F A X

Department of Indian Affairs & Northern Development
Hay River Subdistrict
South Mackenzie District

TO:

CHAR

FROM:

Andrew Forbes
Resource Management Officer
41 Capital Drive, #203
Hay River, NT X0E 1G2
Ph: (867)874-6995
Fax: (867)874-2460
dianddf@cancom.net

Date: ***December 14, 1998***

Number of Pages, including cover = ***9***

REGARDING:

LUPA N1998A0942, Paramount, I-74

Here is the CEAA & Calyx. Permit conditions will be sent as soon as I get the additional information from Paramount.

Canadian Environmental Assessment Act
Screening Form

5. Description of Environment

File No: N1998A0942, Paramount Wellsite I-74 **Ecozone:** Taiga Plains

Description of Biophysical Environment: (flora, fauna, terrain, physical geography, water bodies)

Wellsite located on flat, treed muskeg with thick peat layer over permafrost. Access passes over treed muskeg, pine ridges, swamp and high ground vegetated with spruce and aspen.

Description of Socio-economic & Cultural Environment: (human activities, artifacts - in vicinity)

There has been considerable oil & gas exploration in this area over the years. There is some hunting and trapping in the vicinity and a bit of recreational use by snowmachines.

Past & Current Land Use Activities in the Area:

x Historical Maps (expired permits & licences)

x Running Maps (current permits & licences)

Interference Maps (other land dispositions)

Public Registry System

GIS

7. Identification of Project Components & Environmental Effects

Project Components	Project Effects
("x" all of the items appropriate to this project)	
x Access road	Biological Environment
- construction	01. Deposit into surface water
- abandonment / removal	02. Deposit into ground water
x - modifications (widening, straightening, etc)	03. Change in surface water flow
Automobile, aircraft or vessel movement	04. Change in ground water flow
Blasting	05. Change in water temperature
Building	06. Change in drainage pattern
Burning	07. Change in air quality
Burying	08. Change in air flow
Channelling	x 09. Micro-climate change
x Cut & fill	10. Ice fog
x Cutting of trees or removal of vegetation	11. Change in ambient noise levels
Dams & impoundments	12. Change in slope stability

	- construction		13. Change in structure
	- abandonment / removal	x	14. Alteration of permafrost regime
	- modification		15. Destabilisation / erosion
	Ditch construction		16. Soil compaction
	Drainage alteration		17. Loss of access to non-renewable resource
x	Drilling, other than geophysical		18. Depletion of non-renewable resource
	Ecological surveys		19. Removal of rare / endangered species
x	Excavation	x	20. Introduction of species
	Explosive storage		21. Toxin / heavy metal accumulation
x	Fuel storage		22. Removal of rare / endangered wildlife species
x	Garbage		23. Change in wildlife health
	x - disposal of hazardous waste	x	24. Impact to large mammals
	x - disposal of sewage	x	25. Impact to small mammals
	x - waste generation	x	26. Impact to fish
	Geoscientific sampling		27. Impact to birds
	- trenching	x	28. Impact to other wildlife
	- diamond drill		29. Impact to calving, nesting & spawning areas
	- borehole core sampling		30. Removal of wildlife buffer zone
	- bulk soil sampling		31. Change in wildlife habitat / ecosystem
	Gravel		32. Other, (explain) ..
	Hydrological testing		Directly-related Socio-economic & Cultural environment
x	Site restoration	x	33. Impact to trappers
	x - fertilization	x	34. Impact to hunting
	- grubbing		35. Impact to outfitters
	x - planting / seeding	x	36. Recreational or back country use
	- reforestation	x	37. Impact to fishing
	- scarify		38. Impact to First Nation traditional use
	- spraying		39. Impact to community
	x - recontouring		40. Impact to industry
	Slash & burn		41. Impact to community health
	Soil testing		42. Change in manpower or community economics
	Topsoil, overburden or soil		43. Change in housing or infrastructure
	- fill		44. Change in regional transportation
	- disposal		45. Other, (explain) ..
	- removal		46. Impact to traditional use area

x Stream crossing / bridging	48. Impact to local aesthetics
Tunnelling / underground	49. Impact to archeological or historical site
Other (explain)..	50. Other, (explain)
Accidents or malfunctions, (is there a possibility)?	
Effects of environment on project, (e.g. beaver dams)	

