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Your file - Votre référence  
2BM-ULU1520  
Our file - Notre référence  
CIDM# 1284628

May 5, 2020

Richard Dwyer  
Manager of Licensing  
Nunavut Water Board  
P.O. Box 119  
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E-mail: [licensing@nwb-oen.ca](mailto:licensing@nwb-oen.ca)

**Re: Crown-Indigenous Relations and Northern Affairs Canada Review Comments  
on ULU Gold Project Application for dual Renewal and Amendment of Type B  
Water Licence No. 2BM-ULU1520**

Dear Mr. Dwyer,

Thank you for your April 8, 2020 invitation to review the referenced renewal and amendment application, submitted by Sharleen Hamm Consulting Ltd. on behalf of Blue Star Gold Corporation.

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) examined the application package pursuant to CIRNAC's mandated responsibilities under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Department of Crown-Indigenous Relations and Northern Affairs Act*. Comments have been provided in the attached Technical Memorandum.

If there are any questions or concerns, please contact me at (867) 975-4282 or [bridget.campbell@canada.ca](mailto:bridget.campbell@canada.ca).

Sincerely,

Bridget Campbell,  
Water Resources Coordinator



## **Technical Review Memorandum**

**Date:** May 5, 2020

**To:** Richard Dwyer – Manager of Licensing, Nunavut Water Board

**From:** Bridget Campbell – Water Management Coordinator, CIRNAC

**Subject: Crown-Indigenous Relations and Northern Affairs Canada Review  
Comments on ULU Gold Project Application for dual Renewal and  
Amendment of Type B Water Licence No. 2BM-ULU1520**

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### **A. BACKGROUND**

The Ulu Gold Project (Ulu) is located approximately 220 km southeast of Kugluktuk in the Kitikmeot Region of Nunavut. The Project is located entirely on Inuit-owned land, adjacent to the Hood River property. The project is currently a surface and underground exploration site with a small camp (Camp 3) capable of housing 20 people. According to Blue Star Gold Corporation (Blue Star) in the Landfill Management Plan, this camp consists of, “sleeping and dining quarters, a 22 m by 37 m vehicle repair shop, fuel containment areas (tanks removed in 2018) for bulk diesel and day tank storage, core storage area, core shack, and fuel staging area. The previous operator demolished unused facilities and stockpiled them in preparation for disposal in the underground workings and in a landfill at the portal entrance.” Also on site are an airstrip, a winter access trail, and legacy waste and contaminated soil.

Blue Star Gold Corp. has proposed the following changes to the project scope:

- Establish a non-hazardous waste landfill;
- Establish a soils treatment facility;
- Establish a temporary camp in the future at a new location proximal to the existing airstrip;
- Store bulk fuel in tanks or bladders up to 100,000 L capacity;
- Establish new industrial and domestic water supplies proximal to drill targets and a new future camp location;
- Increase water use to 299 m<sup>3</sup>/day;
- Use biodiesel as an alternative fuel;
- Establish a new quarry for construction materials; and
- Seasonally construct and use the historic winter trail between Ulu and the Lupin Mine.

CIRNAC provides the following comments and recommendations pertaining to both the renewal and the amendment to Water Licence 3BM-IGL1520. A summary of the subjects



of recommendations can be found in Table 1. Detailed technical review comments and recommendations can be found in Section C.

**Table 1: Summary of Recommendations**

| <b>Recommendation</b> | <b>Subject</b>  |
|-----------------------|---|
| <b>R-01</b>           | Acid Rock Drainage and Metal Leaching (ARD/ML)              |
| <b>R-02</b>           | Non-Petroleum Spills  |
| <b>R-03</b>           | Landfill Leachate   |
| <b>R-04</b>           | Landfill Operation and Maintenance Manual                   |
| <b>R-05</b>           | Landfill Capacity and Closure                               |
| <b>R-06, R-07</b>     | Water Sampling and Treatment at the Soil Treatment Facility |
| <b>R-08, R-09</b>     | Draft Licence Terms   |
| <b>R-10</b>           | Closure Design Criteria                                     |
| <b>R-11</b>           | Cost Estimate for Closure                                   |
| <b>R-12</b>           | Payment Schedule for Financial Security                     |

**B. DOCUMENTS REVIEWED**

The following table (Table 1) provides a summary of the documents reviewed under the Application Package for Renewal of 3BM-IGL1520 and the Supplemental Information Package for Amendment of 3AM-IGL----

