



Environment  
Canada

Environnement  
Canada

Environmental Protection Operations  
Prairie and Northern Region  
5019 52<sup>nd</sup> Street, 4<sup>th</sup> Floor  
P.O. Box 2310  
Yellowknife, NT X1A 2P7

*Your file / Votre référence*  
EA0708-007  
*Our file / Notre référence*  
4339 001 017

July 15, 2009

VIA EMAIL

Tawanis Testart  
Environmental Assessment Officer  
Mackenzie Valley Environmental Impact Review Board  
Box 938  
Yellowknife, NT X1A 2N7

**Re: Environment Canada's Information Requests to Dezé Energy Corporation Ltd.  
(EC\_01 to EC\_09)**

Dear Ms. Testart:

Environment Canada (EC) is pleased to submit the following information requests (IRs) to the Mackenzie Valley Environmental Impact Review Board (the Board) as part of the environmental assessment review process being conducted for Dezé Energy Corporation's Taltson Hydroelectric Expansion Project. The answers to these questions will assist our Department in completing its written submission and will help the Department provide advice to the Board on the potential for adverse environmental effects.

Additionally, two (2) separate emails have been sent to the Board for the public record. These emails, dated June 9, 2009 and June 25, 2009, were the results of email discussions EC had with the proponent's consultant regarding jet fuel type and acid rock generation respectively. From the acid rock generation dialogue, the proponent has committed to developing a Metal Leaching and Acid Rock Drainage management plan which EC looks forward to reviewing.

Should you have any questions or wish to discuss these IRs further please do not hesitate to contact me at (867) 669-4707 or [Lisa.Perry@ec.gc.ca](mailto:Lisa.Perry@ec.gc.ca).

Sincerely,

Lisa Perry  
Sr Environmental Assessment Coordinator

cc: Carey Ogilvie, Head EA North  
Dave Fox – Air Pollution Management Analyst, EPOD  
Myra Robertson – EA Coordinator, CWS

Canada

## Information Request (IR) – Blasting

**IR Number:** EC\_01

**Source:** Environment Canada (EC)

**To:** Dezé Energy Corporation Ltd. (the “proponent”)

### **Preamble:**

On page 25, section 5.2.1, the Terms of Reference state:

*...Planning and management strategies for the extracted rock and overburden which should include:*

*I. Amount of land proposed to be affected by spoil pile;*

*II. Potential impact of runoff that may contain sediment and/or residual explosives;*

***III. Water management for potentially contaminated runoff;***

*IV. Spoil pile reclamation options;*

The DAR indicates for “terrestrial blasting away from in-stream habitat” pellet ANFO [ammonium nitrate-fuel oil] explosives would be used. Fisheries and Oceans Canada’s (DFO) *Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters* state “no use of ammonium nitrate-fuel oil mixtures occurs in or near water due to the production of toxic by-products (ammonia).” As you are aware, the deposit of deleterious substances of any type in water frequented by fish, or in any place under any conditions where the deleterious substance, or any other deleterious substance that results from the deposit of the deleterious substance, may enter any such water is prohibited under Section 36(3) of the *Fisheries Act*.

The DAR states, “a significant proportion of the excavated rock material would be processed and used entirely for either concrete aggregates, structural fills, or as material for the dam rehabilitation. The production of fine aggregates would likely require washing, and settling ponds would be required for this process (page section 6.5.4.7.4).” The DAR does not provide the measures/plan that would be used to manage potentially contaminated runoff or treat the wash water.

### **Request:**

1. Given DFO’s Guidelines and the proposed use of ANFO pellets for terrestrial blasting, what will be the set-back distance from waterbodies/ watercourses for the terrestrial blasting to protect the aquatic environment from blasting residues?
2. What are the measures and/or plan to be employed to prevent blasting residues from entering water or forming contaminated runoff if the ANFO explosives used for terrestrial blasting do not fully vapourize upon detonation or part of them remain undetonated? How would contaminated water be collected, stored and treated?  
Where would the proposed settling ponds be located?

