IN THE MATTER OF the Resource Management Act 1991

AND

IN THE MATTER OF 24 applications by the Aupouri Aquifer Water User group to the Northland regional Council to take groundwater from the deep shell bed aquifer of the Aupouri Peninsula (REQ.596300).

Tasks 9(d) & (e) –

Record of Parties' Positions

and

JWS (Requests for additional modelling & sampling)
Finalised on 11 December 2020.

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1. This document was drafted by Marlene Oliver (Independent Facilitator) based on emails received from the experts named below. At the Facilitator's initiative, and to assist the Hearing Commissioners, this document is in two parts:
   i. a "Record of Parties' Positions" provides background and it is the result of input from people in addition to the experts who participated in expert conferencing on 27 November 2020; and
   ii. a JWS includes the technical comments from the experts involved in conferencing on 27 November 2020.
   [Note: Only the JWS part of this document has been circulated to the experts for confirmation and signing.]

2. <u>Background</u>:
The JWS from 27 November 2020 states:
<u>"31. Tasks 9(d) & (e). DOC's requests for additional modelling and sampling.</u>

32. Jon Williamson advised that he did not see what such additional modelling requested under 9(d) would contribute and he did not see how it would be relevant to deciding these applications or setting any conditions. Jon considered that appropriate monitoring was already proposed.
Jon Williamson's view was somewhat similar on the DOC request in sub-task 9(e) – he couldn't see that it would prove anything.

Brydon Hughes commented that additional sampling would not necessarily assist the Hearing Commissioners.

33. James Blyth commented (on task 9d) that while further modelling would be useful, there are limitations to some of the data available and inputs to the modelling, and that refinement of the modelling at this point in time may not resolve some of the modelling uncertainty (for example, that groundwater contributions in localised areas may be present but are not accounted for). Further data collection and refinement in the future would help improve the model.

34. James' thoughts on task 9(e) was that while a number of radon sampling rounds have been conducted to date, this has not been across areas the Department had wanted to be surveyed, primarily the large areas of standing water to the East of monitoring wells KM3 and KM4, and north east of Wetland North monitoring well. Most samples were collected from drains. If localised groundwater upwellings were occurring in hard to access areas, the rapid degassing of radon may mean the groundwater signature is undetectable by the time this water reaches the drains. Further grid-based sampling would help resolve this concern.

35. **James Blyth agreed that DOC's team would review these requests and report back on the outcome by <u>5pm Tuesday 1 December 2020</u>. To be circulated to DOC experts, Jon Williamson and Brydon Hughes, and copied to Marlene Oliver."**

3. <u>Record of the Parties' Positions</u>

4. On 1st December 2020, James Blyth (for DOC) circulated the following text and a table by email:

"*Please see the table below for Tasks 9d and 9e. This includes the previous request and the updated position.*
To ensure all parties are aware of the information, I have CC'd in a number of DOC representatives.
Kind Regards
James Blyth

The table in James Blyth's email has been included as part of Table 1 (below) as columns 1, 2 and 4.

5. Jon Williamson (for the Applicants) responded by email (3 December 2020) as follows:

"*Thank you for the update on these items - Tasks 9(d) and 9(e).*

These items were added only recently within the last few weeks and the applicants do not agree that these two tasks were part of the Hearing Commissioner's Minute. Therefore, the Applicants position on this is that these are not matters that should not be considered in Conferencing between the Technical Experts.

The Applicants do not agree to the additional requests.

Without altering the Applicant's position that these requests are not agreed too, there are a number of factual inaccuracies that require addressing, which I will do in a separate email that explains things in more detail than this email.

I felt it important to signal the Applicants overall position early, hence this email."

6. By email dated 8 December 2020, Sarah Ongley, Counsel for DOC, maintained (in summary) that the Applicants had been advised of DOC's requests on 16 October and, further, DOC considered that these two tasks were part of the Hearing Commissioners Minute.

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7. <u>JWS – Requests for Additional Modelling & Sampling</u>

8. Notwithstanding the Parties' different positions, relating to the timing and the origin of the requests, the experts' technical comments have been collated into Table 1 (below) as follows:

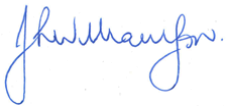
9. Jon Williamson, by email dated 7 December 2020, provided his technical comments. These have been included in Table 1 (below) in columns 3 and 5.

10. Brydon Hughes provided his comments by email dated 9 December 2020. As these relate to the table as a whole, they have been included in Table 1 (below) in a separate row at the end of the table. Jon Williamson's response to Brydon's comments is also included there.

11. James Blyth responded (emails dated 9 & 10 December 2020). His updated comments are included in Table 1 (below) in columns 3 and 5.

12. This JWS was finalised on 11 December 2020.

Signed:



Jon Williamson – 14/12/2020

James Blyth – 11/12/2020

Brydon Hughes

Attachments:

Table 1 (below).

Memo from WWLA dated 17 May 2019. (separate document).

