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7 September 2020

Hawke's Bay Regional Council
Private Bag 6006
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Attention: Tania Diack

Dear Tania

RESPONSES TO FURTHER INFORMATION REQUESTS FOR CONSENT APPLICATION APP-123774 AND REVISED CONDITIONS

This letter provides answers to outstanding information sought by the HBRC from WDC for the processing of the Wairoa wastewater discharge consent. Also attached are revised conditions.

BACKGROUND

On 19 May 2019 WDC provided a response to HBRC's s92 request dated 26 March 2019. HBRC sent a second s92 request on 12 July 2019, which WDC replied to on 11 October 2019. In both responses WDC proposed that some of the requests be addressed separately before the Hearing. While HBRC seemed to agree to this they subsequently provided further feedback and commentary regarding matters that, in their view, were 1) resulting from the earlier responses, 2) were previously incomplete, or 3) remained unresolved. HBRC has provided this feedback at various times over the last 10 months, including during the pre-hearing and submitter consultation period. Further, on 5 November 2019 HBRC raised concerns about flood scouring of the riverbed around the piers of the proposed new outfall structure.

During the pre-hearings and subsequent submitter consultation processes the draft proposed consent conditions have been reviewed and discussed by all parties. A range of feedback including queries, concerns, and potential amendments has been provided to WDC throughout this time. WDC have considered all feedback and have amended the draft conditions with commentary in response to the feedback and proposed amendments.

This letter provides the current version of proposed consent conditions, WDC's responses to the further information sought by HBRC, and relevant supporting information.

DRAFT CONSENT CONDITIONS

Consultation and Structure of Tabulated Conditions

The draft consent conditions have received separate feedback from HBRC and a group of submitters affiliated to Ngati Kahungunu. All submitters were provided an opportunity to respond to a revised set of conditions following the second pre-hearing meeting. The attached table of draft conditions provides the specific amendments and comments from each of these parties in the two left-hand columns. The middle column of this table provides WDC's responses to the feedback and justifications for changing or retaining each of the conditions. The right-hand columns provide

updated condition numbers and WDC's proposed amendments to each condition (strikethrough for proposed deletions and underline for proposed additions).

Structure

In order to simplify the consent conditions and provide clarity, some common terms have been moved to the definitions table above the conditions. Some of these were proposed by the other parties, while others are now proposed by WDC for consistency and simplicity. As part of rationalising the conditions, renumbering has been necessary. For clarity, a new column beside the new condition provides the current number for each condition.

Engagement with Maori

Conditions 2 and 3 have been combined with Conditions 37 and 38 to improve clarity of WDC's overarching goals to help address cultural values and achieve on-going engagement with Maori. Specifically, the wording has been rearranged so that the matters for compliance are within the conditions, while advice notes provide details of the purpose and intended practicalities. In order to show WDC's prioritisation of these matters, these reconfigured conditions are now placed among the first conditions instead of split with some located towards the end (which was disjointed and perhaps suggested that this was a low priority for WDC). WDC believe that this helps to set the scene for the consent conditions and future community engagement.

Discharge Volume Limits

During proofing of these conditions WDC identified that the draft conditions describing the discharge volume and timing limits did not reflect what was sought in the application. The result is a reduction in the volumes that can be discharged when the river is flowing at or below median and 3 x median river flows. This is a change 'down' (more restrictive) from the 5,400 m³/d limit that was originally shown in the earlier drafts of these consent conditions for all river flows and timing of discharges. WDC apologises for this error.

Certification of Plans

As requested by HBRC, WDC have developed a catch-all condition to describe the generic certification process that would be followed by WDC and HBRC for the various Plans such as the Monitoring Plan.

Outfall Certainty

Now that the design and location of the new outfall have been detailed, WDC have developed two groups of conditions. One group describes the construction management requirements for installing the new outfall at a specific and nominated location, while the other group sets out protocols and minimum construction requirements when undertaking any future modifications, relocations, repairs, or maintenance of the new outfall and existing pump station overflow outfalls. This confirms and provides for a design of the outfall structure to be located at a specific location.

This dual grouping and wording avoids a duplication of the first group of conditions, but clearly separates their applicability to the new versus existing and future outfall structures. The second set is necessary to enable WDC to respond in a timely fashion to operational and functional problems as they arise for any of the outfall structures without having to seek specific additional resource consents first; an issue currently limiting modifications to the existing structure.

RESPONSES TO REQUESTS FOR FURTHER INFORMATION

Treated Wastewater Quality Data and Proposed Discharge Quality Limits

There has been some criticism of WDC failing to provide raw monitoring data and statistical analysis of that data. When preparing the previous s92 responses, WDC understood that the key requests were concerned with the statistics of historic results, predictions of future discharge quality, and the setting of realistic future discharge limits. Providing the full dataset seemed to be of little benefit in addition to these statistics.

WDC notes that HBRC already have a full dataset from the monthly compliance records that WDC have always provided to HBRC and HBRC's compliance team could have provided this data to Nick Dempsey for his own review. HBRC and Nick could readily generate statistics and consider potential compliance limits for future discharge quality based on HBRC's dataset. Nick also seemed to accept WDC's proposal to determine discharge quality limits for these consents in consultation with him prior to the Hearing.

