# BEFORE WEST COAST REGIONAL COUNCIL AND BULLER DISTRICT COUNCIL

**IN THE MATTER** of the Resource Management Act 1991

**AND**

**IN THE MATTER** of an application by Buller Coal Limited for resource consents for the Denniston Plateau Escarpment Mine Project

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# DECISION OF COMMISSIONERS APPOINTED BY WEST COAST REGIONAL COUNCIL AND BULLER DISTRICT COUNCIL

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Dated 26 August 2011

**Commissioners:**
Terry Archer, Chair (Westport)
Sharon McGarry, (Christchurch)
Warwick Heal, (Golden Bay)

# Buller Coal Limited

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## Summary of Decision

1. Buller Coal Limited (BCL) has applied to the West Coast Regional and Buller District Councils for a number of resource consents for land use, water take and discharges associated with an open cast coal mining project on the Denniston Plateau, called the Escarpment Mine Project (EMP). The EMP is located approximately 13 kilometres (km) to the east of Westport and approximately 4 km to the south of Denniston. The entire project generally consists of the mine itself, a coal processing plant, a coal slurry transport pipeline leading to a dewatering plant and a stockpiling/loading facility in the Fairdown area with process water discharges into Deadmans Creek.

2. **After consideration of all the evidence presented to the committee during the course of the hearing, we have determined that the applicant, Buller Coal Limited, has made its case for development of an open cast coal mine on the Denniston Plateau together with the construction, maintenance and operation of ancillary plant and equipment. Details of the decision together with consent conditions imposed, are contained within Chapter 8 and 9 of this Determination.**

## Chapter 1: INTRODUCTION

### BACKGROUND

3. Buller Coal Limited (the applicant) has applied to the West Coast Regional Council (WCRC) and Buller District Council (BDC) for a suite of resource consents in association with the mining of coal using open cast methods from within the EMP area on the Denniston Plateau. The proposal includes roading activities, construction of a Coal Processing Plant (CPP), a water take and pipeline, construction of a coal slurry transport pipeline to a Coal Handling Facility (CHF), which includes dewatering and stockpiling/rail loading and water treatment facilities at Fairdown, before being discharged into Deadmans Creek (Figure 1 and Figure 4).

4. The applications were initially lodged with both Councils on 2 September 2010, under the name of L&M Coal Limited. Since that time this company was acquired by Bathurst New Zealand Limited and renamed as Buller Coal Limited. The applications were subsequently publicly notified on 24 September 2010, with the closing date for submissions on 22 October 2010.

5. WCRC and BDC engaged several peer reviewers to review the technical reports provided with the application, who provided independent technical audits of specific elements of the applications. WCRC also sought legal advice on the status of an interim decision of the Environment Court in regard to wetland significance, following a variation to the Proposed Land and Riverbed Management Plan, and how this decision applied to the applications lodged by the applicant

6. Following the completion of the initial technical audits, a request for further information under s.92 of the Resource Management Act 1991 (RMA or the Act) was served on the applicant on 29 October 2010. The majority of further information was provided in response

to that request over the period 23 November 2010 to 8 February 2011. The water management plan was subsequently peer reviewed with the WCRC receiving this review on 28 March 2011.

**SUBMISSIONS FOLLOWING NOTIFICATION**

7. A combined total of 170 submissions were received from 98 submitters, the majority of which were joint submissions to both Councils. Four individual submissions were made to each of the two Councils. A small number of submissions were received after the closing date for submissions, which were accepted by the Councils by the granting of a s.37 waiver. With respect to the submitters, 50 supported the proposal, 41 were opposed or opposed in part, and 7 were neutral or not opposed.

8. Of the total 98 submitters, 34 indicated they wished to be heard in relation to their submission, while 62 indicated they did not wish to be heard. The two submitters that did not state whether they wished to be heard or not, were treated as if they wished to be heard and were given that opportunity. During the hearing, four submitters withdrew their submissions, three submitters who were initially opposed provided written approval for the proposal, three submitters indicated they no longer wished to be heard, one submitter withdrew their submission in support of the proposal, and one submitter amended their submission.

**HEARING PROCEDURE**

9. This was a joint hearing for both West Coast Regional and Buller District Councils. In accordance with the provisions of s.102 of the RMA, the WCRC assumed the administrative role for the hearing. The Hearing Commissioners, who were appointed by the two councils, and given the necessary delegations to hear and decide the applications, were:
   - **Mr Terry Archer**, WCRC Councillor, Westport (Chair);
   - **Ms Sharon McGarry**, Resource Management Consultant, Christchurch; and
   - **Mr Warwick Heal**, Barrister specialising in Resource Management, Golden Bay.

10. The hearing was held in the Westport Bridge Club rooms, Westport during the periods shown in the following table:

| **Dates** | **No of days** |
|---|---|
| 7 - 16 June 2011 | 8 |
| 20 - 22 June 2011 | 3 |
| 6 - 7 July 2011 | 2 |
| **Total** | **13** |

11. At the commencement of the hearing the Chair introduced the parties, outlined the hearing procedure and asked if there were any procedural or jurisdictional matters to be raised. None were raised.

12. The Commissioners undertook a site visit on 9 June 2011 and were guided by Mr Gerry Cooper (a Manager for the applicant who took no part in the hearing) and were accompanied by Ms Deborah Martin (a submitter on behalf of Royal Forest and Bird Protection Society NZ Inc.). We visited the Westport Port, the proposed sites for the Fairdown CHF, the lower route of the coal slurry transport pipeline, Deadmans Creek, Powerhouse Road (including a number of submitter's property boundaries), Denniston, Lake Brazil and the CPP site, part of the coal transport pipeline route (on the Plateau), Whareatea Road, the Cascade Mine, the Waimangaroa River water take point and part of the water pipeline route, Burnett's Face, the old Escarpment Mine and Mt Rochfort Road.

13. On 16 June 2011, we visited Stockton Mine on the Stockton Plateau and were shown a range of mining rehabilitation areas at different stages after development, by Mr Paul Comesky of Solid Energy NZ Ltd.

14. During the hearing, an unfortunate incident was bought to our attention. It was alleged that a person confronted a witness for the applicant, in a threatening and intimidating manner, which resulted in the Chair having to issue a warning prohibiting such behavior.

15. A number of submitters indicated that they would like the opportunity to consider the conditions to determine if their concerns had been adequately met. We were of a similar view in that before we could adequately determine if the adverse effects were able to be avoided, remedied or mitigated, we needed to evaluate more fully the proposed conditions.

16. To this end, we issued a Minute on 22 June 2011 adjourning the hearing and requesting information be provided by the applicant as to when a revised set of proposed conditions would be available, and requested the Council officers when they and their review panel would be in a position to undertake a review of these conditions. The Minute indicated that all parties would be given the opportunity to make written submissions on the proposed consent conditions.

17. The revised conditions were received on 24 June 2011.

18. All parties were advised in the Minute issued on 27 June 2011 that the hearing would reconvene on 6 July 2011.

19. During the adjournment, we requested, and the applicant agreed, to the commissioning of a peer review report under s.41(4) of the RMA, on submissions received and the applicant's evidence on air quality, with particular regard to dispersal of coal dust. Mr Andrew Curtis of URS provided a review on 4 July 2011, which was posted on the WCRC website. We also received comments from some submitters on the proposed conditions.

20. The hearing reconvened on 6 July 2011 and adjourned on 7 July after hearing all the evidence from the applicant, the submitters and the officer's report. At the time of adjournment we had not received the applicant's Right of Reply.

21. We received the applicant's legal closing submission (Right of Reply) on 22 July 2011, together with two supplementary statements and a set of final proposed consent conditions.

22. Under the provisions of s.103A, the hearing concluded on 5 August 2011.

**ACKNOWLEDGEMENTS**

23. We gratefully acknowledge the contributions and help received from the applicant, counsel, witnesses, submitters, and council staff, throughout the hearings process. In particular, we wish to thank all parties who presented evidence to us during the hearing, for the manner in which they conducted themselves. Similarly we also wish to express our appreciation to Mr Cooper and Mr Comesky for their assistance during site visits.

## Chapter 2: THE APPLICATION

### DESCRIPTION OF THE PROPOSED ACTIVITY

24. Buller Coal Ltd has applied for resource consent to mine coal from within the EMP area. The proposal also includes some activities associated with the processing and transportation of coal. The bulk of the mining operations are within the area of Mining Permit MP51279, which is located within the Mount Rochfort Conservation Area and covers an area of approximately 148 hectares (ha) located on the southern edge of the Denniston Plateau.

25. The EMP proposal involves the removal of up to 1.5 million tonnes (Mt) of coal per year from an estimated total resource of 6.1 Mt. Accordingly, the estimated minimum life of the mine is just over 5 years. The majority of the coal type sought for removal is bituminous coking coal (i.e. metallurgic coal), which is destined for the international market for its use in steel manufacture.

26. Apart from the necessary resource consent requirements from the WCRC and the BDC, a number of other legislative authorisations are required, namely access arrangements and concessions from the Department of Conservation (DoC), an access arrangement with Land and Information New Zealand (LINZ), and an authority to destroy, damage or modify an archaeological site from the New Zealand Historic Places Trust (NZHPT).

27. Open cut coal mining techniques are proposed to win the coal, methods which are suited for the coal seam and overburden lithology depths at the site. The coal seam depths range from 1 to 10 metres (m) thick, with overburden depths averaging approximately 50 m. The EMP proposal has been split into two blocks, the "Escarpment Block" located west of the current Escarpment Mine Road and the "Brazil Block" located east of the current Escarpment Mine Road.

28. The initial cut will occur within the Escarpment Block to expose the coal (the pre-strip), with an initial dump to hold the stripped overburden material located within the Mining Permit

area. Mining will then continue towards the west, with overburden placed in the excavated void (progressive rehabilitation technique). Much of the overburden has potential acid forming (PAF) properties.

29. Overburden removed will be stockpiled, reshaped and capped before being incorporated to form the final engineered landscape form (ELF). Rehabilitation will then follow, in a manner that mimics the environment that existed before the mining operations. However, the mining activities will ultimately result in 59.7 ha of Cascade Creek catchment being permanently redirected to the Whareatea River catchment. The overburden has acid producing potential and thus water management is considered critical to protect receiving water quality and for the long-term successful rehabilitation of the mine site, particularly with regard to the control of acid generation and sedimentation of the receiving waterbodies.

30. The existing access road network will be utilised and will involve a substantial upgrade of the existing Whareatea Road and construction of haul roads between the mine footprint and the CPP. Other roads are proposed to provide access for the initial mine benching and an upper level coal access as the pit advances west. The proposal also involves a water take from the Waimangaroa River and a pipeline of some 5 km, to supply water to the CPP facility. It is then proposed to pipe the coal in slurry form from the CPP off the Plateau. The coal slurry transport pipeline will traverse approximately 11 km from the CPP site to the CHF, located on Powerhouse Road, Fairdown. The coal slurry will be dewatered at the CHF, which includes a treatment facility to treat slurry water before it is discharged to Deadmans Creek. Activities at the CHF also include coal stockpiling and a rail loadout.

31. The applicant proposes that the coal processing and transport systems will be available for future coal haulage associated with other future mines on the Denniston Plateau.

**CONSENTS SOUGHT**

32. The activities for which consents were sought were provided in the initial application and the s.42A planning report and are shown below:

**West Coast Regional Council Resource Consents Applications:**

| **ASSOCIATED WITH THE ESCARPMENT MINE PROJECT** | | | |
|---|---|---|---|
| **Consent Type** | **Description** | **Activity** | **Term sought** |
| RC10193/1 | Land Use Consent | To mine coal and associated land disturbance activities. (Discretionary) | 12 years |
| RC10193/2 | Land Use Consent | To place, maintain, extend, remove or demolish structures in, or under the bed of a water body; excavate, drill, tunnel or disturb the bed of a waterbody; deposit substances in or under the bed of a water body; reclaim or drain the bed of a water body. (Discretionary) | 12 years |

| | | | |
|---|---|---|---|
| RC10193/3 | Land Use Consent | To enter or pass across the bed of any waterbody; or damage, destroy, disturb, or remove any plant or the habitats of such plants or of animals in, on, under or over the bed of a waterbody. (Discretionary). | 12 years |
| RC10193/4 | Water Permit | To take, use, dam or divert water. (Limited Discretionary) | 12 years initially, amended to 35 years |
| RC10193/5 | Discharge Permit | To discharge contaminants or water into water. (Discretionary) | 12 years initially, amended to 35 years |
| RC10193/6 | Discharge Permit | To discharge contaminants onto or into land in circumstances may result in that contaminant (or any other contaminant emanating as a result of natural processes from that contaminant) entering water. (Discretionary) | 12 years initially, amended to 35 years |
| RC10193/7 | Discharge Permit | To discharge contaminants onto or into land. (Discretionary) | 12 years |
| RC10193/8 | Discharge Permit | To discharge contaminants to air. (Discretionary) | 12 years |
| **ASSOCIATED WITH THE COAL PROCESSING, TRANSPORTATION AND STOCKPILING FACILITIES** | | | |
| RC10193/9 | Land Use Consent | To undertake land disturbance associated with the CPTSF. (Discretionary) | Unlimited |
| RC10193/10 | Land Use Consent | To place, maintain, extend, remove or demolish structures in, or under the bed of a water body; excavate, drill, tunnel or disturb the bed of a waterbody; deposit substances in or under the bed of a water body; reclaim or drain the bed of a water body. (Discretionary) | 35 years |
| RC10193/11 | Land Use Consent | To enter or pass across the bed of any waterbody; or damage, destroy, disturb, or remove any plant or the habitats of such plants or of animals in, on, under or over the bed of a waterbody. (Discretionary) | 35 years |
| RC10193/12 | Water Permit | To take, use, dam or divert water. (Discretionary) | 35 years |

| | | | |
|---|---|---|---|
| RC10193/13 | Discharge Permit | To discharge contaminants or water into water. (Discretionary) | 35 years |
| RC10193/14 | Discharge Permit | To discharge contaminants onto or into land in circumstances may result in that contaminant (or any other contaminant emanating as a result of natural processes from that contaminant) entering water. (Discretionary) | 35 years |
| RC10193/15 | Discharge Permit | To discharge contaminants onto or into land. (Discretionary) | 35 years |
| RC10193/16 | Discharge Permit | To discharge contaminants to air. (Discretionary) | 35 years |

**Buller District Council Resource Consent Applications:**

| **ASSOCIATED WITH THE ESCARPMENT MINE PROJECT** | | | |
|---|---|---|---|
| **Consent Type** | **Description** | **Activity** | **Term sought** |
| RC10/70A | Land Use Consent (Mining & associated activities) | Mining and associated activities relating to the Escarpment Mine Project on the Denniston Plateau. (Restricted Discretionary) | 12 years |
| RC10/70B | Land use Consent (Roading & associated activities) | Widening and maintenance of the existing Whareatea Road and construction and maintenance of mine haul roads. (Discretionary) | Unlimited |
| RC10/70C | Land Use Consent (Freshwater Pipeline & associated activities) | To construct, operate and maintain approximately 5 km of freshwater pipeline and associated access tracking from an intake on the Waimangaroa River to the CPP. (Controlled) | Unlimited |
| RC10/70D | Land Use Consent (Coal Processing Plant & associated structures/activities) | To construct, operate and maintain a Coal Processing Plant (CPP) and associated activities on the Denniston Plateau. (Non-Complying) | Unlimited |
| RC10/70E | Land Use Consent (Coal Slurry Pipeline & associated activities) | To construct, operate and maintain approximately 11 km long slurry pipeline and associated access tracking from the CPP down to a Coal Handling Facility at Fairdown. (Discretionary) | Unlimited |
| RC10/70G | Land Use Consent (Powerlines and | To construct, operate and maintain a electrical substation and overhead | Unlimited |

| | | | |
|---|---|---|---|
| | Substation) | electrical power lines with associated access tracking. (Discretionary) | |
| **ASSOCIATED WITH THE COAL PROCESSING, TRANSPORTATION AND STOCKPILING FACILITIES** | | | |
| RC10/70F | Land Use Consent (Coal Handling Facility & associated activities) | To construct, operate and maintain a Coal Handling Facility at Fairdown which includes a de-watering and water treatment plants, coal stockpiling and rail loadout facility. (Discretionary) | Unlimited |
| RC10/70H | Land Use Consent (Hazardous Substances) | To use, store and transport hazardous substances during mining and during the construction and operation of the CPP, Fairdown Coal Handling Facility, and within the Electrical Substation. (Discretionary) | Unlimited |

*Note: For the majority of the activities for which consents are sought, more than one rule of the District Plan applies. In this respect the most stringent activity status has been applied.*

**ASSESSMENT OF ENVIRONMENTAL EFFECTS REPORT**

33. The application documents consisted of four volumes. Volumes One and Two each contained the individual applications to both BDC and WCRC respectively, and each contained an introduction, evaluation of the existing environment, proposal description, statutory assessment, assessment of alternatives, assessment of environmental effects (AEE), restoration and rehabilitation, monitoring and an overview of consultation undertaken together with references and appendices.

34. Volume Three and Four each contained a range of technical reports which supported the application and AEE.

35. Part 6 of Volumes One and Two, each contained an individual AEE which comprehensively assessed the actual and potential effects of the proposal on the environment.

## Chapter 3: SUMMARY OF EVIDENCE AND SUBMISSIONS

**WITNESSES FOR APPLICANT AND SUMMARY OF EVIDENCE**

36. **Ms Jo Appleyard**, counsel for the applicant, presented opening legal submissions. She gave a company overview, outlined the proposal and the evidence which would be presented by the applicant's expert witnesses. She summarised the statutory framework and identified the effects the proposal would have on the environment. Ms Appleyard was assisted by **Mr Ben Williams.**

37. **Mr Hamish Bohannan** is the Managing Director for Bathurst Resources Limited. He provided an overview of Buller Coal Company Limited, outlined the company commitments to health, community relations and the environment. Mr Bohannan described the company views on the

contribution the proposal would have to the regional and national economy, and outlined their commitment to rehabilitation and bonds. Mr Bohannan provided further supplementary evidence on the transport chain, the integration with Solid Energy NZ Ltd (SENZ), the Westport Port development and responded to some questions regarding work arrangements for BCL employees.

38. **Ms Marianne Rogers** is the General Manager for Buller Coal Limited. She holds Bachelor degrees in (Engineering and Laws) and a First Class Mine Managers Certificate of Competency, and has over 15 years of experience in technical and management of mining projects. She gave evidence on the consultation undertaken by the applicant.

39. **Mr Les McCracken** is the Principal of his own company, McCracken Consulting Ltd. He holds a Bachelor degree (Science Honours in Mining Engineering) and has over 45 years of experience in the mining industry. In his evidence, he overviewed the changes proposed to the project, explained the stages of mine development, provided details of the CPP (including the haul road), water treatment plants, and coal transport pipeline. He overviewed the water and electricity sources, and explained how the dewatering plant at Fairdown would operate and concluded with comment on the s.42A report.

40. **Ms Emma Pollard** is the Managing Director of Virtual View Limited, which specialises in computer simulations. She provided a 3D virtual model of the proposed EMP with photo simulations of the visual changes associated with the proposal. She explained how the photo simulations were carried out and verified their accuracy.

41. **Mr Andrew Craig** is a Registered Landscape Architect. He holds a Bachelor degree (Arts), a Post Graduate Diploma in Landscape Architecture and is an Associate Member of the NZ Institute of Landscape Architects. He has over 34 years of experience in Landscape Architecture. In his evidence he described and assessed the landscape character and amenity and its wider setting, and described the proposal and its potential effects on the landscape. Mr Craig assessed the proposal with reference to the Buller District Plan (BDP) and Regional Policy Statement (RPS) objectives and policies relevant to landscape matters, and discussed the s.42A report and submissions which raised landscape matters.

42. **Mr Geoffrey Butcher** is a Director of Butcher Partners Ltd and an economist. He holds a Master degree (Arts in Economics) with Honours, and has over 30 years of experience as an economist. He provided evidence estimating the total district and regional economic impacts of developing and operating the EMP.

43. **Mr Fred Overmars** is the Managing Director and consulting Ecologist of his own company Sustainability Solutions Ltd. He holds a Bachelor degree (Science), a Diploma (Natural Resources) and a Masters degree (Applied Science) with 1st Class Honours. He has over 30 years of experience as an ecologist and was a contributing author to the New Zealand Natural Areas Programme. His evidence included a description of the environment of the Ngakawau Ecological District (NED) coal plateau and the EMP site, and coal processing and transport structures and facilities. He described the existing flora of the EMP mine site and network support facilities. He explained the ecological significance of the flora within the EMP and the potential effects the EMP would have on vegetation and flora. He discussed the proposed

mitigation measures and overviewed the proposals to monitor the mitigation outcomes. Mr Overmars included rebuttal evidence following his evidence in chief.

44. **Mr Rhys Buckingham** is the Director of Wildlife Surveys Limited and is a specialist fauna ecologist. He holds a Bachelor degree (Science) and has been involved in ecological consultancy work since 1994. His evidence included a description of the terrestrial fauna with a particular emphasis on birds and *Powelliphanta* snails) within the EMP and transport system footprint. He described the significance of these faunal values on a local, regional and national scale and considered the effects of the EMP on the terrestrial fauna. He made recommendations as to the mitigation of potential effects and as to the monitoring mitigation outcomes, and concluded with comment on the various relevant submissions. He provided rebuttal evidence following his evidence in chief.

45. **Dr Craig Ross** is the acting Science Leader at Landcare Research where he specialises in land restoration/rehabilitation, applied soil physics and soil survey. He holds a Doctorate in (Philosophy), a Bachelor degree (Agricultural Science) with 1st Class Honours, and a Diploma (Business Studies- Dispute Resolution). He is a Certified Practicing Agriculturist, and Honorary Life Member of and Past President of the NZ Institute of Agricultural and Horticultural Science and is associated with a number of other scientific organisations. He has 39 years of experience as a practicing soils scientist and 31 years of experience of mine site rehabilitation. His evidence included a soils and general overview of vegetation with respect to land rehabilitation on the EMP, the impacts of stripping, storage and stockpiling of soils and vegetation together with land rehabilitation recommendations. He discussed mitigation and monitoring recommendations and provided comment on a number of submissions.

46. **Mr Michael Kingsbury** is the Environmental Superintendant for Buller Coal Ltd. He holds a Bachelor degree (Science-Geology and Geography), a Masters degree (Applied Science-Natural Resource Engineering), a Post Graduate Diploma (Applied Environmental Technology) and a Post Graduate Diploma (Science-English, Geology and Geography). He has over eight years of experience in environmental management and mine rehabilitation at a number of New Zealand mines, including the nearby Stockton Mine in the design, management, monitoring and re-vegetation of landscaped mined areas. He has undertaken research in re-vegetation and erosion control techniques, and has presented a number of papers on these subjects. Mr Kingsbury provided evidence on rehabilitation strategies, operations, outcomes and monitoring.

47. **Mr Andrew Carr** is a Traffic Engineer with the firm Traffic Design Group Limited. He is a Chartered Professional Engineer and an Associate Member of the NZ Planning Institute. He holds Masters degrees (Transport Engineering and Operations, and Business Administration). He has over 21 years of experience in traffic engineering in both the UK and in NZ. He presented evidence in transport assessment including impacts on State Highway (SH) 67, Denniston Track and Powerhouse Road.

48. **Mr Stuart Camp** is a Principal in the firm of Marshall Day Acoustics. He holds a Science degree (Mathematics and Acoustics) and has worked in the field of acoustics with Marshall Day Acoustics for 28 years. He gave evidence based on previous experience from a number of rail

load out facilities, and specifically addressed the noise effects associated with the construction and operation of the proposed coal de-watering plant and rail load out facility at Fairdown.

49. **Ms Prue Harwood** is a Chemical Engineer for Beca with significant experience in air quality. She holds a Bachelor degree (Chemical Engineering) and has been an environmental engineer for 18 years. She gave evidence on the characteristics of coal de-watering and coal loading sites, air quality standards, proposed activities on site and dust nuisance, proposed mitigations measures and potential effects, and monitoring. Her evidence included comment on submissions and meteorological data. She provided additional comment on the URS peer review on air quality.

50. **Mr Mel Pederson** is a Electrical Lighting Engineer for Pederson Read Ltd. He holds a Bachelor degree (Engineering-Electrical) and is a Fellow of the Institute of Professional Engineers of NZ. He has over 45 years of experience as a consulting electrical engineer. He gave evidence on the effects of lighting associated with the Fairdown CHF and the measures proposed to mitigate concerns raised.

51. **Mr Richard Heslop** is a Project Manager for Kiwirail Ltd. He has over 55 years of experience working in the rail industry. He gave evidence on Kiwirail and its role as the operator of the national rail network and its experience in similar projects and outlined operational and safety issues relating to the site.

52. **Dr James Pope** is a Geochemist for CRL Energy. He holds a Doctorate degree (Philosophy - Geochemistry) and has over 12 years of experience in the minerals and research sector, providing consulting and research services related to mine drainage chemistry. He has authored eight peer reviewed papers and completed 15 consulting reports relating to mine drainage chemistry from rocks in NZ, including Brunner Coal Measures (BCM), their biological impacts and mine drainage remediation technologies. He gave evidence on acid base accounting rock chemistry, mine drainage chemistry derived from rocks produced by the proposed mine, implications for the Water Management Plan and for ELF management, and included recommendations for future adaptive management for the mine.

53. **Dr Mike Patrick** is an Environmental Scientist for Resource & Environmental Management (Nelson) Ltd. He holds a Doctorate degree (Microbiology/Zoology), a Bachelor degree (Science with Honours) and has worked in environmental management, particularly in water quality, since 1976. He gave evidence in two parts, on the background water quality of the upper Whareatea River and tributaries, Cascade Creek, and Deadmans Creek, and potential effects on water quality arising from the proposed mining operation, including post rehabilitation and also from the proposed coal processing and transport facilities .

54. **Mr Anthony Hewitt** is a Consulting Hydrologist for Envirolink Ltd. He holds a New Zealand Certificate (Engineering), a Post Graduate Diploma (Applied Science), is a Registered Engineering Associate and a Member of the NZ Hydrological Society. He has 44 years of experience in water related subjects and as a consultant hydrologist. He gave evidence on hydrology of the Denniston Plateau and the quantitative effect that the proposed CHF discharge may have on Deadmans Creek.

55. **Dr John Stark** is a self-employed Freshwater Ecologist. He holds a Doctorate (Philosophy-Zoology) and a Bachelor degree (Science with Honours). He was until recently, a Principal Scientist at the Cawthron Institute in Nelson, where he spent over 21 years. He has over 26 years of experience in freshwater biology and his particular areas of expertise include freshwater macroinvertebrate ecology, biological impact assessment, and monitoring using invertebrates. He gave evidence in the distribution of fish and macroinvertebrates, an overview of existing aquatic environment, the relationship between pH, suspended sediments and heavy metals, the distribution of fish and invertebrates, and recommendations for monitoring.

56. **Mr Phillip La Roche** is a Chartered Professional Engineer and a specialist in water treatment. He holds a Bachelor degree (Engineering–Civil), and has over 17 years of experience of water treatment and process engineering. He gave evidence on water quality standards and overviewed the coal transport pipeline. He discussed the treatment proposed to meet discharge standards from site water management at Fairdown, and made monitoring recommendations.

57. **Dr Mark Ellis** is a Senior Process and Environmental Engineer for Golder Associates (NZ) Ltd. He holds a Doctorate degree (Philosophy-Civil Engineering), a Bachelor degree (Engineering with Honours) and a Masters degree (Engineering–Civil). He is a Chartered Professional Engineer and has many years of experience working on a range of municipal wastewater and mine water treatment plants in New Zealand, Australia and South Africa. In his evidence he addressed site water management issues, conceptual design of proposed systems and mitigation measures, management of storm water, construction of the ELF, acid rock, and other mine influenced water as a result of mining.

58. **Mr Robert Greenaway** is a self-employed Recreation Consultant. He holds a Diploma (Parks and Recreation Management), and completed 18 months postgraduate study in conservation management. He is on the Board of Accreditation of the NZ Recreation Association, has over 24 years of experience, and has more recently been involved with the preparation of assessments of environmental effects relating to recreation and tourism for large scale projects. He gave evidence on the effect of the proposed open cast mine on the recreational activities in the area and future activities.

59. **Ms Katherine Watson** is a Consultant Archaeologist and Director of Underground Overground Archaeology Ltd. She holds a Bachelor degree (Arts-Anthropology with Honours), and Masters degree (Arts-Anthropology), and is a Member of the Australasian Society for Historical Archaeology. She has worked as a consultant archaeologist for 10 years and specialises in the historical archaeology of the West Coast and Canterbury where she has worked extensively with coal and gold mining archaeology on the West Coast. She gave evidence on mining history on the Denniston Plateau. She overviewed the historic features of the Escarpment Mine including the archaeological features and values of the impacts of the proposal and other historic features the proposal would have, together with the mitigation measures proposed and commented on the recommendations for mitigation and offsets.

60. **Mr Craig Welsh** is a Consultant Planner and Resource Economist and the Managing Director of Resource and Environmental Management Ltd. He holds a Bachelor degree (Commerce in

Economics), and a Masters degree (Science-Resource Management). He is a Member of the NZ Planning Institute and a member of the Australasian Institute of Mining and Metallurgy, and has over 20 years of experience in resource management and mining related projects. He gave evidence on planning issues in respect of the mining project, including status of land, the involvement of DoC, an overview of the project on the District Plan, and relevant Regional Plans and Regional Policy Statement, and an assessment against the provisions of the RMA.

**SUBMISSIONS AND EVIDENCE ON BEHALF OF SUBMITTERS**

61. **Mr Alan Absalom** represented Kawatiri Energy Limited (KEL) at the hearing. Mr Absalom is a partner in the company and lives in Westport. Mr Absalom stated that KEL fully supports the proposal and recognises the benefits to the Buller District. He confirmed that agreements in principle had been reached with the applicant, and noted the creation of more than 200 direct jobs, indirect jobs in service and maintenance, benefits to the port and freight transport in and out of Westport, and the benefits of a stable and growing community.

62. **Mr Brian Warburton** represented Transpower New Zealand Limited at the hearing and stated a neutral position to the application. Mr Warburton is employed as an Environmental Advisor and holds qualifications of Master of Science (Resource Management and Planning) and Bachelor of Science (Geology and Physical Geography). Mr Warburton outlined Transpower's electricity infrastructure as a significant physical resource and the need to ensure it is sustainably managed in accordance with the purpose and principles of the Act. He described the company's assets, potential adverse effects of the proposal on those assets, the relevance of the National Policy Statement on Electricity Transmission (NPSET), the requirements of the New Zealand Code of Practice for Electrical Safe Distance (NZECP 34:2010), and consent conditions required to preserve the security of the National Grid and the health and safety of people.

63. **Mr Peter Lusk** presented a submission in opposition to the proposal on behalf of the Buller Conservation Group. Mr Lusk stated the group believes the natural values of the coal Plateau are so high it would easily qualify as a national park and therefore needs protection from mining. He noted the huge volume of greenhouse gases that would be released by the proposal, adverse effects on biota and landscape values, and dust, water and noise issues at Fairdown. He highlighted the water take from the Waimangaroa River would take almost the entire flow in times of low flow, and that the treated water would be discharged into Deadmans Creek at times of very low flow, risking pollution of an important whitebait fishery. Appended to his submission were six photographs.

64. **Ms Karen Mayhew** and **Ms Lynley Hargreaves** presented a submission in opposition to the proposal on behalf of the West Coast Environmental Network (WCENT). They considered the proposal would have significant adverse effects on ecological and environmental values, climate change, and would permanently reduce the extent of a unique mosaic of habitats and rare ecosystem. They considered the s.42A report had understated the significance of the area and the level of protection it should be afforded under the West Coast Conservation Management Strategy (CMS), and noted concern with the cumulative loss of ecological integrity on the Denniston Plateau, the destruction of habitat for rare and threatened endemic species, permanent loss of 200 ha of upland coal measure ecosystems, negative effects on

wetlands and water bodies, the adverse effects of acid mine drainage (AMD), weed and pest species incursion, problems with rehabilitation, impacts on climate change, and compensation and offsetting proposals. Included with the submission was a computer disc containing copies of technical reports by DoC in relation to the proposal. An additional statement of clarification (received by email from the group) was read out later in the proceedings.

65. **Mr Stewart Robertson** and **Dr Clare Backes** presented a submission in opposition to the application on behalf of the West Coast Tai Poutini Conservation Board. Mr Robertson is Chairperson of the Conservation Board's Planning Committee and Dr Backes is Chairperson of the Conservation Board. They outlined concern regarding the destruction of the unique sandstone pavement and its ecology, the improbability of rehabilitation and control of AMD/acid rock drainage (ARD). The Board highlighted the statutory relevance of the CMS as a mandate of the people of the West Coast, the classification of the plateau as a historically rare ecosystem and nationally outstanding natural landscape, the relevance of s.6 of the Act, the large scale nature of the proposal, the fact sandstone pavements cannot be restored to their natural form, and uncertainty regarding the treatment of AMD/ARD and potential significant adverse effects on downstream habitats. The Board considered the provision of predator control as an offset would be more appropriate for the access agreement with DoC, and questioned the applicant's implication that DoC favours the proposed off site mitigation. In the Board's view, off site mitigation has merit if the land affected is of low conservation value and no practical alternative can be demonstrated, and that neither of these situations applies to the proposed mining of sandstone pavement.

66. **Ms Jeanette Fitzsimons** presented a submission in opposition to the application. Ms Fitzsimons has worked professionally on climate change policy for 30 years, teaching environmental studies and as an elected member of parliament. Ms Fitzsimons stated concern regarding adverse effects of the proposal on a benign climate, as a natural and physical resource which is fundamental to human wellbeing – to our lives, health and livelihoods. She emphasised a stable climate is 'a resource' deserving protection under the RMA and that impacts on climate are global. She showed us a pre-recorded DVD of a statement by Dr James Hansen (a renowned international expert in climate change science) addressing climate science issues, the urgency of action, the role of coal, and the impacts of the proposal on global climate change. She considered no new coal mines should be opened and that the proposal would increase NZ's production of coal by 43%. She was of the view that s.70A and s.104E were irrelevant, and that due regard must be given under Part 2 of the RMA to the impacts of the proposal on the global climate and the wellbeing of future generations. She considered the mine will not safeguard the life-supporting capacity of air, water or ecosystems, and would set a new permitted baseline for open cast mines on the Plateau.

