

# MINUTES

**TITLE:** Environment & Planning Subcommittee - Commissioner Hearing  
**DATE:** Friday, 13 November 2009  
**TIME:** 9.30 am  
**VENUE:** Club Waimea (Richmond Room), 345 Queen Street, Richmond

**PRESENT:** Dr M Johnston (Chair), Cr T King

**IN ATTENDANCE:** Consent Planner (R Squire), Resource Scientist (E Verstappen), Consent Planner - Water (N Tyson), Administration Officer (J A Proctor)

**1. MINVEST SECURITIES LTD, HIGGINS ROAD, BRIGHTWATER - APPLICATION Nos. RM081077, RM081078, RM081100**

**1.1 Proposal**

The application sought to construct a dam with a crest height of 11 metres and storage of 30,000 cubic metres. The dam is for amenity and irrigation of a vineyard and amenity plantings.

The dam is assessed to be a *large* dam under the Building Act 2004, with a *low* PIC (Potential Impact Classification). Engineering design and construction is to be to a high standard.

**Land Use Consent**

**RM081100** To construct a dam and use of a riverbed in a tributary of Pittfure Stream.

**Land Use Consent**

**RM081077** To carry out earthworks and recontouring.

**Water Permit**

**RM081078** To take from dam storage for irrigation approximately 14,000 cubic metres per annum.

The Commissioners proceeded to hear the application, presentation of submissions and staff reports as detailed in the following report and decision.

**Report and Decision of the Tasman District Council through its Hearings  
Committee**

**Meeting held in the Waimea Town & Country Club, Richmond on  
Friday, 13 November 2009**

A Hearings Committee (“the Committee”) of the Tasman District Council (“the Council”) was convened to hear the applications lodged by **Minvest Securities Limited** (“the Applicant”), to construct a dam in an unnamed tributary of the Pitfure Stream, carry out earthworks and land recontouring and take water from the dam for irrigation purposes. The applications, made in accordance with the Resource Management Act 1991 (“the Act”), were lodged with the Council and are referenced as RM081100, RM081077 and RM081078.

**HEARINGS COMMITTEE**      Dr M Johnston, Chairperson  
   Cr T King

**APPLICANT:**                Ms V Chisnall (Counsel)  
   Mr M Barron (Architect - Jerram Tocker Barron Architects)  
   Mr M Foley (Geotechnical Engineer - Tonkin and Taylor)  
   Mr T Hewitt (Consultant Hydrologist - Envirolink)

**CONSENT AUTHORITY:**    **Tasman District Council**  
   Mr N Tyson (Consent Planner, Water)  
   Mr E Verstappen (Resource Scientist, Rivers and Coast)

**SUBMITTERS:**              N and C Appelman  
   Brightwater Playcentre - V King  
   Mr and Mrs W O’Neill  
   Mr L K Staig  
   Ms J Gorman on behalf of Mr & Mrs J Pike  
   Mr and Mrs M Culverwell  
   Drill Hall Spring Grove Recreation Reserve Committee -  
   Mr Edmonds

**IN ATTENDANCE:**        Ms R Squire (Consent Planner) - Assisting the Committee  
   Ms J Proctor (Committee Secretary)

**1. SUMMARY**

The Committee has **GRANTED** resource consents, subject to conditions, to construct a dam in an unnamed tributary of the Pitfure Stream, carry out earthworks and land recontouring and to take water from the dam for irrigation purposes.

## 2. DESCRIPTION OF THE PROPOSED ACTIVITIES

The applicant seeks resource consents to undertake land disturbance activities in association with the development of a property and the construction of a dam and to take water for irrigation of amenity plantings and a proposed small vineyard on the property. The property is located at 5 Higgins Road, Brightwater and is legally described as Lots 2 and 3 DP 380876 (CT 355932)

Land use consent application RM081100 seeks consent to construct a dam within the bed of an intermittent tributary of the Pitfure Stream with a storage capacity of 30,000 cubic metres and a crest height of 11 metres above natural ground level. The purpose of the dam is to provide amenity benefits for the proposed dwellings on the site and to irrigate a vineyard and amenity plantings. The dam is assessed to be a *large* dam under the Building Act 2004, with a *low* PIC (Potential Impact Classification).

Land use consent application RM081077 seeks consent to undertake the earthworks associated with the construction of the dam and some recontouring of the site associated with the preparation of the access, building sites and vineyard.

Water permit application RM081078 seeks consent to take approximately 14,000 cubic metres per annum for irrigation of the proposed vineyard and amenity plantings.

## 3. TASMAN RESOURCE MANAGEMENT PLAN (“TRMP”) ZONING, AREAS AND RULE(S) AFFECTED

According to the TRMP the following apply to the subject property:

Land Zoning:	Rural 1
Area(s):	Land Disturbance Area 1 Surface Water Yield Protection Area
Water Zone:	Wai-iti

The dam dimensions exceed those for permitted activities under the Transitional Regional Plan Water and Soil Bylaw 1990 and as such the dam is deemed to be a discretionary activity under section 13 of the Act (Restriction of certain uses of beds of lakes and rivers).

The land disturbance activities do not comply with Permitted Activity Rule 18.6.2(b)(i) (no land disturbance which results in the diversion or damming of any river or stream), 18.5.2.1(p) (any recontouring of land is no more than 1 metre in height or depth and is no more than 1 hectare within any 12 month period), the controlled or restricted discretionary standards and are deemed to be discretionary activities in accordance with section 87B of the Act.

The water permit application does not comply with Permitted Activity Rule 31.1.2 and is deemed to be a discretionary activity in accordance with Rule 31.1.6.

It is noted that the applicant also needs to apply for a building consent under the Building Act 2004 because the dam is classified as a large dam i.e. dams with greater than the 20,000 cubic metres of storage and greater than 3 metres of water depth.

#### **4. NOTIFICATION AND SUBMISSIONS RECEIVED**

The applications were limited notified on 1 August 2009 to all parties who were considered to be adversely affected by the proposed activity pursuant to Section 94(1) of the Act.

Six submissions were received from the following groups and individuals: Brightwater Playcentre C/- Mandy Thomas (occupiers of an historic school building located on TDC owned land); Jack and Carol Pike; Mark and Tania Culverwell; Nick Appelman; Spring Grove Drill Hall C/- (Deputy Chair) Julian Edmonds and C Pike (Chairperson); Laurence Staig and W A and R J O'Neill.

All submitters opposed the applications and raised the following main issues:

- the "Low" dam Potential Impact Classification was not accepted;
- the potential loss of life, and property damage if the dam failed, including during construction;
- potential adverse effects on land use(s) below the dam including the property owned by Mr Staig as well as issues relating to future uses of their land (reverse sensitivity);
- concern/frustration that the dam is for aesthetic reasons and is not needed but it has the potential to fail and threaten life and property;
- unwanted adverse effects during construction including dust, noise and vehicle movement;
- concern over the effects of flash floods which have occurred within this catchment and the capacity of the proposed box culvert spillway;
- concern over the diversion of flood water by the applicant's recent access road and culvert towards and into the house owned by Mr Staig;
- concern over adverse effects on property values and the future cost to landowners of insurance and questions regarding future liability and the transfer of this to future owners of the applicants property and questions re responsibility for clean up following a dam failure event; and
- concern that Assessment of the Effects on the Environment was incomplete as it failed to assess the full risk of dam failure.

#### **5. PROCEDURAL MATTERS**

Following the limited notification and the convening of a public meeting a number of persons who were not considered to be adversely affected by the proposed activities indicated that they objected to the manner in which the notification was

carried out. It was clarified by staff that the notification decision is delegated to the Council's Consents Manager and is not a decision that could be challenged during the hearing process. However, under Section 104 (3)(d) of the Act a consent authority must decline resource consent if it considers that an application should have been publicly notified but was not. For this to be invoked the consent authority must be satisfied that the effects of the activity on the environment will be more than minor. The Committee considered the matter and concur with the officers and the applicant that the effects of the proposed activity on the environment will be no more than minor and that all persons potentially adversely affected by the proposed activities were appropriately identified. Therefore, section 104(3)(d) does not apply in this case.

A number of submitters sought clarification as to the height of the dam. The application specified a proposed dam height of 14 metres. However, the limited notice that was sent to potentially affected parties specified a proposed dam height of 11 metres. In this circumstance the test is whether or not the change makes it likely that someone who did not submit would have. The Committee considered the matter and noted that the application and modelling of the dam break was based on a dam with a maximum height of 14 metres not 11 metres. The Committee consider that the fact that the limited notice sent to potentially affected parties specified 11 metres does not materially change any of the findings of fact or the decision made by the Resource Consents manager as to who may be adversely affected by the proposed activity. Therefore, the maximum height of the dam as specified in the application is accepted.

