

12/29/2003

Directly Affected Parties for Paramount Cameron Hills Extension EA

The following organizations have requested and been granted status as directly affected party for the Environmental Assessment of the Paramount Cameron Hills Extension project (EA03-005). The designation as "directly affected party" does not imply a determination by the Review Board that the party will necessarily be affected by the development and does not constitute a legal right for compensation. It does give the party the right to fully participate in the EA. Directly affected parties may present information at any time during the EA and will be given opportunity to identify information requests. The Review Board may also direct information requests at any directly affected party.

Party
Deh Cho First Nation
K'atlodeeche First Nation
West Point First Nation
Fort Providence Metis Local 57
Deh Gah Got'ie First Nation and Fort Providence Resource Management Board
Ka'a'Gee Tu First Nation
NWT Metis Nation
Department of Fisheries and Oceans
Government of the Northwest Territories
Environment Canada
Department of Indian Affairs and Northern Development

12/29/2003

IR Number: 1.2.1

Source: GNWT

To: Environment Canada (Canadian Wildlife Service)

DAR Section:

Section(s) 7.6.2 of the Developer's Assessment Report indicates that several species of wildlife are considered as threatened under the Committee on the Status of Endangered Wildlife in Canada. The DAR 7.6.2 states that "SARA prohibits the killing, harming, harassing, capturing or taking of species officially listed as threatened ..., and the destruction of their residences."

Terms of Reference Section:

Preamble

According to the public registry, [http://www.sararegistry.gc.ca/gen_info/HTML/approach_e.cfm] the *Species at Risk Act (SARA)*, was passed by Parliament on December 12, 2002. It is coming into force in three phases. The first phase resulted in changes to other related federal laws that were amended through the legislative process enacting SARA. These amendments came into force on March 24, 2003.

As of June 5, 2003, two-thirds of the SARA sections came into effect. A comprehensive listing process for species at risk was established and attached as Schedule 1 to the Act. The development of Recovery strategies for threatened species initially listed as Wildlife Species at Risk Schedule 1 must be prepared by June 5, 2007 (within 4 years). In addition, any projects requiring an environmental assessment under federal law that are likely to affect a listed species or its critical habitat need to identify the adverse effects, and, if the project goes forward, steps must be taken to avoid or lessen those effects and to monitor them.

The transitional stages for implementing SARA will be complete on June 1, 2004 when the remaining sections, covering the SARA prohibitions, including critical habitat protection, and enforcement of the law come into force.

Given the lack of definition of the impact of SARA on a current development that covers two jurisdictions, the GNWT believe that all parties would benefit from a clear understanding of SARA and its obligations.

Request

The MVEIRB asks Environment Canada to provide the following information:

Clarify the meaning of the legislation in terms of:

- a) The interpretation of Environment Canada in the applicability of SARA to existing or planned developments within the Northwest Territories.
- b) The application of Section 77 to the Mackenzie Valley Land and Water Board, Department and Indian and Northern Affairs and the National Energy Board in authorizing a project within habitat of a Listed Species in the Northwest Territories.
- c) The application of Section 79 to the Mackenzie Valley Environmental Impact Review Board when conducting an environmental assessment that includes the range of Listed Species.
- d) The role of Environment Canada, INAC or other Federal Departments in defining steps that must be taken to avoid or lessen the effects of a develop and to monitor the effects' if a project goes ahead as per Section 77 of the Act in the Northwest Territories.
- e) The specific federal permits required to permit the harming, or destruction of critical habitat on June 1, 2004 (section 73 of the Act) in the Northwest Territories. Please clarify how a developer applies and who will issue.
- f) How recovery plans will be developed and the level of coordination between jurisdictions on Federal Lands in the Northwest Territories (e.g. Department of Indian and Northern Affairs, Government of Alberta, etc).
- g) The requirements for developers and departments managing federal lands to participate in recovery plan development and implementation under Section 78 of the Act in the Northwest Territories.

IR Number: 1.2.2

Source: GNWT

To: Paramount Resources Ltd.

DAR Section:

Section(s) 3.1.1 on page 55 states "over the next five years or so, 2D, may precede the acquisition of the projected 510 km of 3D seismic.

Terms of Reference Section:

Preamble

Seismic activity results in the direct loss of timber and wildlife habitat. The GNWT is responsible for the assessment of forest disturbance within forest management units. To determine the actual potential of habitat disturbance and forest yield, the GNWT requires clarification on the area and amount of possible 2D.

Request

Please provide the MVEIRB with the following information:

- a) Clarify if the 2D seismic projected for the next five years is included and mapped.
- b) If not, what is the possible length of the 2D seismic and is the 2D seismic within the area of the projected 510 km of 3D seismic?
- c) If the possible 2D seismic is outside of the projected 3D seismic area, please provide an electronic file of "best guess" area and possible lines?

IR Number: 1.2.3

Source: GNWT

To: Paramount Resources Ltd.

DAR Section:

On page 33 of the DAR Paramount indicates potential for burning slash in accordance with local restrictions.

Terms of Reference Section:

Preamble

Given the growing infrastructure in the Cameron Hills, the values at risk and ensuring protection from wildfire are a concern to GNWT. No information is provided on specific operational procedures or predicted requirements for burning are provided.

Request

Please provide the MVEIRB with the following information:

- a) Describe the amount of burning that has occurred.
- b) Describe Paramount's understanding of local restrictions including the GNWT legislation and burn permit standard conditions.
- c) Describe Paramount's operational procedures during burning activities.

IR Number: 1.2.4
Source: GNWT
To: Paramount Resources Ltd.

DAR Section:

Section 3.2.3 re well pads and satellite sites, Paramount states that "If marketable timber is present it will be cut and decked for use as corduroy".
Section 3.2.4.3 Pipeline construction Paramount states that "Merchantable timber will be decked and used for corduroy or made available to sawmill operators. On page 71, the method of timber harvest for gathering flow lines and the water disposal pipeline is stated as "5. All timber will be felled onto the ROWs by a bulldozer equipped with a cutter blade or a hydroax as appropriate.

Terms of Reference Section:

Preamble

In the DAR, Paramount has indicated that decked merchantable timber has not been utilized in the past. No information is provided on what mills were contacted and the reason why the opportunity to secure merchantable timber was rejected.

The DAR uses two terms for valued timber (i.e. merchantable and marketable) but no definition is provided for either.

The DAR also indicates that timber is salvaged but the methods used are either indicated as blading or are undefined.

The GNWT requires clarification to determine the applicability of timber salvage in the Cameron Hills.

Request

Please provide the MVEIRB with the following information:

- a) A list of companies contacted in prior years related to salvage timber and the reasons why timber was not salvaged by these companies.
- b) Whether Paramount has attempted to contract these companies or other companies to haul salvaged wood.
- c) Whether Paramount has attempted to use forest harvest equipment to clear ROWs in order to improve quality and suitability of salvage timber for commercial use at a mill.
- d) Whether Paramount has considered alternate means of processing of timber such as portable mills or chipping.

IR Number: 1.2.5
Source: GNWT
To: Paramount Resources Ltd.

DAR Section:

DAR 7.2.6 Planned Development Case Air Quality Assessment. In Section 7.2.6.1 Paramount indicates that "With respect to SO₂ emissions, Paramount is proposing to implement a number of mitigation measures to ensure that the maximum ground-level SO₂ concentrations as a result of the Planned Development Case sources are below the NT standards. These mitigation measures include: raising stacks, reducing the flow rate through a down hole choke, using propane as a fuel at the wells, using sweet gas as fuel at the wells and using sweet fuel at the battery as fuel." Table 7.2-20 indicates use of sweet gas as fuel at 6 of 35 oil wells, and using propane as fuel at 2 of 37 gas wells and no use of sweet gas at the central battery. Section 7.2.6.3 reaffirms these mitigation measures.

Terms of Reference Section:

Preamble

Previous Environmental Assessments were based on development plans that included a Cameron Hills Fuel Gas Pipeline to the H-03 Central Battery from the Bistcho Gas Plant (Paramount Transmission Ltd. Cameron Hills Pipeline and Fuel Gas Pipeline NEB Application June 2001).

A fuel gas system comprised of an 88.9 mm OD polyethylene pipeline from H-03 to B-05, with laterals coming off this mainline to each of the following oil wells: G-03, I-73, M-73 (2), A-04, B-05, B-25, C-75, H-04, D-74 and C-74 was described on page 2 Section 1.1 in the Environmental Impact Assessment for the Cameron Hills Gathering System and Facilities Project (Paramount, Golder Associates and Alpine Environmental 2001).

Dispersion modelling conducted as part of the previous EA assumed that the compressor and other equipment located at the central battery would be using fuel with no H₂S content ('sweet' fuel gas) and therefore zero SO₂ emissions. However, it appears that the 'sweet' gas pipeline proposed in the EA to supply fuel for the central battery equipment was never built and the equipment is using locally produced gas which contains H₂S. If the equipment is burning gas containing H₂S, this obviously increases the project SO₂ emissions.

For the purposes of the cumulative environmental assessment, it should be emphasized that an accurate accounting and detailed description of ALL contaminant emission sources - both existing and proposed - is critically important if the subsequent modelling predictions and assessment are to be worthwhile. If the use of field gas was considered an option for the central

battery equipment then this is the emissions scenario (worst case) that should have been modelled and assessed in the EA.

Although, the short term impacts to air quality of individual well evaluations (flaring) were deemed "insignificant" in previous EA's, it should not now be assumed that this will be the case for the proposed and future well evaluations. The emission scenarios may be different and the potential impacts exacerbated by the additional affects of existing contaminant concentrations.

While the focus of this EA may be cumulative effects, the potential for short term impacts to air quality due to the proposed individual well evaluations should not be ignored. Assessment (modelling) should be conducted for the proposed individual well evaluations (flaring) as well as the cumulative effects of the overall development proposal.

Mitigation measures that are not feasible or planned should not be reflected in the Environmental Assessment.

Request

Please provide the MVEIRB with the following information:

- a) Confirm if the sweet fuel gas pipeline was built as planned.
- b) If not, please describe why the change was made and who approved the change. Provide documentation of the approval for the public registry including any emissions modeling that was done subsequent to the MVEIRB Environmental Assessment.
- c) If the sweet fuel gas pipeline was built, please explain why only a few wells will use this sweet fuel to minimize SO₂ emissions.
- d) If the sweet fuel gas pipeline was not built, please explain how use of sweet gas can be used as a mitigation measure using sweet gas as fuel at the wells and using sweet fuel at the battery as fuel.
- e) Confirm if the compressor at the Battery currently uses well gas as fuel. If so when does Paramount plan to convert to sweet gas as fuel.
- f) Confirm what mitigations measures are actually feasible will actually be applied from the list in Sections 7.2.6.1 and 7.2.6.3.
- g) Confirm the modeling approach and that modelling has been conducted for individual well evaluations as well as the cumulative effects of the overall development proposal.
- h) Describe what Paramount means by "ensure compliance with relevant ... federal objectives." In Section 7.2.6.3

IR Number: 1.2.6

Source: GNWT

To: Paramount Resources Ltd.

DAR Section:

In 7.8.2 Paramount states that "Vegetation growth in the interim 40 years is expected to have been relatively slow due to short, cool summers with limited degree growing days and early killing frosts. **Section 7.8.3.4 Far Future** indicates a prediction of vegetation composition (Table 7.8-12) by ~2073. In addition Table 7.8-12 includes 1,250 ha of cloud and 395 ha of burn.

Terms of Reference Section:

Preamble

It is unclear if the Far Future Vegetation Composition reflects the annual growth of all vegetation since 1960 (i.e. continued natural change and aging of all vegetation communities since environmental setting from 1960 to 2070) or if it merely reflects the regeneration of vegetation on disturbances resulting from past, planned and future anthropogenic disturbances.

If it reflects only regeneration of disturbed sites it is unclear how much regeneration has occurred in the past 30 years on different vegetation communities on seismic lines that were created in the 1960s and 1970s and whether there is a scientific basis for the assumptions that regeneration will occur and how quickly this will happen.

Clouds may obscure features in the Landsat image used by Paramount. However, they are not a vegetation community. As such other information should be used to augment the Landsat image to overcome this limitation. If the Far Vegetation Communities reflects natural change in the vegetation communities of the entire RSA there is a need to account for change due to natural disturbances, in particular wildfire. Predictions of fire disturbance are based on past fire history. These include fire frequency, fire sizes, intensity and spatial distribution related to potential ignition sources, fuel types, etc, as well as the effects of fire suppression. The increase in values at risk would indicate that GNWT will likely need to increase its fire suppression efforts in the Cameron Hills to protect Paramount's infrastructure.

Request

Please provide the MVEIRB with the following information:

- a) Clarify exactly what has been modeled in the Far Future Vegetation Composition in the RSA of the Cameron Hills.
- b) Describe the modeling used to predict fire and its distribution.

c) Elaborate on how the modeling includes the implications of fire suppression.

d) Clarify if the assumption is that all disturbances of forested vegetation types including pipelines, roads and wellsites will have fully regrown within 70 years to forest cover types given the indication that regrowth is very slow in the Cameron Hills.

e) Indicate how much, if any, disturbance will occur within areas that are cloud covered in the Landsat image. If any disturbance occurs, please use alternate means to supplement the "blank vegetation" areas.

f) Place on the record any studies by Paramount on the regeneration rate of vegetation communities on seismic lines in the area of the Cameron Hills.

IR Number: 1.2.7
Source: GNWT
To: Paramount Resources Ltd.

DAR Section:

Section 6.2.9 indicates that Paramount is in contact with RWED personnel to “offer assistance with their caribou studies in the area.” In addition, Paramount has instituted the reporting of all wildlife ... Sightings ... have not indicated a decline in populations.

In Table 9.6-1 P 31, Paramount indicates a wildlife monitoring program started in 2003 will end in 2007. However, Paramount indicates that the data will be reviewed in 2005 and, if warranted, monitoring terminated.

Terms of Reference Section:

Preamble

The GNWT appreciates that Paramount has initiated wildlife monitoring starting in February 2003 (Appendix VI of the DAR). The GNWT encourages cooperative approaches to resource management with developers such as Paramount. However, we are not clear regarding the methodology behind the statement that sighting records leading to a conclusion that populations have not declined. It is not clear if the wildlife monitoring initiated in 2003 may be terminated in 2005 due to a cessation of construction or certain criteria related to a review of the data.

Request

Please provide the MVEIRB with the following information:

- a) Details on the methodology that permits the sighting records to determine declines in populations.
- b) Describe the details of cooperative projects with RWED staff regarding caribou projects.
- c) Clarify the criteria that will be used in 2005 that would result in a termination of wildlife monitoring.

IR Number: 1.2.8

Source: GNWT

To: Paramount Resources Ltd.

DAR Section:

Section(s) 7.6.1.1 p 214 references Gunn et al.

Terms of Reference Section:

Preamble

The reference for Gunn et al. is not listed in the reference list in Section 10

Request

Please provide the reference for Gunn et al.

IR Number: 1.2.9

Source: GNWT

To: Paramount Resources Ltd.

DAR Section:

Section(s) 7.8.1.1 of the Developer's Assessment Report indicates that "Eighteen representative community vegetation types were identified during a July 2000 survey of the TSA and are listed in Table 7.8-1 (Golder and Alpine 2001)." Section 7.8.2.1 stated that "These community types have been amalgamated into upland and wetland VECS based on the available Landsat image coverage (Figure 7.8.2).

