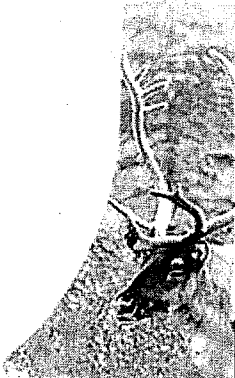


PARAMOUNT CAMERON HILLS  
PUBLIC HEARING

HAY RIVER  
FEBRUARY 18 – 19. 2004

*Government of the Northwest Territories*



Good day. My name is Gavin More. I am the Manager, Environmental Assessment with the Department of Resources, Wildlife and Economic Development.

My Environmental Assessment Unit leads all of the departments of the Government of the Northwest Territories in environmental assessments under the Mackenzie Valley Resource Management Act.

I am joined today by a number of representatives of these departments.

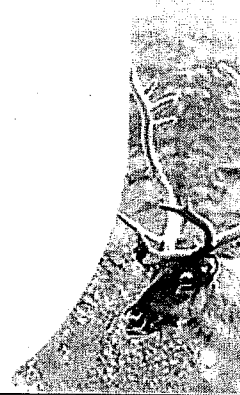
Our presentation is divided into a number of components, and each will be addressed by a different person. I will introduce each representative at the appropriate time during the presentation.



## GENERAL MANDATE

- ❖ To protect the interests and well-being of all NWT residents

*Government of the Northwest Territories*



The GNWT is responsible for protecting the interests and well-being of all residents of the Northwest Territories.

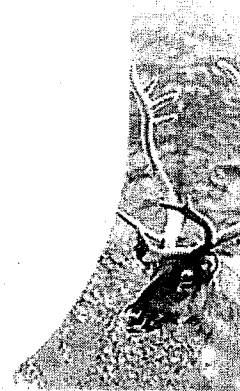
In the context of oil and gas activities in the Cameron Hills, the GNWT requires the protection of the social, cultural and economic well-being of residents of communities in the region.

## Key Challenges in Cameron Hills



- ❖ Ensuring NWT capacity and infrastructure to cope with economic development
- ❖ Balancing resource development with environmental conservation

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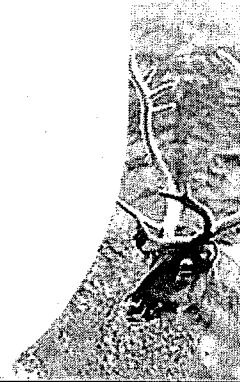
The key challenges facing the GNWT includes ensuring that the capacity and infrastructure within the NWT is able to cope with economic development.

Secondly, the GNWT must balance resource development with environmental conservation.



## Social and Economic Impacts

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The first part of our presentation will be a brief discussion of several Socio-economic and Health infrastructure concerns by:

Karen Cooper – Manager, Career Development, Department of Education, Culture and Employment in Hay River

and

Wes Droge – Chief Executive Officer, Hay River Health and Social Services Authority in Hay River

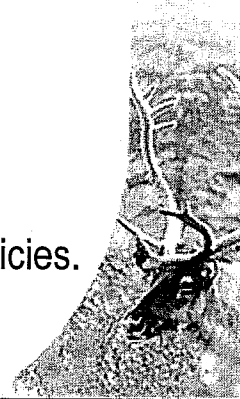
[or Madge Applin, Director of Diagnostic and Patient Care Services]



## Economical

- ❖ Employment targets for Northerners and Aboriginals
- ❖ All NWT Communities included in the Catchment Area.
- ❖ Direct transportation to work site for northern employees.
- ❖ Northern recruitment and retention policies.

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We need Certainty that northerners are going to be hired and to this date no commitment has been made by Paramount.

Paramount has estimated that 25% of there workforce will be northern, this would mean 8 jobs per year during the 10 year construction period. They also mentioned that 75% of their workforce will need to be particularly skilled or high school educated.

In the Northwest Territories last year there were 278 graduates from high school. This year there are 506 grade 12 students. Also during 2003, 884 northern residents participated in Oil and Gas training. From these areas and the existing northern residents we believe that with little effort Paramount could find northern residents who are high school educated or that are particularly skilled to work on this project. Paramount has predicted 7,100 person days per year, which is equivalent to 32 full time jobs per year. The 25% northern hire estimate is too low.

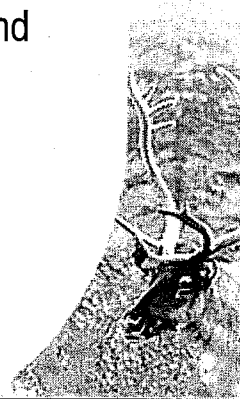
The Economical targets listed above will help to ensure that Paramount helps to contribute to the northern economy.



## Social & Cultural

- ❖ Support towards training of northern residents and employees.
- ❖ Support for aboriginal language use and traditions.

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To ensure that Paramount is able to utilize the trained workforce available in the Northwest Territories and to help build northern capacity, various initiatives such as the following need to be addressed:

- Providing support towards the training of northern residents as well as employees.
- Providing a balance between aboriginal traditions and the work site.



