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22 December 2022

Anne Maree Roberts Planning Department City of Monash 293 Springvale Road Glen Waverley VIC 3150

Dear Anne Maree,

# PLANNING PERMIT APPLICATION FOR ADDITIONAL GROUND IMPROVEMENT PRELOADING WORKS IN DOMAINS 2A, 2B, 3 AND 5, AND REMOVAL OF NATIVE VEGETATION 1221-1249 CENTRE ROAD, OAKLEIGH SOUTH

We continue to act on behalf of Huntingdale Estate Nominees Pty Ltd in relation to the former Talbot Quarry site at 1221-1249 Centre Road, Oakleigh South.

As you are aware, we recently lodged an application for ground improvement works (preloading) for the north-western portion of the site (Domain 1) and the construction of a temporary landfill gas venting trench along the north-western boundary of the site.

The eastern portion of the site (which includes Domains 2a, 3a, 3b and 5) were largely preloaded during the stockpiling works that took place in 2017-19. Further geotechnical investigations undertaken since that time have established that additional preloading is required along the northern and eastern boundaries. This is to ensure that the full practicable extent of the former quarry pits are appropriately preloaded to improve the ground conditions closer to the site boundaries where preloading has not occurred to the edge of the former quarry pits. This will reduce potential differential settlement between the edge of the existing preload and existing ground at the boundaries of the site. Accordingly, we now seek consent for additional ground improvement works (preloading) in the eastern portion of the site.

The eastern portion of the site comprises a former quarry pit which have been backfilled with 'slimes' and other uncontrolled fill during the sand quarrying activities, and more recently preloaded with imported clean fill stockpiles (works carried out under Planning Permit TPA/43337).

The proposed earthworks of stockpiles are a geotechnical ground improvement measure involving bringing clean fill onto the site to 'preload' the existing fill to induce ground consolidation and settlement, as an engineered treatment of previous fill material and to investigate long term settlement patterns of the fill, providing data for future engineering design.

The term 'Domains' relates to areas of the site grouped by similar geotechnical ground conditions, whereas site 'Zones' relate to environmental conditions and associated management requirements as



outlined in the environmental audit. Geotechnical Domains 2a, 3a, 3b and 5 are located in Environmental Zones 2, 3 and 5 in the Statements of Environmental Audit.

This letter should be read in conjunction with the following supporting documentation:

- Existing Conditions Plans prepared by Tetra Tech Coffey;
- Proposed Works plan prepared by Tetra Tech Coffey;
- Tree removal plan prepared by Tetra Tech Coffey;
- Preload Design Report Domains 2a, 3a, 3b and 5 prepared by Tetra Tech Coffey dated 22 December 2021;
- Letter in support of planning application prepared by Tetra Tech Coffey dated December 2021;
- Site Environmental Management Plan prepared by Verve, dated 23 November 2021;
- Flora and Fauna Assessment prepared by Ecology and Heritage Partners, dated September 2021;
- Arboricultural Assessment and Report prepared by Tree Logic dated 15 September 2021;
- Aboriginal Cultural Heritage Assessment prepared by Ecological Australia dated 31 March 2021;
  and
- Additional Aboriginal Cultural Heritage Letter prepared by Ecological Australia dated 2 December 2021;
- Construction and Environmental Management Plan, dated 1 May 2020;
- Traffic Management Plan prepared by Cardno dated 11 November 2021.
- A letter of verification from the Environmental Auditor.

Please note the Construction and Environmental Management Plan (CEMP) is the same as that appended to the Statements of Environmental Audit (SoEA) which have previously been provided to Council. Compliance with the CEMP is a condition of the SoEA.

# 1. BACKGROUND

The site's previous uses and activities of sand quarrying in the eastern portion of the site require a geotechnical response to improve the ground conditions to enable future development works.

The majority of the eastern portion of the site has been preloaded with stockpiles under a previous permit (Planning Permit TPA/43337) which expired in 2019. These works have been instrumental as part of comprehensive geotechnical investigation in providing extensive data and modelling to enable assessment of proposed ground improvement works and any additional works that may be required. The data has facilitated the preparation of the Settlement Prediction Report that informs the geotechnical and structural response of redevelopment.

This application is the second in a staged approach for additional ground improvement works across the site. A permit application for works in Domain 1 are currently under assessment by Council. Future applications will seek approval for additional ground improvement works in Domains 2B and 6, and backfilling of the quarry pit in Domain 4.

