Compiled Date	14/10/2020
File Number	20.21.17

LGOIMA

When releasing responses to previous LGOIMA requests, names and contact details of individual requestors will be withheld to protect their privacy.

Information requested by the media, lobby groups, public sector organisations and MPs will always be published, while information specific to an individual or their property will not generally be published.

Request from:	Federated Mountain Clubs
Information requested:	Griffin Creek and Amethyst Hydro applications
Response from:	Simon Bastion, Chief Executive

14 October 2020

Federated Mountain Clubs

Via Email:

Dear

Official information request for Hydro scheme Resource Consents.

I refer to your official information request dated 24 September 2020 for the application materials for Hydro scheme Resource consents.

The information you have requested is enclosed.

Some names and contact details have been redacted under section 7(2)(a) of LGOIMA to protect the privacy of natural persons, including that of deceased natural persons.

There is no charge in supplying this information to you.

If you wish to discuss this decision with us, please feel free to contact Mary-anne Bell, Senior Administration Assistant at LGOIMA@westlanddc.govt.nz, 03 756 9091.

Sincerely,

Simon Bastion | Chief Executive

SB/MB

Attachments:

Griffin Creek RC110019 #1, Griffin Creek RC110019 #2, Griffin Creek RC110019 #3, Griffin Creek RC110019 #4, Griffin Creek RC110019 #5, Griffin Creek RC110019 #6, Griffin Creek RC110019 #7, Griffin Creek RC110019 #8, Griffin Creek RC110019 #9, Griffin Creek RC110019 #10, Amethyst Hydro Limited RC110129.

RC File

HWM	MPR	MO	MAC	MF	MPA	CSO	ENG	Anna
								✓

Rhys Morgan
Griffin Creek Hydro Limited
[redacted]

RECEIVED
- 5 APR 2011
BY:

SCANNED

Anna Derks
Planning and Regulatory
Westland District Council
Private Bag 704
Hokitika

4 April 2011

Dear Anna

MODIFIED RESOURCE CONSENT APPLICATION GRIFFIN CREEK HYDRO LIMITED

Attached please find the modified Resource Consent Application with changes made as requested in your letter dated 17 March 2011.

Do we need to include the Fitzgerald's as an affected party? They have already been notified three times including the latest notification regarding the LINZ application which they were given until 31 March 2011 to raise any concerns about the proposed scheme with LINZ. From a phone call on 1 April 2011 I had with Rose Quirk at APL Property who act for LINZ no 'concerns' were received.

Several months ago I visited them and spoke to Patrick, their main concern is around people having access to the DOC Estate behind their property, because they had hunters on another part of their property spotlighting at night and who fired in the direction of their home. Whilst I have sympathy's with them, to stop a development because of the potential for somebody to illegally discharge a firearm is not right. The closest the track will be to their home is about 1.6k but there is already an existing DOC track which goes up beside Harrington Creek which only about .6k from their home, it does not make sense. Patrick said in his discussion with me he had no problems with the project he just did not want "people from the city and tourists being able to access the DOC Estate up behind his property". Because I need to construct and maintain an access track into the intake the public will have walking access up into what is a very beautiful valley which will now be able to be enjoyed by anyone who wishes to walk into the area. The Fitzpatrick's will not sign a consent, I have already tried that with the Regional Council who in the end decided they were not an affected party however the Fitzgerald's have not raised any concerns with the LINZ application.

The consents from DOC, LINZ will not be problem they have both consented to the Regional Council Resource Consent which practically identical. I need to contact New Zealand Transport Agency as they have verbally agreed to a crossing off SH73 but I have nothing in writing yet.

Can you please advise me what, if any further information that you may require, if it is necessary for me to come over to the Coast to meet with you in person and the amount of the Consent Application fee?

My email is [redacted] and cell phone [redacted]

Kind Regards

Rhys Morgan

Griffin Creek Hydro Ltd.

Manager: Planning and Regulatory
Westland District Council
36 Weld Street
Private Bag 704
HOKITIKA
☎ 03 756 9010
Fax: 03 756 9045

Resource Consent Application Form
and
Assessment of Environmental Effects
(Land Use Vegetation Clearance)

All actual and reasonable costs incurred by the Council will be charged to the applicant at the conclusion of the appeal period of the Council decision. A full record will be kept of all expenses incurred in processing applications.

Please note, further information can be given on additional pages if need be.

OFFICE USE ONLY

Date Received: _____
Fees Paid: _____
Receipt No: _____
Valuation No: _____

Resource Consent Application Form
(under the Resource Management Act 1991)

Full name/s of applicant/s ...Griffin Creek Hydro Ltd...

...

...

[Note: An application can be made in the name of an individual/ couple/partnership/business, etc.]

Applicant's Postal Address: ... [redacted] ...

[Note: This is the address Council will communicate with.]

Business ☎: [redacted]

Private ☎: [redacted]

Fax: [redacted]

Email: [redacted]

Property owner's name: (if not the applicant)

...Department of Conservation...

...Land Information N.Z...

Business ☎: ...

Private ☎: ...

Fax: ...

Email: ...

Location of activity and/or property address:

...Griffin Creek...

...Waiuhinihini...

At or about
Map Reference (if relevant)
NZMS 260: From K33 774 257
e.g. (1:50.000) to NZMS 260 K33 776-248

CT No.: ...

Legal description of site: ...see attached subdivision plan...

...

(From rates notice, valuation notice or Certificate of Title.)

Are you applying for any resource consents in addition to the vegetation clearance?

No ☐ Yes ☑ What is the consent for? Hydro Power Generation

Do you require additional resource consents from the West Coast Regional Council in relation to this proposal, e.g., for works in a riverbed or discharges (odour, dust)?

No ☐ Yes ☑ If yes, have these consents been applied for? No ☐ Yes ☑

What consent is being sought from the Regional Council? See attached copy

CHECKLIST OF DOCUMENTS

Have you remembered to?

✔

- ☐ Attach a completed Assessment of Environmental Effects
- ☐ Attach a copy of current Certificate of Title for the site
- ☐ Sketch the locality and access points *(if relevant)*
- ☐ Supply an aerial photograph *(if relevant)*
- ☐ Attach affected party approval forms *(if obtained)*
- ☐ Attach site plan showing total area of vegetation, proposed clearance area, all boundaries, water ways, proposed buffer zones and stands to be left.

I hereby certify that, to the best of my knowledge and belief, the information given in this application and the accompanying Assessment of Environmental Effects is true and correct. I undertake to pay all actual and reasonable application costs incurred by the Westland District Council.

Signature of applicant: ..... Date: 12.3.2011.

(or person authorised to sign on behalf of applicant)

Name:(in BLOCK CAPITALS) Richard MORGAN

Land Use Activities
Assessment of Environmental Effects

Please answer all questions fully. You can discuss your application with Council officers before completing this form or seek expert advice.

Please note: Your proposed activity could have a range of effects (both positive and negative) on the environment. Completing this form will help you to identify the effects.

'Effects on the environment' means: any effects on the surrounding area and includes possible effects on people, plants and animals.

Note: For area(s) containing habitat/indigenous species identified as being significant to the area or Ecological District, a separate assessment as to any significant natural area present (i.e. significant indigenous vegetation or habitat of indigenous fauna) may be required as part of an application. Please consult with Resource Consent staff.

For what purposes do you want to clear the vegetation?

1. To construct Power House.
2. To construct 3000 mm wide track to intake
3. To lay 450 mm dia pipe/penstock to intake.

What is the area of the proposed clearance?

Much of clearance for track and penstock is undergrowth only. no clearance of bush canopy Area to be cleared around Power House.

What is the overall area and type of vegetation cover on the property?

see DOC report

What are the surrounding land uses (eg housing, farmland etc)?

Farmland.

Has the proposed clearance area been previously modified by human activity? If Yes, How was it modified? When was it modified? And what proportion of the area has been modified?

No

What are the main vegetation species within the proposed clearance area?

pung Ferns.

Is the vegetation in the proposed clearance area similar to vegetation in surrounding areas? If No, What is the main are the main vegetation species in the surrounding area?

Yes

Does the proposed clearance area provide an important link to other vegetation in the vicinity?

No.

To what extent are weeds/exotic plants present in the proposed clearance area?

A small ammount of gorse in area adjacent to creek alongside Powerhouse site.

Does the proposed clearance area contain indigenous species/habitat that are unusual, rare or unique to that area? If Yes, what are they?

No (Not thought to be)

Is there a covenant or New Zealand statue on the proposed clearance area? If Yes, what are the details of this?

No

EFFECTS ON THE ENVIRONMENT (POSITIVE OR NEGATIVE)

Will your proposed activity have any social or economic effects on people, including yourself as applicant: (e.g., employment)?
Yes ☑ No ☐

Will your proposed activity have any effect on the surrounding landscape or the visual amenity (views)?
Yes ☐ No ☑

Will there be any impact on the privacy of neighbours?
Yes ☐ No ☑

Will the clearance have any effects on the drainage or water bodies in the area and surrounding areas?
Yes ☐ No ☑

Will buffer zones (show these on the site plan) be left for boundaries, riparian margins and aesthetic values?
Yes ☑ No ☐

Are the boundaries surveyed and/or identifiable?
Yes ☐ No ☑

Will there be increased traffic movements because of your proposal?
Yes ☑ No ☐

Will your proposed activity produce any noise that will be heard at the boundary of the site?
Yes ☐ No ☑

Will there be any generation of wastes by the proposed activity?
Yes ☐ No ☑

Will your proposal have any impact on indigenous wildlife (birds, animals, fish, etc)?
Yes ☐ No ☑

Will your proposed activity have any impact on any known historic or cultural/spiritual values in the area?
Yes ☐ No ☑

Will your proposed activity have any impact on the recreational use of the area?
Yes ☐ No ☑

Will your proposed activity include the use of hazardous substances (e.g. fuels, oils, chemicals)?
Yes ☐ No ☑

Will your proposed activity result in any discharges of hazardous substances to the environment? (e.g. fuel, paint, dust)

Yes ☐ No ☑

If you have ticked **yes** to any of the above questions then please describe the effects for any of the boxes you have ticked:

See attached.

Please describe what steps you propose to reduce or avoid the adverse effects on the environment you have identified:

See attached & DOC report

SCALE OF EFFECTS

Looking at all of the effects you have identified as a whole, what scale of effects will occur? *(tick one box)*

- ☑ Within the site only
- ☐ Restricted to the surrounding neighbours
- ☐ Affecting the whole settlement or town

Any comments about the overall nature of the effects?

SERVICING REQUIREMENTS

Will your proposal result in the need for new services (e.g. power, telecommunications, roads, water supply, etc)?

Yes ☑ No ☐

If yes, please describe what new services will be required:

1/ Will provide power for the West Coast.

2/ Will require telecommunications

3/ Will require access road to Power House from SH 73

NATURAL HAZARDS

Is your site subject to flooding or inundation?
Yes ☐ No ☑

Is your site subject to landslides or land instability?
Yes ☑ No ☐

Is your site subject to erosion?
Yes ☑ No ☐

Is your site subject to contamination from any source?
Yes ☐ No ☑

If you answered **yes** to any of the above questions, then what effects could the identified natural hazard/s have on your proposed activity?

See attached.

How do you propose to address the identified natural hazards?

See attached.

[Note: If your site is subject to natural hazard/s and you are unsure of how to proceed, then advice can be sought from a Chartered Professional Engineer (CPEng).]

CONSULTATION

You may have consulted other people or agencies about your proposal (eg Neighbours, DOC, Fish and Game NZ, Te Runanga o Makaawhio, Te Runanga o Ngati Waewae).

Please outline what consultation steps you have taken (if any):

Scheme publically notified by DOC for 2 months

What was the response?

see attached.

AFFECTED PARTIES

You will need to consider which people or agencies might be affected by your proposal. *(Consider the following as a guide and tick boxes below).*

- ☑ Neighbours (list details below) were notified for Regional Council RC & LINZ lease application - copy attached.
- ☑ Department of Conservation
- ☐ Local community
- ☑ New Zealand Transport Agency
- ☑ Agency or other group (name them): LINZ

[Also note that the Council rules on who is an affected party. You can seek the written approval of affected parties - please use the Council's Affected Party Approval form.]

For neighbours: Please list the names and addresses:

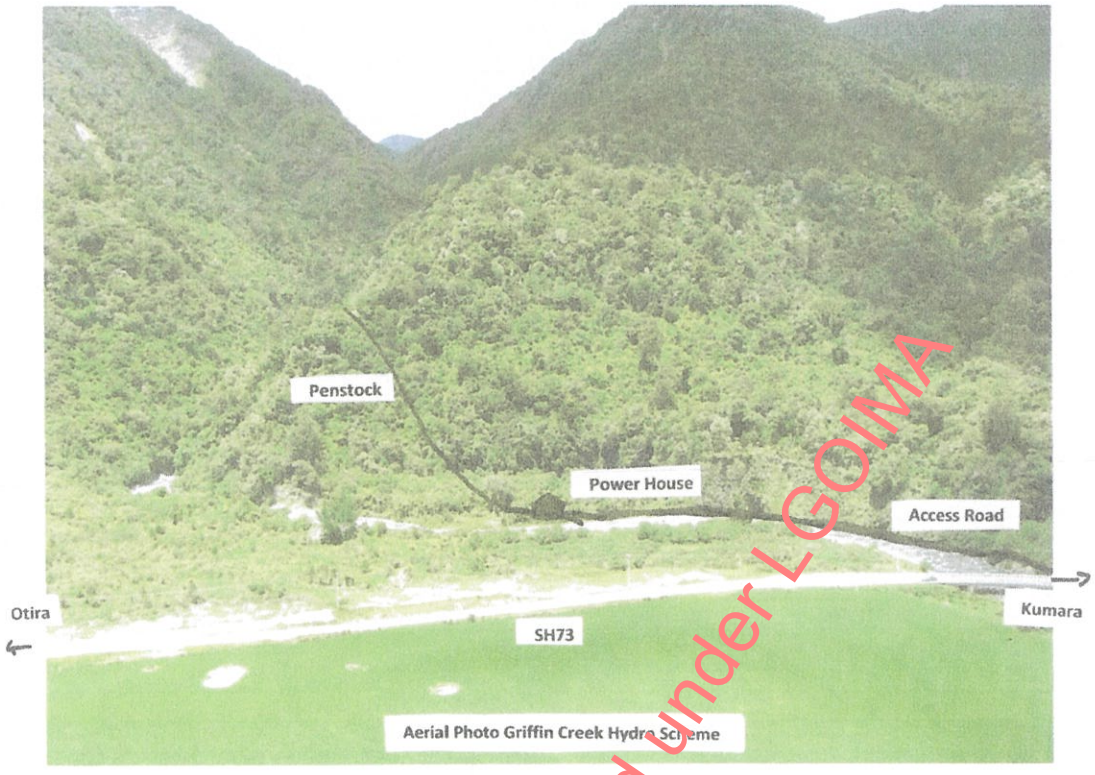
Patrick & Julie Fitzgerald

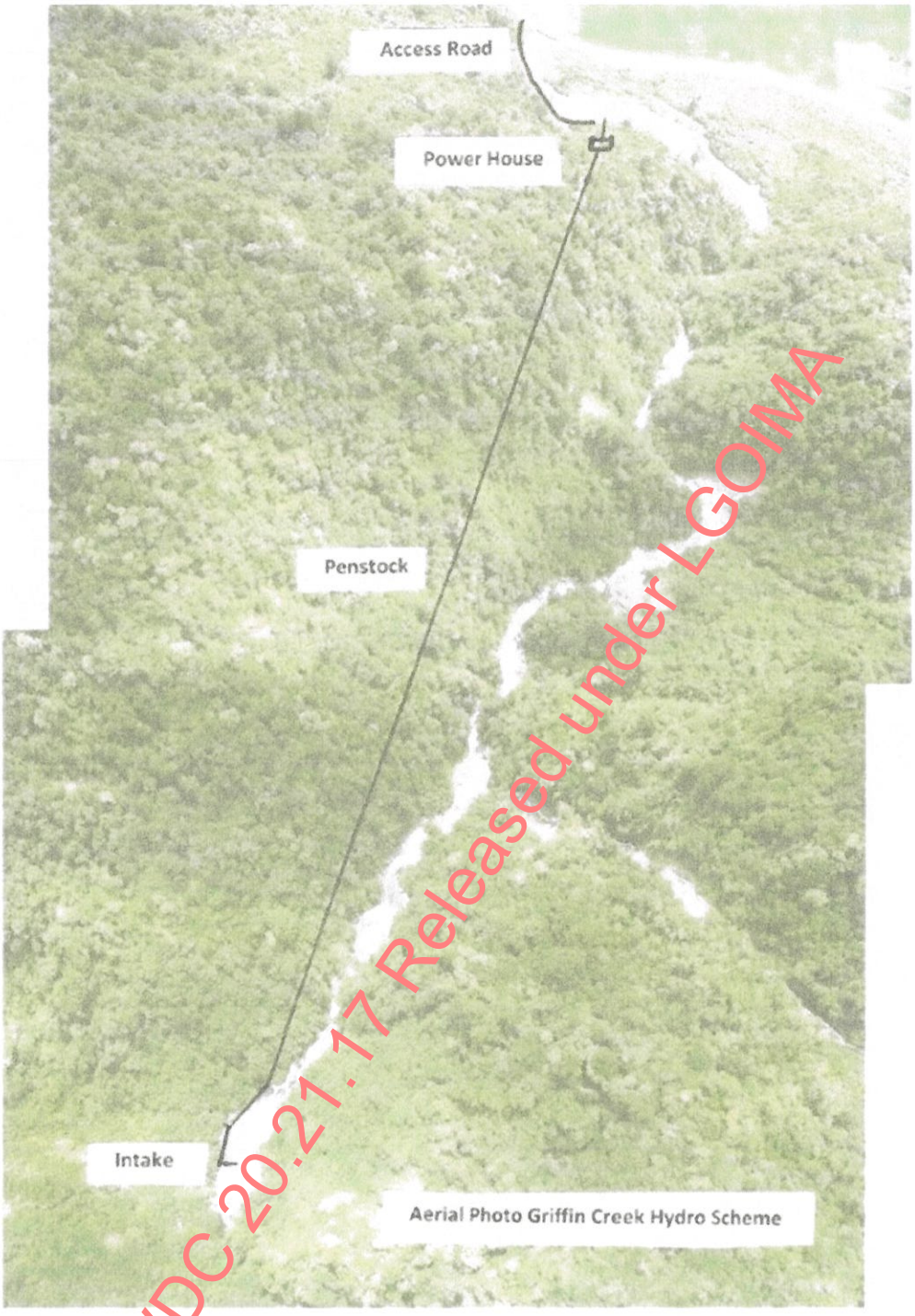
State Highway 73
P.O. Box 73
Kumara.

SUPPORTING INFORMATION – A CHECKLIST

You need to supply the following information to support your application *(tick relevant boxes)*:

- ☐ Resource consent application form
- ☐ Completed Assessment of Effects on the Environment form (this form)
- ☐ Copy of the current Certificate of Title for the site
- ☐ Sketch of locality and access points and/or aerial photo
- ☐ Affected party approval forms *(if obtained)*
- ☐ Attach site plan showing total area of vegetation, proposed clearance area, all boundaries, water ways, proposed buffer zones and stands to be left.





EFFECTS ON THE ENVIRONMENT (POSITIVE OR NEGATIVE)

Will proposed activity have any social or economic effects on people?

The proposed scheme is a "Run of River" type and therefore a dam is not required. The scheme would use a stretch of the creek which, because of the waterfalls is not suitable for recreation i.e. kayaking and fishing.
Run of River Hydro Schemes have the lowest impact on the environment of any type of power generation.
As demand increases there is an ever greater need for more generating capacity. Currently the West Coast is not "self sufficient" in power generation and as a result most of the required power is transmitted from the East Coast.
Should this transmission system ever be damaged in some way there will be a serious shortage of power on the Coast.
Small low impact schemes such as the one proposed at Griffin Creek will help increase the generation on the West Coast.
A reliable, plentiful supply of electric power is an essential requirement for a community and therefore this scheme and will have a direct positive impact on the social and economic lives of people living on the West Coast.

Will buffer zones be left for boundaries, riparian margins and aesthetic values?

See attached topographical map and aerial photos for location of intake, penstock and Power House. It is intended that once constructed these will not be able to be seen from SH73.
Furthermore the proposal will not be able to be seen from the property described as Lot 1 DP 2520, owned by Cooks Stud Farms Ltd on the opposite side of the State Highway 73.

NATURAL HAZARDS

Is your site subject to landsides or land instability?

From the intake the access track and penstock will follow the contour line along a steep sided valley until it reaches the ridge line. This valley is covered in virgin bush which includes a number of large mature trees.

Periods of prolonged heavy rain coupled with high winds can cause mature trees to fall. These fallen trees can over time, through gravity move down the slope which may then cause a landside.

Over a remarkably short time the bush starts to regenerates, this prevents any further erosion.

This process of mature trees falling and then regeneration occurring is part of the natural cycle of the bush.

The penstock will be made of polyethylene which means the pipe will be flexible can be laid around trees, this together with the access track being kept to a maximum width of 30cm will limit the clearing of the bush to just the undergrowth along the penstock and access track.

By limiting the clearing of the bush to just the undergrowth and by constructing the track to accepted standards for the treatment of run off the possibility of the penstock and track contributing to erosion should be minimal.

Because the track and penstock will be under the bush canopy 600 square metres of undergrowth will require removing i.e. .3m wide x 1000m for the track and .3m wide x 1000m for the penstock total 600 square metres and actual land clearing of approximately 400 square metres will be required for the 9x12 metre Power House. Therefore a total of 1000 square metres of indigenous vegetation will require to be removed.

Formation of Access Road

It is proposed that an access road from State Highway 73 to the Power House be constructed along the existing road reserve which is on the right hand side of the creek upstream from the Griffin Creek Bridge. An approximately 50 x 4 metre stretch of the proposed road is currently part of the stream bed (see photo).

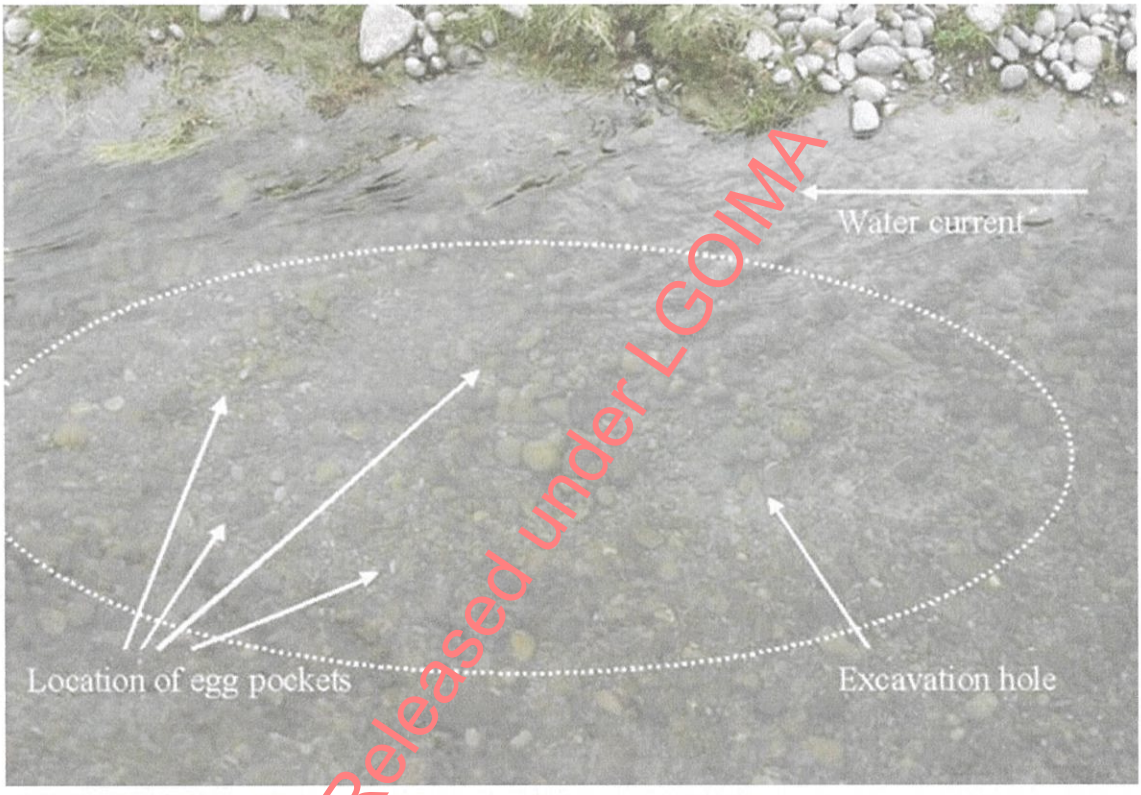
The effects of constructing the access road in this 50 x 4 metre stream bed are as follows.

Aquatic Habitats

Brown Trout

Fish and Game have recently released Brown Trout into the Taramakau which Griffin Creek is a tributary of. It is therefore possible that Brown Trout could spawn in the lower reaches of Griffin Creek however research indicates that the 50 x 4 metre stretch of water which is at the side of the creek is not suitable for spawning. This is because the water is not fast flowing and the material apart from the rocks is very fine, almost sandy and because the brown trout who spawn from May through to September prefer to deposit their eggs amongst gravels in fast flowing waters. Each female trout (or hen fish) deposits her eggs in a series of small excavations (called pockets) in the gravels. After fertilisation by an attendant male fish (or jack), the eggs are buried by stones dislodged immediately upstream (McDowall 1990). The distinctive gravel formation containing trout eggs is called a redd. See photo below.

Therefore it is considered that the formation of the access road along the stream bed will not have a detrimental effect on the Brown Trout.



Inanga

Inanga

Inanga spawn in streamside vegetation, even rank exotic grasses are suitable. Inanga are found in lowland slow-moving streams. They do not climb waterfalls

or swim up steep gradients. Therefore building an access road along the side of the creek will not have detrimental effect on Inanga because Griffin Creek is not considered to provide a suitable environment.

Giant Kokopu

Giant kokopu

The giant kokopu is a threatened native fish. It is secretive and loves having plenty of cover to hide under, preferring gently flowing overgrown streams, swampy lagoons and lake edges. It is considered Griffin Creek does not provide a suitable environment for Giant Kokopu.

Eel

Shortfin eels

Longfin eels can be found throughout New Zealand. They live mainly in rivers and inland lakes but can be found in almost all types of waters, usually well inland from the coast.

They are legendary climbers and have made their way well inland in most river systems, even those with natural barriers. Elvers (young eels) swimming up river will climb waterfalls and even dams by leaving the water and wriggling over damp areas. It is not unheard of for an eel to climb a waterfall of up to 20 metres.

It is quite conceivable that eels are present in Griffin Creek however it is considered the construction of an access road will not prevent eel from migrating up or down the creek .

Natural character of water body and margin

It is considered the proposed access road will have minimal effect because local shingle will be used in its construction and therefore will be unobtrusive. There has recently been a slip on a section of the cliff face which has been caused by flood water eroding the base of the cliff face. The construction of the road along the base of the cliff will help protect it from further erosion.

Clearance of indigenous vegetation

No clearing of indigenous vegetation is required.

Significant landscape areas, including natural features

The construction of the road along the base of the cliff will help protect it from further erosion, this will protect the natural features which can be seen from State Highway 73 as you cross over the Griffin Creek Bridge.

Habitat of indigenous fauna

No indigenous fauna are present in the area to be developed as a road.

Historic and archaeological sites

There are no known historic and archaeological sites in the area to be developed as a road.

Amenity Values

Because local shingle will be used to construct the access road it will blend into the natural surroundings and therefore will not degrade the natural or physical qualities and characteristics of the area.

Wilderness/remote experience recreation values

The construction of the access road will not affect the wilderness/remote experience recreational values.

CONSULTATION

Public Consultation

The public have now been notified twice in the Public Notices of the Grey Star and Hokitika Guardian. The latest notice notifying intention to lease land for the Power House from LINZ closed on 31 March 2011 and no concerns were received.

Department of Conservation

DOC have now granted the easement.

As part of the Easement process the scheme was publically notified for two months and attached is a copy of those submissions.

West Coast Regional Council

The West Coast Regional resource consent has now been approved (attached)

Land Information New Zealand

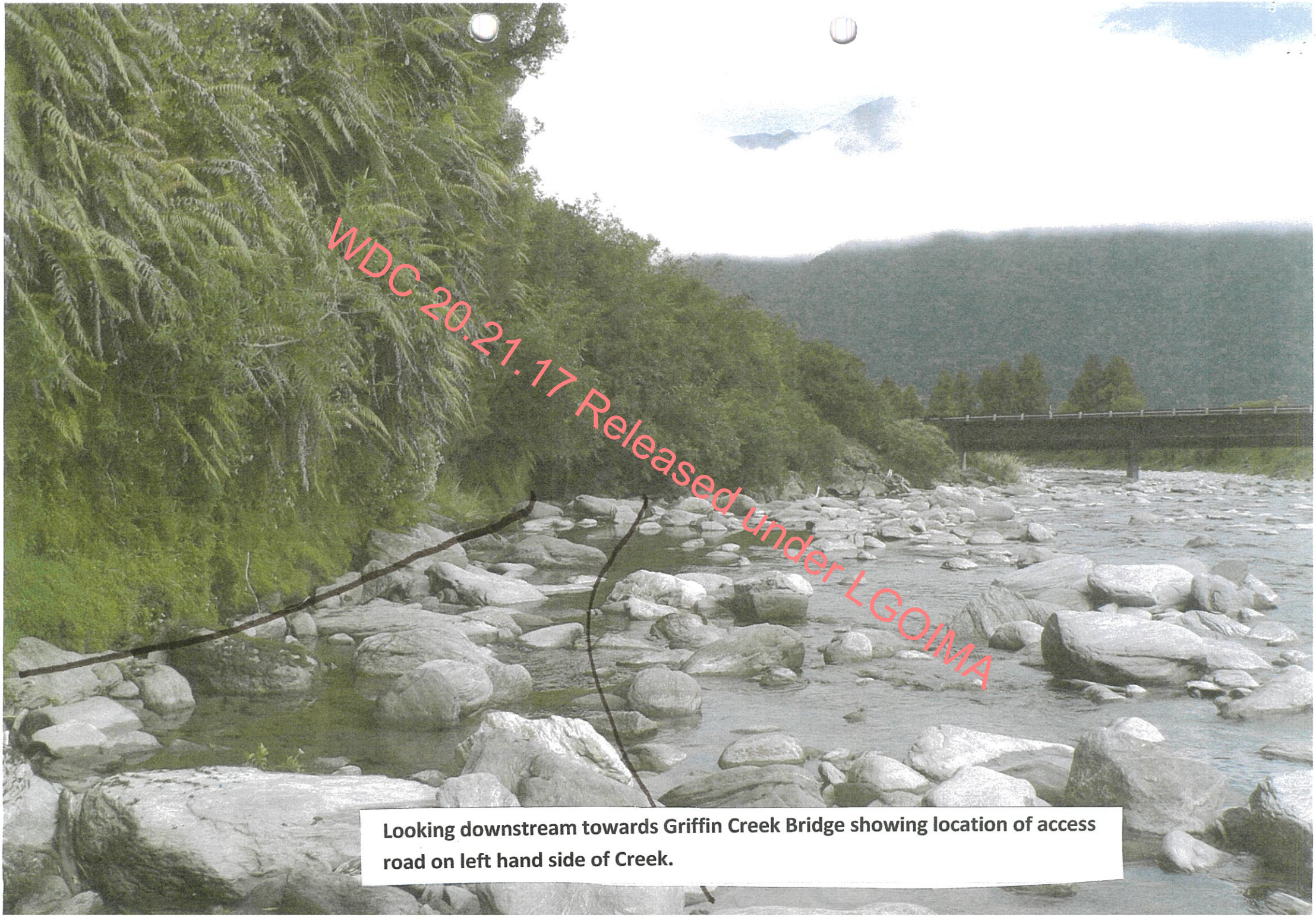
LINZ have advised West Coast Regional Council that they have no objections to the scheme.
An application to LINZ has been made to lease .5 ha of land (see photos) adjacent to Griffin Creek to locate the Power House.
The adjoining landowners P & J Fitzgerald were notified of this application together with Public Notices placed in the Grey Star and Hokitika Guardian Newspapers asking for anyone having concerns about the proposed scheme to submit them in writing by 31 March 2011. No concerns were received by that date and accordingly the lease will now be negotiated.

Transit New Zealand

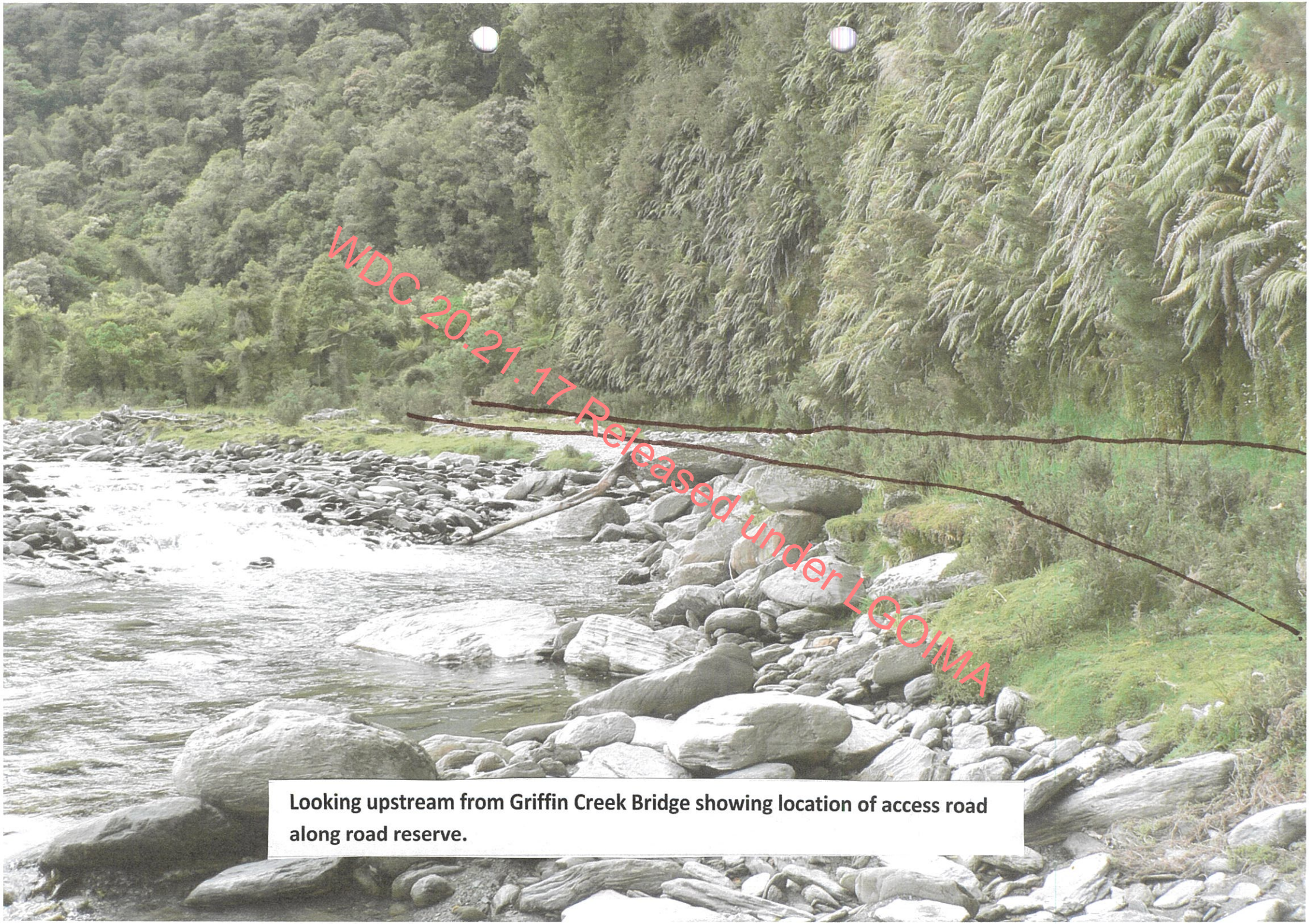
An application has been submitted to Transit New Zealand for approval to construct a crossing off State Highway 73.
It is understood that this application will be approved.

P & J Fitzgerald

The Fitzgerald's have already been notified three times including the latest notification regarding the LINZ application which they were given till the 31 March 2011 to raise any concerns about the proposed scheme with LINZ. From a phone call on 1 April 2011 I had with APL Property who act for LINZ no 'concerns' were received.



Looking downstream towards Griffin Creek Bridge showing location of access road on left hand side of Creek.



Looking upstream from Griffin Creek Bridge showing location of access road along road reserve.

Looking upstream from Griffin Creek Bridge showing location of access road along road reserve.

Rhys Morgan
Griffin Creek Hydro Limited
[redacted]
[redacted]

12 March 2011

Dear [redacted]

Notice in Connection with Lease Application LIPS 17582 – Griffin Creek Hydro Limited -

Notice is given that an Application LIPS 17582 has been made to Land Information New Zealand to lease .25 ha of land which is on the right hand bank of Griffin Creek approximately 250 metres upstream from the Griffin Creek Bridge SH 73 Wainihinihi for the purposes of building a Power House, penstock and tailrace.

Should you have any concerns with this application they should be made in writing by 28 March 2011 and addressed to:

Land Information New Zealand

c/o APL Property Limited

PO Box 1586

Queenstown

Should need any further information please contact me either by phone [redacted] or email [redacted]

Kind Regards

Rhys Morgan

APPROVAL BY A PERSON AFFECTED BY AN APPLICATION FOR A RESOURCE CONSENT

File Number RC10289 Consents Officer Nathan Guard

PART A. : To be completed by the person requesting approval:

APPLICANT: Griffin Ck Hydro Ltd

DESCRIPTION OF PROPOSED ACTIVITY Hydro scheme

LOCATION Griffin Creek

ACCOMPANYING DOCUMENTS (maps, plans, form numbers)

PART B : To be completed by the person giving approval:

NAME: B. van Stratum for Land Information New Zealand
(of person or organisation):

Phone: ~~03~~ C/- APL Property Q. Ltd Rose Quirk 03-442-7133

▪ *I am the owner ~~or occupier or have some other interest in the property at:~~*

Property Address Griffin Creek Riverbed. *Legal Description* Pt bed of Griffin Creek.

