TAIKO CRITICAL MINERALS Ltd.

BARRYTOWN SAND MINING FAST TRACK APPLICATION FOR THE SOUTHERN RESOURCE BLOCK

February 2026

OFFSHORE & COASTAL ENGINEERING LIMITED

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1.0 INTRODUCTION

Taiko Critical Minerals Ltd. (TCML) is preparing an application to lodge under the Government's Fast Track Legislation to mine an area to the south of the Coates Block which was consented in 2024. The site for the Fast Track application is bounded by Canoe Creek in the North and Fagan Creek in the South. The site is shown in the top half of the photograph on the report cover page, south of Canoe Creek and Rusty lagoon at the southern end of the Barrytown Flats. The area referred to as the South Block (SB) consists of three areas – shown figure nos. 1 and 2 in Appendix A to this report and The areas will each be mined individually. The colours represent the following areas:

- Yellow area Granite North
- Purple area Granite Creek South
- Green area Cargill Road to Fagan Creek.

Granite Creek will remain unmined due to size but the other creeks and drains that flow across the site will be diverted and mined. The site is privately owned and currently used as a productive dairy farm. Rehabilitation after mining will involve the reconstruction of the creek and drainage system, however, the creeks will be reformed in meandering channels and planted. The land will be rehabilitated to the same height at the 50 m mark. The topsoil will be reinstated and the land returned to pasture. The existing site contours taken from LIDAR, are shown in drawing nos. DR-231202-011 and 012, Appendix A. The levels are in terms of NZVD 2016, MHWS is +1.27 m.

The mining of the Coates Block now referred to as the Central Block (CB) will be undertaken first, 2029 – 2034. Mining of the SB will start once the mineral resource of the CB is exhausted. The Granite Creek North area will be mined 2035 – 2042, the succeeding areas moving south will be mined respectively in 2043 – 2047 and 2047 – 2050. There will be some loss of volume but the rehabilitation will be undertaken similar to that proposed for the Centre Block redistribution of some volume of material to maintain ground height as high as possible with the material available. A wetland will be formed along the eastern edge of the site between Cargill Road and the WCP to offset the loss of wetlands and the volume of material that will be taken from the site. Mining will start on the Northern Resource block in summer 2026/27. The mining areas will be set back 50 m from MHWS.

2.0 THE EXISTING ENVIRONMENT

2.1 Beach Type

The mine site will be located on the Barrytown Flats 30 km north of Greymouth off SH6 on open farmland, 10 km south of Punakaiki township. The application area is located within the coastal environment identified by the Te Tai Poutini proposed District Plan (TTPP) and the West Coast Regional Coastal Plan but is outside of the Coastal Marine Area as defined by the RMA. The western edge of the area disturbed by mining will be setback 50 m from the MHWS line taken as the edge of the vegetation line which corresponds to the top of the coastal escarpment that extends along the beach front of the proposed mining area.

Pakiroa or Barrytown Beach to the west of the Application area extends north along the length of the Barrytown Flats from 17 Mile Bluff in the South to just north of Burke Road at the north end of the beach. The character of the beach changes along its length. North of Canoe Creek it is a classic mixed sand/gravel beach, (MSGB) the dominant feature of which is a gravel bund barrier backed by a narrow water feature immediately behind the gravel mound. Barrier beaches are a common geomorphological feature worldwide.

In general the proportional composition of sand and gravel varies across the MSGB beach profile. MSGBs are classified into different classes based on the relative abundance of sand and gravel (mean grain size under and over 2 mm respectively) and their spatial distribution within a beach: (1) pure gravel: (2) mixed sand and gravel beaches (MGSB) in which sand and gravel-sized sediment is fully mixed across the beach system: and (3) composite beaches where gravel is generally at the steeper upper beach and sand is located at a lower-gradient intertidal platform at the base of the beach.

The beach north of the application site, shown in photograph no.1, classifies as a Composite MSGB, class 3. At low tide the beach is wide and flat and dominated by sand while at high tide the beach is a steep (27°) gravel bund forming a barrier. The abrupt change in slope occurs around the high tide (MHWS) mark. The gravel bund barrier is generally parallel to the shore and separated from it by a wetland or lagoon. For the beach north of the proposed mine location the gravel bund is backed by a narrow elongated shallow wetland area, known as a ribbon lagoon. The water in the wetland discharges/percolates through the gravel bund to the sea emerging onto the beach at the toe of the bund as upwelling seepage in the sand at regularly spaced intervals along the beach.

Photograph no.1

Just north of Canoe Creek the narrow water feature behind the gravel barrier expands to form a series of coastal lagoon features – Devery's lagoon and Rusty lagoon - and the height and width of the gravel bund in front is lower and can be overtopped by wave runup in a storm event.

South of Canoe Creek the gravel bund feature disappears, along with the coastal lagoons and elongated water channels behind the gravel bund, and the beach is backed by a low -1 to 1.5 m high – coastal escarpment forming the edge of the farmed pasture area, shown in photograph no.2. The grass is growing right up tom the escarpment edge. There are small scale water features on the application site, either from previous dredging operations or from productive farming. The escarpment is close to vertical and consists of cohesive material – variable thickness layers of topsoil, compact sandy silt, gravel and sand. Photograph no.2 shows an accumulation of cobbles at the base of the escarpment, photograph no.3 shows a sandy gravel layer underlying the top soil, overlaying a compact sandy silt layer. The base of the compact sandy silt layer has been undercut by wave action eroding the sand base. The beach is a MSGB type 3 beach with sand predominant, the eroding escarpment evidently does not supply sufficient gravel to create a gravel bund. The volume of gravel on the beach is variable along the beach, in some places a gravel beach has formed at the base of the escarpment, typically north of a creek exit onto the beach, reference photograph no.4.

Photograph no.2

Photograph no.3

Photograph no.4

The proposed mining area is drained by a number of small creeks which exit directly onto the beach. A typical creek exit onto the beach is shown in photograph no.4. At the point where the creek exits onto the beach gravel has built up, gravel transported down the creek and discharged onto the beach in a flood event. Gravel has been transported north in the littoral drift to form a beach at the base of the escarpment north of the creek exit. In the case of the creek exit shown rock armour has been placed at the exit onto the beach to stabilise the position of the creek mouth. The whole beach system is dynamic but the position of the creek mouths or exits onto the beach seems to have been relatively stable over time.

2.2 Wave Energy Environment

The West Coast wave environment is high energy being exposed to, and characterised by, persistent high energy, long period swell generated on the unlimited wave fetches to the southwest. The average significant wave height in deep water offshore is of the order of H_s = 1.6 – 1.7 m (NIWA). Waves reaching the West Coast can have originated from below South Africa.

These deep-water waves approach the coast at an angle that reduces after refraction in the shallowing water but still arrives at an angle to the beach – evident in the cover page photograph - that drives a strong littoral drift to the north. Waves from the north also impact directly on the beach, again at an angle to the beach but these are less frequent and generally less energetic than waves from the SW and don’t significantly affect the net littoral drift to the north. The net northward longshore transport potential has been estimated from hindcast wave data to be in the range from 1.7 million m^3/year to 2.6 million m^3/year (NIWA). The steep near vertical nature of the escarpment at the top of the beach reflects wave runup. The green pasture on top of the land behind the escarpment extends right up to the temporary/movable wire fencing on the top of the escarpment with no sign of grass die-off due to wave overtopping.