Environmental Effect	Describe
(Describe biophysical & socio-economic & cultural environmental effects identified from checklist)	
09. Micro-climate change	Micro climate of the wellsites will be changed but the access should not be affected.
14. Alteration of permafrost regime	If proper operational procedures are followed there should be no alteration but the potential is there.
20. Introduction of species	Domestic grasses will be used for site stability & erosion control.
24. Impact to large mammals	May increase moose & caribou hunting pressure.
25. Impact to small mammals	May increase trapping pressure.
26. Impact to fish	May increase traffic, via snowmachine, to Lori & Swat Lakes for ice fishing
33. Impact to trappers	Improve their access
34. Impact to hunting	May increase the number of big game hunters in the area but this should be minimal.
36. Recreational or back country use	May increase the number of snowmachines using this area but this should be minimal.
37. Impact to fishing	May increase traffic, via snowmachine, to Lori & Swat Lakes for ice fishing

8. Identification of Other Resources & Their Environmental Effects

Other Resource Uses	Effects from other Resource Uses
("x" all of the items appropriate to this project)	
Agriculture	Biological Environment
	01. Deposit into surface water
Forestry	02. Deposit into ground water
- commercial	03. Change in surface water flow
- domestic	04. Change in ground water flow
	05. Change in water temperature
x Fishing	06. Change in drainage pattern

x Hunting / subsistence

Urbanization

- commercial / recreational
- built structures
- Infrastructures

Mining

- exploration
- open pits
- underground

Quarries

Transportation / communications

- roads / trails
- channels / canal
- telephone lines, satellite dishes, cables
- beacons

Solid waste disposal

Energy project

- hydro
- pipeline
- transmission line

Other - water licence, permits, leases

x Land claim lands

- selected
- withdrawn
- special management

-- heritage site

07. Change in a___hality
08. Change in air flow
09. Micro-climate change
10. Ice fog
11. Change in ambient noise levels
12. Change in slope stability
13. Change in soil structure
14. Alteration of permafrost regime
15. Destabilisation / erosion
16. Soil compaction
17. Loss of access to non-renewable resource
18. Depletion of non-renewable resource
19. Removal of rare / endangered species
20. Introduction of species
21. Toxin / heavy metal accumulation
22. Removal of rare / endangered wildlife species
23. Change in wildlife health
x 24. Impact to large mammals
x 25. Impact to small mammals
x 26. Impact to fish
27. Impact to birds
28. Impact to other wildlife
29. Impact to calving, nesting & spawning areas
30. Removal of wildlife buffer zone
31. Change in wildlife habitat / ecosystem
32. Other, (explain) ..

Directly-related Socio-economic & Cultural environment

33. Impact to trappers
34. Impact to hunting
35. Impact to outfitters
36. Recreational or back country use
37. Impact to fishing
38. Impact to First Nation traditional use
39. Impact to community
40. Impact to industry

-- cultural site	41. Impact to community health
	42. Change in manpower or community economics
Other private lands held under tenure	43. Change in housing or infrastructure
x Recreational	44. Change in regional transportation
x Trapping	45. Other, (explain) ..
Mineral processing	46. Impact to traditional use area
Airport	47. Impact to historical site or cultural landmark
Other heritage sites	48. Impact to local aesthetics
Other, (explain) ..Oil & gas exploration.	49. Impact to archeological or historical site
	50. Other, (explain)

9. Cumulative Environmental Effects

Based on a comparison of effects identified in #7 & #8

Matching Numbers	Description of cumulative environmental effects
24 Impact to large mammals	Increase hunting of moose and caribou. The effect should be minimal.
25 Impact to small mammals	Increase trapping should have a minimal effect because it will not bring additional trappers but will allow existing trappers to cover more territory.
26 Impact to fish	A few more people may snowmachine in to Swat and Lori Lake due to easier access.

10. Mitigation Measures

For each environmental effect identified in #7 & #8, describe the required mitigation measure(s)

Number(s)	Description of Mitigation Measure(s)
All	Normal permit conditions will be sufficient to mitigate effects of this land use operation.