## **6. EVIDENCE HEARD**

The Committee heard evidence from the applicant's Counsel, expert witnesses, submitters, and the Council's reporting officer. The following is a summary of the evidence heard at the hearing.

### **6.1 Applicant's Evidence**

#### **Ms V Chisnall (counsel)**

Ms Chisnall addressed the notification issue raised in the officer's report and stated that section 104(3)(d) can only be invoked if the consent authority is not satisfied that the effects on the environment are no more than minor. Ms Chisnall submitted that the evidence shows that the effects of the activities were correctly identified as being no more than minor and that Section 104(3)(d) has no relevance.

Ms Chisnall noted the conclusions from the geotechnical engineering investigations undertaken by Mr Foley of Tonkin and Taylor which stated that he considered that it is feasible to build a dam at the site and have the potential impact classification assessed as being low. In the reporting officer's report, staff had raised what he considered to be a permitted baseline scenario of a dwelling being relocated (with a controlled activity consent required) to a site which was exposed to significant flood hazard. However, Ms Chisnall noted that this is more properly considered as part of the receiving environment rather than the permitted baseline and referred the Committee to Queenstown Lakes DC v Hawthorn Estate Ltd where the Court of Appeal considered that the "environment" embraces the

future state of the environment as it might be modified by the utilisation of rights to carry out a permitted activity. It also includes the environment as it might be modified by the implementation of resource consents which have been granted at the time a particular application is considered. The environment does not include the effects of resource consents that might be made in the future. Regardless, Ms Chisnall noted that Mr Foley had considered this scenario and concluded that the Potential Impact Classification would remain low.

Ms Chisnall noted submitters' concerns with respect to the potential adverse impact of both life and property downstream of the dam and stated that the applicant had gone to considerable lengths and costs to investigate the feasibility of the dam and its actual and potential effects. The results of the investigations and the conclusions reached by consultant geotechnical engineers were that the dam can be constructed, maintained and operated in such a manner that the perceptions of risk referred to by the submitters was unfounded.

Ms Chisnall quoted the officer's report noting that the applicant could construct as of right a series of non-engineered two metre high dams in each gully that would collectively store 20 - 30,000 cubic metre of water. She submitted that it would be appropriate in the context of the application for the Committee to exercise its discretion to apply the permitted baseline.

With respect to potential effects of the water take and use application Ms Chisnall noted the conclusions reached by the applicant's consultants Envirolink that the dam is of a type encouraged by the TRMP, using only winter runoff from a stream for filling. Other positive effects noted were the additional landscape, wildlife habitat, fire fighting and possible flood relief benefits for the Pitfure catchment. She also reiterated the conclusions made in the officer's report that the effects on water users downstream would be no more than minor.

Ms Chisnall also noted that the officer's report acknowledges that only when there is a natural summer flow at a dam site will the dam owner be required to provide a residual flow and then only equivalent to the natural "low flow" inflow in summer. However, the recommended conditions of consent require an ongoing residual flow of 0.186 litres per second during the months of November to April. She reiterated Envirolink's conclusions that if it was for recharge purposes it is insignificant and does not serve any worthwhile purpose and if it is for instream purposes then it is endeavouring to create an environment over and above what naturally exists. If summer residual flow is insisted upon, then a suggested alternative would be for the reticulation network to include a line from the dam pump to the stream so that when irrigation from the dam is taking place, some pre-determined flow is being returned to the stream downstream of the dam.

It was submitted that aspects of the proposal which provide compensatory benefits to the environment may be taken into account in assessing the net environmental effects of a proposal under Section 104. The benefits were submitted as being the likely reduction of flood flows downstream of the dam, the planting and establishment of a new wetland ecosystem and the regeneration of a Totara dominated podocarp forest.

With respect to the other issues raised by submitters Ms Chisnall submitted that the effect on property values is not a relevant resource management consideration, that with respect to liability large dam owners are required to hold public liability insurance, with respect to insurance costs born by property owners downstream of the dam any increase in insurance costs could only be seen as speculative.

With respect to the recommended conditions of consent it was submitted that proposed condition 1 should be amended to read 14 metres, condition 2 amended to remove reference to the residual flow system being installed in the dam - as it is considered more appropriate that the upstream flow be diverted by pipe downstream and proposed condition 3 be amended to provide that the applicant is not required to provide a residual flow in circumstances where there is no flow above the dam.

### **Mr M Barron (Architect - Jerram Tocker Barron Architects)**

Mr Barron presented and summarised the applicant's vision for the development of the property. This includes two dwellings with associated access road, amenity plantings and vineyard and the creation of a new lake through the damming of an existing water course. Mr Barron described the enhanced amenity plantings as including an arboretum with a mixed collection of deciduous fruiting and evergreen trees planted over grassland, plantings around the dwellings and a forest regeneration area towards the southern end of the lake and wetland plantings surrounding the lake. He noted that the lake will provide a valuable water supply for irrigation purposes which will enhance the productive capabilities of the site and provide an important habitat for birds and other wetland fauna.

### **Mr M Foley (Geotechnical Engineer - Tonkin and Taylor)**

Mr Foley presented evidence in support of the application. He concluded that he considered it feasible to build a dam and have the PIC assessed as Low. He also considered that the dam can be safely developed, maintained and operated provided all aspects of the development are in accordance with the New Zealand Dam Safety Guidelines.

Cr King asked to what extent the proposal will mitigate existing flood potential. Mr Foley replied that the 1 metre freeboard will retain flood flows and that a modelled 10 year return period event would raise the lake level by 200 millimetres. The effects of the dam would therefore be to reduce the flood peak and mitigate flooding downstream.

In response to a question from Dr Johnston, Mr Foley clarified that the length of construction would be approximately five months during the summer construction period. He also clarified that most of the fill required would be provided for on site, but material for spillway construction would be required to be sourced off site and that this would involve approximately 100 truck movements.

In response to another question from Dr Johnston with regard to the risk of dam failure Mr Foley clarified that although Tonkin & Taylor's modelling assumed catastrophic failure this was not the likely failure scenario and instead any failure would more likely be that the dam would crack and seep slowly. He noted that one

of the three most likely causes for failure which is internal erosion along a seepage path has been removed as there will be no internal piping. He noted that the design of the dam was very conservative and that a 1 metre freeboard had been provided. Both these meant that the risk of failure was remote. He also clarified that in the unlikely event that failure did occur floodwaters would rise gradually which would give sufficient time for landowners to avoid them. He noted that the modelling indicated the “worst case scenario” at all sites which may have caused increased concern on the part of submitters.

In response to further questioning he stated that if dam failure did occur he did not consider that the Staig house would be adversely affected. He had verified the ground contours within 30 metres of the bank and concluded that the embankment will overtop but the water will fall back into the stream.

In response to questioning from council staff, Mr Foley confirmed his assessment that the dam fitted into the low Potential Impact Category (PIC) and that there is no requirement for formal monitoring and alarm systems.

### **Mr T Hewitt (Consultant Hydrologist - Envirolink)**

Mr Hewitt outlined that there is potential for ground water recharge depletion when runoff is intercepted and stored in a dam. However, his calculations indicated that the effect of the proposed dam on potential recharge would be negligible.

## **6.2 Submitters Evidence**

### **Mr Appleman**

Mr Appleman expressed his concern with regard to the recharge of ground water and adverse effects associated with the construction activities. In response to questioning from Cr King he agreed that he would have been more comfortable with the water permit it had been for productive purposes only as that would provide a more honest justification for the application.

### **Mr King (Brightwater Playcentre)**

Mr King requested a condition requiring a robust monitoring system as a condition of consent. He also questioned the extent of public liability insurance recommended and its adequacy to cover damage if dam failure was to occur. He expressed concern over the safety of children in his care as the evacuation area would be subject to inundation in a flood. He stated that the childcare centre would not know if dam failure had occurred until it was too late as there was no warning system volunteered.

### **Mr O'Neil**

Mr O'Neil clarified that he had a well on his property which was about 6 metres deep and questions how the dam would affect his well. He also thought that the dam would be a limiting factor for future development.