## Monitoring & Mitigation

- ❖ Reporting of employment and recruitment efforts by community.
- ❖ Sharing and reporting of training efforts by community.
- ❖ On-going consultation with communities and governments.

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Communication between northern communities, government and industry is crucial in order to guarantee this and future projects will be integral parts in supporting the northern economy.

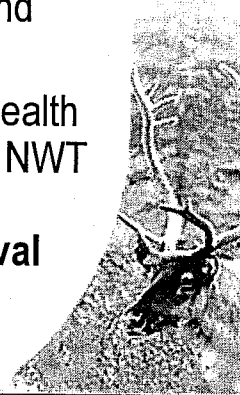
Reporting of employment, recruitment and training efforts as well as the on-going consultation with communities and government ensure a healthy north.



## Health Infrastructure

- ❖ Adequate medical transportation and response provided to employees
- ❖ Minimal impact to local NWT Health and Social Service Authorities
- ❖ Consultation with the Department of Health and Social Services (DHSS) and local NWT Health and Social Service Authorities (HSSA) **in advance of project approval**

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### **Outstanding Issue:**

1. Paramount filed its *Emergency Response Plan* dated July 2003 with the National Energy Board, as noted in Paramount's response to Information Request Number 1.2.18.
2. The *Emergency Response Plan* states that **off-site medical services will be provided by the hospital in Hay River.**
3. As the Chief Executive Officer for the Hay River Health and Social Services Authority, which includes the H.H. Williams Memorial hospital, I was not aware that Paramount had intention to access our services.
4. To our understanding, Paramount did not consult with the GNWT Department of Health and Social Services, nor with local NWT Health and Social Service authorities, in particular, the Hay River Health and Social Services Authority Chief Executive Officer and Medical Director.
5. In order to fulfill the requirements of bullet 1 and 2, we request that Paramount consult with the Department of Health and Social Services and the Hay River Health and Social Services Authority **in advance of the project's approval.** This will ensure that appropriate medical transportation and response will be provided by Paramount, either directly or through contracted services.



## Health and Social Wellness



- ❖ Appropriate medical transportation and response provided by Paramount, either directly or through contracted services
- ❖ Any services intended to be required from other service providers in Hay River or other NWT communities be discussed with the Department (DHSS) and appropriate local NWT HSSA

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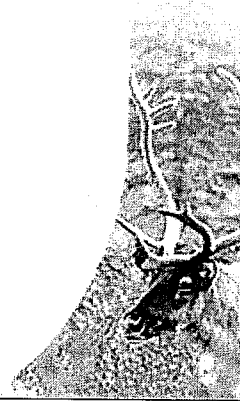
1. Further to the first bullet, I would also request that any services intended to be required from other service providers in Hay River, or other NWT communities, be discussed with the Department and the appropriate local NWT Health and Social Services Authority.
2. This will ensure that all parties are in agreement with service provision and expectations, and are able to plan accordingly.
3. In addition, we are very interested in hearing from Paramount, on what they have done to liaise and consult with others regarding the provision of health and social services to its employees.

Thank you.



## Environmental Issues

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The second part of our presentation will be a discussion of several environmental sectors including:

Wildlife and Vegetation – this section was prepared by Deborah Johnson, Regional Biologist with South Slave Region. Unfortunately, Deb is unable to make her presentation as she is conducting field work in the Fort Liard area of the territory. I will make the presentation on Deb's behalf.

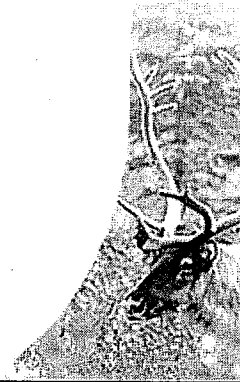
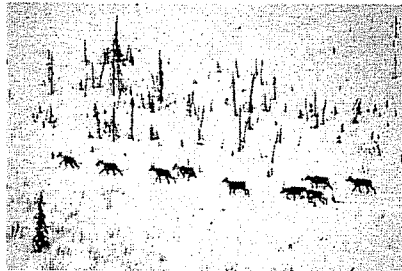
Air – this portion will be presented by Graham Veale – Air Quality Coordinator with Environmental Protection Service of RWED

Regulatory Comments – this closing portion will be presented by by myself.



## Wildlife

- ❖ Species at Risk and Boreal Caribou
- ❖ Cumulative Effects



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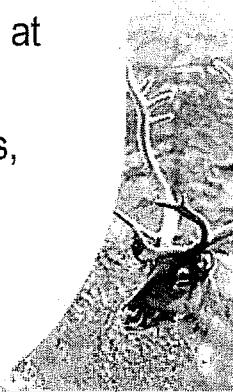
The emphasis of the wildlife presentation is on boreal caribou (used to be called woodland caribou) and cumulative effects. First, I will take a few minutes to set the context for boreal caribou which are nationally rated as Threatened. The recent federal legislation – the Species AT Risk Act has implications for environmental assessment and recovery planning for boreal caribou.



