

centerraGOLD



# Kemess Underground Mine 2018 Annual Report

Prepared for:

Canadian Environmental Assessment Agency

Report Authored by:

Centerra Gold Inc.

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## EXECUTIVE SUMMARY

Aurico Metals Inc., a wholly own subsidiary of Centerra Gold Inc., obtained the Canadian Environmental Ministers Decision Statement on March 13, 2017 for the Kemess Underground Mine, an underground mine located in the mountains of north-central British Columbia (BC), 430 kilometres northwest of Prince George. Construction activities commenced July 2018. The project is located within the territories of the Takla Lake First Nation (TLFN) and Tsay Key Dene Nation (TKDN). The traditional territory of the Kwadacha Nation (KWN) is adjacent to and downstream from the project. The Implementation Schedule was provided to Aboriginal groups and the Canadian Environmental Assessment Agency (CEAA) in 2017. Construction for the Kemess Underground Project Commenced July 16, 2018.

At the mine site, fish and fish habitat protection continues to be achieved through the implementation of erosion and sediment control (ESC) techniques as part of the KUG construction activities in 2018. Many of the construction activities were located within the mines site water management area (MSWMA). Runoff water from the East Pit Quarry continued to flow into the Kemess Underground (KUG) tailings storage facility (TSF). All water that reports to the MSWMA is either pumped to the KUG tailings storage facility (TSF) or flows to sediment settling features (i.e. settling ponds, check-dams) prior to release into the natural environment. Kemess implemented supplementary construction site water management and erosion control measures including the implementation of check dams, French drain features, placement of rip-rap, and hydroseeding efforts.

In-stream work for the installation of the KUG tailings storage facility drainage line to Attichika Creek was completed in consideration Fisheries and Oceans Canada's *Measures to Avoid Causing Harm to Fish and Fish Habitat Including Aquatic Species at Risk* to implement mitigation measured to avoid causing harm to fish and fish habitat.

Metal Mining Effluent Regulations (MMER) water quality monitoring continued in 2018.

Prior to pre-construction clearing of vegetation, migratory bird surveys were conducted by qualified professionals in consultation with indigenous groups. No nesting birds or active nests were observed within the construction areas during any of these surveys.

The Human Health follow-up soil sampling program was conducted during construction in 2018 to verify the accuracy of the environmental assessment as it pertains to adverse environmental effects. 30 soil samples were collected at various land-use areas associated with the KUG mines site, analyzed for presence of trace metal and compared to CCME guidelines for human health (CCME 2007).

Monitoring of the Omineca Resource Access Road (ORAR) was completed to ensure adequate escape pathways were present to allow ungulates to exit the plowed roads during winter months when snow banks were greater than 1 metre in height. No carrion observations were observed in the 2018 reporting year. A Hunting, Fishing and Gathering Policy was implemented in 2018 to prohibit fishing, hunting, and trapping within the Project area.

Pre-clearing sweeps for Western Toad (*Anaxyrus boreas*) were completed on three occasions in 2018. No evidence of Western Toad breeding (egg masses, tadpoles, or adults) were encountered during surveys. Considering this, there was a very low chance of encountering Western Toad breeding in the Attichika wetland

and work proceeded.

Pre-Clearing surveys were conducted for little brown myotis (*Myotis lucifugus*) and Northern myotis (*Myotis septentrionalis*) prior to construction from April 17 to April 22, 2018 and thirty-five nursery bat boxes were installed before the start of construction. The April 2018 pre-clearing surveys did not reveal any active hibernacula or roosting activities therefore no active buffer zones are required at this time.

No heritage or archaeological sites were discovered during the 2018 construction activities or during archaeological monitoring.

No accidents or malfunctions occurred in 2018 that had the potential to cause adverse environmental effects or trigger the emergency response plan.

## RÉSUMÉ

Aurico Metals Inc., une filiale à part entière de Centerra Gold Inc., a obtenu le 13 mars 2017 de la déclaration de décision des ministres canadiens de l'Environnement concernant la mine souterraine Kemess, une mine souterraine située dans les montagnes du centre-nord de la Colombie-Britannique (C.-B.), 430 kilomètres au nord-ouest de Prince George. Les travaux de construction ont commencé en juillet 2018. Le projet est situé sur les territoires de la Première nation de Takla Lake (PNLT) et de la nation Tsay Key Dene (TKDN). Le territoire traditionnel de la nation Kwadacha (KwN) est adjacent au projet et en aval de celui-ci. Le calendrier de mise en œuvre a été fourni aux groupes autochtones et à l'Agence canadienne d'évaluation environnementale (LCEE) en 2017. Les travaux de construction du projet souterrain de Kemess ont débuté le 16 juillet 2018.

Sur le site de la mine, le poisson et ses habitats sont toujours protégés grâce à la mise en œuvre de techniques de contrôle de l'érosion et des sédiments (ESC) dans le cadre des activités de construction du KUG en 2018. De nombreuses activités de construction étaient situées dans la zone de gestion de l'eau du site minier (MSWMA). Les eaux de ruissellement provenant de la carrière à ciel ouvert East ont continué de s'écouler dans l'installation de stockage des résidus souterrains de Kemess Underground (KUG).

Toute l'eau signalée au MSWMA est soit pompée vers l'installation de stockage des résidus KUG (KUG), soit vers les dispositifs de sédimentation (sédiments, barrages de contrôle) avant son rejet dans le milieu naturel. Kemess a mis en œuvre des mesures supplémentaires de gestion de l'eau et de lutte contre l'érosion sur les chantiers de construction, notamment la mise en place de barrages de retenue, de dispositifs de drainage français, de mise en place d'enrochement et d'ensemencement hydraulique.

Les travaux en cours relatifs à l'installation de la conduite de drainage de l'installation de stockage de résidus KUG dans le ruisseau Attichika ont été achevés. Pêches et Océans Canada a pris des mesures pour éviter des dommages au poisson et à son habitat, y compris les espèces aquatiques en péril, afin de mettre en œuvre des mesures d'atténuation visant à poisson et habitat du poisson.

Le Règlement sur les effluents des mines de métaux (REMM) s'est poursuivi en 2018.

Avant le défrichage de la végétation avant la construction, des enquêtes sur les oiseaux migrateurs ont été menées par des professionnels qualifiés en consultation avec les groupes autochtones. Aucun oiseau nicheur ou nid actif n'a été observé dans les zones de construction au cours de ces enquêtes.

Le programme d'échantillonnage de suivi du sol pour la santé humaine a été mené pendant la construction en 2018 afin de vérifier l'exactitude de l'évaluation environnementale en ce qui concerne les effets environnementaux négatifs. 30 échantillons de sol ont été collectés dans diverses zones d'utilisation des terres associées au site des mines KUG, analysés pour la présence de traces de métaux et comparés aux directives du CCME pour la santé humaine (CCME 2007).