Terms of Reference Section:

Preamble

The field work and methodology was not described in Golder and Alpine 2001. As the accuracy of Landsat imagery classification varies based on a number of factors including the amount of ground truthing used in the classification testing. The current DAR does not describe the methodology nor how the accuracy of the vegetation community units was determined.

Request

Please provide the MVEIRB with the following information:

- a) Clarify how the accuracy of the vegetation classification was conducted?
- b) If this was undertaken, how was it done and what were the results?

IR Number: 1.2.10

Source: GNWT

To: Paramount Resources Ltd.

DAR Section:

Section(s) 7.6.3.4.1 of the Developer's Assessment Report indicates that "A suitability approach was taken to assess the availability of wildlife habitat in the TSA and to predict the effects of each of the Development Cases on wildlife habitat quality and quantity. The approach was a simplified version of the habitat evaluation procedures of the US Fish and Wildlife Service (1981). This is supplemented by the sentence that "Simple HIS models were derived for the project including habitat rankings from previous EIAs, results of incidental field observations, literature review, review of secondary information and professional judgement by experienced biologists."

Terms of Reference Section:

Preamble

In the Cameron Hills, where specific scientific information is lacking it is necessary to use the results of scientific studies from other areas. The reference results, however, need to be compared to the Cameron Hills to support the applicability of the results to HSI models.

Request

Please provide the MVEIRB with the following information:

- a) Clarify how the habitat in the Cameron Hills compares to areas from which the HSI model was developed?
- b) Clarify if the HSI models used and represented in the Wildlife VEC HSI 7.6-1, 7.6-2 and 7.6-3 Figures apply to year round habitat or seasonal habitat?
- c) Provide a comparison of results from other jurisdictions that demonstrates that boreal caribou habitat use is tied to availability of habitats.

IR Number: 1.2.11

Source: GNWT

To: Paramount Resources Ltd.

DAR Section:

Section(s) 7.6.3.4 Table 7.6-8 of the Developer's Assessment Report indicates Zones of Influence and Disturbance. A reference is provided for caribou.

Terms of Reference Section:

Preamble

Table 7.6.3.4 bases Zones of Influence and Disturbance on published literature for caribou only.

Request

Please provide the MVEIRB with the following information:

- a) Clarify how the zones of influence and disturbance coefficients were established for moose and marten?

IR Number: 1.2.12

Source: GNWT

To: Paramount Resources Ltd.

DAR Section:

Section(s) 7.6.5.3 states that "Wolf observations have been low, likely a result of low prey densities, thus predation rates are not expected to greatly increase as a result of increased access."

Terms of Reference Section:

Preamble

The statement on low wolf numbers, predation rates and predictions of future predation are not substantiated by scientific research.

Request

Please provide the MVEIRB with the following information:

a) Provide any relevant studies on wolf or prey densities to substantiate the statement that predation rates are not expected to increase greatly as a result of increased access.

IR Number: 1.2.13

Source: GNWT

To: Paramount Resources Ltd.

DAR Section:

Section(s) 7.6.4.2.3 of the DAR states a total linear disturbance density of 3.0 km/km² for the Baseline Case. Section 7.6.4.4.2 also states that the Planned Development Case is 3.0 km/km² within the TSA and concludes that this density of linear disturbance was concluded to not act as a physical barrier for species movement..."

Terms of Reference Section:

Preamble

The methodology to determine existing linear disturbances is not provided. In addition, the amount of linear disturbance planned does not seem to be reflected in the Planned Development Case. The case of the density of the specific layout of linear disturbance not causing a physical barrier to species movement is not supported by scientific study.

Request

Please provide the MVEIRB with the following information:

- a) Describe how the baseline case of linear disturbance was developed and provide an assessment of accuracy. In particular, were any older linear disturbances assumed to be revegetated or sufficiently revegetated to not be included.
- b) Explain why the amount of additional linear disturbance was only an additional 75 km when at least 200 km of 2D is also planned.
- c) Provide any relevant studies that demonstrate that the Planned Development Case does not restrict caribou movement? Of particular relevance are studies related to 3D (i.e. high density rate of disturbance in small areas).
- d) Provide the total linear disturbance density within the Local Study Area.

IR Number: 1.2.14

Source: GNWT

To: Paramount Resources Ltd.

DAR Section:

7.11.5.2 pages 320-332

Terms of Reference Section:

***Economic Factors:** the DAR should describe how the proposed development will impact the economy in the NWT in general and on the economy of any affected communities in particular. This section should also include information on hiring policies with respect to NWT residents and residents of affected communities, including barriers to employment, minimal skill requirements, availability of employees, and any proposed training or education initiatives.*

Preamble

The proponent has stated that experience and observations have indicated they expect about 25% of their work force to be Northerners. This ratio was garnered from previous employment records from 1999-2003.

Request:

Please provide the MVEIRB with the following information:

- a) As 25 percent ratio is not a hiring target but an estimation of the percentage of northern workers based on previous employment records would the proponent be prepared to provide a minimum hiring target for this and future projects?

IR Number: 1.2.15

Source: GNWT

To: Paramount Resources Ltd.

DAR Section:

7.11.5.2 pages 320-332

Terms of Reference Section:

Economic Factors: the DAR should describe how the proposed development will impact the economy in the NWT in general and on the economy of any affected communities in particular. This section should also include information on hiring policies with respect to NWT residents and residents of affected communities, including barriers to employment, minimal skill requirements, availability of employees, and any proposed training or education initiatives.

Preamble:

The proponent has stated that the percentage of Northern hires will depend on the availability of labour as particularly skilled or high school educated labour will be required for ~ 75% of the jobs.

The proponent also states that they have in the past and will continue to conduct on the job training as a means towards enabling employment of Northerners.

Request:

Please provide the MVEIRB with the following information:

- a) Reconcile the two statements referenced above?
- b) If the proponent is willing to conduct on the job training to allow Northerners to join their workforce please explain how lack of education or training would be a barrier to employment?
- c) Indicate in detail the plans for potential on the job training?
- d) Indicate what the policy on educational equivalencies is in terms of their hiring process?
- e) Detailed initiatives planned in the directly affected communities with regards to training and education opportunities for residents of those communities.
- f) Indicate what partnerships exist or are planned with other members of the oil and gas industry to provide training opportunities to northerners?

IR Number: 1.2.16

Source: GNWT

To: Paramount Resources Ltd.

DAR Section:

7.11.5.2 pages 320-332

Terms of Reference Section:

Economic Factors: the DAR should describe how the proposed development will impact the economy in the NWT in general and on the economy of any affected communities in particular. This section should also include information on hiring policies with respect to NWT residents and residents of affected communities, including barriers to employment, minimal skill requirements, availability of employees, and any proposed training or education initiatives.

Preamble:

The proponent has indicated that they may not be able to recruit from the directly affected communities as required skill sets may not be available in the directly affected communities, as such they will recruit from across the NWT.

Request:

Please provide the MVEIRB with the following information:

- a) Indicate whether Paramount has an 'affirmative action' hiring policy in regards to both the directly affected communities and the NWT at large.
- b) If so, provide the details of that policy?

IR Number: 1.2.17

Source: GNWT

To: Paramount Resources Ltd.

DAR Section:

7.11.5.2 pages 320-332

Terms of Reference Section:

Health and Social Indicators: Describe how the proposed development may affect indicators such as use of social services (strain on infrastructure), alcohol and drug use, and teen pregnancy. Information on trends of these and other indicators to describe health and social well being may be obtained from the GNWT Bureau of Statistics or from service providers in the affected communities.

Preamble

In determining health and social impacts, the developer must consider other indicators beyond the limited list above (i.e. strain on infrastructure, alcohol and drug use, and teen pregnancy).

The Developers Assessment Report does not provide enough information to determine what the health and social impacts of the development may be. Further, the information does not address what the developer proposes to do to minimize or mitigate any negative impacts and effects of the project.

The developer states it does not propose to implement monitoring of community socio-economic parameters (page 332) and, should routine data collection (on the part of others) suggest that negative trends in community well being are occurring, they will be dealt with through the developer's consultation process.

The consultation process is, at best, described as ongoing consultation with communities and with two trappers potentially affected by the project, to ensure that as issues arise, they can be dealt with in a fair and timely way (page 331). The GNWT is not listed as a party to the consultation process and finds the developer's response to consulting on negative trends to be inadequate.

Below is what the developer provided in its Assessment Report on potential socio-economic benefits, areas of concern, and monitoring. Because the developer has down played any potential effects of the project and has provided essentially no information on what it would do to minimize or mitigate any impacts, the following Information Requests are being submitted for response.

The developer has noted that the employment (page 324) and contracting (page 326) opportunities are seasonal and considered to be of high consequence at the

local level. Also, the developer has noted that the overall impact on the NWT economy (page 326-327) is considered to be moderate.

Request

Please provide the MVEIRB with the following information:

- a) Can the developer quantify the above statements?
- b) Can the developer identify the anticipated effects on local employment and contracting in the communities of Enterprise, Hay River, Hay River Reserve, Kakisa and Fort Providence during the developer's seasonal activity as well as during the downturn of activity, or off-season?
- c) Further, can the developer identify what the related health and social impacts might be in the above communities as a result of this activity and downturn in employment and contracting at the local level?
- d) Of particular interest to the GNWT is for the developer to identify any anticipated impacts or strains on i) health and social services infrastructure, and ii) population health and well being; that are associated with both an increase and a decrease of employment and affluence in local communities.
- e) Further to the above identification of impacts, the GNWT is interested in what the developer proposes to do to minimize and mitigate the anticipated impacts, and requests that the developer provide this information.

IR Number: 1.2.18

Source: GNWT

To: Paramount Resources Ltd.

DAR Section:
7.11.5.2 pages 320-332

Terms of Reference Section:

Health and Social Indicators: Describe how the proposed development may affect indicators such as use of social services (strain on infrastructure), alcohol and drug use, and teen pregnancy. Information on trends of these and other indicators to describe health and social well being may be obtained from the GNWT Bureau of Statistics or from service providers in the affected communities.

Preamble

The developer has stated that potential impacts on health and safety of the workforce are negligible over the life of the project, however in the unlikely event of an emergency, there is some potential for an impact of high consequence at the individual level. (page 330)

Request:

Please provide the MVEIRB with the following information:

- a) Identify the steps that would be taken to respond to emergency medical situations.
- b) Explain from where medical services would be required.
- c) Confirm that all medical personnel under its employment are licensed to practice within the NWT as per NWT legislation and regulations.

IR Number: 1.2.19

Source: GNWT

To: Paramount Resources Ltd.

DAR Section:
7.11.5.2 pages 320-332

Terms of Reference Section:

Health and Social Indicators: Describe how the proposed development may affect indicators such as use of social services (strain on infrastructure), alcohol and drug use, and teen pregnancy. Information on trends of these and other indicators to describe health and social well being may be obtained from the GNWT Bureau of Statistics or from service providers in the affected communities.

Preamble

The developer has stated that:

The out of area workforce, present on site for a few months only during the construction phase and remote from potentially directly affected communities will have minimal interaction with the area population.

There is more potential for negative impact when workers return to their homes, whether these are in the project area, elsewhere in the NWT or in the rest of Canada. While negative behavior on site can be controlled to some extent by Paramount (through an on-the-job zero tolerance for drugs and alcohol policy for example), there is not such control when workers leave the site for their homes. However, taken in the context of extensive programming to assist people with problem behaviors on the one hand, and the clear social benefits that result from employment and training, it is expected that the net impact may be positive rather than negative.

Potential impacts on the range of community wellness parameters during the project are expected to be predominantly positive and long-term, but of low consequence except at the individual level. (page 331)

Request:

Please provide the MVEIRB with the following information:

- a) Identify the community wellness parameters that were used to assess the project to be predominately positive, long-term and of low consequence.
- b) Explain Paramount's role in providing extensive programming to assist people with problem behaviors.
- c) Identify the mitigation measures Paramount will take to minimize the potential for negative impact when workers return to their home communities.

IR Number: 1.2.20

Source: GNWT

To: Paramount Resources Ltd.

DAR Section:
7.11.5.2 pages 320-332

Terms of Reference Section:

Health and Social Indicators: Describe how the proposed development may affect indicators such as use of social services (strain on infrastructure), alcohol and drug use, and teen pregnancy. Information on trends of these and other indicators to describe health and social well being may be obtained from the GNWT Bureau of Statistics or from service providers in the affected communities.

Preamble

The developer does not propose to implement monitoring of community socio-economic parameters (page 332). Further, the developer has stated that should routine data collection analysis on the part of the GNWT or the communities themselves suggest that negative trends in any community well being parameters are occurring as a result of the project, these will be brought to the developer's attention and dealt with through the consultation process (page 332).

Request:

Please provide the MVEIRB with the following information:

- a) Clarify the consultation process further as to what is described on page 332 of the DAR,
- b) Provide a list of stakeholders for consultation.
- c) Identify mitigation strategies specific to health and social well being as requested in the Terms of Reference, Section G-9 and J.

IR Number: 1.2.21

Source: Fort Providence Metis Council

To: Government of the Northwest Territories

DAR Section:
N/A (previous commitments)

Terms of Reference Section:
N/A

Preamble

In its Report of Environmental Assessment on EA01-005, the Review Board made 7 suggestions. Of those 7, 1 (#2) was directed solely at the GNWT concerning compensation for impacts to traditional harvesting.

Request

Please provide the MVEIRB with the following information:

- a) Describe in full what the GNWT has done in response to Suggestion #2.
- b) Provide any reports that were generated as a result.

IR Number: 1.2.22

Source: Fort Providence Metis Council

To: Government of the Northwest Territories

DAR Section:
Section 3.2.1

Terms of Reference Section:
Section C-2

Preamble

Paramount says that the size and volume of the trees that will be cut down, in conjunction with the travel distance may reduce the economic viability of salvaging timber.

Paramount also says that excess timber not rolled-back or used for corduroy will be decked, and the appropriate companies notified of the volume and location.

Request

Please provide the MVEIRB with the following information:

- a) Identify what, if any, authorizations Paramount will require from the GNWT to allow it to cut down trees.
- b) Provide the GNWT's analysis on the economic viability of salvaging trees cut down in the Cameron Hills by Paramount.
- c) Identify under what authority Paramount is permitted to use the trees that it cuts down for its own purposes, such as the construction of corduroy roads.
- d) What are the GNWT's requirements for Paramount paying for the right to cut down trees, to salvage merchantable timber, to pay to use trees for its own purposes and to replant the areas that have been cleared?

IR Number: 1.2.23

Source: Fort Providence Metis Council

To: Paramount Resources Ltd.

DAR Section:
Section 6.2.15.2

Terms of Reference Section:
Section F-2

Preamble

Paramount has not concluded an impact and benefits agreement with the Fort Providence Metis Council on the Cameron Hills project.

Paramount's response to IR 1.1.34 did not actually answer the questions that were asked.