3.0 EROSION

The coastline to the north and south of the site, along virtually the entire length of the West Coast north of Fiordland is eroding. There have been a number of studies of the causes of the erosion, principally by NIWA. The main findings of these studies suggest that the shoreline "shows evidence of short-medium term (1-20 years' time-frame) cycles of accretion and erosion superimposed on a trend of long-term erosion. The short-medium term shoreline movements are characterised by accretionary "lenses" and erosion "bites" as at Mokihinui from several to 10 m in width and spanning 500-1000 m segments of shore" (Hicks, NIWA 2007).

Historic erosion rates identified over the last 50 to 100 years vary along the length of the West Coast shoreline and along individual beaches. On the Pakiroa/Barrytown Beach the erosion rates are noted (in the Review of West Coast Region Coastal Hazard Areas, Hicks, NIWA) as highest along the southern to middle parts of the beach with erosion rates reducing further north (Hicks NIWA). Generally, long-term observed retreat rates along the West Coast vary in a range between 0.3 - 0.4 m/year at Ngakawau and Hector, 0.6 – 0.8 m/year at Granity (NIWA 2007) and up to 1 m/year at Charleston, 2m/year allowing for future SLR (OCEL 2015). The retreat will occur episodically, being primarily caused by storm events. This retreat rate will be specific to each location and modulated by vegetation, defences and sediment supply.

The historic rates of erosion retreat in front of the proposed Barrytown mining site covered by the Fast Track Application, as determined from vegetation lines on the available historic photography, superimposed on the LIDAR contour plans of the mining areas are shown on drawing nos. DR-231202-011 and 012 attached in Appendix A to this report. The rate of retreat from 1951, the year of the earliest aerial photography available, to 2023 is of the order of 0.9 m to 1.3 m/year along the beach frontage. The rate of retreat derived from a comparison of the 1988 to 2023 historic vegetation lines indicates rates of retreat in the range of 0.2 to 0.7 m/year suggesting the erosion rate has slowed in recent times.

The rate of retreat is more variable around the mouth of Canoe Creek as is to be expected in such a dynamic environment but the general rate of retreat either side of the lagoons is of the order of 1 m/year.

The ongoing long-term coastal erosion and shoreline retreat is occurring because of a long-term (decadal to century) region-wide deficit in new sediment reaching and resupplying the beach face and changes to the balance between waves and sediment supply along the coast. The sediment is being moved north by the littoral drift faster than it is being supplied to the beach. The patterns of coastal erosion are not constant. Cycles of short to medium term accretion and erosion patterns occur depending on the particular complex interactions between wave climate variability, storm occurrence, storm tracks and how often storms and river flood events occur which are the dominant source of sand and gravel supply to the coastline. Landslides in river catchments due to historic earthquakes also have had a significant influence on sediment supplied to the coast on the West Coast. An underlying ongoing rise in sea-level has also been a relatively minor factor in the historic erosion rate. This will change `in a climate change future when the SLR contribution to shoreline recession will accelerate to become a significant if not dominant component of the combined erosion rate.

4.0 SEA LEVEL RISE (SLR)

The latest Coastal Hazards and Climate Change Guidance issued by the Ministry for the Environment (MfE) incorporates the latest SLR scenarios from the Intergovernmental Panel on Climate Change (IPCC) in 2021-22 and NZSeaRise. The updated IPCC projections confirm that SLR is accelerating. The updates to the 2017 Guidelines were issued by the MfE as Interim Guidelines in August 2022 and are for use until the Ministry is able to complete a refresh of the 2017 Coastal Hazards Guidance. The Guidelines 2022 now also explicitly include the effect of local upward, or downward Vertical Land Movement (VLM) locally on SLR.

The four scenario-based climate projections used for the 2017 Guidance were based on four representative climate futures, known as representative concentration pathways (RCPs). The updated guidance from the MfE has shifted to a new integrated set of five future representative scenarios based on Shared Socio-economic Pathways (SSPs) comprising socio-economic assumptions and changes that influence future emission trajectories. These scenarios which complement the RCPs span a wide range of plausible societal and climatic futures from a 1.5° C best-estimate warming to over 4°C warming by 2100. The new SSPs offer five different narratives describing what the world could become, five represented by the titles shown in figure no. 3. Compared to previous scenarios, these offer a broader view than the "business as usual" socio-economic settings. The SSPs also show that it would be easier to both mitigate and adapt to climate change in some socio-economic futures (eg, SSP1 or SSP2) than in others. In contrast, in a SSP5 future, it would harder to both achieve mitigation and implement effective adaptation. Five 'medium confidence' scenarios are now recommended for use in New Zealand. These are SSP1-2.6 M (sustainability), SSP2-4.5 M (middle of the road), SSP3-7.0 M (regional rivalry), SSP5-8.5 M (fossil fuel intensive development) and SSP5-8.5 H+ (upper likely range). These broadly align with the previous four RCP projections used in the guidance although are slightly higher later in the century and beyond (figure no.1). SSP3-7.0 M (regional rivalry) is a new scenario which fills the considerable gap between RCP4.5 and RCP8.5.

From figure no.1 of the MfE Interim Guidance (included here as figure no.3) and Table 1 taken from the MofE 2022 Interim Guidelines, the "medium confidence" SLR out to 2060 for the SSP-5-8.5 H+ scenario, exclusive of VLM, is approximately 0.6 m. Given that the baseline for that assessment is 2005, approximately 0.1 m of that could be taken as having has already occurred on the projection to 2025 and should be reflected in the latest aerial photograph of the MHWS/vegetation line (2023), 2025 – 2060 giving the SLR in that period as 0.5 m. The year 2060 is used for the calculation of the SLR because that year is nominated for completion. Mining should have finished in 2050

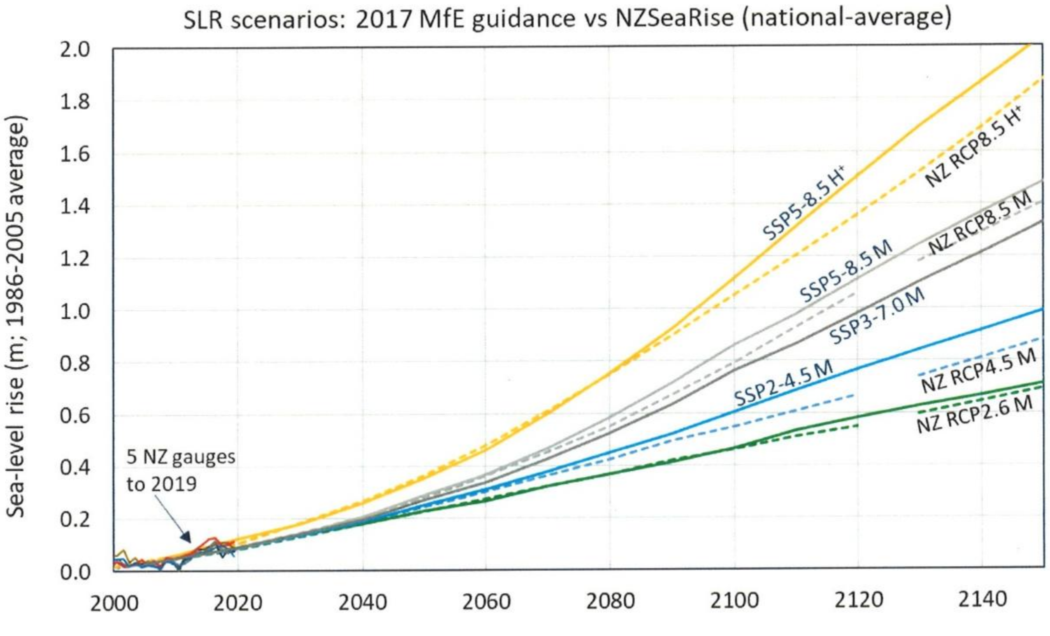


Figure no. 2 – Comparison of the newly nationally averaged NZSeaRise projections (excluding VLM) with the matching equivalent suite of four SLR projections in the 2017 MfE Coastal Guidance

From the NZ SeaRise project for the data point closest to Barrytown, the SLR out to 2060 incorporating Vertical Land Movement, VLM, is 0.4 m, reference figure no.4. The VLM at close to Barrytown is + 3 mm/year +/- 1.4 mm/year, the land rises, decreasing SLR. The VLM incorporated in that figure from the SeaRise projection out to 2040 is then 3.▪(2060 – 2025)/1000 = 0.105 m. The SLR from figure no.2 is 0.5 m, allowing for the VLM rise brings it back to 0.4 m.

