

Appendix 3 Approvals and Authorizations Issued by the Province of Alberta and Government of Canada

The following have been reproduced from the best copy available.

The official approvals are the signed ones on file with the source agency. In any cases where the copy included here may be different from the official copy, then the official signed copy is the correct one.

19 August 1997

Mr. F.J. Munn, P.Eng.
Project Manager, Cheviot Mine
Cardinal River Coals Ltd.
Bag Service 2570
Hinton AB T7V 1V5

FAXED

Dear Mr. Munn:

APPLICATION NO. 960313

The Alberta Energy and Utilities Board (EUB) has granted your application for a permit to develop a surface coal mine site in the Mountain Park area. For this purpose, please find enclosed Permit No. C 97-14.

Kindly note that any operations undertaken pursuant to the authorization of Permit No. C 97-14 are subject to the provisions of the Occupational Health and Safety Act and the Mines Safety Regulation thereunder.

With reference to the various conditions under clause 5 of Permit No. C 97-14, the EUB expects Cardinal River Coals Ltd. to work with the EUB and Alberta Environmental Protection (AEP) to establish firm timelines and expectations to discharge the conditions to the satisfaction of the EUB within six months of this date. The EUB would expect to receive annually, for its review and acceptance, a report which demonstrates how the matters referred to have been addressed. It is suggested that use could be made of the combined AEP/EUB Annual Report for this purpose.

Yours truly,



D.I.R. Henderson, P.Eng.
Staff Engineer
Mine Development Group
Resources Division

DH/

Enclosure

cc: R. Stone/L. Brocke, Alberta Environmental Protection
M. Lascelles, Canadian Environmental Assessment Agency
G. Linsey, Department of Fisheries and Oceans

FAXED

19 August 1997

Mr. F.L. Henderon, P.Eng.
Project Manager, Cheviot Mine
Cardinal River Coals Ltd.
Box Service 2370
Hinton AB T7V 1V2

Dear Mr. Henderon:

APPLICATION NO. 960313

The Alberta Energy and Utilities Board (AEB) has granted your application for a permit to develop a surface coal mine site in the Mountain Park area. For this purpose, please find enclosed Permit No. C 97-14.

Kindly note that any operations undertaken pursuant to the authorization of Permit No. C 97-14 are subject to the provisions of the Occupational Health and Safety Act and the Mines Safety Regulation thereunder.

With reference to the various conditions under clause 3 of Permit No. C 97-14, the AEB expects Cardinal River Coals Ltd. to work with the AEB and Alberta Environmental Protection (AEP) to establish firm timelines and expectations to discharge the conditions to the satisfaction of the AEB within six months of this date. The AEB would expect to receive annually, for its review and acceptance, a report which demonstrates how the matters referred to have been addressed. It is suggested that use could be made of the combined AEB/AEP Annual Report for this purpose.

Yours truly,


D.L.R. Henderon, P.Eng.
Staff Engineer
Mine Development Group
Resources Division

D/L

THE PROVINCE OF ALBERTA

COAL CONSERVATION ACT

ALBERTA ENERGY AND UTILITIES BOARD

**IN THE MATTER of a surface coal mine site
Cardinal River Coals Ltd. in the Mountain Park
area**

PERMIT NO. C 97-14

WHEREAS the Alberta Energy and Utilities Board is prepared to grant an application by Cardinal River Coals Ltd. for a permit to develop a surface coal mine site in the Mountain Park area, subject to the terms and conditions herein contained, and;

WHEREAS the Lieutenant Governor in Council has given his approval by Order in Council, numbered O.C. 372/97 and dated 13 August, 1997.

THEREFORE, the Alberta Energy and Utilities Board (hereinafter called the EUB), pursuant to the Coal Conservation Act, being chapter C-14 of the Revised Statutes of Alberta, 1980, hereby grants Cardinal River Coals Ltd. (hereinafter called "the Permittee") a PERMIT to develop a surface coal mine site in the Mountain Park area, subject to the provisions of the Act and regulations and orders pursuant thereto and to the following terms and conditions:

1. The mine site shall be known as the Cheviot Mine Site and be designated as Mine No. 1801
2. This permit shall apply to 7105 hectares, more or less, in Townships 45 and 46, Ranges 22, 23 and 24, West of the 5th Meridian, as shown in Appendix A1 and A2 hereto attached.
3. Subject to other provisions of this permit, the mining methods, site development and related operations shall be in accordance with the application of the Permittee to the EUB, registered as Application No. 960313 on 21 March 1996, and in accordance with any subsequent technical modifications thereof which the EUB may approve.
4. The Permittee shall carry out its operations to the satisfaction of the EUB, and in a manner that
 - (a) will result in the mining of all practical and economic coal within the permit area,
 - (b) will not preclude or render more difficult the recovery of other coal recoverable by practical and reasonable operations, and

- (c) will facilitate land reclamation.
5. The Permittee shall
- (a) for the purposes of providing a template for the proposed Cheviot mine end pit lake establish an ongoing program into the aquatic ecology of the Luscar Mine's Lac De Roche.
 - (b) justify the need for each end pit lake and rock drain on an individual basis to the satisfaction of the EUB and Alberta Environmental Protection (hereinafter called AEP).
 - (c) establish minimum instream flow values in the drainages directly affected by the Cheviot mine and, in consultation with AEP, carry out long-term monitoring of groundwater and surface water quality, including appropriate biomonitoring.
 - (d) undertake to review available control technologies for metals, nutrients, and other compounds within its settling ponds as well as assess the relevance of current water quality guidelines to its effluent discharges.
 - (e) monitor the success of its programs to re-establish native rainbow trout stocks and identify potential alternative areas for habitat enhancement should end pit lakes not prove to be successful.
 - (f) re-examine its mine plan options in the vicinity of Powerhouse Creek and any other area if appropriate to determine in consultation with the EUB and AEP if disturbance of the Englemann spruce-subalpine fir community can be avoided.
 - (g) in consultation with the EUB, continue to refine its mine plan with the goal of maintaining a 1000 m buffer between areas of mine disturbance and the present boundaries of the Cardinal Divide Natural Area wherever practical. In particular, proposed waste rock dumps which currently intrude within this buffer must be re-examined at the appropriate time and their location justified to the EUB. Should the Cardinal Divide Natural Area be expanded, the Permittee will be required to maximize the distance between mine disturbance and the Cardinal Divide Natural Area to the degree practical, recognizing that the 1000 m buffer likely can no longer be maintained. In consultation with the stewards for the Cardinal Divide Natural Area, the Permittee will also ensure that no access points are created or that its reclamation programs do not have a negative impact on existing plant communities.
 - (h) advise the EUB on an annual basis regarding the status of the Carnivore Compensation Program and, within three years of receiving approval for the project and before unmitigable impacts have occurred, shall provide evidence of measurable success in establishing the proposed Carnivore Compensation Program.

- (i) monitor the impacts of its increased traffic on wildlife populations along the Grave Flats Road and make any adjustments necessary to reduce wildlife mortality to acceptable levels.
 - (j) carry out studies needed, in consultation with the EUB, AEP, and Parks Canada, to examine current wildlife movement patterns across the mine site and to establish the likely minimum conditions (e.g. width, degree of cover) necessary for wildlife corridors to be effective, and to establish how such corridors might be accommodated within the mine plan. Ongoing monitoring to identify new mineral licks is also required.
 - (k) monitor changes to public access and use patterns resulting from its development and advise AEP if any of these appear to have unduly increased the risk of wildlife habitat displacement or of either legal or illegal wildlife mortality.
 - (l) if it locates a construction camp at Cadomin, educate workers regarding the area sensitivity and monitor the Cadomin Caves trail usage by its workers and contractors.
 - (m) employ all reasonable methods available to reduce impacts on Harlequin duck populations, including reducing disturbance levels in riparian areas of the McLeod River, MacKenzie Creek, and Cardinal River watersheds, and continue to monitor these populations.
 - (n) prior to commencing any construction work, establish Permissible Noise Levels (as defined by the EUB's ID 94-4) with respect to residences in the Hamlet of Cadomin and the Whitehorse Creek Recreational Area and, in discussion with EUB staff, determine if noise monitoring at the Cadomin Caves is appropriate.
 - (o) undertake to pave the west bypass access route provided no significant safety or other concerns are raised by either the regional authorities or the residents of Cadomin.
 - (p) review its mine plan in consultation with the EUB, the Mountain Park Association, and Alberta Culture to establish appropriate buffers, access, and signage for the Mountain Park cemetery and former townsite.
 - (q) establish a community liaison group or groups in order to provide interested parties with an opportunity to express concerns, learn about proposed company activities, and receive the results of the Permittee's various monitoring programs. In particular, the Permittee will continue its dialogue to the best of its ability with the Cadomin Environmental Protection Agency, the Mountain Park Association, the stewards of the Cardinal Divide Natural Area, the Alexis First Nation, and the Smallboy Camp.
6. Each mining area and external discard site within the permit area shall be individually licensed by the EUB prior to the commencement of any mining activity.

7. The Permittee shall advise the EUB of any technical modifications to the development plan and obtain the EUB's approval prior to effecting such modifications.

8. The Permittee shall, as soon as practicable, advise the EUB and provide a preliminary assessment of any incident or accident affecting or having the potential for affecting safety the environment and being attributable to design features or operational methods which are subject to the approval of the EUB.

9. (1) Attached hereto as Appendix B, and made part of this permit, is the order of the Lieutenant Governor in Council authorizing the granting of this permit.

(2) This permit is subject to the terms and conditions, if any, prescribed by the order of Lieutenant Governor in Council set out in Appendix B.

10. The EUB may

(a) cancel or suspend this permit, in whole or in part, for failure of the Permittee to comply with any provision of the Act, the regulations or the terms and conditions set out herein; or

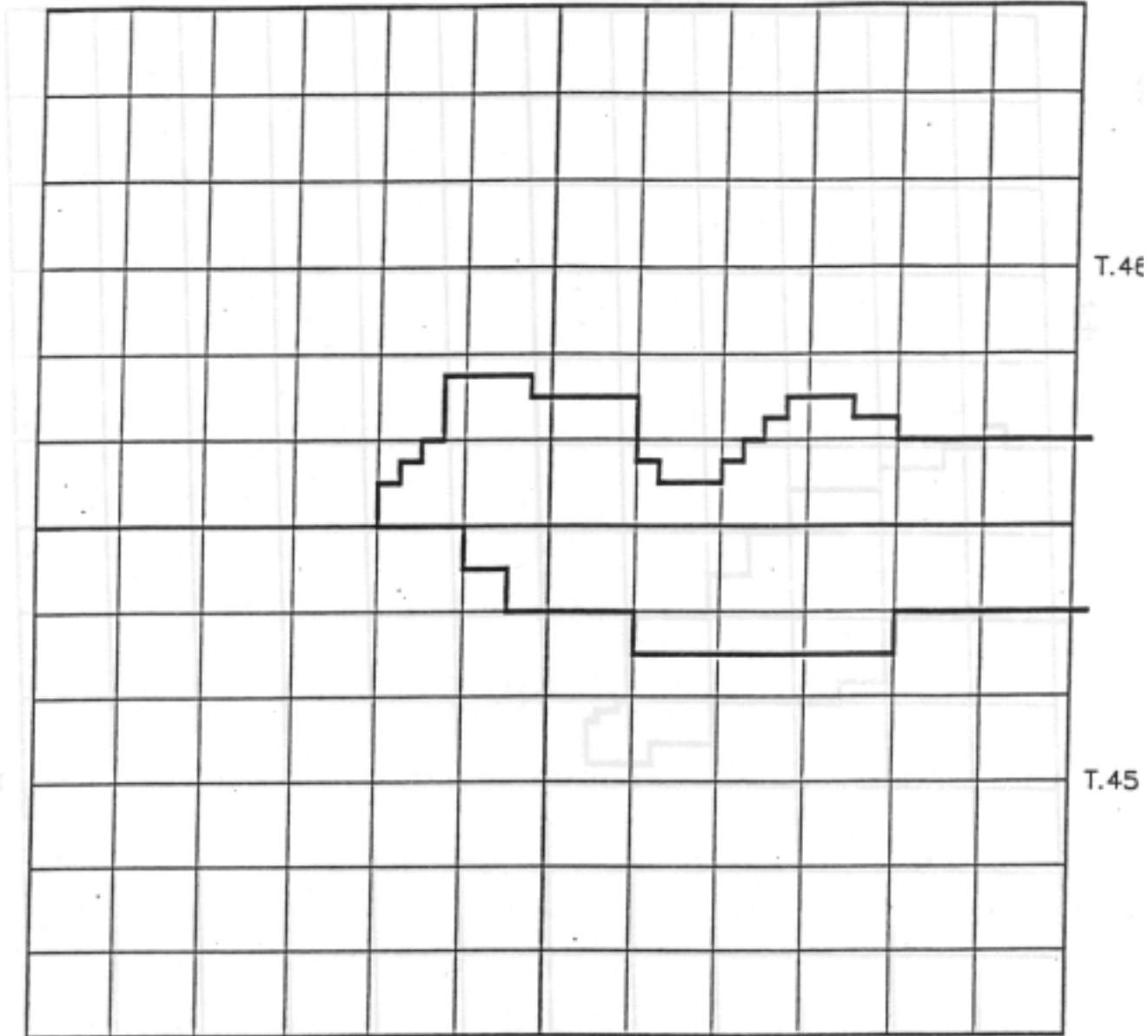
(b) amend this permit or make such other order as it thinks appropriate under the circumstances.

MADE at the City of Calgary, in the Province of Alberta, this 19th day of August, 1997.

ALBERTA ENERGY AND UTILITIES BOARD

R.24

R.23 W.5M.



T.46

T.45

CARDINAL RIVER COALS LTD.-MOUNTAIN PARK AREA

APPENDIX A1 TO PERMIT NO. C 97-14

LEGEND

— PERMIT BOUNDARY MINE NO. 1808



Canadian Environmental Assessment Agency

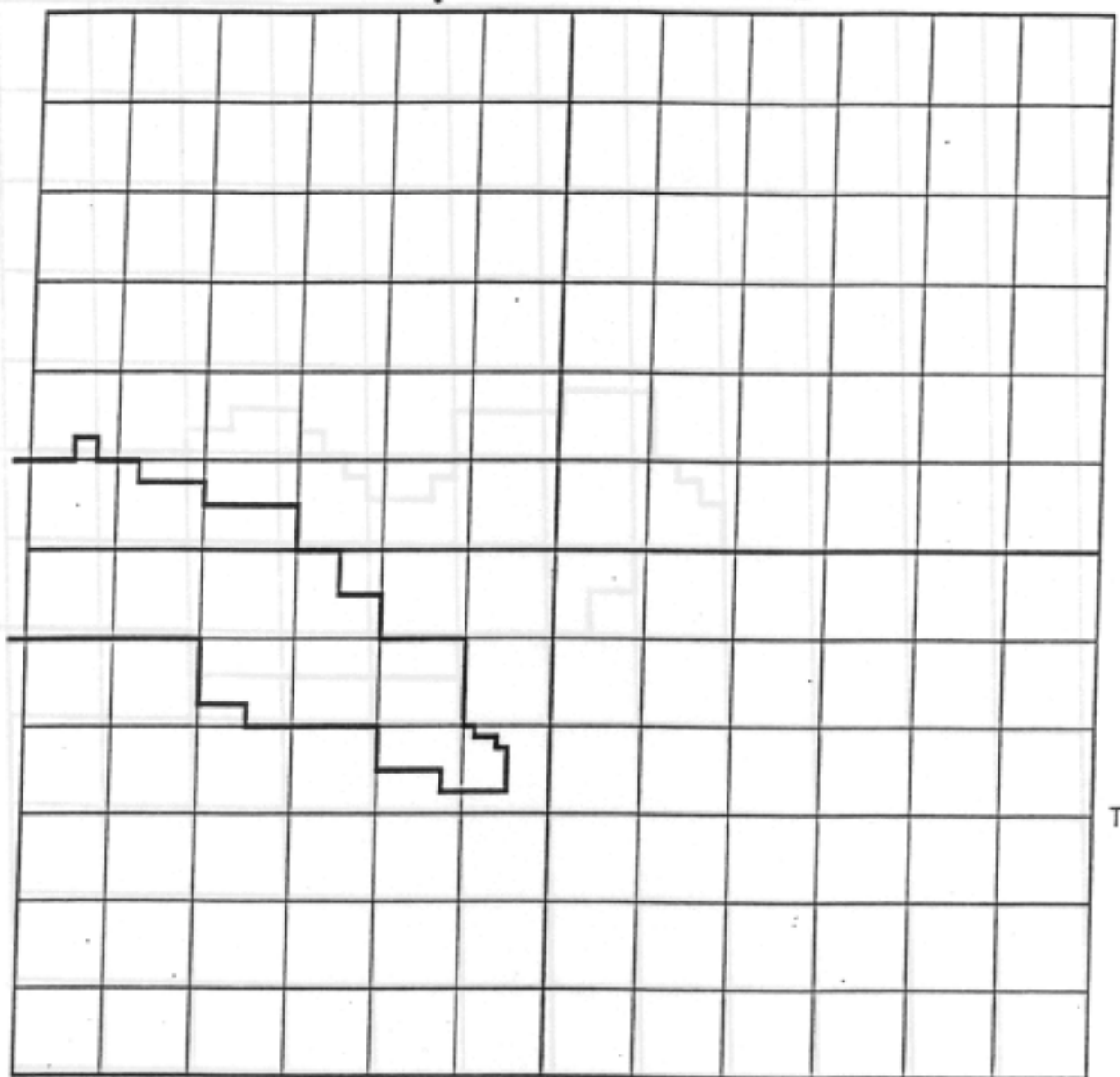
Agence canadienne d'évaluation environnementale

R.22

R.21 W.5M.

