



THE POWER IS YOURS

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Handwritten: (From: John Chapman re- COG Burn possible energy needs)

May 09, 2003

John Chapman
Chapman Mining Services
18-1480 Foster Street
White Rock, BC
V4B 3X7

Handwritten signature and date: 2003/05/20

Dear John Chapman

Re: Hat Creek Disposition Project - Reclamation Plan Update

Further to our February 18 correspondence on this subject, I would like to update you on the status of the reclamation work at Hat Creek.

Morrow Environmental Consultants Inc. (Morrow) was retained by BC Hydro to complete a detailed reclamation plan for BC Hydro's Hat Creek properties. A draft copy of the executive summary (April 4, 2003) of that plan and a site plan is attached for your reference. The purpose of the plan is to define the means of reclaiming lands affected by coal exploration activities to a condition acceptable to the BC Ministry of Energy and Mines. BC Hydro is undertaking the reclamation work under Permit No. C-103 as issued pursuant to section 9 of the Coal Mine Regulation Act.

The key elements of the reclamation work are:

- re-contouring and re-vegetating three test trenches and a coal stockpile area;
- capping groundwater pumping wells (completed in March 2003);
- burying meteorological tower foundations (met tower was removed in the 1980s), and removing the powerline to this site;
- backfilling and re-vegetating bucket auger holes and holes for the powerline poles;
- re-fencing the compound and removing all equipment but the Quonset Hut and the core sheds; and
- burying in the test trenches or disposal at the Cache Creek landfill of all equipment, materials and visible scrap from the area.

This work will be undertaken over the next several months in order to facilitate the timely surrender of BC Hydro's coal licenses and the transfer of Hat Creek properties to the Provincial Government.

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Morrow also completed a Stage I Preliminary Site Investigation for the Hat Creek properties, which identifies the following areas of potential soil or groundwater contamination: the diesel fuel storage and dispensing areas; the vehicle maintenance areas; and the landfill. A draft copy of the executive summary (April 10, 2003) of that site investigation is attached for your reference. Morrow will develop and implement a work plan for further investigation. This work will be coordinated with further site activities in the next 2 months.

If you have any questions regarding this plan or the reclamation work, please contact Doug Grimes, Senior Environmental Co-ordinator, at (604) 623-3813 or myself at (604) 528-2234.

Yours truly,



Terry Parsons

Attachment - Executive Summaries and Site Plan

EXECUTIVE SUMMARY

Acting on the directive of BC Hydro and Power Authority (BC Hydro), Morrow Environmental Consultants Inc. (Morrow) has completed a Stage 1 Preliminary Site Investigation (PSI) of the BC Hydro Hat Creek Properties in Hat Creek, BC.

The Properties include approximately 1,590 hectares (4,000 acres) of BC Hydro owned land in the Upper Hat Creek Valley, comprised of 39 properties, 31 water licenses and a grazing license of approximately 7,950 hectares (25,000 acres) of Crown Land. BC Hydro holds the coal licenses for the entire Upper Hat Creek Valley coal resource of approximately 28,313 hectares (20,540 acres). Also included in the property rights is a Crown Grant of 259 hectares (640 acres), which provides BC Hydro with the coal, petroleum and natural gas rights.

The purpose of the investigations is to close the site and reclaim disturbed lands from the exploration activities to a level of productivity that existed prior to mining. BC Hydro announced in June of 2002 that it had no plans to develop the coal resource at Hat Creek in the foreseeable future. BC Hydro's Board of Directors subsequently directed the surrender of the coal licenses at Hat Creek to the Province in the fall of 2002. The work completed under this task order is in support of this approach to surrender the coal licenses.

The objective of the Stage 1 PSI was to identify areas of potential environmental concern (APECs), which may require additional environmental investigation in conjunction with decommissioning of the facilities and/or reclamation activities at the Properties in preparation of their sale.

Provided below is a summary of the facilities and operations determined to be of High or Moderate environmental risk as evaluated under the *Contaminated Sites Regulation*¹ (CSR) guidelines and protocols. No areas of low environmental concern are included, as they are not anticipated to require further investigation/documentation.

¹ Waste Management Act, *Contaminated Sites Regulation* (CSR), BC Reg. 375/96, deposited December 16, 1996. O.C. 1480/96, effective April 1, 1997 (includes amendments BC Reg. 244/99, deposited July 19, 1999 and BC Reg. 17/2002, deposited February 4, 2002).

EXECUTIVE SUMMARY

Morrow Environmental Consultants Inc. (Morrow) was retained by BC Hydro to complete a Detailed Reclamation Plan of the Hat Creek Properties in accordance with the Request for Proposal dated February 7, 2003. The work has been completed with the assistance of C.E. Jones and Associates and Mr. Al Tattersall, P.Eng.

The purpose of the reclamation plan is to close the site and reclaim disturbed lands from the exploration activities to a level of productivity that existed prior to mining. BC Hydro announced in June of 2002 that it had no plans to develop the coal resource at Hat Creek in the foreseeable future. BC Hydro's Board of Directors subsequently directed the surrender of the coal licenses at Hat Creek to the Province in the fall of 2002. The work completed under this task order is in support of this approach to surrender the coal licenses.

