

IN THE MATTER OF THE

Resource Management Act 1991

AND

IN THE MATTER OF

Seven applications to take and use water for irrigation and associated consents in the Hakataramea Valley and tributaries – CRC050940, CRC050960 and CRC050957 R G and Z L Pringle, CRC051767, CRC051768 and CRC051769 RPNZ Properties Ltd, CRC042653, CRC040999, CRC981376, CRC981377 and CRC95464.2 Hakataramea Valley Station (1990) Limited, CRC021221.2, CRC021258, CRC021585, CRC072576, CRC082460 and CRC951776.5 Star Holdings Limited, CRC071114 R W and M E Sutton, CRC051766, CRC040988, CRC040989 and CRC071825 N J Small, CRC011989 Padkins Creek Community Race.

DECISION OF THE HEARING COMMISSIONERS

Introduction

This decision relates to applications by seven applicants to take and use surface water and groundwater for the purposes of irrigation, and in one case community and stock water, and in some cases includes applications for associated land use consents.

All but one of the applicants (Padkins Creek Community Race) are part of a group known as Mid River New Applications Group (MRNAG). The cases of all these applicants were presented as part of a series on behalf of that Group and other applicants in the period between 11 August 2008 and 2 October 2008.

The relevant water bodies are the Hakataramea River and several tributaries of that river, namely Peter's Stream, Mackay's Stream, Station Stream, Avonlea Stream, Grampians Stream and Mortens Stream.

The seven applicants are as follows:

- R G and Z L Pringle
- RPNZ Properties Limited
- Hakataramea Station (1990) Limited
- Star Holdings Limited
- R W and M E Sutton
- N J Small
- Padkins Creek Community Race

All these applications were heard by the same Panel comprising Commissioners Peter Skelton, Michael Bowden and Gregory Ryder. On 2 October 2008 the hearing of these applications was adjourned sine die on 21 days notice. On 3 December 2009 the Panel issued a Minute to all the Parties in the Hakataramea Catchment cases. A copy of that Minute is annexed to the decision as Appendix 1. In response to that Minute the hearing of all the Hakataramea Catchment cases was resumed on 3 March 2010 when we heard further evidence and submissions on whether the whole of catchment approach should apply and on the way in which we should deal with Rule 2 Table 3 row xxii in the Allocation Plan. At the conclusion the hearing was again adjourned sine die on 21 days notice.

When we came to deliberate on these issue we discovered that the parties to these proceedings had not been provided with some material concerning row xxii in the Allocation Plan that had been supplied to us by the Regional Council in response to a Minute we had issued in May 2009. Accordingly we issued another Minute to Parties on 22 March 2010 referring to this matter and sought further advice from the parties. A copy of that Minute is annexed to this decision as Appendix 2. In due course we received further memoranda from counsel for the applicants and from counsel for Fish and Game in response to that Minute and the submissions contained therein have been taken into account by us in the rulings we are going to make about these matters later in this part of this decision.

In the meantime we record here that the hearing of these applications is now at an end and this decision is issued accordingly.

We propose to issue this decision in two volumes. Volume 1 will contain two parts. In Part A we will introduce the applications covered by this decision and deal with issues

that are common to all the applications. In Part B we will address each application, the evidence in support of it and any specific submissions and evidence in opposition to it, before arriving at a conclusion about whether the applications should be granted. Volume 2 will contain schedules of terms and conditions for each of the consents that we decide to grant in terms of Volume 1.

VOLUME 1: PART A

General Issues

With this group of applications, the issues arising between the applicants and the submitters were, for the most part, of a general nature. There were some concerns about individual applications expressed by some of the submitters, and as we said earlier we will address those in Part B of this decision. At the hearings all the applicants, except Padkins Creek Community Race, were represented by Ms Jane Borthwick as counsel. Ms Borthwick conducted the case throughout for MRNAG. After the hearings had been adjourned in October 2008 she was appointed a Judge of the Environment Court and her cases were taken over by Ms Prue Steven as counsel who represented the applicants at the resumed hearing in March 2010 and thereafter.

In her opening submissions Ms Borthwick set out a number of broad general issues that were raised in these proceedings. With regard to this particular group of applications, these were as follows:

1. The reliability of supply and access to water in the Hakataramea River and its tributaries.
2. The position of the current consent holders in the Hakataramea Catchment and whether the flow regime provided for in their consents should apply to these applications.
3. The relationship between the Hakataramea River and its tributaries – whether the Waitaki Catchment Water Allocation Regional Plan (the Allocation Plan) provides for a whole of catchment approach.
4. The correct application of the provisions in Rule 2, Table 3 of the Allocation Plan for the tributaries.
5. Issues relating to water quality and the management of nitrates and phosphates in circumstances where the proposed irrigation is going to result in an increase in existing agricultural or horticultural activity.
6. The exceedence of the annual allocation of 150 million cubic metres per annum provided for in the Allocation Plan by some of these applications. This issue involves making a decision about how much water has actually been allocated to existing consent holders and whether those applications that are still exceeding this limit should be granted consent as non-complying activities.
7. The duration of the consents should they be granted.

Two of these applicants are seeking to replace consents that have expired and are currently being exercised pursuant to section 124 of the Resource Management Act 1991 (RMA). These are the applications by the Pringles and RPNZ Properties Limited and they involve taking connected groundwater from the Hakataramea River.

Originally the other applicants, except for Padkins Creek Community Race, (which also involves an application to replace a series of expired consents), sought to take water from the various tributaries mentioned earlier at various rates and in various volumes, but towards the end of the hearings these applications were amended to provide for what is commonly called “water harvesting” only.

The key point about this is that these applicants are now seeking to take water from the relevant tributary streams only when the flow in the Hakataramea River is above 4.5 cumecs. We will be discussing this matter in more detail later in this decision.

The Star Holdings Limited applications involve the consolidation of some existing consents and some additional water. As we said earlier, the Padkins Creek Community Race involves a replacement of some existing consents but although the original application sought to take water for irrigation, this has now been deleted and the application is for a community water supply and stock water supply only.

Several witnesses were called by the applicants to address the issues identified earlier.

Ms Keri Johnston, who also gave evidence on each of the applications and will be referred to several times in Part B of this decision, gave general evidence about the existing volumetric allocation for this sub-catchment of the larger Lower Waitaki Catchment. It will be remembered from other cases, including our decision in the North Bank Tunnel Concept (NBTC) case, that the Allocation Plan makes provision in Rule 6, Table 5 for two annual allocations of water for activities in the Lower Waitaki Catchment. Above Black Point (the relevant allocation here), the total allocation in the Plan for agriculture and horticulture is 150 million cubic metres per annum, which is intended to cover both existing consents and new applications, such as the ones we are now dealing with as well as others in other sub catchments above Black Point.

Throughout this series of cases, starting with NBTC through to the Hunter Downs Irrigation case (HDI) and ending with these cases there was a large amount of evidence presented on this matter from different witnesses and none of it was really capable of sensible reconciliation. Basically, this was because the assessments made by the Canterbury Regional Council (Environment Canterbury) staff initially, kept on changing as records were either found or revisited and there was a fundamental difference of opinion between witnesses, such as Ms Johnston, Mr Robert Potts, a witness called by Meridian Energy Limited (MEL), and Regional Council staff about the way the allocations should be calculated. The fundamental difference concerned the question whether diversions should be included or excluded.

We made a ruling on this matter in our decision in the NBTC case. We ruled that diversions were to be included. That decision has not been challenged. At our request officers of Environment Canterbury, and in particular Ms Gillian Ensor, who was one of the section 42A reporters for these proceedings, provided us with an up to date schedule of allocations for agriculture and horticulture in this part of the Lower Waitaki Catchment. This was completed in June 2009 in accordance with our ruling in the NBTC case. This schedule has been the one that we have worked off ever since.

It formed the basis for the figures set out in our Minute to Parties of 18 May 2009, which is referred to in our decision on this topic in the application by Sunny Downs Limited. In that decision we decided that the non compliance with Table 5, which (on the basis of the revised schedule) is a common feature of all these applications, with the exception of one application by Star Holdings Limited, CRC021585, should not stand in the way of the granting of consent. In other words, we have made a ruling that all these applications will meet at least one of the threshold tests in section 104D of the RMA. That ruling, which is contained in our decision in the Sunny Downs Limited case, is attached to this decision as Appendix 3. In the light of that ruling, there is no need to consider further either Ms Johnston's evidence or any other evidence called either by the applicants or by the submitters on this particular issue.

The other general issues referred to above will be addressed later in this part of this decision. We record here that on matters of hydrology evidence was given for the MRNAG applicants by Mr David Stewart, and again his evidence will be referred to later.

On the matter of water quality, evidence was given for MRNAG applicants by Ms Lynn Torgeson and again her evidence will be referred to later. The evidence on planning matters was given by Ms Cathy Begley. For the Padkins Creek Community Race, which was not represented by counsel at these hearings, evidence was given by Ms Keri Johnston only.

The Relevant Statutory Instruments

For the purposes of these applications the relevant statutory instruments are the Canterbury Regional Policy Statement, the Transitional Regional Plan, the Allocation Plan (mentioned above) and the proposed Natural Resources Regional Plan (NRRP). As and when required these statutory instruments will be referred to in the course of this decision, but we record here that the relevant broad objectives and policies of the Regional Policy Statement are recognised and provided for in the Allocation Plan and the proposed NRRP. The Transitional Regional Plan, although still technically operative, is virtually redundant given the provisions of the Allocation Plan but it is still relevant for some aspects of some of these applications where discharges or earthworks are involved and also for the abstraction of water

Submitters

Some of these applications were the subject of call-in procedures by the then Minister for the Environment at the time when central government took action to establish the Waitaki Allocation Board that led to the promulgation of the Allocation Plan. As part of that process some of these applications were publicly notified and submissions were received. The Resource Management (Waitaki Catchment) Amendment Act 2004 (the Waitaki Act) provided that when these applications were finally to be heard and determined by the Regional Council those submissions were to be taken into account. The Act also provided for circumstances where the applications were to be publicly notified again. In this case all these applications were publicly notified in August 2007, including the ones that had previously been so notified and this resulted in further submissions being lodged.

The submission processes were complicated. In the first lot of submissions during the call-in process there were many submissions that were opposed to some of these applications for various reasons, including assertions that there was insufficient water available in the appropriate water bodies including the Lower Waitaki River. A number of the submissions were also concerned with environmental aspects of proposed takes in the Upper Waitaki Catchment. There were also other environmental issues raised about the Lower Waitaki Catchment.

The promulgation of the Allocation Plan in itself resolved many of these submissions and no doubt for that reason many of those submitters did not enter appearances at the hearing of these applications either at the pre-hearing conference or at the substantive hearings. Similar comments can be made about a number of submitters on these applications when they were notified in August 2007.

The submitters in opposition who did enter appearances and who took an active part in these proceedings were:

- The Director General of Conservation;
- The Central South Island Fish and Game Council;
- Te Runanga o Ngai Tahu and other local Runanga;
- The Lower Waitaki River Management Society.

We mention also Waitaki First Inc because it took an active part in the NBTC and HDI hearings but did not enter an appearance in respect of the Lower Catchment hearings generally and these applications in particular.

We also record here that MEL was a submitter in conditional support of these applications and its case will be referred to shortly.

Given the comprehensive nature of the cases presented by all the above submitters, either in conditional support of or in opposition to these applications, we think it reasonable to say that at these hearings we received full coverage of all the environmental and resource management issues that are raised by these applications. Indeed we cannot conceive of any other general issues that any of the submitters who are not mentioned specifically here could have raised.

The Cases for the Submitters

Meridian Energy Limited:

At the hearings in 2008 Ms Jo Appleyard, counsel for MEL, addressed three matters in her submissions, two of which have some relevance to these applications. These were the installation and maintenance of water meters and telemetry systems and water quality effects of land use intensification and best management practices.

As we said earlier, MEL supports these applications, provided conditions are imposed to cover the matters set out above.

Two of the witnesses called by MEL at these hearings addressed specifically some of the issues arising out of this group of applications. The first of these was Mr Edward Norton, who gave evidence about water quality, which is a contentious issue with this group of cases. Mr Norton's evidence on water quality was applicable to all applicants in the Hakataramea Catchment including Mr R H Robertson, whose applications are being dealt with in a separate decision. Mr Norton specifically commented on the evidence of one of Mr Robertson's witnesses, Mr Tom Heller, and as these comments have relevance to the applicants we are dealing with in this decision, they are also considered here.

Mr Norton referred to a report prepared for Environment Canterbury entitled "*Assessment of effects of increased nutrient concentrations due to catchment land use changes in the Hakataramea River*", which he co-authored. This report predicted the effects of potential future land use scenarios on water quality. He said the report indicated that periphyton blooms in the Hakataramea River already periodically exceed the biomass threshold defined in Objective WQL1 of Chapter 4 of the proposed Natural Resources Regional Plan (the NRRP), particularly during summer low flow periods and probably for periods of weeks or months until blooms are cleared by floods. He said that current water abstraction contributes to this problem by reducing flows and allowing intensified land use under irrigation.

He went on to state that the report predicted that allowing all new abstractions currently applied for could increase algal biomass in the Hakataramea River by about 20%, and that constructing a community irrigation storage scheme that would allow further intensification of all irrigable land (beyond the consents presently being considered) could increase algal biomass by about 60%.

He said the report described the availability of a suite of best land management practices that could potentially reduce nutrient losses from land to groundwater and rivers. It also discussed a number of assumptions and biases in the methods used and, in particular, noted the possibility that blooms would not proliferate to the extent predicted, in areas where there is significant riparian vegetation shading the river.

It was also noted that if *Didymosphenia geminata* (didymo) becomes established in the Hakataramea River, it will probably grow to biomass levels that exceed the guidelines and the biomass outcome defined in Objective WQL1 of Chapter 4 of the NRRP under existing and future increased irrigation scenarios. We note at this point that we heard from several witnesses that didymo is now confirmed to be present in the main stem of the Hakataramea River.

Mr Norton reiterated the opinion he expressed at the HDI hearing about the effectiveness of mitigation measures, stating that a 50% nutrient load reduction is ambitious, being at the upper end of the performance of mitigation measures reported in recent studies.

He also expressed some concerns about the applicants' evidence relating to water quality in particular the evidence of Ms Torgerson (for the MRNAG applicants) and Mr Heller (for R H Robertson) and their criticism of other studies of water quality and irrigation in the Hakataramea Catchment. In regard to this point, he referred to three studies prepared by AgResearch, GNS and NIWA. These studies were summarised in a single Environment Canterbury report. He was critical of Mr Heller's and Ms Torgerson's dismissal of the findings of these reports principally on the grounds that the reports predicted in-river nutrient (bio-available nitrogen and phosphorus) concentrations for the existing scenario that were higher than those shown by measured data for the Hakataramea River.

Apparently the applicants were concerned that the Environment Canterbury study did not reflect what is happening in their respective catchments and subsequently commissioned AgResearch to conduct a more detailed modelling prediction of increased nutrient loadings, taking account of site-specific characteristics of their properties. Mr R W Sutton, a farmer and applicant in the Hakataramea Catchment, and whose application we will subsequently address in Part B of this decision, expressed a similar concern.

According to Mr Norton, the AgResearch work predicted in-river nutrient concentrations that were very similar to the original predictions made for Environment Canterbury, yet

Ms Torgerson had concluded that the AgResearch results were inaccurate because they also did not match the measured data. He said that Mr Heller dismissed these reports for the same reason. Mr Norton said he was not persuaded by the evidence of either Ms Torgerson or Mr Heller to dismiss the predictions made in the NIWA report or the reports prepared for Environment Canterbury on which the NIWA work relied.

Mr Norton said that it was clear that periphyton cover, which has been measured regularly at the Main Highway Bridge, exceeded the Objective WQL1 threshold for 15 out of the 19 years of record. He noted that the Objective WQL1 threshold (15% cover) is more stringent than the Ministry for the Environment guideline of 30% cover. Filamentous periphyton exceeded 30% cover in 9 out of the 19 years of record. He said he made this comparison for context because the proposed NRRP is not yet operative.

Mr Norton then discussed the issue of the source of the nutrients in the surface waters of the Hakataramea Catchment, noting that both Ms Torgerson and Mr Heller considered that the dominant contributions of nutrients are currently from direct stock access to waterways (presumably from urine and faeces, which we understand Mr Heller to refer to as 'Organic Nitrogen') and from nutrients associated with wind-blown dust falling directly into waterways, rather than losses from land via either groundwater or surface flow paths.

Mr Norton did not accept the further argument of Ms Torgerson and Mr Heller that any future increase in nutrient losses caused by irrigation (via groundwater or surface flow paths) would be minor compared with the reductions that could be made to existing loadings by removing stock from waterways and reducing windblown dust. He said it was by no means clear from the data presented that contributions from in-river stock and windblown dust were dominant, and there was no evidence to indicate that any additional load from increased irrigation and land-use intensity would be negligible in comparison.

Mr Norton went on to say that the mitigation measures described by Mr Heller and Ms Torgerson will be necessary rather than optional requirements if Objective WQL1 of the proposed NRRP are to be met.

With respect to mitigation, Mr Norton stated that currently available mitigation measures may reduce nutrient losses from land but will not eliminate them, and that we should not expect more than about a 50 % reduction of nutrient loads from all mitigation measures combined.

The other MEL witness who specifically addressed these applications was Mr Robert Potts, who is a witness we have referred to in several other decisions including NBTC and HDI. Amongst other matters Mr Potts addressed the issue about over allocation in terms of Table 5 of the Allocation Plan, but as we have said earlier in this decision we have already made a ruling about that matter in the NBTC decision and applied that

ruling in respect of the non-complying aspects in the Sunny Downs Limited decision, so there is no need to consider Mr Potts' evidence about this any further.

Mr Potts also addressed conditions for flow metering and farm management plans and then he addressed, quite usefully for our purposes, each of the individual applications. Although we will be dealing with these in Part B of this decision, we think it is appropriate to record Mr Potts' advice on them now because it will assist us later in reaching conclusions about each of these applications.

On the RG and ZL Pringle applications CRC050940, CRC050957, and CRC050960 Mr Potts' only comment was in relation to the joint evidence prepared by Ms Johnston and Ms Anthony and given orally by Ms Johnston at the hearings, relating to a lower annual volume of 528,000 cubic metres. This is lower than the 612,000 cubic metres originally applied for and Mr Potts said he agreed with the lower figure.

On the NJ Small applications, CRC040989, CRC040988, CRC051766 and CRC071825 again Mr Potts' only comment was that he agreed with Ms Johnston's assessments in relation to annual volumes.

On the Hakataramea Station (1990) Limited applications CRC9500464.2, CRC981376, CRC040999, CRC981377 and CRC042653 Mr Potts reviewed these in some detail, but concluded after discussions with Ms Johnston that he understood that the applicant did not wish to use an existing consent in conjunction with some new consents being sought and on the matter of the annual volume he allocated 735,180 cubic metres, which is somewhat lower than Ms Johnston's 1,148,180 cubic metres, which he said includes the dammed volume. On the Padkins Creek Community Race application, CRC011989, Mr Potts noted that this application no longer seeks water for irrigation purposes. He had endeavoured to reconcile the stock and domestic water requirements with the annual volume provided by Ms Johnston in her evidence, but there is still a difference between them.

Using the stock numbers in paragraph 42 of Ms Johnston's evidence, and assuming 16 households (within eight properties), each with five people and an allowance of 300 litres per person per day, the annual volume is 82,344 cubic metres for domestic water supply. Mr Potts has added on conveyance losses to give a total of 98,813 cubic metres. He then summarised the position in respect of stock water in Table 6 of his evidence, showing how he calculated the total allocation of 98,813 cubic metres per annum. He went on to say that there is a lack of information about how the water is conveyed and over what sort of distances. In discussion with Ms Johnston she had told him that the conveyance was via open channel, which covers a large area but should be reasonably sealed due to the age of the system. However, Mr Potts said he had added 20% losses to account for this.

He concluded by saying that if the use is just domestic and stock water, he suggested the take rate be re-evaluated as taking the proposed volume of 534,515 cubic metres

per annum at the proposed peak rate will only last 56 days, assuming daily abstraction over 24 hours. For example, if the 534,515 cubic metres is to be taken over 365 day period, the net take rate would be 17 l/s. There are obviously losses and perhaps minimum conveyance rates to make the system work properly.

Ms Johnston replied to this evidence towards the end of the hearings and we will refer to that reply later in Part B of this decision.

On the applications by RPNZ Properties Limited, CRC051767, CRC051768 and CRC051769, Mr Potts said that his analysis of the volumes required coincided with those of Ms Johnston and he had no further comments to make.

On the application by Star Holdings Limited, CRC072756, Mr Potts again had no issue with the annual allocation of 3,240,000 cubic metres provided for by Ms Johnston.

On the application by R W and M E Sutton, CRC071114, again he and Ms Johnston were agreed about the appropriate annual volume of 500,000 cubic metres being diverted from an unnamed stream into a storage dam.

The Director General of Conservation:

The next submitter we will consider is the Director General of Conservation. Ms Phillipa Rutledge, counsel for the Director General, said in her submissions that generally the Department's concern in respect of these cases related to the effects of these applications on native fish and fisheries habitats and also the effects on water quality of any additional farming activity.