▪ ***I have read the information identified below detailing the proposed activity and its likely Effects. (Please verify by initialling space provided.)***

Completed WCRC application form Yes ☑ No/NA ☐

Other information (Note Titles, Plan Nos etc as appropriate):

▪ ***I understand that if I give my approval the Council can take no account of any effects that the proposal may have on me when considering the application.***

▪ ***I have the authority to give approval for the proposal to proceed as described in the above documents on behalf of myself, the above organisation and all owners of the property identified above, and hereby do so.***

DO NOT SIGN BEFORE READING THE NOTES ON THE BACK OF THIS SHEET

Signed B. van Stratum **Date** 2-2-2011

P.T.O.

Department of Conservation
Te Papa Atawhai

File: SAR 05 63 02
Your Ref: RC10269
Date: 31 January 2011

Consents & Compliance Manager
West Coast Regional Council
PO Box 66
Greymouth 7840

FAO Nathan Geard

Dear Nathan,

REQUEST FOR APPROVAL: S95 RMA
Griffin Creek Hydro Scheme – R Morgan

I have considered the above application for approval in terms of s95 RMA and advise that I grant my approval as an affected person.

My approval is granted on the basis that the proposal is as described, is for the purposes described, and will have the effects on the Department's interests as described in the copy of the application received on 21 January 2011.

This approval is limited to the likely adverse effects of the proposal on the Department's interests and should not be construed as approval to effects on the environment generally.

This approval is specific to the above application and is for the purposes of s95 RMA only. It is not indicative of any associated concession or other statutory approval which may be required from the Department in regard to this proposal.

This approval will be rendered null and void if the proposal to which it refers is changed between the date of this approval and its consideration by the consent authority without referral back to me for my further assessment.

Yours sincerely

Ian McClure
Area Manager

cc: Richard Morgan, 107 Puriri Street, Christchurch 8041

Hokitika Area Office
Private Bag 701, Sewell Street, Hokitika, New Zealand
Telephone 03-756 9100, Fax 03-756 9188

Rhys Morgan
[redacted]
Christchurch 8041

[redacted]

Westland

18 December 2010

Dear [redacted]

Copy of Griffin Creek Hydro Resource Consent Application

As discussed on the phone, please find a copy of the application to the West Coast Regional for Resource Consent for the Hydro Power Scheme at Griffin Creek together with an approval form should you wish to give your consent to the application. I have included a self addressed envelope for you to return the approval form.

As I understand it your main concern is around the issue of the access track to the intake increasing the ability of the public to access the area. In particular around irresponsible hunters who have caused problems in the past by carelessly discharging their firearms in the direction of your home.

For the most part the track will be on the other side of the ridge from your home and for hunters to get any nearer is very difficult because the bush is so thick. In a straight line the nearest point the track will be to your home is approximately 1.6 kilometres.

While the easement corridor will be 5 metres wide (which will include the penstock and access track), DOC is requiring the access track to be only 30 centimetres wide.

I also propose to install a gate near where the access road leaves SH73 to prevent stock from that come across the creek to graze from getting onto SH73. This gate would also deter the public from being in the area.

Security cameras will also be installed which would identify people coming into the area.

Hopefully the above information will allay any concerns you have. Should you wish I am more than happy to come over to discuss the application with you further.

Kind Regards

Rhys Morgan

[redacted]

23rd November 2010

The Conservator
Department of Conservation
Private Bag 701
Hokitika

Dear Sir/Madam

RE: Submission from [redacted] surrounding land owners to: Application for an easement by Griffen Creek Hydro Limited – File No: PAC 1 04 109

An article in the Greymouth Evening Star alerted us to submissions called for the above-mentioned application.

Objections:

1. The application states: *"The proposal would considerably improve access for hunters to the area"*

We do not want any more land opened up to hunters!!! We have had experience with the public in the Taipo Valley which we share with your Department. This has got to a point where we are not currently farming the Valley after some 60 + years of freehold and leasehold custodianship, primarily because of abuse from the public. Unfortunately there is an element of our community who have no respect for the private land owner or their property.

Your department's requirement that the public get a hunting permit and gain permission from the land owners is unfortunately a fantasy, it simply doesn't happen very often.

We have had cattle shot and butchered on a number of occasions, high powered rifles fired towards our home, vandalism, and trespass issues.

The last thing we need is to have the public being able to cross/or come into the back of our home via this proposed track, which at the moment, may seen unlikely. However, it is our intention to develop the neighbouring land being RS 5550 in the future, which we already have the necessary consents to do, so having a public road in the side would be a disaster for our farming operation and the lose of protection into the back of our family home.

We can not stress enough; **we do not want any more public access around our property.** Any track, vehicular or walk track, public or otherwise attracts people and some of those unfortunately do not respect others property and causes us a great deal of unnecessary stress.

2. It also states *"Access to the intake would be open to the public along the access track".*

Note, concerns as mentioned above.

3. *"It is a standard condition in concession documents that the Concessionaire must obtain all other necessary approvals and authorisations to conduct the activity."*

It is disappointing that Mr Morgan has not consulted with us as neighbours, if this is any indication of the way he works with his neighbours, we have grave concerns for his venture on our doorstep.

In summary:
We have 290ha of freehold property in the Taipo Valley where we have basically Succumb to public pressure and given in to the recreational user, (still paying rates and a grazing concession) we are not prepared to run the risk of these circumstances arising again from the proposed plan with public tracks and access.
Therefore we can not support to proposed application from Mr Morgan.

We have other issues with parking etc, which we will take up with other authorities.

Thank you for your consideration of our concerns/objections.

We await your response.

Yours faithfully

[redacted]

Department of Conservation
Te Papa Atawhai

Notified Concession Final Report to Decision Maker

Final Report to Decision Maker: Conservator, West Coast Tai Poutini Conservancy

Notified Application for a Concession Easement Notified Concession

Applicant: Griffin Creek Hydro Limited

Permission Record Number: WC-20844-OTH

File: PAC 11 04 109

1.0 Summary of proposal

Type of concession sought:
Notified Concession Easement Notified

Term sought:
30 years

Description of the proposed activity:
Hydro-electric power scheme at Griffin Creek, including intake structures and 1.5km pipeline, and excluding power station, outlet structures and access road from the State Highway.

Description of locations where activity is proposed:
Griffin Creek. Conservation land: Wanganui/Otira Catchment.

This report seeks your final approval, following public notification, on a concession application from Griffin Creek Hydro Limited for the construction and operation of a hydro-electric power scheme on Griffin Creek. The application was submitted in January 2006 with a number of variations submitted during the processing period. The applications can be found on file PAC 11 04 109.

The final version of the application was processed pursuant to Part IIIB of the Conservation Act and the Minister's intention to grant the concession was notified for public comment pursuant to s17T(4) of the Conservation Act 1987 on 15th September 2010.

The "First Determination" report details the analysis that led to the decision to grant a concession subject to the outcome of public notification (found on file PAC 11 040109). Public submissions on the intended granting of the concession closed on 25th November 2010. Three submissions were received. No submitters requested to be heard.

This "final" report is prepared pursuant to s17S(4)(a) of the Conservation Act 1987.

2.0 Summary of Submissions and Recommendations as to the Extent to Which they should be Allowed, or Accepted – Section 49(2)(d) of the Conservation Act 1987

Analysis of submissions
Full copies of the three written submissions can be found on file.

Submission 1
One submission was received from the landowner whose land is adjacent to the public conservation land where the hydro-power scheme is proposed. The location of their own land relative to the proposed concession and public conservation land is found on file.

The submitter was concerned that the concession would improve the access by hunters to the general area and specifically, the submitter does not want improved public access to the public conservation land that is adjacent to their own land. They state that hunters access their land without permission, cause damage to their property and death of livestock and fire high-powered weapons towards their home. They state that few hunters requested permission before entering their land, either directly from the State Highway or via public conservation land.

Department's response
The proposed track is a foot track alongside the pipeline. The track would not be constructed but develop a footprint through foot traffic only. Beyond the head of the proposed easement, the land becomes very steep. It would be unlikely trampers and hunters would use the foot track alongside the pipeline to gain access to the higher country, particularly given that the Department maintains a much better standard foot track up into the tops in the area via Harrington Creek (to Griffin Creek Hut).

Access to the lower land (which is not public conservation land) would be made easier by the applicant's proposal to build a vehicle track from the State Highway to the nearby site for the power station. As this is not public conservation land, increased access due to the presence of the road (attraction of the visible power station buildings), is not a consideration for the concessions process.

Submission 2
One submission was received from a concerned resident of Greymouth. He noted that in 2000 he had heard kiwi calling up under Mt. McInerney (a mountain directly on the true right of the Griffin Creek catchment) and a pair of blue ducks were seen in the valley. His concern was "the impact any interference of Griffin Creek would have on these birds".

The submitter also described an event in January 1993 when Griffin Creek was dammed by a land slip. When the dam broke, a wall of water and debris ran down Griffin Creek and washed across the State Highway, causing injury to one person.

Department's response
These fauna records are not directly in the area applied for. The record of blue duck being in the valley section of the catchment above the steep section where the easement would be located is noted in the First Determination Report.

The mostly likely species of kiwi to be found in the area is the great spotted kiwi. They favour mountain forest areas and therefore may be present near to the proposed concession area. The Department does not hold any recent records of great spotted kiwi near to Griffin Creek as reported by the submitter, though the area would have held great spotted kiwi in historical times. The nearest documented records are at Kelly Creek, near to the Otira township and at the confluence of the Otira and Taramakau Rivers. Relative to the Griffin Creek, these sites are beyond the large catchment of the Taipo River. However, the record provided by the submitter is of interest to the Department.

Great spotted kiwis are territorial and sensitive to abandoning eggs and young chicks when disturbed. Based on the timing of breeding of the species in the Paparoa Ranges area, in the Griffin Creek area, the breeding season is likely to occur between August and February. Outside of the breeding season, any great spotted kiwi present within the proposed concession area would not be effected by the construction or operation of the hydro scheme. Roroa are known to be able to climb over obstacles up to 45 cm high (i.e. the height of the pipeline in the headrace section), so the pipeline would not block the travel of roroa through the proposed concession area.

There is a very low likelihood that great spotted kiwis would be breeding within the proposed concession area and therefore it is recommended that no specific conditions be included in the easement document for great spotted kiwi.

The proposed hydro scheme does not involve damming or holding back any water. The construction methods for intake and pipeline structures would not require tree greater than 20 diameter at breast height to be removed and the structures would be laid over-ground. There would be very limited disturbance to the vegetation, soil and rocks. The intake structure would also be closed by the automatic control system if the pipeline was damaged, thus reducing the potential for water leaking out of the pipeline to trigger tree or rock fall. A requirement of the proposed concession is that a construction and operation plan prepared by a suitably qualified person must be approved by the Hokitika Area Manager. An additional condition indicates that the Department of Conservation

331 800 E

332 400 E

713 400 N

712 800 N

N

Griffin Creek

No 73 STATE HIGHWAY over 20

(Formed)

105.73
93° 50' 50"

199.48
63° 39' 30"
Adpt S.O. 1734

Adpt
101° 46' 30"
47.10

231.54
113° 22' 10"

113° 22' 10"
10.00

S. O.

46.65
203° 08' 20"

38.38
114° 08' 20"

47.35
28° 19' 50"

Pt R.1397
Gravel
Gaz. 1912 p.1725

590.8

203° 50' 10"
130° 50' 10"

Bridge

86.10
131° 51' 25"
Adpt S.O. 1734

69.62
131° 59' 14"

Over 20

area where land will cleared.

power station

penstock.

Harrington Creek

PUBLIC ROAD (Unformed)

Adpt S.O. 1734

R.S. 5550
45·9500 ha
S.O. 1734
S.O. 5908
Pt R.S. 3056

Adpt S.O. 1734
243° 09' 40"
900.93

20.12

Pt R.1676
State Forest
Gaz. 1935 p.1020

WDC 20.2.17 Released under LGOIMA

Approvals.

Note :

1. Roads are legal by-:
   - (A) Gaz. 1976 p 421
   - (B) Gaz. 1975 p. 1618
   - (C) Gaz. 1975 p. 2833
   - (D) Gaz. 1975 p. 1803
2. All other roads shown are legal by Sec. 110a P.W. Act 1928.

Datum Old Cadastral
Hokitika Circuit Coordinates
Origin 'C' Kowhitirangi
700 000 m N 300 000 m E
Drawn By: PJWeb

Total Area 45·9500 ha

Comprised in C.T. 1C/1098 (All)

I, ... of .....
Registered Surveyor and holder of an annual practising certificate hereby certify that this plan has been made from Surveys executed by me or under my direction; that both plan and Survey are correct and have been made in accordance with the regulations under the Surveyors Act 1966
Dated at ..... this ..... day of ..... 19 ..... Signature

Field Book ..... p. ..... Traverse Book ..... p.

Reference Plans S.O's 1734, 5908, 652, 1439

Examined ~~B.E.~~ ..... Correct B.E.T.

Approved as to ~~Survey~~ Compilation
O.R. Amor
9.9.76 Chief Surveyor

~~Deposited~~ this ..... day of ..... 19 .....
District Land ~~Registrar~~

File R.L. 289
Received/Lodged 9.9.76
Instructions Folio 79

S09710

LAND DISTRICT WESTLAND
SURVEY BLK.& DIST. VII Turiwhate
NZMS 177 SHEET No. S51 & S58

R.S. 5550

LOCAL AUTHORITY Westland County
~~Surveyed by~~ Compiled in Survey Office
Scale 1:4000 Date August 1976

Printed by Litchfield Instruments Ltd. Wellington, New Zealand.
I.F. Stirling, Surveyor General, Department of Lands and Survey, Wellington.
LBS FORM M 93

3

Concession Number: WC-20844-OTH
File Number: PAC 11 04 109

First Determination Report to the Community Relations Manager West Coast *Tai Poutini* Conservancy **(Approval in Principle)**

Application for an easement by Griffin Creek Hydro Limited

26th August 2010

Department of Conservation
Te Papa Atawhai

1.0 INTRODUCTION

1.1 The Application

The Department has received an application from Griffin Creek Hydro Limited to construct and operate a small hydropower station at Griffin Creek.

The applicant submitted an application for an easement in January 2006. Since this time, a number of discussions have been held between the Department and the applicant regarding the specific details of the proposed activities.

In September 2007, a new application was submitted to the Department. This version was circulated for comment to Department's Hokitika Area Office and Technical Services and the relevant iwi groups. Further questions were raised by the reviewers and a revised application was received in January 2009. Further information and some revised details were submitted in April, May and June 2010.

The Hokitika Area Office, Technical Services (Freshwater Ecologist), Ngai Tahu, Te Runanga o Ngati Waewae and the West Coast *Tai Poutini* Conservation Board provided further comment to the activities detailed in the 2009 application.

A copy of the three applications and additional details provided can be found on file PAC 11 04 109.

The purpose of this report is to consider the application in accordance with the relevant legislation and recommend whether the application should be approved in principle or declined.

1.2 The Law

Part IIIB of the Conservation Act 1987 sets out the provisions dealing with concessions. These include:

- *Section 17S – 'Contents of the application'*. This is discussed in section 2 of this report.
- *Section 17T- 'Process for a complete application'*. This requires the Minister to decline an application within 20 working days of it being deemed complete; if the *"...application does not comply or is inconsistent with the provisions of this Act or any other relevant conservation management strategy or plan..."*. It is discussed in section 2.8 of the report.
- *Section 17U - 'Matters to be considered by the Minister'* - This includes but is not limited to the consideration of the effects of the proposal (s17U(1)(b)); measures that can be taken to avoid remedy or mitigate any adverse effects of the activity (s17U(1)(c)); and the purpose for which the land is held under the relevant legislation (s17U(3)). These matters are discussed more comprehensively in section 4 of this report.
- *Section 17W - 'Relationship between concessions and conservation management strategies and plans'*. This is discussed in section 5 of this report.

2.0 CONTENTS OF THE APPLICATION - Section 17S

Under section 17S of the Conservation Act 1987, the applicant is required to outline details relating to the application. These are outlined in this section.

2.1 Description of the Activity - Section 17S(1)(a)

The proposed easement is for the right to construct and operate a 1.3 megawatt (MW) run of river small hydropower scheme on public conservation land using water from Griffin Creek, which feeds into the Taramakau River, in order to supply electricity to the national grid. Construction would include the building of a 1.5km access track, a penstock and data cable to the intake point and several intake structures (Fig. 1). The lower 120m of the access track and penstock, and powerhouse and outfall are located on LINZ land.

2.2 Status of Area under Application - Section 17S(1)(b)

The proposed activity would be located on stewardship land managed under section 25 of the Conservation Act 1987 being Wanganui/Otira Catchment Conservation Area. Discussion regarding the consistency of this application with the purpose for which the land is held is discussed in Section 4.9 of this report.

2.3 Effects of the Proposed Activities - Section 17S(1)(c)

The applicant has identified a number of effects. These and the appropriate avoidance and mitigation measures are discussed in section 4.2 of this report.

2.4 Proposed Type of Concession and Duration - Section 17S(1)(d) & (e)

Type of concession

The applicant has applied for an easement to undertake the proposed activity. Griffin Creek Hydro Limited initially also requested exclusive use of the site during the construction stage due to the risks to people injuring themselves on partially completed structures, i.e. settling tanks. However, the applicant indicated by email on 1st July 2010 that during the construction and operation phases that exclusive use of the site was not required.

Term

An easement for a term of 33 years has been applied for. The reason given for this term is *"This is a permanent structure with total development costs of approximately $3 million. A period of 33 years would be needed by finance institutes for the company to raise the necessary capital for the development. A 33 years term will be the same as the lease of the crown [LINZ] land where the power station will be located."* After the application was submitted, the applicant altered the term to 30 years, and this is discussed in section 4.3 of this report.

Discussion

Relevant to the consideration of the appropriate form of concession is section 17Q(2) of the Conservation Act 1987 which states; *"The Minister shall not grant an easement in respect of an activity if a lease, licence, or permit may be granted in respect of the activity and the Minister considers that a lease, licence or permit is appropriate in that case."*

The proposed structures, conveying of water and foot access to the site can be covered together by way of an easement.

2.5 Relevant Information relating To the Applicant's Ability to carry Out the Activity - Section 17S(1)(f)

The applicant has advised that he would engage the required companies with the necessary expertise and experience to construct and operate this venture. A firm in Christchurch that specialises in designing hydropower schemes would complete the final design of the proposed scheme.

Comment

This application is the first hydropower project undertaken by the applicant. It is considered that with advice from various organisations and authorities, and the more recent involvement of structural engineering consultants (Xona Ltd., Christchurch), the applicant would be capable of carrying out the activity.

2.6 Process for a Complete Application - Section 17T(2)

This section requires the Minister to decline a complete application within 20 working days of its receipt if the *"...application does not comply or is inconsistent with the provisions of this Act or any other relevant conservation management strategy or plan..."*

Comment

This application is considered to be complete. It appears to comply with and be consistent with the provisions of the Conservation Act 1987 and the relevant conservation management strategy or plan.

3.0 NATURAL, CULTURAL, RECREATIONAL & HISTORIC VALUES

3.1 On Land Applied For

History of the Proposed Activity
There has been no other hydropower activity in this valley. Various larger hydropower schemes operate within the West Coast *Tai Poutini* Conservancy.

Landform
Griffin Creek is a small mountain stream with a total catchment of 15 km^2 and has a stream length of approximately 11 km. The upper catchment of Griffin Creek is a large, wide valley but the lower reach is enclosed in a steep sided gorge, with a number of waterfalls and two deep ravines. The width of Griffin Creek at the intake is 8 m. The proposed hydropower scheme would remove water from a site approximately 7 km from the confluence of the Taramakau River and return the water into Griffin Creek 1.5 km further downstream.

The steep sided gorge is on the leading edge of the band of ultramafic schist immediately behind the Alpine Fault. The lowest part of the proposed pipeline crosses the Alpine Fault. Soils are well drained and derive from tertiary mudstones, sandstones, greywacke and granite alluvium.

The applicant provided a report in his application from a civil engineering company that commented on the technical feasibility of constructing a hydropower scheme at the site. This report stated that on the western side of the valley, where the access track and penstock would be located, there are several relatively old (i.e. 50 – 100 years) and inactive small and large landslips, as well as a number of tree falls. On the eastern slope of the valley, outside of the application site, is a relatively new landslide.

The report stated that the proposed hydropower scheme was technically feasible and that the potential risks to the feasibility of the scheme were tree falls (high), landslips (moderate) and landslides (low to very low). The consultant believed that there was an extremely low risk to the feasibility of the proposed scheme from creek embankment collapse but noted that there was on-going erosion of the creek bank and bed. The conclusion of the consultant was that the risks to the feasibility of the scheme associated with the landform would more likely be associated with the operation phase (i.e. maintenance) than during the construction phase.

Flora
The vegetation in this area, as for other western valleys, is indigenous forest. The dense podocarp forest includes matai, miro, rimu and kahikatea on the lower slopes and southern rata, kamahi and mountain totara on higher slopes. Diverse fern species are also present.

Fauna
Common native forest birds inhabit the forest in this area, including tui, bellbird, tomtit, rifleman, fantail, kereru, grey warbler, brown creepers and silver eye. Whio/blue duck inhabit the upper reaches of Griffin Creek and it is suspected (i.e. they have not been sighted at this site) that they do not use the area of the intake due to the waterfalls in the area. Deer, goats and pigs may be found in the application area.

Freshwater
The applicant estimates that the mean annual flow and the median annual flow for Griffin Creek is 3.5m^3/s (3,500 litres per second) and 2.3m^3/s, respectively, and the mean annual low flow is 0.8m^3/s (800 litres per second). [Information supplied by email April 6th 2009, which is different from the mean annual flow of 2.5m^3/s stated in the application submitted in January 2009].

This is based on flow data for the nearby Taipo River that has a NIWA river gauge and downscaling the Taipo data proportionally by the smaller catchment size of Griffin Creek. The mean and median annual flow rates are somewhat different, which indicates that the system is flashy, i.e. there can be large occasional floods.

Due to the steepness of the terrain, elevation, distance inland and high rainfall, the fish biodiversity and biomass is likely to be very low. There are also a number of waterfalls in Griffin Creek, some being 40m high, which may prevent upstream travel by fish.

Although some fish are recorded in the higher sections of mountainous catchments elsewhere and considerable distances from the sea, it is not likely that there is a high diversity and abundance of fish in the section of Griffin Creek where the intake is proposed to be located. This is due to the steep nature of the creek and the presence of waterfalls that may prevent the passage of fish. However, fish may be present in the lower reaches near to the power house.

Historic
The area is not known to have any historical mining features or to be of cultural significance. Mining for serpentine occurred around the top of Mount Griffin some 4.5km to the south-west of the application site during 1912 to 1914. Griffin Creek valley is unlikely to have been used by early Maori travellers as a "greenstone trail" or a pass because the valley is perpendicular to the main divide. It is more likely that early travellers would have used either Browning Pass 20km to the south or Arthurs Pass to the north.

The area falls under the Ngai Tahu Pounamu Vesting Act, which controls the management and protection of the pounamu. Griffin Creek is part of the Kaiti Waewae Waahi Pounamu. Occasionally erosion, land movement and development can unearth raw pounamu and serpentine and pounamu artefacts and it is illegal to remove or interfere in any way with artefacts or the site where it was found. Any raw pounamu found at Griffin Creek is the property of Te Runanga o Ngai Tahu and should be notified to the Pounamu Management Officer immediately.

Recreation
It is thought that very few trampers, hunters or other recreational users use the section of Griffin Creek where the hydropower scheme is proposed to be installed. This is due to the steepness of the valley and the presence of waterfalls and ravines. Access to the backcountry area, routes and huts in the region above the proposed intake site is easier via neighbouring valleys to the east and west. If there are people accessing the site, then the access track may make access to the point of the intake more straightforward.

3.2 On Adjoining Land

Recreation
Routes exist heading south into the mountains from SH73 via neighbouring valleys to the west (Harrington Creek) and to the east (Taipo River). The former goes over the ridgeline and reaches Griffin Creek around 1.5km further upstream than the proposed intake site. Griffin Creek Hut, Rocky Creek Hut and Scottys Biv are south of the application site and accessed via the established routes described above.

Other
The powerhouse and the start of the access track would be set back 200m from SH 73.

4.0 MATTERS FOR CONSIDERATION

Section 17U(1) requires the Minister to have regard to the following matters:

4.1 Nature of Activity - Section 17U(1)(a)

Introduction
Nationally, hydropower schemes are categorised by their level of energy production. Small hydropower schemes are generally classified into three size bands: micro-hydro is up to 10kW; mini-hydro is between 10 and 1,000kW; and small-hydro is between 1,000kW and 10MW. These may provide enough electricity for one house, a small village or a small town, respectively.

The proposal is to construct and operate a small-hydropower scheme on a section of Griffin Creek, which feeds into the Taramakau River about 40km upstream of Kumara Junction. It is proposed that

construction would be in two stages over a two year period with Stage 1 being a 300kW generator and Stage 2 being a 1,000kW generator.

The intake point is proposed to be located 1.5km above the power house and outfall (Fig. 2). A 0.3m wide walking access track would be established to the intake point. Some of the intake structures would be located in the streambed and some would be sited on the side of the creek. The hydropower operating system would monitor the flow rate at the intake site via cameras and a flow gauge, and control gates on the intake structures would be controlled remotely via a data cable, which would be installed along the line of the penstock.

The lower 120m of the access track and penstock cross over into LINZ land (Fig. 3). The penstock pipeline would enter a powerhouse near to Griffin Creek bridge on SH 73. The water would then be discharged from the power house back into Griffin Creek via a tailrace and outfall. The stream at this point is not on public conservation land. Thus, the last 120 m of the access track and penstock as well as the powerhouse and outfall have not been considered in the report.

Vehicle access to the power house would be on an access road over LINZ land a legal road. This access road would be the start of the access track open to the public.

Water take
Once the scheme has been fully developed, the applicant proposes to divert $1.2m^3/s$ from the stream to the hydropower scheme (48% of the mean annual flow). The 300kW turbine would require a flow of at least $0.3m^3/s$ and the 1000kW turbine would require $0.9m^3/s$. The two turbines can be shut down independently as the flow in the creek falls.

To determine the actual flow rates on Griffin Creek, a NIWA approved flow gauge would be installed just below the intake site (but above the settling take outlet/weir outlet) once the hydropower scheme is operational. However, until the actual flow rates are known for Griffin Creek, the applicant proposes to turn off the larger turbine when the residual flow drops below $0.9m^3/s$ and the flow below the intake would increase to just under $1.8m^3/s$. The smaller turbine would continue to operate. If the flow continued to decrease, the smaller turbine would shut down when the residual flow would be $0.6m^3/s$.

Access track
A 0.3m wide track would be established from the powerhouse up to the intake site to enable foot access to the upper section of the penstock, the headrace and the intake structures. The track would be located within the 3m wide easement corridor

The track route would be marked and the surface would not be hardened, except where, with subsequent use, becomes very soft and muddy. This type of track is the equivalent of a Standards New Zealand backcountry adventurer track (SNZ HB 8630: 2004). The route would be chosen to avoid the need to cut down any trees larger than 20cm diameter at breast height (dbh) and some trimming may be required during the operational phase.

Intake and settling tank
The intake structures would be spread over about 20m of the stream (Fig. 4). The width of Griffin Creek at the intake area is 3m. No trees greater than 20cm dbh would be need to removed in order to site the structures.

There is an 8m high waterfall at the intake area and directly above this is a 20m by 20m wide pool. From the edge of the pool, a 0.5m deep x 2m wide channel would be cut using hand held petrol driven equipment (e.g. diamond tipped saw) into the bedrock of the true left of the streambed for a distance of 5m.

The channel would feed water over the waterfall and direct it into an intake structure (Fig. 4). This steel structure would be 1m high x 2m wide x 3m long. The structure would be located in-stream but to the side against the rock face of the waterfall. The steel structure would be anchored to the surrounding rock using steel pins.

The intake would have a self-cleaning grate, consisting of parallel bars 2mm apart, to prevent gravel and wildlife such as fish from entering the structure.

There would be a gate at the entry of the intake structure, which would be electronically controlled from the powerhouse and powered by solar/battery (see below). When the gate is closed, water would flow over the structure and continue downstream in the natural streambed.

When the gate is open, from the intake structure, the water would be taken approximately 15m in a steel pipe to the settling tank. The settling tank would be situated as close to the intake structure as possible, possibly approximately 15m away. It is considered that any closer would not be practical as there is a vertical rock cliff face immediately alongside the intake structure.

The fabricated steel settling tank would be sited in the streambed to the side. The tank would be 2m wide x 4m long x 2m deep. It would sit on top of the rocks (i.e. not dug into the streambed) and fixed to large boulders using steel pins.

The settled sand and gravel would be returned to the stream via a 50mm constant return pipe. The return pipe would be pointed downstream to ensure that the fines do not build up beneath the pipe.

There would be a gate at the end of the settling tank that would be electronically controlled from the powerhouse and powered by solar/battery (see below). When the gate is down, there would be no flow into the penstock pipe. The water that does not enter the pipe would return to the stream via an overflow weir. The overflow weir would be made of steel.

From the settling tank, the water would be piped along a 1500m long pipeline, consisting of an 800m long headrace (with a 450mm diameter pipe) and a 700m long penstock (with a 350mm diameter pipe).

The exact design of the intake and settling tank system would be formalised by a hydro engineer. No concrete would be used in constructing the intake and settlement pond structures. There is no need for a dam to be constructed.

Surveillance equipment at intake
Up to three surveillance cameras would be installed to allow remote monitoring of the intake area. A river gauge would also be installed in the streambed just below the intake site. The video data and electronic data to control the headrace gate would be sent to the powerhouse via the data cable (see below) to assist how the gates on the intake structures are operated.

Solar energy production
The surveillance cameras and intake structure gates would be powered by solar power. This would be captured using solar panels mounted on a 3m high pole, located beside the settling tank. Power would be stored in batteries, which would be housed in a waterproof shed 3m long x 1m wide x 2m high. The construction materials for the shed are yet to be determined. The shed would be located next to the settling tank.

Headrace and penstock
For the headrace, 450mm diameter black high-density polyethylene (HDPE) piping would be used. The maximum head of 20 metres for the headrace pipe would mean that the water would not be under significant pressure. The pipe would be made up into 50m lengths and taken into the site by helicopter and/or using a winch.

The headrace pipe would lie on wooden planking 200mm wide x 50mm deep, and the pipe and the wooden plank would be fixed into rock using steel pins every 2m approximately. The applicant states that this design would be finalised by an engineer.

The width of the disturbance for the headrace pipeline and adjacent access track would be 3m. Primarily this footprint width would be required as a working place during construction and maintenance. The piping proposed to be used is relatively flexible, which allows for some choice in the exact line. It would be sited in such a way that no trees larger than 20cmdbh.would need to be removed.

From the intake, the headrace pipe would follow the contour line for 700m to the ridgeline At this point, the pipe/penstock size would be decreased to 300mm diameter.

A surge tank and pipe, and inspection point may be installed at this join. The surge pipe would be laid at right angles to the penstock, going up the side of the valley to a height greater than the intake. The end of the surge pipe would have a mesh to prevent the entry of substrate and wildlife. To gain the required height (approximately 10m), the surge pipe would need to be about 15m in length.

A surge tank and pipe are built into piping systems that carry water in order to allow for air to be introduced into the line. When water is in a pipeline, it is under pressure and any sudden stops to the flows (e.g. if the intake gate is closed) create significant more pressure, which risks pipe rupture. The surge pipe allows air to enter the pipeline and because it is above the height of the pipeline, water can not exit from the surge pipe. The inclusion of a surge tank and pipe into the hydropower scheme would be decided when the final design is determined.

The penstock pipeline would be 800m long, running directly down to the power house. The pipeline would drop from 320m in altitude to 120m. The applicant states that the penstock pipeline would not require pinning and would simply lie on the ground. The width of the disturbance for the penstock would be no greater than 3m. Primarily this footprint width would be required as a working place during construction and maintenance. The piping proposed to be used is relatively flexible, which allows for some choice in the exact line.

It would be sited in such a way that trees no larger than 20cm dbh would need to be cut,.and so only minimal vegetation or earth would need to be disturbed. The penstock would be made up into 60m sections and winched up the hillside removing the need for vehicles to be used on the line of the penstock. The winch would be able to be located on the access track at the crest of the hill.

A cable that would carry electronic data signals between the intake gate and cameras and the powerhouse would run beside the pipeline. As it is a data cable only, it does not need to be buried.

Monitoring equipment in the powerhouse would detect a loss of water pressure in the pipeline, which could be due to low water levels or a ruptured pipeline. The gates at the intake would be immediately closed by remote command. Therefore, water should not be spilt from the pipeline for any length of time if the pipe ruptures.

Access during construction phase
The construction period is proposed by the applicant to be approximately two years. The intake structures and pipeline would be installed using a winch and hand held equipment. Temporary scaffolding may need to be erected.

All material required to construct the penstock and headworks would be winched up the line where the penstock would be laid and carried in by helicopter. The helicopter would carry the items in a sling beneath it and therefore it would not need to land anywhere on the site.

To build the intake channel and structures, the stream would be temporarily diverted away from the edge of the pool adjacent to the proposed channel site using heavy polythene sheets and sandbags.

Access during operation phase
Once the hydropower scheme is in operation, all access would be using the access track on foot.

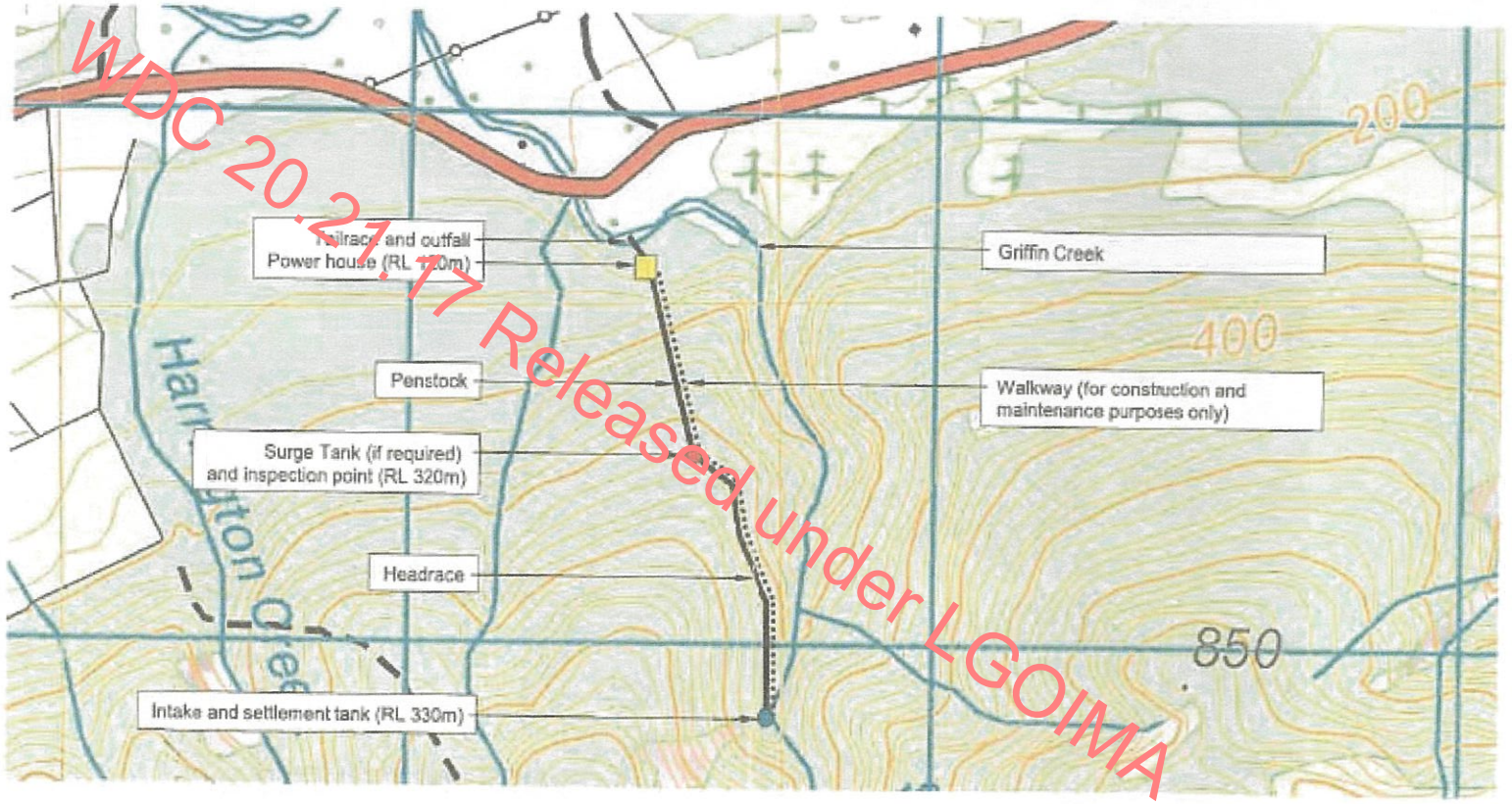


Fig. 1 Overview of the scheme design features

Fig. 2 Design overlaid on aerial photograph showing position of intake site and placement line of the pipes

Fig. 3 Scheme design at downstream end, showing location of State Highway, access road and power house off public conservation land.