La surveillance de la route d'accès aux ressources d'Omineca (ORAR) a été réalisée afin de garantir la présence de voies d'évacuation adéquates permettant aux ongulés de sortir des routes déblayées pendant les mois d'hiver lorsque les bancs de neige dépassaient 1 mètre de hauteur. Aucune observation de charogne n'a été observée au cours de l'année de référence 2018. Une politique de chasse, de pêche et de cueillette a été mise en place en 2018 pour interdire la pêche, la chasse et le piégeage dans la zone du projet.

Les balayages préalables au dégagement du crapaud de l'Ouest (*Anaxyrus boreas*) ont été achevés à trois reprises en 2018. Aucun signe de reproduction du crapaud de l'Ouest (masses d'œufs, têtards ou adultes) n'a été observé lors des prospections. Compte tenu de cela, il y avait très peu de chances que le crapaud de l'Ouest se reproduise dans la zone humide de l'Attichika et les travaux ont continué.

Des enquêtes préalables au dégagement ont été menées sur la petite myotis brune (*Myotis lucifugus*) et la myotis nordique (*Myotis septentrionalis*) avant la construction du 17 au 22 avril 2018 et 35 boîtes pour chauve-souris ont été installées avant le début des travaux. Les enquêtes préalables au dégagement d'avril 2018 n'ont révélé aucune activité d'hibernacle ni de repos actif. Par conséquent, aucune zone tampon active n'est requise pour le moment.

Aucun site patrimonial ou archéologique n'a été découvert pendant les activités de construction de 2018 ou lors de la surveillance archéologique.

En 2018, aucun accident ou défaillance ne risquait d'avoir des effets environnementaux négatifs ou de déclencher le plan d'intervention d'urgence.

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## 1. Introduction

Aurico Metals Inc. (Aurico) is a wholly own subsidiary company of Centerra Gold Inc. and is developing the Kemess Underground Project (KUG, Project), an underground copper-gold mine at the site of the former Kemess South mine.

The Project consists of the economic extraction of copper and gold ore from the underground deposit using panel caving techniques and processing approximately 9 million tonnes per year (average 24,650 tonnes per day equivalent) with an average annual production rate estimated at 105,000 ounces of gold and 44 million pounds of copper, for a total of 1.3 million ounces of gold and 563 million pounds of copper produced over a mine life of approximately 13 years. The project is located at the former Kemess South mine, which operated as an open pit copper-gold mine until 2011, and will use existing infrastructure to the extent possible. Other than the existing Kemess South development, the Project is located in a relatively undeveloped area in north central BC with limited sources of anthropogenic air emissions. Mineral exploration and forestry activities are the primary industrial related activities in the region.

Aurico received a BC provincial Environmental Assessment Certificate (#M17-01) on March 13, 2017 and a Canadian Environmental Ministers Decision Statement on March 9, 2017. All of the various provincial and federal permits required to construct the mine have been received. Surface construction activities began at the Kemess Mine Site on July 6, 2018.

This report has been developed to meet Decision Statement Condition 2.9: *“the Proponent Shall, commending in the reporting year during which the Proponent begins the implementation of the conditions set out in this Decision Statement, prepare an annual report”*. The report is laid out such that each heading addresses an annual reporting requirement defined within the subheadings of Condition 2.9.

## 2. Condition 2.9.3: Consideration for consultation

*2.9.3 for conditions set out in this Decision Statement for which consultation is a requirement, how the Proponent considered any views and information that the Proponent received during or as a result of the consultation*

The following sections identify the Decision Statement conditions that required consultation and how the Proponent has considered the views and information received as per the requirements set out in Condition 2.2.

*2.2 The Proponent shall, where consultation is a requirement of a condition set out in this Decision Statement:*

*2.2.1 provide a written notice of the opportunity for the party or parties being consulted to present their views and information on the subject of the consultation;*

*2.2.2 provide sufficient information on the scope and the subject matter of the consultation and a reasonable period of time to permit the party or parties being consulted to prepare their views and information;*

*2.2.3 provide a full and impartial consideration of any views and information presented by the party or parties being consulted on the subject matter of the consultation; and*

*2.2.4 advise in a timely manner the party or parties being consulted on how their views and information have been considered by the Proponent.*

### **3. Condition 3: Fish and Fish Habitat**

#### **3.1. Condition 3.1**

*The Proponent shall implement erosion and sedimentation control measures within the Project area during all phases of the Designated Project to avoid the deposit of deleterious substances in water frequented by fish.*

As per the Erosion Prevention and Sediment Control Plan, erosion and sediment control (ESC) techniques were implemented as part of the KUG construction activities in 2018. Many of the construction activities were located within the mines site water management area (MSWMA). All water that reports to the MSWMA is either pumped to the KUG tailings storage facility (TSF) or flows to sediment settling features (i.e. settling ponds, check-dams) prior to release into the natural environment.

Settlement ponds were successful in reducing sediment transport within the MSWMA, verified by in-situ turbidity measurements at discharge points. Turbidity measurements did however exhibit minor increases with the construction activities at different times during the reporting period. To respond to the increases in turbidity, Kemess implemented supplementary construction site water management and erosion control measures including the implementation of check dams, French drain features, placement of rip-rap, and hydroseeding efforts throughout the 2018 reporting year.

#### **3.2. Condition 3.2**

*The Proponent shall, taking into consideration Fisheries and Oceans Canada's Measures to Avoid Causing Harm to Fish and Fish Habitat Including Aquatic Species at Risk, implement mitigation measures when conducting Designated Project activities to avoid causing harm to fish and fish habitat, including timing work in or around water to respect the timing windows identified to protect fish.*

Hatfield Consultants on behalf of AuRico submitted a proposal on June 25, 2018 regarding the installation of two precast concrete piers to support the diffuser pipe in Attichika Creek to the Fisheries Protection Program of Fisheries and Oceans Canada (DFO). On July 23, 2018 a response from the DFO was received titled "Diffuser Installation, Attichika Creek, Fort Ware – Implementation of Measures to Avoid and Mitigate Serious Harm to Fish and Prohibited Effects on Listed Aquatic Species at Risk". Provided that AuRico implemented mitigation measures in to the Construction Plan, DFO concluded that the works would not result in serious hard to fish or prohibited effects on listed aquatic species at risk. As such, an authorization under the *Fisheries Act* or a permit under the *Species at Risk Act* was not required.

To avoid and mitigate the potential for serious hard to fish, the following measures were implemented:

- Works were completed during the November low flow period;
- A qualified environmental professional was present to monitor for the presence of fish in the immediate construction areas; and
- Riparian clearing was kept to a minimum.

### **3.3. Condition 3.3**

*The Proponent shall comply with the Metal Mining Effluent Regulations and subsection 36(3) of the Fisheries Act regarding the deposit of effluent from the Designated Project in water frequented by fish, taking into account the Canadian Council of Ministers of the Environment's Water Quality Guidelines for the Protection of Aquatic Life, from the start of construction to the end of decommissioning. In doing so, the Proponent shall:*

*3.3.1 place all acid-generating and potentially acid-generating material into the tailings storage facility and submerge all such materials placed in the tailings storage facility under a permanent water cover; and*

During construction activities at the Kemess mine site, all acid-generating and potential acid-generating material was deposited into the KUG tailings storage facility under a permanent water cover.