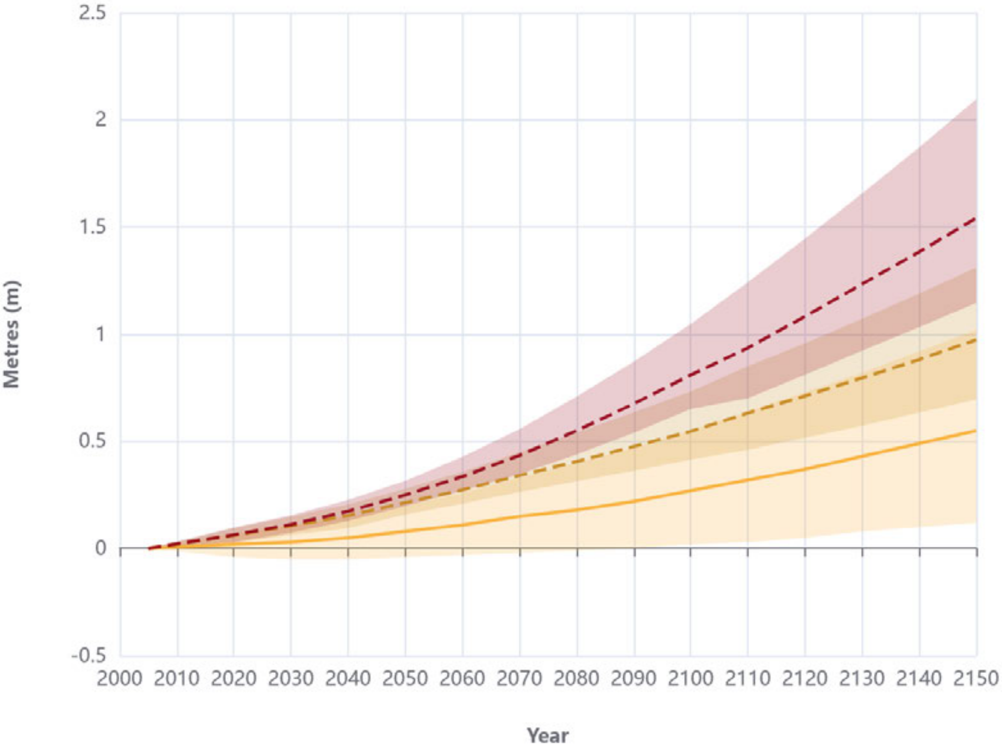


Figure no.4

SLR is not just an increase in the depth of water at the location there is also an associated beach retreat/shoreline recession as the coast adjusts to the increased water depth. The current rate of erosion retreat extrapolated from the historical shoreline change already includes the SLR to date. The beach retreat consequent on future SLR needs to be added to the historic rate.

The beach retreat/shoreline recession resulting from SLR is typically approximated by the Bruun Rule, a simple geometric relationship between shoreline recession Δx which results from ΔS of SLR. The principle is that an initial equilibrium profile of length L (the horizontal distance to the closure depth from the beach crest) for a given depth of closure d_c will re-establish itself further landward and higher by a depth ΔS after SLR, as the d_c remains constant. This implies that the material eroded on the upper part of the profile is deposited on the lower part of the profile.

$$\Delta x = L \cdot \Delta S / (d_c + h)$$

where h is the height of the beach crest above MSL (Mean Sea Level). This method is widely used in international literature and is recommended by the MfE (2017) guidance. As the rule is governed by simple two dimensional conservation of mass principles it is limited in its application which is principally for sand beaches and applies in this case. Using the Bruun rule and approximating $L/(d_c + h)$ as the sand beach slope, 1:100 the beach recession calculated for 1 m SLR in 100 years would be 100 m, 1 m/year.

Out to 2060 the recession due to SLR would be 0.4 x100 = 40 m. The combined recession SLR plus historic erosion trend is conservatively – based on SSP5-8.5H+ - estimated to be 40 + 35 ▪ 1 =75 m.in 2060, in excess of the 50 m setback from MHWS at the start of the project. The 50 m mining setback should then be reset at the start of mining for each area of the SB from the actual MHWS position at the start of mining each area to acknowledge the erosion and SLR that occurred during the mining of the previous area/block. The mining operation closest to the beach would have to be managed to ensure the stability of the beach side wall of the excavation which will depend on what recession has actually occurred at the time of the excavation.

5.0 COASTAL FLOODING INUNDATION

Coastal flooding arises from the occurrence or combinations of several meteorological and astronomical processes which combine to elevate sea levels sufficiently to inundate coastal margines with sea water. Future Extreme Sea Levels (ESL) are determined by the combination of:

- Increasing mean sea level (MSL) due to SLR
- Astronomical tides
- Storm surge resulting from winds and low barometric pressure
- Wave setup and runup
- Climate change effects, stronger winds and larger waves

The existing land heights on the top of the coastal escarpment behind the beach, shown on the LIDAR contour plans in drawing nos. DR-231202-011 and 012, vary between +3.5 and 5.0 m in terms of NZVD 2016. The current freeboard at high tide MHWS is then 2.3 to 3.7 m. Allowing 1 m of storm and wave setup – wave runup is cut off by reflection off the vertical escarpment – reduces the freeboard to 1.3 and 2.7 m. SLR to 2060 is forecast to be 0.4 m (allowing for the 0.1 m that has already occurred by 2020 and VLM) that further reduces the freeboard to 0.9 and 2.3 m, however by this time erosion will have progressed back into higher ground. It is likely that some overtopping will occur in extreme events at the top of the tide. The overtopping volume will flow back out to the beach through the existing established drainage channels/creeks. In this way it will be similar to the overtopping that currently occurs at the Rusty Lagoon location. The water builds up the lagoon level and flows back to sea through the existing outflow across the beach.

NIWA has mapped coastal flooding scenarios around the NZ coastline – *Mapping New Zealand's Exposure to Coastal Flooding and Sea Level Rise, May 2023* - and has developed estimates of Extreme Sea Levels (ESLs) and assigned Annual Exceedance Probabilities (AEP) to these events. The ESLs include SLR, storm surge, wave setup and tides MHWS 7% - the highest 7% of MHWS tides. The likelihood of extreme events can also be described in terms of their Average Recurrence Intervals, (ARI). AEPs and ARIs are linked by the equation $AEP = 1 – e^{(-1/ARI)}$. An AEP of 10% has an ARI of 10 years.