## **Mr Staig**

Mr Staig questioned the classification of the dam and suggested that it be classified as medium not low. He still had concerns that his property would be affected by a dam break. In response to a question from Cr King asking if a condition requiring a clean flood path would reassure him he said it would not and that a bund on the applicant's property adjacent to the road on "his" side would be preferable.

## **Ms Gorman on behalf of Mr and Mrs Pike**

Ms Gorman presented a slide show illustrating the varied use of the land downstream of the dam. She disputed the ground levels indicated in the application and stated that although dam breaks were fairly predictable there was a wide margin of error in modelling.

## **Ms Culverwell**

Ms Culverwell noted that the Plan says the dam will have a height of 11 metres but at the hearing a height of 14 metres was stated as the maximum height. She wanted clarification as to what was being applied for. She questioned the ability of the culvert to accommodate flood flow and also how the presence of people in the domain is taken into account in determining the PIC category. She said that she had not gained any reassurance that the PIC assessment was correct.

## **Mr Edmonds**

Mr Edmonds stated that in his opinion there would be adverse effects on the environment due to loss of water for recharge. He noted that there would be damage during construction and four months of noise and disturbance. He requested that the box culvert be replaced with an open spillway and chimney drains and other safety devices. He highlighted the limited capacity of the box culvert and the risk of vegetation blocking it. He requested that the dam be redesigned so that it fills only during winter months. He also requested that an alarm system be required and that downstream property owners should be compensated for increased risk posed by the dam.

## **6.3 Council's Reporting Officers' Report and Evidence**

### **Mr Tyson (Consent Planner, Water)**

Mr Tyson restated aspects of his report including his assessment that the effects of the activity were no more than minor and his determination as to who were potentially adversely affected parties. He stated that he did not consider that the dam would alleviate water shortfalls on the Plains but there is no requirement in the Tasman Resource Management Plan for dam owners to augment downstream aquifers. He stood by his assessment and recommended conditions with respect to the requirement for a residual flow and the effects of the dam and water take on water users downstream. He reiterated that the purpose of the Act is not to avoid risk at all cost but rather to manage development and resource use. He also noted that an additional dwelling could be erected within the inundation zone subject to a minimum floor level requirement. He noted that if the Commissioners decide that a

higher PIC classification is appropriate then additional conditions would be required. He noted that the liability quantum was for the Commissioners to decide.

He concluded that he cannot justify recommending a warning system for a dam which is designed so that it will not fail.

### **Mr Verstappen (Resource Scientist, Rivers and Coast)**

Mr Verstappen stated that the dam was designed for a very low probability event and that the effect of the dam would be less than a natural flood event if the dam was not built. However, he acknowledged that if the dam did burst there would be some adverse effects. He stated that given the minimum floor level requirements imposed by the Building Act 2004 (due to the existing natural flooding hazard in the area) it was his opinion that the implications of a dam failure on land use below would not be significant. He could not find justification for an early warning system and considered that there is no reason to be concerned about the modelling work. In response to submitters' concerns he stated that there would be no benefit in having Tonkin & Taylor's modelling independently reviewed.

Cr King sought clarification as to how the classification of the PIC under the Building Act 2004 worked and that if a qualified engineer assesses a dam as having a low PIC who has authority to get reclassification and if staff agreed with the classification. Mr Verstappen confirmed that it was Council's responsibility to do this and that staff agreed with the PIC assessment level.

Mr Foley in clarification stated that the models used to assess the PIC are very conservative and that generally if the water depth was greater than 0.5 metres then people would be considered to be at risk. He also stated that shallow fast moving water can also pose a risk. He noted that the depth x velocity (dv) at the drill hall site was between 0 and 0.2 which was deemed not to be a risk. The models did not indicate any water at the Play Centre but at the tennis court there would be water covering the site with a depth of 0.1 metres with a dv of 0.25. He noted that the level would rise slowly and that people would have time to avoid flood waters.

Mr Foley advised that if he were to give his personal assessment of flood flows arising from dam failure then it would be significantly less than the model which was based on very conservative assumptions. He also noted that the modelling used was state of the art and internationally recognised and incorporated all possibilities.

## **6.4 Applicant's Right of Reply**

Ms Chisnall reiterated that the models used in the design of the dam, the prediction of the effects of flood events on the dam and the prediction of the flow paths of flood waters if the dam failed are based on very conservative assumptions and are in accordance with best practice. She emphasised that the Committee can only take into account the effects of the proposed activity on permitted activities not other activities which may require a consent at some future date. She noted that the construction effects would be completed within a five month period not five years and that the effects during this period would be dealt with by

conditions and a volunteered condition requiring the preparation of an operations and maintenance plan. She reiterated the main points in her original submission.

Mr Foley advised that the construction of the dam would be professionally managed and that it would be built in accordance with the regulations. He advised that if there was a 1 in 100 year flood event during construction, then contractors would have the ability to cut a small channel into the adjacent hillside to provide an emergency spillway.

Mr Foley again reiterated that the modelling used had taken a conservative approach and that the design flows were approximately 1.8 x predicted events. He concluded by stating that flash floods would flow through to the Wai-iti and that a dam would slow down the flood peak and provide floodwaters with more time to pass through to lower aquifers.

## **7. PRINCIPAL ISSUES AND MAIN FINDINGS OF FACT**

The principal issues that were in contention and the Committee's findings of fact are:

### **a) What is the appropriate Potential Impact Classification (PIC) for the dam?**

A range of opinions were expressed during the hearing as to the most appropriate PIC for the dam. The applicant's assessment is that the dam has a low PIC. The population at risk is defined as all those people who would be directly exposed to flood waters within the natural flood or dam break affected zone if they took no action to evacuate. The guidance outlined by the applicant's consulting engineer which was used to determine the dam classification is accepted by the Committee as is the assessment that the dam has a low PIC. The assessment concluded that the depth x velocity parameter would be generally less than 0.5 metres per second across the flood plain.

### **b) What is the risk of dam failure?**

Although the Committee acknowledges the concerns expressed by submitters with regard to the risk of dam failure they are mindful of the empirical evidence provided by the applicant versus the perceived effects as expressed by submitters. The Committee notes that design and modelling work undertaken in both the design of the dam and the dam break scenarios are based on very conservative assumptions, are clearly prescribed by both New Zealand and International guidelines and follow best practice. The evidence presented at the hearing that the risk of dam failure is remote is accepted as was the likely non catastrophic failure scenario. The three most likely dam break scenarios were identified as:

- i) an earthquake initiating cracking in the dam with gradual seepage of water and possible failure over a 35 minute period peaking at 20 minutes;

The Committee agree that failure in this scenario would not be catastrophic and there is the possibility that the dam can be dewatered to minimise effects to both the dam and downstream landowners.

- ii) a high rainfall event breaching the dam and causing erosion of the face;

The design of the dam is very conservative and provides a 1 metre freeboard for flood water storage. In a 10 year return period event the lake behind the dam would rise by 200mls. The spillway is designed to accommodate a 1 in 10,000 year flood event.

- iii) Internal erosion via a seepage path such as piping.

The dam will be constructed from materials arising from the weathering of Moutere Gravel and the dam will not include a low flow pipe so any risk of piping is removed.

The Committee accepts that many dams have been successfully built on and using Moutere Gravel which provides a strong and stable foundation material, and is suitable for construction of low permeability embankments. It also accepts that the subsurface investigations indicate that the site conditions are typical of those underlain by Moutere Gravel and are thus suitable for an earth dam.

It is accepted that the applicant could construct as a permitted activity a series of non-engineered two metre high dams in each gully which could collectively store 20 - 30,000 cubic metres of water. Instead, the applicant has chosen a single large engineered dam to create a large surface area of water.

**c) If dam failure was to occur what is the likely impact on downstream properties?**

The Committee agrees that if the dam fails the likelihood of a catastrophic failure is remote. Instead the likely worse case failure would be gradual release of water over a 35 minute period with a peak around 20 minutes. The scenario presented by the applicant's geotechnical engineer indicates a narrow flood path between the dam and the lower end of the site and beyond that the flows spread out onto the wider flood plain. At this point flow velocities are predicted to drop significantly as the flood flows spread out onto the wider floodplain. Potential flooding is predicted to be generally less than 0.5 metres deep and less than 0.5 metres per second across the floodplain, with some localised areas exceeding these values. The Committee notes the applicant's submission that an inundation depth of 0.5 metres or higher is commonly used as an indication of the area where population is at risk. They also note that shallow fast moving water can be as dangerous as deep but slow moving flood flows and that the dv can assist with providing a basis for assessment. The Committee understands that the dv would generally be less than 0.5 metres per second across the floodplain and using best practice guidance notes this would result in no danger to life. However, it acknowledges that a dv greater than 0.5 is likely to be exceeded in certain areas, most notably upstream of the main stem Pitfure Stream. However, the

Committee is satisfied that the ground levels are such that it is unlikely that flows would be diverted by the culvert and embankment into the Staig house. The committee notes that the modelled dv parameters presented by Mr Foley are based on catastrophic dam failure.

