IN THE MATTER OF	the Resource Management Act 1991
AND	
IN THE MATTER OF	The Proposed One Plan notified by Manawatu-Wanganui Regional Council

SPEAKING NOTES OF EMILY SUZANNE GRACE
FOR NEW ZEALAND DEFENCE FORCE
WATER HEARING

Dated: 25 February 2010

1.0 Introduction

1.1 My name is Emily Grace. I am a resource management consultant with Tonkin & Taylor Ltd. I appear today on behalf of the New Zealand Defence Force (NZDF). With me is Mr Rob Owen, Environmental Manager with the Joint Logistics and Support Organisation of NZDF.

1.2 I submitted evidence for the Water Hearing of the Proposed One Plan (POP) on 28 September 2009. Following this, I took part in a pre-hearing meeting with Horizons Regional Council officers (Natasha James and Clare Barton) on 21 October 2009. I have also had ongoing discussions with Natasha James on the proposed rules in Chapter 16 relating to dams.

1.3 Council officers issued Supplementary Reports in December 2009, and have since presented these reports to this Hearing.

1.4 I take this opportunity today to present supplementary evidence that updates the Hearing Panel on matters that are no longer at issue and focuses on matters that remain outstanding, as well as providing input in relation to questions asked by

the Hearing Panel.

2.0 Matters no longer at issue

2.1 My evidence of 28 September 2009 identified matters where NZDF is in agreement with the Officer Recommendations and requested that the Hearing Panel accepts the Officer Recommendation.

2.2 Since 28 September 2009, NZDF has reached agreement with Council Officers on a number of other matters. I identify these matters below.

Public water supply definition

2.3 As stated in Appendix 3 of the Supplementary Report of Clare Barton and Natasha James, Council Officers and NZDF have reached agreement on proposed amendments to the definition of Public Water Supply in the Glossary of the POP. Officers have agreed to the amendments suggested at paragraph 3.13 of my 28 September 2009 evidence, which are as follows:

> *"**Public water supply** means a reticulated publicly or privately owned community drinking water supply connecting at least two buildings ~~on separate titles~~ and serving at least 1500 person days per year (i.e., 25 people for at least 60 days per year)."*

2.4 This amended definition will ensure that the POP provides for NZDF's community water supply functions in the same manner that it provides for other suppliers of community water. I consider this to be an appropriate outcome and recommend that the Hearing Panel adopts this definition.

2.5 I draw the Panel's attention to the fact that this definition includes the word 'community', which was omitted from the definition as amended in the Provisional Determination of the General Hearing Panel, issued 20 November 2009. To be clear, I recommended the use of the word 'community' in evidence to the General Hearing Panel, and NZDF's preference is for the definition to include the word 'community'.

Discharges of live ammunition

2.6 My 28 September 2009 evidence, at paragraphs 4.3 to 4.6, stated that I supported the Officer's Recommendation WTR 108, to include an exception for the discharge of live ammunition within Rule 13-25. This is still the case.

2.7 Question 55 asked by the Hearing Panel on 12 January 2010 relates to this matter. The question asks if the proposed exclusion would actually achieve anything. I believe that it would.

2.8 Rule 13-25 regulates discharges of contaminants to land in circumstances where the contaminant will not enter water. Under Section 15(2A) of the Resource Management Act 1991 (the RMA) such a discharge, when it is not from an industrial or trade premise (as it would not be in the case of NZDF), can be undertaken without the need for a resource consent, provided the discharge does not contravene any regional rule.

2.9 My understanding is that the exception proposed by the Council Officer effectively makes the discharge of live ammunition to land, in circumstances where it will not enter water, a permitted activity. If the activity is specifically excluded from the rule, it will not be in contravention, and could therefore be undertaken without a resource consent.

2.10 I note that Mr Maassen has provided a legal opinion to the Hearing Panel on the workings of Section 15 of the RMA (27 January 2010, paragraph 1). I believe that Mr Maassen's statement that Section 15(2A) has a 'presumption of lawfulness' supports my interpretation of Rule 13-25 above.

Rule 15-5 and Local Water Conservation (Hautapu River) Notice

2.11 Paragraph 6.3 of my 28 September 2009 evidence stated that I would seek clarification from Council Officers regarding whether NZDF's water take from the Waiouru Stream was included in the core allocation for the Rang 2F Water Management Sub-zone. Council Officers have confirmed this is the case. I therefore express support for Rule 15-5 as it does carry through the intent of the

Local Water Conservation (Hautapu River) Notice.

