Residential	332	202	E
3204 Luggate-Cromwell Road	Residential	333	3	S
172 Queensberry Terrace	Residential	334	42	W
71 Pukerangi Drive	Residential	346	140	W
118B Queensberry Terrace	Residential	358	88	SW
3398 Luggate-Cromwell Road	Residential	362	308	NW
3396 Luggate-Cromwell Road	Residential / Hotel	371	12	N
170 Queensberry Terrace	Residential	376	337	SW
176 Queensberry Terrace	Residential	432	81	SW
43D River Ridge Road	Residential	450	186	SE
108 Queensberry Terrace	Residential	451	261	SW
85 River Ridge Road	Residential	470	144	E
79 River Ridge Road	Residential	497	164	E
60 Pukerangi Drive	Residential	486	338	W
736 Luggate-Tarras Road	Residential	489	347	E
618 Luggate-Tarras Road	Residential	500	161	NE
43E River Ridge Road	Residential	507	329	SE
144 Queensberry Terrace	Residential	537	307	SW
Estimated as 40 Pukerangi Drive	Residential	539	324	W
43G River Ridge Road	Residential	600	305	SE



Legend

- Sensitive Receptors
- Site Boundary
- 350m Buffer from Site Boundary
- NZ Property Titles

NOTES:
1. Aerial image: Contains data sourced from the LINZ Data Service and licensed for reuse under CC BY 4.0
2. Projection: EPSG:2193 - NZGD2000/ New Zealand Map Grid

CLIENT:
Awa Koura Mining Ltd.

PROJECT:
Sandy Point Gold Mine -
Technical Air Quality Assessment

TITLE:
Location of Sensitive Receptors Surrounding the Proposed Mining Site

FIGURE No.:	REV:
Figure 3-4	1.0

REV DATE:	13/04/2026
PREPARED BY:	AC
REVIEWED BY:	RD
APPROVED BY:	FB

4 Assessment

4.1 Nuisance Dust – FIDOL

The potential for dust effects associated with the proposed works has been assessed using the FIDOL framework, which considers the following factors with regard to dust emissions and their interaction with surrounding sensitive receptors:

Frequency	- The likelihood dust reaches receptors
Intensity	- How concentrated it would be
Duration	- For how long it might persist
Offensiveness	- How intrusive or unpleasant it would be
Location	- How sensitive the affected area is

FIDOL is a qualitative, risk-based assessment tool commonly used in New Zealand to provide an initial evaluation of nuisance dust effects, particularly where activities are temporary, variable, or not readily suited to detailed dispersion modelling.

By systematically considering the characteristics of dust-generating activities alongside local environmental conditions (such as proximity to receptors, meteorology, and site activities), the FIDOL approach enables a transparent and proportionate assessment of potential effects. Outcomes of the FIDOL assessment are used to identify risk levels, inform appropriate mitigation measures, and support the development of dust management and monitoring requirements.

4.1.1 Frequency

Frequency considers how often dust effects are likely to occur at sensitive receptors and is influenced by the coincidence of dust-generating activities with meteorological conditions that promote dust transport. In principle, this is informed by an assessment of prevailing wind directions, seasonal wind patterns, and the alignment of winds between dust sources and receptors; however, site-specific wind data are not currently available. In the absence of this information, frequency has been assessed qualitatively based on the nature and scheduling of site activities and the regional climatic context.

Mining operations are proposed to occur for approximately 10 hours per day, five days per week, with dust-generating activities such as earthworks, vehicle movement and the presence of exposed surfaces expected to occur regularly during operational hours. Key material handling processes are largely undertaken in a wet state, which reduces the likelihood of dust generation during routine operations. In addition, the progressive movement of the active mining area across the site limits repeated exposure at individual receptors.

Regional climatic conditions indicate that periods of dry and windy weather do occur, particularly during the Spring and Summer months, which may increase the potential for dust effects during those periods. On this basis, dust effects attributable to the Project are expected to occur intermittently rather than continuously at any given receptor, with frequency influenced by weather conditions and operational activity levels.

As outlined within section 3.1 the receiving environment already contains several areas of exposed sediments and sparsely vegetated land, which give rise to background dust during dry and windy conditions independent

of the Project. Consequently, periods when dust effects are experienced at nearby receptors are largely controlled by prevailing meteorological conditions that already result in dust generation from natural sources. Within this context, the Project is not expected to materially increase the frequency with which dust effects occur, but rather to contribute an incremental component during conditions when dust is already present. Frequency is expected to be intermittent without mitigation in place when compared to baseline conditions.

4.1.2 Intensity

Intensity considers the magnitude of dust experienced at sensitive receptors and is influenced by the proximity of receptors to dust sources, the inherent dustiness of site activities, and the degree of physical containment between the source and receiving environment.

While 28 property boundaries are located within 350 m of the site, the majority of the dwellings are located at distances greater than 350 m, which reduces the potential intensity of dust effects at the sensitive locations within the property.

Activities with the greatest dust generation potential include topsoil stripping, material handling and the presence of exposed surfaces. Unsealed haul roads within the active mining area and the vegetated stockpile may also contribute intermittently to dust generation.