T.46

T.46



CARDINAL RIVER COALS LTD.—MOUNTAIN PARK AREA
APPENDIX A2 TO PERMIT NO. C 97-14

LEGEND

—— PERMIT BOUNDARY MINE NO. 1808





Province of Alberta
Order in Council

APPENDIX B

O.C. 372 /97

AUG 13 1997

ORDER IN COUNCIL

Approved and ordered:



Lieutenant Governor

The Lieutenant Governor in Council authorizes the Alberta Energy and Utilities Board to grant Permit No. C 97-14 to Cardinal River Coals Ltd. in the form attached.



CHAIR

For Information only

Recommended by:
Authority:

Minister of Energy
Coal Conservation Act
(section 21)

Alberta

5 September 1997

Mr. F.J. Munn, P.Eng.
Project Manager, Cheviot Mine
Cardinal River Coals Ltd.
Bag Service 2570
Hinton AB T7V 1V5

FAXED

Dear Mr. Munn:

APPLICATION NO. 960314

The Alberta Energy and Utilities Board has granted your application for an approval to construct and operate a Coal Processing Plant in the Mountain Park area. For this purpose, please find enclosed Approval No. C 97-15.

Kindly note that any operations undertaken pursuant to the authorization of Approval No. C 97-15 are subject to the provisions of the Occupational Health and Safety Act and the Mines Safety Regulation thereunder.

Yours truly,



D.I.R. Henderson, P.Eng.
Staff Engineer
Mine Development Group
Resources Division

DH/

Enclosure

cc: R. Stone/L. Brocke, Alberta Environmental Protection
M. Lascelles, Canadian Environmental Assessment Agency
G. Linsey, Department of Fisheries and Oceans

Alberta Energy and Utilities Board
THE PROVINCE OF ALBERTA

COAL CONSERVATION ACT

ALBERTA ENERGY AND UTILITIES BOARD

IN THE MATTER of a coal processing plant
Cardinal River Coals Ltd. in the Mountain Park
Area

APPROVAL NO. C 97-15

WHEREAS the Alberta Energy and Utilities Board is prepared to grant an application by Cardinal River Coals Ltd. for an approval to construct and operate a coal processing plant in the Mountain Park area, subject to the conditions herein contained; and

WHEREAS the Lieutenant Governor in Council has given his approval by Order in Council, numbered O.C. 402/97 and dated 27 August, 1997.

THEREFORE, the Alberta Energy and Utilities Board (hereinafter called the EUB), pursuant to the Coal Conservation Act, being chapter C-14 of the Revised Statutes of Alberta, 1980, hereby orders as follows:

1. The construction and operation by Cardinal River Coals Ltd. (hereinafter called "the Operator") of a coal processing plant in the Mountain Park area is approved, subject to the terms and conditions herein contained.
2. The plant shall be designated as **Coal Processing Plant No. 10** and shall be located in Township 46, Range 23, West of the 5th Meridian.
3. Subject to other provisions of this approval, the plant shall be constructed and operated in accordance with the application to the EUB registered as Application No. 960314 on 21 March 1996 and in accordance with any technical modification thereof which the EUB may approve.
4. The Operator shall, prior to construction, submit for the approval of the EUB the final design of the processing plant.
5. The Operator shall, as soon as practicable, advise the EUB and provide a preliminary assessment of any incident or accident affecting or having the potential for affecting safety or the environment and being attributable to design features or operational methods which are subject to the approval of the EUB.

6. The Operator shall operate the plant to the satisfaction of the EUB and in a manner that results in the recovery of the practical and economic maximum of the marketable coal from raw coal mined and processed.
7. Any discard material shall be disposed of in a manner satisfactory to the EUB to reduce the potential for spontaneous combustion and to prevent it from becoming a hazard to worker or public safety or contributing to air or water pollution.
8. The Operator shall advise the EUB of any significant modifications
 - (a) to the plant, or
 - (b) in the method or facilities employed for the storage or loading of clean coal, or
 - (c) in the method or facilities employed for the storage or disposal of discard material from the plant,and obtain its approval prior to effecting such modifications.
9.
 - (1) Attached hereto as Appendix A, and made part of this approval, is the order of the Lieutenant Governor in Council authorizing the granting of this approval.
 - (2) This approval is subject to the terms and conditions, if any, prescribed by the Lieutenant Governor in Council as set out in Appendix A.
10. The EUB may
 - (a) rescind or suspend this approval, in whole or in part, or shut down the plant, for failure of the Operator to comply with any provision of the Act, the regulations or the terms and conditions set out herein; or
 - (b) amend this approval, or make such other order as it deems suitable under the circumstances.

MADE at the City of Calgary, in the Province of Alberta, this Fifth day of September, 1997.

ALBERTA ENERGY AND UTILITIES BOARD

AUG 27 1997



Province of Alberta
Order in Council

APPENDIX A

ORDER IN COUNCIL

Approved and ordered:

Lieutenant Governor

The Lieutenant Governor in Council

- 1 authorizes the Alberta Energy and Utilities Board to issue Approval No. C 97-15 to Cardinal River Coals Ltd. in the form attached, and
- 2 rescinds Order in Council numbered O.C. 373/97.

ACTING CHAIR



For Information only

Recommended by: Minister of Energy

Authority: Coal Conservation Act (section 24)



Government of Canada / Gouvernement du Canada

Fisheries and Oceans / Pêches et Océans

CONFIRMATION COPY

Rgf
Oly

August 17, 1998

Mr. F.J. Munn
Project Manager
Cardinal River Coals Limited
Bag Service 2570
Hinton, Alberta T7V 1V5

Dear Mr. Munn:

Re: Authorization for the harmful alteration, disruption or destruction of fish habitat pursuant to Subsection 35(2) of the Fisheries Act.

The harmful alteration, disruption or destruction of fish habitat arising from the upgrading of Grave Flats Municipal Road and restoration of the Mountain Park Subdivision rail line from Cadomin, collectively referred to as the Cheviot Mine access corridor, is hereby authorized pursuant to Subsection 35(2) of the *Fisheries Act*. This Authorization shall be conditional upon implementation of the mitigation and compensation measures specified on the attached document. Failure to comply with any of the conditions in this Authorization may result in contravention of Section 35 of the *Fisheries Act*.

The environmental impacts of this undertaking have been reviewed by a joint federal / provincial review panel in accordance with the *Canadian Environmental Assessment Act*. The conclusions of the Joint Review Panel are presented in the report entitled "Report of the EUB-CEAA Joint Review Panel, Cheviot Coal Project, Mountain Park, Alberta", issued in June, 1997.

Please be advised that this Authorization does not imply authorization of this undertaking in accordance with any section of the *Fisheries Act* other than Section 35, nor does it supersede the requirements of any other federal, provincial or municipal legislation. Further, this Authorization applies only to the above-referenced project components. Any future authorizations pursuant to the *Fisheries Act* will be assessed on an individual basis.

Please do not hesitate to call Mr. Garry Linsey at (204) 984-2502 should you have any questions or require additional information.

Yours sincerely,

J.N. Stein, Manager
Habitat Management Division
Central and Arctic Region

Attach.

- cc: G. Linsey (DFO, Winnipeg)
- D. Robinson (DFO, Ottawa)
- T. Swerdfager (DOE, Edmonton)
- R. Christie (CEAA, Edmonton)
- R. Pierce (DFO, Sarnia)
- J. Cooley (DFO, Burlington)
- M. Barrett (AEP, Edmonton)
- D. Hodgins (Parks, Jasper)
- S. Faulknor (DOJ, Edmonton)



Fisheries and Oceans
Pêches et Océans

CONFIRMATION
COPY

Gouvernement
du Canada
Government
of Canada
Pêches
et Océans
Fisheries
and Oceans

Authorization issued to: Cardinal River Coals Limited
Autorisation délivrée à :

Name: F.J. Munn
Nom: Project Manager

Address: Bag Service 2570
Adresse: Hinton, Alberta
T7V 1V5

Telephone No.: (403) 692-5100
No de Téléphone:

Location of Project/Emplacement du projet

The project is located in the Municipal District of Yellowhead (No. 94) approximately 12 km south of the Hamlet of Cadomin, Alberta. The corridor consists of upgrading the Grave Flats municipal road, south from Highway 40 at Cadomin, along the McLeod River valley, and the restoration of the existing Mountain Park Subdivision rail line from Cadomin.

Valid Authorization Period/Période de validité

From/De August 17, 1998 To/À December 31, 2003

Description of Works or Undertakings (Type of work, schedule, etc.)

Description des ouvrages ou entreprises (Genre de travail, calendrier, etc.)

1) Upgrading of Grave Flats Road

- Culverts - Upper and Lower Leyland Creek
- Cadomin Springs
- Prospect Creek (multi-plate)
- Cheviot Creek
- McLeod River (multi-plate)

Riprap Installation - McLeod River, north of Cadomin

Ford Crossing of Whitehorse Creek

Diversion of Thornton Creek

2) Restoration of the Mountain Park Subdivision Rail Line

- Channel Restoration - McLeod River
- Channel Realignment - McLeod River
- Multi-plate Culverts - Prospect Creek
 - McLeod River (rail only)
 - McLeod River (rail and haul road)
- Culverts - Cheviot Creek
- Riprap Installation - Numerous locations
- Retaining wall structures - Three along the McLeod River

Conditions of Authorization/Conditions de l'autorisation

SH AND FISH HABITAT

1) Culverts and Multi-plate Installations

Fish and Wildlife
Division
Central and Arctic Region



- 1.1 Culverts shall be installed and maintained in a manner such that they allow the free passage of fish. This shall apply to culverts in fish bearing waters as well as to culverts in watercourses that have the potential to support fish in the upper McLeod River system as described in "The Cheviot Mine Project Access Corridor Licence Application" (October, 1997).
- 1.2 The culverts described in 1.1 shall be monitored on a routine basis, for the life of the crossing, to ensure that they continue to allow the free passage of fish. If any of the culverts are found to be deficient in this respect, repairs, maintenance or replacement shall be undertaken as soon as possible.
- 1.3 At each installation site involving the use of multiple culverts, one of the culverts shall be installed at a lower elevation than the others so as to ensure adequate flows for the passage of fish during low flow periods.
- 1.4 The culvert crossings described in 1.1 and constructed for the Grave Flats Road shall be monitored for the life of the project to determine whether ice build up, during spring, blocks fish passage through these culverts. Should this be the case, following decommissioning of the mine and the rail line, CRC shall have in place plans to ensure that required inspection and maintenance, which includes ice removal, continues or that the culvert crossings for the Grave Flats Road are replaced by suitable bridge structures.
- 1.5 For watercourse crossings other than those referenced in 1.4 (above), following decommissioning of the mine and the rail line, culverts and multi-plate installations shall be removed and the beds and banks of the watercourses stabilized and reclaimed.
- 1.6 Temporary erosion control measures shall be employed during culvert installations and following construction until such time as permanent erosion control is established.
- 1.7 Cardinal River Coals Limited (CRC) shall make every effort to restrict in-stream work to the period from July 16 to August 31 of any year in fish bearing watercourses and in water courses that flow into fish bearing waters and shall employ construction mitigation methods which minimize the amounts of suspended sediment introduced into these watercourses. For the remaining periods of any year, isolation techniques, as described in "The Cheviot Mine Project Access Corridor Licence Application" (October, 1997), shall be employed in undertaking any construction activities within or immediately adjacent to the wetted perimeter of these watercourses.
- 1.8 During construction activities within or adjacent to the wetted perimeter of fish bearing watercourses and watercourses that flow into fish bearing waters, suspended sediment concentrations shall be monitored immediately downstream of the construction site. For the period of September 1st to July 15th, construction activities shall be temporarily terminated if suspended sediment concentrations exceed levels recommended for the protection of aquatic life, in the "Canadian Water Quality Guidelines". Following the resumption of construction, additional mitigation measures shall be implemented to reduce the levels of suspended sediment introduced into the watercourse.

2. Riprap Bank Armouring (Road and Rail Line) and Ford Crossing (Whitehorse Creek)

- 2.1 Material used for bank armouring shall be clean and free of fines and shall be sized to withstand erosion at design flood stage or greater.
- 2.2 Material used for construction of the ford crossing shall be clean and free of fines.
- 2.3 Riprap bank armouring shall be installed as described on pages 11, 12 and 17 of section 3 and in drawings 110-STD-5 and 120-STD-5 of Appendix 4 in "The Cheviot Mine Project Access Corridor Licence Application" (October, 1997).
- 2.4 CRC shall make every effort to restrict in-stream work to the period from July 16 to August 31 of any year in fish bearing watercourses and in watercourses that flow into fish bearing waters and shall employ construction and mitigation methods which minimize the amounts of suspended sediment introduced into these watercourses. For the remaining periods of any year, isolation techniques, as described in "The Cheviot Mine Project Access Corridor Licence Application" (October, 1997) shall be employed in undertaking any construction activities within or immediately adjacent to the wetted perimeter of these watercourses.
- 2.5 During construction activities within or adjacent to the wetted perimeter of fish bearing watercourses and watercourses that flow into fish bearing waters, suspended sediment concentrations shall be monitored immediately downstream of the construction site. For the period of September 1st to July 15th, construction activities shall be temporarily terminated if suspended sediment concentrations exceed levels recommended for the protection of aquatic life, in the "Canadian Water Quality Guidelines". Following the resumption of construction, additional mitigation measures shall be implemented to reduce the levels of suspended sediments introduced into the watercourse.



- 3 All equipment using the ford crossing shall be free of excessive grease, mud and other contaminants that could potentially the watercourse.
- 2.7 Use of the ford crossing shall be kept to a minimum and restricted to equipment that exceeds the capacity of the bridge structure.