3.0 Outstanding issues

3.1 A number of issues remain outstanding between NZDF and the Council Officers. Rather than repeat explanations and arguments I made in my 28 September 2009 evidence, I include only additional comments in this supplementary statement.

"Per-property" qualifications

3.2 My 28 September 2009 evidence expresses my professional opinion that "per-property" qualifications for permitted activity rules for discharge to land and takes of surface and groundwater are not effects-based and are therefore not reasonable or equitable (paragraphs 5.1 to 5.5 of my evidence). I maintain this opinion.

3.3 I wish to make no changes to paragraphs 5.6 to 5.9 of my 28 September 2009 evidence, which address the per-property standard in Rule 13-25(a) and request that the Hearing Panel either deletes this standard or uses a per-hectare standard instead.

3.4 I discussed the per-property issue, particularly as it relates to permitted water takes (Rules 15-1 and 15-2) with Council Officers Clare Barton and Natasha James at our meeting of 21 October 2009. The Officers acknowledged the issue and undertook to discuss the matter further with the Council Officers dealing with water allocation issues.

3.5 I note that expert evidence submitted by Fonterra (30 October 2009) also discussed issues with the per-property qualification in Rules 15-1 and 15-2 (NZDF made a further submission in support of Fonterra's original submission point on Rule 15-1). The evidence of Mr Gerard Willis for Fonterra suggested an alternative wording for Rules 15-1 and 15-2.

3.6 Ms Barton's Supplementary Report addresses Fonterra's alternative at paragraph 23. She refers to Dr Jon Roygard's Supplementary Evidence on behalf of

Council, which assesses a number of different scenarios for altering the basis of the permitted activity rules, including that proposed by Mr Willis. Dr Roygard expresses a preference for a permitted take on a per-hectare basis, scaled to property size (scenarios 11, 12 and 13). However, Ms Barton does not make any recommendations regarding changes to Rule 15-1, indicating instead that she intends to have further discussions with submitters.

3.7 I am encouraged to see that Council is undertaking further investigations into permitted water allocation limits, and particularly considering permitted takes on a per-hectare basis. However, Dr Roygard's preference includes a limitation based on property size, and therefore does not satisfy NZDF's original concerns with the original per-property basis.

3.8 Under either scenario 11, 12 or 13 in Dr Roygard's supplementary evidence for Council, NZDF would be no better off than under the version of the Rule as proposed by Council Officers (in the Pink version). This is because a cap is imposed on property size – the qualification is per-hectare per-day for properties up to 50ha in size, and then all properties over 50ha receive the same permitted allocation.

3.9 I note that under the version of Rule 15-1 put forward by Mr Willis for Fonterra, NZDF would be worse off than under the Rule as proposed by Council Officers (in the Pink version). This is because Mr Willis' rule proposes an upper limit on water takes for properties *not* in some form of agricultural or horticultural use that is much lower than the limit proposed for land in agricultural or horticultural use. I consider that it is incorrect to assume that land in other non-specified uses may require less water.

3.10 Dr Roygard's analysis of permitted take scenarios is based on different scenarios of *need* for water. I acknowledge that need is an equitable way to assign water allocations, provided that the effect of the take on the particular waterway is appropriate. My understanding is that Dr Roygard's analysis of the percentage that each permitted scenario would be of the core allocation is an assessment of

the effect of that scenario on the waterway. As would be expected, the results are different for each catchment.

3.11 However, the needs analysis does not take into account all types of needs, and does not take account of the needs of NZDF. I consider that a permitted rule based only on the needs of the primary sector is therefore not equitable.

3.12 The cap on property size proposed by Dr Roygard for Council and Mr Willis for Fonterra is also not equitable, as it assumes that larger properties need less water, in total and per hectare, than smaller properties.

3.13 In addition, I believe that the cap on property size does not provide the protection of the water resource that Dr Roygard is after, as the number of properties of that size is not fixed and could change through subdivision.

3.14 Mr Owen has provided an example of a situation where NZDF needs to use water for training activities. I consider that it is useful to apply the proposed rules to this situation to illustrate NZDF's concerns with the rules.

3.15 Mr Owen informs me that NZDF has recently acquired several deployable reverse osmosis water treatment plants. These may be used to supply safe drinking water for deployed troops, or for communities affected by natural disasters. They were recently deployed to the Pacific following tsunami damage to infrastructure. Each plant has capacity to provide 125,000 litres of water per day (the equivalent of 125m^3 per day). NZDF needs to provide training in the deployment and use of these plants, which includes taking water to fill the plants.