The Environmental Audit was completed in May 2020 which resulted in three Statements of Environmental Audit (SoEA) permitting sensitive uses subject to various requirements and conditions.



The preload stockpiling works proposed under this planning permit application in Domains 2a, 3a, 3b and 5 are located in the SoEA area for Zone 2, Zone 3 and Zone 5.

The SoEA for Zone 2, Zone 3 and Zone 5 includes the following Condition (5):

 The CEMP and CDSMM prepared by Coffey Services Australia Pty Ltd attached to this Statement, also must be adhered to prior to the commencement of construction and followed in detail regarding the proposed staging; the location of required gas protection measures (i.e. gas pathway intervention and building/ services protection measures); and required continuing monitoring of landfill gases.

The reference in the SoEA to the CEMP prepared by Coffey Services Australia Pty Ltd, is the *Construction Environmental Management Plan* (Coffey 2020) prepared in support of the Environmental Audit.

No specific environmental management measures are required in the SoEA and CEMP for preload stockpiling works in Zones 2, 3 and 5. The reference in SoEA Condition 5 (above) to a *gas pathway intervention* relates to the requirement to construct an inground pathway intervention (e.g. gas venting trench) between the former landfill in Zone 1 and the western boundary of Zones 2, 3 and 5. The pathway intervention is required prior to construction of the Zone 1 landfill cap (and any civil or housebuilding construction) but is not required for preloading activities.

The SoEA and associated CEMP do not include any specific LFG monitoring requirements with regards to preloading works in Zones 2, 3 and 5 (Domains 2a, 3a, 3b and 5). The majority of these site areas have previously been subject to preloading, the potential environmental effects of which were assessed during the environmental audit.

In accordance with the CEMP, landfill gas and groundwater monitoring is required across the site on a biannual basis (~every 6 months). Results of the monitoring are verified by an appointed Environmental Auditor and provided to EPA annually.

# 2. SITE AND SURROUNDS

The entire property comprises almost 19 hectares, situated to the north east of Centre and Huntingdale Roads intersection in Oakleigh South. The land has a long history of use for quarrying and sand extraction, and landfilling in parts of the site. Stockpiling of fill has been the most recent activity undertaken on site.



The works proposed as part of this application will take place the eastern portion of the site (Domains 2a, 3a, 3b and 5 in the Preload Design Report). This area is also referred to as Zones 3, 5, 2a and part of Zone 2 in the Environmental Audit.





Figure 1 - Zones in Environmental Audit

Figure 2 - Geotechnical Domains

The eastern portion of the site has a northern and eastern interface with the rear of residential properties. To the north-east, the former primary school site is currently being developed for townhouses. Talbot Park is located to the south.

To the south of Domain 4 is a four storey apartment building located at the corner of Huntingdale and Centre Roads and two storey apartment blocks at 1219 Centre Road. There are residential properties which front onto Huntingdale Road along the north-western boundary and Davies Reserve, including a scout hut located to the north of the western portion of the site.

# 3. PROPOSAL

The key features of the proposal are:

- Additional preloading to the north and east of the existing stockpiles in Domains 2a, 3a, 5 and 3b.
- The crest of the stockpiles will be set back 12m-12.5m from the site boundaries and stockpile toe of the batter will setback 2m from the site boundaries. This has been proposed to provide the maximum extent practicable and sufficient preload over the pit edges, which are located 2m to 8m from the northern boundary and 5m to 12.5m from the eastern boundary.
- Based on the geotechnical properties of the fill and slimes material, a 3H:1V batter is considered a safe batter slope for the proposed preload height.



- Proposed preload levels vary from RL66m at the northern end of Domain 2a to RL64.5m at the southern end of Domain 3b.
- The existing stockpiles with current elevations higher than the proposed preload levels will be reatined.
- As the preloading of stockpiles is required up to 2m from the site boundaries, and with the requirement of a swale drain at the base of the stockpile, all the trees and vegetation area are proposed to be removed within the boundary areas, including one patch of native vegetation and 6 native trees.

The former quarry pits in Domains 2A, 3A 5 and 3B were typically up to 20m deep and mainly backfilled with very soft to soft, highly compressible clay slimes which are typically covered by sandy and clayey fill varying between a few metres thick up to about 10m thick in some areas. Between 2017 and 2019 fill was stockpiled in theses Domains to act as a 'preload' to a maximum level of between RL63.5 and RL65.5m (up to 3m higher than the levels at the site boundary) and proposed subsequent reuse in the backfilling of the quarry pit in Domain 4.