**d) What are the likely effects generated during dam construction?**

Concern was expressed over potential adverse effects during flood events during construction and the number of vehicle movements, noise and dust generated.

The Committee notes that all the 26,400 cubic metres of dam and embankment fill will be obtained on site and that imported rock will only be required for the spillway. This spillway material will equate to approximately 100 truck movements over the five month construction period.

The Committee considers that in the context of permitted seasonal rural activities this number of movements is acceptable and the adverse effects generated by them will be short in duration. With respect to concern over the effects of a flood event during construction the Committee notes that construction will be undertaken during the normal summer earthworks season and that surface water flows during construction will be controlled by a cofferdam with associated pump and temporary piping. The formation of temporary spillways as part of the staged construction of the dam will ensure that any extreme flood event will bypass the site without inducing excessive erosion.

**e) To what extent will the damming of water and water take effect downstream aquifers and water users?**

The Committee accepts that the damming of the unnamed creek on the applicant's property will have no more than minor adverse effects on water users downstream. The main source of stock and household water immediately downstream of the site is from Council's reticulated scheme, the only groundwater take is from a shallow well 6 metres in depth which is understood to be predominantly recharged from an unconfined aquifer that in turn is recharged by rainfall and local streams.

Although it is acknowledged that there is potential for ground water recharge depletion when runoff is intercepted and stored in a dam, the effect of this dam on the recharge of the Wai-iti aquifer represents 0.006% of potential recharge in an average winter. This effect is considered to be negligible and due to the provision of 1.0 metres of freeboard above the dam crest the dam will result in a positive dampening effect resulting in a reduction in the natural flood peak.

The requirement to maintain a residual flow will address any adverse effect of the capture of summer runoff and maintain in stream values.

**f) Is a dam failure warning system appropriate?**

Submitters requested that a dam failure warning system should be required as a condition of consent if the activity is approved. The Committee accepts that the low PIC for the dam is appropriate and that there is no requirement for formal monitoring or alarm systems for low PIC dams. It notes that as far as it is aware no other low PIC dams in the District have dam failure warning systems in place. The Committee noted the requirement for Civil Defence to be made aware of the dam structure and the monitoring requirements of dam owners.

**g) To what extent are the landscape values and amenity adversely or positively affected by the construction of the dam?**

The Committee can understand why this issue has raised concerns with submitters. However, evidence given at the hearing and observations made during a site visit indicate that the productivity of the site will not be adversely affected by the proposed development. The decision needs to be based on the potential adverse effects of the proposal and it is considered that the construction of the dam will facilitate wetland restoration and a relatively minor vineyard development which will enhance the productivity of the site. As previously described the water take will have no more than a negligible effect on the recharge of aquifers downstream of the dam. In addition, the applicant proposes to undertake amenity plantings.

## **8. RELEVANT STATUTORY PROVISIONS**

### **8.1 Policy Statements and Plan Provisions**

In considering these applications, the Committee has had regard to the matters outlined in Section 104 of the Act. In particular, the Committee has had regard to the relevant provisions of the following planning documents:

- a) the Tasman Regional Policy Statement (TRPS);
- b) the Transitional Regional Plan (TRP); and
- c) the Tasman Resource Management Plan (TRMP).

The Objectives and Policies in the Tasman Regional Policy Statement which are considered to be relevant to this assessment of the application are outlined in Table 1 below:

**Table 1 - Provisions of the TRPS**

<b>Section</b>	<b>Objectives</b>	<b>Policies</b>
Land Resources	6.3, 6.4	6.2, 6.4, 6.5
Fresh Water Resources	7.2, 7.3	7.3
Resource Management Processes	13.2	13.7

The Objectives and Policies in the Tasman Resource Management Plan which are considered to be relevant to this application are outlined in Table 2 below:

**Table 2 - Summary of TRMP Objectives and Policies**

<b>Chapter</b>	<b>Objectives</b>	<b>Policies</b>
5 Site Amenity Effects	5.1.2	5.1.3.1 5.1.3.8 5.1.3.9 5.1.3.11
7 Rural Environment	7.4.2	
12 Land Disturbance Effects	12.1.2	12.1.3.1 12.1.3.2
13 Natural Hazards	13.1.2	13.1.3.1
30 Fresh Water Resources		30.1.17, 30.3.2
33 Discharges to Land and Freshwater	33.3.0,	33.3.4
34 Discharges to Air	34.2.0	34.2.1, 34.2.1A, 34.2.2, 34.2.4, 34.2.5A

The Committee considers that the proposal does not offend the objectives and policies described in the Tasman Regional Policy Statement and Tasman Resource Management Plan. The objectives and policies envisage development subject to avoiding, remedying or mitigating any adverse effects. It is considered that the temporary effects can be adequately addressed with management plans and the long term effects through the detailed design phase of the project and ongoing maintenance and monitoring.

The Committee considers that the proposal is consistent with the objectives and policies concerning natural hazards. The applicant proposes to protect the dam from flood flows and the dam will reduce rather than increase downstream flooding. The applicant has assessed the geological stability of the area and it has been found to be suitable for the proposed purpose.

Council's summer water management objective in the Wai-iti Zone is to maintain and (if possible) improve existing user's security of supply to an acceptable level. In other words, Council acknowledges that water is critically important for landowners and water users in the Wai-iti Zone. In the neighbouring Wai-iti Dam Service Zone, security of supply has been significantly improved by the construction by TDC of a water augmentation dam in the upper catchment in 2006. In contrast, in the Wai-iti Zone there are numerous privately owned and operated irrigation dams including dams larger than that proposed.

The Council's water allocation policies (ie Chapter 30 TRMP) encourage dams and dam storage in water short catchments while seeking to protect any natural surface flows for existing water users and instream values. Where a catchment is smaller than 20 hectares, damming is permitted as the stream bed will typically be dry or reduced to a seepage in a dry summer. A dry stream bed significantly restricts the habitat available for instream life but residual pools can sustain a surprising variety of life including eels and possibly other native fish. Dams in such

small Moutere Gravel catchments can have positive benefits insofar as attracting and providing permanent habitat for eels and birdlife.

## 8.2 Part 2 Matters

In considering these applications, the Committee has taken into account the relevant principles outlined in Sections 6, 7 and 8 of the Act, as well as the overall purpose of the Act as presented in Section 5. There are no section 6 or 7 matters which are considered to be relevant to the application.

The activity is not considered to be inconsistent with the purpose and principles of the Act. The Committee is satisfied that the applicant has demonstrated that the dam can be constructed so that it does not pose a real risk to downstream property or persons.

## 9. DECISION

Pursuant to Section 104B of the Act, the Committee **GRANTS** consent subject to conditions.

## 10. REASONS FOR THE DECISION

### Effects on the Environment

The Committee accepts the applicant's geotechnical engineering advice that the dam design and the predicted effects of flood events on the dam and the prediction of the flow paths of flood waters if the dam failed are based on very conservative assumptions and are in accordance with best practice. The Committee notes that many dams have been successfully built on Moutere Gravel which provides a strong and stable foundation material, and is suitable for construction of low permeability embankments.

The Committee understands the concerns of residents that the motivation of the applicant to enhance the site is not entirely based on the productive use of the land. However, they are of the opinion that the construction of the dam, capture of winter runoff and irrigation of the site will enhance the productivity and biodiversity of the catchment in a manner which will not have an adverse effect on the productivity of downstream water users or landholdings.

The Committee notes that the applicant's unnamed stream, and other local streams such as the Pitfure, are regularly dry in summer and are too unreliable to be a source of stock water. In most years the proposed dam will readily refill as a result of catchment runoff. Therefore, until irrigation commences, runoff and stream flows will be unchanged below the dam except for a positive dampening effect common to dams resulting in a reduction in the natural flood peak. In winter, there are few if any water users and frequently there is too much water for the local drainage system to cope with.