Ms Rutledge asked us to consider these effects on a cumulative basis and cited authority for that submission, one of which was *Kuku Mara Partnership (Forsyth Bay) v Marlborough District Council* Decision, W25/2002. There were others as well to the same effect. We respectfully accept and adopt those decisions as providing the basis for a cumulative effects assessment.

Ms Rutledge then addressed various objectives and policies in the Allocation Plan that were referred to also in the evidence and with which we are by now very familiar indeed. She mounted an argument for including diversions in Rule 6, Table 5 in the Allocation Plan but we have already ruled on that matter in our decision on the NBTC decision and there is no need to consider it further here. Finally, she addressed matters in terms of section 104D of the RMA.

The first witness called by Ms Rutledge was Mr Peter Ravenscroft, who is a freshwater ranger in the coastal area office of the Department of Conservation. Mr Ravenscroft's evidence was directed specifically to matters in the Hakataramea Catchment.

Mr Ravenscroft described the native fish community of the Hakataramea Catchment noting that nine species had been recorded, the most ecologically significant of these

being the lowland longjaw galaxias (or longjaw). He stated that this species is New Zealand's most threatened fish, being ranked as "Nationally Critical" placing it in the same level of threat classification as the Kakapo.

In describing the habitat of this species, Mr Ravenscroft noted that it has specialised habitat needs, living most of its life amongst and below the river substrate, moving between surface and groundwater flows. He said the interstitial spaces, which provide corridors between surface and sub-surface water, are the key to the long term survival of this fish as they allow it to seek refuge in ground waters, gather food and reproduce.

While longjaw have been recorded from only two tributaries in the Hakataramea Catchment, one being an old (1979) record and the other a more recent (2006) record, Mr Ravenscroft stated the records indicate that as long as suitable habitat is available, then there is potential for this species to be distributed throughout the Hakataramea Catchment. He also said that the Hakataramea population is the most significant population in the Waitaki Catchment as it has twice as many fish recorded here as the total number of fish in the other Waitaki populations combined.

Mr Ravenscroft stated that to provide for the long-term survival of the Waitaki Catchment lowland longjaw populations there must be enough ground water to drive/feed the springs which longjaws appear to favour. For the fish inhabiting the river main stems, sufficient flushing flows are needed to create bed turn over and bed reshaping. Such flushing flows are important as they loosen the substrate and lessen the armouring of the bed and reshape the bed and create riffle habitat. It was his opinion that there is a need to manage smaller spring-type habitats as separate identities, so residual flows should be established on these tributary streams as well as minimum flow on the main stem of the Hakataramea River.

Mr Ravenscroft considered some structures associated with these consent applications have the potential to have an adverse effect on fish populations in natural streams by preventing the passage of fish both up and down the waterway. He recommended that any in-stream structures be constructed to allow fish passage across and over the structure.

The second witness was Mr David Newey, who is a planner with the Department of Conservation. Mr Newey told us that he relied on the various section 42A reports with regard to assessments of the applications that are the subject of this decision and he addressed only general issues.

Mr Newey specifically addressed Table 3, row xxii in the Allocation Plan, which is the row in the Table relating to environmental flow regimes for water bodies not specifically included earlier in that Table. We will be referring to this issue relating to this Table later in this part of this decision. Mr Newey also referred to the issue about exceeding the annual volumetric allocation in terms of Table 5 of the WAP but again, as we have said earlier, we have already ruled on that matter.

Central South Island Fish and Game Council:

The next submitter we will consider is the Central South Island Fish and Game Council (Fish and Game). Ms Camilla Owen counsel for Fish and Game referred to the need to maintain the integrity of the Allocation Plan, the precedent effect of granting non-complying activity consents and relevantly, particularly to these applications, the cumulative effect of granting them.

On the matter of the granting of non-complying activity consents, we have already dealt with this in our rulings in the NBTC and Sunny Downs Limited decisions.

Ms Owen went on to say that Fish and Game sought the imposition of additional conditions to deal with cumulative adverse effects including:

- Payment of the cost to Fish and Game of addressing the increased bird population that will arise from increased irrigation and associated changes in land use and the creation of ponds;
- Baseline monitoring.

She went on to develop these ideas, particularly in relation to the Hakataramea Catchment applications, but we record here that provision for baseline monitoring has in fact been made now by the applicants in a revised set of conditions for each of the relevant applications that were provided by Ms Johnston towards the end of the hearings.

We also record here that we are not prepared to order the payment of costs as sought by Fish and Game. There was no evidence about what those costs might be (which is not surprising as the whole proposition is based on conjecture) and we doubt we have the ability in law to do so anyway.

The first witness called by Fish and Game to whom we will refer is Ms Bridget Pringle, who gave specific evidence about the Hakataramea Catchment and raised an important issue about it being over allocated on a whole of catchment approach which she advocated. Ms Pringle said that the current commitment to allocation in the Catchment on a whole of catchment approach equals 1,050 l/s with proposed takes of “new” water during times of low flow of 165 l/s and 240 l/s for renewals

Ms Pringle went on to assert that the Hakataramea River is currently badly impacted by abstraction and suffers from extended periods of very low flow in summer, reduced water quality and the effects of in-stream diversions.

She said that Fish and Game acknowledges that the Allocation Board did consider the relevant issues and derived an environmental flow regime for the Hakataramea River that attempts to cater for the interests of all parties, but it was apparent from her

evidence that Fish and Game is not altogether satisfied with the outcome of the Allocation Board's deliberations on this matter. .

We note here that in her evidence in reply to submitters' evidence, Ms Johnston said that the total catchment allocation was 874.3 l/s made up of 204 l/s for the Hakatamea River and 668.3 l/s for the tributaries. She pointed to some differences between her evidence and that of Ms Pringle relating to some specific consents. Another point raised by Ms Pringle, which the applicants later appeared to accept, was that the flow regime for the winter months provided for in Table 3, row xix should be applied here, rather than just applying the irrigation months flow regime to ensure that there is fish passage during those winter months.

Ms Pringle then referred to the Padkins Creek Community Race application, CRC011989. She stated that she understood, correctly, that the application for irrigation water had been deleted but she pointed out, again correctly, that there had been no reduction in the rate of take to account for this.

She went on to assert that if this is a true replacement for domestic and stock water only, then the take should be 45 L/s whereas the application seeks 110 l/s and a weekly volume of 66,528 cubic metres.

Ms Johnston also dealt with this matter in her supplementary evidence and there is evidence from the section 42A reporter that addresses this matter as well.

However, later in her evidence Ms Pringle did say "*On clarification it seems that the take is to be limited to a volume that considers reasonable use and this volume shall be 534,535 cubic metres a year for stock water and 11,600 cubic metres per year for domestic water supply. This seems to be a reasonable volume overall. I do note, however, that 534,515 cubic metres per year for stock water plus 14 households for members at 300 litres a day equals 6,132 cubic metres is equivalent to an instantaneous rate of 0.017 litres a second*".

Ms Pringle then questioned why the system was not a piped system to provide for what she asserted would be a more efficient use of water. She also said that Fish and Game prefer that fish are prevented from entering a system such as this one, but she did acknowledge that there are practical barriers to screening at this site, although she said piping would solve this problem. She questioned also whether the race has been fenced to prevent stock from entering it.

In response to this evidence Ms Johnston made the following points in her supplementary evidence:

1. The applications for stock water and domestic supply are full replacements of existing applications listed in paragraph 9 of the section 42A report, which currently authorises a diversion of 110 l/s from Kirkliston Stream. This is not an increase from 45 l/s as Ms Pringle claims.

2. The diversion is a controlled diversion- again see the section 42A report.
3. She talks about the annual volume “consumed” so is not taking the full divert as we later decided, which she says is yet another figure of 315,360.
4. The scheme presently has uninterrupted fish passage throughout and the race augments flows in the Padkins, Bellfield and Farm streams, therefore Ms Pringle’s suggestion that fish will become entrained in the system is untrue. In actual fact it is better to have a continuous diversion to ensure this does not happen.
5. The race has been in existence since the late 1800s and has sealed over time. At one stage piping had been considered but it is too expensive, and given that there are no significant losses from the system it is not necessary at this stage.

The system has become “naturalised” over time and is now shown on topographical maps. It has become part of the Hakataramea Catchment’s vast array of waterways and stock have had, and still do have direct access to it. While this may have benefits to the stock and farming in general we questioned the benefit to the aquatic ecosystem by allowing stock direct access to surface waters.

Ms Johnston went on to say in this connection, however, that Star Holdings Limited now owns many of the properties served by the race and as part of the mitigation package proposed by other applicants seeking to use water for irrigation, including Star Holdings Ltd, there is an undertaking to exclude stock from direct access to waterways. This will be of benefit to the race system as well.

Then also in her supplementary evidence there were some answers given to questions asked by us about the potable water supply figure which satisfy us on that matter.

Fish and Game also expressed concerns through Ms Pringle’s evidence about the level of certainty in relation to farm management plans and particularly with regard to water quality issues and it was not supportive of the use of nitrification inhibitors because one of the by-products is ammonia, which is a fish toxin. Ms Pringle did not provide any details on the relationship between nitrification inhibitors and ammonia production, but in any event should we decide to grant these applications we are satisfied that farm management plans and receiving water monitoring requirements can be made suitably robust to address any potential environment risk associated with such a mitigation tool.

On the duration of consent Fish and Game sought 15 years.

The next witness called by Fish and Game on these applications was Graham Hughes, a Fish and Game Officer. His evidence was based on the original applications, which as we have said before have now been modified. He said the Hakataramea River has a productive trout fishing value and is important for salmon spawning and also for rearing waters. It is well fished and well regarded by local and visiting anglers.

He acknowledged that the Hakataramea River is an important source of irrigation water as well. It is situated in a low rainfall area and there are irrigation restrictions at low river levels. But he went on to assert that the minimum flow provided for in the Allocation Plan is ineffective because at one cumec the River is already dry. At 500 l/s, which is the minimum flow in the Plan, several kilometres of the riverbed are dry.

We comment here that this appears to be an attack on the relevant provisions of the Allocation Plan which provide for a minimum flow in the Hakataramea River of 500l/s and an A block allocation of 500l/s. We must of course take the Plan as we find it. It is not for us in these proceedings to seek to change that regime.

Didymo is in the Hakataramea River already and an increase in takes from the River is of concern to anglers and other river users and existing irrigators. Mr Hughes said the period of low flow appears to be increasing and the minimum flow has become the normal river flow.

The next witness called by Fish and Game was Wayne Grafton, a professional fishing guide based in Omarama. Mr Grafton described how he has fished the Hakataramea River annually since 1976. He said he has noted a slow decline in the water quality and flow in the lower reaches which in his opinion has resulted in the River becoming less of a world class trout fishery. Prior to 2004 Mr Grafton said he would guide on the Hakataramea River until mid January, but now stops after the third week in November.

Then there was evidence from another Fish and Game Officer, Mark Webb, giving details about the state of use and values for sport fish and game bird purposes in the Hakataramea Valley.

He noted there are four salmonid species present within the Catchment (chinook salmon, brown and rainbow trout and brook char). He described how the Hakataramea River sustains 1,600 to 1,900 days of angling effort per season, or on average about 10 anglers fishing for each day of the season with about 60% of angling occurring in November and December. He said that trout are the primary target of anglers as salmon angling is too difficult in the shallow clear waters of the Hakataramea River mainstem. Early season rainbow trout fishing upstream of Cattle Creek Bridge (about 35km upstream from the Lower Waitaki River) is the most valuable angling attribute. Apparently most of these fish will have originated from the annual July to September spawning run of adult fish from the Lower Waitaki River to the upper reaches of the Hakataramea River.

Mr Webb noted that the large Lower Waitaki River rainbow trout fishery, estimated to sustain an angler harvest of about 5,000 fish per season, is believed to be totally dependant on tributary spawning. Fish and Game surveys of anglers identify the Hakataramea River rainbow trout fishery in its upper reaches as an important recreational resource, albeit early in the season. Brown trout angling increases in importance downstream and endures for the remainder of the season. He said that

winter access for adult rainbow trout upstream from the Lower Waitaki River and spring and summer access for their offspring downstream to the Lower Waitaki River are important aspects of managing this important fishery.

Mr Webb explained the significance of autumn and winter flows in the Hakataramea River for salmon spawning, with surveys indicating that flows in March and April appear to play a significant role in the salmon's ability to find and/or enter the Hakataramea River from the Lower Waitaki River. He said that on average about 90% of salmon redds are excavated in the 13-km of river downstream from Wrights Crossing to the Lower Waitaki River confluence. He noted that in four of the last eight years the Hakataramea salmon run has not exceeded 30 fish and equates to one two-hundredth the run size of less than 10 years earlier.

It was Mr Webb's opinion that the increased intensity of low flows which he considered had occurred in the Hakataramea River is a consequence of increased abstraction for irrigation where competition for water intensifies as flows decline. Abstraction causes river flows to decrease more rapidly towards the minimum flow and remain there for longer than would occur in the same catchment with no abstraction. He did not believe the rainfall pattern in the Hakataramea Catchment could account for the increase in occurrence of low Hakataramea River flows in March and April during extended low flow periods between 1976 and 2008. In contrast, Mr Stewart, a hydrologist who gave evidence for the applicants, said that this is a climate matter. The rainfall is lower.

Mr Webb also said that the low flow situation is why water harvesting was to be encouraged before further seasonal takes from the River. He also said that the proposal to apply the existing consent conditions was opposed by Fish and Game because it did not recognise the need for higher autumn/winter flows. We note here however that this matter can be taken care of by the adoption of the 750 l/s flow in autumn/ winter condition mentioned earlier by the applicants.

The final witness called by Fish and Game was Mr Scarf who said in respect of Rule 2, Table 3 in the Allocation Plan and that part of it which provides for all other rivers and streams, that he did not support the argument that this separates the management of the tributaries from the Hakataramea River mainstem. He said hydrologically this was wrong because the River exists as a consequence of its tributaries. He also drew attention to Policy 1 in the Allocation Plan which talks about recognising the importance of connectedness between all parts of the Catchment from the mountains to the sea and between all parts of fresh water systems of the Waitaki River and associated beds, banks, margins, tributaries, islands, lakes, wetlands and aquifers.

Te Runanga o Ngai Tahu and other Local Runanga:

The next submitter we refer to is Te Runanga o Ngai Tahu and other Local Runanga (comprising Te Rūnanga o Ngāi Tahu, Te Rūnanga o Arowhenua, Te Rūnanga o

Waihao and Te Rūnanga o Moeraki). Counsel, Mr M J Wallace, made submissions about the Hakataramea River and drew attention to the fact that it is a statutory acknowledgement in terms of the Ngai Tahu Claim Settlement Act 1998. Mr Te Wera King and Mr David Higgins were two witnesses who presented evidence on behalf of Iwi interests. Both witnesses described the Maori ancestral relationship with the Hakataramea Valley, which was used to access other surrounding areas and as a source of food and materials. Mr King noted how the area was once abundant with wetlands but that these had been drained and converted to pasture. He expressed concern about further reducing the minimum flows in the Hakataramea River and its tributaries.

Mr Higgins expressed concern about what he considered was a lack of attention by the applicants and the Regional Council towards maintaining the integrity of the mauri of rivers and providing for healthy ecosystems for mahika kai species.

Lower Waitaki River Management Society Inc.:

The final submitter was the Lower Waitaki River Management Society Inc evidence was given by Mr McIlraith for the Society. Mr McIlraith said that the Society, as a matter of principle, opposed all applications which are non-complying with respect to key provisions of the Allocation Plan. However the Society supported "sustainable irrigation" within the Waitaki Catchment.

Also the Society is concerned that treating the tributaries independently of the main stem in rivers like the Hakataramea River may well undermine the capacity to sustain an environmental flow in the main stem. It also understands that the ecology of smaller streams may be more vulnerable than that of larger rivers to the diversion of an equivalent proportion of baseline flow. This matter has been extensively canvassed and our reasons for adopting the approach we have are clearly set out in this section of this decision.

Mr McIlraith then said that the Society considered that, because the minimum flows in the Allocation Plan were selected after exhaustive hearings, they needed to be tested before they are lowered. Our approach, in the Hakataramea Valley, which is also set out in this section of this decision, imposes restrictions that sustain a higher environmental flow in the main stem than the Plan envisaged and also protects the more vulnerable ecology of smaller streams.

The Society supported the use of monitored and enforceable Farm Management Plans as part of the conditions for all new and replacement consents and proposed a list of generic criteria which they considered warranted inclusion in such plans. All of the applicants in the Hakataramea Valley offered conditions that included the preparation and implementation of such Farm Plans

Finally Mr McIlraith said that the Society supported the need for effective fish screening in all intakes and considered the location, extent and intensity of nutrient and microbiological contamination of land, and natural and constructed drainage need to be very carefully considered to prevent any further deterioration in water quality (Policy 1). All these matters have been addressed in arriving at our findings on the effects of increased irrigation on water quality and Oecology.

Advice from the Section 42A Reporters:

Dr Greg Burrell, a Scientist with Golder Associates, provided evidence to us on behalf of the Regional Council. His evidence addressed water quality and aquatic ecology matters with particular reference to the evidence of Ms Torgerson, Dr Donovan, Mr Heller and Mr Norton. Dr Donovan and Mr Heller gave evidence on behalf of Mr RH Robertson and their evidence (apart from references to Mr Heller's evidence earlier in this decision) is dealt with in that separate decision.

Dr Burrell concluded that concentrations of bio-available nitrogen and phosphorus are relatively low in the Hakataramea River compared with other hill-fed rivers, and both nutrients will likely be limiting (to periphyton growth) at times in the River. He said Environment Canterbury water quality monitoring data indicated that nitrogen and phosphorus concentrations in the tributaries were similar to or slightly higher than those observed in the lower Hakataramea River.

He agreed with Mr Norton that the nutrient models used tend to over-estimate in-river nutrient concentrations, because the models do not take into account nutrient uptake via biological or physico-chemical processes. He did not agree with the opinion of Ms Torgerson that the nutrient modelling approaches used by AgResearch and NIWA should be discounted given they yielded similar results.

Our consideration of the outstanding general issues

A whole of catchment approach:

The first matter we should deal with, because it is critical to the overall view to be taken of managing water resources in this Catchment, is whether it is appropriate to adopt a whole of catchment approach so that the Hakataramea River and its tributaries are viewed together for the purposes of the allocation of the water resources.

As we said earlier this issue was the subject of much debate at both the initial hearing in 2008 and again at the resumed hearing in March 2010. It will also be apparent from references to the evidence above that the applicants maintain that a whole of catchment approach is not the correct way to read the Allocation Plan as it relates to

the Hakataramea Catchment whereas other parties and in particular Fish and Game take the opposite view.

We are grateful to counsel for their extensive submissions on this matter and we hope that in not referring to those submissions further now, it is not thought we have ignored them. On the contrary they have helped us to reach a clear view which we will now express as succinctly as we can in the interests of keeping this decision within some reasonable bounds as regards its length and also in the interests of bringing these long outstanding proceedings to a conclusion. We add that what we are about to say applies to all the Hakataramea Catchment applications with the exception of Haka Valley Irrigation Ltd which, so far as its water take is concerned, is subject to the flow and allocation regime for the Lower Waitaki River and not the Hakataramea Catchment regimes.

In our Minute of 3 December 2009 (Appendix 1) we indicated that we thought a whole of catchment approach might be right. However, we have now concluded that this is not the right way to read the Allocation Plan notwithstanding that purely from a hydrological point of view it may well be the preferable approach.

One reason that lead us to the tentative view we expressed in the 3 December 2009 Minute was the way that Policy 43 in the Allocation Plan is headed and the way the Hakataramea Catchment is separately identified from the other Lower Waitaki River tributaries.

Policy 43 is headed "*Policy for the Hakataramea catchment*" and these words are followed immediately by a footnote reference to the fact that the Hakataramea River is a statutory acknowledgement in the Ngai Tahu Claims Settlement Act 1998. Then, if one looks at Map 2 in the Plan it will be seen that the Hakataramea River, which is in fact a tributary of the Lower Waitaki River, is separately identified from the other tributaries of the Lower Waitaki River such as the Maerewhenua River and other rivers identified on Map 2 as being tributaries of the Lower Waitaki River. Then too, there is a separate policy for these other tributaries. It is Policy 44.

Returning to Policy 43 it opens with the words "*by setting an environmental flow regime in the **Hakataramea River** (our emphasis) that recognises certain values*" of that River and enables access to water for activities. The meaning of Policy 43 is not clarified however by the wording of its explanation that reads "*This policy identifies the important values of the Hakataramea catchment and the basis for the environmental flow regime set in the rules.*"

Coming to the rules in the Plan, the first and indeed the only one to be considered in the present context is Rule 2. This Rule sets environmental flow and level regimes for all the water bodies in the Waitaki Catchment as a whole and provides constraints on taking, using, damming, and diverting surface water and groundwater to maintain the various environmental flow regimes or EFR's

In many instances where a water body is identified in Table 3 provided for as part of Rule 2, tributaries of that water body are also included as part of the water body so identified. For example, Table 3 refers to *Fork Stream and tributaries*, *Gray River and tributaries*, and *Twizel River and tributaries*, just to name a few. However when it comes to the Hakataramea River, tributaries are not mentioned –see Table 3 row xix. This row sets the EFR for that River which includes seasonal minimum flows, an allocation limit, and flow sharing limits all in accord with the definition of EFR in the Plan at page 59.

