



Northwest
Territories

Resources, Wildlife and Economic Development



JUL 06 2001

Hand Delivered

Mr. Vern Christensen
Executive Director
Mackenzie Valley Environmental Impact Review Board
BOX 938
YELLOWKNIFE NT X1A 2N7

Dear Mr. Christensen: *Vern*

Patterson Sawmill Ltd. Environmental Assessment
Government of the Northwest Territories Response to the Information Request

On April 23 the Mackenzie Valley Environmental Impact Review Board issued an information request to the Government of the Northwest Territories (GNWT). The Board required additional information for its consideration of the proposed Patterson Sawmill Ltd. development.

Attached is the GNWT response to the Board's information request. Additional supporting documentation, including maps and other graphics, are located as indicated in the following report.

If you require any additional clarification, or information please contact Mr. Brett Hudson, Environmental Assessment Analyst at (867) 920-6392.

Sincerely,

R.P. Bailey

R. P. Bailey
Assistant Deputy Minister, Operations

Attachment

- c. Mr. Brett Hudson
Environmental Assessment Analyst
- Mr. William Mawdsley
A/Director, Forest Management Division



57

**INFORMATION REQUEST
MACKENZIE VALLEY ENVIRONMENTAL IMPACT REVIEW BOARD
PATTERSON SAWMILL LTD.**

- 1) The impacts of the proposed development on local plant communities, rare or highly valued species including long-term, direct and indirect, habitat loss or alteration.**

Biophysical Description

The area of the proposed development lies with the Boreal Plains Ecozone, Slave River Lowland Ecoregion (1), and is contained within Ecodistrict #575 and #574. An Ecodistrict is an area characterized by a distinctive assemblage of relief, geology, landforms, soils, vegetation, water and fauna that is classified at a functional scale of about 1:500,000 (2). No descriptions of the biophysical characteristics of these ecodistrict units were completed and published.

Ecodistrict #575 lies within the extreme northwest portion of the Slave River Lowlands Ecoregion (3). It consists of less productive sub-unit of the Slave River Lowlands Ecoregion. In comparison with much of the remainder of the ecoregion, particularly the alluvial/riparian dominated ecodistricts to the east and southeast, this area is more elevated; likely has a less favourable overall climatic regime for plant growth (because of its elevation in combination with its close proximity to Great Slave Lake); is characterized by a predominance of more poorly developed, less nutrient rich, likely more calcareous and much thinner (close to bedrock) mineral soils, as well as some areas of organic soils (i.e., black spruce bogs - wet, cold, nutrient poor); almost certainly has an overall lower species diversity (plants and animals); and lower overall biomass productivity.

Ecological Evaluations

Based on the "Ecosites of Northern Alberta" (4.), (the most relevant ecosite classification field guide currently available to assess the proposed development area) the area of the proposed development falls within the "Boreal Mixedwood" ecological area. The stands that would be harvested most closely lie within the "low-bush cranberry" ecosite phase, and "white spruce/feather moss" plant community type. In these stands, mature and over-mature white spruce is the dominant and climax tree species. These particular stands and specific climax plant community have been able to develop over time (100-150+ years) on some of the elevated rounded ridges and small plateaus within the area surrounding Pine Point and to the west of the Little Buffalo River on these sites where:

- 1) Natural processes (climate + biota + parent material) and the natural disturbance regime over time have resulted in the formation and maintenance of deeper, more fully developed, fine textured, better drained (therefore warmer), more nutrient

rich mineral soils.

- 2) The sites have managed to escape fire - the major natural disturbance event within the region responsible for renewal and recycling of all of the forests within this region.

The areas of suitable white spruce timber (volume/hectare and quality) within the proposed harvest development area (5,6) are discontinuous and occur in pockets of a few hectares to at most tens of hectares. Dominant trees species at the landscape level within the area of the proposed development are jackpine (*Pinus banksiana*), black spruce (*Picea mariana*) and white birch (*Betula spp.*). Less dominant are white spruce (*Picea glauca*), aspen (*Populus tremuloides*), balsam poplar (*Populus balsamea*) and tamarack (*Larix laricina*). Pre-harvest ecological assessments of the proposed harvest areas show a dominance of white spruce with secondary presence of aspen.