Request

Please provide the MVEIRB with the following information:

- a) Paramount's view on the requirement for Paramount to negotiate an impact and benefits agreement with the FPMC based on aboriginal rights and in accordance with recent case law (e.g. *Powley*). This agreement would be outside of the existing regulatory processes and along the same lines of, although at a different scale, as the IBAs that were negotiated for the NWT diamond mines.
- b) Answers to the questions that were asked in IR 1.1.34.

IR Number: 1.2.24

Source: Fort Providence Metis Council
KTFN

To: Paramount Resources Ltd.

DAR Section:
Section 7.9.3.2

Terms of Reference Section:
Section G-7

Preamble

Paramount states that First Nation groups consulted as part of the Heritage Resources Impact Assessment (HRIA) included the Dene Tha' and the K'atlodeeche.

Request

Please provide the MVEIRB with the following information:

- a) Explain whether or not Paramount used information provided by the FPMC or KTFN in the HRIA.
- b) How was that information used?

IR Number: 1.2.25

**Source: Fort Providence Metis Council
KTFN**

To: Paramount Resources Ltd.

**DAR Section:
Section 7.9.3.2**

**Terms of Reference Section:
Section G-7**

Preamble

Paramount refers to a 1991 Benefits Plan and a 2001 Benefits Plan Update.

Request

Please provide the MVEIRB with the following information:

- a) Copies of the 1991 and 2001 Benefits Plan.
- b) Copies of Paramount's annual reports that are required by the Plans.

IR Number: 1.2.26

Source: Fort Providence Metis Council
KTFN

To: Indian and Northern Affairs Canada

DAR Section:
Section 7.11.4.2

Terms of Reference Section:
Section G-9 and G-10

Preamble

Paramount refers to a 1991 and a 2001 Benefits Plan Update.

Request

Please provide the MVEIRB with the following information:

- a) An analysis of INAC's ability to enforce the terms of the Benefits plan and the Benefits Plan Update.

IR Number: 1.2.27

Source: Fort Providence Metis Council
KTFN

To: Paramount Resources Ltd.

DAR Section:
Section 7.11.4.2.1

Terms of Reference Section:
Section G-9 and G-10

Preamble

Paramount states that there are "high levels of support for the project".

Request

Please provide the MVEIRB with the following information:

- a) evidence that supports Paramount's claim that there are high levels of support from the FPMC/KTFN.

IR Number: 1.2.28

Source: Fort Providence Metis Council
KTFN

To: Paramount Resources Ltd.

DAR Section:
Section 7.11.4.2.1

Terms of Reference Section:
Section G-9 and G-10

Preamble

Paramount describes the consultation program it has been using for the project.

Request

Please provide the MVEIRB with the following information:

- a) Explain how your consultation process has met the standards established by the Supreme Court of Canada and other high level courts (such as in cases *Sparrow*, *Haida*, *Delgamuukw* and *Powley* to name just some) that in the event that FPMC's aboriginal and treaty rights are infringed, there must be serious and meaningful consultation, including negotiation, to accommodate the FPMC's aboriginal rights. This accommodation can include the requirement for FPMC consent before a project can proceed.
- b) Specifically, explain how your consultation process(es) with the FPMC/KTFN has satisfied the requirements of the attached Deh Cho Consultation Principles.

IR Number: 1.2.29

Source: Fort Providence Metis Council
KTFN

To: Paramount Resources Ltd.

DAR Section:
7.11.5.3.2

Terms of Reference Section:
G-9, G-10

Preamble

Paramount states that it is committed to contracting for goods and services on competitive principles, which it terms "Equal Opportunity Contracting".

As a private company, Paramount is under no obligation to require competitive contracting. Paramount could choose to increase the number of contracts awarded to FPMC/KTFN businesses by using a sole-source negotiated price contracting approach. Such an approach could be used to ensure FPMC/KTFN benefits as part of the negotiations on infringing FPMC/KTFN aboriginal rights.

Request

Please provide the MVEIRB with the following information:

a) Explain Paramount's refusal to use a sole-source negotiated price contracting process, instead using a strictly competitive process that results in far fewer benefits to the FPMC/KTFN.

IR Number: 1.2.30

Source: Fort Providence Metis Council
KTFN

To: Paramount Resources Ltd.

DAR Section:
7.11.5.3.3

Terms of Reference Section:
G-9, G-10

Preamble

Paramount describes the potential for benefits to the economy of the Northwest Territories but does not provide any figures.

Request

Please provide the MVEIRB with the following information:

Provide an economic analysis, to the extent possible, of the Cameron Hills project over its lifespan, with data provided on a year-to-year and total basis, that includes at least the following items:

- a) Volume and value of natural resources extracted;
- b) Value and distribution of resource royalties;
- c) Net impact on the economy of the Deh Cho region and the FPMC;
- d) Net impact on the finances of Deh Cho First Nations (DCFN) and the FPMC/KTFN;
- e) Net impact on the NWT economy;
- f) Net impact of the finances of the GNWT;
- g) Net impact on the Canadian economy; and
- h) Net impact on the finances of the federal government.

IR Number: 1.2.31

**Source: Fort Providence Metis Council
KTFN**

To: Indian and Northern Affairs Canada

**DAR Section:
N/A – MVEIRB Information Request 1.1.34**

**Terms of Reference Section:
N/A**

Preamble

Although IR 1.1.34 was not directed to INAC, INAC sent in a request to the Review Board asking for clarification on what the Review Board meant by “Benefits Agreements” and “negotiated agreements”.

During the permitting of the diamond mines in the North Slave region of the NWT, the affected communities were able to negotiate impact and benefit agreement with the diamond mining companies. However, there was no legislative or regulatory requirement for the negotiation of these diamond mine IBAs.

Although IR 1.1.34 was not directed to INAC, INAC sent in a request to the Review Board asking for clarification on what the Review Board meant by “Benefits Agreements” and “negotiated agreements”.

During the permitting of the diamond mines in the North Slave region of the NWT, the affected communities were able to negotiate impact and benefit agreement with the diamond mining companies. However, there was no legislative or regulatory requirement for the negotiation of these diamond mine IBAs.

INAC required the negotiation of socio-economic and environmental agreements with the diamond mining companies. These agreements are much more detailed and useful than the Benefits Plan required under the *Canada Oil and Gas Operations Act*. Therefore, INAC has been requiring a higher level of protection for communities affected by diamond mining than communities affected by oil and gas development.

Request

Please provide the MVEIRB with the following information:

- a) Did INAC support the affected communities, either financially or through other means, in their efforts to obtain IBAs with the diamond mining companies? If yes, please describe how INAC supported the affected communities.
- b) INAC's position on the requirement for Paramount to negotiate an impact and benefits agreement with the FPMC/KTFN based on aboriginal rights and in accordance with recent case law (e.g. *Powley*). This agreement would be outside of the existing regulatory processes and along the same lines of, although at a different scale, as those IBAs that were negotiated for the NWT diamond mines.
- c) Explain how INAC will support the FPMC/KTFN in their efforts to negotiate an IBA with Paramount related to the oil and gas development on the Cameron Hills.
- d) A comparison of the requirements placed on the diamond mining companies under the socio-economic and environmental agreements to the requirements placed on Paramount under the COGOA Benefits Plan.
- e) Explain why INAC has not required socio-economic or environmental agreements for oil and gas projects in general, and this project specifically, when INAC does require such agreements for diamond mines. The existence of the COGOA Benefits Plan is not a valid response to this question as the scope and detail of the Benefits Plan is such that it is practically useless and unenforceable.

IR Number: 1.2.32

Source: Indian and Northern Affairs Canada

To: Paramount Resources Ltd.

DAR Section:
Section 3.4.3 (p.88)

Terms of Reference Section:
Section C-4 (Waste Management)

Preamble

In response to Section C-4 of the MVEIRB's Terms of Reference, where the Paramount Resources Ltd. is required to provide a description of the existing and proposed waste management plans, Paramount Resources Ltd. states that following camp closure, wastes associated with the sewage sumps will be treated with lime and backfilled.

INAC would note that modern technologies exist that are capable of treating sewage to levels acceptable for discharge to land and or water.

Request

Please provide the MVEIRB with the following information:

- a) Indicate whether or not Paramount intends to incorporate an alternate sewage treatment strategy (present day, state-of-the-art or otherwise), prior to backfilling the sump.

IR Number: 1.2.33

Source: Indian and Northern Affairs Canada

To: Paramount Resources Ltd.

DAR Section:
Section 3.6.2 (p.91)

Terms of Reference Section:
Section C-6 (Abandonment and Restoration)

Preamble

In response to Section C-6 of the MVEIRB's Terms of Reference, where the Paramount Resources Ltd. is required to 'describe its plans for abandonment and restoration (including)...plans for long-term monitoring', Paramount Resources Ltd. outlines its general plan for the abandonment and restoration specific to Pits and Drilling Waste Disposal.

Request

Please provide the MVEIRB with the following information:

- a) Indicate if any post-closure monitoring of sumps will occur,
- b) If so, provide a detailed plan outlining the associated long-term monitoring strategy(ies).

IR Number: 1.2.34

Source: Indian and Northern Affairs Canada

To: Paramount Resources Ltd.

DAR Section:
Section 3.6.10 (p.94)

Terms of Reference Section:
Section C-6 (Abandonment and Restoration)

Preamble

In response to Section C-6 of the MVEIRB's Terms of Reference, where the Paramount Resources Ltd. is required to 'describe its plans for abandonment and restoration (including)...plans for long-term monitoring', Paramount Resources Ltd. indicates its commitment to 'monitor the effectiveness of abandonment and reclamation efforts for at least the one year after a site is reclaimed, and beyond the first year until satisfactory reclamation conditions prevail', the latter of which a 'remediation plan will be developed for'.

Request

Please provide the MVEIRB with the following information:

a) Describe the monitoring strategies that will be implemented to confirm site restoration and stability.

IR Number: 1.2.35

Source: Indian and Northern Affairs Canada

To: Paramount Resources Ltd.

DAR Section:
Section 7.4.4.2.4 (p.196)

Terms of Reference Section:
Section G-4 (Water)

Preamble

In response to Section G-4 of the MVEIRB's Terms of Reference, where the Paramount Resources Ltd. is required to describe and 'include impacts on surface and ground water, in terms of quantity and quality', Paramount Resources Ltd. states that sewage and grey water from the camps will be contained in small, open camp sumps and will be treated with lime, as required.

Request

Please provide the MVEIRB with the following information:

- a) Indicate if any additional treatment will be performed?
- b) Indicate if Paramount has considered an alternate sewage treatment strategy (present day, state-of-the-art or otherwise), prior to backfilling the sump.
- c) Will any additional treatment be performed?

IR Number: 1.2.36

Source: Ka'a'Gee Tu First Nation (KTFN)

To: Paramount Resources Ltd.

DAR Section:

DAR Section 1.1.1

DAR Section 5.1 Table 5.1-1

Terms of Reference Section:

ToR Section A-1 and Section E-1

Preamble

In Section 1.1.1 Paramount describes the baseline case for the DAR. It includes 39 well sites and associated facilities. The application case consists of 5 wells and the associated facilities. So, the baseline and application case combined have 44 well sites.

Table 5.1-1 only lists 41 well sites.

Request

Please provide the MVEIRB with the following information:

- a) Explain the discrepancy between the 44 wells in Section 1.1.1 and the 41 wells in Table 5.1-1.

IR Number: 1.2.37

Source: KTFN

To: Paramount Resources

DAR Section:
DAR Section 1.1.7

Terms of Reference Section:
ToR Section A-1

Preamble

Paramount says that its aerial pipeline water crossings “guarantee” leak detection without release to the environment.

Request

Please provide the MVEIRB with the following information:

- a) Explain how leak detection is “guaranteed”.

IR Number: 1.2.38

Source: KTFN

To: Indian and Northern Affairs Canada

DAR Section:

N/A - Review Board EA01-005 Recommended Measures

Terms of Reference Section:

N/A

Preamble

In its Report of Environmental Assessment on EA01-005, the Review Board applied 21 measures. Of those 21, 1 (#16) was directed solely at INAC.

The Review Board also made 7 suggestions with 5 of them directed at INAC.

Request

Please provide the MVEIRB with the following information:

a) Describe in full what INAC has done to fulfill Measure #16 and to address Suggestions #3 to #7.

IR Number: 1.2.39

Source: KTFN

To: Government of the Northwest Territories

DAR Section:
N/A - Review Board EA01-005 Recommended Measures

Terms of Reference Section:
N/A

Preamble

In its Report of Environmental Assessment on EA01-005, the Review Board made 7 suggestions. Of those 7, 1 (#2) was directed solely at the GNWT concerning compensation for impacts to traditional harvesting.

Request

Please provide the MVEIRB with the following information:

- a) Describe in full what the GNWT has done in response to Suggestion #2. Please provide any reports that were generated as a result.

IR Number: 1.2.40

Source: KTFN

To: Paramount Resources Ltd.

DAR Section:
DAR 3.2.1

Terms of Reference Section:
ToR Section C-2

Preamble

Paramount says that “Generally, known heritage resources are not utilized as a criteria for access or pipeline routing...”.

Request:

Please provide the MVEIRB with the following information:

- a) Explain the criteria, and criteria weighting, that Paramount used for selecting among alternatives for access and pipeline routing.

IR Number: 1.2.41

Source: KTFN

To:
**Indian and Northern Affairs Canada
Government of the Northwest Territories**

Dar Section:
DAR 3.2.1

Terms of Reference Section:
ToR Section C-2

Preamble

As the regulators and reviewers of this project, the above organizations have a responsibility to approve Paramount's selected access and pipeline routes.

Request

Please provide the MVEIRB with the following information:

- a) Explain the criteria, and criteria weighting, that your organization considers acceptable for use by Paramount in selecting access and pipeline routes.

IR Number: 1.2.42
Source: KTFN
To: Paramount Resources Ltd.

DAR Section:
DAR Section 3.2.1

Terms of Reference Section:
ToR Section C-2

Preamble

Paramount says that if heritage resources are discovered, work will continue in other unaffected areas.

Request

Please provide the MVEIRB with the following information:

- a) Indicate the minimum radius around the heritage discovery within which work will not proceed until further study has been completed.
- b) Explain the basis for the minimum radius around the heritage discovery within which work will not proceed until further study has been completed.

IR Number: 1.2.43

Source: KTFN

To: Government of the Northwest Territories

DAR Section:
DAR Section 3.2.1

Terms of Reference Section:
ToR Section C-2

Preamble

Paramount says that the size and volume of the trees that will be cut down, in conjunction with the travel distance may reduce the economic viability of salvaging timber.

Paramount also says that excess timber not rolled-back or used for corduroy will be decked, and the appropriate companies notified of the volume and location.

Request

Please provide the MVEIRB with the following information:

- a) Identify what, if any, authorizations Paramount will require from the GNWT to allow it to cut down trees.
- b) Provide the GNWT's analysis on the economic viability of salvaging trees cut down in the Cameron Hills by Paramount.
- c) Identify under what authority Paramount is permitted to use the trees that it cuts down for its own purposes, such as the construction of corduroy roads.
- d) What are the GNWT's requirements for Paramount paying for the right to cut down trees, to salvage merchantable timber, to pay to use trees for its own purposes and to replant the areas that have been cleared?

IR Number: 1.2.44

Source: KTFN

To: Paramount Resources Ltd.