67. **Mr Michael Stephens** presented a submission in opposition to the proposal on behalf of himself and his wife. They own a 2.3 ha block in Powerhouse Road and intend building a dwelling in the future. Mr Stephens questioned why the load out could not be achieved at an existing facility and outlined a number of mitigation measures if consent is granted, such as requiring 12 m high bunds, extending the length of the bunds and restricting operating hours to 6 am-6 pm Monday-Saturday.

68. **Mrs Coraleen White** gave evidence in opposition to the proposal on behalf of herself and her husband. They are deeply concerned about potential adverse effects on water quality in Deadmans Creek. If consent is granted, they request that conditions be imposed requiring water treatment to best practice standards, quarterly review of water treatment results and management, involvement of the Community Liaison Group in the development of the Water Management Plan, and that a significant proportion of the financial contribution be directed towards the new coal town museum on Palmerston Street.

69. **Ms Deborah Martin** presented evidence in opposition to the application on behalf of the Royal Forest and Bird Protection Society of New Zealand Incorporated (Forest & Bird). Ms Martin is employed as a Regional Field Officer and holds qualifications of a Bachelor degree (Sociology and Psychology) and a Master degree (Geography), with over ten years of experience. She presented opening and closing submissions, and called Ms Kathy Gilbert and Mr Michael North as witnesses. Ms Martin considered the proposal will result in the degradation of a landscape that currently includes rare ecosystems and wetlands, and the loss of significant habitats and species. She was of the view the application would set a dangerous precedent for mining of the public conservation land on Denniston plateau. She suggested that DoC is not appearing in defense of public Conservation Land because of political influence and that responsibility for approving mining on Conservation Land is required from the Minister of Energy and Resources, as well as the Minister of Conservation. She stated large scale open cast mining is incompatible with the smaller underground mining of the past, and that the Denniston Plateau is the only extensive area of BCM ecosystem that is specifically held for conservation purposes. She considered the proposal fails to safeguard the life supporting capacities of air, water, soil and ecosystems, fails to avoid remedy or mitigate adverse effects, and fails to preserve the natural character of wetlands and rivers and their margins. She was of the opinion the proposed weed control and predator control is insufficient and is already occurring; and that the compensation package proposed is both inappropriate and inadequate to offset the cumulative loss of habitat, indigenous vegetation, landscape and natural character.

70. **Ms Kathy Gilbert** is the Chairperson of the West Coast branch of Forest & Bird. Ms Gilbert gave an overview of the branch and outlined the kinds of activities Forest & Bird is involved in on the West Coast.

71. **Mr Michael North** is a self-employed Ecologist with a Bachelor of Science degree (Ecology) and over 17 years of experience. Mr North's evidence provided an ecological context of the Plateau as a whole and the importance of size, shape and ecological complexity in relation to species diversity and abundance and their likelihood of extinction. Mr North outlined the significance of the coal measure plateau in the CMS as a "priority site for biodiversity management" and as an area "of major national significance", and discussed the draft "Ngakawau Ecological District – Survey Report for Protected National Areas Programme" report (1998) (PNAP report). He considered the applicant had not assessed potential adverse effects of the proposal on invertebrates or bryophytes, lichens and fungi. He noted much of the Plateau is identified as part of an 1138 ha wetland and is listed as being in the top 30% of wetlands ranked regionally and nationally for its spatial unit. He considered the destruction of 200 ha would impact significantly on representativeness, intactness and connectivity values, and that rehabilitation (re-vegetation) would bear little resemblance to pre-mining conditions.

He was of the view the proposed predator control will be of little additional value and is inadequate mitigation for significant adverse effects of the proposal.

72. **Mr Malcolm Duff** (General Manger, Southern Region), **Dr Christine Whybrew** (Heritage Advisor) and **Mr Robert McClean** (Senior Heritage Policy Advisor) gave statements of evidence on behalf of the New Zealand Historic Places Trust (NZHPT). Mr Duff outlined the NZHPT's original submission and the reasons for initially not supporting the application. He stated the NZHPT was now offering conditional support to the application, as it is satisfied any adverse effects on heritage values can be avoided, mitigated or compensated. He confirmed that an agreement was being finalised with regard to the cumulative effect on heritage of the Plateau, and the commitment of the applicant to prepare a structure plan covering all areas of interest to the applicant, DoC and NZHPT. Dr Whybrew provided an overview of the industrial history of mining on the Denniston plateau during the 19th and 20th Centuries, compared the site with other New Zealand mining sites, and assessed the contribution of the Escarpment Mine to heritage values of Denniston. Appended to her evidence was a copy of the registration of the Denniston Historic Place. Mr McClean summarised avoidance, mitigation and heritage benefit issues in relation to the application, and the archaeological provisions of the Historic Places Act 1993. He outlined support for proposed consent conditions requiring the preparation of a historic heritage management plan, proposed interpretation panels, heritage training for staff and contractors, and the identification, management and storage of artefacts.

73. **Mr Gary James** made a submission in opposition to the application on behalf of himself and his wife. Mr and Mrs James live at 49 Burnett's Face Road, Denniston and they are concerned with renewed use of the old quarry on the Plateau, and the recognition and protection of heritage sites. Mr James is chairperson of 'Friends of the Hill' and has lived on the hill for 24 years. Mr James confirmed they were now satisfied the applicant was not intending to use the old quarry and stated he was 'sitting on the fence' as long as heritage sites (in particular 'Poverty Point') were adequately protected. He was of the view that the biggest problem with saving heritage was financial.

74. **Mr Terry Sumner** presented a submission in opposition to the application. Mr Sumner has lived part of his life in Denniston since 1979 and was accompanied by his white cardboard cut-out elephant. He considered the proposed 'off-sets' of weed and pest control are work that DoC is funded to do anyway and do not relate to the direct loss of kiwi or their habitat on the Denniston plateau. He was of the view that Denniston is an outstanding landscape and natural feature, and that despite 130 years of mining, retains a unique and unusual beauty. He considered operation of a 24/7 open cast mine would ruin the 'natural quiet' of the Plateau and the outstanding night sky. He suggested most of the economic benefits stated by the applicant in wages and salaries would not benefit the region, as jobs would be filled by a workforce residing elsewhere. He highlighted negative social consequences associated with 'boom-bust' development, and the unsustainable nature of the industry. He noted the popularity of the Plateau and Mt Rochfort for cycling and the potential economic benefits of tourism to the region. He considered the rehabilitation would be merely re-vegetation and that the ecosystems would be irreversibly changed. He suggested climate change (hence the white elephant) is the most significant issue for consideration, and that coal is the single biggest threat to civilisation and all life on the planet.

75. **Mr Max Nurse** gave evidence in opposition to the application. Mr Nurse owns a property at 10 Powerhouse Road, Fairdown, which he is currently building a house on. He considered the CHP facility and pipeline would impact too heavily on the community of Fairdown and that the proposal had already divided the community. He is concerned about adverse effects on the rural amenity of the area and reductions in property values. He expressed particular concern with coal dust pollution, light pollution, noise pollution, increased traffic volumes, obstruction of existing views, pollution of Deadmans Creek, extended loss of access to walking tracks, and the proximity of the CHP site access to his property access. He requested a number of consent conditions that should be imposed in the event that consent is granted.

76. **Mr David Orchard** presented evidence on behalf of the Fairdown/Whareatea Residents Association Incorporated (FWRA) and lives with his wife at 84 Powerhouse Road, Fairdown. Mr Orchard expressed concern that the residents are hugely disadvantaged in the process without finances to engage consultants and lawyers, and that their numbers had dwindled as undisclosed agreements have been made between the applicant and affected residents. He highlighted concern regarding damage to the environment, people, and property values in the vicinity of the CHP facility. He outlined significant adverse effects on air and water quality, ambient noise levels, the night sky and amenity values. He suggested the health of a number of members of the group had been adversely affected by stress from the proposed development and emphasised this could be expected to continue if the CHF is located in a rural-residential area. He questioned the suitability of the Fairdown site for the proposed facilities, as the site is located on saturated clay known as 'slop' and finding a foundation would be difficult and expensive, and could result in the applicant applying for a variation to move closer to residences. He stated concern for the existing good water quality in Deadmans Creek and the potential for pollution of Christmas Stream from untreated water overflows into the Whareatea Creek entering KEL's water intake. He questioned the use of wind data from Westport airport (12 km away), and noted markedly different wind and rain patterns at Fairdown. He outlined concern about dust emissions and suggested the problems with dust control at SENZ's coal loading facility at Ngakawau had been expensive and unsuccessful. He considered the economic benefits to the region had been overstated by the applicant, as a significant number of employees would reside outside the area.

77. **Ms Anni Kolff** and **Mr Tony Peet** reside at 1055 Fairdown Road and gave evidence on behalf of themselves and the FWRA. Ms Kolff expressed concern that the proposed CHF and coal slurry pipeline would not comply with s.5 and s.17 of the Act. She outlined concern with loss of amenity, views from the state highway and impacts on the well-being of the community. She noted the extensive rural-residential growth in the area and considered this is based on the existing amenity related to peace and quiet, the natural outlook, wildlife, clean water, fresh air and an unpolluted night sky. She considered the proposal would not maintain or enhance the amenity values of the area and would have negative social effects. She questioned how the slurry pipe would co-exist with the KEL pipeline, and noted concern regarding the dump ponds and potential contamination of water supplies. She also described the wind conditions at Fairdown and the infrequent occurrence of tornadoes in the area. She emphasised the rural character of the area, the inappropriate nature of the proposed industrial facility, and its incompatibility with the existing amenity values.

78. **Mr Tom Baxter** lives on Fairdown Road and gave evidence on behalf of himself and the FWRA. Mr Baxter considered the applicant has a moral obligation to provide the best social

and environmental outcome rather than the bare minimum in return for the right to extract a valuable resource. He noted concern regarding the geological stability of the slurry pipeline route and noted two studies which highlight the instability of the areas. He showed a series of photographs illustrating the instability of the existing geology, previous landslides and the effect of KEL excavations in the area. He detailed an alternative coal transport pipeline route and location for a CHF further away from Fairdown.

79. **Ms Deborah Chorley** and **Mr Kim Stevenson** presented jointly prepared evidence on behalf of themselves and the FWRA. Ms Chorley considered the detail of the AEE did not correspond to the scale and significance of the proposal, and lacked sufficient detail to adequately assess the potential adverse environmental effects. She highlighted that Stockton Plateau had been set aside for the purpose of coal mining (as 'Coal Reserve') and that the Escarpment Mine is on land set aside for conservation purposes and is managed under the Conservation Act. She noted concern with ARD and AMD, and potential toxic effects on biological systems. She questioned whether the applicant had demonstrated there was enough NAF material onsite to cap the ELF and to adequately manage on-going leachate discharges. She supported vegetation direct transfer (VDT), but noted it could not be stockpiled for any length of time without smothering flora and fauna. She questioned the use of limited rainfall data and the applicant's failure to account for increased rainfall from predicted climate change. She question the geology of the area for the dams and integrity of the structures, the use of settlement ponds for 'primary' water treatment, proposed sediment control, the accumulation of heavy metals, proposed compliance limits for Deadmans Creek, and the discharge of untreated mine water into Whareatea River 5% of the time. She considered consent to widen the coal transport pipeline route should have been applied for as part of this application. Appended to the evidence was information on mercury in coal, coal-fired power plant emissions, and the world's oceans in decline.

80. **Mr Hubert Miranda-Suarez** resides on Powerhouses Road, Fairdown and presented evidence on behalf of himself and the FWRA. Mr Miranda-Suarez outlined concerns regarding the applicant's assessment of potential dust emissions by highlighting information gaps and what he believed to be, were errors in the assessment methodology and subsequent conclusions reached. He was of the view that consent should not be granted as the CHF must be considered as a non-complying activity and the adverse effects of dust would be more than minor. He considered the 'Dust Extinction Moisture' (DEM) of the coal should be determined and that all activities on-site must be taken into account. He referred to the coal stockpiling facility at Lyttelton and on-going issues with dust emissions affecting surrounding residences, and provided a site plan and a record of complaints received by Canterbury Regional Council (CRC). He questioned the effectiveness of 4 m high bunds when the stockpiles would be 12 m high, and exposure of the site (including the orientation of the stockpiles) to winds from the south-western quarter. He highlighted the applicant's assessments were not based on real environmental parameters, but rather compared proposed mitigation measures with best practice. He raised concern with the use of the wind data from Westport Airport, and noted the occurrence of numerous tornadoes in the area. He outlined dust suppression methods at SENZ's Ngakawau coal handling facility and suggested dust was 'an on-going constant problem'. He provided extracts from overseas studies on health impacts in coal mining areas. Overall, he concluded that the location for the CHF is inappropriate and poses a serious

negative health risk for residents living nearby. Appended to his evidence was the 'Dust Management Plan' for the Ngakawau facility, a file note of a complaint to the WCRC, a diagram showing the location of meteorological stations at Lyttelton, measured wind proportions at Lyttelton and the effect of terrain, a map and aerial photo showing the proximity of houses at Lyttelton, a record of complaints received by CRC relating to dust at Lyttelton, a report "Review of Assessment of Effects on Air Quality" by Golder for Lyttelton, a written statement by Rex Walker and photos regarding tornadoes.

81. Mr Miranda-Suarez also presented evidence on behalf of himself and the FWRA regarding noise. He questioned the adequacy of the applicant's noise assessment and suggested the BDP noise limits would not be adhered to. He highlighted the assessment was not made on the closest residential boundary (to the east) and that predicted noise levels were right on maximum permitted levels. He suggested the proposed 4 m bund would not mitigate noise, as many of the activities were higher than this. He noted the proximity of the coal slurry pipeline to his boundary (10 m), the potential change in the quality and character of sound and its effect on human health, and irreversible effects of the proposal on the existing amenity value.

**Applicant's right of reply**

82. The applicant provided a written right of reply on 22 July 2011, which comprised legal submissions, supplementary evidence from Ms Rogers and Mr Overmars, and a final version (V5) of proposed consent conditions.

## Chapter 4: SECTION 42A OFFICERS' REPORT

83. Recognising that this hearing was to be conducted as a joint hearing, the s.42A Officers Report was prepared as a joint report. The report was prepared by Council officer **Mr Tony Ridge** on behalf of WCRC, and by **Ms Rebecca Inwood** a self-employed consultant planner, on behalf of BDC.

84. Mr Ridge has a Bachelor of Science degree (Agricultural Science), a Post Graduate Diploma in Applied Science majoring in soil physics and water resource management, and a Masters in Applied Science associated with effluent management. He has worked with the WCRC as a Consents Officer for seven years and has been involved in processing numerous coal and gold mining consent applications.

85. Ms Inwood has a Bachelor of Laws and is an Associate Planner of the Planning Institute of New Zealand. She has worked for the WCRC for five years as a Consents Officer (1993–1998) and has been involved in a number of significant projects including coal and gold mining consents. Since 2004, after re-entering the planning field, she assisted the BDC in processing resource consents and assessing annual work plans for mining operations throughout the region. Since 2008 she has been engaged as a Consent Manager for Hydro Developments Ltd, dealing with all planning aspects of a proposed hydro scheme on the Stockton Plateau.

86. The s.42A report was set out in a helpful, easy to follow format. The body of the report provided evaluations of the conclusions from a series of technical audits of the more critical aspects of the proposal (in Appendix 5). The report also provided information on notification of the application, submissions, AEE, statutory framework, and an assessment against the provisions of the RMA. Appendix 1 provided a table of the resource consents applied for, and Appendix 2 provided the objectives and policies of the relevant WCRC planning documents with an assessment of the planner's evaluations at Part 6. Included as part of Appendix 2 are relevant extracts of the BDC's relevant policies and objectives in table form and included an assessment of the planner's evaluations. Appendix 3 included specific details and extensive corresponding responses from the applicant to the s.92(1) request for further information. Appendix 4 contained a set of proposed consent conditions submitted by the applicant, including diagrammatic representations of the site, the concept rehabilitation plan, water discharge monitoring and compliance locations. Appendix 5 contained technical peer review reports of those parts of the applications which the Council officers considered the effects were more than minor. Appendix 6 contained a table of submitters. Appendix 7 contained information on offsets and roading issues and Appendix 8 contained a Geotechnical assessment of the Escarpment Mining Area prepared by Golder Associates.

87. The analysis of the key statutory considerations set out in the s.42A report was consistent with our obligations under s.104(1) and was particularly helpful. The core matters under the statutory framework that were analysed in detail in the report included the weight given to the key environmental considerations and adverse effects on the environment. Generally, we refer to the statutory framework and the relevant matters that we are required to consider in Chapter 7 of this decision.

88. At a Regional level there are six relevant planning documents each of which the applications were assessed against:
    i) Regional Policy Statement (RPS);
    ii) Proposed Water Management Plan (PWMP);
    iii) Proposed Land and Riverbed Management Plan(PRLRMP);
    iv) Regional Air Quality Plan (RAQP);
    v) Regional Plan for Discharges to Land (RPDL); and
    vi) Proposed Land and Water Plan (PRLWP).

    It was noted that overall the status of the Regional Council resource consent applications should be considered as a discretionary activity.

89. At the district level, the BDP is the only statutory document which applies. The s.42A report correctly identified the CPP dam as a non-complying activity and on that basis 'bundled' the applications for the CPP and the transport facility together to be considered as a non-complying activity. While the 'bundling' together is the normal practice, based on *Locke v Avon Motor Lodge (1973)4 NZTPA 17 (SC),* counsel for the applicant submitted that only the water storage reservoir should be assessed as a non-complying activity. This matter is further considered under Chapter 7.

90. The s.42A report included an assessment of the actual and potential effects of the proposal. The approach taken was for both Council officers and peer reviewers to comment briefly on

the matters agreed upon, and to focus primarily on differences of opinion and unresolved matters (at the time of writing the report).

91. As we have already noted, a series of technical audits of parts of the applicant's AEE was commissioned by the Councils and these were appended to the s.42A report at Appendix 5. These reports which covered the potential effects of the proposal on a number of relevant matters, were produced by the following consultants:
    - **Ms Siobahn Hartwell** (URS New Zealand Ltd) is the Principal Water Resources Engineer, she holds a Bachelor degree (Engineering) and is a Chartered Professional Engineer with over 20 years of experience in the UK, New Zealand, Australia and the USA, much of it in mining and water quality projects. She reviewed the water management proposals.
    - **Mr Graham Densem** (an independent Landscape Architect) holds qualifications of a Bachelor degree (Arts in Geography) a Postgraduate diploma (Landscape architecture) with over 40 years of experience. He reviewed the landscape and visual effects assessments.
    - **Mr Nevil Hegley** (Hegley Acoustic Consultants) holds qualifications of Masters degree (Acoustics) is a Chartered Professional Engineer, has Membership of the Institute of Professional Engineers of New Zealand, Institute of Civil Engineers United Kingdom and Acoustical Society of America with over 30 years specialising in acoustics. He reviewed the noise affects assessment.
    - **Mr Simon Beale** (MWH Ltd) holds qualifications of a Bachelor degree (Zoology, Forestry Science) is a Certified Environmental Practitioner a member of the NZ Planning Institute and Ecological Institute with over 22 years of experience. He reviewed the terrestrial ecology assessments.
    - **Mr Hans van der Wal** (Duncan Cotterill Lawyers) provided a legal opinion on the legal status of an interim decision of the Environment Court on wetland significance.
    - **Mr Andrew Curtis** (URS New Zealand Ltd) holds a Bachelor degree (Engineering, Chemical and Materials) a Graduate Diploma (Toxicology) with over 25 years engineering experience and 14 years in the air pollution field. He authored the peer review report of air quality assessment and submissions, which was commissioned by us.

92. The s.42A report also discussed the potential benefits of the proposal, and again we refer to these in Chapter 5.

93. National Environmental Standards (NES) are legally enforceable regulations developed under the RMA and the s.42A report identified four relevant NES's which are in force as regulations which are required to be observed:
    i) National Environmental Standards Relating to Certain Air Pollutants, Dioxins and Other Toxics 2004;
    ii) National Environmental Standards for Sources of Human Drinking Water 2007;
    iii) National Environmental Standards for Telecommunication Facilities 2008; and
    iv) National Environmental Standards for Electricity Transmission Activities 2009.

94. A further Regulation which was identified and requires consent holders to comply with, is the Resource Management (Measurement and Reporting of Water Takes) Regulations 2010.

95. The 'permitted baseline' test includes the 'environment' as it might be modified by existing consents. The s.42A report identified an existing consent held by KEL which is the redevelopment of a historic hydro scheme and involves the laying of a tailwater pipeline from Lake Rochfort to a penstock on Powerhouse Road. The application incorporates the use of a section of the hydro pipeline route, to lay an additional coal transport pipeline to the Fairdown CHF. The applicant submitted that resource consents (yet to be exercised) for the Brookdale Mining Company coal stockpile and loading facility (across the SH from the CHF site), which is now owned by BCL, also forms part of the existing environment.

96. A number of other matters, that under s.104(1)(c) we are required to have regard to, were identified and assessed in the s.42A report as possibly relevant which were:
- The National Policy Statement on Electricity Transmission (NPS ET)
- The Proposed National Policy Statement for Freshwater Management
- The New Zealand Biodiversity Strategy
- Te Runanga o Ngāi Tahu Freshwater Policy
- Ngāi Tahu (Pounamu Vesting) Act 1997
- West Coast Conservation Management Strategy 2010
- Building Act 2004
- NZ Society of Large Dams Guidelines

97. Included within the s.42A report were comments on proposed conditions, together with comments on bonds and financial contributions.

98. The Council Officers, in their conclusions of the s.42A report identified a number of matters which were still outstanding and required further assessment which included the following:
i) The ability to reinstate the distinctive coal measure landforms and drainage patterns as part of progressive rehabilitation of the mine site;
ii) The ability to establish vegetation on rehabilitated areas that represents the original vegetative condition pre-mining;
iii) Provision of further detail on the proposed off-site mitigation measures to address the residual terrestrial ecology effects of the proposal;
iv) Commitment to specific off-site heritage projects to allow consideration as part of the heritage mitigation measures;
v) Maintenance of visual amenity for residents in the vicinity of the Fairdown CHF;
vi) Provision of measures to address public safety and road integrity concerns associated with the use of Denniston Road; and
vii) Clarification as to the water quality effects of the mine development.

The Officers brought to our attention that they understood that the applicant intended providing further details on these outstanding matters during the hearing.

99. The s.42A report's final conclusion recommended that, providing the outstanding matters were adequately addressed to our satisfaction, the consents could be granted, subject to suitable conditions.

100. Following the presentation of all the evidence and submissions, excluding the applicant's

'Right of Reply,' the officers presented two separate Addenda to their original s.42A report. The BDC Addendum contained a summary and overview of issues raised during the hearing, matters requiring further consideration, comment on proposed conditions and a conclusion which focused on compensation proposals in regard to the effects on flora and fauna and an understanding that further detail in relation to 'off-sets' would be addressed in the applicant's 'Right of Reply'. The Addendum included a copy of the Proposed National Policy Statement on Indigenous Biodiversity, a paper titled 'Biodiversity offsets- An Overview of Selected Recent Developments' prepared by Mr Mark Christensen, and a copy of the Environment Court interim decision W026/2009 *Royal Forest and Bird Protection Society v Gisborne District Council.*

101. The WCRC Addendum included issues raised during the hearing, matters requiring further consideration, amendments to conditions and a recommendation that the consents could be granted subject to conditions.

# Chapter 5: PRINCIPAL ISSUES

## INTRODUCTION

102. This chapter considers, in some detail, the principal issues and effects relevant to this proposal. Because of the effects-based nature of the RMA, we shall review the effects of the works in total on a range of relevant matters, largely as identified in the Fourth Schedule of the Act. This approach is consistent with s.104 of the Act.

103. In carrying out our assessment, we have reviewed the submissions and evidence concerning each of the principal issues and the effects on the environment that were brought to our attention. While we have not repeated everything we heard, we have endeavoured to record here the more important aspects of the evidence presented to us on behalf of the applicant and from submitters, as well as from the Council Officers from WCRC and BDC, and their consultants. At the conclusion of our discussion of each issue we provide our findings with respect to that issue. This, in due course, provides the basis for our decision and, in terms of our duties under the Act, this chapter is also consistent with s.113.

104. We are aware that the non-complying status of this proposal requires that it pass the so called 'threshold test' described in s.104D(1). We have broadly examined the proposal, particularly with respect to the objectives and policies of the BDP and, having done so, have determined that before we were satisfied as to whether or not the application was contrary to the plan, we needed to consider the issues and effects in some detail. We shall, subsequently, return to the s.104D threshold test later in this decision.

## LANDSCAPE, NATURAL CHARACTER AND VISUAL EFFECTS

### Overview

105. Landscape evidence was provided on behalf of the applicant by Mr Craig, a registered landscape architect. He stated that the mining site was to be found on the Denniston Plateau, which together with its eastward defining escarpment, incorporating the summit of Mount

Rochfort, is fundamentally an outlier of the greater Mt William Range. He said that each of the basic landscape elements were very well demarcated and defined because the transition between the elements was abrupt. He stated:

"*These transitions occur at the coastline, the meeting point of the coastal plain and seaward escarpment, and that of the Plateau with the latter...the contrast is further reinforced by the attendant land use which in turn is mainly expressed via vegetation regimes of one sort or another. Essentially these amount to mainly pastoral land use and its attendant vegetation on the coastal plain, dense bush on both escarpments and the largely stunted shrub lands of the Plateau."*

106. The proposed EMP mine footprint and CPP are located on the Plateau and the CHF is located on the coastal plain at Fairdown, with the proposed coal transport pipeline traversing across the Plateau to Lake Rochfort, before running down the KEL penstock route (currently under development), to the coastal plain below.

107. The proposed EMP mine footprint is located just outside the NED Mt Rochfort RAP as proposed by the DoC, but is not recognised in the provisions of the BDP. The coal transport pipeline also passes through the lower part of the Mt Rochfort RAP (Figure 3 and Figure 5).

**Fairdown**

108. The landscape values of the proposed CHF at Fairdown can be disposed of fairly quickly. The area to be developed is adjacent to the railway line and SH 67. The land is presently flat and used for grazing. It is presently part of the coastal plain and can be properly considered to be relatively featureless, with the landscape at the location of the CHF being dominated by the flax and manuka vegetation that stands between the railway line and the highway, and a remnant stand of native bush that stands several hundred metres to the east of the site. Mr Craig described the general vicinity as follows:

"*Land use is almost entirely devoted to pastoral farming including a smattering of small settlements such as Waimangaroa, Birchfields, Granity, Ngakawau and Hector. As is typical of such land use regimes throughout the West Coast, the pastoral landscape is dotted with native forest remnants, exotic woodlands native and exotic scrub, infrastructure scribes linear patterns across the plains landscape in the form of mostly straight roads, drainage channels, transmission lines and rail.*

*Outside the settlements buildings are what you would expect in a rural environment – farm dwellings, implement sheds, hay barns, the occasional substation and such like. The coastal plain also accommodates buildings and infrastructure derived from mining activity. This is particularly so at Ngakawau where significant structures exist involved in the processing of coal from the Stockton Plateau.*

*Because of the characteristics described above, the coastal plain is the most modified and therefore the least natural of the three basic landscape elements potentially affected by the proposal*."

109. We agree with this assessment and would add that it should also be said that Fairdown is also undergoing a change to a "rural residential" type of environment, with the more recent addition of dwellings on what appears to be low density rural/residential allotments.

110. Overall, we are satisfied that the Fairdown site does not have any special landscape, natural character or visual amenity value.

111. It is clear that the construction of the proposed new CHF will result in a significant change to the landscape of the Fairdown area. This was conceded by the applicant in the material supplied by it with the application itself (Mr Glasson), but the applicant contended that the new building would be readily absorbed into the landscape because of the proposed dense road screening and the high backdrop of the hills behind the site to the east. This view was not accepted by Mr Densem, a landscape architect who was employed by the Councils to review Mr Glasson's report. Mr Densem maintained that the visual impact of the new buildings would be significant to the adjoining neighbours and very significant without mitigation.

**Denniston Plateau**

112. The proposed EMP on the Denniston Plateau is quite different altogether. At first glance the EMP and its surrounding landscape appears rather dismal and featureless, being generally flat and unspectacular covered with low scrub on the rock pavements and denser vegetation in the many gullies. Mr Craig refers to the "…*sense of openness, exposure and expansiveness... reinforced by the generally stunted and low vegetation..."*

113. In his evidence Mr Craig alluded to the fact that the Plateau is incised by numerous small streams that flow east and west, and that lesser watercourses are also present including lakes, streams and draining wetlands. He noted:

> "*The waterways create a hummocky and somewhat convoluted effect across the Plateau...A consequence of this regarding visibility of the proposal is that views are both truncated and expansive over short distances as people move into and out of gullies when they traverse the Plateau."*

114. Mr Craig described the effect that different types of vegetation have on the landscape. He pointed to the fact that dense woody vegetation occurs in the damper more sheltered gullies and deeper soils and in the more exposed and soil deficient areas the vegetation is more stunted comprising species such as stunted manuka and wire rush vegetation.

115. Mr Craig stated that the effect is a "…*reasonably high level of vegetative contrast between the gully and ridge top vegetative regimes*" which conveys a very open and accessible appearance on the flat areas and the contrary in the gullies. He concluded that:

> "*Because of these combined landform and vegetation characteristics and also due to the expansive openness, the Plateau's landscape is highly legible, its overall character will be immediately apparent to any who visit the area. They will also discern that it is largely a natural looking landscape, but will immediately appreciate the presence of past mining activity and the presence of Denniston settlement as it is manifestly evident."*

116. It was Mr Craig's view that the general Denniston Plateau is a modified area as a result of previous mining activity and also previous activities such as the repeated burning of the Buller Coal Measure (BCM) vegetation, and the erection of the Mount Rochfort communication tower

and associated roading and electricity poles. In our view, this development is rather more apparent in the northern part of the Denniston Plateau, and applies to a very much more limited degree in the part of the Plateau which is to become the EMP mine footprint.

117. While it is true that a good deal of the Plateau has been the subject of mining over the years, by and large, the visual impact of the activity is now very limited, usually to old adits which are only visible close up, and to the power poles and abandoned mining materials such as concrete bins and rusting steel lengths that are increasingly being covered by vegetation. We would hazard a guess that an uninformed visitor would not at first understand that the area where the EMP is to be established had been the subject of earlier mining operations.

118. As discussed above, EMP mine footprint is just outside the Mt Rochfort RAP. We note that in the PNAP report (written by the applicant's witness Mr Overmars and others) it is stated:

> *"The (Mt Rochfort) RAP has the best remaining representation of the coal measures landform and vegetation patterns of the Denniston Plateau and its coastal hill slopes, in a full altitudinal sequence from c. 50m asl to 1040 m asl at Mt Rochfort. The Mt Rochfort forest is the most complete altitudinal sequence in the ecological district of coastal slope coal measures forest, from lowland beech-podocarp to the dense sub-alpine scrub below Mt Rochfort. The Plateau portion has a range of communities typical of the Denniston plateau; lower altitude rush-sedge land in the north of the RAP rises through prostate manuka –Chionochloa Juncea shrub –tussock land to sub-alpine herb field and seepage zones on the slopes of Mt Rochfort"* (p.83)

119. The report noted that:

> "*Past modifications include fire, the old Lake Rochfort dam, water channels and pipeline, the Mt Rochfort road and telecommunications tower (with weeds) and one coal prospecting track. Nevertheless the RAP has a predominantly natural character. It stands in marked contrast to the remainder of the Denniston Plateau, a much scarred landscape which may take centuries to recover."*

120. This description seemed to us to closely coincide with our impressions of much of the proposed EMP mine footprint. It was no surprise to us therefore when Mr Overmars was questioned by us, that he conceded that the only reason that the mining site was taken out from within the boundaries of the Mt Rochfort RAP was on account of the presence of the coal resource. We find that there was no reason to exclude the area of the EMP mine footprint to the west of Trent Stream on account of landscape and natural character qualities.

121. What in our view this means, is that the original high landscape values of the Denniston Plateau, at or close to the proposed mining site, are still clearly evident today.

122. It was Mr Craig's opinion that the natural character values of the relevant area are "*moderate to reasonably high*", although we note this assessment does not appear to include an assessment of some aspects of "natural character." Mr Craig did accept that parts of the Denniston Plateau should be considered to have high natural character values, and he pointed to the fact that the proposed EMP mine footprint is less than a kilometre from the Mt Rochfort RAP.

123. Mr Craig concluded that:

> "*Overall the Denniston Plateau is an extensive discrete and distinctive landscape feature, accentuated by its elevation and general lack of containment by surrounding ridges and ranges. It is highly readable and therefore readily appreciable. It contains a mix of activities which include recreation, historic conservation, mining, transmission lines, media transmission and to a small extent residential (seven dwellings at Denniston). This plateau is therefore not a pristine natural landscape, although on balance its character conveys the natural rather more than the physical. Further it is a landscape that clearly expresses both natural and physical change, compounded by the sometimes extreme transient conditions that occur on the Plateau.*

124. While we consider this to be a reasonable description of the landscape and natural character of the Denniston Plateau generally, we do not consider it to be accurate in respect of the EMP mine footprint and the immediately surrounding land, particularly between the EMP and the RAP, nor the land required for the coal transport pipeline which runs through the Mt Rochfort RAP. Nor do we feel that it addresses the very peculiar indigenous fauna and flora issues that must be considered in an analysis of "natural character".

125. The applicant provided a landscape assessment from a Mr Glasson (who did not give evidence) which was reviewed by Mr Densem. He stated in his review (attached to the s.42A report) that:

> *"i) That the Buller District Plan in S.4.0.1 stated that a key issue was "the protection of outstanding landscape values and natural features of the Buller District from inappropriate subdivision, use and development".*
> *ii) Section 4.9.2 identifies the Buller Coal Measures as an Outstanding Natural Feature and landscape (without explaining why.)*
> *iii) The Denniston Plateau was not an Outstanding Natural Landscape;*
> *iv) The Resource Management Act identifies "natural values" as encompassing geological, ecological and dynamic components of a landscape generated by natural as opposed to human activities;*
> *v) The Denniston Plateau has a value of uniqueness in a national context.*
> *vi) The Denniston Plateau is of high legibility in that the formative processes of sedimentary deposit, uplift and recent surface erosion are clearly obvious and attractive.*
> *vii) The EMA has a clearly defined topography of gullies eroded into the main surface conglomerate and comprises a highly legible portion of the landscape;*
> *viii) The EMA provides a "moderate" aesthetic perspective except for the dramatic backdrop, but also includes high levels of memorability, naturalness, and vividness of special features;*
> *ix) The site has high transient features such as weather patterns of mist and rain, wind and cold, and clear bright weather. Also a lesser seasonal pattern of winter snow/rain and summer bright."*

126. Mr Densem accepted Mr Glasson's contention that the Denniston Plateau as a whole is not an Outstanding Natural Landscape (ONL), but rather is a distinctive feature because of its modification by industry mining and settlements. He was of the view that the Plateau, while

not being an ONL, is a Significant Natural Landscape (SNL) which appears that we are required to have regard to, under s.7 of the Act.