Much of the area is dominated either by black spruce bogs (wet, cold, nutrient poor organic soils - a result of areas of local or regional ground water discharge) or jackpine dominated stands that occur in those areas where soils are thin (close to bedrock), poorly developed, rapidly drained and/or coarse textured. These areas would be considered unproductive in terms of potential softwood sawlog production (inability of an area to grow a sawlog-size tree in a reasonable period of time).

Forest productivity on these white spruce sites is likely fair (site class 2 or 3 for the Slave River area), but this assessment is based on little data. The 1961 forest inventory lists the proposed harvest sites as site class III – small lumber, 41-60 feet, upland.

Renewable Resource Inventories on the Proposed Harvest Area

There only extensive forest information available for the area of the proposed development is a dated, very general forest inventory (7) prepared by the Government of Canada based on earlier aerial photography (circa 1950) and a recent preliminary Landsat-based (remote sensing) vegetation classification (8).

In late 2000, Department personnel conducted a reconnaissance inventory of the proposed harvest areas. The results of the survey are contained in Appendix I: Timber Supply Review - Patterson Sawmill - Forest Management Application FA001828. The conclusions of the timber supply review note that there is more than sufficient timber in the area to meet the demands of the application, that there is considerable juvenile forest resources on the rotation cycle, and that there are no special ecological considerations of note in the area.

Aerial views of the proposed harvest area, and ground views of the survey plots put in place in the assessment may be viewed on the Department's FTP site, (13, 14).

Peer review of the information and documents is contained in Appendix II: Operational Cruise Results Timber Licence Application. – FA001828. Although the reports differ

somewhat in the assessment of the total timber supply, the conclusions of the review are in agreement with the timber supply review in the estimation of the harvestable volumes in the short-term. The peer review concludes that an authorization of one year would be supportable.

No comprehensive and extensive species-level renewable resource (plants or animals) assessment or survey data is available for the area of the proposed development.

Forest Fires

Major fires have occurred in the area since the 1961 inventory. Based on the experience of forest management personnel, forest fires in the area, while significant, are not landscape level forest removing fires. This is further evidenced by the diversity of forest types displayed on the 1961 forest inventory map and by the diversity of forest cover shown on the aerial photographs of the area.

Impacts on Plant Communities

To realistically assess short and long term impacts (with any degree of confidence) would require the completion on an updated forest inventory of the area of interest, growth and yield assessment work followed by modeling various harvesting scenarios using an appropriate timber supply model. However, a number of reasonable assumptions can be made about the area in the absence of in-depth surveys.

The potential impacts of the proposed development would be directly related to the current species and age-class distribution of forest within the area of interest, and to the anticipated level of harvest (area and volume), timing, duration and regeneration success.

The main impact on plant communities over the short term would be to increase the area of early seral or successional plant communities within the area of the proposed development.

The longer-term impact relates to the potential removal of a percentage of "old growth" white spruce stands. These stands provide forest ecosystem functions and structures in the area that may not be replaced for many decades. The proposed harvest program will target stands of mature or "climax" white spruce. By the very nature of the boreal forest, these stands are generally single age. These stands represent a significant percentage, (the total estimated area is 60-70 hectares out of an estimate of +/- 250 hectares in the one area), of the forest stands in a few very localized areas, which raised concerns that the harvest program could cause serious ecological impacts.

However, although they may represent a significant percentage of the forest stands in a few very localized areas, at a landscape scale, these mature white spruce dominated stands comprise (on an area basis) a small percentage of the total forest cover. Within the area of the 1961 inventory west of the Little Buffalo River and north of Wood Buffalo National Park, there is at least 1873 hectares of this forest type.

Assessment of the proposed Pine project area by the Forest Management Division indicates that there is sufficient timber to accommodate a harvest of 10,000 m³ of white spruce (*Picea glauca*). The harvest prescriptions required as conditions of the timber permit and the final layout of the harvest project would ensure that the ecological functions of the forest, both locally and on a broader scale are maintained.