DAR Section:
DAR Section 3.2.1

Terms of Reference Section:
ToR Section C-2

Preamble

Paramount says that rutting to a depth of 30 cm will be permitted.

Request:

Please provide the MVEIRB with the following information:

- a) Explain Paramount's rationale for a 30 cm rutting depth being the acceptable maximum.

IR Number: 1.2.45

Source: KTFN

To: Government of the Northwest Territories
Indian and Northern Affairs Canada
Environment Canada

DAR Section:
DAR Section 3.2.1

Terms of Reference Section:
ToR Section C-2

Preamble

Paramount provides a break-down of the species content of Certified Canada Seed #1.

Paramount says that rutting to a depth of 30 cm will be permitted.

Request

Please provide the MVEIRB with the following information:

- a) Are the species identified indigenous to the project area?
- b) What is your organization's policy on the use of non-indigenous plant species?
- c) Are there any concerns with the species that have been identified?
- d) What is your organization's policy on acceptable rutting depth?

IR Number: 1.2.46

Source: KTFN

To: Paramount Resources Ltd.

DAR Section:
DAR Section 3.2.2.2

Terms of Reference Section:
ToR Section C-2

Preamble

Paramount says that existing linear disturbances will be used whenever practical.

Request

Please provide the MVEIRB with the following information:

- a) For the 2001 field season and for the proposed application case, please identify the percentage of existing disturbance that was or will be utilized by Paramount when constructing new access and pipeline routes.
- b) For the 2002 field season and for the proposed application case, please identify the percentage of existing disturbance that was or will be utilized by Paramount when constructing new access and pipeline routes.
- c) For the 2003 field season and for the proposed application case, please identify the percentage of existing disturbance that was or will be utilized by Paramount when constructing new access and pipeline routes.

IR Number: 1.2.47

Source: KTFN

To: Paramount Resources Ltd.

DAR Section:
DAR Section 3.2.4.1

Terms of Reference Section:
ToR Section C-2

Preamble

Paramount refers to a November 2002 Golder report titled "Erosion Survey and Mitigation Plan for the Cameron Hills Gathering System and Pipeline".

Request

Please provide a copy of this report.

IR Number: 1.2.48

Source: KTFN

To: Paramount Resources Ltd.

DAR Section:
DAR Section 3.2.4.2

Terms of Reference Section:
ToR Section C-2

Preamble

Paramount refers to an "Environmental Protection Plan Manual".

Request

Please provide a copy of this manual.

IR Number: 1.2.49
Source: KTFN
To: Paramount Resources Ltd.

DAR Section:
DAR Section 3.2.11

Terms of Reference Section:
ToR Section C-2

Preamble

Paramount proposes windrow breaks every 400 m of at least 10 m in length to minimize the potential wicking effect during forest fires and to promote wildlife movement.

Paramount says that it will notify the NEB, MVLWB and/or INAC when an archaeological site is found. Paramount does not mention contacting the Ka'a'Gee Tu First Nation.

Paramount says it will not move any equipment or vehicles unless the ground surface is in a state capable of fully supporting the equipment or vehicles without rutting or gouging. This seems to contradict Paramount's previous statement that 30 cm was the maximum acceptable for rutting.

Request

Please provide the MVEIRB with the following information:

- a) What is the basis for Paramount concluding that the proposed windrow spacing is sufficient to achieve the dual purposes cited by Paramount?
- b) Please clarify whether or not Paramount will notify the KTFN when an archaeological site is found.
- c) If not, please explain why.
- d) Clarify Paramount's contradictory statements regarding acceptable rutting depth.

IR Number: 1.2.50

Source: KTFN

To: Government of the Northwest Territories
Environment Canada

DAR Section:
DAR Section 3.2.11

Terms of Reference Section:
ToR Section C-2

Preamble

Paramount proposes windrow breaks every 400 m of at least 10 m in length to minimize the potential wicking effect during forest fires and to promote wildlife movement.

Request

Please provide the MVEIRB with the following information:

- a) Explain whether or not your organization agrees that the proposed windrow break spacing is sufficient to achieve the dual purposes stated by Paramount.
- b) If no, then what does your organization believe is the minimum acceptable spacing for windrow breaks.
- c) Provide the rationale for your proposed spacing.

IR Number: 1.2.51

Source: KTFN

To: Environment Canada

DAR Section:
DAR Section 3

Terms of Reference Section:
ToR Section C-2 and Review Board IRs 1.1.17, 1.1.35

Preamble

Paramount is proposing to dispose of drill cuttings in remote pits.

Request

Please provide the MVEIRB with the following information:

- a) Summarize any information or research that Environment Canada has as to the effectiveness of remote pits to contain contaminants in drill cuttings.
- b) Describe any concerns that Environment Canada has with regards to Paramount's proposed method of disposing of drill cuttings as described in the DAR and in Paramount's responses to IR 1.1.17 and IR 1.1.35.

IR Number: 1.2.52

Source: KTFN

To: Paramount Resources Ltd.

DAR Section:
DAR Section 4.1.1

Terms of Reference Section:
ToR Section D

Preamble

With regards to the disposal of drilling fluids, Paramount states that: "These types of practices have their own set of risks, benefits, and the costs are prohibitive that Paramount feels are not warranted for application in the Cameron Hills."

Request

Please provide the MVEIRB with the following information:

- a) The analysis that supports the above statement.

IR Number: 1.2.53

Source: KTFN

To: Paramount Resources Ltd.

DAR Section:
DAR Section 4.1.4

Terms of Reference Section:
ToR Section D

Preamble

Developing a sustainable KTFN economy through non-renewable resource development requires the extraction of the natural resources to occur over a sufficiently long period of time to allow the KTFN economy time to diversify into other areas besides non-renewable resource development.

In listing the factors that Paramount used in scheduling project activities, the development of sustainable local economies is not mentioned.

Request

Please provide the MVEIRB with the following information:

- a) Confirm that the development of a sustainable KTFN economy is not a factor that Paramount considers when scheduling project activities.

IR Number: 1.2.54

Source: KTFN

To: Paramount Resources Ltd.

DAR Section:
DAR – All Sections

Terms of Reference Section:
ToR Section E-1

Preamble

Paramount has applied for land use permit and water license amendments from the Mackenzie Valley Land and Water Board. These amendments are for 5 new wells locations that replace five locations that were approved but will not be used. The amendments are also to re-locate the approved gathering system facilities, including pipelines, to connect with these five new wells. Those amendments are not included in the DAR.

Request

Please provide the MVEIRB with the following information:

a) If amendments are approved, will Paramount's impact analysis remain accurate?

IR Number: 1.2.55
Source: KTFN
To: Paramount Resources Ltd.

DAR Section:
DAR Section 6.2

Terms of Reference Section:
ToR Section F-2

Preamble

Although Paramount does prominently not mention it, concern has been raised by the Ka'a'Gee Tu First Nation with the lack of consultation by Paramount with regards to environmental problems encountered by the project. For example, Paramount encountered significant problems with erosion and pipeline breaks but failed to inform the KTFN of these events or to involve us in discussions as to how these problems can be repaired and avoided.

Request

Please provide the MVEIRB with the following information:

a) Explain why Paramount chose not to consult with the KTFN about the erosion problems and pipeline breaks. Please note that the lack of a legislative or regulatory requirement to do so is not an acceptable response. Paramount can choose to consult in a manner that goes beyond the requirements placed on it by applicable legislation or the regulators.

IR Number: 1.2.56

Source: KTFN

To: Indian and Northern Affairs Canada
Government of the Northwest Territories

DAR Section:
DAR Section 6.2

Terms of Reference Section:
ToR Section F-2

Preamble

Paramount has encountered significant erosion problems. None of the MVLWB, NEB, INAC or the GNWT ensured that the Ka'a'Gee Tu First Nation had been informed of these problems and involved in discussions on how to repair and avoid these problems.

Request

Please provide the MVEIRB with the following information:

a) Explain why your organization did not consult with, or ensure that Paramount consulted with, the KTFN on the erosion problems encountered by Paramount. If the position taken is that your organization is not the organization responsible for informing the KTFN of environmental problems, then please identify the organization that is responsible for doing so.

IR Number: 1.2.57

Source: KTFN

To: Paramount Resources Ltd.

DAR Section:
DAR Section 6.2.15.2

Terms of Reference Section:
ToR Section F-2 and Review Board IR 1.1.34

Preamble

Paramount has not concluded an impact and benefits agreement with the Ka'a'Gee Tu First Nation on the Cameron Hills project.

Paramount's response to IR 1.1.34 did not actually answer the questions that were asked.

Request

Please provide the MVEIRB with the following information:

- a) Answers to the questions that were asked in IR 1.1.34.

IR Number: 1.2.58

Source: KTFN

To: Paramount Resources Ltd.

DAR Section:
N/A

Terms of Reference Section:
N/A - Review Board IR 1.1.1

Preamble

In its response, Paramount provided reasons for why a hand-cut seismic program was rejected in favor of Vibroseis.

Request

Please provide the MVEIRB with the following information:

A comparison of Paramount's planned Vibroseis seismic program versus a hand-cut seismic program that includes at least the following information for each program:

- a) total program cost;
- b) personnel requirements and salary costs;
- c) amount of disturbed areas; and
- d) volumes of merchantable timber cut down.

IR Number: 1.2.59
Source: KTFN
To: Paramount Resources Ltd.

DAR Section:
N/A

Terms of Reference Section:
N/A - Review Board IR 1.1.8

Preamble

In its response, Paramount stated that: "...only impacts with a high Environmental Consequence rating have the potential to have significant adverse effects on the environment."

The objective of a quality environmental assessment process is not just to identify "significant" impacts but rather it is to identify and mitigate whatever adverse impacts will occur, regardless of whether or not they are deemed "significant".

Request

Please provide the MVEIRB with the following information:

- a) Rationale for Paramount's opinion that only impacts with a high consequence rating have the potential to have significant adverse impacts on the environment.
- b) Confirmation that Paramount accepts the principle that all adverse impacts should be reasonably mitigated, not just those deemed "significant".

***IR Number:** 1.2.60
Source: KTFN
To: Paramount Resources Ltd.

Reference:

DAR Section 7.1.1.5.3
Review Board IR 1.1.9

Preamble:

In its response to IR 1.1.9, Paramount provided its reasons for assigning a negative value (i.e. beneficial) to reversible impacts.

Paramount's reasons do not provide valid justification for its reversibility scoring system. Using that system, an adverse impact can be rated as a net benefit to the environment. For example, an adverse impact with negligible magnitude, immediate duration, low frequency and local extent would be considered a net benefit to the environment with a total score of -3 just because the impact was reversible.

In a valid scoring system, no adverse impact can achieve a score lower than 0, with a score of 0 acknowledging that the adverse impact exists but that it can be considered negligible.

A valid approach for scoring reversibility is as follows:

- 0 points - Reversible in the immediate term (< 30 days)
- 1 point – Reversible in the short term (30 days to 1 year)
- 2 points – Reversible in the medium term (1 to 20 years)
- 3 points – Reversible in the long term (20 to 100 years)
- 5 points – Irreversible or reversible far future (> 100 years)

Note that the suggested score of 5 for “Irreversible” is not a mistake. The difference between a long-term reversible impact and an irreversible impact justifies the increase from 3 to 5 points.

Request:

Please redo and resubmit Section 7 of the DAR using the above approach for assigning scores for reversibility.

IR Number: 1.2.61

Source: KTFN

To: Government of the Northwest Territories

DAR Section:
N/A

Terms of Reference Section:
N/A - Review Board IR 1.1.28

Preamble

Paramount provides its view of the requirements of the GNWT handbook on constructing winter roads.

Request

Please provide the MVEIRB with the following information:

- a) GNWT's evaluation of Paramount's response to IR 1.1.28

IR Number: 1.2.62

Source: KTFN

To: Indian and Northern Affairs Canada

DAR Section:
N/A

Terms of Reference Section:
N/A - Review Board IR 1.1.31

Preamble

Paramount says that it does not have the authority to deny access to the winter road to any member of the public.

Request

Please provide the MVEIRB with the following information:

- a) A description of Paramount's authority to prevent public use of the winter access roads into and within the Cameron Hills project area.
- b) If Paramount does not have the ability to prevent public use of its access roads, then please explain whether or not INAC or another organization does.

IR Number: 1.2.63

Source: KTFN

To: Paramount Resources Ltd.

DAR Section:
DAR Section 7.2.2.6

Terms of Reference Section:
ToR Section G-1

Preamble

Paramount adjusted all hourly mixing heights in the data set that were less than 95 m up to 95 m.

Request

Please provide the MVEIRB with the following information:

- a) The rationale for adjusting the hourly mixing heights to 95 m.

IR Number: 1.2.64

Source: KTFN

To: Paramount Resources Ltd.

DAR Section:
DAR Section 7.2.3.3

Terms of Reference Section:
ToR Section G-1

Preamble

Paramount did not include odor or visibility among its key indicators of air quality.

Request

Please provide the MVEIRB with the following information:

- a) An analysis of the potential direct impacts on the air quality indicators odor and visibility and,
- b) The potential indirect impacts on receptors such as humans and wildlife.

IR Number: 1.2.65
Source: KTFN
To: Paramount Resources Ltd.

Reference:

ToR Section G-1
DAR Section 7.2.3.6 Table 7.2-7

Preamble:

In Table 7.2-7, Paramount explains how it assigned magnitude scores for the air quality analysis. The approach used by Paramount unjustifiably applies qualitative scores in a situation in which quantitative scores are easily possible.

Instead of the process used by Paramount, the Low and Moderate columns of Table 7.2-7 should just be deleted. The High column can remain as is with 15 points pegged as the value at which air quality guidelines are equaled. The modeled air quality values can then have calculated magnitude scores that start at 0 (no increase in emissions) and increase as appropriate.

For example, the following 1-hour SO₂ values would have the calculated magnitude scores as follows:

- 300 µg/m³ – 10 points
- 450 µg/m³ – 15 points
- 600 µg/m³ – 20 points

The process used by Paramount produces artificially low magnitude scores as long as the air quality guidelines are not exceeded. For example, a 1-hour SO₂ value of 440 µg/m³ would only have 5 magnitude points with an increase of only 20 µg/m³ to 460 µg/m³ increasing the magnitude score to 15. In this manner, the total environmental consequence scores are kept low as long as the air quality guidelines are not exceeded. This is not an acceptable method of conducting an EA. If it were, all that would ever be required would be to compare emissions levels to guidelines and all other EA factors would be meaningless.

Request:

Please redo and resubmit the air quality section of the DAR using magnitude scores calculated as described above.

IR Number: 1.2.66

Source: KTFN

To: Paramount Resources Ltd.

DAR Section:

DAR Section 7.2
DAR Appendix III

Terms of Reference:

ToR Section G-1

Preamble

Transportation emissions, such as from trucks and ATVs, do not appear to have been included in Paramount's air quality modeling.

Request

Please provide the MVEIRB with the following information:

- a) an air quality analysis, which includes transportation emissions.

IR Number: 1.2.67

Source: KTFN

To: Paramount Resources Ltd.

DAR Section:
N/A

Terms of Reference Section:
N/A - Review Board IR 1.1.10

Preamble

Paramount did not provide the information requested by IR 1.1.10(b).

Request

Please provide the MVEIRB with the following information:

a) further response to the information requested by IR 1.1.10(b).