Physical containment between sources and receptors is limited, with some tree cover present but much of the intervening land being open and sparsely vegetated, offering only partial attenuation of dust.

Overall, dust intensity is expected to be highest in close proximity to active earthworks and exposed areas, with reduced intensity at more distant receptors due to separation distance and dispersion.

It is noted that the receiving environment already contains extensive areas of exposed sediments and sparsely vegetated ground, which give rise to elevated background dust levels during dry and windy conditions independent of the Project. As a result, sensitive receptors in the area already experience intermittent dust impacts associated with natural and existing sources. Within this context, dust emissions from the Project are expected to represent a small incremental addition to existing dust levels, rather than a step-change in intensity at nearby receptors.

On balance, dust intensity is expected to be moderate without mitigation in place, reflecting the presence of inherently dusty activities such as topsoil stripping and earthworks, tempered by the separation distances to most sensitive receptors, the wet nature of key material handling processes within the processing circuit.

4.1.3 Duration

Duration considers the length of time over which dust-generating activities occur and the persistence of potential effects at sensitive receptors.

The proposed mining operation is expected to operate for up to three years, with typical daily operations of approximately 10 hours per day, five days per week, and relatively limited seasonal variation. While this represents a medium- to long-term activity overall, the active mining area will progressively move across the property from south to north over the consent duration, as well as east to west in a zig-zag pattern expecting to move approximately 13 m per day. As a result, dust-generating activities will not remain in close proximity to any single receptor for the full operational period, reducing the duration of potential effects at each location. Accordingly, the duration of dust effects at specific receptor locations is considered intermittent and time-limited rather than continuous for the full project duration.

Some activities, such as vehicle movements and exposed surfaces, will be occurring throughout the operational period; however, these will also be moving with the active site. Material loading and tailings placement will generally be undertaken in a wet state, which limits dust generation during active handling. Earthworks associated with topsoil removal, and subsequent rehabilitation will occur intermittently as mining

progresses. Overall, while dust-generating activities will be ongoing across the site for several years, the duration of dust effects at individual receptors is moderated by the mobile nature of the operation. Considering the overall length of operations and the progressive movement of the active mining area and rehabilitation across the site, dust effects at individual receptors will be moderate in duration without mitigation in place, reflecting intermittent exposure over the consent term rather than continuous long-term effects at any single location.

4.1.4 Offensiveness

Offensiveness considers the nature and character of the dust and the extent to which it may cause nuisance or adverse perceptions among the surrounding community.

While rural environments typically have a higher tolerance for dust compared with urban or high-density residential areas, community expectations in this case appear elevated, as evidenced by several submissions expressing concern about dust effects. Accordingly, while the dust is not inherently different in character from current local sources of dust, its visibility and the level of community concern increase its potential offensiveness under certain operating and meteorological conditions.

Dust generated by the proposed mining activities is expected to be predominantly soil- and mineral-based, arising from earthworks, exposed surfaces and on-site vehicle movements. This type of dust can be visually noticeable, with potential for short-term dust plumes under dry and windy conditions and may result in visible soiling of surfaces such as vehicles, outdoor areas or washing, contributing to perceived nuisance effects. Additionally, alluvial gravels in Central Otago are described as “predominantly quartz clasts” which implies that silica (SiO_2) likely constitutes a high proportion of the mineral components, although specific percentages are not quantified[6]. Finer fractions of silica can cause the lung disease known as silicosis when present at high concentrations. Because there is no drilling or crushing of material and a wet screening method is used in this case, the potential for generation of respirable silica (RCS) is expected to be very low. However, the presence of such materials increases the importance of effective dust control to minimise potential health and environmental effects.

On balance, the offensiveness of dust effects is considered to be slightly offensive, reflecting the visible nature of soil-based dust, and community sensitivity, tempered by the rural setting and the low potential for RCS release.

4.1.5 Location

Location considers the sensitivity of the receiving environment and the likelihood of people being exposed to dust effects.

The surrounding area is predominantly rural and farming in character. Nearby receptors are mainly rural residential in nature with moderate to high sensitivity, comprising of 28 dwellings on large rural allotments. 12 of these properties have dwellings within 350m of the site, 16 have dwellings between 350 m and 600 m from the site. No marae, schools, or other highly sensitive community facilities are present in the vicinity.

The site is located within a natural valley setting, with limited shelter from prevailing winds due to generally open terrain and the presence of exposed landforms such as river beaches and exposed escarpment, which contribute to the naturally present dust.

Overall, the receiving environment is assessed as having moderate sensitivity for the purposes of the FIDOL assessment prior to the implementation of mitigation, reflecting the predominantly rural land use, dispersed

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[6] D Craw, A Bartle, J Fenton & S Henderson. 2013. *Lithostratigraphy of gold-bearing Quaternary gravels, middle Manuherikia Valley, Central Otago, New Zealand*. New Zealand Journal of Geology and Geophysics, 56:3, 154-170, DOI: 10.1080/00288306.2013.803984

nature of receptors and existing dusty environment, while acknowledging the presence of some moderate to high-sensitivity residential receptors and limited natural shelter that may influence exposure under certain conditions.