127. Mr Densem was given a copy of the applicant's evidence presented at the hearing and the Officers presented a copy of his response when commenting on the evidence. Mr Densem concluded in his additional statement that he did not depart from his previous assessment that the EMP mine area was not part of an ONL. He acknowledged that the decision was not clear cut, and that the Plateau was in the "…*upper levels of the significant range of values",* but that none of the values clearly passed the 'self-evident' test for an ONL.

128. Mr Densem referred to the evidence of Ms Martin and Mr Robertson who both referred to an extract from the PNAP report which stated "…*that the extensive elevated coal measure rocks...could be regarded as a naturally outstanding landscape in its entirety"* (p.177), and Mr Overmars had been rather equivocal in respect of his assessment of whether the land had natural values of a nationally outstanding status. Mr Densem accepted the 'unique nature of the coal measures', but he was less than accepting of the word 'could' which suggested to him a degree of uncertainty or unwillingness to commit as regards 'outstanding values'. He reassessed the proposed EMP mine footprint in terms of natural science, legibility, and aesthetic considerations (including memorability, naturalness, vividness, coherence, and transience) and confirmed that in his view the highest values on the Denniston Plateau were natural science (rarity) and historic. He did not consider that the values reached an outstanding standard over the whole landscape.

***Evaluation***

129. We agree with the views of Mr Densem, but we think that it is a close run thing.

130. The conclusion that we have reached is that the proposed EMP mine site is part of a Significant Natural Landscape feature that contains elements of a high degree of naturalness and ecological quality of a National scale and importance.

**WATER QUALITY EFFECTS**

131. This section focuses on the effects of the proposed discharges on water quality in the receiving environments of the Whareatea River (on the Plateau) and Deadmans Creek (at Fairdown), and any actual or potential adverse effects on aquatic ecology. *'The maintenance and enhancement of the quality of the environment'* (s.7(f)) is a fundamental consideration under Part 2 of the RMA, and is a critical element in protecting the *mauri* of water and providing for the relationship of Maori (s.6(e)) with water and *waahi tapu*.

**Existing receiving environment**

132. Dr Patrick's evidence described the water quality monitoring undertaken and outlined the existing water quality in V8 Creek, V37 Creek, and lower Cascade Creek. He noted the water quality in V8 Creek (from Lake Brazil) was excellent for all parameters, except for low pH; water quality in V37 Creek (receiving the flow of AMD from the old Escarpment Mine) was extremely poor, with extremely high dissolved metals and extremely low pH (2.5-3.6); water

quality in lower Cascade Creek (below the confluence with V37 Creek) is extremely poor due to AMD, with pH levels <4 and levels of dissolved nickel (Ni), aluminium (Al), iron (Fe), arsenic (As) and Zinc (Zn), exceeding ANZECC 2000[1] trigger levels for 99% species protection.

133. With regard to the Whareatea River, Dr Patrick noted the water quality in S Creek, V40 Stream and Trent Stream is excellent, with the exception of naturally occurring low pH levels. He stated there appeared to be a relationship between flow and pH, with lower pH levels occurring in lower flows. He noted the water of Whareatea River normally flowed very clear (low suspended solids and turbidity) and that there is no significant relationship between increasing levels of suspended solids and increasing river flows. He highlighted slightly elevated levels of Al and Fe in the River, and suspected contributions of AMD from the old Whareatea Mine.

134. Dr Patrick considered the water quality in Deadmans Creek is very good to excellent, apart from a naturally occurring low pH, and nutrient and bacterial enrichment in the lower reaches (potentially from land use activities within the catchment).

135. Dr Stark's evidence described the sampling of macroinvertebrate communities undertaken in the above receiving waters as an indication of stream health. He noted that streams affected by ARD and AMD tend to have impoverished macroinvertebrate and fish communities. He considered there is strong evidence that low macroinvertebrate taxon richness is associated with low pH. He noted taxon richness may also be restricted at very low levels of total reactive Al (> 1-2 mg/l) and Fe (> 2 mg/l), and that mortality is dependent of the duration of exposure. He stated exposure to sediment (increases in turbidity above 5 NTU) can also have adverse effects (by reducing quantity and quality of food), and like exposure to heavy metals, the duration of exposure is important. In summary, Dr Stark considered the macroinvertebrate richness was very low at some sites in the Cascade Creek and the Whareatea River, and that the highest numbers of taxon (19-25) were found in Deadman's Creek and Christmas Stream, respectively. He also noted that two freshwater invertebrate species of stoneflies (*Spaniocercoides philpotti* and *Zelandobius illiesi)* of conservation interest were identified in streams near the EMP.

136. Dr Stark noted a total of thirteen diadromous freshwater fish species (lamprey, short-fin eels, long-fin eels, five galaxiid species ('whitebait'), brown trout, torrentfish and three bullies) were recorded, and that of these, all native species, except the banded kokopu, short-fin eel and the common bully, are classified as 'At Risk'. He noted very few fish were found above an altitude of 60-100m and suggested that the steep gradient may form a natural physical barrier. No fish were recorded at most sites on the Plateau and Dr Stark was of the view the waterways in this vicinity were unlikely to support healthy fish populations. He noted koura (freshwater crayfish) were found in many of the streams and that they are known to be vulnerable to sedimentation effects. He noted marine cockabullies were found in the tidal reaches of Deadmans Creek. He considered that long-fin eel, banded kokopu, and koaro appear to be the most tolerant of acid waters; and that torrentfish and bluegill bullies were only found at sites with pH >6.5.

[1] '*Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (2000)'. It is noted the guideline value for Al is from ANZECC 1992.

**Construction Phase**

137. The Applicant proposes to control all sediment runoff during the construction phase by implementing an 'Erosion and Sediment Control Plan' (ESCP). Golder have produced a draft ESCP based on Canterbury Regional Council's 'Erosion and Sediment Control Guidelines' (2007) and Auckland Regional Council's Technical Publication Number 90 (TP90) guideline (1999). Dr Ellis noted this should be regarded as a living document that would evolve as the EMP progressed.

138. Mr McCracken noted temporary sediment control systems would be constructed in the valley draining the site of the 'Freshwater Dam' and in the valley draining the 'Mine Amenities Area'. He stated the purpose built Mine Influenced Water – Water Treatment Plant (MIW-WTP) surge pond and the Stormwater Water Treatment Plant (SW-WTP) sediment pond would be constructed for use as construction sediment control facilities. He noted that to allow the surge pond to be constructed, vegetation and topsoil will be stripped and stockpiled, and some coal will need to be stripped and mined. In terms of the proposed conditions of consent, he considered all these works are considered to be 'construction activities'.

***Evaluation***

139. Having had regard to the evidence presented, we are satisfied that the proposed erosion and sediment mitigation measures meet recognised standards of current 'best practice'. We accept the discharges during the construction phase are temporary, until the water treatment plants and processes are in place and functioning. We consider the draft ESCP contains adequate and appropriate measures, and that these measures will be revised and added to as the construction works progress and that the results will be monitored on an ongoing basis. We are satisfied that with the imposition of consent conditions, any adverse effect of the discharges during the construction phase is likely to be minor.

**Plateau**

140. Mr McCracken described how during the operational phase of the mine the applicant proposes to collect and treat AMD (from old underground mines in the EMP), ELF leachate, and water runoff from disturbed areas (mine influence water (MIW)) in a purpose built Mine Influenced Water – Water Treatment Plant (MIW-WTP).

141. The sulphide bearing nature of the overburden rocks on the Plateau will produce acidic runoff when their surface area is exposed to both water and oxygen. Groundwater, surface water runoff and CPP water all have the potential to form acidic discharges and without careful water management the proposal has the potential to increase existing quantities of the AMD from the site. AMD also contains trace elements of metals including Zn, Fe, Ni and manganese (Mn), and a variety of other elements at concentrations above background levels. Dr Pope noted that AMD at a rate of 1.5-16 l/s currently flows from the historic Escarpment Mine portal.

142. Mr McCracken outlined the MIW-WTP will consist of the MIW 'surge sump' (to attenuate storm flows), a treatment plant, and a series of sedimentation ponds. He noted the discharge

from Lake Brazil to V8 stream would be blocked so that all MIW-WTP discharges will be discharged north to the Whareatea River. He explained the MIW-WTP would provide secondary level treatment via aeration, lime dosing, sedimentation and pH correction, before discharge to the upper Whareatea River. Dr Ellis noted the MIW-WTP would be similar to the Stockton WTP, in that it will have a high level of treatment process control and flexibility, and be able to provide consistent levels of suspended solids and dissolved metals removal.

143. Dr Ellis explained how the Downerton rainfall record had been used to form the basis of the rainfall series applied to the water management model (the 'Golder model'), and how this was used to design the EMP water treatment process and to formulate the 'Water Management Plan'. He explained the catchment routing model developed for predicting water quantity and quality, and the model inputs. He noted the most sensitive inputs to the model are rainfall and water chemistry. He stated that based on a range of assumed ARD water quality, the model indicates the MIW-WTP will remove 99% of the dissolved Al and Fe, and in excess of 50% the dissolved Ni and Zn. He noted the model indicated the worst case scenario for ARD water quality is at Year 5, when the large ELF will be generating direct and indirect contaminants. He considered the model would allow the applicant to implement any changes to the water management strategy in the first 2-3 years, in the event that any of the assumptions of the model change significantly. He noted obvious changes would be to increase the capacity of the MIW surge sump and/or the MIW-WTP, or to modify/improve the treatment process

144. During extreme high rainfall events, it was noted that the applicant may discharge a combination of fully treated and partially, or untreated MIW due to surge sump overflows to the upper Whareatea River. The applicant proposed managing the frequency of such overflow events to less than 5% of the time and Ms Appleyard submitted this should be considered as "temporary" in terms of s.107 restrictions (we address this later in the decision). Dr Ellis noted that such overflows would be 'rare events' from the MIW surge sump, with the worst case discharge quality and quantity occurring at Year 5 when the predicted concentrations of dissolved Al and Fe will be greater than in the pre-development scenario, and Ni, Mg and Zn predicted to increase at monitoring site W-M2 to 0.03, 0.121 and 0.07 g/$m^3$ respectively. He stated that during overflow events the pH in the Whareatea River is predicted to be less than pH 5.0 at Year 2 and less than 4.4 at Year 5.

145. Mr Hewitt noted that the six months of recorded rainfall data for the Denniston Plateau had allowed for testing of the outputs of the Golder model. He stated:

> *"In Year 5 when the catchment is in its most disturbed state the model predicts the surge sump capacity of 200,000$m^3$ will be exceeded 29.4 times, and the recycle dam with live storage capacity at 38,000$m^3$ will over flow on average 1.6 days per annum."*

146. Mr McCracken noted *'a passive sediment treatment plant between the ELF toe and the escarpment crest'* would be utilised to treat leachate from the part of the ELF that faces south above the existing adits that can not be drained to the north the MIW-WTP. He estimated approximately two thirds of the ELF leachate would naturally drain towards the MIW-WTP surge pond along the base of the ELF.

147. Mr McCracken outlined the lowest point of the mine will always be the sump at the northern end of the coal face. He noted that initially water will flow to the MIW-WTP via an open

channel, but later will need to be pumped through a pipe either on the coal road to the highest point (and then through an open channel) or along the coal floor under the ELF. He described how each overburden bench will be graded to ensure that the surface water is collected and directed to the surface water drainage system via sediment ponds, prior to reaching the MIW-WTP.

148. When the mine face reaches the old workings from the Whareatea Mine, Mr McCracken considered it may be necessary to seal the northern pit face to prevent leachate seeping into the water in the old workings. He proposed monitoring leachate drainage rates and quality from the ELF against the predictions of the Golder water management model over the first twelve months to determine whether this is necessary. He stated that if required, a geotextile-bentonite membrane could be placed over a thin layer of fill to be used to reduce leachate penetration. Mr McCracken anticipated that over time, as water quality improves, water will be redirected to the original surface streams and the existing three stream paths would be recreated within the form of the ELF. He noted larger 1V:5H sloping sections would be broken up with surface drains to prevent erosion, while vegetation cover establishes itself, and the drains would be lined with non-acid forming (NAF) or low potential acid forming (PAF) material.

149. Dr Ellis noted the old underground mine water (AMD) intercepted during mining would be 'highly acidic' and would be collected in the pit sump (50,000$m^3$ design capacity) and pumped to the MIW surge sump (200,000 $m^3$ design capacity) and then to MIW-WTP. He confirmed groundwater is unconfined and that groundwater flow within the basement and BCM rocks is likely to be along discrete fractures. He noted that where discrete fractures intercept the old underground mining areas, it is likely that mine water in the underground workings will be recharged. He considered there was very little recharge to and from groundwater in the EMP where the natural terrain had not been disturbed by mining.

150. The applicant has undertaken acid base accounting (ABA) analyses that concluded the top 5m of the overburden can be expected to have lower acid generating potential than other rocks in the sequence, but that to date there appears to be no correlation between acid generating potential and lithology. Therefore it is difficult to predict where and when low acid producing material will present itself in the mining sequence. It was noted that because all overburden material looks the same, ABA paste analyses will need to be performed on an ongoing basis, immediately after blast holes are drilled, allowing rocks to be classified according to their acid producing potential.

151. Dr Pope outlined geochemical testing undertaken to determine if the disturbed overburden will produce acid, and if so, how much acid and how fast it would be produced. He stated the ABA data indicated more than 80% of samples were PAF or were uncertain, and that less than 20% were NAF. He considered the results were conservative because some uncertain samples may contain sulphur species that are NAF such as organic bound sulphur or gypsum. Dr Pope noted that ABA does not discriminate between rocks that produce acid rapidly and those that produce acid slowly, and explained the use of Kinetic testing to analyse acid production and leachate chemistry over time. Lysimeter data indicated a lag period before increased acid production from PAF rocks. Acidity titrations indicated there is potential for acid release in the

CPP and during coal transportation, and that pH correcting may therefore be necessary at the CPP and CHF to meet compliance standards.

152. Overall, Dr Pope considered that *"NAF rocks were less abundant and more difficult to identify than anticipated…"*, but that the results were preliminary and there was more data available that had yet to be interpreted. He noted the need for adaptive management and revision of preliminary plans during the early phases of the mine. He stated that the worst case scenario is that the MIW-WTP would have to treat large volumes of AMD for an extended period of time after mine closure, and that the best case scenario is that there is no AMD after mine closure and the monitoring period. He noted in that between those scenarios, active treatment could be ceased and passive treatment could be used with appropriate monitoring.

153. Dr Ellis outlined the multi-tier management strategy to manage ELF ARD, which includes reducing or eliminating the infiltration of water, use of low permeability NAF cap, zoned containment cells within the ELF, and active treatment of leachate (until passive treatment may be possible). He considered that assuming the ELF seeped ARD for 30-100 years, it is likely active treatment will be required for 25 years (requiring the MIW-WTP to remain operational to treat the leachate at an estimated rate of 50 l/s). He noted 25 years was the design life of the plant and that provision would need to be made for maintenance and replacement of parts as they fail. He was of the view that when the acid load from a leachate drain was less than 150 kg/day, passive treatment of ARD may be considered.

154. Mr McCracken explained the final surface of the ELF is designed as a 'wet cover' and would have three discrete layers comprising of - a surface layer of soil and vegetation, an up to 2 m thick layer of material with low potential to generate acid, and an up to 2 m thick layer of compacted, selected, low permeability material. He estimated that approximately 3.4 million cubic metres ($Mm^3$) of low acid forming rock would be needed to cover the final ELF. He acknowledged that some water would penetrate the ELF surface down to the mudstone coal floor and that this would produce acid leachate that needed to be directed to the MIW-WTP.

155. Dr Ellis estimated that seepage rate into the ELF would be on the order of 2.3 mm/day (based on the hydraulic conductivity of the lower layer), and that the expected acidity of the leachate would be pH <4. He noted that at pH<3.7 ferric iron in the overburden would become the dominant oxidant of pyrite, and would self-sustain the oxidation and formation of further ARD within the ELF. He therefore considered the primary objective of the construction of the ELF is to minimise the volume of ARD leachate.

156. Mr McCracken estimated that based on the surface area of the EMP approximately 8 $Mm^3$ of low acid producing rock will be available and that approximately 2 $Mm^3$ of NAF granite would be mined from the southern pit wall. He noted the analysis ignored low acid generating rock which could be found below 5 m. Furthermore he noted the applicant would continue to investigate the relationship between ABA and rock type, and would continue sampling the top portion (0-5 m or 10 m) of all exploration drill holes.

157. In relation to water management, Mr McCracken outlined the applicant is committed to undertaking settlement tests to aid the design of settlement ponds, evaluate various grain sizes for the low permeability zone of the ELF cover, undertake infiltration tests to evaluate

the effectiveness of the wet cover, and determine the hydraulic conductivity of the water retention protective cover and in particular the effect of slope angle.

158. The further evidence of Dr Ellis stated that the overburden will be stockpiled and engineered to suitable material "*to construct a low permeability layer (LPL) in the order of 1 x $10^{-8}$*". He noted that while the detailed design was not yet completed, the LPL would comprise two layers, a thick protective layer of NAF material (2 m thick), overlaying a thinner LPL in the order of 200 mm. He estimated 2.9 $Mm^3$ of material will be required for the protective layer and 340,000 $m^3$ is required for the LPL. He outlined estimated quantities of NAF overburden to demonstrate there is sufficient material to construct the ELF cover.

159. Mr McCracken explained that water runoff that is not influenced by mining, such as excess stormwater from the CPP area (via the Recycle Pond) and runoff from the Haul Road (from the CPP to the EMP), would be treated in the Surface Water – Water Treatment Plant (SW-WTP) by a simple coagulant dosing system and sediment ponds. He noted the ponds are designed to store a 10% annual exceedance probability (AEP) storm event (1 in 10 year event), and that the SW-WTP is designed to by-pass extremely high rainfall events, with discharge into the upper Whareatea River. He noted the Recycle Pond would attenuate storm flows and provide capacity to dump all the plant water if necessary (e.g. for maintenance). He outlined that to ensure there is sufficient capacity of 38,000 $m^3$, the Recycle Pond would need to be pumped out to either the Freshwater Reservoir or the flood channel to flow to the SW-WTP. He noted that if water is pumped to the Freshwater Reservoir, water quality would be monitored to ensure any discharge from the reservoir does not breach consent conditions.

160. Mr McCracken stated that some 'stormwater' from the CPP area would be pumped from the Recycle Pond to the Freshwater Reservoir for use in the coal transportation pipeline, without passing through the SW-WTP. He noted runoff from the coal haul road would enter the treatment system via a sump designed to bypass extreme storm events around the SW-WTP to prevent these flows flushing sediment from the ponds; and that clean surface water ahead of the advancing mine face would be controlled by drains to keep the water out of the pit and direct to existing surface streams. He stated the MIW-WTP and SW-WTP sedimentation ponds would be cleaned out regularly and the sludge co-disposed with coal fines and rejects within the ELF overburden; and that all grey water and sewage discharges from showers and toilets at the CPP Amenities Area would be held in storage tanks and removed from the Plateau for disposal in Westport.

161. Dr Stark discussed the effects of pH and heavy metal concentrations and noted a study by Greig et al. (2010) recommended a pH of 4.5 or more would be a suitable target for receiving waters in order to maintain reasonable fish populations, and combined concentrations of dissolved metals of <2.5 mg/L and individual concentrations of dissolved Al and Fe <1 mg/L, and dissolved Zn <0.1 mg/L. He noted that in general, fish and koura appear to be less sensitive to sediment than invertebrates, therefore compliance limits should be aimed at maintaining invertebrate health. He agreed with Dr Patrick that the discharges must meet Class AE water quality standards after reasonable mixing. He recommended annual macroinvertebrate biomonitoring in summer for five years to allow assessment of trends in stream health at each site, except for the Waimangaroa River water take site.

162. Dr Patrick was of the view there would be no measurable adverse effect on the aquatic ecology of the Whareatea River from the discharge of suspended solids, including discharges that bypass the MIW-WTP during extreme flood events. With regard to heavy metal concentrations, he agreed with Dr Stark that any exposure would be of a short duration during high flow conditions. He also referred to work that had indicated some of the ANZECC (2000) limits were too low, and noted the proposed limits are higher than Greig et al. recommended because at monitoring site M-W2 there are no fish to protect.

163. Dr Ellis noted there is a risk that the acid neutralising potential of the MIW-WTP sludge may be insufficient to maintain the metals in the sludge in a solid form, therefore he recommended the sludge be placed above the water table in the ELF, below the low permeability layer and covered with a layer of lime. He considered that maintaining the sludge in a neutral to alkaline state would mitigate the re-release of dissolved metals and prolong sludge stability. He estimated the SW-WTP and the MIW-WTP would produce a combined volume of 4,800 tonnes/year of sludge, and that 16% would be metal hydroxides.

164. The applicant considers the altered coal transportation pipeline route reduces the number of dump ponds required along the route of the pipeline and therefore mitigates the risk to the environment from any coal transportation pipeline discharges.

165. Many submitters in opposition to the proposal raised general concerns about water quality, increases in AMD contamination, and potential adverse effects on aquatic life.

166. Mr Robertson and Ms Backes submitted the proposal would potentially release acid runoff and that the proposed methods to control this were incomplete and uncertain due to the lack of information regarding the availability of sufficient capping material on the site.

167. Ms Martin also considered the applicant had failed to show how the use of NAF material would limit ARD/AMD discharges, or how levels of elevated dissolved metals would be managed. She noted natural water flows would be altered and that the discharges would change the quality and clarity of the receiving waters.

168. The FWRA raised similar concerns regarding the availability of NAF material, management of AMD water, the potential adverse effects on aquatic communities over prolonged periods of exposure, and proposed compliance limits. They considered use of settlement ponds for primary treatment does not work and raised concern over lime treatment regarding the potential for precipitation of gypsum and heavy metals in the receiving waters.

169. Mr Ridge relied on the expert opinions of Ms Hartwell and her peer review of the applicant's water management strategy and plan. Ms Hartwell was of the view that the over-riding control is the downstream water quality standard/compliance limits, and that various methods or actions could be used to ensure these standards can be met. She noted that any steps to increase storage capacity would need some lead-in time and would need to be identified well in advance. She supported annual review of the Water Management Plan and associated infrastructure.

170. Mr Ridge recommended that if the consents are granted, that all proposals for MIW treatment systems and the ELF be submitted for peer review prior to implementation. He also recommended the applicant submit an annual report on the performance of the treatment systems, management of overburden, and construction of the ELF, including information to determine if there are sufficient quantities of material appropriate for capping and rehabilitation.

171. With regard to the availability of suitable ELF capping material, Mr Ridge outlined a number of conditions of consent suggested by Mr Jenkins (peer reviewer for WCRC). Mr Jenkins noted the change from the proposed 'wet cap' to a LPL. He noted concern that the proposed thickness of the LPL is not sufficient to control air and water flux and would not maintain the layer at near saturation that is needed to provide the same level of acid rock drainage control as the proposed wet cover. He suggested a condition to require the detailed design to demonstrate that the LPL will remain greater than 99.5% saturated over a thickness of not less than 500 mm.

***Evaluation***

172. The proposed water management strategy and draft Water Management Plan have been formulated on the basis of the predictions of the Golder water management model. We note the accuracy of the outputs/predictions of the model is sensitive to a number of the assumed inputs, and that the model is particularly sensitive to the rainfall data and water chemistry (leachate production and characteristics). We consider that given the fact there is only six months of site specific rainfall data and only preliminary results of ARD leachate quality available, there is a high level of uncertainty in terms of both the predicted water quality and quantity.

173. We do however, accept that the Water Management Plan is a starting point for designing the water treatment systems, and that it will be refined and developed over time as additional information becomes available. We accept the applicant has provided sufficient information to demonstrate that there are suitable methods and treatments available to adequately treat MIW, stormwater runoff and ELF leachate to appropriate standards, within the confines of the site. We note the applicant is not relying on sedimentation as the primary method of treatment, but rather as one of a range of treatment processes.

174. We consider it is critical that further testing and monitoring data is regularly compared with the Golder model predictions, particularly over the first 1-3 years. It is crucial that the water treatment processes are functioning effectively by Year 5 of the development, as this is when MIW discharges are predicted to be of the worst quality and in the greatest quantities. We note that the applicant's predicted water quality results at W-M2 for Year 5 indicate general compliance with proposed compliance standards, but that dissolved Zn and Ni will comply 95% of the time. We also note the combined concentration of dissolved Al, Fe, Mg, Ni and Zn is predicted to comply 95% of the time. We accept the evidence of Dr Ellis that the levels of dissolved Al, Fe, Zn and Ni can be reduced by increasing the pH level and that compliance with proposed limits is achievable.

175. We consider the key to successfully managing ELF leachate is in the careful construction of the ELF and by ensuring the protective layer (whether a 'wet cover' or a LPL) is appropriately formed using NAF material. We consider there is significant motivation for the applicant to get the protective cover 'right' thus allowing active treatment to cease as soon as monitoring results indicate suitable leachate quality and quantity has been reached. In the event that ongoing ELF leachate quality or quantity requires active treatment, the applicant will be required to maintain the MIW-WTP. This is why we consider the duration of this consent must be for the maximum term of 35 years, and that a substantial bond must be held to ensure active treatment can be sustained for at least 35 years if deemed necessary.

176. We also note that monitoring will be critical in managing seepage from old mine workings and that this AMD water will be of extremely poor quality.

177. We accept the evidence of Mr McCracken and Dr Ellis regarding the availability of NAF material for the construction of a protective layer over the ELF. We note it is in the applicant's interest to ensure the ELF is constructed properly and that monitoring leachate quality and quantity will indicate if the protective cover is not functioning as designed. We are conscious that performance of the ELF (in reducing contamination) will be highly dependent of ongoing ABA testing, sorting, storage and the appropriate placement of overburden, and the careful management of the disposal of sludge and reject fines within the ELF.

178. With regard to the potential for discharge of untreated MIW overflows, we are concerned about the lack of site specific rainfall data and the limitation to accurately define the frequency or magnitude of 'extreme rainfall events'. We are concerned by the estimates given by Mr Hewitt, and we are concerned the pit sump, surge sump and WTP capacities may be inadequate, resulting in more frequent overflows than the model predicts. It is therefore critical to continue site specific monitoring of rainfall and to ensure this is used overtime to input into the Golder model. We are satisfied that limiting overflows to no more than 5% of the time will address our concern, and that the applicant has a range of strategies available to ensure this threshold is complied with. We accept the evidence presented that such 'rare' overflows of short duration, during high flow conditions will not have any significant adverse effects on aquatic values.

179. We have considered the proposed compliance limits for monitoring site M-W2 and accept the evidence indicates these are likely to be sufficient to protect the aquatic environment. We note the evidence on 'reasonable mixing' and agree that monitoring site M-W2 is an appropriate compliance monitoring site given the aquatic life present, contributing tributaries and other potential AMD sources.

180. Overall, we accept the evidence presented, that with 'adaptive management', based on actual monitoring results, ongoing testing and comparison with the Golder model, it is likely the applicant will be able to comply with the water standards for Class AE waters in the Whareatea River, after reasonable mixing. We are satisfied the proposed compliance standards are likely to protect the life supporting capacity of the receiving waters.

**Fairdown**

181. The Fairdown Discharge Water Treatment Plant (DWTP) will separate the coal and water, and treat the water and any site runoff water at a rate of 675 $m^3$/h (187.5 L/s), before discharge into Deadmans Creek at a maximum rate of 125L/s. Mr La Roche explained, "*The pipeline and DWTP will be run in batch mode and buffer storage provided to manage the discharge within the rate sought."*

182. Dr Ellis explained how the Golder model had been extended to predict water quantity and quality effects in Deadmans Creek. He noted that the low base flows in the receiving waters would be increased by 15%, and that dissolved metal concentrations would be decreased as a result of the discharge, with the exception of dissolved Al which is predicted to increase by 8% to 0.13 g/$m^3$. He considered the water management model underestimated the treatment efficiency, as maintaining a discharge pH of 6.5 prior to sedimentation and/or filtration is likely to result in a significant reduction of actual dissolved Al concentrations. He noted total suspended solid concentrations are not expected to change in the receiving waters as a result of the discharge, but that pH may increase slightly. He noted that based on 38 years of rainfall data the ponds (increased from 6,000 to 12,000$m^3$ capacity) were predicted to never overflow.

183. Mr McCracken outlined how the DWTP would use chemicals to assist in the flocculation of the fine coal in a thickener, and included using pH adjustment. He noted centrifuges would be used to remove water from the coarse coal and belt presses to extract the water from the fine coal from the thickener underflow; and that further treatment via a sand filter (or similar) will be required to meet the water quality standards of Deadmans Creek.

184. Mr La Roche characterised the coal and Waimangaroa River water sample used for testing leaching, as having elevated dissolved Fe and Zn concentration levels, high suspended solids (from the attrition of coal), and low biochemical oxygen demand (BOD). He noted the suspended solids were readily '*flocculated and settlable with moderately low flocculant doses*'. He estimated the slurry contained less than 5% of overburden material and therefore the contribution of contaminants should be small. He considered the DWTP is expected to be able to reduce dissolved Fe levels to less than 1 mg/l, in the discharge; and that typical levels are likely to be 0.2 g/$m^3$ (2 mg/l).

185. With regard to meeting water quality standards, Mr La Roche stated '*Following treatment in the proposed process, which includes pH correction, the parameters noted to be elevated in this sample are considered to be able to be managed such that the proposed discharge standards can be met…modifications may be required to the treatment process to achieve the proposed discharge standards.'* He considered the proposed compliance standards for discharge into Deadmans Creek were quite stringent and that because dilution cannot be relied on (i.e. due to periods of very low flow) the discharge will be managed to meet compliance standards without mixing. He noted this would be achieved by including a filtration step in the process and that the final treated water would be stored in the treated water tank. He outlined how the discharge from treated water tank would be continuously monitored and automatically diverted to the pond should any excursions in water quality occur.

186. Mr McCracken estimated a stormwater attenuation pond capacity of approximately 10,000$m^3$ and a dump pond for the plant and pipeline of 2,000 $m^3$ (2.5 times the volume of the coal transportation pipeline) would be required. He was of the view that the formed aggregate base beneath the stockpiles would bind with the coal fines over time and that very little water will penetrate groundwater.

187. Dr Patrick noted initial tests undertaken on Waimangaroa River water mixed with coal (to mimic the slurry water) indicated potential concern regarding suspended solids, colour, nitrate, and possibly sulphate. However, further testing taken in 2011 indicated elevated levels of dissolved trace metals As, Cu and Zn, and small increases in Fe and Al. He noted toxicity of these metals is water hardness dependent and that the lower the hardness the more toxic the trace metals. He explained that because the water of the Whareatea River (which makes up most of the receiving waters in Deadmans Creek once the KEL scheme is operating) has very low hardness, the relative ANZECC trigger values (based on 30mg/l of calcium carbonate) need to be adjusted to approximately 4 mg/l (using the hardness-dependent algorithm in the ANZEEC guideline). However, he noted that the tests were based on settlement only and the slurry discharge water would be treated by polymer-assisted flocculation, as well as settling. He was therefore confident there would be no increase in trace metal concentrations in the discharge over background levels in the Waimangaroa River slurry water used. Overall, he was of the view that there would be no significant adverse effects on the aquatic environment of Deadmans Creek.

188. Many submitters in opposition to the proposal noted concern regarding the potential contamination of the water quality in Deadmans Creek, and highlighted the existing high quality of the water and its importance locally as a whitebait fishery. Concern was also raised that the KEL discharge could result in poor quality water (from the MIW overflows) entering Christmas Stream and ultimately Deadmans Creek.

189. Ms White was concerned about protecting the existing high water quality in Deadmans Creek and was not confident the water quality standards would be met. The FWRA shared this concern and highlighted the potential for untreated MIW to be discharged (5% of the time) into the Whareatea River and ultimately into Christmas Stream via the KEL intake structure.

190. Mr Absalom confirmed KEL would not be taking water from the Waimangaroa River and provided a written statement outlining a proposed variation to the water take consent that would require the take to cease in high flows when turbidity reached 30 NTU.

191. The FWRA submitted there is insufficient information about the likely nature of the discharge and suggested there are a number of heavy metals likely to be present in the discharge that should be monitored in the discharge. Mr Miranda-Suarez submitted a coal transport pipeline rupture would risk 'severe environmental damage'.

192. Mr Ridge was satisfied that with the imposition of appropriate consent conditions, any adverse effects on the aquatic ecology of Deadmans Creek would be minor. He confirmed the compliance limits were designed to ensure a typical discharge does not breach s.107 and to protect the whitebait fishery.

### *Evaluation*

193. We are satisfied that the evidence before us demonstrates that the applicant is likely to meet quite stringent compliance limits for the discharge into Deadmans Creek. We note the applicant proposes to meet these standards without any zone of reasonable mixing, as the receiving waters may be at very low flows.

194. We accept that there are a range of treatment methods available to treat the discharge and that additional processes (such as filtering) can be added to ensure a high quality effluent is achieved. We note the treated discharge water will be continuously monitored and that any non-compliance will result in the diversion of the discharge back into the treatment process.

195. We accept the provision of a dump pond will mitigate any risk of a spillage of the contents of the coal transportation pipeline and agree that this must be maintained at maximum capacity. We consider that if the dump pond is utilised any coal or fines should be removed. We do not accept that the rupture of the coal transport pipeline would cause 'severe environmental damage'. We are satisfied the water management plan will address adequate maintenance and operation procedures.

196. Overall, we are satisfied that the evidence demonstrates that the discharge is likely to meet the proposed compliance limits, and that any adverse effects on aquatic ecology are likely to be minor.

## HYDROLOGY EFFECTS

### *Waimangaroa River*

197. The proposal has the potential to affect the hydrology of the Waimangaroa River by diverting and taking water for use in the coal transport pipeline to transport coal to the CHF at Fairdown.