*3.3.2 collect and treat all waters affected by the Designated Project that do not meet the requirements of the Metal Mining Effluent Regulations and subsection 36(3) of the Fisheries Act, as applicable, prior to the affected waters being deposited in waters frequented by fish.*

As per the Metal Mining Effluent Regulation and the *fisheries Act*, water quality monitoring was conducted in accordance with the Canadian Council of Ministers of the Environment's Water Quality Guidelines for the Protection of Aquatic Life. MMER water quality monitoring will be ongoing through construction to the end of decommissioning.

Contact seepage water from the NAG Waste Rock Dump was collected in the selenium seepage pond. Selenium rich seepage water was then pumped directly to the KUG tailing storage facility through a pump and pipeline system.

### **3.4. Condition 3.6**

*The Proponent shall divert all runoff from the East Pit quarry into the tailings storage facility during construction and operation.*

Construction activities at the Kemess East Pit Quarry during the 2018 reporting year included drilling and blasting for Non-Acid Generating (NAG) source rock. Runoff from the East Pit Quarry drainage reported directly into the tailings storage facility via existing drainage ditches. Most flow is captured by gravity, and the rest is collected in a ditch that reports to Dump Pond 1 which is then pumped to the KUG tailings storage facility. No additional measures or works were implemented. Monitoring of the drainage pattern from the East Pit Quarry will continue through the Construction and Operations phases of the mine life in accordance with the Mine Site Water Management Plan. Photo documentation of the East Pit Quarry drainage area into the KUG tailings storage facility (plate 3.6-1) is present in Appendix B.

### **3.5. Condition 3.7**

*Discuss consultation activities relative to Condition 3.7: The Proponent shall develop, prior to construction and in consultation with Indigenous groups, Gitxsan Wilp Nii Kyap, and relevant authorities, and implement, from the start of construction to the end of decommissioning, a follow-up program to verify the accuracy of the*

*environmental assessment as it pertains to fish and fish habitat and to determine the effectiveness of mitigation measures referred to in conditions 3.1 to 3.6. As part of the follow-up program, the Proponent shall:*

- 3.7.1 monitor quality of water discharged in Attichika Creek during the dewatering of the Kemess South Pit and treat that water to meet the requirements of subsection 36(3) of the Fisheries Act;*
- 3.7.2 monitor surface water quality in Amazay Lake and groundwater movement between the subsidence zone identified by the Proponent during the environmental assessment and Amazay Lake;*
- 3.7.3 monitor changes in channel form and sediment load downstream of the discharge location in Attichika Creek;*
- 3.7.4 monitor changes in water quality in Waste Rock Creek and the tailings storage facility, including changes in selenium concentrations;*
- 3.7.5 monitor the presence and use of spawning habitat by bull trout (*Salvelinus confluentus*) and rainbow trout (*Oncorhynchus mykiss*) downstream of the discharge location in Attichika Creek prior to and after the installation of the discharge pipeline into Attichika Creek. The Proponent shall offset any loss of spawning habitat for bull trout (*Salvelinus confluentus*) and rainbow trout (*Oncorhynchus mykiss*) in Attichika Creek if monitoring results show that spawning habitat loss has occurred; and monitor contaminants, including mercury, in the tissue of fish species harvested by Indigenous groups in Thutade Lake, including bull trout (*Salvelinus confluentus*)*

AuRico Metals submitted its permit application to the Major Mines Permitting Office (MMPO) on August 31, 2017. Prior to the official permit application submission, AuRico Metals consulted with Tsay Keh Nay (TKN) on the development of Fish and Aquatic Effects Monitoring Plans (FAEMP), Wildlife Management and Monitoring Plan, and Mine Site Water Management Plan (MSWMP), circulating draft copies of these plans on June 30, 2017, 60 days in advance of official permit application submission. These plans were developed in consideration of Condition 3.7. AuRico and TKN continue to consult on management plans through the permitting process and through established collaboration and consultation methods espoused within the 2017 Impact Benefit Agreement. Permitting and permitting consultation activities with relevant authorities and TKN as part of the Mine Review Committee (MRC) for KUG is ongoing and anticipated to conclude in Q2 2018. During the permitting process, TKN, via their consultants at Environment Dynamics Incorporated (EDI), provided feedback on Fish and Fish Habitat. TKN comments focused on the Selenium management Plan which outlines a selenium monitoring plan as well as mitigation measures for capturing flows with elevated selenium and addressing potential flow reduction in Waste Rock Creek. TKN is concerned that reduced flows in Waste Rock Creek may result in the environmental flow needs for fish and fish habitat not being met in Waste Rock Creek. In response, AuRico installed an additional monitoring station (WQ-14ds) in 2018 to gather flow data to verify model flow predictions, data from which will be used to inform management decisions if the environmental flow needs in Waste Rock Creek are not being met.

The TKN and AuRico IBA and its precursor the IMA, allows for capacity funding to support Additional Environmental Studies initiated by TKN, proposals for which are put forward to AuRico by TKN. In 2016 the Additional Studies program researched bull trout migration behaviour, spawner residence time and critical habitats in Lower Attichika Creek. Year three of the three-year study is scheduled to continue in summer 2019. Results from the Attichika Creek Bull Trout Study are shared between TKN and AuRico and reported out in the

joint TKN/ AuRico community newsletter.

AuRico circulated the FAEMP and MSWMP to the Gitxsan Wilp Nii Kyap on December 22, 2017. No comments on the plans have been received to date.

## **4. Condition 4: Migratory Birds**

### **4.1. Condition 4.1**

*The Proponent shall carry out Designated Project activities in a manner that protects migratory birds and avoids harming, killing, or disturbing migratory birds or destroying, disturbing, or taking their nests or eggs. In this regard, the Proponent shall take into account Environment and Climate Change Canada's Avoidance Guidelines. The Proponent's actions in applying the Avoidance Guidelines shall be in compliance with the Migratory Birds Convention Act, 1994 and with the Species at Risk Act.*

In accordance with Environment and Climate Change Canada's Avoidance Guidelines and the Kemess Underground Wildlife Management Plan (WMP), pre-clearing surveys for raptor nests and migratory birds were conducted in 2018 prior to vegetation clearing. No nesting birds or active nests were observed within the construction areas during any of these surveys. Photo documentation of the migratory bird surveys (plate 4.1-1) is present in Appendix B.