## Species at Risk Act

- ❖ Boreal caribou nationally rated Threatened
- ❖ December 2002 Species at Risk Act (SARA)
- ❖ Recovery strategies for Wildlife Species at Risk by June 2007
- ❖ June 1, 2004 Phase 3 SARA prohibitions, including critical habitat protection, and enforcement of the law

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The emphasis on boreal caribou is because boreal caribou are nationally recognized as Threatened.

Wildlife recognized as Endangered and Threatened receive protection under the federal Species At Risk Act which was passed by Parliament in December 2002.

SARA requires that federal Recovery strategies for Threatened species must be prepared by June 5, 2007.

The act includes that After June 1, 2004 it will be an offence to:  
kill, harm, harass, capture or take an individual of a listed species  
possess, collect, buy, sell or trade an individual of a listed species, or its parts or derivatives.

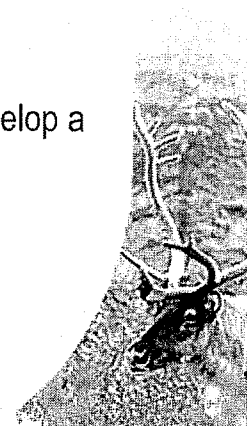
SARA also includes provisions for the identification and protection of critical habitat



## SARA in the NWT

- ❖ NWT Species at Risk Act - under development
- ❖ Schedule 1 Threatened Species
  - Boreal Caribou - GNWT required to develop a Recovery Strategy by June 5, 2007

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The intent is for each Canadian jurisdiction to develop legislation complementary to the federal law and the GNWT is currently drafting a Species at Risk Act for the Northwest Territories.

GNWT is currently working on the technical aspects of a NWT recovery strategy for boreal caribou to link into the national strategy.

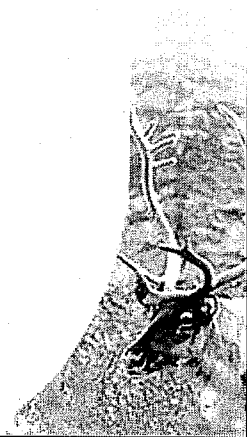
The federal and NWT boreal caribou recovery strategy will set out population goals and objectives, and broad approaches to respond to the known threats to the survival of boreal caribou, to identify boreal caribou critical habitat, if possible, and to set time lines for the preparation of action plan(s).



## Inadequate baseline

- ❖ Boreal caribou abundance and population trend
- ❖ Habitat modeling

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GNWT's comments on the Paramount project are that GNWT does not agree with all Paramount's conclusions about project effects and boreal caribou. GNWT's position is that the baseline information is inadequate and the predicted effects are under-estimated and do not fully acknowledge uncertainties in the data.

### **Inadequate baseline:**

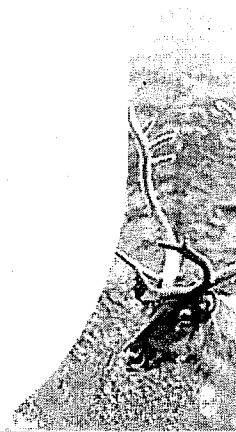
- Paramount relied on a wildlife observation system to document only the presence of boreal caribou based on sightings by employees. Paramount also used reports including for example, GNWT's preliminary work in cooperation with the DCFN to map boreal caribou occupation and occurrence (potential habitat) across the southern NWT ( the draft report was provided to Paramount's consultants). The study was not designed to estimate caribou abundance but Paramount used it and other reports to substantiate low caribou numbers in the Cameron Hills.
- GNWT notes that Paramount's baseline information did not take into account what is known about boreal caribou ecology – that typically the caribou are scattered in low numbers across large areas – the key thing about their ecology is that they need space to reduce their exposure to predators – wolves and black bears.
- Paramount's baseline did not include information on the status of the caribou – whether they are likely increasing or decreasing – what is the level of adult and calf survival? Those inadequacies would hinder monitoring the population's responses to any environmental changes.



## Inadequate baseline

- ❖ Boreal caribou abundance and population trend
- ❖ **Habitat modeling**

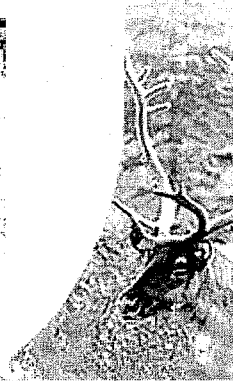
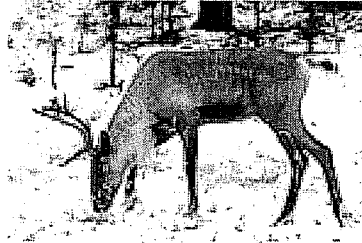
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- Paramount did undertake habitat mapping – a Habitat Suitability model, however, GNWT notes that the model does not include a wide enough range of habitats.
- GNWT has undertaken preliminary work in cooperation with the DCFN to map boreal caribou occupation and occurrence (potential habitat) across the southern NWT ( the draft report was provided to Paramount's consultants). The study used traditional knowledge, aerial survey data, and habitat mapping to conclude that boreal caribou are strongly associated with black spruce and lichen on uplands and in lowlands. The study predicted that there was high quality boreal caribou habitat on the southern Cameron Hills.