The previous stockpiling planning permit had a condition that no works took place within 30m of the site's boundaries, except for infilling perimeter mounds that were up to 10m from the boundary. As can be seen in historical aerial photos (see Figure 1) and as inferred from test pits excavated as part of the recent geotechnical investigations, the former quarry pit crests are located approximately 2m to 8m from the northern boundary and 5m to 12.5m from the eastern boundary. The existing preloaded areas are required to extend as close as practicable to the edges of the former pit to apply a more uniform load across the site. This will reduce potential differential settlement between the edge of the existing preload and existing ground at the boundaries of the site following the removal of the preload, construction of the structural fill platform and subsequent construction of infrastructure and dwellings.

Figure 1 - Historical Aerial Photos from 1963 and 1972





A batter slope of 3H:1V is proposed for the eastern Domains due to the geotechnical properties of the slimes and fill material which is different to the Domain 1 fill material. Taking account of the slope required batter which is considered a safe batter slope for the proposed preload height, the toe of the preload will be set back 2m from the northern and eastern boundaries.

The existing preload of Domains 2a, 3a, 3b and 5 comprises stockpiles with surface elevations ranging from RL63.5m to over RL65.5m. These levels have previously been adopted to provide an applied load of about 25kPa greater than the final applied loads to induce the settlement and to reduce the magnitude of settlement that occurs during the placement of the structural fill and dwellings. Settlement of up to 900mm has been recorded since the placement of the preload demonstrating the success of the preload.

The same approach has been adopted for design of the extended preload towards the property boundaries. The extended preload will be placed at least to RL66m in the northern end of Domain 2a and RL64.5m at the southern end of Domain 3b which corresponds to at least 2.5m (at least 25kPa) above the final site levels.

Further details of the preload design are provided in the Preload Design Report.

The preload is expected to be in place and monitored for settlement for around 12-18 months. After which, the preload will be removed and used as backfill material for the quarry void in Domain 4 (subject to separate planning approval).

As the preloading of stockpiles is required up to 2m from the site boundaries to ensure uniform settlement of ground within the former quarry pits and avoid differential settlement with existing ground, all the trees and vegetation are proposed to be removed within the boundary areas.

Trucks and vehicles will utilise the existing access from Huntingdale Road (proposed to be widened under the Domain 1 works application) to enter and leave the site. No trucks are proposed to use the Centre Road access.

# 4. PLANNING CONTROLS AND POLICIES

### 4.1. ZONING AND OVERLAYS

The site is located in the **General Residential Zone – Schedule 3** (GRZ3) and the **Special Use Zone 2** (SUZ2). The eastern domains are located in the SUZ2. However, access to the this area is required through the GRZ3 zone.

The proposed use and works associated with improving the ground conditions of the land requires a planning permit under the Special Use Zone and General Residential Zone.



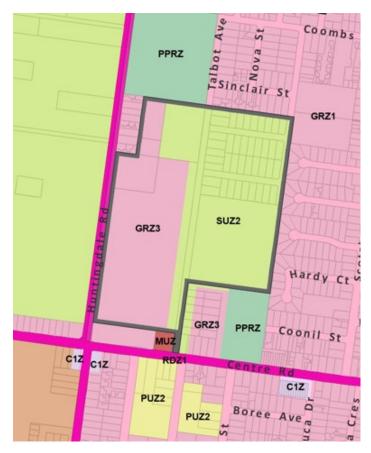


Figure 2 - Zoning Plan

The subject site is affected by an **Environmental Audit Overlay**. The Environmental Audit is now complete.

# 4.2. CULTURAL HERITAGE SENSITIVITY

The south western portion of the site is located in an area of cultural heritage sensitivity as shown in the plan below.