### **4.2. Condition 4.2**

*The Proponent shall deter migratory birds from accessing the tailings storage facility and seepage ponds until water quality is not harmful to migratory birds.*

Use of the KUG tailing storage facility and seepage ponds by migratory birds was monitored throughout the 2018 reporting year as part of the on-site wildlife reporting. No instances of birds accessing or inhabiting the tailing storage facility or seepage ponds were reported in 2018. Monitoring for use by migratory birds will continue in 2019 and deterrent(s) will be implemented as necessary.

## **5. Condition 5: Human Health**

### **5.1. Condition 5.1**

*The Proponent shall develop, prior to construction and in consultation with Indigenous groups and relevant authorities, a follow-up program to verify the accuracy of the environmental assessment as it pertains to adverse effects on the health of Indigenous Peoples caused by changes in concentrations of contaminants of potential concern identified during the environmental assessment in air, soil, water, and sediment. The Proponent shall implement the follow-up program during construction and operation. As part of the development of the follow-up program, the Proponent shall:*

*5.1.1 identify levels of environmental change relative to established baseline conditions for contaminants of potential concern that would require the Proponent to implement modified or*

*additional mitigation measure(s) to mitigate increased risks to human health; and*

*5.1.2 if monitoring results demonstrate that concentration levels for contaminants of potential concern are greater than the identified levels of environmental change, update the human health risk assessment for the consumption of traditional foods exposed to these contaminants and communicate the results of the updated human health risk assessment to Indigenous groups.*

AuRico Metals circulated the proposed Human Health Follow-up Program to TKN via email on March 20, 2018. A reminder of requests for feedback was discussed at the April 20, 2018 EMC meeting. To date no comments have been received. The Human Health Follow-Up Program dated February 2018 is present in appendix C.

Follow up monitoring was conducted in September 2018 through a baseline soil sampling program for metal concentration. 30 soil samples from various locations and specific land uses on the Kemess mine site and at off-site locations were collected to determine trace metal deposition. Trace metal deposition in soils and their potential impact on various land uses are regulated by the Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (CCME 2007). These guidelines provide Canada-wide standard for the maximum limits of various toxic substances in the soil. Select soil samples exhibited exceeding concentrations of copper, molybdenum, arsenic, selenium and vanadium when compared against CCME 2007 guidelines.

## **6. Condition 6: Current Use of Lands and Resources for Traditional Purposes**

### **6.1. Condition 6.1**

*The Proponent shall install and maintain, during construction and operation, ramps every 100 to 300 metres over the discharge line between the tailing storage facility and Attichika Creek to provide passage for moose (*Alces alces*), woodland caribou (*Rangifer tarandus caribou*), grizzly bear (*Ursus arctos*), and furbearers. The Proponent shall identify the locations of ramps in consultation with Indigenous groups and relevant authorities.*

The KUG discharge line between the tailing storage facility and Attichika Creek was installed from August through October 2018. The entire discharge line was buried at the time of installation; therefore, wildlife access will not be impeded, and installation of ramps became unnecessary. Photo documentation of the buried discharge pipeline (plate 6.1-1) is present in Appendix B.

### **6.2. Condition 6.2**

*The Proponent shall create and maintain, during construction and operation, escape pathways along all access roads associated with the Designated Project, including the northern section of the Omineca Resource Access Road, to allow ungulates to exit the plowed roads. The Proponent shall identify the locations of escape pathways in consultation with Indigenous groups and relevant authorities.*

As per the Wildlife Management and Monitoring Plan, Kemess conducted a monitoring program of the Omineca Resource Access Road (ORAR) snowbanks during the winter months of 2018. Management of snowbanks on the ORAR included ensuring banks remained under one metre in height or that sufficient gaps were present to provide escape pathways to allow ungulates to exit the plowed roads. Two official monitoring events were carried out by Indigenous Group Monitors and Kemess Environmental staff on December 22 and December 31,

2018. The first monitoring events provided a learning opportunity for the staff as several locations were found to have snowbanks over one metre in height but were never consistent for more than a few hundred metres. Therefore, the Kemess team and Indigenous Monitors assessed and agreed the snow banks in these cases to be compliant with the management plan as areas of refuge remained accessible at least every 500 metres. Supplementary information regarding ORAR road and snowbank conditions was collected from truckers intermittently. No events of ORAR snowbank non-compliance were noted in 2018. Photo documentation of the ORAR snowbank survey (plate 6.2-1) is present in Appendix B.

Kemess also completed snow track surveys to monitor the use of escape gaps and high-traffic crossing areas created in snowbanks along the ORAR. This data will be used to selectively install wildlife crossing signs along the ORAR in high-traffic areas in the future.

### **6.3. Condition 6.3**

*The Proponent shall, from the start of construction to the end of decommissioning, remove carrion within 24 hours of its discovery by the Proponent from all access roads associated with the Designated Project, including the northern section of the Omineca Resource Access Road.*

As per the Wildlife Management and Monitoring Plan, Kemess tracked incidental wildlife occurrences on-site and on the Omineca Resource Access Road (ORAR). All wildlife observations by Kemess staff and contractors were communicated to the Kemess environmental department via in-person communication, radio communication, self-documentation, or reporting through the wildlife email hotline. Employees are encouraged to submit photos along with the location, date and time of observation to help confirm the ID of the species and track movement. Supplementary data were collected from truck drivers coming to Kemess along the ORAR, as well as Avalanche Technicians who frequented the ORAR. No instances of carrion were observed on the on-site or on the ORAR during the 2018 reporting year. Carrion monitoring and removal will continue through the life of mine to the end of decommissioning.

### **6.4. Condition 6.4**

*The Proponent shall prohibit employees and contractors associated with the Designated Project from fishing, hunting, and trapping within the Project Area, unless an employee or a contractor is provided access by the Proponent for traditional purposes or for exercising Aboriginal rights, to the extent that such access is safe.*

As per condition 6.4, AuRico has created the Kemess Mine Fishing, Hunting and Gathering Policy on June 29, 2018. The Kemess Mine Fishing and Hunting Policy (FaHP) is designed to ensure safety of Kemess Mine personnel, contractors and the general public in the Kemess Mine area as well as for the protection of fish, wildlife and plant resources at the mine site. The policy defines that hunting, fishing or trapping, mushroom, berry picking, or the gathering of plants is not permitted by mine personnel or contractors at the mine site at any time. The policy is communicated to all employees at the Kemess Mine site through the mandatory Mine Site Orientation. Supplementary signage is posted around site displaying the policy.

### **6.5. Condition 6.5**

*The Proponent shall, prior to construction and in consultation with Indigenous groups and relevant authorities,*

*conduct pre-clearing surveys to identify Western toad (*Anaxyrus boreas*) breeding habitat, and shall implement measures to mitigate the loss of Western toad (*Anaxyrus boreas*) breeding habitat caused by the Designated Project.*

Prior to the official permit application submission AuRico Metals consulted with Tsay Keh Nay (TKN) on the development of the Wildlife Management and Monitoring Plan. To date no comments on the Western Toad preclearing surveys have been received. AuRico and TKN continue to consult on management plans and follow up program development through established collaboration and consultation methods espoused within the 2017 Impact Benefit Agreement.

