PROVINCE OF BRITISH COLUMBIA
MINISTRY OF ENERGY AND MINES

AMENDMENT TO COAL EXPLORATION PERMIT
APPROVING WORK SYSTEM AND RECLAMATION PROGRAM
(Issued pursuant to Section 10 of the **Mines Act,** R.S.B.C. 1996, c.293)

Permit: **CX-9-44**

Issued to: **HD Mining International Ltd.**
433, 495 Burrard Street
Vancouver BC V7X 1J1

for work at the following property:

Murray River

Located at: **093/15, 093/14 Latitude 55.0074 Longitude 121.0448**

Mining Division: **Northeast Peace**

Coal Tenure: **417452, 417426, 417453, 417425, 417441, 417440, 417447**

This amended permit consists of the following permits and approvals:

Issue Date:	**Authorization**
December 16, 2010	Permit Authorizing Coal Exploration
May 12, 2011	Amendment Approving Geotechnical Drilling
August 9, 2011	Amendment Approving Surface Site Facilities North Shaft Site
December 16, 2011	Amendment Approving Surface Site Facilities south Decline Site

Amendment Approving Bulk Sample Program Issued this 15th day of March in the year 2012.

Victor Koyanagi, P.Geo.
Inspector of Mines

Richard Booth, P.Eng.
Inspector of Mines

PREAMBLE

A Notice of Work application to amend Coal Exploration Permit CX-9-44, entitled "Murray River Bulk Sample", dated June 30, 2011, which included the work system plans and an amended program for the protection and surface reclamation of the land and watercourses affected by the work, was filed with the Senior Regional Permitting Inspector of Mines on June 30, 2011 in accordance with Part 10 of the Health, Safety and Reclamation Code for Mines in British Columbia (the Code).

The application includes the following documents:

- June 30, 2011 revised Murray River Coal Bulk Sample Application (NoW 1640549-201104)
- October, 2011 Murray River Bulk Sample Waste Discharge Permit Application Technical Assessment Report
- January 12, 2012 Murray River Coal Bulk Sample Project – Supplement to Notice of Work Application

This permit contains the requirements of the Ministry of Energy and Mines for mining activities and reclamation. It is also compatible, to the extent possible, with the requirements of other provincial ministries for reclamation issues. The amount of security required by this permit, and the manner in which this security may be applied, will also reflect the requirements of those ministries. Nothing in this permit, however, limits the authority of other provincial ministries to set other conditions, or to act independently, under their respective permits and legislation.

Decisions made by staff of the Ministry of Energy and Mines have been made in consultation with the other agencies and/or ministries and First Nations as well as specific non-government organizations having potential interest in the proposed activities.

CONDITIONS

The Chief Inspector of Mines (Chief Inspector) hereby approves the work system and the amended program for protection and reclamation of the land surface and watercourses subject to compliance with the following conditions:

1. Reclamation Security

(a) The owner, agent or manager (herein called the Permittee) shall deposit with the Minister of Finance and Corporate Relations additional securities in the amount of One Million Three Hundred and Fifty Thousand dollars ($1,350,000.00), bringing the total security held under the amended permit to One Million Eight Hundred and Seventy Eight Thousand dollars ($1,878,000.00). The security will be held by the Minister of Finance and Corporate Relations for the proper performance of the approved program and all the conditions of this permit in a manner satisfactory to the Chief Inspector.

(b) The Permittee shall conform to all forest tenure requirements of the Ministry of Forests, Lands and Natural Resource Operations. Should the Permittee not conform to these requirements then all or part of the security may be used to cover the costs of these requirements.

(c) The Permittee shall conform to all Ministry of Environment (MoE) approvals, licences and permit conditions, as well as requirements under the *Wildlife Act*. Should the Permittee not conform to these conditions, all or part of the security may be used to fulfil these requirements.

2. Compliance

(a) All work shall be in compliance with all sections and parts of the *Mines Act* and *Health, Safety and Reclamation Code for Mines in British Columbia* (Code), and the owner, agent or manager (herein called the Permittee) shall obey all orders issued by the Chief Inspector or his delegate.

(b) The Permittee shall carry out work and reclamation in accordance with:

a) *the Metal Leaching and Acid Rock Drainage Guidelines for Mines in British Columbia*, and

b) *the Handbook For Mineral and Coal Exploration in British Columbia*.

(c) The Permittee shall notify the Senior Regional Permitting Inspector and Senior Regional Health and Safety Mine Inspector (Mines Inspector) in writing of any intention to depart from either the plan of the work system or the program for the protection and reclamation of the surface of the land and watercourses to any substantial degree, and shall not proceed to implement the proposed changes without the written authorization of the Senior Regional Permitting Inspector.