IR Number: 1.2.68

Source: KTFN

To: Paramount Resources Ltd.

DAR Section:
DAR Section 7.3.1.2

Terms of Reference Section:
ToR Section G-2 and G-3

Preamble

Paramount refers to a permafrost monitoring report, which is understood to also include revegetation and access monitoring.

Request

Please provide the MVEIRB with the following information:

- a) A copy of this report or a more recent version, if available.

IR Number: 1.2.69
Source: KTFN
To: Paramount Resources Ltd.

DAR Section:
DAR Section 7.3

Terms of Reference Section:
ToR Section G-2 and G-3

Preamble

Paramount has had pipeline breaks in the last couple of years.

Request

Please provide the MVEIRB with the following information:

a) All relevant information regarding the pipeline breaks including the following:

- i. the locations;
- ii. the causes;
- iii. the extent of hydrocarbon contamination including volumes spilled;
- iv. clean-up and repair activities; and
- v. preventative measures that have been developed.

b) Include copies of all reports that were completed as a result of these pipeline breaks.

IR Number: 1.2.70

Source: KTFN

To: Paramount Resources Ltd.

DAR Section:
DAR Section 7.3

Terms of Reference Section:
ToR Section G-2 and G-3

Preamble

Paramount does not discuss what measures are in place to ensure the pipelines, including the product in the pipelines, do not alter the thermal regime of the soil and cause permafrost degradation.

Request

Please provide the MVEIRB with the following information:

- a) Describe the measures that are in place to ensure the pipelines, including the product in the pipelines, do not alter the thermal regime of the soil and cause permafrost degradation

IR Number: 1.2.71
Source: KTFN
To: Indian and Northern Affairs Canada

DAR Section:
N/A

Terms of Reference Section:
N/A

Preamble

The National Energy Board and Indian and Northern Affairs Canada undertake inspections of Paramount's Cameron Hills operations.

Request

Please provide the MVEIRB with the following information:

- a) Dates of all inspections completed in 2000, 2001, 2002 and 2003.
- b) Copies of all inspection reports with any problems, concerns or infractions highlighted.
- c) Copies of any orders or instructions that were issued to Paramount.
- d) Identification of any outstanding concerns and plans for resolving those concerns.
- e) An explanation as to why the inspection reports and any orders or instructions were not automatically provided to the Ka'a'Gee Tu First Nation as soon as they were prepared.
- f) If the position taken is that the NEB and INAC are not the organizations responsible for informing the KTFN of environmental problems, then please identify the organization that is responsible for doing so.

IR Number: 1.2.72

Source: KTFN

To: Paramount Resources Ltd.

DAR Section:
DAR Section 7.3

Terms of Reference Section:
ToR Section G-2 and G-3

Preamble

Paramount provides very little information on the extent of the erosion problems that have been encountered or of its efforts to repair and prevent these problems.

Another IR has asked for a copy of the November 2002 Golder report titled "Erosion Survey and Mitigation Plan for the Cameron Hills Gathering System and Pipeline". It is expected that this report will describe what was planned but it likely does not describe what was actually done.

Request

Please provide the MVEIRB with the following information:

- a) Explain what Paramount did to repair existing erosion problems and to prevent future problems.
- b) Provide copies of all reports prepared as a result of these erosion issues.

IR Number: 1.2.73
Source: KTFN
To: Paramount Resources Ltd.

DAR Section:
DAR Section 7.3.3.1

Terms of Reference Section:
ToR Section G-2 and G-3 and Review Board IR 1.1.20

Preamble

In Section 7.3.3.1.2, Paramount states that the probability of impact occurrence is high for the Application case. However, in Section 7.3.4, Paramount states that the probability of impact occurrence is moderate for the Application case.

Table 7.3-5 shows a total disturbed area for the planned case as 2093 ha. However, in Section 7.3.4, Paramount states that the total disturbed area is 2135 ha and in the response to IR 1.1.20 Paramount has a total disturbed area of 2074 ha.

Request

Please provide the MVEIRB with the following information:

- a) Resolve inconsistencies.

IR Number: 1.2.74

Source: KTFN

To: Paramount Resources Ltd.

DAR Section:
DAR Section 7.3.3.1.2

Terms of Reference Section:
ToR Section G-2 and G-3

Preamble

In Table 7.3-6 Paramount has not provided the rationale for its magnitude ratings.

Also, Paramount has assigned a frequency rating of low to all of the soil and terrain impacts. These impacts will be continuous and should have a rating of high.

Request

Please provide the MVEIRB with the following information:

- a) Provide the rationale for the magnitude ratings and resubmit the analysis with "high" ratings for frequency.

IR Number: 1.2.75

Source: KTFN

To: Paramount Resources Ltd.

DAR Section:
DAR Section 7.4.4.2

Terms of Reference Section:
ToR Section G-4

Preamble

In Section 7.4.4.2, Paramount lists the potential impacts on surface water. This list does not include altered flows despite the fact that altered flows were one of the results of the erosion problems that occurred.

Request

Please provide the MVEIRB with the following information:

- a) An analysis of the potential for altered surface, and sub-surface, water flows due to this project.

IR Number: 1.2.76

Source: KTFN

To: Department of Fisheries and Oceans

DAR Section:
DAR Section 7.4

Terms of Reference Section:
ToR Section G-4

Preamble

Using guidelines established by DFO, Paramount will be withdrawing water from surface water bodies for use in its operations.

Request

Please provide the MVEIRB with the following information:

- a) Explain how DFO will monitor the impacts on a year-to-year basis to ensure that too much water is not withdrawn from the surface water bodies.
- b) Explain what DFO will do, and under what authority, in the event that too much water is being withdrawn.

IR Number: 1.2.77

Source: KTFN

To: Paramount Resources Ltd.

DAR Section:
DAR Section 7.6

Terms of Reference Section:
ToR Section G-5

Preamble

Wolves and wolverine were not among the species included in the analysis as Valued Ecosystem Components. Wolves are the primary predator species for caribou and moose in the area. Wolverines are known to be sensitive to development.

Request

Please provide the MVEIRB with the following information:

a) add wolves and wolverines to the list of Valued Ecosystem Components and submit an impact analysis for these species. In that analysis, please ensure that impacts resulting from human-wildlife interaction, such as wolverines scavenging at project areas, are included. These interactions have proven to have significant adverse impacts on wolverines for other projects in the NWT.

IR Number: 1.2.78

Source: KTFN

To: Paramount Resources Ltd.

DAR Section:
DAR Section 7.6 Table 7.6-7

Terms of Reference Section:
ToR Section G-5

Preamble

As proposed mitigation, Paramount states that pre-project surveys were completed to identify sensitive locations for disturbance.

Request

Please provide the MVEIRB with the following information:

- a) Provide the results of these surveys.

IR Number: 1.2.79

Source: KTFN

To: Paramount Resources Ltd.

DAR Section:

DAR Section 7.6 Table 7.6-7

Terms of Reference Section:

ToR Section G-5

Preamble

As proposed mitigation, Paramount states that nest trees encountered during construction will not be cut down if possible.

Request

Please provide the MVEIRB with the following information:

Describe the process that will occur, including:

- i. the identification of individuals who are responsible for identifying these nests,
- ii. the training that will be provided to these individuals,
- iii. the process that will be used to look for nests and
- iv. the decision process for deciding whether or not to cut down such trees.

IR Number: 1.2.80

Source: KTFN

To: Paramount Resources Ltd.

DAR Section:

DAR Section 7.6 Table 7.6-7

Terms of Reference Section:

ToR Section G-5

Preamble

Paramount notes that construction noise and light may cause temporary displacement of wildlife.

Request

Please provide the MVEIRB with the following information:

- a) Describe what Paramount has done to minimize the impacts of noise and light during all phases of the project. For example, has Paramount used low impact lighting systems?
- b) Describe what Paramount will do to minimize the impacts of noise and light during all phases of the project. For example, will Paramount use low impact lighting systems?

IR Number: 1.2.81

Source: KTFN

To: Paramount Resources Ltd.

DAR Section:
DAR Section 7.6 Table 7.6-7

Terms of Reference Section:
ToR Section G-5

Preamble

As proposed mitigation, Paramount states that bends in the rights-of-way will limit the lines-of-sight.

In reviewing the project maps, there appear to be many long, straight stretches that would have long lines-of-sight.

Request

Please provide the MVEIRB with the following information:

- a) Explain if Paramount will adhere to a maximum acceptable distance for lines-of-sight
- b) Describe the rationale for the selected distance.

IR Number: 1.2.82

Source: KTFN

To: Paramount Resources Ltd.

DAR Section:
DAR Section 7.6.4.2.1

Terms of Reference Section:
ToR Section G-5

Preamble

Paramount refers to a 2003 report on the wildlife monitoring program.

Request

Please provide the MVEIRB with the following information:

A copy of this report.

IR Number: 1.2.83
Source: KTFN
To: Paramount Resources Ltd.

DAR Section:
DAR Section 7.6

Terms of Reference Section:
ToR Section G-5

Preamble

Paramount provides data on direct habitat losses and habitat losses due to sensory disturbance. However, the analysis provided is of little value for several reasons:

- Paramount need to sum the direct and sensory habitat losses together to obtain a total area of the habitat that is lost;
- Paramount has not presented any thresholds for the target species. For example, at 100% habitat loss it is assumed that a target species will be gone from the area. However, the species is unlikely to wait until there is 100% habitat loss before leaving. When is the species expected to leave? At 40% habitat loss? 50%? At what percent of habitat loss will a target species begin to experience stresses that might affect individual animal health or result in local population declines?
- The habitat losses are presented on the basis of the entire study area. This does not recognize that some areas will have higher habitat losses than others due to the intensity of activity. Paramount needs to present maps for each target species and for each development case that identifies habitat losses within portions of the study area. This information could be presented as shaded regions that show areas with 0-10% losses, 10-20% losses, etc. depending upon what the thresholds are for that particular species. The areas of each range of habitat losses should be summed and presented in a table format as well.

Request

Please provide the MVEIRB with the following information:

An analysis that includes the information requested above.

IR Number: 1.2.84

Source: KTFN

To: Paramount Resources Ltd.

DAR Section:
DAR Section 7.6

Terms of Reference Section:
ToR Section G-5

Preamble

Paramount provides data on barriers to movement due to linear disturbances. Again however, the analysis provided is of little value for a couple of reasons:

- Paramount has not presented any thresholds for the target species. For example, at what linear disturbance density is a species likely to leave an area? At 3 km/km²? At 4 km/km²? At what linear disturbance density will a species begin to experience stresses that might affect individual animal health or result in local population declines?
- The linear disturbance density of 3 km/km² is presented on the basis of the entire study area. This does not recognize that some areas will have higher densities than others due to the intensity of activity. Paramount needs to present maps for each target species and for each development case that identifies linear disturbance densities within portions of the study area. This information could be presented as shaded regions that show areas with a 0-1 km/km² density range, a 1-2 km/km² density range, etc. depending upon what the thresholds are for that particular species. The areas of each range of linear disturbance density should be summed and presented in a table format as well.

Request

Please provide the MVEIRB with the following information:

An analysis that includes the information requested above.

IR Number: 1.2.85
Source: KTFN
To: Paramount Resources Ltd.

DAR Section:
DAR Section 7.6 Table 7.6-16

Terms of Reference Section:
ToR Section G-5 and Review Board IR 1.1.11

Preamble

Paramount needs to present the rationale for each magnitude rating. Paramount has assigned a short-term duration to sensory disturbance potential. This needs to be changed to long-term as the disturbance will exist for at least 20 years and probably longer.

Paramount has applied a medium-term duration to direct habitat loss, increased predation/hunting/trapping and barriers to movement. All of these impacts are due to land being cleared for the project. Paramount's explanation for why it assigned medium-term durations in its response to IR 1.1.11 is not adequate. Although revegetation of the cleared areas will likely begin in the medium-term (<20 years), it is unlikely to be completed. This analysis needs to be redone using a long-term duration for these impacts.

Paramount has assigned a frequency of low to the three impacts discussed in the previous paragraph. As an explanation for why it has done so, Paramount states in its response to IR 1.1.11 that the vegetation will only be cleared once. This is a ridiculous argument for Paramount to be making. Although the clearing of vegetation only occurs once, the vegetation will likely remain cleared for the duration of the project and at least partially cleared for a substantial period of time after the project ends. Therefore, the impacts associated with the clearing will occur on a continuous basis until the land is revegetated. The analysis needs to be redone with a high rating for frequency.

For the sensory disturbance impact, Paramount has also assigned a rating of low for frequency. This analysis needs to be redone with a frequency rating of high. Sensory disturbance due to project noise, light, the presence of clearings and cutlines, etc. will be continuous for the lifespan of the project and in some instances beyond.

Request

Please provide the MVEIRB with the following information:

Redo and resubmit the wildlife analysis with the changes described above.

IR Number: 1.2.86

Source: KTFN

To: Paramount Resources Ltd.

DAR Section:
DAR Section 7.8.3.1.4

Terms of Reference Section:
ToR Section G-6

Preamble

Paramount refers to its efforts to prevent "weed" species from entering the project area. It is not clear if Paramount is equating "weed" species with "non-indigenous" species.

Paramount refers to a revegetation monitoring program.

Request

Please provide the MVEIRB with the following information:

- a) Is Paramount considering "weed" species and "non-indigenous" species as the same thing?
- b) If no, please explain what measures Paramount is taking to prevent non-indigenous species from invading and taking over project areas.
- c) Please provide the report from the revegetation monitoring program

IR Number: 1.2.87

Source: KTFN

To: Paramount Resources Ltd.

DAR Section:
DAR Section 7.8.3.1.3

Terms of Reference Section:
ToR Section G-6 and Review Board IR 1.1.11(a)

Preamble

Paramount has not provided the rationale for its magnitude ratings.

Paramount states that the residual impacts to vegetation communities will be long-term but Table 7.8-6 shows medium-term for duration. In its response to IR 1.1.11(a), Paramount said that the text on page 270 was incorrect and that medium-term was correct. Paramount's explanation for why the impacts are medium term does not provide adequate rationale. Revegetation will not be complete within 20 years and so the impacts will be long-term.

Paramount has assigned frequency ratings of "low" to the vegetation impacts with the rationale that the clearing will only occur once so the frequency is low. As said earlier, this is a ridiculous argument. It is the frequency of the impacts, not the frequency of the clearing activity that is being rated. Although the land will only be cleared once, it will remain cleared for the lifespan of the project and likely well beyond. These impacts will be continuous and should have a frequency rating of "high".

Request

Please provide the MVEIRB with the following information:

a) Resubmit the analysis with the rationale for the magnitude ratings, using a duration rated as long-term and a frequency rated as high.

IR Number: 1.2.88

Source: KTFN

To: Paramount Resources Ltd.

DAR Section:

DAR Section 7.8.3.3.1 Tables 7.8-9 and 7.8-10

Terms of Reference:

ToR Section G-6

Preamble

The rationale for its magnitude ratings is not provided by Paramount. Changes in duration from medium-term to long-term and changes in frequency from low to high should be made.

Request

Please provide the MVEIRB with the following information:

- a) Resubmit the analysis with the rationale for the magnitude ratings, with duration rated as long-term and with frequency rated as high.