3. Retaining Wall Structures - McLeod River (Rail Line)

- 3.1 Retaining walls shall be constructed as described in drawings 120-RET-10 (Sheets 1, 2 and 3), 120-RET-11 and 110-STD-Appendix 5 in "The Cheviot Mine Project Access Corridor Licence Application" (October, 1997).
- 3.2 CRC shall make every effort to restrict instream work to the period from July 16 to August 31 of any year in fish bearing watercourses and in watercourses that flow into fish bearing waters and shall employ construction and mitigation methods which minimize the amounts of suspended sediment introduced into these watercourses. For the remaining periods of any year, isolation techniques, as described in "The Cheviot Mine Project Access Corridor Licence Application" (October, 1997) shall be employed in undertaking any construction activities within or immediately adjacent to the wetted perimeter of these watercourses.
- 3.3 During construction activities within or adjacent to the wetted perimeter of fish bearing watercourses and watercourses that into fish bearing waters, suspended sediment concentrations shall be monitored immediately downstream of the construction site. For the period of September 1st to July 15th, construction activities shall be temporarily terminated if suspended sediment concentrations exceed levels recommended for the protection of aquatic life, in the "Canadian Water Quality Guidelines". Prior to resuming construction, additional mitigation measures shall be implemented to reduce the levels of suspended sediments introduced into the watercourse.

4. Channel Restoration - McLeod River (Rail Line) - km 44.0

- 4.1 Work shall be undertaken as described in section 4.1.6 (page 24) and drawings 120-CGD-4, 120-CGD-5 and 120-CGD-6 of Appendix 10 in "The Cheviot Mine Project Access Corridor Licence Application" (October, 1997).
- 4.2 Should existing plans be modified to accommodate fisheries enhancement work, as per condition 7.1 of this Authorization, final design plans for this channel restoration shall be submitted to the Department of Fisheries and Oceans (DFO) and Alberta Environmental Protection (AEP) for approval prior to commencement of work.
- 4.3 Should fish habitat enhancement structures be constructed in the proposed new channel, as per condition 7.1 of this Authorization, they shall be constructed during the period when the initial channel restoration work is being undertaken and water is being diverted to the new channel.
- 4.4 CRC shall make every effort to restrict instream work to the period from July 16 to August 31 of any year in fish bearing watercourses and in watercourses that flow into fish bearing waters and shall employ construction and mitigation methods which minimize the amounts of suspended sediment introduced into these watercourses. For the remaining periods of any year, isolation techniques, as described in "The Cheviot Mine Project Access Corridor Licence Application" (October, 1997), shall be employed in undertaking any construction activities within or immediately adjacent to the wetted perimeter of these watercourses.
- 4.5 During construction activities within or adjacent to the wetted perimeter of fish bearing watercourses and watercourses that flow into fish bearing waters, suspended sediment concentrations shall be monitored immediately downstream of the construction site. For the period of September 1st to July 15th, construction activities shall be temporarily terminated if suspended sediment concentrations exceed levels recommended for the protection of aquatic life, in the "Canadian Water Quality Guidelines". Prior to resuming construction, additional mitigation measures shall be implemented to reduce the levels of suspended sediments introduced into the watercourse.
- 4.6 Should fish habitat enhancement structures be constructed in the proposed new channel, as per condition 7.1 of this Authorization, "as constructed" drawings certified by a licenced professional engineer shall be submitted to DFO within three months of completion of construction.

5. Channel Realignment - McLeod River (Rail Line) - km 45.8 to 46.1



- 1.1 Work shall be undertaken as described in section 4.1.8 (page 24) and drawings 110-RP-20 and 110-GA-1 of Appendix 1, "The Cheviot Mine Project Access Corridor Licence Application" (October, 1997).
- 5.2 Should existing plans be modified to accommodate fisheries enhancement work, as per condition 7.1 of this Authorization, design plans for this channel realignment shall be submitted to DFO and AEP for approval prior to commencement of work.
- 5.3 Should fish habitat enhancement structures be constructed in the proposed new channel, as per condition 7.1 of this Authorization, they shall be constructed during the period when the initial channel restoration work is being undertaken and water is being diverted to the new channel.
- 5.4 CRC shall make every effort to restrict instream work to the period from July 16 to August 31 of any year in fish bearing watercourses and in watercourses that flow into fish bearing waters and shall employ construction and mitigation methods which minimize the amounts of suspended sediment introduced into these watercourses. For the remaining periods of any year, isolation techniques, as described in "The Cheviot Mine Project Access Corridor Licence Application" (October, 1997) shall be employed in undertaking any construction activities within or immediately adjacent to the wetted perimeter of these watercourses.
- 5.5 During construction activities within or adjacent to the wetted perimeter of fish bearing watercourses and watercourses that flow into fish bearing waters, suspended sediment concentrations shall be monitored immediately downstream of the construction site. For the period of September 1st to July 15th, construction activities shall be temporarily terminated if suspended sediment concentrations exceed levels recommended for the protection of aquatic life, in the "Canadian Water Quality Guidelines". Upon resuming construction, additional mitigation measures shall be implemented to reduce the levels of suspended sediment introduced into the watercourse.
- 5.6 Should fish habitat enhancement structures be constructed in the proposed new channel, as per condition 7.1 of this Authorization, "as constructed" drawings certified by a licenced professional engineer shall be submitted to DFO within three months of completion of construction.

Channel Diversion - Thornton Creek - near road station 15+700

- 6.1 Work shall be undertaken as described in section 4.1.13 (page 32) and drawing 140-1PP-15 of Appendix 17 in "The Cheviot Mine Project Access Corridor Licence Application" (October, 1997).
- 6.2 Should existing plans be modified to accommodate fisheries enhancement work, as per condition 7.1 of this Authorization, design plans for this diversion channel shall be submitted to DFO and AEP for approval prior to commencement of work.
- 6.3 CRC shall make every effort to restrict instream work to the period from July 16 to August 31 of any year in fish bearing watercourses and in watercourses that flow into fish bearing waters and shall employ construction and mitigation methods which minimize the amounts of suspended sediment introduced into these watercourses. For the remaining periods of any year, isolation techniques, as described in "The Cheviot Mine Project Access Corridor Licence Application" (October, 1997) shall be employed in undertaking any construction activities within or immediately adjacent to the wetted perimeter of these watercourses.
- 6.4 During construction activities within or adjacent to the wetted perimeter of fish bearing watercourses and watercourses that flow into fish bearing waters, suspended sediment concentrations shall be monitored immediately downstream of the construction site. For the period of September 1st to July 15th, construction activities shall be temporarily terminated if suspended sediment concentrations exceed levels recommended for the protection of aquatic life, in the "Canadian Water Quality Guidelines". Upon resuming construction, additional mitigation measures shall be implemented to reduce the levels of suspended sediment introduced into the watercourse.

7. Fish Habitat Compensation for Works Associated with the Access Corridor

During the open water period in 1998, CRC shall undertake a survey of the upper McLeod River and its tributaries to identify potential sites for fish habitat enhancement as would increase the likelihood of survival success of rainbow trout in the upper McLeod River system upstream of the falls near the confluence with Whitehorse Creek. The feasibility of constructing and maintaining enhancement structures at these potential sites shall be evaluated by a qualified engineer and a report submitted to DFO and AEP by December 31, 1998. Following review of this report, CRC shall implement a fish habitat enhancement program as deemed appropriate by DFO and AEP. Potential fish habitat enhancement structures identified as feasible in the reaches of the McLeod River where channel restoration or realignment work has been proposed, shall be constructed during the period when the initial work is being undertaken, prior to flows being diverted into the new channels.



- 2 CRC is responsible for ensuring that the habitat enhancement structures created pursuant to point 7.1 (above) are proper functioning for the period of railway operation and reclamation. If monitoring indicates that these structures are not functioning as designed, CRC shall carry out or cause to be carried out at its own cost and expense, with due diligence and in a good workmanlike manner, and to the satisfaction of DFO, any reasonable modifications deemed by DFO to be necessary to ensure the enhancement structures to function as designed.

8. Monitoring Programs

In addition to monitoring programs described in previous sections of this Authorization:

- 8.1 CRC shall design and implement, to the satisfaction of DFO and AEP, a suspended sediment monitoring program for the McLeod River and its tributaries during and following construction activities. This monitoring shall be undertaken for the life of the project and for a period of time following site reclamation as necessary to evaluate the effectiveness of the erosion control measures. Should this monitoring indicate that suspended sediment exceeds acceptable levels, additional mitigation measures shall be implemented by CRC to reduce the levels of suspended sediments introduced into the watercourses. Results of the monitoring program shall be documented and reports provided to DFO on an annual basis.
- 8.2 CRC shall design and implement, to the satisfaction of DFO and AEP, a program to monitor the potential impacts of the proposed project on fish and fish habitat in the upper McLeod River, downstream of the falls near the Whitehorse Creek confluence.
- 8.3 CRC shall design and implement, to the satisfaction of DFO and AEP, a program to monitor the quality of water in the McLeod River downstream of the project site. Initially, this monitoring program will provide baseline water quality data and following commencement of project development, will demonstrate project impacts on water quality as well as compliance with the appropriate water quality guidelines.

MIGRATORY BIRDS

- 9.1 CRC shall minimize vegetation clearing from May 1 to July 31 in order to reduce the impact on breeding migratory bird populations. When proposing to clear vegetation within this period, CRC shall obtain authorization in writing from an AEP Conservation and Reclamation Inspector and consult with Environment Canada (DOE).
- 9.2 Construction activities within 70 meters of the McLeod River and its tributaries shall not be undertaken between May 1 and August 31 except in accordance with the recommendations and schedule described in the Harlequin Duck Mitigation Plan included as appendix 20 of "The Cheviot Mine Project Access Corridor License Application" (October 1997). In addition, the Red timing windows for Zones B, C, and D shall be expanded to extend from July 10 to August 31.
- 9.3 CRC shall design and implement, to the satisfaction of DOE and AEP, a program to monitor the potential impacts of the proposed project on harlequin ducks in the McLeod River / Whitehorse Creek watershed. This monitoring shall include such parameters as numbers of birds, habitat use and productivity. If monitoring indicates that mitigative actions are not functioning as designed, CRC shall carry out or cause to be carried out at its own cost and expense, with due diligence, any reasonable modifications deemed necessary by, and to the satisfaction of, DOE and AEP. Progress reports shall be submitted to DOE annually.
- 9.4 CRC shall not undertake any construction activities within 70 meters of active Harlequin Duck nests. Active nest locations shall be communicated to DOE and AEP upon discovery. Any exceptions shall be made in consultation with DOE and AEP.

The holder of this authorization is hereby authorized under the authority of section 35(2) of the Fisheries Act, R.S.C., 1985, c. F. 14, to carry out the work or undertaking described herein.

Le détenteur de la présente est autorisé en vertu du paragraphe 35(2) de la Loi sur les pêches, L.R.C. 1985, ch. 14, à exploiter les ouvrages ou entreprises décrits aux présentes.

This authorization is valid only with respect to fish habitat and for no other purposes. It does not purport to release the applicant from any obligation to obtain permission from or to

L'autorisation n'est valide qu'en ce qui concerne l'habitat du poisson et pour aucune autre fin. Elle ne dispense pas le requérant de l'obligation d'obtenir la permission d'autres



Fisheries and Oceans
Pêches et Océans

Failure to comply with any condition of this authorization may result in charges being laid under the Fisheries Act.

This authorization form should be held on site and work crews should be made familiar with the conditions attached.

En vertu de la Loi sur les pêches, des accusations pour être portées contre ceux qui ne respectent pas les conditions prévues dans la présente autorisation.

Cette autorisation doit être conservée sur les lieux des travaux, et les équipes de travail devraient en connaître les conditions.

Date of issuance AUGUST 17/98

Approved by [Signature]

Title MANAGED HABITAT MANAGEMENT

Date de délivrance _____

Approuvé par _____

Titre _____

17 August 1998

File: 60275

Mr. Fred Munn
Cardinal River Coals Ltd.
Bag Service 2570
Hinton, Alberta
T7V 1V5

Dear Mr. Munn:

RE: CHEVIOT MINE ROAD AND RAIL ACCESS CORRIDOR PERMIT

Enclosed are Permit Nos. 98-44-NES and 98-45-NES, which authorize in accordance with the *Water Resources Act* the construction of structures associated with the Grave Flats Road Upgrading and the Rail Restoration Projects.

Please note that:

1. These authorizations do not supersede approvals required pursuant to other provincial acts.
2. These approvals should not be taken to mean that you have an authority under federal legislation. You should contact **Habitat Management, Central and Arctic Region, Fisheries and Oceans, 501 University Crescent, Winnipeg, R3T 2N6 (phone: 204-985-2505)** in relation to the application of federal laws relating to the *Fisheries Act (Canada)* and the **Navigation Protection Program, Canadian Coast Guard, 201 North Front Street, Suite 703, Sarnia, Ontario, N7T 8B1 (phone: 519-383-1862)** relating to the *Navigable Waters Protection Act*.
3. In order to reduce the potential of the spread of **whirling disease** in fish, we ask that all equipment and machinery that has been used in the United States be washed clean of all mud and dirt before being used again in any activities in or near streams in Alberta.
4. Further to your "Response to Additional Information Requirements Access Corridor Application", December 1997, it is our understanding that the proposed McLeod River road culvert crossing (Sta. 15+762.5) will be removed in a 5 to 10 year period after commencement of the mine operations. Should there be any change to this plan, Cardinal River Coals Ltd. shall contact the Department to determine the actions to take.

5. In any condition where information is to be requested by or submitted to the Controller of Water Resources, the information will be requested by or provided to the Manager, Regional Support, Northern East Slopes Region.

If you have further questions or comments regarding the permits, please contact José Michel at (403) 427-6451.

Sincerely,

Patrick Marriott, P.Eng.
Manager, Regional Support
Northeast Boreal Region

JRM/

Enclosures

cc: Garry Linsey, Department of Fisheries and Oceans
Dennis Bratton, C & R Review Committee
Jim Skrenek, NRS-Northern East Slopes
Dave Henderson, EUB
Al Lang, P.Eng., Manager, Regional Support, NES

Cardinal River Coals Ltd.
Bag Service 2570
Hinton, Alberta
T7V 1V5
(referred to below as “Cardinal”)

FILE No. 60275
DATE ISSUED August 17, 1998
PERMIT No. 98-44-NES

is authorized under the WATER RESOURCES ACT, to carry out works associated with the upgrading of the Grave Flats Road to access the Cheviot Mine. The road will be located in Section 33, Township 45; Sections 4, 5, 7, 8, 18, 19, 30 and 31, Township 46; Sections 5, 8, and 17, Township 47, Range 23; and Section 24, Township 46, Range 24, West of the 5th Meridian. Included in the works are: construction of road bridges, installation of culverts, realignment and/or armouring of associated sections of the McLeod River and local streams, and installation of a heavy equipment fording site on Whitehorse Creek. All work is to be carried out according to the October 10, 1997 and the August 12, 1998 reports filed and identified in departmental records as:

W.R. REPORT NO.

TITLE

60275-R1	Access Corridor Licence Application
60275-R2	Access Corridor Applications (Road and Rail) File No. 60275 - Supplemental Information

This permit is subject to the following conditions:

1. Cardinal is responsible for the construction, operation and maintenance of the works and for any damage that may result therefrom. Cardinal must, upon finalizing an agreement with the Municipal District of Yellowhead No. 94, submit to this office a letter detailing the responsibilities of the parties related to construction, takeover and maintenance of the works.
2. Subject to condition 3, no in-stream activity is permitted in the waters of the McLeod River and tributaries between September 1 and July 15 of the following year in order to protect spawning and incubation of fish.
3. In-stream work between September 1 and July 15 of the following year will be accommodated provided that:
 - (a) isolation techniques are used;
 - (b) the Canadian Water Quality Guidelines for suspended solids are met; specifically, that suspended solids derived from construction activities shall not exceed 10 mg/L when background levels are ≤ 100 mg/L, or 10% of background levels when background levels are > 100 mg/L;
 - (c) monitoring of suspended solids occurs above and below the construction site during and immediately following any in-stream activity;
 - (d) construction activities are temporarily suspended if the levels in condition 3(b) are exceeded. Prior to resuming construction, additional mitigation measures shall be implemented to reduce the levels of suspended sediments introduced into the watercourse; and,
 - (e) Cardinal submits a monthly report to the Controller of Water Resources (the “Controller”), indicating the occasions when exceedance occurred, the measured total suspended solids values, and the mitigation measures implemented.