For the Barrytown area the 10% AEP ESL from figure 3.7 of the NIWA report is estimated as in the range 3.75 – 4.875 m above existing MSL, nominally 0.0 but = - 0.15 at this location in terms of NZVD 2016. MHWS = + 1.27, MLWS = -1.57, MSL = - 0.15. In terms of NZVD the AEP 10% ESL level is then 3.6 – 4.725 .Inundation will occur at the top of the tide in this event where the level at the back of the beach is .3.5 m at the lower estimate of 3.6 m ESL but not where the ground level is 5 m. If the ESL is 4.725 m the same applies with increased overtopping at the top of the tide. The event is classified as unlikely/rare occurrence. The consequences of damaging inundation are low, the flooding will be close to the back of the beach the water will flow back out to sea through the existing creek network. In the unlikely event that the inundation reached the mining pit the dredge is a floating unit that rises with the water level.t.

There is a significant inundation risk for the Application site and the surrounding area taking into account the 2130 planning horizon but that applies irrespective of whether the mining goes ahead or not.

6.0 TSUNAMI

The tsunami risk for the West Coast of New Zealand is relatively low risk compared to the rest of New Zealand, in particular the East Coast, which is exposed to tsunamis generated by major earthquakes in deep submarine trenches/subduction zones representing tectonic plate boundaries – Pacific/Australian – directly offshore. While there are no major subduction zones in the Tasman Sea there are other tsunamigenic sources such a submarine landslides. In the past 700 years there have been three large tsunamis on the West Coast – reference the paper *Three Large Tsunamis on the Non-subduction, Western Side of New Zealand over the Past 700 years by Janes Goff et al.* The one closest to the Barrytown site was at Westport in 1870. That took the form of a tidal wave up to 12 m high that destroyed much of the town but seemed to have been localised and was not noted elsewhere along the coast. The source of that tsunami was likely a distant submarine slope failure, given the relatively flat continental shelf offshore Westport..

The maximum tsunami wave height (maximum amplitude) for the West Coast given by the GNS 2013 Tsunami Hazard model is still considerable at 4-6 m but the return period for an event of that size is 2500 years. A tsunami of 4 – 6 m height would cause significant inundation, particularly at high tide, but is low probability and unlikely to cause more than moderate damage to the Barrytown site.

7.0 REHABILITATION

The mining operation will have no impact on coastal processes in the short term during the life of the mine. In the longer term the coastal retreat would continue through the rehabilitated ground. With regard to the infilling of the mine excavation the infill material will be the same material that was extracted by the mining operation, non cohesive sand, less the HMC component. The sand will compact under its own weight, plus the weight of the reinstated topsoil on top of it, normal consolidation, similar to the surrounding material. When the sea reaches the former mine location it won't erode the infill material any faster than the surrounding untouched ground would erode.

As noted in the RMP approximately 5.6 million tonnes (equivalent to 2.6 million m^3 at a bulk density of 2.2 tonnes/m^3 of Heavy Mineral Concentrate (HMC) will be removed from the mining disturbance area over the life of the project. When balanced against the available redistribution material this equates to an average reduction in land height of approximately 0.63 m across the 408 ha consent area. The post-mining landform will be constructed progressively as mining advances. The western side of the mining disturbance area will be rehabilitated to approximately the same ground level as existed prior to mining. As mining progresses eastward, starting from the west side, the difference between the pre- and post mining ground levels will gradually increase, reflecting the net removal of HMC material.

The final landform will replace the pre-existing 'humped and hollowed' topography with a more gently contoured, stable landscape sloping down towards the sea to maintain the drainage gradient across the area. The final landform design will cover surface drainage and overland flow paths integrated into the rehabilitated creek, wetland and drainage network. This will avoid ponding resulting from any overtopping and inundation behind the coastal escarpment.

8.0 NATIONAL POLICY STATEMENT FOR NATURAL HAZARDS 2025 – NPS-NH

The policy stipulates that the natural hazard risk to people and property associated with subdivision use and development is to be managed using a risk-based proportionate approach. The risk must be assessed using:

(a) the likelihood of the natural hazard occurring, in accordance with table 1, appendix 1, and

(b) the consequences of a natural hazard event for life and property, in accordance with table 2, appendix 1;

To determine whether the level of natural hazard risk is low, medium, high or very high in accordance with the risk matrix.

In terms of NPS-NH the risk of minor coastal inundation or overtopping at the coastal escarpment at the peak of the tide during the mining operation is almost certain at AEP 10% but the consequences of that would negligible provided that the 50 m setback from MHWS is established at the start of each mining operation for the separate areas in the South Block. The MHWS to be established at the start of the mining operation for each separate area since the height reflects SLR up to that time and the position reflects coastal erosion. From the risk matrix, attached in Appendix B the risk is low.

For a major inundation resulting from a tsunami 4 – 6 m the likelihood is rare at an ARI of 2500, the damage would be dependent on the state of the tide and would vary from moderate to major. The resulting risk would be low to medium, closer to low because the probability that the tide was high rather than low would be 50%. Multiplying the probability of the tsunami, 1/2500 with the probability it occurs at high tide 50% gives a combined probability for the event at 1/5000, very rare.

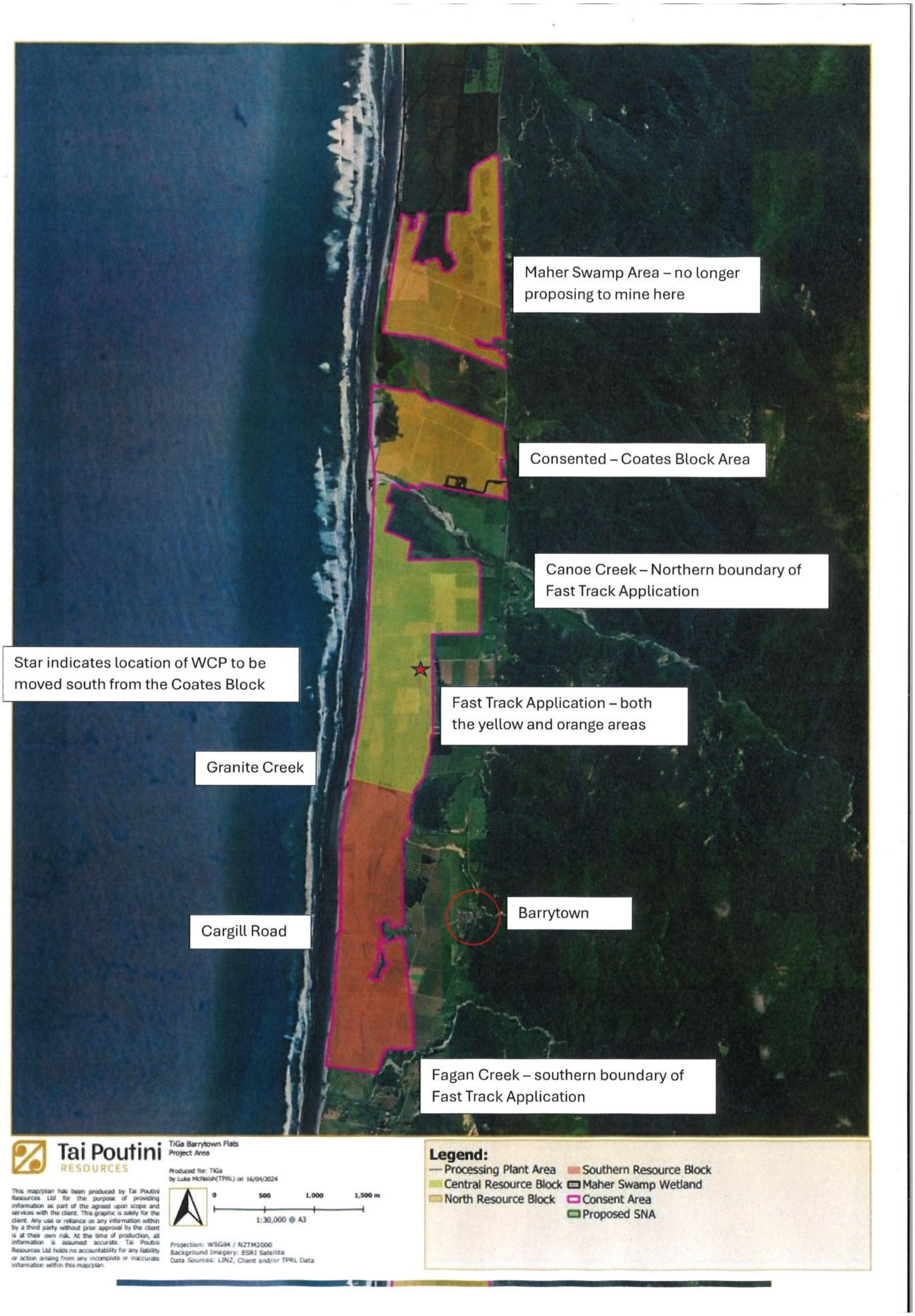
The erosion hazard develops over time and can be monitored and allowed for. The rate of erosion provided for in this report is conservatively estimated using current forecasts but the actual rate can be monitored over the considerable length, 35 years, of the mining operation period and the 50 m setback line re-established at the start of the mining operation for each separate area. That, the MHWS, will reflect the actual erosion and SLR that has occurred up to that time. The 50 m setback established at the start of each operation provides a buffer and the risk of the erosion hazard impacting on the mining operation is then low.