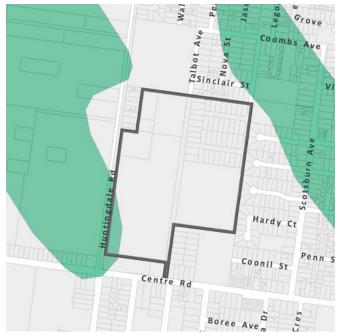


Figure 3 - Aboriginal area of cultural heritage sensitivity

Whilst no works are proposed in this area under the current application, an Aboriginal cultural heritage assessment has been carried out by Ecological Australia. This assessment concluded that the previous activities on the site has resulted in significant ground disturbance and the mandatory cultural heritage management plan (CHMP) will not be required for quarry infilling or any future redevelopment of the site for mixed-use residential purposes, on the basis that no areas of Aboriginal cultural heritage sensitivity are present within the study area. Ecological Australia has confirmed in a separate letter dated 2 December 2021 that no mandatory CHMP is required for any future use, development or works on the site.

#### 4.3. PARTICULAR PROVISIONS

**Clause 52.17** 'Native Vegetation' seeks to ensure no net loss to biodiversity resulting from removal, destruction or lopping of native vegetation. Pursuant to Clause 52.17-1, a permit is required to remove, destroy or lop native vegetation, including dead native vegetation, with some exemptions.

Clause 53.18 'Stormwater Management in Urban Development' seeks to ensure stormwater in urban development, including retention and reuse, is managed to mitigate the impacts of stormwater on the environment, property and public safety, and to provide cooling, local habitat and amenity benefits. Whilst the proposed works are not for new buildings, the provisions of this clause have been taken into account.

# 4.4. RELEVANT PLANNING POLICIES

Clause 13.04-1S 'Contaminated and potentially contaminated land' seeks to ensure that 'potentially contaminated land is suitable for its intended future use and development, and that contaminated land is used safely'.

Clause 21.13 'Sustainability and Environment' seeks to (amongst other strategies) 'ensure that planning, development and associated infrastructure complies with the principles of economic prosperity, social advancement and environmental protection.'



**Clause 22.05** 'Tree Conservation Policy' seeks to 'maintain, enhance and extend the Garden City Character throughout Monash' and 'to promote the retention of mature trees and encourage the planting of new canopy trees with spreading crowns throughout Monash'.

Clause 22.09 'Non-Residential Use and Development in Residential Areas' seeks to 'ensure that development is appropriate having regard to the residential environment of the surrounds and that the amenity of the neighbourhood is not adversely affected by a business conducted in a residential area.'

# 5. PLANNING CONSIDERATIONS

The preloading works are considered appropriate on the basis they are required as an engineered geotechnical design response to improve the ground conditions to enable the future development on the site.

The proposed preloading extent and stockpile pile heights are required to ensure sufficient uniform settlement of ground within the former quarry pits and avoid differential settlement with existing ground around the site boundaries. The preloading design has also had regard to the future redevelopment of the site and the requirement for future ground levels in the northern portion of the site to be higher than the southern portion of the site to allow for gravity storm water drainage to a future retarding basin/wetlands in the southern portion of the site.

There is no requirement for a landfill gas boundary venting trench for these works due to the distance to the Domain 1 landfill.

#### 5.1. CONSISTENCY WITH PLANNING POLICY

The proposal is consistent with relevant planning policy, having regard to:

- The works are consistent with the Environmental Audit, which will enable the land to be safely used (Clause 13.04-1S)
- The works will ensure the surrounding environment is protected from future rehabilitation works on the site (Clause 21.13).
- Whilst Clause 22.05 seeks the retention of semi-mature and mature tree canopy, tree retention is not possible due the extent of preloading earthworks required to be 5m from the site boundary.
- Amenity impacts can be minimised and managed for the works to be appropriate adjacent to existing residential areas (Clause 22.09).

#### 5.2. EXTENT OF PRELOAD WORKS

The preload heights and location are required to avoid differential settlement with the existing natural ground around the former pit edge when the site is redeveloped and future drainage requirements for the whole site. On the basis that the former quarry pits extended to up to 2m from the northern and eastern boundary and up to 5m from the eastern boundary and taking account of the safe slope (3L:1V) of the preload batter over slimes materials, the preload 'toe' will be located approximately 2m from the northern and eastern boundaries.

Whilst we note that Clause 52.09 'Extractive Industry and Extractive Industry Interest Areas' refers to the rehabilitation of previously extracted areas, this Clause does not apply to the current application as the proposed works are not for extraction industry, within an Extractive Industry Interest Area, or within 500 metres of an existing or proposed extractive industry operation. Whilst not applicable, the Clause refers to a 20m setback from site boundaries to not alter the natural condition or topography of the land. As noted above, previous quarrying activities at the site occurred up to around 2m from the site



boundaries and the proposed works form part of the geotechnical ground improvement strategy for the site that will assist in enabling the rehabilitation of the land so it can be used for future urban purposes that would be more beneficial to the local community than its current fenced off condition, vacant condition.