The timber supply review (Appendix I) notes that ecological features in the area would not limit regeneration activities. As such, regeneration is not considered a limiting factor in the proposed harvest.

Rare or Threatened Species

RWED has compiled a list of plant species present in the NWT, with notes, among others, on the number of occurrences and habitat. This list is preliminary and was derived almost entirely from McJannet CL, Argus GW and Cody WJ. (9) The list does not constitute an official list of rare plants in the NWT. However, Ferns and Orchids were ranked according to their biological status in the NWT. This ranked list includes three species considered as "May be at Risk"; of these, none are found in the Boreal Plain ecozone.

The existence of any rare plant species or communities within the proposed development area is not known. To address this concern further would require an extensive and intensive botanical resource survey and assessment of the area by a professional botanist.

Conclusion:

Based on the information available and gathered, the proposed development would not have a significant adverse long-term impact on local plant communities, rare or highly-valued species, nor would there be a significant level of habitat loss or alteration.

- 2) The direct and indirect impacts of the proposed development on wildlife and wildlife habitats, including migratory birds. Special consideration shall be given to species listed as vulnerable or endangered on the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) list.**

The harvest areas of the proposed project represent a significant percentage (the total estimated area is 60-70 hectares out of an estimate of +/- 250 hectares in the one area) of the forest stands in a few very localized areas. Within the area of the 1961 inventory west of the Little Buffalo River and north of Wood Buffalo National Park, there is at least 1873 hectares of this forest type.

Wildlife and Wildlife Habitats

There would be a short-term impact on plant communities through an increase in the quantity (area) of early seral or successional plant communities within the area of the proposed development. An increase in the percentage of seral stage plant communities that would develop in the stands following harvest within the area would be a direct benefit to those wildlife species that utilize these successional habitats (e.g., snowshoe hare, lynx, moose, ruffed grouse, sharp-tailed grouse, deer mice, meadow voles, etc.). The harvesting activity could have a negative impact on those species that favour old growth white spruce stands (e.g., marten, red squirrel, woodland caribou, red-backed voles, etc.).

The greatest single impact of the proposed development on wildlife is that it would result in improved access for hunting and trapping. Wildlife species such as the threatened Woodland Caribou are particularly vulnerable to increased access and hunting pressure such as may result from forest developments. Woodland caribou are known to occur in the area of the proposed development. The level of populations and the importance of this area as critical habitat have not been determined at this time.

Removal of old growth stands such as the white spruce targeted for harvest in the subject application is held to reduce the availability of thermal cover for ungulates. In the past, most biologists believed that ungulates required areas of thermal cover in winter. Today there is some debate over this issue. Other research indicates that if there is sufficient quality winter browse available, there is no requirement for "thermal" cover. This issue is controversial and there is no consensus, either on the value of old growth white spruce stands as thermal cover, or on the importance of thermal cover generally to ungulate survival. However, in instances where ungulates are subjected to continual harassment or disturbance they will often seek out dense forest cover for "hiding" cover.

COSEWIC Species

Species on the COSEWIC list that exist in the Boreal Plain ecozone and hence may be found in the proposed project area if appropriate habitat exists:

Threatened

- Woodland Caribou (*Rangifer tarandus caribou*) Boreal population - uses Boreal forest (Woodland Caribou are proposed for the COSEWIC list)
- Wood Bison (*Bison bison athabasca*)* - uses Boreal forest and open grassland/prairies
- Peregrine Falcon (*Falco peregrinus anatum*) - uses cliffs in proximity of wetlands in summer only, not present in winter

Special Concern

- Yellow Rail (*Coturnicops noveboracensis*) - uses wetlands
- Short-eared Owl (*Asio flammeus*) - uses wetland, open grasslands, bogs, open areas
- Wolverine (*Gulo gulo*) Western population - uses Boreal-Taiga forest

It should be noted that the proposed project area is near the eastern limit of the Bison-free Management Zone, a zone established for the limitation of the spread of tuberculosis and brucellosis from diseased herds to healthy herds. Any bison occurring in the Bison-Free Zone will be shot on sight to prevent the possibility of disease transmission.

