6	**Appendix 9 - Surface Water Assessment Report**	**Response Post Report Update**
6.2	**Review of application technical documents**	
6.2.1	**Effects on stream flow**	
	A key issue is whether the construction of the landfill and its operation will affect flow and flow variability in the unnamed tributary of the Otokia Stream located downstream of the landfill itself, including the effects of construction of the landfill over the headwaters of this tributary.	
	The hydrogeological report indicates that this watercourse is ephemeral in the vicinity of the proposed landfill and predicts the landfill construction will result in dewatering of a reach of this tributary. The ecological significance of this will need to be addressed in the draft ecological report.	Hydrogeology and Surface Water Report expect any changes to be less than minor
	The proposal includes the loss of a small proportion of the Open Stream, and an assessment of the effects of this on the Open Stream is also required.	Open Stream is no longer impacted with changes to the landfill design revised design
	The application may need to consider the National Policy Statement on Freshwater Management (2020). Given that the technical reports identify that the landfill will result in down slope movement of the ephemeral/intermittent/perennial boundary, it may be necessary for the Applicant to demonstrate how it is able to comply with Policy 7 of the NPS-FM1.	Groundwater and Surface Water Reports do not anticipated a change to ephemeral streams/wetland with proposed mitigation measures
	We note that this is also identified as an information gap in the ecological assessment provided by the applicant as described in Section 8 of this report, where: *"We recommend that a clear method for classifying streams be developed and implemented as part of future stream surveys."*	
	Further information requested:	
a	Address how the proposal complies with Policy 7 of the NPS-FM.	See 9.1.5 and 9.1.7 of the updated AEE.
b	That further investigations are carried out to more clearly define the hydrological character of the unnamed tributary of the Otokia Stream including its headwaters, to support a more refined assessment of the effects of the proposal (dewatering and stream loss) on this tributary and its hydrological characteristics.	Further field visits have been completed. It is noted that for the past 6 months no surface flow was present as far downstream as the McLaren Gully Road culvert. Stream had retreated to series of stagnant wetlands.
c	That further information is provided on the effects of the proposal on the headwaters of the Open Stream.	With changes to the landfill design Open Stream is no longer impacted.
6.2.2	**Stormwater treatment**	
	The permanent stormwater treatment ponds proposed in the draft documents reviewed contain very little detail on their performance. Given the reliance of these devices to control water quality and quantity, we would have expected the provision of information to demonstrate the expected performance of these facilities based on site specific information, rather than reference to compliance with published earthworks guidelines.	Further details provided on drawings and in draft Landfill Management Plan. However, at this stage of design the overall concepts and expected p[reformate are critical to define. Details design may change the details.
	These details may be provided in the Stormwater Management Plan; however, this report is not available to us at this time.	Monitoring and management will be provided in the draft LMP
	The assessment of the discharge of stormwater on surface water quality is limited to evaluation against some Regional Plan water quality criteria2. The Regional Plan, however, does not cover the range of contaminants that may discharge from a landfill site. Further the water quality standards set out in the NPS-FM will also need to be considered as a part of assessing the effects of this proposal on water quality.	Added additional parameters including NPS -FM
	This was a matter that was raised in our preliminary assessment of the draft investigation scope. The information provided in the reports reviewed here has not addressed that issue.	
	Further information sought:	
a	That an assessment of the effects of the discharge of a full range of contaminants (such as metal and organic toxicants), and parameters set out in the National Objectives Framework of the NPS-FM) during construction and operation of the landfill on surface water quality is carried out. Alternatively, advise what measures and monitoring are proposed to ensure this does not occur.	Monitoring plan has been expanded and further detail provided.
6.2.3	**Monitoring**	
	The monitoring plan as far as surface water quality is concerned is very limited. All surface water quality sites are in the immediate footprint and surrounds of the facility, all of these are in watercourses that have been identified in the draft reports as ephemeral (which pose monitoring challenges). No downstream (off-site) sites are identified.	This is not correct. SW7 is offsite at the culvert beneath McLaren Gully Road. The location was noted on drawing C309, and is shown in Figure 3 of the Surface Water Report, and remains a proposed monitoring location.
	We have been unable to find the list of monitoring parameters referred to in Appendix D of the hydrogeological report, so cannot comment on the range or suitability of the parameters to be monitored. However, we would expect those to include water quality parameters set out in the NPS-FM and Regional Plan for Otago and a full range of contaminants (toxicants for instance) that could arise from the operation of a landfill.	This table has been available previously and is now updated in the Hydrogeology report
	Given the reliance of the stormwater pond as a key treatment device, we would have expected close attention would be paid to the treatment performance of this device, including the consideration of continuous monitoring of stormwater, and the establishment of trigger levels for sediment during construction, including response actions in situations where those triggers are exceeded, and similar triggers for the landfill's operational phases.	An approach to monitoring and compliance is set out in the Surface Water Report.
Further information sought:		
a	That further information is provided on the monitoring proposed including full consideration of off-site monitoring points and parameters.	See above comment regarding SW7
b	That further information is provided on the design and performance of the stormwater treatment ponds, including its performance during construction and operation of the ponds, proposed monitoring, trigger levels and response actions.	An approach to monitoring and compliance is set out in the Surface Water Report