## Boreal Caribou Adequacy of predicted effects

- ❖ Increased predation risk.
- ❖ Uncertainty about indirect habitat loss



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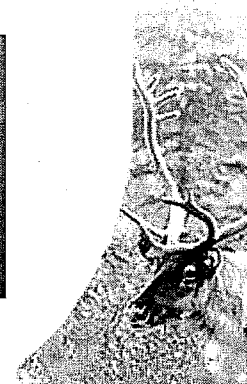
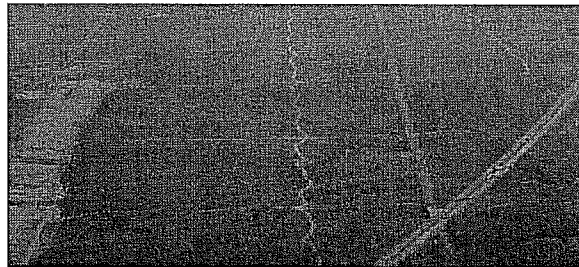
### **Inadequacy of impact predictions**

- A key finding from across Canada but especially well-documented in northern Alberta is the increased risk of predation on boreal caribou when their habitat is changed through oil and gas development or forestry. For example, in Alberta, researchers James and Stuart-Smith (2000) found that wolves travel three times faster on linear corridors (seismic lines and access roads) than in the surrounding forest. Caribou closer to the linear corridors were at greater risk of being killed by wolves.
- Paramount states that the risk of wolf predation is negligible due to few wolves in the area. However, Paramount does not have any information to substantiate this comment. Based on GNWT's information, wolf and black bear predation is a factor in the relatively high death rate for boreal caribou in the South Slave Regional study area (which includes the Cameron Hills). Paramount did not provide information on the risk of black bear predation.
- Wolves are wide ranging species and, although moose populations are not high in the Terrestrial CESA, this area is close to productive moose habitat (e.g., west end of Tathlina Lake and flats to the east of the Cameron Hills). Roads and utility corridors provide access for predators to travel into boreal caribou habitat in the Cameron Hills and thus increase predation risk.



## Boreal Caribou Adequacy of predicted effects

- ❖ Increased predation risk.
- ❖ Uncertainty about indirect habitat loss



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### **Inadequacy of Impact predictions**

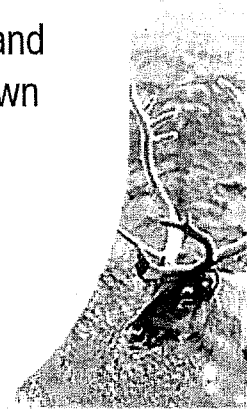
- GNWT is concerned that even although Paramount rated the indirect habitat loss as high (>20%), this may be an under-estimate given uncertainties about the Zone of Influence.
- The Zones of Influence (ZOIs) and Disturbance Coefficients (DCs) are based on research in northern Alberta under somewhat different landscapes thus GNWT recommends caution.
- Paramount averaged the ZOIs and DCs, which diminishes the maximum avoidance effects and GNWT argues that using the averages is conservative (we are dealing with a nationally Threatened caribou), the maximum avoidance effects should have been used to define the ZOIs and DCs for the model.
- The GNWT notes that Paramount has refused to buffer the direct disturbance by 250 m as requested by the Review Board and has declined to do comparisons with results from boreal caribou populations in Alberta.
- Given the line spacing of the 3 D seismic program, the buffering would effectively reduce an area in the southern portion of the SDL to zero habitat effectiveness.



## GNWT's concerns – cumulative effects

- ❖ Preliminary information that survival of adult cows is relatively low
- ❖ The existing density of seismic lines and access roads is at or exceeds the known threshold for boreal caribou survival

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### **GNWT's concerns for cumulative effects are two-fold:**

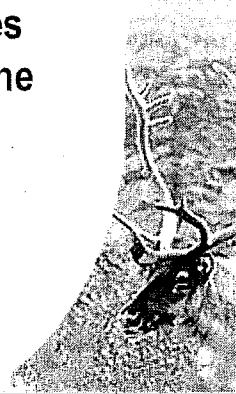
- GNWT initiated research over the trend in boreal caribou numbers in response to concerns about the caribou. The preliminary findings – admittedly based on 1 year – are of concern. Of the 17 cows that were collared in March 2003; 4 cows were killed by wolves or black bears. This would translate as adult female survival rate of only 0.77 (95% Confidence Limits 0.58 to 0.95). GNWT, however, notes that those results are preliminary and indicate the need for further work but if the population is already declining which is likely if adult female survival is as low as the preliminary data indicate, the population will be more vulnerable to any environmental changes especially those that could increase predation.