This EFR, on its plain wording, applies only to the Hakataramea River itself. However in Table 3 there is also row xxii that refers to “*All other rivers and streams*” with some named exceptions that are not relevant here. Then row xxiii refers to all connected groundwater having the same EFR as the relevant surface water body and perhaps more importantly row xxiv refers to shallow groundwater in two named catchments one of which is the Hakataramea catchment where the EFR is that of the surface water body to which the groundwater contributes the majority of its flow. On the evidence we have this would include not only the Hakataramea River but also its tributaries functioning, for this purpose, independently of the River.

Having regard to the foregoing analysis we are unable to read the Allocation Plan as providing for one EFR for the Hakataramea catchment as a whole. We think the reference to the statutory acknowledgement as a footnote to the heading to Policy 43 is there to identify that the River itself is such an acknowledgement which is a matter that the Plan is required to record in terms of the Settlement Act. This is the way the Plan has done that here. That reference does not assist in ascertaining the intention of the Plan for the Hakataramea catchment generally. It may be in fact that the heading of Policy 43 and the separate identification of the Hakataramea catchment were intended simply to be the means by which the statutory acknowledgement was recorded in the Plan. None of the other tributaries of the Lower Waitaki River are statutory acknowledgements

Be this as it may, the way in which the Hakataramea River is discretely provided for in Table 3 and the fact that the same table provides for all other rivers and streams brings us to the clear conclusion that the River and its tributaries are to be treated separately for the purposes of Rule 2 in the Plan. If there is any residual doubt about that having regard to the way Policy 43 is written, then in accordance with the well established principle relating to the interpretation of plans the Rule must prevail over the Policy.

It follows from this that the Hakataramea River itself is subject to the EFR in row xix of Table 3 and the tributaries are subject to the EFR in row xxii. This leads to the next general issue about the application of that row in the context of this case.

The application of the provisions in Rule 2, Table 3 of the Allocation Plan for the tributaries:

Table 3 row xxii provides for an EFR with two components. The first is a minimum flow of the 5 year 7 day low flow “as assessed by the Canterbury Regional Council set at the downstream end of the catchment.” The second is a flow sharing threshold “at the mean flow as assessed by the Canterbury Regional Council” It is commonly accepted that the Hakataramea Catchment water resource is more limited than much of the rest of the Waitaki Catchment and that is particularly true of the eastern side of the catchment, the Kirkliston Range western side having higher specific discharges under both low and high flow conditions. Nevertheless the tributary catchments of the Hakataramea River are generally steep, gravel bed streams whose courses from where they exit their upland gorges are deeply incised into old high level gravel terraces through to the Hakataramea River valley floor. Good flows occur at the gorge exits but significant losses occur before the confluences to the Hakataramea River are reached. As a consequence most of these tributaries are ephemeral over the period September to May each year. Some persist in this state year round unless rain storm and/or snow melt events provide temporary continuous surface flow through to the Hakataramea River.

In a Minute to Parties in May 2009 we requested information from the Regional Council about row xxii as it applied to the Hakataramea catchment. In response we received a table that is annexed to our further Minute to Parties annexed to this decision as Appendix 3. This Table has been signed off by the Chief Executive acting under delegated authority from the Council It contains a list of the tributaries in the Hakataramea catchment with assessed minimum flows and mean flows for some but not all of them. The assessed flows are in the main as we understand it derived from correlations with the Hakataramea River at the Main Highway Bridge recorder.

Mr Stewart the hydrologist advising most of the applicants told us that in his opinion there was very little merit in trying to impose restrictions on abstractions tied to flows in the tributaries. Stream bed instability made the establishment of recorders extremely difficult.

Then too, deriving small tributary flows from a much larger main catchment flow can end up providing distorted figures for the tributaries. The reliability of tributaries in the Hakataramea Catchment are likely to be significantly less than the main river system, floods are likely to have relatively higher peak flows and shorter recessions than the main river, and their low flows are likely to be significantly lower in relation to their mean flows compared with the main river.

Mr Stewart also said that as the tributary flows are derived from the measured Hakataramea River flows at the Main Highway Bridge, the derived flows will

automatically provide 7 day MALFs and 5-year return period 7-day low flows at the same time as the Hakataramea River. In reality however this is not likely to be the case, but with the derived flows it would be.

Put shortly it was Mr Stewart's opinion that the minimum and mean flows contained in Appendix 3 are too unreliable to be useful as a method of regulating takes from the tributaries.

As will be apparent from the Minutes in Appendices 2 and 3 there is an issue between the parties about applying the row xxii regime in this case. Once again we are indebted to counsel for their helpful submissions but for the same reasons as those given above when addressing the whole of catchment approach we intend to come directly to the issue and make a ruling about it for the purposes of this case. This ruling will also apply to one of Mr RH Robertson's applications.

Basically the contest between the parties revolved around first, the vires of row xxii and secondly the practicality of applying it. The applicants submitted that it is ultra vires because it enables the Regional Council to, in effect, change the Plan without following the formal public participation processes under the RMA. Fish and Game did not accept this and went on to submit that where the row does provide minimum flows and mean flows they should be applied and where there are none then evidential material can be used to fill the gaps. Fish and Game's principal purpose is, of course, to protect the in-stream values of the tributaries.

We have carefully considered the vires argument which we think has some force but for the purposes of determining these proceedings we have decided that it is unnecessary to rule on this matter.

The applicants have abandoned their proposals to take water from the tributaries at normal flow times and have instead now confined themselves to water harvesting when the flow in the Hakataramea River exceeds 4.5 cumecs. Also, in some cases they have proposed a flow sharing arrangement. Strictly, if row xxii is valid, this means that these water harvesting proposals are non-complying activities. However as will be seen shortly they are unlikely to have adverse effects on the relevant tributaries that are more than minor, if properly controlled by conditions, and in fact water harvesting in water short areas is encouraged by Policy 8 of the Allocation Plan. For these reasons we conclude that both limbs of section 104D of the RMA can be met

For the reasons outlined by Mr Stewart we are not confident about applying the assessed minimum flows and mean flows in Appendix 3 and for the reasons just given we see no need to do so. In our view row xxii needs revisiting. It is in fact one of a number of provisions in the Allocation Plan that we have been required to give rulings on in the course of all the proceedings we have heard relating to the Lower Waitaki River and some review of the Plan would be desirable to deal with all these matters.

We should add that where Appendix 3 does not provide a minimum flow or a mean flow we were directed to the section 42A reports prepared for these hearings but in fact they do not provide us with any more reliable information than that contained within Appendix 3 for the minimum flows and mean flows provided.

For all the above reasons we will adopt the applicants' proposals to link the water harvesting takes from the tributaries to that part of Hakataramea River EFR in row xix of the Plan that enables takes above 4.5 cumecs.

We will now address some practical matters associated with these takes. Abstractions for irrigation from the tributaries have traditionally been by gravity fed races. This approach provides an efficient mechanism for irrigation which avoids the need for pumping. Water is diverted from the stream into the race by low unconsolidated gravel bunds constructed at an angle to the natural bank and angling upstream. These bunds divert part of the approach flow into the race the balance passing on downstream. The system is not sophisticated but it does work remarkably well. However freshes in the stream which induce bed movement rapidly damage or destroy these bunds and when that happens the ability to abstract at the consented rate reduces or stops completely until such time as the bunds can be reconstructed.

In estimating the available water from water harvesting it is necessary to make use of temporal and peak flow reduction factors to account for the reduced reliability inherent in the diversion technique.

Policy 8 of the Allocation Plan (referred to above) allows a water harvesting regime above the mean flow on a river or stream.

Water storage is undertaken for a number of reasons:

- to provide security against the interruption of irrigation activity when minimum flow restrictions cut in;
- to provide reliability of supply when local conditions and abstractive techniques reduce reliability of supply;
- to provide a basis for extending the area able to be irrigated; and
- to provide security against inter-seasonal storage recharge shortfalls.

In the example (Station Stream) that Mr Hall an engineering witness for Mr R H Robertson spoke to at the resumed hearing on the 3rd March 2010, the off-season water harvesting is really only capable of maintaining current consented abstraction rates during the irrigation season if adequate storage is provided on farm. Mr Hall said that the nature of these catchments except for a few specific examples (e.g. Homestead Stream) preclude in-stream storage as a realistic option because of the torrent nature of the streams and their active bed load under flood.

Mr Hall went on to say that the reliability of flow diversion from these steep, active gravel bed torrents becomes more problematic the higher the stream flow. That means that high flow harvesting will never be easy and it must be expected that more often than not the diversion will reduce or fail altogether during a high flow event. He could not see how this situation can realistically be avoided. In his experience, rough as it might appear the method being used to divert flows is a safe and acceptable method albeit with limitations. To try to divert water by other means such as more substantial permanent structures would be inviting trouble. One would expect these to be regularly damaged, to choke with gravel deposits and other debris and raise the risk of avulsion.

That being the case and given that the availability of storage is likely to be limited, it is our opinion that it is preferable if the Main Highway recorder site is used for regulating this activity. The evidence also tended to establish that in most cases when the flow in the Hakataramea River is above 4.5 cumecs at that site the flows in the tributaries will also be quite high. We are also of the view that flow sharing should be imposed on the diversions such that only 50% of a tributary's flow is diverted.

Notwithstanding the above conclusion, where applicants have continued to offer specific minimum flows below their proposed abstraction points when flows in the Hakataramea River at the Main Highway recorder are 4.5 cumecs or more we have considered these on a case by case basis in Part B of this decision.

Issues relating to aquatic ecology and water ecology:

Because applications to abstract from the mainstem will be required to adhere to the minimum flow provisions of the Allocation Plan relating to the Hakataramea River, and abstractions from the tributaries will be required to cease abstraction once the flow in the Hakataramea River at the Main Highway recorder is less than 4.5 cumecs, in-stream habitat of the River will be protected for fisheries. In reaching this conclusion, we note the Allocation Board's comments at paragraphs 150 to 152 of its report on decisions and principal reasons for adopting the Plan provisions (Annex 1 of the Plan), which state:

"Submitters requested changes to matters relating to fish habitat and fishing in the policy for the Hakataramea River. The Board amended Policy 43 (formerly Policy 42), with alterations to c and d, to give effect to submissions. It was not persuaded to make the other changes, but noted that changes elsewhere in the Plan might achieve, in part, the change sought to the application of the environmental flow regime at a downstream point in a water body. Consequential and clarification changes were also made.

Angling and conservation interests sought higher minimum flows, especially in the salmon spawning months (April – June). Farming interests provided information on their requirements for water, and on current investigations into

water storage options. There was evidence that the economic cost of the proposed environmental flow regime for the Hakataramea River, particularly the requirement for flow sharing at high flows, would be very high. Various alternative regimes were suggested. On balance, the Board decided to amend the environmental flow regime to better meet the specific needs of salmon spawning and water harvesting.

The minimum flow from April to August was increased to 0.75 cubic metres per second for passage of salmon for spawning. The Board noted that this was outside the main irrigation-demand period, and retained the minimum at 0.5 cubic metres per second for the rest of the year. Flow-sharing requirements were reduced, and do not apply when the flow is over 4.5 cubic metres per second. In removing from the rule the requirement for flow-sharing at higher flows, the Board noted that Policy 8 would still apply to consent applications for water harvesting, and the applicant would need to ensure that sufficient flow variability is maintained.”

While reservations about the effectiveness of the Allocation Plan’s minimum flows was expressed by Mr Hughes, we are satisfied that this issue was sufficiently explored in the Allocation Board’s inquiry, and indeed this hearing, and there is no need to further assess the issue of flow requirements for in-stream habitat and fish passage particularly in respect of the main-stem River.

Having addressed the general issue of minimum flows and flow variation, the principal remaining aquatic ecological effect of increased irrigation in the Hakataramea Catchment relates to nutrient enrichment and its effect on water quality.

Policy 13 of the Allocation Plan states:

“In considering whether to grant or refuse consent to take, divert, dam or use water allocated to agricultural and horticultural activities, the consent authority will have regard to the extent to which exercise of the consent could result in the water quality objectives in the Natural Resources Regional Plan not being achieved.”

The explanation to Policy 13 states:

“This policy recognises the importance of water quality considerations when allocating water to agricultural and horticultural activities and, in particular, to irrigation. The intensification of land use, including that arising from irrigation, increases the potential for adverse effects on water quality. The Waitaki catchment has some sensitive and pristine water bodies that have not, to date, had intensive land uses in their catchments. This policy links to the Natural Resources Regional Plan water quality chapter to ensure these matters are considered when deciding consents.”

Farming is a widespread activity in the Hakataramea Catchment and intensive farming is relatively common within its valley and would increase with more land being irrigated.

Objective WQL1 of the proposed NRRP seeks water quality in rivers to be maintained or improved. It seems to us from the evidence presented that this objective may already not be fully met at times but nonetheless the River continues to support important fisheries.

Expert witnesses for all parties generally acknowledged that losses of nutrients to surface waters would increase under the proposed irrigation scenarios. The pathways for these nutrients to reach surface waters are via groundwater (from percolation of irrigation precipitation water through the soil profile) and overland flow principally during rain events. From the evidence presented to us, the degree of increase in nutrient enrichment is uncertain and varied amongst witnesses depending on what assumptions they adopted in their analyses and the weight they applied to them. There was general consensus that it was not possible to mitigate 100% of the potential nutrient additions. Mr Norton considered a 50% reduction in nutrient load to be “ambitious” and Dr Burrell thought a 20-30% reduction to be more realistic.

Nutrient enrichment acts to promote benthic algal (periphyton) growth in stony bed rivers given other favourable environmental conditions such as stable clear flows. Nuisance proliferations of periphyton can affect benthic macro-invertebrate communities (a source of food for fish), water quality and the general aesthetic appearance of rivers and streams. Periphyton proliferations appear to be of significant concern to the Director General of Conservation, Fish and Game, and Environment Canterbury, but as Dr Burrell pointed out in his evidence, it can be difficult linking periphyton biomass to stream nutrient concentrations for several reasons none of which have been closely studied in the Hakataramea Catchment.

We heard from several witnesses that nuisance periphyton growths already occur in the lower Hakataramea River, and these appear linked to the presence of enriched groundwater entering the River in the lower catchment. Notwithstanding these observations, we also heard from Fish and Game witnesses that the River continues to support a robust and important salmonid fishery, which is subject to heavy angling pressure. The Hakataramea River main-stem is obviously an important river for several fish species, with reports of large numbers of juveniles, salmonids (trout and salmon), eels and bullies. The importance of the tributaries for fisheries is less clear. We heard that some support important salmonid spawning habitat (e.g., Grampian Stream) while others have much less value in the areas that might be affected by abstraction and irrigation due largely to their ephemeral nature. The question we must address is whether some further increase in nutrient enrichment of these surface waters as a result of these consent applications will significantly affect the aquatic values that currently exist.

We note that the applicants presented us with a set of draft conditions at the end of the hearing which included a number of conditions relating to the mitigation of nutrient (and other contaminants) losses from farm systems. Included among these are fencing of riparian margins to exclude stock access to intercept nutrients contained in runoff and

provide better stream habitat through provision of cover and reducing bank erosion, management of irrigation water and fertiliser applications to pasture and use of nitrogen inhibitors. Very importantly, from our perspective, all of this is to be accompanied by a comprehensive catchment-wide survey and ongoing monitoring programme for which the applicants including Mr RH Robertson are to take full responsibility with stringent reporting requirements to the Regional Council. This is a major commitment by the applicants

Mr Norton stated that the NIWA report predicted that allowing all new abstractions currently applied for could increase algal biomass in the Hakataramea River by about 20% and this could increase further under a community irrigation scheme. We also heard that mitigation measures could reduce enrichment anywhere between 20-50%. If the mitigation measures were so effective, we doubt whether any increases in surface water nutrient concentrations and periphyton growth would significantly affect fisheries values. We also see additional benefits to the quality of existing stream habitat through the widespread establishment of 12 metre wide buffers as proposed by the applicants.

As we noted in our decision on HDI, we acknowledge there is a significant reliance on Scheme and Farm Management Plans being wholly adopted, implemented and adhered to by all applicants in order to reduce the degree of potential adverse effects on water quality and surface water ecology. That is the challenge of addressing the cumulative effects of non-point source contaminants. Consequently we have not hesitated to ensure that conditions relating to management and monitoring plans are thorough and consistent amongst all applicants within the Hakataramea Catchment. In this way we think we have adequately addressed and reconciled the need to protect indigenous habitats in terms of section 6 of the RMA, the habitats of salmon and trout and amenity values in terms of section 7 of the RMA and the needs of the farming community for water for irrigation purposes in terms of efficient use of resources in section 7 and section 5 relating to the purpose of the Act.

We need also to address the concerns of the runanga as articulated by Mr Te Wera King and Mr David Higgins, the two witnesses who gave evidence specifically about the Hakataramea catchment. In this case these concerns arise mainly under section 6 of the RMA. There was really no evidence about Kaitiakitanga or Treaty of Waitangi principles.

We are conscious of the spiritual and cultural significance of water bodies to Maori including, in this particular case, the water bodies of the Hakakaramea catchment. These matters are also included in the Allocation Plan. The history of the use of the Hakataramea River as a route of travel in times gone by does need to be respected as does the need to maintain, as far as possible, the natural values of that River and its mauri.

Having regard to the way in which the Allocation Plan has provided for these values in terms of the EFR for the Hakataramea River and the provisions we intend to make in

any consents we decide to grant to also protect those values in the River and in the tributaries it is our judgment that the values spoken about by the witnesses will be recognised and provided for in terms of section 6 of the RMA.

Compatibility with the current consent holders:

On the general matter of compatibility with the current consent holders the issue here arises from the fact that in the Hakataramea River itself the EFR is more favourable to new consent holders than it is to existing consent holders. This was resolved however by the offer by those seeking new consents, (other than for water harvesting), to accept the same minimum flow restrictions as existing consent holders. There are no existing consents for water harvesting in the Hakataramea Valley and 4.5 cubic metre per second threshold flow in the Hakataramea River means no existing consent holders are affected.

The term of the consents

The applicants seek terms of 35 years for their replacement and new consents. As we said earlier Fish and Game seek 15 year terms. We have discussed the matter of the term of consents in other decisions now issued including HDI and other cases involving the Lower Waitaki River. Generally because we have been satisfied that adverse effects of the water takes and on water quality can be satisfactorily mitigated and because in most instances substantial expenditure on infrastructure is involved we have granted consents for 35 years. In doing so we have also had regard to Chapter 1 of the proposed NRRP that contains some matters to be considered in this regard.

With the present applications we have again reached the view that we can safely provide for 35 year terms for several reasons. First the Hakataramea River takes will comply with the EFR for that River and in fact go further in that they will also be tied to the winter flow regime. Secondly the tributary takes are for water harvesting only and as discussed above the in-stream values will be protected by the flow regime we intend to impose. Thirdly there is the major commitment by the applicants to the catchment survey and ongoing monitoring programme which in addition to their infrastructure costs will impose a substantial financial burden on them. Fourthly we intend to provide for a comprehensive review condition in the appropriate consents to deal with any unforeseen adverse effects or effects that become evident through the monitoring processes.

For these reasons we will be granting these consents for 35 years except where the application relates to a change of an existing consent which will of course be for the unexpired term of that consent.

However in the case of the application by RW and ME Sutton for consent to divert water CRC071114, this diversion is for the purposes of existing consents with an expiry

date of 20 May 2033. Consequently the consent to divert will be granted to expire on the same date.

VOLUME 1: PART B

We come now to deal more specifically with each of the applications that are the subject of this decision.

(1) R G and Z L Pringle

Three applications have been made.

CRC050940 is an application to take and use water from three ponds adjacent to the Hakataramea River at a rate of up to 14 l/s to irrigate 120 hectares of land. It is an application to replace an earlier consent that expired on 1 June 2005.

CRC050957 was originally an application to divert water from Peter's Stream at a rate of 40 l/s and to take water from a pond associated with that diversion at a rate of 35 l/s, again for irrigation of 120 hectares. This is one of the applications that has now been "converted" to a water harvesting application only. It now seeks to divert water at the rate of 40 l/s from Peter's Stream and use it at a rate of 35 l/s for irrigation of 120 hectares of crops and pasture, but only when the flow in the Hakataramea River at the Main Highway recorder site is above 4.5 cumecs.

We note at this point too that this consent, if granted, could be operated in combination with CRC050940 but if that is the case the combination of the two consents is limited to an annual volume of 528,000 cubic metres.

CRC050960, is an ex post facto application to place a culvert in the bed of Peter's Stream for the diversion of water. The culvert already exists.

In respect of CRC050957, Ms Johnston also told us there was previously a consent to divert water from Peter's Stream for stock and domestic water supply in terms of WTK856651A. However, for reasons unknown, this consent was surrendered by the previous owner of the Pringle's property in 1994. Nonetheless, the diversion has continued, in effect unlawfully, because it was not realised that it had been surrendered and it was for stock water supply only.

She also told us that this diversion is into the up gradient of the three ponds earlier referred to in respect of CRC050940.

Ms Johnston then went on to consider these applications in more detail. Ms Johnston said that Peters Stream is a tributary of the Hakataramea River, with no permanent surface connection to the Hakataramea River as it goes underground 100 metres downstream of the point where water is diverted through a culvert to a water hole which discharges into the Hakataramea River. For this reason the applicants note that aquatic and ecological values are limited. They also note that as the diversion has been in place a long time it has naturalised and appears to be part of the stream system.