The presence of Short-eared Owls and Peregrine Falcons in the proposed project area is unknown. Potential peregrine falcon nesting habitat within the proposed development area appears to be minimal or non-existent.

Aquatic Resources and Migratory Birds

There are limited aquatic resources in the area of concern. Potential for negative impacts on aquatic dependent migratory birds should be low.

Conclusion:

The impacts of the proposed development on wildlife, wildlife habitat, migratory birds, and aquatic resources are limited to improved access for hunting and trapping, which may increase harvest pressures ungulates and other species in the area. On the other hand, the development will foster the conversion of "climax" sites to early seral stages, supporting wildlife species favouring seral ecotones, including moose, lynx, and hares. The area of harvest represents a small percentage of the known area of the forest type in the region and is therefore not considered a significant impact.

3) The impacts of the proposed development on the use of land for wildlife harvesting purposes taking into specific consideration hunting and trapping.

The proposed development would likely prove beneficial to harvesters by providing increased or improved access into hunting and trapping areas. Early seral plant community stages tend to be more productive (species diversity, biomass production) than later stages and old growth. Harvesting mature white spruce stands will result in increased early seral plant communities that provide optimal habitat for wildlife such as grouse, snowshoe hare, lynx and moose - all species that are actively sought after by local resource harvesters.

The area of the proposed development is part of the hunting and trapping areas for the people of Fort Resolution. This area falls within the harvesting area of four trappers from the community of Fort Resolution: Eddy Lafferty, Sonny Edward Balsillie, Greg Balsillie, and Lawrence Fabian. Fur harvesting records for the past two years are available (10).

Conclusion:

Given the expected level of harvest and area of forest affected, the impact on the harvesting opportunities for community harvesters is expected to be neutral. Harvesters will benefit from improved access to the area. This may result in increased harvest pressure on all harvested species. Some of these species, such as marten and woodland caribou will be adversely affected by the changes in habitat wrought by the development. Other species of value to hunters and trappers, such as moose, lynx and hares, will be positively impacted by habitat alteration.

4) Explain the chance of and size of an accident or malfunction that could happen with the proposed timber cutting development and what contingencies should exist in the event of an accident or malfunction.

Analysis of the Potential for Spills

- Types of spills that are possible would include leaking fuel tanks/containers, leaking hydraulic lines, and leaking oil containers.
- Spill potentials are reduced if fueling of heavy equipment like trucks and skidders takes place at an appropriate fueling location. An appropriate fueling location would include a gas station or a facility that has spill containment equipment in place.
- Fuel stored in small quantities, should be safely stored 100m away from any water body and in an appropriate container.
- Hydraulic oil leaks can be minimized by inspecting all equipment before it goes out into the field and on a regular basis. Repairs should be made as soon as a leak is noticed.
- An empty container should be on hand to place under any leaking container, or to temporarily store contaminated material.
- Fuel and oil containers should be safely stored away from the logging activity in an area that is highly visible from all equipment.
- Spill equipment that should be located on site is as follows;
 - Sorbant pads,
 - Shovels,
 - Plastic sheeting,
 - Empty container.
- Personnel should be informed of what procedures should be followed in the event of a spill. This would include how to contain, report, and cleanup a spill.

Based on the available information it appears that this type and level of activity would present a relatively low risk to the environment in regards to spills and other discharges of contaminants into the environment.

Forest Fires

The proposed development is a winter operation. Risk of forest fires from industrial activities in winter operations is generally nil. Increase in forest fire potential due to increased levels of slash and debris from logging is limited through standard mitigation measures. Burning of slash and debris on site would not be an approved practice.