As per the Wildlife Management and Monitoring Plan, amphibian surveys were conducted from June 6 to July 29, 2018 prior to construction activities in locations that were identified as potential Western Toad (*Anaxyrus boreas*) habitat. AuRico, through its joint Environmental Management Committee (EMC) with TKN discussed plans for the preclearing surveys and results with TKN. Three surveys were conducted by the Takla First Nation and TKD Aboriginal group monitors, accompanied by qualified internal staff and external consultation from Environmental Resources Management (ERM) prior to all new ground disturbance in the Attichika Wetland.

The methodology utilized to determine presence/absence was the visual encounter method following the *Inventory Methods for Pond-breeding Amphibians and Painted Turtles* (1998) standards. Line transects were used which parallel the channel to visually search the area. Since the areas of possible habitat were small, the areas were searched completely in a systematic fashion. No evidence of Western Toad breeding (egg masses, tadpoles, or adults) were encountered during surveys. Considering this, there was a very low chance of encountering Western Toad breeding in the Attichika wetland and work proceeded.

## **6.6. Condition 6.6 and 6.7**

*The Proponent shall conduct pre-clearing surveys to determine the distribution of little brown myotis (*Myotis lucifugus*) and Northern myotis (*Myotis septentrionalis*), and establish, in consultation with Indigenous groups and relevant authorities, buffer zones around active hibernacula and active roosts.*

During the permitting process, TKN, via their consultants at Environment Dynamics Incorporated (EDI), provided feedback on the bat pre-clearing surveys, submitting seven questions. TKN comments focused on the methodology used to identify what species of bat were using roosting structures and identify which roosting structures or nursery bat boxes were actively used.

AuRico conducted initial bat habitat surveys in November of 2017 to inform the initial offsetting requirements for roosting structures. Pre-Clearing surveys were conducted prior to construction from April 17 to April 22, 2018 and thirty-five nursery bat boxes were installed before the start of construction. The April 2018 pre-clearing surveys did not reveal any active hibernacula or roosting activities therefore no active buffer zones are required at this time. Installed bat boxes will be subject to ongoing monitoring to determine usage and if active, will assist in identifying active hibernacula and active roosts and establishing buffer zones.

AuRico, through its joint Environmental Management Committee (EMC) with TKN discussed plans for the preclearing surveys and results with TKN. The Takla Lake First Nation and TKD Aboriginal group monitors, accompanied pre-clearing survey professional and installed the bat roosting structures.

## **6.7. Condition 6.10**

*The Proponent shall develop, prior to construction and in consultation with Indigenous groups and relevant authorities, a follow-up program to verify the accuracy of the environmental assessment as it pertains to the presence of hoary marmot (*Marmota caligata*), white-tailed ptarmigan (*Lagopus leucura*), and short-eared owl (*Asio flammeus*) within the subsidence zone identified by the Proponent during the environmental assessment and within a buffer area of 250 metres along the limits of that subsidence zone. The Proponent shall implement the follow-up program during construction and operation.*

AuRico Metals submitted its permit application to the Major Mines Permitting Office (MMPO) on August 31, 2017. Prior to the official permit application submission AuRico Metals consulted with Tsay Keh Nay (TKN) on the development of the Wildlife Management and Monitoring Plan circulating a draft copy of the plan for comment and feedback on June 30, 2018, 60 days in advance of the official permit submission. Permitting and permitting consultation activities with relevant authorities and TKN as part of the Mine Review Committee (MRC) for KUG is ongoing and concluded in Q2 2018. To date no specific feedback has been received on the subsidence zone follow up program. AuRico and TKN continue to consult on management plans and follow up program development through the permitting process and through established collaboration and consultation methods espoused within the 2017 Impact Benefit Agreement.

## **6.8. Condition 6.11**

*The Proponent shall develop, prior to construction and in consultation with Indigenous groups and relevant authorities, a follow-up program to verify the accuracy of the environmental assessment as it pertains to the effects of changes caused by the Designated Project to the Chase herd of Southern mountain caribou (*Rangifer tarandus caribou*) and the Thudade herd of Northern mountain caribou (*Rangifer tarandus caribou*) on caribou hunting activities for traditional purposes and to determine the effectiveness of the mitigation measures. The Proponent shall implement the follow-up program from the start of construction to the end of decommissioning. As part of the follow-up program, the Proponent shall:*

- 6.11.1 monitor, during construction and the first three years of operation, the use by moose (*Alces alces*), woodland caribou (*Rangifer tarandus caribou*), grizzly bear (*Ursus arctos*), and furbearers of the ramps referred to in condition 6.1 and of the escape pathways referred to in condition 6.2; and*
- 6.11.2 monitor mortality of wildlife on all access roads associated with the Designated Project, including the northern section of the Omineca Resource Access Road.*

Follow up programs for conditions 6.11.1 and 6.11.2 are outlined in previous sections 6.1 and 6.2, respectively. Photo documentation of the wildlife cameras set up for KUG (plate 6.8-1) is present in Appendix B. These programs commenced with the start of construction in 2018 and will continue to the end of mine decommissioning.

# **7. Condition 7: Physical and Cultural Heritage and Structures, Sites, or Things of Historical, Paleontological, or architectural Significance**

## **7.1. Condition 7.1**

*The Proponent shall, for any previously unidentified archeological structures, sites, or things of historical,*

*archaeological, paleontological, or architectural significance discovered by the Proponent or brought to the attention of the Proponent by an Indigenous group, Gitxsan Wilp Nii Kyap, or another party during any phase of the Designated Project: 7.1.1 immediately halt work at the location of the discovery; 7.1.2 have a qualified individual conduct an assessment at the location of the discovery; 7.1.3 inform, forthwith, in writing, Indigenous groups and Gitxsan Wilp Nii Kyap of the discovery, and allow for monitoring by Indigenous groups and Gitxsan Wilp Nii Kyap during archeological work; and 7.1.4 comply with all applicable legislative or legal requirements and associated regulations and protocols respecting the discovery, recording, transferring, and safekeeping of previously unidentified archeological structures, sites, or things of historical, archaeological, paleontological, or architectural significance.*

In early August 2017, an Archeological Impact Assessment (AIA) of five ancillary development areas to the proposed KUG was conducted to ensure compliance with the Heritage Consultation Act (HCA) prior to any ground altering activities. An existing preliminary predictive model was used to guide fieldwork. Fieldwork was conducted over eight days (August 8-15th, 2017) under HCA Section 14 Permit 2017-0263. A total of 70 ha of area was surveyed, 295 tests were excavated, and 15 exposures were inspected. The field crew consisted of Millennia personnel and members of Tsay Keh Dene, Kwadacha, and Takla Lake First Nations.