Table 1 – Tasks 9(d) and (e)

Col 1	Col 2	Col 3	Col 4	Col 5
Sub Task Number	**Initial DOC Task Request**	**JWS – Comments on Col 2 by experts: Jon Williamson (JW) & James Blyth (JB)**	**Revised DOC Position Statement (1/12/2020)**	JWS – Comments on Col 4 by experts: Jon Williamson (**JW)** & James Blyth **(JB)**
9 (d)	Model sensitivity should be presented for other parameters, such as (but not limited to) the 1.4 m level assigned to open water evaporation. Model should be re-calibrated with a smaller catchment area and inclusion of groundwater (GW) inputs to evaluate if a calibration/validation is still possible with some groundwater contributions.	**JW** - Groundwater inputs to the wetland and the sensitivity of these were simulated and documented in Section 3.1 of the model report. The results (using the leaky model scenario) show that i) groundwater inputs make up a very small proportion of the wetland water balance, and ii) the model calibration holds with or without groundwater contributions (Figure 16). **JB** - My position has not changed from the hearing - that some areas may have GW contribution different	• Further modelling at this point in time would be useful, but still limited by a lack of data and uncertainty around some of the modelling inputs. • Subsequently, further modelling at this point in time would not change the Departments position on the Kaimaumau Wetland water balance as outlined during the hearing.	**JW** - My position is that this will not further assist the Commissioners at this time. **JW** - Is this inferring that even if further modelling was done, it would not change DoC's positon regardless of the outcome of that modelling. **JB** - Until further data is collected (a number of monitoring wells were dry over summer, see comment below) there would still be uncertainty when comparing/validating to a short observed record.

	GW contribution is not likely to be occurring at all wetland areas (given the mosaic across the wetland and some perched rainfall fed systems), however a sub-model should be trialled to represent a smaller catchment contributing to the large standing water body east of loggers KM3 and KM4, which should be the focus of the GW evaluation.	to that conceptualised and modelled by the applicant and if present would be important for wetland species adapted to that environment.	**The Department requests that:** • Water level transducers at Wetland North and Wetland South should be deepened before summer 2021. No installation data has been provided, so it is not known if these are dipwells or simply transducers attached to a waratah/post. Both monitoring wells were dry over the peak of the 2020 summer, which is the most important period for monitoring and aids calibration/validation of the model.	**JW** - Note that the DoC water level transducers KM3, KM9 also went dry during the 2019/20 drought, hence would also require deepending]. **JB** - Following a review of water level records at DOC monitoring site (noting these are not part of the GMCP and were set up for a research project on drainage effects) I have made the following comments – KM3 did not run dry over 2020 summer drought and does not need to be deepened. The water table stabilised ~0.46 mbgl and oscillated around this depth for a period of 58 days from Feb to April 2020, despite other transducers in the wetland continuing to decline. Manual water dips confirmed transducer water levels, and transducer install details show the logger is still ~1 m below the lowest recorded water level. This is similar for KM4 – although a data storage error meant some information was missing until 1/3/2020 reactivation. KM9 is a drain logger on the wetland fringe, and does appear to have run dry.

				However, has less relevance to Kaimaumau Wetland water levels and the GMCP, and I consider it is not a necessity for deepening, although for data quality and research purposes would be useful.
			• Future model updates should continue as part of the Staged Implementation and Monitoring Programme Review (SIMPR), which would integrate: o longer periods of monitoring data, o recalibration and validation to revised catchments and longer datasets o assessment of potential groundwater ingress during calibration/validation o sensitivity analysis across a range of other modelling parameters not presented to date	
9 (e)	Further radon sampling in Kaimaumau Wetland over the peak of summer throughout the standing water body to the East of		• Whilst a number of rounds of radon sampling have been completed to date, they have not occurred in the areas requested/preferred by the Department (primarily, the large	**JW** - The radon sampling was done in the locations agreed by the experts in the JWS done as part of the MWWUG case (see attached memo), with the exception

	monitoring sites KM3 and KM4 (multiple samples across a grid area to capture a range of results, given if springs are present they may be localised). This may require helicopter or boat access (i.e. hovercraft).		areas of standing water to the east of Selwyn Drain). • Previous sampling of drains may not reflect any groundwater signatures as degassing and decay of the Radon isotope could have occurred (if for example, groundwater contribution was some distance from the stream/drain) **The Department requests that:** • A grid based sampling programme of standing water to the East of KM3 and KM4 occurs, given if springs are present they may be localised. The department would advise on sample locations. • In the absence of the applicant undertaking further radon sampling, there should be consideration of a joint	of the one site 2 km east of Bacica drain due to access issues. My position is that this will not further assist the Commissioners at this time.] **JB** - Whilst the previous sampling regime may have been agreed upon at the time, I do not believe it was adequate enough (spatially) to capture potential locations of groundwater ingress and that further sampling is still requested.

			approach between NRC, DOC and the applicant to undertake this work. • In the absence of the above, further water level monitoring (with a transducer) should be undertaken in a new site to the north east of Wetland North monitoring well to better understand the hydrology of this location. This could be installed during the deepening of Wetland North and South monitoring wells as requested in Task 9 (d).	

JWS – Comments on whole Table from Brydon Hughes (BH):
Of possible relevance to the discussion, I note that the Staged Implementation and Monitoring Programme Review (SIMPR) completed for a sub-set of the MWWUG consents in early October 2020 included the following recommendations:

a. A rain gauge be installed in the vicinity of the Motutangi sentinel monitoring site
b. The Kaimaumau Wetland north monitoring site be deepened (to prevent it drying out as happened March-May 2020)
c. The wetland north monitoring site be telemetered
d. Once item c) is in place, monitoring of the wetland south site be discontinued (water levels are perched above the shallow sand and shellbed aquifers, and temporal variation during water level recession is virtually identical to that measured at the wetland north site).

As far as I am aware, all parties have agreed to the SIMPR recommendations so these will be implemented by Council going forward.

JWS – Comment from Jon Williamson (JW):
The MWWUG have agreed to these recommendations so I also understand that the Council should be making these changes. It is understood that the costs are then on charged to MWWUG consent holders.