PERMIT No. 98 – 44 – NES (continued)

- 2 -

4. The deposition of deleterious material in the McLeod River and tributaries is prohibited.
5. Cardinal shall maintain stream flow downstream from individual construction sites at all times. The water handling and drainage plans proposed by the construction contractors for any of the watercourse crossings shall be reviewed and approved by an officer of the Land and Forest Service and/or the Natural Resources Service prior to implementation.
6. Where portions of the road right-of-way slopes to the watercourse, Cardinal shall install adequate controls to prevent erosion and siltation.
7. Cardinal shall utilize only one ford-crossing site for heavy equipment at Whitehorse Creek. The fording site must be identified, inspected and approved by an officer of the Natural Resources Service prior to its construction and use.
8. Prior to any creek fording, Cardinal shall obtain the approval of an officer of the Natural Resources Service, and shall ensure that excessive grease, mud and other contaminants that may fall into or that may be in contact with the creek water are removed from the equipment.
9. Culverts must be designed, installed, and maintained to allow upstream passage of fish on fish bearing streams and streams with potential to support fish. Cardinal shall install the culverts that will allow upstream passage of fish at the same general slope as the existing stream channel bed.
10. Disturbance of the bed and banks of the McLeod River and tributaries arising from any activity or equipment used in the project is to be kept to a minimum and confined to the immediate work site.
11. With the exception of the Thornton Creek diversion described in the Application, the bed and banks of the McLeod River and tributaries shall be restored to their original contours, concurrently with project completion.
12. Cardinal shall carry out debris disposal, cleanup, and reclamation concurrently with the operations.
13. All disturbed areas are to be stabilized and reclaimed within one growing season; interim measures must be implemented to prevent short-term erosion problems.
14. Cardinal shall implement a Harlequin Duck mitigation plan, including the retention of a Biologist on site, for the construction period, and shall continue its Harlequin ducks monitoring program for the duration of the Cheviot Mine Project. Ongoing reports shall be submitted to the Controller each year during the life of the project. Cardinal and the Department shall perform an overall evaluation at the end of the project to determine the impact of the Prospect Creek culvert, and to consider the need for alternative plans at abandonment.
15. Cardinal shall submit to the Controller an as-constructed report, complete with plans of the works, upon completion of the road upgrading.
16. A copy of the permit is to be available at the job site during construction.

.../3

File: 60275

PERMIT No. 98 – 44 – NES (continued)

- 3 -

17. This authority to upgrade the road and construct its related structures expires on December 31, 2001

Department of Environmental Protection

Manager, Regional Support
Northeast Boreal Region

Cardinal River Coals Ltd.
Bag Service 2570
Hinton, Alberta
T7V 1V5
(referred to below as “Cardinal”)

FILE No. 60275
DATE ISSUED August 17, 1998
PERMIT No. 98-45-NES

is authorized under the WATER RESOURCES ACT, to carry out works associated with the restoration of the Cheviot Mine rail access located in Sections 4, 5, 7, 8, 18, 19 and 30, Township 46, Range 23, West of the 5th Meridian. Included in the works are: the construction of a railway bridge, installation of culverts, realignment and armouring of associated sections of the McLeod River and local streams, and the demolition and removal of existing bridge structures. All work is to be carried out according to the October 10, 1997 and the August 12, 1998 reports filed and identified in departmental records as:

W.R. REPORT NO.

TITLE

60275-R1

Access Corridor Licence Application

60275-R2

Access Corridor Applications (Road and Rail)
File No. 60275 - Supplemental Information

This permit is subject to the following conditions:

1. Cardinal is responsible for the construction, operation and maintenance of the works and for any damage that may result therefrom. Cardinal must, upon finalizing an agreement with Canadian National Railways, submit to this office a letter detailing the responsibilities of the parties related to the construction, takeover and maintenance of the works.
2. Subject to condition 3, no in-stream activity is permitted in the waters of the McLeod River and tributaries between September 1 and July 15 of the following year in order to protect spawning and incubation of fish.
3. In-stream work between September 1 and July 15 of the following year will be accommodated provided that:
 - (a) isolation techniques are used;
 - (b) the Canadian Water Quality Guidelines for suspended solids are met; specifically, that suspended solids derived from construction activities shall not exceed 10 mg/L when background levels are \leq 100 mg/L, or 10% of background levels when background levels are $>$ 100 mg/L;
 - (c) monitoring of suspended solids occurs above and below the construction site during and immediately following any in-stream activity;
 - (d) construction activities are temporarily suspended if the levels in condition 3(b) are exceeded. Prior to resuming construction, additional mitigation measures shall be implemented to reduce the levels of suspended sediments introduced into the watercourse; and,
 - (e) Cardinal submits a monthly report to the Controller of Water Resources (the “Controller”) indicating the occasions when exceedance occurred, the measured total suspended solids values, and the mitigation measures implemented.

PERMIT No. 98 – 45 – NES (continued)

- 2 -

4. The deposition of deleterious material in the McLeod River and tributaries is prohibited.
5. Cardinal shall identify and evaluate all sites with potential for enhancement of wintering habitat within the restored McLeod River channel. Cardinal shall submit by December 31, 1998 to the Natural Resources Service, Northern East Slopes Region, a proposal containing evaluations and designs for those sites with high potential for enhancement. Construction of any identified wintering habitat will take place according to the time frames authorized under this approval.
6. Cardinal shall maintain stream flow downstream from individual construction sites at all times. The water handling and drainage plans proposed by the construction contractors for any of the watercourse crossings shall be reviewed and approved by an officer of the Land and Forest Service and/or the Natural Resources Service prior to implementation.
7. Where portions of the railway right-of-way slopes to the watercourse, Cardinal shall install adequate controls to prevent erosion and siltation.
8. Culverts must be designed, installed, and maintained to allow upstream passage of fish on fish bearing streams and streams with potential to support fish. Cardinal shall install the culverts that will allow upstream passage of fish at the same general slope as the existing stream channel bed.
9. After the end of the Cheviot Mine Project and the decommissioning of the rail line, Cardinal shall remove the culverts, and stabilize and reclaim the bed and banks of the watercourses affected.
10. Disturbance of the bed and banks of the McLeod River and tributaries arising from any activity or equipment used in the project is to be kept to a minimum and confined to the immediate work site.
11. With the exception of the McLeod River Channel Restoration and Realignment described in the Application, the bed and banks of the McLeod River and tributaries shall be restored to their original contours, concurrently with project completion.
12. Cardinal shall carry out debris disposal, cleanup, and reclamation concurrently with the operations.
13. All disturbed areas are to be stabilized and reclaimed within one growing season; interim measures must be implemented to prevent short-term erosion problems.
14. Cardinal shall implement a Harlequin Duck mitigation plan, including the retention of a Biologist on site, for the construction period, and shall continue its Harlequin ducks monitoring program for the duration of the Cheviot Mine Project. Ongoing reports shall be submitted to the Controller each year during the life of the project.
15. Cardinal shall submit to the Controller an as-constructed report, complete with plans of the works, upon completion of the railway restoration.
16. A copy of the permit is to be available at the job site during construction.

.../3

File: 60275

PERMIT No. 98 – 45 – NES (continued)

- 3 -

17. This authority to restore the railway and construct its related structures expires on December 31, 2001

Department of Environmental Protection

Manager, Regional Support
Northeast Boreal Region

Government
of CanadaGouvernement
du CanadaFisheries
and OceansPêches
et Océans

September 29, 1998

Mr. F.J. Munn
Project Manager
Cardinal River Coals Limited
Bag Service 2570
Hinton, Alberta T7V 1V5

Your file / Votre référence

Our file / Notre référence

AB94-052-2

Dear Mr. Munn:

Re: Authorization for the harmful alteration, disruption or destruction of fish habitat pursuant to Subsection 35(2) of the *Fisheries Act*.

The harmful alteration, disruption or destruction of fish habitat arising from the development of the Cheviot Mine Industrial Complex, is hereby authorized pursuant to Subsection 35(2) of the *Fisheries Act*. This Authorization shall be conditional upon implementation of the mitigation and compensation measures specified on the attached document. Failure to comply with any of the conditions in this Authorization may result in contravention of Section 35 of the *Fisheries Act*.

The environmental impacts of this undertaking have been reviewed by a joint federal / provincial review panel in accordance with the *Canadian Environmental Assessment Act*. The conclusions of the Joint Review Panel are presented in the report entitled "Report of the EUB-CEAA Joint Review Panel, Cheviot Coal Project, Mountain Park, Alberta", issued in June, 1997.

Please be advised that this Authorization does not imply authorization of this undertaking in accordance with any section of the *Fisheries Act* other than Section 35, nor does it supersede the requirements of any other federal, provincial or municipal legislation. Further, this Authorization applies only to the above referenced project components. Any future applications for authorizations pursuant to the *Fisheries Act* will be assessed on an individual basis.

Please do not hesitate to call Mr. Garry Linsey at (204) 984-2505 should you have any questions or require additional information.

Yours sincerely,

J.N. Stein
Habitat Management Division
Central and Arctic Region

cc: G. Linsey (DFO, Winnipeg) R. Pierce (DFO, Sarnia)
J. Cooley (DFO, Burlington) D. Robinson (DFO, Ottawa)
K. Crutchfield (AEP, Edmonton) T. Swerdfager (DOE, Edmonton)
D. Hodgins (Parks, Jasper) R. Christie (CEAA, Edmonton)
S. Faulknor (DOJ, Edmonton)



Fisheries and Oceans
Pêches et Océans

AE
Authorization No./N° de l'aut

**AUTHORIZATION FOR WORKS OR UNDERTAKINGS AFFECTING FISH HABITAT
AUTORISATION POUR DES OUVRAGES OU ENTREPRISES MODIFIANT L'HABITAT DU POISSON**

Authorization issued to: Cardinal River Coals Ltd.

Autorisation délivrée à :

Name: F. J. Munn
Nom: Project Manager

Address: Bag Service 2570
Adresse: Hinton, Alberta
T7V 1V5

Telephone No.: (403) 892-5190
No de Téléphone:

Location of Project/Emplacement du projet

The project is located in the County of Yellowhead approximately 12 km south of the Hamlet of Cadomin, Alberta and consists of development earthworks and construction activities associated with the shop/office complex, pre-development earthworks and preliminary construction activities associated with the coal processing plant and related infrastructure and pre-development discharge of underground water from abandoned mines. These works are collectively described as the Cheviot Mine Industrial Complex. Descriptions of these proposed works are provided in "The Cheviot Mine Project Shop/Office - Coal Processing Plant Complex Construction Application" (October, 1997), the "Pre-Development License Application for Earthwork and Construction Activities at Mine Facilities" (December, 1997) and the "Pre-Development License Application for Earthwork and Construction Activities Cheviot Mine Facilities - Supplementary Information Report" (April, 1998).

Valid Authorization Period/Période de validité

From/De	September 28, 1998.	To/A	Until all conditions of this Authorization are met to the satisfaction of the Department of Fisheries and Oceans.
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**Description of Works or Undertakings (Type of work, schedule, etc.)
Description des ouvrages ou entreprises (Genre de travail, calendrier, etc.)**

Harris Creek

1. Diversion to align the channel with the proposed culvert crossing.
2. Installation of a multi-plate culvert crossing to accommodate a haulroad into the future Harris Creek mining area.
3. Diversion to accommodate construction of the plant area sedimentation pond.
4. Construction of a dam to create a water reservoir as a source of plant make-up water.

Cheviot Creek

1. Construction of a dam to permit disposal of fine refuse produced from the coal processing plant.
2. Installation of a culvert crossing to accommodate an access road from the Grave Flats Road to the mine facilities.
3. Diversion to accommodate construction of the shop area sedimentation pond.

McLeod River

Fisheries and Oceans
Pêches et Océans

Authorization No./N° de l'au

**AUTHORIZATION FOR WORKS OR UNDERTAKINGS AFFECTING FISH HABITAT
AUTORISATION POUR DES OUVRAGES OU ENTREPRISES MODIFIANT L'HABITAT DU POISSON****Conditions of Authorization/Conditions de l'autorisation****1. GENERAL**

- 1.1 All construction activities shall be undertaken as described in "The Cheviot Mine Project Shop/Office - Coal Processing Complex Construction Application" (October, 1997), the "Pre-Development License Application for Earthwork and Construction Activities Cheviot Mine Facilities" (December, 1997) and the "Pre-Development License Application for Earthwork and Construction Activities Cheviot Mine Facilities - Supplementary Information Report" (April, 1998).
- 1.2 Following decommissioning of the mine and the rail line, the culverts and multi-plate installations, water reservoir and retention ponds shall be removed and the beds and banks of the watercourses stabilized and reclaimed. The fine refuse disposal site shall be reclaimed upon decommissioning.
- 1.3 Temporary erosion control measures shall be employed during and following all construction activities near watercourse such time as permanent erosion control is established.
- 1.4 Material used for bank armouring shall be clean and free of fines and shall be sized to withstand erosion at design flow or greater.
- 1.5 Riprap bank armouring shall be installed as described in the "Pre-Development License Application for Earthwork and Construction Activities Cheviot Mine Facilities" (December, 1997).
- 1.6 Cardinal River Coals Ltd. (CRC) shall make every effort to restrict all instream work to the period from July 16 to August any year in fish bearing watercourses and in watercourses that flow into fish bearing waters and shall employ construction and mitigation methods which minimize the amounts of suspended sediment introduced into these watercourses. For the remaining periods of any year, isolation techniques, as described in the "Pre-Development License Application for Earthwork and Construction Activities Cheviot Mine Facilities" (December, 1997), shall be employed in undertaking any construction activities within or immediately adjacent to the wetted perimeter of these watercourses.
- 1.7 During construction activities within or adjacent to the wetted perimeter of fish bearing watercourses and watercourses that flow into fish bearing waters, suspended sediment concentrations shall be monitored immediately downstream of the construction site. Construction activities shall be temporarily terminated if suspended sediment concentrations exceed those recommended for the protection of aquatic life in the "Canadian Water Quality Guidelines". Prior to resuming construction additional mitigation measures shall be implemented to reduce the levels of suspended sediments introduced into the watercourse.

2. COMPENSATION

- 2.1 As compensation for the harmful alteration, disruption or destruction (HADD) of fish habitat resulting from facilities development associated with the Cheviot Mine in the upper McLeod River basin, Cardinal River Coals Ltd. shall implement the program described in the "Letter of Intent to Compensate" appended to this authorization.
- 2.2 If it is determined by DFO, that the compensation program described in the "Letter of Intent to Compensate", referenced above, is not functioning as intended, CRC shall develop and implement an alternate compensation program in consultation with and acceptable to DFO and AEP.

3. MONITORING

- 3.1 In addition to suspended sediment monitoring described in condition 1.7 above, monitoring programs for fish, benthic invertebrates, epilithic algae and water quality shall be implemented as described in the following documents:
 - "Pre-Development License Application for Earthwork and Construction Activities Cheviot Mine Facilities" (December



Fisheries and Oceans
Pêches et Océans

Authorization No./N° de l'au

AUTHORIZATION FOR WORKS OR UNDERTAKINGS AFFECTING FISH HABITAT
AUTORISATION POUR DES OUVRAGES OU ENTREPRISES MODIFIANT L'HABITAT DU POISSON

- Authorization for the harmful alteration, disruption or destruction of fish habitat resulting from undertakings associated with the Cheviot Mine access corridor, issued to Cardinal River Coals Ltd. by the Minister of Fisheries and Oceans August 17, 1998.
- Letter of Intent to Compensate.