During the study, one new site, HfSq-3, was found in Area 1 the Discharge Pipeline Corridor, just outside the proposed development footprint corridor. The site is likely older than AD1846 and is therefore automatically protected under the HCA. The site is rated as low scientific significance as a result of comparison with other regional sites and the low density or absence of additional material. This site is unlikely to be impacted during construction based on current designs. A draft report on the AIA was received by AuRico on February 14, 2018. CEAA, TKN and Gitxsan Wilp Nii Kyap received written notification of discovery of site HfSq-3 on March 22, 2018. An electronic copy of the final AIA report was shared with TKN and Gitxsan Wilp Nii Kyap via our filesharing site on April 23, 2018.

In 2018 an Archaeological Chance Find Procedure was been developed for the Project. It provides a standard operating procedure should heritage sites, not identified during baseline studies, be discovered during Construction or Operations. The Archaeological Chance Find Procedure includes the following steps if personnel suspect archaeological, traditional use, and paleontological materials or human remains are discovered:

- immediately contact the Environmental Superintendent or Construction Manager to implement a stop work order to reduce/minimize impacts to the site;
- leave the material in place and protect and/or mark the area around the site, and do not disturb or collect any archaeological, paleontological, heritage materials, or human remains; and
- report the discovery to their immediate Supervisor.

The General Manager and the Project Archaeologist will also be notified as outlined in the management plan. The Archaeology Branch and local Aboriginal groups/organizations will be advised of the discovery, if necessary. Final mitigation measures will be determined through consultation with the Archaeology Branch.

No new archaeological sites were identified in 2018 from chance encounters.

## **7.2. Condition 7.2**

*The Proponent shall not undertake any ground altering activities within 50 metres of the boundaries of archeological sites, unless authorized by relevant authorities.*

As per the Heritage Management Plan, all known archaeological sites within 150 m of the Project footprint have been clearly indicated on development maps in relation to the Project footprint components. If construction is occurring within 150 m of a protected heritage site, the site will be flagged or temporarily fenced to serve as a visible barrier. The Kemess Environment Monitor will monitor for archaeological site impacts or situations where construction activities occur less than 50 m from a site. Should impacts be anticipated or found to have occurred within 50 m of an archaeological site, the Project Archaeologist will be contacted to determine if additional mitigation measures are required. Environment Department staff members will be fully briefed on the HMP and resulting mitigation measures.

During construction the preferred mitigation measure for archaeological sites was avoidance, therefore, construction monitoring was only required on one occasion during the 2018 reporting year. Construction of the KUG tailing storage facility water discharge pipeline was within 150 metres of archaeological site HfSq-3. Construction did not encroach within 50 metres of the Archaeological site HfSq-3 and no adverse effects to the site were found.

## **8. Condition 8: Independent Environmental Monitor**

### **8.1. Condition 8.1**

*Prior to the start of construction, the Proponent shall retain the service of an independent environmental monitor, who is a qualified individual as it pertains to environmental monitoring of mining projects in British Columbia, to observe, record, and report on the implementation of the mitigation measures set out in this Decision Statement.*

Environmental Dynamics Inc. (EDI) was retained in 2018 as the KUG Mine Site independent environmental monitor (IEM). A formal Terms of Engagement Document was submitted to AuRico by EDI in April 2018. EDI has been performing as an IEM throughout the reporting period.

### **8.2. Condition 8.2**

*The Proponent shall give the independent environmental monitor the authority to stop Designated Project activities that do not comply with the conditions set out in this Decision Statement.*

As per the 2018 IEM Terms of Engagement document, the IEM will have authority for stop work and will keep record of all stop work orders where works are resulting in, or are at imminent risk of, causing material environmental damage, in accordance with the EA Certificate and applicable legislation.

A Stop Work Order may be issued under two circumstances:

- In the event where an environmental incident, or where the completion of works at or in proximity to the location of the incident, has the potential to cause material unauthorized environmental impacts.

- In the event that a lack of compliance with the Certificate conditions, authorizations/permits and management plans has the potential to cause unauthorized adverse material environmental effects and previous communications with the responsible parties have not led reasonable corrective action.

Under both circumstances, the IEM will inform the responsible parties, EAO, CEAA and the Holder of the issue within 24 hours, and provide rationale and high-level options/considerations for achieving compliance as soon as possible. A recommendation to lift the stop work order will occur when the IEM is satisfied that the appropriate steps have been taken to ensure compliance. To date no STOP WORK orders have been issued by the IEM.

### **8.3. Condition 8.3**

*The Proponent shall require the independent environmental monitor to prepare reports that include:*

- 8.3.1 a description, including through photo evidence, of the Designated Project activities that occurred and the mitigation measures that were applied during the period covered by the report; and*
- 8.3.2 if any, a description, including through photo evidence, of occurrences of non-compliance related to the implementation of mitigation measures set out in this Decision Statement Page 12 of 14 observed during the period covered by the report, the date of the occurrence(s) of non- compliance, whether Designated Project activities were stopped as a result of non- compliance, how the occurrence(s) of non-compliance was or were corrected by the Proponent, the date that the corrective action(s) was or were completed by the Proponent, or, if any, the status of pending occurrence(s) non- compliance that have not been corrected yet, and a description of any adverse environmental effect(s) associated with the occurrence(s) of non-compliance.*

As per the 2018 IEM Terms of Engagement document, a monthly meeting is proposed to occur with the IEM, the Holder, EAO, CEAA, and other Regulators and Aboriginal Groups. This will be aligned with EMC meetings. The Holder will provide a summary of Project activities since the last meeting and forecasted construction activities. The IEM will provide an update on the following items.

- Review of previous environmental concerns and status; and
- Summary of new environmental non-compliances and incidences, all corrective actions undertaken and successes of those actions.

A summary of compliance will be provided in a monthly report. The IEM will document, through written and photo documentation, any relevant inspections and communications pertaining to any non-compliance within the IEM checklist and the issue tracking log. Non-compliances will be closed out pending corrective action and removed from the issue tracking log in the subsequent report following indication of closure. Corrective actions by the Holder will be documented in the monthly report along with the date of corrective actions, the status of pending occurrences that have not been corrected yet, and a description of any adverse environmental effects associated with the occurrences of non-compliance.

The first IEM inspection commenced July 11-12, 2018, and AuRico Metals has received monthly IEM compliance reports summarizing site visits for July through December 2018. IEM reports will continue to be received by AuRico Metals through all phases of the Kemess mine life.

