Summary

Classification and environment management plan assessment report – Hi Quality (Bulla)

Introduction

EPA has received from Hi-Quality Sales Victoria Pty Limited (Hi Quality) an environment management plan (EMP) proposing to receive and manage soil and rock (spoil) from the West Gate Tunnel Project. EPA has also received a sample analysis quality plan (SAQP) from CPB/John Holland Joint Venture (CPBJH JV) documenting how the soil would be transported to and sampled at a potential receiving site.

Construction of the tunnel will produce an estimated 1.5 million cubic metres (2.8 million tonnes) of spoil. Hi-Quality proposes to receive the spoil at their premises at 570 Sunbury Road, Bulla, Victoria (the Site).

Hi-Quality's environment management plan covers:

- temporarily stockpile and temporarily store spoil generated from the tunnel project within holding bays in order to collect and analyse soil samples for categorisation
- permanently deposit categorised spoil into a containment cell at the Site where suitable to do so, or either reuse, treat or dispose at an appropriate facility.

Groundwater investigations along the tunnel alignment have indicated the presence of per- and poly-fluoroalkyl substances (PFAS). However, the soil and rock from the tunnel alignment has not been sampled for PFAS. Based on the groundwater results provided the maximum leachable PFOS+PFHxS (perfluorooctanesulfonic acid and perfluorohexane sulfonic acid) concentration in spoil is likely to be approximately 0.7 micrograms per litre (µg/L). Therefore, EPA requires that the spoil is sampled and analysed prior to reuse, containment, or disposal.

To support its application, Hi-Quality submitted a document titled ‘Hi-Quality Quarry Products Pty Limited, Sunbury Waste Management Facility Environmental Management Plan’ prepared by GHD, and dated August 2020. This submission comprised environmental control and monitoring measures including containment design, human health and ecological risk assessment, modelling report and concept design of a temporary storage and containment area, including water treatment system design.

EPA assessment

EPA assessed Hi-Quality’s submission in accordance with the principles of the Environment Protection Act 1970 (the EP Act 1970), as well as in accordance with the Management of Tunnel Boring Machine Spoil Regulations (2020) and other relevant subordinate legislation and guidelines.

EPA’s assessment focused particularly on the follow areas:

- spoil storage and categorisation procedures, including sampling and analysis plans
potential environmental and human health impacts of temporary storage of the spoil within holding bays and permanent deposition to a containment cell

risk assessment of spoil management, noise and leachate to on-site operators and future Site users, groundwater, surface water, stormwater and air quality.

EPA has prepared an assessment report that includes its observations, conclusions and recommendations. The report also contains information about the West Gate Tunnel Project, the Site, and material from the Hi-Quality EMP. The report includes information about the potential contaminants – both in the soil to be removed, and in the groundwater.

EPA is satisfied that the proposed spoil EMP complies with the relevant subordinate legislation and guidelines.

Risk assessment

Hi-Quality’s Human Health and Ecological Risk Assessment has identified relevant exposure scenarios for on-site and off-site sensitive receptors to PFAS-contaminated soil, dust and water. Site specific triggers levels were developed for groups of PFAS compounds that were deemed to be protective of onsite workers and waterfowl.

EPA noted that some conservative assumptions had been included in deriving the proposed acceptance criteria (specification) for the spoil. However, it was also noted some additional uncertainties given the risks associated with the limited evidence base available at this time on PFAS behaviour, noting the conservatisms elsewhere in the proposed approach. EPA therefore applied additional conservatism to the proposed acceptance criteria (specification) based on the principles in EPA Publication 631 for concentrations of contaminants in landfills.

Spoil and water management

The spoil containment cell will comprise a combination of a liner overlaid with additional protection and drainage layers and a leachate collection system to avoid the potential for PFAS leaching into groundwater.

EPA concludes that the proposed containment system will control and contain any contaminants leaching from the soil. Therefore, leached contaminants are unlikely to migrate into groundwater below the containment cell.

Hi-Quality must provide EPA with information further detailing the capacity of the leachate system, bunding, the liner profile and subgrade materials. The company must also submit further details for the containment cell, leachate storage ponds, water treatment plant and capping design, which should include an assessment of the overall stability of the resulting landform.

There is a requirement for regular sampling of soils prior to being placed in the containment cell to ensure it meets the cell acceptance criteria. EPA is also required to review auditor assessed final specific designs prior to and following the construction of the containment system at the Site.

Environmental monitoring

Hi-Quality will undertake regular monitoring of groundwater, surface water, leachate, air quality and noise to check that the controls associated with the management of the spoil adequately protect human health and the surrounding environment.

There will be monitoring of groundwater, surface water dust and noise is required to assess the effectiveness of controls proposed, with trigger values proposed which may result in further control measures. The monitoring program has been assessed as being sufficient to assess the effectiveness of the liner performance and leachate management system.
Hi-Quality proposes that all construction activities will be undertaken during the day and evening, with no night works anticipated until the operation phase. Construction noise must be minimised to the extent practicable. Confirmation of the effective implementation of noise mitigation measures should be sought via follow-up assessment. EPA recognises that road traffic noise would increase resulting from more heavy vehicle movements. Although EPA does not regulate noise from vehicles movements, it does recommend an assessment of low frequency noise potentially generated from the activities.

Background concentrations of contaminants of concern have been established for groundwater, surface water and soil. Hi-Quality must establish background levels of PFAS in groundwater, surface water and soils before any activities take place on Site.

A detailed Site rehabilitation and after-care management plan must also be prepared to ensure the environment remains protected following completion of the containment cell.

**Next steps**

Further development of final specific design drawings and specifications based on the designs provided. These are required to be reviewed by an independent auditor prior to being reviewed by EPA.

An independent third-party environmental Auditor is required to undertake the following:

- **Final specific design audit** - Review and assess the final specific design of the containment cell and leachate management system, including the holding bay design, leachate ponds and leachate treatment system.

- **Post construction audit** - Review the construction of the holding bays, leachate management systems and containment cell to ensure they are constructed to a suitable standard.

- **Operation audit** – assessment of the soil and leachate management processes and the monitoring program to ensure that they are being undertaken as per the EMP and are effective.

- **Post completion audit** – assess the completion of the removal of the holding bays, other temporary soil management infrastructure, capping of the containment cell and post completion monitoring program.

**More information**

Read EPA’s full assessment report, cover letter and H-Quality’s EMP on EPA’s website.

If you would like further information, please contact us by emailing contact@epa.vic.gov.au or calling 1300 372 842 (1300 EPA VIC).