IR Number: 1.2.89
Source: KTFN
To: Paramount Resources Ltd.

DAR Section:
DAR Section 7.8.4

Terms of Reference Section:
ToR Section G-6

Preamble

Paramount states that: "These patches are expected to maintain connectivity with the remainder of the landscape and the remaining patches are expected to have sufficient core area (56%) to support interior wildlife and vegetation forest species."

There is no evidence or analysis in the DAR to support this concluding statement.

Request

Please provide the MVEIRB with the following information:

a) Supply the evidence and analysis that enables Paramount to make the above statement.

IR Number: 1.2.90

Source: KTFN

To: Government of the Northwest Territories

DAR Section:
DAR Section 7.9.2.6

Terms of Reference Section:
ToR Section G-7

Preamble

In Section 7.9.2.6, Paramount describes how it developed its heritage resource potential map, including the use of a list of criteria for selecting higher probability locations for resource discoveries.

Request

Please provide the MVEIRB with the following information:

- a) Review and comment on Paramount's methodology.
- b) Are the criteria that were used appropriate?
- c) Are there other criteria that should have been applied?
- d) Any other comments about Paramount's heritage resource investigation methodology or conclusions?

IR Number: 1.2.91

Source: KTFN

To: Paramount Resources Ltd.

DAR Section:
DAR Section 7.9.2.6

Terms of Reference Section:
ToR Section G-7

Preamble

Paramount refers to studies that indicated that although some areas of potential would be affected, no heritage resources appear to be present in areas examined.

Request

Please provide the MVEIRB with the following information:

Please provide copies of these studies.

IR Number: 1.2.92

Source: KTFN

To: Paramount Resources Ltd.

DAR Section:
DAR Section 7.9.3

Terms of Reference Section:
ToR Section G-7

Preamble

Paramount refers to a Heritage Resources Impact Assessment.

Request

Please provide the MVEIRB with the following information:

Please provide a copy of this report.

IR Number: 1.2.93

Source: KTFN

To: Paramount Resources Ltd.

DAR Section:
DAR Section 7.9.4

Terms of Reference:
ToR Section G-7

Preamble

Paramount states that heritage resource studies were conducted in 2001 and that a monitoring manual was developed for use in the field.

Request

Please provide the MVEIRB with the following information:

- a) Provide copies of the 2001 heritage resource studies and the monitoring manual.

IR Number: 1.2.94

Source: KTFN

To: Paramount Resources Ltd.

DAR Section:
DAR Section 7.10.1

Terms of Reference Section:
ToR Section G-8

Preamble

Paramount states that trappers will be compensated for any demonstrable loss.

Request

Please provide the MVEIRB with the following information:

- a) Explain what would qualify as a demonstrable loss
- b) Explain the compensation process.

***IR Number:** 1.2.95

Source: KTFN

To: Government of the Northwest Territories

DAR Section:

DAR Sections 7.10.2 and 7.10.5.1.1

Terms of Reference Section:

ToR Section G-8

Preamble

Paramount attributes some statements to several GNWT employees. Al Hymers told Paramount that harvesting and trapping records for the Cameron Hills are not available. Al Helmer said that there is very little hunting activity in the Cameron Hills. Similarly, Deb Johnson said that most of the caribou hunting in the region is well outside of the SDL, occurring mainly west of Kakisa Lake.

Request

Please provide the MVEIRB with the following information:

- a) Provide evidence that supports the statements made by Al Helmer and Deb Johnson, given that there are no harvesting and trapping records available upon which to base or dispute those statements.

IR Number: 1.2.96

Source: KTFN

To: Paramount Resources Ltd.

DAR Section:

DAR Sections 7.10.6 Table 7.10-2

Terms of Reference Section:

ToR Section G-8

Preamble

Paramount has applied magnitude ratings of “low” to effects to hunting and effects to trapping for the baseline case.

However, for both the application and planned development cases, Paramount has applied magnitude ratings of “negligible” to these two impacts.

Request

Please provide the MVEIRB with the following information:

a) Given that the baseline case has the least amount of development, please explain why the magnitude ratings for effects to hunting and effects to trapping are lower for the application and planned development case, which have higher amounts of development.

IR Number: 1.2.97

Source: KTFN

To: Paramount Resources Ltd.

DAR Section:
DAR Sections 7.11.2

Terms of Reference Section:
ToR Sections G-9 and G-10

Preamble

Paramount claims that the KTFN do not use the project area for traditional activities.

Request

Please provide the MVEIRB with the following information:

- a) evidence that Paramount has to support this claim.

IR Number: 1.2.98

Source: KTFN

To: Paramount Resources Ltd.

DAR Section:
DAR 7.11.4.2.3

Terms of Reference Section:
ToR Sections G-9 and G-10

Preamble

Paramount has a history of being slow to pay its contractors. This creates hardship for small northern companies that must have a steady cash-flow to operate.

Request

Please provide the MVEIRB with the following information:

- a) For each of the last four years, provide data on the average and longest periods between Paramount receiving an invoice from a contractor and that contractor receiving the money.
- b) Provide a graph for each year that has "Invoice Value" on the x-axis and "Time to Pay" on the y-axis. Plot all invoices for each seasons' work on these graphs.
- c) Explain what steps were required by the Government of the Northwest Territories to assist small businesses that were harmed by slow payment from Paramount.
- d) What did these steps cost the GNWT?
- e) Will Paramount commit to a maximum period between receiving an invoice and providing payment to a contractor?

IR Number: 1.2.99

Source: KTFN

To: Paramount Resources Ltd.

DAR Section:
DAR 7.11.4.2.3

Terms of Reference Section:
ToR Sections G-9 and G-10

Preamble

Paramount has total of 6 production employees – 2 lead operators and 4 assistants. Of the 4 assistants, 3 are aboriginal.

As it is not stated, it is assumed that neither of the lead operators are aboriginal.

Request

Please provide the MVEIRB with the following information:

- a) Explain Paramount's training plan and target dates for promoting aboriginal assistants to the lead operator positions.

IR Number: 1.2.100
Source: KTFN
To: Paramount Resources Ltd.

DAR Section:
DAR 7.11.5.3.2

Terms of Reference Section:
ToR Sections G-9 and G-10

Preamble

Paramount states that its efforts to work with northern businesses have resulted in these businesses being invited to bid on contracts in Alberta and British Columbia.

Request

Please provide the MVEIRB with the following information:

- a) Identify the number of times that KTFN businesses have bid on work in Alberta and British Columbia and,
- b) the number of times that these bids have been successful.

IR Number: 1.2.101

Source: KTFN

To: Paramount Resources Ltd.

DAR Section:
DAR Section 8.1.2.11

Terms of Reference Section:
ToR Section H-1

Preamble

Paramount was instructed in the ToR to describe the effects of global warming on the project.

Paramount's discussion of this matter was brief, questioned whether or not global warming was actually happening and did not describe the effects on the project as instructed.

Request

Please provide the MVEIRB with the following information:

a) Describe the effects of global warming on the project, as was instructed in the ToR.

IR Number: 1.2.102

Source: KTFN

To: Paramount Resources Ltd.

DAR Section:

DAR Sections 8.2.1, 8.2.2, and 8.2.3

Terms of Reference Section:

ToR Section H-2

Preamble

Paramount provides industry-wide statistics on well blowouts, pipeline leaks and ruptures, and spills. Paramount does not, however, provide its own statistics for these incidences.

Paramount has had pipeline ruptures in both 2002 and 2003 with the 2003 rupture resulting in the release of over 36,000 L of product. Curiously, this spill is the only one without a volume shown in Table 8.2-2.

Request

Please provide the MVEIRB with the following information:

- a) The statistics on Paramount's Cameron Hills operations and,
- b) compare these to industry standards.
- c) Include a list of all spills, and volumes, since 1999.

IR Number: 1.2.103

Source: KTFN

To: Paramount Resources Ltd.

DAR Section:

DAR Section 9.7 Table 9.6-1

Terms of Reference Section:

ToR Section J

Preamble

Paramount refers to its noise monitoring program.

Request

Please provide the MVEIRB with the following information:

- a) Provide a copy of the noise monitoring program report.

IR Number: 1.2.104
Source: KTFN
To: Paramount Resources Ltd.

DAR Section:
DAR Appendix I

Terms of Reference Section:
N/A

Preamble

Paramount has a table in Appendix I that seems to list every single contact between it and the KTFN, no matter how minor that contact might be.

As described in the Deh Cho Consultation Principles, consultation involves much more than a phone call or open house. Consultations must involve meaningful discussions, and negotiations, about infringements of KTFN aboriginal and treaty rights.

Request

Please provide the MVEIRB with the following information:

a) Review, revise and resubmit this table so that it only includes those events that Paramount considers to have been consultation with the KTFN, which are consistent with the Deh Cho Consultation Principles.

IR Number: 1.2.105
Source: KTFN
To: Paramount Resources Ltd.
Indian and Northern Affairs Canada

DAR Section:
DAR Section 3.4.1
DAR Table 2.4-2

Terms of Reference Section:
ToR Section C-4

Preamble

Paramount states that drilling waste disposal will be in accordance with the Alberta Energy and Utilities Board's Drilling Waste Management Guide G-50.

Paramount also states that AEUB Guide 60 will be adhered to during flaring.

Request

Please provide the MVEIRB with the following information:

- a) What other guidelines are available for use for drilling waste disposal and flaring?
- b) Why are the Alberta guidelines being proposed for use in the Cameron Hills?
- c) Are the other guidelines that are available more or less environmentally stringent than the Alberta guidelines?
- d) Why haven't NWT guidelines been developed?
- e) What organization would be responsible for developing the NWT guidelines and why haven't they done so?

IR Number: 1.2.106
Source: Department of Fisheries and Oceans
To: Paramount Resources Ltd.

DAR Section:
1.1.1, Introduction page 1.

Terms of Reference Section:

Preamble

The Cameron Hills development is divided into three stages: baseline case, application case, and planned development case. Applicable project components are listed for each case.

Seismic activity is not specifically noted in either the baseline case or planned development case although on page 55 of the DAR it states that 2D seismic "may precede the acquisition of the projected 510 km's of 3D seismic." This is in addition to seismic that has already taken place.

Request

Please provide the MVEIRB with the following information:

a) Was this linear disturbance included in the calculations for surface area disturbance?

IR Number: 1.2.107

Source: Department of Fisheries and Oceans

To: Paramount Resources Ltd.

DAR Section:
3.2.2.3, Water Crossings, page 62

Terms of Reference Section:

Preamble

Paramount states that "if snow makers are used, it is preferable to use water from the creek being crossed, but water can be imported from a nearby water source lake to the snow maker/ crossing site if water is not available from the water being crossed."

Four water source lakes have been identified for the Cameron Hills program area. No streams have been submitted to DFO as potential alternative water sources, and DFO recommends against the use of streams in general.

Request

Please provide the MVEIRB with the following information:

- a) Will Paramount commit to using only the 4 approved water source lakes?

IR Number: 1.2.108

Source: Department of Fisheries and Oceans

To: Paramount Resources Ltd.

DAR Section:
3.2.2.3, Water Crossings, page 63

Terms of Reference Section:

Preamble

Paramount states that “depending on snow conditions, logs may be placed in the channel to facilitate ice bridge construction to ensure safe vehicle operation.”

Request

Please provide the MVEIRB with the following information:

a) Will Paramount commit to obtaining approval from a Fishery Officer prior to using logs or any materials other than ice or snow for ice bridge construction?

Please note: contacting DFO is a requirement as the use of materials other than ice or snow to construct a temporary crossing-over of any ice-covered stream is prohibited under Section 11 of the Northwest Territories Fishery Regulations, unless authorized by a Fishery Officer.

IR Number: 1.2.109

Source: Department of Fisheries and Oceans

To: Paramount Resources Ltd.

DAR Section:
3.2.4.2, Water Crossings, page 66

Terms of Reference Section:

Preamble

In reference to open cut crossings Paramount states that excavated soil will be stored on the stream bank to minimize its entry into the stream at break up.

Request

Please provide the MVEIRB with the following information:

- a) How far from the stream bank will the excess excavated soil be placed to ensure it will not enter the water course?
- b) Is any other mitigation (ex-berms, silt fences) proposed?

IR Number: 1.2.110

Source: Department of Fisheries and Oceans

To: Paramount Resources Ltd.

DAR Section:
3.2.6, Access to and use of Water Source Lakes, page 75

Terms of Reference Section:

Preamble

Paramount states at various points throughout the DAR that the *DFO Protocol for Water Withdrawal for Oil & Gas Activities in the NWT* will be followed. However, on page 75 it is stated that intake screens of 5 mm will be utilized. According to the protocol the mesh size must be 2.54 mm (1/10") to prevent the potential entrainment of fish.

Request

Please provide the MVEIRB with the following information:

a) Will Paramount commit to ensuring that all intake screens for the Cameron Hills program are the proper mesh size (2.54 mm)?

IR Number: 1.2.111

Source: Department of Fisheries and Oceans

To: Paramount Resources Ltd.

DAR Section:
5.2, Future Components, page 107 - Table 5.2-1

Terms of Reference Section:

Preamble

A table is provided indicating regulatory approvals required for the planned development case. For the drilling, completion, facilities and tie-in production it is anticipated that Section 35(2) *Fisheries Act* authorizations will be required.

Request

Please provide the MVEIRB with the following information:

a) What activity is expected to create a harmful alteration, disruption, or destruction of fish habitat (HADD) that would require these authorizations?

IR Number: 1.2.112

Source: Department of Fisheries and Oceans

To: Paramount Resources Ltd.

DAR Section:
7.4.2.4, Water Source Lakes, page 186 - Table 7.4-5

Terms of Reference Section:

Preamble

Water source information, based on bathymetric surveys is provided in a table format.

Request

Please provide the MVEIRB with the following information:

a) Since the water source information is based on bathymetric surveys why is the maximum depth column labelled "Approximate Maximum Depth"? Please clarify.

IR Number: 1.2.113

Source: Mackenzie Valley Environmental Impact Review Board

To: Deh Cho First Nation

DAR Section:

Terms of Reference Section:

F- Public Consultation

Preamble

The Deh Cho First Nations have been working towards the development of a set of Consultation Principles, to be used by Industry and Government when undertaking consultation with the First Nations. It is expected that Paramount Resources Ltd. would have followed the Consultation Principles set forth by the Deh Cho First Nations, providing they were available to Industry while Paramount was conducting consultation with potentially affected First Nations.

Request

Please provide the MVEIRB with the following information:

- a) When were the Deh Cho First Nations Consultation Principles released to the public, government and industry?

IR Number: 1.2.114

Source: MVEIRB

To: Paramount Resources Ltd.

DAR Section:
n/a

Terms of Reference Section:
MVEIRB IR 1.1.30

Preamble

The Review Board requested a spatial analysis of the Cameron Hills SDL, employing a 250m buffer on either side of any linear disturbance (cutlines, ROWs, pipelines and roads) and a 1000m buffer around wellsites.

Paramount's response to this request was: "Paramount does not feel that employing a restrictive buffer of 250m on either side of a linear disturbance and 1000m buffer around wellsites, accurately depicts the situation in the Cameron Hills, therefore, a map will not accurately reflect the buffer on the linear disturbance".