Ms Johnston also said that the three consents sought by the applicants are all part of the same system. The proposal is to divert water from Peters Stream into a diversion channel which flows through a culvert under Moorland Settlement Road and then into "Waterhole 1" as identified on the Plan CRC050957. Water is then taken from the three waterholes which are all connected via one main channel at a rate of 14 l/s (CRC050940) and secondly from the diversion channel at a rate of 35 l/s (CRC050957) for the irrigation of 120 hectares. A permanent discharge outlet from "Waterhole 1" flows directly into the Hakataramea River.

During the irrigation season, Ms Johnston said that it is proposed to abstract water at a rate of 35 l/s from the diversion channel, and 14 l/s in total from the waterholes to irrigate 120 hectares of crops and pasture for grazing sheep, beef cattle, and non-milking dairy cows. Water is abstracted using a diesel pump and suction pipe. There is no permanent surface water intake site on the diversion channel or any of the three waterholes.

Ms Johnston said that the annual volume proposed for these applications was 612,000 m³/year but this was amended to 528,000 m³/year combined for both consents as the soil type used to determine the initial annual allocation was incorrect.

Submissions

Nineteen submissions were received in total relating to these applications. Of these, 13 were in opposition, 4 in support and 2 neither support nor oppose. Of the submissions received two related directly to these applications.

Mr SW Taylor is an irrigator in the Hakataramea Valley, and he is concerned that any new takes from the Hakataramea River will impact on his reliability of supply. Ms Johnston said that only resource consent application CRC050940 is related directly to the Hakataramea River and this is a renewal application, not a new take. Given this, Ms Johnson believed Mr Taylor's reliability of supply will not be impacted any further by this take as it exists at present.

Mr G Hay supported this application because it is a renewal application.

Ms Johnston said that CRC050940 is a replacement consent within the allocation limit set in Table 3 of the Allocation Plan for the Hakataramea River. The Hakataramea River has an allocation limit of 500 l/s. If all resource consents are granted, including CRC050940, the total allocation for the River will be 407 l/s, which is less than the allocation limit.

CRC050957 is in the "all other streams" category of Table 3 of the Allocation Plan. The minimum flow specified for water bodies in this category is the one in five year, seven day low flow but there is no allocation limit specified for "all other streams", and there

are no other users consented or otherwise on Peters Stream. However as noted in Part A of this decision since this is now a water harvesting proposal based on a flow in the Hakataramea River above 4.5cumecs there is no need to dwell on this matter any further.

Ms Johnston said that the proposal is to spray irrigate 120 ha of crops and pasture on a seven day rotation. The property is covered with light soils with an average water holding capacity of 75mm and with a seven-day return period, 27.3mm will be applied. This is less than 50% of the average water holding capacity of the soil and is considered to be an efficient use of water. The diversion and the take will be metered as required by Policy 21 of the Allocation Plan.

The take for irrigation also occurs after the diversion from Peters Stream. The diversion is a permanent diversion (i.e. it operates throughout the year) as it also supplies stock water to the property. It is also noted that Peters Stream ceases to have surface flow approximately 100 metres downstream of the diversion. There is therefore no benefit to having the minimum flow set on Peters Stream.

Ms Johnston said that it is proposed to install a fish screen designed in accordance with the report "*Fish Screening: good practice guidelines for Canterbury, NIWA Client Report: CHC2007.092, October 2007*". However, for the three ponds, the fish screens will be installed on suction pipes, as opposed to being in-situ, and therefore, the design parameters need to be modified to reflect this.

As the diversion channel ceases to have surface flow downstream of the diversion itself, and water that is not abstracted for irrigation is able to flow into the waterholes, and then to the Hakataramea River, a fish screen is not necessary at the point of diversion. Given this, effects on in-stream values are considered by Ms Johnston to be less than minor.

The additional water permit application CRC050957 is to replace consents that were surrendered by the previous owner in 1994 (WTK856651A & B). However, the diversion and discharge which was previously consented has never ceased as it provides the only stock water supply to that part of the property.

Ms Johnston noted that the proposed diversion will be approximately two thirds of the flow in Peters Stream. The residual surface flow from the diversion seeps into the channel gravels within 100 metres downstream of the diversion so that there is no permanent surface water between Peters Stream and the Hakataramea River. Given the ephemeral nature of the Peters Stream and the fact that it does not have a direct connection to the Hakataramea River, the ecological value of the stream is limited.

Ms Johnston said that because the culvert had been installed for a number of years the only effects that can arise now would be from maintenance work. The culvert is approximately 500 mm in diameter and 7 – 8 metres long. This has recently been upgraded due to a history of blockages.

Ms Johnston added that the three water holes from which water is abstracted occur naturally but were historically enhanced by a previous land owner. The ponds fill via below ground seepage from the Hakataramea River and are all linked via surface connections.

The Advice of the Section 42A Reporter

The Hakataramea River is classified under Table 3, row (xix) which specifies a minimum flow of 0.5 cubic metres per second at the Main Highway recorder. Peters Stream is classified under Table 3, row (xxii).

Table 3, row (xxii) for all other rivers and streams specifies a minimum flow of the 5-year, 7-day low flow. Ms Penman, the section 42A reporter, said the applicant had not proposed a 5-year, 7-day low flow for this stream but, as we have noted above, proposed a minimum flow on the Hakataramea River below which abstraction from Peter Stream must cease. We have already addressed this matter in Part A of this decision.

Ms Penman's assessment of the annual volume using Schedule WQN9v2 was significantly less than the 612,000 cubic metres per year applied for, but Ms Johnston has amended that figure to 528,000 cubic metres which is in line with Ms Penman's assessment.

For the take from the River the applicant originally proposed a minimum flow of 0.5 cubic metres per second in line with Table 3 of the Allocation Plan with the option to impose the further restriction which would bring their abstractions into line with existing consent holders,

After discussions with Fish and Game, the applicant decided to propose a minimum flow for CRC050957 equivalent to the mean annual low flow on the Hakataramea River, in order to protect values in Peters Stream. However, the applicant has not established a relationship between flows in Peters Stream and flows in the Hakataramea River to ensure ecological values in Peters Stream are maintained.

Ms Penman said that Fish and Game and the Department of Conservation lodged submissions on the application and described in detail the Hakataramea River catchment, its importance for fisheries values and the pressure that existing water abstraction is placing on in-stream values, especially as the river is frequently running dry or has very low flows and high water temperatures. The applicant states that there is currently a fish screen of 5mm mesh on the pump intakes from the water hole, however, it is unclear from the application whether there is also a fish screen at the

point of diversion on Peters Stream. The applicant has proposed that the current fish screen will be upgraded.

As we have already noted, the applicant's reason for not proposing a minimum flow on Peters Stream was that below the point of diversion any remaining flow goes underground and therefore there are no in-stream ecological values which need to be protected. The applicant states that as the stream goes underground beneath the diversion and is quite steep, there is little likelihood of fish being present in Peters Stream. While there were submissions which are concerned with ecological values and minimum flows, Ms Penman considered that in setting minimum flows in the Allocation Plan, protection of in-stream ecological values would have been taken into account. Provided the applicant installs an appropriate fish screen at the diversion and intake and adopts the minimum flow for the Hakataramea River set out in the Plan, she considered the effects of the proposed abstractions on ecosystems would be minor.

The applicants have proposed to install a measuring or recording device at the point of diversion and take in order to monitor how much water they will be taking to minimise adverse effects on ecosystems and other water users.

While a number of submitters raised concerns with regard to natural character and amenity values, Ms Penman was satisfied that the local effects on people, communities and amenity values would be minor as appropriate minimum flows have been proposed and the area is currently irrigated.

CRC050960

Ms Penman said that the culvert is approximately 525 millimetres in diameter and is 7-8 metres long. It will be installed in the bed of Peters Stream which diverts water into a race of approximate dimensions 0.3 metres deep and 0.5 metres wide. The proposed maintenance works would involve the clearing of gravel and weeds from the channel from time to time particularly after freshes and floods.

Ms Penman said that the land use permit is covered by Rule BLR2 Chapter 6 of the proposed NRRP dealing with the erection and placement of structures in the beds of rivers. The culvert would not comply with condition 4 because the catchment area above the culvert is greater than 50 hectares. Therefore consent is required as a discretionary activity under Rule BLR8.

The applicants consider that any overland flows as a result of the culvert being in place, or from the diversion channel would all occur in their property, and therefore effects on flood-carrying capacity would be minor.

Environment Canterbury River Engineer, Bruce Scarlett, has commented that he is happy with the proposal, provided standard conditions which provide mitigation for potential effects on flood-carrying capacity are included on the consent. Mr Scarlett is satisfied that there are no man-made structures likely to be adversely affected by the

proposed works and the mitigation measures proposed by the applicant are suitable to ensure that adverse effects of the works on water quality in Peters Stream are minor.

Given the comments by Mr Scarlett, the location of the works and the proposed mitigation, Ms Penman was satisfied that the adverse effects of the works on bank erosion and stability would be minor.

Our consideration of this application

Ms Johnston gave no assessment of the in-stream values of Peters Stream except to say that the effects on in-stream values are less than minor because of the loss of surface flow downstream of the diversion. Her recommendation for no minimum flow appears to us to be supported by a somewhat circular argument in that the loss of surface flow occurs almost immediately downstream of the permanent diversion of water from Peters Stream, and it could be viewed that lack of ecological value in the lower stream is due to the diversion, and therefore a minimum flow is necessary to mitigate the effect of abstraction. Ms Johnston goes on to propose a fish screen for the diversion that would be designed in accordance with the report "Fish Screening: good practice guidelines for Canterbury", which are guidelines promoted by the Regional Council..

Notwithstanding the above comments, neither the Director General of Conservation nor Fish and Game nor any other party for that matter presented any ecological evidence specific to Peters Stream.

We have already recorded our conclusions relating to minimum flows in the Hakataramea Catchment in Part A of this decision.

With respect to water quality effects, we are satisfied that the draft conditions offered by the applicants, in particular setbacks, and the requirement for a farm management plan will provide suitable measures to mitigate the effects of land use intensification resulting from irrigation on the water quality and ecology of Peters Stream. We have already addressed the cumulative effects of land use intensification on the Hakataramea River and again we are satisfied that the conditions are sufficient to allow these consents to be granted.

Land use permit CRC050960

The proposed works in the bed of the river is a discretionary activity. The diversion has been in place for a number of years and there have been no reported problems other than blockages and the culvert has been upgraded to prevent further blockages.

The actual and potential effects of the activity have been discussed in the assessment of the activity. We are satisfied that effects with mitigation are acceptable and the proposed activity is consistent with the relevant planning provisions of proposed NRRP

Water permits CRC050940 and CRC050957

The taking and use of water is a non-complying activity. However we have previously determined this matter in the Sunny Downs Ltd. Decision and in Part A of this decision. Then too CRC050940 is a replacement consent within the allocation limit set in Table 3 of the Allocation Plan for the Hakataramea River. .

The applicants have agreed to participate in a catchment wide study of the effects of land use intensification and have also agreed to implement a farm management programme to minimise nutrient runoff. We have considered in detail the effects of land use intensification on water quality in Part A of this decision.

The applicants agreed to the minimum flow set out in Table 3 for the replacement take associated with the Hakataramea River. At a later stage of the hearing they actually went further and agreed to the existing flow regime..

The take associated with the water harvesting aspect of the proposed activities will be restricted in line with the decision we made on this matter generally in Part A of this decision.

Having regard to the assessments and conclusion just recorded it is our judgment that the applicant's proposal is not in conflict with any of the relevant matters in sections 6, 7 and 8 of the Resource Management Act 1991 and accordingly granting consent will achieve the purpose of that Act.

Finally we turn to the matter of the term of consent. For the reasons set out in Part A of this decision these consents will be granted for a period of 35 years.

Decision

For all the foregoing reasons this application is granted on the terms and conditions set out in Volume 2 of this decision.

(2) RPNZ Properties Limited

Here again there are three applications.

CRC051767 is to take and use water at a maximum rate not exceeding 30 l/s, with an annual volume not exceeding 252,000 cubic metres, from a pond adjacent to the Hakataramea River at or about map reference NZMS 260 I40:218-164, for spray irrigation of 48 ha of crops and pasture, adjoining McHendrys Road, in the Hakataramea Valley. This is an existing activity.

CRC051768: is to take and use water at a maximum rate not exceeding 26 l/s, with an annual volume not exceeding 212,000 cubic metres, from bores I40/0003 and I40/0159, (1000 mm diameter and three metres deep), at or about map references NZMS 260 I40:207-156 and I40:210-159, for the spray irrigation of 40 ha of crops and pasture, adjoining McHendrys Road, in the Hakataramea Valley. This is an existing activity. A 35 year duration is sought.

CRC051769: is to take and use water at a combined maximum rate not exceeding 20 l/s, with an annual volume not exceeding 216,000 cubic metres, from bore I40/0528 (500 mm diameter and 10 metres deep), at or about map reference I40:147-102, bore I40/0440 (500 mm diameter and 10 metres deep), at or about map reference NZMS 260 I40: 144-106, and from bore I40/0441 (500 mm diameter and 10 metres deep), at or about map reference I40: 150-106, for the spray irrigation of 40 ha of crops and pasture, opposite Milne Road, Hakataramea Valley. This is an existing activity with the inclusion of an additional bore. A 35 year duration is sought.

Ms Johnston said that these applications are replacement consents in terms of flow rate and volume and the change to CRC051769 was required to allow water to be taken from an additional bore. This was granted by way of change of consent condition on 24 January 2005. The total area being spray irrigated by these three consents is 128 hectares of horticultural crops, pasture, and grazing of dry stock.

Ms Johnson also informed us that on 4 March 2005 the Regional Council made a request for information and in particular, an annual volume for each of the applications was requested. This was submitted to the Regional Council on 7 March 2005.

Ms Johnston said that for CRC051767 water is taken from a pond sourced directly from the Hakataramea River whereas for CRC051768 and CRC051769 water is abstracted from shallow bores, which are considered to be hydraulically connected to the Hakataramea River and therefore have been considered as surface water takes.

Two of the applications are connected groundwater abstracted via galleries beneath the riverbed and therefore do not require fish screens. However, for consent CRC051767, where the take is directly from surface water, the applicant proposes to install a fish screen on the existing intake. Ms Johnston did not describe the fisheries values associated with the pond where the take will occur, although she did note that

the Hakataramea River is a highly valued salmon spawning river. No details of the proposed fish screen design were provided.

Ms Johnston then went on to discuss the current (pre Allocation Plan) Hakataramea River minimum flow which requires abstractors to reduce to 50% of the maximum allowable take when flows in the Hakataramea River as measured at the Main Highway recorder are at or below 1,500 l/s and to cease when flows are at or below 500 l/s. Therefore until such time as existing consents are reviewed, renewed, or changes of condition sought to change the minimum flow condition of a consent to that specified in the Allocation Plan she said there will be this discord between existing users and new users.

Ms Johnston told us that the applicant recognises this and therefore, for these applications, it is proposed to maintain the current Hakataramea River minimum flow (50% abstraction at 1.5 m³/s and cease abstraction at 0.5 m³/s). This she said would ensure the effects on other users will be less than minor. As the proposal is more restrictive than the Allocation Plan minimum flow requirement we see no problem with adopting such a proposal even though technically it makes these applications non-complying for that reason. The adverse effects on the environment will be less than they might be under the Allocation Plan's EFR and consequently the first gateway in section 104D can be met.

Again with respect to Rule 2, Table 3, the Hakataramea River has an allocation limit of 500 l/s in terms of the Allocation Plan. If all resource consents currently sought are granted, including these applications, the total allocation for the River will be 407 l/s, which is less than the allocation limit. With respect to Rule 6, Table 5, the take also sits within the area defined as "*Downstream of Waitaki Dam, but upstream of Black Point*" in Table 5 of the Allocation Plan

Ms Johnston calculated the annual volumes using Schedule WQN9v2 in Policy 16 of the Allocation Plan as follows:

- CRC051767 - 252,000 m³/year
- CRC051768 - 212,000 m³/year
- CRC051769 - 216,000 m³/year

Ms Johnston said that the applicant is proposing to spray irrigate a total of 128 ha of crops and pasture for grazing dry stock on a five to seven day rotation. The properties are covered with light soils with an average water holding capacities ranging from 60mm to 82mm. On a five to seven day return period, between 27mm to 30mm will be applied at each location. This is less than 50% of the average water holding capacity of the soil and is considered to be an efficient use of water. We note here that these annual volumes are in excess of the 150 million cubic metres provided for in Table 5 of

the allocation Plan but as we recorded in Part A of this decision we have already dealt with this matter in our decision on the Sunny Downs Ltd application.

The takes will be metered as required by Policy 21 of the Allocation Plan.

Submissions

Nineteen submissions were received in total relating to this application. Of these, 13 were in opposition, 4 are in support and 2 neither support nor oppose.

Two of the submissions received relate directly to these applications.

Mr SW Taylor is an irrigator in the Hakataramea Valley, and he is concerned that any new takes from the Hakataramea River will impact on his reliability of supply.

Ms Johnston said that Table 3 of the Allocation Plan specifies an allocation limit of 500 l/s for the Hakataramea River. At present, there is 291 l/s allocated, with a total of 116 l/s in process, including these applications. This brings the total allocation if all resource consents in process are granted to 407 l/s, within the allocation limit set by Table 3 of the Plan. Also, she made the point that these three applications are related directly to the Hakataramea River, and are for replacements, not a new takes.

Mr G Hay supported these applications because they are replacement applications.

The Advice of the Section 42A Reporter

For CRC051769, an additional bore (I40/0528) is proposed to be included in the replacement consent.

The replacement applications were lodged on 23 December 2004, more than six months before the expiry of the existing consents, and the applicant was authorised to continue exercising those consents under section 124 of the Resource Management Act.

For irrigation use, Rule 2 clause (1)(a) requires that no person shall take or use water unless the flow in the relevant river is above the minimum flow. The Hakataramea River is classified under Table 3, row (xix) which specifies a minimum flow of 0.5 cubic metres per second at the Main Highway recorder.

Two of the applications (CRC051768 and CRC051769) are from galleries beneath the bed of the Hakataramea River. They are considered to be "connected groundwater" under Table 3 row (xxiii) and are therefore subject to the minimum flows on the Hakataramea River.

The applicant proposes the minimum flows specified in Table 3 for all three applications. For that reason Ms Penman was satisfied that the applications comply with this Rule.

For irrigation use, Rule 2 clause (1)(b) requires that no person shall take or use water unless the activity is within the allocation limit for the water body specified in Table 3. The allocation limit for the Hakataramea River is 0.5 cubic metres per second. These are replacement applications and are all within the allocation limit. Ms Penman was therefore satisfied that the applications comply with this Rule.

The pond from which water will be abstracted under CRCO51767 is naturally formed and fills via groundwater seepage from the Hakataramea River.

No submitters raised concerns regarding the potential ecological effects associated with this particular application and, subject to the wider issues of water quality and minimum flows associated with the Hakataramea Catchment, which we have already addressed, the only other ecological matter relating to these consents is fish screening, which we note has been proposed by the applicant in accordance with the same guidelines mentioned above for Peters Stream.

The applicant proposes to install a measuring or recording device at the point of diversion and take in order to monitor how much water the applicant will be taking in order to minimise adverse effects on ecosystems and other water users.

Whilst the applicant has proposed to comply with minimum flows consistent with the Allocation Plan, Ms Penman noted that there remains some uncertainty regarding the effects on existing consent holders and other applications with higher priority in terms of flow- sharing or banding, should all consents in the catchment be granted. Therefore, she was not satisfied that effects of the proposed activity on other water users in the Hakataramea Catchment would be minor.

The applicant stated that there will be no change to the current rate and locations of take, and therefore, there will be no change to the visual amenity of the area.

Across all three applications, the applicant proposes to take water at a combined rate not exceeding 76 l/s and use up to 680,000 cubic metres per year for spray irrigation of 128 hectares. This has been based on analysis using Schedule WQN9v2 in Policy 16 of the Allocation Plan for arable land use with light soil (PAW <75mm) and Effective Summer Rainfall of between 210mm and 225mm.

The Hakataramea River has a statutory acknowledgment in the Ngai Tahu Claims Settlement Act 1998. The sites of the proposed abstractions are within the rohe of Te Runaka 0 Waihao. Te Runaka 0 Waihao and Te Runanga 0 Ngai Tahu were served notice of the application in August 2007. Submissions were received in opposition to this application from Te Runanga 0 Ngai Tahu.

Given that there are a number of submitters who wish to be heard who identify cultural values, Ms Penman could not conclude whether the actual and potential effects on the cultural values of the area will be minor.

Our consideration of this application

These applications are for replacement consents in terms of flow rate and volume. The change to CRC051769 was required to allow water to be taken from an additional bore. This was granted by way of change of consent condition on the 24 January 2005. The total area being spray irrigated by these three consents is 128 hectares of crops, horticultural crops, pasture, and grazing of dry stock.

These applications are within the instantaneous allocation limit for the Hakataramea River and would therefore retain their current priority. We record here too that the applicant proposes to adopt the pre Allocation Plan EFR for the Hakataramea River so that existing consent holders will not be adversely affected. This deals with Ms Penman's concerns in this regard

Two of the applications are connected groundwater abstracted via galleries beneath the river bed and therefore do not require fish screens. However, for consent CRCO51767, where the take is directly from surface water, the applicant proposes to install a fish screen on the existing intake and the takes will be metered.