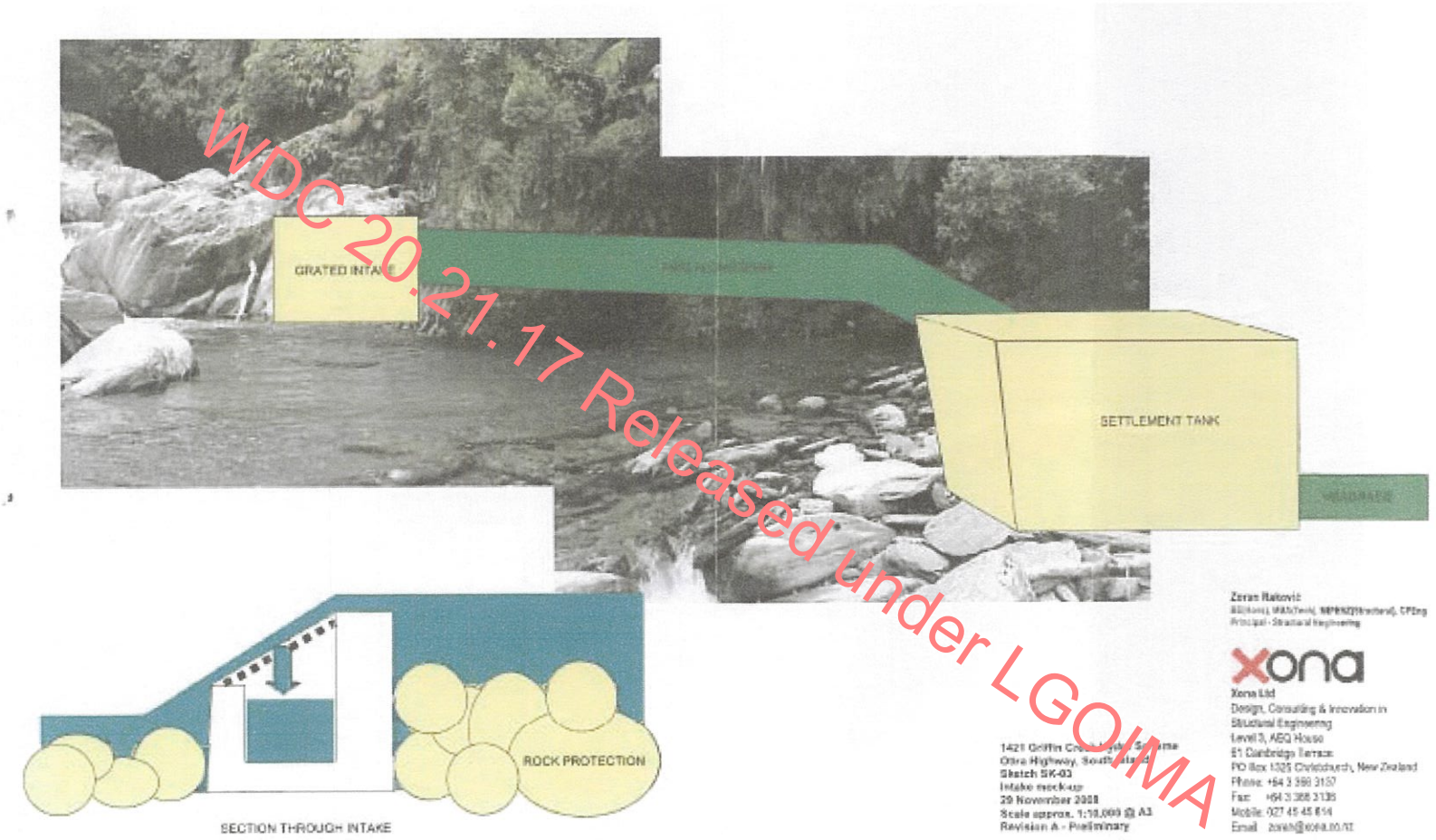


Fig. 4 Scheme design of the structures at the intake.

4.2 Effects of Activity - Section 17U(1)(b) and any Measures to Avoid, Remedy or Mitigate Effects - Section 17U(1)(c)

The applicant has made the following assessment of the effects of the proposal and has proposed the following mitigation measures:

Run of river power schemes are considered to have the least impact on the environment of any type of power generation.

Landscape
By walking along a narrow access track that would not be developed within the well-developed forest, the track and the pipeline should not be seen from the highway.

Flora and fauna
The 0.3m wide access track, 3m wide pipeline corridor and intake structures would require minimal clearing of vegetation, including no trees greater than 20cm dbh. Ongoing maintenance would require trimming of the vegetation to maintain a clear working environment. The presence of the access track and pipeline would not affect the passage of ground birds, and the effects to the flora and fauna are considered to be minor.

There is a moderate likelihood of natural tree falls in the proposed area and the applicant states that the operation phase is more at risk than the shorter construction period. The applicant does not propose to remove any trees to reduce or eliminate the possibility of tree fall and instead proposes to use flexible pipe, which can be threaded around trees. The polyethylene piping can also take some compression (i.e. from falling trees, rock slippage etc).

Freshwater
The applicant states that blue ducks and fish species are not found in high abundance in the immediate area of the intake or downstream to the outlet site. The intake screen would prevent fish from being drawn into the system. The amount of water to be taken from Griffin Creek would therefore not effect the freshwater values significantly. For these reasons, the effects of the proposed hydropower scheme on the freshwater values are considered to be minor.

Noise
During construction, noise would only be heard in the immediate part of the track that is being worked on at the time. The nearest neighbour to the site is approximately 500m from the power house and therefore unlikely to be significantly effected by noise during construction.

Water flow onto the land
Tree fall or rocks falling in a landslide could potentially rupture the pipe causing water to discharge from the pipeline. Should the penstock be damaged or ruptured, automatic control equipment at the power house would electronically close the intake gate, which would stop the water entering the pipeline. The gate would remain closed until the pipe was repaired.

Recreation
There are few recreational opportunities over the stretch of Griffin Creek proposed to be used. It is unsuitable for rafting, kayaking and fishing because of the low water volume and the presence of waterfalls. It is thought that hunters may use the area for hunting due to the presence of deer, pigs and goats. The proposal would considerably improve access for hunters to the area.

General
The applicant proposes to monitor any effects from the activity by regular visits and remote observation of the intake area. As part of the operating procedure, the applicant proposes that the power house would be visited on a regular basis by staff, including inspecting the pipeline and intake site. The power house and intake area would also be remotely observed by video camera, and the images would be viewed remotely by operators. Thus, any operational problems and any effects from the activity would therefore be identified very quickly.

The power house itself would be totally automatic and if there were any problems with the pipeline i.e. rupture of the pipeline caused by falling trees or an earthquake, then the intake gates would be shut off and staff would be notified.

The power house would alert operators to any problems using a form of tele-communication (e.g. phone message). It is envisaged that local people would be employed to supervise the operation and to respond to emergencies.

The Department has made the following assessment of the effects of the proposal and proposed a number of mitigation measures:

The Department agrees with the assessment completed above and has identified a number of additional issues.

Landform, flora and fauna
The applicant proposes an access track 0.3m wide and the pipeline to have a disturbed footprint 3m wide. At the intake site, the structures on the land and the working area would occupy an area 4m x 3m.

Given the sizes, the proposed structures and access track would have minimal effects on the landscape, flora and fauna as of their sizes and the mature nature of the forest. If the concessions were to be approved, a condition regarding a maximum tree size of 20cm dbh to be cut would be recommended.

The 3m pole containing the solar panels and the hut to house the batteries would be located below the height of the forest. It is recommended that a special condition would be included in the concessions to ensure that the solar panel pole and hut are constructed using materials in keeping with the natural environment (e.g. use of natural colours).

It is recommended that a special condition would be included in the concession to ensure that the areas of disturbance are kept to specified maximum widths and that all damaged areas would be rehabilitated once the scheme is operational.

Freshwater
The amount of water proposed to be taken from the creek at the intake point when both turbines would be operating ($1.2m^3/s$) represents 52% of the median annual flow and when the smaller turbine would be operating ($0.3m^3/s$) represents 13% of the median annual flow. The water take of $0.3m^3/s$ to operate the smaller turbine would occur most of the time (as the cut off point is around the mean annual low flow). The water take for both turbines of $1.2m^3/s$ would occur at least 50% of the time, as the cut off point for the take above the intake is 2.1m3/s (the median annual flow being $2.3m^3/s$).

To summarise, approximately 50% of the water is proposed to be removed from Griffin Creek during more than 50% of the time.

The reduced water flow would not cause significant changes in oxygen levels, or represent a significantly smaller area of freshwater habitat for wildlife, in terms of foraging and passage. The catchment and the specific intake site were selected due to its steep slopes and waterfalls, which means that the creek section is not particularly suitable for whio/blue duck and fish.

The intake structures would not be dug into the streambed and instead located in deeper water sections on top of the rocks on the edge of the creek. Being on the creek edge, they would not block or impinge the upstream or downstream movement of fish, waterfowl or other wildlife.

The applicant proposed a cut off in taking water when the residual flow is $0.6m^3/s$, which is lower than the mean annual low flow rate ($0.8m^3/s$). It is the view of the Department that to protect the environmental values of Griffin Creek, the minimum residual flow should be above the mean annual low flow rate and thus the cut off point for the removal of water should be at least $0.8m^3/s$ of water below the point of the intake.

The applicant proposed a cut off in taking water for the larger turbine when the water flow above the intake is 2.1m^3/s and residual flow below is 0.9m^3/s. To be consistent, it is recommended that Department should allow the cut off point for the larger turbine to also be a residual flow of 0.8m^3/s.

As there is no storage of water in the proposed system and there is a reasonable number of freshes and floods as indicated by the significant difference between the mean and median annual flows, the creek would retain an acceptable level of flow variability. Although the intake structures would be located within the streambed, and there would be a number of structures to return water to the watercourse, the natural flow of the watercourse would not be significantly diverted or altered and there would not be any increased abrasion or erosion occurring at the site.

Recreation
Access to the intake would be open to the public along the access track, although because it starts on LINZ land, may not be obvious to members of the public. Access beyond the intake point is very steep and the access track would not be seen as an alternative route to Griffin Creek Hut.

Historic
There are no known historic features in the proposed area. However, the area falls under the Ngai Tahu Pounamu Vesting Act, which controls the management and protection of the pounamu. Thus if the application is granted, it is recommended that the relevant special condition addressing accidental discovery would be included in the concession.

Comment
It is considered that the likely impacts of the proposed scheme on conservation values are minimal and that the Department's standard conditions for an easement and the proposed special conditions below would allow the applicant to avoid, remedy or mitigate the effects of the application, if it is to be granted.

It is a standard condition in concession documents that the Concessionaire must obtain all other necessary approvals and authorisations to conduct the activity. As such, there would be a number of conditions in resource consents (if granted) that would also be applicable and of interest to the Department, particularly in respect of freshwater values, preparation of construction plans and ongoing water monitoring.

The recommended special conditions for the easement are found in Appendix One.

4.3 Term
A term of 33 years was requested in the application. Section 17Z of the Conservation Act 1987 (Term of concession) provides that "*a lease or a licence may be granted for a term (which term shall include all renewals of the lease or licence) not exceeding 30 years or, where the Minister is satisfied that there are exceptional circumstances, for a term not exceeding 60 years*".

Comment
Due to the standard maximum term length being 30 years, the applicant altered the requested term to 30 years. It is considered that a term of 30 years is an appropriate term for an easement for the construction and operation of a small hydropower scheme. The term is consistent with granted concessions of this nature.

4.4 Any Information Received under Section 17S or 17T- Section 17U(1)(d)
The Area Office report together with information held on file has allowed the application to be 'complete' and an assessment of effects made.

4.5 Any Relevant Environmental Impact Assessment Including Audit or Review - Section 17U(1)(e)
An additional EIA was not considered necessary.

4.6 Any Relevant Oral or Written Submissions Received as a Result Of Public Notification - Section 17U(1)(f)
The term applied for (30 years) requires this application to be publicly notified pursuant to section 49 of the Conservation Act 1987. If the recommendation from this report is accepted, then it is recommended that the application be notified in The Hokitika Guardian and Grey Star newspapers.

Individuals or groups may then object or submit and be heard on the proposal. The objections and submissions will be considered in a 'final' report following notification.

4.7 Any Relevant Information which may be Withheld under The Official Information Act 1982 or The Privacy Act 1993 - Section 17U(1)(g)

While any request for information under the Privacy Act or the Official Information Act would be considered on its merits and on a case by case basis, there appears to be no relevant information concerning this application that may be withheld under the Official Information Act or Privacy Act.

4.8 Decline of Application - Section 17U(2)

This provides that the Minister may decline any application if the Minister considers that;

(a) The information available is insufficient or inadequate to enable him or her to assess the effects (including the effects of any proposed methods to avoid, remedy, or mitigate the adverse effects) of any activity, structure, or facility; or

(b) There are no adequate methods or no reasonable methods for remedying, avoiding, or mitigating the adverse effects of the activity, structure, or facility."

Comment

It is considered that there is sufficient information on the effects of this proposal to enable the Minister to assess the effects of the proposed activity.

It is considered that the Department's standard conditions for a easement and the proposed special conditions would allow the applicant to avoid, remedy or mitigate the effects of the application, if it is to be granted.

4.9 Purpose for which the Land is held - Section 17U(3)

The land under application is stewardship land, which is held under the Conservation Act for conservation purposes. The Minster may not grant a concession if the proposed activity is contrary to the purpose for which the land is held. Section 25 of the Conservation Act 1987 states the "Every stewardship area shall be so managed that its natural and historic resources are protected."

Conservation is defined under the Act as *"the preservation and protection of natural and historic resources for the purpose of maintaining their intrinsic values, providing for their appreciation and recreational enjoyment by the public, and safeguarding the options of future generations".*

Protection is defined in the Conservation Act 1987; *"protection" in relation to a resource, means its maintenance, so far as is practicable, in its current state; but includes – (a) its restoration to some former state; and (b) its augmentation, enhancement or expansion.*

Comment

The Minster must give consideration to the resources that the Stewardship Land status seeks to protect and to question whether the granting of the application, with or without conditions, would be consistent with the protection of those resources.

The values of the Wanganui/Otira Catchment Conservation Area are discussed elsewhere in this report, specifically in the following sections:

2.2 Location and Land Tenure (above)
4.1 Effects of activity and any measures to avoid, remedy or mitigate effects (above) and
5.2 Provisions of the draft West Coast *Tai Poutini* Conservation Management Plan (below).

These discussions conclude that the effects of the activities and development proposed by Griffin Creek Hydro Limited can be adequately mitigated or are otherwise minor. As such, it is considered that grant of this application with appropriate concession conditions would not undermine the protection of the natural and historic resources of the land, as such, the proposed activity is not contrary to the purpose for which the land is held.

4.10 Structures – Section 17U(4)

Section 17U(4) provides that:

"The Minister shall not grant any application for a concession to build a structure or facility, or to extend or add to an existing structure or facility, where he or she is satisfied that the activity-

(a) Could reasonably be undertaken in another location that-

(i) Is outside the conservation area to which the application relates; or

(ii) Is in another conservation area or in another part of the conservation area to which the application relates, where the potential adverse effects would be significantly less; or

(b) Could reasonably use an existing structure or facility or the existing structure or facility without the addition."

Comment

The applicant has undertaken considerable research including a number of visits to potential sites to identify a suitable site for a small-hydro power house. A 'run of river' type hydropower scheme (which needs a head of water instead of a dam to create the required pressure) can only be operated in waterways where there is a large upstream catchment area, a large drop in altitude over a short distance and a narrow streambed.

The applicant identified a number of reasons why Griffin Creek and the particular intake site were chosen. These included:

- good site access to a main road
- close to transmission lines
- good head to distance ratio (Griffin Creek falls about 300m over a 1.5km distance)
- high rainfall (6m per year) in the catchment area,
- few natural or historic values identified for the site
- little recreational use
- remote location and high bush cover, which should reduce potential conflict with users and shield structures from public view

It is considered that the chosen location is a critical element of the proposal. While there may be other locations that could have been chosen for this activity, the majority of the land in the vicinity containing the potential to generate hydro electricity is managed by the Department of Conservation and it is therefore unlikely that a suitable site could be found outside conservation land. As such, it is considered that the proposed activity and its associated structures could not reasonably be located elsewhere.

5.0 PLANNING INSTRUMENTS

5.1 Conservation General Policy

The Conservation General Policy (CGP) is the first statement of general policy prepared under section 17C of the Conservation Act 1987. It provides guidance for the implementation of the Conservation Act and other conservation related legislation, including the Reserves Act 1977. Conservation management strategies and plans prepared under this legislation must be consistent with the CGP, although existing approved conservation management strategies and plans will continue to have effect until they are amended or reviewed, except where they clearly derogate from the CGP.

Specific policies covering the proposed activity are provided in Section 11 of the Conservation General Policy.

Policy 11 – Activities requiring specific authorisation

Policy 11 of the CGP deals with activities requiring specific authorisation, including concessions. It states that activities should avoid, remedy or mitigate any adverse effects (including cumulative effects) and maximise any positive effects. Both the Department and concessionaires should monitor effects, including effects on public enjoyment, to inform future management decisions. Concessionaires are to be responsible for the safe conduct of their operations.

Utilities

Policy 11.3 of the CGP allows utilities to be provided where they cannot reasonably be located outside public conservation land. Any new utilities are to be of a scale, design and colour that integrate with the landscape. Public access to facilities may be denied where necessary for public safety.

Comment
If a concession is granted, it is considered that compliance with the Department's standard concession conditions and the proposed special conditions would ensure that the proposed activity is not inconsistent with the Conservation General Policy.

5.2 Relationship between Concessions and Conservation Management Strategies and Plans - Section 17W

Section 17W(1) provides *"Where a conservation management strategy or conservation management plan has been established for a conservation area and the strategy or plan provides for the issue of a concession, a concession shall not be granted in that case unless the concession and its granting is consistent with the strategy or plan."*

Section 17W(3) of the Conservation Act states that *"the Minister may decline any application, whether or not it is in accordance with any relevant conservation management strategy or conservation management plan, if he or she considers that the effects of the activity are such that that a review of the strategy or plan or the preparation of a strategy or plan is more appropriate."*

5.3 Draft West Coast Conservation Management Strategy

The West Coast *Tai Poutini* Conservation Management Strategy (dated April 2010) ("CMS") is relevant to the area under application. The concessions provisions of the Conservation Act 1987 state that every concession shall include a condition that requires the concessionaire to comply with any CMS whether or not it is in force at the time of the grant of concession (Section 17W(7)). It further states that concession conditions which breach an operative CMS have no effect, and breach of an operative CMS by a concessionaire will be deemed to be a breach or contravention of the concession (Section 17W(8)). It is therefore considered prudent to consider this application against the CMS.

Key relevant provisions of the CMS are summarised below.

Section 3.3.1.5 Threats to freshwater biodiversity values

The CMS recognises that *"maintenance of the natural character and quality of waterways and wetlands is crucial for the survival of freshwater invertebrates, fish and bird species as well as the continuation of freshwater ecosystem services. Many human activities or human-induced factors have the potential to adversely affect freshwater species and ecosystems, including life-supporting capacity, natural character, water quality and water quantity.*

Examples of such activities include: drainage, dredging, filling; gravel extraction, mining; hydrological modifications; creation of dams and other barriers to fish passage; discharge of pollutants to waterways; vegetation clearance; introduction or spread of invasive weeds, animal pests and unwanted organisms (e.g. Didymo); introduction of sports fish (McDowall 2003); grazing of domestic stock in or near waterways; and harvesting activities."

Section 3.3.3.3 Freshwater ecosystem management

The objective of the CMS in respect of freshwater ecosystem management is: *"to prevent further extinctions of indigenous freshwater fish species and declines in species abundance and range."*

To achieve this objective, the CMS states a number of policies. Those applicable to this application are:

"*1. Existing and potential threats affecting indigenous fish populations, including barriers to migration (see Policies 2-4), habitat degradation and loss (see Section 3.3.1.5), introduction of pest species (see Policy 9 and Section 3.3.1.5), and interactions between exotic fish, including sports fish, and indigenous fish (see Policy 9) should be addressed.*

11. Surveys to improve understanding of the range of indigenous fish species present on the West Coast Te Tai o Poutini and to help predict where they are likely to be found may be undertaken.

13. Public and resource user awareness about the importance of freshwater ecosystems, threats to fish habitats and vulnerability of species should be enhanced."

Section 3.5 Authorised Uses of Public Conservation Lands

The objectives of the CMS in respect to authorising use of public conservation lands include:

"*1. To implement Conservation General Policy 2005 and General Policy for National Parks 2005 when considering applications for authorisations on public conservation lands and waters.*
2. To protect natural, historical and cultural heritage values from adverse effects of recreation, tourism or other uses.
3. To protect recreational opportunities from adverse effects of authorised uses of public conservation lands.
4. To protect places and other taonga of cultural significance to Poutini Ngäi Tahu from adverse effects of authorised uses of public conservation lands.
5. To consult, where necessary, with Papatipu Rünanga, conservation boards, the West Coast Fish and Game Council, authorisation holders, communities and other people and organisations over the consideration and granting of concessions, access arrangements and other authorisations for use of public conservation lands."

The policies in section 3.5.2 detail a number of conditions to be applied as appropriate to concessions or other authorisations, including for activities on or in beds of rivers or lakes.

Section 3.7.2 Activities on or in Beds of Rivers or Lakes
Section 3.7.2 of the CMS provides guidance for all types of activities that occur on or in beds of rivers or lakes that are managed as public conservation land. The policies are:

"*1. When assessing applications for any activity on or in the bed of a river or lake, consideration should be given to (but not limited to) the following guidelines:*
a) Adverse effects on freshwater and terrestrial species, habitats and ecosystems, historical and cultural heritage values, public access, recreation opportunities and amenity values should be avoided or otherwise minimised;
b) Riparian vegetation should be maintained or enhanced;
c) Activities should not damage riverbanks;
d) No pests, weeds or other unwanted organisms (e.g. Didymo) should be likely to be introduced to, or become established within, the area as a result of the activity; and
e) The natural character within the setting of the activity should be maintained.

2. Biological communities, physical habitat, channel profiles and substrate may be monitored, in order to evaluate and manage the long-term impacts of activities occurring on or in the beds of rivers or lakes."

Section 3.7.11 Utilities
A concession is required for any utility on public conservation lands. The CMS recognises that structures and infrastructure for energy generation and transmission (including pipelines, dams, weirs and transmission lines) are examples of utilities which may be situated on land administered by the department.

The CMS notes that the "*provision and maintenance of utilities within public conservation lands may, in some cases, have adverse effects on conservation values. Such effects may include fragmentation of ecosystems; loss of habitat (e.g. permanent inundation of terrestrial ecosystems); degradation of freshwater ecosystems (e.g. barriers to fish passage, changes to hydrological regimes and sediment loads); invasive weed and animal pest infestation; adverse effects on wähi tapu and other cultural values; alterations to the natural character of the landscape or seascape; control of public access; and changes to recreational opportunities and the type of public use of the area.*"

The policy for utilities is:
"*1. Allowance for the 'public good' nature of non-commercial utilities (e.g. flood warning systems and remote weather stations) may be made when considering concession applications and setting rentals.*

2. The Department should liaise with agencies responsible for network utility operation in regard to routine maintenance and upgrading proposals wherever they occur in or adjacent to public conservation lands."

Comment
This application is not inconsistent with the provisions of the draft West Coast *Te Tai o Poutini* Conservation Management Strategy in respect of freshwater biodiversity and ecosystem management and authorised uses of public conservation lands.

The impacts of the structures and activities associated with a small-hydropower scheme are not considered to be significant and with appropriate design and special conditions, adverse effects could be avoided, remedied or mitigated. It is not considered that the effects of this activity are such that a review of the strategy is appropriate.

5.4 Management Plans
There is no active management plan covering this area.

6.0 OTHER INFORMATION FOR CONSIDERATION

6.1 Papatipu Runanga
The application as it was presented in 2007 was forwarded to Ngai Tahu on the 29th October 2007 and Te Rünanga Ngati Waewae on the 8th of November 2007.

The application submitted in January 2009 and the draft First Determination Report were forwarded to Ngai Tahu and Te Runanga Ngati Waewae on 6th May 2009. Ngai Tahu replied on 22nd June 2009 and Te Runanga Ngati Waewae replied on 29th July 2009; both did not oppose the application.

6.2 Ngai Tahu Deed of Settlement
The area is within the takiwa of Ngai Tahu, but is not subject to any specific statutory instruments. The area falls under the Ngai Tahu Pounamu Vesting Act, which controls the management and protection of the pounamu. This is covered in Section 3.1 and the standard accidental discovery protocol is included as a special condition.

6.3 West Coast Tai Poutini Conservation Board
The proposed concessions are covered by the 'trigger mechanisms' for consultation with the Board. The application submitted in January 2009 and the draft First Determination Report were forwarded to the Board on 6th May 2009. Their assessment was that "*the effects should be minor as long as the conditions laid down by the applicant and the Department are followed. It is pleased that public access to the area will be improved once the scheme is operational. The Board advises that it agrees with the granting of this concession.*"

7.0 CONCLUSION

The information provided by the applicant is complete enough to allow further consideration.

It is considered that the use of the Wanganui - Otira Catchment Conservation Area for the construction and operation of a small-hydropower scheme at Griffin Creek is consistent with the purpose for which the land is held, as discussed in section 4.9 above.

It is considered that adherence to the standard and special conditions would enable the applicant to avoid, remedy or mitigate the potential adverse effects of the proposed hydropower scheme.

There appears to be no reason why the Minister cannot publicly notify her intention to grant an easement to Griffin Creek Hydro Limited with a final decision on this application being made subject to the applicant's acceptance of the proposed special conditions and the outcome of the public notification process.

8.0 APPLICANT'S COMMENTS

The applicant was sent the draft report, draft lease-licence and draft easement for comment on 18th June 2010. Comments were received in June and July 2010. This included a re-assessment by the applicant of the need for a lease in order to exclude the public during the construction phase to reduce the risk of injury. The applicant indicated that he would prefer to manage the risks of public safety

by way of signage than by the ability to exclude the public from the construction areas. This was considered appropriate by the Department.

Subsequently, the Department's solicitor provided further advice regarding what type of concession was appropriate for the proposed structures and activities. An easement concession only would be adequate because of the low scale in terms of effects and size of the particular hydro-electric power scheme applied for, and that there was no longer any public safety concern to warrant the need for a lease.

The new draft of the report and easement were sent to the applicant on 19th August 2010. Very minor comments were received on 23rd August 2010.

9.0 RECOMMENDATION

Pursuant to a written delegation, it is recommended that the Community Relations Manager approve **in principle** the grant of an easement to construct and maintain a small hydropower scheme to Griffin Creek Hydro Limited subject to the outcome of the public notification process, and the standard and special conditions identified in the attached draft easement.

If this application were approved in principle then the intention to grant the concession would be publicly notified.

Helen Otley
Community Relations Officer (Concessions)
Date: September 13th 2010

Peer review comments: See tracked changes in draft document Di Clendon Date: 16th July 2009 Time spent:

Conservancy Solicitor comments: Date:

Recommendation: **Approved / Declined** Campbell Robertson Acting Community Relations Manager **West Coast *Tai Poutini* Conservancy** **Date:**

Appendix 1 – Special conditions

General

1. The Concessionaire must not undertake the Concession Activity unless or until the final Construction and Operational Plan is approved in writing by the Hokitika Area Manager. In considering the Construction and Operation Plan, the Grantor would check that it does not differ substantially in regard to location, scale or level of effect to the application lodged by the Concessionaire and to the Concession Activity as described in the Department's First Determination Report. The Concessionaire must ensure that the Construction and Operational Plan is prepared by a suitably qualified person. The Grantor may require the plan to be audited by a suitably qualified person.

2. Once audited and approved by the Grantor, the Construction and Operational Plan including a timeline must form part of the Concession, and the Concessionaire must not deviate from this plan without the prior written approval of the Hokitika Area Manager.

3. The Concessionaire must pay the costs incurred by the Grantor in auditing and approving all plans required pursuant to this Concession. Standard Department rates for staff time are payable by the Concessionaire.

4. The Concessionaire must ensure that appropriate resource consents are obtained prior to the commencement of the Concession Activity on the Easement Land and that they comply with any conditions of those consents throughout the term of this Concession. If any conditions attached to any resource consent obtained by the Concessionaire in relation to the Concession Activity are, in the opinion of the Minister, incompatible with this Concession, the Grantor may review the provisions of this Concession; and, at the discretion of the Minister of Conservation, this Concession may be varied accordingly.

5. The Grantor reserves the right to apply restrictions to the Concession Activity if, in the opinion of the Grantor, the Concession Activity granted is having or may have an adverse effect on the physical environment and the effect can not be avoided, remedied or mitigated to an extent satisfactory to the Grantor. The Concessionaire shall not be entitled to any compensation in the event of such action being taken.

6. The Concessionaire acknowledges that pounamu is under the ownership of Te Rünanga o Ngäi Tahu pursuant to the Ngäi Tahu (Pounamu Vesting) Act 1997. No pounamu may be removed or recovered by the Concessionaire or their employees/agents. Where the Concessionaire finds any pounamu or serpentine, they are requested to immediately notify John Reid, Te Runanga o Ngai Tahu (03 372 1119).

7. Aircraft access to the Easement Land is permitted with authorised aircraft concessionaires only. No helicopter landings may take place upstream of the intake site on Griffin Creek.

8. The Concessionaire must install a continuous flow monitoring device above the outlet site (which is located below the powerhouse). Flow must be recorded to an accuracy of +/- 10%, and at no less than 15 minute time intervals. An electronic copy of these records must be provided to the Grantor annually.

9. Extraction of water must cease whenever the flow recorded at the flow-monitoring site specified in Condition 8 falls below the mean annual low flow, which is agreed to be $0.8m^3/s$. Once two years of data under Condition 8 has been obtained, a new minimum residual flow based on a revised mean annual low flow may be used following agreement by the Grantor and the Concessionaire.

10. The Concessionaire must notify the Grantor within five working days of any situations outside of normal operations (e.g. major ruptures), and provide any details regarding the effectiveness of the response.

11. The Concessionaire must comply with all guidelines and notices put out by Biosecurity New Zealand regarding measures to avoid spreading the pest organism Didymosphenia geminata (refer to www.biosecurity.govt.nz/didymo). The Concessionaire must comply with the Didymo prevention and cleaning protocols as set out in Schedule 5 before and after contact (including people, equipment, clothing, footwear and other items) with any waterway.

12. The Concessionaire must control all weeds present on the Easement Land.

13. No fires are to be lit on the Easement Land and extreme care is to be taken with equipment likely to start fires. Full fire extinguishing equipment is to be kept on the Easement Land at all times during construction.

14. Prior to commencing the Concession Activity, the Concessionaire must commission an independent assessment of the risks associated with the Concession Activity, using a methodology to be approved in writing by the Grantor. The independent risk assessment would be at the expense of the Concessionaire, and would provide advice to the Grantor regarding the appropriate structure of bonds, insurances and guarantees appropriate to manage potential risks associated with the Concession Activity.

Bond

15. Prior to commencing the Concession Activity, the Concessionaire must provide as surety a trading bank, insurance company or bond guarantor who is acceptable to the Grantor.

16. The surety must execute (in the case of two or more jointly and severally) in favour of, and on terms acceptable to, the Grantor a performance bond initially set at NZ$ XXX,000 (xx thousand dollars) for due and faithful performance by the Concessionaire of the obligations under the Concession and/or reinstating any disturbed area of the Easement Land to a standard satisfactory to the Grantor where disturbance has been caused by the Concessionaire or any agent of it and/or otherwise remedying or mitigating any adverse effects of the Concession Activity.

17. If the initial amount of the bond has not been set in clause 16 then prior to the Concession Activity commencing that amount would be set by the Grantor following the independent risk assessment required by clause 14.

18. The initial amount set under either clauses 16 or 17 may be reviewed at the discretion of the Grantor at any time.

19. Notwithstanding the expiry, surrender or termination of the Concession, the bond will not expire and is to remain in full force and effect until such time as all obligations of the Concessionaire under the Concession have been complied with to the satisfaction of the Grantor.

20. If the Concessionaire breaches any condition or fails to carry out any condition of the Concession or in carrying out the Concession Activity there arise adverse effects not authorised or reasonably foreseen in the Concession, the Grantor may call on the bond entered into under this Concession or any portion of it to ensure compliance with the conditions of the Concession or to remedy or mitigate those adverse effects referred to above.

Construction Works

21. The Concessionaire, their contractors and employees must ensure that contact is made with the Hokitika Area Manager prior to the commencement of the work on the Easement Land.

22. The Concessionaire must ensure that only suitably qualified persons carry out the Concession Activity.

23. The Concessionaire must provide an opportunity for the Hokitika Area Manager or his representative to meet with contractors and brief them on conservation awareness and environmental protection best practices prior to the commencement of the work on the Easement Land.

24. The access track and pipeline must be contained within a width of 0.3m and 3m, respectively, unless otherwise agreed with the Hokitika Area Manager. At the intake site, the structures on the Easement Land and the working area must be contained within a 12m^2 area. The Concessionaire must ensure that the boundaries of all areas to be disturbed are marked out with tape prior to work commencing and approved by the Hokitika Area Manager or his delegated representative.

25. The boundaries of construction work must not exceed those agreed with the Grantor as set out in Condition 24 and will be subject to a penalty of $50 for each square metre of Easement Land disturbed

outside the agreed boundaries.

26. The Concessionaire must construct and maintain the foot access track to the tramping track standards contained in Standards NZ – Tracks and Outdoor Visitor Structures, SNZ HB 8630:2004, or subsequent amendments and updates.

27. Once construction has been completed, the Concessionaire must ensure that an engineering inspection of the structures at the intake site is undertaken by an appropriately qualified Chartered Engineer. A copy of the engineer's report indicating the condition of the structures approved under this Concession must be supplied to the Hokitika Area Manager.

28. The Concessionaire must ensure that disturbance of riparian margins is minimised.

29. Further to clause 7.1 of Schedule 2, the Concessionaire may remove, trim and cut down standing vegetation less than 20cm diameter at breast height on the Easement Land. All practical measures must be taken to minimise damage to surrounding vegetation.

30. Further to clause 7.1 of Schedule 2, the Concessionaire may remove, trim and cut down any natural tree fall that is adversely effecting the operation of the scheme. All practical measures must be taken to minimise damage to surrounding vegetation.

31. Any vegetation cleared from around the intake structure and access track during construction or maintenance phases must be cut into small sections (no greater than 1m length) and wherever possible, removed from sight of the track.

32. The Concessionaire must ensure that any discharges from the intake structures must be constructed in such a way as to avoid scouring of the natural watercourse.

33. The Concessionaire must ensure that all structures blend in with the surrounding environment.

34. The Concessionaire must ensure that any rubbish and surplus materials are removed from the Easement Land at the completion of construction and any maintenance activities.

35. To prevent weed spread, the Concessionaire and its contractors must, prior to entering the Easement Land, clean all machinery and equipment so that it is free of weed seeds, plant fragments and mud.

36. The Concessionaire must ensure that all gravel taken onto the Easement Land comes from a weed free source.

37. It may be appropriate to have a portaloo on the Easement Land during construction. If not provided or not accessible, toilet waste must be buried in a hole at least 50m away from waterways and the track.

Fuel

38. The Concessionaire must ensure that its contractors and employees undertake any refuelling a minimum of 20m from the nearest waterway and on flat ground, bare of vegetation. A spill kit of loose absorbent material must be carried at all times to absorb spilled fuel. In the event of a spill, the absorbent material must be laid immediately over the site of the spill, and every practical step taken to contain the fuel. All contaminated soil must be removed from the Easement Land and disposed of in an environmentally safe manner. The Concessionaire must immediately report all fuel spills over 20 litres to the Hokitika Area Manager.

39. The Concessionaire must ensure machinery with fuel or oil leaks must not be used on the Easement Land.

Monitoring of construction and operation

40. If requested by the Grantor, the Concessionaire must fund an independent contractor who will act as a liaison contact between the Concessionaire and the Grantor during the term of construction. The exact role, brief of service and level of remuneration of the Liaison Officer will be determined by the Grantor, following consultation with the Concessionaire. The Liaison Officer would report to the Grantor

41. The Concessionaire must undertake at minimum monthly visual inspections of the intake structures, pipeline and access track for signs of damage, blockages, leakages, erosion, etc.

42. The scheme's control system must ensure that if the powerhouse can not communicate with and control the intake structure that the intake gate closes so that water can not enter the scheme.

43. The Grantor may at any time monitor any effects arising from the Concession Activity and compliance with the terms and conditions of the Concession. The costs of such monitoring must be recoverable from the Concessionaire, including staff time and use of vehicles. The suggested monitoring frequency is quarterly during the construction phase and annually for the first five years of the operation.

44. The Grantor may, with prior notification to the Concessionaire, call on independent external consultants for specialist advice on matters reasonably raised by the Concessionaire's operations carried out under this Concession. The Concessionaire would be advised of anticipated costs of consultants and the Concessionaire must meet the costs reasonably charged by such consultants.

Concession expiry

45. Further to clause 14.3 of the Standard Terms and Conditions, at the expiry of this Concession, the Concessionaire must remove all the structures authorised under this Concession.

Guarantor

44. In consideration of the Grantor entering into this Concession at the Guarantor's request the Guarantor:

    (a) guarantees payment of the Concession Fee and the performance by the Concessionaire of the covenants in this Concession; and

    (b) indemnifies the Grantor against any loss the Grantor might suffer should the Concession be lawfully disclaimed or abandoned by any liquidator, receiver or other persons.