3.2 Copies of reports for the above monitoring programs shall be provided to the Department of Fisheries and Oceans, Habitat Management Division.

4. MIGRATORY BIRDS

4.1 Cardinal River Coals Ltd. shall minimize vegetation clearing from May 1 to July 31 of any year, in order to minimize the impact on breeding migratory birds.

The holder of this authorization is hereby authorized under the authority of section 35(2) of the Fisheries Act, R.S.C., 1985, c. F. 14, to carry out the work or undertaking described herein.

Le détenteur de la présente est autorisé en vertu du paragraphe 35(2) de la Loi sur les pêches, L.R.C. 1985 14, à exploiter les ouvrages ou entreprises décrits aux présentes.

This authorization is valid only with respect to fish habitat and for no other purposes. It does not purport to release the applicant from any obligation to obtain permission from or to comply with the requirements of any other regulatory agencies.

L'autorisation n'est valide qu'en ce qui concerne l'habitat du poisson et pour aucune autre fin. Elle ne dispense pas le requérant de l'obligation d'obtenir la permission d'autres organismes réglementaires concernés ou de se conformer à leurs exigences.

Failure to comply with any condition of this authorization may result in charges being laid under the Fisheries Act.

En vertu de la Loi sur les pêches, des accusations pour non-respect de la présente autorisation peuvent être portées contre ceux qui ne respectent pas les conditions prévues dans la présente autorisation.

This authorization form should be held on site and work crews should be made familiar with the conditions attached.

Cette autorisation doit être conservée sur les lieux des travaux, et les équipes de travail devraient en connaître les conditions.

Date of Issuance SEPTEMBER 29/98

Date de délivrance _____

Approved by [Signature]

Approuvé par _____

Title MANAGER, HABITAT MANAGEMENT

Titre _____



CHEVIOT MINE
CARDINAL RIVER COALS LTD.

BAG SERVICE 2570, HINTON, ALBERTA, CANADA T7V 1V5
PHONE: (403) 692-5190 FAX: (403) 692-5192

LETTER OF INTENT TO COMPENSATE FOR LOSS OF FISH HABITAT

In accordance with the Department of Fisheries and Oceans's *Policy for the Management of Fish Habitat*, and with particular reference to the principle of "No Net Loss of the Productive Capacity of Habitats":

With respect to Cardinal River Coals Ltd. (hereafter "CRC")'s Application of October 14, 1997 regarding the Cheviot Mine Industrial Complex, CRC hereby agrees to undertake the following program to compensate for the harmful alteration, disruption or destruction (HADD) of fish habitat resulting from facilities development activities associated with the Cheviot Mine in the upper McLeod River basin, approximately 10 km south of the Hamlet of Cadomin in the County (formerly Municipal District) of Yellowhead No. 94. This development occurs early in the mine life and would not otherwise be compensated until mine lake development well into the mining phase.

The intent is to extend the range of a native fish species, establish a self-reproducing population isolated from potential genetic contamination, and increase angling opportunities in the upper McLeod River basin. Implementation of the program is subject to initiation of in-stream construction activities at the Cheviot Mine, scheduled for 1999.

CRC will:

1. In consultation with the Department of Fisheries and Oceans (DFO) and Alberta Environmental Protection (AEP), finalize a fish transfer program to compensate for losses of fish habitat associated with facility development by the transfer of native Athabasca rainbow trout into the main stem of the upper McLeod River where natural barriers have prevented their occupation. The details of the transfer program shall be finalized by December 31, 1998, and in any case at least one week prior to in-stream construction commencing at the site.
2. Develop the fish transfer program referenced in 1 (above) which will include: Finalizing source stock; enhancement of over-wintering habitat in the upper McLeod River basin; transfer of fish; and monitoring of the transfer; - the program being satisfactory to DFO and AEP.
3. Enhancement of over-wintering habitat in the Upper McLeod basin will include the construction of one or more ponds totalling about 1 hectare in area. Construction of this habitat will be undertaken in 1999 and 2000, with fish transfers starting in 2000.

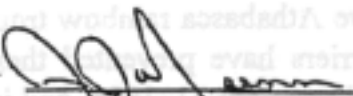
4. Monitor the rainbow trout transfer starting 3 years after the first transfer, by which time natural reproduction and dispersal should have occurred. One index section will be established on the main stem of the McLeod River near the mouth of Prospect Creek to monitor numbers (density). A population estimate would be obtained annually until a target density is reached. Sampling will be conducted in late summer after expected fry emergence so that evidence of successful reproduction could be obtained at the same time.

5. Ensure that the proposed program meets and complies with all applicable municipal, provincial and federal regulatory requirements. Of particular note are provincial requirements for fish transfers and water resource development.

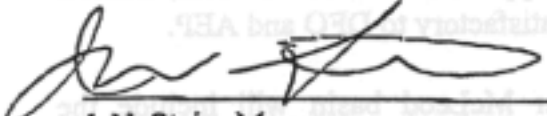
6. If it is determined that the program was not carried out as designed, carry out any modifications determined by the DFO and AEP to be reasonably necessary to enable the compensation program to function as designed.

The Department of Fisheries and Oceans, Habitat Management Division, in consultation with Alberta Environmental Protection, will:

1. Provide technical advice regarding the design and implementation of the compensation program, including monitoring requirements.
2. Provide advice regarding the proposed project, and offer assistance regarding the interpretation of any aspects of the "Policy for the Management of Fish Habitat" which require clarification.


F. J. Munn
Manager, Cheviot Project
Cardinal River Coals Ltd.

Sept 17/98
Date


J. N. Stein, Manager
Habitat Management Division
Central and Arctic Region
Department of Fisheries and Oceans
Government of Canada

27/9/98
Date



Environmental Service
Northern East Slopes Region
Office of the Regional Director

4th Floor Oxbridge Place
9820 - 106 Street
Edmonton, Alberta
Canada T5K 2J8

Telephone: (403) 427-5883
Fax: (403) 422-4182

September 29, 1998

Application No. 001-46972

Mr. Fred Munn
Project Manager
Cardinal River Coals Ltd.
Bag Service 2570
Hinton, Alberta
T7V 1V5

Dear Mr. Munn:

Re: Pre-development License Application for Earthwork and Construction Activities for the Cheviot Mine Facilities: EPEA Application No. 001-46972

Your application to construct, operate and reclaim a mine and a coal processing plant has been reviewed and Approval No. 46972-00-00 dated September 29, 1998 is enclosed.

In addition to this Approval, Cardinal River Coals Ltd. is responsible for obtaining all approvals pursuant to other applicable provincial acts.

This approval should not be taken to mean that Cardinal River Coals Ltd. has an authority under federal legislation. Cardinal River Coals Ltd. should contact **Habitat Management, Central and Arctic Region, Fisheries and Oceans, 501 University Crescent, Winnipeg, Manitoba, R3T 2N6, Telephone: 204-984-2505** in relation to the application of federal laws relating to the *Fisheries Act (Canada)* and the **Navigation Protection Program, Canadian Coast Guard, 201 North Front Street, Suite 703, Sarnia, Ontario, N7T 8B1, Telephone: 519-383-1862** relating to the *Navigable Waters Protection Act*.

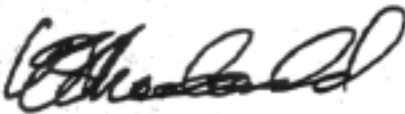
Prior to construction and through construction, operation and reclamation of the mine and coal processing plant, liaison must be maintained with Mr. Bruce Cartwright, Inspector, Alberta Environmental Protection, 2nd Floor, Provincial Building, #203, 111 - 54 Street, Edson, Alberta, T7E 1T2; telephone 403/723-8265; fax 403/723-7963.

I would like to state that the approval I have issued does not authorize under EPEA and its regulations any further activities and components associated with the mine and processing plant beyond those described in the pre-development application. Prior to commencing further activities related to the mine and processing plant, Cardinal River Coals Ltd. will have to apply for an amendment to this approval which will be reviewed under EPEA and its regulations.

Please note that Section 84 of the *Environmental Protection and Enhancement Act* may provide a right of appeal to this decision to the approval holder by submitting a Notice of Objection to the Alberta Environmental Appeal Board (William A. Tilleman, Chair). There may be a strict time line for filing such an appeal. For further information, please contact the Board Secretary at 400, Alberta Treasury Branches Plaza, 9925 - 109 Street, Edmonton, Alberta, T5K 2J8; telephone 427-6207, fax 427-4693.

Should you have any questions or comments pertaining to this approval, please call me at 403/723-8357 or Neil Chymko at 403/427-5445.

Yours truly



W.S. Macdonald, P. Eng.
 Director
 Northern East Slopes Region

I would like to state that the approval I have issued does not authorize under EPEA and its regulations any further activities and components associated with the mine and processing plant beyond those described in the pre-development application. Prior to commencing further activities related to the mine and processing plant, Cardinal River Coals Ltd. will have to apply for an amendment to this approval which will be reviewed under EPEA and its regulations.

This approval should not be taken to mean that Cardinal River Coals Ltd. has an authority under federal legislation. Cardinal River Coals Ltd. should contact Habitat Management, Cardinal and Arctic Region, 581 University Crescent, Winnipeg, Manitoba, R2T 2R6, Telephone: 204-784-1305 in relation to the application of federal laws relating to the Fisheries Act (Canada) and the Navigation Protection Program, Canadian Coast Guard, 381 North Front Street, Suite 701, St. John's, Canada, N1T 8B1, Telephone: 219-263-1821 relating to the Navigable Waters Protection Act.

Prior to construction and through construction, operation and reclamation of the mine and coal processing plant, liaison must be maintained with Mr. Bruce Cartwright, Inspector, Alberta Environmental Protection, 7th Floor, Provincial Building, 4303, 111 - 24 Street, Edmonton, Alberta, T5E 1T7, telephone: 403-723-8282; fax 403-723-7963.

In addition to this Approval, Cardinal River Coals Ltd. is responsible for obtaining all approvals pursuant to other applicable provincial acts.

Your application to construct, operate and maintain a mine and a coal processing plant has been reviewed and Approval No. 40372-00-00 dated September 29, 1998 is enclosed.

Mine Facilities EPEA Application No. 881-8812

For development liaison Application for EPEA and Construction Activities for the Coals

Don Mc Mann

Mr. Fred Mann
 Project Manager
 Cardinal River Coals Ltd.
 Bag Service 2370
 Edmonton, Alberta
 T5Y 1V2



APPROVAL

ENVIRONMENTAL PROTECTION AND ENHANCEMENT ACT

APPLICATION NO. **001-46972**

APPROVAL NO. **46972-00-00**

EFFECTIVE DATE **September 29, 1998**

EXPIRY DATE **September 1, 2008**

APPROVAL HOLDER **Cardinal River Coals Ltd.**

Pursuant to Division 2, of Part 2, of the Environmental Protection and Enhancement Act, S.A. 1992, c.E-13.3, as amended, approval is granted subject to the attached terms and conditions for the following activity:

opening up, operation and reclamation of a coal mine and construction, operation and reclamation of a coal processing plant.

Director

Date

TERMS AND CONDITIONS

PART 1: DEFINITIONS

1.1: Definitions

- 1.1.1 All definitions from the **Act** and the **regulations** apply except where expressly defined in this approval.
- 1.1.2 In all PARTS of this approval:
- (a) "**Act**" means the *Environmental Protection and Enhancement Act*, S.A. 1992, c.E-13.3, as amended;
 - (b) "**air contaminant**" means any solid, liquid or gas or combination of any of them in the atmosphere resulting directly or indirectly from the activities of man;
 - (c) "**application**" means written submissions to the **Director** in respect of application number 001-46972 and any subsequent applications for amendments of approval number 46972-00-00;
 - (d) "**daily determination of concentration**" means the determination of the concentration of a water substance or parameter in any sample by procedures authorized in this approval, and if more than one sample is collected and analyzed per **day**, the arithmetic average of their analytical results shall be considered as the **daily determination of concentration**;
 - (e) "**day**" means any sampling period of 24 consecutive hours;
 - (f) "**Director**" means the **Director** responsible for this approval unless otherwise specified;
 - (g) "**disturbed land**" means any land disturbed in any manner in association with the activity which is the subject of this approval;
 - (h) "**grab sample**" means an individual sample collected in less than 30 minutes and which is representative of the substance sampled;
 - (i) "**incompatible substances**" means substances which when mixed can produce effects which are harmful to human health or the environment such as heat, pressure, fire, explosion, violent reaction, toxic dusts, mists, fumes or gases, or flammable fumes or gases and include, but are not limited to, those substances listed in Appendix 5 of the *Guidelines for Industrial Landfills*, June 1987, Alberta Environmental Protection, as amended;
 - (j) "**local environmental authority**" means the Department of Environmental Protection, within the Province of Alberta, or the agency that has the equivalent responsibilities for any particular jurisdiction outside the Province;

TERMS AND CONDITIONS

- (k) "**major pond**" means a **mine wastewater handling facility** that receives **mine wastewater** from active mining areas, dumping locations, the plant or maintenance shop areas and discharges to the environment;
- (l) "**maximum daily**" means the value not to be exceeded by any **daily determination of concentration**;
- (m) "**maximum daily average**" means the value which is not to be exceeded as determined by the arithmetic average of all **daily determinations of concentration** collected as part of monitoring per Table 4.2-B and 4.2-C or as specified during any month;
- (n) "**mine wastewater**" means any liquids originating from the operation of the plant or mine excluding runoff from undeveloped areas;
- (o) "**mine wastewater handling facilities**" means the parts of the mine that collect, transport, store or treat **mine wastewaters**;
- (p) "**minor pond**" means a **mine wastewater handling facility** which has met all approval limits in the past year or receives **mine wastewater** from a reclaimed area and discharges to the environment;
- (q) "**NTU**" means turbidity measured in Nephelometric Turbidity Units;
- (r) "**quarter year**" means a time period of three consecutive months designated as January, February and March; or April, May, and June; or July, August, and September; or October, November, and December;
- (s) "**regulations**" means the **regulations** issued pursuant to the **Act**, as amended;
- (t) "**sediments**" means all fine sands, silts and clays or any other fines resulting from the settlement of impounded water or wastewater;
- (u) "**settling pond**" means containment structures to treat and discharge **mine wastewater**;
- (v) "**storm event**" is a precipitation event where the actual measured intensity over a specific duration is greater than or equal to the intensity calculated by the following equation:

$$\log(i) = -0.70 * \log(t) + 1.40$$

where: i = storm intensity (mm/hour)
 t = storm duration (hour)

This equation is valid only for determining storm intensities of 0.5 hour to 168 hours duration.

TERMS AND CONDITIONS

- (w) "**stream**" means any fluid flow, discharge or release;
- (x) "**summer**" means the time period between April 1 and September 30;
- (y) "**surface soil**" means the undisturbed soil profile made up of the following:
 - (i) litter layer, and A, B and BC horizons as defined in the *Canadian System of Soil Classification*, Second Edition, 1987, and rated as good, fair or poor as described in the *Soil Quality Criteria Relative to Disturbance and Reclamation*, 1987, Table 10, page 30, or
 - (ii) organic horizons;
- (z) "**tank**" means a stationary device, designed to contain an accumulation of a substance, which is constructed primarily of non-earthen materials that provide structural support, and without precluding the generality of the foregoing, may include substances such as wood, concrete, steel and plastic;
- (aa) "**TSS**" means the total suspended solids or nonfilterable residue measured in milligrams per litre;
- (bb) "**volume estimate**" means a technical evaluation based on the sources contributing to the release, including, but not limited to, pump capabilities, water meters, and batch release volumes;
- (cc) "**waste storage area(s)**" means the area(s) designated for **waste** container storage and/or waste tank storage as described in the **application**;
- (dd) "**week**" means any consecutive 7-day period;
- (ee) "**winter**" means the time period between October 1 and March 31; and
- (ff) "**year**" means calendar year.