## GNWT's concerns – cumulative effects

- ❖ Preliminary information that survival of adult cows is relatively low
- ❖ **The existing density of seismic lines and access roads is at or exceeds the known threshold for boreal caribou survival**

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### **GNWT's second major concern:**

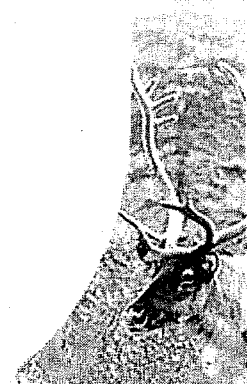
- The density of linear features for the Baseline Case (existing conditions plus what has also been approved) is approximately 3 km/km<sup>2</sup>. This level is considered by biologists to be at the upper limit for the survival of boreal caribou based on research in northern Alberta where boreal caribou populations declined when total corridors are > 1.8 km/km<sup>2</sup>. In northeastern British Columbia, a tiered threshold system identified a critical threshold of 3.0 km/km<sup>2</sup>, 1.8 km/km<sup>2</sup> and 1.5 km/km<sup>2</sup> for areas zoned for enhanced resource development, general resource development and special resource management development, respectively (Salmo et al. 2003).
- Current linear density levels in Paramount's CESA are near or exceed these thresholds determined in Alberta and BC.
- GNWT does note uncertainty over the applicability of these thresholds for the NWT as on one hand, they depend on age of the seismic lines (rate of vegetation regeneration etc). On the other hand, GNWT notes that the estimated density of the seismic lines and access roads did not include all those planned - an Information Request produced information that a further 200 km of line is planned but was not included in the analysis.



## GNWT's recommendations

- ❖ Supplement baseline information on predation risk
- ❖ Further examine thresholds for the cumulative effects of the existing and possible development scenarios for seismic lines and access roads

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### **GNWT recommendations:**

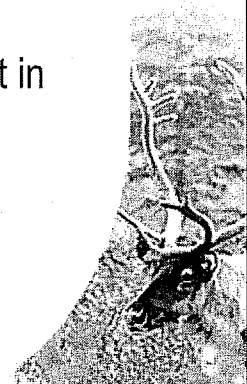
- Paramount should supplement their baseline information by examining predation risk using all available information (from Alberta's Boreal Caribou Committee, GNWT, published scientific literature and traditional knowledge) on the relationship between the risk of predation and current habitat and likely habitat change. Both black bear and wolf predation should be considered and available information on likely caribou densities and population trend. GNWT recommends a modeling approach to examine the probability of predation related to habitat change.
- GNWT recommends a re-evaluation of the densities of seismic lines including various scenarios for future development. Those densities then should be buffered by different widths for the Zones of Influence to examine the effect of differing conditions including the rates of vegetation regeneration and seismic line width. Then the range of linear corridor densities should be evaluated as thresholds for cumulative effects including the likely changes in predation rates. The outcome will be projections for changes in caribou status relative to the density, width and vegetation state of proposed linear corridors.
- The re-evaluation should include modeling the reduction in habitat loss from applying best practices (reduced line width, hand cut lines etc).



## GNWT's recommendations

- ❖ GNWT willing to work with Paramount using Alberta's Boreal Caribou Committee as a model
- ❖ GNWT willing to work with Paramount in recovery planning for boreal caribou

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### **GNWT recommendations:**

- GNWT has identified a number of baseline data deficiencies and uncertainties in cumulative effects predictions. However, GNWT would be willing to work with the Proponent using Alberta's Boreal Caribou Committee as a useful model. The Boreal Caribou Committee has government, industrial, and academic partners working together to integrate industrial activities in northern Alberta with the conservation of caribou and caribou habitat.
- GNWT is also willing to work with Paramount (and the oil and gas industry) in developing the GNWT recovery strategy for boreal caribou and to prepare a Boreal Caribou Management Plan for the area which would include details of monitoring and mitigation.

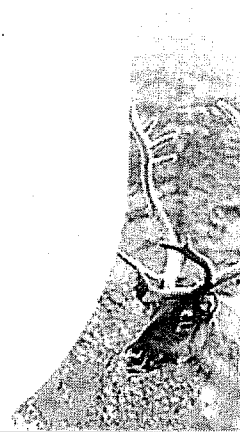


# AIR

## Air Quality Issues

Graham Veale  
Air Quality Programs Coordinator  
RWED – Env. Protection Service

*Government of the Northwest Territories*



# NWT Ambient Air Quality Standards

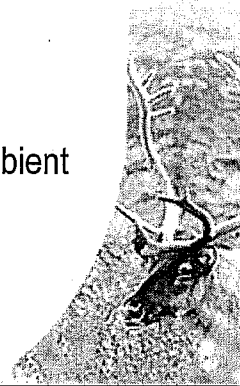


- ❖ NWT Ambient Air Quality Standards (AAQS)
  - SO<sub>2</sub>, O<sub>3</sub>, TSP & PM<sub>2.5</sub>

- ❖ Apply everywhere in the NWT

- ❖ If no NWT AAQS, then Federal National Ambient Air Quality Objectives (NAAQO's) apply

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Before discussing the DAR and to give some context to our comments, I would like to briefly provide some background on RWED's approach to review of new or existing projects and their potential impacts on air quality.