198. The applicant proposes taking water from the Waimangaroa River at a rate of up to 140 l/s by pumping it into two settling tanks and then pumping it to storage in a 152,000 $m^3$ Freshwater Reservoir located by the CPP. It is also proposed to use water from the Recycle Pond, and it was stated that this will be used in preference to water taken from the River, as it would reduce the need to pump water.

199. The applicant considered the Waimangaroa River has a much higher reliability of supply than the Whareatea River, and noted the Whareatea River is also subject to a take for the KEL hydro electricity scheme.

200. It is proposed to record river flows and the rate of take continuously, and that minimum flow levels in the river will be maintained and that the rate of take is reduced or the take ceased, accordingly.

201. Mr Hewitt noted the NIWA recorder (1974 to 1988) just downstream of the proposed intake point provided sufficient data to generate provisional low flow statistics, but was too short for full flood analysis. He therefore used a standard frequency analysis procedure combined with the rational method to generate estimated flood return periods. He outlined the mean annual low flow (MALF) has been calculated at 195 l/s and that Policy 6.4.7 of the WCRC's PWMP requires 146 l/s to be left in the river immediately below the take. He noted this would require the proposed rate of take to be reduced on a pro rata basis when the upstream flow reaches 286 l/s. He considered that any effect of the take on downstream flows would be minor because of the 17 contributing tributaries below the intake point, which he estimated resulted in a gain of some 270% in flow to the SH Bridge.

***Whareatea River***

202. Mr Hewitt noted there was very little rainfall data for the Denniston Plateau, until recently with six complete months of continuous data. He noted there is a 52 year rainfall record for Downertown (on Stockton Plateau) from 1945 to 1997 (with 3.8 years of record missing), but that he was unable to verify the accuracy of the record. He noted that rainfall records for Millerton and Westport are daily totals only, and that up until the last three years at Stockton, there are no records of short duration rainfall intensities.

203. Mr Hewitt considered the recent Denniston Plateau rainfall data showed a good relationship to the Stockton data. He noted the Stockton data over the three year period (since 2008) showed 13 events with rainfall intensities greater than 25 mm/hour, with the highest recorded rainfall at 44 mm/hour. He noted the Denniston data showed a maximum one hour event of 40 mm, and 12 events of more than 20 mm. He considered use of empirical methods, such as HIRDS[2] for estimating rainfall intensity values, cannot reliably be used for short duration events on the Plateau.

204. Mr Hewitt noted there are no flow records for the catchments on the Denniston Plateau, except for some preliminary work by Doyle (2008) involving four gauging runs across six sub catchments, and the establishment of a flow recorder on V40 Stream. He explained how Doyle had used this data, with correlation to data for the Mangatini Stream, to estimate flood flows based on catchment areas. Mr Hewitt compared the different monitored catchment responses over time (six months) and adopted one site to represent the entire mine site. He noted runoff in the catchments tended to occur in a short time after rainfall, with steep recession rates and relatively small baseflows. He highlighted the hydrographs showed a longer time of concentration than expected for a small high country catchment, which he attributed to the relatively flat typography and the retentive nature of the vegetation. Mr Hewitt noted that low to zero flow occurs throughout the catchment for considerable durations (up to 25% of the time).

205. Mr Hewitt noted his original report recommended a range of design flows, but he considered these peak flow rates (mean annual flood of 0.17 cubic metre per second per hectare ($m^3/s/ha$), a 10 year flood of 0.22 $m^3/s/ha$, and a 50 year flood of 0.28 $m^3/s/ha$) can be compared with the six months of actual flow data. To do this he normalised the data using the

[2] High Intensity Rainfall Design System by NIWA

rainfall data from Stockton at Downerton, and adopted the 2 March 2011 event as a mean annual flood (MAF), with higher magnitude floods calculated using adjust HIRDS one hour ratios and catchment areas. This resulted in Mr Hewitt revising his predicted MAF to $0.11m^3/s/ha$.

206. Mr Hewitt noted that 59 ha of catchment, which currently discharges to the Cascade Creek catchment, will be re-directed to the Whareatea River as a result of the EMP, except for some flow from the southern section of the ELF. He considered flows to the Whareatea would be attenuated, which would result in increased low flows and reduced high flows.

***Deadmans Creek***

207. Mr Hewitt also assessed the potential hydrological effects of the proposed discharge rate of 125 l/s at Fairdown on Deadmans Creek. He noted the KEL hydro scheme would result in short duration fluctuations of up to 1,200 l/s in Deadmans Creek and likely long periods of high flows. He estimated the EMP would increase the flow by 41.6% when KEL were discharging only 100 l/s (during normal 200 l/s flow conditions); and 9.6% when KEL were discharging 1,200 l/s (during 100 l/s MALF flow conditions). During flood flows, he estimated a 0.2% difference caused by the EMP discharge and he considered this was easily accommodated within the cross section at the bridge.

208. The FWRA raised concern regarding the use of the Downerton rainfall data and the small data set available for the Denniston Plateau. They suggested the Stockton office rainfall data appeared to correlate better with the limited site specific data (than with the Downerton data), and that the applicant had failed to take into account increasing rainfall due to climate change.

209. Mr Lusk, on behalf of the Buller Conservation Board, considered it was not uncommon to have 8 weeks of dry weather in the summer and that at such times the applicant would be taking almost the entire flow of the Waimangaroa River.

***Evaluation***

210. The site specific rainfall data for the Denniston Plateau is very limited and cannot be relied on with any level of certainty to estimate short duration high intensity rainfall events. While we accept the recent flow and rainfall data is a 'step up' from nothing, it is very limited. There is no real indication what a critical duration event would be or what resulting flood flows would occur. The graph provided (Figure 3. Hewitt p.10) of the daily rainfall at Lake Brazil (over the 6 month record) indicated 26 events exceeding (or equal to) 50 mm/day, 7 events exceeding 100 mm/day, and 3 events exceeding 150 mm/day. We note the highest recorded rainfall was nearly 250 mm/day. This indicates to us a large number of high rainfall events, but gives no indication of potential short duration intensities.

211. We consider there is a high level of uncertainty regarding the hydrology of the streams affected by the EMP footprint. The flow gauging work by Doyle is very preliminary and the resulting estimate of flood flows (using 'normalised' rainfall) cannot be relied on with any certainty, even with six months of actual flow data. The rainfall comparisons provided by the

FWRA for Downerton (585 m above sea level (asl)), Denniston (639m asl -Figure 2), and Stockton (site office 785m asl) indicated a relatively poor correlation between the site specific data and Downerton, but a good correlation between the site specific data and the Stockton (site office) data.

212. This causes us some concern regarding the use of the Downerton data for normalising the site specific data, and the reliability of the calculated flood flows. This has important consequences for the design capacity of the pit sump, the MIW surge sump and MIW-WTP, and whether water flows will realistically be contained for 95% of the time, as discussed above.

213. However, we accept the ongoing collection of rainfall data and comparison of actual monitoring results against the Golder model predictions can allow for adaptive management. We are acutely aware that understanding site specific rainfall/runoff response of the catchment is critical to managing contaminant discharges, peak flows and water management associated with the EMP.

214. We consider the evidence shows rainfall ranges from frequent periods of no rainfall to extremely intense short and long term duration events.

215. It is noted that the flows of S Creek, V40 Stream, and Trent Stream will be reduced by approximately 50%, 15% and 60% respectively. We acknowledge this will be temporary until the typography has been reinstated and the discharge from the ELF is returned to its original catchment. We note Mr Hewitt recommended the existing flow recorder in V40 Stream be retained to more accurately quantify the effects of mining, we agree. We also note the evidence of Dr Patrick, that there is unlikely to be any adverse effect on aquatic life given the ephemeral nature of these streams.

216. We accept that the imposition of minimum flows, in accordance with the PWMP provisions, will ensure adequate water flows are maintained in the Waimangaroa River. We consider this minimum flow has been calculated in accordance with national guidelines to protect the life supporting capacity of the river and to maintain ecological values.

217. We consider the evidence presented indicates that any adverse effects of the proposal on the hydrology of the Whareatea River (and its tributaries) are likely to be minor.

218. We are satisfied the proposed maximum rate of discharge into Deadmans Creek will have a minor effect on flood flows and that it has the capacity to convey those flows. We note Dr Patrick's evidence that additional flow from the discharge may have beneficial effects on downstream biota in times of low flow.

**TERRESTRIAL ECOLOGY EFFECTS**

219. This section considers the potential and actual adverse effects of the proposal on the ecological values, which are matters that are enshrined in Part 2 of the RMA. In particular, s.6(c) requires us to recognise and provide for the *"protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna"* as a matter of national importance. In addition, s.7 requires us to have particular regard to - (d) *"the intrinsic value of ecosystems"* and (f) *"maintenance and enhancement of the quality of the environment".*

220. The applicant acknowledges that the primary adverse effect on terrestrial fauna and flora is the loss of approximately 200 ha of existing indigenous vegetation and habitat from the mine footprint and associated infrastructure areas. While it is accepted the existing habitat can not be restored to its existing state, the applicant considers it can be rehabilitated over a long time period to:
    - Produce a stable and erosion resistant, congruent landform;
    - Manage runoff to prevent erosion and to preserve water quality;
    - Create a stable self-sustaining, productive and diverse indigenous vegetative cover; and
    - Encourage appropriate faunal assemblages to re-colonise rehabilitated surfaces through re-vegetation.

221. In recognition that the existing indigenous environment cannot be replicated and that there will be residual ecological effects, the applicant proposes to "offset" or "compensate" by funding, for 35 years, the following offsets:
    - Predator and herbivore management over approximately 19,000 ha of land in the Heaphy River area within the Kahurangi National Park, to enhance populations of the great spotted kiwi.
    - Predator and herbivore management over approximately 2,030 ha of the Denniston Plateau to enhance populations of *Powelliphanta patrickensis*, key invertebrate species, western weka and fernbirds.
    - Weed control on the Denniston Plateau over approximately 1,240 ha to maintain and enhance biodiversity values on the Plateau, by preventing the spread of weeds.

222. In acknowledging that the loss of ecological values cannot be fully mitigated, the applicant has looked outside the application site (i.e. off-site) to offset or compensate for the residual effects that will not be addressed through the rehabilitation programme. These proposed environmental offsets are appropriately considered below under s.104(1)(c) – other matters.

223. The applicant considers adverse effects on ecological values have also been avoided and mitigated by:
    - Relocating the CPP platform to avoid 87% of the wetland identified to the south of the site;
    - Locating the freshwater pump station beside Cedar Creek Road in an area which requires minimal vegetation removal (600 $m^2$);
    - Placing the freshwater pipe along the surface of existing tracks;
    - Using (as much as possible) and upgrading an historic power line route from close to the Waimangaroa River pump station to Burnett's Face;
    - Placing the slurry pipeline along the KEL route down the hill from Lake Rochfort;
    - Altering the slurry pipeline route and reducing the number of dump ponds;
    - Using the same slurry pipeline route for power supply to the CPP;
    - Narrowing the road from Denniston to the SPP to a single lane in areas where vegetation has been identified for protection; and
    - Replacing the original pit access roads with a ramp to reduce the area affected by 3.2 ha.

224. Mr McCracken noted that during the first twelve months of the mine operation, vegetation and topsoil will need to be stockpiled until the ELF develops sufficiently for both direct transfer of vegetation to occur and material retrieved from the stockpile. He stated the final slope of the ELF for successful rehabilitation has been designed with one 200 m long slope at 1V:1H and all other slopes either 1V:3H or 1V:5H.

225. Dr Ross' evidence assessed the likely impacts on successful rehabilitation of stripping, storing and stockpiling soils and vegetation. He noted approximately 18 ha of non-vegetated land (11 ha sandstone pavement and 7 ha roads and tracks), with less than 50% of the EMP having machine salvageable soils. Of these soils, 65% are 'Vee Forty soils' and 30% are 'Trent soils', both of which are ideal for vegetation direct transfer (VDT). The remaining 5% are 'Denniston soils' which may be suitable for VDT. The soils tend to be at or near to saturation and in general have low fertility. The three vegetation types present in the EMP have potential for VDT for land rehabilitation, with the degree of success being greatest for pakihi, with potential reducing for scrub and forest. Stockton experience with VDT shows a high degree of success for pakihi, significant regeneration of scrub (despite some die back), and the least success for beech-podocarp forest. He suggested all practicably salvageable vegetation can and should be utilised for rehabilitation, including dead woody material.

226. Dr Ross noted bare areas of sandstone pavement cannot be restored to their current natural forms, but that large boulders can be utilised onto rehabilitated land as rock boulder fields before re-vegetation, or into gaps during VDT. He emphasised the need to minimise the handling of material (one or two shifts); store material with bunded sides to minimise erosion, sediment runoff, and weed invasion; and store woody material separately. He noted storage and doubling handling pakihi vegetation will increase the risk of degradation. Dr Ross recommended ongoing monitoring of re-vegetation progress using GPS photo-points during mining operation and post mining for at least 5 years. He noted maintenance requirements included excluding vehicles, weed and pest control, remediation of any ground instability and erosion/sediment runoff, and repeat planting where there is less than 80% survival after 5 years. He recommended closure targets for minimum ground cover of predominantly indigenous species, with a significant and biodiverse content of plant species endemic to the Plateau. He was of the view the closure criteria for the Solid Energy Cypress Mine could be modified to take into account the environmental differences between sites. Dr Ross strongly supported the requirement to engage a Technical Review Panel and that an independent expert on land rehabilitation be included as a member of the panel.

227. Mr Kingsbury's evidence outlined that the goals and objectives of the rehabilitation programme are "*to create an environmental condition that is compatible with the natural landscape, and from which a stable indigenous ecosystem will develop in the long term that is compatible with the intended post-mining land use".* He outlined a range of rehabilitation strategies to be utilised to achieve the objectives. He stated the most critical strategy is adopting a progressive staged approach with the aim being to disturb as small an area as possible for the shortest time. He noted the specialist machinery and high level of operator skill needed to successfully undertake VDT. He was of the opinion a total of approximately 75 ha of forest, scrub and pakihi would be established by VDT and 65 ha would be vegetated by transplanting, planting and/or hydro-seeding. He stated all stockpiling and storage of material would be within the EMP area and would be necessary for 12-18 months. He considered some

progressive rehabilitation could be possible during the construction phase of the slurry pipeline and the CPP. The CPP area would be stripped as VDT, with material transferred to bare areas and to the identified 680 ha no/thin coal area on the Plateau. Mr Kingsbury suggested annual monitoring along 50 m transects and use of established photo points to measure rehabilitation against closure targets. In his experience, effective weed control over the area is achievable over three to five years. He was of the view environmental conditions on the Denniston Plateau were similar to Stockton, but were probably harsher at Stockton due to higher elevations.

228. Mr Overmars' evidence described the distinctive environment of the NED coal plateaux with which the EMP, CPP and transport structure are located. He described the existing vegetation and flora of the EMP, CPP area and areas potentially affected by the associated roads, power lines and pipelines. We note he has particular experience of the vegetation BCM Plateaux ecosystems of the Buller District having contributed to the DoC's PNAP survey in 1998, which aimed to identify and protect significant areas of indigenous vegetation (under s.6(c) of the Act) with Recommended Areas of Protection (RAP); and the environmental assessment of other mining projects.

229. Mr Overmars was of the view that although the EMP site did not contain "the best examples of coal measure vegetation", it does have significant vegetation and flora values in relation to the significance criteria in the WCRPS and the BDP, and to s.6(c) of the Act. He considered the EMP would completely modify the existing vegetation and flora and that it would not be possible to re-create the sandstone pavements or rehabilitate the vegetation and flora to be regarded as significant under s.6(c) of the Act. He was of the view the sandstone pavement is a historically rare ecosystem and that it is recognised as national biodiversity protection priority. He noted particular values include three mountain beech forest associations on the southern ridge, the presence of two 'at risk' plant species (red mistletoe *Peraxilla tetrapetalla,* 'declining - conservation dependent', and *Chionochloa juncea,* 'declining - range restricted').

230. Mr Overmars considered the vegetation within the EMP, range from highly modified (tracks) to unmodified forest vegetation on the southern ridge, and sandstone pavement areas in the western part of the EMP that represent some of the better examples within the Plateau environment.

231. Mr Overmars outlined the CPP area compromises mostly unmodified vegetation and flora that meet several of the RPS and BDP significance criteria, and that the wetland area is also considered to be significant vegetation in relation to s.6(c) of the Act. He noted the CPP had been modified to avoid direct impacts on the wetland, except for a small area (0.1 ha). He highlighted there will be a loss of wetland catchment inflow from the construction of the Recycle Pond and that this should be restored at the end of the CPP lifetime. He noted the principal factor in achieving successful rehabilitation will be weed and pest control in the CPP area, both during in the operational phase and post plant closure. In recognition of the loss of ecological structure and diversity within the CPP area, he considered offsite compensation is required.

232. Mr Overmars considered the water pipeline route mainly comprises highly modified vegetation and flora, but that the Plateau section of the pipe transects some of the best

sandstone pavement vegetation that exists on the lower Plateau, and it is considered to be significant under s.6(c) of the Act.

233. Mr Overmars noted that the coal transport pipeline and power line routes generally pass through modified vegetation, but between the KEL weir and Lake Rochfort the vegetation is considered to be significant in terms of s.6(c) of the Act. In this area, the vegetation is part of the Mt Rochfort altitudinal sequence within the Mt Rochfort RAP, and has high representativeness significance. He noted that the linear structures have the potential to impact beyond their footprint, as a vector for further modification (e.g. weeds, pests, erosion, habitat fragmentation and edge effects, and increased accessibility). He noted that while the carriageway is 20m wide, the total width of earthworks would be approximately 40 m. He confirmed the vegetation within the road upgrade area would not be considered significant under s.6(c).

234. Mr Overmars outlined the range of mitigation proposed to address the overall loss of biodiversity and ecosystem values, and the offsite compensation. He considered principal mitigation to be rehabilitation of disturbed associated areas, regular weed control, and rehabilitation of the EMP to indigenous coal measure vegetation at the end of mining. He noted growth rates in the Plateaux environment, and recovery from modification, are very slow and that rehabilitation would take decades and in some instances centuries. He outlined measures specific to at risk and distinctive species and appropriate monitoring conditions.

235. In his rebuttal evidence, Mr Overmars outlined the values of the Mt Rochfort RAP (total 1322.72 ha) and estimated it contains approximately 381.72 ha of BCM (some 28.9% of the RAP area). He stated the boundaries of the RAP were based on *"…options to find representative areas for each community or feature that lay outside the areas of known coal deposits, or to define larger areas that encompassed these key representative areas but also included replicates and provided for faunal habitat and better long-term viability of protected areas."* He noted the approach had two phases: survey and implementation; and that proposed boundaries, based in survey results, can change during the implementation phase.

236. In relation to the Mt Rochfort RAP, Mr Overmars noted that there had been a boundary change excluding the area between Conglomerate and Trent Streams on account of coal resource considerations and that similar mid-altitude Denniston Plateau communities were represented immediately west of Conglomerate Stream. He noted a portion of the excluded area (between Trent Stream and the western margin of the proposed mine site) is within the EMP area and contains vegetation and flora of a similar value to that within the Mt Rochfort RAP. He stated:

> *"The significance of the sandstone pavement ecosystem was only recently recognised (Williams et al. 2007). In my opinion, retention of the natural character of the entire elevated coal plateaux is an important matter to be considered in the management of the coal plateaux (e.g. mining rehabilitation), but the primary determinant of RAP boundaries is biodiversity itself, such as inclusion of high quality representative communities and rare and distinctive features (such as Chionochloa juncea) and choosing viable long term protected area boundaries."*

237. In answer to our questions, Mr Overmars estimated the cumulative loss of the endemic sandstone pavement ecosystems on both the Stockton and Denniston Plateaux to be approximately 20-25%, and that the loss had not yet reached a critical level (80%). He noted the main difference between the Stockton and Denniston Plateaux was that vegetation association type 10 (Manuka-*Dracophyllum politum*/wire rush rush-shrubland) was not well represented on Denniston, and that association type 11 (Manuka/wire rush-*Chionochloa juncea* tussock rushland with subalpine bog species) is more prevalent on Denniston. He acknowledged perspectives have changed since the PNAP survey due to the ongoing decline in biodiversity, degradation of habitat, and the effect of predators. He was unsure at what point the BCM ecosystem would become too small or too fragmented to be unsustainable, as it is very complex, but stated he was unaware of any recent extinctions. He stated that the Mt Rochfort RAP was probably not of sufficient size to be managed sustainably for protection and conservation of indigenous flora and fauna in the future.

238. Mr Overmars considered there were no species of flora that were similar in character (in terms of extinction threat) to *P. patrickensis* that would continue to decline if nothing is done. He highlighted the importance of weed control and stated he considered this to be an offset. He emphasised the importance of the rehabilitation and the evidence that this will be carried out to a very high standard so that it will be of a similar nature, and that overtime there will be a succession back to forest ecosystems. He considered the loss was temporal and would be regained over a period of 500 years. He stated he had not looked at the benefit of the Heaphy River area as an offset as it is not 'like for like', but acknowledged there would be an associated benefit for vegetation and flora.

239. Mr Buckingham's evidence addressed the actual and potential adverse effects of the proposal on fauna values. He outlined that the primary effect on terrestrial fauna would be the loss of approximately 200 ha of significant indigenous habitat. He noted this loss would adversely affect threatened species such as the great spotted kiwi, western weka, South Island fernbird, black shag, South Island rifleman, South Island kaka, New Zealand pipit, lizards and the endemic land snail *Powelliphanta patrickensis,* and non-threatened species such as bellbirds, kakariki, other lizards and invertebrates. He highlighted the uncertain outcomes of the rehabilitation due to the nature of the terrain, altitude, soils and exposure to wind.

240. Mr Buckingham outlined that *P. patrickensis* are classified as 'Nationally Endangered' and are limited to the coal measure scrubland of the Stockton and Denniston Plateaux. He conservatively estimated approximately 3% of their habitat range would be affected by the EMP and acknowledged that diminishing habitat on the Plateau is one of the factors impacting the population. He considered plot surveys within the EMP mine footprint indicate relatively low densities compared to recognised stronghold areas, such as the upper Waimangaroa River. He outlined that use of VDT for pakihi scrub habitat would result in some snails being successfully translocated to bare areas on the Plateau. While there are no studies on the survival of snail in VDT, Mr Buckingham was of the view there would be a benefit to their habitat. Mr Buckingham stated that the indications of high numbers of predator kills, in combination with low densities of live snails and the patchiness of distribution within the EMP mine footprint suggests that the population may be moribund and on the brink of collapse. He was of the view the decline was probably the combined effects of habitat degradation (fire and habitat fragmentation) and cyclic predator events.

241. Mr Buckingham noted that great spotted kiwi are classified as 'Acutely threatened' and therefore every individual is of national importance. The Mt William Range population is considered to be of national significance. Survey results indicated two breeding pairs and perhaps 4-5 of female kiwi within the EMP mine footprint, or within 1 km of it. Forested parts of the EMP to the south and west are considered to be where kiwi would be concentrated. No kiwi or sign of them was found at the CPP site, but kiwi present in moderate numbers on the coastal escarpment within the coal transport route. Mr Buckingham considered 2-4 pairs of kiwi may be affected south and west of the EMP, but was of the view any habitat loss on the coal transport pipeline and pump intake site would be comparatively minor. He considered adverse effects in the construction phase could be mitigated by avoiding the breeding season (June-January) and construction of underpasses or ramps so pipes do not become physical barriers to their movement.

242. Mr Buckingham provided a report by Dr John McLennan that estimated the gains for the great spotted kiwi from predator control in the Heaphy conservation management area and compared this to the predicted losses in the footprint of the EMP. The report suggested that without management the kiwi present in the EMP would be expected to decline by about 2.4% per year and only a single pair would remain after about 30 years. In comparison, in the Heaphy area with regular predator control the population would be expected to grow at an average rate of 0.9% per year and the ratios adult/young would be expected to improve.

243. Mr Buckingham considered approximately 100-150 fernbird territories may be affected by the EMP, which represents approximately 2.5% of the local fernbird habitat. He noted the EMP mine footprint was not ideal fernbird habitat and that the numbers represented a negligible percentage of the national population.

244. Mr Buckingham considered other threatened species of birds appeared to be relatively poorly represented within the EMP footprint, although he acknowledged some species such as the kaka may have been quiet in winter during the survey. He noted other studies had found comparatively high carabid (beetle) species richness and distinctiveness in the Mt Rochfort and Whareatea Mine area and that this may indicate the abundance and diversity of other invertebrates in the area. Although no specialist bat surveys or invertebrate surveys were undertaken, he was of the view that effects would be minor and localised.

245. Mr Buckingham highlighted mitigation measure such as carrying out construction works in areas of ecological importance (e.g. wetlands, tall forest and less disturbed areas) in late summer and autumn, retaining large trees (even dead trees and logs), retaining and rehabilitating natural forest edges, reducing dust, noise and light effects, prohibiting dogs, reducing road kills and contingency planning for fires.

246. Overall, he acknowledged mitigation could be provided by using VDT and undertaking weed and pest control on the Plateau. However, he was of the view that significant positive benefits for kiwi and *Powelliphanta* taxa (and a range of indigenous fauna) could be made by long-term management and restoration of significant offsite areas such as the proposed predator and herbivore management programme for the Heaphy River area. He considered the proposed

Heaphy River area would more than compensate for the habitat loss of kiwi within the EMP footprint, as their situation is critical and the area is of importance.

247. Mr Buckingham referred to the DoC technical reports of Mr Tim Shaw and Dr Ingrid Gruner, and was of the opinion submitters had not provided a balance point of view of the available information. He highlighted that Dr Gruner agreed with his estimates of loss of *P. Patrickensis* and that residual effects will remain that require environmental offset or compensation. He noted Mr Shaw was of the opinion the avifauna survey may have underestimated the diversity and abundance in the EMP, but that the existing knowledge is adequate for consideration of the application. With regard to invertebrates, he noted Mr Shaw's agreement that it was unlikely the scale of the habitat loss would be more than local. He stated that there are risks that undetected invertebrate species may be present in the EMP, but considered it is highly unlikely they would be restricted to the mine footprint area.

248. Mr Buckingham was of the view that baseline survey for species present in the EMP need to be undertaken to determine numbers or indexes of keystone fauna and that regular monitoring of the rehabilitated areas needs to in the carried out in the medium to long term to determine ongoing effects.

249. Submitters raised concern regarding allowing development within the Mt Rochfort RAP, protection of the conservation estate, biodiversity and habitat loss, adverse effects on indigenous flora and fauna, weeds, rare ecosystem destruction, and difficulties with successful rehabilitation.

250. Mr Lusk submitted the Buller Conservation Board believes the values of the coal Plateau are so high it would easily qualify as a national park.

251. Ms Mayhew and Ms Hargreaves, on behalf of the West Coast Environment Network (WCENT), submitted the proposal would have significant and permanent adverse effects on ecological and environmental values, and would permanently reduce the extent of a unique mosaic of habitats and originally rare ecosystems. They emphasised the cumulative loss of ecological integrity on the Denniston Plateau and the high level of species endemism, the protection the area should be afforded under the CMS and WCRP, and the inadequacy of the proposed offset/compensation. While WCENT provided no expert evidence in support of their submission, they referred to and provided copies of technical reports by DOC technical officers that relate to the access agreement sought from DOC for the EMP. The technical reports provided, which were released to them under the Official Information Act, were:
    - Assessment of Effect on Plant Ecology, by Jane Marshall (20 June 2010);
    - Assessment of Effects on *Powelliphanta patrickensis,* by Ingrid Gruner (24 August 2010);
    - Assessment of Effects on Terrestrial Fauna, by Tim Shaw (20 June 2010);
    - Assessment of Effect on Freshwater Ecology, by Darin Sutherland (18 November 2010)[3];
    - Assessment of Ecological Rehabilitation, by Sarah Wild 10 March 2011; and
    - Assessment of Mitigation, by Darin Sutherland, Jane Marshall, Tim Shaw and Ingrid Gruner (11 October 2010).

[3] This report is summarised in the Water Quality Section of the decision.

252. In general, the technical report by Jane Marshall was consistent with the evidence of Mr Overmars, particularly in regard to significance thresholds and the presence of threatened species. However, we note the assessment was made prior to the Applicant relocating the CPP to avoid most of the significant wetland identified. The report highlighted the change in substrate and hydrology that would alter the vegetation associations post mining, reducing the current level of ecological integrity. Ms Marshall noted the entire Denniston Plateau is within the West Coast Kawatiri place (under the CMS) and is identified as a 'Priority site for Biodiversity Management'. With regard to *Chionochloa juncea,* the report stated the EMP footprint represented 6.7% of that vegetation type on the Denniston Plateau and 1.8% of the total area of the vegetation type on both Plateaux, and noted it is only found on the North Westland coal measure Plateaux; in this regard, it was considered the proposal would "perpetuate species decline". It noted the footprint contains approximately 5 ha of sandstone erosion pavement, which is an originally rare ecosystem. Ms Marshall considered the effects on the bryophyte flora of the Whareatea River from flow reduction, mineralisation and acidification are unknown. She commented on the variable value of the proposed mitigation measures and noted weed and pest animal are in naturally low numbers.

253. In general, the technical report by Mr Tim Shaw on effects on terrestrial fauna (excluding *P. patrickensis*) was consistent with the evidence of Mr Buckingham, particularly in regard to significance thresholds and the presence of threatened species. He noted the limited nature of the survey work and the exclusion of some fauna; the risk that unique invertebrate species or associations of species with a limited distribution may be presented within the EMP footprint; and the likely presence of 3-6 lizard species. He considered while the applicant has proposed appropriate mitigation measures, the loss of 140 ha of significant indigenous habitat can only be mitigated offsite. He stated that for offsite predator control to be effective it must be long-term, large scale and well planned and managed.

254. The technical report by Dr Ingrid Guner addressed the effect of the proposal on *P. patrickensis.* Again, there was a high level of agreement with the evidence of Mr Buckingham regarding potential losses, densities in the EMP footprint and the limited mitigation value of translocating snails. Dr Gruner highlighted the fact that *P. patrickensis* endemic to the Buller Coal Plateaux and is listed as 'nationally endangered' and is absolutely protected under the Wildlife Act 1953. She noted DoC's recovery plan (Walker 2003) identifies protection of habitat as the highest priority for conservation management, and considered the Denniston Plateau offers a unique opportunity to protect an area of the snail's range that is meaningful with regard to size and shape. She estimated 48% of the known range is on public conservation land and that the proposal would lead to a loss of 10% of this. She estimated that a large number of individual snails would be killed by the proposal (1,170-11,940 individuals) and that the survival of snails left *in situ* during VDT is unknown. She noted predation of snails was low at higher altitudes and noted opportunity for beneficial predator control lower on the Plateau is limited, as the AHB and SENZ already undertake this on Mt Rochfort. She considered some benefit could be gained on the wider Plateau by adding to or altering current practices (particularly targeting rats) and at lower altitudes where higher predator numbers have been found, if the control is carried out long-term. Overall, Dr Gruner was of the view that the proposed offsite restoration could not mitigate the long-term loss of *P. patrickensis* habitat from public conservation land (1.7% of the extant range), and that this can only be achieved by protecting habitat currently not on public conservation land. Even if all the mitigation were

implemented, she was of the view that substantial residual effects (habitat loss, habitat degradation and fragmentation) would remain.

255. The technical report by Ms Sarah Wild assessing the proposed ecological rehabilitation in general concurs with the Applicant's evidence regarding the slow rehabilitation and preferred use of VDT. The report highlights the need to remove all structures and re-vegetate all disturbed areas after the operating phase, the need to have % vegetation cover targets included in conditions of consent, the need to minimise stockpiling, the difficulty of re-vegetating very steep slopes (mine perimeter benches), and the need for ongoing, long-term weed control. She was of the view that rehabilitation could mitigate the loss vegetation, but that the sandstone pavements would be permanently lost.

256. Mr Robertson and Ms Backes, on behalf of the West Coast Tai Poutini Conservation Board, submitted the proposal would destroy the nationally important and rare sandstone pavement ecology, and that it cannot be restored to its present form. They highlighted the importance of the CMS, the protection of the Plateau as public conservation land, the improbability of rehabilitation, and that the ecological loss cannot be adequately offset.

257. Ms Martin, on behalf of the Royal Forest and Bird Protection Society, submitted the proposal would degrade rare ecosystems and wetlands, result in the loss of significant habitats and species, and set a dangerous precedent for the degradation of the only extensive area of BCM held in public conservation land. She noted the effects of opencast mining were incomparable to the historical effects of underground mining on the Plateau. She considered the proposal fails to safeguard the life supporting capacities of air, water, soil and ecosystems, and to avoid, remedy or mitigate adverse effects. She was of the view the proposed weed control is insufficient, the predator control will not mitigate for the loss of *P. patrickensis* habitat, and that financial compensation is only appropriate for remote, 'ripple' effects of the activity.

258. Ms Martin highlighted the cumulative loss of habitat and indigenous vegetation, and considered the natural science value of the Plateau had been ignored. She suggested that where there are nationally significant natural resources on the land surface, opencast mining is not an appropriate activity. Ms Martin provided us with a copy of the PNAP survey report for our consideration and emphasised the 'environmental creep' of past, present and future activities in degrading the values outlined in the survey report. She urged us to have regard to the Environment Court's Cypress Mine decision and the need to demonstrate that the proposed mitigation will benefit and enhance significant indigenous fauna. She highlighted the results of the VDT undertaken at Stockton and how this clearly demonstrates it is not possible to restore the unique BCM ecosystems to anything natural, let alone significant in terms of s.6(c) of the Act.

259. Ms Martin called Mr North as a witness to give expert ecological evidence. Mr North submitted the impacts of the proposal must be considered on the Plateaux as a whole, with regard to assemblages of organisms and communities, the size, shape and ecological complexity of an area, and the likelihood of extinction. He considered Mr Overmars had significantly underestimated the value of the BCM Plateaux as an area "of major national significance" under the CMS and deserving of the fullest protection in their entirety. He was

critical that Mr Overmars had focused almost exclusively on the EMP footprint area and had reduced the Plateau ecosystem to its component parts.