TERMS AND CONDITIONS

PART 2: GENERAL

2.1: General

- 2.1.1 The approval holder shall immediately report by telephone any contravention of the terms and conditions of this approval to the Director of Enforcement and Monitoring at 1-403-422-4505.
- 2.1.2 The approval holder shall submit an **application** for renewal to the **Director** a minimum of six months prior to the approval expiry date or otherwise as specified in writing by the **Director**.
- 2.1.3 Any conflict between the **application** or any document and the terms and conditions of this approval shall be resolved in favour of the approval.
- 2.1.4 The terms and conditions of this approval do not affect any rights or obligations created under any other approval issued by Alberta Environmental Protection.
- 2.1.5 The mention of trade names, commercial products or named technologies in this approval does not constitute an endorsement or recommendation by Her Majesty the Queen in Right of Alberta, her employees, agents and the **Director** for general use.
- 2.1.6 The terms and conditions of this approval are severable. If any term or condition of this approval or the application of any term or condition is held invalid, the application of such term or condition to other circumstances and the remainder of this approval shall not be affected thereby.
- 2.1.7 The approval holder shall only conduct activities described in the **application** and authorized by this approval.
- 2.1.8 The approval holder shall notify the **Director** in writing within 30 days of all changes in the corporate status of the approval holder.
- 2.1.9 If the approval holder monitors for any substances or parameters which are the subject of operational limits as set out in this approval more frequently than is required and using procedures authorized in this approval, then the approval holder shall provide the results of such monitoring as an addendum to the reports required by this approval.
- 2.1.10 All abbreviations used in this approval follow those given in *Standard Methods for the Examination of Water and Wastewater* published jointly by the American Public Health Association, the American Water Works Association, and the Water Environment Federation, as amended, or as otherwise specified in the approval.
- 2.1.11 The approval holder shall notify the **Director** in writing within 30 days of operations ceasing permanently.

TERMS AND CONDITIONS

- 2.1.12 The approval holder shall operate and maintain all treatment facilities and monitoring equipment including ensuring effective performance, trained operators, regular inspections, and adequate laboratory and process controls which include quality assurance procedures.
- 2.1.13 The approval holder shall notify a Conservation and Reclamation Inspector in writing prior to commencement of drilling programs within the Alberta Energy and Utilities Board Mine Permit Area.

2.2: Record Keeping

- 2.2.1 The approval holder shall record and retain all the following information for a minimum of ten **years**:
- (a) the names and addresses of all persons who discover any contravention of the **Act**, the **regulations** or this approval;
 - (b) the names and addresses of all persons who take any remedial action arising from the contravention of the **Act**, the **regulations** or this approval; and
 - (c) a detailed description of the remedial measures taken in respect of a contravention of the **Act**, the **regulations** or this approval.
- 2.2.2 The approval holder shall record and retain all the following information in respect of any sampling conducted or analyses performed for a minimum of ten **years**, or otherwise as specified in writing by the **Director**:
- (a) the place, date and time of sampling;
 - (b) the dates the analyses were performed;
 - (c) the analytical techniques, methods or procedures used in the analyses;
 - (d) the names of the persons who collected and analyzed each sample; and
 - (e) the results of the analyses.

TERMS AND CONDITIONS

2.3: Analytical Requirements

2.3.1 Collection, analysis of samples and reporting shall be conducted in accordance with the following or otherwise as specified in writing by the **Director**:

(a) for **mine wastewater**, groundwater, waterworks and **domestic wastewater** parameters:

- (i) the *Standard Methods for the Examination of Water and Wastewater* American Public Health Association, American Water Works Association, Water Environment Federation, as amended; or,
- (ii) the *Methods Manual for Chemical Analysis of Water and Wastes*, Alberta Environmental Center, as amended;

(b) for biological monitoring:

- (i) the *Guidelines for Monitoring Benthos in Freshwater Environments*, Environment Canada, January, 1993, as amended; and

(c) for toxicity testing:

- (i) the *Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout*, Environment Canada, Environmental Protection Series 1/RM/13, July 1990, as amended;
- (ii) the *Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Daphnia Magna*, Environment Canada, Environmental Protection Series 1/RM/14, July 1990, as amended.

2.3.2 The preservation, storage, and handling of all samples collected at the sampling locations identified in this approval shall be in such a manner that the validity of the samples is not compromised. The analysis of samples shall be in a laboratory with documented quality assurance and quality control programs, including participation in interlaboratory studies.

TERMS AND CONDITIONS

2.4: Workplans

- 2.4.1 The approval holder shall develop workplans, including objectives, methodology and schedule of implementation, that are designed to:
- (a) provide a template for the proposed mine end pit lakes, by establishing an ongoing monitoring program into the aquatic ecology of existing or planned lakes at the Luscar Mine;
 - (b) establish minimum instream flow values in the drainages directly affected by the mine, in particular the McLeod River, Mackenzie Creek, and Redcap Creek; and carry out long-term monitoring of groundwater and surface water quality, including appropriate biomonitoring and fisheries monitoring;
 - (c) further evaluate levels of iron, aluminum, copper and nitrogen in receiving waters through the use of modeling; to review available control technologies for metals, nutrients and other compounds within the settling ponds; and to prevent a net increase of nitrogen loadings to the McLeod River from the combined effects of the Luscar Mine and the Cheviot Mine; and to assess the relevance of current water quality guidelines to effluent discharges;
 - (d) develop a fisheries compensation program related to establishment of fisheries at the mine; monitor the success of its programs to re-establish native rainbow trout stocks and identify potential alternative areas for habitat enhancement should end pit lakes not prove to be successful;
 - (e) develop a carnivore compensation program for onsite and offsite measures related to maintaining regional carnivore populations, including effectively replacing habitat for individual carnivore species affected by the Cheviot Mine;
 - (f) monitor the impacts of the increased traffic on wildlife populations along the Grave Flats Road, and make any adjustments necessary to reduce wildlife mortality to acceptable levels;
 - (g) carry out studies that:
 - (i) examine current wildlife movement patterns and dispersal across and throughout the mine site and to establish the likely minimum conditions (e.g. width, degree of cover) necessary for wildlife corridors to be effective and for dispersal to be successful in terms of establishing home ranges and successful reproduction;
 - (ii) establish how such corridors might be accommodated within the mine plan;
 - (iii) monitor impacts to elk on mine permit lands and land peripheral to the mine disturbance area and to propose mitigation strategies that will enable elk to continue to effectively use these areas;
 - (iv) monitor and identify new mineral licks;
 - (v) identify and assess the location, characteristics, value to wildlife and fisheries, and connectivity of riparian features in the mine permit area and to propose mitigation strategies to reduce impacts on these areas;
 - (h) monitor the changes to public access and use patterns resulting from the development, and advise the **Director** if any of these appear to have unduly increased the risk of wildlife habitat displacement or of either legal or illegal wildlife mortality; and

TERMS AND CONDITIONS

- (i) develop a program for Harlequin ducks that:
 - (i) employs all reasonable methods available to reduce impacts on Harlequin duck populations, including reducing disturbance levels in riparian areas of the McLeod River, MacKenzie Creek and Cardinal River watersheds;
 - (ii) continues to monitor these populations; and
 - (iii) maintains a viable population.
- 2.4.2 The approval holder shall submit the workplans specified in 2.4.1 by October 31, 1998 unless otherwise authorized in writing by the **Director**.
- 2.4.3 The approval holder shall implement the workplans specified in 2.4.1 as authorized in writing by the **Director**.

TERMS AND CONDITIONS

PART 3: CONSTRUCTION

3.1: General

- 3.1.1 If construction of the pre-development activities as described in the **application** has not commenced by December 31, 2001, the approval holder shall apply for an amendment to this approval unless otherwise authorized in writing by the **Director**.

3.2: Mine Wastewater

- 3.2.1 The approval holder shall design and construct **settling ponds** to meet all the following minimum requirements:
- (a) located to capture all **mine wastewater** for a specific area;
 - (b) achieve "settleable solids" for all water inflows, up to the mine specific **storm event** (settleable solids = 0.5 ml/L);
 - (c) to withstand a washout from a 1 in 100 year flood;
 - (d) allow all weather access for monitoring, dredging and maintenance;
 - (e) minimize short circuiting of water flow and thereby achieve adequate settling retention time;
 - (f) prevent the escape of floating hydrocarbons;
 - (g) provide reliable flow measurement, if so designated in TABLE 4.2-B; and
 - (h) minimize erosion in the discharge channel.
- 3.2.2 Prior to the commissioning of the Loadout Pond, Plantsite Pond and Shop Pond, the approval holder shall contain and treat **mine wastewater** by use of ditches, sumps, straw bales, filter fences or other such structures. These structures shall be subject to the limits, monitoring and reporting requirements prescribed for major ponds in 4.2.

3.3: Land Conservation

- 3.3.1 The approval holder shall salvage all **surface soil** on slopes less than 22°.
- 3.3.2 The approval holder shall stockpile all **surface soil** as follows:
- (a) stockpile foundations shall be stable;
 - (b) stockpiles shall be stabilized to control water erosion;
 - (c) stockpiles shall be accessible and retrievable; and
 - (d) stockpiles shall be revegetated.
- 3.3.3 The approval holder shall immediately suspend **surface soil** salvage when:
- (a) wet or frozen field conditions will result in the degradation of **surface soil**; or
 - (b) high wind velocities, any other field conditions or mine operations will result in the degradation, of **surface soil**; or
 - (c) directed in writing by a Conservation and Reclamation Inspector.

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- 3.3.4 The approval holder shall only recommence **surface soil** salvage when suspended under 3.3.3 if:
- (a) field conditions referred to in 3.3.3 no longer exist; or
 - (b) direction for a change in **surface soil** salvage procedures is received in writing from a Conservation and Reclamation Inspector.
- 3.3.5 The approval holder shall minimize vegetation clearing from May 1 to July 31 to reduce the impact on breeding bird populations. When proposing to clear vegetation within this period, the approval holder shall obtain authorization in writing from a Conservation and Reclamation Inspector prior to vegetation clearing.

3.4: Fisheries and Harlequin ducks

- 3.4.1 With respect to fisheries mitigation:

- (a) The approval holder shall identify and evaluate all sites with potential for enhancement of wintering habitat within the restored McLeod River channel. Prior to construction work in the restored channel or by December 31, 1998, whichever is earliest, the approval holder shall submit for the approval of the **Director**, a proposal containing evaluations and design for those sites with high potential for enhancement. The proposal shall also include an evaluation to identify sites with the potential for enhancement of wintering habitat within the McLeod River system upstream of the falls above the confluence with Whitehorse Creek.
- (b) The approval holder shall employ construction and mitigation methods which minimize the amounts of suspended sediment introduced into fish bearing watercourses and in watercourses that flow into fish bearing waters.
- (c) Subject to 3.4.1(d), the approval holder shall only conduct in-stream activities in the McLeod River and tributaries from July 16 to August 31 of any **year** in order to protect spawning and incubation of fish.
- (d) In-stream work between January 1 and July 15 or between September 1 and December 31 of each **year** will be accommodated provided that:
 - (i) isolation techniques are used;
 - (ii) the *Canadian Water Quality Guidelines* for suspended solids levels for the protection of aquatic life are met; specifically, that suspended solids derived from construction activities shall not exceed 10 mg/L when background levels are ≤ 100 mg/L, or 10% of background levels when background levels are > 100 mg/L;
 - (iii) monitoring of suspended solids occurs above and below the construction site during and immediately following any in-stream activity; and
 - (iv) construction activities are temporarily suspended if the levels in 3.4.1(d)(ii) are exceeded. Prior to resuming construction, additional mitigation measures shall be implemented to reduce the levels of suspended sediments introduced into the watercourse.

TERMS AND CONDITIONS

- 3.4.2 With respect to Harlequin duck mitigation, the approval holder shall implement the Harlequin duck mitigation plan described in the *Cheviot Mine Project Access Corridor Licence Application*, including the retention of a biologist on site, for the construction period and shall continue the Harlequin duck monitoring program for the duration of the Cheviot Mine Project.

PART 4: OPERATIONS, LIMITS, MONITORING AND REPORTING

4.1: Air

Operations

- 4.1.1 The approval holder shall control dust and **air contaminant** emissions, as described in the **application** or as directed in writing by a Conservation and Reclamation Inspector.

4.2: Mine Wastewater

Operations

- 4.2.1 The approval holder shall not release any substances from the mine to the surrounding watershed except as authorized under this approval.
- 4.2.2 With respect to the discharge of **mine wastewater**:
- (a) The approval holder shall only discharge **mine wastewater** from the following **mine wastewater handling facilities**:
- | MAJOR PONDS | MINOR PONDS |
|----------------|-------------|
| Loadout Pond | |
| Plantsite Pond | |
| Shop Pond | |
- (b) The approval holder shall submit written notification to the **Director** prior to discharge of any **mine wastewater** from a new **settling pond** to the surrounding watershed.
- 4.2.3 The water from the Thornton Creek underground mine workings shall be pumped or handled in a manner such that the *Alberta Water Quality Guideline for the Protection of Freshwater Aquatic Life-Dissolved Oxygen* is met prior to discharge into Thornton Creek.
- 4.2.4 Should there be evidence of precipitates in Thornton Creek downstream of the discharge, the approval holder shall construct a **settling pond** for the water pumped from the Thornton Creek underground mine workings when requested in writing from the **Director**.

TERMS AND CONDITIONS

- 4.2.5 All fuel and chemical storage areas shall have secondary containment to contain spills and leaks.
- 4.2.6 All storage **tanks** shall meet the requirements in the *Secondary Containment for Above Ground Storage Tanks*, Alberta Environmental Protection, September 25, 1995, as amended.
- 4.2.7 The approval holder shall not use flocculants unless otherwise authorized in writing by the **Director**.
- 4.2.8 Flocculant facilities are to be sited to avoid washout from a 1 in 20 year flood and must be secure from unauthorized entry or tampering.
- 4.2.9 The approval holder shall determine **TSS** from turbidity in the following manner:
- (a) for turbidity values less than or equal to 50 **NTU**, the corresponding **TSS** value is as follows:

Turbidity Range NTU	TSS Value (mg/l)
>0 – 10	3.0
>10 – 20	7.0
>20 – 30	10.0
>30 – 40	17.0
>40 - 50	23.0

- (b) for turbidity values greater than 50 **NTU**, the sample shall be analyzed for **TSS**.
- 4.2.10 The **maximum daily** limits for **TSS** in TABLE 4.2-A shall be waived for a period of 48 hours after a **storm event** has occurred at the mine.
- 4.2.11 Prior to construction, the approval holder shall develop, document and implement a Best Management Practices (BMP) Plan which is based on the *Best Management Practices and Spill Response Guidance Document*, Industrial Waste and Wastewater Branch, July 1994, as amended. The approval holder shall keep the BMP Plan current to mine operations.

Limits

- 4.2.12 Releases from the **mine wastewater handling facilities** shall not exceed the limits specified in TABLE 4.2-A.

TERMS AND CONDITIONS

TABLE 4.2-A: LIMITS – MINE WASTEWATER RELEASES

PARAMETER	LIMIT	
	maximum daily average (for any month)	maximum daily
Total Suspended Solids (TSS)	50 mg/L	350 mg/L
pH	6.0 - 9.5 pH units	
Floating Solids	not present except in trace amounts	
Visible Foam	not present except in trace amounts	
Oil or other substances	not present in amounts sufficient to create a visible film or sheen	
Acute Lethality Test Using Rainbow Trout (<i>Oncorhynchus mykiss</i>)	100% survival in 100% mine wastewater sample (undiluted)	

Monitoring

- 4.2.13 Monitoring requirements in 4.2 shall commence upon the start of construction of the mine.
- 4.2.14 The approval holder shall monitor all releases from **mine wastewater handling facilities** as specified in TABLE 4.2-B & 4.2-C. The approval holder shall include the new **settling ponds** in the monitoring as a **major pond** as described in 4.2.
- 4.2.15 The approval holder shall monitor ambient conditions in the McLeod River at MR-1A and MR-2 for the parameters and frequency specified in TABLE 4.2-B. Should mine activities be conducted upstream of the MR-1A site, then MR-1 shall be used instead of MR-1A.
- 4.2.16 The approval holder shall conduct inspections daily of those **minor ponds** using flocculants and all **major ponds**, unless there is no discharge from the pond, and inspections shall include:
- (a) checking that all flocculant stations are functioning properly;
 - (b) a visual check that discharge is not abnormally turbid; and
 - (c) taking a **mine wastewater** sample for analysis, if the discharge appears abnormally turbid (i.e. greater than 50 **NTU**), and comparing with the limits of Table 4.2-A.