9.0 CONCLUSION

The West Coast coastline is eroding as a result of sediment being moved Northward by littoral drift faster than it is being supplied to the beach. The Barrytown beach coastline is eroding back at an estimated rate of 1 m/year as a result and the shoreline recession rate will be increased by future SLR effects. The proposed mining operation will not affect the natural beach processes. Even at an accelerated rate of erosion, the current rate of erosion, 1m/year, plus a conservative estimate of SLR induced recession of 1 m/year giving a combined rate of 2 m/year, would take in excess of 25 years for the coastline to erode through the setback to reach the site of the mining operation. Given the life of the mine will be out to 2060, 35 years hence, the MHWS position will be re-established at the start of the mining operation for each separate area/block of the southern block. That way the actual erosion and SLR that has occurred during the mining of the previous block will be recognised and accommodated., preserving the setback margin and the separation from coastal processes.

There will be minor overtopping and inundation at the top of the tide of the coastal escarpment at the top of the beach in storm conditions as the freeboard is reduced by SLR, the same as occurs now at the opening of the Rusty Lagoon to the sea, but that minor flooding will be accommodated by the setback and dealt with by the existing drainage channels/creeks.

APPENDIX A – DRAWINGS & FIGURES



TiGa Barrytown Flats
Project Area

Produced for: TiGa
by Luke McNeish(TPRL) on 16/04/2024

Projection: WSG84 / NZTM2000
Background Imagery: ESRI Satellite
Data Sources: LINZ, Client and/or TPRL Data

This map/plan has been produced by Tai Poutini Resources Ltd for the purpose of providing information as part of the agreed upon scope and services with the client. This graphic is solely for the client. Any use or reliance on any information within by a third party without prior approval by the client is at their own risk. At the time of production, all information is assumed accurate. Tai Poutini Resources Ltd holds no accountability for any liability or action arising from any incomplete or inaccurate information within this map/plan.