260. Mr North was of the view the PNAP report had failed to designate large areas of high conservation value and that most of the Plateau as a whole should have been in the RAP (excluding highly modified areas) because of sufficiently high ecological value. He highlighted the aim of the PNAP survey was to "*identify and recommend for protection only the best examples of the range of natural diversity for each ecological district that deserves protection."* He considered that at the time of the PNAP survey the national significance of the sandstone pavement ecosystem (as an 'originally rare' ecosystem) was not appreciated, and that since this time (23 years ago), significant areas of land have been lost and the remnant RAPs are not necessarily the best of what remains. He noted since the survey, resource consent to destroy significant areas of the RAPs have been granted (e.g. the Cypress Mine within the Upper Waimangaroa Valley-Mt William RAP, mining of the ridgeline in the Mt Frederick-Mt Augustus RAP, and construction of the KEL pipeline through the Mt Rochfort RAP) and that the natural population of *P. patrickensis* in the Mt Rochfort RAP has been affected by the translocation of *P. augusta* snails from mining activity on Mt Augustus. He was of the view that given this recent (and ongoing) cumulative loss of significant habitat on the Plateaux, the adverse impact on birds, particularly great spotted kiwi, had been understated.

261. Mr North considered there was insufficient information on fauna within the EMP footprint and bryophytes in the Whareatea River, and provided references from the PNAP report and Mr Shaw's report to support the contention it is probable that unique, unknown, endemic invertebrate fauna are likely to inhabit the site. He disagreed with Mr Overmars' assessment of the extent of wetlands and sandstone pavement within the CPP and EMP areas, and considered over 80% of the EMP area to be generally intact with little modification (other than from fire, of which the impact is difficult to assess) and few weeds. He noted the pakihi type vegetation relied on the underground presence of the sandstone pavement to retain moisture. Mr North considered the evidence of Mr Buckingham, with regard to *P. patrickensis,* to be confusing and inconsistent and that it understated the vulnerability of the population to very small changes.

262. Mr North stated, if the impact of the proposal on the ecological significance of Denniston Plateau is considered as a whole, it would impact significantly on representativeness, intactness and connectivity values and have major consequences for the integrity and functioning of the ecosystem through vegetation loss and fragmentation. He considered that after 20-30 years the vegetation of the rehabilitated site would "…*bear little resemblance to that which occurred prior to mining",* with less diversity and different species composition and abundance.

263. The WCRC's ecological reviewer, Mr Beale, considered the applicant's evidence indicated that rehabilitation of the site using the methods outlined was realistic in terms of outcomes anticipated. He noted that the key conditions proposed are the 'Mine Site Rehabilitation Management Plan' and the requirement for a technical review panel. On this basis, Ms Inwood was of the view that a mix of species representative of the pre-mining environment is likely to be re-established over the long-term.

264. Mr Beale noted the loss of significant indigenous vegetation and the significant habitat of indigenous fauna had not been fully mitigated. Having heard all the evidence, Ms Inwood was of the view that the loss of significant vegetation was still an outstanding matter that had not been adequately mitigated, but that she considered this may not be 'fatal' to granting the applications.

***Evaluation***

265. Having had regard to all the evidence presented, we note there is considerable agreement that there will be a loss of approximately 200 ha of indigenous vegetation, of which much of it is considered to be significant habitat of indigenous fauna. There is a high level of agreement regarding the areas of vegetation that are considered significant under s.6(c) of the Act. The proposal will undoubtedly result in the loss of approximately 140 ha of significant indigenous habitat and the permanent loss of significant indigenous vegetation.

266. It is acknowledged by the applicant that the significant indigenous vegetation within the EMP mine footprint and the CPP area cannot be fully restored to its existing state, and that after rehabilitation it will not be regarded as significant under s.6(c) of the Act. We are of the view that the loss of significant indigenous vegetation can only be avoided, or mitigated by the protection (in perpetuity) of another area of significant indigenous vegetation of equivalent value to that proposed to be stripped. We consider the applicant has not proposed any mitigation for the direct effects of the permanent loss of the significant indigenous vegetation in the CPP area, or the mine footprint. In particular, there is no mitigation proffered for the loss of significant areas of *Chionochloa juncea,* or the loss of significant indigenous vegetation to the west of Trent Stream which is considered to be of very high value and is comparable to 'the best examples' within the Mt Rochfort RAP.

267. Overall, we accept the vegetation in the EMP footprint is largely intact, relatively unmodified and that 93% is indigenous. While we accept there are highly modified areas, with associated weed invasion, we accept that in general weeds are present in relatively low numbers.

268. The applicant acknowledges the EMP will adversely affect other areas of significant indigenous vegetation (under s.6(c)) where the proposed water pipeline be constructed in areas of some the best examples of sandstone pavement (on the section across the Plateau) and where the coal transport pipeline will pass through the lower Mt Rochfort RAP. We consider these structures will also have indirect adverse impacts on the introduction and spread of weeds, pests and erosion. We accept the applicant's proposed weed control and predator control will mitigate these adverse effects by adding to and improving the existing AHB and SENZ control programmes. We also note that the applicant has proffered conditions to avoid or minimise some of these effects by using best practice methods and minimising the area of disturbance. We consider this proposed mitigation measures are sufficient for the adverse effects on significant indigenous vegetation and fauna **outside** the EMP mine footprint and CPP area. We are of the view that weed control is critical to achieving successful rehabilitation, in reducing the potential impacts of the pipelines, power lines and roads on the introduction and spread of weeds.

269. The key mitigation proposed by the applicant for the loss of 140 ha of significant habitat of indigenous fauna is the high standard of rehabilitation and the eventual re-colonisation of indigenous flora and fauna. In this regard, Mr Overmars was confident the mitigation required is for the 'gap' or period of time (100-500 years) it would take for the area to return to indigenous forest. While we accept that re-vegetation by the methods outlined is likely to be successful, we consider there is a high level of uncertainty regarding the future composition, diversity and abundance of indigenous flora and fauna that may successfully re-colonise the site. We are satisfied that the evidence indicates the site can be re-vegetated, but whether it will be suitable habitat for indigenous fauna in the future is very uncertain. We are concerned that in the time (perhaps centuries) it takes for adequate vegetation succession, many existing indigenous species may already be absent from the local area. We also have concerns that there will be a shortfall in soil and VDT material and that there will be significant areas of un-vegetated 'boulder fields' and grassed batter slopes.

270. The applicant has proposed mitigation of the adverse effects on the population of *P. patrickensis* by using VDT and undertaking predator control on the Denniston Plateau. While we accept this will mitigate the impacts of any increased predation on snails as the result of the proposal, further habitat loss can only adversely impact on the population. We accept that population may be moribund, but this does not make the loss of habitat any more acceptable. There is no evidence to suggest that *P. patrickensis* can be successfully translocated by VDT or that the rehabilitated site will support populations at some point in the future. We accept that the population may continue to decline without the proposal, but we do not accept the population will be enhanced by the proposal and proposed predator control. The evidence suggests predation and habitat loss are the limiting factors on the Plateau, and predator control is already being undertaken and predators are at relatively low levels.

271. The proposed Heaphy River area is to offset the loss of great spotted kiwi habitat within the EMP footprint. It is acknowledged the proposal will displace 2-4 breeding pairs and that associated structures (pipelines and roads) have the potential to adversely affect kiwi that are known to be present on the lower Plateau. We accept the chosen method to transport the coal down the Plateau will reduce the risk of road kills. We will address the proposed offset in the 'Offset/Compensation' section under s.104(1)(c) of the Act below.

272. Overall, we are of the view the proposal will result in the loss of approximately 140 ha of significant habitat for indigenous fauna, and the permanent loss of areas which are considered to contain significant indigenous vegetation under s.6(c). We consider these direct effects can only be partially mitigated or compensated for the scale of the losses.

**HERITAGE EFFECTS**

273. Mr Duff**,** Dr Whybrew and Mr McLean addressed us on behalf of the NZHPT, which was a submitter on the issue of historical heritage. Evidence was presented by Ms Watson for the applicant.

274. Dr Whybrew gave evidence on the history of mining on the Denniston Plateau, which she said commenced in the 1870's. She noted that the Denniston Plateau was one of the Country's most significant industrial sites from an historical perspective, mainly on account of the famous

Incline which was once referred to as the "*eighth wonder of the world*" on account of the Incline's length, gradient and the volume of the coal that it carried.

275. Dr Whybrew said:

> "*The outstanding historical, technological, archaeological and social significance of Denniston is recognised by its inclusion in NZHPT Register of Historic Places, Historic Areas, Wahi Tapu areas as a category 1 Historic Place.... Denniston was first registered as an Historic Area in 1989 and was reassessed in 1995...[the] physical extent of the Denniston Historic Place Registration runs from the base of the Incline to the centre of activities at the brakehead and then continues along the route at major mining areas at Burnett's Face and Coalbrookdale....the key components are:.. the Coalbrookdale Mine site and Fanhouse."*

276. She stated that apart from access to Coalbrookdale, the access to the old Whareatea Mine and the remains of the old Escarpment Mine and the Birchall's Co-operative Party and Plateau mine, the principal items of historical interest on the Denniston Plateau lie outside the mine footprint.

277. She noted that the main items of historical interest on the mining footprint itself comprised the old Escarpment Mine that was an underground mine that closed in 1982, and the remnants of the Birchall's Co-operative and Plateau mines. She stated that the old Escarpment Mine was the first State Coal mine worked by hydro methods on Denniston Plateau.

278. Dr Whybrew considered that the main items of historical value within the EMP mine footprint that would be destroyed by the proposal are the three mine entrances (of which only one remains open), the concrete dam relating to hydro mining at the Whareatea Mine, a concrete entrance to the return airway, tramway rails, original bins, part of a conveyor, a power shed and the remains of the foundations for a pump shed, the administration block, the store and a covered work area, hydro bins and the Lake Brazil dam.

279. We note that the heritage value of these items was described by Ms Watson as "low to moderate".

280. Ms Watson reported that the old Escarpment Mine, while having connections to other mines on the Plateau, was not "rare" as a result of there being other mines of a similar kind remaining. She also reported that the bins and hydro bins are "rare" and that their information potential is "moderate". She stated that in her opinion the archaeological value of the old Escarpment Mine is "moderate to high", and that this is based "*chiefly on its internal, external contextual values, rarity and amenity values*."

281. The NZHPT was concerned that the proposed EMP would interfere with heritage values as a result of proposed upgrade of the access road, and that the construction of the proposed water pipeline would have adverse effects on the historic mining landscape of Burnett's Face and Coalbrookdale areas. The Trust was also concerned that the application would generate traffic on the Denniston Road with a consequent increase of risk to public safety. The Trust was also worried that the application would have an undesirable impact on the "*historic mining landscape, especially with regard to the feeling of an isolated "ghost town" characteristic in a quiet regenerating bush context at the Southern side of the Plateau."*

282. Mr Duff indicated in his statement that he felt that it would be beneficial if a structured plan could be agreed upon between the Trust and the applicant "*covering all areas of interest to the applicant, DOC and the NZHPT*."

283. We think that such an approach would be very beneficial and should what is more, be adopted by the applicant with respect to all of its mining interests on the Plateau. We consider such planning should involve the District and Regional Councils, so that a comprehensive plan for mining on the Plateau can be conceived and implemented, rather than mining proceeding on an unplanned ad hoc basis which is what is occurring at the moment.

284. We were pleased to hear from Mr Duff at the hearing that the NZHPT had reached an agreement with the applicant and that subject to the adoption of the agreed conditions, the Trust's position was changed from one of opposition to "conditional support". We take it that the provisions of Condition 2.10 adequately reflect the positions of the parties in that respect.

***Evaluation***

285. We are of the view, based on the evidence of Ms Watson and the NZHPT, that the proposals by the applicant, together with the proposed conditions on the effects of the proposal on historic heritage, will have no more than a minor effect and in some instances are likely to provide positive benefits.

**HAZARDS AND HAZARDOUS SUBSTANCES**

286. The existence of natural hazards on the proposed mine site and the land intended to be used for pipelines and roads is limited. There is an obvious hazard that will result from the benching of the opencast mine, but we expect the applicant to use all reasonable ways of drawing this risk to the attention of persons working in the vicinity of the edge and also all others who happen to be near to the edge to whom the risk will be self-evident. No doubt the applicant's plan to restrict access to the pit will assist it in this respect. There is also the possibility of dam break failure as identified within the s.92 request for further information.

287. There are two kinds of natural hazards that we shall refer to in this decision that have been raised or alluded to by the applicant or submitters. The first relates to the general geologic conditions applying to the mine site, and the second relates to the localised consequences of slips and landfalls resulting from earthquakes and other seismic events.

288. The mine site is situated in the Kongahu Fault Zone which we understand to be inherently stable and unlikely to undergo large scale reactivation through intensely vigorous ground shaking. The report "*Geologic Setting, Gravity Collapse and Hazard Assessment of the Kongahu Fault Zone, Westport"* (1997) a thesis by Kane Scott Inwood of Canterbury University, was provided to us by Mr Baxter as part of his evidence. It states at page iv ) of the introduction:

> *"Only one section of the failure complex, the "Mt Rochfort failure" is considered to still be active although inferred to be failing as extremely slow, deep creep. Localised recent failures are primarily related to antecedent pore water conditions and are triggered by intense or prolonged rainfall and seismic events. These create low level hazard due to lack of human interaction in areas where the failures occur.*

*Reactivation of debris within fluvial channels leading to avulsion onto fan surfaces along the coastal plain forms the dominant hazard."*

289. The BCM are located between two north-northeast trending faults, the Kongahu and Glasgow faults, forming a discrete latest Cretaceous to Miocene sedimentary basin in which the coal measures are to be found. Mr Inwood reported that high levels of seismic activity within the upper crust, in the West Coast of the South Island occur, predominantly located within the top 15 km. He said that the Buller area is historically one of the most seismically active areas in New Zealand. He stated that almost all seismic events have been shallow resulting in very high intensity ground shaking and have been the result of reverse faulting.

290. Mr Inwood stated that seismically triggered rock falls and rock slides are the most common slope failure manifestations, occurring near actively incising streams. Failure of these types he concluded, are mainly controlled by climatic factors or are initiated by strong ground shaking. Based on the Inwood report, Mr Baxter presented a series of photographs showing what he considered to be serious geological deficiencies, in the terrain that was proposed to be used for the coal transport pipeline, including the existing pipeline route under development by the KEL hydro scheme. Mr Baxter acknowledged that we as a hearing committee, were in no position to consider alternative routes but he wished to show that there were other more suitable route options for the pipeline, which in his opinion, were slightly further, but geologically more stable.

291. A s.92 request for further information highlighted the need to undertake a risk assessment particularly relating to the effects of dam failure. The response from the applicant resulted in a dam break analysis prepared by **Dr Justin Bell** who is a Senior Environmental Engineer with Golder Associates. Dr Bell showed modelling results of a likely flood wave resulting from a failure of both the Freshwater Pond and the Recycle Pond on the EMP. Dr Bell's found that localised flooding may occur and a flood wave may present a hazard to motorists who may be on the SH bridge at the time from overtopping, but that the rail bridge below the highway is unlikely to be affected or overtopped.

***Evaluation***

292. It seems clear to us that the greatest risk to human health and safety are in the areas affected by the mine where people may be close to landforms (i.e. the escarpment) that are susceptible to landslides and rock falls. However, we doubt if this exposure will be substantial given the overall human use of the Denniston Plateau.

293. It might be that the increased residential use of Fairdown will increase the risk of landslides affecting residents, but we do not see that such a risk will be exacerbated by either the mine or the water or coal pipelines, given that both are to be placed on the ground and should result in very little surface cutting or disturbance.

294. A submitter, Mr Miranda-Suarez who gave evidence on behalf of the Fairdown/Whareatea Residents Association, raised with us what he saw as a significant risk of pipe failure that would result he said, in possible loss of human life and severe damage to infrastructure and property because of the "hazardous" nature of the coal slurry that would escape into the

environment if the pipe line was broken. We do not accept this contention. Although we accept that there is a risk that the slurry pipeline may be fractured and may as a consequence overflow into the environment, including into waterways, in our opinion this should be an extremely rare event, and even if it did occur, we do not consider coal slurry to be a seriously toxic or "hazardous" substance.

295. Recognising that we have received no contrary evidence, we are satisfied that there are adequate safeguards under the provisions of the Building Act 2004, to ensure that there will be continual and ongoing monitoring of the dams created for impoundment purposes, which as a result, are unlikely to create any more than a minor risk.

296. We note for instance that coal itself does not appear to impart to water any significantly toxic chemicals and many people inhale coal dust without immediate dangerous effects. We accept that coal and coal dust may have serious health effects if ingested over a period of time, but this would not occur in the event of a sudden short term spillage. The quantitative restrictions imposed by the pipeline size should prevent the spilling of significantly large amounts of coal slurry.

297. We also do not see any discharges as constituting an insuperable problem to clean up as their distribution is constrained by geographic circumstances. We do not see people on the mine site itself generally being exposed to serious danger from seismic events because of the mine footprint's flat nature and distance from hill sides.

298. If the applicant elects to create a dam as part of its remedial package, then it will be obliged to comply with the minimum standard requirements for whatever dam size is proposed and we see no significant resulting danger to any person as a consequence.

299. For these reasons we do not see any significant problems with natural hazards arising from the application. With respect to hazardous substances, we are satisfied that the conditions that we have imposed will result in the appropriate containment and handling of such materials.

**NOISE EFFECTS**

300. Noise related effects can cause substantial adverse reaction and can be a cause of stress and at worst can lead to ill health. We received many submissions from residents at Fairdown who considered that the CHF proposal would have a significant adverse effect on their amenity values, particularly in relation to noise. Only a few of those submitters however made further submissions to us during the hearing and a number provided written approval during proceedings.

301. The applicant, as part of their AEE, considered that the noise effects of the proposal would be no more than minor. Providing noise evidence for the applicant was Mr Camp who has extensive experience in that field. In his evidence, he assessed the potential impact of noise generating aspects of the proposal relating to: the coal transport pipeline, the dewatering plant and the rail loadout facility. He has not undertaken a detailed assessment of the noise generation from mining activities because they were so far from existing residences (some 3 km) that he anticipated that any noise levels from that source would be negligible, and we agree. Mr Camp outlined the provisions of the BDP, and from his modelling he identified specific noise sources and provided a predicted noise level from each of those sources at two

separate positions of residential locations away from the noise source. He noted that these predictions all complied with the night time noise standards provided for in the BDP, which in turn reflected the World Health Organisation criteria for minimising sleep disturbance.

302. Mr Camp noted that that his predictions included the attenuation provided by the four metre high earth bund (mound), but did not consider any acoustic benefit of the landscaping. He made a number of recommendations which he considered would reduce noise effects. From the background noise monitoring taken, together with the unusual loading of the stationary train, he was satisfied that the proposal, together with the proposed consent conditions, would result in the noise effects being no more than minor.

303. Giving evidence for the FWRA, Mr Miranda-Suarez disputed the noise assessment report stating that it did not include many pertinent pieces of information and that the sound assessment calculations were incorrect. Throughout his evidence he focused on discrediting the evidence of Mr Camp based on his opinions, but without providing any credible contrary evidence which would have provided any substance to his claims, that the sound assessment calculations were incorrect.

304. Mr Orchard who also gave evidence for the FWRA, outlining general concerns relating to possible noise effects and generally appealed for protection against possible effects on the basis that it would be too late to close the operation down after it was operating, if conditions were not met. Similarly Mr Nurse, one of the closer residents to the CHF, expressed his concerns about the location of the site access to his property and the resultant noise from vehicle entry and rail shunting noise, and felt that perhaps the facility should be enclosed within a building.

305. The Officers, in their s.42A report, concluded that after considering the noise assessment and peer review, that the noise effects would be within what is considered to be a reasonable level. They said that this did not mean that the neighbours would not hear any noise from the site, but that the noise would be within the baseline level for the zone as determined by the BDP, and that as such there would be minimal noise disturbance for the two closest and hence most affected residences. In forming their opinions, the Officers had engaged Mr Hegley, an experienced noise consultant, to peer review the application and evidence presented on behalf of the applicant, at the hearing.

306. Mr Hegley, in a series of reviews from September 2010 to May 2011, assessed the Marshall Day 'Assessment of Noise Effects' (by Mr Camp) report. In general terms, after evaluating the submissions and reviewing the proposed conditions, he concurred with the report. He made a number of recommendations to modify some of the proposed consent conditions.

***Evaluation***

307. We fully understand the concerns of nearby residents, as to the possible effects that uncontrolled noise could have on their amenity values. We accept that there will be some noise heard, especially at the closest residences, but are satisfied on the basis of the evidence that these levels are unlikely to be much above normal background levels and will be within the noise standards of the BDP. We have considered the submissions, reports and the

proposed conditions together with the most recent amendments (including bund extensions), and conclude that noise effects are able to be adequately avoided and mitigated. On this basis we are satisfied and accept the expert report of the applicant together with the expert peer review, that any adverse noise effect from the site is likely to be no more than minor.

**TRAFFIC EFFECTS**

308. The initial application and AEE did not include any details relating to traffic or traffic management, consequently this matter was raised as a s.92 request for further information.

309. A response to these matters resulted in a table of estimated traffic movements to Denniston and the CHF being provided, which was based on 'car pooling' but noted that it was likely that 25 seat buses would be used. The response indicated that a 'Traffic Safety Management Plan' would be developed in association with the BDC and the New Zealand Transport Agency (NZTA).

310. It is generally acknowledged that the traffic generated during the construction phase of large developments has the potential to create adverse environmental effects. Here, it is mostly the effect of project traffic on the environments of Denniston and Powerhouse Roads that we need to consider, rather than the SH 67, recognising that there could be some inconvenience to road users, at times.

311. The effects caused by traffic increases on a small, relatively isolated community, with little through traffic, can be significant. We consider that the issues which arise are likely to be the physical ability of the existing roading network to cope with increased traffic size and volumes, and the impact of these movements on the safety and convenience of other road users. A number of submitters have raised similar concerns.

312. Mr Carr, an experienced roading engineer, presented evidence on behalf of the applicant on the effects of the proposal on traffic and the existing roading infrastructure. He evaluated two scenarios being, traffic to the mine site and traffic to the Fairdown CHF, both during the construction phase and during the normal day to day operational life of the project.

313. He indicated that because there was some uncertainty as to whether 'car pooling' or buses would be used, he had added an additional measure of 'conservatism' to ensure that his approach is both conservative and robust. Mr Carr considered and made comment on each of the similar submissions which were raised, which related to traffic flows and increased road safety risks.

314. Mr Carr reviewed the current warning system at the level railway crossing at Powerhouse Road and concluded that the low traffic volumes did not justify any additional warnings, although he noted that such final decisions would be made by Kiwirail. Similarly in his evaluation of the SH 67/McGill Street, and SH 67/Powerhouse Road intersections there were no road safety issues arising and on this basis he considered there was no requirement to upgrade either.

315. In his assessment of the roads in the Denniston area, Mr Carr noted that while some areas of the existing road did not meet current standards, in his evaluation of traffic counts and vehicle accidents, was of the view that the Level of Service was very good and that these records did not indicate any particular underlying concerns. He noted that from a traffic perspective, the use of a coal slurry pipeline to transport the coal from the mine, and rail movement to transport the coal to Westport and Lyttelton was an extremely beneficial aspect of the proposal and minimises the largest source of traffic –related effects.

316. Mr Carr did however note the rather narrow carriageway of Powerhouse Road which could constrain passing, particularly in some locations, if cars were to pass large vehicles. He noted that if the development of the proposed Traffic Safety Management Plan, identified any roading improvements, in his view it would be more appropriate to construct a layby, mid-way along Powerhouse Road where one vehicle could wait for another to pass, rather than widen the whole of the road.

317. In Mr Carr's conclusions, he generally concurred with the Officer's report, by recommending strengthening of the proposed conditions, which included among other suggestions, installing additional road speed signs, additional road reflective marker posts and additional carriageway arrow markings. He considered that these recommendations together with the proposed condition of consent requiring the development of a Traffic Safety Management Plan would appropriately address any transport related effects of the proposal. On this basis, he considered the application could be approved.

318. Following the presentation of his evidence, and in response to questions regarding the cumulative impact the currently consented (but presently not operational) Deadmans Coal Stockpile and the consented (but not operational) Brookdale coal mine would have on the current proposal, Mr Carr provided a written supplementary statement. A summary of this supplementary statement concluded that Mr Carr's original findings of his primary evidence, clearly indicated that the impact which the additional traffic being generated from the consented Deadmans Coal Stockpile and Brookdale coal mine, remains unchanged and that the existing road infrastructure between both operations, while generally complying with the provisions of the BDP, would not have any adverse safety or efficiency effects on the roading network.

319. Mr Welsh, the applicant's planning consultant, addressed a number of the matters raised by Mr Carr and confirmed that proposed consent conditions, included the development of a 'Memorandum of Understanding' (between the applicant and BDC), which would address road integrity concerns and agreed to review the road to Denniston prior to construction and upgrade it, where necessary. He included in his evidence details of the proposed conditions which reaffirmed the recommendations made by Mr Carr.

320. We received written submissions and heard from a number of residents from the Powerhouse Road area, who have indicated that they believe the existing roading infrastructure is inadequate to cope with additional heavy traffic, especially during the construction of the proposed coal transport pipeline and the potential dangers resulting from such additional use. Mr Nurse considered that he will be even more affected, as the entry to his property is

adjacent to the entry to the Fairdown CHF, and as such will make entry and exit to his property more dangerous.

321. Ms Sail and Mr Duncan stated the narrow road, with increased traffic movements as a result of KEL's development, had resulted in difficulty to pass. Mr and Mrs Spark in their written submission concurred with this view.

322. The NZTA drew our attention to the application, which in their view was unclear how coal would be transported from the CHF, and emphasised the obligations in regard to the operation of over-sized and overweight vehicles. Ngai Tahu Property requested that we give consideration to the adequacy of the road formation of Powerhouse Road, as they were concerned that the cumulative effect would compromise the health and safety of all road users. Ms Davidson raised concerns about the narrowness of the incline road (Denniston Road) and the difficulty of some vehicles and their ability to manoeuvre some of the tight bends without crossing the centre line.

323. The s.42A report acknowledged that transportation of coal from the Plateau by the coal transport pipeline was preferable to trucking the coal. The report also agreed that widening of the Whareatea Road and using buses to transport the workforce to the mine, would reduce pressure on the existing roading network. The report noted that neither the BDC – Operations section, nor NZTA had raised any issues regarding the ability of the existing roading network to cope with increased traffic flows, other than heavy vehicles using tight corners. In conclusion the s.42A report considered that the effects of increased traffic from the proposal would likely be no more than minor.

***Evaluation***

324. Having reviewed the evidence and submissions before us, including the supplementary statement from Mr Carr, we consider that conditions can be imposed to ensure that the effects of the proposal on traffic are likely to be no more than minor. We acknowledge however, that some residents, particularly in the Powerhouse Road area may be adversely affected by additional traffic, especially during the construction period. In our view, the development of a Traffic Safety Management Plan, as proposed, will result in cooperation between the applicant and the residents. Should these arrangements not be adequate, and genuine concerns remain unresolved, the BDC has the option to review the conditions under s.128 of the RMA.

**DUST EFFECTS**

325. Most construction projects have a propensity to generate dust, which can cause a nuisance to nearby residents. In this instance, it has been submitted by nearby residents that dust is likely to be both a construction nuisance and an ongoing issue especially from the CHF at Fairdown during stockpiling and loading of coal.

326. Dust from coal is potentially likely to be windblown or tracked by vehicles from the site (and subsequently pulverised) unless there are specific and detailed conditions preventing such developments. It is noted that the applicant has proposed the development of an 'Environmental Monitoring Plan' with reporting systems, together with a Fairdown 'Air

Quality Management Plan' and specific air quality consent conditions for both the Denniston Plateau and the CHF at Fairdown.

327. Ms Harwood, an experienced air quality engineer, provided evidence on meteorological conditions for the applicant and noted that the CHF had the potential to be a significant source of dust, unless it was well managed. She considered that the dust control measures proposed by the applicant were consistent with recognised good practice. She put some emphasis on the fact that the coal would have a relatively high moisture content when it was unloaded onto the stockpiles and that a watering sprinkler system would be installed to maintain the moisture content and keep the yard and roads damp. In summary, she considered that the effects of the discharge of dust beyond the boundary of the property would be no more than minor, and that the discharge of dust from the site could be adequately avoided, remedied and mitigated.

328. In Ms Harwood's evidence she provided information on the National Environmental Standard (NES) for Ambient Air Quality, described the nature of dust together with an assessment process for deposited and total suspended dust, and noted the levels which could be likely to cause a nuisance in sensitive residential areas. She noted the proposed dust mitigation measures as being:

- Bunds surrounding the CHF site on three sides;
- The planting of trees on the bunds;
- Control of vehicle speeds;
- Dampening of yards and stockpile;
- Maintenance and removal of fine material from yard and haul roads; and
- Travel distances reduced through the use of conveyors and close rail siding.

329. Ms Harwood noted that based on the meteorological data obtained from the Westport Airport, which is located approximately 10 km west of the CHF site, she concluded that the predominant winds came from the south-westerly quarter and provided a wind rose supporting that assessment. In her evidence, Ms Harwood recommended that a real time dust monitor be installed between the nearest house and the site, together with wind monitoring instruments.

330. A number of residents, primarily from the Powerhouse Road area, provided written submissions outlining their concerns about potential dust issues but did not appear before us. Mr Miranda–Suarez provided a comprehensive statement of evidence on behalf of the FWRA in regard to dust. He considered that the applicant's dust assessment contained serious information gaps, inaccuracies, and false assumptions to the degree of being inadequate and misleading. He considered that it was not possible for the applicant to implement sufficient mitigation measures at the CHF location, to avoid objectionable dust nuisance for nearby residents, and that the facility posed a serious health risk to the surrounding community.

331. A large part of Mr Miranda–Suarez's evidence focused on questioning the maintenance of the coal moisture content, disputing the predominant wind conditions at Fairdown, and drawing a comparison between the proposal before us and the coal handling facilities at Ngakawau and Lyttelton. On questioning, Mr Miranda–Suarez considered that there were many similarities

between the Lyttelton facility and the proposal but acknowledged that some conditions were different.

332. Part of Mr Miranda–Suarez's evidence included coal dust complaints for Ngakawau and Lyttelton and he put some emphasis on his view that despite significant measures that were supposed to prevent dust nuisance, nearby residents are still experiencing coal dust nuisance.

333. Mr Nurse, who is an adjoining resident, expressed his concerns about likely dust nuisance. Similarly, Ms Kolff who also represented the FWRA outlined her disagreement with the applicant's evidence and put some emphasis on tornado type winds and also disagreed with the applicant's typical and predominant wind directions. She also expressed her concern about coal dust contamination of rain water collection systems and noted that many residential properties rely on catching rain water for their potable supply.

334. The officers in their s.42A report considered that the proposed conditions which required instantaneous monitoring of particulate, would enable strategic management to occur and prevent nuisance dust migration beyond the boundaries of the CHF site.

335. In light of there being no peer review of the evidence presented, we considered it was appropriate to commission a peer review of the air quality evidence and submissions. In terms of the provisions of s.41C(4) RMA, we sought and obtained agreement from the applicant and commissioned Mr Andrew Curtis from URS to undertake a review of the evidence relating to air quality of specific and identified the scope of the report.

336. Mr Curtis found that while using the Westport meteorological data was appropriate and not unreasonable, other data from the nearby Cranberry NZ development provided some different results as to predominant wind direction and speed in the area. The Cranberry data (although having a lesser level of quality assurance) indicated that the predominant and stronger wind directions came from northeast and southeast which had resulted in some over and underestimates of effects. He also found that the discussion on dust generation of the Harwood evidence was generally appropriate, there was little value in increasing the height of bunds, majority of any effects would be experienced within 200 m, and supported the use of real time monitoring. In his report, Mr Curtis provided some changes and additions to the proposed conditions.

***Evaluation***

337. As we have received very little information or evidence, on dust related matters for the Denniston Plateau proposal, we accept that the proposed measures and conditions are appropriate to adequately control dust generation in that area.

338. We understand and accept the concerns of nearby residents that the CHF may from time to time generate nuisance dust, which is difficult to quantify in advance. We accept that unless dust control measures are closely and efficiently managed and implemented, dust could be a major nuisance and that very fine dust (<$PM_{10}$) particles have the potential to cause adverse health effects. Coal dust by its colour alone, is often considered to be a greater nuisance than normally anticipated dust levels in the air as it is highly visible. Before coming to a conclusion, we believe that the community has not given sufficient weighting to the mitigation measures

put before us, and as a result, have overestimated the impact the effects will have after mitigation.

339. We have carefully considered all the evidence and submissions and believe after weighing up all these matters, including the proposed and suggested conditions, that sufficiently robust measures and conditions, can be put into place to avoid and mitigate any adverse nuisance or health effects of dust from the CHF site and on this basis accept the expert evidence of the applicant and the peer review of URS.

340. We acknowledge that infrequent strong winds and extreme weather conditions could on occasions, result in nuisance coal dust being spread some distance from the CHF site, and therefore have imposed remediating conditions which will require the applicant to rectify, by cleaning, any deposited coal dust on, or in residential buildings, resulting from such occurrences. We consider this is reasonable and that links between such events and any such deposition will be possible based on the real time monitor and recorded wind speeds and directions.

**LIGHTING EFFECTS**

341. Potentially, lighting causing glare can have adverse effects on the environment. In this instance there are two separate sources of light glare (other than from vehicles) which are the CPP and EMP mine footprint and the Fairdown CHF.

342. The applicant provided very little evidence, which would indicate that light glare would have any more than a minor effect on surrounding properties from mining activities on Denniston Plateau, based on the significant distances to the nearest residential properties of approximately 3 km. The AEE indicated that contractors would be required to comply with the provisions of the BDP and that all outside lighting would be focused and shaded to minimise spill, glare and distractions to birdlife and other fauna. The response to the s.92 request for further information in regard to lighting at Fairdown, indicated that lighting would be directed away from residential roads and property, and that stockpile lighting would be directed downwards.

343. Mr Pederson, an experienced lighting engineer, said that the impact of lighting can be defined in terms of light spill, glare and sky glow. He provided evidence in regard to the lighting proposals at the CHF and produced details of the actual lighting proposed. He explained the directional elements of the lighting which would avoid light spill beyond the immediate work area. He outlined factors taken into account when selecting lighting for the project site and produced drawings showing how the lighting was designed to focus on specific work areas. Mr Pederson said that the proposed development would be screened by existing flax and manuka from the adjacent SH 67 and that the noise control bunds (with planted vegetation) would take the screening height up to 12 m, which he noted was about the same height as the proposed stockpiles. He said that these measures would be effective at screening all the low level lighting and much of the high level lighting. He noted that these screening provisions would limit glare to an insignificant level and consequently an impact on the surrounding environment that would be no more than a minor In terms of sky glow, Mr Pederson said that

with the proposed directional lighting, lamp characteristics and the minimised lateral extent of illuminated area, the glow produced would be noticeable, but minor.