3.16 Mr Owen informs me that NZDF's preferred training location is in the Argo Valley. I understand that a consent held for water use on that stream requires a compensation flow to be maintained (associated with the Moawhango Hydro Dam). Mr Owen informs me that the stream flow at the location of the training activity, as a result of the minimum flow requirement plus additional contributing catchment, is likely to be approximately 1000 litres/sec. This is the equivalent of over 86,000m^3 per day. From this training location, there are no

downstream users for over 10km (the stream flows within NZDF land for another 10km past the training location). In addition, there is over 40km^2 of NZDF-owned catchment, downstream of the training location, contributing to increased flow in the stream below the training site (which is able to 'replace' any water taken at the training location).

3.17 The 'pink' version of Rule 15-1 would require NZDF to obtain a consent for this essential training activity as the permitted limit is 15m^3 per-property per-day. Dr Roygard's preferred scenario would also require NZDF to obtain a consent as permitted takes would be limited to 15m^3 per day for properties over 50ha in area. At just over 10% of the capacity of the treatment plant units, a volume of 15m^3 per day is insufficient to provide proper training.

3.18 In this situation, the need for consent is caused by the size of the NZDF property, and is not triggered as a result of effects of the take on the waterway or any other users (approximate minimum flow of over 86,000m^3 per day compared to a take of 125m^3 per day, and no downstream users for over 10km). This occurs as a consequence of the way the rules are structured. If the downstream catchment (40km^2) were instead subdivided into 80 properties of 50ha each, the permitted take from the catchment would be 1200m^3 per day (based on a 15m^3 per-property per-day permitted standard). I do not think that it is appropriate to limit NZDF (or any large property holder) to 15m^3 per day just because it has one landholding rather than many.

3.19 I consider that catchment-based permitted take rates, as I suggest in paragraph 5.12 of my 28 September 2009 evidence, are the most effects-based. I note that no comment is made on this option by any of the Council Officers.

Temporary Bridge for Military Training Purposes

3.20 As stated in Appendix 3 of the Supplementary Report of Clare Barton and Natasha James, Council Officers do not agree with the amendments NZDF sought, as per my 28 September 2009 evidence to allow for temporary bridges

for military training purposes to be erected as a permitted activity, provided they comply with certain conditions.

3.21 I do not wish to change anything in paragraphs 4.7 to 4.16 of my 28 September 2008 evidence, which sets out my reasoning for NZDF's request.

3.22 I would like to add further explanation, having listened to Council Officer's concerns at our meeting of 21 October 2009.

3.23 Officers expressed a concern that temporary bridges could be washed out by floods and cause downstream adverse effects. NZDF sought a maximum period of 2 weeks for which the bridges would remain in place. This was suggested by NZDF to meet practical requirements, as well as to account for the probability of a significant flood occurring within such a period. Given the size of the Waiouru Military Training Area, the effects deriving from a washed out bridge, should there be a washout, would be most unlikely to extend beyond the Training Area boundary and there would therefore not be any adverse effects on other parties or infrastructure.

Dam Rules and Local Water Conservation (Hautapu River) Notice

3.24 I have had a number of discussions with Council Officers about the rules relating to dams within Chapter 16 of the POP. While we have made progress and reached general agreement on most issues, I have some remaining concerns I wish to bring to the attention of the Hearing Panel.

3.25 Paragraphs 6.4 to 6.9 of my 28 September 2009 evidence addressed the matter of whether the rules relating to dams within Chapter 16 of the POP, sufficiently provide for the intent of the Local Water Conservation (Hautapu River) Notice. This intent was that nothing in the Hautapu Notice should prevent the renewal of any water rights in place at the time the notice was made. NZDF therefore wishes to ensure that, when it is time for NZDF to obtain replacement consents for its dam on the Waiouru Stream, the POP provides a permissive activity status for the application (permitted or controlled activity).

3.26 Mr Owen has provide photographs of two of NZDF's dams, which I have attached to the end of my speaking notes.

3.27 I do not wish to change paragraphs 6.4 or 6.5 of my 28 September 2009 evidence. I continue to support the Council Officers' recommended changes to Rules 16-1 and 16-2. Specifically, I support the inclusion of the word "new" in Rule 16-1 and the exclusion of paragraph (e) of Rule 16-2.