Figure no.1

Plan C: Mining Sections within the Southern Block

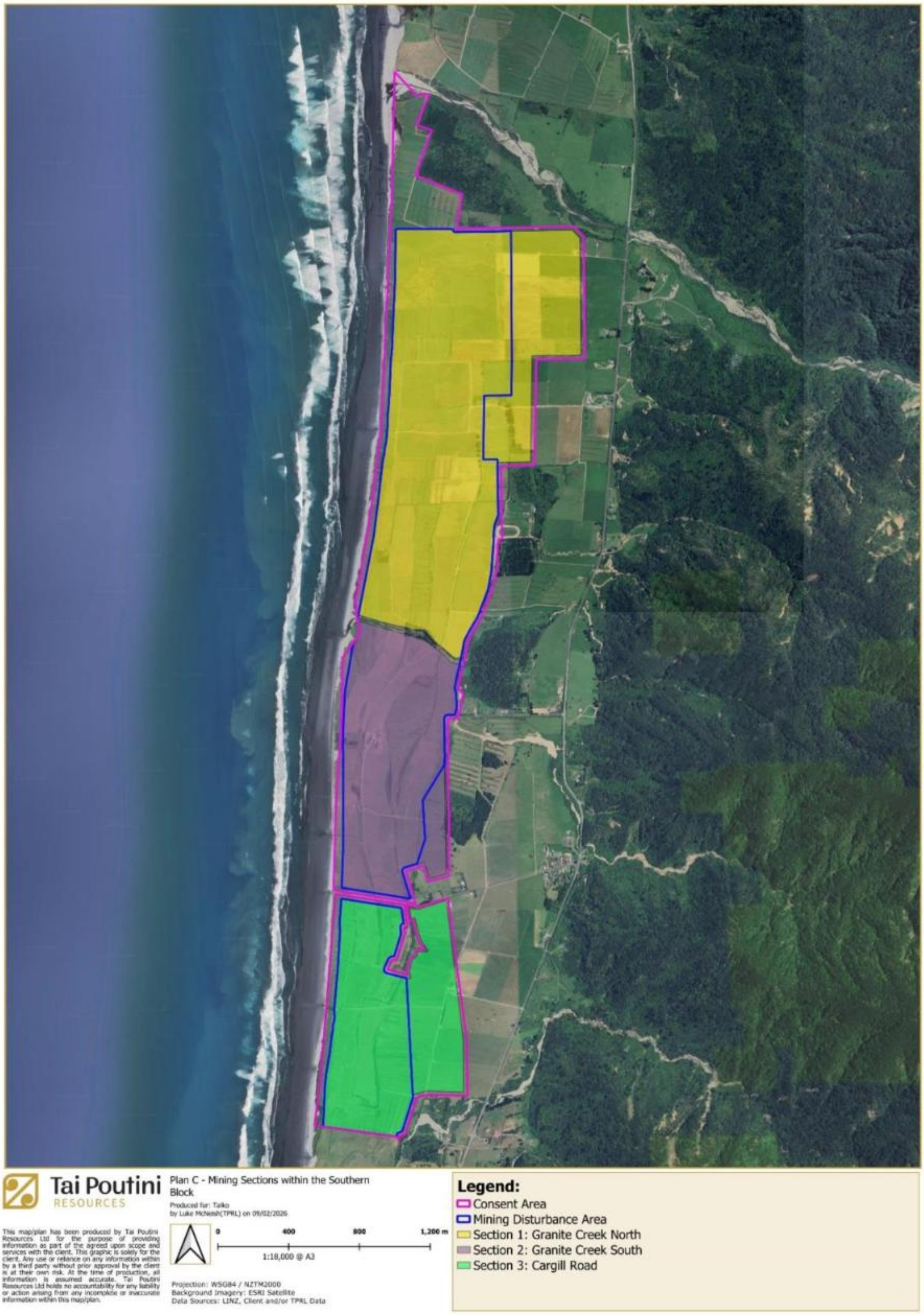


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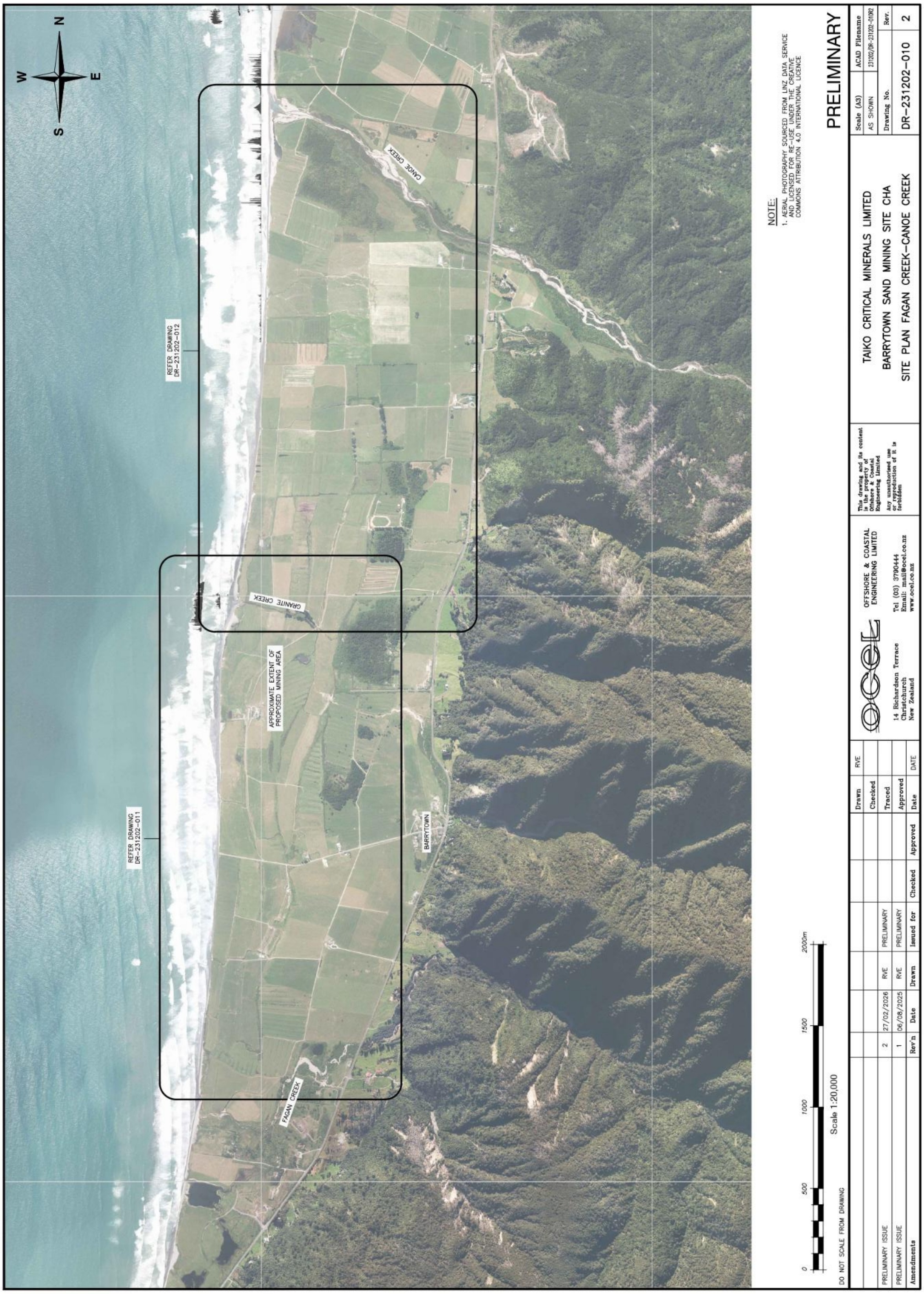
Figure no.2

DRAWINGS


N
E
S
W
REFER DRAWING DR-231202-012
REFER DRAWING DR-231202-011
CANOE CREEK
GRANITE CREEK
APPROXIMATE EXTENT OF PROPOSED MINING AREA
BARRYTOWN
FAGAN CREEK
0
500
1000
1500
2000m
Scale 1:20,000
DO NOT SCALE FROM DRAWING
NOTE:
1. AERIAL PHOTOGRAPHY SOURCED FROM LINZ DATA SERVICE AND LICENSED FOR RE-USE UNDER THE CREATIVE COMMONS ATTRIBUTION 4.0 INTERNATIONAL LICENCE
PRELIMINARY
PRELIMINARY ISSUE
2
27/02/2026
RVE
PRELIMINARY
PRELIMINARY ISSUE
1
06/08/2025
RVE
PRELIMINARY
Amendments
Rev'n
Date
Drawn
Issued for
Checked
Approved
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RVE
Checked
Traced
Approved
Date
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TAIKO CRITICAL MINERALS LIMITED
BARRYTOWN SAND MINING SITE CHA
SITE PLAN FAGAN CREEK-CANOE CREEK
Scale (A3)
AS SHOWN
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Drawing No.
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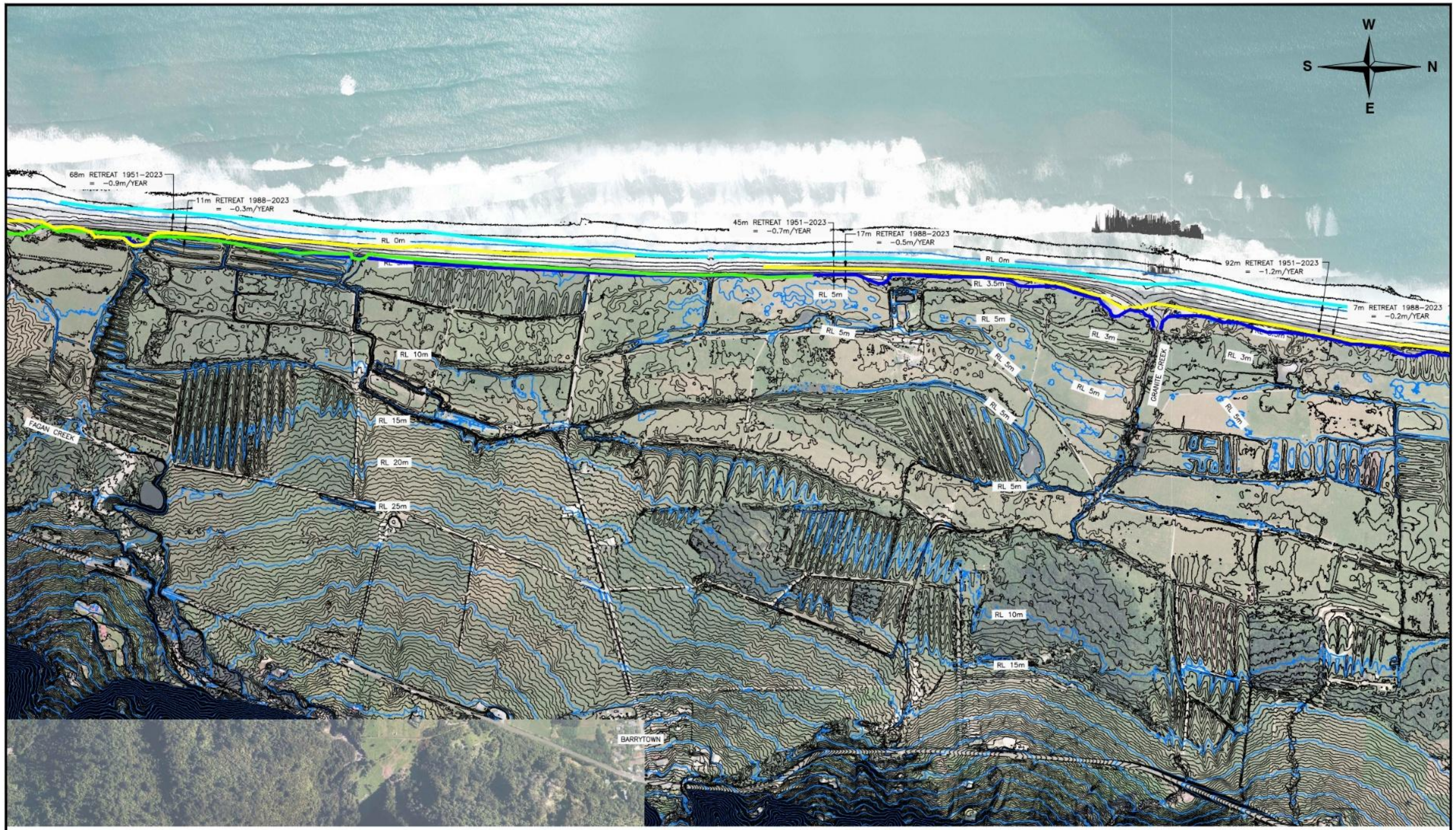
Rev.
2