344. A number of submitters raised concerns about the potential impact that lighting would have on the night sky, the majority of which related to glare effects from the CHF at Fairdown. Mr Orchard, who gave evidence on behalf of the FWRA, stressed the importance of the beauty of the night sky and gave a local example of the effect which lighting can have from an industrial source. Mr Sumner considered that the night sky would be a casualty of the proposal on the Plateau.

345. The s.42A Officer's report accepted that lighting effects should be able to be managed so as to meet the BDP standards and requirements, particularly given the distance to the nearest residences and the various methods available to mitigate glare and spill.

***Evaluation***

346. We note the comments from Mr Pederson when he said that the screening effects of the vegetation to be planted on the bund would be as high as the stockpile i.e. 12 m. However we note the bund planting is only likely to reach that height after a period of up to eight years. Notwithstanding this point, we accept the evidence of Mr Pederson and of the s.42A report in that the effects or impact of lighting, on both the night sky and from glare and light spill, is likely to be no more than minor at both the CHF at Fairdown and at the CPP and mine footprint on the Plateau.

**AMENITY VALUE EFFECTS**

**Fairdown site**

347. At the present time the area where the applicant intends to erect its proposed coal de-watering plant and CHF at Fairdown is a relatively quiet rural area. The site itself is located a few metres from the railway line, adjacent to Deadmans Creek, a short distance from Powerhouse Road.

348. The railway line is also located a few metres to the east of State Highway (SH) 67 and there is a well-established stand of flax and manuka between SH 67 and the railway line, which largely obscures the railway line from the view of passing motorists.

349. Deadmans Creek meanders across and under the railway line a few metres to the southwest of the proposed site.

350. The land is predominantly in pasture or in scrub and regenerating native bush. Some 200 or 300 m away, and to the southeast of the proposed site, is an expansive stand of native bush that presents a visual block to the features behind, except for the coastal escarpment that rises steeply behind.

351. The area presents as a relatively quiet rural area dominated by the SH 67 and the railway line to the west. The area shows signs of being converted to a low density rural/residential

area, with recent subdivisions and houses becoming established in the locality mainly accessed from Powerhouse Road. Much of the opposition to the application comes from residents and people who live or own properties in the general vicinity of the site.

352. We would not have thought that it could be claimed that the area was a quiet isolated undisturbed rural area because of the location of SH 67 and the railway line, and because of the presence of the dwellings themselves, although we agree that the limited scale of pastoral and horticultural farming in the locality will mean that many of the more common noisy rural farming activities are unlikely to be present. We accept however that the locality, apart from the SH and railway, can be considered as a relatively tranquil rural setting.

353. The area enjoys some good views over the coastal escarpment and the Mount William Range behind, and such elevated sites as there are, will enjoy more expansive views of the coastal plain and the sea.

354. The air quality in the area is good, being rather better than in nearby Westport where the smell of the burning of coal by residents is particularly noticeable in the evenings.

355. Overall, we would assess the quality of the area from an amenity perspective to be on the high side of moderate.

356. It is our conclusion that the impact of the proposed activity on people living at Fairdown, particularly on the east of SH 67 will be significant in terms of views, noise light and dust discharges in the absence of satisfactory mitigation measures, although we think that these impacts will to a large extent, be mitigated naturally for the residents who live to the east of the large stand of native bush that presently exists in the area, some 300 to 400 m to the east of the site.

357. It should also be noted that several land owners who live or own land close to the proposed CHF initially submitted in opposition to the application, withdrew their opposition and changed their position to one of support. This included some property owners who were closest to the proposed facility and who would be most affected if the proposal were to proceed.

**Denniston Plateau**

358. The amenity values of area where EMP mine footprint is to be established are very different from the flat rural area at Fairdown. This area comprises a very unusual combination of sandstone pavements, rocky outcrops and incised waterways and gullies, with a high degree of natural character created by the unusual landforms themselves and the unusual vegetation types that have established themselves on them.

359. Added to this state of affairs is the presence on the land of unusual and unique flora and fauna, which once one is aware of their presence, adds further to the amenity value people enjoy. The quality of the natural character and landscape elements that contribute to the areas amenity is very high in our opinion.

360. Added to these characteristics is an open space quality enjoyed by visitors, particularly those seeking enjoyment from recreation pursuits such as mountain biking and walking.

361. The evidence was that these activities are well established, even if they are not heavily utilised, which says more about the relative geographic isolation than anything else. We shall refer to the recreational activities later in our decision.

362. The area is also blessed with very high landscape values which we have already referred to. The views that can be seen from parts of the site are outstanding and give a sense of remoteness. Views can be obtained over the rest of the Plateau itself, the coastal plain, the sea, and over Mount Rochfort and the impressive Mount William range to the east are dramatic and memorable.

363. The landscape of the Denniston Plateau generally, is complimented by a high heritage element with many mining relics being present, which one witness described as comprising one of New Zealand's principal historical industrial sites.

364. On first appearance the Denniston Plateau looks nothing particularly significant, but the. More knowledge that we accumulated as to its myriad of special features, brings us to the conclusion that its amenity values are high and unique.

***Evaluation***

365. With respect to the site of the CHF at Fairdown we were convinced that with the implementation of the mitigation measures required by the conditions we have imposed, the significant adverse effects that we have identified can be avoided and mitigated to the point where the effects can be considered to be no more than minor. We appreciate that the FWRA may not agree with this assessment, but we were satisfied that, however well-meaning these residents may be, they have over-estimated the impact the effects will have once they are mitigated.

366. We see noise as being an effect that can be readily attenuated by conditions, and that the main impact of noise will be the impact of the low noise generated over a long period of time. We have addressed this aspect and the mitigation measures that we propose in the section headed "Noise".

367. We also accept that the discharge of dust may be a problem from time to time and we have imposed what we consider to be quite stringent conditions on the applicant to deal with this.

368. We also believe that with dust, the fact that dust can sometimes be visible has a greater nuisance impact on people than the harm it may cause, and this can be exacerbated by the black colour of coal dust as opposed to the lighter colour of dust discharged naturally, or from the roads, the rail line or the surrounding rural area.

369. We believe that the bunds proposed by the applicant, together with the planting regime that we have required, will largely mitigate against the adverse visual effects created by the imposition of the CHF. Indeed we would go so far as to say that the most significant visual

impact of the establishment of the facility will be the linear impact of the level nature of the bund, which will in time of course be broken by the growing trees.

370. With respect to the mine footprint, CPP, power lines and pipelines, it is our opinion that the impact on the amenity values created will be temporary (5-12 years) and will largely cease when the mine closes, which will be in very short order in the way of things. The mine site will be rehabilitated to a very high level which will sooner, rather than later, mean that all obvious signs of mining will be gone. In due course the only visible signs that the mine ever existed will be the linear slopes of the rehabilitated benches which will contrast with the irregular nature of the surrounding features, together with such records and display features the NZHPT and the applicant agree upon.

371. The lasting impact on such things as landscape, views and recreational activities will be very limited in our opinion. There will be a lasting impact on heritage values as the mine will destroy such heritage items as presently exist, but we have found that the number of heritage items within the mine footprint are insignificant and of only low to moderate value.

372. We have imposed a condition requiring the applicant to remove all buildings and infrastructure from the site, including any sign of access or pipelines, and that will also see the natural context of the site, together with tracks restored as closely as can be to the original, thereby largely avoiding any ongoing effects on above ground amenities.

**RECREATION EFFECTS**

373. Evidence on recreation effects was presented to us by Mr Greenaway on behalf of the applicant. In summary he said:

> *"The degree to which the proposal will have adverse effects on recreation and tourism amenity off the Denniston Plateau is likely to be very slight. They may be associated with local perceptions of effect on whitebaiting on Deadman's Creek and the Waimangaroa and Whareatea Rivers, although the Aquatic Ecosystems Assessment of Effects and evidence of Mr Patrick indicates the ability to manage discharges for little real effect. The Fairdown load out area is proposed to be well screened and will form only a very small element of the experience of driving on SH67, if it is noticed at all…On the Plateau, the outcomes espoused by the West Coast Conservation Strategy 2010-2010(DOC 2010) (dealing with public access and enjoyment of the Buller Coal Measure Ecosystems and Landscape) remain possible....The only limitations are some restrictions on the existing suite of mountain biking options, the need to re-route those affected and to re- establish the four wheel drive access to Mt Rochfort, as proposed by the Applicant. Importantly the Heritage experience of a visit to Denniston will be substantially unaffected, and the parallel option to visit an operating mine may appeal to many visitors."*

374. Mr Greenaway went on to say that residual adverse recreation amenity effects from the establishment and operation of the mine will relate to visual amenity and the effects from the CPP and other small items of infrastructure.

375. Overall, Mr Greenaway found that the proposal represented some minor losses to recreation and tourism amenity as a result of localised noise and visual effects and localised activity displacement such as mountain biking .

376. Although some of the submitters, particularly Ms. Martin for Forest and Bird, gave evidence on what they saw as the high value of recreation opportunities on the Plateau, no evidence was placed before us seriously contradicting what Mr Greenaway said and we accept his conclusions. A submission was received from Paul Comesky and the Buller Cycling Club that identified existing mountain bike tracks affected by the proposal and which formed part of the "Whareatea Circuit" and the "Sullivan Circuit". In addition parts of other tracks were affected being a connection between the Whareatea and Sullivan circuits and a track along the Escarpment Road would be limited by the proposal. The applicant has addressed this concern by holding discussions with the Club and agreeing that it will fully rehabilitate the tracks on conclusion of mining.

377. Mr Greenaway advised the Hearing that of the tracks affected only the Whareatea Circuit was substantially affected by the proposal and this represented only 17% of the currently available distance of track. The Sullivan Circuit he said could be retained by adopting a minor diversion.

***Evaluation***

378. It does appear therefore that there will be an impact on the cycling opportunities, but it will be limited and short lived. In due course there will be no permanent impact on the cycling or walking opportunities in the area.

**CULTURAL EFFECTS**

379. Although a submission was made by Te Runanga o Ngati Wae Wae addressing the matter of cultural issues, it was withdrawn before the hearing and no one addressed us on the matter of the cultural impact of the proposal. The s.42A report recorded-

*"A cultural Impact Assessment (CIA) for the mine development was prepared by Te Runanga Ngati WaeWae (Ngati Waewae). This assessment identified issues of concern and detailed adverse effects which Ngati Waewae requested be avoided:*

- *Any deterioration of the quality of water bodies – monitoring needs to confirm improvements.*
- *Unnatural changes to the sediment flow and patters of deposition – monitoring needs to confirm no adverse impacts. Monitoring of the river mouth is particularly important – consistent with ki uta ki tai.*
- *Any encroachment of adjacent land uses onto the river margins and riverbeds.*
- *Any de-watering or loss of small aquatic resources including streams and springs throughout the catchment – hydraulic monitoring is required.*
- *Any loss of access to sites of significance, especially remaining mahinga kai sites.*
- *Any loss of mahinga kai habitats and mahinga kai species.*
- *Any loss of wahi tapu and wahi taonga"*

380. The report also noted that the submission from Ngati Waewae stated that it was working through mitigation measures with the applicant. We assume this must have been successful

because the submission has been withdrawn. We congratulate both Ngati Waewae and the applicant for resolving these issues. There was a submission lodged by Ngai Tahu properties, but its concerns also have been addressed and it now supports the application, or at least is not opposed to it.

***Evaluation***

381. With this in mind we find that as the above matters have been addressed by us in our decision we find that there are no matters of a cultural nature that prevent this application from proceeding. We are satisfied that the proposed conditions of consent will ensure the above identified issues have been adequately addressed.

**CLIMATE CHANGE EFFECTS**

382. Several submitters raised the issue of climate change in their submissions, but we were only addressed by Forest and Bird, WCENT and Ms Fitzsimons on the issue at the hearing. Ms Fitzsimons showed us a DVD from Professor Dr James Hanson on the topic which was presented to us as evidence.

383. In basic terms, the argument was put to us that coal when burnt, is a major cause of $CO_2$ emissions and such emissions constitute a significant part of the total human activity that is warming the atmosphere of the Earth, leading to various weather changes. We were advised that Ms Fitzsimons and others saw the EMP as contributing to this state of affairs and that the activities of Ms Fitzsimons (and presumably Forest and Bird) are designed to prevent the opening of new mines in New Zealand and presumably elsewhere to eventually prevent the mining and burning of coal altogether.

384. It was made plain to us that if we did not see fit to refuse consent to BCL to mine coal from the Plateau, a series of further judicial challenges would be forthcoming to bring the matter before the highest judicial authorities in the country.

385. Be that as it may, we have given very serious consideration to the views of Dr Hanson and Ms Fitzsimons who is a person we very much respect in environmental matters. We cannot say that we disagree with any of the sentiments concerning climate change and its potential danger as expressed by Ms Fitzsimons and Dr Hanson, but it is our opinion that the effects of burning coal on global "climate change" as such is not a matter that we can properly consider in our consideration of this application. Even if we thought that we could, we would find that the effects of this proposal if it were to proceed, would be very much less than minor on the weather patterns of the world in general and the country and the West Coast region in particular and so we do not propose to refuse consent on this ground.

386. We note we are required to have particular regard to the effects of climate change under s.7(i) of the RMA. In order to do that we believe that in considering the application we have to have regard to the effects of climate change.

387. We were not in fact given any information or evidence on what impact the granting of consent to this application would have on any change that might occur to weather patterns and any resulting consequences on the Denniston Plateau. We were told however, that the total contribution that the coal extracted from this proposed mine would add "a fraction of one per cent" to the total annual world emissions that are apparently creating the problem.

388. We accept that even if human made emissions are not the cause of climate change, but are contributing to and exacerbating an existing atmospheric warming process that may be underway, it makes no sense at all to add to the problem. From a practical point of view, we believe that it is incumbent on decision makers to take whatever meaningful and practical steps that can to avoid or minimise the problem.

389. We have formed the view however that we three hearing commissioners in Westport, New Zealand, will be making no practical and meaningful contribution to the problem by refusing this consent on this ground, and we do not think it would be lawful of us to do so. We think that a refusal of this consent on the grounds that it would be creating some kind of precedent thereby contributing to the end of climate change and global warming would be quixotic and meaningless on a world scale, where it is obvious that the problem must be addressed.

390. We are legally bound to restrict our consideration to the actual and potential adverse effects of the proposed activity on climate change. We accept the applicant has not made application to burn the coal in New Zealand by way of application for a discharge permit under s.15.

391. We note that Section 7(i) requires us to take into account "the effects of climate change" on the environment, but we interpret this to mean that we must take into account the effects that climate change might have on the outcome of any application that we are considering. We do not think that climate change is a relevant matter that we need to consider in respect of the mining operation itself for which consent is sought. We do not see Section 7(i) as requiring us to investigate the effect of the application on the global climate change situation.

392. Section 104E of the RMA states-

> *"**Applications relating to discharge of greenhouse gasses***
>
> *When considering an application for a discharge permit or coastal permit to do something that would otherwise contravene section 15 or section 15B relating to the discharge into air of greenhouse gasses, a consent authority must not have regard to the effects of such a discharge on climate change except to the extent that the use and development of renewable energy enables a reduction in the discharge into air of greenhouse gasses either-*
>
> *(a) In absolute terms ; or*
> *(b) Relative to the use and development of non renewable energy."*

It will be seen therefore that the prohibition against considering climate change in consent applications under the RMA is essentially confined to applications for a discharge permit to discharge greenhouse gasses into the air. Although there is included within the suite of consents a discharge into air application, it relates to dust emissions and not the activity of

burning coal and the consequential release of greenhouse gasses. This means that we are not prevented from considering the contribution to climate change that result from this application if we think it relevant to do so.

393. It seems to us that there is no complaint by submitters in respect of the greenhouse gasses discharged into the air by the mining activity itself. Although the mine creates what might be referred to as a significant carbon footprint when one considers the use of petrol and diesel driven trucks and machinery, and the possible release of gases to the air as part of the ordinary mining activity, no submitter presented a case against this state of affairs.

394. Ms Fitzsimons, Dr Hanson, and Forest and Bird were concerned about the consequences of the discharges of $CO_2$ and other gasses that would be discharged to the atmosphere when the coal was burned at its ultimate destination. We understand that the coal that will be produced by the Escarpment Mine will be high quality coal that is likely to be used in steel manufacture in India and China.

395. It seems to us that the RMA does not deal with global effects or effects that occur beyond New Zealand's territorial boundary, unless possibly it can be said that they affect people living in New Zealand at the same time.

396. That being so, the effects generated in India and China are beyond the practical area of enforcement and application of the Act. The end use and effects generated by the final use of goods or materials created by a process for which consent has been sought, has not been considered by the Environment Court as a matter that need be considered by the decision makers in an application for resource consent to the initial process.

397. We think that the lack of information provided by the submitters precludes us from finding that the coal that will be produced by this mine will have effects on others that are significant or more than minor within the meaning of the RMA. If the total greenhouse gas emissions that will result from the coal produced by this mine, are "less than a fraction of one percent" as conceded by the submitters, that means presumably that the increase in temperature will be also a fraction of one percent, as will be the weather pattern changes and the increase in sea level. We have no evidence before us that contradicts that natural progression of circumstance. In that context in respect of s.104 and s.104D of the Act, the effects of the contribution of the EMP coal to the world climate change problem caused by greenhouse gas emissions must be trivial and mere bagatelle.

398. It may be contended that the contribution that the burning of coal produced by the proposed Escarpment Mine will cumulatively create an effect that is more than minor. In our view even if an effect can be considered cumulative to others, it is only when the combined effect becomes adverse or more than minor , that an application for consent should be refused. We were given no evidence to suggest that this was or would be the case here.

399. It is very clear to us that the phenomena of climate change can only be addressed in any meaningful way by governments at a national and international level, and in a political manner in this country. If coal mines are to be seen as encouraging climate change in a significant way, it must be a political process to prevent them from being established and operated. We do not

see the RMA as a vehicle designed to meet such political aspirations, well-meaning as they may be.

**SOCIAL AND ECONOMIC EFFECTS**

400. The applicant in its AEE claimed that the proposal would improve public safety by removing the remnants of previous underground mining, which included areas of pillared land. We assume by this that the applicant means that there are within the mine footprint land areas that might be subject to subsidence and collapse if left to nature. There was no evidence specifically addressed at the point, but we can accept that the claim is correct. We do not think however, given the low level of human activity on the site, that any significant danger results from the claimed state of affairs.

401. The other major health and safety issues relate to traffic, noise, dust and lighting which we will discuss separately later in our decision.

402. We also accept that there will be safety issues raised by the mining operation itself, but that such dangers are not public dangers and are internalised on site and need not be considered here.

403. The most compelling aspect of the applicant's case by far was the fact that the proposed EMP will bring very substantial economic benefits to the West Coast generally and the Buller District in particular.

404. The applicant called evidence from Mr Butcher an economist who gave evidence on economic issues. He stated that the mining industry provided "*…a hugely significant part of the West Coast regional economy."* He reported that 2010 statistics indicated that mining constituted 21% of total Buller employment including 290 jobs in coal mining and some 600 mines in mining support.

405. It is clear to us that coal mining is very important to the economic life blood of the Buller district and sustains much of its present vitality. With respect to the direct benefits emanating from the proposed EMP, Mr Butcher stated:

> "T*he mine is expected to generate 225 jobs during operations at full capacity of 1 million tonnes per year. Associated with this level of activity is $132 million/year of added value of which $10 million/year is in the form of wages and salaries. Average salaries will be in excess of $100,000/year and are extremely high by New Zealand standards..."*

406. Mr Butcher calculated that over the predicted life of the mine the direct income from the mine would amount to $1,132,000,000 with added value including government royalties of $544,000,000 and gross salaries of $125,000,000.

407. Mr Butcher also pointed out that in addition to the direct benefits, there were indirect benefits and flow on effects arising from the purchases made by the producer, and household spending by the employees. The beneficiaries of this flow on effects include rail and port facilities, the

sale of explosives, warehousing and part supplies, technical services, business services and expenditure by households.

408. Mr Butcher stated that the mine is expected to generate a total of 418 jobs in the Buller District, and 458 jobs in the West Coast Region (inclusive of the Buller jobs). Associated with a production level of 1 million tonnes per year would be $159 million per year of value added in Buller District including $44 million per year in the form of wages and salaries and $163 million per year of value added in the West Coast Region, including $46 million per year for wages and salaries.

409. Based on a 4.1 year mine life, the mine would generate $670,000,000 of value added in the West Coast Region including $653,000,000 in the Buller District and also $190,000,000 in household income in the West Coast Region, including $182,000,000 in the Buller District.

410. In addition to these benefits, he estimated the setup of the EMP would generate 233 job years of work in the West Coast Region including 142 in the Buller District. There will be $20,000,000 in value added in the West Coast Region including $12,000,000 in Buller, and $13,000,000 household income in the West Coast Region including $12,000,000 in Buller.

411. In addition to the economic benefit to the region of the set up and operation of the mine, we were told by Mr Bohannan (Managing Director of Bathurst Resources), that BCL proposes to spend approximately $15,000,000 upgrading the Port at Westport. He stated the Company would also contribute significantly to the ongoing operating cost of the Port and also the railway link between Westport and Christchurch. Mr Bohannan also said that if the planned co-operation with SENZ continued, the export of coal from the Port at Westport would be optimised and could amount to 2 million tonnes per annum. He stated-

> "*…that would result in Westport having a fully optimised Port operation to a level that would be comparable in functionality with the Port of Lyttelton. The economic benefits to the Region from such a facility, as well as its construction would be immense."*

412. A number of submitters claimed that if the mine proposal proceeded it would have an adverse impact on the value of their property. These submissions were mainly made by persons owning property in the Fairdown area.

413. It has been law for some time now that effects on property values are not a relevant consideration in determining whether a resource consent application should be granted. The diminution of property values is simply another measure of adverse effects on amenity values (*Foot v Wellington City Council* (1988) Env Ct 77/98).

414. We were presented with no evidence from a property valuer or some other person qualified to discuss land values. We have held that the present application will have effects that will be less than minor on the residents at Fairdown and so it is our view, if it proceeds, it will have no lasting significant effect on land values. There may even be an argument that given the proximity of Fairdown to the mine, land values may well increase as workers employed at the mine seek to relocate themselves and their families to the District.

***Evaluation***

415. Even allowing for the fact that Mr Bohannan may well be gilding the lily a little, it is still quite clear to us that the EMP will have a very substantial economic impact on the Buller District and the town of Westport. Westport has not always enjoyed the best of economic times, and it does have other sources of income, but in our view the mining industry offers the region a substantial and reliable source of income that will enable the region's inhabitants to provide for their economic and social well-being which is an imperative under Part 2 of the RMA.

416. The Buller District is presently bracing itself for the prospective loss of the Holcim cement factory together with many jobs. The addition of jobs and income from another mine will be a very welcome addition to the economy of the area.

417. We are required under the RMA to assess and balance the various aspects of the case, including positive and negative effects, in order to determine how the imperatives of the Act are to be determined. The largely uncontested evidence of economic benefits to the region weighs heavily on the side of approving the application in our view.

**CUMULATIVE EFFECTS**

418. There is a high level of agreement that the BCM plateaux are internationally and nationally unique and rare, and that their extent is geographically constrained and finite.

419. All parties agree the sandstone pavement ecosystems cannot be replaced. We therefore consider opencast mining and protection of the sandstone pavement are incompatible activities.

420. The DoC report by Ms Marshall stated that 18.5% of the elevated coal measures on Stockton have been cleared by mining, roading, pond construction and exotic vegetation; and that approximately 6% of the Denniston Plateau has been modified by more diffuse human activity, but it remains largely natural. It noted there are two isolated areas of elevated coal measures ecosystems on the Stockton Plateau within conservation land (approximately 22% of the total area of this ecosystem on the Stockton Plateau); and approximately 2200 ha of elevated coal measure ecosystems on the Denniston Plateau, of which 92% is in public conservation land.

421. Mr Buckingham stated the EMP footprint is approximately 12.5% of the total BCM on the Denniston Plateau and 7.7% of BCM on Conservation Land. He considered the loss was unlikely to have a critical effect on wider ecosystem functioning, and that rehabilitation, weed and pest control management would reduce the effects in the medium-long term.

422. Ms Martin highlighted the fact that the applicant has stated there is approximately 45 Mt of coal available within their permit areas and that this is over seven times the footprint of the EMP footprint. It is clear there will be more applications to open cast mine coal on the Denniston Plateau.

***Evaluation***

423. There is no doubt that Stockton and Denniston Plateau are the only elevated BCM ecosystems in New Zealand, and that it supports indigenous flora and fauna that is both nationally and internationally rare. No party challenged this fact, and we accept the Plateau ecological significance and importance is beyond challenge. The question for us is whether the cumulative loss of this unique and rare type ecosystem has reached a level where the protection and conservation of these ecosystems has become unsustainable. We do not consider we have enough information to answer this.

424. There is also no doubt that there will be further applications to opencast mine coal on the Denniston Plateau. This is evident by the existing mining licenses and exploration permits, and the applicant's open intentions to continue mining in the area by applying for consent duration of 35 years for the CPP, CHF and associated transportation structures. Given there is no uncertainty regarding the future pressure to mine the wider Plateau area, we consider it is reasonable to assume the entire Plateau is likely to be subject to further exploration and further applications to open cast mining in the future. In taking this view, we consider it is important to consider the cumulative adverse effects of the proposal in the context of the ecological values of the Stockton and Denniston Plateau ecosystem as a whole.

425. In considering the current protection afforded to the wider Plateau, it appears the status of the land, as public conservation land, provides no certainty of protection from development. Previous and current mining activity on the Stockton Plateau also indicates that identification of an area as RAP does not provide any secure level of protection from development either.

426. Our consideration of the cumulative loss of BCM ecosystems on the Denniston and Stockton Plateau indicates that there must be recognition and secure protection of the areas of the Plateau which deserve protection under s.6 **before** any further loss of significant areas of indigenous vegetation or habitat can be allowed. The identification of such values must be ecologically based, allowing for the protection of significant areas (i.e. forfeiting future development) to offset the loss future development on the Plateau in less significant areas.

427. The evidence clearly shows that the boundaries of the current Mt Rochfort RAP are not based on protecting all of the 'best examples' of the unique ecosystem or the areas deserving of full protection under s.6(c) of the Act. We have to agree that the boundaries are outdated in terms of the loss of significant vegetation and habitat in the intervening period since the survey was carried out in the summer of 1987/88 (23 years), and they are clearly not based on best practice regarding size, shape and connectivity.

428. Overall, we do not consider we have enough information before us to be satisfied that the cumulative effect of the loss of 140 ha of significant indigenous vegetation and significant habitat of indigenous fauna is less than minor.

**BIODIVERSITY OFFSETS AND FINANCIAL COMPENSATION**

429. The concepts of 'environmental compensation' or 'biodiversity off-sets' are not defined in the Act, but are concepts that have been developed over time in response to situations where direct effects cannot be adequately avoided or mitigated. These concepts have evolved with

case law and the Environment Court has provided some guidance regarding the use and appropriateness of such compensation.

430. Ms Appleyard directed us to the Environment Court's guidance in *JF Investments v Queenstown Lakes District Council, Royal Forest and Bird Protection Society Incorporated v Gisborne District Council* and *Transwaste Canterbury Limited v Canterbury Regional Council,* and submitted the Applicant's proposal had the flowing discernible benefits-
    - Predator control (targeting possums, stoats and rats) on an area of 150 ha centred on the Whareatea Gorge, which identified as significant habitat for *P. patrickensis* ;
    - Predator control of a larger area of 1,880 ha on the Denniston Plateau; and
    - Predator control on 5,620 ha of conservation land in the Heaphy River area, which is identified as significant habitat for the great spotted kiwi, South Island kaka, and *Powelliphanta* land snails.

431. The three sites referred to as the Heaphy River area are part of Kahurangi National Park as are the Heaphy River Flats, the southern Heaphy silver beech forest, and the Ryan Creek hard beech /rimu forest. The applicant proposes to fund predator and herbivore control on these three areas and a 3 km buffer around each area providing control over a total of approximately 19,000 ha. We note in the final suite of proffered conditions that this area has been increased to include the Heaphy northern Rata Coastal Forest, thus increasing the total offset area to 29,804 ha.

432. Mr Buckingham provided further evidence regarding the scale of the compensation proposed and how the offsets can be measured. He outlined the measured positive outcomes for various fauna documented for several mainland island conservation management areas and highlighted benefits have been measured even when conservation areas are smaller than the proposed Heaphy River area. He stated that given the recent significant funding cuts to conservation management, the ongoing control of key biodiversity sites such as the Heaphy River area is very uncertain. He considered the revised proffered conditions provide a framework for measuring and monitoring selected threatened fauna to quantify adverse effects and corresponding positive effects offsite. He agreed with submitters that the benefits of mainland island conservation require management in perpetuity and that the 35 years proffered by the applicant give effect to this requirement.

433. He stated that predators are limiting populations of fauna (particularly on the lowland forest areas) and that the proposed 2,030 ha conservation management area on the Denniston Plateau and coastal hill slope will compensate for the loss of *P. patrickensis* and other fauna that live in pakahi scrub. He was of the view submitters had underestimated the effect of predators on *P. patrickensis.* He considered the existing AHB control programme was not sufficient and needed to be targeted and timed to coincide with increasing pest numbers. He highlighted the need to upgrade the quality of predator control (to target rats as well as possums) and use predictive monitoring to ensure applications are timed accurately to be able to meet target levels of control.

434. The proposed mitigation measures such as rehabilitation and onsite weed control are aimed at avoiding and minimising adverse effects of the proposal onsite. Rehabilitation of the site does not mitigate for the permanent loss of significant indigenous vegetation, as it will not meet the

threshold of s.6(c) after rehabilitation. Mr Overmars confirmed this stating *"The new vegetation would not be regarded as significant under Section 6(c)…".*

435. Ms Martin was of the view that the proposed predator control on the Denniston Plateau (150 ha) is inadequate when balanced against the habitat to be lost. She considered the wider predator control on the Plateau was already being done (as well as on Stockton) and that only protection of habitat can benefit *P. patrickensis* populations. She stated the Heaphy-Kahurangi predator control block (26,000 ha) has been funded and run by DoC since 1994, and will continue into the future as the site is of national significance. She noted that there will be no net environmental benefit and therefore must be considered as financial compensation. Furthermore, she considered the proposed Heaphy River area could not be considered as a 'biodiversity offset' under the guidance of the *JF Investments* decision or the business and biodiversity offset principles BBOP (Schedule 2) of the proposed National Policy Statement on Indigenous Biodiversity. She emphasised that no biodiversity offset can be offered because there is nothing of such high ecological value that is not already protected.

436. Ms Martin urged caution in considering financial compensation or offsets and provided us with the following quote from the Parliamentary Commissioner for the Environment[4] - *'Enhancing the value of one part of the conservation estate to compensate for damage to another (offsetting), let alone going beyond compensation to a net conservation benefit approach, is a change that requires great care to be taken.'* In terms of the value of the financial compensation offered, Mr Martin submitted aerial control over 17,000 ha cost approximately $340,000 every four years. Therefore, the applicant is offering approximately $85,000 per year for the destruction of 200 ha of the Plateau and annual profits of over $100 million per year.

437. Mr North agreed with the DoC report by Sutherland *et al.* that the benefits of the proposed predator control programmes on the Plateau is likely to be low, as the area is protected under public conservation land, the habitat is largely intact, and some weed and predator control is already being done. He considered the design of the proposed control programme did not meet best practice, and noted the proposal would destroy habitat that currently supports significant fauna and proposed predator control work on land that did not support significant fauna. He was of the view that proposed weed control on the Plateau was not mitigation for biodiversity loss, but expected operating practice.

438. Mr North did not assess the ecological value of the proposed Heaphy River area because it did not meet the biodiversity offset criteria and can only be considered as financial compensation.

439. Ms Inwood referred us to Policy 5 of the Proposed National Policy Statement on Indigenous Biodiversity (NPS) which states-

> *"In addition to the inclusion in plans of any other provisions that the plan has or is required to have relating to section 6(c) of the Act, local authorities must manage the effects of activities through district and relevant regional plans (or be satisfied that the effects are managed by methods outside of district or regional plans) to*

[4] Wright, J (2010) '*Making Difficult Decisions: Mining the Public Conservation Estate*'

*ensure 'no net loss' of biodiversity of areas of significant indigenous vegetation and significant habitats of indigenous fauna by:*

*a. avoiding adverse effects*

*b. where adverse effects cannot be avoided, ensuring remediation*

*c. where adverse effects cannot be remedied, ensuring mitigation*

*d.where adverse effects cannot be adequately mitigated, ensuring any residual adverse effects that are more than minor, are offset in accordance with the principles set out in Schedule 2.*

*For the avoidance of doubt, in accordance with the principles of Schedule 2, there are limits to what can be offset because some vegetation or habitat and associated ecosystems, is vulnerable or irreplaceable. In such circumstances off-setting will not be possible and local authorities will need to take full account of residual adverse effects in decision-making processes."*

440. She also referred us to Schedule 2 of the NPS regarding the principles to be applied when considering biodiversity offsets. She noted the proposed NPS is limited in its application to land beyond public conservation land, as the Conservation Act is seen to address the protection of biodiversity in this regard, but considered we could have regard to it pursuant to s.104(1)(c) of the Act.

441. Mr Beale was of the view the applicant has not provided sufficient evidence to establish the proposed offsite measures (Heaphy River area) meet the requirements for biodiversity offsetting in terms of the BBOP guidelines. In this basis, he concluded the applicant has not demonstrated the residual effects will be fully mitigated. He considered the measures should be considered as a form of environmental compensation and that the value needs to be assessed in terms of the guidelines set out in *JF Investments Ltd.* He also noted that for the Whareatea Gorge and Denniston Plateau offset areas to be considered, the applicant would need to confirm the areas would not be subject to any future development.

442. With regard to the 35 year term now proposed by the applicant, Mr Beale considered the benefit is likely to be more substantive (particularly in respect to threatened avifauna), but he noted there is no detail as to how these biodiversity gains can be measured over the duration of the programme and what the desired outcomes are. In view of the uncertainty, he suggested a habitat enhancement bond be held in favour of the Council until the rehabilitated sites (excluding the Heaphy area) is shown to support a similar numbers of threatened species (e.g. great spotted kiwi, fernbird and *P. patrickensis*) populations lost due to the mine development. He also suggested an endowment fund administrated by a trust to maintain the offset programmes in perpetuity. He emphasised the residual effects of the mine development are not capable of being offset and that there is no evidence to refute this. Therefore the measures must be considered to be environmental compensation measures.