Regardless of this, I have enclosed WDC's full dataset of historic discharge quality with graphs, statistics, and compliance rates with proposed limits. The attached spreadsheet provides all of the available monthly treated wastewater quality data for relevant parameters since November 1999 along with an assessment of the compliance rates that would have been achieved with the proposed limits (on a rolling 12-month basis for simplicity of calculations). Based on this data analysis, WDC has proposed limits that are considered to be an appropriate balance between the risk of consent breaches, similarity to existing consent limits, and typical performance of Wairoa's WWTP. WDC have taken some care to retain limits as close as possible to the existing limits while also providing some incentives to manage the WWTP's performance.

As has been noted in the attached conditions, WDC does not agree to quantify and impose discharge quality limits that will apply once filtration and UV treatment have been added to the WWTP's outlet. This is primarily because there are no environmental reasons for imposing stricter limits but also because it is difficult to quantify the likely improvements in quality. The reduction in I & I is a related factor that is also difficult to quantify in terms of its scale and its effects on treatment performance. A third factor is the management and removal of sludge from the WWTP ponds. In order to assist with defining design parameters and likely discharge quality of the filtration and UV treatment, WDC will perform pilot-scale trials of filtration and UV treatment during the next few months. WDC hope that this will provide more confidence to HBRC and submitters regarding the likely scale of benefits from installing filtration and UV treatment.

River Monitoring Plan

In the previous s92 responses WDC proposed that this Plan be addressed separately before the Hearing, and HBRC seemed to agree. The in-river monitoring plan has recently been discussed between Shane Kelly for HBRC and Shaw Mead for WDC. Good progress towards developing this Plan and agreeing key details appears to have been made, but the Plan is still some way off being finalised. WDC proposes that these experts continue to collaboratively develop the Plan, and confer with Shade Smith who represents a group of submitters affiliated to Ngati Kahungungu, and present the draft Plan with commentary to the Hearing as an integral part of their evidence. Shane agrees with this approach.

In response to concerns raised by Shane regarding the unknown quality of the benthic community along the new outfall's route, WDC has engaged eCoast to sample the riverbed in this area and report on the outcomes. This is expected to assist with assessing the effects of constructing the new outfall on the riverbed's benthic communities. WDC will send copies of eCoast's report to HBRC and the submitters once it is available.

Flood Scouring Around New Outfall Piers

HBRC's expert, Laddie Kuta of E2 Environmental, noted that flood scour around the new outfall structure's anchor piles could exceed the 2 m burial depth of the armoured part of the new structure. He wanted to understand how the risk of flood scour would be mitigated and addressed. He was also concerned that this scouring would remove support and thrust block capacity/resilience from the base of the outfall structure, which is a crucial consideration given that flood flows coincide with maximum discharge velocities and durations from the WWTP.

Gary Tear of OCEL responded directly to Laddie on 8 November 2019. Gary's response noted that, based on other similar-sized New Zealand rivers, the maximum likely flow rate under flood conditions was 12 knots. At this velocity it is likely that the bed is live, sediment upstream is being transported in a bed layer down to the diffuser structure, material is being eroded, and material is simultaneously

being brought in to fill the scour hole. For clear water scour the sediment is eroded/scoured around the structure because the flow locally speeds up.

OCEL calculated that the upper limit of scour depth is likely to be around 2 m. The diffuser's outer structure is buried at least 2.4 m into the riverbed, so this is expected to be well below any potential scouring zone, and therefore it is very unlikely to ever be undermined by flood scouring.

The OCEL survey also picked up a harder cobble layer within this 2 m scour depth, so the geotextile bags inside and around the diffuser's armour are likely to sink down until they rest on this layer, thus limiting the scour depth. The design showed 457 mm diameter piles incorporated into the diffuser structure which are 10 m long. Their standard size is 12 m long, so using 12 m piles would give them 8 m of penetration into the riverbed even after an allowance for 2 m of scouring.

The worst case scenario is for the piles to be taking both the hydrodynamic drag load on the diffuser structure plus the pipe thrust at the upward bend into the diffuser structure, in the absence of seabed support with the diffuser structure in a scour hole, with no soil support within the scour hole. The outfall design drawings previously provided to HBRC illustrate the design dimensions and features that are anticipated to be capable of reducing scour, withstanding any scour and coping with thrust and flood loads combined.

This appeared to allay Laddie's concerns, as there has been no further communication. However, if any concerns do remain, please advise me of the relevant details.

Subsequent to these communications, WDC engaged eCoast to use their hydrodynamic model of the Wairoa River to estimate the likely velocities of flood flows in the vicinity of the new outfall. Based on the largest recorded flood event for the Wairoa River (Cyclone Bola, 1988), eCoast's model predicted that the river velocity at the new outfall's location was likely to be up to 4.0 m/s or 8 knots. This confirmed that OCEL's scouring estimation was based on conservative estimates of river velocities during flood events at Wairoa. OCEL's conclusions are therefore considered to be an appropriate risk assessment of the proposed new outfall's scouring risks under flood conditions.

CLOSING REMARKS

I trust that the attached draft consent conditions, supporting information, and the above responses provide the clarification that you have sought. Please contact Hamish Lowe at Lowe Environmental Impact (phone 06 359 3099 or email hamish@lei.co.nz) if you require any further information.

Yours sincerely



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Wairoa District Council

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Encl

Updated draft consent conditions (Version 20 – 4 September 2020)
Spreadsheet of historic treated wastewater quality and proposed limits