For the purpose of this site, future land use is deemed to be ranching suitable for cattle grazing. Reclamation will proceed in accordance with Part 10 of the Health, Safety and Reclamation Code for Mines in British Columbia, 1997, the Reclamation Permit # C-103 and in accordance with a BC Hydro confirmation letter (December 20, 2002) to Mr. John Errington, P.Ag., Manager of Reclamation and Permitting for the Ministry of Energy and Mines. The permit references reclamation under the Guidelines for Coal Exploration, which is no longer an active protocol. As such, reclamation will proceed in accordance with Part 10 of the Health, Safety and Reclamation Code for Mines in British Columbia, 1997. A reclamation prescription summary is included below followed by details of each of the areas to be reclaimed.

Reclamation Prescription Summary

In general, all equipment, materials and visible scrap will be removed from the sites or buried as noted. The surfaces will be re-contoured where noted. All levelling, grading and re-contouring operations will address the following objectives:

- i. Blend all worked surfaces smoothly and naturally into the existing topography. Slope angles will be graded at 2:1 (horizontal to vertical)
- ii. Ensure drainage to natural low points without local ponding, except as noted in Trench D. This will result in good control of surface and ground water flows, as demonstrated by the current surface conditions at the site. Twenty years after completion of reclamation activities, reclaimed slopes remain in excellent condition with little evidence of erosion.

exception of two flowing wells that are equipped with valves to maintain the well flow. The ground has been levelled to conform to the surrounding flat topography. The ditch around OW4 will be contoured to conform to the original flat topography. A small met tower located close to one well site has been knocked down and all waste materials have been hauled to the Cache Creek landfill. All disturbed ground has been graded smooth and re-vegetation will take place with the remainder of the reclamation plan.

Meteorological Tower Foundations: Concrete foundations to be buried on site; the Met Tower was previously removed.

Bucket Auger Holes (BAH): Bucket auger holes were used to collect bulk coal samples for testing. All bucket auger holes will be pumped dry and backfilled with clean pit run gravel with the exception of the BAH at the fenced compound. All casings will be cut off 0.5 m below grade and the area graded smooth to conform with the existing topography. Metal waste will be hauled to Trench C for burial. Settling of the fill materials will be assessed to ensure no future hazard exists from subsidence of the back filled material. Disturbed areas will be re-vegetated.

Fenced Compound: The fenced compound is roughly rectangular in shape, 310 meter by 80 meters wide. The fenced area contains a variety of temporary buildings and building remnants at the north end. The south end contains a number of core sheds. Equipment and inert scrap materials have been stored in designated locations throughout the fenced area. The majority of the fenced compound is to be reclaimed. Two fenced enclosures will remain when reclamation is complete. The first will contain the Quonset hut, and the other the core shed area. Except for these structures and the fences surrounding them, all equipment and surface materials will be removed from the site. Underground plumbing and electrical services will be cut off below ground level and left in place. One concrete sidewalk will be broken and buried at the site. Earthwork structures will be smoothly contoured to blend with surrounding natural topography. The power poles and conductors will be removed from within the compound. Disturbed areas will be re-vegetated. A Stage 2 Preliminary Site Investigation will be undertaken within and around the fenced compound to determine any potential environmental impacts are present from fuel handling and storage and maintenance activities.

Trench A: The end wall area (west end of trench), will be entirely re-sloped to 2:1 (horizontal to vertical). Any fencing removed for this work will be replaced. The remainder of the trench crest

Drill Site Terrace South of Trench C: These terraces will be contoured smoothly to blend in more naturally with the surrounding topography and re-vegetated. Particular attention will be paid to sloping to reduce potential for siltation of an existing, currently dry, watercourse.

Free Dump/Windrow Area north of Trench D: This area consists of waste rock mixed with coal. It has been re-vegetated but vegetation is sparse because surface soils are inadequate to support growth. Soil cover depth of 30 cm is required here prior to re-vegetation.

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will be rounded to eliminate any steep slopes then re-vegetated. The east end of Trench A is reserved for Pacific Bentonite work and no reclamation will be done in this area.

Trench C: Trench C North and South walls will be completely re-sloped to a maximum slope angle of 2:1 (horizontal to vertical). The re-contouring will preserve the natural lie of the ridges that currently form the north and south walls of the pit. The steep slopes at the top of the west end wall will be smoothed and blended evenly into the existing and re-contoured topography, minimizing disturbance of previously undisturbed ground. Placement of a 30 cm soil cover over the bentonite clays after re-contouring is recommended prior to re-vegetation. Inert crushed scrap will be buried under this re-sloping, at minimum cover depth of 3 meters. Any fencing removed for re-sloping will be replaced

Trench D: The walls of Trench D will be re-sloped to 2:1 (horizontal to vertical) and re-vegetated.