443. In the applicant's right of reply, Ms Appleyard confirmed the inclusion of an area of northern rata forest (740 ha) in the proposed Heaphy River control programme in response to perceived inadequacies in the flora offset. She noted Mr Overmars' evidence that the residual effect is the lag time (200-500 years) to fully rehabilitate forest ecosystems, and highlighted

the Denniston Plateau proposed predator and herbivore control (2030 ha) and weed control (1240 ha) for a period of 35 years and Mr Overmars' view that this outweighs the residual effects after rehabilitation. She stated exclusion of the area west of Trent Stream would reduce the coal reserve from 6.1 Mt to 3.9 Mt and would reduce the mine life by 14 months. She considered that underground mining is not a realistic option, and that replacement of the 'lost' resource is not possible at this time.

***Evaluation***

444. We accept that the objective of a 'biodiversity offset' is to offset the direct effects of the proposal by securing equivalent (or better) biodiversity or conservation gains.

445. Although we acknowledge the proposed NPS for biodiversity applies to private land, we consider the direction outlined should be considered as a 'bottom line' and that objectives for public conservation land should be in line with this, and arguably should be of a higher standard.

446. In considering Schedule 2 of the proposed NPS we find the following:
    a) There is likely to be a net loss of biodiversity unique to the BCM ecosystems. There is clearly no 'like for like' gain here for the habitat of *P. patrickensis* or the indigenous flora association types which are unique to the BCM Plateaux. We accept there are likely to be benefits for the great spotted kiwi inhabiting the Heaphy River area.
    b) The proposed Heaphy River area programme is part of an existing predator control programme undertaken by DoC in Kahurangi National Park. There is no evidence to support the contention that DoC will discontinue the existing predator control programme or that taking over the funding of this programme will result in any additional conservation outcomes. Therefore we are not satisfied there are any additional conservation outcomes for biodiversity in the Heaphy River area over and above the results that will occur if the proposed offset did not take place. We have no evidence from DoC on what control work is currently being undertaken or what additional work of conservation benefit could be undertaken with the redirection of funds.
    c) After rehabilitation there will be direct adverse effects from the loss of 200 ha of indigenous vegetation and more indirect effects relating to the change in complexity, diversity and abundance of populations of indigenous flora and fauna (particularly those endemic to the BCM ecosystems). We consider the direct loss of indigenous habitat can only be avoided by not removing areas of significant indigenous habitat or by mitigating the loss by protecting (in perpetuity) commensurate indigenous habitat not currently protected from development. We agree with Mr Beale that the residual effects of the loss of significant indigenous habitats are those that cannot be fully mitigated by rehabilitation and are not capable of being offset. While some species may recolonise the EMP footprint overtime (perhaps centuries), it is accepted it will never be returned to a state that will be considered as significant under s.6(c) and that there is great uncertainty

regarding the future composition, diversity and abundance of indigenous species that may re-colonise the site.

d) The evidence indicates that the BCM ecosystems are unique and irreplaceable, and that the whole of the Denniston Plateau is vulnerable to coal mining interests. We consider that without forfeiting development of areas deserving of protection of the Act under s.6, there are opportunities available to offset the loss of other less significant areas of BCM ecosystems. We consider this application, and others on the Stockton Plateau, demonstrate the fact that RAP areas (an areas of similar ecological value) are not securely protected from future development. The evidence also suggests the remaining BCM RAP areas are not currently sufficient in size, shape or connection to be sustainable into the future.

e) There is no evidence that the biodiversity offset contributes to and complements biodiversity conservation priorities/goals at the landscape and national levels. We consider only that DoC could have informed us in this regard and we have not had the benefit of its perspective in this regard.

f) The proposed Heaphy River offset requires third party approval and therefore there is no certainty it can be achieved and the requirement is not enforceable.

g) We do not consider the proposed offset has been established by a transparent process or that there has been any ability for public consultation regarding how the relevant values are measured and protected. The details of the proposal have been provided late in the resource consent process and we do not accept this process is a substitute for such a public consultation process.

447. Given the evidence presented and our assessment above, we determine the proposed Heaphy River area cannot be considered as 'biodiversity offset,' and therefore we must consider it as financial compensation for the residual effects of the proposal. We consider the BCM ecosystems are indeed "vulnerable and irreplaceable" and therefore such biodiversity offsets (as envisaged by the Proposed National Policy Statement on Indigenous Biodiversity) are limited to protection (in perpetuity) of areas of BCM equivalent to or greater value than the area lost.

448. We consider it is not appropriate to weigh up any proffered financial compensation for any direct effects of the proposal. We accept that financial compensation is appropriate to address offsite and indirect 'ripple' effects, and as such it should not be balanced in the round under Part 2 of the Act.

449. With regard to the proposed predator and herbivore control (2,030 ha) and weed control (1,240 ha) on the Denniston Plateau for a period of 35 years, we consider this to be adequate mitigation for the effects of the EMP on the wider Plateau, and in particular on the areas of significant vegetation outside the mine footprint.

## Chapter 6: MAIN FINDINGS ON PRINCIPAL ISSUES

450. Throughout the preceding Chapter 5 we have examined the effects of the proposal on a range of matters that were bought to our attention through evidence and submissions. In the table below we have, for convenience, summarised our findings with respect to each of these issues.

## Summary of main findings

| Effect of proposal on | Our Findings | RMA |
|---|---|---|
| **Landscape, Natural Character and Visual Impacts** | We accept the evidence that the Denniston plateau is not an ONL, but only by a narrow margin.<br><br>The conclusion that we have reached is that the proposed Escarpment Mine site is part of a Significant Natural Landscape feature that contains elements of a high degree of naturalness and ecological quality of a National scale and importance.<br><br>We also acknowledge that part of the ecosystem, particularly the sandstone pavement and significant indigenous vegetation, which will be destroyed, cannot be avoided, remediated or mitigated.<br><br>We are satisfied that there is sufficient NAF material to form the ELF in such a way that progressive rehabilitation is likely to be achieved and surface water flows can ultimately be recreated.<br><br>We accept that over a long period of time the ELF can be managed to visually blend in with the surrounding landscape. | s.6(a), s.6(b), s.7(f) |
| **Water Quality and Hydrology Effects** | We are satisfied that the proposed erosion and sediment mitigation measures meet recognised standards of 'best practice'. We accept the discharges during the construction phase are temporary, until the water treatment plants and processes are in place and functioning.<br><br>We accept that with 'adaptive management', based on actual monitoring results, ongoing testing and comparison with the Golder model, it is likely the applicant will be able to comply with the water quality standards for Class AE waters in the Whareatea River.<br><br>We consider the construction and | s.5(2)(b), s.5(2)(c), s.6(e), s.7(d), s.14, s.15 |

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| | management of the ELF is key to managing ARD/AMD leachate rates and quality, and are satisfied the applicant has sufficient NAF material available to form a protective layer.<br><br>We are satisfied that the evidence before us demonstrates that the applicant is likely to meet quite stringent compliance limits for the discharge into Deadmans Creek. We note the applicant proposes to meet these standards without any zone of reasonable mixing.<br><br>We accept that the imposition of minimum flows, in accordance with the WMP provisions, will ensure adequate water flows are maintained in the Waimangaroa River.<br><br>We consider the evidence presented indicates that any adverse effects of the proposal on the hydrology of the Whareatea River (and its tributaries) are likely to be minor.<br><br>We are satisfied the proposed maximum rate of discharge into Deadmans Creek will have a minor effect on flood flows and that it has the capacity to convey those flows. | |
| **Aquatic Ecology Effects** | We are satisfied the water quality standards and proposed discharge compliance limits are likely to protect the life supporting capacity of the receiving waters.<br><br>We consider the provision of a minimum flow level in the Waimangaroa River is likely to protect the life supporting capacity of the river and to maintain ecological values. | s.(5)(2)(b), s.5(2)(c), s.6(e), s.7(d), s.7(f), s.14, s.15 |
| **Terrestrial Ecology Effects** | The Denniston plateau has significant ecological values and is part of a unique sandstone pavement and is part of a large, generally intact catchment with high naturalness and biophysical diversity. | s.(5)(2)(b), s.6(c), s.7(d), s.7(f) |

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| | The proposal will result in the loss of approximately 140 ha of significant indigenous habitat and the permanent loss of significant indigenous vegetation.<br><br>It is uncertain after rehabilitation whether the ELF will support indigenous fauna and flora currently found on the site. | |
| **Heritage Effects** | There is a net positive effect through recording and display of historic heritage by providing for greater public understanding and awareness. | s.6(f) |
| **Hazards and Hazardous Substances** | During construction and operation of the proposal there will be normally expected operational hazards. We are satisfied that the controls imposed under the Building Act will be unlikely to introduce unnecessary risks of dam failure. While failure of the slurry pipeline may result in environmental risks we are generally satisfied that any risk to life or property is minimal. We consider that spillages of hazardous substances can be appropriately contained by conditions. | s.5(2)(c) |
| **Noise** | While some noise will be heard, we consider that these levels are unlikely to be much above current background levels, the effects of which will be no more than minor. | s.7(c), s.16 |
| **Traffic** | Some residents in the Powerhouse Road area will be adversely affected by increases in traffic during the construction period, however we are satisfied that conditions can be imposed to ensure that traffic effects would be no more than minor. | s.7(c) |
| **Dust** | Some dust will be generated from the Fairdown CHF, however monitoring equipment together with robust conditions and suppressant measures, should ensure that dust migration from the site should be minimal. Conditions requiring cleanup of migrating dust during normal and extreme weather conditions should be sufficient to ensure that appropriate remediation measures are in place. | s.7(c) |
| **Lighting** | We accept that the effects of lighting will be no more than minor. | s.7(c) |
| **Amenity Values** | The visual and recreational amenity values on the Denniston Plateau are high and | s.7(c) |

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| | unique. Other amenity values such as noise, dust, property values etc. have been separately assessed. | |
| **Recreation** | During construction, some existing recreation facilities such as mountain bike tracks will be temporarily lost. We are satisfied that adequate facilities will be in place during that period which will result in a less than minor effect. | s.7(c) |
| **Social Effects** | We accept that this proposal would generate some adverse social effects, if there were no mitigating conditions. Overall we are satisfied that the social effects on residents, and the community at large, through the imposition of robust conditions, will result in effects that are no more than minor. | s.5(2) |
| **Economic Effects** | There was no conflicting evidence that there will be substantial employment and flow on effects of the proposal. This largely uncontested evidence of economic benefits to the region, weigh heavily on the side of approving the application in our view. | s.5(2) |
| **Climate Change** | Several submitters suggested that the consents should be declined because the eventual burning of coal, probably overseas, would have an adverse effect on climate change. While we agree that this is possible, we are of the view that legislative restrictions provide us with no jurisdiction to consider 'climate change' in the general sense. We consider that there is little evidence which would indicate that the effects on climate change of the mining activity itself will have any more than minor effects. | s.7(i) |
| **Cumulative Effects** | There is not enough information before us to be satisfied that the cumulative effect of the loss of 140 ha of significant indigenous vegetation and significant habitat of indigenous fauna is more than minor in the context of the sustainability of the BCM ecosystems.<br><br>There is no doubt that there will be further applications to opencast mine coal on the Denniston Plateau and a cumulative assessment of the total loss and protection | s.104(1)(a) |

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| | (in perpetuity) of the best examples of the BCM ecosystems must be undertaken before any further consents are granted. | |
| **Compensation /Offsets** | The proposed herbivore and predator control for the Heaphy River area (29,804 ha) is considered to be financial compensation for the direct effects of the loss of 200 ha of significant indigenous habitat and vegetation.<br><br>The proposed herbivore and predator management over 2,030 ha on the Denniston Plateau is considered to be a mitigation for the adverse effects on significant indigenous vegetation of the CPP and coal transport pipeline.<br><br>The proposed weed control programme is considered to avoid, remedy and mitigate the adverse effects of the EMP on the introduction and spread of weeds. | s.104(1)(c), s.108(10) |

## Chapter 7: STATUTORY PROVISIONS

### Overview

451. Amongst the many documents provided to us, and in the evidence and submissions we heard, helpful guidance as to the statutory criteria that we are required to apply and the various parts of the particular plans and policy statements that are relevant to the application, was provided by the applicant and in the s.42A report prepared for WCRC and BDC.

452. The statutory provisions relevant to this application under Part 6 of the RMA are:
- s.104D, which sets out the requirements for granting consent for non-complying activities;
- s.104, which provides the relevant matters to be considered;
- s.105, which sets out the requirements for discharge permits; and
- s.107, which places restrictions on the grant of certain discharge permits; and
- s.108A, relating to bonds.

In addition, s.104B allows us, after considering an application for a discretionary activity or a non-complying activity, to grant or refuse consent and, if granted, to impose conditions under s.108.

### Status of the Activities

453. Within Chapter 4 of this decision, under the s.42A officer's report, we referred to a procedural matter in regard to s.104D relating to 'bundling 'of the applications. We noted at paragraph 89 that all parties had agreed that the application included at least one activity (size of building i.e. including the dam and water supply reservoir footprint) that is classified as a non-complying activity under the BDP. What was not agreed was that the applications should be bundled and assessed as a whole against the provisions of s.104D

454. Ms Appleyard submitted that the activities should be 'unbundled' into their respective components and suggested that the consents sought for the CPP and transportation parts of the project should be considered separately according to the status of each application. She submitted it was important that we do not consider the discretionary activities to be contrary to the objectives and policies of the plan just by the fact that one aspect triggered the non-complying status. She stated that the only part of the BCL proposal that was non-complying was the size of the footprint of the development as it included the footprint of the freshwater reservoir. She considered therefore this component of the development is "…*the only matter where the Section 104D (objectives and policies) test is relevant*". In the event we disagreed with her position, Ms Appleyard submitted it was a rather academic point because the applicant's case had demonstrated that the application as a whole meets both threshold tests of s104D.

455. Ms Inwood considered that the consents sought relating to the mining activity itself (i.e. within the mine footprint) should be considered as a restricted discretionary activity, the freshwater pipeline as a controlled activity, and that according to "the general rule" the remaining consents should be bundled together as the most restrictive classification as a non-complying activity.

456. Ms Inwood considered that the consents sought for CPP, coal transport pipeline and CHF were "inextricably linked" and that one component could not operate without the others. She also pointed out that the applicant has sought different terms for the mine site (12 years) and the transportation/processing components (35 years and unlimited durations) and that the transportation/processing components are likely to remain after the close of the Escarpment Mine, and will likely service other mining operations.

457. As we understand the legal position, it was originally said in *Burton v Auckland CC* [(1994) NZRMA 544 High Court] that the basic principle was that the effects of a development as a whole should be considered and that an assessment of actual or potential effects prepared in accordance with Schedule 4 must take into account relevant cumulative effects "of the development as a whole".

458. This approach was refined by a series of decisions starting with *Bayley v Manukau CC* [(1999) 1 NZLR 568] and *Body Corporate 97010 v Auckland C.C* [(2000) 3 NZLR 513] where it was held that if some of the activities for which consent is sought are restricted discretionary activities or controlled activities, and as a consequence the hearing authority has a limited discretion, then the Hearing Authority may be able to deal with those parts of the application separately.

459. We consider that is what Ms Inwood has done. She said that in her view the correct status should be:

    a) *RC 10/70A Mining and associated activities – restricted discretionary activity.*

*b) RC 10/70B & D-H Transportation and Coal Processing activities – bundled as non-complying activities.*

c) *RC 1070/C Freshwater pipeline – Controlled Activity*

460. We agree with Ms Inwood that this is the correct approach.

**Section 104D**

461. In reaching the determination that the CPP, coal transport and CHF aspects of the proposal must be considered under s.104D, we are required to consider the two limbs or the so called 'gateway test' in s.104D(1) before we can move on to the other statutory matters.

462. Section104D(1) states that we must only grant consent if we are satisfied that either:
   a. *the adverse effects of the proposal on the environment will be no more than minor (s.104D(1)(a)); **or***
   b. *the activities will not be contrary to the objectives and policies of the relevant plan.*

463. We are conscious that the relevant applications need only meet one or other of the threshold tests and that even if it meets both, we retain our overall discretion (under s.104) to refuse consent. We note that there does not appear to be any dispute about what the relevant plans or proposed plans are in terms of s.104D(1)(b).

464. In having regard to the overall assessment of effects, that relate to the transportation and processing aspects of the application, we are satisfied that the adverse effects of the activities are likely to be minor with the imposition of consent conditions. We also find that in the round the activities are not contrary to the relevant provisions of the BDP, RPS, PWMP, PAQP, RPDL and RLWP.

465. Having found the transportation and processing aspects of the application meet both threshold tests of s104D we can proceed with our assessment of the applications under s.104.

**Section 104**

466. Section 104(1)(a) requires us to consider the actual and potential effects on the environment that will occur should we allow this application. Our assessment of the environmental effects is in Chapter 5 and our main findings are summarised in Chapter 6. We note that we find that the loss of 140 ha of significant indigenous habitat and vegetation within the EMP mine footprint will have an adverse effect that we consider will be more than a minor.

467. In terms of our assessment under s.104(b), we are satisfied that the application as a whole is not contrary to the provisions of any relevant national environmental standard (as set out in paragraph 93), any other regulation, national policy statement, regional policy statement or proposed regional policy statement, or plan or proposed plan (as set out in paragraph 88). We note the Proposed NPS for Indigenous Biodiversity is not applicable to public conservation land and furthermore that it is not included by virtue of its 'proposed' state.

468. We note the mine footprint is wholly contained within the Rural Zone of the Buller District Plan, and as Ms Appleyard correctly noted in her closing submissions *"…the application has been made in the context of a District Plan that has been structured to accommodate mining within the rural zone*".

469. All of the planning evidence that we have heard has made it clear to us that mining does have an omnipotent kind of preferential treatment in the Buller District Plan, no doubt because of its importance to the wider economy of the West Coast Region and Buller District as a whole.

470. We find that the proposal is consistent with the policies and objectives of the Buller District Plan and rather unsurprisingly also the Regional Policy Statement that preceded it. We also find that mining is obviously a well-considered activity in the Regional Plans that relate to the activity. While we acknowledge it may be argued that the application is inconsistent with a very limited number of policies, we do not accept that in the round it is contrary to the relevant objectives and policies.

**Permitted Baseline Considerations**

471. Section 104(2) of the RMA states that we "may disregard" any adverse effect if a national environmental standard or plan permits an activity with that effect. This is sometimes referred to as the 'permitted baseline' that exists when determining the extent of the adverse effects. That investigation to our way of thinking includes an analysis of the existing condition or state of the receiving environment and the adverse effects that may be generated by any permitted or controlled activity (with due regard to any controlled activity standards that must be met).

***Regional Plans***

472. Because all of the activities that permit activities of a similar or identical nature to that being proposed in this application are discretionary activities or even more constrained, the applicant can obtain little assistance from the requirement in this case. There are permitted activity rules that apply to some water takes in the Waimangaroa River, but Mr Ridge stated that he considered that the water take proposed by the applicant is above the threshold abstraction limits provided for under the permitted activity rules and accordingly does not impact on the permitted baseline assessment.

473. Mr Ridge reported that the Proposed Regional Land and Water Plan and the Proposed Regional Land and Riverbed Management Plan contained permitted activity rules authorising earthworks that are categorised by "land slope angle to which the earthworks will occur on." However, he considered that generally the greater the slope, the lesser the earthworks are likely to be permitted. He noted that because of the steep slope of much of the applicant's proposed works, they would be considered as a discretionary activity and once again outside the context of Section 104(2)

474. Similarly, Mr Ridge considered that:

> "*Due to the PAF nature of the overburden and the potential for sediment transport to water it is considered that this activity is discretionary in entirety and that the discharge of all waters containing contaminants to land where it may enter water is not authorised under*

*any permitted activity under the (Regional Plan for Discharges to Land) nor the (Proposed Regional Land and Water Plan).*

475. We heard no evidence to persuade us that Mr Ridge was incorrect.

476. Mr Ridge concluded as follows:

*"....the proposed EMP and the CPTSF activities do not comply with many of permitted activity rules in the Regional Plans for the West Coast therefore the overall proposal is beyond the scale and nature of activities that the Plans 'contemplated' could be permitted. It is my opinion that the proposal is so different to the expectations of the plans permitted activities that no regional permitted baseline considerations are relevant."*

***Buller District Plan***

477. Ms Inwood stated that:

*"... the buildings /structures proposed at the Fairdown site are of a scale that they fall as a permitted activity and this is relevant consideration in terms of the degree of acceptable visual/landscape effects. However the majority of the activities associated with the mine development are not permitted therefore reference to the permitted baseline test provides limited assistance."*

**Other Matters**

478. In terms of our consideration under s.104(1)(c) of any other matter '…*relevant or reasonably necessary to determine the application*' we were referred to various documents to which we had regard to including the proposed NPS on Indigenous Biodiversity, Te Runanga o Ngai Tahu Freshwater Policy, the West Coast Conservation Management Strategy 2010, Ngakawau Ecological District Survey Report for the Protected Natural Areas Program, the Building Act 2004, the Dam Safety Guidelines, and the 'Geologic Setting, Gravity Collapse and Hazard Assessment of the Kongahu Fault Zone, Westport' by Kane Scott Inwood.

479. We do not see that any of the matters above have significant implications for the application, but note the lack of any RMA planning provisions to give effect to the protection of the best examples of the BCM ecosystems as is envisaged by the identified priorities of the West Coast CMS and the PNAP report. It seems totally unsatisfactory to us that the clear directives of these documents have not been given effect to by implementation of protection of these areas from development. We note that any further loss of biodiversity on private land (as at 2010) is deemed to be unacceptable, but that the public conservation land on the Plateau appear to have no such statutory requirement under the RMA. In this regard, we record that our decision has been somewhat constrained and to say the least very difficult.

**Section 104 Conclusion**

480. We have formed the view that when all of the various adverse and positive effects of this application are considered in the round, and when the conditions that we have applied and the mitigation measure proffered by the applicant come into play, that none of the adverse effects that we have identified are such that it would be fatal to the granting of the application. We concluded that the application is not contrary to the policies and objectives of any relevant planning provisions.

**Section 105**

481. In terms of s.105 of the RMA, when considering any s.15 (Discharge Permit) matter, we are required to have regard to:

*(a) the nature of the discharge and the sensitivity of the receiving environment to adverse effects; and*
*(b) the applicant's reason for the proposed choice; and*
*(c) any possible alternative methods of discharge, including discharge to any other receiving environment.*

482. We consider the applicant has characterised the nature of the discharges. We accept on the basis of the evidence presented that the Whareatea River is moderately sensitive to the proposed discharges and that Deadmans Creek is highly sensitive to the proposed CHF discharge. We consider the proposed compliance limits reflect the relative sensitivity of the receiving environments.

483. The applicant has discussed the reasons for the proposed method of discharge and the consideration of alternative methods and receiving environments. We accept that in these high rainfall environments that discharge into water is practical and reasonable.

**Section 107**

484. In terms of our consideration of s.107(1), we are prevented from granting a discharge permit to discharge a contaminant or water into water if, after reasonable mixing, the contaminant or water discharged (either by itself or in combination with the same, similar or other contaminant or water), is likely to give rise to all or any of the following effects in the receiving waters-

*(c) the production of any conspicuous oil or grease films, scums or foams or floatable or suspended materials;*
*(d) any conspicuous change in the colour or visual clarity;*
*(e) any emission of objectionable odour;*
*(f) the rendering of fresh water unsuitable for consumption by farm animals;*
*(g) any significant adverse effects on aquatic life.*

485. Pursuant to s.107(2), we may only grant a discharge permit to do something that would otherwise contravene s.15 that may allow any of the effects described in subsection (1) above, if we are satisfied-

*(a) that exceptional circumstance justify the granting of the permit; or*
*(b) that the discharge is of a temporary nature; or*

*(c) that the discharge is associated with necessary maintenance work- and that it is consistent with the purpose of this Act to do so.*

486. As outlined earlier in our decision, the applicant proposes to discharge untreated MIW and stormwater runoff into the upper Whareatea River in extreme high rainfall events. It was submitted that this would be limited to 5% of the time and that such incidence would occasionally give rise to a conspicuous change in colour or visual clarity after reasonable mixing in the receiving waters. It was explained that the occurrence of such overflows would vary over the life of the mine, with an upper limit of 8%.

487. Ms Appleyard submitted we must consider the extent to which the discharge amounts to "exceptional circumstances" or to which it is "temporary" in nature. She considered the test was whether it was *"…out of the ordinary, both in terms of the significance and duration of the activity for which consent is sought and the consequences of refusing consent."* She cited the Environment Court decisions of *Paokahu Trust & Ors v Gisborne District Council* and *Marr v Bay of Plenty Regional Council.*

488. We consider the case law referred to has no implication for this application, as this is for a new activity whereas the cases quoted involved the renewal of consent for discharges associated with established activities and the use of existing infrastructure.

489. Mr Ridge was of the opinion that there are no "exceptional circumstances" associated with the EMP and that granting a discharge on this premise was not warranted. He considered to do so would set a precedent for other new mining proposals. He stated there are existing water treatment technologies to treat the proposed discharges to a level that is unlikely to give rise to any of the prohibited effects in s.107(c)-(g). He considered only short duration discharges in high rainfall events during the construction phase should be viewed as temporary in nature. Mr Ridge noted the evidence of Dr Patrick that these temporary conspicuous changes in the visual clarity of the Whareatea River are unlikely to result in significant adverse environmental effects. Overall, Mr Ridge was satisfied the proposed conditions of consent adequately addressed stormwater potential surge sump bypass during storm events and discharges during the EMP construction phase.

490. Dr Ellis noted the Golder model predicted the capacity of the Recycle Pond will be exceeded 0.43% of the time or an average 1.6 days per annum; the capacity of the SW-WTP's will be exceeded 0.82% of the time or on average 3.0 days per annum; and the MIW Surge Sump will overflow approximately 0.3% of the time or on average 1.1 days per annum. However, he noted that in Year 5 the increased inflow to the MIW Surge Sump is anticipated to overflow in the order of 8% of the time. In answering questions, Dr Ellis was of the opinion that 8% of the time was not what he would consider "rare" events, but that 5% of the time would be acceptable. He noted that in order to meet the water management strategy objective of limiting overflows to 5% of the time, the applicant could increase the size of the sump or increase the capacity of the MIW-WTP, or a combination of both.

491. In addition, Dr Ellis highlighted the model assumes all the ELF surface runoff is directed to the Surge Sump and MIW-WTP, and this may not need to be done if there are low concentration levels of dissolved metals compared to the water quality of the Whareatea River at W-M2 (the

proposed downstream monitoring point in the receiving water). He also noted the increase in the median flow in the Whareatea River (by 8%) by Year 5 from the additional flow currently discharge into the Cascade River catchment.

492. Mr Hewitt noted low or zero flow in the catchments for considerable durations, which is a reason for the zone of reasonable mixing zone being at monitoring site W-M2.

493. Dr Stark noted that there is strong evidence that invertebrates can cope with short term exposure to high levels of suspended sediment from fine clay. Dr Patrick considered the Whareatea River was sensitive to any increase in concentrations of Mg and Zn, but that such increases were likely to be of short duration.

494. The FWRA pointed out that allowing untreated discharge into the Whareatea River (and potentially Christmas Stream) to occur for 5% of the time would equate to 8 hours every week or 168 hours a year. They considered these 'over-topping' events would contaminate the upper reaches of the Whareatea River.

495. Having considered the evidence present we are of the view that the proposed overflows of MIW and/or AMD for up to 5% if the time can not be considered to be temporary or exceptional under s.107(2). While we accept that infrequent and unforeseen discharges in extremely high rainfall events during the construction phase may be temporary, the predicted overflows from the operational phase are not of the same nature. We are concerned that there is no definition of what an extreme rainfall event is and note the very poor potential water quality of the discharge.

496. We have no ability to waive the restrictions of s107, and in this regard we agree with Mr Ridge that the applicant will need to implement such processes and capacities to meet these standards in the receiving water after reasonable mixing. We resolve to limit any such overflows to no more than 5% of the time, but note it is appropriate that the standards of s.107(1)(c)-(g) apply. We are satisfied on the basis of the evidence of Dr Patrick and Dr Stark that there is unlikely to be any significant adverse effect on aquatic life.

**Section 108A - Bonds**

497. We acknowledge that both the applicant and Council Officers, share similar views in regard to the type of performance bond and the assessment procedure for quantification of the bond, and are in agreement that the bond conditions proposed by the applicant as being reasonable and appropriate for a development of this nature. We note that this type of 'rolling bond' as proposed, has been used for several years by both consent authorities for similar large scale mining developments and has shown to be successful and avoids what can sometimes be described as 'double bonding'. Based on these views we accept the performance bond proposals as being appropriate.

**Part 2 (RMA) Matters**

498. Having considered section 104 matters, all our considerations are subject to Part 2 of the RMA. Section 5 (Part 2 of the RMA) states:

1) *The purpose of the Act is to promote the sustainable management of natural and physical resources.*
2) *In this Act,* ***sustainable management*** *means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while-*
   (a) *Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
   (b) *Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*
   (c) *Avoiding, remedying, or mitigating any adverse effects of activities on the environment.*

499. These clauses [s.5(1) and s.5(2)] are the very essence of the RMA. In arriving at a decision we are bound to determine whether or not the proposal, overall, is consistent with the single purpose of the Act in terms of these two clauses.

500. The positive effects of the applicant's case was based on the significant financial and job creation benefits to the West Coast region and in particular the Buller district the proposal would bring, resulting from the creation of 424 jobs and $138 million per year of added value, including $41 million per year of wages and salaries, over an assumed five year mine life. Over the life of the mine, operations would therefore generate $670 million of value added to the West Coast region, including $653 million in the Buller district and $190 million in household income to the region of which $182 million are expected to be distributed through wages to the Buller district. These distribution sums were however disputed by submitters on the basis that many employees would come to the Buller for their 'shift' period and return to their place of residence during their 'off' duty periods, spending their income at their place of residence. This may be the case; however the income and value added assessments were undisputed. We note and accept that considerable efforts have been made to avoid a number of adverse effects. While we acknowledge that the proposal in broad terms, meets the requirements by definition of sustainable management, and while some of the adverse effects are not able to be mitigated, remedied or avoided, offsets and financial compensation are offered as mitigation measures, which are all addressed in more detail in Chapter 5.

501. Section 6 of the RMA is concerned with matters of national importance that this decision is required to recognise and provide for in relation to managing the use, development and protection of natural and physical resources.

502. Section 6(a) *The preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development.* On the basis of the evidence presented we are satisfied the proposal will avoid most of the wetland area identified at the CPP site. We consider that overall the proposal is not an inappropriate development in terms of the relevant statutory provisions.

503. Section 6(b) *The protection of outstanding natural features and landscapes from inappropriate subdivision, use and development.* The Denniston Plateau is not currently recognised within the

Buller District or West Coast Regional Plans as either an outstanding Natural Feature or Landscape, and the neither is the Mt Rochfort RAP. We have determined that the Denniston Plateau is not an Outstanding Natural Landscape by a narrow margin, but accept that the Plateau is a Significant Natural Landscape feature, that contains elements of a high degree of naturalness and ecological quality of a national scale and importance. We also acknowledge that part of the BCM ecosystem, particularly the effects on the sandstone pavement and significant indigenous vegetation which will be destroyed, cannot be avoided, remediated or mitigated.

504. Section 6(c) *The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna.* We accept that the EMP contains vegetation and flora which ranges from highly modified to significant under s.6(c) of the Act, but acknowledge it does not contain the best areas of vegetation and flora on the Plateau or any of the areas identified for protection. In terms of fauna values we consider that the EMP has high ecological values and mining will result in the loss of approximately 200 hectares of indigenous habitat. On balance however we consider that the proposed mitigation and financial compensation will compensate for these losses.

505. Section 6(d) *The maintenance and enhancement of public access to and along the coastal marine area, lakes and rivers.* We have concluded that while public access to some areas will be interrupted during development and mining, there were no specific instances bought to our attention of access restrictions near waterways. Adequate alternative access provisions in the form of mountain bike tracks, will be developed and upon completion of mining, and access ways will be re-established.

506. Section 6(e) *The relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga.* We have been provided with no evidence that would indicate that traditional culture and traditions of tangata whenua will be compromised in any way. We are satisfied that water quality will be maintained with the imposition of appropriate discharge standards.

507. Section 6(f) *The protection of historic heritage from inappropriate subdivision, use and development.* Any adverse effects on historic heritage can and will be adequately mitigated by the imposition of consent conditions and the implementation of a Heritage Management Plan which will result in greater public awareness of historic heritage.

508. Section 6(g) *The protection of recognised customary activities.* There were no recognised customary activities bought to our attention.

509. Other matters that we are required to have particular regard to are provided in s.7 of the RMA.

510. Section 7(a) *Kaitiakitanga.* We note that initial submissions from two iwi, were respectively subsequently withdrawn and were not opposed to the proposal. On this basis we have received no evidence of any concerns.

511. Section 7(aa) *The ethic of stewardship.* Aside from *iwi* stewardship (*kaitiakitanga*), which we have concluded would not be affected, we are satisfied that the discussions between the

applicant and NZ Historic Places Trust, which includes the care of heritage items, will ensure that the ethic of stewardship is not compromised. The land on which the proposal is to take place is stewardship land under the control of DoC, as we have heard no evidence to the contrary, we assume that any stewardship matters between the applicant and DoC will be resolved if an access agreement and concession is provided.

512. Section 7(b*) The efficient use and development of natural and physical resources.* We are satisfied that the proposal will efficiently use and develop the resources to the extent that the proposed land and water uses will enable peoples social and economic well-being. While others may have a different view, we have concluded that the proposal will not impair the social well-being or health of the community, generally avoids, remedies or mitigates adverse effects on the environment and maintains and enhances amenity values and the quality of the environment.

513. Section 7(ba) *The efficiency of the end use of energy.* We are not aware that the proposal will create any inefficient use of energy.

514. Section 7(c*) The maintenance and enhancement of amenity values.* We have drawn different conclusions from residents in the Fairdown area, based on the submissions received. We are satisfied however that the extent of the comprehensive conditions imposed, together with variations proposed during the hearing, will maintain and enhance amenity values so that the effects of the proposal will be no more than minor.