The Review Board is not prepared to abandon this request, and is again making a request that this information be supplied.

Request

Please provide the MVEIRB with the following information:

- a) As indicated in Information Request 1.1.30 (b)

IR Number: 1.2.115
Source: MVEIRB
To: Paramount Resources Ltd.

DAR Section:
Section 7.1.1, 1st full paragraph page 118

Terms of Reference Section:
Section 4.1.3 (Impact Prediction)

Preamble

Further to IR Number 1.1.2, the discussion of ecological thresholds notes that the 20% rule for severity of effects from contamination is applicable by analogy to areal scales of ecological effects. This was the basis for establishing a 20% change in the measurement endpoint as a high magnitude effect. Suter et al. (1995) note that some exceptions apply to the use of a 20% change in measurement endpoint for ecological effects. They specifically indicate that this value is not applicable to species of concern such as woodland caribou – that may be sensitive to small perturbations. They also note that this value is not applicable to habitats protected from any net loss (e.g., wetlands and fisheries habitat). Finally, they note that the 20% criterion is based on *measured* effects (e.g., documented change in population parameters that incorporates measurement error) and should not necessarily be assumed to apply to *modelled* effects (e.g., predicted changes in habitat suitability).

Request

Please provide the MVEIRB with the following information:

- a) Rationale as to why the 20% contaminant-based threshold is an appropriate measure of high magnitude for modelled effects on woodland caribou, moose, marten, forest songbirds, and wetlands. Make specific reference to the range of natural variability and sensitivity of species displaying low recruitment or survival. If appropriate, provide an alternate magnitude rating scheme for these VECs.

IR Number: 1.2.116
Source: MVEIRB
To: Paramount Resources Ltd.

DAR Section:

Section 7.1.1, 2nd paragraph page 119: Although the future wellsites are located to the best of Paramount's knowledge, uncertainties with respect to drilling success may affect the final location of subsequent wellsites.

Terms of Reference Section:

Section 2 (Scope of Development) and Section 3 (Scope of Assessment)

Preamble

As noted in IR 1.1.3, because a spatially-explicit modelling approach was used for the cumulative effects assessment, the assessment conclusions are sensitive to the development footprint included in the Planned Development Case and Far Future Case. The Board acknowledges Paramount's effort to provide a reasonable projection of likely future development and discuss both best- and worst-case scenarios.

Request

Would Paramount be willing to accept a condition of approval that defines maximum acceptable disturbance using the number and areal extent of land features identified in the DAR Planned Development Case?

IR Number: 1.2.117

Source: MVEIRB

TO: Paramount Resources Ltd.

DAR Section:

Section 7.1.1.1.2, page 120 and 121: the terrestrial CESA is based on the home range of one female woodland caribou and natural features

Terms of Reference Section:

Section 4.1.1 (Spatial Boundaries)

Preamble

The responses to IR Numbers 1.1.5 and 1.1.6 note that the terrestrial CESA was expanded from 70,000 ha (the average home range of one female caribou) to 96,231 ha to include natural features, specifically the escarpment breaks of the Cameron Hills to the north and east, and natural drainages and lake boundaries to the south and west. The inclusion of these natural features increases the size of the terrestrial CESA by 37%. While it is clear that this larger CESA diminishes the relative effects of the project, it is not clear how the 'unique terrestrial resources' included in these areas are relevant to the assessment of cumulative effects for soil, terrain, wildlife, and vegetation VECs.

Request

Please provide the MVEIRB with the following information:

- a) Why the unique terrestrial resources included in the expanded terrestrial CESA must be considered to evaluate potential cumulative effects on terrain and soil.
- b) Why the unique terrestrial resources included in the expanded terrestrial CESA must be considered to evaluate potential cumulative effects on woodland caribou at the home range scale.
- c) Why the unique terrestrial resources included in the expanded terrestrial CESA must be considered to evaluate potential cumulative effects on each vegetation VEC.

IR Number: 1.2.118
Source: MVEIRB
To: Paramount Resources Ltd.

DAR Section:
N/A – previous IRs Numbers 1.1.7, 1.1.11, and 1.1.21

Terms of Reference Section:
N/A

Preamble

Paramount provided additional information in the response to IR Number 1.1.7 in support of its use of a 20 year duration as the criteria for long-term impacts. In the response to IR Numbers 1.1.7 and 1.1.21, Paramount references a study conducted by MacFarlane (1999) to support its position that seismic lines will be revegetated 10-20 years following clearing (i.e., medium term duration). In the response to IR Number 1.1.11, Paramount indicates that direct vegetation loss associated with clearing was concluded to be medium-term in duration because reclamation will begin within 20 years.

DAR conclusions on direct vegetation loss are based on the attributes of the activity or feature that causes a response, rather than the way that these activities or features impact the VEC. For example, the DAR appears to conclude that clearing-related effects end once reclamation has begun or any kind of vegetation is established. With this 'cause-based approach', grass, shrubs, or immature trees are considered to be an equivalent replacement for mature spruce. However, the MVEIRB is interested in an 'effects-based approach' that focuses on the consequences of the loss or alteration of specific vegetation units (e.g., mature spruce and the associated wildlife habitat value of this unit). This requires consideration of the time required for regeneration of pre-disturbance vegetation units.

Request

Please provide the MVEIRB with the following information:

- a) In the responses to IR Numbers 1.1.7 and 1.1.21, Paramount states that seismic lines can be considered to be revegetated 10-20 years following clearing (i.e., medium term duration) because MacFarlane (1999) found that seismic lines reach similar tree densities to those found after wildfires 10-20 years post-disturbance. This appears to be inconsistent with MacFarlane's (1999) own conclusions:

"The large differences in tree densities on wellsites and seismic lines compared to fires provide evidence that the rate of revegetation of these features is much slower than natural. The trees that are

growing are of smaller diameters and could be younger than expected based on the time passed since initial disturbance. ... There seems to be no period that wellsite recruitment equals that after fire nor, at any time, do they approach the standards set for regenerating cutblocks. Based on this evidence and the size of trees over each time period, recruitment is extremely slow, growth is slow, and mortality may be high (Discussion page 28)."

"Changes in age and growth characteristics of trees on these disturbances may result in cumulative long term losses of forested [landbase] (Abstract page 1)."

MacFarlane's (1999) work does not appear to support the DAR conclusion that regeneration of mid to mature seral stage vegetation communities that dominate the Cameron Hills area will occur in 10-20 years following disturbance. Please modify the DAR assessment conclusions regarding duration of vegetation loss and alteration, or provide data relevant to the Cameron Hills CESA area that documents regeneration of mid to mature seral stage vegetation communities within 20 years following disturbance.

- b) Please provide estimates of the time required for each of the vegetation communities listed in Table 7.8-1 to return to pre-disturbance density, size (height and diameter), species composition, and structure following clearing (e.g., for black spruce mature open with sphagnum and lichen to return to black spruce mature open with sphagnum and lichen; and aspen young closed to return to aspen young closed). Discuss any differences in regeneration rates for clearing conducted for seismic lines, pipelines, roads, and wellsites, and discuss implication of sequential disturbance where previously disturbed seismic lines or clearings are incorporated into rights-of-way, and facility or camp sites.
- c) Information provided in the DAR and response to IR Numbers 1.1.7 and 1.1.11 does not appear to support the DAR conclusion that vegetation loss and alteration will result in a one-time loss of forest resources. Rather, MacFarlane's (1999) work suggests that this will result in cumulative effects expressed as a continuous loss to the forest land base until regeneration is complete. Please modify the DAR assessment conclusions regarding frequency of vegetation loss and alteration, or provide data relevant to the Cameron Hills CESA area that explains why impacts of forest clearing should not be considered to occur continuously within the CESA over the assessment period.
- d) MacFarlane's (1999) study demonstrates that there is some uncertainty whether mid to mature seral stage vegetation communities can be regenerated following clearing. Please modify the DAR assessment conclusions regarding reversibility of vegetation loss and alteration, or provide data relevant to the study area that documents that clearing-related impacts are reversible within the assessment period considered in the DAR for each of the vegetation communities listed in Table 7.8-1.

- e) Please provide evidence relevant to the Cameron Hills CESA that demonstrates that invasion of foreign species persists for less than 20 years and is reversible.
- f) Conclusions presented in Table 7.8-6 and on DAR page 277 indicate that vegetation loss and alteration impacts are reversible, although a statement on the previous page indicates that clearing of black spruce bogs will result in permanent loss of disturbed areas because the peat layer will have been too disturbed to revert back to peatland (DAR page 276). Please resolve this apparent inconsistency.

IR Number: 1.2.119

Source: MVEIRB

To: Paramount Resources Ltd.

DAR Section:
N/A

Terms of Reference Section:
Section 4.1.3 (Impact Prediction)

Preamble

In response to IR Number 1.1.8, Paramount indicated that there is an indirect relationship between Environmental Consequence and Environmental Significance, and that only impacts with a High Environmental Consequence rating have the potential to have significant adverse effects on the environment.

Request

Please provide the MVEIRB with the following information:

- a) What conditions must be present for an impact to be considered to have a significant adverse effects on the environment?

IR Number: 1.2.120
Source: MVEIRB
To: Paramount Resources Ltd.

DAR Section:

Section 7.3.3.1.1, Disturbance of Soil and Terrain Units, page 176: "With complete reclamation of all disturbed lands following final reclamation, there will be no net loss in soil and terrain units." Section 7.8.3.4, Far Future Scenario, page 276: It was assumed that black spruce bogs will likely revert to black spruce uplands because the peat layer would have been too disturbed to revert back to a peatland".

Terms of Reference Section:

Section 4.1.3 (Impact Prediction)

Preamble

As noted in Section 7.8.3.4, complete reclamation of disturbed organic soil and terrain units is unlikely where grading or cut and fill is required (page 65) for permanent facilities.

Request

Please provide the MVEIRB with the following information:

- a) Please modify the DAR assessment conclusions included in Table 7.3-6 regarding the reversibility of soil and terrain units or provide information relevant to the Cameron Hills CESA area which demonstrate that natural drainage patterns and organic soil parameters can be restored on disturbed organic soil and terrain units.

IR Number: 1.2.121
Source: MVEIRB
To: Paramount Resources Ltd.

DAR Section:

Section 7.6.3.2, page 222: "Approximately 50% of new disturbances will be reused for other components of the project."

Terms of Reference Section:

Section 4.2 (Developer's Assessment Report Specific Items)

Preamble

IR 1.1.20 requested a tabular summary of disturbance by land use feature in the aquatic and terrestrial CESAs for the Existing, Project Application, and Planned Development cases. The response to IR 1.1.20 provides a table that summarizes area of disturbance for three classes of land use features, presumably for the terrestrial CESA.

Request

Please provide the MVEIRB with the following information:

- a) A tabular summary of disturbance for **each** of the following land use features in the **Terrestrial CESA** for the **Existing Case**: existing seismic lines, approved 3D seismic lines, 8 m temporary roads, 10 m operations roads, 20 m pipeline ROWs, 30 m utility ROWs, well pads, emergency access for each well, disposal pits, battery/facility sites, satellites, camps, airstrips, borrow pits, and other.
- b) A tabular summary of disturbance for **each** of the following land use features in the **Aquatic CESA** for the **Existing Case**: existing seismic lines, approved 3D seismic lines, 8 m temporary roads, 10 m operations roads, 20 m pipeline ROWs, 30 m utility ROWs, well pads, emergency access for each well, disposal pits, battery/facility sites, satellites, camps, airstrips, borrow pits, and other.
- c) Table 1.1.20-1 indicates that road and utilities disturbances for the Baseline Case total 97 ha and 1,652 ha respectively; statistics provided in Table 7.8-8 indicate that road and utilities disturbances for the Baseline Case total 116 ha and 1,633 ha respectively. Please provide statistics that outline the reason(s) for these discrepancies.
- d) A tabular summary of disturbance for **each** of the following land use features in the **Terrestrial CESA** for the **Project Application Case**: existing seismic lines, approved 3D seismic lines, potential future 2D reconnaissance seismic lines, 8 m temporary roads, 10 m operations roads, 20 m pipeline ROWs, 30 m utility ROWs, well pads, emergency

access for each well, disposal pits, battery/facility sites, satellites, temporary camps, permanent camps, airstrips, borrow pits, and other.

- e) A tabular summary of disturbance for **each** of the following land use features in the **Aquatic CESA** for the **Project Application Case**: existing seismic lines, approved 3D seismic lines, potential future 2D reconnaissance seismic lines, 8 m temporary roads, 10 m operations roads, 20 m pipeline ROWs, 30 m utility ROWs, well pads, emergency access for each well, battery/facility sites, satellites, disposal pits, temporary camps, permanent camps, airstrips, borrow pits, and other.
- f) Table 1.1.20-1 indicates that combined disturbance for the Application Case will total 28 ha; statistics provided in Table 7.8-8 suggest 37 ha. Table 1.1.20-1 indicates that 6 ha of facilities will be added for the Planned Development Case; DAR Table 7.8-8 indicates that 14 ha of facilities will be added. Please provide statistics that outline the reason(s) for these discrepancies.
- g) A tabular summary of disturbance for **each** of the following land use features in the **Terrestrial CESA** for the **Planned Development Case**: existing seismic lines, approved 3D seismic lines, potential future 2D reconnaissance seismic lines, 8 m temporary roads, 10 m operations roads, 20 m pipeline ROWs, 30 m utility ROWs, well pads, emergency access for each well, battery/facility sites, satellites, disposal pits, temporary camps, permanent camps, airstrips, borrow pits, and other.
- h) A tabular summary of disturbance for **each** of the following land use features in the **Aquatic CESA** for the **Planned Development Case**: existing seismic lines, approved 3D seismic lines, potential future 2D reconnaissance seismic lines, 8 m temporary roads, 10 m operations roads, 20 m pipeline ROWs, 30 m utility ROWs, well pads, emergency access for each well, disposal pits, battery/facility sites, satellites, temporary camps, permanent camps, airstrips, borrow pits, and other.
- i) Table 1.1.20-1 indicates that combined disturbance for the Planned Development Case will total 128 ha; DAR page 1 says 147 ha, and statistics provided in Table 7.8-8 suggest 147 ha. Table 1.1.20-1 indicates that 64 ha of roads will be added for the Planned Development Case; DAR Table 7.8-8 indicates that 83 ha of roads will be added. Please provide statistics that outline the reason(s) for these discrepancies.
- j) A tabular summary of disturbance for **each** of the following land use features in the **Terrestrial CESA** for the **Far Future Case**: existing seismic lines, approved 3D seismic lines, potential future 2D reconnaissance seismic lines, 8 m temporary roads, 10 m operations roads, 20 m pipeline ROWs, 30 m utility ROWs, well pads, emergency access for each well, battery/facility sites, satellites, disposal pits, temporary camps, permanent camps, airstrips, borrow pits, and other.

k) Please indicate the source of the disturbance data used to generate wildlife habitat loss and sensory disturbance estimates in Table 1.1.22-1 (i.e., data used to generate Table 1.1.20-1 or data used to generate Table 7.8-8).

IR Number: 1.2.122

Source: MVEIRB

To: Paramount Resources Ltd.

DAR Section:

Section 7.6.3.4.3, page 227 and Table 7.6-8, page 228: "A zone of influence is the assumed maximum distance to which a disturbance (e.g., noise) influences wildlife use of habitat."