TERMS AND CONDITIONS

TABLE 4.2-B: MAJOR PONDS - MONITORING AND REPORTING REQUIREMENTS

MONITORING				REPORTING		REPORT
Parameter, Test or Reporting Requirement	Frequency	Sample Type	Sampling Location	Monthly	Annual	To
Flow (in cubic metres/D)	daily	Weir	A (only ponds using flocculants)	Yes (On or before the end of the month following the month in which the information was collected) Number of Copies Required: 1	Yes (Provide annual summary of data by March 31) Number of Copies Required: 1	Director
Total Suspended Solids (in mg/L)	1/week and when turbidity >50 NTU	Grab	A & B			
Turbidity (NTU)	3.5/week in summer 1/week in winter	Grab	A & B			
pH	3.5/week in summer 1/week in winter	Grab	A & B			
Nitrate-Nitrogen (in mg/L)	1/month until the start of mining, then 1/week thereafter	Grab	A & B			
Visual: foam and solids oil and grease	daily	N/A	N/A			
<p>A = the sampling location for compliance monitoring of Mine Wastewater (i.e., pond perimeter or discharge stream) B = MR1 (or MR1-A) and MR-2</p>						

TERMS AND CONDITIONS

TABLE 4.2-C: MINOR PONDS - MONITORING AND REPORTING REQUIREMENTS

MONITORING				REPORTING		REPORT
Parameter, Test or Reporting Requirement	Frequency	Sample Type	Sampling Location	Monthly	Annual	To
Total Suspended Solids (in mg/L)	prior to discharge and 1/week thereafter	Grab	A	Yes (as in Table 4.2-B)	Yes (as in Table 4.2-B)	Director
pH	prior to discharge and 1/week thereafter	Grab	A			
Nitrate-Nitrogen (in mg/L)	monthly	Grab	A			
Visual: - floating solids - visible foam - oil sheen etc.	prior to discharge and 1/week thereafter	N/A	N/A			
A = the sampling location for compliance monitoring of Mine Wastewater (i.e., pond perimeter or discharge stream)						

4.2.17 To provide information to determine total nitrogen loadings in the McLeod River, the approval holder shall sample and analyze for nitrate/nitrite, ammonia, and total kjeldahl nitrogen (TKN) at MR-4 once per **week** during the **summer** and once per month during the **winter**.

4.2.18 The approval holder shall monitor the Thornton Creek underground mine pumped discharge as specified in TABLE 4.2-D.

TERMS AND CONDITIONS

TABLE 4.2-D: UNDERGROUND MINE DISCHARGE MONITORING
AND REPORTING REQUIREMENTS

PARAMETER	FREQUENCY	SAMPLE TYPE	LOCATION	REPORT	REPORT TO
Total Suspended Solids (TSS)	once a month	Grab	A & B	Monthly	Director
pH	once a month	Grab	A & B		
TDS	once a month	Grab	A & B		
Dissolved Oxygen	once a month	Grab	A & B		
Sulfide	once a month	Grab	A & B		
Copper	once a month	Grab	A & B		
Iron	once a month	Grab	A & B		
Aluminium	once a month	Grab	A & B		
A = Thornton Creek upstream of the discharge B = Thornton Creek downstream from the discharge					

4.2.19 The approval holder shall sample the McLeod River upstream and downstream of mine operations at MR-1A and MR-2 on a **quarter year** basis. Should mine activities be conducted upstream of the MR-1A site, then MR-1 shall be used instead of MR-1A. These samples shall be analysed for all of the following:

- (a) all inorganic parameters listed in the Guidelines for Freshwater Aquatic Life of the *Canadian Water Quality Guidelines*, 1988, CCREM, as amended; and
- (b) BOD, BTEX, Color, Oil & Grease, Phenols, Total Phosphorus, Total Kjeldahl Nitrogen, Dissolved Oxygen, Sulfate, TDS, Temperature, Total Sulfide, **TSS**.

4.2.20 The approval holder shall continue the Benthic Invertebrate Biomonitoring Program in the McLeod River. The program shall:

- (a) be conducted in the fall of 1999, 2000, 2001 and every second **year** thereafter;
- (b) evaluate whether there have been changes in the benthic invertebrate community which are attributable to the effects of the mine effluent and, if so, the length of impact along the river;
- (c) follow the protocol set out in *Guidelines for Monitoring Benthos in Freshwater Environments*, Environment Canada, January 1993.

TERMS AND CONDITIONS

- 4.2.21 The approval holder shall submit a proposal to the **Director** to monitor the epilithic chlorophyll A or other suitable measures that can be used to assess benthic algae in the McLeod River. The proposal shall outline a monitoring program that will:
- (a) be conducted in the fall of 1999, 2001 and every second **year** thereafter;
 - (b) evaluate whether there have been changes in the benthic algae community which are attributable to the effects of the mine effluent and, of so, the length of impact along the river;
 - (c) include sufficient sites to determine impacts;
 - (d) include sufficient samples at each site to obtain reliable estimates and allow for statistical analyses; and
 - (e) be submitted by June 30, 1999, unless otherwise authorized in writing by the **Director**.
- 4.2.22 The approval holder shall implement the Epilithic Chlorophyll A Monitoring Proposal as authorized in writing by the **Director**.
- 4.2.23 The approval holder shall submit a Fish Monitoring Program Proposal and schedule for the main stem of the McLeod River below the falls, MacKenzie Creek and Redcap Creek to evaluate effects of mining on fish populations and fish habitat over time and the effectiveness of mitigation measures. The proposal shall:
- (a) consider habitat capabilities, critical habitat areas, species distribution and species abundance;
 - (b) include a monitoring program to measure the success of the introduction of native Athabasca rainbow trout in the upper McLeod River above the falls; and
 - (c) be submitted to the **Director** by October 31, 1998, or another date as authorized in writing by the **Director** and implemented as authorized in writing by the **Director**.
- 4.2.24 The approval holder shall conduct a Substrate Monitoring Program in the McLeod River and tributaries prior to and following construction activities as described in the **application**.
- 4.2.25 For any problems that are identified by monitoring programs required in 4.2, the approval holder shall submit, for authorization in writing by the **Director**, a plan that outlines the mitigation measures to be implemented.

Reporting

- 4.2.26 The approval holder shall submit, under separate cover and for authorization in writing by the **Director**, a Turbidity **TSS** Evaluation Report by March 31, 2000, which will evaluate the relationship between turbidity and **TSS**.
- 4.2.27 The approval holder shall submit, for authorization in writing by the **Director**, a Storm Event Report by March 31, 1999, which evaluates the **storm event** equation for the mine.

TERMS AND CONDITIONS

- 4.2.28 The results of water quality monitoring in the McLeod River as specified in 4.2.19 shall be compared with provincial and federal guidelines and submitted to the **Director**, under separate cover, as a Watershed Water Quality Report by March 31 of each **year**.
- 4.2.29 The approval holder shall submit the Benthic Invertebrate Biomonitoring Program Report to the **Director** by June 30 of the **year** following the sampling. The 1999 and 2000 reports shall be submitted by February 28 of the following **year** in order to modify construction practices, if necessary, for the upcoming open water season.
- 4.2.30 The approval holder shall submit under separate cover the Epilithic Chlorophyll A Monitoring Report to the **Director** by March 31 of the **year** following the sampling.
- 4.2.31 The approval holder shall submit the Substrate Monitoring Report, under separate cover, by March 31, 2002, unless otherwise authorized in writing by the **Director**.
- 4.2.32 The monthly wastewater report shall include the following:
- (a) monitoring data as required in Tables 4.2-B, 4.2-C and 4.2-D;
 - (b) comparison of monitoring data with limits in Table 4.2-A;
 - (c) in addition to reporting pursuant to 2.1.1, details of any approval contravention and follow-up action taken;
 - (d) identification of any flocculants added and the quantity used;
 - (e) any mine operations that would have an impact on the **mine wastewater** discharges, and
 - (f) the results of monitoring data collected pursuant to 3.4.1(d), including the occasions when exceedances occurred, the measured total suspended solids values, and the mitigation measures implemented.
- 4.2.33 The annual wastewater report shall include the following:
- (a) a statistical summary of the **mine wastewater** monitoring results from 4.2. This shall include high, low and average values for every parameter routinely monitored;
 - (b) an assessment of the data relative to the limits in TABLE 4.2-A, including a trend analysis, using appropriate control charts or graphs to demonstrate performance;
 - (c) a summary and evaluation of the performance of all **mine wastewater handling facilities** including remarks on **sediment** accumulation, dredging activities, extensions and alterations of the facilities;
 - (d) a summary of total nitrogen loading at MR-4 and a comparison with the predictions in the Environmental Impact Assessment Report for the Cheviot Mine, Volumes 1-14;
 - (e) in addition to reporting pursuant to 2.1.1, details of any approval contravention and follow-up action taken; and
 - (f) a description of proposed mining activities in the upcoming **year** which may affect the **mine wastewater handling facilities**.

TERMS AND CONDITIONS

4.3: Waste Management

Operations

- 4.3.1 The approval holder shall manage **wastes** in accordance with the following, unless otherwise authorized in writing by the **Director**:
- (a) all recyclables shall be stored at the **waste storage areas**; and
 - (b) grease and edible waste shall be stored at the **waste storage areas**.
- 4.3.2 The approval holder shall only land treat contaminated soil in accordance with and pursuant to the *Code of Practice for the Land Treatment and Disposal of Soil Containing Hydrocarbon (Draft)*, as amended.
- 4.3.3 Hazardous **waste** or hazardous recyclables stored in **containers** or **tanks** shall be stored in accordance with *the Hazardous Waste Storage Guidelines*, Alberta Environmental Protection, June 1988, as amended.
- 4.3.4 All **containers** which hold **waste** or any empty unrinsed **containers** which held **waste**, shall be stored in the **waste storage area**.
- 4.3.5 **Wastes** shall only be transferred at designated transfer areas designed to contain spills and leaks.
- 4.3.6 All **waste** that is unloaded shall be immediately transferred to the **waste storage areas**.
- 4.3.7 The approval holder shall provide and maintain a minimum of 1.2 m of aisle space to allow inspection, unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of the **waste storage area**. Inspection aisles shall be arranged such that each **container** is exposed to view from at least one side.
- 4.3.8 The approval holder shall dispose of **waste** generated at the mine only to facilities holding a current approval under the **Act** or to facilities approved by a **local environmental authority** outside of Alberta.
- 4.3.9 **Incompatible substances** shall be prevented from mixing by a dyke, berm, wall or other methods.
- 4.3.10 The approval holder shall post a sign reading "Waste Storage Area" at the entrances to the **waste storage area**.

TERMS AND CONDITIONS

Monitoring

4.3.11 The approval holder shall identify all **waste** generated at the mine, but this does not include **mine wastewater** or **air contaminant** emissions.

4.3.12 The approval holder shall measure and record the quantity of each **waste** generated in the previous **year**, and the disposal location for each **waste**.

Reporting

4.3.13 The approval holder shall compile all the information required by 4.3.11 and 4.3.12 in an Annual Waste Management Summary report as indicated in TABLE 4.3-A and pursuant to or in compliance with *Industrial Waste Identification and Management Options*, May 1996, as amended, and the *Alberta User Guide for Waste Managers*, May 1995, as amended.

TABLE 4.3-A: ANNUAL WASTE MANAGEMENT SUMMARY

Waste Name	Uniform Waste Code				Quantity (kg or L)		Disposal Location
	WC	PIN	Class	Mgmt	Hazardous	Non-hazardous	
TOTAL							

4.3.14 The Annual Waste Management Summary report for the preceding **year** shall be submitted to the **Director** by March 31, or another date as authorized in writing by the **Director**.

4.4: Groundwater

4.4.1 The approval holder shall continue the Groundwater Monitoring Program as described in the **application** unless otherwise authorized in writing by the **Director**.

TERMS AND CONDITIONS

4.5: Domestic Wastewater

- 4.5.1 The approval holder shall collect and contain all **domestic wastewater** at the mine.
- 4.5.2 The approval holder shall remove all **domestic wastewater** from the mine for treatment only to a municipal wastewater treatment facility holding a current approval under the **Act**.

4.6: Waterworks

- 4.6.1 All potable water used at the mine shall consist of bottled water or water obtained from a municipal water source holding a current approval under the **Act**.

PART 5: RECLAMATION

5.1: General

- 5.1.1 The approval holder shall apply to amend the approval at least six months prior to starting any final reclamation activities that include the dismantling and removal of all buildings, structures, or fixtures.
- 5.1.2 The approval holder shall carry out interim reclamation work, including slope stabilization, soil replacement, and seeding concurrent with operations.

5.2: Land Reclamation

- 5.2.1 The approval holder shall reclaim the land, through appropriate conservation and reclamation methods, to provide land having characteristics (soils, topography, vegetation and drainage) that result in a return of land capability at least equivalent to that existing prior to disturbance.
- 5.2.2 The approval holder shall remove all watercourse crossings as part of the final reclamation, unless otherwise authorized in writing by the **Director**.

5.3: Materials Placement, Backfilling and Contouring

- 5.3.1 The approval holder shall create a final landscape with free draining and nonerosive slopes.
- 5.3.2 The approval holder shall immediately suspend **surface soil** replacement when:
- (a) wet or frozen field conditions will result in the degradation of **surface soil**; or
 - (b) high wind velocities, any other field conditions or mine operations will result in the degradation of **surface soil**; or
 - (c) directed in writing by a Conservation and Reclamation Inspector.

TERMS AND CONDITIONS

5.3.3 The approval holder shall receive direction in writing from a Conservation and Reclamation Inspector prior to disposing of **sediment** cleaned out from **settling ponds**.

5.4: Revegetation

5.4.1 The approval holder shall only use the following for revegetation:

- (a) seed, for agronomic species, that is equivalent to Canada #1 seed and is free of prohibited and primary noxious weed; and
- (b) seed, for native species that:
 - (i) is free of prohibited and primary noxious weeds;
 - (ii) has a count of 5 or less secondary noxious weed seeds per 25 g of seed; and
 - (iii) has a count of 50 or less for other weed seeds per 25 g of seed.

5.4.2 The approval holder shall obtain and retain documentation that verifies that the seed used for revegetation meets the criteria specified in 5.4.1.

5.4.3 The approval holder shall, in consultation with a Conservation and Reclamation Inspector, continue to evaluate the opportunities for incorporating greater use of native species in revegetation.

5.5: Monitoring and Reporting

Monitoring and Research

5.5.1 The approval holder shall submit a proposal to the Director for a reclamation monitoring and research program to determine satisfactory methods for reclamation of disturbed land. The program shall:

- (a) outline the objectives, methods and procedures to address areas where monitoring and research is warranted;
- (b) consider factors such as seed mixtures and the opportunity to incorporate native species in revegetation plans;
- (c) be submitted by December 31, 1999 unless otherwise authorized in writing by the **Director**; and
- (d) be implemented as authorized in writing by the **Director**.