515. Section 7(d) *Intrinsic value of ecosystems.* We are satisfied that with the imposition of appropriate conditions the intrinsic value of ecosystems will be maintained. While we acknowledge there will be a permanent loss of part of the sandstone pavement ecosystem, we accept this area is not considered to contain the best examples for protection.

516. Section 7(e*)* Repealed.

517. Section 7(f) *Maintenance and enhancement of the quality of the environment*. Throughout Chapter 5, and in particular within the sections titled Landscape Natural Character and Visual Impacts, Water Quality and Hydrology effects, Aquatic Ecology effects and Terrestrial Ecology effects we have evaluated the quality of the environment. Specific assessments of these elements can be found in these sections.

518. Section 7(g*) Any finite characteristics of natural and physical resources.* The proposal to mine coal will result in the removal of the vast majority of this natural resource.

519. Section 7(h) *The protection of the habitat of trout and salmon:* No adverse effects on trout or salmon were brought to our attention.

520. Section 7(i) *The effects of climate change.* We have thoroughly assessed the effects of climate change, within the jurisdictional boundaries of the RMA.

521. Section *7(j) The benefits to be derived from the use and development of renewable energy.* While the proposal does not develop renewable energy, the use of energy will result in significant financial and job creation benefits to the West Coast and Buller district.

522. S.8 *Principles of the Treaty of Waitangi (Te Tiriti o Waitangi).* We have concluded that the effects of the proposal on the Principles of the Treaty of Waitangi, or on Tangata Whenua will not be compromised by this proposal.

**Chapter 8: DETERMINATION**

523. We have decided to grant this application, but not without some considerable reservations and anguish. The most and almost overwhelming factor that we had to consider is the enormous financial benefit that the mine will bring to the Buller district and the West Coast region. The proposed mine will bring hundreds of millions of dollars into the region and will provide hundreds of jobs. In that respect the proposed mine will be meeting one of the prime imperatives of the Resource Management Act, which is to enable people to provide for their social and economic wellbeing.

524. As often seems to be the case, this prospective wealth comes at a cost. The real issue with this application is whether the cost is worth paying for the benefits that will be derived. It is the classic development/environment conundrum.

525. The proposed mine is to be situated on the Denniston Plateau, on a very unusual and unique land form, the Buller Coal Measures. This landform is only found in one other area of New Zealand and even that is not identical. The landform, while at first glance appearing to be unremarkable, contains large sandstone pavements interspersed with cracks and gullies of various sizes. The combination of this unusual landform and the extreme weather on the Plateau and the resulting poor soils has resulted in the evolution of some unique and unusual taxa. The carnivorous land snail *Powelliphanta patrickensis* is present within the proposed mine footprint, which forms part of its habitat. Not a lot is known about this secretive creature, and we were given no clear guideline on what impact the removal of the mine footprint from its habitat would have on its sustainability as a species.

526. We also entertain considerable doubt as to whether the off-site mitigation offered by the applicant will be sufficient to compensate for the overall environmental loss that will be occasioned by the new mine. While we think that the mitigation offered in respect of the impact on the great spotted kiwi (being the protection of a large area of bush in the Heaphy River area) will almost certainly ensure an environmental gain by indirectly protecting kiwi and other species, we are uncertain that the applicant's other on and off-site remediation proposals will bear sufficient fruit.

527. One of the major problems confronting us has been the lack of information in respect to the extent the Buller Coal Measures have already been modified and how much has not, and what the resulting impact on the species inhabiting it has been. We also do not know whether the habitat of *P. patrickensis* is, or has been affected to the point where the sustainability of that species is critically impinged. That is not a criticism of the applicant, but more a reflection on the lack of information available. The snail is a threatened species and so any impacts on it as a species must be seriously considered when an application such as this is made.

528. In other circumstances it would have been easy to reject this application had we been inclined to take a more precautionary approach. We are greatly influenced however by the significant economic gains that the district and region and the country as a whole will enjoy if the mine proceeds, and we are obliged to give every one of these matters such consideration as we consider appropriate in the circumstances.

529. It may well be that members of the public would wonder why we anguish over whether a few hundred land snails living in the back of beyond and the unusual landform that is the Buller Coal Measures that hardly anyone gets to see, are worth worrying about if even their complete loss is the cost to be paid for the hundreds of millions of dollars and the jobs that the mine will bring. We however can see that a wider picture is involved. The Resource Management Act is a pragmatic document that allows a sensible, pragmatic approach to be taken in every case. In our view the time may well arrive when there is clear evidence that a mining proposal would materially and fatally injure the great spotted kiwi and *P. patrickensis* as a species. In that case it may well be that the economic benefits of allowing that to occur would not be sufficient and a consent would be refused.

530. Although we think that such a circumstance might be close, we do not think it occurs with this application.

531. We are very concerned at the vulnerability of the Buller Coal Measures and its inhabitants (which we have come to accept are remarkable) to further development and mining. We are alarmed that merely because the bulk of the landform is in the public estate and under DoC's care and protection will not necessarily save it from destruction as an ecological unit in its own right. From the evidence presented to us, it is abundantly clear that large scale mining is poised to invade the entire Denniston Plateau coal reserves which if unchecked, will totally destroy the ecosystems which are present.

532. As we have said there does not appear to be any overall plan in existence that deals with the future exploitation and development of the Denniston and Stockton Plateaux and the Buller Coal Measures in particular and in our view such is now sorely needed and well overdue. We would like to think that DoC or other parties would complete a programme of identifying Areas Recommended for Protection, if it has not already done so, and to consolidate and protect those areas in a meaningful way in the future. In our view it is not sufficient to undertake a study and produce a report on recommended areas of protection, and then 23 years later no further action taken to provide any meaningful (statutory) protection for those high value ecological areas.

533. We think that both the Buller District Council and the West Coast Regional Council should commit to enshrining in their planning documents the results of an appropriate study of the Plateaux ecosystems and the Buller Coal Measures, and to look at fully protecting the habitat of kiwi and *P. patrickensis* by way of appropriate provisions in those planning documents. That would enable miners and the public to identify and clearly understand the areas that could be mined in the future and areas where the protection of the environment would prohibit further development. At the moment, this is decided on an ad hoc basis only which is clearly unacceptable and fraught with difficulty.

534. We suspect that such an approach would also be helpful to the mining industry who would then know what parts of the BCM are unavailable for mining, even if they hold licenses to mine the land.

535. In granting the application we have imposed a number of conditions that we think will mitigate and avoid adverse environmental effects, many of which were volunteered by the applicant and some of which we have determined to impose. We consider these conditions are reasonable, appropriate and enforceable.

536. We note that the applicant has varied the duration sought for the discharge consent associated with the ELF from 12 years to 35 years. We consider this is appropriate given the potential period of time (25 years) it may take for the leachate to meet require quality and quantity standards to enable passive treatment.

537. We also note the applicant is seeking 35 year (or unlimited) durations for the consents related to the ongoing operation of the CPP, coal transport pipeline, and CHF. While we understand that the logic for such an approach is to enable for the longer use of the expensive infrastructure and as a result spread those costs over a longer period, we have declined to grant such time extensions because we do not wish to provide any indication that future consents will be granted to undertake further mining in this area. Such a view is primarily instigated from the lack of any clear study undertaken to determine at what stage mining will irreversibly destroy the Denniston Plateau ecosystems as outlined above.

538. It is strongly our view that the applicant is well within their rights to make application to open cast mine on a piece meal basis, but in our view this prevents us granting consent for the infrastructure for longer than the resource use would necessitate. Thus from our perspective, we consider that it would be in the best interests of the environment and all parties contemplating mining on the Denniston Plateau, to join together to undertake a 'whole of plateau' ecological study, with the very clear intention of identifying where the most important values are located, how these can be protected in perpetuity, and what areas can be mined without further irreversible cumulative loss of ecological values.

Dated this 26th day of August 2011

Terry Archer (Chair)

Sharon McGarry

Warwick Heal

**Chapter 9: CONDITIONS**

For expediency the conditions to this consent are a separate document with its own indexing system.

**Chapter 10: APPENDICES**

**List of Submitters following notification**

*NB – Name in bold indicates heard at hearing*

| **Name** | **Support or Oppose** | **Submitted to:** | **Location** | **Main points raised in submission** |
|---|---|---|---|---|
| GW Anderson | Support | Both | Westport | Employment and financial benefits |
| YG Anderson | Support | Both | Westport | Economic benefits |
| K Bainbridge | Support | Both | Westport | Employment & financial benefits |

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|---|---|---|---|---|
| W Bainbridge | Support | Both | Westport | Employment & industrial benefits |
| KR Barlow | Support | Both | Westport | Employment &financial benefits |
| **TM Baxter** | Oppose | Both | Westport | Oppose development in Rochfort RAP, effluent, water quality, land stability, discharges, separation from KEL, increase AMD, |
| G Begg | Support | Both | Ashburton | Employment |
| GL Boaz | Support | Both | Westport | Job security & economic benefits |
| SJ Brace | Support | Both | Westport | Employment benefits |
| Brightwater Engineers – R Herd | Suppport | Both | Brightwater | General support |
| Brookdale Mining | Support | Both | Westport | General support |
| **Buller Conserv. Group - (J. Mate) - P Lusk** | Oppose | Both | Westport | Environmental & social concerns, greenhouse gases, biodiversity risks, landscape alteration, pollution |
| Buller Cycling Club-P Comesky | Neutral | Both | Westport | Effects on mountain bikers |
| Buller Holdings Ltd | Support | Both | Westport | Economic development, industrial & employment growth |
| KW Butson KP Malone | Oppose | Both | Nelson | Water quality, noise |
| **D Chorley** | Oppose | Both | Ngakawau | Water contamination, dust, noise, ecological effects, climate change, amenity values |
| N Cleine | Support | Both | Westport | Economic & employment benefits |
| G Cox | Oppose | Both | Westport | Water quality, noise, dust, property prices |
| D Craddock | Support | Both | Westport | General support |
| GW Craddock | Support | Both | Westport | Job security and future progres |
| Cranberriez | Submission withdrawn | | Greymouth | |
| Min of Economic Devpt – Crown Minerals Group | Support | Both | Wellington | Economic, employment & social benefits |
| T Currie | Support | Both | Westport | Employment benefits |
| YJ Davidson | Oppose | Both | Greymouth | Environmental damage, heritage loss, roading , environmental impacts |
| RZ de Lee | Oppose | BDC | Wellington | Noise, visual impacts, amenity loss |
| H Dennis | Support | Both | Westport | Employment benefits |
| Director Gen of Conservation – V. Addison | Neutral | Both | Hokitika | Habitat loss, water quality & quantity, increase AMD, flora & fauna loss, landscape & amenity |

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| | | | | values |
| H & P Devine | Support | Both | Westport | General support |
| W Elley | Oppose | WCRC | Whitby | Conservation estate protection, rehabilitation |
| L Elvins | Support | Both | Westport | Job creation, improvements in health services, schools, infrastructure, port facilities |
| R Elvins | Support | Both | Westport | Economic development |
| Fairdown Holdings Ltd | Support | Both | Westport | Employment benefits |
| **Fairdown – Whareatea Residents Assn Inc** | Oppose in part | Both | Westport | Noise , dust, land values, economic effects, amenity values, water contamination, tourism, historical values, destabilisation of land, lifestyle, flooding, stress |
| **J Fitzsimons** | Oppose | WCRC | Thames | Climate change, sustainable use of resources |
| SW Forsyth | Support | Both | Westport | Job creation & economic benefits |
| T Gray | Support | Both | Westport | Industry & employment benefits resulting in increased population |
| BT Haines | Support | Both | Westport | Employment providing environmental safeguards |
| V Harmon & D Morgan | Submission withdrawn | | Waimangaroa | |
| I Harvey | Oppose | Both | Westport | Air quality, dust, amenity values, water & aquatic values |
| AC Hastie | Oppose | Both | Westport | Environmental effects, water pollution, discharge of slurry water, dust, AMD, noise, property values, greenhouse gas, hours of operation |
| R Hicks | Support | Both | Westport | Positive benefits to families , schools and businesses |
| G Hill | Support | Both | Westport | Progress and employment |
| J Hill | Support | Both | Westport | Improve economy |
| M Hill | Support | Both | Hector | Economic benefits |
| SA Hill | Support | Both | Westport | Progress & employment |
| DR Hughes | Submission withdrawn | | Westport | Affected party approval |
| AH Hume | Oppose | Both | Blackball | Property values, visual amenity, noise, dust |
| **S & G James** | Oppose | BDC | Waimangaroa | Water quality, historic sites, dust |
| **Kawatiri Energy Ltd** | Support | Both | Westport | Economic benefits, employment benefits, environmentally responsible |
| G Ricketts & L Kernohan | Submission withdrawn | | Westport | Affected party approval |

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| **AL Kolff** | Oppose | Both | Westport | Noise , dust, land values, economic effects, amenity values, water contamination, visual impact, tourism, historical values, destabilisation of land, lifestyle, stress |
| Land Information NZ – R Burnard | Neutral | Both | Queenstown | Not consulted |
| **H Miranda-Suarez** | Oppose | Both | Westport | Adverse environmental effects, noise, air quality, water & land pollution |
| N Mouat | Support | Both | Punakaiki | Sustainable community, suitable physically and historically for large scale mining |
| F Mountier | Oppose | WCRC | Lower Hutt | Climate change, health implications environmental impacts, AMD |
| MSD Murphy | Support | Both | Westport | General support |
| Natural Capital Partners Ltd | Oppose | Both | Christchurch | Inadequate documentation, impact on future use of natural and physical resources, sustainable management |
| CR Nelson TJ Stringer | Part Opposed | Both | Westport | Opposed to CHF location, dust , noise, light, AMD, amenity values, water quality, discharges |
| **NZ Historic Places Trust** | Oppose | Both | Christchurch | Impact on historic mining landscape, public safety, loss of tracks, |
| NZ Transport Agency | Oppose in part | Both | Christchurch | Water discharges, traffic routes, lighting |
| Ngai Tahu Property Ltd | Not opposed | Both | Christchurch | Supports mitigation to water quantity, supports rationale for slurry pipeline, roading issues, supports CHF |
| JM Nickle RG Walker | Oppose | Both | Westport | Opposed to impacts of mine and CHF |
| G Norris | Oppose | Both | Westport | Coal dust, noise, property values, water quality |
| **M Nurse** | Oppose | Both | Rolleston | Landscape effects, dust , noise, proximity, water quality, impacts on flora & fauna |
| E O'Donnell | Support | Both | Westport | Support development |
| F O'Donnell | Support | Both | Westport | Positive step |
| WS O'Keefe | Support | WCRC | Greymouth | Social , economic advantages, employment opportunities |
| F O'Toole | Support | Both | Westport | Positive economic benefit, employment opportunities |

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| H O'Toole | Support | Both | Westport | Economic boom, employment opportunities |
| C & G Patrick | Oppose | Both | Westport | Noise, pollution, traffic, environment disturbance, dust, water quality |
| **T Peet** | Oppose in part | Both | Westport | Pipeline route, location of CHF, environmental effects, values |
| N Philpott | Support | Both | Westport | General support |
| K Reynolds | Support | Both | Westport | Employment, associated industries, utilisation of harbor facilities |
| Rochfort Coal Ltd | Support | Both | Timaru | Employment and added wealth |
| **Royal Forest and Bird Protection Society of NZ Inc – D Martin** | Oppose | Both | Nelson | Climate change, loss of ecosystems, indigenous vegetation, degradation of RAP, habitat destruction, negative effect on fauna, water quantity change, water mixing, negative effects on wetlands, landscape effects, partial destruction of ONFL, weeds, loss of access, loss of heritage, failure to remove buildings, biodiversity loss |
| J Sail<br>S Duncan | Oppose in part | Both | Westport | Opposed to slurry pipeline route and CHF, visual effects, destabilize hillside, land values, noise, road access, water quality |
| A & P Sara | Submission withdrawn | | Westport | Affected party approval |
| G Smith | Support | Both | Westport | Employment , progress for town |
| Solid Energy NZ Ltd | Submission withdrawn | | Christchurch | |
| J & D Sparks | Oppose | Both | Westport | Water quality, noise, dust, visual pollution, narrow roads, property values, lifestyle |
| **MP & RM Stephens** | Oppose | BDC | Nelson | Opposed to location of CHF, noise, hours of operation, height of bund |
| **KR Stevenson** | Oppose | Both | Westport | Climate change, visual impact, landscape effects, dust, noise, AMD, water quality |
| N Stevenson | Support | Both | Westport | Development and progress |
| RA Strang | Support | Both | Invercargill | Positive community effects |
| **T Sumner** | Oppose | Both | Westport | No long term benefits, many long term economic, social & environmental costs, water quality, flora, fauna, AMD, ecosystem destruction |

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| B & A Sutherland | Support | Both | Westport | Employment & flow on effects |
| JL Taylor | Support | Both | Westport | Economic development, employment opportunities, industry growth, increased harbor trade |
| Te Runanga Ngati Waewae –F Tumahai | Submission withdrawn | | Hokitika | |
| **Transpower NZ Ltd –B Warburton** | Neutral | Both | Wellington | Concern over close proximity, asset protection – suggested conditions |
| A Walker | Support | Both | Westport | Progress, employment, community growth |
| A Walker(Ms) | Support | BDC | Westport | General support, employment |
| WH Walker | Support | Both | Westport | General support |
| RM Wegerer | Oppose | Both | Westport | Adverse environmental effects, air pollution, AMD, discharges, location of CHF, property values, greenhouse gases, hour of operation, |
| **West Coast ENT Inc** | Oppose | Both | Ross | Loss of ecosystem, destruction of habitat, threatened species, landscape effects, wetlands, climate change, weeds, loss of access, loss of cultural values |
| **West Coast Tai Poutini Conservation Board** | Oppose | Both | Hokitika | Loss of unique sandstone pavement, rehabilitation, AMD, weeds, water take |
| Westport Harbour Ltd | Support | Both | Westport | Positive benefits for harbor, community and district |
| **CP & DW White** | Oppose | Both | Westport | Water quality, location of CHF, discharges, Mt Rochfort RAP |
| IJ Williams | Support | Both | Westport | Economic growth, development of harbor, employment and career prospects |

## Site Plans and Diagrams

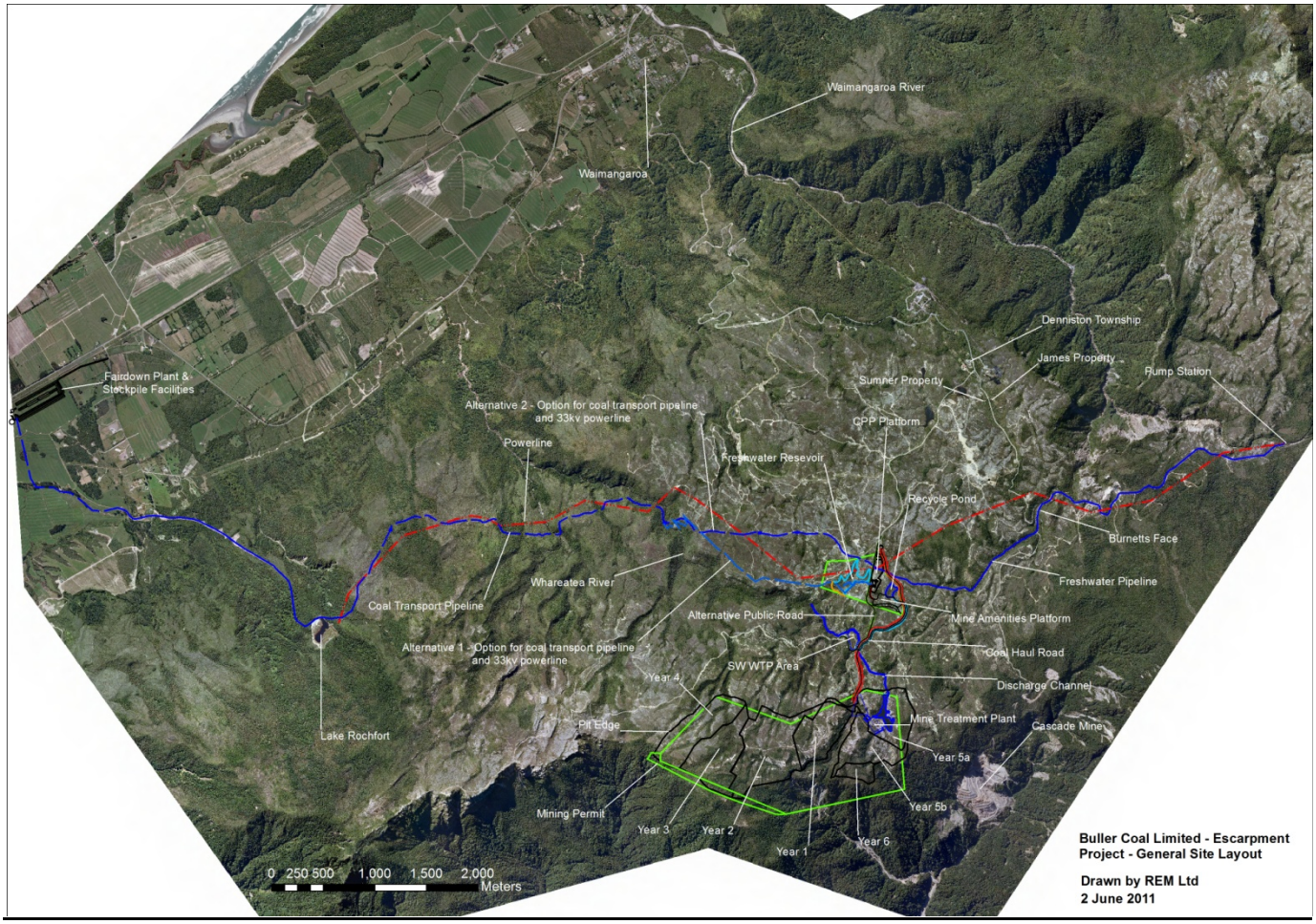


**Figure 1- Overall General Arrangement**

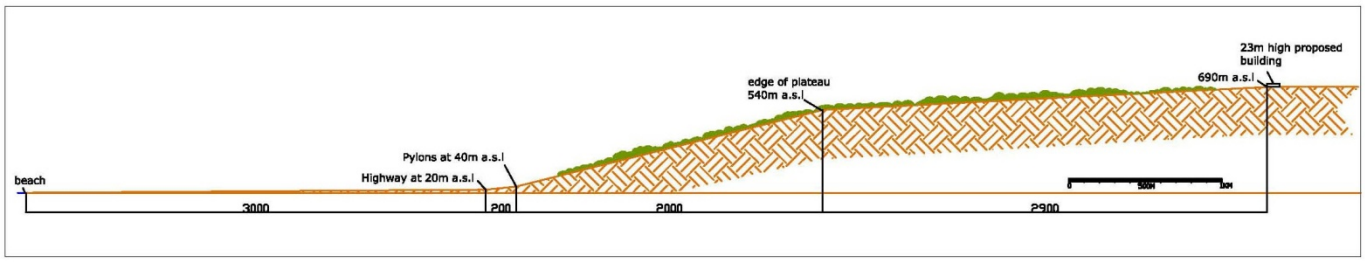


**Figure 2 -Sectional Elevation from CPP to Shoreline**

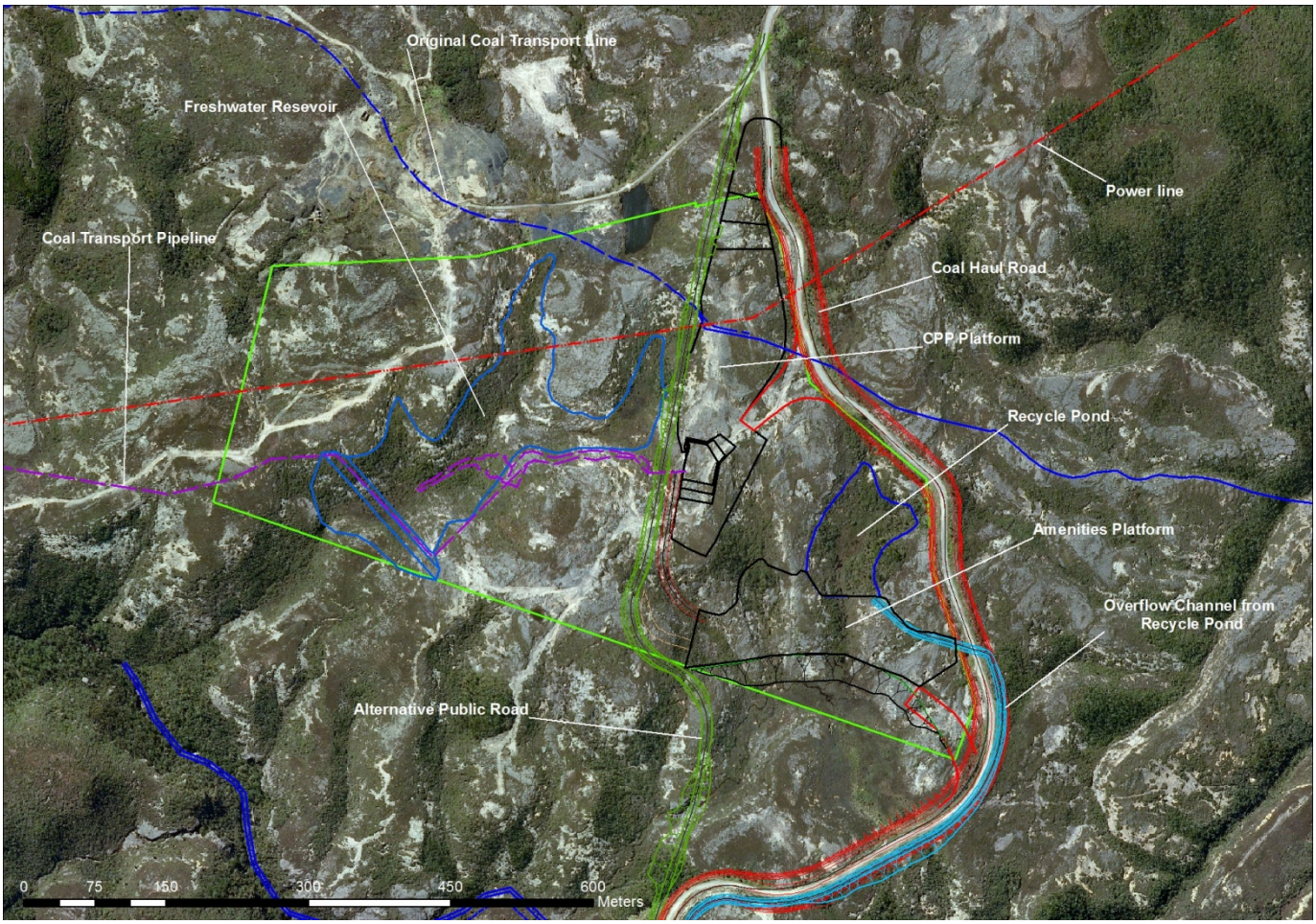


**Figure 3- Plan of the CPP and dam sites**

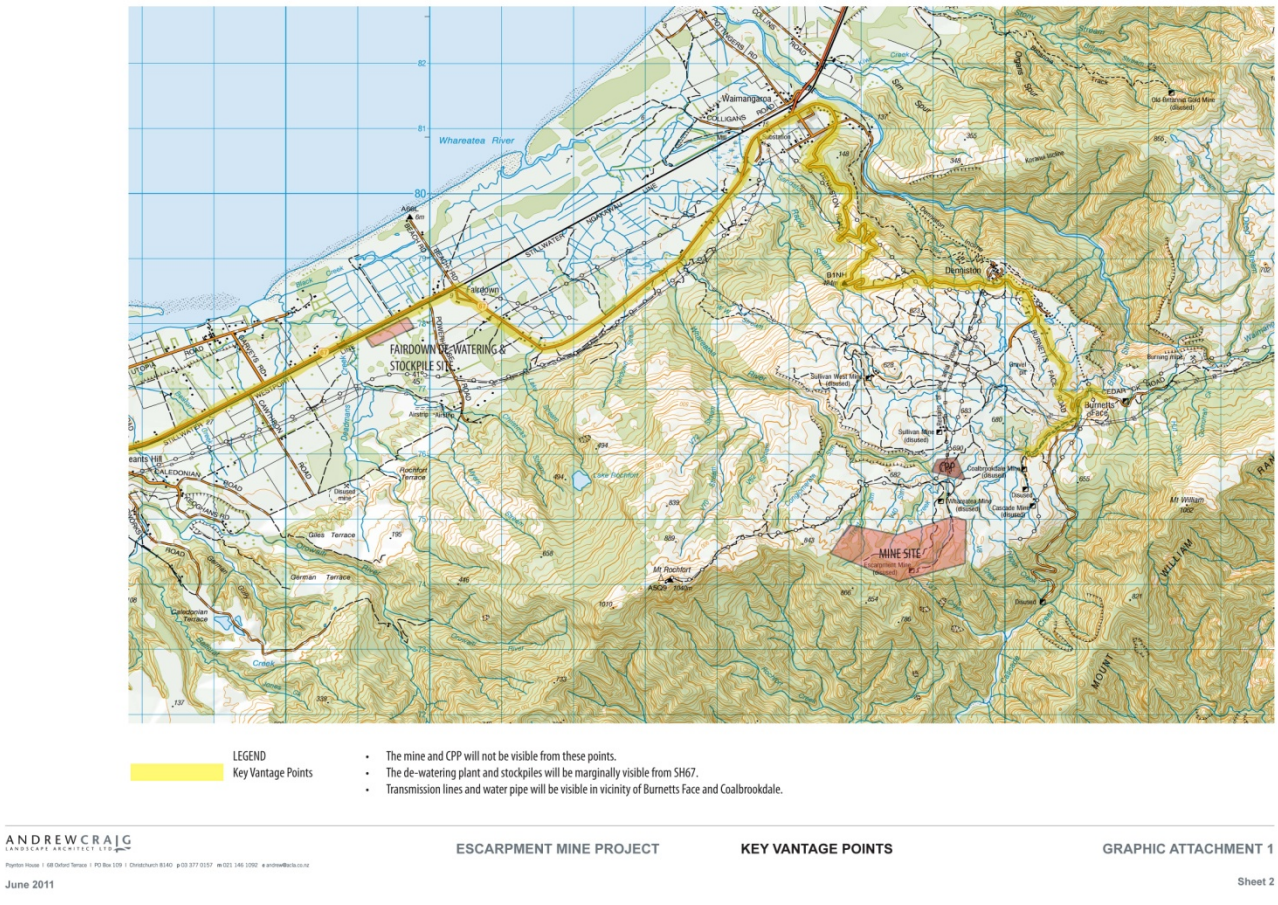


**Figure 4 -Escarpment Mine Project - Topographic Map**

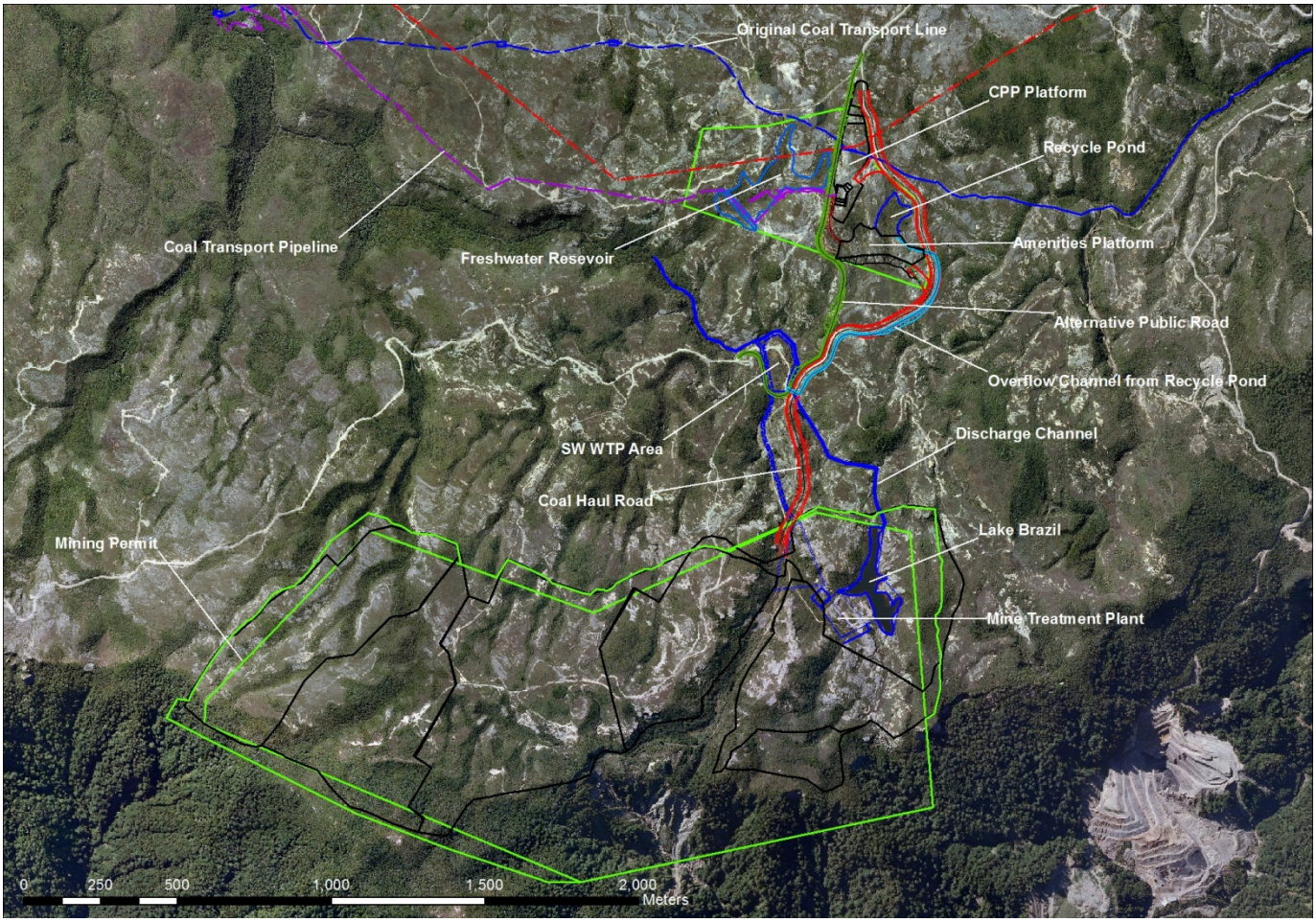


**Figure 5 -Mine Infrastructure Location Map**