3. Authorizations from Other Agencies

The Permittee is responsible for obtaining all permits and authorizations as required under other legislations.

4. Tenures and Land Use

(a) The site shall not be utilized for any purpose unrelated to the exploration and/or development of the coal resource.

(b) Geological investigations shall be restricted to those activities consistent with standard coal mining practices. Drill hole dewatering, pump testing and other investigations for commercial coalbed methane production are not permissible under the terms of this permit.

(c) The mine site shall be reclaimed to an end land use of Forestry / Wildlife.

5. Coal Haulage and Vehicles

(a) Covered trailers shall be utilized for all offsite coal haulage. Loose coal and/or coal dust shall be removed from truck frames and tires prior to leaving the minesite.

(b) All vehicles exiting the minesite shall be suitably washed and free of loose coal and/or coal dust.

6. Coal Bulk Sample

(a) The underground bulk sample shall not exceed 100,000 tonnes of mined coal under the terms of this permit.

(b) The proponent shall ensure that the following engineering drawings, stamped and approved by a P.Eng. licensed in British Columbia, are provided to the Senior Regional Permitting Inspector of Mines a minimum of 60 days prior to the commencement of:

(i) Collaring the portal to the decline ramp,
(ii) Mine Shaft Development, and
(iii) Installation of any hoisting system, head frame, building or other permanent structure.

(c) All underground mine openings shall be sealed by the construction of engineered stopping that satisfy the requirements of the Code and the needs of the Province for reclamation at the time of permanent abandonment, or if the site is to be dormant for a period in excess of 18 months.

(d) Only approved explosives and detonators shall be utilized in decline developments within 30 metres of a coal seam. This does not apply if all workers are removed from the mine during blasting.

(e) In addition to the required ventilation plan, the manager shall provide a plan for the gas\air monitoring within the mine that includes the location and specification of all monitoring equipment in both intake and return airways. The plan shall also address the

identification, monitoring and mitigation of potential spontaneous combustion. This plan shall also include the specification of all automated equipment shut downs associated with the monitoring system.

7. Environmental Protection

(a) Mobile equipment shall not be refuelled or serviced within 50 metres of any watercourse.

(b) Oil spills shall be cleaned up immediately and the waste materials disposed of in an appropriate manner. Absorbent pads and spill containment kits shall be maintained on-site during the course of operations. A spill contingency plan shall be developed and implemented prior to commencing site operations.

(c) All stationary engines shall be provided with suitably designed drip pans.

(d) Waste containers and garbage shall be removed from site at the earliest possible opportunity.

8. Wildlife Mitigation and Monitoring

The Manager shall ensure all practicable measures are taken to minimize impacts to wildlife. This shall include development and implementation of a Wildlife Mitigation and Monitoring Plan. This plan shall be authored by a qualified registered professional and shall be developed and implemented prior to May 31, 2012. This Plan shall be provided to the Senior Regional Permitting Inspector of Mines prior to May 31, 2012.

9. Disposal of Fuels and Toxic Chemicals

As a minimum, all empty fuel drums and chemical containers shall be removed from the property on a monthly basis. All such containers shall be removed from the site upon completion of the bulk sampling program.

10. Protection of Land and Water Courses

(a) Metal Leaching and Acid Rock Drainage (ML/ARD)

(i) General

a) All materials with the potential to generate ML/ARD shall be placed in a manner that minimizes the production and release of metals and contaminants to levels that assure protection of environmental quality.

b) Unless otherwise approved, all plans for the prediction, and if necessary, the prevention, mitigation and management of metal leaching and acid rock drainage shall be prepared in accordance with the *Guidelines for Metal Leaching and Acid Rock Drainage at Minesites in British Columbia*.

c) No changes shall be made to the geochemical criteria for potentially ARD generating / metal leaching definition, waste handling procedures,

mitigation strategies, or materials monitoring program without the approval of the Senior Regional Permitting Inspector.

(ii) Definition of Potentially ARD Generating (PAG) Materials

a) Mine waste materials with an sulphide net potential ratio (SNPR) < 2 are defined as PAG and mine waste material with an SNPR ≥ 2 are defined as non-PAG, where SNPR is defined as the ratio of the Modified Sobek Neutralization Potential / Acid Potential from Sulphide-Sulphur.

b) All mine waste material associated with the Hasler, Boulder Creek, and Hulcross formations, D and E coal seams and all coal partings are defined as PAG.

c) All material from the Middle Gates Formation must be tested prior to classification as PAG or non-PAG.

d) Unconsolidated till is defined as non-PAG except for the 2 m of till overlying the Hasler Formation, which shall undergo ABA analysis prior to classification as PAG or non-PAG.