45. The Guarantor covenants with the Grantor that:

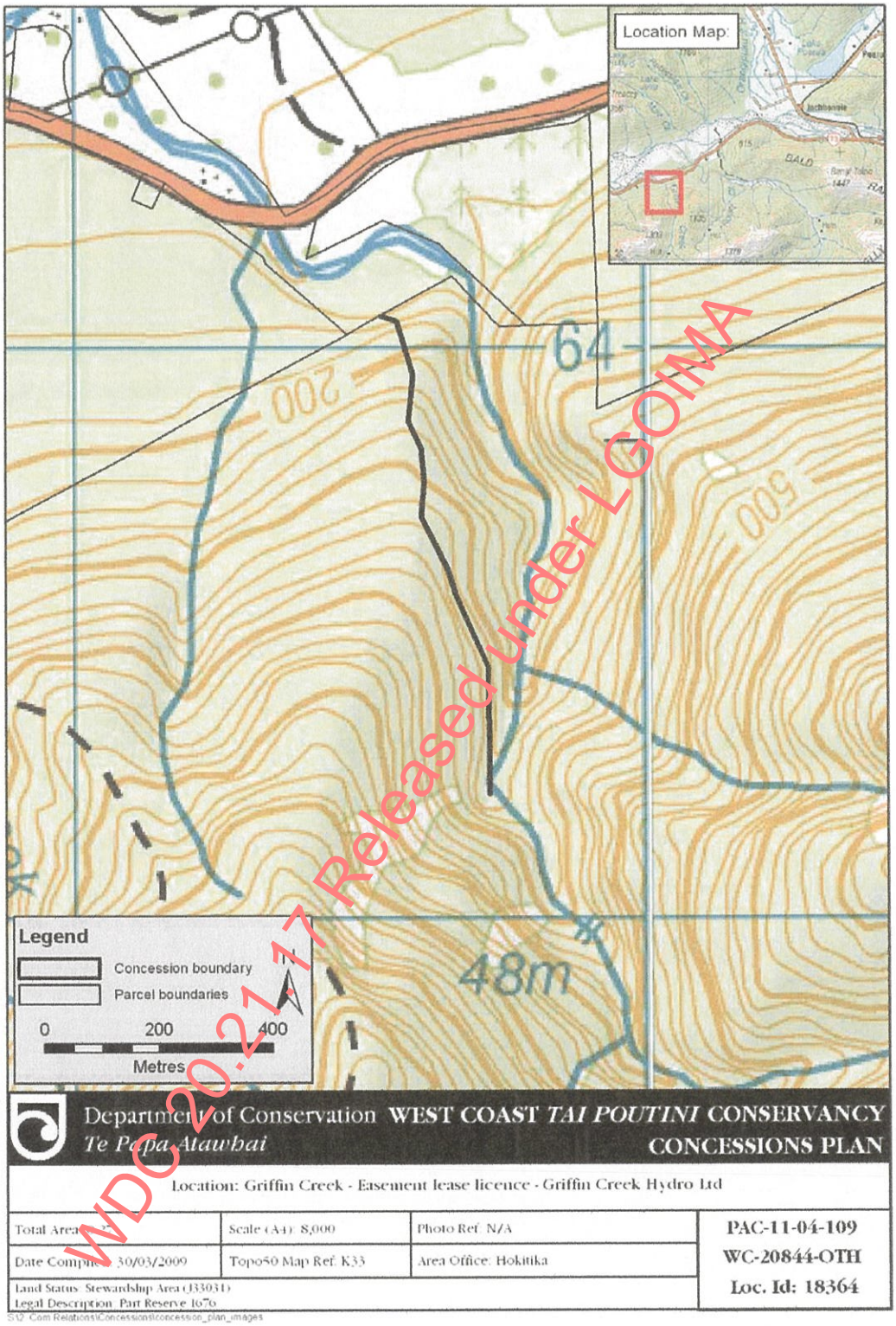
    (a) no release, delay, or other indulgence given by the Grantor to the Concessionaire, to the Concessionaire's successors or assigns, or any other thing whereby the Guarantor would have been released had the Guarantor been merely a surety is to release, prejudice, or affect the liability of the Guarantor as a Guarantor or as indemnifier;

    (b) as between the Guarantor and Grantor the Guarantor may, for all purposes, be treated as the Concessionaire and the Grantor is under no obligation to take proceedings against the Concessionaire before taking proceedings against the Guarantor;

    (c) the guarantee is for the benefit of and may be enforced by any person entitled for the time being to receive the Concession Fee;

    (d) any assignment of this Concession and any Concession Fee Review in accordance with this Concession are not to release the Guarantor from liability;

    (e) should there be more than one Guarantor the liability of each Guarantor under this Guarantee is to be joint and several.



THE WEST COAST
REGIONAL COUNCIL

388 Main South Road, Paroa
P.O. Box 66, Greymouth 7840
The West Coast, New Zealand
Telephone (03) 768 0466
Toll Free 0508 800 118
Facsimile (03) 768 7133
Email info@wcrc.govt.nz
www.wcrc.govt.nz

18 February 2011

Griffin Creek Hydro Ltd
[redacted]
Attention: Rhys Morgan

Enquiries to: Nathan Geard
Our Ref: RC10269

Dear Mr Morgan

GRIFFIN CREEK HYDRO LIMITED
RESOURCE CONSENT FILE NUMBER RC10269
LAND USE CONSENT RC10269/1
WATER PERMITS RC10269/2 & 3

By delegated authority of Council you are advised that the above application for resource consent has been granted.

Please note that this letter is not the actual resource consent document (refer to Objection and Costs Sections at end of the letter).

DECISION

Pursuant to Sections 104B of the Resource Management Act 1991, a Land Use Consent and two Water Permits have been granted to Griffin Creek Hydro Limited for 35 years for the purpose described below and subject to the following conditions.

PURPOSE OF RESOURCE CONSENT

Consent No	Consent Type	Activity / Location
RC10269/1	Land Use Consent	To disturb the bed of Griffin Creek for the construction of structures associated with hydro electricity generation, Wainihinihi.
RC10269/2	Water Permit	To take and use surface water from Griffin Creek for hydro electricity generation, Wainihinihi.
RC10269/3	Water Permit	To divert water from Griffin Creek for hydro electricity generation, Wainihinihi.

LOCATION

Griffin Creek, Wainihinihi

MAP REFERENCES

From: At or about NZMS 260 K33: 774-257
To: At or about NZMS 260 K33:776-248

CONDITIONS

Pursuant to Section 108 of the Resource Management Act 1991, the Resources Consents include the following conditions:

GENERAL CONDITIONS APPLYING TO ALL CONSENTS

1. Works and activities shall be carried out in general accordance with the details contained in the consent application and additional information submitted to the Consent Authority.

2. The Consent Holder shall supply any agent or contractor working under these consents with a copy of the consents.

3. Any person working under these consents shall have a copy of the consents on site and present it to an officer of the Consent Authority upon request.

4. Pursuant to Section 128 of the Resource Management Act 1991, the Consent Authority may review the conditions of these consents by serving notice within a period of one month commencing each anniversary of the commencement of the consents for any of the following purposes:

    a) To deal with any adverse effect on the environment which may arise from the exercise of these consents, and which it is appropriate to deal with at a later stage; and
    b) To require the Consent Holder to adopt the best practicable option to remove or reduce any adverse effect on the environment.

SPECIFIC CONDITIONS APPLYING TO LAND USE CONSENT RC10269/1

5. The Consent Holder shall avoid damage to creek banks and creek bank vegetation wherever practicable.

6. The Consent Holder shall ensure that sediment losses to natural water from the exercise of this consent are avoided as far as practicable.

7. The Consent Holder shall ensure the disturbance of the creekbed does not cause or exacerbate erosion or land instability.

8. All refuelling, lubrication and mechanical repairs of any equipment used under this consent shall be undertaken in such a manner so as to ensure that no spillages of hazardous substances onto the land surface or into water occur. If a fuel spillage in excess of 20 litres occurs, the Consent Holder shall inform the Consent Authority immediately.

9. To avoid the spread of Didymo, no equipment shall be used in the exercise of this consent that has been used previously to undertake activities in any water body known to contain Didymo, unless that equipment has been thoroughly cleaned in accordance with the attached Biosecurity New Zealand document titled "***Don't Spread Didymo***".

10. In the event of any disturbance of Koiwi Tangata (human bones) or Taonga (artefacts, including pounamu), the Consent Holder shall:

    a) Cease any further excavation for a period of at least 24 hours; and
    b) Immediately advise the Consent Authority of the disturbance; and
    c) Immediately advise the Upoko of the Papatipu Runanga, or the representative, of the disturbance; and
    d) Immediately advise the Regional Archaeologist of the New Zealand Historic Places Trust, except in relation to disturbance of unworked pounamu.

11. At the completion of the works the Consent Holder shall ensure that all equipment and machinery are removed from the bed of the creek.

SPECIFIC CONDITIONS APPLYING TO WATER PERMITS RC10269/2 & 3

12. The Consent Holder shall ensure that a residual flow of 0.8 cumecs (800 litres per second) is retained in Griffin Creek immediately downstream of the intake point.

13. In addition to Condition 15, the maximum rate of water abstraction shall not exceed 1.2 cumecs (1,200 litres per second) from Griffin Creek.

14. The Consent Holder shall, upon request from the Consent Authority, measure and record daily totals of water abstracted together with the residual water flow in Griffin Creek immediately downstream of the intake point. A copy of these records shall be provided to the Consent Authority when requested.

15. Upon notice to the Consent Holder the Consent Authority may require the Consent Holder to cease water abstraction for a period not exceeding 48 hours to undertake monitoring of the natural water flows.

16. A screen shall be used and maintained on the water intake to ensure that fish (including eel) are prevented from passing into the water intake.

TERM

The term of consent RC10269/1 is for 2 years from its date of commencement.
The term of consents RC10269/2 & 3 is for 35 years from their date of commencement.

NOTES TO THE CONSENTS

The Consent Holder is advised that **these consents do not confer a right of access** and the Consent Holder should be aware the permission of the legal owner or administering body of the site may also be required.

Pursuant to Section 125 of the Resource Management Act 1991, Resource Consents RC10269/2 and 3 will lapse 5 years after the date of commencement of the consents if the consents are not actioned before the end of this period. However, this period can be extended under the Act by application to the Consent Authority.

REASON FOR DECISION PURSUANT TO SECTION 113, RESOURCE MANAGEMENT ACT 1991

In making this decision to grant the resource consent the purposes and principles of the Resource Management Act 1991 as set out in Part II of the Act have been achieved along with consideration of Section 104 which requires an assessment of the effects of the proposed activity.

The nature of the activities that are authorised under this decision are consistent with the Council's Regional Policy Statement. Specific objectives and policies in respect of Poutini Ngai Tahu, Soils & Rivers, Water and Habitats & Landscapes are contained within Chapters 5, 7, 8 and 9 of the Regional Policy Statement.

The disturbance of the bed of Griffin Creek associated with the construction of structures in the bed of the creek for hydro electricity generation is a discretionary activity under both Rule 6.2.6.1 of the Council's Proposed Regional Land and Riverbed Management Plan and Rule 36 of the Council's Proposed Regional Land and Water Plan (PRL&WP).

The taking of water from Griffin Creek for hydro electricity generation is a discretionary activity under both Rule 12.1.7 of the Proposed Water Management Plan (PWMP) and Rule 54 of the PRL&WP.

The diversion of water from Griffin Creek for hydro electricity generation is a discretionary activity under both Rule 12.4.6 of the PWMP and Rule 55 of the PRL&WP.

The taking of water from Griffin Creek is non-consumptive as the water is returned to Griffin Creek near the point of take and there is no significant delay between the abstraction of water from Griffin Creek and its return to the creek. As the take is non-consumptive, the Resource Management (Measurement and Reporting of Water Takes) Regulations 2010 do not apply to the take.

These activities are consistent with the relevant objectives and policies of these plans (see Table 1 below), and will have no more than minor effects. The conditions imposed are suitable to avoid, remedy, or mitigate any adverse effects that may arise within the term of the consents.

Table 1: Summary of the relevant regional plan provisions

Planning Documents	Rules	Status	Objectives/Policies
Regional Policy Statement			
Poutini Ngai Tahu			O 5.1, P 5.1.1
Soils & Rivers			O 7.2, P7
Water			O 8.1.1, P 8.1.1
Habitats & Landscapes			O 9.1, 9.2, 9.3, P 9.1, 9.2, 9.3, 9.5
Proposed Regional Land & Riverbed Management Plan			
Creekbed disturbance	Rule 6.2.6.1	D	O 5.3.1, P 5.4.2
Proposed Water Management Plan			
Surface water take	Rule 12.1.7	D	O 5.3.1, 5.3.2, 6.3.1, 6.3.5, P 5.4.1, 5.4.1C, 5.4.4, 5.4.5, 6.4.3, 6.5.3, 6.5.4, 6.5.6
Water diversion	Rule 12.4.6	D	
Proposed Regional Land & Water Plan			
Lake & Riverbed Management			O 4.2.1, P 4.3.2
Natural & Human Use Values of Water			O 6.2.1, 6.2.2, P 6.3.1, 6.3.3, 6.3.6, 6.3.7
Surface Water Quantity			O 7.2.1, 7.2.5, P 7.3.3, 7.3.10, 7.3.11, 7.3.13
Rules - Creekbed disturbance	Rule 36	D	
- Surface water take	Rule 54	D	
- Water diversion	Rule 55	D	

OBJECTION TO THE CONSENT AUTHORITY

You are advised that you have a right of objection to the Consent Authority in respect of this decision, pursuant to Section 357A of the Resource Management Act 1991. Any objection is to be in writing and must set out the reasons for the objection. Any objection must be made within 15 working days of receipt of this decision. The Consent Authority will then consider the objection and give its decision in writing. Any person who made an objection may appeal to the Environment Court against the Consent Authority's decision on the objection, pursuant to Section 358.

Alternatively, pursuant to Section 120 of the Resource Management Act 1991 you have the right of appeal directly to the Environment Court against the whole or any part of this decision. Notice of appeal shall be in the prescribed form and must be lodged with the Environment Court and served on the Council within 15 working days of receipt of the Council's decision.

COSTS

An invoice will follow shortly, if the deposit lodged was insufficient to cover the costs associated with processing this application.

The final consent document will be issued if no objection/appeal has been received after the 15 work day objection period has passed. Alternatively, the Council will issue a final document if you advise the Council in writing that you will not be lodging any objection/appeal.

If you have any queries regarding this matter, please contact the Council.

Colin Dall
Consents & Compliance Manager

RESOURCE CONSENT APPLICATION

BY GRIFFIN CREEK HYDRO LTD for a Resource Consent to construct a Run of River 1.3 Mw Hydro Electric Power Station at Griffin Creek SH73 Turiwhati Westland.

Land Use Consent Application
For Works in or on the Bed of Griffin Creek

Intake Structure
Tail Race Outlet Structure
Road Access Along Creek Bed from SH73 to Power House

Water Consent Application

To Divert Water from Griffin Creek and to Return Water to Griffin Creek

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Applicant	Griffin Creek Hydro Ltd Richard Morgan (company director)
Postal Address	[redacted]
Telephone: Business: Private: Facsimile: Mobile: Email:	[redacted]

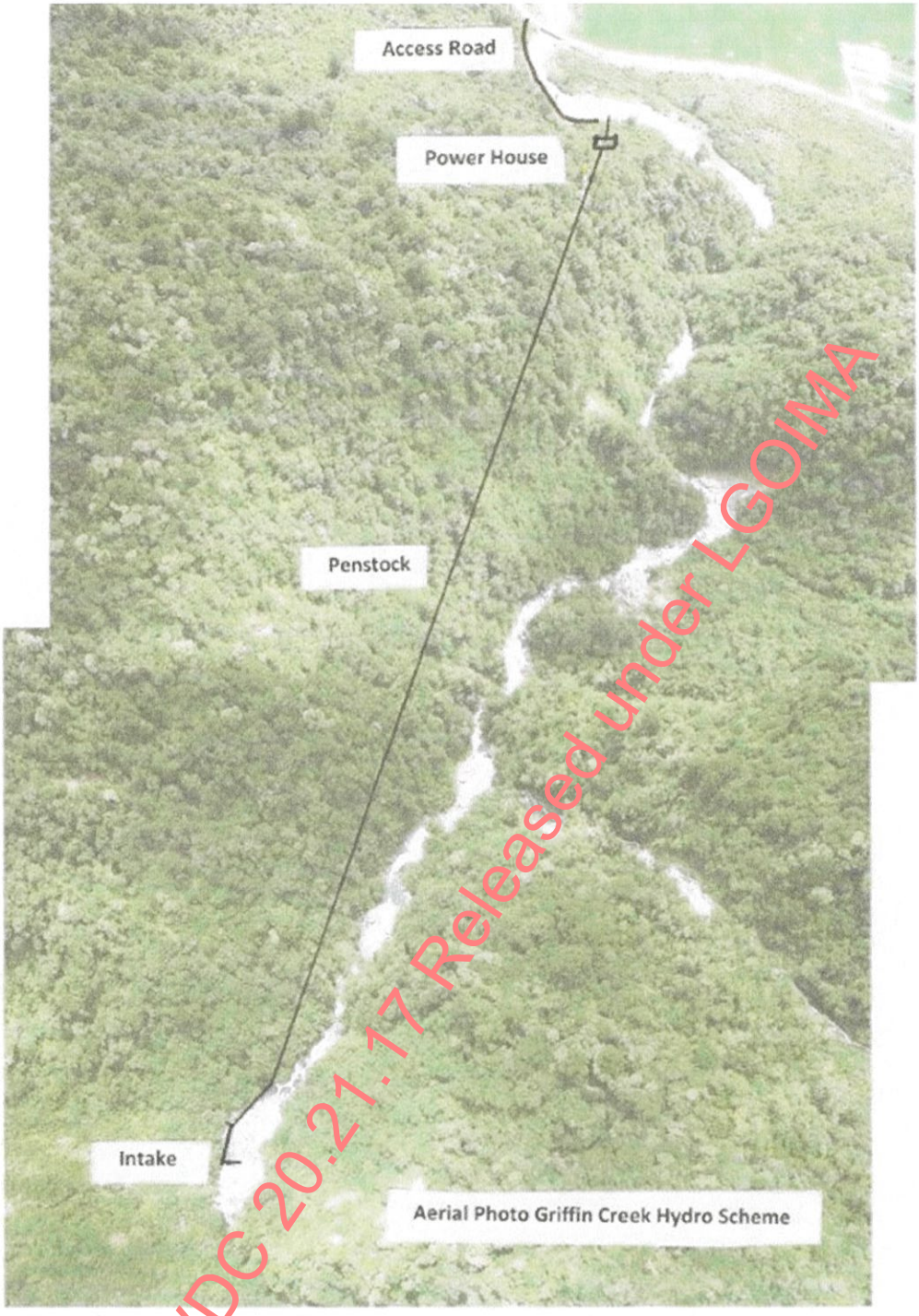
Property owner's name:

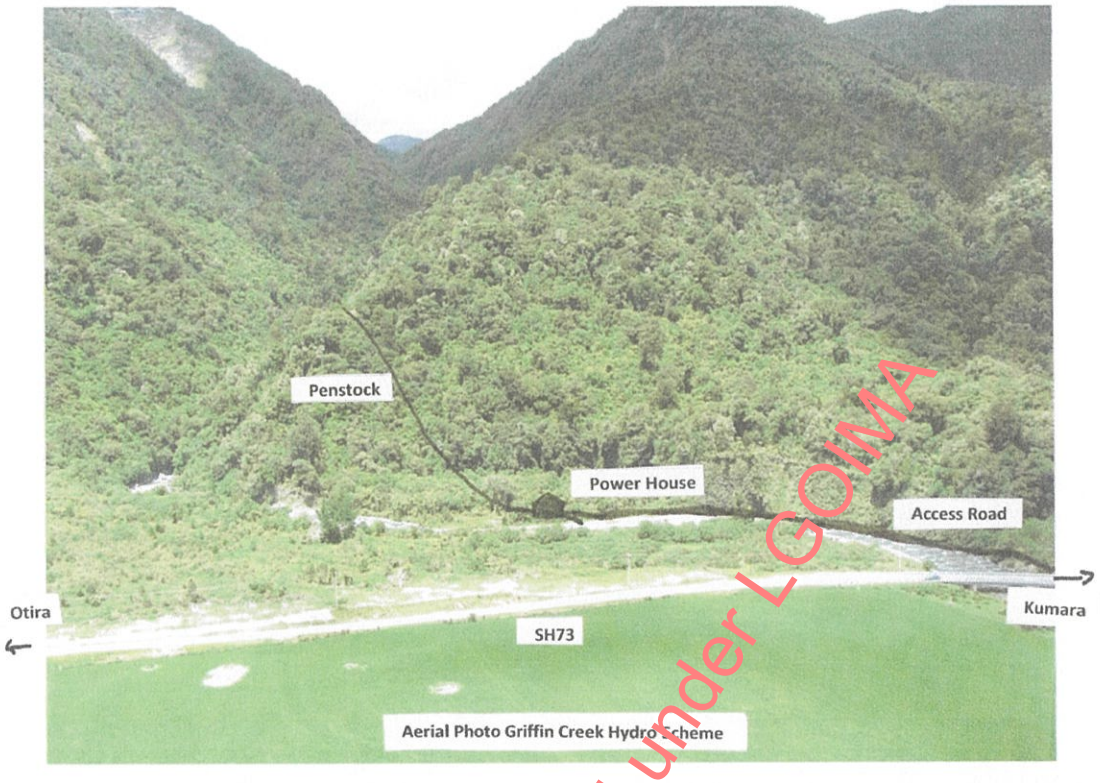
Department of Conservation
Land Information New Zealand

Location of activity

Griffin Creek SH 73 Turiwhati Westland

Territorial authority in which land is situated:
Westland District Council





1. Type of Activity

This application is to obtain Resource Consent to construct a small 1.3 Mw Hydro Electric Power Station at Griffin Creek.
The area where the intake, headrace /penstock will be located makes Griffin Creek an ideal site for small power generation for the following reasons.

(a) The steep terrain which is largely covered in dense bush and which currently has no access tracks makes the area unsuitable for recreation users apart from the occasional hunter.
(b) Because of the waterfalls above and below the intake site there are thought to be no fish in this stretch of the creek. It is therefore of no use to recreation fishermen.
(c) Because it is thought there are no fish then lowering the flow of the stream will have no effect on fish life.
(d) There are known to be Whio/blue duck in the upper reaches of Griffin Creek however because of the waterfalls the habitat in this stretch of the Creek is not suitable for them.
(e) Because this proposed scheme would be a "Run of River" type no dam is required. Rocks and other material can pass over the intake unheeded when the creek is in flood.
(f) The area is not known to have any historical mining features or to be of cultural significance.

Nationally, hydropower schemes are categorised by their level of energy production. Small Hydropower schemes are generally classified into three size bands: micro-hydro is up to 10kW; mini hydro is between 10 and 1,000kW; and small-hydro is between 1,000kW and 10MW. These may provide enough electricity for one house, a small village or a small town, respectively.
The proposal is to construct and operate a small-hydropower scheme on a section of Griffin Creek, which feeds into the Taramakau River about 40km upstream of Kumara Junction.
It is proposed that construction would be in two stages over a two year period, with Stage 1 being a 300kW generator and Stage 2 being a 1,000kW generator.
The intake point is proposed to be located 1.5km above the power house and outfall . A 0.3m wide walking access track would be established to the intake point. Some of the intake structures would be located in the streambed and some would be sited on the side of the creek. The hydropower operating system would monitor the flow rate at the intake site via cameras and a flow gauge, and control gates on the intake structures would be controlled remotely via a data cable, which would be installed along the line of the penstock.
The lower 120m of the access track and penstock cross over into LINZ land. The penstock pipeline would enter a powerhouse near to Griffin Creek bridge on SH 73. The water would then be discharged from the power house back into Griffin Creek via a tailrace and outfall.
Vehicle access to the power house would be on an access road built on the left hand side of the creek bed and which is part of a legal road which extends from SH73. The Power House would be built on land leased from LINZ. An application to lease this land has been made to LINZ.

Access track
A 0.3m wide track would be established from the powerhouse up to the intake site to enable foot access to the upper section of the penstock, the headrace and the intake structures.
The track would be located within the 3m wide easement corridor
The track route would be marked and the surface would not be hardened, except where, with subsequent use, becomes very soft and muddy. This type of track is the equivalent of a Standards New Zealand backcountry adventurer track (SNZ HB 8630: 2004). The route would be chosen to avoid the need to cut down any trees larger than 20cm diameter at breast height (dbh) and some trimming may be required during the operational phase.

Intake Structure

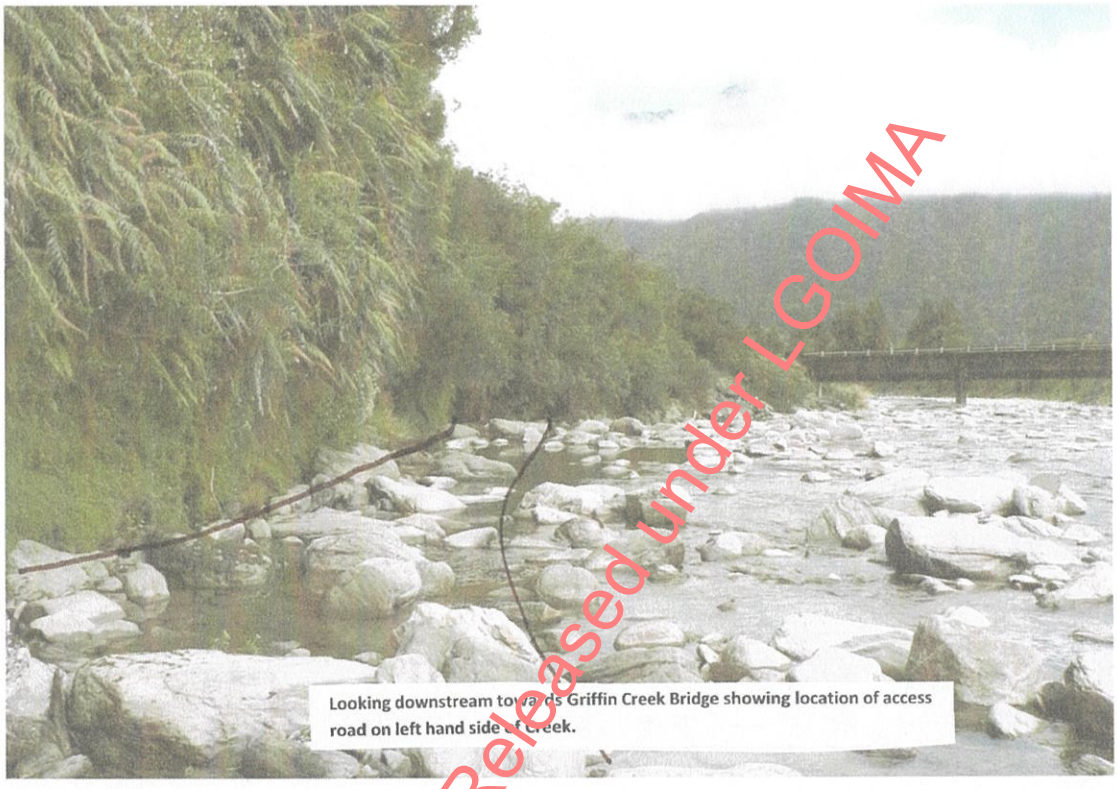
The intake structures would be spread over about 20m of the stream (Fig. 4). The width of Griffin Creek at the intake area is 3m. No trees would be need to removed in order to site the structures. There is an 2m high waterfall at the intake area and directly above this is a 20m by 20m wide pool. From the edge of the pool, a 0.5m deep x 2m wide channel would be cut using hand held petrol driven equipment (e.g. diamond tipped saw) into the bedrock of the true left of the streambed for a distance of 5m. The channel would feed water over the waterfall and direct it into an intake structure (Fig. 4). This steel structure would be 1m high x 2m wide x 3m long. The structure would be located in-stream but to the side against the rock face of the waterfall. The steel structure would be anchored to the surrounding rock using steel pins. The intake would have a self-cleaning grate, consisting of parallel bars 2mm apart, to prevent gravel and wildlife such as fish from entering the structure.
There would be a gate at the entry of the intake structure, which would be electronically controlled from the powerhouse and powered by solar/battery (see below). When the gate is closed, water would flow over the structure and continue downstream in the natural streambed. When the gate is open, from the intake structure, the water would be taken approximately 15m in a steel pipe to the settling tank. The settling tank would be situated as close to the intake structure as possible, possibly approximately 15m away. It is considered that any closer would not be practical as there is a vertical rock cliff face immediately alongside the intake structure. The fabricated steel settling tank would be sited in the streambed to the side. The tank would be 2m wide x 4m long x 2m deep. It would sit on top of the rocks (i.e. not dug into the streambed) and fixed to large boulders using steel pins.
The settled sand and gravel would be returned to the stream via a 50mm constant return pipe. The return pipe would be pointed downstream to ensure that the fines do not build up beneath the pipe.
There would be a gate at the end of the settling tank that would be electronically controlled from the powerhouse and powered by solar/battery (see below). When the gate is down, there would be no flow into the penstock pipe. The water that does not enter the pipe would return to the stream via an overflow weir. The overflow weir would be made of steel.
From the settling tank, the water would be piped along a 1,500m long pipeline, consisting of an 800m long headrace (with a 450mm diameter pipe) and a 700m long penstock (with a 350mm diameter pipe).
The exact design of the intake and settling tank system would be formalised by a hydro engineer. No concrete would be used in constructing the intake and settlement pond structures.
There is no need for a dam to be constructed.

Tailrace Outlet Structure

A Tailrace Outlet Structure would be built below the Power House to return the water to Griffin Creek. It is intended that this 2m x 2m structure would be a concrete wing backed design constructed in such a way as to ensure the water would not scour out the creek bed.

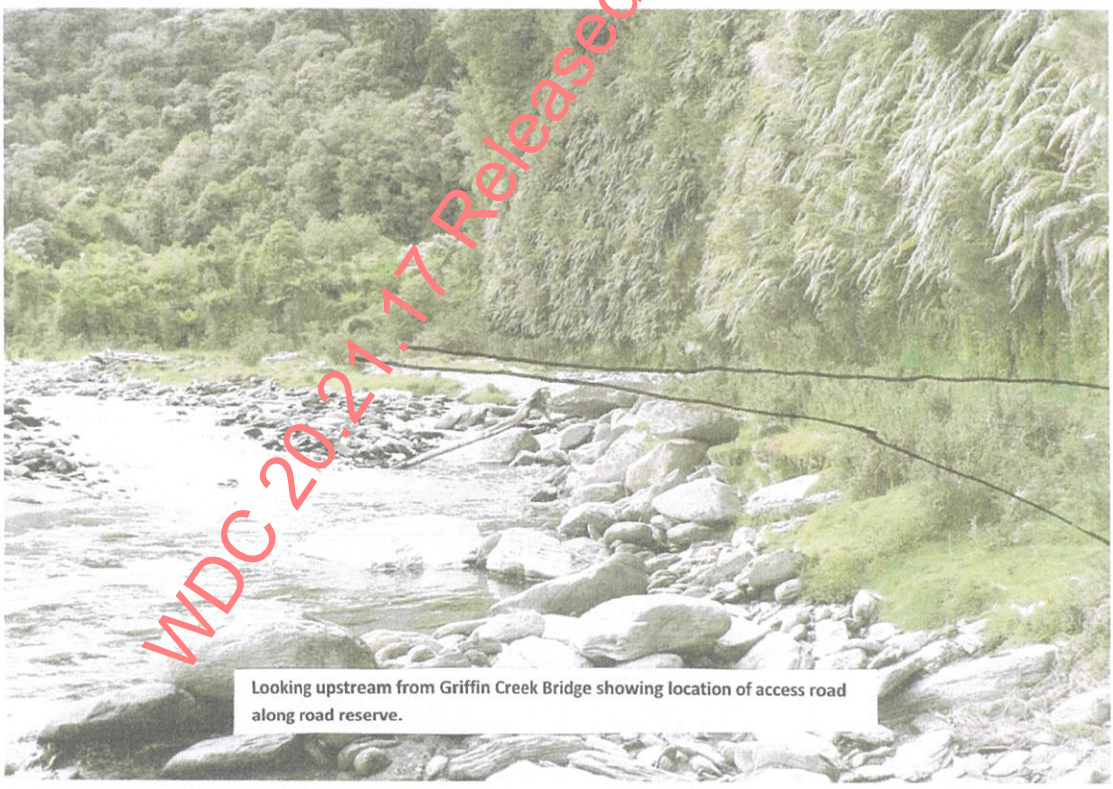
Access Road

An Access Road from SH73 to the Power House would be built, part of which would be constructed on the bed of Griffin Creek along an existing legal road which extends from the SH73 Griffin Creek Bridge along the far right hand side of the creek (looking upstream from the bridge). This 3m wide access road would be built using material (shingle) from the creek so as prevent introducing freshwater weeds and didymo.



Looking downstream towards Griffin Creek Bridge showing location of access road on left hand side of creek.

Looking upstream from Griffin Creek Bridge showing location of access road along road reserve.



Looking upstream from Griffin Creek Bridge showing location of access road along road reserve.

Once the scheme has been fully developed, the applicant proposes to divert up to **1.2m3/s** from the stream to the hydropower scheme (48% of the mean annual flow). The 300kW turbine would require a flow of at least 0.3m3/s and the 1000kW turbine would require 0.9m3/s. The two turbines can be shut down independently as the flow in the creek falls.
To determine the actual flow rates on Griffin Creek, a NIWA approved flow gauge would be installed just below the intake site once the hydropower scheme is operational.
Once the residual flow falls below **0.8m3/s** the water inlet would automatically shut off and the Power Station will shut down.

A hydro electric power scheme uses the pressure created by the head of water in the penstock to drive the turbine and therefore generate electricity. The water is not changed in any way and is returned to the creek exactly as it was before it was diverted.

2. Programme

The proposed commencement date of the work is 1 February 2011.

The proposed completion date of the work is 1 February 2013.

Requested expiry date of consent is 1 February 2013.

The work would be undertaking by a number of subcontractors working under the control of a project manager engaged by Griffin Creek Hydro Ltd.
The construction of a Hydro Power Station involves civil engineering, mechanical engineering and electrical engineering. Where possible contractors from the West Coast would be used.

The proposed hours of construction will be from 7am to 5pm six days a week. The nearest house is approximately 500 metres away from the Power House and so the construction or operation is not expected to affect the residents in any way.
Once the scheme is operational apart from routine maintenance power would be produced 24/7 providing there is sufficient water to operate. As this will be a "run of river" scheme there is no dam and therefore there is no storage.

Access during construction phase
The construction period is proposed by the applicant to be approximately two years. The intake structures and pipeline would be installed using a winch and hand held equipment. Temporary scaffolding may need to be erected.
All material required to construct the penstock and headworks would be winched up the line where the penstock would be laid and carried in by helicopter. The helicopter would carry the items in a sling beneath it and therefore it would not need to land anywhere on the site.
To build the intake channel and structures, the stream would be temporarily diverted away from the edge of the pool adjacent to the proposed channel site using heavy polythene sheets and sandbags.
Access during operation phase
Once the hydropower scheme is in operation, all access would be using the access track on foot.

Part C: Assessment of Effects on the Environment

History of the Proposed Activity
There has been no other hydropower activity in this valley. Various larger hydropower schemes operate within the West Coast *Tai Poutini* Conservancy.

Landform
Griffin Creek is a small mountain stream with a total catchment of 15 km2 and has a stream length of approximately 11 km. The upper catchment of Griffin Creek is a large, wide valley but the lower reach is enclosed in a steep sided gorge, with a number of waterfalls and two deep ravines. The width of Griffin Creek at the intake is 8 m. The proposed hydropower scheme would remove water from a site approximately 7 km from the confluence of the Taramakau River and return the water into Griffin Creek 1.5 km further downstream.
The steep sided gorge is on the leading edge of the band of ultramafic schist immediately behind the Alpine Fault. The lowest part of the proposed pipeline crosses the Alpine Fault. Soils are well drained and derive from tertiary mudstones, sandstones, greywacke and granite alluvium.
The applicant provided a report in his application from a civil engineering company that commented on the technical feasibility of constructing a hydropower scheme at the site. This report stated that on the western side of the valley, where the access track and penstock would be located, there are several relatively old (i.e. 50 – 100 years) and inactive small and large landslips, as well as a number of tree falls. On the eastern slope of the valley, outside of the application site, is a relatively new landslide. The report stated that the proposed hydropower scheme was technically feasible and that the potential risks to the feasibility of the scheme were tree falls (high), landslips (moderate) and landslides (low to very low). The consultant believed that there was an extremely low risk to the feasibility of the proposed scheme from creek embankment collapse but noted that there was on-going erosion of the creek bank and bed. The conclusion of the consultant was that the risks to the feasibility of the scheme associated with the landform would more likely be associated with the operation phase (i.e. maintenance) than during the construction phase.

Flora
The vegetation in this area, as for other western valleys, is indigenous forest. The dense podocarp forest includes matai, miro, rimu and kahikatea on the lower slopes and southern rata, kamahi and mountain totara on higher slopes. Diverse fern species are also present.

Fauna
Common native forest birds inhabit the forest in this area, including tui, bellbird, tomtit, rifleman, fantail, kereru, grey warbler, brown creepers and silver eye. Whio/blue duck inhabit the upper reaches of Griffin Creek and it is suspected (i.e. they have not been sighted at this site) that they do not use the area of the intake due to the waterfalls in the area. Deer, goats and pigs may be found in the application area.

Freshwater
The applicant estimates that the mean annual flow and the median annual flow for Griffin Creek is 3.5m3/s (3,500 litres per second) and 2.3m3/s, respectively, and the mean annual low flow is 0.8m3/s (800 litres per second).
This is based on flow data for the nearby Taipo River that has a NIWA river gauge and downscaling the Taipo data proportionally by the smaller catchment size of Griffin Creek. The mean and median annual flow rates are somewhat different, which indicates that the system is flashy, i.e. there can be large occasional floods.

Due to the steepness of the terrain, elevation, distance inland and high rainfall, the fish biodiversity and biomass is likely to be very low. There are also a number of waterfalls in Griffin Creek, some being 40m high, which may prevent upstream travel by fish.
Although some fish are recorded in the higher sections of mountainous catchments elsewhere and considerable distances from the sea, it is not likely that there is a high diversity and abundance of fish in the section of Griffin Creek where the intake is proposed to be located. This is due to the steep nature of the creek and the presence of waterfalls that may prevent the passage of fish. However, fish

may be present in the lower reaches near to the power house.

Historic

The area is not known to have any historical mining features or to be of cultural significance. Mining for serpentine occurred around the top of Mount Griffin some 4.5km to the south-west of the application site during 1912 to 1914. Griffin Creek valley is unlikely to have been used by early Maori travellers as a "greenstone trail" or a pass because the valley is perpendicular to the main divide. It is more likely that early travellers would have used either Browning Pass 20km to the south or Arthurs Pass to the north.