## Information Request (IR) – Concrete Wash Water & Effluent

**IR Number:** EC\_02

**Source:** Environment Canada (EC)

**To:** Dezé Energy Corporation Ltd. (the “proponent”)

### Preamble:

The Taltson Hydroelectric Expansion Project will use concrete for building new structures and enhancing existing structures (e.g. spillway). Concrete may be used to seal the existing sluice gates at the control structure on Nonacho Lake (section 6.5.5.3), and grout used for the transmission line tower foundations and anchors (section 6.5.4.4.4). Concrete batch plants to produce concrete are proposed at the Twin Gorges and Nonacho Lake sites (section 6.5.4.6.5 and 6.5.4.7.2). As well, the use of premixed concrete in bags is being considered (section 6.5.4.7.5), and grout will be mixed on-site (section 6.5.4.4.4).

Concrete is a mixture of Portland cement, aggregate, water and additives. Portland cement is the ingredient that gives concrete wash water the highly corrosive and highly alkaline properties that make it a deleterious substance as defined by the *Fisheries Act*. Portland cement is also the active ingredient of mortar and grout. Concrete wash water is formed when water comes into contact with uncured or incompletely hardened concrete (e.g. washing of concrete mixers, pumps, cranes, equipment etc.). The wash water will typically have a high suspended sediment load and high pH. Wastewater effluent generated by concrete batch plants will also have a high pH and high suspended sediment content. Discharges to fish-frequented waters are subject to the general provisions of the *Fisheries Act* (e.g. section 36(3)).

The Developer’s Assessment Report (DAR) indicates that water use and discharge for concrete activities may require a water licence from the Mackenzie Valley Land and Water Board (section 2.2.2.2). In section 3.3.2 of the *Draft Erosion and Sediment Control Plan* it states “water used to clean concrete trucks, chutes and mixers will not be allowed to enter any surface waters directly. To reduce the concentration of lime, such wash waters will be treated in a temporary impoundment system and/or percolated through the soil, after hardened concrete has been removed.” No treatment system is described for waste and wash water effluent generated by the batch plants.

Deposition of concrete wash water and effluent can have adverse impacts on aquatic ecosystems. The high pH of concrete wash water and effluents can kill fish in minutes. Every attempt to conduct the works in the dry, isolated from water, should be undertaken.

### Request:

1. Are settling ponds proposed to be used to collect effluent and wash water from both of the concrete batch plants? If so, what treatment and monitoring is planned before

the wash water and effluent is released to a water body to ensure the effluent will not be deleterious? Where are the settling ponds to be located? Are these settling ponds the same proposed to collect waste water from blasting areas and aggregate washing activities?

2. On page 15.2.33 and 20.3 a commitment is made that states “when concrete works can not be completed in the dry, site-specific operational and management plans would be developed with the contractor, and submitted to DFO prior to conducting the works.” Please commit to also including EC in review of those plans prior to conducting the work. Included in the plans should be measures that describe how adverse impacts to the aquatic environment will be prevented.

## Information Request – Aquatic Monitoring Plans/Programs & Mercury

**IR Number:** EC\_03

**Source:** Environment Canada (EC)

**To:** Dezé Energy Corporation Ltd. (the “proponent”)

### **Preamble:**

In the Terms of Reference (Section 3.2.7, page 19), the proponent was requested to:

*...For each valued component considered in the DAR, the developer must provide a description of any commitments, plans and programs that are proposed to monitor possible impacts... The DAR must include a description of any follow up programs, contingency plans, or adaptive management programs the developer proposes to employ before, during, and after the proposed development for the purpose of recognizing and managing unpredicted problems to valued components. The DAR must explain how the developer proposes to verify impact predictions and must also describe what alternative measures will be used in cases where a proposed mitigation measure does not produce the anticipated result.*

Aquatic sections (sections 13 & 14) of the DAR referencing monitoring did not provide the details requested in the Terms of Reference.