Fish passage is not considered an issue for this dam as the Committee agrees that eels will find their own way into the reservoir. However, it is considered that providing a year round residual flow release from the dam, equivalent to the natural summer low flow, will address any effect of the capture of summer runoff



and provide for in stream values that may exist. It is left to the applicant to determine how to do that. However, it is the Councils experience that a metered discharge has been the most pragmatic and practical method used to date.

The Committee considers that constructing a dam in this small catchment will not exacerbate flood hazard risk or peak flows; on the contrary the dam will in virtually all circumstances attenuate rainfall runoff and peak flows from the catchment (when compared when to natural runoff patterns). The probability of severe flooding in the Pitfure and the resultant effects of that flooding on various inhabitants is much more likely to arise from natural rainfall events (as has been documented on several occasions since 1980) than from a dam break scenario. The Committee notes that existing natural flooding poses a restriction to land use development on the floodplain below the dam and that this proposed dam will have a positive effect on natural flooding in reducing peak runoff from the catchment.

The proposed lake and amenity plantings including the reestablishment of indigenous trees and wetland vegetation will enhance the amenity of the site and its environs.

The Committee considers that in the context of permitted seasonal rural activities the adverse effect generated by vehicle movements required for construction vehicle access and to provide material for the spillway is acceptable and the adverse effects generated by them will be short in duration.

### **Objectives and Policies of the Tasman Regional Policy Statement (TRPS)**

The Committee largely agrees with Mr Tyson's assessment of the relevant objectives and policies in the TRPS.

<b>LAND RESOURCES</b>	<b>EXPLANATION AND REASONS</b>
<i>Objective 6.3</i> - Avoidance, remedying, or mitigation of adverse cross-boundary effects of rural land uses on adjacent activities.	Some rural land uses may generate adverse effects for adjacent properties, including contaminant discharges, emissions of noise or odour, and shading. Such effects need to be managed to an appropriate degree.
<i>Objective 6.4</i> - Avoidance, remedying, or mitigation of soil loss or damage, sedimentation and other adverse effects of land uses.	Soil damage or loss, sediment contamination of water bodies and other adverse effects of soil or vegetation disturbance and other land use activities are significant risks to key natural resources that need to be managed through a variety of measures.
<i>Policy 6.2</i> - The Council will ensure that subdivision and uses of land in the rural areas of the District avoid, remedy or mitigate adverse effects on: <ul style="list-style-type: none"> <li>(i) productivity and versatility of land, particularly in areas of high productive value; and</li> <li>(ii) provision of services, including roading, access, water availability, wastewater treatment or disposal; and</li> <li>(iii) amenity, natural and heritage values of sites, places or areas including landscape features such as karst terrain; and</li> <li>(iv) accessibility of mineral resources; and</li> <li>(v) socioeconomic viability of adjacent areas; and that are not unnecessarily exposed to</li> </ul>	Council wishes to protect and maintain rural land for soil-based production activities. However, it recognises that a high demand exists for large-site residential development in rural areas, generally in close proximity to urban services, and with sufficient space and character for lifestyle choices. There is also a need for Council to ensure that other land uses including buildings, structures, plantings and land disturbance activities in the rural areas of the District avoid, remedy or mitigate adverse effects on visual amenity and heritage values. There are areas in the District where climate, soil type or topography

<p>adverse effects from:</p> <p>(a) adjacent land uses across property boundaries; and</p> <p>(b) natural hazards.</p>	<p>may limit production options, but which may be desirable or appropriate for activities such as rural residential development provided the adverse effects of such development may be managed.</p>
<p><i>Policy 6.4</i> - The Council will avoid, remedy or mitigate adverse effects of adjacent rural land use activities across property boundaries including effects of:</p> <p>(i) noise;</p> <p>(ii) odour;</p> <p>(iii) contaminant discharges;</p> <p>(iv) shelter belts;</p> <p>(v) fire risk.</p>	<p>A number of predominantly intensive rural land use activities may create adverse effects for other adjacent rural uses. Examples of these conflicts are shading from shelterbelts, agrichemical spray drift, offensive odours and noise from various devices. The Council seeks to manage the adverse effects where neighbour or community conflicts are likely.</p>
<p><i>Policy 6.5</i> - The Council will avoid, remedy or mitigate soil damage or loss, sedimentation and other adverse effects of land use activities.</p>	<p>A variety of soil or vegetation disturbance and other land use activities carried out for farming, plantation forestry, mineral extraction or other purposes may cause soil damage or loss, sedimentation in water bodies and associated risks for water and river resources. Management of erosion, damage and sedimentation effects of land use activities is important to sustain the quality and life-supporting capacity of soil, water and river resources.</p>
<b>FRESH WATER RESOURCES</b>	
<p><i>Objective 7.2</i> - Fair and efficient allocation of available water to abstractive users on a sustainable basis.</p>	<p>While water fluctuates in availability, allocation requires maintenance of life-support or instream needs before water is available for abstractive allocation. Available water needs to be made accessible to abstractive users on a continuing basis in ways that are both fair and efficient. Except where there is sufficient evidence of future public need for water, Council will allocate water on a first come, first served basis, within sustainable limits of allocation.</p>
<p><i>Objective 7.3</i> - Avoidance, remedying or mitigation of reductions in water availability for sustainable water uses, and the efficient use of such available water, arising from water or land uses.</p>	<p>Land and water use activities can affect water resources for a variety of values and uses. Vegetation changes, particularly the establishment of tall vegetation can intercept and remove rainfall that would otherwise contribute to stream flows or aquifer recharge. Reduction in available water by abstractive users can further adversely affect instream values, other water users and aquifer viability. There is a need to ensure that all abstracted water is used efficiently and avoids, remedies or mitigates such adverse effects on water resources. There is also a need to address the reduction in available water which may be caused by land use changes, particularly through establishment of tall vegetation by ensuring that such effects be avoided, remedied or mitigated to an appropriate degree.</p>

<p><i>Policy 7.3</i> - The Council will promote efficiency in water use.</p>	<p>Water is a limited resource in the District of absolute economic and ecological significance. Enhancing its availability by measures to achieve efficient uses is an important way of sustaining the water resource.</p>
<p><b>RESOURCE MANAGEMENT PROCESS</b></p>	
<p><i>Objective 13.2</i> - Use of effective methods in the development and implementation of resource management plans in fulfilment of duties under the Resource Management Act.</p>	<p>Sound resource management practice demands adoption of good process methods in order to develop and deliver good resource management results. Such methods should be open to the public and Council clients, understandable and fair to all interests, flexible in their response to situations, and efficient in their use of effort. Effective process methods should result in sound decisions on policies, consents and other actions to implement plans. Good process includes adequate environmental investigations, monitoring and enforcement to ensure that good resource management decisions are made and complied with, and to enable progress in achieving resource management results to be established.</p>
<p><i>Policy 13.7</i> - The Council will adopt a cautious approach to making decisions on plans and consent applications that: seeks and utilises all relevant available information; and acknowledges uncertainty or inadequacy in the information available about any potential adverse effect (or risk) of activities, including information about the type and level of risk; and establishes whether any risk is able to be remedied or mitigated to an acceptable degree or is of a type that must be avoided; and ensures that the need for further information about any risk is considered when making judgements under (c) above; and results in decisions that are responsive to new information about effects and risks.</p>	<p>The Council may have to make decisions on plans or consents where there is inadequate information about the likely effects of proposals or activities, or where the information suggests that there are potential adverse effects (or risks). The Council will acknowledge whenever these uncertainties are present. It will consider whether it can obtain further information, or whether any potential adverse effect can be avoided or reduced to an acceptable degree. The Council recognises the role of further information when making its decisions.</p>

## Objectives and Policies of the Tasman Resource Management Plan (TRMP)

The Committee largely agree with Mr Tyson's assessment of the relevant objectives and policies in the TRMP:

<p><b>SITE AMENITY EFFECTS</b></p>	
<p><i>5.1.2 Objective</i> - Avoidance, remedying or mitigation of adverse effects from the use of land on the use and enjoyment of other land and on the qualities of natural and physical resources.</p>	<p><i>Policy 5.1.3.1</i> - To ensure that any adverse effects of subdivision and development on site amenity, natural and built heritage and landscape values, and contamination and natural hazard risks are avoided, remedied, or mitigated.</p> <p><i>Policy 5.1.3.8</i> - (Proposed) Development must ensure that the effects of land use or subdivision activities on stormwater flows and contamination risks are appropriately managed so that the adverse environmental</p>