(iii) ML/ARD Mitigation

a) The waste rock management plan, as outlined in the "Supplement to Notice of Work Application, Murray River Coal Bulk Sample Project", dated January 12, 2012 is approved.

b) Prior to construction, the Permittee shall provide detailed design information and quality assurance and quality control procedures for the foundation and cover construction of the waste rock facility.

c) Prior to construction, the Permittee shall provide a letter report prepared by a qualified geotechnical engineer with an assessment of the stability of the waste rock dump during construction and in the long-term. The assessment shall include consideration of potential sliding on the compacted clay layer.

d) During construction, if design specifications cannot be met, or if adequate construction materials are not available, a HDPE or geosynthetic clay liner and cover shall be installed according to manufacturer specifications and the Senior Regional Inspector shall be immediately notified.

e) An as-built design of the waste rock facility shall be submitted to the Senior Regional Permitting Inspector within 3 months of completion of cover installation. The report shall include information on the attained compaction and hydraulic conductivities for the cover, of the till and the clay layers in the liner and cover.

f) The Permittee shall ensure that all personnel responsible for waste rock management are knowledgeable and accountable for the correct implementation of the waste rock management procedure.

g) Temporary PAG mine waste storage in the stockpile area shall not exceed 4 months prior to final placement in the waste rock facility.

h) Any coal wastes generated from processing shall be removed from the site with the coal product within 4 months of its formation.

i) All parting material mined during development or bulk sample extraction shall be immediately stowed underground.

(iv) ML/ARD Monitoring

a) The monitoring plan is approved. The Permittee shall monitor and maintain an inventory of the geochemical characteristics of all waste rock located in temporary storage areas and within the waste rock dump. This inventory shall be kept on-site and made available to any Mines Inspector upon request.

b) For all mine wastes, a minimum of one representative daily composite sample shall be taken of rock classified as PAG and one representative daily composite sample shall be taken of rock classified as non-PAG, for confirmation monitoring and to ensure adequate segregation practices.

c) Flagging placed on temporary waste rock piles shall include labelling with sample identification to increase ease of tracking.

d) For all waste rock, representative composites shall be analysed weekly for paste pH, total sulphur, sulphate sulphur, sulphide sulphur, bulk Sobek NP, modified Sobek NP, carbonate NP (at a laboratory capable of doing a direct measure of inorganic carbon) and elemental composition by ICP methods.

(b) Water Management and Sediment Control

(i) General

a) The Permittee shall, when required to do so by the British Columbia Ministry of Environment, obtain permits and licenses for water discharge.

b) In the event that seepage and other drainages that may arise from the mine site are not of acceptable discharge quality, the Permittee shall collect and treat, or otherwise mitigate drainage for as long as is necessary.

(ii) Sediment and Erosion Control

a) Sediment control and water management structures shall be constructed and operational prior to soil disturbance, including grubbing activities, which has the potential to result in sediment release.

b) The Permittee shall implement progressive reclamation where possible to control erosion around all areas of the mine.

(iii) Groundwater

a) Discharge of surface runoff from the mine area and/or drainage from underground workings to groundwater is subject to the issuance of approvals by FLNRO.

b) The operator shall undertake all measures necessary to preserve the integrity of the regional groundwater resource.

(iv) Surface Water and Groundwater Quality Monitoring

a) The Permittee shall implement the water quality monitoring program included in the Technical Assessment Report and "Supplement to Notice of Work Application, Murray River Coal Bulk Sample Project", dated January 12, 2012, shall be implemented.

b) Notification of changes to the proposed surface water quality monitoring program shall be submitted to the Senior Regional Permitting Inspector for review and acceptance. The program shall be updated as required to meet Effluent Permit requirements.

c) Within 90 days of issuance of this permit, a map indicating the locations of groundwater quality monitoring stations around the waste rock dump shall be submitted.

d) Surface and ground water quality monitoring parameters shall include at minimum pH, sulphate, alkalinity, acidity, major cations and total and dissolved metals for monthly and quarterly sampling events. Detection limits shall be sufficient to compare to Provincial water quality guidelines and objectives for aquatic life.

e) Sampling at the leachate pond shall be completed on a monthly basis when water is present.

f) The Permittee shall monitor and track any changes to surface and groundwater chemistry across the project area, including waste rock storage facilities, coal storage facilities and underground mine areas. The monitoring programs shall be capable of providing early warning about the onset of ARD or an increase in contaminant loading under neutral conditions.

g) Water quality results that indicate the development of poor water quality shall be immediately reported to the Senior Regional Permitting Inspector and Ministry of Environment staff, and a mitigation plan shall be submitted.