Policy 13 deals with water quality issues resulting from land use intensification and enables the consent authority to have regard to the water quality objectives in the proposed NRRP. The Allocation Plan incorporates by reference Objectives WQL1, 2 and 3 of the proposed NRRP which contain particular outcomes to be achieved in the regions water bodies. The applicant has agreed to participate in a catchment wide study of the effects of land use intensification and has also agreed to implement a farm management program to minimise nutrient runoff. We have considered in detail the effects of land use intensification on water quality in Part A of this decision.

Having regard to the assessments and conclusion just recorded and also the conclusions reached in Part A of this decision it is our judgment that the applicant's proposals are not in conflict with any of the relevant matters in sections 6, 7 and 8 of the Resource Management Act 1991 and accordingly granting consent will achieve the purpose of that Act.

Finally we turn to the matter of the term of consent. For the reasons given in Part A of this decision these consents will be granted for a period of 35 years.

Decision

For all the foregoing reasons this application is granted on the terms and conditions set out in Volume 2 of this decision.

(3) Hakataramea Station (1990) Limited

Here there are five applications.

CRC950464.2 is an application to change the conditions of consent in CRC950464.1 to include water storage. CRC950464.1 is an existing consent to take and use water at a rate of 15 l/s from McKay Stream for irrigation and stock water purposes.

CRC981376 was originally an application to divert water at 60 l/s from McKay Stream to a water race flowing into a dam yet to be constructed. This application has now been converted to a water harvesting application, which is to be triggered by the appropriate flow in the Hakataramea River of 4.5 cumecs at the Main Highway recorder site.

CRC040999 is an application to dam 413,000 cubic metres of water in four storage dams and to use water from the dams at 75 l/s to irrigate 105 hectares.

CRC981377 is an application to disturb and excavate the bed of the McKay Stream to install a water intake structure.

CRC042653 is an application to disturb the bed of an unnamed ephemeral stream to construct the four water storage ponds.

Two of these applications (CRC981376 and CRC981377) were lodged in February 1998 and are the oldest in the Waitaki Catchment. They were originally for diversion of water from McKays Stream for wild flooding of pasture and discharge of by-wash water into Rocky Point Stream, McKay Stream and the Hakataramea River. These two applications are to replace resource consents WTK895056A, WTK895056B and WTK895056C which expired 30th June 1993 but were not lodged until 5 years after expiry of the Waitaki Catchment Commission consents and therefore cannot be considered as replacements. However, Ms Johnston said that the diversion and discharge previously consented has never ceased as it provides the only stock water supply to the property.

Since lodgement, the details of each new consent has changed but the proposed activity outlined in subsequent sections is in line with the public notification in August 2007.

The five applications are part of one proposal. The proposal is to divert water from McKays Stream into a series of water races which will direct flow to each of four proposed dams. Both the existing consent CRC950464.2 and the new consent CRC981376 will provide up to 75 l/s to the dams. A portion of the race will continue to run through the property to provide stock water. A residual flow of 137 l/s will be maintained in McKays Stream. Water from the dams will be used to irrigate up to 105 ha of crops and pasture.

Ms Johnson then proceeded to address these applications in some detail and we note here that they include land use consent applications as well as water permit applications.

CRC981376: To divert water from Mckays Stream

This application was amended at the end of the substantive hearing through counsel for the applicant to an application to divert water for water harvesting purposes rendering much of the evidence on the effects at low flows redundant. Ms Johnston said that with respect to Rule 2, Table 3 of the Allocation Plan, the diversion from McKays Stream was in the “all other stream” category of Table 3 of and with respect to Rule 6, Table 5 of the Allocation Plan, the take sits within the area defined as *“Downstream of Waitaki Dam, but Upstream of Black Point”*

This application exceeds the allocation limit of 150 million m³/year for this area but we have already dealt with this matter in the Sunny Downs Ltd decision.

CRC950464.2: Adding the storing of water as a use

Ms Johnston said that no additional water is being taken from McKays Stream, and the effects of this activity would be assessed under CRC040999 (to dam and use water).

CRC040999: To dam and use water

Ms Johnston said that the three storage ponds of 21,000 cubic metres are a maximum height of 4.5 metres above ground level with a maximum water depth of 4 metres. The fourth pond has a maximum height of 10 metres.

Ms Johnston said that the maximum catchment area for each dam was 0.5 square kilometres. Three of the dams will each hold a maximum of 21,000 cubic metres, while the fourth will hold a maximum of 350,000 cubic metres. Given the small size of each catchment and the dam location within small grassed depressions rather than instream, any dam failure is not likely to occur as a result of a flood event. The potential impact category for the proposed dams is low as determined from the NZSOLD Guidelines. Because the dams are to be constructed as homogenous earthfill dams, the most likely causes of failure are overtopping causing a breach, or piping (internal erosion).

Ms Johnston said that dam failure analysis for the largest dam estimates a peak outflow of 318.6 cubic metres per second which reduces to 143 cubic metres per second within a few minutes. The distance to the nearest road is 2.3 kilometres, and at this distance the estimated peak velocity is 0.84 metres per second and water depth of 198mm which would last for a few minutes. Analyses of dam failure for the smaller dams estimate a peak outflow of 47 cubic metres per second. This results in a peak velocity of 0.39 metres per second and water depth of 63mm which would last for a few minutes at Hakataramea Valley Road.

Ms Johnston said that the nearest downstream dwellings are more than 3 kilometres away and Hakataramea Valley Road is 2.3 kilometres downstream of the largest pond. Any failure flows would be routed into the Hakataramea River via McKays Stream and Rocky Point Stream.

The above analyses had been reviewed by Mr Rob Connell of OH Flood Modelling. He concluded that the details of the spillways indicate that they are designed to an adequate standard to pass any dam failure flows and that the downstream effects on the nearest potentially affected property owners would be minor. However, Mr Connell did note that there may be some minor damage to the road should one of the smaller dams fail, although, any water overflow would only last about 15 minutes.

Ms Johnston proposed conditions to ensure a Chartered Professional Engineer's involvement throughout the process.

With regard to the proposed annual volume for irrigation Ms Johnston said that it had been calculated using Schedule WQN9v2 in Policy 16 of the Allocation Plan.

Water quality effects resulting from the use of water on a cumulative basis have been addressed addressed in Part A of this decision..

CRC981377: Excavate, disturb and place a structure, for the diversion of water, McKays Stream

Ms Johnston said that the works involved the construction of a low-level diversion bund in the bed of McKays Stream to facilitate the diversion of water into races that feed the water storage ponds.

The bund comprises un-consolidated river gravels and boulders pushed up from the bed in order to effect the diversion of water.

Ms Johnston said that the batters will be 1:1 H:V, with a crest width of 800 mm to 1000 mm, and not stand more than 800mm to 1000mm above the general bed level. The bund will be located adjacent to the natural banks of the stream and project upstream at an angle of typically 30 to 40 degrees to the centre line of the stream at the bund site. It will be approximately 30 metres in length.

No other structures are required for the diversion of water as the intake already exists for CRC050464.1.

Ms Johnston said that the bund is designed to fail in a flood event and therefore no change in flood patterns are expected.

Works in the channel may cause a temporary discoloration of the water. Mitigation is proposed stating that all practicable measures will be undertaken to minimise the discharge of sediment to the watercourse, arising from the works. Ms Johnston also

noted that the works are of short duration (approximately 1 -2 days), and the proposed mitigation measures will ensure that water quality is not affected.

Mitigation is proposed to ensure that the effects of the works on bank erosion and stability are minor.

Ms Johnston's view was that effects of the works on the flood carrying capacity and flood patterns of McKays Stream would be minor with the proposed mitigation, and effects on bank erosion and stability would also be minor.

Finally Ms Johnston pointed out that the bund is not a dam i.e. it does not extend across the entire width of McKays Stream. There will always be flow either flowing over the bund and/or around the bund downstream and fish passage will not be impeded in any way. Given this, her view was the effects on in stream values will be minor.

Mr Scarlett, (Environment Canterbury River Engineer) commented on this application, and whilst he did not have any concerns regarding effects on flood-carrying capacity provided the standard conditions are included on the consent, he has recommended that the dimensions of the proposed diversion bund and intake structure should be included in the conditions of consent.

CRC042653: Construct four storage ponds in the bed of unnamed ephemeral streams

Ms Johnston said that these works involve the construction of four water storage ponds in grassed depressions. The depressions normally carry water approximately two times a year following an extreme rainfall event or snow melt. The maximum catchment area for each pond is 0.5 square kilometres.

Construction equipment will consist of diggers, trucks and compaction equipment. The ponds will capture any water flowing in the depressions, but for the catchment area, Ms Johnston estimated this to be in the order of 2 l/s to 5 l/s.

If the ponds are full, spillways incorporated in the dams will allow water to overflow the ponds and continue on down the depressions. Given this, Ms Johnston said that there will be no effect on flood carrying capacity and flood patterns of any river.

Ms Johnston said that because the works will occur in grassed depressions that flow typically two times a year there is no effect of the works on water quality.

No party presented any ecological evidence specific to McKay Stream, although Ms Penman noted in her 42A report that Fish and Game had expressed some concerns to the applicant regarding these applications. However these concerns appear to be of a more general nature relating to the abstraction of water from within the Hakataramea Catchment. The applicant's proposed minimum flow is substantially higher than that required under the Allocation Plan and, based on this fact, the applicant submits that

effects on in-stream values will be minor. The 42A Reporting Officer (Ms Penman) considered that, provided that an appropriate fish screen design was adopted for the diversion, and fish passage around the diversion structure was provided for, the effects of the proposed diversion on ecosystems would be minor.

Submissions

Eighteen submissions were received in total relating to these applications. Of these, 12 were in opposition, 4 in support and 2 neither support nor oppose.

Two of the submissions received are related directly to these applications. The remainder were from submitters who made submissions on all applications in process.

Mr G Hay supported the applications.

Fish and Game and the Department of Conservation lodged submissions on the application and describe in detail the Hakataramea River catchment, its importance for fisheries values and the pressure that existing water abstraction is placing on instream values, especially as the river is frequently running dry or has very low flows and high water temperatures.

GK & JL Taylor Partnership hold water permits (CRC931008 and CRC931009) to divert and take up to 60 l/s approximately 6 kilometres downstream of the proposed diversion. Mr S Taylor is opposed to all new takes in the Hakataramea Valley on the basis the catchment is already over allocated.

Ms Johnston said that the applicant has proposed a condition to protect the reliability of supply of existing users on McKays Stream which provides for a residual flow downstream of the point of take of 137 l/s which encompasses the 77 l/s minimum flow and 60 l/s which is the consented rate for the downstream abstractor (CRC931008).

The Advice of the Section 42A Reporter

The reporting officer for these consents was Ms Claire Penman to whom we have referred already in this and in other decisions. It was her view that although the proposed dams (CRC040999) are technically out of stream storage dams, they are only small grassed depressions across the existing farmland which may convey water during times of heavy rainfall and therefore the flow regimes established in Table 3 and required under Rule 2 clauses (1)(a) and (1)(b) do not apply.

Ms Penman said the proposed water permits were non-complying under Rule 16, and that the land use permits are covered by Rule BLR2 of the proposed NRRP but a consent is required as a discretionary activity under the TRP.

Ms Penman said that consent for the dams will also be required under the Building Act 2004 as they are classified as a large dam under the Act but the applicant has not yet lodged an application for building consent.

There is currently a fish screen on the pump intakes from the diversion however the rate of take is not metered. The applicant has not submitted any details of the current fish screen.

However given the nature of the proposed damming, use and discharge, Ms Penman considered the effects on ecosystems would be minor.

Ms Penman said no submissions were received from any of the existing water permit holders on the Hakataramea River when these applications were notified in August 2007. However, there were submissions from other water permit holders on tributaries of the Hakataramea River who are subject to minimum flow conditions on the Hakataramea River. In addition, a submission was received from the downstream permit holder on McKays Stream.

A submission from the neighbouring landowners who border the water races flowing through the applicant's property requested that stock water continue to flow through the races as their own stock utilise them for stock water. However, the applicant has proposed a piped trough system for summer months to reduce leakage and only proposes to use the races in winter when frosts may damage the troughs and pipes. As the water races run through the applicant's property and are fed by the applicant's consented water take, Ms Penman was of the opinion that the effect on neighbours ability to utilise that stock water system, which is not a jointly owned system, should not be considered further. This is a private arrangement between two property holders and is beyond the scope of our enquiry so we can take the matter no further.

Ms Penman said that the proposed dams will be located on relatively flat slopes within the applicant's property at a distance of over 2 kilometres from the road. While a number of submitters raised concerns regarding the effects of such structures on the natural character and amenity values, Ms Penman was satisfied that the local effects on people, communities and amenity values would be minor.

Ms Penman said that proposed conditions will ensure that the dam is designed, inspected and maintained adequately to mitigate the effects of dam failure. It was her opinion that based on the information provided by the applicant and comments from Mr Rob Connell the Regional Council's Southern Area Rivers Engineer that the potential effects of dam failure will be minor.

Of the divert volume of 1,148,180 cubic metres (under CRC981376), 157,680 cubic metres is for stock water purposes, 413,000 cubic metres for the dam storage, and the balance 577,500 cubic metres for irrigation. Ms Penman considered that this volume should be specified on the consent to be in conjunction with the 15 l/s diversion under CRC950464.2.

On the proposed dams, Ms Penman agreed, that given their location and the spillway design, effects on flood-carrying capacity would be minor.

Ms Penman said that the Hakataramea River has statutory acknowledgment in the Ngai Tahu Claims Settlement Act 1998. The sites of the proposed activities are within the rohe of Te Runaka 0 Waihao. Te Runaka 0 Waihao and Te Runanga 0 Ngai Tahu were served notice of the applications in August 2007. Submissions were received in opposition to this application from Te Runanga 0 Ngai Tahu.

Our consideration of this application

Ms Johnston reported that an analysis of flows in Station Stream and Hakataramea River in 2003 by Mr Bob Hall enabled him to derive a correlation between flows in Sutton Stream and McKays Stream. This analysis determined that McKay's Stream contributes 3% of the daily mean flow of the Hakataramea River, and 7% of the mean annual low flow. Environment Canterbury has estimated the one in five year, seven day low flow for McKays Stream to be 7 l/s.

She also noted there is a consented downstream user (GK & JL Taylor Partnership) who can divert up to 60 l/s from McKay's stream. Providing the 5 year, seven day low flow of 7 l/s would not allow the GK & JL Taylor Partnership to abstract its maximum consented rate of 60 l/s. To avoid this adverse effect, the applicant has proposed a minimum flow of 77 l/s be retained at Hakataramea Valley Road and a minimum flow of 137 l/s is to be retained immediately downstream of the applicant's intake (77 l/s minimum flow plus 60 l/s for the Taylor diversion).

At the start of the hearing, the applicant also proposed a minimum flow for the Hakataramea River to halve abstraction when flows in the Hakataramea River at Main Highway recorder are at 1,500 l/s and to cease abstraction at 500 l/s in order to ensure that effects on other users are mitigated but since this proposal is now a water harvesting proposal at times of high flow it is no longer necessary to make that provision in this case.

Land use permits CRC981377 & CRC042653: The proposed works in the bed of a river are discretionary activities. The actual and potential effects of the activity have been discussed in the assessment of the activity.

For CRC981377 (installation of diversion structure) the actual and potential effects of the proposed activity are acceptable given the proposed mitigation measures

For CRC042653 we are also satisfied that the actual and potential effects of the proposed activity are acceptable particularly given location of the proposed works are out of stream.

Water permits CRC981376 & CRC040999: The taking and use of water is a technically a non-complying activity and must be discussed in the context of s104D of the RMA. However we have addressed this matter previously in the Sunny Downs Ltd. decision and it is not necessary to address the matter here. We have also addressed it in Part A of this decision in the context of non-compliance with Table 3 row xxii of the Allocation Plan.

Policies 3 and 43 outline values when setting an environmental flow regime for the Hakataramea catchment and tributaries and link directly to Rule 2 and the environmental flow and level regimes outlined in Table 3. Policy 3 is incorporated in policy 43(ii).

Again we have dealt with these matters previously in Part A of this decision.

Policy 13 deals with water quality issues resulting from land use intensification and enables the consent authority to have regard to the water quality objectives in the proposed NRRP. The Allocation Plan incorporates by reference Objectives WQL1, 2 and 3 of the proposed NRRP which contain particular outcomes to be achieved in the regions water bodies. The applicant has agreed to participate in a catchment wide study of the effects of land use intensification and has also agreed to implement a farm management programme to minimise nutrient runoff. We have considered the cumulative effects of land use intensification on water quality in Part A of this decision.

We consider this proposal an efficient and effective use of water.

Policy 19 encourages the piping or otherwise sealing of water distribution systems to minimise water losses and maintain the quality of water. The applicant is proposing to upgrade the stock water system to a pipe and trough system for use in the summer months. However, it also proposes to retain the existing open race system during winter to prevent damage to pipes and troughs from freezing water. We consider that the applicant is proposing to make all reasonable efforts to upgrade its distribution system where possible and is therefore acting consistently with this policy.

Policies 25 and 26 deal with flow sharing among users and reliability of supply. As there are a number of existing consents to take water in the Hakataramea catchment which are limited by minimum flow conditions on the Hakataramea River, reliability of supply in the context of these policies has been taken into account when considering these applications.

On the matter of the Runanga concerns we have already addressed these in Part A of the decision and we adopt the conclusions reached in that Part.

Having regard to the assessments and conclusion just recorded it is our judgment that the applicant's proposals are not in conflict with any of the relevant matters in sections 6 ,7 and 8 of the Resource Management Act 1991 and accordingly granting consent will achieve the purpose of that Act.

Finally we turn to the matter of the term of consent. Again this matter has also been addressed in Part A of this decision and in accordance with the conclusions reached there these consents will be granted for a period of 35 years..

Decision

For all the foregoing reasons this application is granted on the terms and conditions set out in Volume 2 of this decision.

(4) Star Holdings Limited

Here there are six applications.

CRC951776.5 is an application to take water at the rate of 103 l/s from Station Stream for irrigation. This is slightly complicated because the application is seeking to transfer 60 l/s from a downstream location in terms of CRC951776.5 and consolidate three existing consents at the current upstream location of consent CRC951776.4. We comment here that this is a typical example of the complicated irrigation arrangements in the Lower Waitaki Catchment. There are many others.

CRC021585 was originally an application to divert surface water from Station Stream during times of high flow into a storage dam and it remains that way.

CRC021221.1 is an application to increase the total volume already consented in terms of the water permit for storage from 300,000 cubic metres to 500,000 cubic metres.

CRC072756 is an application to take and use water at a rate of 434 l/s from a water storage pond to irrigate 600 ha of crops and pasture for grazing sheep, beef cattle, deer and non-milking cows.

CRC021258 is an application to excavate, disturb and place a structure in the bed of Station Stream for the diversion of water.

CRC084260 is an application to change the location of the discharge authorised by CRC021223.1 from Potatoe Stream to Station Stream.

We note with this last application that it was opposed at the hearings before us by Mr S Taylor who thought it would affect him but when he gave evidence it appeared to us that this would not be the case. We were anticipating a final response about this but it has never come and we have assumed that Mr Taylor has accepted that he would not be affected

Ms Johnston addressed these applications in some detail. She described how the applications relate to two properties known as Caberfeidh Station and Broadacres. The applicant lodged applications CRC084260, CRC951776.5, CRC021221.1 and CRC072756 after the purchase of Broadacres, the property immediately downstream of Caberfeidh Station. Broadacres has resource consents that allow a total of 60 l/s to be taken from Station Stream. The applicant has requested that this allocation be transferred 2.7 km upstream to Caberfeidh Station, which has a resource consent for 43 l/s, to allow a total of 103 l/s to be abstracted at this point. The volume of storage would be increased from 300,000 cubic metres to 500,000 cubic metres, and both Caberfeidh Station and Broadacres could be irrigated from the water stored. Water diverted, but not taken, would be returned to Station Stream.

We were told by Ms Johnston that there are two other abstractors on Station Stream. One is located upstream of Caberfeidh Station, and the other is located downstream of Broadacres, in the vicinity of where Station Stream ceases to have surface flow, and this user's reliability of supply can be very poor. including the applicant's existing consents. There is 193 l/s allocated from Station Stream. The applicant has 103 l/s of this allocation, with each of the upstream and downstream abstractors having 45l/s. There are no other resource consents (in process or granted) for taking or diverting water for irrigation purposes from Station Stream.

Ms Johnston described Station Stream as a steep mountain torrent coming off the eastern face of the Kirkliston Range, and discharging into the Hakataramea River. The catchment area is approximately 21 square kilometres and the mean annual flood is estimated to be approximately 5.6 cubic metres per second at the Hakataramea River confluence. She said Station Stream is ephemeral in the lower reaches during most summers, and with respect to flows, is either "a feast" or "a famine". It is likely that the ephemeral nature of this stream, which has an estimated mean flow of approximately 224 l/s, is exaggerated by abstraction, which totals about 200 l/s.