Coal Yard: The coal yard equipment will be removed and surface earthwork structures and coal piles moved and contoured to blend naturally with existing topography. Coal piles will be compacted in lifts upon final placement to eliminate the potential for spontaneous combustion. Effort will be made to preserve trees that have taken root among the coal piles. Coal piles will be covered with 30 cm of growing medium prior to re-vegetation.

Historic Mine Workings: One historic adit entrance remains exposed at the base of a steep hill, situated at the back of a terrace built into the slope. This adit and the nearby area of subsidence will be dug down and backfilled sufficiently to eliminate potential for future subsidence. Any requirements for drainage will be addressed during the reclamation. The surface disturbance on the terrace will be graded smoothly to blend with local topography and re-vegetated.

Trench B Coal Stockpile: Soils will be excavated from the perimeter of the coal pile and the coal pile will be flattened and contoured into the excavation. Final surface configuration will be shaped to blend smoothly with surrounding topography. All coal moved, will be compacted in lifts to eliminate spontaneous combustion potential. Additional soils will then be excavated from the surrounding flats resulting in a depth of soil cover 30 cm over the coal and re-vegetated.

- iii. Ensure burial of inert materials. Inert loose materials will be hauled to Trench C for burial under a minimum of three metres cover as part of re-sloping operations.
- iv. Ensure adequate soils cover to sustain vegetation to an extent equivalent to the undisturbed surroundings.

Seeding and Fertilizing Treatments

A mix of drought tolerant grasses and legumes has been developed for the re-vegetation of the site. Varieties of some of the species have been modified from those used in the early trials because better varieties have become available since 1978.

The fertilizer prescribed has moderate levels of nitrogen, high levels of phosphorous, minimal levels of potassium and includes the micronutrients zinc and boron. The initial application rate is 350 kg/ha. Maintenance applications in future years will be 200 kg/ha. The duration of the maintenance period will be based on assessments of biomass and foliar nutrients.

The fertilizer will be applied using broadcast spreaders, tractor mounted spreaders for larger areas and hand broadcast spreaders for small sites on slopes of 2:1 or shallower. On areas seeded by tractor, a harrow will be drawn behind the tractor to achieve better seed and soil contact.

Seed and fertilizer will be applied in the late fall. Some loss of nutrients may result from spring runoff, but it is not believed that the losses would be significant. A contingency for the application of additional seed in the spring of 2004 has been adopted. Maintenance fertilizer will be applied in early spring of 2002 to improve growth over the spring and early summer months. Further requirements for maintenance fertilizer should be determined through monitoring during the summer of the year after seed germination.

The reclaimed sites should be protected from cattle grazing for the first two years, to allow the plants to become established and able to withstand the pressure of grazing. This may prove to be a very important factor in the ultimate success of the re-vegetation program.

Site-specific Reclamation Summary

Six (150 mm diameter) Groundwater Pumping Wells: Includes removal of all pumps and equipment, pump houses and concrete, and conductors and poles. This work was completed prior to March 31, 2003, to facilitate return of all coal licenses not requiring significant reclamation. The casings have been cut off above ground level and welded shut with the

*EXECUTIVE SUMMARY. CONT.***Summary of Potential Environmental Concerns**

Area	Potential Contaminant(s)	Environmental Risk	Comments
Quonset Hut	Hydrocarbons, Metals, Glycol	Moderate	Leaks and spills may have impacted surrounding/underlying soils. Surface soil impacts may extend to groundwater.
Former maintenance building	Hydrocarbons, Metals, Glycol	Moderate	Leaks and spills may have impacted surrounding/underlying soils. Surface soil impacts may extend to groundwater.
Oil change ramp	Hydrocarbons, Metals, Glycol	High	Risk of lubricating oil spills, leaks and/or discharges to soil underlying and adjacent to oil change ramp. Confirm soil quality; risk may extend to groundwater if significant soil contamination identified.
Tank racks and associated fuelling area within fenced compound	Hydrocarbons, Metals	High	Risk of spills, leaks and/or discharges at the fuelling facilities. Confirm soil quality; risk may extend to groundwater if significant soil contamination identified.
Diesel fuel storage and re-fuelling area outside of fenced compound	Hydrocarbons, Metals	High	Risk of product spills, leaks and/or discharges at the fuelling facilities. Confirm soil quality; risk may extend to groundwater if significant soil contamination identified.

Although evidence of contamination from fuel handling and maintenance was not observed, potential impacts may be masked at the ground surface because the activities took place over 20 years ago and the ground surface was snow covered during the time of inspection. The type of activities indicate a moderate to high potential for environmental impacts. Additional investigations comprising inspection of the ground surface once the snow cover is gone and test pitting are recommended in areas of non-core exploration activities such as fuel storage and light vehicle maintenance in the following areas:

1. Quonset Hut
2. Former maintenance building
3. Oil change ramp
4. Tank rack and associated fuelling area (within fenced compound)
5. Diesel fuel and gasoline storage and re-fuelling area (outside fenced compound)