Calyx EA for DIAND
Component Characteristic Checklist

File #: N1998A0942 I-74

Applicant: Paramount

Date: Dec 14/9

All Components have the following attributes:

Value: Low
Medium
High

Ecological Resources

Aquatic animals

aquatic birds
- commercially/traditionally important (True/False)
- critical habitat (True/False)
- pollutant-sensitive (True/False)
- rare/endangered (True/False)
- recreationally important (True/False)
- sensitive to disturbance (True/False)
- sensitive to turbidity (True/False)
- temperature sensitive (True/False)

} F

aquatic invertebrates
- commercially/traditionally important (True/False)
- critical habitat (True/False)
- pollutant-sensitive (True/False)
- rare/endangered (True/False)
- recreationally important (True/False)
- sensitive to disturbance (True/False)
- sensitive to turbidity (True/False)
- temperature sensitive (True/False)

} F

aquatic mammals
- commercially/traditionally important (True/False)
- critical habitat (True/False)
- pollutant-sensitive (True/False)
- rare/endangered (True/False)
- recreationally important (True/False)
- sensitive to disturbance (True/False)
- sensitive to turbidity (True/False)
- temperature sensitive (True/False)

} F

aquatic reptiles/amphibians
- commercially/traditionally important (True/False)
- critical habitat (True/False)
- pollutant-sensitive (True/False)
- rare/endangered (True/False)
- recreationally important (True/False)
- sensitive to disturbance (True/False)
- sensitive to turbidity (True/False)
- temperature sensitive (True/False)

} F

fish
- commercially/traditionally important (True/False)
- critical habitat (True/False)
- pollutant-sensitive (True/False)
- rare/endangered (True/False)
- recreationally important (True/False)
- sensitive to disturbance (True/False)
- sensitive to turbidity (True/False)
- temperature sensitive (True/False)

} F

aquatic vegetation

algae/phytoplankton
- pollutant-sensitive (True/False)
- rare/endangered (True/False)
- sensitive to disturbance (True/False)

} F

emergent vegetation
- pollutant-sensitive (True/False)
- rare/endangered (True/False)
- sensitive to disturbance (True/False)

} F

submerged vegetation
- pollutant-sensitive (True/False)
- rare/endangered (True/False)
- sensitive to disturbance (True/False)

} F

ecosystems

aquatic ecosystem
- high ecological value (True/False)
- sensitive (True/False)
- wetlands (True/False)

} F

terrestrial ecosystem
- high ecological value (True/False) T M
- salt-sensitive (True/False) T L
- sensitive (True/False) T L

sensitive habitat

aquatic substrate
- contaminated (True/False)
- erodible quality (True/False)
- high mud/silt content (True/False)
- high organic content (True/False)

} F

- calving area (None)
- denning site (None)
- migration route (None)
- nesting area (None)
- riparian (None)
- spawning (None)
- staging area (None)

terrestrial animals

terrestrial birds
- burrowing (True/False) F
- commercially/traditionally important (True/False) T M
- critical habitat (True/False) T L
- pollutant-sensitive (True/False) T L
- rare/endangered (True/False) F
- recreationally important (True/False) T M
- sensitive to disturbance (True/False) T L
- vulnerable to predators (True/False) T L
- rely on invertebrates (True/False) T L

terrestrial invertebrates
- burrowing (True/False) T L
- commercially/traditionally important (True/False) F
- critical habitat (True/False) T L
- pollutant-sensitive (True/False) T L
- rare/endangered (True/False) F
- recreationally important (True/False) T L
- sensitive to disturbance (True/False) T L
- vulnerable to predators (True/False) T L

terrestrial mammals
- burrowing (True/False) T M
- commercially/traditionally important (True/False) T M
- critical habitat (True/False) T L
- pollutant-sensitive (True/False) T L

- rare/endangered (True/False) F
- recreationally important (True/False) T M
- sensitive to disturbance (True/False) T L
- vulnerable to predators (True/False) T L
- rely on invertebrates (True/False) T L

terrestrial reptiles/amphibians
- burrowing (True/False) T L
- commercially/traditionally important (True/False) F
- critical habitat (True/False) F
- pollutant-sensitive (True/False) T L
- rare/endangered (True/False) F
- recreationally important (True/False) F
- sensitive to disturbance (True/False) T L
- vulnerable to predators (True/False) T L
- rely on invertebrates (True/False) T L

terrestrial vegetation

crops
- native (True/False)
- pollutant-sensitive (True/False)
- rare/endangered (True/False)
- salt-sensitive (True/False)
- sensitive to trampling (True/False)
- used by terrestrial animals (True/False)
- susceptible to fire (True/False)