**Table 1: Documents Reviewed**

| Appendix | Document Title  | Author, File No., Rev., Date                          |
|----------|---|---|
| Main Doc | Type "B" Renewal Amendment Water Licence Application Form | Blue Star Gold Corps., 13-03-2020                     |
| A        | Maps  | Blue Star Gold Corps., 13-03-2020                     |
| B        | Nunavut Planning Commission Determinations                | Nunavut Planning Commission, 15-01-2020, 20-02-2020   |
| C        | Nunavut Impact Review Board Screening Decision Reports    | Nunavut Impact Review Board, 08-12-1999 to 11-08-2006 |
| D        | Project Description                                       | Blue Star Gold Corps., 17-03-2020                     |
| E        | Project Summary   | Blue Star Gold Corps., 13-03-2020                     |
| F        | Supplemental Information Guidelines, Advanced Exploration | Blue Star Gold Corps., 06-04-2020                     |
| G        | Effects Assessment  | Blue Star Gold Corps., 06-04-2020                     |
| H        | Stakeholder Engagement Log and Summary                    | Blue Star Gold Corps., 13-03-2020                     |
| I        | Statement of Financial Security                           | Blue Star Gold Corps., 13-03-2020                     |
| J        | List of Officers  | Blue Star Gold Corps., 13-03-2020                     |
| K        | Certificate of Incorporation                              | Blue Star Gold Corps., 13-03-2020                     |
| L        | Compliance Assessment                                     | Blue Star Gold Corps., 13-03-2020                     |
| M        | Draft Amended Water Licence                               | Blue Star Gold Corps., 17-03-2020                     |
| N        | Spill Response Plan                                       | Blue Star Gold Corps., 01-2020                        |
| O        | Waste Management Plan                                     | Blue Star Gold Corps., 03-2020                        |
| P        | Interim Closure and Reclamation Plan                      | Blue Star Gold Corps., 03-2020                        |
| Q        | Closure Cost Estimate                                     | Blue Star Gold Corps., 06-04-2020                     |
| R        | Environment and Heritage Resources Protection Plan        | Blue Star Gold Corps., 01-2020                        |
| S        | Soil Treatment Facility Management Plan                   | Blue Star Gold Corps., 03-2020                        |
| T        | Borrow Management Plan                                    | Blue Star Gold Corps., 03-2020                        |
| U        | Landfill Management Plan                                  | Blue Star Gold Corps., 03-2020                        |



## **C. TECHNICAL REVIEW COMMENTS AND INFORMATION REQUESTS**

### **1. Acid Rock Drainage and Metal Leaching (ARD/ML)**

#### **Comment:**

The Borrow Pits and Quarry Management Plan and Appendix A of the Interim Closure and Reclamation Plan (ICRP) indicate that acid rock drainage and metal leaching (ARD/ML) could be produced at the Ulu Gold Project site, and that geochemical investigations will be carried out prior to quarry construction. CIRNAC supports Blue Star Gold's sampling program as ARD/ML can be accompanied by potentially toxic metals and can cause waters to become acidic if left untreated.

Untreated ARD/ML can result in harmful effects on aquatic wildlife and can lead to non-compliance with water licence conditions pertaining to effluent. Details pertaining to the prevention of ARD/ML, and its treatment if encountered on site, have not been provided in the Spill Response Plan or the Borrow Pits and Quarry Management Plan. Further, the ICRP does not include sufficient details regarding how Blue Star Gold plans to manage ARD/ML at the project site at the time of closure to avoid long-term treatment.

#### **Recommendation:**

(R-01) CIRNAC recommends that details outlining management strategies for ARD/ML be included in the Spill Response Plan, the Borrow Pits and Quarry Management Plan, and the ICRP.

### **2. Non-Petroleum Spills**

#### **Comment:**

The Spill Response Plan outlines measures that Blue Star Gold will undertake under most spill scenarios, as petroleum spills are the most likely type of spill and pose the highest risk to the environment. Blue Star Gold also plans to house lubricants and greases, salt, and drill additives. It is not clear what measures will be taken for other types of spills, for example spills containing drilling fluid or dry chemicals such as salt or drill additive powders.

#### **Recommendation:**

(R-02) CIRNAC recommends that the Spill Plan include a plan of action for spills of dry chemicals, drilling fluid, and/or drilling additives.