With previous applications, EC commented on Taltson Hydro's Water Effects Monitoring Program (WEMP). EC recommended, and will continue to recommend in this process, the development of a comprehensive aquatic effects monitoring program (AEMP) for the existing facility and proposed expansion project. This program should confirm and expand on the aquatic information collected to date prior to the expansion to ensure that the natural spatial and temporal variability in the system is characterized. Baseline water quality data should be collected within all zones.

As stated in the DAR, methylmercury is highly toxic, has low water solubility and tends to be associated with sediments. Methylmercury is also bioaccumulative and persistent in nature. The DAR predicts that no soils would be flooded with the expansion, but water level and flow variation from project activities may disturb sediments and redistribute existing elements from sediments (e.g. sediment-sequestered mercury) into the water column (Sections 13.4 and 13.5). It is concluded that the potential effect on aquatic quality from the redistributed sediments is low. However, water column measurements should not be the only measure for mercury. Since methylmercury tends to be associated with sediments and sediment concentrations of mercury were measured previously in the WEMP, monitoring of sediments for mercury and other parameters should continue prior to and after the expansion works to verify the impact predictions of the DAR. Monitoring of mercury should not be discontinued.

**Request:**

1. The proponent develop and provide as soon as possible an AEMP which includes:
  - Results of historical and recent data collection efforts;
  - Explanation of how the proponent will monitor aquatic ecosystems to detect potential effects, as well as verify the accuracy of the impact predictions and validate the effectiveness of the mitigation measures; and
  - QA/QC plan.
2. The proponent commits to taking more sediment cores prior to the proposed expansion, and continues with the sampling within its AEMP. A more surficial layer should be analyzed for mercury than was done for the WEMP. This will provide a more meaningful baseline against which future considerations can be made to determine effects with the expansion.

## Information Request – Incineration

**IR Number:** EC\_04

**Source:** Environment Canada (EC)

**To:** Dezé Energy Corporation Ltd. (the “proponent”)

### Preamble:

The Taltson Hydroelectric Expansion Project (THEP) will include 2-main work camps, Twin Gorges and Nonacho Lake (DAR Section 6.5.3.2), and small work camps along the transmission line corridor (DAR Section 6.5.3.3). At each camp, the proponent is planning to use incineration to dispose of camp waste (DAR Section 3.3.1).

EC recognizes that timely disposal of camp waste - specifically food waste - is of critical importance to minimize safety risks associated with wildlife attraction. Timely disposal is usually achieved through burning. However, burning of waste products releases numerous contaminants to the air, many of them persistent, bioaccumulative and toxic (e.g. polycyclic aromatic hydrocarbons - PAH's - heavy metals, chlorinated organics – dioxins and furans). These contaminants can result in serious impacts to human and wildlife health through direct inhalation and they can also be deposited to land and water, where they bioaccumulate through food chains affecting wildlife and country foods. Therefore, burning should only be considered after all other alternatives for waste disposal have been explored.

To minimize the formation and release of contaminants the proponent should consider the following:

- Ensuring that the incineration device is capable of meeting the emission limits established under the *Canada-wide Standards (CWS) for Dioxins and Furans* and the *CWS for Mercury Emissions* is required (both the Government of Canada and the Government of the Northwest Territories (GNWT) are signatories to these Standards and are required to implement them according to their respective jurisdictional responsibility). The minimum requirement for incineration technology should be a dual-chamber incinerator.
- Development and implementation of an Incineration Management Plan. The objective of the management plan is to minimize the amount of waste to be incinerated and to ensure that appropriate incineration equipment is used and operated properly. The Incineration Management Plan should include:
  - Purchasing policies that focus on reduced packaging;
  - On-site diversion and segregation programs (i.e. the separation of non-food waste items suitable for storage and subsequent transport and disposal or recycling);
  - A waste audit of the types and quantities of waste to be incinerated;
  - Selection of incineration equipment suitable to burn these types of waste;

- Staff training to ensure that the incineration equipment is operated properly; and
  - Monitoring and reporting.
- Incineration ash can be contaminated with incineration byproducts, such as dioxins and furans, and therefore should be tested to ensure the ash is suitable for the landfill.