The area falls under the Ngai Tahu Pounamu Vesting Act, which controls the management and protection of the pounamu. Griffin Creek is part of the Kaiti Waewae Waahi Pounamu. Occasionally erosion, land movement and development can unearth raw pounamu and serpentine and pounamu artefacts and it is illegal to remove or interfere in any way with artefacts or the site where it was found. Any raw pounamu found at Griffin Creek is the property of Te Runanga o Ngai Tahu and should be notified to the Pounamu Management Officer immediately.

Recreation

It is thought that very few trampers, hunters or other recreational users use the section of Griffin Creek where the hydropower scheme is proposed to be installed. This is due to the steepness of the valley and the presence of waterfalls and ravines. Access to the backcountry area, routes and huts in the region above the proposed intake site is easier via neighbouring valleys to the east and west. If there are people accessing the site, then the access track may make access to the point of the intake more straightforward.

3.2 On Adjoining Land

Recreation

Routes exist heading south into the mountains from SH73 via neighbouring valleys to the west (Harrington Creek) and to the east (Taipo River). The former goes over the ridgeline and reaches Griffin Creek around 1.5km further upstream than the proposed intake site. Griffin Creek Hut, Rocky Creek Hut and Scottys Biv are south of the application site and accessed via the established routes described above.

Other

The powerhouse and the start of the access track would be set back 200m from SH 73.

Consent No. .....(for office use only)

Rhys Morgan
Griffin Creek Hydro Ltd
[redacted]

10 December 2008
1421 Griffin Creek Power Scheme report

Xona Ltd
Design, Consulting & Innovation in Structural Engineering

Level 3, AEQ House
61 Cambridge Terrace
PO Box 1325
Christchurch, New Zealand

Phone +64 3 366 3137
Fax +64 3 366 3136

Dear Rhys,

Griffin Creek Power Scheme - Civil Engineering Report

INTRODUCTION

Xona Ltd (Xona) has been engaged by Griffin Creek Hydro Ltd to carry out brief site investigation and comment on technical feasibility of constructing a electric power generation plant.

Our appraisal is based on a half-day walk-through from the Otira Highway to approximate location of the future surge tank, and a helicopter fly-over the intake area. The inspection is limited to visual examination of the topography and ground conditions. Due to the preliminary nature of the inspection, it is unlikely that all possible risks, conditions and qualities are identified.

Our report does not constitute the confirmation (or otherwise) of the financial viability of the scheme, nor it constitutes a "buildable design" – a final engineering design shall be completed before construction can commence.

PROPOSED POWER SCHEME - GENERAL DESCRIPTION

Following is the preliminary description of the proposed scheme, as proposed by the Griffin Creek Hydro Ltd:

- Intake, at approx. RL 340 – hollow vessel with proprietary self-cleaning grating, short run of pipe, settlement tank anchored to the bedrock and connected to headrace.
- Headrace – from approx. RL 340 to approx. RL 320 – low-pressure large diameter enclosed high-density polyethylene (HDPE) pipe on intermittent supports.

- Surge tank – at approx. RL 320 – benched into the hillside on a relatively flat section.
- Penstock – from approx. RL 320 to approx. RL 120 – high pressure low diameter HDPE pipe on intermittent supports.
- Powerhouse – at approx. RL 120 – an enclosure on plateau near the creek.
- Tailrace and outfall – at approx. RL 120 – a short length of enclosed large diameter HDPE pipe.
- Timber walkway alongside the pipe route, for construction and maintenance personnel only.

INSPECTION FINDINGS

Our inspection findings are as follows:

- Relatively steep embankment overgrown with native bush;
- Several larger and smaller slips which appear to be relatively old and inactive;
- Treefalls;
- Relatively new landslide on the Eastern slope of the valley;
- Several relatively large rocks;
- Slopes covered with what appears to be weathered rock overlying schist bedrock;
- Creek's West bank reveals thick layer (at some points over an estimated 20m vertical drop) of dense interlocked schist shingle.

POTENTIAL RISKS

Following are assessed risks for a 5 year period:

- Tree falls – high
- Landslides – moderate
- Slips – low to very low
- Collapse of the high creek embankment – extremely low
- Erosion of creek embankments and within river bed - ongoing

CONCLUSIONS

On the basis of our inspection and despite several potential risks that may require ongoing management and maintenance, it is our professional opinion that the proposed Griffin Creek power scheme, as outlined above, is technically feasible.

We trust the above report is to your satisfaction. Please do not hesitate to contact writer if you have any further questions.

Yours faithfully,

Zoran Raković
BE(Hons), MBA(Tech), MIPENZ, CPEng
Principal – Structural Engineering

on behalf of
Xona Ltd
Direct Dial: 03 366 3137, Mobile: 027 45 45 814
zoran@xona.co.nz

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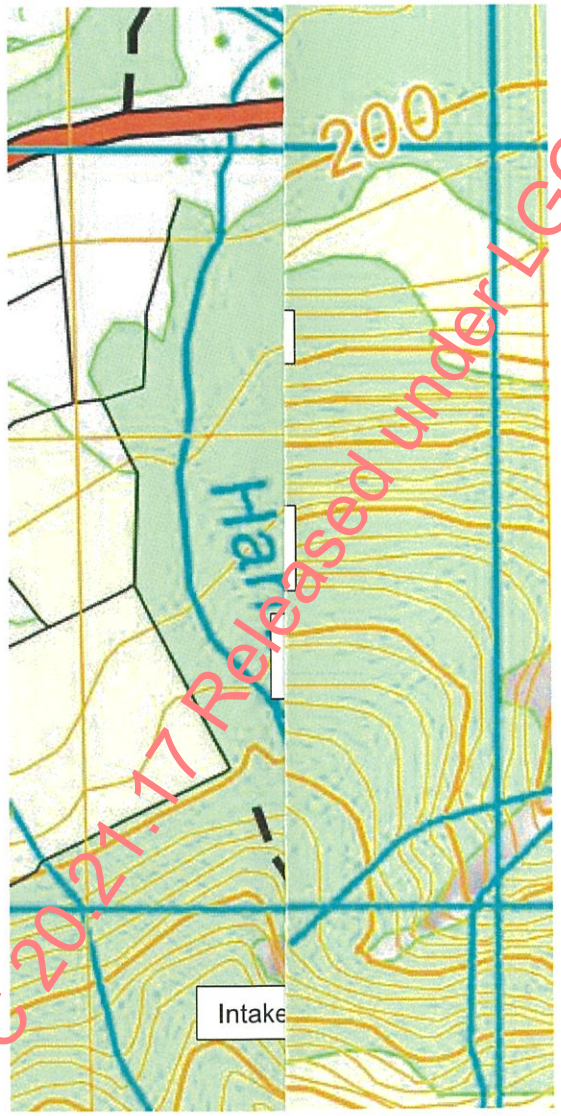

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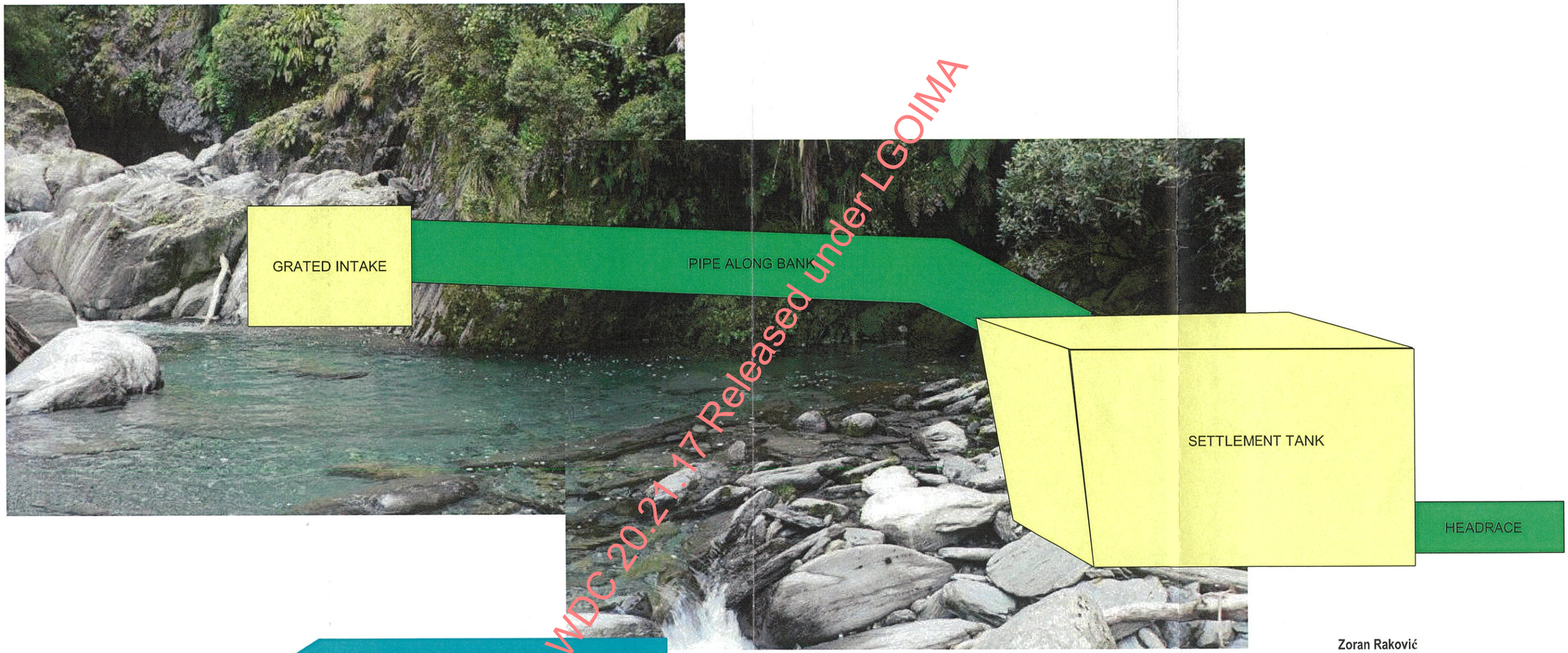

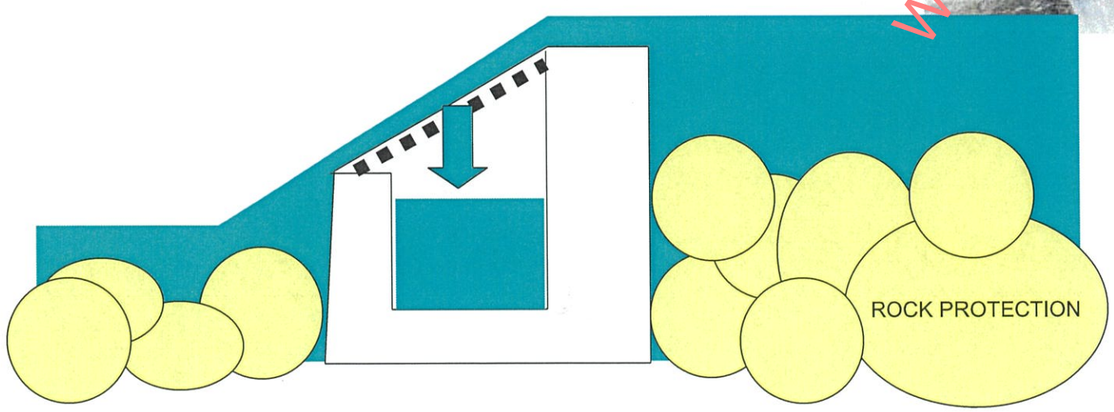

SECTION THROUGH INTAKE

1421 Griffin Creek Hydro Scheme
Otira Highway, South Island
Sketch SK-03
Intake mock-up
29 November 2008
Scale approx. 1:10,000 @ A3
Revision A - Preliminary

Zoran Raković
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Principal - Structural Engineering

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Anna Derks

From: Rhys Morgan <[redacted]>
Sent: Monday, 4 April 2011 11:59 a.m.
To: Anna Derks
Subject: Griffin Creek Resource Consent Application
Attachments: Westland District Council Application.docx

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Anna

Attached please find an electronic copy of the information which is attached to the completed form.
I am today sending you the modified Resource Consent Application with changes made as requested in your letter dated 17 March 2011.
So we need to include the Fitzgerald's as an affected party? They have already been notified three times including the latest notification regarding the LINZ application which they were given until 31 March 2011 to raise any concerns about the proposed scheme with LINZ. From a phone call on 1 April 2011 I had with Rose Quirk at APL Property who act for LINZ no 'concerns' were received.
Several months ago I visited them and spoke to Patrick, their main concern is around people having access to the DOC Estate behind their property, because they had hunters on another part of their property spotlighting at night and who fired in the direction of their home. Whilst I have sympathy's with them, to stop a development because of the potential for somebody to illegally discharge a firearm is not right. The closest the track will be to their home is about 1.6k but there is already an existing DOC track which goes up beside Harrington Creek which only about .6k from their home, it does not make sense. Patrick said in his discussion with me he had no problems with the project he just did not want "people from the city and tourists being able to access the DOC Estate up behind his property". Because I need to construct and maintain an access track into the intake the public will have walking access up into what is a very beautiful valley which will now be able to be enjoyed by anyone who wishes to walk into the area. The Fitzpatrick's will not sign a consent, I have already tried that with the Regional Council who in the end decided they were not an affected party however they have not raised any concerns with the LINZ application.
The consents from DOC, LINZ will not be problem they have both consented to the Regional Council Resource Consent which practically identical. I need to contact New Zealand Transport Agency as they have verbally agreed to crossing off SH73 but I have nothing in writing yet.
Can you please advise me what, if any further information that you may require, if it is necessary for me to come over to the Coast to meet with you in person and the amount of the Consent Application fee?
Kind Regards

Rhys Morgan
Griffin Creek Hydro Limited

EFFECTS ON THE ENVIRONMENT (POSITIVE OR NEGATIVE)

Will proposed activity have any social or economic effects on people?

The proposed scheme is a "Run of River" type and therefore a dam is not required. The scheme would use a stretch of the creek which, because of the waterfalls is not suitable for recreation i.e. kayaking and fishing.
Run of River Hydro Schemes have the lowest impact on the environment of any type of power generation.
As demand increases there is an ever greater need for more generating capacity.
Currently the West Coast is not "self sufficient" in power generation and as a result most of the required power is transmitted from the East Coast.
Should this transmission system ever be damaged in some way there will be a serious shortage of power on the Coast.
Small low impact schemes such as the one proposed at Griffin Creek will help increase the generation on the West Coast.
A reliable, plentiful supply of electric power is an essential requirement for a community and therefore this scheme and will have a direct positive impact on the social and economic lives of people living on the West Coast.

Will buffer zones be left for boundaries, riparian margins and aesthetic values?

See attached topographical map and aerial photos for location of intake, penstock and Power House. It is intended that once constructed these will not be able to be seen from SH73.
Furthermore the proposal will not be able to be seen from the property described as Lot 1 DP 2520, owned by Cooks Stud Farms Ltd on the opposite side of the State Highway 73.

NATURAL HAZARDS

Is your site subject to landsides or land instability?

From the intake the access track and penstock will follow the contour line along a steep sided valley until it reaches the ridge line. This valley is covered in virgin bush which includes a number of large mature trees.

Periods of prolonged heavy rain coupled with high winds can cause mature trees to fall. These fallen trees can over time, through gravity move down the slope which may then cause a landside.

Over a remarkably short time the bush starts to regenerates, this prevents any further erosion.

This process of mature trees falling and then regeneration occurring is part of the natural cycle of the bush.

The penstock will be made of polyethylene which means the pipe will be flexible can be laid around trees, this together with the access track being kept to a maximum width of 30cm will limit the clearing of the bush to just the undergrowth along the penstock and access track.

By limiting the clearing of the bush to just the undergrowth and by constructing the track to accepted standards for the treatment of run off the possibility of the penstock and track contributing to erosion should be minimal.

Because the track and penstock will be under the bush canopy 600 square metres of undergrowth will require removing i.e. .3m wide x 1000m for the track and .3m wide x 1000m for the penstock total 600 square metres and actual land clearing of approximately 400 square metres will be required for the 9x12 metre Power House. Therefore a total of 1000 square metres of indigenous vegetation will require to be removed.

Formation of Access Road

It is proposed that an access road from State Highway 73 to the Power House be constructed along the existing road reserve which is on the right hand side of the creek upstream from the Griffin Creek Bridge. An approximately 50 x 4 metre stretch of the proposed road is currently part of the stream bed (see photo).

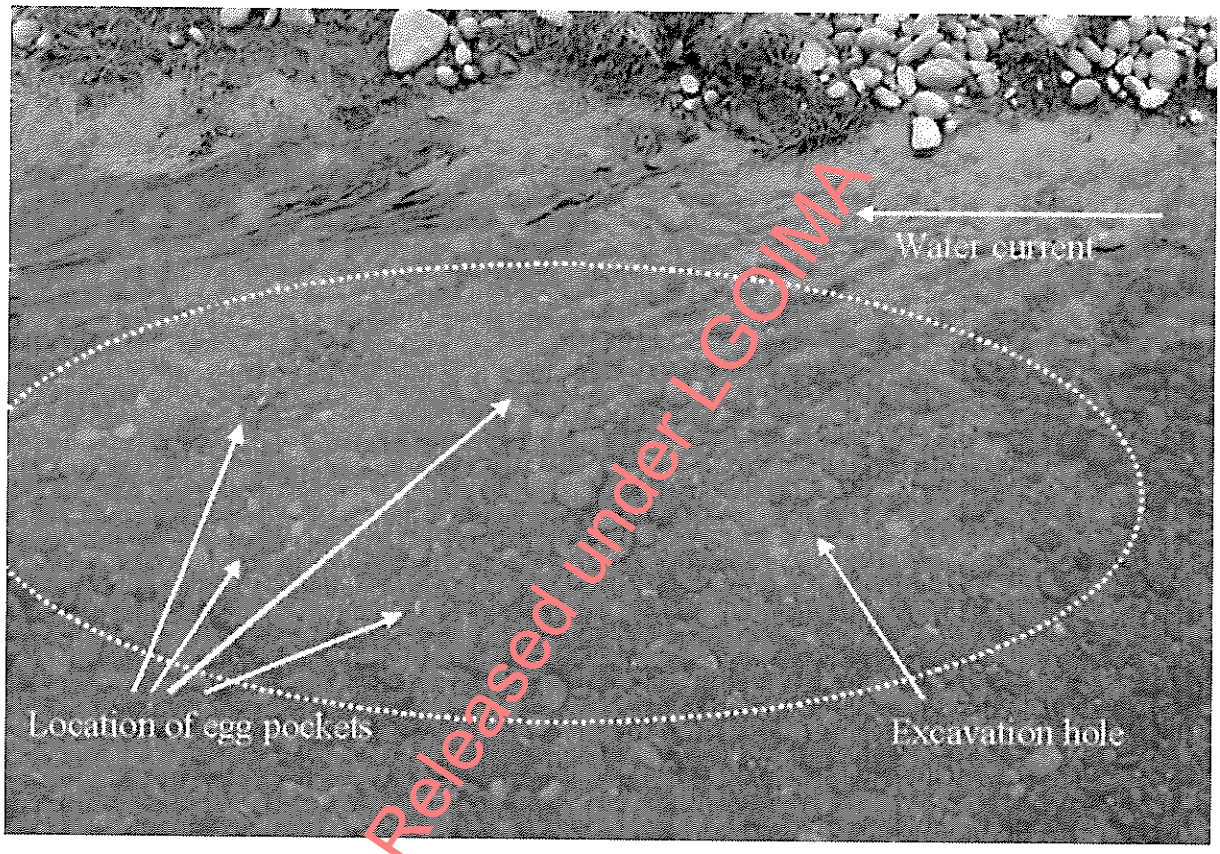
The effects of constructing the access road in this 50 x 4 metre stream bed are as follows.

Aquatic Habitats

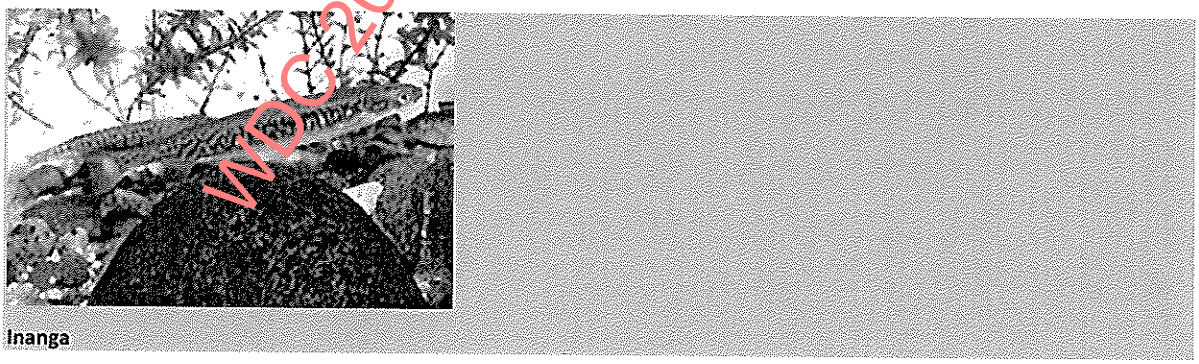
Brown Trout

Fish and Game have recently released Brown Trout into the Taramakau which Griffin Creek is a tributary of. It is therefore possible that Brown Trout could spawn in the lower reaches of Griffin Creek however research indicates that the 50 x 4 metre stretch of water which is at the side of the creek is not suitable for spawning. This is because the water is not fast flowing and the material apart from the rocks is very fine, almost sandy and because the brown trout who spawn from May through to September prefer to deposit their eggs amongst gravels in fast flowing waters. Each female trout (or hen fish) deposits her eggs in a series of small excavations (called pockets) in the gravels. After fertilisation by an attendant male fish (or jack), the eggs are buried by stones dislodged immediately upstream (McDowall 1990). The distinctive gravel formation containing trout eggs is called a redd. See photo below.

Therefore it is considered that the formation of the access road along the stream bed will not have a detrimental effect on the Brown Trout.



Inanga

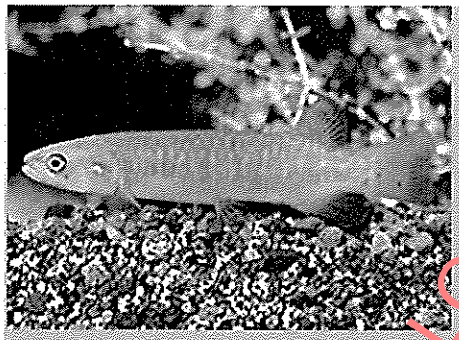


Inanga

Inanga spawn in streamside vegetation, even rank exotic grasses are suitable. Inanga are found in lowland slow-moving streams. They do not climb waterfalls

or swim up steep gradients. Therefore building an access road along the side of the creek will not have detrimental effect on Inanga because Griffin Creek is not considered to provide a suitable environment.

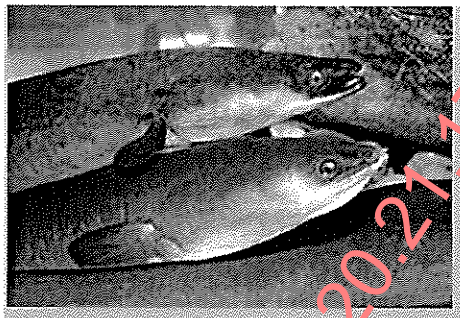
Giant Kokopu



Giant kokopu

The giant kokopu is a threatened native fish. It is secretive and loves having plenty of cover to hide under, preferring gently flowing overgrown streams, swampy lagoons and lake edges. It is considered Griffin Creek does not provide a suitable environment for Giant Kokopu.

Eel



Shortfin eels

Longfin eels can be found throughout New Zealand. They live mainly in rivers and inland lakes but can be found in almost all types of waters, usually well inland from the coast.

They are legendary climbers and have made their way well inland in most river systems, even those with natural barriers. Elvers (young eels) swimming up river will climb waterfalls and even dams by leaving the water and wriggling over damp areas. It is not unheard of for an eel to climb a waterfall of up to 20 metres.

It is quite conceivable that eels are present in Griffin Creek however it is considered the construction of an access road will not prevent eel from migrating up or down the creek .

Natural character of water body and margin

It is considered the proposed access road will have minimal effect because local shingle will be used in its construction and therefore will be unobtrusive. There has recently been a slip on a section of the cliff face which has been caused by flood water eroding the base of the cliff face. The construction of the road along the base of the cliff will help protect it from further erosion.

Clearance of indigenous vegetation

No clearing of indigenous vegetation is required.

Significant landscape areas, including natural features

The construction of the road along the base of the cliff will help protect it from further erosion, this will protect the natural features which can be seen from State Highway 73 as you cross over the Griffin Creek Bridge.

Habitat of indigenous fauna

No indigenous fauna are present in the area to be developed as a road.

Historic and archaeological sites

There are no known historic and archaeological sites in the area to be developed as a road.

Amenity Values

Because local shingle will be used to construct the access road it will blend into the natural surroundings and therefore will not degrade the natural or physical qualities and characteristics of the area.

Wilderness/remote experience recreation values

The construction of the access road will not affect the wilderness/remote experience recreational values.

CONSULTATION

Public Consultation

The public have now been notified twice in the Public Notices of the Grey Star and Hokitika Guardian. The latest notice notifying intention to lease land for the Power House from LINZ closed on 31 March 2011 and no concerns were received.

Department of Conservation

DOC have now granted the easement.

As part of the Easement process the scheme was publically notified for two months and attached is a copy of those submissions.

West Coast Regional Council

The West Coast Regional resource consent has now been approved (attached)

Land Information New Zealand

LINZ have advised West Coast Regional Council that they have no objections to the scheme.
An application to LINZ has been made to lease .5 ha of land (see photos) adjacent to Griffin Creek to locate the Power House.
The adjoining landowners [redacted] were notified of this application together with Public Notices placed in the Grey Star and Hokitika Guardian Newspapers asking for anyone having concerns about the proposed scheme to submit them in writing by 31 March 2011. No concerns were received by that date and accordingly the lease will now be negotiated.

Transit New Zealand

An application has been submitted to Transit New Zealand for approval to construct a crossing off State Highway 73.
It is understood that this application will be approved.

[redacted]

The [redacted] have already been notified three times including the latest notification regarding the LINZ application which they were given till the 31 March 2011 to raise any concerns about the proposed scheme with LINZ. From a phone call on 1 April 2011 I had with APL Property who act for LINZ no 'concerns' were received.

Manager: Planning and Regulatory
Westland District Council
36 Weld Street
Private Bag 704
HOKITIKA
☎ 03 756 9010
Fax: 03 756 9045

Resource Consent Application Form and Assessment of Environmental Effects (Land Use Vegetation Clearance)

All actual and reasonable costs incurred by the Council will be charged to the applicant at the conclusion of the appeal period of the Council decision. A full record will be kept of all expenses incurred in processing applications.

Please note, further information can be given on additional pages if need be.

OFFICE USE ONLY

Date Received: _____
Fees Paid: _____
Receipt No: _____
Valuation No: _____

Are you applying for any resource consents in addition to the vegetation clearance?

No ☐ Yes ☑ What is the consent for? Hydro Power Generation

Do you require additional resource consents from the West Coast Regional Council in relation to this proposal, e.g., for works in a riverbed or discharges (odour, dust)?

No ☐ Yes ☑ If yes, have these consents been applied for? No ☐ Yes ☑

What consent is being sought from the Regional Council..... See attached copy.....

CHECKLIST OF DOCUMENTS

Have you remembered to?

✔

- ☐ Attach a completed Assessment of Environmental Effects
- ☐ Attach a copy of current Certificate of Title for the site
- ☐ Sketch the locality and access points *(if relevant)*
- ☐ Supply an aerial photograph *(if relevant)*
- ☐ Attach affected party approval forms *(if obtained)*
- ☐ Attach site plan showing total area of vegetation, proposed clearance area, all boundaries, water ways, proposed buffer zones and stands to be left.

I hereby certify that, to the best of my knowledge and belief, the information given in this application and the accompanying Assessment of Environmental Effects is true and correct. I undertake to pay all actual and reasonable application costs incurred by the Westland District Council.

Signature of applicant: ..... Date: 12:3:2011.

(or person authorised to sign on behalf of applicant)

Name:(in BLOCK CAPITALS) ...Richard Morgan.....

What are the surrounding land uses (eg housing, farmland etc)?

Farmland.

Has the proposed clearance area been previously modified by human activity? If Yes, How was it modified? When was it modified? And what proportion of the area has been modified?

No

What are the main vegetation species within the proposed clearance area?

pung ferns.

Is the vegetation in the proposed clearance area similar to vegetation in surrounding areas? If No, What is the main are the main vegetation species in the surrounding area?

Yes

Does the proposed clearance area provide an important link to other vegetation in the vicinity?

No.

To what extent are weeds/exotic plants present in the proposed clearance area?

A small ammount of gorse in area adjacent to creek alongside Powerhouse site.

EFFECTS ON THE ENVIRONMENT (POSITIVE OR NEGATIVE)

Will your proposed activity have any social or economic effects on people, including yourself as applicant: (e.g., employment)?
Yes ☑ No ☐

Will your proposed activity have any effect on the surrounding landscape or the visual amenity (views)?
Yes ☐ No ☑

Will there be any impact on the privacy of neighbours?
Yes ☐ No ☑

Will the clearance have any effects on the drainage or water bodies in the area and surrounding areas?
Yes ☐ No ☑

Will buffer zones (show these on the site plan) be left for boundaries, riparian margins and aesthetic values?
Yes ☑ No ☐

Are the boundaries surveyed and/or identifiable?
Yes ☐ No ☑

Will there be increased traffic movements because of your proposal?
Yes ☑ No ☐

Will your proposed activity produce any noise that will be heard at the boundary of the site?
Yes ☐ No ☑

Will there be any generation of wastes by the proposed activity?
Yes ☐ No ☑

Will your proposal have any impact on indigenous wildlife (birds, animals, fish, etc)?
Yes ☐ No ☑

Will your proposed activity have any impact on any known historic or cultural/spiritual values in the area?
Yes ☐ No ☑

Will your proposed activity have any impact on the recreational use of the area?
Yes ☐ No ☑

Will your proposed activity include the use of hazardous substances (e.g. fuels, oils, chemicals)?
Yes ☐ No ☑

Please describe what steps you propose to reduce or avoid the adverse effects on the environment you have identified:

See attached DOC report

SCALE OF EFFECTS

Looking at all of the effects you have identified as a whole, what scale of effects will occur? *(tick one box)*

- ☑ Within the site only
- ☐ Restricted to the surrounding neighbourhood
- ☐ Affecting the whole settlement or town

Any comments about the overall nature of the effects?

NATURAL HAZARDS

Is your site subject to flooding or inundation?
Yes ☐ No ☑

Is your site subject to landslides or land instability?
Yes ☑ No ☐

Is your site subject to erosion?
Yes ☑ No ☐

Is your site subject to contamination from any source?
Yes ☐ No ☑

If you answered **yes** to any of the above questions, then what effects could the identified natural hazard/s have on your proposed activity?

See attached.

How do you propose to address the identified natural hazards?

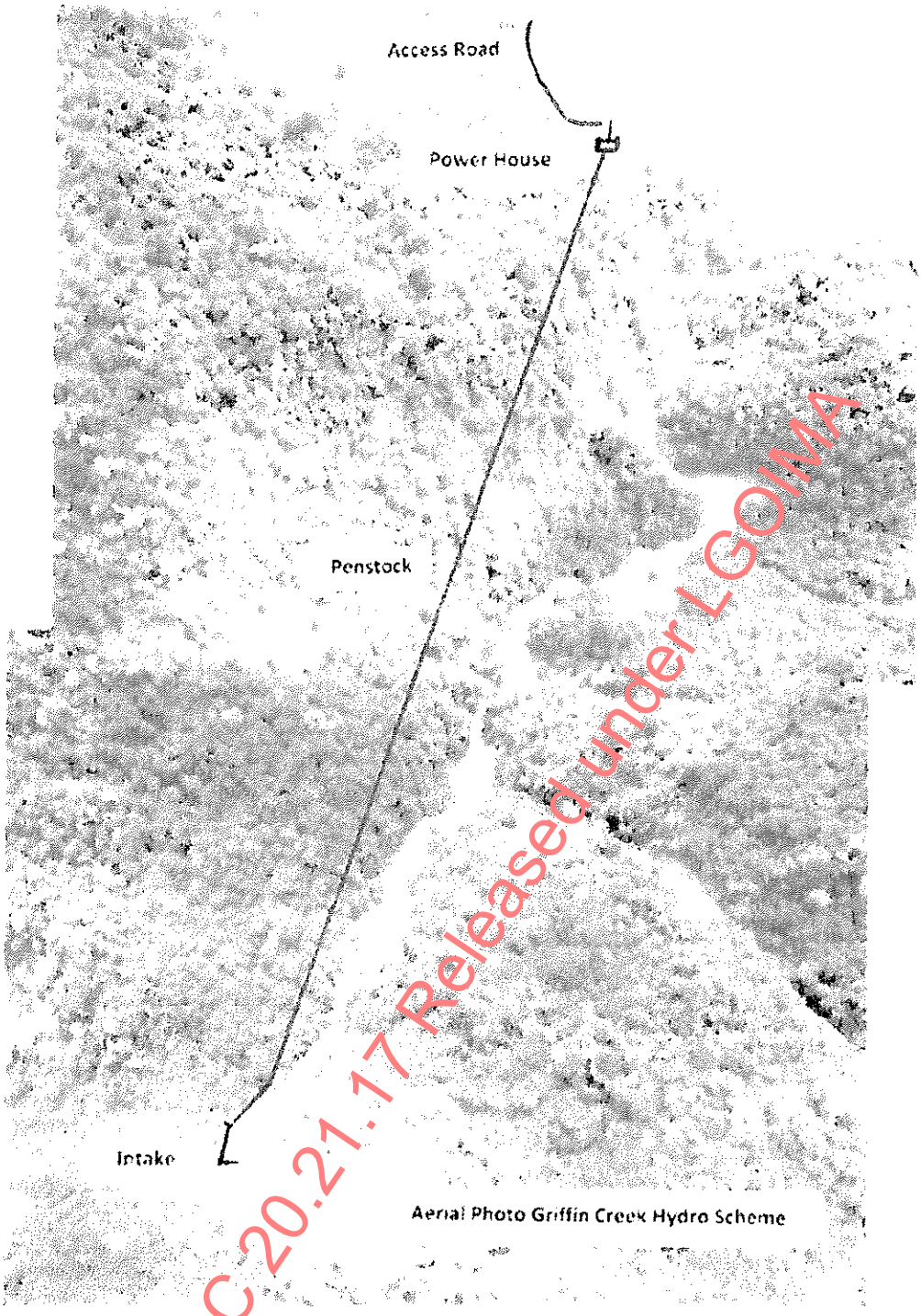
See attached.

[Note: If your site is subject to natural hazard/s and you are unsure of how to proceed, then advice can be sought from a Chartered Professional Engineer (CPEng).]

SUPPORTING INFORMATION – A CHECKLIST

You need to supply the following information to support your application *(tick relevant boxes)*:

- ✔
- ☐ Resource consent application form
- ☐ Completed Assessment of Effects on the Environment form (this form)
- ☐ Copy of the current Certificate of Title for the site
- ☐ Sketch of locality and access points and/or aerial photo
- ☐ Affected party approval forms *(if obtained)*
- ☐ Attach site plan showing total area of vegetation, proposed clearance area, all boundaries, water ways, proposed buffer zones and stands to be left.



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By limiting the clearing of the bush to just the undergrowth and by constructing the track to accepted standards for the treatment of run off the possibility of the penstock and track contributing to erosion should be minimal.

Because the track and penstock will be under the bush canopy the actual land clearing of around 400 square metres will just be for the 9x12 metre Power House.

CONSULTATION

Department of Conservation

DOC have now granted the easement.

As part of the Easement process the scheme was publically notified for two months and attached is a copy of those submissions.

West Coast Regional Council

The West Coast Regional resource consent has now been approved (attached)

Land Information New Zealand

LINZ have advised West Coast Regional Council that they have no objections to the scheme.
An application to LINZ has been made to lease .5 ha of land (see photos) adjacent to Griffin Creek to locate the Power House.
Public Notices are to be placed in the Grey Star and Hokitika Guardian Newspapers asking for anyone having concerns about the proposed scheme to submit them in writing by 31 March 2011.

APPROVAL BY A PERSON AFFECTED BY AN APPLICATION FOR A RESOURCE CONSENT

File Number RC092451 Consents Officer [illegible]

PART A. : To be completed by the person requesting approval:

APPLICANT: Coalbrook Hydro Ltd

DESCRIPTION OF PROPOSED ACTIVITY Hydro above

LOCATION Griffin Creek

ACCOMPANYING DOCUMENTS (maps, plans, form numbers)

PART B : To be completed by the person giving approval:

NAME: B. van Stratum for Land Information New Zealand
(of person or organisation): Phone: ~~[illegible]~~ C/- APL Property Q. Ltd Rose Quirk 03 - 442-7133

■ ***I am the owner ~~or occupier or have some other interest in the property at:~~***

Property Address Griffin Creek Riverbed. *Legal Description* Pt bed of Griffin Creek.

■ ***I have read the information identified below detailing the proposed activity and its likely Effects. (Please verify by initialling space provided.)***

Completed WCRC application form Yes ☑ No/NA ☐

Other information (Note Titles, Plan Nos etc as appropriate):

■ ***I understand that if I give my approval the Council can take no account of any effects that the proposal may have on me when considering the application.***

■ ***I have the authority to give approval for the proposal to proceed as described in the above documents on behalf of myself, the above organisation and all owners of the property identified above, and hereby do so.***

DO NOT SIGN BEFORE READING THE NOTES ON THE BACK OF THIS SHEET

Signed B. van Stratum Date 2 - 2 - 2011

P.T.O.

Department of Conservation
Te Papa Atawhai

Notified Concession Final Report to Decision Maker

Final Report to Decision Maker: Conservator, West Coast Tai Poutini Conservancy

Notified Application for a Concession Easement Notified Concession

Applicant: Griffin Creek Hydro Limited

Permission Record Number: WC-20844-OTH

File: PAC 11 04 109

1.0 Summary of proposal

Type of concession sought:
Notified Concession Easement Notified

Term sought:
30 years

Description of the proposed activity:
Hydro-electric power scheme at Griffin Creek, including intake structures and 1.5km pipeline, and excluding power station, outlet structures and access road from the State Highway.