Terms of Reference Section:

Section 4.2 (Developer's Assessment Report Specific Items)

Preamble

The zones of influence used in the disturbance analysis do not represent the maximum distance that a disturbance will potentially affect animals, and the rationale for the selected zones of influence is not clear.

Request

Please provide the MVEIRB with the following information:

- a) The zones of influence for songbirds included in Table 7.6-8 are defined there as the maximum distance that a disturbance will potentially affect a species. Please provide the rationale, including supporting literature relevant to the Cameron Hills CESA area, for use of a 50 m zone of influence for songbirds near access, wellsites, and utility corridors, when the cursory literature review included in Section 7.6.1 indicates that effects have been documented to at least 150 m from linear features. Flaspohler et al. (2001) found that nest success of ovenbird and hermit thrush, two ground-nesters found in the Cameron Hills area, was affected up to 300 m from clearings.
- b) Please provide the rationale, including supporting literature relevant to the Cameron Hills CESA area, for use of a 250 m zone of influence for marten near access and wellsites, and a 100 m zone of influence near utility corridors.

IR Number: 1.2.123

Source: MVEIRB

TO: Paramount Resources Ltd.

DAR Section:

Section 7.6.4.2.3, Barriers to Movement and Increased Access

Terms of Reference Section:

Section 4.2 (Developer's Assessment Report Specific Items), page 13: "... address changes in effective or critical habitat for boreal woodland caribou."

Preamble

Follow-up to the request for additional spatial information on linear disturbance density and habitat effectiveness for woodland caribou. (IR 1.1.30)

Request

Please provide the MVEIRB with the following information:

- a) Provide a spatially-explicit map displaying linear corridor density variation throughout the terrestrial CESA.
- b) The zones of influence for caribou included in Table 7.6-8, defined there as the maximum distance that a disturbance will potentially affect a species, are attributed to Dyer (1999). Please discuss why a 250 m zone of influence was used for wellsites, when Dyer (1999) reported the maximum zone of influence for wells to be 1000 m. Please discuss why a 1000 m zone of influence was used for access, when Dyer (1999) reported the maximum zone of influence for roads to be 500 m. Please discuss why a 100 m zone of influence was used for utility corridors (including seismic lines), when Dyer (1999) reported the maximum zone of influence for seismic lines to be 250 m.
- c) Please update Table 1.1.22-1, Summary of Direct Habitat Loss and Area Affected by Sensory Disturbance for Wildlife VECs Under Each Development Case, to reflect the maximum zones of influence reported by Dyer (1999): 1000 m for wells; 500 m for access; and 250 m for seismic lines. Indicate the source of the disturbance data used to generate these estimates (i.e., data used to generate Table 1.1.20-1 or data used to generate Table 7.8-8).
- d) The Alberta Boreal Caribou Committee (2003) has concluded that the following formula is an excellent predictor of woodland caribou population trends:

$$Y = (-0.258*I) - (0.212*F) + 1.140$$

Where: Y is the population's finite rate of increase (1.0 is a stable population).
I is the % of the planning range (CESA in this case), within 250 m of an industrial feature.
F is the % of the planning range (CESA in this case), that is fire-origin and less than 50 years old.

Please calculate this formula for the Paramount Cameron Hills terrestrial CESA.

IR Number: 1.2.124

Source: MVEIRB

To: Paramount Resources Ltd.

DAR Section:

Section 7.6.4.4.3, Residual Impact Classification, Table 7.6-16, page 238.

Terms of Reference Section:

Section 4.2 (Developer's Assessment Report Specific Items), page 11: "... examine ecosystem components and analyze how they will be impacted by all development components combined in space and over time, rather than presenting individual components and their impacts."

Preamble

Paramount has provided conclusions regarding the environmental consequence of sensory disturbance associated with three types of activities or features. Because the four wildlife VECs in the terrestrial CESA will be simultaneously affected by concurrent and sequential exploration, development, production, abandonment, and post-abandonment activities and features, additional information on the combined effect of sensory disturbance is required. The DAR assessment conclusions and response to IR Number 1.1.21 b) indicate that the worst-case scenario for sensory disturbance is associated with a winter 3D seismic program during the winter it is completed. This presumes that noise and human activity is the only source of sensory disturbance. However as noted later in Paramount's response, sensory disturbance includes all sources of impact that result in reduced use (avoidance) of areas adjacent to land use features. Literature referenced by Paramount indicates that boreal-ecotype caribou avoid seismic lines (Dyer 1999). Oberg's (2001) study may not be directly applicable to the Cameron Hills area because it involved mountain-ecotype caribou; nevertheless, this study found that caribou were less likely to occur near seismic lines <23 years old than near lines >23 years old. These studies suggest that caribou display reduced use near conventional seismic lines like those used in the Cameron Hills CESA for >20 years after they are cleared (i.e., a long-term impact). During this period, caribou will also be exposed to sensory disturbance from existing seismic lines roads and utility corridors; camp, battery, and well operations, aircraft overflights, and any subsistence, trapping, and recreational activity.

Request

Please provide the MVEIRB with the following information:

- a) The response to IR Number 1.1.21 b) indicates that sensory disturbance resulting from production operations will be local in geographic extent (i.e., confined within lease boundaries and rights-of-way). Please provide

relevant information that confirms that sensory disturbance effects (defined as “reduced use of *adjacent* habitat”) can in fact be restricted to development features, or modify the geographic extent criterion included in Table 7.6-16 to Regional for all four wildlife VECs.

- b) Information provided in the DAR and response to IR Number 1.1.21 does not appear to support the DAR conclusion that reduced caribou use near seismic lines will not occur after 20 years post-disturbance. Please modify the DAR assessment conclusions regarding duration of sensory disturbance on caribou, or provide data that demonstrates that boreal-ecotype woodland caribou do not display long-term sensory disturbance from seismic lines.
- c) Provide a combined rating of the environmental consequence of sensory disturbance on woodland caribou. Conclusions for the sensory disturbance pathway must integrate all forms of sensory disturbance associated with exploration, production, abandonment, and post-abandonment activities and features. The rationale for any differences between the combined sensory disturbance rating and the original rating provided in Table 7.6-16 should be presented.
- d) Provide a combined rating of the environmental consequence of sensory disturbance on moose. Conclusions for the sensory disturbance pathway must integrate all forms of sensory disturbance associated with exploration, production, abandonment, and post-abandonment activities and feature. The rationale for any differences between the combined sensory disturbance rating and the original rating provided in Table 7.6-16 should be presented.
- e) Provide a combined rating of the environmental consequence of sensory disturbance on marten. Conclusions for the sensory disturbance pathway must integrate all forms of sensory disturbance associated with exploration, production, abandonment, and post-abandonment activities and features. The rationale for any differences between the combined sensory disturbance rating and the original rating provided in Table 7.6-16 should be presented.
- f) Provide a combined rating of the environmental consequence of sensory disturbance on forest songbirds. Conclusions for the sensory disturbance pathway must integrate all forms of sensory disturbance associated with exploration, production, abandonment, and post-abandonment activities and features. The rationale for any differences between the combined sensory disturbance rating and the original rating provided in Table 7.6-16 should be presented.

IR Number: 1.2.125
Source: MVEIRB
To: Paramount Resources Ltd.

DAR Section:

Section 7.6.4.4.3, Residual Impact Classification, Table 7.6-16, page 238.

Terms of Reference Section:

Section 4.2 (Developer's Assessment Report Specific Items), page 11: "... examine ecosystem components and analyze how they will be impacted by all development components combined in space and over time, rather than presenting individual components and their impacts."

Preamble

The predicted environmental consequence of each effect pathway is summarized in Table 7.6-16 on page 238. However, each of the four wildlife VECs will be affected by the combined consequence of all four pathways. Additional information on the combined effect of human activity and features is required to reach defensible conclusions on the likely significance of planned development in the Cameron Hills area. A precautionary approach would be to develop a combined rating for each wildlife VEC based on the largest value assigned to each environmental consequence criteria (e.g. for moose: high magnitude, regional extent, medium-term duration, high frequency, reversible).

Request

Please provide the MVEIRB with the following information:

- a) Provide a combined rating of the combined environmental consequence of direct habitat loss, sensory disturbance, increased predation/mortality, and barriers to movement on woodland caribou. The discussion should focus on environmental consequences as described in IR Number 1.2.121 and incorporate combined sensory disturbance as requested in IR Number 1.2.127.
- b) Provide a combined rating of the combined environmental consequence of direct habitat loss, sensory disturbance, increased predation/mortality, and barriers to movement on moose. The discussion should focus on environmental consequences as described in IR Number 1.2.121 and incorporate combined sensory disturbance as requested in IR Number 1.2.127.
- c) Provide a combined rating of the combined environmental consequence of direct habitat loss, sensory disturbance, increased predation/mortality, and barriers to movement on marten. The discussion should focus on environmental consequences as described in IR Number 1.2.121 and

incorporate combined sensory disturbance as requested in IR Number 1.2.127.

- d) Provide a combined rating of the combined environmental consequence of direct habitat loss, sensory disturbance, increased predation/mortality, and barriers to movement on forest songbirds. The discussion should focus on environmental consequences as described in IR Number 1.2.121 and incorporate combined sensory disturbance as requested in IR Number 1.2.127.

IR Number: 1.2.126

Source: MVEIRB

To: Paramount Resources Ltd.

DAR Section:

Section 7.6.4.5, Far Future Case, Table 7.6-17, p. 238-239

Terms of Reference Section:

Section 4.1.3 (Impact Prediction) and IR 1.1.12

Preamble

The rationale for Far Future Projections is not clear. The decision rules included in Table 7.8-11 indicate that mature closed aspen forest can't be regenerated to young (not mature) aspen forest within 50 years after disturbance ends.

However, the rules indicate that mature black spruce forest with lichen (highest quality caribou habitat) can be regenerated within 50 years after disturbance ends.

Request

Please provide the MVEIRB with the following information:

- a) Provide data relevant to the Cameron Hills DAR that document regeneration of mature black spruce forest with lichen on disturbed sites in less than 50 years. Alternatively, provide new decision rules consistent with responses to IR Number 1.2.127 and revise Tables 7.8-12 and 7.6-17 to reflect these new decision rules. Supplement each revised estimate of Far Future Case Habitat Units with numerical estimates of HUs classified as High, Moderate, and Low suitability.
- b) Discuss how a projection of far future vegetation conditions that ignores natural succession and disturbance (i.e., fire and insects) provides any information that is useful to the MVEIRB in assessing potential long-term cumulative impacts on vegetation and wildlife habitat.

IR Number: 1.2.127
Source: MVEIRB
To: Paramount Resources Ltd.

DAR Section:
Section 7.10.5.1.1, Traditional Harvesting Potential Effects

Terms of Reference Section:
Section 4.2 (Specific Items)

Preamble

The Terms of Reference state that both direct and indirect effects on traditional harvesting are to be considered in the DAR, but only direct effects of habitat loss are considered in Section 7.10. The DAR indicates that traditional harvesting could be impacted by alteration of wildlife distribution and/or travel routes due to human activity and equipment disturbance. In the DAR, sensory disturbance is concluded to have Moderate Environmental Consequence for caribou, moose, and marten, while direct habitat loss is concluded to have Negligible Environmental Consequence for these species (Table 7.6-16).

Request

Please provide the MVEIRB with the following information:

- a) Provide an assessment of the potential effects of long-term sensory disturbance in the Cameron Hills CESA on traditional harvest opportunities and harvest success (per unit effort).
- b) Provide additional rationale as to why effects on hunting and trapping are concluded to be highest during baseline conditions (Table 7.10-2), when direct habitat loss and alteration and indirect effects of sensory disturbance will increase over the development period (Table 7.6-15).

IR Number: 1.2.128
Source: MVEIRB
To: Paramount Resources Ltd.

DAR Section:

Section 7.2.5.2.3, Other Air Quality Parameters, page 158; Section 7.2.6.2.3, Other Air Quality Parameters, page 165-166: "It is also reasonable to infer that the areas with elevated PAI levels (i.e., above 0.17 keq/ha/yr) at Cameron Hills would be smaller than at Snap Lake and that they would be restricted to an area that would lie fully within the Cameron Hills SDL."

Terms of Reference Section:

Section 4 (Developer's Assessment Report)

Preamble

The Cameron Hills SDL appears to be located in an area with Low potential to reduce acidity which suggests that soils are sensitive to acid input (CASA 1999). The Air Quality assessment suggests that areas with elevated PAI levels (i.e., above the 0.17 keq/ha/y) will occur at Cameron Hills. This value represents the Monitoring Load established by CASA at which monitoring and research is to be initiated. Section b) of the response to IR Number 1.1.10 notes that no areas are *likely to* experience PAI values in excess of 0.25 keq/ha/yr. This value represents the Critical Load established by CASA - management actions (including emissions reduction) are designed to maintain PAI levels below this value. No specific predictions were provided to support these conclusions, and the response to IR Number 1.1.10 indicates that specific predictions (i.e., modelling) are not warranted because Critical Loads are unlikely to be exceeded. However, the DAR includes numerous examples where modelling was used to provide support for conclusions that critical thresholds for other VECs will not be exceeded by Planned Development activities.

Request

Please provide the MVEIRB with the following information:

- a) Given that PAI values are expected to exceed the Monitoring Load, describe the monitoring program that Paramount will implement to document actual PAI levels in the Cameron Hills SDL. Discuss sample site number, location, sampling frequency, and parameters to be monitored.
- b) Describe the specific management actions to be undertaken by Paramount in the event that the 0.17 keq/ha/yr PAI Monitoring Load is exceeded.
- c) Describe the specific management actions to be undertaken by Paramount in the event that the 0.22 keq/ha/yr PAI Target Load is exceeded.

d) Describe the specific management actions to be undertaken by Paramount in the event that the 0.25 keq/ha/yr PAI Critical Load is exceeded.

IR Number: 1.2.129
Source: MVEIRB
To: GNWT
INAC
Environment Canada

DAR Section:

Section 7.2

Terms of Reference Section:

Section G-2

Preamble

Policy related to air quality applicable in the development area (and the Mackenzie Valley in general) includes Air Quality Standards set out under the territorial Environmental Protection Act. The environmental management of impacts often requires effective monitoring, inspection and enforcement. It is unclear how this is presently done with respect to air.

Request

Please provide the MVEIRB with the following information:

- a) Specify what binding legal air quality guidelines or standards your organization is responsible for.
- b) Specify if regular compliance inspections for air quality are conducted by your organization to ensure that developments in operation are meeting those standards. If your organization does not conduct such inspections, please specify who currently is responsible for doing so.
- c) Specify if your organization is responsible for air quality enforcement, and if so, exactly how it is currently done. Provide examples.

IR Number: 1.2.130

Source: MVEIRB

To: Paramount Resources Ltd.

DAR Section:
N/A

Terms of Reference Section:
N/A

Preamble

The Review Board believes that spatial analysis of the Paramount Cameron Hills SDL is key to making sound decisions about current and future management plans.

Request

Please provide the MVEIRB with the following information:

Paramount's most recent satellite images or aerial photos of the Cameron Hills SDL area, including the main access routes. This information should be provided in the form of paper maps, at a scale of 1:50 000.