The NWT has AAQS for several pollutants – Sulphur Dioxide, Ground Level Ozone, Total Suspended Particulate (“dust”) and PM<sub>2.5</sub> – the very small ‘breathable’ particles contained within TSP

The AAQS apply everywhere in the NWT

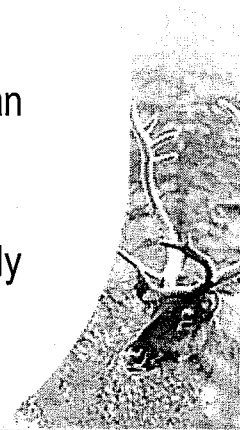
If no AAQS are available for a particular pollutant, then we refer to federal standards (e.g. Nitrogen Dioxide)



## Additional Air Quality Concepts

- ❖ Canadian Council of Ministers of the Environment (CCME)
- ❖ "Continual Improvement/Keeping Clean Areas Clean"
- ❖ Recognises that AAQS may not be fully protective

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CCME is the national forum for discussion of environmental issues between the federal government and the provinces and territories. In the areas of emissions and air quality the CCME has produced a number of standards and strategies or approaches. One of these is the concept of CI/KCAC which is endorsed by both the federal government and the GNWT. The CI/KCAC concept recognises that some pollutants do not appear to have a safe limit and therefore air quality standards may not be fully protective.





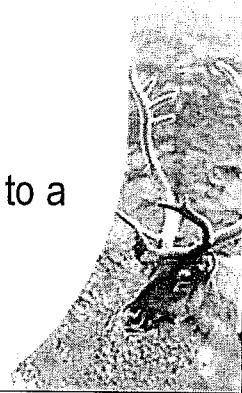
## Minimize Emissions

- ❖ Emphasis on Pollution Prevention and Emission Reduction

- Best Environmental Practices
- Best Available Technology

- ❖ Minimize Emissions - No "Polluting up to a Limit"

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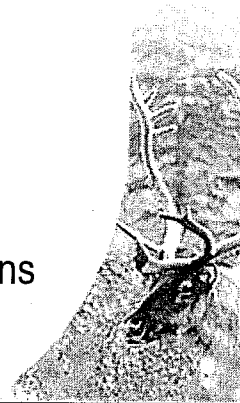
Therefore, the best approach is to continually strive to minimize emissions and improve air quality through activities such as P2, BEP etc. and avoid unnecessary degradation of areas where the air is considered clean. The goal is to ensure that air quality does not degrade to a level where exceedences of AAQS are likely to occur – polluting up to a limit - and therefore avoid having to ‘fix’ the problem at a later date which can involve difficult and expensive mitigation measures.



## RWED Position

- ❖ Compliance with NWT AAQS/NAAQO's is minimal requirement
- ❖ Projects should strive to do better
- ❖ Projects expected to demonstrate that every attempt made to reduce emissions

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RWED agrees with the CI/KCAC approach. When we are asked to review and provide comment on an environmental assessment submitted in support of a development project we keep these viewpoints in mind:

Emissions from the project must comply with NWT AAQS (or federal standards when applicable)

BUT

In addition, we are looking for evidence that the proponent has made every attempt to minimize their emissions and is not simply doing the bare minimum to meet the AAQS – i.e. polluting to a limit

## Assessment Report Validity

- ❖ Project acceptability based on info. contained in Assessment Report - esp. dispersion modelling
- ❖ Important that modelling assessment be
  - Representative of facility design and potential emissions
  - Conservative - 'worst case scenario' - ensure that potential impacts are not underestimated
- ❖ Important that facility design commitments in Assessment Report are followed.

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In terms of the assessment report itself, it should be understood that decisions on the acceptability of the project are based on the information contained in the Report. It is therefore vital that the report accurately reflect the proposed or existing development.

In the case of a proposed development where the actual emissions are unknown and the assessment is purely theoretical, the developer must ensure that the emissions estimates and other modelling inputs are sufficiently conservative to provide a level of comfort to reviewers and regulators that potential impacts are not underestimated

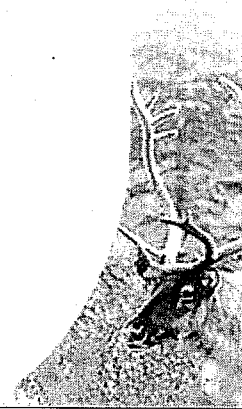
Finally, if the project is approved by the appropriate regulatory authority, adequate follow up and compliance inspections should be performed to ensure that the facility design commitments are implemented.

## Paramount DAR

### ❖ Concerns

- Dispersion modelling inputs
- Not minimizing emissions
  - “Polluting up to a Limit”
- No confirmatory ambient monitoring

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In the review of the Paramount DAR, three basic areas of concern were identified.