(c) Reporting of Results

(i) Results and interpretation of water quality monitoring, ML/ARD analytical testwork, and materials inventories shall be included in the Annual Reclamation Report.

(ii) The results of monitoring data shall be incorporated into water quality modelling and predicted discharge water quality estimates. Updated predictions shall be included in the final site-wide reclamation and closure plan due December 31, 2012.

11. Reclamation Program

(a) Soil Salvage and Storage

(i) Topsoil shall be salvaged and stockpiled for future reclamation and revegetation activities. The topsoil and till storage piles shall be designed to minimize erosion, and reasonable efforts shall be made to minimize the removal of mature timber from the storage areas.

(ii) Topsoil and overburden stockpiles shall be clearly marked to ensure that they are protected during construction activities. The locations, origins and quantities of materials shall be documented and reported in the Annual Reclamation Report.

(iii) Stockpiled topsoil and organic materials shall be revegetated using a certified weed-free seed mix to reduce erosion during the storage period.

(b) Revegetation

(i) On all lands to be revegetated, the growth medium shall satisfy vegetation and water quality objectives.

(ii) The Permittee shall manage and control noxious weeds that establish on the site and shall take reasonable efforts to ensure that noxious weeds do not move from the minesite to adjacent areas.

(iii) A final re-vegetation plan for the waste rock facility shall be provided to the Regional Mines Inspector prior to September 31, 2012. This plan shall address the requirement to maintain the long-term stability of the impermeable cover design. This plan shall also include a plan for the control of noxious weeds on the minesite, mine access road and mine lease area.

(iv) The Permittee shall ensure that all seed mixes used for revegetation purposes are certified as noxious weed-free.

(v) Land shall be revegetated to a self-sustaining state using the most suitable plant species relevant to the nature and location of the land.

(vi) Revegetation and reforestation of the site shall be conducted in accordance with any applicable Silviculture Prescription approved by the Ministry of Forests, Lands and Natural Resource Operations.

(c) Reclamation and Closure Plan

A final site-wide reclamation, closure and post-closure monitoring plan for all elements on the site including surface works, water diversion structures, decline and shaft shall be provided to the Senior Regional Permitting Inspector of Mines prior to December 31, 2012.

12. Noise abatement

(a) Stationary engines and portable compressor installations shall be enclosed in noise attenuating structures.

(b) Site equipment shall be fitted with high efficiency muffling devices.

13. Dust Control

All dust on the minesite shall be suitably controlled at the source.

14. Fire Suppression

On-site Surface fire fighting equipment shall be maintained in accordance with the Forest Fire Prevention and Suppression Regulation and the BC Fire Code. Underground and mine surface fire fighting requirements shall comply with the requirements of the Health Safety and Reclamation Code for Mines in British Columbia (Code)

15. Safety Provisions

(a) All site operations shall be conducted in accordance with the provisions of the *Mines Act and Health, Safety and Reclamation Code for Mines in British Columbia*.

(b) First aid equipment shall be maintained as appropriate for the number of people employed.

(c) Site access shall be secured and shall be posted with appropriate safety advisories.

16. Archaeological Sites

In the event that an archaeological site is encountered during the course of the approved exploration activities, the program shall be suspended or modified in such a manner as to ensure that the site is not damaged, desecrated or otherwise altered, and the occurrence shall be reported immediately to the Archaeological Branch, Ministry of Sustainable Resource Management and the Ministry of Energy and Mines. Work shall not be resumed until jointly authorized by the two Ministries.

The Manager shall develop and implement a suitable Archaeological Chance Find Procedure (CFP). The Manager shall ensure all workers on the site are aware of and understand the CFP and adhere to the procedure.

17. Notice of Closure

Pursuant to Part 10.5.1 of the Code, a Notice of Completion of Work shall be filed with the Regional Inspector not less than seven days prior to cessation of works.

18. Annual Summary of Exploration Activities

An Annual Summary of Exploration Activities shall be submitted to the regional Inspector of Mines before the end of March of every year the permit is in effect. Reclamation and other exploration activities undertaken in the previous year shall be submitted in the form prescribed by the Chief Inspector of Mines.

19. Notification

The Manager shall notify the Senior Regional Health and Safety Inspector seven days prior to initiating construction of the underground development.