In the Allocation Plan, Station Stream is classified under Table 3, row xxii for all other rivers and streams which specifies a minimum flow of the 5-year 7-day low flow. The applicant did not propose a minimum flow on Station Stream, but instead proposed a minimum flow of 4.5 cubic metres per second on the Hakataramea River. Mr Bob Hall (earlier referred to) created a synthetic flow record for Station Stream by using the mean daily flows of the Hakataramea River at the Main Highway recorder and the instantaneous records including 2 days either side of the days that gaugings had been undertaken in Station Stream. Using this data, he established a correlation between the two. The equivalent flow in Station Stream when flows are in excess of 4.5 cumecs on the Hakataramea River is approximately 200 l/s.

The S42A report recommends a minimum flow for this consent of 67l/s measured in Station Stream at the Kirkliston Foothills. Ms Johnston stated that the applicant accepts this minimum flow requirement as well as retaining the current Hakataramea River minimum flow requirement.

Ms Johnston stated that the applicant proposed to limit the volume of water taken for harvesting to 50% of the available flow in Station Stream. This is to protect flow variability and to ensure that sufficient water is still available for downstream users. She said that because the take occurs only when flows are sufficiently high in both the Hakataramea River and Station Stream other users on Station Stream are not affected by the harvesting regime. She also said that the diversion will be metered in accordance with Policy 21 in the Allocation Plan.

In terms of in-stream ecology, Ms Johnston stated that NIWA had prepared a report for the previous owner of the properties on the fauna of Station Stream and Potato Creek in February 2002. That report concluded that Station Stream contained average

densities of two widespread and common native fish species (Canterbury galaxias and Upland bully). No uncommon or endangered species were found and no trout were recorded in Station Stream. The report concluded that both native species present are able to complete their life cycles in streams, so do not require access downstream to large rivers or the ocean.

The applicant is proposing to install a fish screen designed in accordance with the report *"Fish Screening: good practice guidelines for Canterbury, NIWA Client Report: CHC2007.092, October 2007"*.

No other party to these applications has commented specifically on the ecological values of Station Stream.

Mr Webb for Fish and Game stated that the proposed minimum flow of 67 l/s to be retained in Station Stream, with no more than half the flow above the minimum to be taken, and an approved fish screen to be installed, met with the approval of Fish and Game. He went to say that the proposal to increase the pond volume by 60% would very likely enable it to support trout if stocked subject to Fish and Game approval. He also said that Fish and Game did not object to granting of these applications subject to an undertaking to equally share the costs associated with increased gamebird control that might be required as a result of an increase in crop depredation by game birds. As we have already held in Part A of this decision, we are not prepared to impose such a condition relating to a financial contribution to Fish and Game for game bird control. .

Other information relevant to the individual consent applications now follows.

CRC951776.5: to transfer the location of the water abstraction

CRC951776.5 is an application to transfer 60 l/s from two existing resource consents 2.79 kms upstream on Station Stream to what is currently the take point of CRC951766.4. There are only 2 other parties with consents to take water from Station Stream. Mr B Gray (formerly New Zealand Deer Farms) holds CRC950458.1 to take 45 l/s approximately 250 metres upstream of the take point of CRC951766.4. Maungatiro Partnership holds CRC931005 to take 45 l/s approximately 6.4 kilometres downstream of the take point of CRC951766.4.

Ms Johnston said that no additional allocation is being taken from Station Stream. The only change in effects is to move the location of the existing consented takes upstream, and this does not adversely affect the other users on Station Stream.

An annual volume combined with CRC021585 is proposed by Ms Johnston to ensure that no more water than is needed is diverted from Station Stream. It was her opinion that given no more water is being taken from Station Stream than is currently authorised, and there are no other water users between the points of take being "merged", effects on other users will be minor.

CRC951776.4 is currently subject to the Hakataramea River minimum flow.

CRC021221.2: seeks to increase the volume dammed from 300,000 to 500,000 cubic metres.

CRC021221.1 authorises the storage of 300,000 cubic metres of water. The storage is located wholly within Caberfeidh Station, and is an out of stream storage system. CRC021221.2 is a replacement for CRC021221.1.

Ms Johnston said that In December 2006, an application to vary the conditions of consent CRC021221.1 by increasing the volume of water stored from 300,000 cubic metres to 500,000 cubic metres was lodged with the Regional Council.

It was originally proposed to store this water behind a 12 metre high earth dam, but the applicant is in the process of building the first 300,000 cubic metres of storage in a series of smaller ponds (all one structure), with a maximum embankment height of 1.4 metres above natural ground level and a maximum water depth of 2.9 metres, but with a total area of approximately 20 ha (as opposed to 4.5 ha).

Ms Johnston said that the volume of water dammed and embankment height are two key components in dam safety. The reduction in height means that the probability of a dam failure is significantly reduced. And, whilst it is a series of ponds, it is all one structure. The area is entirely within the applicant's property and therefore the fact that the applicant has chosen to construct storage over 20 ha only impacts on the applicant. Therefore, the reduction in height, but an increase in area is within the scope of the application as the effects of the change are reduced from that which was originally applied for.

Storage is currently being filled using CRC951776.4, but it is intended to use both CRC021585 and CRC951776.5 if granted.

As the storage facility is located out of stream, Ms Johnston opinion was that the primary effect to address was dam failure.

Ms Johnston calculated that the nearest dwellings to the storage site (excluding the applicant) are over 3 km away. The nearest road is 2.5 km downstream. Under NZSOLD guidelines, the proposed storage facility is considered to be in the low risk category. This means that the risk to life is low, with minimal damage (environmental and economic) possible as a consequence of failure. Her view was that the likelihood of loss of life is exceedingly small given the rural nature of the site, and the size of the dam.

Turning to the most likely cause of a dam failure, Ms Johnston said that for storage of this nature, overtopping is the most likely cause of a breach.

Calculations have been undertaken by Ms Johnston to assess the effect of a breach failure. For a 500,000 m³ water storage pond, time to affect the breach is 5 minutes, with the breach lasting between 15 minutes to 20 minutes. Peak outflow from the breach is predicted to be 1166 cumecs. This results in a velocity of 0.32 m/s, and a water depth of 17 mm at a distance of 2, 500 metres from the dam (this is the distance to the road), and would last for a matter of minutes at this rate.

Ms Johnston said that if a 12-metre embankment was to be constructed, the peak outflow from the breach would be in the order of 443 cumecs 36 times greater than storing the same volume of water in a 1.4 metre embankment dam. She explained that for overtopping to create a breach, there would need to be a “depression” in the downstream slope and water would need to be concentrated at this point for a long period of time to erode enough material for it to fail. For out of stream water storage ponds, this is highly unlikely to occur as the storage is filled manually.

Finally Ms Johnston said that conditions on the resource consent already ensure that the applicant has chartered professional engineers involvement and certification in the process right through from design to filling, and as this application for a change of conditions is to increase the volume stored, these conditions will be unchanged.

CRC072756

The proposed annual volume has been determined using Schedule WQN9v2 in Policy 16 in the Allocation Plan.

Ms Johnston said that it is proposed to spray irrigate 600 ha of crops and pasture on a three day rotation. The property is covered with light soils, with an average water holding capacity of 63mm. On a three-day return period, 18.9 mm will be applied. This is less than 50% of the average water holding capacity of the soil and is considered to be an efficient use of water.

Ms Johnston confirmed that the diversion and the take will be metered as required by Policy 21 of the Allocation Plan.

CRC084260 change location of the discharge from Potatoe Creek to Station Stream

Ms Johnston said that the water being discharged is that diverted in excess of the consented rate, and is returned immediately back to Station Stream, rather than Potatoe Creek. Also the proposed discharge could be flood waters up to 2.5 cubic metres per second during the probable maximum flood event, or when the dam is already full. The spillway for the discharge will be grassed and any discharge will likely occur during times when the stream already has high flows and is not likely to result in a significant increase in flows in the stream.

With the inclusion of the appropriate erosion condition, the proposed erosion protection on the spillway, and the likely timing of any discharge, Ms Penman was satisfied that the adverse effects on flood-carrying capacity and erosion would be minor.

The applicant notes that the dam from which the spill will originate has not yet been built. So there has been no discharge to Potatoe Creek. The applicant also notes that the water that would have been spilled to Potatoe Creek previously would be over and above what would normally occur, and therefore it is of no benefit to aquatic values.

Ms Penman noted that a submission was received from a downstream water user on Potatoe Creek who has concerns with the proposed change of location of the discharge to Station Stream. The submitter made the point that they rely on water in Potatoe Creek for stock water and that changing the location of the discharge would result in less water being available within the stream. However as the proposed discharge has never occurred to Potatoe Creek there could be no change in actual effect on that creek.

Ms Johnston and Ms Penman were satisfied that the adverse effects of the proposed change in discharge location would not result in adverse effects on downstream users.

There is one water user with consent to take water from Station Stream, who is located downstream of the dam site. Maungatiro Partnership (Mr S Taylor) holds resource consent CRC931005 to take 45 l/s approximately 6.4 kilometres downstream. The reliability of flow at their point of take would be increased by the relocation of the spill water in Station Stream as the take occurs very close to where Station Stream becomes ephemeral.

Ms Johnston said that Mr Taylor submitted in support of this application for that very reason, stating that the discharge back into Station Stream would give other consent holders (such as himself) access to the water. Had the water been spilled to Potatoe Creek it would have resulted in higher flows in this creek than would naturally occur. No other water users will be adversely affected by the change of the discharge location.

In relation to the discharge of water to Station Stream, the fish species that are present (being galaxids and bullies) are able to complete their life cycles notwithstanding the fact that there was no permanent summer flow to the main stem of the Hakataramea River.

CRC021258

Ms Johnston described the proposed structure in Station Stream as consisting of a low gravel bund (approximately 10 metres long and 3 metres wide) to deflect the flow into the water race and control gate. The control gate will be adjustable to regulate inflow into the race and a side spill weir (made of concrete or timber) with rock rip apron will be constructed to direct any excess flow back into Station Stream.

Ms Johnston considered that the effects of the proposed groyne and intake structure on flood-carrying capacity and erosion would be minor. She noted that the groyne, being constructed of gravel, is designed to “blowout” during freshes and floods so as not to obstruct free passage of flood waters and not result in any scour or erosion. The riprap on the excess flow weir will ensure that there is no erosion from the discharge back to the stream from the water race at the control gate.

Regarding maintenance of the groyne, Ms Johnston assessed this as approximately half a day with works required about once per year to reconstruct the groyne after flood events. She said that there will be a small amount of sediment released during construction and re-construction work. However, she noted that these will be limited in area and downstream effects due to the filtering effects of the coarse alluvium bed.

Mr Scarlett did not have any concerns regarding effects on flood-carrying capacity or erosion provided the activity is carried out in accordance with the applicant’s proposed guidelines and standard conditions are attached to the consent.

Ms Penman agreed with Ms Johnston that the adverse effects of the works on artificial structures, flood-carrying capacity, erosion and water quality would be minor.

The bund is not a dam (i.e. it does not extend across the entire width of Station Stream). There will always be flow either flowing over the bund and/or around the bund downstream.

The NIWA 2002 report advised that it would be unlikely that adult trout would be able to migrate very far up into these tributaries given that they have ephemeral flow in the lower reaches.

The NIWA report also confirmed that the native species present did not need access downstream into larger rivers or oceans. However, access will not be prevented as a result of the bund as water will be able to flow over and around the bund.

Given this, effects on in stream values are considered to be minor.

Submissions

20 submissions were received in total relating to these applications. Of these, 14 were in opposition, 4 in support and 2 neither support nor oppose.

Three of the submissions received relate directly to these applications.

Mr and Mrs. Cleave who initially asked that the applications be declined withdrew their submission.

Mr S Taylor is opposed to all new takes in the Hakatamea Valley on the basis the catchment is already over allocated. Ms Johnston pointed out that these applications

relate to combining existing takes, and harvesting water during periods of high flows, which will have no effect on existing users, such as Mr Taylor.

Mr G Hay is in support of the applications stating, "*harvesting should be encouraged*".

Mr S Taylor submitted in support of application CRC082460 (discharge permit) advising that the discharge being returned to Station Stream, gives other consent holders the use of the water.

The Advice of the Section 42A Reporter

Ms Penman said that in May 2003, the then applicant advised the Regional Council that in order to mitigate effects on downstream water users on Station Stream, the proposal was to be considered a joint proposal between NZ Deer Farms, RPNZ Properties, Broadacres Farming and Maungatiro Farm (known as the Station Stream Water Users Group) with a number of diversion points for harvesting. A draft decision was prepared in July 2003 for the harvesting and land use consents, however, it was held up pending consultation with Meridian Energy Ltd as Project Aqua applications had been lodged. The application to harvest water was subsequently called-in by the Minister for the Environment

All applications were transferred to Star Holdings Ltd in August 2004. Since the consents to dam, transfer water and discharge had already been granted, Star Holdings Ltd proposed to change the conditions of those consents by increasing the dam volume, transferring additional water consents to the same take point and changing the discharge location. These amendment applications were lodged in December 2006.

In addition, Rule 2 clause (1)(b) requires that no person shall take or divert water unless the activity is within the instantaneous allocation limit for the water body specified in Table 3. There is no specific allocation limit for Station Stream but as we have already held in Part A of this decision this is now of no consequence because we have decided not to rely on Table 3 row xxii in the Allocation Plan.

Given the dam is not in any water body which contains any in-stream values, the effects of damming and using water on ecosystems can be considered to be minor.

The current consents have a minimum flow condition requiring abstraction to cease when the flows in the Hakataramea River reach 500 l/s, and abstraction must reduce by 50 percent when the flows in the Hakataramea River drop below 1,500 l/s.

The applicant proposes to retain this condition at the transferred point of take, and also proposes to adopt a minimum flow of 67 l/s equivalent to that outlined in Rule 2, Table 3 being the 5-year 7-day low flow for all other rivers and streams although have we

have just said we are not relying on that Table for the purposes of determining these applications

Ms Penman considered the effects of the proposed diversion from Station Stream on ecosystems would be minor.

The take and use of water from the dam (CRCO72756) does not need to comply with the environmental flow and level regimes established in Table 3 as the take is from the out-of-stream storage dam established under CRCO21221.2.

Rule 6 deals with annual allocation limits. In total, the applicant proposes a combined annual volume of 3,740,000 cubic metres for the harvesting consent (CRC021585) and the transfer consent (CRC951776.5) which is to be included in the allocation limits. This incorporates 500,000 cubic metres to be stored in the proposed dam at the beginning of an irrigation season and 3,240,000 cubic metres to be used for irrigation in a season. The proposed activity is within the allocation limit for agricultural activities.

The proposed transfer of water from consents CRC951804.2 and CRC951698.1 to CRC951776.5 is covered by Rule 8. This rule states that any transfer must result in the same use of water and that no person shall transfer the location at which a consent to take or use water is exercised unless the new location is downstream along the route the water would flow between the existing location and the sea. It also states that no person shall transfer the location at which a consent to take or use water is exercised from one part of the catchment to another, except in accordance with Rule 21, Rule 21A, Rule 22 or Rule 23.

Ms Penman said that the proposed transfer will contravene Rule 8 (3), as it proposes to move the take location 2.7 kilometres upstream and therefore must be considered under Rule 21A. This rule requires that in the new location the exercise of the consent must comply with Rule 6 and Rule 2, the take must be metered and the exercise of the consent must comply with the water quality standards in the proposed NRRP.

Ms Penman said that the annual volume of 1,406,200 cubic metres which is the total of two consent being transferred to the new location means that no more water would be allocated than under the existing three consents and it is within the Table 5 allocation limits. a minimum flow of 67 l/s on Station Stream, is consistent with Rule 2, Table 3, and the water will be taken to a dam for irrigation storage which will comply with the proposed NRRP water quality standards.

The application is therefore considered a restricted discretionary activity under Rule 21A.

Ms Penman said that the land use permit is covered by Rule BLR2 of the proposed NRRP dealing with the erection and placement of structures in the beds of rivers. The proposed works will not comply with condition 4 as the catchment area is

approximately 21 square kilometres. Therefore, consent is required as a discretionary activity under both the TRP and Rule BLR8.

The discharge permit is covered by Rule WQL56 of the proposed NRRP dealing with discharge of water or a contaminant into surface Water. Therefore consent is required as a discretionary activity under Rule WQL56.

Ms Johnson proposes a staged water harvesting approach in accordance with the following table:

| Flow in the Hakataramea River at SH82 (m ³ /s) | Abstraction Rate (l/s) |
|---|------------------------|
| 4.5 – 10 | 103 |
| 10-16 | 250 |
| 16-25 | 400 |
| 25-30 | 500 |
| >30 | 600 |

The minimum flow proposed is 4.5 cubic metres per second on the Hakataramea River in line with Table 3 for water harvesting and in conjunction with the applicant's existing consents to take 103 l/s from Station Stream (CRC951776.4, CRC951804.2 and CRC951698.1). Ms Penman considered that in effect the applicant is proposing a minimum flow of 10 cubic metres per second before the water harvesting component of the proposal begins.

Ms Penman said that Mr Hall, who had given evidence on a number of the Lower Waitaki applications, had established a relationship between flows in Station Stream and flows in the Hakataramea River by correlation. This relationship indicated that when flows in the Hakataramea River are approximately 4 cubic metres per second, flows in Station Stream would be approximately 200 l/s. When flows in the Hakataramea River are approximately 10 cubic metres per second, flows in Station Stream would be approximately 440 l/s.

Ms Penman said that given the established relationship, the flows in Station Stream would be approximately 440 l/s (from Mr Hall's correlation) before the harvesting consent can be operated. This is significantly more than the minimum flow of 67 l/s and would ensure that in-stream values are protected.

The current consents have a minimum flow condition requiring abstraction to cease when the flows in the Hakataramea River reach 500 l/s, and abstraction must reduce by 50 percent when the flows in the Hakataramea River drop below 1,500 l/s.

Ms Penman considered the effects of the proposed transfer of point of take on ecosystems would be minor.

Ms Penman noted that the proposed water harvesting will only occur when flows in the Hakataramea River are above 10 cubic metres. Below that flow only the existing consented rate of 103 l/s would be taken from Station Stream, down to a minimum flow of 500 l/s on the Hakataramea River. This is consistent with the minimum flows on the applicant's existing consents.

As the proposed dam is out of stream, there will be no effect on reliability of supply for other water users from the damming and use of water. Ms Penman was satisfied that the local effects on people, communities and amenity values would be minor as appropriate minimum flows have been proposed and the dam is distant from the nearest road boundary.

Given the location of the dam out-of-stream, appropriate design, construction, monitoring and maintenance conditions being attached to the existing consent, and the substantial distance to downstream properties, Ms Penman was satisfied that the effects of dam failure will be minor.

The applicant proposes to take water at a rate not exceeding 434 l/s and use up to 3,240,000 cubic metres per year for spray irrigation of 600 hectares. This has been based on analysis using Schedule WQN9v2 in Policy 16 of the Allocation Plan for arable land use with light soil (PAW <75mm) and Effective Summer Rainfall of 210mm. Ms Penman agreed with the volume the applicant has proposed for irrigation and considers it would be an efficient use.

The applicant has proposed an annual volume of 3,740,000 cubic metres for the water harvesting consent (CRC021585) in combination with the water transfer consent (CRC951 776.5). This is made up of 500,000 cubic metres as the dam full volume at the beginning of an irrigation season, plus 3,240,000 cubic metres for irrigation.

In summary, Ms Penman is satisfied that the annual volume proposed is reasonable for the proposed irrigation area.

Effect on Tangata Whenua values

The Hakataramea River has a statutory acknowledgment in the Ngai Tahu Claims Settlement Act 1998. The sites of the proposed activities are within the rohe of Te Runaka 0 Waihao. Te Runaka 0 Waihao and Te Runanga 0 Ngai Tahu were served notice of the applications in August 2007 and May 2008. Submissions were received in opposition to these applications from Te Runanga 0 Ngai Tahu.

Our consideration of this application

The proposed water permit CRC951776.5 is a restricted discretionary activity.

Section 104C restricts our consideration to those matters specified in the Plan. Rule 21A, lists the matters to which discretion is restricted. Having considered these matters, we consider that the effects of the proposed transfer are acceptable.

The actual and potential effects of the proposed activity are acceptable when taking into account the proposed mitigation, as the applicant has proposed appropriate minimum flows to protect in-stream values, no other users take water between the two abstraction points and the rate of take will not increase.

We consider that CRC951776,5 is consistent with the relevant planning provisions of the RPS, proposed NRRP and Allocation Plan.

The proposed land use, discharge and water permit activities except CRC951776.5 are discretionary activities and must be considered in the context of s104 of the RMA.

Water permits

The actual and potential effects of the proposed activity are acceptable when taking into account the proposed mitigation. In particular, the applicant has proposed sufficient mitigation to protect in-stream values and other water users' reliability of supply.

For consent CRC021221.2 the actual and potential effects of the proposed activity are acceptable when again taking into account the proposed mitigation,

Again water quality issues resulting from land use intensification have been addressed in Part A of this decision. The applicant has agreed to participate in a catchment wide study of the effects of land use intensification and has also agreed to implement a farm management program to minimise nutrient runoff.

The applicant has agreed to install a suitable fish screen on the diversion and both the diversion and the take from the dam will be metered.

Land use permit

The actual and potential effects of the activity have been discussed in the assessment of effects section. For CRC021258 (installation of a groyne structure) we are satisfied that the effects of the proposed activity are acceptable given the proposed mitigation measures.

Also we consider that CRC021258 is consistent with the relevant planning provisions.

Discharge permit

For CRC082460 (discharge water) we are satisfied that the actual and potential effects of the proposed activity are acceptable given the proposed mitigation measures and the expected timing and frequency of discharges. Also CRC082460 is consistent with the relevant planning provisions.