	<p>effects are no more than minor</p> <p><i>Policy 5.1.3.9</i> - To avoid, remedy, or mitigate effects of:</p> <ul style="list-style-type: none"> <li>(a) noise and vibration;</li> <li>(b) dust and other particulate emissions;</li> <li>(c) contaminant discharges;</li> <li>(d) odour and fumes;</li> <li>(e) glare;</li> <li>(f) electrical interference;</li> <li>(g) vehicles;</li> <li>(h) buildings and structures;</li> <li>(i) temporary activities;</li> </ul> <p>beyond the boundaries of the site generating the effect.</p> <p><i>Policy 5.1.3.11</i> - To avoid, remedy, or mitigate the likelihood and adverse effect of the discharge of any contaminant beyond the property on which it is generated, stored, or used.</p>
<b>RURAL ENVIRONMENT</b>	
<i>Objective 7.4.2</i> - Avoidance, remedying or mitigation of the adverse effects of a wide range of existing and potential future activities, including effects on rural character and amenity values.	
<b>LAND DISTURBANCE EFFECTS</b>	
<p><i>Objective 12.1.2</i> - The avoidance, remedying, or mitigation of adverse effects of land disturbance, including:</p> <ul style="list-style-type: none"> <li>(a) damage to soil;</li> <li>(b) acceleration of the loss of soil;</li> <li>(c) sediment contamination of water and deposition of debris into rivers, streams, lakes, wetlands, karst systems, and the coast;</li> <li>(d) damage to river beds, karst features, land, fisheries or wildlife habitats, or structures through deposition, erosion or inundation;</li> <li>(e) adverse visual effects;</li> <li>(f) damage or destruction of indigenous animal, plant, and trout and salmon habitats, including cave habitats, or of sites or areas of cultural heritage significance;</li> <li>(g) adverse effects on indigenous biodiversity or other intrinsic values of ecosystems.</li> </ul>	<p><i>Policy 12.1.3.1</i> - To promote land use practices that avoid, remedy, or mitigate the adverse effects of land disturbance on the environment, including avoidance of sediment movement through sinkholes into karst systems.</p> <p><i>Policy 12.1.3.2</i> - To avoid, remedy, or mitigate the actual or potential soil erosion or damage, sedimentation, and other adverse effects of land disturbance activities consistent with their risks on different terrains in the District, including consideration of:</p> <ul style="list-style-type: none"> <li>(a) natural erosion risk, and erosion risk upon disturbance;</li> <li>(b) scale, type, and likelihood of land disturbance;</li> <li>(c) sensitivity and significance of water bodies and other natural features in relation to sedimentation or movement of debris.</li> </ul>
<b>NATURAL HAZARDS</b>	
<i>Objective 13.1.2</i> - Management of areas subject to natural hazard, particularly flooding, instability, coastal and river erosion, inundation and earthquake hazard, to ensure that development is avoided or mitigated, depending on the degree of risk.	<i>Policy 13.1.3.1</i> - To avoid the effects of natural hazards on land use activities in areas or on sites that have a significant risk of instability, earthquake shaking, flooding, erosion or inundation, or in areas with high groundwater levels.
<b>FRESH WATER RESOURCES</b>	
	<i>Policy 30.1.17</i> - To avoid, remedy or mitigate the adverse effects of water damming either by itself or cumulatively with other dams, including adverse effects on:
	<ul style="list-style-type: none"> <li>(a) the flow regime or water levels in rivers, lakes and wetlands;</li> <li>(b) passage of fish and eels</li> </ul>

	(c) other water users; (d) aquatic ecosystems and riparian habitat; (e) water quality; (f) groundwater recharge; and (g) adverse effects of dam failure on (a) to (f) above. <i>Policy 30.3.2</i> - To recognise the beneficial effects of water augmentation, including harvesting in dams and reservoirs when considering water permit applications, including beneficial effects on: (a) aquatic habitat and ecosystems; (b) increased water availability; (c) downstream water bodies; (d) other water users.
<b>DISCHARGES TO LAND AND FRESHWATER</b>	
<i>Objective 33.3.0</i> - Stormwater discharges that avoid, remedy or mitigate the actual and potential adverse effects of downstream stormwater inundation, erosion and water contamination.	<i>Policy 33.3.4</i> - To avoid, remedy or mitigate the potential for flooding, erosion and sedimentation arising from stormwater run off.

The objectives and policies that relate to freshwater resources and natural hazards are particularly relevant to this application. In particular Policies 30.1.17, 30.3.2 and objective 13.2.1 of the TRMP which seek to avoid, remedy or mitigate the adverse effects of water damming either by itself or cumulatively with other dams, including adverse effects on:

- (a) the flow regime or water levels in rivers, lakes and wetlands;
- (b) passage of fish and eels
- (c) other water users;
- (d) aquatic ecosystems and riparian habitat;
- (e) water quality;
- (f) groundwater recharge; and
- (g) adverse effects of dam failure on (a) to (f) above.

And to recognise the beneficial effects of water augmentation, including harvesting in dams and reservoirs when considering water permit applications, including beneficial effects on:

- (a) aquatic habitat and ecosystems;
- (b) increased water availability;
- (c) downstream water bodies;
- (d) other water users.

And to manage areas subject to natural hazard, particularly flooding, instability, coastal and river erosion, inundation and earthquake hazard, to ensure that development is avoided or mitigated, depending on the degree of risk.

Overall it is considered that the proposal is not contrary to the objectives and policies in the TRPS and TRMP. The dam has been designed to enhance the productivity and amenity of the site without compromising in stream values and downstream water users. The design, construction and ongoing maintenance of

the dam structure is such that the risk of dam failure is insignificant and if it were to occur there would only be a low risk to life and property. The committee notes that large dams require consent holders to carry liability insurance.

### **Purpose and Principles of the Act**

Adopting a broad overall judgement approach to the purpose of the Act, the Committee is satisfied that the proposal is consistent with Part 2 and achieves sustainable management of natural and physical resources as set out in Section 5 of the Act. The Committee is satisfied that the proposal will not pose a significant risk to downstream landowners and will not compromise in stream values or the productivity of the site or downstream water users. The existing amenity of the site is typical of that found in the hill country adjoining the Waimea Plains, the proposal will enhance the natural character values and amenity of the catchment.

## **11. COMMENTARY ON CONDITIONS OF CONSENT**

The application states that the embankment height will be up to 14 metres with an RL of 77 metres. This is reflected in the consent conditions (See section 5 - Procedural Matters).

A condition requiring that the applicant provide a residual flow year round has been required. The reason for this is to protect in stream values and aquifer recharge during both the construction period and during dry winters.

A condition requiring that the spillway be designed and construction to withstand a 10,000 year flood is provided in order to give some comfort to downstream landowners that flood events will not impact on the integrity of the spillway.

The Committee agrees with the imposition of a condition requiring the development of an operations and maintenance plan in order to provide ongoing assurance that the dam will be adequately maintained and its stability monitored over time.

The quantum of public liability insurance has been increased over and above the figure recommended by staff in order to address submitters concerns with regard to the adequacy of the insurance cover provided.

## **12. LAPSING OF CONSENT(S)**

The applicant did not specify a consent term or lapse date. Pursuant to Section 125(1) of the Act, the resource consents lapse in five years unless they are given effect to before then, or unless an extension is applied for and granted by the Council.

### 13. EXPIRY OF CONSENT(S)

A two year expiry date has been provided for the land disturbance consent (RM081077) once it has been given effect to. A 35 year term is provided for the land use consent to construct and operate the dam (RM081100) and a 15 year term is provided for the water permit (RM081078).

Issued this 22<sup>nd</sup> day of December 2009

A handwritten signature in black ink, appearing to read 'Mike Johnston', written in a cursive style.

Mike Johnston  
**Commissioner**



## RESOURCE CONSENT

### RESOURCE CONSENT NUMBERS: RM081100, RM081078 and RM081077

Pursuant to Section 104B of the Resource Management Act 1991 ("the Act"), the Tasman District Council ("the Council") hereby grants resource consents to:

**Minvest Securities Ltd**  
(hereinafter referred to as "the Consent Holder")

### ACTIVITIES AUTHORISED BY THESE CONSENTS:

- RM081100 To construct a dam within the bed of a tributary of Pitfure Stream with a storage capacity of 30,000 cubic metres. The dam is assessed to be a large dam under the Building Act 2004, with a low PIC (Potential Impact Classification).
- RM081078 To take up to 14,000 cubic metres of water per annum for irrigation of a proposed vineyard and amenity plantings.
- RM081077 To undertake land disturbance and recontouring activities in association with the construction of the dam, formation of access, building platforms and vineyard establishment.