Description of locations where activity is proposed:
Griffin Creek. Conservation land: Wanganui/Otira Catchment.

This report seeks your final approval, following public notification, on a concession application from Griffin Creek Hydro Limited for the construction and operation of a hydro-electric power scheme on Griffin Creek. The application was submitted in January 2006 with a number of variations submitted during the processing period. The applications can be found on file PAC 11 04 109.

The final version of the application was processed pursuant to Part IIIB of the Conservation Act and the Minister's intention to grant the concession was notified for public comment pursuant to s17T(4) of the Conservation Act 1987 on 15th September 2010.

The "First Determination" report details the analysis that led to the decision to grant a concession subject to the outcome of public notification (found on file PAC 11 040109). Public submissions on the intended granting of the concession closed on 25th November 2010. Three submissions were received. No submitters requested to be heard.

This "final" report is prepared pursuant to s17S(4)(a) of the Conservation Act 1987.

2.0 Summary of Submissions and Recommendations as to the Extent to Which they should be Allowed, or Accepted – Section 49(2)(d) of the Conservation Act 1987

Analysis of submissions
Full copies of the three written submissions can be found on file.

Submission 1
One submission was received from the landowner whose land is adjacent to the public conservation land where the hydro-power scheme is proposed. The location of their own land relative to the proposed concession and public conservation land is found on file.

[redacted]

23rd November 2010

The Conservator
Department of Conservation
Private Bag 701
Hokitika

Dear Sir/Madam

RE: Submission from [redacted] – Surrounding land owners to: Application for an easement by Griffen Creek Hydro Limited – File No: PAC 1 04 109

An article in the Greymouth Evening Star alerted us to submissions called for the above-mentioned application.

Objections:

1. The application states: *"The proposal would considerably improve access for hunters to the area"*

We do not want any more land opened up to hunters!!! We have had experience with the public in the Taipo Valley which we share with your Department. This has got to a point where we are not currently farming the Valley after some 60 + years of freehold and leasehold custodianship, primarily because of abuse from the public. Unfortunately there is an element of our community who have no respect for the private land owner or their property.

Your department's requirement that the public get a hunting permit and gain permission from the land owners is unfortunately a fantasy, it simply doesn't happen very often.

We have had cattle shot and butchered on a number of occasions, high powered rifles fired towards our home, vandalism, and trespass issues.

The last thing we need is to have the public being able to cross/or come into the back of our home via this proposed track, which at the moment, may seen unlikely. However, it is our intention to develop the neighbouring land being RS 5550 in the future, which we already have the necessary consents to do, so having a public road in the side would be a disaster for our farming operation and the lose of protection into the back of our family home.

Concession Number: WC-20844-OTH
File Number: PAC 11 04 109

First Determination Report to the Community Relations Manager West Coast *Tai Poutini* Conservancy **(Approval in Principle)**

Application for an easement by Griffin Creek Hydro Limited

26th August 2010

Department of Conservation
Te Papa Atawhai

2.2 **Status of Area under Application - Section 17S(1)(b)**
The proposed activity would be located on stewardship land managed under section 25 of the Conservation Act 1987 being Wanganui/Otira Catchment Conservation Area. Discussion regarding the consistency of this application with the purpose for which the land is held is discussed in Section 4.9 of this report.

2.3 **Effects of the Proposed Activities - Section 17S(1)(c)**
The applicant has identified a number of effects. These and the appropriate avoidance and mitigation measures are discussed in section 4.2 of this report.

2.4 **Proposed Type of Concession and Duration - Section 17S(1)(d) & (e)**

Type of concession
The applicant has applied for an easement to undertake the proposed activity. Griffin Creek Hydro Limited initially also requested exclusive use of the site during the construction stage due to the risks to people injuring themselves on partially completed structures, i.e. settling tanks. However, the applicant indicated by email on 1st July 2010 that during the construction and operation phases that exclusive use of the site was not required.

Term
An easement for a term of 33 years has been applied for. The reason given for this term is *"This is a permanent structure with total development costs of approximately $3 million. A period of 33 years would be needed by finance institutes for the company to raise the necessary capital for the development. A 33 years term will be the same as the lease of the crown [LINZ] land where the power station will be located."* After the application was submitted, the applicant altered the term to 30 years, and this is discussed in section 4.3 of this report.

Discussion
Relevant to the consideration of the appropriate form of concession is section 17Q(2) of the Conservation Act 1987 which states; *"The Minister shall not grant an easement in respect of an activity if a lease, licence, or permit may be granted in respect of the activity and the Minister considers that a lease, licence or permit is appropriate in that case."*

The proposed structures, conveying of water and foot access to the site can be covered together by way of an easement.

2.5 **Relevant Information relating To the Applicant's Ability to carry Out the Activity - Section 17S(1)(f)**
The applicant has advised that he would engage the required companies with the necessary expertise and experience to construct and operate this venture. A firm in Christchurch that specialises in designing hydropower schemes would complete the final design of the proposed scheme.

Comment
This application is the first hydropower project undertaken by the applicant. It is considered that with advice from various organisations and authorities, and the more recent involvement of structural engineering consultants (Xona Ltd., Christchurch), the applicant would be capable of carrying out the activity.

2.6 **Process for a Complete Application - Section 17T(2)**
This section requires the Minister to decline a complete application within 20 working days of its receipt if the *"application does not comply or is inconsistent with the provisions of this Act or any other relevant conservation management strategy or plan..."*

Comment
This application is considered to be complete. It appears to comply with and be consistent with the provisions of the Conservation Act 1987 and the relevant conservation management strategy or plan.

Due to the steepness of the terrain, elevation, distance inland and high rainfall, the fish biodiversity and biomass is likely to be very low. There are also a number of waterfalls in Griffin Creek, some being 40m high, which may prevent upstream travel by fish.

Although some fish are recorded in the higher sections of mountainous catchments elsewhere and considerable distances from the sea, it is not likely that there is a high diversity and abundance of fish in the section of Griffin Creek where the intake is proposed to be located. This is due to the steep nature of the creek and the presence of waterfalls that may prevent the passage of fish. However, fish may be present in the lower reaches near to the power house.

Historic
The area is not known to have any historical mining features or to be of cultural significance. Mining for serpentine occurred around the top of Mount Griffin some 4.5km to the south-west of the application site during 1912 to 1914. Griffin Creek valley is unlikely to have been used by early Maori travellers as a "greenstone trail" or a pass because the valley is perpendicular to the main divide. It is more likely that early travellers would have used either Browning Pass 20km to the south or Arthurs Pass to the north.

The area falls under the Ngai Tahu Pounamu Vesting Act, which controls the management and protection of the pounamu. Griffin Creek is part of the Kaiti Waewae Waahi Pounamu. Occasionally erosion, land movement and development can unearth raw pounamu and serpentine and pounamu artefacts and it is illegal to remove or interfere in any way with artefacts or the site where it was found. Any raw pounamu found at Griffin Creek is the property of Te Runanga o Ngai Tahu and should be notified to the Pounamu Management Officer immediately.

Recreation
It is thought that very few trampers, hunters or other recreational users use the section of Griffin Creek where the hydropower scheme is proposed to be installed. This is due to the steepness of the valley and the presence of waterfalls and ravines. Access to the backcountry area, routes and huts in the region above the proposed intake site is easier via neighbouring valleys to the east and west. If there are people accessing the site, then the access track may make access to the point of the intake more straightforward.

3.2 On Adjoining Land

Recreation
Routes exist heading south into the mountains from SH73 via neighbouring valleys to the west (Harrington Creek) and to the east (Taipo River). The former goes over the ridgeline and reaches Griffin Creek around 1.5km further upstream than the proposed intake site. Griffin Creek Hut, Rocky Creek Hut and Scottys Biv are south of the application site and accessed via the established routes described above.

Other
The powerhouse and the start of the access track would be set back 200m from SH 73.

4.0 MATTERS FOR CONSIDERATION

Section 17U(1) requires the Minister to have regard to the following matters:

4.1 Nature of Activity - Section 17U(1)(a)

Introduction
Nationally, hydropower schemes are categorised by their level of energy production. Small hydropower schemes are generally classified into three size bands: micro-hydro is up to 10kW; mini-hydro is between 10 and 1,000kW; and small-hydro is between 1,000kW and 10MW. These may provide enough electricity for one house, a small village or a small town, respectively.

The proposal is to construct and operate a small-hydropower scheme on a section of Griffin Creek, which feeds into the Taramakau River about 40km upstream of Kumara Junction. It is proposed that

The intake would have a self-cleaning grate, consisting of parallel bars 2mm apart, to prevent gravel and wildlife such as fish from entering the structure.

There would be a gate at the entry of the intake structure, which would be electronically controlled from the powerhouse and powered by solar/battery (see below). When the gate is closed, water would flow over the structure and continue downstream in the natural streambed.

When the gate is open, from the intake structure, the water would be taken approximately 15m in a steel pipe to the settling tank. The settling tank would be situated as close to the intake structure as possible, possibly approximately 15m away. It is considered that any closer would not be practical as there is a vertical rock cliff face immediately alongside the intake structure.

The fabricated steel settling tank would be sited in the streambed to the side. The tank would be 2m wide x 4m long x 2m deep. It would sit on top of the rocks (i.e. not dug into the streambed) and fixed to large boulders using steel pins.

The settled sand and gravel would be returned to the stream via a 50mm constant return pipe. The return pipe would be pointed downstream to ensure that the fines do not build up beneath the pipe.

There would be a gate at the end of the settling tank that would be electronically controlled from the powerhouse and powered by solar/battery (see below). When the gate is down, there would be no flow into the penstock pipe. The water that does not enter the pipe would return to the stream via an overflow weir. The overflow weir would be made of steel.

From the settling tank, the water would be piped along a 1,500m long pipeline, consisting of an 800m long headrace (with a 450mm diameter pipe) and a 700m long penstock (with a 350mm diameter pipe).

The exact design of the intake and settling tank system would be formalised by a hydro engineer. No concrete would be used in constructing the intake and settlement pond structures. There is no need for a dam to be constructed.

Surveillance equipment at intake
Up to three surveillance cameras would be installed to allow remote monitoring of the intake area. A river gauge would also be installed in the streambed just below the intake site. The video data and electronic data to control the headrace gate would be sent to the powerhouse via the data cable (see below) to assist how the gates on the intake structures are operated.

Solar energy production
The surveillance cameras and intake structure gates would be powered by solar power. This would be captured using solar panels mounted on a 3m high pole, located beside the settling tank. Power would be stored in batteries, which would be housed in a waterproof shed 3m long x 1m wide x 2m high. The construction materials for the shed are yet to be determined. The shed would be located next to the settling tank.

Headrace and penstock
For the headrace, 450mm diameter black high-density polyethylene (HDPE) piping would be used. The maximum head of 20 metres for the headrace pipe would mean that the water would not be under significant pressure. The pipe would be made up into 50m lengths and taken into the site by helicopter and/or using a winch.

The headrace pipe would lie on wooden planking 200mm wide x 50mm deep, and the pipe and the wooden plank would be fixed into rock using steel pins every 2m approximately. The applicant states that this design would be finalised by an engineer.

The width of the disturbance for the headrace pipeline and adjacent access track would be 3m. Primarily this footprint width would be required as a working place during construction and maintenance. The piping proposed to be used is relatively flexible, which allows for some choice in the exact line. It would be sited in such a way that no trees larger than 20cmdbh.would need to be removed.

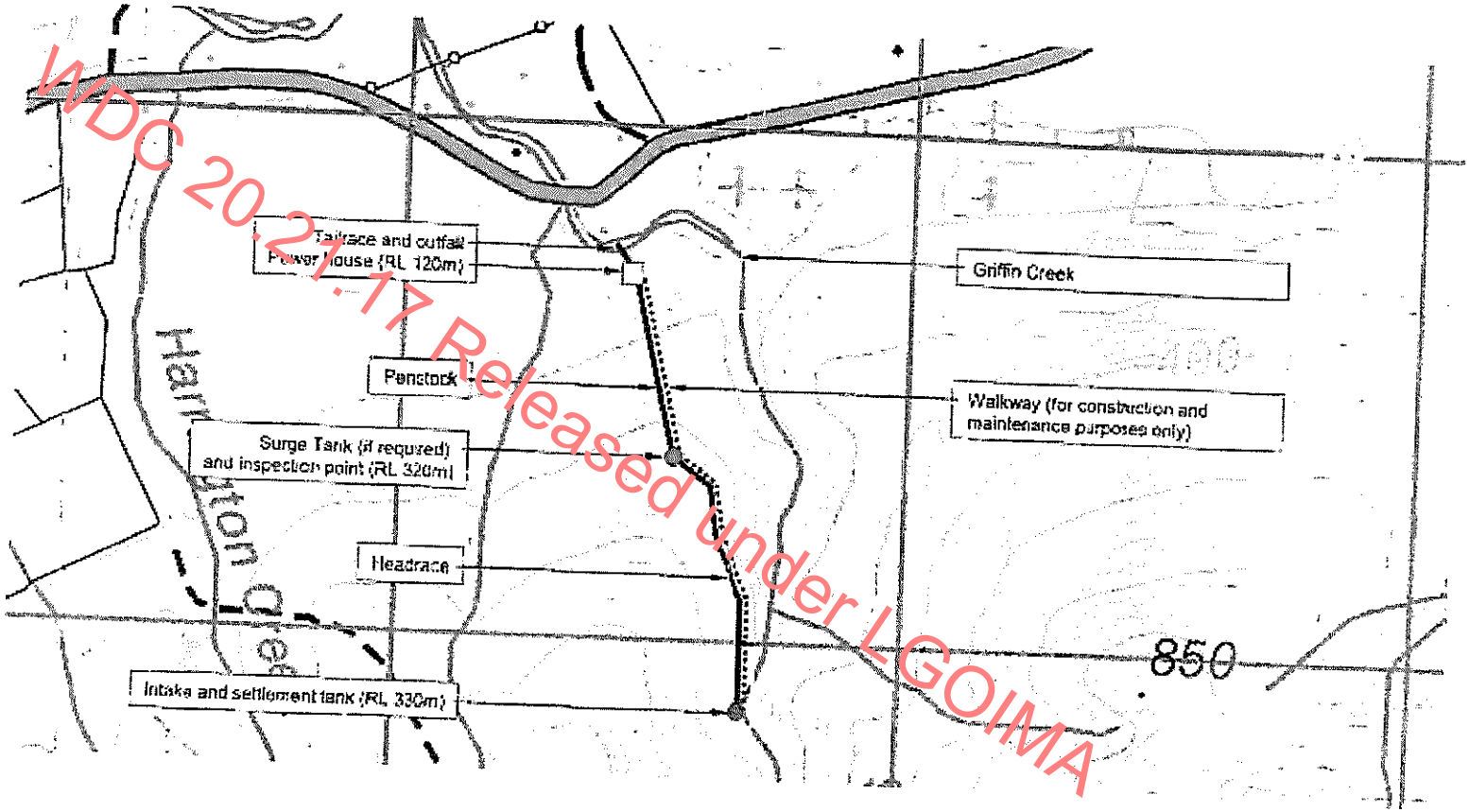


Fig. 1 Overview of the scheme design features

Fig. 3 Scheme design at downstream end, showing location of State Highway, access road and power house off public conservation land.

4.2 Effects of Activity - Section 17U(1)(b) and any Measures to Avoid, Remedy or Mitigate Effects - Section 17U(1)(c)

The applicant has made the following assessment of the effects of the proposal and has proposed the following mitigation measures:

Run of river power schemes are considered to have the least impact on the environment of any type of power generation.

Landscape
By walking along a narrow access track that would not be developed within the well-developed forest, the track and the pipeline should not be seen from the highway.

Flora and fauna
The 0.3m wide access track, 3m wide pipeline corridor and intake structures would require minimal clearing of vegetation, including no trees greater than 20cm dbh. Ongoing maintenance would require trimming of the vegetation to maintain a clear working environment. The presence of the access track and pipeline would not affect the passage of ground birds, and the effects to the flora and fauna are considered to be minor.

There is a moderate likelihood of natural tree falls in the proposed area and the applicant states that the operation phase is more at risk than the shorter construction period. The applicant does not propose to remove any trees to reduce or eliminate the possibility of tree fall and instead proposes to use flexible pipe, which can be threaded around trees. The polyethylene piping can also take some compression (i.e. from falling trees, rock slippage etc).

Freshwater
The applicant states that blue ducks and fish species are not found in high abundance in the immediate area of the intake or downstream to the outlet site. The intake screen would prevent fish from being drawn into the system. The amount of water to be taken from Griffin Creek would therefore not effect the freshwater values significantly. For these reasons, the effects of the proposed hydropower scheme on the freshwater values are considered to be minor.

Noise
During construction, noise would only be heard in the immediate part of the track that is being worked on at the time. The nearest neighbour to the site is approximately 500m from the power house and therefore unlikely to be significantly effected by noise during construction.

Water flow onto the land
Tree fall or rocks falling in a landslide could potentially rupture the pipe causing water to discharge from the pipeline. Should the penstock be damaged or ruptured, automatic control equipment at the power house would electronically close the intake gate, which would stop the water entering the pipeline. The gate would remain closed until the pipe was repaired.

Recreation
There are few recreational opportunities over the stretch of Griffin Creek proposed to be used. It is unsuitable for rafting, kayaking and fishing because of the low water volume and the presence of waterfalls. It is thought that hunters may use the area for hunting due to the presence of deer, pigs and goats. The proposal would considerably improve access for hunters to the area.

General
The applicant proposes to monitor any effects from the activity by regular visits and remote observation of the intake area. As part of the operating procedure, the applicant proposes that the power house would be visited on a regular basis by staff, including inspecting the pipeline and intake site. The power house and intake area would also be remotely observed by video camera, and the images would be viewed remotely by operators. Thus, any operational problems and any effects from the activity would therefore be identified very quickly.

The applicant proposed a cut off in taking water for the larger turbine when the water flow above the intake is 2.1m^3/s and residual flow below is 0.9m^3/s. To be consistent, it is recommended that Department should allow the cut off point for the larger turbine to also be a residual flow of 0.8m^3/s.

As there is no storage of water in the proposed system and there is a reasonable number of freshes and floods as indicated by the significant difference between the mean and median annual flows, the creek would retain an acceptable level of flow variability. Although the intake structures would be located within the streambed, and there would be a number of structures to return water to the watercourse, the natural flow of the watercourse would not be significantly diverted or altered and there would not be any increased abrasion or erosion occurring at the site.

Recreation
Access to the intake would be open to the public along the access track, although because it starts on LINZ land, may not be obvious to members of the public. Access beyond the intake point is very steep and the access track would not be seen as an alternative route to Griffin Creek Hut.

Historic
There are no known historic features in the proposed area. However the area falls under the Ngai Tahu Pounamu Vesting Act, which controls the management and protection of the pounamu. Thus if the application is granted, it is recommended that the relevant special condition addressing accidental discovery would be included in the concession.

Comment
It is considered that the likely impacts of the proposed scheme on conservation values are minimal and that the Department's standard conditions for an easement and the proposed special conditions below would allow the applicant to avoid, remedy or mitigate the effects of the application, if it is to be granted.

It is a standard condition in concession documents that the Concessionaire must obtain all other necessary approvals and authorisations to conduct the activity. As such, there would be a number of conditions in resource consents (if granted) that would also be applicable and of interest to the Department, particularly in respect of freshwater values, preparation of construction plans and ongoing water monitoring.

The recommended special conditions for the easement are found in Appendix One.

4.3 Term
A term of 33 years was requested in the application. Section 17Z of the Conservation Act 1987 (Term of concession) provides that "*a lease or a licence may be granted for a term (which term shall include all renewals of the lease or licence) not exceeding 30 years or, where the Minister is satisfied that there are exceptional circumstances, for a term not exceeding 60 years*".

Comment
Due to the standard maximum term length being 30 years, the applicant altered the requested term to 30 years. It is considered that a term of 30 years is an appropriate term for an easement for the construction and operation of a small hydropower scheme. The term is consistent with granted concessions of this nature.

4.4 Any Information Received under Section 17S or 17T- Section 17U(1)(d)
The Area Office report together with information held on file has allowed the application to be 'complete' and an assessment of effects made.

4.5 Any Relevant Environmental Impact Assessment Including Audit or Review - Section 17U(1)(e)
An additional EIA was not considered necessary.

4.6 Any Relevant Oral or Written Submissions Received as a Result Of Public Notification - Section 17U(1)(f)
The term applied for (30 years) requires this application to be publicly notified pursuant to section 49 of the Conservation Act 1987. If the recommendation from this report is accepted, then it is recommended that the application be notified in The Hokitika Guardian and Grey Star newspapers.

"The Minister shall not grant any application for a concession to build a structure or facility, or to extend or add to an existing structure or facility, where he or she is satisfied that the activity-

(a) Could reasonably be undertaken in another location that-

(i) Is outside the conservation area to which the application relates; or

(ii) Is in another conservation area or in another part of the conservation area to which the application relates, where the potential adverse effects would be significantly less; or

(b) Could reasonably use an existing structure or facility or the existing structure or facility without the addition."

Comment

The applicant has undertaken considerable research including a number of visits to potential sites to identify a suitable site for a small-hydro power house. A 'run of river' type hydropower scheme (which needs a head of water instead of a dam to create the required pressure) can only be operated in waterways where there is a large upstream catchment area, a large drop in altitude over a short distance and a narrow streambed.

The applicant identified a number of reasons why Griffin Creek and the particular intake site were chosen. These included:

- good site access to a main road
- close to transmission lines
- good head to distance ratio (Griffin Creek falls about 300m over a 1.5km distance)
- high rainfall (6m per year) in the catchment area,
- few natural or historic values identified for the site
- little recreational use
- remote location and high bush cover, which should reduce potential conflict with users and shield structures from public view

It is considered that the chosen location is a critical element of the proposal. While there may be other locations that could have been chosen for this activity, the majority of the land in the vicinity containing the potential to generate hydro electricity is managed by the Department of Conservation and it is therefore unlikely that a suitable site could be found outside conservation land. As such, it is considered that the proposed activity and its associated structures could not reasonably be located elsewhere.

5.0 PLANNING INSTRUMENTS

5.1 Conservation General Policy

The Conservation General Policy (CGP) is the first statement of general policy prepared under section 17C of the Conservation Act 1987. It provides guidance for the implementation of the Conservation Act and other conservation related legislation, including the Reserves Act 1977. Conservation management strategies and plans prepared under this legislation must be consistent with the CGP, although existing approved conservation management strategies and plans will continue to have effect until they are amended or reviewed, except where they clearly derogate from the CGP.

Specific policies covering the proposed activity are provided in Section 11 of the Conservation General Policy.

Policy 11 – Activities requiring specific authorisation

Policy 11 of the CGP deals with activities requiring specific authorisation, including concessions. It states that activities should avoid, remedy or mitigate any adverse effects (including cumulative effects) and maximise any positive effects. Both the Department and concessionaires should monitor effects, including effects on public enjoyment, to inform future management decisions. Concessionaires are to be responsible for the safe conduct of their operations.

Utilities

Policy 11.3 of the CGP allows utilities to be provided where they cannot reasonably be located outside public conservation land. Any new utilities are to be of a scale, design and colour that integrate with the landscape. Public access to facilities may be denied where necessary for public safety.

The objectives of the CMS in respect to authorising use of public conservation lands include:

"*1. To implement Conservation General Policy 2005 and General Policy for National Parks 2005 when considering applications for authorisations on public conservation lands and waters.*
2. To protect natural, historical and cultural heritage values from adverse effects of recreation, tourism or other uses.
3. To protect recreational opportunities from adverse effects of authorised uses of public conservation lands.
4. To protect places and other taonga of cultural significance to Poutini Ngäi Tahu from adverse effects of authorised uses of public conservation lands.
5. To consult, where necessary, with Papatipu Rünanga, conservation boards, the West Coast Fish and Game Council, authorisation holders, communities and other people and organisations over the consideration and granting of concessions, access arrangements and other authorisations for use of public conservation lands."

The policies in section 3.5.2 detail a number of conditions to be applied as appropriate to concessions or other authorisations, including for activities on or in beds of rivers or lakes.

Section 3.7.2 Activities on or in Beds of Rivers or Lakes
Section 3.7.2 of the CMS provides guidance for all types of activities that occur on or in beds of rivers or lakes that are managed as public conservation land. The policies are:

"*1. When assessing applications for any activity on or in the bed of a river or lake, consideration should be given to (but not limited to) the following guidelines:*
a) Adverse effects on freshwater and terrestrial species, habitats and ecosystems, historical and cultural heritage values, public access, recreation opportunities and amenity values should be avoided or otherwise minimised;
b) Riparian vegetation should be maintained or enhanced;
c) Activities should not damage riverbanks;
d) No pests, weeds or other unwanted organisms (e.g. Didymo) should be likely to be introduced to, or become established within, the area as a result of the activity; and
e) The natural character within the setting of the activity should be maintained.

2. Biological communities, physical habitat, channel profiles and substrate may be monitored, in order to evaluate and manage the long-term impacts of activities occurring on or in the beds of rivers or lakes."

Section 3.7.11 Utilities
A concession is required for any utility on public conservation lands. The CMS recognises that structures and infrastructure for energy generation and transmission (including pipelines, dams, weirs and transmission lines) are examples of utilities which may be situated on land administered by the department.

The CMS notes that the *"provision and maintenance of utilities within public conservation lands may, in some cases, have adverse effects on conservation values. Such effects may include fragmentation of ecosystems; loss of habitat (e.g. permanent inundation of terrestrial ecosystems); degradation of freshwater ecosystems (e.g. barriers to fish passage, changes to hydrological regimes and sediment loads); invasive weed and animal pest infestation; adverse effects on wähi tapu and other cultural values; alterations to the natural character of the landscape or seascape; control of public access; and changes to recreational opportunities and the type of public use of the area."*

The policy for utilities is:
"*1. Allowance for the 'public good' nature of non-commercial utilities (e.g. flood warning systems and remote weather stations) may be made when considering concession applications and setting rentals.*

2. The Department should liaise with agencies responsible for network utility operation in regard to routine maintenance and upgrading proposals wherever they occur in or adjacent to public conservation lands."

by way of signage than by the ability to exclude the public from the construction areas. This was considered appropriate by the Department.

Subsequently, the Department's solicitor provided further advice regarding what type of concession was appropriate for the proposed structures and activities. An easement concession only would be adequate because of the low scale in terms of effects and size of the particular hydro-electric power scheme applied for, and that there was no longer any public safety concern to warrant the need for a lease.

The new draft of the report and easement were sent to the applicant on 19th August 2010. Very minor comments were received on 23rd August 2010.

9.0 RECOMMENDATION

Pursuant to a written delegation, it is recommended that the Community Relations Manager approve **in principle** the grant of an easement to construct and maintain a small hydropower scheme to Griffin Creek Hydro Limited subject to the outcome of the public notification process, and the standard and special conditions identified in the attached draft easement.

If this application were approved in principle then the intention to grant the concession would be publicly notified.

Helen Otley
Community Relations Officer (Concessions)
Date: September 13th 2010

Appendix 1 – Special conditions

General

1. The Concessionaire must not undertake the Concession Activity unless or until the final Construction and Operational Plan is approved in writing by the Hokitika Area Manager. In considering the Construction and Operation Plan, the Grantor would check that it does not differ substantially in regard to location, scale or level of effect to the application lodged by the Concessionaire and to the Concession Activity as described in the Department's First Determination Report. The Concessionaire must ensure that the Construction and Operational Plan is prepared by a suitably qualified person. The Grantor may require the plan to be audited by a suitably qualified person.

2. Once audited and approved by the Grantor, the Construction and Operational Plan including a timeline must form part of the Concession, and the Concessionaire must not deviate from the plan without the prior written approval of the Hokitika Area Manager.

3. The Concessionaire must pay the costs incurred by the Grantor in auditing and approving all plans required pursuant to this Concession. Standard Department rates for staff time are payable by the Concessionaire.

4. The Concessionaire must ensure that appropriate resource consents are obtained prior to the commencement of the Concession Activity on the Easement Land and that they comply with any conditions of those consents throughout the term of this Concession. If any conditions attached to any resource consent obtained by the Concessionaire in relation to the Concession Activity are, in the opinion of the Minister, incompatible with this Concession, the Grantor may review the provisions of this Concession; and, at the discretion of the Minister of Conservation, this Concession may be varied accordingly.

5. The Grantor reserves the right to apply restrictions to the Concession Activity if, in the opinion of the Grantor, the Concession Activity granted is having or may have an adverse effect on the physical environment and the effect can not be avoided, remedied or mitigated to an extent satisfactory to the Grantor. The Concessionaire shall not be entitled to any compensation in the event of such action being taken.

6. The Concessionaire acknowledges that pounamu is under the ownership of Te Rünanga o Ngäi Tahu pursuant to the Ngäi Tahu (Pounamu Vesting) Act 1997. No pounamu may be removed or recovered by the Concessionaire or their employees/clients. Where the Concessionaire finds any pounamu or serpentine, they are requested to immediately notify John Reid, Te Runanga o Ngai Tahu (03 372 1119).

7. Aircraft access to the Easement Land is permitted with authorised aircraft concessionaires only. No helicopter landings may take place upstream of the intake site on Griffin Creek.

8. The Concessionaire must install a continuous flow monitoring device above the outlet site (which is located below the powerhouse). Flow must be recorded to an accuracy of +/- 10%, and at no less than 15 minute time intervals. An electronic copy of these records must be provided to the Grantor annually.

9. Extraction of water must cease whenever the flow recorded at the flow-monitoring site specified in Condition 8 falls below the mean annual low flow, which is agreed to be 0.8m^3/s. Once two years of data under Condition 8 has been obtained, a new minimum residual flow based on a revised mean annual low flow may be used following agreement by the Grantor and the Concessionaire.

10. The Concessionaire must notify the Grantor within five working days of any situations outside of normal operations (e.g. major ruptures), and provide any details regarding the effectiveness of the response.

11. The Concessionaire must comply with all guidelines and notices put out by Biosecurity New Zealand regarding measures to avoid spreading the pest organism Didymosphenia geminata (refer to www.biosecurity.govt.nz/didymo). The Concessionaire must comply with the Didymo prevention and cleaning protocols as set out in Schedule 5 before and after contact (including people, equipment, clothing, footwear and other items) with any waterway.

outside the agreed boundaries.

26. The Concessionaire must construct and maintain the foot access track to the tramping track standards contained in Standards NZ – Tracks and Outdoor Visitor Structures, SNZ HB 8630:2004, or subsequent amendments and updates.

27. Once construction has been completed, the Concessionaire must ensure that an engineering inspection of the structures at the intake site is undertaken by an appropriately qualified Chartered Engineer. A copy of the engineer's report indicating the condition of the structures approved under this Concession must be supplied to the Hokitika Area Manager.

28. The Concessionaire must ensure that disturbance of riparian margins is minimised.

29. Further to clause 7.1 of Schedule 2, the Concessionaire may remove, trim and cut down standing vegetation less than 20cm diameter at breast height on the Easement Land. All practical measures must be taken to minimise damage to surrounding vegetation.

30. Further to clause 7.1 of Schedule 2, the Concessionaire may remove, trim and cut down any natural tree fall that is adversely effecting the operation of the scheme. All practical measures must be taken to minimise damage to surrounding vegetation.

31. Any vegetation cleared from around the intake structure and access track during construction or maintenance phases must be cut into small sections (no greater than 1m length) and wherever possible, removed from sight of the track.

32. The Concessionaire must ensure that any discharges from the intake structures must be constructed in such a way as to avoid scouring of the natural watercourse.

33. The Concessionaire must ensure that all structures blend in with the surrounding environment.

34. The Concessionaire must ensure that any rubbish and surplus materials are removed from the Easement Land at the completion of construction and any maintenance activities.

35. To prevent weed spread, the Concessionaire and its contractors must, prior to entering the Easement Land, clean all machinery and equipment so that it is free of weed seeds, plant fragments and mud.

36. The Concessionaire must ensure that all gravel taken onto the Easement Land comes from a weed free source.

37. It may be appropriate to have a portaloo on the Easement Land during construction. If not provided or not accessible, toilet waste must be buried in a hole at least 50m away from waterways and the track.

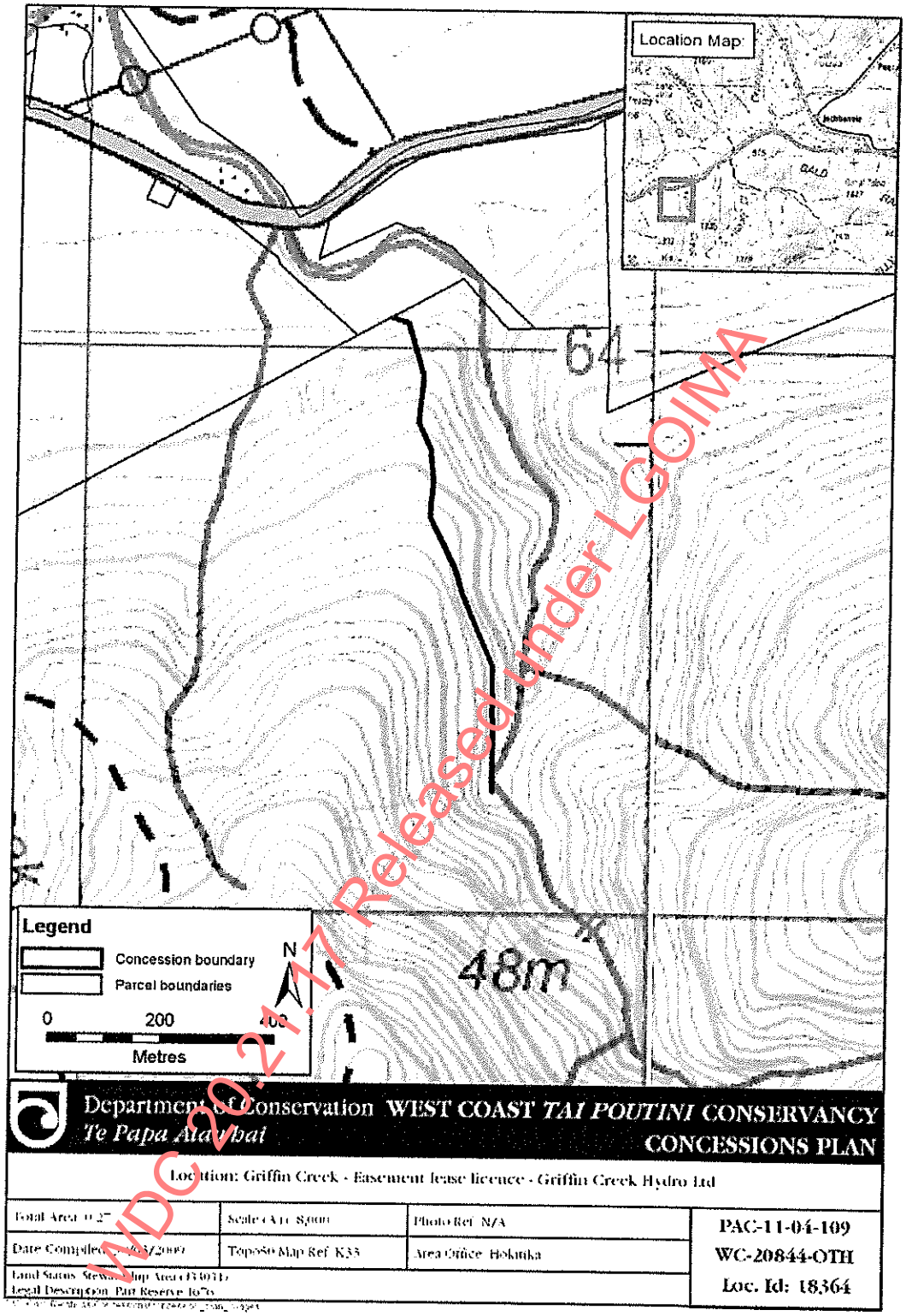
Fuel

38. The Concessionaire must ensure that its contractors and employees undertake any refuelling a minimum of 20m from the nearest waterway and on flat ground, bare of vegetation. A spill kit of loose absorbent material must be carried at all times to absorb spilled fuel. In the event of a spill, the absorbent material must be laid immediately over the site of the spill, and every practical step taken to contain the fuel. All contaminated soil must be removed from the Easement Land and disposed of in an environmentally safe manner. The Concessionaire must immediately report all fuel spills over 20 litres to the Hokitika Area Manager.

39. The Concessionaire must ensure machinery with fuel or oil leaks must not be used on the Easement Land.

Monitoring of construction and operation

40. If requested by the Grantor, the Concessionaire must fund an independent contractor who will act as a liaison contact between the Concessionaire and the Grantor during the term of construction. The exact role, brief of service and level of remuneration of the Liaison Officer will be determined by the Grantor, following consultation with the Concessionaire. The Liaison Officer would report to the Grantor



CONDITIONS

Pursuant to Section 108 of the Resource Management Act 1991, the Resources Consents include the following conditions:

GENERAL CONDITIONS APPLYING TO ALL CONSENTS

1. Works and activities shall be carried out in general accordance with the details contained in the consent application and additional information submitted to the Consent Authority.

2. The Consent Holder shall supply any agent or contractor working under these consents with a copy of the consents.

3. Any person working under these consents shall have a copy of the consents on site and present it to an officer of the Consent Authority upon request.

4. Pursuant to Section 128 of the Resource Management Act 1991, the Consent Authority may review the conditions of these consents by serving notice within a period of one month commencing each anniversary of the commencement of the consents for any of the following purposes:

    a) To deal with any adverse effect on the environment which may arise from the exercise of these consents, and which it is appropriate to deal with at a later stage; and
    b) To require the Consent Holder to adopt the best practicable option to remove or reduce any adverse effect on the environment.

SPECIFIC CONDITIONS APPLYING TO LAND USE CONSENT RC10269/1

5. The Consent Holder shall avoid damage to creek banks and creek bank vegetation wherever practicable.

6. The Consent Holder shall ensure that sediment losses to natural water from the exercise of this consent are avoided as far as practicable.

7. The Consent Holder shall ensure the disturbance of the creekbed does not cause or exacerbate erosion or land instability.