5) CEA of the proposed development on vegetation and wildlife.

a) Contributing Development Activity

The only other development activities in the vicinity of the proposed development are the abandoned Pine Point townsite, and associated mining developments.

b) Concurrent Potential Impact

The Pine Point Mine is closed and no further impacts are expected from the activity, on vegetation or wildlife. The proposed development will be using previously established access routes from the mining activity, as part of the access to the harvest areas. Increase in access to the area is therefore limited.

c) Recommended Measures

No additional measures are identified or recommended.

Appendix I: Timber Supply Review
Patterson Sawmill
Forest Management Application FA001828

By Rafe Smith
Silviculture Operations Coordinator
Forest Development Services

Introduction

During October and Early November of 2000 a review of the timber supply in the area of Pine Point and Little Buffalo River was conducted to verify the potential for a harvesting operation. Concern was noted over the absence of a recent inventory in the areas applied on in FA001828.

Research

Research involved all available sources of information.

The license application and ecological assessments were reviewed.

Danny Patterson was interviewed and provided oblique aerial photos of the area around Pine Point.

A 1961 inventory of the Buffalo River area was reviewed. This inventory covered the area near Pine Point but not the Little Buffalo River area.

The Pine Point cutblock layout was inspected and a volume cruise was performed to assess the potential of the stand.

The Landsat image of the entire application and surrounding area was reviewed to identify additional timber resources in the area.

1:20,000 aerial photography of the Little Buffalo River area and the Pine Point area was analyzed.

A helicopter was chartered to fly the application areas and to assess the timber and condition of the surrounding forest.

Observations

The proposed Pine Point harvest blocks were laid out in large, softwood dominated stands identified on the Buffalo River inventory. The stands cover 1873 hectares of land.

The stand listing described the forest there as 50% to 75% softwood, 41 to 60 feet (12.3m to 18m) tall, 21% to 40% crown closure, site class III, with a 20% stand shrub cover.

The operational cruise of the stand was carried out in the operable areas within the stand. 25 plots, fixed at 200m², were tallied. All trees 17cm dbh or greater were counted and an average height was measured. Not all plots were installed within the cutblock lay out, but none of the plots were placed in shrub, juvenile or otherwise unmerchantable timber areas. Practical operability of the surrounding stand was the main criteria for plot placement. Plots were placed randomly within practicable working range and detailed notes were taken to describe the stand at each area.

The cruise revealed that the timber laid out is mature to over mature. Many trees exhibited dead and rotten branches, and some of the trees had rotten cores. Some of the stand had suppressed understory at low densities. Severe spruce budworm defoliation was evident, and bark beetle damage was also present in some areas. In general the merchantable timber of the area is in poor health and beginning to drop out of the stand. The stand is should be considered prime for harvest as its value as a timber resource is in decline.

There are patches of healthy regeneration present, and patches of spruce regeneration of all ages in the proximity of the inventory. Diameters averaged around 30cm. Tree heights ranged from 18m to 25m. This corresponds to the heights described in the stand listing, as it must be noted that the trees are now 40 years older than at the time of the inventory. The inventory also averaged the heights of trees across a broad land area, whereas the timber laid out represents samples of the dominant trees of that population.

The helicopter flight of the area revealed that the general shape and composition of the stand as indicated in the inventory map is accurate. The composition to the northern end of the stand is jack pine or smaller spruce. There are patches of juvenile spruce, and jack pine with spruce understory. There are also bands of aspen throughout the stand. Approximately 10% to 15% of the stand is composed of timber suitable for harvest.

Gross spruce volumes ranged from 33m³/ha to 335m³/ha, with a mean sawlog volume of 193m³/ha. 92% of the plots exceeded 80m³/ha. According to aerial site photos, Patterson's have laid out 143 ha of blocks, and have identified another 107 ha for future operations. Of this area, approximately 40% will have marginal volume and will probably prove to not be economically feasible to harvest. There is more merchantable timber, in the range of 10,000m³ or more, in the area that has not been laid out or identified for harvest that will contribute to the practical volume of the area. By estimation based on the research data there is approximately 35,000m³ to 45,000m³ of merchantable sawlogs in the area around Pine Point.