### LOCATION DETAILS:

Address of property: 3 Higgins Road, Brightwater  
Legal description: Lot 2 and Lot 3 DP 380879  
Certificate of title: CT 355932 and 355933  
Valuation number: 1937044802 and 1937044803

Pursuant to Section 108 of the Act, these consents are issued subject to the following conditions:

### CONDITIONS

#### Conditions applying to RM081100 (Land Use Consent - To Construct a Dam)

##### Site and Dam

- River or Stream bed:** Unnamed stream  
**Zone and Catchment:** Wai-iti, Waimea Catchment



### **Dam Dimensions**

Dam Height (m):	Up to 14 metres
Crest length (m):	130 approx
Storage (m <sup>3</sup> ):	30,000

### **Dam Location**

NZ Map Grid Datum: Easting: 2512271 Northing: 5969445

### **Advice Notice:**

A building consent is required to be obtained for the dam and the Committee consider that a hazard classification of "Low" is appropriate.

3. The dam shall be designed and its construction overseen by a Chartered Professional Engineer practicing in Geotechnical Engineering and specialising in the construction of large dams.
4. The dam shall be designed and constructed in accordance with the revised application (including a reduced dam storage of 30,000 cubic metres) and NZSOLD Dam Safety Guidelines.
5. The dam spillway shall be designed and constructed to withstand a 10,000 year flood flow.
6. No part of the dam embankment or any appurtenant structure shall be located closer than 5 metres from any certificate of title boundaries. Notwithstanding this, the existing land parcel passing through the water body formed by the dam is allowed to the extent shown in the application.

### **Advice Notice:**

Condition 6 recognises the existing land parcel but ensures that the entire dam structure, spillway etc is contained in a single certificate of title ensuring clear liability and ownership of the structure. Trespass by the lake onto another property is a civil matter which is not relevant in this case at this time as the Consent Holder owns both properties.

### **Notice of Construction**

7. The Consent Holder shall advise the Council's Co-ordinator, Compliance Monitoring when works are about to commence and when the core trench is fully exposed prior to infilling.

### **Rock Protection Required**

8. In order to ensure that there are no adverse effects of the dam on the watercourse below it, rock protection (or similar) shall be placed under the direction of the chartered professional engineer referred to in Condition 3 below the spillway and shall be maintained by the Consent Holder.
9. The chartered professional engineer shall inspect the watercourse within the property downstream of the spillway, including the existing culvert, and any

recommendations to improve its stability or improve flood flows shall be implemented by the Consent Holder.

### **Dam Construction Period and Sediment Control**

10. Dam construction earthworks shall occur during the summer months from 1 October to 31 May inclusive and appropriate coffer dams, sediment traps and/or other such practical measures shall be undertaken so as to avoid introducing silt and other contaminants to the stream below the dam.

### **Vegetation**

11. The Consent Holder shall not plant, or allow to grow, any trees or shrubs on the dam embankment or within 3 metres of the dam toe and shall ensure that the dam embankment and any unplanted land is grassed down as soon as practicable after dam completion and no later than 6 months following completion of the works.

### **Operation and Maintenance Programme**

12. Prior to undertaking any works on site an Operations and Maintenance Plan shall be prepared by a Chartered Professional Engineer practicing in Geotechnical Engineering and specialist in the construction of large dams. The Plan shall provide for a one off inspection by a Chartered Professional Engineer following dam construction and annual inspections of the structural integrity with additional three monthly inspections and maintenance of dam surfaces and spillway paths by the owner. Evidence of their inspections shall be provided to the Council's Co-ordinator, Compliance Monitoring. The Plan shall also provide specific inspection requirements after the following events:
  - (i) Following rainstorm events that trigger spillway flow; and
  - (ii) earthquakes producing ground shaking levels at the site greater than MMVII on the Modified Mercalli Scale.

Records of all inspections shall be kept by the Consent Holder.

### **Slumping and Seepage**

13. If any slumping of or significant seepage of the dam is observed, the Consent Holder shall immediately inform the Council's Co-ordinator Compliance Monitoring and shall engage a Chartered Professional Engineer practicing in Geotechnical Engineering and specialist in the construction of large dams to advise on appropriate remediation measures. Any remediation recommended shall be immediately implemented by the consent holder and shall be undertaken under the supervision of the Chartered Professional Engineer.

### **Borrow Cut Restriction**

14. The natural valley sides within 25 metres from the lake head and an adjacent strip 5 metres wide adjoining that part of the lake shall not be modified by earthworks.

**Advice Note:**

The reason for this restriction is that the heads of dams usually provide the best habitat for wetland planting and shallow water for wading birds with minimal loss of storage.

15. The existing culvert below the proposed dam shall be assessed by the geotechnical engineer supervising the design and construction of the dam. If in the opinion of that engineer the culvert requires to be upgraded or otherwise modified then that shall be undertaken by the Consent Holder and the TDC is to be advised accordingly.

**Contractor**

16. Prior to the work authorised by this consent commencing the Consent Holder shall forward to Council a letter from the chartered professional engineer referred to in condition 3 confirming engagement to supervise the design and construction of the dam and associated structures.
17. Prior to undertaking any on site works authorised by this consent the Consent Holder shall provide a copy of this consent and any other relevant consents to the contractor undertaking the works and the Chartered Professional Engineer overseeing the construction.

**Insurance Cover**

18. The Consent Holder shall provide evidence of a minimum \$2 Million public liability insurance cover to Council before commencing work and shall maintain this cover through the life of the dam and produce evidence of cover on request.

**Expiry and Lapsing**

19. This consent shall lapse five years after the date that the consent commences unless the consent is either: a) given effect to; or b) the Council has granted an extension pursuant to Section 125 (1) (b) of the Act.
20. This consent shall expire 35 years after the consent is given effect to.

**Advice Note:**

For the avoidance of doubt, the date that the consent commences is the date when any appeals have been settled and the consent holder is legally authorised to go ahead with the work. The date that the consent is given effect to is when substantive work first begins on site.

**Review of Conditions**

21. The Council may within three months following the anniversary of the granting of the consent each year review any or all of the conditions of the consent pursuant to Section 128 of the Resource Management Act 1991 for all or any of the following purposes:

- a) to deal with any unexpected adverse effect on the environment that may arise from the exercise of the consent; and/or
- b) to require the adoption of the best practical option to remedy or reduce any unexpected adverse effects on the environment; and/or
- c) to comply with requirements of an operative regional plan; and/or
- d) for the purposes of implementing a dam safety monitoring programme or such other conditions required pursuant to any building consent granted for this dam or to take account of any new statutory requirements that may come into effect.

## OTHER ADVICE NOTES

1. Access by the Council or its officers or agents to the land subject to this consent is reserved pursuant to Section 332 of the Act.
2. The Consent Holder shall pay the reasonable costs associated with the monitoring of this consent.
3. Unless specifically authorised, no part of the dam or any dammed water shall be closer than five metres from any internal boundary.

## Conditions applying to RM081078 (Water Permit - To Take and Use Water for Irrigation)

### Dam Storage, Take and Use Details

- |                                   |                                 |
|-----------------------------------|---------------------------------|
| 1. Category of Source:            | Storage                         |
| River or Stream being dammed:     | Unnamed Stream                  |
| Zone                              | Wai-iti                         |
| Catchment:                        | Waimea Catchment                |
| Maximum rates of take authorised: | 3.3 litres per second           |
|                                   | 12 cubic metres per hour        |
|                                   | 36.00 cubic metres per day      |
|                                   | 250.00 cubic metres per week    |
|                                   | 3,000.00 cubic metres per annum |

### Dam Details

- |                                |                                    |
|--------------------------------|------------------------------------|
| Dam Number:                    | 301                                |
| Dam Storage (m <sup>3</sup> ): | 30,000                             |
| Location:                      | Easting: 2517383 Northing: 5979461 |
| Meter Required:                | Yes                                |

### Residual Flow System

2. The Consent Holder shall install and operate a year round residual flow system which shall be capable of discharging to the watercourse below the dam a residual flow of a minimum of two litres per second. Any intake shall be screened and/or constructed to avoid the entrapment of fish. The residual flow system shall include

a water meter as specified in Condition 4 and an adjustable valve to record and monitor the residual flow release from the dam.

The Consent Holder shall advise the Council's Co-ordinator, Compliance Monitoring when the residual flow system is completed and functioning.