#### 5.3. ENVIRONMENTAL MANAGEMENT CONSIDERATIONS

The proposed preloading works have been reviewed by and are supported by Tetra Tech Coffey Environmental Scientists (see enclosed letter from Tetra Tech Coffey). The works have also been verified by the Environmental Auditor (see enclosed letter from Ken Mirval of EHS Support).

The findings of the Environmental Audit indicate that the potential for off-site landfill gas migration to occur in Zone 3 and 5 is low given the absence of identified sources of LFG in these areas, which have primarily been filled historically with low permeability slimes.

The ground gas conditions of Zone 2 are characterised by elevated methane and carbon dioxide concentrations but with generally very low flow rates (<0.5 L/hr). The elevated LFG concentrations in this area of the site are likely to be associated with the presence of a distinct layer of construction and demolition waste (including at least a component of organic material, timber etc.) previously imported to the site in the 1990s as a bridging layer for the slimes. Given the relatively shallow nature and source of the wastes in Zone 2, low permeability of the underlying slimes and low rates of LFG generation, any migration of LFG in this area is likely to occur due to diffusive processes. Under these conditions any LFG would be expected to attenuate prior to reaching the site boundary and is unlikely to pose an unacceptable risk to off-site receptors.

Considering the LFG conditions in Zones 2, 3 and 5 it is unlikely that the proposed preload stockpiling works would have any measurable negative affect on LFG migration at the site and pose a risk to off-site receptors (either to properties immediately adjacent to the works or in other areas surrounding the site). Preloading works may have a positive affect in this area, by reducing the permeability of the ground below the preload.

Whilst the proposed preloading works are considered unlikely to impact on LFG conditions at the site and pose a risk to off-site receptors, as a confirmatory measure, if preloading works in Domains 2a, 3a, 3b and 5 were to occur prior to those in Zone/Domain 1 (TPA/53179) an additional round of LFG sampling should be undertaken for boundary LFG bores in these areas as outlined in the letter provided by Tetra Tech Coffey and verified by the Environmental Auditor.

The proposed Domain 2a, 3a, 3b and 5 stockpiling works are not expected to have any measurable effect on groundwater conditions at the site and no additional groundwater monitoring is considered to be required for these works.

#### 5.4. OFF SITE AMENITY CONSIDERATIONS

All works will be carried out in accordance with the Construction Environment Management Plan (CEMP) which forms part of the Environmental Audit Statements. The CEMP includes comprehensive mitigation measures to ensure amenity considerations are appropriately managed and neighbouring properties will not be adversely impacted.

It is considered there will not be any unreasonable amenity impacts associated with these works having regard to the following:

As shown in the cross sections appended to the Preload Design Report, some sections the preloading stockpiles will be visible from the rear of the properties abutting the northern and eastern boundaries of the site. The crest of the stockpiles will be between 12m and 12.5m from the site boundaries which is considered a reasonable setback from a visual amenity perspective,



noting the stockpiles are a temporary measure and are expected to the removed from the site after a 12-18 month period. Furthermore, the stockpiles will be revegetated with grass seed which will assist in improving the visual amenity of the stockpiles to be grassy mounds.

- To limit the impact of noise associated with the construction works, working hours will be restricted to:
  - 7am 6pm Monday-Friday
  - 8am to 12pm Saturdays
  - No work on Sundays or public holidays.
- The CEMP identifies a number of measures are to be taken to minimise the amount of dust detected outside the site. These include minimising the movement and speed of vehicles at the site and using a water spray for dust suppression, if required.
- The CEMP also includes measures with regard to construction
- The duration of works is expected to be relatively short over a 2-3 month period (depending on the availability of fill and weather conditions). Works will commence with vegetation removal and construction of the perimeter swale drain. The stockpiling works will then be carried out sequentially from the north-west corner of Domain 2a, along the northern boundary and then down the eastern boundary so works nearby each adjacent residential property will be limited.

In line with previous permits on the site and the S173 Agreement applying to the land, a community consultative committee will be re-established to liaise with all parties and deal with and resolve any ongoing issues associated with the project. Residents and land owners surrounding the development will be invited to participate in the community consultative committee prior to the use and development commencing.

