

66. Prior to commencing construction of the water intake and lake outlet structures and infrastructure, the consent holder shall prepare a detailed construction / design report and management plan for certification by the Council.

Advice note

The consent holder will also need to comply with the conditions of Consents AUTH139551.09.01 and AUTH139551.10.01 from the Waikato Regional Council with respect to the construction of the river intake and lake outlet structures.

67. The construction / design report and management plan shall indicate the main construction activities to be undertaken, materials to be delivered to the construction area, materials to be removed from the construction area, duration and timing of earthworks and construction of structures, and proposals concerning the rehabilitation of areas disturbed during construction.
68. The Liaison Officer shall ensure that the programme of construction of the water intake and lake outlet structures is provided to all residents in the immediate area who, in their opinion, are likely to experience the effects of these activities and to the Council. This programme shall be provided at least five working days in advance of the construction work being undertaken.
69. The construction of the lake outlet structures shall be carried out and completed to the satisfaction of the Group Manager – Planning and Environmental Services.

PIT SLOPE MANAGEMENT PLAN

70. The consent holder shall prepare a Pit Slope Management Plan. This plan shall be peer reviewed by the Peer Review Panel (required in accordance with Condition 13 of Schedule One) and then submitted to Council for certification 30 working days prior to the exercise of this consent. If certification is not provided within 30 working days of Council's receipt of the Pit Slope Management Plan activities authorised by this consent may commence. The Pit Slope Management Plan shall address at least the following issues:
- a. Procedures for the investigation, monitoring, excavation and backfilling of old mine stopes where practical and safe to undertake within 30 m below the toe of the Phase 4 Cutback;
 - b. Development of a monitoring regime focused on monitoring groundwater and pit slope behaviour, including pit wall movement due to underground mining;
 - c. Location and installation of horizontal drains for the purposes of addressing groundwater and surface water effects;
 - d. The identification of areas around the Martha Pit that may be subject to ground deformation and associated structures / facilities that may be at risk; and
 - e. Development of a contingency response appropriate to these facilities / structures in the event of instability - including restoring these facilities to their former condition, the provision for interim structures / facilities or alternative structures / facilities in the event they are affected by the mining activities authorised by this consent.

Commented [MDL2]: HDC have advised that Conditions 70 – 75 can be shown in 'black' as they are agreed between the experts, they still require a final review by the Council.

UNDERGROUND AND SURFACE STABILITY

71. Underground mining within the Martha Underground Mine shall be conducted to ensure ground surface stability. This shall include adoption of the following measures:

- a. Mining methods shall be restricted to those that require stope voids created or enlarged as a result of this consent to be backfilled;
 - b. Historical open voids formed from caving or stoping shall be identified to be backfilled to ensure that these do not cause localised disturbance or displacement as a result of interaction with future stoping. This is to ensure short term and long-term stability;
 - c. No stoping in the Rex Orebody shall occur above a depth of at least 40m below the top of the andesite, unless investigations reported to the Council demonstrate to its satisfaction that a lesser depth will ensure surface stability. Any such investigation report is to include, at least, results from groundwater monitoring above the Rex workings, results from extensometers installed from the surface above the Rex workings, and surface settlement results from markers in the area above the Rex Orebody;
 - d. No stoping shall occur within 20 m of the mapped extent of the Milking Cow Zone (PSM, 2018). This three dimensional zone held within the geological model held by the consent holder and shown schematically in Figure X;
 - e. Backfilling of any other underground workings that overlap with the Martha Underground Mine where geotechnical conditions require backfilling to ensure long-term stability;
 - f. Seismic monitoring and rock movement monitoring of underground mine workings for the duration of mining including backfilling and any other underground rehabilitation work to include at least the monitoring of three extensometers to be installed from the surface above the Rex Orebody where practicable; and
 - g. Grouting of all future surface-drilled holes to a depth below the top of the andesite.
72. 30 working days prior to the commencement of any underground mining authorised by this consent, the consent holder shall provide to the Council for certification a Void Management Plan. If certification is not provided within 30 working days of Council's receipt of the Void Management Plan activities authorised by this consent may commence.

The objective of the Void Management Plan is to confirm the location and shape of old unfilled and filled mine voids, and to identify the risks and controls required to ensure ground surface stability. The plan will include, but will not be limited to:

- a. Proposed remnant mining methods;
- b. The procedures / methods for the backfilling of stope voids (including historic stopes);
- c. Modelling;
- d. Probe drilling;
- e. Stand-off distances (where applicable);
- f. Monitoring and operating procedures;
- g. Specifications for construction and placement of stope pillars where required;
- h. Describe the investigations to develop an adequate understanding of the ground conditions, and verify the location, status and extent of historical mine workings; and

- i. Review the information from the investigations and adjust the mine design and stope design to ensure that there is a high level of confidence that the stopes will be stable prior to backfilling and in the long term.

The consent holder shall review and update the plan as necessary including whenever there is any change in the methods or procedures used for void detection monitoring or operating procedures and shall provide the updated plan to the council for certification.

- 73. The Void Management Plan shall include a procedure describing preventative and mitigation actions that would be implemented to ensure that the mining in the Rex Orebody does not drain the strata overlying the andesite via existing drill holes and structures. Preventative and mitigation actions may include:
 - a. Avoiding intercepting the drill holes with mine workings;
 - b. Grouting drill holes from underground where underground development intercepts holes that are making water or geotechnical defects with significant and sustained water flows; and
 - c. Undertaking geotechnical investigations to demonstrate to the satisfaction of Council that draining of the drill hole(s) will not adversely affect surface stability.
- 74. The consent holder shall provide to the Council on an annual basis (within one month of an agreed anniversary date) a report:
 - a. Describing the location, depth height and volume (m³) of stopes and a summary of the data required by Condition 75 regarding unfilled stope voids; and
 - b. Describing the lengths of the development that, due to the encountered geotechnical conditions or where multiple levels overlap, will require backfilling prior to mine closure; and
 - c. Describing the backfilling associated with each stope; and
 - d. Describing the ground conditions revealed by the mine excavations; and
 - e. Describing the monitoring and measures adopted to ensure surface stability, particularly as provided for in Condition 71 and the outcomes of such measures; and
 - f. Describing the location and depth of exploratory drives; and
 - g. Confirming that the extent of the mining works is confined to the Project Martha area as defined in Plan A of Appendix 2.
- 75. The consent holder shall report to the Council on a monthly basis on the total stope volume and volume of filled stopes for that month for each mining method employed. This shall include the volume of voids created, the volume of fill in voids that have been created and the volume of fill in surveyed unfilled historic voids (including the volume of fill up to 30 m below the toe of the Phase 4 Cutback). The report shall be in a form acceptable to the Council and the data shall be for the situation as at the 20th day of the reporting month. The report shall be delivered no later than 10 working days after the end of the calendar month covered.