3. The Consent Holder shall discharge to below their dam (Council number 301) a year round continuous residual flow of a minimum of 0.186 litres per second (112 cubic metres per week) at all times when there is inflow into the dam.

**Advice Note:**

The requirement to release 0.186 litres per second equates to 112 cubic metres per week and 5,586 cubic metres per year.

**Water Meter Specifications, Maintenance and Readings**

4. The Consent Holder or their agent shall, at their own expense, install, operate and maintain a water meter to measure the release of water as required by Conditions 2 and 3. The water meter shall comply with the Council's Water Meter Specifications as stated in the Tasman Resource Management Plan.
5. The Consent Holder shall as a minimum record their water meter reading on the same day each week and from November to April shall return their weekly meter readings each fortnight to the Council's Co-ordinator, Compliance Monitoring.

**Advice Note:**

Notwithstanding Condition 5, Council reserves the right to require returns on a weekly basis during periods of water rationing in the zone.

6. The Consent Holder shall supply a complete and accurate record of the water discharged from the dam which shall not be less than 112 cubic metres per week as specified in Condition 3.
7. The Consent Holder shall pay all reasonable costs associated with the monitoring of this consent. This shall include the reasonable costs associated with maintaining a water meter-usage database and costs associated with water meter calibration to confirm its accuracy within the range of  $\pm 5\%$  (provided that meter calibration is not more frequent than five yearly).
8. The Consent Holder shall keep such other records as may be reasonably required by the Council and shall, if so requested, supply this information to the Council. If it is necessary to install measuring devices to enable satisfactory records to be kept, the Consent Holder shall, at his or her own expense, install, operate and maintain suitable devices.

**Adverse Effects on Aquatic Life**

9. This consent may not be exercised to the extent that there is any significant adverse effect on resident eels in the dam. A minimum of 1,000 cubic metres of storage shall be retained within dam (Council number 301) at all times to provide for their survival and all pipe intakes and discharge pipes shall be screened to avoid the entrapment of fish and eels.

## **Expiry and Lapsing**

10. This consent shall lapse five years after the date that the consent commences unless the consent is either: a) given effect to; or b) the Council has granted an extension pursuant to Section 125 (1) (b) of the Act.
11. This consent shall expire 15 years after the consent is given effect to.

### **Advice Note:**

For the avoidance of doubt, the date that the consent commences is the date when any appeals have been settled and the consent holder is legally authorised to go ahead with the work. The date that the consent is given effect to is when substantive work first begins on site.

12. The Council may within three months following the anniversary of the granting of the consent each year review any or all of the conditions of the consent pursuant to Section 128 of the Resource Management Act 1991 for all or any of the following purposes:
  - a) to deal with any unexpected adverse effect on the environment that may arise from the exercise of the consent; and/or
  - b) to require the adoption of the best practical option to remedy or reduce any unexpected adverse effects on the environment; and/or
  - c) to comply with relevant national environmental standards made under Section 43 of the Resource Management Act 1991; and/or
  - d) to reduce the quantities of water authorised to be taken if the consent is not fully exercised: and
  - e) to change the residual flow required to be discharged from the dam if it is shown there are unexpected adverse effects on the environment including, but not limited to, adverse effects on existing used wells.

### **ADVICE NOTES**

1. Access by the Council or its officers or agents to the land subject to this consent is reserved pursuant to Section 332 of the Resource Management Act 1991.
2. The Consent Holder shall pay the reasonable costs associated with the monitoring of this consent.

### **Conditions applying to RM081077 (Land Use Consent - To Undertake Land disturbance Activities)**

1. At least 20 working days prior to undertaking any activities authorised under this consent, the Consent Holder shall submit to the Council's Co-ordinator Compliance Monitoring a Construction, Erosion and Sediment Management Plan (CESMP) which, as a minimum, shall contain the following:

- a) description and engineering design details of the works;
  - b) description of temporary activities and equipment storage in specified areas;
  - c) description of proposed construction programme including timetable, sequence of events and duration including any final land restoration;
  - d) description of construction methods and equipment to be used;
  - e) description of methods proposed for minimising generation of sediment and limiting erosion;
  - f) description of methods proposed for dust suppression during construction activities;
  - g) identification of the location, design, operation and maintenance of stormwater runoff controls and sediment control facilities;
  - h) description of steps taken to inform staff and contractors about the conditions of consent and the management plans;
  - i) description of traffic management and property access management;
  - j) contingency plans for flooding and any other potentially foreseeable event;
  - k) complaints and reporting procedures.
2. Works shall not commence until the CESMP is certified by the Council's Co-ordinator Compliance Monitoring. The CESMP will be certified by the Council's Co-ordinator Compliance Monitoring if he is satisfied it will meet the following outcomes:
- a) minimise the disturbance to land;
  - b) construction is appropriately staged;
  - c) protect steep slopes from erosion;
  - d) protect watercourses from sediment discharge;
  - e) minimise run off from exposed areas and steep slopes;
  - f) trap and remove run off sediment;
  - g) topsoil is retained wherever possible.
  - h) minimise the generation of dust; and
  - i) to ensure that contingencies are in place for flood events during construction.
3. The CESMP shall include sufficient plans and/or cross-sections etc to identify the proposed sources of the fill to be used both for the dam embankment and to infill the reservoir and shall demonstrate measures to ensure that all slopes will be stable at the completion of the works.

4. All sedimentation mitigation or control measures shall be maintained by the Consent Holder for as long as there is a potential for sediment movement to adversely affect off-site areas or natural water.
5. All excavations over one metre depth and the construction of any stormwater detention structures shall be planned and supervised under the direction of a chartered professional engineer practising in geotechnical engineering.
6. All exposed ground outside the reservoir shall be reinstated with vegetation as soon as is practicable and at least within six months of the completion of the earthworks or each stage of the earthworks if they are undertaken in stages so as to limit erosion and reduce adverse visual effects. This condition shall be considered to be complied with when 100% vegetative cover has been established.
7. No excavation of in situ Moutere Gravel shall be undertaken within 25 metres of the southernmost (upstream) end of the lake formed by the dam.

**Advice Note:**

The reason for this restriction is that the heads of dams usually provide the best habitat for wetland planting and shallow water for wading birds with minimal loss of storage.

8. The Council may within three months following the anniversary of the granting of the consent each year review any or all of the conditions of the consent pursuant to Section 128 of the Resource Management Act 1991 for all or any of the following purposes:
  - a) to deal with any unexpected adverse effect on the environment that may arise from the exercise of the consent; and/or
  - b) to require the adoption of the best practical option to remedy or reduce any unexpected adverse effects on the environment; and/or
  - (c) when relevant national environmental standards have been made under Section 43 of the Act.

**Expiry and Lapsing**

9. This consent shall lapse five years after the date that the consent commences unless the consent is either: a) given effect to; or b) the Council has granted an extension pursuant to Section 125 (1) (b) of the Act.
10. This consent shall expire two years after the consent is given effect to.

**Advice Note:**

For the avoidance of doubt, the date that the consent commences is the date when any appeals have been settled and the consent holder is legally authorised to go ahead with the work. The date that the consent is given effect to is when substantive work first begins on site.



## ADVICE NOTES

1. Officers of the Council may also carry out site visits to monitor compliance with resource consent conditions.
2. The Consent Holder should meet the requirements of the Council with regard to all Building and Health Bylaws, Regulations and Acts.
3. Access by the Council or its officers or agents to the property is reserved pursuant to Section 332 of the Resource Management Act.
4. All reporting required by this consent should be made in the first instance to the Council's Co-ordinator Compliance Monitoring.
5. This resource consent only authorises the activity described above. Any matters or activities not referred to in this consent or covered by the conditions must either:
  - a) comply with all the criteria of a relevant permitted activity rule in the Tasman Resource Management Plan (TRMP);
  - b) be allowed by the Resource Management Act; or
  - c) be authorised by a separate resource consent.
6. Council draws your attention to the provisions of the Historic Places Act 1993 that require you in the event of discovering an archaeological find (eg, shell, midden, hangi or ovens, garden soils, pit, depressions, occupation evidence, burials, taonga) to cease works immediately, and tangata whenua, the Tasman District Council and the New Zealand Historic Places Trust should be notified within 24 hours. Works may recommence with the written approval of the Council's Environment & Planning Manager, and the New Zealand Historic Places Trust.

Issued this 22<sup>nd</sup> day of December 2009



Mike Johnston  
**Commissioner**

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**Date Confirmed:**

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**Chair:**