8. All refuelling, lubrication and mechanical repairs of any equipment used under this consent shall be undertaken in such a manner so as to ensure that no spillages of hazardous substances onto the land surface or into water occur. If a fuel spillage in excess of 20 litres occurs, the Consent Holder shall inform the Consent Authority immediately.

9. To avoid the spread of Didymo, no equipment shall be used in the exercise of this consent that has been used previously to undertake activities in any water body known to contain Didymo, unless that equipment has been thoroughly cleaned in accordance with the attached Biosecurity New Zealand document titled "***Don't Spread Didymo***".

10. In the event of any disturbance of Koiwi Tangata (human bones) or Taonga (artefacts, including pounamu), the Consent Holder shall:

    a) Cease any further excavation for a period of at least 24 hours; and
    b) Immediately advise the Consent Authority of the disturbance; and
    c) Immediately advise the Upoko of the Papatipu Runanga, or the representative, of the disturbance; and
    d) Immediately advise the Regional Archaeologist of the New Zealand Historic Places Trust, except in relation to disturbance of unworked pounamu.

11. At the completion of the works the Consent Holder shall ensure that all equipment and machinery are removed from the bed of the creek.

The taking of water from Griffin Creek is non-consumptive as the water is returned to Griffin Creek near the point of take and there is no significant delay between the abstraction of water from Griffin Creek and its return to the creek. As the take is non-consumptive, the Resource Management (Measurement and Reporting of Water Takes) Regulations 2010 do not apply to the take.

These activities are consistent with the relevant objectives and policies of these plans (see Table 1 below), and will have no more than minor effects. The conditions imposed are suitable to avoid, remedy, or mitigate any adverse effects that may arise within the term of the consents.

Table 1: Summary of the relevant regional plan provisions

Planning Documents	Rules	Status	Objectives/Policies
Regional Policy Statement			
Poutini Ngai Tahu			O 5.1, P 5.1.1
Soils & Rivers			O 7.2, P 7
Water			O 8.1.1, P 8.1.1
Habitats & Landscapes			O 9.1, 9.2, 9.3, P 9.1, 9.2, 9.3, 9.5
Proposed Regional Land & Riverbed Management Plan			
Creekbed disturbance	Rule 6.2.6.1	D	O 5.3.1, P 5.4.2
Proposed Water Management Plan			
Surface water take	Rule 12.1.7	D	O 5.3.1, 5.3.2, 6.3.1, 6.3.5, P 5.4.1, 5.4.1C, 5.4.4, 5.4.5, 6.4.3, 6.5.3, 6.5.4, 6.5.6
Water diversion	Rule 12.4.6	D	
Proposed Regional Land & Water Plan			
Lake & Riverbed Management			O 4.2.1, P 4.3.2
Natural & Human Use Values of Water			O 6.2.1, 6.2.2, P 6.3.1, 6.3.3, 6.3.6, 6.3.7
Surface Water Quantity			O 7.2.1, 7.2.5, P 7.3.3, 7.3.10, 7.3.11, 7.3.13
Rules - Creekbed disturbance	Rule 36	D	
- Surface water take	Rule 54	D	
- Water diversion	Rule 55	D	

OBJECTION TO THE CONSENT AUTHORITY

You are advised that you have a right of objection to the Consent Authority in respect of this decision, pursuant to Section 357A of the Resource Management Act 1991. Any objection is to be in writing and must set out the reasons for the objection. Any objection must be made within 15 working days of receipt of this decision. The Consent Authority will then consider the objection and give its decision in writing. Any person who made an objection may appeal to the Environment Court against the Consent Authority's decision on the objection, pursuant to Section 358.

Alternatively, pursuant to Section 120 of the Resource Management Act 1991 you have the right of appeal directly to the Environment Court against the whole or any part of this decision. Notice of appeal shall be in the prescribed form and must be lodged with the Environment Court and served on the Council within 15 working days of receipt of the Council's decision.

COSTS

An invoice will follow shortly, if the deposit lodged was insufficient to cover the costs associated with processing this application.

The final consent document will be issued if no objection/appeal has been received after the 15 work day objection period has passed. Alternatively, the Council will issue a final document if you advise the Council in writing that you will not be lodging any objection/appeal.

RESOURCE CONSENT APPLICATION

BY GRIFFIN CREEK HYDRO LTD for a Resource Consent to construct a Run of River 1.3 Mw Hydro Electric Power Station at Griffin Creek SH73 Turiwhati Westland.

Land Use Consent Application
For Works in or on the Bed of Griffin Creek

Intake Structure
Tail Race Outlet Structure
Road Access Along Creek Bed from SH73 to Power House

Water Consent Application

To Divert Water from Griffin Creek and to Return Water to Griffin Creek

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Applicant — Griffin Creek Hydro Ltd
Richard Morgan (company director)

Postal Address [redacted]

Telephone: Business: [redacted]
Private:
Facsimile:
Mobile:
Email:

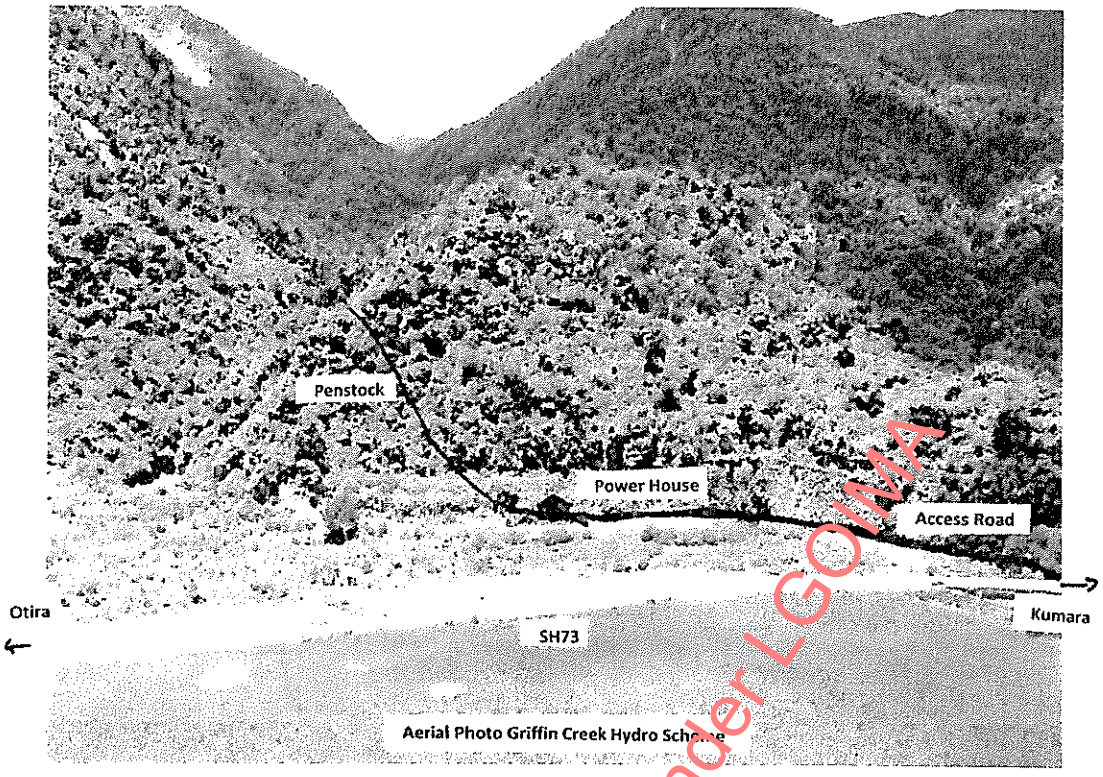
Property owner's name:

Department of Conservation
Land Information New Zealand

Location of activity

Griffin Creek SH 73 Turiwhati Westland

Territorial authority in which land is situated:
Westland District Council

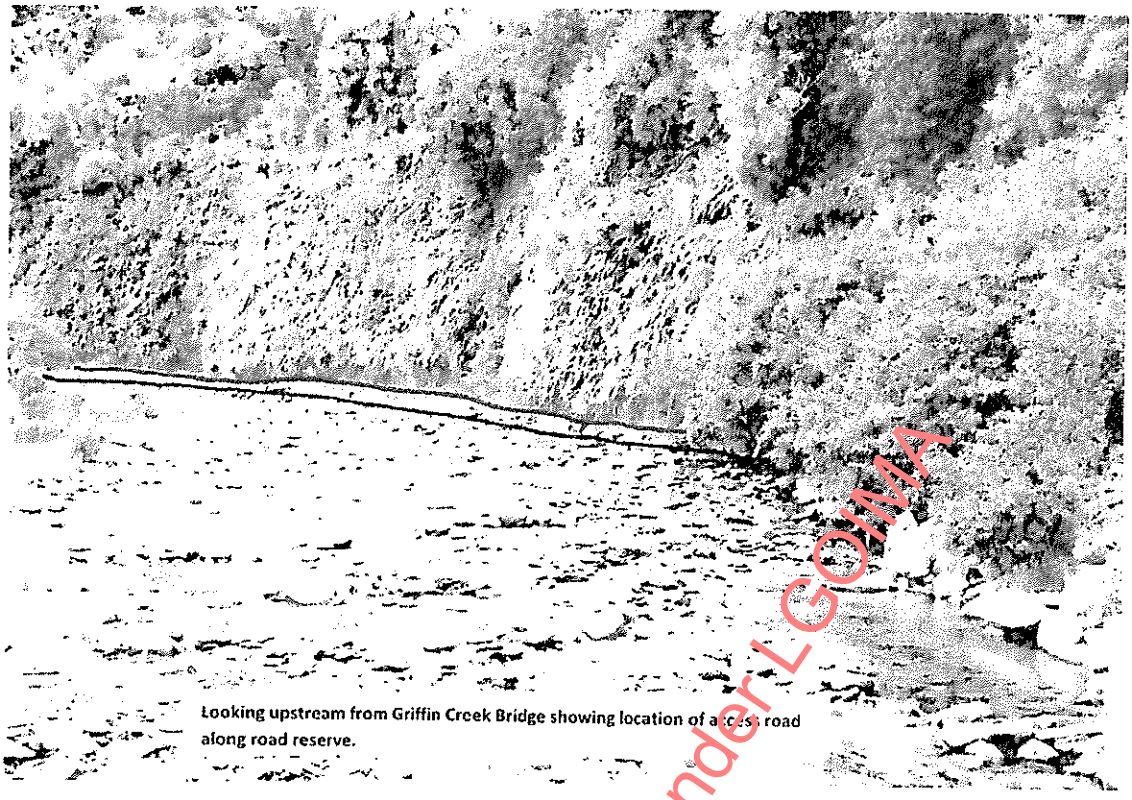


Intake Structure

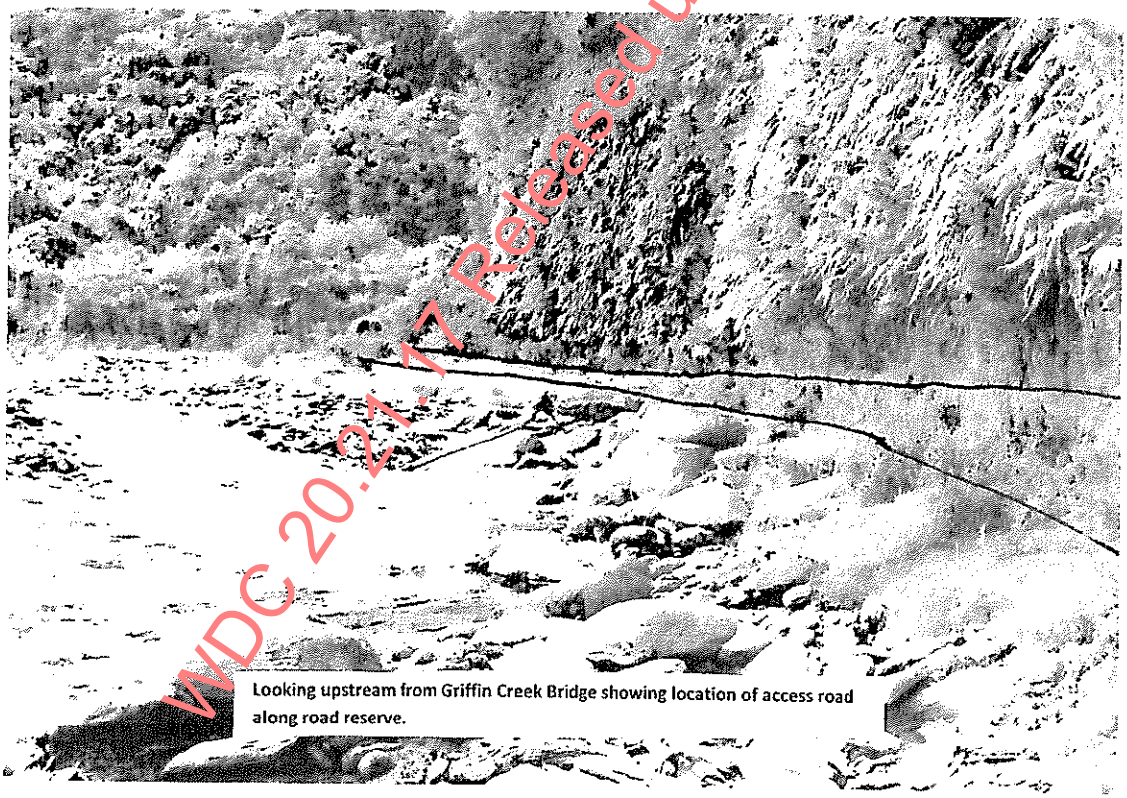
The intake structures would be spread over about 20m of the stream (Fig. 4). The width of Griffin Creek at the intake area is 3m. No trees would be need to removed in order to site the structures.
There is an 2m high waterfall at the intake area and directly above this is a 20m by 20m wide pool. From the edge of the pool, a 0.5m deep x 2m wide channel would be cut using hand held petrol driven equipment (e.g. diamond tipped saw) into the bedrock of the true left of the streambed for a distance of 5m. The channel would feed water over the waterfall and direct it into an intake structure (Fig. 4). This steel structure would be 1m high x 2m wide x 3m long. The structure would be located in-stream but to the side against the rock face of the waterfall. The steel structure would be anchored to the surrounding rock using steel pins. The intake would have a self-cleaning grate, consisting of parallel bars 2mm apart, to prevent gravel and wildlife such as fish from entering the structure.
There would be a gate at the entry of the intake structure, which would be electronically controlled from the powerhouse and powered by solar/battery (see below). When the gate is closed, water would flow over the structure and continue downstream in the natural streambed. When the gate is open, from the intake structure, the water would be taken approximately 15m in a steel pipe to the settling tank. The settling tank would be situated as close to the intake structure as possible, possibly approximately 15m away. It is considered that any closer would not be practical as there is a vertical rock cliff face immediately alongside the intake structure. The fabricated steel settling tank would be sited in the streambed to the side. The tank would be 2m wide x 4m long x 2m deep. It would sit on top of the rocks (i.e. not dug into the streambed) and fixed to large boulders using steel pins.
The settled sand and gravel would be returned to the stream via a 150mm constant return pipe. The return pipe would be pointed downstream to ensure that the fines do not build up beneath the pipe.
There would be a gate at the end of the settling tank that would be electronically controlled from the powerhouse and powered by solar/battery (see below). When the gate is down, there would be no flow into the penstock pipe. The water that does not enter the pipe would return to the stream via an overflow weir. The overflow weir would be made of steel.
From the settling tank, the water would be piped along a 1,500m long pipeline, consisting of an 800m long headrace (with a 450mm diameter pipe) and a 700m long penstock (with a 350mm diameter pipe).
The exact design of the intake and settling tank system would be formalised by a hydro engineer. No concrete would be used in constructing the intake and settlement pond structures.
There is no need for a dam to be constructed.

Tailrace Outlet Structure

A Tailrace Outlet Structure would be built below the Power House to return the water to Griffin Creek. It is intended that this 2m x 2m structure would be a concrete wing backed design constructed in such a way as to ensure the water would not scour out the creek bed.



Looking upstream from Griffin Creek Bridge showing location of access road along road reserve.



Looking upstream from Griffin Creek Bridge showing location of access road along road reserve.

History of the Proposed Activity
There has been no other hydropower activity in this valley. Various larger hydropower schemes operate within the West Coast *Tai Poutini* Conservancy.

Landform
Griffin Creek is a small mountain stream with a total catchment of 15 km2 and has a stream length of approximately 11 km. The upper catchment of Griffin Creek is a large, wide valley but the lower reach is enclosed in a steep sided gorge, with a number of waterfalls and two deep ravines. The width of Griffin Creek at the intake is 8 m. The proposed hydropower scheme would remove water from a site approximately 7 km from the confluence of the Taramakau River and return the water into Griffin Creek 1.5 km further downstream.
The steep sided gorge is on the leading edge of the band of ultramafic schist immediately behind the Alpine Fault. The lowest part of the proposed pipeline crosses the Alpine Fault. Soils are well drained and derive from tertiary mudstones, sandstones, greywacke and granite alluvium.
The applicant provided a report in his application from a civil engineering company that commented on the technical feasibility of constructing a hydropower scheme at the site. This report stated that on the western side of the valley, where the access track and penstock would be located, there are several relatively old (i.e. 50 – 100 years) and inactive small and large landslips as well as a number of tree falls. On the eastern slope of the valley, outside of the application site, is a relatively new landslide. The report stated that the proposed hydropower scheme was technically feasible and that the potential risks to the feasibility of the scheme were tree falls (high), landslips (moderate) and landslides (low to very low). The consultant believed that there was an extremely low risk to the feasibility of the proposed scheme from creek embankment collapse but noted that there was on-going erosion of the creek bank and bed. The conclusion of the consultant was that the risks to the feasibility of the scheme associated with the landform would more likely be associated with the operation phase (i.e. maintenance) than during the construction phase.

Flora
The vegetation in this area, as for other western valleys, is indigenous forest. The dense podocarp forest includes matai, miro, rimu and kahikatea on the lower slopes and southern rata, kamahi and mountain totara on higher slopes. Diverse fern species are also present.

Fauna
Common native forest birds inhabit the forest in this area, including tui, bellbird, tomtit, rifleman, fantail, kereru, grey warbler, brown creepers and silver eye. Whio/blue duck inhabit the upper reaches of Griffin Creek and it is suspected (i.e. they have not been sighted at this site) that they do not use the area of the intake due to the waterfalls in the area. Deer, goats and pigs may be found in the application area.

Freshwater
The applicant estimates that the mean annual flow and the median annual flow for Griffin Creek is 3.5m3/s (3,500 litres per second) and 2.3m3/s, respectively, and the mean annual low flow is 0.8m3/s (800 litres per second).
This is based on flow data for the nearby Taipo River that has a NIWA river gauge and downscaling the Taipo data proportionally by the smaller catchment size of Griffin Creek. The mean and median annual flow rates are somewhat different, which indicates that the system is flashy, i.e. there can be large occasional floods.

Due to the steepness of the terrain, elevation, distance inland and high rainfall, the fish biodiversity and biomass is likely to be very low. There are also a number of waterfalls in Griffin Creek, some being 40m high, which may prevent upstream travel by fish.
Although some fish are recorded in the higher sections of mountainous catchments elsewhere and considerable distances from the sea, it is not likely that there is a high diversity and abundance of fish in the section of Griffin Creek where the intake is proposed to be located. This is due to the steep nature of the creek and the presence of waterfalls that may prevent the passage of fish. However, fish

RMA 11

17 March 2011

Richard Morgan
[redacted]

Dear Sir

RETURN OF INCOMPLETE RESOURCE CONSENT APPLICATION

Thank you for your application for a resource consent to form legal road and to generate electricity at Griffin Creek, State Highway 73 Wainihinihi Westland. Your application was lodged on the 15th March 2011.

We have undertaken an initial check of your application to ensure that we have all the information we require to receive the application pursuant to section 88(3) of the Resource Management Act 1991.

Unfortunately, we are unable to accept your application in its current form for formal receipt purposes. This is because the application does not contain the following information:

- Your application states 400 m² of indigenous vegetation will be cleared for the power house. Please confirm the total area of clearance including any clearance required for the formation of the access road, penstock and track following the penstock.
- The Department of Conservation's report refers to a report created by a civil engineering company that relates to ground stability. Please provide a copy of that report.
- The formation of legal road is a restricted discretionary activity. The District Plan lists the matters that are to be considered. This list is attached please provide an assessment of these matters in relation to the proposed formation of legal road to access the power house.
- Please confirm whether the proposal will be visible from the property described as Lot 1 DP 2520, owned by Cooks Stud Farms Limited on the adjacent side of the State Highway 73.

Your application is enclosed for your review and amendment.

You are entitled to formally object to the return of this application pursuant to section 357 of the Resource Management Act 1991. If you wish to object then the objection must be made in writing and served on the Council within 15 working days of the receipt of this letter. The objection must state the reasons for objecting.

It is likely that Council will find New Zealand Transport Agency, [redacted] Department of Conservation and Land Information New Zealand as affected parties. It is also noted that you have provided a copy of the approval from LINZ, we are unable to accept this as it is on the West Coast Regional Council form.

Please do not hesitate to contact me on phone 756 9085 if you have any queries in relation to the above information or information that needs to be supplied as part of your application.

Yours faithfully

Anna Derks
Consents Officer

AD/VM

~~RMH 13-4-11~~

SCANNED

RECEIVED
15 MAR 2011
BY:

CEO	HWM	MPR	MO	MAC	MF	MPA	CSO	ENG	Rebecca
									✓

Rhys Morgan
Griffin Creek Hydro Limited
[redacted]

Rebecca Strange
Planning and Regulatory
Westland District Council
Private Bag 704
Hokitika

12 March 2011

Dear Rebecca

RESOURCE CONSENT APPLICATION GRIFFIN CREEK HYDRO LIMITED

Attached please find the Resource Consent Application and associated documents for the proposed Hydro Electric Power scheme at Griffin Creek State Highway 73 Wainihinihi Westland.

Can you please advise me what, if any further information that you may require and the amount of the Consent Application fee.

My email is [redacted] and cell phone [redacted]

Kind Regards

Rhys Morgan

Griffin Creek Hydro Ltd.

Resource Consent Application Form and Assessment of Environmental Effects (Land Use)

Applicants Details

Full name/s of applicant/s: Amethyst Hydro Ltd

[redacted]

Property owner's name: (if not the applicant): As above

Address for Service

West Coast Planning Ltd
6 Dowling Road
Greymouth
[redacted]

Property Details

Location of activity and/or property address: Map Reference NZMS 260: I34

The land is situated in the Wanganui River Valley, South Westland, about 1.5 kilometres upstream from State Highway 6 and 6.5 kilometres east of Hari Hari. The application relates to a proposed change to the originally consented power station site, on land previously described as RS 6406 adjoining the Wanganui River. At the time of the original consent for the site consent for separate subdivision was also obtained. Accordingly this application relates to the new legal description of the side

Legal description & CT Reference: Lot 1 DP 429190 (CT: 514560)

What zone is the site? Rural

Nature Of Consent(s) Being Applied For:

Land Use: commercial or industrial activity in a rural area
reduction of yard setbacks

Category of Application: non-complying. The existing consent for the power station on the site was a non-complying activity due to its position 3 metres from the adjoining

road reserve to the north. The proposed increases in height and floor area of the revised design do not trigger other standards which would make the activity non-complying, indeed the building remains comfortably within the height and floor area limits of the rural zone in the District Plan. The proposed activity remains the same as approved in the existing consent 080097 and 080098 in all other respects.

Term of consent sought: indefinite

Do you require additional resource consents from the West Coast Regional Council in relation to this proposal, e.g., for works in a river bed or discharges (odour, dust)? No, all required consents are in place. An application for discharge consent for a septic tank is in process and will either be completed or withdrawn depending on final decisions as to on-site amenity.

If yes, have these consents been applied for? as above, already approved at the same time as the original land use consents for the site.

What consent is being sought from the Regional Council: relevant regional consents already in place.

Checklist Of Documents

Have you remembered to?

Attach a completed Assessment of Environmental Effects
Attach a copy of current Certificate of Title for the site *(if relevant)*
Sketch the locality and access points *(if relevant)*
Supply an aerial photograph *(if relevant)*
Attach technical plans (subdivision plan/site plan/building plan)
Attach affected party approval forms *(if obtained)*
Attach a cheque for application fee/deposit

Application Declaration

I hereby certify that, to the best of my knowledge and belief, the information given in this application and the accompanying Assessment of Environmental Effects is true and correct. I undertake to pay all actual and reasonable application costs incurred by the Westland District Council.

Signature of applicant: **Date:** 12 December 2011
(or person authorised to sign on behalf of applicant)

Name:(in BLOCK CAPITALS) **MARTIN KENNEDY**

Land Use Activities
Assessment of Environmental Effects

Please note: Your proposed activity could have a range of effects (both positive and negative) on the environment. Completing this form will help you to identify the effects. 'Effects on the environment' means: any effects on the surrounding area and includes possible effects on people, plants and animals.

What do you want to do? The applicant holds consents, 08097 and 08098, for the development of the Amethyst hydro electric power scheme. This includes consent 08098 to develop a power station and associated ancillary building the site which is the subject of this application. This application is not to gain consent for the power station and ancillary building as that is already approved for the site. The application is to increase the floor area and height of the building. The project is well advanced in its development and through the technical design phase of the project alterations have been required to the power station building to house the required generator. It has also been decided to incorporate the ancillary building within the power station building, which was an option outlined in the original application.

There are therefore two matters related to the proposed power station which have required the need for a new consent, being; floor area and height.

The proposed new building layout measures 9.35 metres wide by 12.37 metres long to create a floor area of approximately 115.7m^2. The required additional height to be able to fit an upright generator is a 5.8 metre wall height with an additional 20^0 roof pitch which adds 2 metres at the highest point, giving a total of 7.8 metres at the highest point.

Having considered the layout of the site the applicant also proposes to utilise the roughly formed track over the road reserve to the north to access the power station. It is considered that this provides the advantage of vehicle movements around the power station site to occur on the essentially unused side road. The proposal does not require resource consent to form an unformed road as a rough formation already exists out to the stopbank works located along the river frontage. This formation will be upgraded for access purposes. Currently the entire road reserve is fenced in with the adjoining farming operation. The applicant proposes to fence the section of road to be used as access off from the paddock with a gate provided at the western end to provide for ongoing access along the road reserve to the stopbank and river should that be required by any party. It is accepted that an intersection to the existing formed road will be required to be formed to Council standards. The council also holds a bond through the subdivision creating the power station site for the creation of access to the land. The location of that access will be determined by this application.

What are the surrounding land uses (e.g., housing, farmland, etc): The surrounding area is rural farmland with the exception of land to the north-east which is Department of Conservation reserve. Further to the south is a quarry, while to the north is the state highway. There are no dwellings in the near vicinity. Existing consents are in place over the subject site and Department of Conservation reserve for the Amethyst hydro electric power scheme, including a power station on the land subject to this current application.

Effects On The Environment (Positive Or Negative)

Will your proposed activity have any social or economic effects on people, including yourself as applicant: (e.g., employment)?

The power station activity will not, and this application does not seek to, change from that approved under the existing consent. This consent relates to an increase in floor area and height of the building already approved.

Will your proposed activity have any effect on the surrounding landscape or the visual amenity (views)?

There is potential for a landscape effect as a result of the increased floor area and height of the building. However this must be considered in light of the existing consent for the development of a power station on the site, including the floor area and height. The proposed building is also situated well back from the state highway and there are no dwellings in the near vicinity. The road it is situated on is not a highly used road and it can be anticipated that there will be rural buildings in the area given the use of the surrounding land so the additional of the building will not have an adverse effect on the environment. The proposed building is also not out of character with the scale of building envisaged in the rural area of the Westland District. It is considered that in the main anyone viewing the building would not readily notice the difference between the currently consented building and proposed building given its location and surroundings. It is important to mitigate potential landscape effects and to this end the original application advised that the building will be undertaken using recessive colours to assist with blending in to the landscape. This is still the proposal.

Will there be any property shading of neighbours or any impact on the privacy of neighbours?

The additional height of the building does not result in either shading or privacy effects. There are no dwellings in the vicinity which could be affected. The proposed building is a considerable distance from surrounding properties, and is bounded by two roads of approximately 45 metres width to the north and 30 metres to the east. It must also be borne in mind that an existing consent is in place for the development of a power station and ancillary building on the site and it is considered that the additional effect of the current proposal is minimal when compared with what may already occur on the site.

Will there be any lighting effects or glare created off site?

The power station activity will not, and this application does not seek to, change from that approved under the existing consent. This consent relates to an increase in floor area and height of the building already approved.

Will there be any new signage erected either off-site or on-site?

The power station activity will not, and this application does not seek to, change from that approved under the existing consent. This consent relates to an increase in floor area and height of the building already approved.

Will there be increased traffic movements because of your proposal?

The change proposed under this configuration is for access to be gained to the site via the generally unused road reserve along the northern boundary of the site. This will keep all traffic associated with the power station and site maintenance away from the existing formed road along the south eastern boundary. Whilst there may be some limited traffic movement around the loading bay from time to time the advantage of using this side road for access is that use by other vehicles is extremely limited and will not result in adverse traffic effects at this location.

Will additional parking off site be required?

The power station activity will not, and this application does not seek to, change from that approved under the existing consent. This consent relates to an increase in floor area and height of the building already approved. It is likely with the development of the access along the road reserve on the northern boundary that parking may occur on the road reserve from time to time. Given the current and likely future use of this piece of road it is not considered that there will be any adverse effects of the proposed layout. Space on site has also not be greatly decreased as a result of the increased floor area from that previously approved particularly given that one of the previous options involved two separate buildings.

Will your proposed activity produce any noise that will be heard at the boundary of the site?

The power station activity will not, and this application does not seek to, change from that approved under the existing consent. This consent relates to an increase in floor area and height of the building already approved.

Will there be any generation of wastes by the proposed activity?

The power station activity will not, and this application does not seek to, change from that approved under the existing consent. This consent relates to an increase in floor area and height of the building already approved.

Will there be any activity on the surface of water bodies (rivers and lakes)?

The power station activity will not, and this application does not seek to, change from that approved under the existing consent. This consent relates to an increase in floor area and height of the building already approved.

Will your proposal have any impact on indigenous vegetation or habitat (e.g., forest, wetland)?

The power station activity will not, and this application does not seek to, change from that approved under the existing consent. This consent relates to an increase in floor area and height of the building already approved.

Will your proposal have any impact on indigenous wildlife (birds, animals, fish, etc)?

The power station activity will not, and this application does not seek to, change from that approved under the existing consent. This consent relates to an increase in floor area and height of the building already approved.

Will your proposed activity have any impact on any known historic or cultural/spiritual values in the area?

The power station activity will not, and this application does not seek to, change from that approved under the existing consent. This consent relates to an increase in floor area and height of the building already approved.

Will your proposed activity have any impact on the recreational use of the area?

The power station activity will not, and this application does not seek to, change from that approved under the existing consent. This consent relates to an increase in floor area and height of the building already approved.

Will your proposed activity include the use of hazardous substances (e.g. fuels, oils, chemicals)?

The power station activity will not, and this application does not seek to, change from that approved under the existing consent. This consent relates to an increase in floor area and height of the building already approved.

Will your proposed activity result in any discharges of hazardous substances to the environment? (e.g. fuel, paint)

The power station activity will not, and this application does not seek to, change from that approved under the existing consent. This consent relates to an increase in floor area and height of the building already approved.

Scale Of Effects

Looking at all of the effects you have identified as a whole, what scale of effects will occur?

When considering the scale of effects it is important that the existing consent and resultant use and development of the site must be considered. It should be noted in considering the effects that a power station and ancillary building can already be built on the site. This includes the development of the proposed substation and the electricity line infrastructure, including poles and overhead lines, which will be constructed to transmit the electricity from the power house and substation. These are permitted activities on the site. This application does not seek to change any aspect or effect of the proposal other than floor area and height. The proposed change in building floor area and height when considered against the scale of buildings and other required infrastructure allowed will result in only minimal difference on site and surroundings.

It is considered that the proposed changes are localised and are likely to occur within the site only, particularly with respect to the increase in floor area. It may be considered that

there is a potential for a change in effect from the increased height however this would mainly be in relation to the adjoining road reserve along the northern boundary which, under this proposal is to be used as access to the power station and site. This piece of road reserve has very little use and there will not be an effect on the travelling public in this regard. The rural property to the north is some 48 metres away given the width of the road reserve whilst properties to the east and south east are in excess of 40 metres to the nearest corner of the building. The effect of a change in height will be negligible in this regard, and remains below the 8 metres height limit permitted in the District Plan for rural buildings.

Any comments about the overall nature of the effects? The applicant already holds consent for the construction, operation and maintenance of a power station on the site. Therefore the proposed power station itself does not create any effect. The activity is to remain the same in this regard. The building is to remain generally in the same location as the previous consent, being setback 10 metres from the boundary of the formed road to the south east and 3 metres to the northern road reserve boundary. Consideration of the effects of the consented power station building compared with the proposed building relates to difference in floor area and height.

Floor Area Increase

In terms of floor area two options were presented in the original application, the first was of circular design with a separate switch room (approximately 8.2 metres wide at the power station and 14.2 metres combined building length) whilst the second combined both together in an essentially square building (approximately 10 metres by 10 metres). The application advises at section 4.10 that the combined buildings will be approximately 1/3 of the 300m^2 permitted for non-rural farm buildings, and could therefore be up to 100m^2, the consent for the power house notes building sizes of 71m^2 and 18m^2. The proposed building is rectangular in shape at 9.35 metres by 12.37 metres and therefore falls between the two options set out in the application in terms of length and width of the buildings. At approximately 115.7m^2 it is 15.7 square metres greater than the larger of the two options presented in the application, and 26.7m^2 greater than the floor areas referred to in the decision.

Given the location of the power station, the distance to surrounding rural properties including the intervening road reserves of considerable width, and the fact that consent for a power station already exists, it is considered that the difference in floor area over the whole building will create minimal additional effect over that already approved for the site. The scale of the effect of the increased size in terms of what could be anticipated within the District is highlighted when considered against the 300m^2 controlled, or the 800m^2 discretionary, activity gross floor area for non-farming buildings. It is noted that there is no gross floor area limit for rural buildings, and the proposed power station is not out of character with the floor area of rural farm buildings throughout the area or which could be anticipated on the site were it not to be used for the proposed purposes..

Height Increase

The second matter arising relates to the effect of an increase in height over that already consented for the site. Whilst the consent decision refers directly to floor area it does not refer to height, rather requiring compliance through condition 1 with the application and

plans. The original application advises that the building will be 3.5-4 metres in height and that the building will be less than the 8 metre height limit for non-residential buildings in the rural zone. The application referred to 2 possible design options and provided these at Appendix 19. These show, for the rectangular option, a 3 metre wall height with a 30^0 roof pitch. This brings the total height of the building to 5.9 metres. This is the approximate wall height of the proposed redesign power station, which is 5.8 metres. The circular option provided had a slightly higher wall height but lower pitch roof and overall was slightly lower than the rectangular building. The proposed building, at 7.8 metres is approximately 1.9-2.3 metres higher than the options provided in the plans attached to the original application. As with the original application the proposed building remains lower than the 8 metre height for non-residential buildings permitted in the District Plan.

As with the floor area discussion above there are a number of factors to consider when determining whether there is an additional effect of the increased height. It must be remembered that a power station, ancillary building and associated substation and transmission line structures can be developed and operated on the site. The power station is located away from residential dwellings and is at a distance from highly used public viewing points. The limited traffic moving along the formed local road is transient in nature and the presence of the power station is not changed by the increased height. In terms of surrounding properties the power station is separated by some distance due to the presence of intervening road reserve widths. It is also relevant when determining the scale of the effect of the increased height to consider what could be anticipated within the rural zone in terms of the height provisions of the District Plan. The plan provides an 8 metre height limit for non-residential buildings in the rural zone which means that the increase in height proposed remains below the permitted height of buildings can be anticipated in the area. It is considered that the difference in height will create minimal additional effect over the activity already approved for the site, or activities which may be permitted on the site.

Servicing Requirements

Will your proposal result in the need for new services (e.g. power, telecommunications, roads, water supply, etc)?

No, these matters are already provided for through existing consents. This application is to allow an increase in floor area and height of the power house building already approved.

Natural Hazards

Is your site subject to natural hazards? i.e. **flooding or inundation**
landslides or land instability
erosion
contamination from any source

A full assessment of hazards has not been undertaken as the application is for an increase in floor area and building height for an already approved power station building on the site.

If you answered yes to any of the above questions, then what effects could the identified natural hazard/s have on your proposed activity? N/A

How do you propose to address the identified natural hazards? See comments above.

[Note: If your site is subject to natural hazard/s and you are unsure of how to proceed, then advice can be sought from a Chartered Professional Engineer (CPEng).]

Consultation

Please outline what consultation steps you have taken (if any): Consultation was undertaken during the original consent process for the site, including limited notification. Building scale was not an issue arising through that process. The proposal is not for a new activity as consent is in place for the construction, operation and maintenance of a power station on the site. That activity is still going to occur. Further consultation has not been undertaken given; the existing consent, the location of the proposed building, and the scale of the building being considerably less than performance standards for permitted, controlled or discretionary buildings in the rural area.

What was the response? N/A

Affected Parties

You will need to consider which people or agencies might be affected by your proposal. ***(Consider the following as a guide and tick boxes below):***

This application is not to construct and operate a power station, ancillary building and associated infrastructure on the site, as that has already received consent under previous applications. The application is to increase the floor area and height of the power station building over that already approved. This proposal also clarifies access to the power station building and site via the use of an area of road reserve along the northern boundary of the site. No other aspects or effects of the consented activity are changed through this application. As discussed above, it is not considered that there will be more than minimal effect of the application given; the existing consent for a power station and ancillary building on the site, the other permitted infrastructure to be built on site as part of the activity, the location of the building in relation to surrounding properties, and the scale of the changes to the building proposed. The height of the building is also below the permitted height for non-residential buildings in the rural zone. An additional factor is that a hearing was held regarding the original consents for the scheme, however the issues arising did not relate to building scale or location.