} F

grasses/herbs/ferns
- native (True/False)
- pollutant-sensitive (True/False)
- rare/endangered (True/False)
- salt-sensitive (True/False)
- sensitive to trampling (True/False)
- used by terrestrial animals (True/False)

} F

} T

lichen/moss
- native (True/False)
- pollutant-sensitive (True/False)
- rare/endangered (True/False) F
- salt-sensitive (True/False)
- sensitive to trampling (True/False)
- used by terrestrial animals (True/False)

} TL

shrubs
- native (True/False)
- pollutant-sensitive (True/False)
- rare/endangered (True/False) F
- salt-sensitive (True/False)
- sensitive to trampling (True/False)
- used by terrestrial animals (True/False)
- susceptible to fire (True/False)

} TL

trees
- native (True/False) TH
- pollutant-sensitive (True/False) TL
- rare/endangered (True/False) F
- salt-sensitive (True/False) TM
- sensitive to trampling (True/False) F M
- used by terrestrial animals (True/False) T M
- susceptible to fire (True/False) T M
- shallow rootings (True/False) T M
- susceptible to windthrow (True/False) TL

Physical Resources

ambient noise level
- normal ambient noise level
  - Low (wilderness) ✓
  - Medium (urban playground)
  - High (industrial)

atmospheric environment
- atmosphere
  - clear (True/False) TH
  - cold temperatures (True/False) TH
  - low noise levels (True/False) TL
  - low pollutant levels (True/False) TL
  - stable conditions (True/False) TH
  - subject to inversions (True/False) TL
- climate
  - clear (True/False) TH
- local air quality
  - clear (True/False) TH
  - low dust content (True/False) TH
  - low noise levels (True/False) TL
  - low pollutant levels (True/False) TL
  - stable conditions (True/False) TL
  - subject to inversions (True/False) TL

groundwaters
- aquifer recharge areas
  - low contaminant levels (True/False)
  - normal salinity (True/False)
  - shallow water table (True/False)

} TL

- aquifers
  - low contaminant levels (True/False)
  - low mineral content (True/False)
  - normal salinity (True/False)
  - shallow water table (True/False)

} TL

- wells
  - low contaminant levels (True/False)
  - normal salinity (True/False)
  - shallow water table (True/False)

} F

landforms/geological resources
- aggregate resources
  - esker (True/False)
  - rare/unique (True/False)

} F

- geological formations
  - easily damaged (True/False) F
  - rare/unique (True/False) F
  - scientific/aesthetic value (True/False) TL
- glaciers/snow fields
  - avalanche-prone (True/False)
  - rare/unique (True/False)

} F

- ice
  - a surface for travel (True/False)
  - rare/unique (True/False)

} F

- mineral resources
  - rare/unique (True/False) F
  - salt deposit (True/False) F

shorelines
- erodible (True/False) TM
- marshy (True/False) F
- natural/undisturbed (True/False) TL
- rare/unique (True/False) F

surficial deposits
- easily damaged (True/False)
- erodible (True/False)
- rare/unique (True/False)
- scientific/aesthetic value (True/False)
- slide-prone (True/False)

} F

Surface Waters

freshwater environment
- canals
  - clear (True/False)
  - high DO (True/False)
  - high swimming potential (True/False)
  - low contaminant levels (True/False)
  - low flow/flushing rates (True/False)
  - low temperature (True/False)
  - low turbidity (True/False)
  - normal salinity (True/False)
  - pleasant appearance/smell (True/False)
  - unproductive (True/False)

} F

- lakes/reservoirs
  - clear (True/False)
  - high DO (True/False)
  - high swimming potential (True/False)
  - low contaminant levels (True/False)
  - low flow/flushing rates (True/False)
  - low temperature (True/False)
  - low turbidity (True/False)
  - normal salinity (True/False)
  - pleasant appearance/smell (True/False)
  - unproductive (True/False)