3.28 I wish to make further comment on Rules 16-5, 16-8 and 16-9, as these are the rules that would apply to an application by NZDF to re-consent its existing dam if the Hearing Panel accepts the Council Officers' recommendation regarding Rules 16-1 and 16-2. Therefore I consider these rules also need to be consistent with the Hautapu Notice. In addition, I consider that the application of these rules is confusing, and I note that the Hearing Panel has asked a number of questions about these Rules. I therefore recommend changes to the rules and rule guides to ensure that the intention of the Hautapu Notice is achieved and that the clarity of the provisions is improved.

Rule 16-5:

3.29 Rule 16-5 is a permitted activity rule for the 'use' of existing dams. This rule therefore means that NZDF would not need to re-consent the 'use' of its existing dam when its consent expires. In this respect, the rule does give effect to the intent of the Hautapu Notice. I therefore support the activity status of this rule.

Rule Guide for Rules 16-5 to 16-7:

3.30 To assist in the explanation of Rule 16-5, I support the recommendation of Council Officers in Appendix 3 of the Supplementary Report, to relocate a sentence from the Rules Guide for Rules 16-8 to 16-9 into the Rules Guide for Rules 16-5 to 16-7. The sentence is: "*This means that the Regional Council has decided to accept the presence of existing dam structures and has declined to give itself the discretion as to whether an existing dam structure should remain*." I consider that the sentence is more appropriately located within the Rules Guide for Rules 16-5 to 16-7 as it explains Rules 16-5. [I note a

typographical error in the sentence (delete the 'al' from the end of the word discretion).]

3.31 I note that the Hearing Panel has asked (question 86) if the Rule Guide should refer to 'lawfully established' dams, as Rule 16-5 only applies to 'lawfully established' dams. To be accurate as the rule contains this reference, I consider that the Rule Guide should be amended to refer to 'lawfully established' dams.

3.32 I note that the Hearing Panel's question 87 asks if the heading of this section of rules (16.5) should include the word 'damming'. I consider that it should. This would add greatly to the interpretation of the section, which contains rules relating to dam structures and the damming of water.

Rule 16-8:

3.33 I stated at paragraph 6.8 of my 28 September 2009 evidence that I was confused as to why Rule 16-8 needed to apply to existing small dams, when Rule 16-5 permits the 'use' of a small dam. Reading the rules again now, I see that Rule 16-8 does not refer to 'use'. Therefore, for existing small dams, Rule 16-5 permits the 'use' of the dam and Rule 16-8 permits the 'damming' of water by the dam. I therefore accept the current wording of these rules in this regard.

Rule 16-9:

3.34 I reiterate my recommendation in paragraph 6.7 of my 28 September 2009 evidence, that at the least, the title of Rule 16-9 within the 'rule' column should refer to 'other damming of water', and not to 'other existing dams', as the activity description addresses the damming of water and not dam structures (although I note that the conditions of the rule, as well as the matters over which control is reserved, cover effects of both the damming of water and the dam structure – in this respect I consider that the rule does blur the distinction sought to be made by other rules between damming and dam structures – Hearing Panel question 89).

3.35 NZDF has some concerns with condition (b) of Rule 16-9, which states that "*The dam structure shall include a spillway to enable the passage of the*

probable maximum flood without the dam being overtopped". I consider that the wording of this condition does not achieve the intent of the Hautapu Notice as NZDF's dam is not likely to comply with it and would therefore require a discretionary activity consent.

3.36 Firstly, I recommend that the phrase "*without the dam being overtopped*" is removed from the condition. I consider that the standard, as amended in this way, is sufficient to ensure that dams have spillways designed to pass the appropriate flood flows. My reasoning for this is that a 'dam' structure may take a variety of forms. For example, a weir may substantially dam a stream under most flow conditions and therefore be subject to this Rule. However, a weir is designed to be overtopped at any flow (with no threat to its integrity). NZDF's 'dam' on the Waiouru Stream is one such structure, where it is designed to operate as a weir. A proportion of all flows, including the probable maximum flood, overtop the weir via a spillway. The wording of the condition therefore, unintentionally I believe, excludes the type of damming associated with appropriately designed weirs such as the NZDF structure from being a controlled activity. If the condition is left as it is, NZDF would require a discretionary activity consent under Rule 16-20, which I consider is not in keeping with the intention of the Hautapu Notice in terms of certainty of approval.