#### **8.4. Condition 8.4**

*The Proponent shall require the independent environmental monitor to retain the reports referred to in condition 8.3 until the end of decommissioning. The Proponent shall require the independent environmental monitor to provide the reports referred to in condition 8.3 to the Agency, Indigenous groups, and relevant federal authorities within 10 days of their production. If occurrence(s) of non-compliance are observed by the independent environmental monitor, the Proponent shall require the independent environmental monitor to report all occurrence(s) of non-compliance directly to the Agency, Indigenous groups, and relevant federal authorities immediately.*

AuRico has communicated the requirement for the IEM to retain compliance reports until the end of decommissioning. The IEM and IEM Support will be tasked with documenting compliance with the Certificate conditions and management plan commitments throughout all Project phases. The IEM is to provide information to EAO, CEAA, Ministry Energy and Mines (MEM), Ministry of Environment (ENV), Forests, Lands, Natural Resources Operations & Rural Development (MFLNRORD) and to Aboriginal Groups as directed by EAO and set out in the Decision Statement. The IEM will not provide such information or reports to the Holder in advance of providing such information or reports to the EAO and CEAA. The IEM will submit monthly (or following their site visit) a report to the Holder, the EAO, and CEAA simultaneously via email. Information or reports related to non-compliance will not be submitted to the Holder in advance of providing the information to the EAO and CEAA. To align with Condition No. 12 of the Certificate related to the Environmental Monitoring Committee (EMC), and item 8.4 of the Decision Statement to provide reports to Indigenous groups, the IEM will submit the monthly (subject to site visit) and end of phase reports to the EMC on behalf of the Holder.

### **9. Condition 9: Accidents and Malfunctions**

#### **9.1. Conditions 9.1, 9.2, 9.3, 9.4**

*9.1 The Proponent shall take all reasonable measures to prevent accidents and malfunctions that may result in adverse environmental effects.*

*9.2 The Proponent shall, prior to construction, consult with Indigenous groups and relevant authorities on the measures to be implemented to prevent accidents and malfunctions.*

*9.3 The Proponent shall, prior to construction and in consultation with Indigenous groups and relevant authorities, develop an emergency response plan in relation to the Designated Project.*

*9.4 In the event of an accident or malfunction with the potential to cause adverse environmental effects, the Proponent shall implement the emergency response plan referred to in condition 9.3 and shall:*

*9.4.1 notify Indigenous groups, Gitxsan Wilp Nii Kyap, and relevant authorities of the accident or malfunction as soon as possible, and notify the Agency in writing;*

9.4.2 implement immediate measures to mitigate any adverse environmental effects associated with the accident or malfunction;

9.4.3 submit a written report to the Agency no later than 30 days after the day on which the accident or malfunction took place. The written report shall include:

9.4.3.1 a description of the accident or malfunction and of its adverse environmental effects;

9.4.3.2 the measures that were taken by the Proponent to mitigate the adverse environmental effects of the accident or malfunction;

9.4.3.3 any views received from Indigenous groups, Gitxsan Wilp Nii Kyap, and relevant authorities with respect to the accident or malfunction, its adverse environmental effects, and measures taken by the Proponent to mitigate adverse environmental effects; Page 13 of 14

9.4.3.4 a description of any residual adverse environmental effects and any modified or additional measures required by the Proponent to mitigate residual adverse environmental effects;

9.4.3.5 details concerning the implementation of the emergency response plan referred to in condition 9.3; and

9.4.4 submit a written report to the Agency, no later than 90 days after the day on which the accident or malfunction took place, on the changes made to avoid a subsequent occurrence of the accident or malfunction, and on the implementation of any modified or additional measures to mitigate and monitor residual adverse environmental effects and to carry out any required progressive reclamation, taking into account the information in the written report submitted pursuant to condition 9.4.3.

AuRico Metals submitted its permit application to the Major Mines Permitting Office (MMPO) on August 31, 2017. Prior to the official permit application submission AuRico Metals consulted with Tsay Keh Nay (TKN) on the development of the Emergency Response Plan, circulating a draft copy of the plan for comment and feedback on June 30, 2018, 60 days in advance of the official permit submission. The Mine Emergency Response Plan (MERP) is developed in consideration to conditions 9.3 and 9.5. To date no comments from TKN have been received on the draft Mine Emergency Response Plan or the draft Accidents and Malfunctions Communication Plan. AuRico and TKN continue to consult on management plans through the permitting process and through established collaboration and consultation methods espoused within the 2017 Impact Benefit Agreement. Permitting and permitting consultation activities with relevant authorities and TKN as part of the Mine Review Committee (MRC) for KUG is ongoing and concluded in Q2 2018.

Regarding Condition 9.5, AuRico circulated the draft Accidents and Malfunctions Communication Plan to Gitxsan Wilp Nii Kyap on December 22, 2017. No comments on the plan have been received from Gitxsan Wilp Nii Kyap to date.

During the 2018 reporting year, the ERP was not invoked as there were no events that had the potential to cause adverse environmental effects.

## **9.2. Condition 9.5**

*The Proponent shall develop and implement a communication plan in consultation with Indigenous groups and Gitxsan Wilp Nii Kyap. The Proponent shall develop the communication plan prior to construction and shall implement and maintain it up to date from the start of construction to the end of decommissioning. The plan shall include:*

*9.5.1 the types of accidents and malfunctions requiring the Proponent to notify the respective Indigenous groups and Gitxsan Wilp Nii Kyap;*

*9.5.2 the manner by which Indigenous groups and Gitxsan Wilp Nii Kyap shall be notified by the Proponent of an accident or malfunction and of any opportunities for the Indigenous groups and Gitxsan Wilp Nii Kyap to assist in the response to the accident or malfunction; and*

*9.5.3 the contact information of the representatives of the Proponent that the Indigenous groups and Gitxsan Wilp Nii Kyap may contact and of the representatives of the respective Indigenous groups and Gitxsan Wilp Nii Kyap to which the Proponent provides notification.*

As per condition 9.5, the Accidents and Malfunctions Communication Plan was developed in 2018 to guide the co-ordination of communications between the organization and any applicable outside agencies (e.g. regulatory agencies, stakeholders, and the public) in the event of an accident and/or malfunction resulting from the KUG Project. This plan identifies the types of accidents and malfunctions requiring notification to external stakeholders and the timeframe of notification (including updates subsequent to the initial notification) to each Aboriginal Group community and other users of the area that could be affected by the accident and/or malfunction. The Accidents and Malfunctions Management Plan is present in Appendix C.