On Runanga concerns we have already addressed these in Part A of this decision and we adopt the findings made in that Part of this decision.

Having regard to the assessments and conclusion just recorded and also those recorded in Part A of this decision it is our judgment that the applicant's proposals are not in conflict with any of the relevant matters in sections 6 ,7 and 8 of the Resource Management Act 1991 and accordingly granting consent will achieve the purpose of that Act.

Finally we turn to the matter of the term of consent. In Part A of this decision we considered this matter and in the case of new consents we ruled they were to be granted for 35 years. In this case this ruling is applied for all new consents For amendments to existing consents the term of those consents remain unaltered.

Decision

For all the foregoing reasons this application is granted on the terms and conditions set out in Volume 2 of this decision.

(5) R W and M E Sutton

Here there is one application.

CRC071114 is an application to divert water at a rate of 50 l/s from the Avonlea Stream into a storage dam. The annual volume is not to exceed 500,000 cubic metres. The applicants already have consents to dam water and to take water from that dam for irrigation. These consents expire on 20 May 2033. The water storage consent, which is CRC9850512.1, already exists and initially CRC071114 was lodged to amend the terms of that consent to increase the storage. However the Regional Council required a new application and hence CRC071114 has been lodged accordingly as a new application rather than an amendment of the existing consent.

Robert William Sutton has owned the 626 hectare Haka Valley property Tironui Farm for eight years. He gave evidence in support of this application and the application of Haka Valley Irrigation Ltd. a company of which he is a director.

With regarding Tironui Farm Mr Sutton said that 50 hectares of the farm is reliably irrigated under existing consents. Additional areas are able to be watered when he has sufficient water from existing consents.

Outside of the 50 hectares which is under irrigation, pasture growing in gullies or by the banks of springs and streams is critical to the very survival of this farm. Stock are grazed in these areas. Land with intermittent springs and streams is not fenced off from sheep and cattle. These areas have the only reliable pasture in periods of drought. Land is grazed notwithstanding the issues associated with stock access to water bodies which may affect water quality. This is because these areas provide the only significant feed during times of drought. Mr Sutton could not stress enough the importance of pastures associated with these waterways to farmers within the Valley during dry and drought periods.

Mr Sutton said that with increased irrigation these areas will lose their importance for grazing in dry and drought periods. Irrigation water is critical to retirement of surface water ways and margins from grazing.

Ms Johnston said that the applicant holds two other resource consents related to the diversion. These are CRC980511 to dam water at a volume of 123,500 cubic metres and CRC980513 to take water from the Tironui Dam for irrigation, at a rate not exceeding 44 l/s, with a volume not exceeding 38,016 cubic metres in any period of fourteen consecutive days. The existing 5 l/s take CRC980512.1, is not subject to a minimum flow. .

Ms Johnston said that the Avonlea Stream is fed by several small tributaries draining the Kirkliston Range. During freshes or floods is the only time that tributary water enters the main stem of Avonlea Stream via surface flow. Below the intake to the dam

the stream disappears to ground and the stream becomes a grassed channelled depression across farmland. The continuous diversion rate of 5 l/s is approximately two thirds of the average flow in the channel at the diversion point.

Ms Johnston said that water is to be diverted from Avonlea Stream at a rate not exceeding 50 l/s at times of high flows into the Tironi Dam. Water is stored and subsequently abstracted for irrigation purposes by the two existing consents. She pointed out that hydrology data on the Avonlea Stream is very limited with no known hydrology investigations. For that reason, restricting the diversion in accordance with the Hakataramea River flow regime was considered more appropriate. It is also proposed to regulate the diversion by installing an intake slide gate on the existing pipe intake and the diversion will only operate at periods of high flow.

Ms Johnston said that written approval was received for this application from Fish and Game on 13 October 2006 and from the Department of Conservation on 21 January 2007.

The issue of priority was raised in relation to this application. There are currently no active resource consents in the Hakataramea Catchment to harvest water, however, including this application, there are three applications in process, including the applicant's, to take water at high flows. The total amount of water being abstracted when flows in the Hakataramea River are above 4.5m³/s is a maximum of 653 l/s. This increased because of amendments to some applications at the latter stages of the hearing. If water is available within the restrictions imposed on water harvesting takes a consent holder is entitled exercise their consent and we are aware that the three applicants applying to harvest water have agreed that priority between them is not an issue. Therefore, cumulative effects on other water harvesters are less than minor.

Nineteen submissions were received in total relating to these applications. Of these, 13 were in opposition, 4 in support and 2 neither in support or opposition.

Two of the submissions received in opposition were generic submissions from the Director General of Conservation and Fish and Game who had previously provided written approval for this application as discussed earlier.

Ms Johnston said that subsequent discussions were held with both parties in relation to their submissions. It was identified that since their earlier written approval had been received, issues over water quality and allocation had arisen but not necessarily in the context of this application.

On the 2nd April 2008 a letter was received from Fish and Game saying they were not opposed to the application based on a number of matters, but they requested an expiry of 20 May 2033 which is consistent with the two related consents and which now has been proposed as part of these consent conditions.

At the hearing, Mr Webb said that to the best of his knowledge Avonlea Stream did not contain sports fish or sports fish habitat, he thought probably because the stream ceases to have surface flow 20 to 30 metres downstream of the diversion to the storage pond except during flood/fresh events. It was his opinion that, without the abstraction, the stream would 'undoubtedly' flow further, possibly 1.5 km to the Hakataramaea River, and so the fish habitat would increase. He did not know whether this would be sufficient to enable trout to permanently reside in the stream or use it for spawning.

He said the storage pond currently has value as a small trout fishery and that the applicants operate a fish screen on the take from the dam. Mr Webb said that provided access for anglers to the pond is generally approved and flow conditions around the screen do not result in impingement of fish on the screen surface or their passage through the screen then Fish and Game would be satisfied with operation of the screen to retain trout in the pond.

His primary concern related to the part of the consent that seeks to take water from a tributary to the Hakataramaea River when the Hakataramaea River is above 500 l/s September to March or 750 l/s April to August and he recommended that the component of the Sutton application seeking to take water when Hakataramaea River flows are less than 1,500 l/s be declined. However as already noted this application is now a water harvesting application for abstraction when the flow in the Hakataramaea River at Main Highway recorder is above 4.5 cumecs.

It is also noted that the diversion not only supports the irrigation abstraction from the dam but also the fisheries and wildlife values associated with the dam. In communications with Graeme Hughes of Fish and Game an article on the Tironui Dam was written regarding paradise shelduck, noting that the dam is an important molting habitat. In 1996 there was a banding programme at the dam to provide information on hunter harvest, molt dispersion and shelduck species. Graeme Hughes noted it is important that the dam sustains good water levels to provide for the ducks and fisheries.

Two further submissions were received relating directly to the application.

Mr SW Taylor is an irrigator in the Hakataramaea Valley. He is concerned that any new takes from the Hakataramaea River will impact on his reliability of supply.

Mr G Hay supported this application for the fact that it is a renewal application.

Ms Penman stated in her section 42A report that the applicant had not provided information to support an established relationship between the flows in this tributary and the flows in the Hakataramaea River. She said Environment Canterbury Water Resources Scientist Adam Martin could not comment on the flows in Avonlea Stream due to a lack of flow information. However, he considered that given it is likely to make

a small contribution to the Hakataramea River, the proposed Hakataramea River minimum flow would be appropriate. Ms Penman also stated that Fish and Game had written to the applicant and Environment Canterbury (2 April 2008) advising that they no longer opposed this application provided the Hakataramea River environmental flow regimes are adopted as conditions of consent. Apparently the Department of Conservation had also provided written approval to the application on 22 January 2007, but subsequently submitted in opposition to all applications below the Waitaki Dam in August 2007. The Department provided no ecological information specific to Avonlea Stream at the hearing.

Ms Penman confirmed there are no other water permits on Avonlea Stream and it is her opinion that other existing consent holders with minimum flow conditions on the Hakataramea River would not be adversely affected by this proposal.

Ms Penman said that the stream is not visible to the public as there is no road along the banks of the stream and farmland lies adjacent to the river. The land adjacent to the river is currently irrigated and as the stream flows underground soon after the diversion point it is unlikely there will be any change to the visual amenity of the area.

Ms Penman pointed out that the immediate use of the water will be for storage in a dam. The use of water for irrigation is authorised by the 'take and use' permit CRC980511.1 and is therefore not a consideration for this application.

Our consideration of this application

The diversion and use of water for agriculture is in this case a non-complying activity for a number of reasons which we have discussed and ruled on both in our Sunny Downs Ltd decision and in Part A of this decision. We have already concluded that this and the other applications being considered pass the thresholds in section 104D of the RMA.

Policy 8 of the Allocation Plan promotes water harvesting as a means of capturing water for use when flows are low by allowing the taking, damming or diversion of water at flows that are above the mean and in a manner that avoids or mitigates the loss of physical and ecological benefits of high flow events. As this activity proposes to divert the majority of its consented rate during times of high flow, we consider this activity is consistent with this policy.

We have discussed in Part A of this decision both the restrictions on abstractions from the tributaries we intend to impose and the reasoning for doing so. Water quality issues resulting from land use intensification have also been addressed in Part A of this decision. The applicant has agreed to participate in a catchment wide study of the effects of land use intensification and has also agreed to implement a farm management programme to minimise nutrient runoff. Granting this application will also be beneficial in that it should result in the cessation of grazing adjacent to water ways as discussed by Mr Sutton

We are unaware of any Runanga issues regarding this particular application and we have already determined the generic issues raised by the Runanga in Part A of this decision.

An annual volume has been proposed on the diversion considering water availability in relation to the percentage of time the Hakataramea River exceeds $4.5\text{m}^3/\text{s}$ and also to sustain the subsequent irrigation abstraction.

The diversion will be metered as required by Policy 21 of the Allocation Plan.

Having regard to the assessments and conclusion just recorded it is our judgment that the applicant's proposal is not in conflict with any of the relevant matters in sections 6, 7 and 8 of the Resource Management Act 1991 and accordingly granting consent will achieve the purpose of that Act.

In Part A of this decision we held that the term of this consent should expire on 20 May 2033. We confirm now the granting of consent for that period.

Decision

For all the foregoing reasons this application is granted on the terms and conditions set out in Volume 2 of this decision.

(6) N J Small

Here there are four applications.

CRC040989 is to divert surface water from Grampian Stream to a storage dam in Mortens Stream. Originally the application was to take 30 l/s from Grampians Stream with a minimum flow of 1500/500 l/s on the Hakataramea River as measured at the Main Highway recorder and 57 l/s as measured at the Grampians Stream, Hakataramea Valley Road. And secondly, to take up to 1000 l/s from the Grampians Stream at the time of high flows. This application has now been amended so that it seeks water harvesting as above only. The application to take and use 30 l/s from Grampians Stream has been withdrawn. Hence this is an application to take up to 1000 l/s from Grampians Stream when the flow in the Hakataramea River measured at the Main Highway recorder is at or above 4.5 cumecs.

CRC040988 is to dam water in Mortens Stream.

CRC051766, is an application to use water from the storage dam for irrigation at a rate not exceeding 200 l/s with a volume not exceeding 120,960 cubic metres in any period of seven consecutive days and 1,540,000 cubic metres per annum for irrigation of crops and pasture (275 hectares).

CRC071825, is to construct a dam in Mortens Stream and a diversion bund in Grampian Stream. This application seeks land use consent for these two activities.

Water diverted from Grampians Stream will be stored in a 23 metre high dam in Mortens Stream, a tributary of Grampian Stream, storing 2,600,000 cubic metres of water.

Grampians Stream is a tributary of the Hakataramea River. It has a catchment area upstream of the proposed diversion of 12 km². It has a cobbled bed, with a steep gradient and is incised into the alluvial fan. Mortens Creek was described to us as ephemeral and typically flows only during heavy rainfall and snowmelt. Its catchment is approximately 38 square kilometres above the dam site, with an annual flood of 14 cumecs, 200 year flood of 80 cumecs and probable maximum flood of 160 cumecs.

The applicant engaged Ross Dungey to undertake a fisheries investigation of Grampian Stream and Mortens Stream. His report was annexed to Ms Johnston's supplementary evidence given towards the end of the hearings. He reported four species of fish (brown trout, rainbow trout, upland bully and the Canterbury galaxiid) have been found in Grampians Stream. Mr Dungey concluded that the stream supports a significant fish fauna and clearly is important for spawning habitat for rainbow trout. He also advised that the proposed scheme of capturing a proportion of high flows is unlikely to adversely affect aquatic biota on Grampians Stream.

Mr Webb for Fish and Game considered that Grampian Stream is an important source of rainbow trout recruitment to the Lower Waitaki River based on the density of fry found in the Dungey survey.

The applicant is also proposing to install a fish screen on the diversion from Grampian Stream designed in accordance with the report "Fish Screening: good practice guidelines for Canterbury, NIWA Client Report: CHC2007.092, October 2007". Given these matters, Ms Johnston was of the view that the effects on in-stream values will be less than minor. Mr Webb said Fish and Game supported the applicant's intention to install a fish screen on the intake in compliance with Environment Canterbury guidelines. He also requested that screened fish be returned back to Grampian Stream unharmed.

Mr Webb made the point that adult rainbow trout generally do not occupy river habitat all year and after spawning return downstream to the lake or large river from whence they came. He considered the source of rainbow fry in the upper Grampian is almost certainly not from resident adult trout and so flows sufficient to provide access upstream from the Hakataramea River to above the proposed diversion on Grampian Stream for dam storage must be maintained. He said no information had been provided to show the relationship between Grampian Stream and Hakataramea River flows that ensures sufficient flow will be retained in Grampian Stream to maintain fish passage. However he noted that flows in Grampian Stream in July to September 2004, when the mean Hakataramea River flow was 3.4 cumecs, appeared sufficient to provide passage for adult trout from the Hakataramea River into Grampian Stream and up through the gorge for at least 10 km.

We note here that the applicant is now seeking to abstract from Grampian Stream when the Hakataramea River flow at the Main Highway recorder exceeds 4.5 cumecs, which would appear to satisfy Mr Webb's concerns provided there is also sufficient water left in Grampian Stream below the applicant's proposed abstraction point.

Mr Stewart (in his supplementary statement in response to our Minute to Parties of 3 December 2009) stated that "*Grampian Stream has a surface water connection with the main river due to its size and the fact that it is a headwaters stream with higher annual rainfall resulting in greater water yields*".

We were told by Ms Johnston that Mortens Stream has a catchment area upstream of the dam site of approximately 31 square kilometres. The catchment is sourced in the Kirkliston Range, and flows across pastoral farmland before cutting through a very narrow gorge, and then joining Grampian Stream. The proposed dam site is in the narrow gorge. Simultaneous gaugings were undertaken on Grampian Stream in April 2003 at the diversion site and on Mortens Stream at the dam site by Environmental Consultancy Services. The measured flow in Grampian Stream was 67 l/s, whilst the corresponding flow in Mortens Stream was 6 l/s indicating that the contribution of Mortens Stream to Grampian Stream is very small.

Fisheries investigation on the applicant's property found three longfin eels in Mortens Stream. Mr Dungey noted that Mortens Stream was high and discoloured at the time of sampling but even in such conditions, if there were any significant number of fish, some would at least be seen even if they did escape capture.

Ms Johnston said that applicant did not propose to maintain a residual flow downstream of the dam on Mortens Stream. She said flows in the catchment are not significant in the context of what is entering Grampian Stream, and it was not a significant spawning ground. She also considered that the reservoir would provide additional habitat, and this will be a positive effect of the proposal.

Mr Stewart (supplementary brief dated 22 September 2008) noted that there was a significant degree of uncertainty surrounding the calculation of the 5-year 7-day low flow for Mortens Stream. The applicant states that Morten Stream is ephemeral and typically flows only during heavy rain and snowmelt.

Mr Stewart further noted that Mr Dungey had recommended a 10 l/s flow be maintained downstream of the dam site for ecological reasons. Mr Stewart said that such a flow might be higher than the 5-year 7-day low flow, and to set any other minimum flow apart from a cut-off at the Hakataramea River Main Highway recorder without good information was "*premature*".

Ms Johnston indicated that a minimum flow of 33.5 l/s had been proposed for Grampian Stream, which had been derived using a catchment area ratio (McKercher Pearson) and apparently is equivalent to the mean annual low flow. Ms Penman stated in her S42A report that Mr Martin (Environment Canterbury Water Resources Scientist) considers that the 5-year 7-day low flow for Grampian Stream to be approximately 57 l/s at the Hakataramea Valley Road Bridge. Ms Johnston responded by indicating the applicant was agreeable to the minimum flow proposed by Environment Canterbury.

Ms Penman considered that the effects on ecosystems from taking and using water from the proposed dam would be minor.

The matter of residual or minimum flows for the tributaries has been discussed fully in Part A of this decision and we have ruled on the approach we would adopt in the Hakataramea Catchment. This is no need to traverse that matter again.

There are no other users on Grampian Stream.

Once the Mortens Stream dam has been initially filled, Ms Johnson said that the proposal was to discharge floodwaters during times of high flow (up to an including the probable maximum flood of 135 cubic metres per second) via a spiliway into Mortens Stream. This will maintain some of the natural flow variability experienced in the

catchment, however, the nature of the dam will mean that much of the flood flows are buffered or held back from the peak flows in the catchment.

However, Ms Johnson went on to say that Mortens Stream typically only flows in wet weather or during snow melt, therefore a calculated low flow was not reflective of the summer conditions.

Dam safety

Ms Johnston said that two alternative dam designs options have been developed for consideration at the site by Riley Consulting Ltd. The final dam design will be confirmed following detailed site investigation.

The two dam types are a roller compacted concrete dam and a concrete faced rock fill dam. A roller compacted concrete dam is constructed of roller compacted concrete placed in 300 mm layers. The dam's upstream face and crest is sealed with a 500mm capping layer of conventional concrete. The concrete faced rock fill dam is constructed such that majority of fill is compacted rock with two 800mm thick transition layers consisting of compacted selected rock fill and silty gravel respectively overlain on the upstream batter, and a 200 mm thick concrete slab placed on the upstream dam face to provide a leakage barrier.

Ms Johnston said that for the construction of the dam (either type), a small earth fill coffer dam will be constructed upstream of the dam to intercept stream flow and divert it into a pipe passing through the dam site. When the dam construction reaches the height of the outlet pipe, the diversion pipe will be connected.

The dam is located in a rock lined gorge, and given the proposed construction methods, will not induce any erosion at the site. Construction equipment consists of a concrete batch plant, diggers, trucks and compaction equipment. Works in the channel may cause a temporary discoloration of the water. Mitigation is proposed requiring that all practicable measures be undertaken to minimise the discharge of sediment to the watercourse, arising from the works. Construction of the dam will take approximately three months.

Ms Johnston said that the dam will reduce any flood flows downstream by buffering the peak flood flows and capturing these in storage. Effects on flood carrying capacity and flooding patterns will be minor.

A bund which, Ms Johnston said will comprise un-consolidated river gravels and boulders pushed up from the bed may be constructed in order to effect the diversion of water in Grampian Stream. The bund would be located in a relatively flat and stable part of Grampian Stream, which greatly limits the potential for scour, and is designed to "blow out" during times of high flows.

Ms Johnston said that normally if a dam fails, a large wave of water flows downstream. Downstream properties can experience a loss of property, stock, and even life. Also, the ecosystem downstream of the dam can be significantly damaged. There are two dwellings within 6 km of the dam site. However, both dwellings are located on the other side of a 90 metre ridge and could not possibly be affected by a dam failure.

The proposed dam has a height of greater than 15 metres, and a reservoir volume of greater than 1 million cubic metres, and the potential impact category of the dam has been determined using the screening criteria set-out in the NZSOLD guidelines, as high. However, the NZSOLD guidelines make it clear that the preliminary screening criteria should not be adopted where the expected consequences of failure are low, or very low.

Ms Johnston opinion was that for this dam, given the restricted natural gorge flow capacity, isolation of the location, and the lack of dwellings and buildings on the floodplain between the gorge and the Hakataramea River, a low to medium PIC was more appropriate. She also said that the most likely causes of a dam failure for storage of this nature are overtopping causing a breach or a piping (internal erosion) failure.

Ms Johnston carried out calculations to assess the effect of a breach failure. The calculations were based on work by Macdonald and Langridge-Monopolis. For a 2.6 million cubic metre water storage pond in a 23m high dam, with a 1 m freeboard, the time to effect the breach is 13 minutes. The peak outflow from the breach is 1879 m³/s and a peak velocity is 3.8 m/s.

Floodwaters from the dam site flow directly into Grampian Stream and the Hakataramea River, all within confined flood paths to the Hakataramea River.

Regarding dam construction Ms Johnston said there are two options. A concrete faced rock fill dam would require a spillway separate from the dam. This would be constructed to safely pass a 1 in 200 year flood for the stream, assumed to be 65m³/s. This will be constructed on the true right abutment of the dam, and would be 30 metres wide and 80 metres long.

A roller compacted concrete dam allows floodwaters to pass over the dam directly (i.e. the dam itself acts as the spillway). The design width of the spillway would be 50 metres, although the dam is wider. Such a structure could pass the attenuated 1 in 200 year flood flow with a water depth over the crest of 0.8 metres and the probable maximum flood of 135m³/s with a water depth of 1.4 metres. By the time this water gets to the Hakataramea River at a distance of approximately 7 kilometres, the depth of the water is calculated to be only 253 mm and have a velocity of 1.3 m/s. This is unlikely to have any significant effect on the Hakataramea River.