[Also note that the Council rules on who is an affected party. You can seek the written approval of affected parties - please use the Council's Affected Party Approval form.]

For neighbours: Please list the names and addresses: N/A

COMPUTER FREEHOLD REGISTER
UNDER LAND TRANSFER ACT 1952

Search Copy

R.W. Muir
Registrar-General
of Land

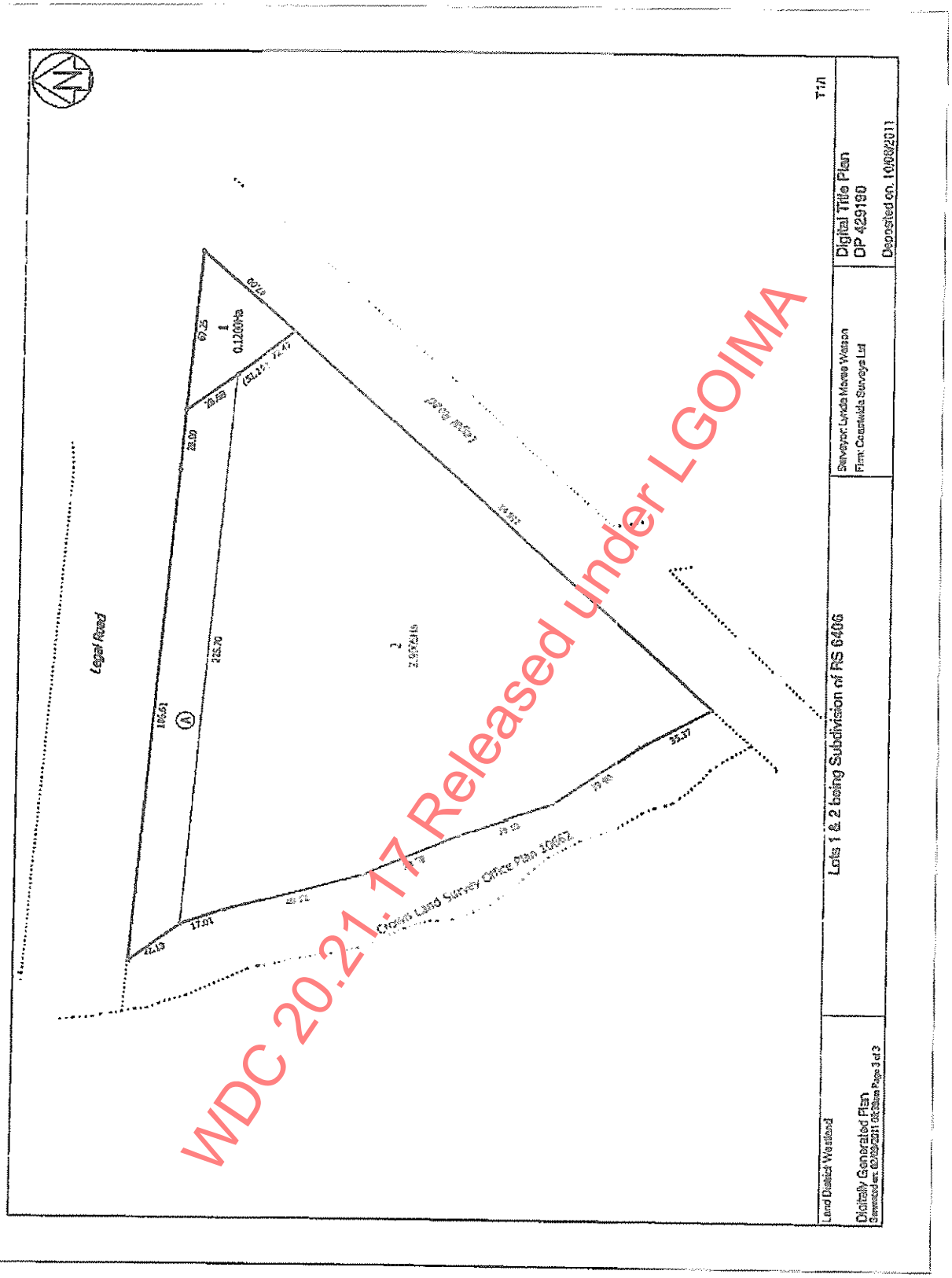
Identifier	514560
Land Registration District	Westland
Date Issued	10 August 2011

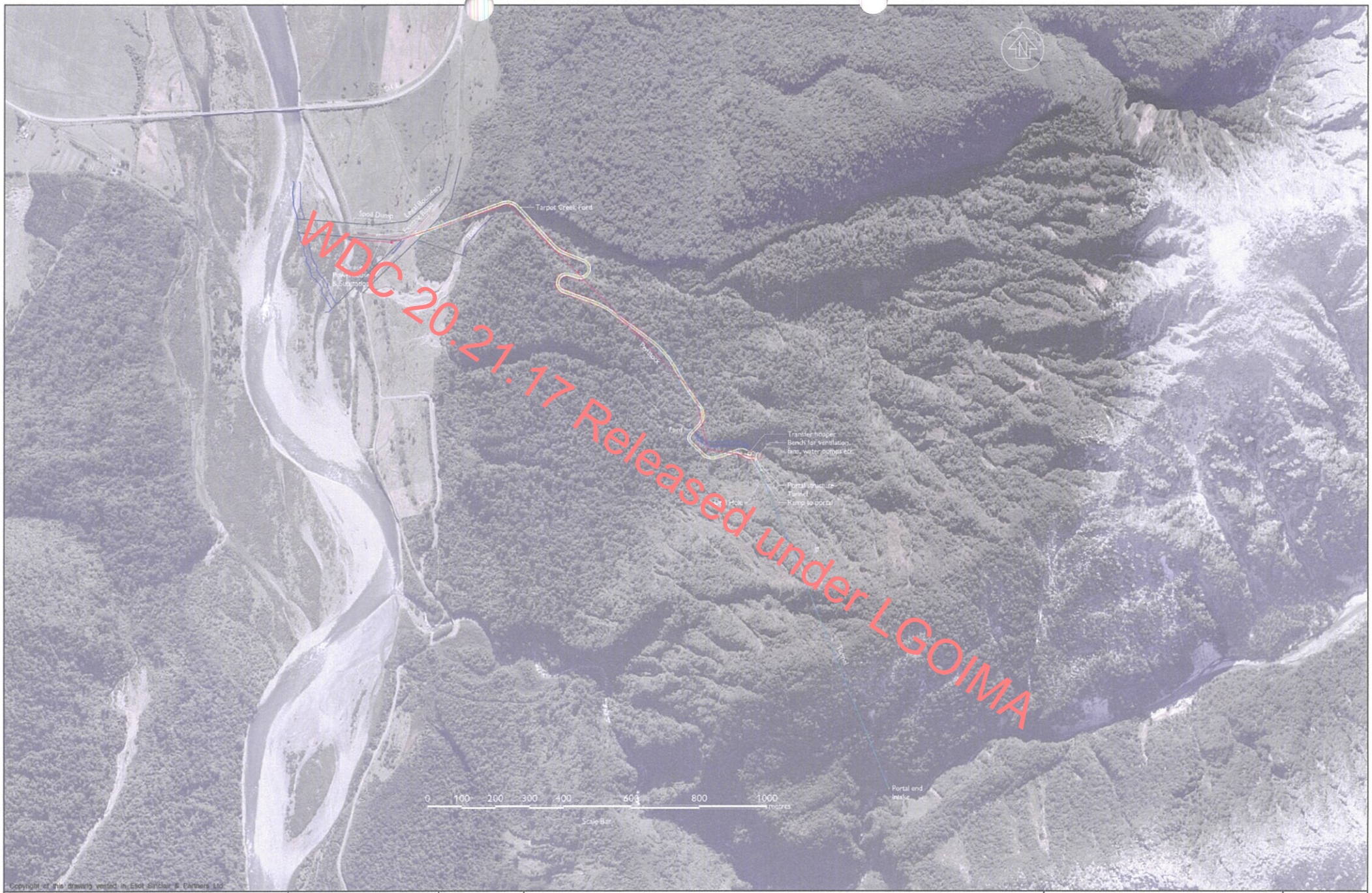
Prior References
WS8A/32

Estate	Fee Simple
Area	1200 square metres more or less
Legal Description	Lot 1 Deposited Plan 429190

Proprietors
Westpower Limited

Interests
Subject to Section 11 Crown Minerals Act 1991
Subject to Part IV A Conservation Act 1987
Appurtenant hereto is a right to convey and drain water created by Easement Instrument 8776307.4 - 10.8.2011 at 11:18 am
Some of the easements created by Easement Instrument 8776307.4 are subject to Section 243 (a) Resource Management Act 1991


Legal Road
Crown Land Survey Office Plan 30662
Lots 1 & 2 being Subdivision of RS 6406
Digital Title Plan
DP 429190
Deposited on 10/08/2011
Surveyor: Linda Maree Watson
Firm: Cosmopolitan Surveys Ltd
Land District Westland
Digitally Generated Plan
WDC 20.21.17 Released under LGOIMA



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no.	amendment	initial	date

Date: 28/05/2008

checked			
drawn	Snezana Bejakovich		
designed	SB	surveyed	?
manager	JMH	surv.date	

origin of levels
BENCH MARK
?
?
datum Lyttelton 1937

SCHEME LAYOUT
AMETHYST HYDRO LTD

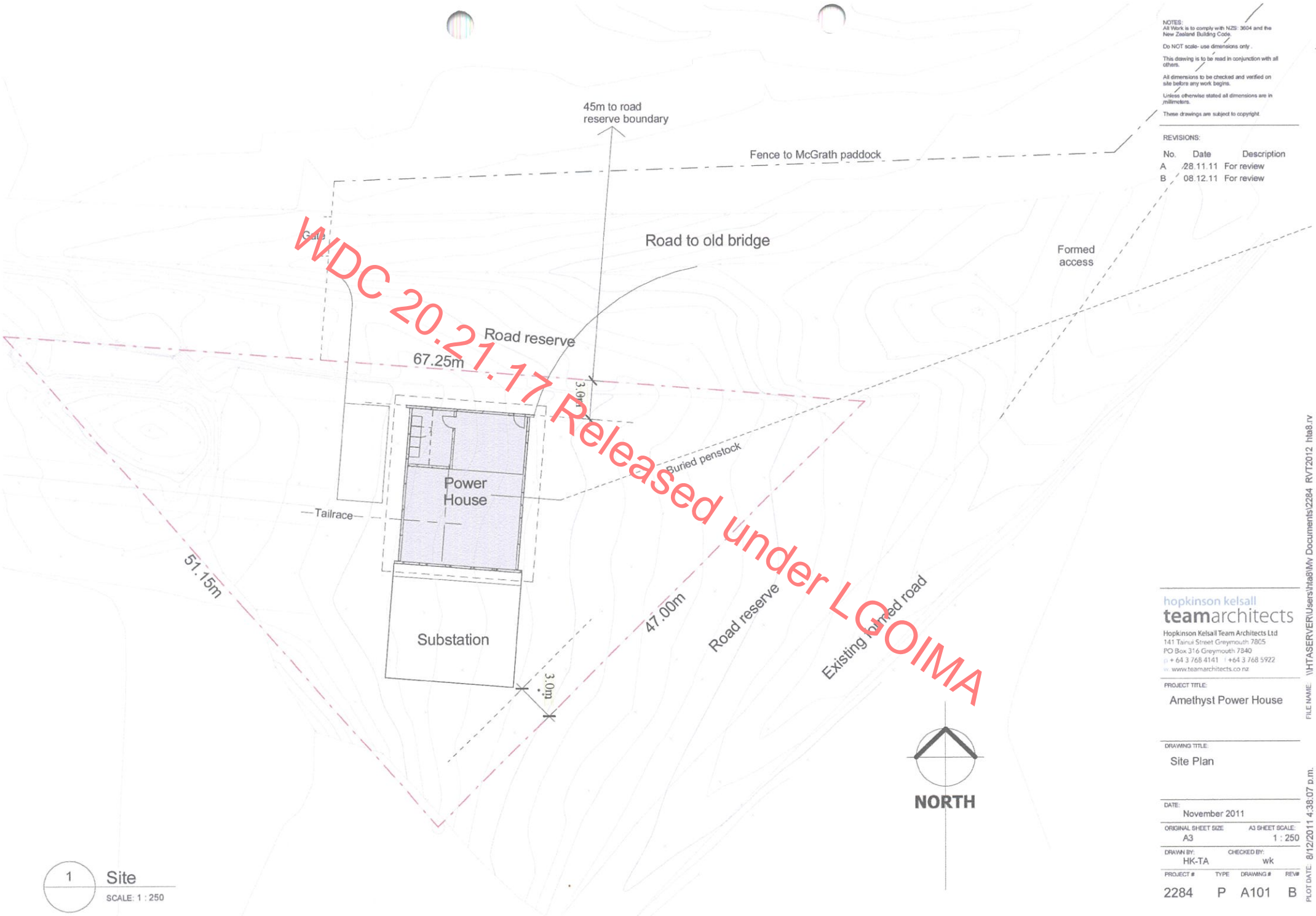
Eliot Sinclair & Partners Limited
Surveyors • Engineers • Planners
151 Kilmore Street, PO Box 4597, Christchurch 8140, N.Z.
Telephone: (03) 379-4014 Fax: (03) 365-2449

Drawing Set
287008 E1
PLOT E1 Scheme 1m0009 28052008

Sheet 1 of 1

rev.

G:\Jobs\287008\12dV9 Amethyst Hydro DESIGN\V9 Penstock Route DESIGN Wed May 28 08:20:00 2008



1 Site
SCALE: 1 : 250

NOTES:
All Work is to comply with NZS: 3604 and the New Zealand Building Code.

Do NOT scale- use dimensions only.

This drawing is to be read in conjunction with all others.

All dimensions to be checked and verified on site before any work begins.

Unless otherwise stated all dimensions are in millimeters.

REVISIONS:

No.	Date	Description
A	28.11.11	For review
B	08.12.11	For review

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FILE NAME: \\HTASERVER\Users\hta8\My Documents\2284 RVT2012 hta8.rvt

PROJECT TITLE:
Amethyst Power House

DRAWING TITLE:
Site Plan

DATE:
November 2011

ORIGINAL SHEET SIZE	A3 SHEET SCALE:
A3	1 : 250

DRAWN BY:	CHECKED BY:
HK-TA	wk

PROJECT #	TYPE	DRAWING #	REV#
2284	P	A101	B

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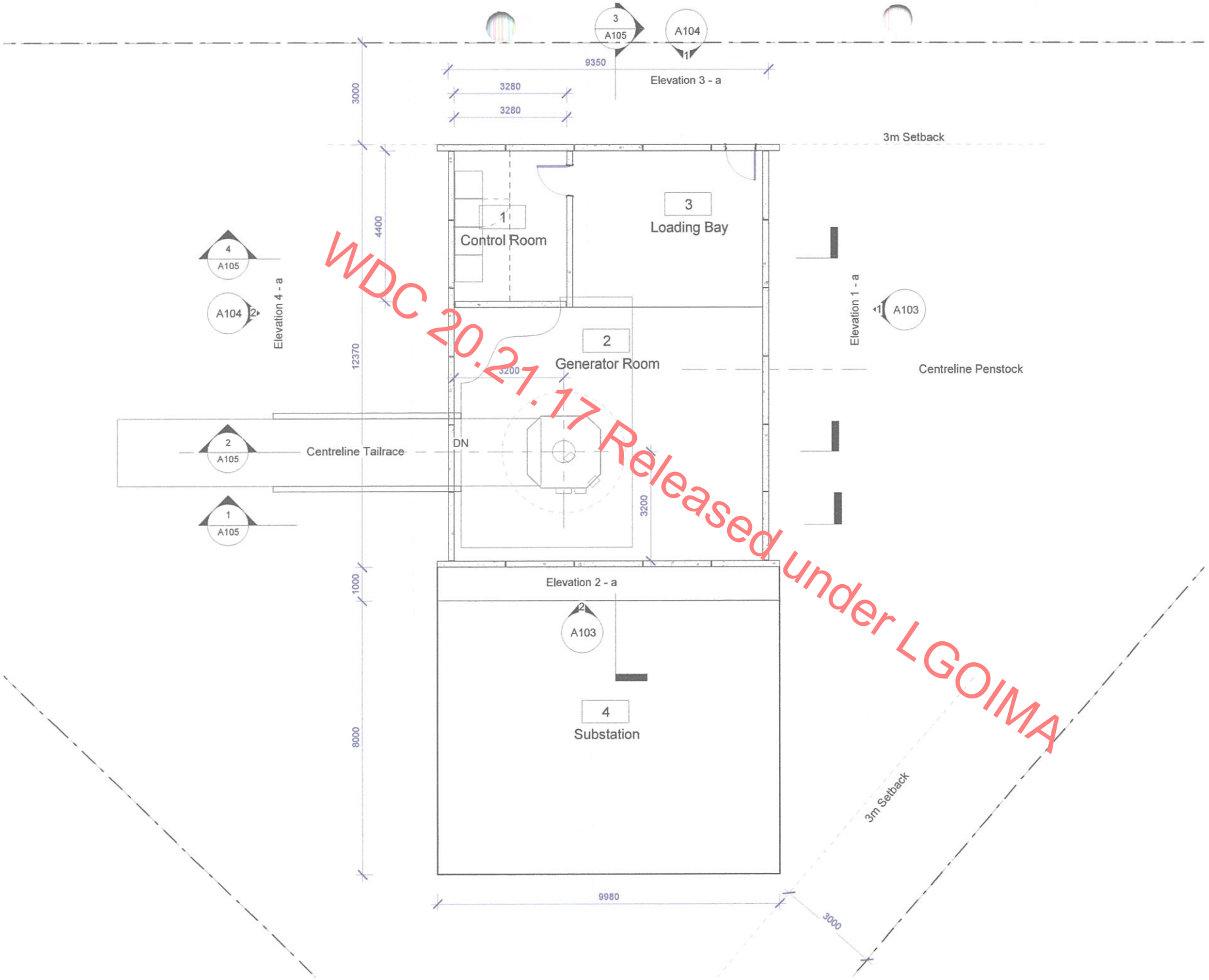

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PROJECT TITLE:
Amethyst Power House

DRAWING TITLE:
Floor Plan

DATE:
November 2011

ORIGINAL SHEET SIZE: A3
A3 SHEET SCALE: 1 : 100

DRAWN BY: HK-TA
CHECKED BY: wk

PROJECT #	TYPE	DRAWING #	REV#
2284	P	A102	B

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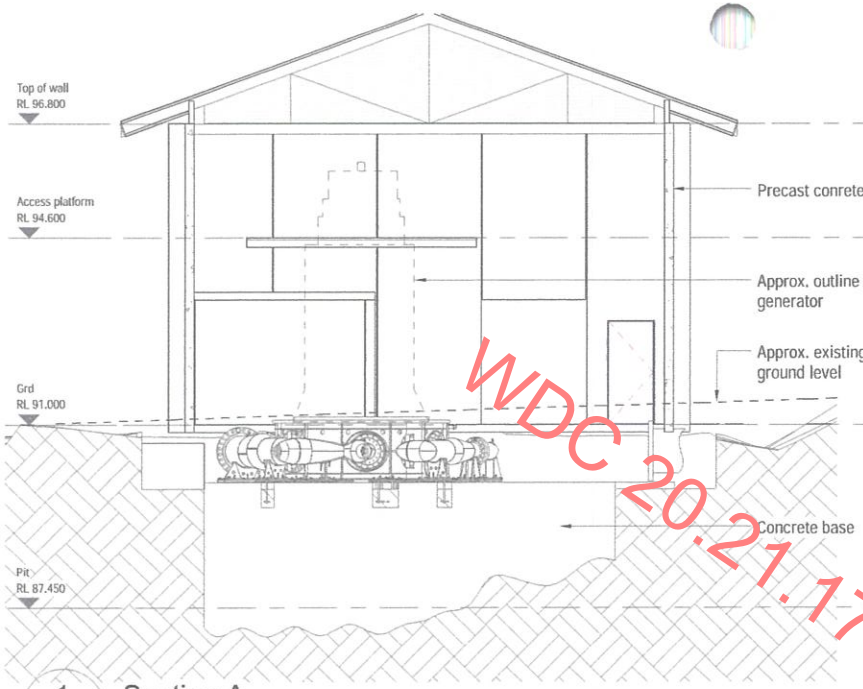

1 A102 **Section A**
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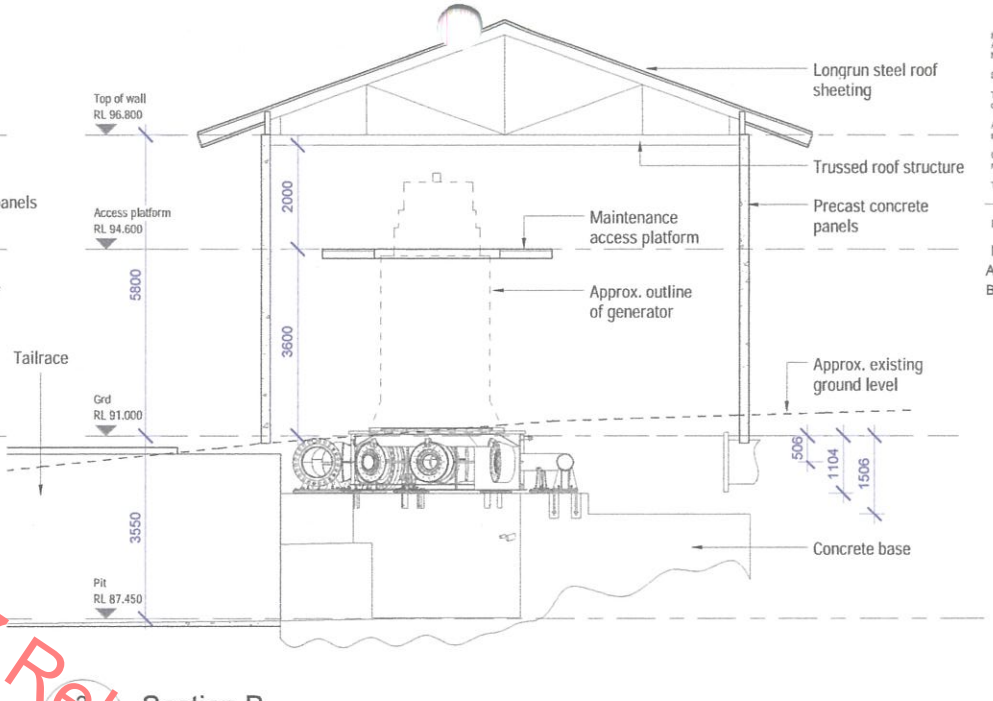

2 A102 **Section B**
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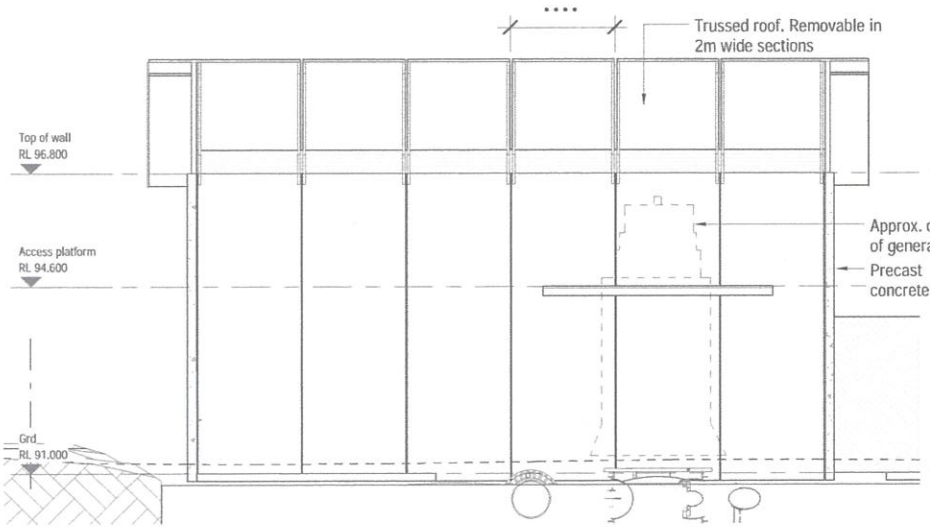

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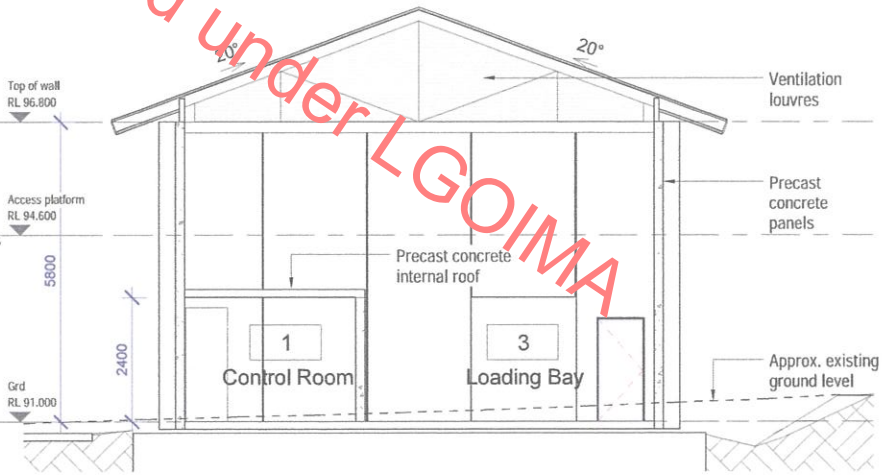

4 A102 **Section D**
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NOTES:
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B	08.12.11	For review

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PROJECT TITLE:
Amethyst Power House

DRAWING TITLE:
Sections

DATE:
November 2011

ORIGINAL SHEET SIZE: A3
A3 SHEET SCALE: 1 : 100

DRAWN BY: HK-TA
CHECKED BY: wk

PROJECT #	TYPE	DRAWING #	REV#
2284	P	A105	B

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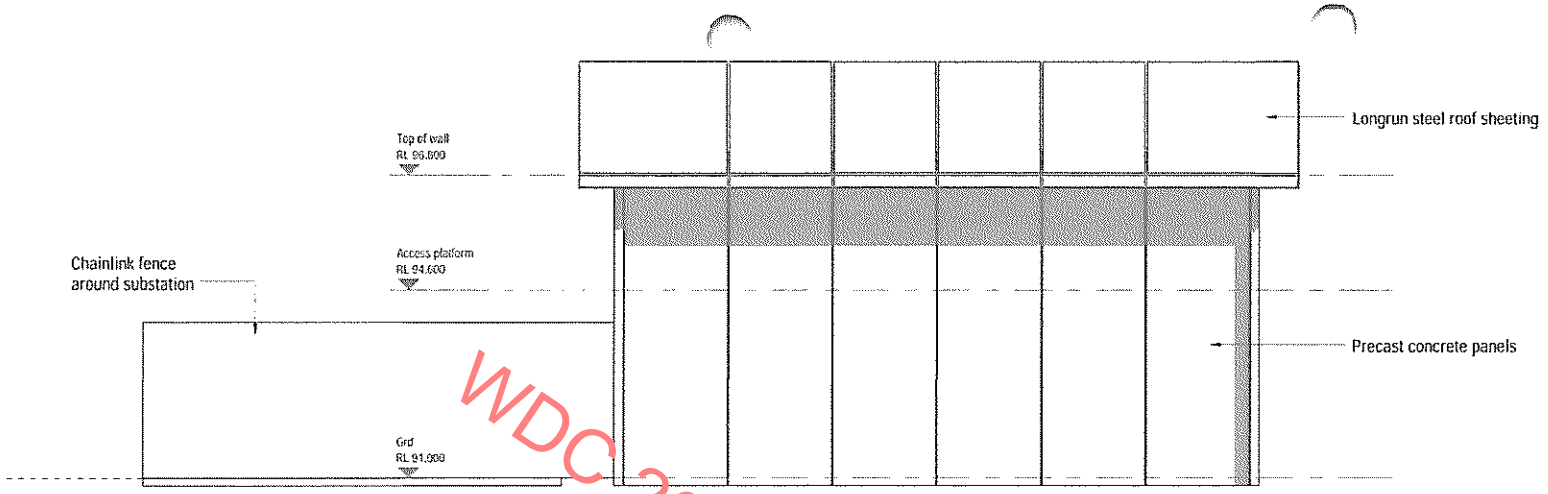

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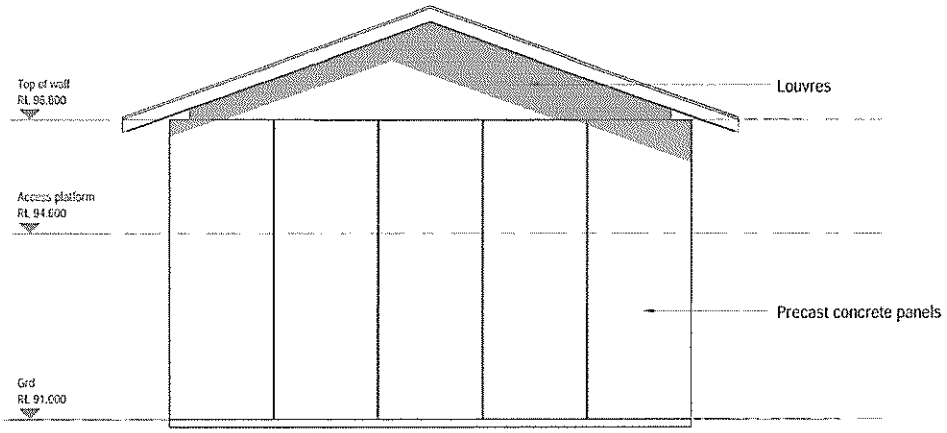

2 Elevation 2 - a

A102 SCALE: 1 : 100

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PROJECT TITLE
Amethyst Power House

DRAWING TITLE:
Elevations 1

DATE
November 2011

ORIGINAL SHEET SIZE	A3 SHEET SCALE
A3	1 : 100

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PROJECT #	TYPE	DRAWING #	REV#
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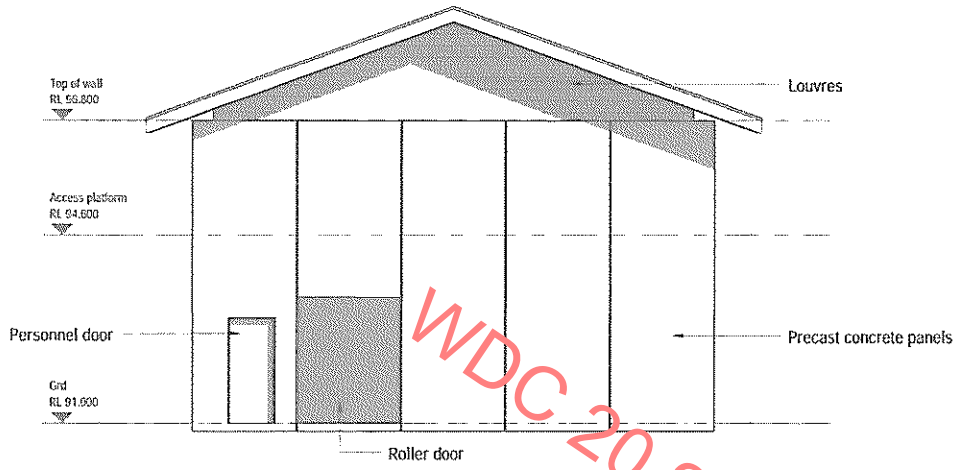

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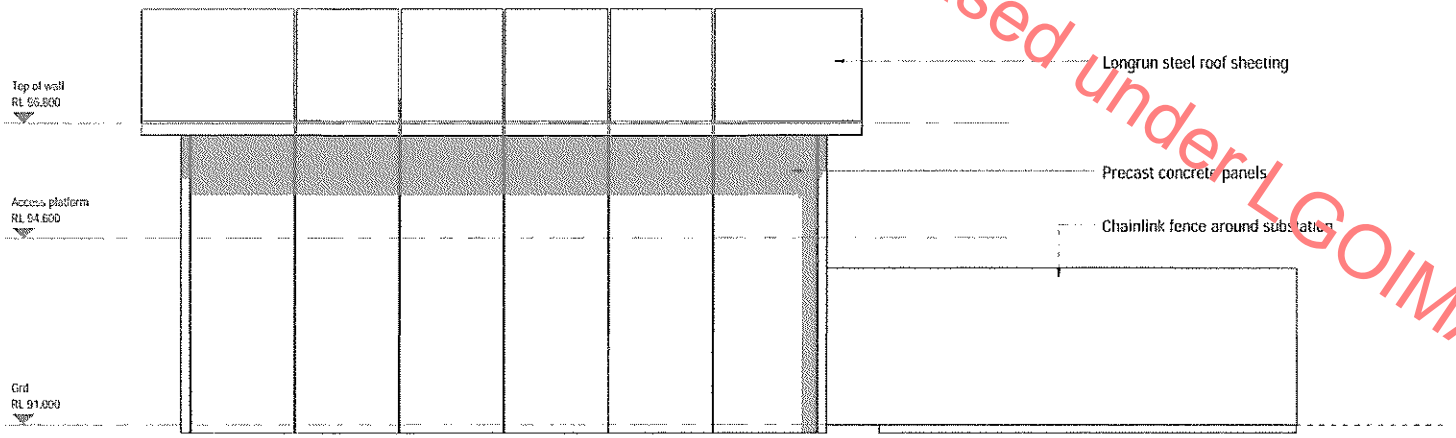

2 Elevation 4 - a

A102 SCALE: 1 : 100

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PROJECT TITLE
Amethyst Power House

DRAWING TITLE
Elevations 2

DATE
November 2011

ORIGINAL SHEET SIZE	A3 SHEET SCALE
A3	1 : 100

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PROJECT #	TYPE	DRAWING #	REV#
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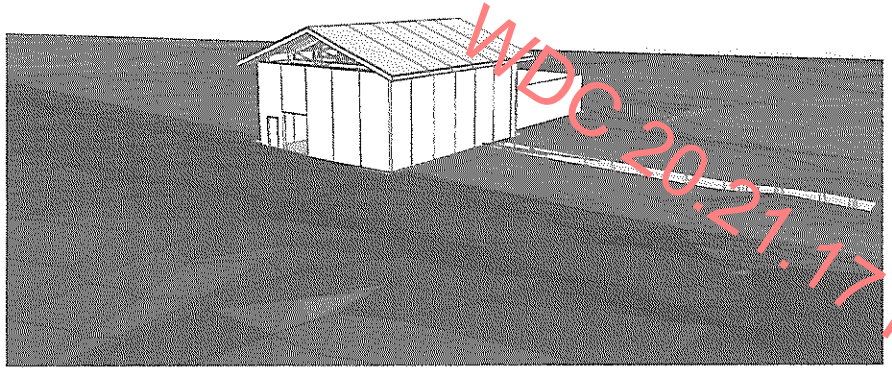

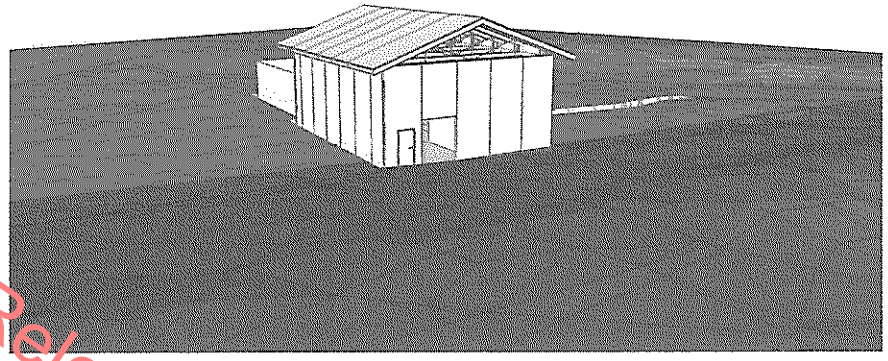

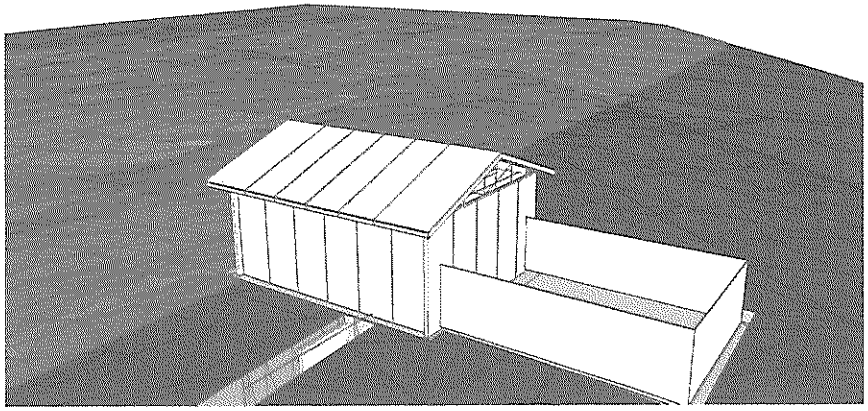

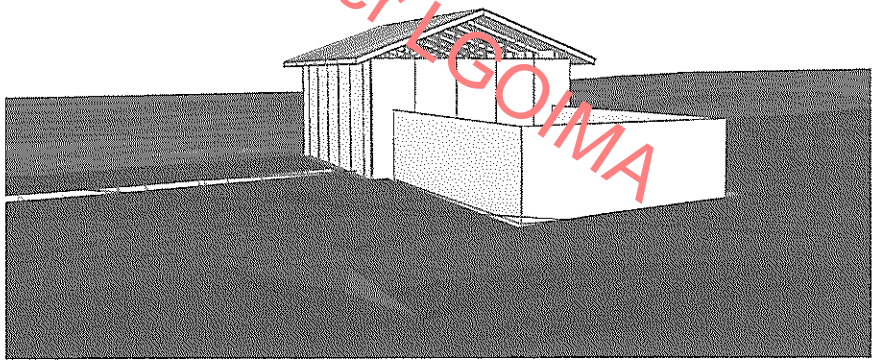

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PROJECT TITLE
Amethyst Power House

DRAWING TITLE
Views

DATE
November 2011

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PROJECT #	TYPE	DRAWING #	REV#
2284	P	A106	A

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