**Request:**

1. EC requests that the proponent commit to the following:
  - Development of an Incineration Management Plan in consultation with EC and the GNWT Department of Environment and Natural Resources and implementation of the management plan prior to any incineration of waste at the THEP work camps; and
  - Contaminant analysis of incineration ash to determine appropriate disposal options.
2. EC requests that the proponent provide the following information:
  - Type and quantities of waste to be incinerated at each camp; and
  - Type, model, and year of the incinerator to be used at each camp.



## **Information Request – Open Burning**

**IR Number:** EC\_05

**Source:** Environment Canada (EC)

**To:** Dezé Energy Corporation Ltd. (the “proponent”)

### **Preamble:**

As part of the closure and restoration of construction camps (Section 6.8.4.2), the proponent plans to burn “all materials that are approved for disposal via open-fire burning at an approved on-site location.”

The proponent should follow the Government of the Northwest Territories (GNWT) open burning policy which states that only paper and untreated wood are suitable for open burning. The proponent should also consider providing any reusable building materials to local communities.

### **Request:**

1. EC requests that the proponent commit to following the GNWT policy on open burning.

## Information Requests – Assessment of Horned Grebes

**IR Number:** EC\_06

**Source:** Environment Canada (EC)

**To:** Dezé Energy Corporation Ltd. (the “proponent”)

**Preamble:**

The Terms of Reference (Section 5.2.3, page 26) state:

*For Species at Risk, the analysis provided in the DAR must be of sufficient detail to allow the Review Board, as well as relevant other parties, to discharge its responsibilities under the Species at Risk Act, which includes:*

- a) Determining whether the proposed development is likely to affect a listed species or its critical habitat;*
- b) Identifying the adverse effects on the species and its critical habitat;*
- c) Ensuring that measures are taken to avoid or lessen those effects, consistent with any applicable recovery strategy and action plan; and*
- d) Monitoring the effects.*

*For the purpose of this environmental assessment, the term “species at risk” includes all species listed under any applicable schedule of the Species at Risk Act, as well as any species listed by the Committee on the Status of Endangered Wildlife in Canada.*

In April 2009, Horned Grebe (western population) was newly assessed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as being a species of Special Concern. As such, it is now under consideration for listing on Schedule 1 of the *Species of Risk Act* (SARA). Horned Grebes are found in the project study area (DAR, Tables 13.10.3 – page 13.10.12 and Table 14.9.3 – page 14.9.11) and should be assessed as outlined in the Terms of Reference.

Note that a Management Plan for Horned Grebe will only be developed when the species is listed on Schedule 1 of SARA. Critical habitat (as defined in SARA) is only established for species listed as endangered or threatened on Schedule 1 of SARA. Thus, critical habitat will not be established for Horned Grebe given its current status of Special Concern.

**Request:**

1. For the proponent to determine whether the proposed development is likely to affect Horned Grebe or its habitat, identify any adverse effects on the species and its habitat, suggest mitigation to avoid or lessen any adverse effects, and suggest whether any monitoring is required.

## Information Requests – Potential Increase in Ravens in Project Area

**IR Number:** EC\_07

**Source:** Environment Canada (EC)

**To:** Dezé Energy Corporation Ltd. (the “proponent”)

### **Preamble:**

Predation of eggs and chicks is a key factor that limits the productivity of many species of birds. Although predation is a natural process, artificial increases in predator abundance from human activities can readily alter any existing balance between predators and nesting birds. This can lead to population declines and conservation problems. Ravens are predators of eggs and chicks, and increases in raven populations in development areas elsewhere in the north have resulted in declines in local bird populations (e.g., Alaskan North Slope).

In the Terms of Reference (Section 2.3.5, page 27), the proponent was asked for:

*Characterization of the transmission towers for their suitability as nesting and roosting sites for predators and the potential for increased predation facilitated by the development as well as potential mitigation measures to be considered, such as tower design*

As well, the Terms of Reference also identified raptor and raven nesting habitat along the transmission line as one of the issues to analyze from the EA scoping exercises (Table 7-1, page 36).