Firstly, there are concerns as to whether the dispersion modelling is representative of the various development cases and whether the emission estimates are conservative enough to account for all possible emission scenarios

Secondly, the proponent does not appear to be making every attempt to minimize emissions

And thirdly, there is no commitment to confirmatory ambient monitoring

## Dispersion Modelling

### ❖ Input uncertainty

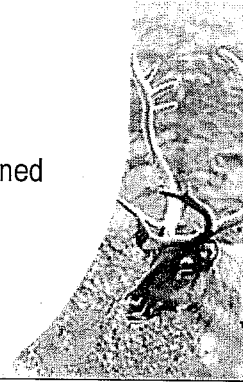
- Met data from Ft Smith
- Fuel gas H<sub>2</sub>S concentration based on 'selected' analytical results

### ❖ Unrealistic facility information

- Reconfiguration of exhaust stack heights
- Introduction of fuel 'sweetening' system at Planned Development Case

### ❖ 'Worst case' scenarios?

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As far as dispersion modelling is concerned, the model inputs, as stated earlier, must be representative

- The met data which drives the model is taken from Ft Smith some 250km to the east. This location may not be representative of atmospheric conditions at Cameron Hills
- H<sub>2</sub>S concentration of the fuel gas is critical in determining SO<sub>2</sub> emissions from combustion sources; If H<sub>2</sub>S is underestimated, then SO<sub>2</sub> is underestimated. Paramount (response to IR#1.2.131) indicated that a set of 'representative' samples were chosen from a range of gas analyses but did not provide the range. Therefore it cannot be verified that the values used in the emission estimates represent 'worst case'?

Facility characteristics also influence the behaviour of emissions and modelling predictions

- In all 3 development Cases, the pump jack and line heater exhaust stack heights were 'nudged' higher and higher in the model until the necessary dispersion was achieved to just meet the AAQS – a solution to pollution is dilution approach and a clear example of polluting to a limit
- Resulting stack heights appear unrealistic. Some range as high as 19m (60ft).
- A sweet fuel system is introduced at the Planned Development Case which considerably reduces the SO<sub>2</sub> emissions at the Central Battery. In their reply to IR#1.2.134 Paramount states that they actually have no plans to install such a sweetening system as this is a speculative Case. The DAR does not identify any 'trigger' point in development that would spur the company to install the sweetening system so how do we know that it will ever be installed? If there are no installation plans then why was this scenario modelled? It is certainly not the



## Minimizing Emissions

- ❖ Not minimizing emissions
  
- ❖ Modelling predictions for Baseline, Application and Planned Development Cases all approach AAQS (>98% of SO2 AAQS)
  - “Polluting up to a Limit”

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Our second concern. The company is apparently unwilling to minimize emissions despite modelling predictions which indicate borderline compliance with air quality standards in both the existing and planned development Cases modelled. They have identified some proven technology which would achieve significant reductions in SO2 emissions yet appear reluctant to commit to its use.

## Emission Reduction Benefits

- ❖ Maintenance of clean air in the Cameron Hills area
- ❖ Minimize risks to Human and Environmental Health
- ❖ Maintain airshed assimilative capacity
  - Further development in airshed and/or
  - Avoid expensive process alterations/retrofitting for existing emission sources

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Aside from the obvious benefits of maintaining clean air and minimizing risks to human and environmental health, ensuring emissions are as low as possible has benefits in terms of future development in the area.

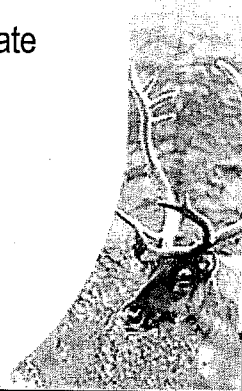
If the assimilative capacity of the airshed – i.e. the ability of the atmosphere to adequately disperse emissions at any given time – is used up due to one facilities emissions ‘polluting to the limit’, this could limit any further development in the area. For development to proceed existing emission sources would need to be reduced – a potentially expensive procedure.

## Ambient Air Quality Monitoring



- ❖ Uncertainties with modelling
- ❖ Lack of on-site meteorological data
- ❖ Predictions very close to AAQS/NAAQO's
- ❖ Current 'sulphation plate' sampling inadequate
  -
- ❖ Ambient air quality monitoring
  - SO<sub>2</sub> and NO<sub>x</sub>
- ❖ On-site meteorological monitoring

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Our third concern relates to a lack of ambient air quality monitoring in the area. As discussed, there are a number of uncertainties in the modelling assessment and predictions for both the existing and future development Cases indicate pollutant values close to the AAQS.

This highlights the need for ambient air quality monitoring of the pollutants of concern to reduce the uncertainty

Current monitoring by Paramount using sulphation plates will not provide results in a form or averaging period that allows comparison to AAQS. Ambient air quality monitoring equipment capable of providing concentrations and short term averages should be installed for both SO<sub>2</sub> and NO<sub>x</sub>

On-site meteorological monitoring should also be installed.