TERMS AND CONDITIONS

Reporting

- 5.5.2 In addition to reporting pursuant to 2.1.1, the approval holder shall immediately contact a Conservation and Reclamation Inspector when an emergency causes or requires a land surface disturbance that is not authorized by this approval.
- 5.5.3 The approval holder shall prepare an Annual Report that includes:
- (a) a statement summarizing compliance with the requirements of this approval;
 - (b) a summary statement and maps of **disturbed land**, undisturbed areas, and reclaimed land;
 - (c) a summary statement and maps of **surface soil** salvage, storage and replacement;
 - (d) a summary statement and maps of materials handling, reclamation, revegetation progress and productivity;
 - (e) a summary of the monitoring and research required in 5.5.1 and the implications to operational reclamation plans, and
 - (f) any other information requested by the **Director**.
- 5.5.4 Fifteen copies of the Annual Report for the preceding **year** shall be submitted to the **Director** by March 31, or another date as authorized in writing by the **Director**.

Director

Date

September 29, 1998

File: 60335

Mr. Fred Munn
Cardinal River Coals Ltd.
Bag Service 2570
Hinton, Alberta
T7V 1V5

Dear Mr. Munn:

RE: CHEVIOT MINE – PLANT SITE FACILITIES

Your \$1,050.00 licence fee for this project is acknowledged (receipt No. 99404793 enclosed). Also enclosed is Interim Licence No. 22085 authorizing construction of structures associated with the pre-development activities of the Cheviot Mine in accordance with the *Water Resources Act*.

Please review all of the interim licence conditions.

Also, note that:

1. This interim licence does not supersede approvals required pursuant to other provincial acts.
2. This interim licence should not be taken to mean that you have an authority under federal legislation. You should contact **Habitat Management, Central and Arctic Region, Fisheries and Oceans, 501 University Crescent, Winnipeg, R3T 2N6 (phone: 204-985-2505)** in relation to the application of federal laws relating to the *Fisheries Act (Canada)*, and the **Navigation Protection Program, Canadian Coast Guard, 201 North Front Street, Suite 703, Sarnia, Ontario, N7T 8B1 (phone: 519-383-1862)** relating to the *Navigable Waters Protection Act*.
3. In order to reduce the potential of the spread of **whirling disease** in fish, we ask that all equipment and machinery that has been used in the United States be washed clean of all mud and dirt before being used again in any activities in or near streams in Alberta.
4. In any condition where information is to be requested by or submitted to the Controller of Water Resources, the information will be requested by or provided to the Manager, Regional Support, Northern East Slopes Region.

5. This interim licence may be amended to incorporate any additional structures that may be required within the approved fence line for the project.

If you have further questions or comments regarding this interim licence, please contact José Michel at 427-6451 or Rick Nutbrown at 427-7049, Edmonton.

Sincerely,

Al Lang, P. Eng.
Manager, Regional Support
Northern East Slopes Region

JRM/

Enclosure

cc: Jim Skrenek, NRS-Northern East Slopes Region
Garry Linsey, Department of Fisheries and Oceans
Dennis Bratton, C & R Review Committee
Dave Henderson, EUB

CHEVIOT MINE PLANT SITE FACILITIES

Cardinal River Coal Ltd.
Bag Service 2570
Hinton, Alberta
T7V 1V5
(the "Licensee")

File No. 60335

Priority No. 1997-12-18-05
1997-12-18-06

having complied with the applicable provisions of the Water Resources Act and the Regulations is authorized as soon as right-of-way is obtained:

A. To construct works as shown on plans and reports filed, approved and identified in departmental records as:

See attached list of plans and reports

B. To divert and use water as specified and described subject to the following terms and conditions:

PURPOSE: Diversion (drainage and flood control)

SOURCE OF SUPPLY: All water sources identified in Figure 5 of "Pre-Development License Application for Earthwork and Construction Activities Cheviot Mine Facilities", December 1997 (W.R. Report No. 60335-R1), including groundwater (except direct diversion from the McLeod River)

POINT OF DIVERSION: All points where water is diverted (both consumptive and non-consumptive) within Sections 32 and 33, Township 45, Range 23, and Sections 3, 4 and 5, Township 46, Range 23, West of the 5th Meridian.

GROSS DIVERSION: Up to 3,876 acre-feet ($4.781 \times 10^6 \text{ m}^3$) annually consisting of:

1. Estimated Consumptive Use: Nil
2. Estimated Losses: 1.0 acre-foot ($1\,234 \text{ m}^3$)
3. Estimated Return Flow: 3,875 acre-feet (4.78 million cubic metres) to Thornton Creek at SE 32-45-23-5

RATE OF DIVERSION: 5.35 cubic feet per second (0.15 cubic metres per second)

Construction must be complete by 2003-12-31

1998

Dated at Edmonton

Manager, Regional Support
Northern East Slopes Region

CONDITIONS TO INTERIM LICENCE No. 23082

EXCERPTS FROM THE WATER RESOURCES ACT

Granting of Interim licence

23. (1) On receipt of the application and plans, properly approved, together with proof

(a) that the proper notice of the filing of the application and plans has been given, and

(b) that, if such is the case, the permission referred to in section 13(8)(b), has been granted and after considering all protests filed, the Minister may grant an interim licence authorizing the construction of the proposed works with any changes and variations and subject to any conditions the Minister considers necessary, and fixing a term within which the construction of the works is to be completed.

(2) The term of an interim licence shall be one year from its date unless a longer or shorter term is prescribed in the interim licence but the Minister may from time to time extend the term

(a) for a period not exceeding one further year, and

(b) if he is satisfied that the completion of the works has been retarded by physical conditions over which the holder of the interim licence has no control, for any additional period or periods that he thinks fit.

RSA 1980 CW-5
s18: 1981 c40s6

Issue of permit or licence

24. (1) A permit, exploration permit, interim licence or licence may be issued by the Minister, the Controller of Water Resources or any other person authorized by the Minister in writing to do so.

(2) An extension of the term of a permit, exploration permit, interim licence or licence may be granted by the Minister, the Controller of Water Resources or any other person authorized by the Minister in writing to do so.

RSA 1980 CW-5
s24

Failure to complete works within time limited

53. (1) If authorized works are not completed on the expiration of the time limited under this Act or under an extension granted by the Minister for their completion, the rights granted to the licensee cease, except in so far as they are necessary for effectually operating the works then completed.

(2) Any works constructed or acquired at the date of the forfeiture may be taken over and operated or disposed of by the Minister in the manner and on the terms here in before provided.

RSA 1980 CW-5
s53

CONDITIONS TO INTERIM LICENCE No. 22085**Definitions**

- (a) “Act” means the *Water Resources Act*, R.S.A., 1980, C.W-5 as amended, and any regulations under the Act.
- (b) “Controller” means the Controller of Water Resources unless otherwise specified.
- (c) “fenceline” means the boundaries of the area described in the Miscellaneous Lease (MLL) No. 980004 issued to the Licensee under the *Public Lands Act*, and as identified on Figure 5 of “Pre-Development License Application for Earthwork and Construction Activities Cheviot Mine Facilities”, December 1997 (W.R. Report No. 60335-R1).
- (d) “wells” means production wells and dewatering wells.

Part 1 Scope of Licence

- 1.01 This interim licence authorizes all activities related to the *Water Resources Act* for the primary purpose of dewatering that will allow the Licensee to carry on the activities granted under the *Environmental Protection and Enhancement Act* (EPEA) approval issued in response to Application No. 001-46972. The activities authorized under the *Water Resources Act* include the diversion, control and use of water, and construction, operation and maintenance of related structures within the fenceline.
- 1.02 Subject to condition 5.01, the construction and development of drainage, flow control, water diversion and conveyance systems may include:
 - (a) Intake and Conveyance Systems: intake works, channels, pipelines, culverts, flumes, siphons, aqueducts, turnouts, drop structures, crossings, dykes;
 - (b) Containment Structures: dams, retention ponds, sedimentation ponds, tailings ponds, dykes, lagoons, transfer sumps; and,
 - (c) Land Grading and Drainage Systems: berms, terraces, ditches, pipelines, culverts, flumes, siphons, aqueducts, drop structures, road crossings, stream re-alignment and outfall structures.
- 1.03 The Licensee may develop wells for groundwater exploration and groundwater diversion for the purpose specified under this interim licence.

CONDITIONS TO INTERIM LICENCE No. 22085 (continued)

- 2 -

Part 2 General Conditions

- 2.01 This interim licence and the attached conditions are based on knowledge available to the Controller at the time of issue, and therefore, the rights and privileges granted are subject to annual review and modification. Without limiting the meaning of the foregoing, the Controller reserves the right to require modifications to the works as deemed necessary.
- 2.02 All water released from the sedimentation ponds shall comply with the limits established under the EPEA approval issued in response to Application No. 001-46972.
- 2.03 The Licensee shall assume all liability for all damages caused by, or directly attributable to any error, omission or negligence in the operation of the works authorized by this interim licence by the Licensee, its officers, employees, agents or contractors.
- 2.04 All detailed engineering plans and analysis reports for any of the systems identified in condition 1.02 must be submitted to the Controller at least sixty (60) days prior to the start of the construction.

Part 3 Conditions Relating to Construction

- 3.01 The Licensee shall not dispose of any deleterious material on the ice or in the water of the sources of supply.
- 3.02 Subject to condition 3.03, the Licensee shall only conduct in-stream activities in the McLeod River and tributaries from July 16 to August 31 of any year in order to protect spawning and incubation of fish.

CONDITIONS TO INTERIM LICENCE No. 22085 (continued)

- 3 -

- 3.03 In-stream work between January 1 and July 15 or between September 1 and December 31 of each year will be accommodated provided that:
- (a) isolation techniques are used;
 - (b) the Canadian Water Quality Guidelines for suspended solids are met; specifically, that suspended solids derived from construction activities shall not exceed 10 mg/L when background levels are ≤ 100 mg/L, or 10% of background levels when background levels are > 100 mg/L;
 - (c) monitoring of suspended solids occurs above and below the construction site during and immediately following any in-stream activity;
 - (d) construction activities are temporarily suspended if the levels in condition 3(b) are exceeded. Prior to resuming construction, additional mitigation measures shall be implemented to reduce the levels of suspended sediments introduced into the watercourse; and,
 - (e) the Licensee submits a monthly report to the Controller, indicating the occasions when exceedance occurred, the measured total suspended solids values, and the mitigation measures implemented.
- 3.04 The Licensee shall:
- (a) take precautions to prevent soil erosion and siltation in the streams;
 - (b) carry out debris disposal, clean up, and reclamation concurrently with the operations; and
 - (c) stabilize and reclaim all disturbed areas following completion of the works.
- 3.05 Culverts shall be designed, installed, and maintained as described in "Pre-Development License Application for Earthwork and Construction Activities Cheviot Mine Facilities", December 1997 (W.R. Report No. 60335-R1). The Licensee shall install the culverts at the same general slope as the existing stream channel bed.
- 3.06 The Licensee shall use temporary crossing structures or existing road crossings during construction, for vehicle and equipment crossing of any watercourse.
- 3.07 All works authorized shall be constructed under the direct supervision of a qualified professional engineer registered in the province of Alberta.
- 3.08 The Licensee shall submit to the Controller an as-constructed report, complete with plans of the works, upon completion of the plant site water management facilities.

CHEVIOT MINE PLANT SITE FACILITIES

File: 60335

CONDITIONS TO INTERIM LICENCE No. 22085 (continued)

- 4 -

Part 4 Conditions Relating to Operation and Maintenance

- 4.01 The Licensee shall provide facilities for the release of water to prior licensees and other water users when requested by the Controller.
- 4.02 The Licensee shall cease or reduce water diversion, or release water when requested in writing by the Controller.
- 4.03 The Licensee is responsible for the time and manner in which water is released and for damages that may occur.
- 4.04 The Licensee shall submit an annual report to the Controller, on or before March 31 in each year for the preceding calendar year, indicating:
- (a) periods and rates of diversion;
 - (b) the total monthly quantity of water diverted;
 - (c) the total annual quantity of water diverted;
 - (d) the total monthly quantity of water released to the McLeod River System;
 - (e) the total annual quantity of water released to the McLeod River system;
 - (f) monthly readings of the number of cubic metres or gallons pumped from the wells as per condition 6.06. The dates and times at which readings are taken must be included;
 - (g) the total annual quantity of water pumped, expressed in cubic metres or gallons;
 - (h) monthly water levels in existing piezometers related to the underground workings;
 - (i) recommendations for the adjustments of pumping rates, the number and location of observation wells, and well monitoring procedures.
 - (j) the status of all water management facilities within the fenceline; any modifications made during the reporting year or planned for the following year.

and such other information as may be required from time to time.

Part 5 Conditions Relating to Dam and Canal Safety Regulation

- 5.01 The Licensee shall submit for review and approval of the Controller, at least sixty (60) days prior to construction, plans and supporting information on all proposed dams and canals that fall under the provisions of the Act.

CHEVIOT MINE PLANT SITE FACILITIES

File: 60335

CONDITIONS TO INTERIM LICENCE No. 22085 (continued)

- 5 -

Part 6 Conditions Relating to Groundwater

- 6.01 The Licensee shall monitor the discharge of groundwater in accordance with the EPEA approval issued in response to Application No. 001-46972.
- 6.02 The Licensee shall, on and after the effective date of this interim licence at its own expense, investigate all written complaints relating to surface or groundwater within 3.2 kilometres of the Licensee's works in connection with the project described in this interim licence.
- 6.03 The Licensee shall submit a report giving the results of any investigation to the Controller within 15 working days of receiving the complaint.
- 6.04 When the Controller is satisfied that any water source has been unreasonably interfered with by the project, the Licensee shall notify the Controller in writing that satisfactory alternative water supplies have been arranged with the water user(s), or that a satisfactory agreement has been entered into with the water user(s).
- 6.05 If the Licensee fails to satisfy the Controller with respect to the matters prescribed in condition 6.03 and 6.04, on or before a date prescribed by the Controller, this interim licence may be cancelled.
- 6.06 Any wells shall be equipped with a cumulative meter that registers the number of cubic metres or gallons of water pumped.
- 6.07 When requested by the Controller, the Licensee shall install an observation well or wells, completed in the same aquifer as the production well(s), to provide data for the evaluation of the effect of this withdrawal on the aquifer and the effect on other groundwater users.
- 6.08 When requested by the Controller, the Licensee shall obtain water samples for purposes of chemical analyses from the production well(s). The analyses must include: total dissolved solids, pH, Ca, Mg, Na + K, H₂S, CO₃, HCO₃, SO₄, Cl, Fe and NO₃.

CHEVIOT MINE PLANT SITE FACILITIES

File: 60335

CONDITIONS TO INTERIM LICENCE No. 22085 (continued)

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6.09 The Controller reserves the right to revise or to modify the following portions of the interim licence and attached conditions:

- (a) pumping rates;
- (b) number, type, location, and frequency and method of measurement of observation wells required;
- (c) responsibility for investigation of complaints; and,
- (d) conditions pertaining to annual water use returns;

any time that the Controller has information indicating unreasonable interference with water supplies which cannot be satisfactorily remedied or that damage of the aquifer(s) is occurring.

1998 - 09 - 29

Dated at Edmonton

Manager, Regional Support
Northern East Slopes Region

CHEVIOT MINE PLANT SITE FACILITIES

File: 60335

LIST OF REPORTS – INTERIM LICENCE No. 22085

<u>W.R. REPORT No.</u>	<u>TITLE</u>
60335-R1	“Pre-Development License Application for Earthwork and Construction Activities – Cheviot Mine Facilities” by Cardinal River Coals Ltd., December 1997.
60335-R2	“Pre-Development License Application for Earthwork and Construction Activities – Cheviot Mine Facilities – Supplementary Information Report” by Cardinal River Coals Ltd., April 1998.
60335-R3	“Aquifer Test Program: Cheviot Underground Workings” by Piteau Engineering Ltd., June 1998.

1998-09-29
Dated at Edmonton

Manager, Regional Support
Northern East Slopes Region