The timber Patterson's have identified west of the Little Buffalo River is a continuation of the same forest as the wood near Pine Point. It occurs along beach ridges and covers extensive land area. Most of the prime, mature timber occurs in the vicinity of Salt Lake, although there are smaller stands and scattered timber to the north and west as well. The

trees in question appear to be of similar age, composition, and height as those laid out near Pine Point. Farther south the forest appears to have been burned, and the spruce stands of that area are much younger. Some are nearing merchantable size, but are still less than 80 years old. According to site observations, analysis of the Landsat data and the 1994 aerial photo series, approximately 600 ha of concentrated, merchantable spruce forest exists in the area, in addition to smaller stands scattered to the north and west of the main stands. Estimates of the main body of the wood range from 70,000m³ to 100,000m³, with additional resource scattered throughout the area.

It should also be noted that although Patterson's have applied on the timber lying to the west of the river there are extensive spruce stands to the east in the same proximity. It is likely that there is much more timber on the east side of the river than the west. This timber is part of the same forest as the timber Patterson has expressed interest in.

Conclusion

Ecologically, there are no special considerations that apply to the stands in the area, and regeneration efforts will be standard fare. Harvesting the area will be easily accomplished by application the Timber Harvesting Guidelines.

There is more timber available in the application area that has not been identified in detail and thus not included in this assessment of the resource. There are also considerable juvenile spruce resources in the area that will continue to add to the existing timber supply with time.

Review of the forest resource in the Pine Point and Little Buffalo River area indicates that there is sufficient timber volume available to sustain a small 10,000m³ harvesting operation for 10 to 14 years.

Appendix II: Operational Cruise Results
Timber Licence Application. – FA001828

South Slave Regional Forest Management

An original Timber Cutting Licence was filled in approx. July 4, 2000 for 50,000 m³ of White Spruce saw logs in the Pine Point and the Little Buffalo River Area. The application was incomplete and further details were requested of the applicant. Additional mapping detail was made available on September 21, 2000. Yellowknife requested an operational cruise and this was accomplished by the Forest Development office about November 4, 2000. The summary report of this work and copies of the tally sheet are attached.

A copy of my own evaluation of the cruise data is attached (11.a). We have treated the plots as an evaluation of one forest type. The data was therefore averaged.

We have used the applicant's estimation of 99 hectares of proposed forest blocks. The estimate of Forest Development is approx. 193 m³ per hectare. Our averaging approach estimates the level at closer to 129 m³ per hectare. Due to the apparent highly variable nature of these stands the actual mathematical value may lie somewhere in between. The stands seem to be made up of medium sized sawlog White Spruce with an average diameter of 22 to 24 centimetres. We have used an average stand height of 20 metres and have used a standard merchantable White Spruce volume table developed for the Northwest Territories.

Using these values we estimate that the area volume identified in Blocks 1 to 9 is approx. 12,000 to 13,000 cubic meters. Again the highly variable nature of these stands makes the estimates tentative. Area volumes centre around the 26 to 30 DBH classes.

It is clear that this type of licence proposal will remove area resources in very short order. Even taking the best case scenario the resource will only last 5 to 10 years; and that only if all the mature White Spruce resource is removed. This would not be the best support of the sustainable yield concepts. These areas may be better kept as part of the North Slave resource base to support possible Fort Resolution operations. Winters too warm to support operations along the Slave River could be supported by these types of areas.

We have no adequate mapping or survey information for this area so any long-term disposition of area resources would be inappropriate. The long term Licence proposal would clearly not be within any estimate of an AAC; sustainable cut value.

A yearly permitting of volumes is the most that should be considered. Even though this will also be too high a harvest; at 10,000 m³, for the area; the yearly allocation will at least allow the department to bring a stop to harvesting if area damage to the environment becomes apparent. We believe that overcutting of the mature forest represents an environmental damage and should not be permitted. We must certainly not commit the Department to such a possibility in the long run through the issuance of long term renewable licences.

Small, scattered stands of mature White Spruce may also represent a wildlife support function important to the area. This question should be particularly brought to the attention of the wildlife section.

Conclusion; FA001828.