3.37 I note that the Hearing Panel has asked, at question 88(f), if 'probable maximum flood' is a term with a clear meaning. NZDF also has concerns with the inclusion of this term in the standard as it is also likely to mean that NZDF dams cannot be permitted or controlled activities.

3.38 My understanding is that in relation to situations where dams are involved, probable maximum flood (PMF) is a term associated with High Potential Impact category dams. These are dams for which the Building Act Regulations require the most stringent design, construction and monitoring standards. I have been advised that a PMF is likely to have a recurrence probability greater than 1 in 100,000 years. It is the most extreme event that can conceivably be imagined.

Therefore, I consider that it is not appropriate for PMF to be a standard in the Regional Plan for all dams, regardless of their classification under the Building Act Regulations. I recommend that this reference is removed from the standards in both Rule 16-8 and 16-9, and dam design is left to the Building Act rather than the Regional Plan.

3.39 In terms of controlling effects that may result from use of a spillway, I consider that it is more appropriate to use a standard similar to that in the operative Beds of Rivers and Lake Plan that controls erosion and scour as a result of discharges from the dam structure.

3.40 I therefore recommend that condition (b) of Rule 16-9, as well as the corresponding condition (d) of Rule 16-8, is worded as follows:

> *"The dam structure shall include provision for the discharge of water in a manner that shall not cause riverbed scouring or erosion beyond the point of discharge"*.

Rule Guide for Rules 16-8 to 16-9:

3.41 I consider that the sentence recommended to be removed from the Rule Guide for Rules 16-8 to 16-9 and placed in the Rule Guide for Rules 16-5 to 16-7, should be deleted from the Rules Guide for Rules 16-8 to 16-9 (see paragraph 3.30 above). I consider that the sentence does not add anything to the explanation of Rules 16-8 or 16-9 and therefore does not need to be left in this Rule Guide.

3.42 I consider that the application of Rules 16-8 and 16-9 is very confusing. I think that this is partly because there is a separate Rule (16-5) that regulates 'use'. To me, it is conceptually difficult to separate the 'use' of the dam from the activity of damming, and from the 'erection and placement' activity. I also think confusion is caused by Rule 16-8 covering both existing dams and new dams, as well as the dam structure and the damming of water. In addition, the format of Rule 16-8 is different to that of Rule 16-9, which deals only with the damming of water, and not the dam structure, even though the conditions of the rule and

the matters for which control is reserved cover the effects of both the structure and damming activities.

3.43 I consider that amendments to the Rule Guide for Rules 16-8 to 16-9 could significantly help with interpretation of Rules 16-8 and 16-9. At present, I consider that the Rule Guide does not explain all of the functions of Rules 16-8 and 16-9. I suggest the amendments below to ensure that all of the functions are explained.

3.44 I recommend that the word 'existing' in the second sentence of the Rule Guide is shown in bold.

3.45 I recommend the addition of the following sentence after the second sentence of the Rule Guide: "*For **new** small dams, the **erection and placement** of the dam structure, and the **damming of water**, are also covered by Rule 16-8*".

3.46 Amend the 'green' sentence as follows (addition shown in underline, deletions shown in ~~strikethrough~~:

> "The **erection and placement** of new dams and the **damming of water** that exceed the 'small dams' criteria set out in Rule 16-8 are ~~a~~ discretionary activities~~y~~ under Rule 16-20. These dams may require a building consent from the Regional Council under the Building Act 2004. Any lawfully established **damming of water** that cannot comply with the two conditions of Rule 16-9 is also a discretionary activity under Rule 16-20.

4.0 Conclusion

4.1 Pre-hearing discussions have clarified and resolved a number of matters between NZDF and Council Officers.

4.2 Three matters remain outstanding. These relate to:

- a permitted activity rule for water takes that is effects-based and equitable

- minor amendments to the rules relating to permitted bridges to allow NZDF to erect and remove temporary bridges for military training activities
- amendments to condition (b) of Rule 16-9 (as corresponding condition (d) of Rule 16-8) and the Rule Guides for Rules 16-5 to 16-7 and 16-8 to 16-9 to ensure that the intent of the Hautapu Notice is provided for in the dam rules, as well as to provide clarity to the interpretation of the rules.

4.3 I am happy to answer questions from the Hearing Panel on my previously submitted evidence and this supplementary evidence. Mr Owen is also available to answer questions.

Emily Grace, 25 February 2010

P:\84404\IssuedDocuments\Hearings\Water\Water Hearing speaking notes Feb10.doc

Waiouru

Waitangi