It is noted that the purpose of the Special Use Zone expressly encourages the rehabilitation of the land. The works are therefore in accordance with the zone purpose, fulfilling the site's rehabilitation from its former quarrying past.

#### 5.5. ACCESS AND TRAFFIC

The existing access to Huntingdale Road is proposed to be widened to enable trucks to enter and exit from this access while the preloading works take place (approval sought under the Domain 1 application).

The amount of the traffic movements is expected to be relatively low. The ground improvement works will be carried out in stages so the traffic generation from this application is expected to follow the Domain 1 application.

A Traffic Management Plan has been prepared by Cardno which prescribes safe vehicle movements into and within the site during the construction phase.

#### 5.6. TREE REMOVAL

The geotechnical strategy for the site contemplates preloading of stockpiles up to 2m from the site boundaries to ensure uniform settlement of ground within the former quarry pit and avoid differential settlement with existing ground. A swale will be built between the preload and site boundary to manage stormwater run off. Trees will be required to be removed to enable these earthworks to take place.



An arboricultural assessment has been undertaken for the whole site. For the proposed works in the eastern portion of the site, a total of 29 individual trees and 4 tree groups are proposed to the removed. The arboricultural rating, which reflects its retention value from an arboricultural perspective, for the trees to be removed are as follows:

- No trees were assessed to have a High arboricultural rating.
- Two (2) trees were attributed an arboricultural rating of Moderate A, being prominent trees in Fair or better condition and with a moderate to long useful life expectancy (ULE).
- Ten (10) tree features rated Moderate B, being middle of the range and typical of the species worthy of retention where possible.
- Six (6) tree features rated Moderate C, being of either small size or displaying accumulated deficiencies that are tending towards becoming of Low arboricultural value.
- Eight (8) tree features were attributed an arboricultural rating of Low, displaying symptoms of decline and / or structural deficiencies.
- Three (3) trees were attributed a rating of Very Low due to being dead or becoming hazardous.

Overall, the vegetation removal is considered appropriate to enable earthworks that are required to enable the future redevelopment of the site. As part of future development works, the geotechnical strategy requires a 2m structure capping layer constructed (after the preload and part of the previous fill on site is removed) and there is a requirement of the Environmental Audit for 500mm of clean fill topsoil be placed on the site. These requirements will change the existing levels of the ground around existing trees which necessitates the removal of trees. Importantly, none of the tree features on site were assessed to have a High arboricultural rating and only 12 tree features were identified as Moderate A or Moderate B ratings. Furthermore, extensive planting of trees is proposed as part of the proposed redevelopment of the site which will result in an overall net gain of trees.

#### 5.7. NATIVE VEGETATION REMOVAL

A Flora and Fauna assessment has been carried out. For Domains 2, 3a, 5 and 3b two large native Coast Manna-gum trees in a Heathy Woodland patch are present in the north east corner of the site, and four (one small and three large) scattered Coast Manna-gum trees are present along the eastern boundary of the site.

Due to the extent of preload required to be offset 2m from the site boundaries, these trees and required to be removed and appropriate offsets have been identified Flora and Fauna assessment.

#### 5.8. ENVIRONMENTAL SITE MANAGEMENT AND STORMWATER MANAGEMENT

An Site Environmental Management Plan has been prepared by Verve, which in addition to the CEMP applying to the site (as appended to the Environmental Audit), will ensure the works will be appropriately managed during construction and measures to ensure stormwater is appropriately managed during construction and while the stockpiles are in place.

The stormwater management measures include drainage swales close to the edge of the northern and eastern preload stockpile crest to enable stormwater to drainage southwards. Additional swales are proposed around the boundaries of the stockpiles to collect water from the stockpile batters. The swales will connect into the existing drainage swales in the south-eastern portion of the site. These measures will ensure stormwater drainage is appropriately managed on-site.



Silt fences are proposed at the crest and toe of the stockpiles to ensure silt does not wash down the stockpile batters. The stockpiles areas will be revegetated with grass seed to assist with soil erosion.

# 6. CONCLUSION

Overall, preloading works are considered appropriate as an engineered geotechnical design response to improve the ground conditions to enable future development on the site. The works do not pose an unacceptable risk due to landfill gas migration to surrounding residential properties and amenity impacts can be appropriately managed.

We trust that the information provided in this application is satisfactory. However, if you have any questions, please don't hesitate to contact me.

Yours sincerely,

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