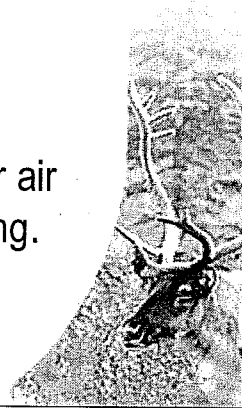




## Monitoring Benefits

- ❖ Demonstrate commitment to maintaining clean air and compliance with AAQS/NAAQO's
- ❖ Reduce uncertainties associated with emission scenarios
- ❖ Provide on-site meteorological data for air quality assessment and future modelling.

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## Summary

- ❖ Most of NWT has “clean” air
- ❖ GNWT is supportive of sustainable development activities

BUT

- ❖ Emissions to air are a disposal of waste
- ❖ Expectation that the development activity will make every attempt to minimize impacts

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The vast majority of the NWT has clean air and it will be a challenge to maintain it that way in the face of increasing development activity and the associated emissions.

It should be recognised that emissions to air are a disposal of waste – no different from a sewage discharge to a lake or disposal of hydrocarbon contaminated soil to a landfill - and they must be dealt with responsibly.

The GNWT is supportive of sustainable development activities. We are not proposing that development activities eliminate all emissions – this would be naïve and is simply not technically possible. However, proponents should recognise that simply meeting established limits is not to be viewed as the sole objective and the best approach is to minimize impacts where possible through emission reduction and mitigation



## Summary

- ❖ Install fuel sweetening system and provide timeline for installation
- ❖ Install ambient air quality and meteorological monitoring

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The GNWT suggests that the proponent install the proposed fuel sweetening system and utilize it for all combustion sources. The installation should proceed as soon as technically possible rather than at some as yet vague undefined point in the future.

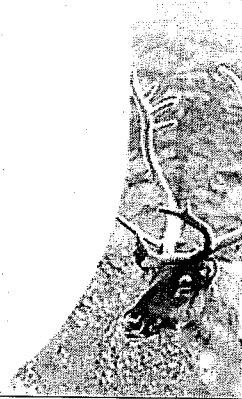
The company should install appropriate ambient air quality monitoring equipment capable of providing results in a format that will allow comparisons to AAQS. A meteorological monitoring station should also be installed to provide the appropriate meteorological data for assessment of air quality and future dispersion modelling.



## Summary

- ❖ Appropriate regulatory authority should ensure protection of air quality

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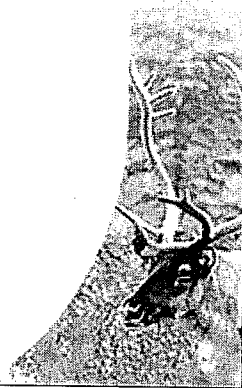


The GNWT is concerned that historically in the NWT, air quality has largely been ignored by the various regulatory authorities with responsibility for development activity on federal land. As outlined in our response to IR 1.2.129, there is an expectation that regulatory approval of this project should include provisions to ensure protection of air quality including adequate confirmatory monitoring, compliance inspections and enforcement activity.



## Conclusion and Key Messages

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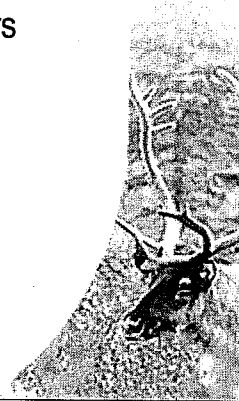


## Regulatory Solutions

### ❖ Federal Mandates

- National Energy Board
- Department of Indian and Northern Affairs

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It is apparent from the Developer's Assessment Report and Responses to Information Requests, that Paramount recognizes the mandate and authority of the National Energy Board. While it is true that National Energy Board issues a variety of authorizations under the Canadian Oil and Gas Administration Act, many of the activities of Paramount also affect the ability of the Government of the Northwest Territories to exercise its stewardship mandates related to wildlife and forest management. Paramount does provide reports to the NEB as required under regulation, the NEB does not or cannot confer with the GNWT as it makes decisions regarding authorizations.

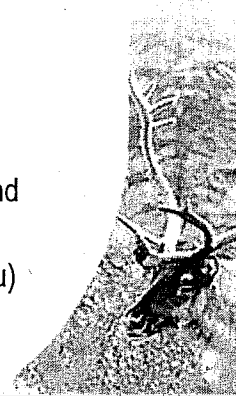
A similar concern exists with the Department of Indian Affairs and Northern Development regarding socio-economic issues. The requirement for Benefit Agreements under COGOA has long created difficulties given the mandate of the GNWT to develop the economy of the NWT while ensuring this is done in a sustainable and equitable manner.



## Working Together

- ❖ Ways to Simplify Regulatory Process
  - Best Practices to Minimize Environmental Impacts
  - Self Assessment Standards
  - Community Support
  - Partnership Studies
  - Building Territorial Informatics Systems
  - Partnership in Cumulative Effects Monitoring and Management
  - Interprovincial Management (e.g. boreal caribou)

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Need to work together to address capacity issues and ensure sustainable development (environmental, social and economic)