We believe that the application as such; 50,000 m³ over 5 years, should be rejected as excessive in volume request for this area.

If required to issue a cutting authorization it should be no more than a one year permit which makes it clear that a continuing assessment of suitability will be made each year. The current AOP application could be used to support this approach.

A permit; if issued should be for the indicated blocks only. There will be no mid season shifting to unsurveyed areas.

Area support to Fort Resolution workers and the community should still be a requirement.

Harvest buffers will have to be in place at all critical areas; including low-lying areas. This may result in a harvest area with a great many buffers. It shall be the responsibility of the permittee to both flag and paint these.

Further studies should be undertaken to evaluate the appropriateness of including the Little Buffalo River Area stands in the North Slave AAC. The area is too small to stand alone.

Christopher R. Carlisle,
Regional Forester,
South Slave Region.

Appendix III: Bibliography and Reference Documents

- 1) Map of Terrestrial Ecozones of Canada
<http://www.nrcan.gc.ca/cfs/proj/ppiab/sof/maps/map96.pdf>
- 2) The State of Canada's Environment – Part II – Canadian Ecozones
<http://www.ec.gc.ca/soer-ree/English/1996Report/Doc/1-1.cfm>
- 3) A National Ecological Framework For Canada - Attribute Data
http://sis.agr.gc.ca/cansis/nsdb/ecostrat/data_files.html
- 4) Maps of the Application Area
 - a) Application Map – Harvest Area (TIFF Format)
<ftp://216.108.146.3/MVEIRB/MVEIRB Documents/ApplicationMap1Area1.tif>
 - b) NTS Map Locating the General Harvest Area (TIFF Format)
<ftp://216.108.146.3/MVEIRB/MVEIRB Documents/NTSMap85A.tif>
- 5) Forest Inventory Map – circa 1961 (Adobe PhotoShop Format)
<ftp://216.108.146.3/MVEIRB/MVEIRB Documents/ForestInventoryMap1961.psd>
 - a) Forest Inventory Map – Shaded and Highlighted With Proposed Harvest Area (Adobe PhotoShop Format)
<ftp://216.108.146.3/MVEIRB/MVEIRB Documents/ForestInventoryMapHighlighted.psd>
- 6) Satellite Image of the Proposed Harvest Area (Adobe PhotoShop Format)
<ftp://216.108.146.3/MVEIRB/MVEIRB Documents/SatelliteImageUnclassified.psd>
- 7) Aerial Photographs of the Harvest Area
 - a) Aerial Photograph of the Proposed Harvest Area (TIFF Format)
<ftp://216.108.146.3/MVEIRB/MVEIRB Documents/AirPhotoHarvestArea.tif>
 - b) Aerial Photograph with Delineated Harvest Blocks (TIFF Format)
<ftp://216.108.146.3/MVEIRB/MVEIRB Documents/AirPhotoHarvestBlocksYr1.tif>
- 8) Field Guide to Ecosites of Northern Alberta. Beckingham, J.d. and Archibald, J.H. Canadian Forestry Service. 1996
- 9) Rare Vascular Plants in the Northwest Territories. McJannet CL, Argus GW and Cody WJ. 1995. Syllogeus 73:1-104.
- 10) Harvest Records and Information – Traditional Harvesters in the Development Area
<ftp://216.108.146.3/MVEIRB/MVEIRB Documents/2m204360.psd>

11) Forest Inventory Charts and Tables

a) Inventory Survey Volumes Tables and Charts

<ftp://216.108.146.3/MVEIRB/MVEIRB Documents/InventorySurveychart2.xls>

12) Environmental Protection Issues Statement

<ftp://216.108.146.3/MVEIRB/MVEIRB Documents/EP Issues.pdf>

13) Digital Photographs – Aerial Views - of the Proposed Harvest Area

<ftp://216.108.146.3/MVEIRB/MVEIRB Documents/2000 Pictures Aerial Views/>

14) Digital Photographs – Ground Views - of the Proposed Harvest Area

<ftp://216.108.146.3/MVEIRB/MVEIRB Documents/2000 Pictures Ground Views/>