### **3. Landfill Leachate**

#### **Comment:**

The Landfill Management Plan suggests that leachate could be produced if materials are not properly sorted and unauthorized materials are added to the landfill. If left untreated, leachate can have adverse impacts on the water and soil with which it comes into contact. To maintain an awareness of the presence of leachate, the Landfill Management Plan suggests that seepage contact water, if flowing, will be monitored for quality. Awareness of the landfill water quality is the first step in the dealing with leachate issues. An action plan regarding how leachate will be managed, if encountered, has not been provided in the Landfill Management Plan and its inclusion would better demonstrate Blue Star Gold's preparedness to respond to this potential situation.

#### **Recommendation:**

(R-03) CIRNAC recommends that Blue Star Gold include details in the Landfill Management Plan regarding the Ulu Project management strategy for leachate seepage.

### **4. Landfill Operation and Maintenance Manual**

#### **Comment:**

The Landfill Management Plan includes a section pertaining to Operation and Maintenance of the landfill infrastructure. It is important to outline Operation and Maintenance procedures to ensure proper use and maintenance of the infrastructure, such as procedures for product sorting and placement, troubleshooting issues, and monitoring performance to prevent the formation of leachate, leaks and spills, and other potential issues which can cause deleterious substances to be released to the environment. Operation and Maintenance Manuals are used to explicitly outline proper procedures for operators in a systematic and detailed fashion. A complete Operation and Maintenance Manual for the Landfill has not been submitted.

#### **Recommendation:**

(R-04) CIRNAC recommends that Blue Star Gold submit an Operation and Maintenance Manual for the Landfill to the NWB for review.

### **5. Landfill Capacity and Closure**

#### **Comment:**

The Landfill Management Plan Design Memo, found in Appendix A of the Landfill Management Plan, indicates that the capacity for the landfill will be 30,000m<sup>3</sup>. It is



important to maintain a landfill within its design limits for proper functioning of the waste disposal site. It is not clear what Blue Star Gold intends to do with remaining wastes if the landfill reaches capacity before all of the waste has been disposed.

Further, closure of the landfill will require a cover to prevent debris from being blown out of the site, and to prevent water infiltration and erosion. It is not clear from the Landfill Management Plan whether esker sand will produce dust and, if so, how dust will be managed to prevent nearby surface water bodies from increased dust cover.

**Recommendation:**

(R-05) CIRNAC recommends that Blue Star Gold include details regarding dust management and waste disposal strategies when the landfill reaches its capacity in the Landfill Management Plan.

## **6. Water Sampling and Treatment at the Soil Treatment Facility**

**Comment:**

Section 3 of Appendix A of the Soil Treatment Facility Management Plan advises that a water storage pond will be built as part of the soil treatment facility (STF Pond), and that excess water within the soil treatment cells will be (pg 9) "...pumped to the water storage pond for testing, treatment (if needed) and discharge." This is important because contact water containing petroleum hydrocarbons (PHC) can have an adverse impact on the receiving environment if not treated. It is not clear from the provided description how the water will be treated.

Further, Appendix B of the Soil Treatment Facility Management Plan contains details pertaining to the soil sampling methodology while few details have been provided regarding the sampling methodology for groundwater and for seepage water.

Without these details, interveners cannot sufficiently evaluate the water and effluent management strategy in place to prevent the release of PHC to the receiving environment.

**Recommendation:**

(R-06) CIRNAC recommends that Blue Star Gold provide details on how the contact water in the STF Pond will be treated, how water will be conveyed prior to release to the environment, if applicable, and what the surface and groundwater monitoring program will entail.

(R-07) CIRNAC recommends adding details of the groundwater and seepage water monitoring program to the Soil Treatment Facility Management Plan.



## 7. Draft Licence Terms

### **Comment:**

Blue Star Gold has provided a proposed licence (Appendix M of the Application Package) which contains suggested changes to licence conditions based on updated management strategies and physical changes on site since the change in property ownership. One condition which creates concerns for CIRNAC is Part I. Conditions Applying to Abandonment and Restoration or Temporary Closing, Item 12, found on page 23.

The first concern is that the wording “as otherwise approved by the Board” creates uncertainty. Firstly, it does so in a substantive manner given that it suggests exceptions from the standard that provision creates, without providing guidance as to what will guide the NWB in granting such exceptions. Secondly, it creates uncertainty from a procedural perspective as it is unclear what process would be followed before an approval in writing is granted, and whether interveners will be given a chance to comment. In some instances, this may make it difficult for the Minister of Northern Affairs to know the exact nature of the licence he or she is asked to approve.