The DAR did assess the potential impacts of the transmission towers providing hunting perches and nest sites for raptors (Section 15.4.5.2.2.8, page 15.4.34). However, the DAR did not address the issue of ravens nesting and roosting on towers or other project infrastructure.

### **Request:**

1. For the proponent to:

- Evaluate the degree to which ravens will use the towers and other project infrastructure for nesting;
- Assess the probability of increased predation of migratory birds because of increased nesting and roosting sites in the area for ravens and evaluate how this might impact local bird populations;
- Suggest potential mitigation measures to be considered; and
- Suggest monitoring measures to evaluate the effectiveness of mitigation measures and/or to determine if further mitigation might be required.

## Information Request (IR) – Sewage Treatment

**IR Number:** EC\_08

**Source:** Environment Canada (EC)

**To:** Dezé Energy Corporation Ltd. (the “proponent”)

**Preamble:**

On page 10, section 3.1.5.3, the Terms of Reference required:

*The DAR must provide a plan for waste management during construction and operation, including:*

*a) Camp sewage;...*

In the DAR, the proponent has indicated that treatment of domestic wastewater at the temporary and permanent camps may occur with on-site sewage treatment systems or regularly transporting the waste off-site (section 3.1.3 and 3.3.3). No mention is made about the sewage treatment proposed for barge camp facilities. No further information is provided on the type of treatment system to be used, its treatment capacity, and effluent quality or where the effluent would be discharged except to say it will “be treated according to all applicable regulations.” In section 6.8.4.3 a sewage lagoon is mentioned that may require clean-up and restoration if utilized. No other mention of this lagoon can be found in the DAR.

Domestic wastewater has the potential to adversely impact both surface and ground waters. Evaluation of the proposal can not be conducted without further information.

Waters in the project area are highly sensitive to eutrophication. EC is responsible for administering Section 36(3) of the *Fisheries Act* which ensures that deleterious substances do not enter fish bearing waters. Therefore, EC requires information on the project’s proposed wastewater discharges.

**Request:**

1. Please provide a description of the proposed disposal method for sewage and wastewater generated at the camps, including the barge camps. The description should include the type of treatment system proposed, its treatment capacity, effluent quality and where the effluent would be discharged.

## Information Requests – Water levels during Yellow Rail surveys

**IR Number:** EC\_09

**Source:** Environment Canada (EC)

**To:** Dezé Energy Corporation Ltd. (the “proponent”)

### **Preamble:**

Section 79(2) of the *Species at Risk Act* (SARA) states that during an assessment of effects of a project, the adverse effects of the project on listed wildlife species must be identified, that measures are taken to avoid or lessen those effects, and that the effects need to be monitored. This requirement is also reflected in the Terms of Reference for the project (Section 5.2.3, page 26). Yellow Rail is listed as Special Concern in SARA and, as such, these requirements apply to this species.

As a first step in determining whether there could be potential adverse effects, it needs to be determined if Yellow Rail occur in the project area. The proponent had a wildlife consultant undertake surveys for Yellow Rail in 2008 (Appendix 13.10A of the DAR, 2008 Taltson Basin Wildlife Baseline Study). No Yellow Rails were detected during the surveys. EC is assessing the survey undertaken in 2008 to determine whether the survey timing and methodology were adequate to detect Yellow Rails, or whether additional surveys might need to be conducted.

Yellow Rails have been found to move to other locations to breed from one year to the next if water levels are not sufficient for breeding (i.e., water levels too high or wetlands completely dry). If 2008 was an unusually wet or dry year, this might have affected the ability for the surveys to adequately detect Yellow Rail. This could indicate the need for additional surveys.

### **Request:**

1. For the proponent to provide information as to whether 2008 was a normal, wet or dry year for water levels in the areas assessed for Yellow Rails.