Conditions are proposed to ensure a chartered professional engineer's involvement throughout the process.

A building consent is also required for this structure and the design and structural detail together with the construction supervision will be dealt with in detail during the building consent process.

Ms Penman the section 42A reporter also noted that consent for the dam will be required under the Building Act 2004 as it is classified as a large dam under that Act (capable of holding more than 20,000 cubic metres and deeper than 3 metres). At the time of the hearing, the applicant had not lodged an application for building consent. Ms Penman said that the spillway design had been reviewed by Mr Rob Connell of CH Flood Modelling and Mr Tony Boyle (Environment Canterbury Hazards Analyst). They both concluded that the details of the spillway indicate that it is designed to an adequate size to pass the estimated probable maximum flood and that the downstream effects on nearest potentially affected property owners would be minor.

Use of water (CRC051766)

Ms Johnston said that the applicant is proposing to spray irrigate 275 ha of crops and pasture at any one time on a three day rotation. The area specified on the plan showing the area to be irrigated is much larger as throughout the year, water requirements will vary around the property, but only 275 ha will be irrigated at any one time. Ms Johnston said that providing this flexibility will enable the applicant to use the water efficiently. The property is covered with medium soils with an average water holding capacity of 82mm. On a three-day return period, 18.9 mm will be applied. This is less than 50 % of the average water holding capacity of the soil and is considered to be an efficient use of water. Ms Johnston calculated the proposed annual volume using WQN9 v2 in Policy 16 of the allocation Plan.

Ms Johnston confirmed that the diversion and the take will be metered as required by Policy 21 of the Allocation Plan.

Effects on water quality have been addressed in Part A of this decision.

Submissions

For CRC040988 (to dam water) 17 submissions were received. Of these, 11 were in opposition, 4 in support and 2 neither support nor oppose.

For CRC071825 (to construct a dam), 18 submissions were received. Of these, 12 were in opposition, 4 in support and 2 neither support nor oppose.

None of the submissions received relate directly to these applications.

For CRC040989 (to divert water) and CRC051766 (to use water) 19 submissions were received in total relating to these applications. Of these, 13 were in opposition, 4 in support and 2 neither support nor oppose.

Two of the submissions received relate directly to these applications.

Mr S Taylor is opposed to all new takes in the Hakataramea Valley on the basis the catchment is already over allocated. Ms Johnston said that these applications relate to taking water at times of higher flow than existing users, with the intention of protecting existing users.

Mr G Hay is in support of the applications stating that "*harvesting should be encouraged*".

Our consideration of this application

Land use permit

The proposed works in the bed of a river are discretionary activities

The actual and potential effects of the activity have been discussed in the assessment of the activity. We are satisfied that the effects of the proposed activities are acceptable and that those activities are also consistent with the relevant provisions of the RPS and the proposed NRRP

Water permits

The damming, diversion, taking and use of water are non-complying activities

As discussed in the assessment of effects section of this report, with the information provided to date, Ms Penman was not satisfied that an appropriate flow sharing regime has been determined to protect other water users reliability of supply, or that adverse effects of the use of water on water quality will be less than minor. We have considered both of these matters in Part A of this decision and fully detailed our views so it is not necessary to traverse these matters again here. We are satisfied that other water users will not be adversely affected and that with mitigation, effects on water quality will not be so significant as to warrant refusal of consent. The applicant has agreed to participate in a catchment wide study of the effects of land use intensification and has also agreed to implement a farm management program to minimise nutrient runoff.

Policy 8 promotes water harvesting as a means of capturing water for use when flows are low by allowing the taking, damming or diversion of water at flows that above the mean and in a manner that avoids or mitigates the loss of physical and ecological benefits of high flow events. As this activity proposes to divert the majority of its consented rate during times of high flow, we consider that this proposal is consistent with that policy.

We received considerable detail regarding the proposal to construct a 23 metre high dam in Mortens Stream to store water for irrigation. The design, structural integrity, and

construction of that dam are matters that must be addressed during the processing of the building permit for that dam. But of course we also need to know about the downstream effects should the dam fail. We were presented with adequate detail of the peak breach flow and the risk profile of damage from such a breach. We consider that a dam designed and built to the appropriate standard to meet the requirements of the Building Act will represent an acceptable risk given its location.

The applicant has agreed to instal a suitable fish screen on the diversion and both the diversion and the take from the dam will be metered.

The three applicants applying to harvest water have agreed that priority between them is not an issue, therefore, cumulative effects on other water harvesters are less than minor.

Again Ms Johnston made the point that the take also sits within the area defined as "*Downstream of Waitaki Dam, but Upstream of Black Point*" in Table 5 of the Allocation Plan and the allocation limit of 150 million m³/year for this area will be exceeded if all resource consents are granted but again we have already ruled on this matter in the Sunny Downs Ltd decision referred to in Part A of this decision.

Having regard to the assessments and conclusions just recorded it is our judgment that the applicant's proposal is not in conflict with any of the relevant matters in sections 6 ,7 and 8 of the Resource Management Act 1991 and accordingly granting consent will achieve the purpose of that Act.

Finally we turn to the matter of the term of consent. In Part A of this decision we considered this matter and in the case of new consents we ruled they were to be granted for 35 years. That ruling applies to these applications. .

Decision

For all the foregoing reasons these applications are granted on the terms and conditions set out in Volume 2 of this decision.

(7) Padkins Community Race

Kirkliston Stream is a tributary of the Hakataramea River, with approximately a 5km catchment area above the Hakataramea Water Supply Scheme and Padkins Creek Community Race diversions. The flow in the stream is ephemeral in the lower reaches, although winter inflows often provide sufficient surface flow to connect with the Hakataramea River. The stream supports populations of common and upland bullies, and galaxiids.

Application

CRC011989:is to divert water from Kirkliston Stream at a rate not exceeding 110 l/s with a volume not exceeding 66,528 cubic metres in any period of seven consecutive days. This application was lodged on 29 March 2001 more than six months prior to the expiry of resource consents WTK691210A - H and WTK691217A - B.

Besides the Hakataramea Water Supply Scheme and Padkins Creek Community Race diversions, there is only one other consented diversion from Kirkliston Stream, which is CRC980911 held by Montara Properties Limited for a maximum rate of diversion and abstraction of 25 l/s. This occurs approximately 800 metres upstream of the Hakataramea River confluence and two kilometres downstream of the Padkins Creek Community Race connection with Kirkliston Stream.

The Padkins Creek Community Race which connects to Padkins Stream (which is synonymous with the race itself), Farm Stream and Bellfield Stream, provides uninterrupted fish passage throughout the race system and augmenting flows in the associated water bodies.

Ms Johnston said that the Padkins Community Race has been in existence since 1886, with modification over time. Fourteen households rely on the water for domestic purposes, and it supplies stock water to approximately 20,000 animals.

Ms Johnston further explained that the Waitaki Catchment Commission consents originally referred to irrigation as a possible use of water, however, most of the properties supplied by the scheme now hold individual irrigation consents. The remaining properties do not irrigate at present, and therefore this part of the consent was not being exercised. She said that with the number of properties reliant on the scheme for domestic and stock water purposes, it is very valuable to the community for this reason and the applicant no longer wishes to pursue the use of water for irrigation purposes.

This is a permanent diversion (all year round), and only water that is needed for domestic and stock water purposes is used once the diversion has occurred. It is noted that historically, a number of discharge consents were held by the scheme, but now the

only discharge points that are relevant are actually branches in the race system, where the flow is split and a portion diverted down another arm of the race. The race system even appears on topographical maps further emphasising its place in the Valley and the length of time it has been in existence - it is now part of the natural landscape.

Submissions

Twenty four submissions were received. Of these, 11 were in opposition, 11 were in support and 2 neither support or oppose. There were nine submissions specific to this application.

Mr S Taylor and Mr G Hay were concerned about effects on existing users. As this is an application to replace an existing water permit, effects on existing users should not be any different from the status quo.

Mr G McCaw, PS Cleave, AM Cleave, TB Petrie, I McCaw and J Abelen all supported the replacement of the existing water permit.

Star Holdings Ltd also submitted on this application supporting the replacement of the permit for domestic and stock water but expressed concern about the impact the irrigation component could have on its own water permits downstream. As the irrigation component of this application is no longer being pursued, Star Holdings Ltd is now fully in support of the application.

Ms Johnston said that Mr Potts in his evidence on behalf of MEL was unable to match her calculations of the appropriate annual volume for this application.

Ms Johnston explained that in her evidence, the figure quoted of 534,515 cubic metres per year is incorrect. It is actually the figure for litres per day. This she said equates to an annual volume for stock water of 203,128 cubic metres per year.

Ms Johnston then commented on the evidence of Ms Pringle of Fish and Game who also raised several points in relation to this application. First Ms Johnston pointed out that this was a replacement for an existing diversion of 110 l/s from Kirkliston Stream and it was not an increase from 45 l/s as suggested by Ms Pringle.

Ms Johnston said that the diversion is able to be controlled. It is correct that there are two intakes. One allows a maximum of 50 l/s to be diverted, and the other is adjustable to control the rate up to that required. The diversion is able to be completely shut off, however, the first intake is always slightly open to maintain a base flow into the race system and further flow into the race is received from naturally occurring water courses along its path.

Ms Johnston then explained that the annual volume proposed is that which is "consumed". She said the reality is that approximately 10 l/s is always diverted, and

this is 315, 360 cubic metres per year. In total for stock water and domestic purposes the applicant is seeking 214, 808 cubic metres to be consumed, but it will be more than this as the flow increases up to 110 l/s to meet demand. Ms Pringle had suggested that the annual volume is equivalent to an instantaneous rate of 0.017 l/s (but we note here that this has to be an error and we think she really meant 17 l/s). However Ms Johnston has pointed out that with the previous annual volume, it was 17 l/s and with the revised annual volume it is now 7 l/s.

Ms Johnston said that it is correct, that there is uninterrupted fish passage throughout the system and the race augments flows in Padkins, Bellfield and Farm Streams. Therefore, Ms Pringle's suggestion that fish will become entrained in the system is incorrect. Ms Johnston believes it is better to have a continuous diversion to ensure that this does not happen.

The race has been in existence since the late 1800's and has sealed over time. At one stage, Ms Johnston said piping had been considered, but it is too expensive, and given that there are no significant losses from the system, is not necessary at this stage.

Star Holdings Ltd now owns many of the properties serviced by the race and as part of the mitigation package proposed by other applicants seeking to use water for irrigation (including Star Holdings), Ms Johnston said that there is an undertaking to exclude stock from having direct access to waterways.

Ms Johnston said that domestic use is within the allocation limit under Rule 6 of the Allocation Plan for Town and Community Supply activities. Stock water is defined as agricultural and horticultural use under Rule 6, and therefore, is in the allocation limit set for this activity. The allocation for this activity is considered to be over allocated, however, this is a renewal of an historic take the use is considered to be reflective of "reasonable and efficient" use. We also note here that we have ruled on the matter of exceeding Rule 6 Table 5 in our decision on the Sunny Downs Ltd application referred to in Part A of this decision. That ruling favours granting this consent

Ms Johnston told us that there are two other water users on Kirkliston Stream. These are the Hakataramea Water Supply Scheme and Montara Properties. Padkins Community Race and Hakataramea Water Supply Scheme work together with regard to sharing the flow as the two intakes are in close proximity to each other. Montara Properties are approximately 2km downstream of the applicant's take.

CRC011989 is within the "*all other streams*" category of Rule 2, Table 3 of the Allocation Plan and therefore no allocation limit is set for this stream. The scheme currently supplies 8 properties with stock water and 14 households with domestic water. Rule 2 (2) applies and the activity is exempt from a minimum flow.

Ms Johnson said that the Ministry of Health gives guidance on the requirements per household for domestic water. This is 2,000 litres per household per day. For 16

households, this equates to 32,000 litres per day, or 11,680 cubic metres per year. This is considered to be reasonable and reflective of actual use.

The proposed NRRP gives guidance on stock water requirements. It is very difficult to quantify stock water requirements as in any given year, the type of stock and numbers will ultimately change depending on climatic conditions (and thus the amount of feed available) and the demand for the stock type.

Ms Johnson said that since 2002, there has been a "shift" away from sheep and there are more beef cattle on the properties. Currently there are 23,130 ewes/hoggets, 8,625 beef cattle, and 2,200 deer on the properties supplied with stock water. Using those figures she calculated the annual volume for stock water is 534,515 cubic metres per year. The diversion will be metered as required by Policy 21 of the Allocation Plan.

Ms Johnston said that there is no fish screen on the diversion, and after receiving comments from Fish and Game, the reporting officer for this application is satisfied that this is not required because of the fisheries values and the naturalized nature of the race system.

Ms Johnston said that the water from the scheme supplies essential drinking and stock-water to 16 households and 8 properties and is of huge value to the community, and it is vital that the scheme continues as it has done since 1886. The renewal of this application will not have any adverse effect on the environment, as there is no change to the status quo.

Advice of the Section 42A Reporter

Ms Claire Penman to whom we have referred in other parts of this decision was the section 42A reporter in this case

She told us that Mr Alan Cleave lodged the application on behalf of Padkins Creek Community Race on 29 March 2001, having prepared the application himself. R J Hall Consulting Limited was employed by the applicant during 2003, but the applicant has since chosen to proceed without the assistance of a consultant.

This application is to replace a number of Waitaki Catchment Commission resource consents that expired on 1 October 2001.

The application to replace the above consents was lodged on 29 March 2001, more than six months before the expiry of the existing consents. The applicant was authorised to continue exercising those consents under section 124 of the Resource Management Act.

Application CRCO11989 does not cover the existing discharge permits, because some of the discharge points from the race are no longer active. In essence, those discharge

points still relevant are actually branches in the race system, where the flow is split and a proportion diverted down another arm of the race, or where the race then connects to another water body.

Sixteen households are reliant on domestic supply from this race system (2 new houses have been built since this application was initially lodged), and the stock water component is estimated by the applicant to cover 20,000 head of stock.

During 2003, when R J Hall Consulting Limited was representing the applicant, Bob Hall indicated there were plans to change the open race system to a piped system. This proposal has not been pursued by the applicant.

The Hakataramea Water Supply Scheme intake is approximately 100 metres upstream of the Padkins Creek Community Race intake, with a consented rate of abstraction from Kirkliston Stream of 12.6 l/s. This water is diverted into the head of the Padkins race and the water for the Hakataramea Water Supply Scheme is then piped from out of the race, with excess discharged back to Kirkliston Stream.

The Hakataramea Water Supply Scheme serves approximately 50 households in the mid to lower Hakataramea valley.

In 2006 Environment Canterbury installed a data logger on Kirkliston Stream, approximately 220 metres upstream of the Padkins Creek Community Race intake, to record natural stream flows ahead of all abstractions from the stream.

For stock drinking water and domestic use, Rule 2 (2) in the Allocation Plan applies and the activity is exempt from a minimum flow.

Rule 6 deals with annual allocation limits. For irrigation and stock water use, this activity is over the allocation limit for agricultural activities. For domestic use the activity is within the annual allocation limit for Town and Community activities. In summary, Ms Penman said the proposed activity is non-complying under Rule 16.

There is no fish screen on the existing intake and the applicant states that fish can travel through the system as there is a continuous flow through the races. In 2003, Graham Hughes of Central South Island Fish & Game was asked to inspect the intake of the community race. His comments, dated 25 January 2003 are as follows:

“Due to the high altitude and limited habitat the stream does not hold a significant sportfish population however the occasional small specimen is seen. . . .any fish which finds its way into the structures either swim back from where they originated.. .or they may be relocated into the adjacent Kirkliston Stream. The climatic conditions and geographical location make screening highly impractical and in my opinion for protection of sportfish unnecessary. .screening of the Padkins Creek Community Race is not required as a condition of the consent renewal.”

In terms of native fish, this divert application is unique in that the race system has naturalised substantially since it's commissioning and is now regarded as Padkins Stream. The race therefore has its own in-stream values and is likely to provide habitat for native species. As the diversion system is the main contributing flow to Padkins Stream, Ms Penman considered that any native species which enter the diversion at Kirkliston Stream will support the populations in Padkins Stream.

Given the comments by the applicant and Fish and Game with regard to fisheries values and the naturalised nature of the race system, Ms Penman was satisfied that there is no requirement for a fish screen at the point of diversion.

The applicant has proposed to install a measuring or recording device at the point of diversion in order to monitor how much water it will be taking and when restrictions should be imposed in order to minimise adverse effects on ecosystems and other water users.

Ms Penman was not satisfied that effects of the proposed activity on other water users in the Hakataramea Catchment would be minor.

Ms Penman believed that the applicant has not addressed the wider effects on community for the proposed stock water use in respect of Policy 12 and availability of water to other activities listed in Objective 2 with regards to annual allocations to activities. This policy specifies that any activity that falls outside of the allocation limits specified in Rule 6, Table 5 must demonstrate the effect of granting the consent on the entitlements to other activities over the timeframe of the consent. However we have already addressed this matter in the Sunny Downs Ltd decision..

In summary, Ms Penman was satisfied that the proposed activity provides for water to be used in a reasonable and efficient manner that is consistent with the guidelines provided in Policies 15 to 17 of the Allocation Plan. The applicant has not assessed the adverse effects of taking or using water on water quality, nor proposed any mitigation to ensure that effects on water quality are less than minor.

However, we understand that the water race will not be accessible to stock when fencing proposals by Star Holdings are carried out and we remind ourselves that irrigation is no longer proposed.

Our consideration of this application

The purpose of this application is to obtain a replacement consent for domestic and stock water supplies. The original proposal for irrigation water has been withdrawn.

It will be evident from what we have already recorded in both Parts of this decision about this particular application that there has been a good deal of confusion about the actual volumes being sought for the two activities and we have not been assisted in

trying to resolve this confusion by the several changes that have been made by Ms Johnston in the various statements of evidence she has provided.

In the end we have done our own analysis of all the material put before us and we have arrived at a total volume of 530,168 cubic metres per annum. This is made up of 214,808 cubic metres per annum for stock water and domestic water and 315,360 cubic metres per annum for the additional 10L/s that Ms Johnston said was necessary to maintain a continuous flow in the water race. The 214,808 cubic metres per annum is the combined volume for stock and domestic water that Ms Johnston provided in her evidence in reply and as far as we can tell is made up of 203,128 for stock water and 11,680 for domestic supply. We understand from her evidence that Ms Pringle for Fish and Game would accept these as being volumes reasonable in terms of annual usage.

We should note here that the 110L/s instantaneous flow is in fact a maximum rate and will not be used continuously. It is intended to meet peak demands.

Policy 19 in the Allocation Plan deals with efficiency of water distribution systems. The applicant states that the distribution system will be maintained in good working order and is long established and since naturalised providing some aquatic habitat. The applicant has investigated piping the supply but this would likely have adverse effects on the in-stream values of Padkins Stream which is in essence the naturalised community race. We consider the application is consistent with policy 19.

Having regard to the assessments and conclusion now recorded it is our judgment that the applicant's proposal is not in conflict with any of the relevant matters in sections 6 ,7 and 8 of the Resource Management Act 1991 and accordingly granting consent will achieve the purpose of that Act.

Finally we turn to the matter of the term of consent. In Part A of this decision we addressed this matter in some detail and ruled that for new applications (which would include replacements) the term would be for 35 years. That will be the case here.

Decision

For all the foregoing reasons this application is granted on the terms and conditions set out in Volume 2 of this decision..

DECISION

For all the reasons set out earlier in this decision, these applications are granted on the terms and conditions set out in Volume Two attached to this decision, these applications are granted for the following durations:

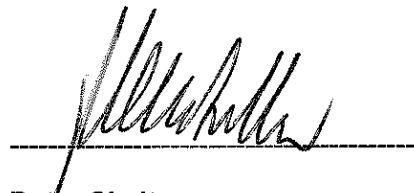
A duration of 35 years has been granted for consents:

- CRC050940, CRC050960 and CRC050957 R G and Z L Pringle
- CRC051767, CRC051768 and CRC051769 RPNZ Properties Ltd
- CRC042653, CRC040999, CRC981376 and CRC981377 Hakataramea Valley Station (1990) Limited
- CRC021258, CRC021585, CRC072576, CRC082460 Star Holdings Limited
- CRC051766, CRC040988, CRC040989 and CRC071825 N J Small
- CRC011989 Padkins Creek Community Race

The following consents have expiry dates of:

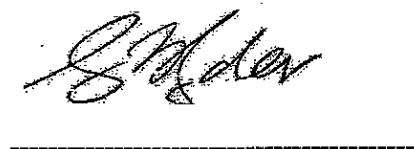
- CRC95464.2 Hakataramea Valley Station (1990) Limited 23 November 2029
- CRC021221.2 Star Holdings Limited 25th April 2037
- CRC951776.5 Star Holdings Limited 26th October 2030
- CRC071114 R W and M E Sutton 20th May 2033

Dated at Christchurch this day of July 2010



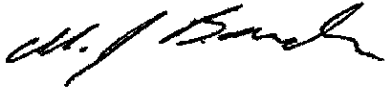
Peter Skelton

Commissioner and Chair



Gregory Ryder

Commissioner



Michael Bowden

Commissioner