4.1.6 Summary

The potential for dust effects has been assessed using the FIDOL framework, taking into account the frequency, intensity, duration, offensiveness, and location of dust-generating activities in relation to the receiving environment.

The frequency of dust effects is assessed as intermittent, as dust-generating activities will occur regularly during operational hours, but dust occurrence is conditional on dry and windy conditions and is not expected to be continuous.

Dust intensity is assessed as moderate, reflecting the presence of inherently dusty activities such as topsoil stripping, earthworks, and exposed surfaces, tempered by an adequate separation distance to most sensitive receptors and the use of wet processes within the mining operation.

The duration of dust effects at individual receptors is also assessed as moderate, noting that while the operation will occur for up to three years, the active mining area will progressively move across the site, limiting prolonged exposure at any single receptor.

Offensiveness is assessed as slightly offensive, as dust is expected to be predominantly visible soil- and mineral-based material, which may be noticeable at times and has raised community concern, but is not intrinsically noxious and is typical of rural earthworks activities and the existing environment.

Location sensitivity is assessed as moderate, reflecting the predominantly rural setting, dispersed receptors on large allotments and absence of highly sensitive community facilities.

4.1.7 FIDOL Factors with Mitigation

With implementation of the Dust Management Plan (DMP), the potential for dust effects is expected to be reduced across all FIDOL factors. The frequency of Project-related dust effects will be limited through the use of proactive and reactive controls, including surface wetting, activity management during dry and windy conditions, and defined wind-speed triggers, such that dust effects are controlled to avoid contribution from the site across the boundary. Dust intensity at sensitive receptors will be moderated by effective source controls and the wet nature of key activities, resulting in only a minor incremental contribution above existing background dust levels. Any dust effects that do occur are expected to be short-lived due to rapid response and suppression measures, limiting their duration. The dust is of a similar character to existing local materials and is not expected to be any more offensive in nature, with visible dust and soiling minimised by the DMP. While receptor sensitivity remains unchanged, the combined effect of mitigation, separation distances, and an inherently dusty receiving environment means the practical consequences at these locations are reduced.

Implementation of the DMP is expected to reduce the overall residual dust effect to low, with additional dust impacts resulting from the Project being infrequent, short-lived, and of low intensity. Any remaining dust effects are anticipated to be manageable, reversible, and consistent with the existing dusty character of the receiving environment.

4.2 Health-Related Particulates (PM_{10})

The proposed gold mining activities will generate coarse particulate matter through excavation, material handling, stockpiling and vehicle movements on unsealed surfaces. These emissions will consist predominantly of the coarse fraction of PM_{10} (particles 2.5 - 10 µm in size) and larger dust particles, which are similar in character to naturally occurring dust already present within the site and surrounding environment due to exposed alluvial gravels, rural land use, and prevailing dry and windy conditions. Such particles settle relatively quickly, are often visible as dust plumes, and are commonly associated with amenity and nuisance effects, including soiling, reduced visibility, and complaints.

While mining activities will contribute incrementally to local PM_{10} concentrations, these emissions are generally short-term, highly localised, and episodic when compared with continuous sources such as traffic exhaust, domestic heating, or industrial discharges. Any potential impacts will occur primarily in close proximity to active work areas and under unfavourable meteorological conditions.

In this context, the primary potential effect is reduced local amenity associated with visible dust and soiling, rather than exceedances of health-based PM_{10} standards. Implementation of best-practice dust management measures will be effective in controlling both nuisance dust and associated PM_{10} emissions.

5 Conclusions and Recommendations

Based on the above assessment, the proposed activities do have the potential to create adverse effects, however with appropriate mitigation in place, dust generation and impacts are expected to be suitably controlled to avoid nuisance and health effects.

5.1 Recommended Consent Conditions

- A Dust Management Plan (DMP) shall be prepared and implemented prior to works commencing, to include methods for the consent holder to minimise dust emissions and prevent visible dust crossing the site boundary as far as practicable.
- A complaints register shall be maintained and made available to the consent authority on request; complaints shall be investigated promptly and corrective actions implemented.
- Visual monitoring by site staff during the execution of their normal duties shall be undertaken daily so as to respond to any potential dust emissions quickly.
- Baseline Monitoring shall be undertaken prior to the start of works to establish existing conditions.

6 Limitations

This report ('**Report**') has been prepared by WSP New Zealand Limited ('**WSP**') exclusively for Awa Koura Gold Limited ('**Client**') in relation to development of a dust management plan for their proposed gold mine in Sandy Point ('**Purpose**') and in accordance with the Short Form Agreement dated 25 March 2026 ('**Agreement**'). The findings in this Report are based on and are subject to the assumptions specified in the Report and Offer of Services dated 24 March 2026. WSP accepts no liability whatsoever for any use or reliance on this Report, in whole or in part, for any purpose other than the Purpose or for any use or reliance on this Report by any third party.

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