0 100 200 300 400 500 600 700 800 900 1000m

Scale 1:10,000

DO NOT SCALE FROM DRAWING

LEGEND:

🟦	1951 EDGE OF VEGETATION LINE
🟨	1988 EDGE OF VEGETATION LINE
🟩	2012 EDGE OF VEGETATION LINE
🟦	2023 EDGE OF VEGETATION LINE

NOTE:

1. AERIAL PHOTOGRAPHY SOURCED FROM LINZ DATA SERVICE AND LICENSED FOR RE-USE UNDER THE CREATIVE COMMONS ATTRIBUTION 4.0 INTERNATIONAL LICENCE
2. ALL HEIGHTS ARE IN TERMS OF NZVD2016
3. MINOR CONTOUR INTERVAL = 0.5m
   MAJOR CONTOUR INTERVAL = 5m
7. MHWS = APPROX +1.27m NZVD2016
   MLWS = APPROX −1.57m NZVD2016

PRELIMINARY

Amendments	Rev'n	Date	Drawn	Issued for	Checked	Approved
PRELIMINARY ISSUE	1	06/08/2025	RVE	PRELIMINARY		

Drawn	RVE
Checked	
Traced	
Approved	
Date	DATE

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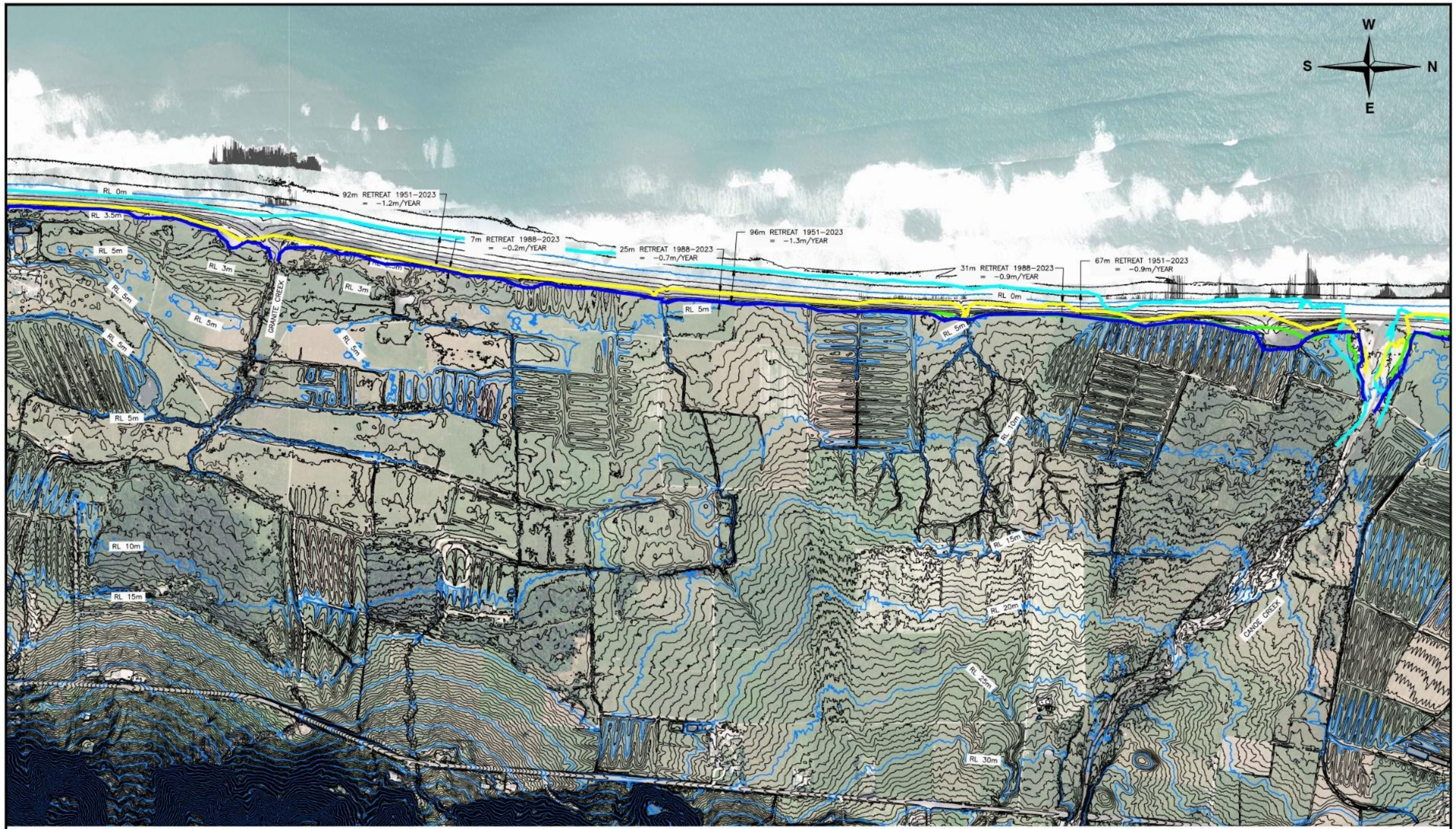
TAIKO CRITICAL MINERALS LIMITED
BARRYTOWN SAND MINING SITE CHA
CONTOUR PLAN FAGAN CREEK–GRANITE CREEK

Scale (A3)	ACAD Filename
1:10,000	231202/DR-231202-011R1

Drawing No.	Rev.
DR–231202–011	1



0 100 200 300 400 500 600 700 800 900 1000m

Scale 1:10,000

DO NOT SCALE FROM DRAWING

LEGEND:

- 🟦 1951 EDGE OF VEGETATION LINE
- 🟨 1988 EDGE OF VEGETATION LINE
- 🟩 2012 EDGE OF VEGETATION LINE
- 🟦 2023 EDGE OF VEGETATION LINE

NOTE:

1. AERIAL PHOTOGRAPHY SOURCED FROM LINZ DATA SERVICE AND LICENSED FOR RE-USE UNDER THE CREATIVE COMMONS ATTRIBUTION 4.0 INTERNATIONAL LICENCE
2. ALL HEIGHTS ARE IN TERMS OF NZVD2016
3. MINOR CONTOUR INTERVAL = 0.5m
   MAJOR CONTOUR INTERVAL = 5m
7. MHWS = APPROX +1.27m NZVD2016
   MLWS = APPROX −1.57m NZVD2016

PRELIMINARY

							Drawn	RVE
							Checked	
PRELIMINARY ISSUE	2	27/02/2026	RVE	PRELIMINARY			Traced	
PRELIMINARY ISSUE	1	06/08/2025	RVE	PRELIMINARY			Approved	
Amendments	Rev'n	Date	Drawn	Issued for	Checked	Approved	Date	DATE

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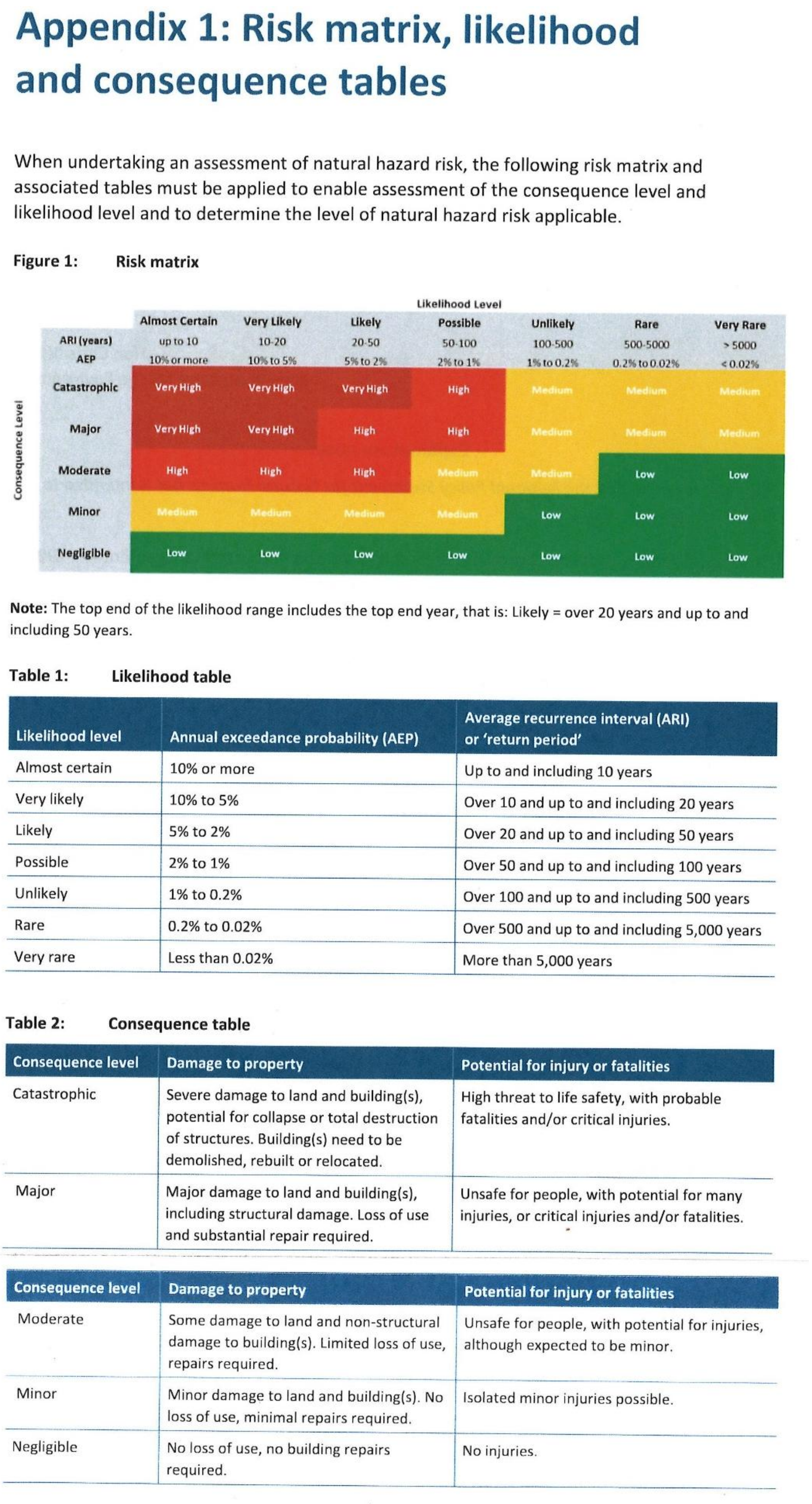
TAIKO CRITICAL MINERALS LIMITED
BARRYTOWN SAND MINING SITE CHA
CONTOUR PLAN GRANITE CREEK–CANOE CREEK

Scale (A3)	ACAD Filename
1:10,000	231202/DR-231202-012R2
Drawing No.	Rev.
DR–231202–012	2

APPENDIX B – NPS-NH RISK MATRIX



Appendix 1: Risk matrix, likelihood and consequence tables

When undertaking an assessment of natural hazard risk, the following risk matrix and associated tables must be applied to enable assessment of the consequence level and likelihood level and to determine the level of natural hazard risk applicable.

Figure 1: **Risk matrix**

		Likelihood Level						
		Almost Certain	**Very Likely**	**Likely**	**Possible**	**Unlikely**	**Rare**	**Very Rare**
	ARI (years)	up to 10	10-20	20-50	50-100	100-500	500-5000	> 5000
	AEP	10% or more	10% to 5%	5% to 2%	2% to 1%	1% to 0.2%	0.2% to 0.02%	< 0.02%
Consequence Level	**Catastrophic**	Very High	Very High	Very High	High	Medium	Medium	Medium
	Major	Very High	Very High	High	High	Medium	Medium	Medium
	Moderate	High	High	High	Medium	Medium	Low	Low
	Minor	Medium	Medium	Medium	Medium	Low	Low	Low
	Negligible	Low	Low	Low	Low	Low	Low	Low

Note: The top end of the likelihood range includes the top end year, that is: Likely = over 20 years and up to and including 50 years.

Table 1: **Likelihood table**

Likelihood level	Annual exceedance probability (AEP)	Average recurrence interval (ARI) or 'return period'
Almost certain	10% or more	Up to and including 10 years
Very likely	10% to 5%	Over 10 and up to and including 20 years
Likely	5% to 2%	Over 20 and up to and including 50 years
Possible	2% to 1%	Over 50 and up to and including 100 years
Unlikely	1% to 0.2%	Over 100 and up to and including 500 years
Rare	0.2% to 0.02%	Over 500 and up to and including 5,000 years
Very rare	Less than 0.02%	More than 5,000 years

Table 2: **Consequence table**

Consequence level	Damage to property	Potential for injury or fatalities
Catastrophic	Severe damage to land and building(s), potential for collapse or total destruction of structures. Building(s) need to be demolished, rebuilt or relocated.	High threat to life safety, with probable fatalities and/or critical injuries.
Major	Major damage to land and building(s), including structural damage. Loss of use and substantial repair required.	Unsafe for people, with potential for many injuries, or critical injuries and/or fatalities.
Moderate	Some damage to land and non-structural damage to building(s). Limited loss of use, repairs required.	Unsafe for people, with potential for injuries, although expected to be minor.
Minor	Minor damage to land and building(s). No loss of use, minimal repairs required.	Isolated minor injuries possible.
Negligible	No loss of use, no building repairs required.	No injuries.