The second concern is that Blue Star Gold is suggesting to replace soil treatment objectives outlined in the *Government of Nunavut’s Environmental Guideline for Site Remediation* (Government of Nunavut Department of Environment, 1999) with the objectives set out in the Soil Treatment Facility Management Plan, written by Blue Star Gold. As the details contained within management plans can be changed and altered without approval from the Minister of Northern Affairs, CIRNAC takes issue with replacing government guidelines with self-determined objectives in a NWB Water Licence. CIRNAC encourages the proponent to exceed the objectives outlined in the Government of Nunavut’s *Environmental Guideline for Contaminated Site Remediation* (1999), but does not encourage the guideline’s replacement in this proposed licence condition.

### **Recommendation:**

(R-08) CIRNAC recommends that the condition under Part I, Item 12 of Water Licence 2BM-ULU1520 demonstrate the procedure by which the NWB can approve changes to the provision.

(R-09) CIRNAC recommends that the soil treatment objectives outlined in the Government of Nunavut’s *Environmental Guideline for Contaminated Site Remediation* (1999), which were updated in 2014, not be replaced by objectives set out in the Soil Treatment Facility Management Plan in the condition under Part I, Item 12 of Water Licence 2BM-ULU1520.





## 8. Closure Design Criteria

### **Comment:**

Section 5.2 of the Interim Closure and Reclamation Plan (ICRP) provides a summary the design criteria for the Landfill Cover (Section 5.2.1), the Soil Treatment Facility (Section 5.2.2), and the Soil Quality Remediation Objectives for Petroleum Hydrocarbons (Section 5.2.3). Further details are provided in the design memos associated with respective management plans.

CIRNAC is seeking details on a number of items in the ICRP which are important for evaluating reclamation costs, and recommends that Blue Star Gold provide these details or provide direction to CIRNAC regarding where these details can be found.

### **Recommendation:**

(R-10) CIRNAC recommends that the following details be provided by Blue Star Gold.

#### Section 5.2.1

- a. The expected tolerances in the grading of the final surface;
- b. Any specific surface treatment;
- c. The outlet of the effluent;
- d. The conveyance and management of the water runoff within and adjacent to the landfilled area; and

#### Section 5.2.2

- e. Any emergency overflow criteria that were considered.

## 9. Cost Estimate for Closure

### **Comment:**

Certain rates used by Blue Star Gold in the reclamation cost estimate appear to be low compared to industry practice. This difference could be attributed to whether labour and equipment costs have been included in these rates. To assist in a better evaluation of the suggested closure costs, CIRNAC requests that clarification on these items be provided.

### **Recommendation:**

(R-11) CIRNAC recommends that Blue Star Gold clarify the following points:

- a. Verify the unit rate of \$1.69/m<sup>3</sup> for the grading work that involves a dozer and whether this rate is inclusive of operator, equipment and other indirect costs;
- b. Verify the unit rate of \$15.96/m<sup>3</sup> for the foundation and berm construction tasks;
- c. Confirm whether compaction work will be required and, if so, provide a task in the cost break down to address this component of the project;
- d. Confirm that the liner removal unit cost also covers disposal of the liner; and
- e. Provide a breakdown of costs for components pertaining to the land-water split.



## **10. Payment Schedule for Financial Security**

### **Comment:**

In the Application Form (Section 21, pg. 13) submitted to the NWB on March 13, 2020, Blue Star Gold has requested that:

...the total amount of security held currently remain unchanged under a renewed and amended licence as the contingencies considered in the estimate are very conservative and actual liabilities, especially those associated with large equipment repairs, will be better understood after the upcoming work season on site.

The purpose of Financial Security is to ensure that funds are secured in place with the responsible landowner for use in the case that the licensee is unable to reclaim the site. It is common for a security estimate to be conservative and estimates are based on current information and best predictions. CIRNAC is of the opinion that no new infrastructure should be built on site until sufficient security is posted.

### **Recommendation:**

(R-12) CIRNAC recommends that Blue Star Gold post security to the designated responsible landowner prior to constructing new infrastructure.



## D. REFERENCES

### Works Cited

Government of Nunavut Department of Environment. (1999, April). *Environmental Guideline for Contaminated Site Remediation. Revised December 2014*. Retrieved from <http://www.gov.nu.ca/env/environment>