} F

- rivers
  - clear (True/False) F
  - high DO (True/False) FL
  - high swimming potential (True/False) F
  - low contaminant levels (True/False) TL
  - low flow/flushing rates (True/False) TL
  - low temperature (True/False) FL
  - low turbidity (True/False) F
  - normal salinity (True/False) TL
  - pleasant appearance/smell (True/False) TL
  - unproductive (True/False) F
- streams
  - clear (True/False)
  - high DO (True/False)
  - high swimming potential (True/False)
  - low contaminant levels (True/False)
  - low flow/flushing rates (True/False)
  - low temperature (True/False)
  - low turbidity (True/False)
  - normal salinity (True/False)
  - pleasant appearance/smell (True/False)
  - unproductive (True/False)

} F

marine environment
- estuaries
  - clear (True/False)
  - high DO (True/False)

} F

- high swimming potential (True/False)
- low contaminant levels (True/False)
- low flow/flushing rates (True/False)
- low temperature (True/False)
- low turbidity (True/False)
- normal salinity (True/False)
- pleasant appearance/smell (True/False)
- unproductive (True/False)

} F

- marine waters
  - clear (True/False)
  - high DO (True/False)
  - high swimming potential (True/False)
  - low contaminant levels (True/False)
  - low flow/flushing rates (True/False)
  - low temperature (True/False)
  - low turbidity (True/False)
  - normal salinity (True/False)
  - pleasant appearance/smell (True/False)
  - unproductive (True/False)
  - high swimming potential (True/False)

} F

terrain
- permafrost/ground ice
  - used by terrestrial animals (True/False)
  - discontinuous (True/False)

} TL

- soil
  - used by terrestrial animals (True/False) TM
  - acid bearing (True/False) TL
  - agricultural (True/False) TL
  - clay (True/False) TM
  - contains permafrost (True/False) TL
  - fine textured (True/False) TM
  - high organic content (True/False) TM
  - low contaminant levels (True/False) TL
  - mineral (True/False) F
  - poorly drained (True/False) F
  - potentially erodible (True/False) TL
  - sensitive (True/False) TL
  - steep slope (True/False) F

Socio-Economic Resources

aesthetic values
- scenic views/vistas
  - agricultural (True/False) F
  - pristine (True/False) TM

people
- aboriginal/first nation peoples (None)
- artists/artisans (None)
- commercial resource users (None)
- farmers/ranchers
  - livestock (True/False) F
- nearby community residents (None)
- nearby residents (None)
- nearby/adjacent landowners
  - with riparian rights (True/False) F
- recreational resource users (None)
- special status groups (None)
- tourists/visitors
  - terrestrial backcountry use (True/False) TL
- traditional resource users (None)
- workers (None)

services
- drinking water
  - high volume (True/False) TL
- electricity (None)
- emergency response (None)
- firefighting (None)
- gas (None)
- general social services (None)
- health services (None)
- industrial/lab processes
  - requires uncontaminated inputs (True/False) F
- irrigation water
  - high volume (True/False)
  - requires uncontaminated inputs (True/False) > F
- law enforcement (None)
- navigation
  - difficult navigation (True/False)
  - high volume (True/False)
  - requires uncontaminated inputs (True/False) > F
- parking (None)
- sewage treatment (None)
- telephone (None)
- transportation access
  - only route (True/False) F
- waste disposal (None)

society
- economics
  - employment
    - community nearby (True/False) TL
  - personal income
    - community nearby (True/False) TL
  - regional economic activity
    - community nearby (True/False) TL

general indicators
- community structure (None)
- health and safety (None)
- social well-being (None)

special land uses
- agricultural land use
  - grazing rights
    - livestock (True/False)
  - (True/False) > F
- animal refuge land use (None)
- commercial land use
  - aquaculture (True/False) F
- industrial land use (None)
- parks land
  - wilderness qualities (True/False) F
- recreational land use (None)
- residential land use (None)
- traditional land use/area (None)
- wilderness (None)

structures/sites
- archaeological feature
  - accessible (True/False)
  - underwater (True/False) > F
- bridges (None)
- buildings (None)
- communication/transmission (None)
- dams (None)
- hydro power facility (None)
- marine structures
  - underwater (True/False) F
- nearby community (None)
- oil/gas lines
  - underwater (True/False) F

- pipelines (None)
- power lines
  - underwater (True/False) F
- religious feature/cemeteries (None)
- roads/railways (None)
- scientific feature (None)
- sewage system
  - underwater (True/False) F
- telephone lines (None)
- traditional/historic feature
  - accessible (True/False)
  - underwater (True/False) > F
- trails (None)
- waste disposal sites (None)
- water system (None)