## **Appendix A:**

### **Decision Statement Conditions – Implementation Activities Undertaken**

**AuRico Metals Inc Kemess Underground****2018 CEAA Annual Report**

<b>Section</b>	<b>Sub-section</b>	<b>Condition</b>	<b>Implementation Activities Undertaken</b>
<b>2</b>	<b>General Conditions</b>		
2.1		The Proponent shall ensure that its actions in meeting the conditions set out in this Decision Statement are considered in a careful and precautionary manner, promote sustainable development, are informed by the best information and knowledge available at the time the Proponent takes action, including community and Indigenous traditional knowledge, are based on methods and models that are recognized by standard-setting bodies, are undertaken by qualified individuals, and have applied the best available economically achievable technologies.	Refer to 2018 CEAA Annual Report Section 2.
2.2		The Proponent shall, where consultation is a requirement of a condition set out in this Decision Statement:	
	2.2.1	provide a written notice of the opportunity for the party or parties being consulted to present their views and information on the subject of the consultation;	This practice has been implemented and will continue for the duration of the Project.
	2.2.2	provide sufficient information on the scope and the subject matter of the consultation and a reasonable period of time to permit the party or parties being consulted to prepare their views and information;	This practice has been implemented and will continue for the duration of the Project.
	2.2.3	provide a full and impartial consideration of any views and information presented by the party or parties being consulted on the subject matter of the consultation; and	This practice has been implemented and will continue for the duration of the Project.
	2.2.4	advise in a timely manner the party or parties being consulted on how their views and information have been considered by the Proponent.	This practice has been implemented and will continue for the duration of the Project.
2.3		The Proponent shall, where consultation with Indigenous groups is a requirement of a condition set out in this Decision Statement, communicate with each Indigenous group with respect to the manner by which to satisfy the consultation requirements referred to in condition 2.2, including methods of notification, the type of information and the period of time to be provided when seeking input, the process for full and impartial	This practice has been implemented and will continue for the duration of the Project.

		consideration of any views and information presented on the subject of the consultation, and the means by which Indigenous groups will be informed of how their views and information have been considered by the Proponent.	
2.4		The Proponent shall, where a follow-up program is a requirement of a condition set out in this Decision Statement, determine, as part of the development of the follow-up program and in consultation with Indigenous groups and relevant authorities, the following information, for each follow-up program:	Refer to 2018 CEAA Annual Report.
	2.4.1	the methodology, location, frequency, timing, and duration of monitoring associated with the follow-up program as well as the scope, content, and frequency of reporting of the follow-up results;	This practice has been implemented in 2018 and will continue for the duration of the Project.
	2.4.2	the levels of environmental change relative to established baseline conditions that would require the Proponent to implement additional mitigation measure(s), including instances where the Proponent may require Designated Project activities to be stopped; and	This practice has been implemented in 2018 and will continue for the duration of the Project.
	2.4.3	the range of technically and economically feasible mitigation measures to be implemented by the Proponent if monitoring conducted as part of the follow-up program shows that the levels of environmental change referred to in condition 2.4.2 have been reached or exceeded.	This practice has been implemented in 2018 and will continue for the duration of the Project.
2.5		The Proponent shall submit the information referred to in condition 2.4 to the Agency prior to the implementation of a follow-up program. The Proponent shall update that information in consultation with Indigenous groups and relevant authorities during the implementation of the follow-up program, and shall provide the updated information to the Agency, Indigenous groups, and relevant authorities within 30 days of the information being updated.	This practice has been implemented in 2018 and will continue for the duration of the Project.
2.6		The Proponent shall, where a follow-up program is a requirement of a condition set out in this Decision Statement:	
	2.6.1	conduct the follow-up program according to the information determined pursuant to condition 2.4;	This practice has been implemented in 2018 and will continue for the duration of the Project.
	2.6.2	undertake monitoring and analysis to verify the accuracy of the environmental assessment as it pertains to the particular condition and/or to determine the effectiveness of any mitigation measure(s);	This practice has been implemented in 2018 and will

			continue for the duration of the Project.
	2.6.3	determine whether modified or additional mitigation measures are required based on the monitoring and analysis undertaken pursuant to condition 2.6.2; and	This practice has been implemented in 2018 and will continue for the duration of the Project.
	2.6.4	if modified or additional mitigation measures are required pursuant to condition 2.6.3, 2.6.4develop and implement the modified or additional mitigation measures in a timely manner and monitor them pursuant to condition 2.6.2.	This condition is understood and will continue for the duration of the Project.
2.7		Where consultation with Indigenous groups is a requirement of a follow-up program, the Proponent shall discuss with each Indigenous group opportunities for the participation of that Indigenous group in the implementation of the follow-up program, including the analysis of the follow-up results and whether modified or additional mitigation measures are required, as set out in condition 2.6.	This condition is understood and will continue for the duration of the Project.
2.8		The Proponent shall follow the consultation process outlined in conditions 2.3, 2.4, 2.5, and 2.7 when consulting Gitxsan Wilp Nii Kyap for the purpose of conditions 3.7 and 9.5.	Refer to 2018 CEAA Annual Report Sections 3 and 9.
2.9		The Proponent shall, commencing in the reporting year during which the Proponent begins the implementation of the conditions set out in this Decision Statement, prepare an annual report that sets out:	Refer to the 2018 CEAA Annual Report.
	2.9.1	the activities undertaken in the reporting year to comply with each of the conditions set out in this Decision Statement;	Implementation activities undertaken are tabulated in this Appendix.
	2.9.2	how the Proponent complied with condition 2.1;	Refer to 2018 CEAA Annual Report Section 2.
	2.9.3	for conditions set out in this Decision Statement for which consultation is a requirement, how the Proponent considered any views and information that the Proponent received during or as a result of the consultation;	Refer to 2018 CEAA Annual Report Section 2.
	2.9.4	the information referred to in conditions 2.4 and 2.5 for each follow-up program;	This condition is understood and will continue for the duration of the Project.
	2.9.5	the results of the follow-up program requirements identified in conditions 3.7, 4.3, 5.1, 6.10, and 6.11; and	This condition is understood and will continue for the duration of the Project.

	2.9.6	any modified or additional mitigation measures implemented or proposed to be implemented by the Proponent, as determined under condition 2.6.	This condition is understood and will continue for the duration of the Project.
2.10		The Proponent shall submit to the Agency the annual report referred to in condition 2.9, including an executive summary in both official languages, no later than March 31 following the reporting year to which the annual report applies.	Refer to 2018 CEAA Annual Report
2.11		The Proponent shall publish on the Internet, or any medium which is widely publicly available, the annual reports and the executive summaries referred to in conditions 2.9 and 2.10, the reports related to accidents and malfunctions referred to in conditions 9.4.3 and 9.4.4, the communication plan referred to in condition 9.5, the implementation schedule referred to in condition 10.1, and any update(s) or revision(s) to the above documents, upon submission of these documents to the parties referenced in the respective conditions. The Proponent shall keep these documents publicly available throughout construction and operation and until the end of decommissioning. The Proponent shall notify the Agency, Indigenous groups, and Gitxsan Wilp Nii Kyap of the availability of these documents upon publication.	The 2018 Annual Report and executive summary will be available <a href="#">on the Centerra Gold Corporate website</a> .
2.12		The Proponent shall notify the Agency and Indigenous groups in writing no later than 60 days after the day on which there is a transfer of ownership, care, control, or management of the Designated Project in whole or in part.	Not applicable. No activity undertaken.
2.13		The Proponent shall consult with Indigenous groups prior to initiating any material change(s) to the Designated Project that may result in adverse environmental effects and shall notify the Agency in writing no later than 60 days prior to initiating the change(s).	Not applicable. No activity undertaken.
2.14		In notifying the Agency pursuant to condition 2.13, the Proponent shall provide the Agency with a description of the potential adverse environmental effects of the change(s) to the Designated Project, the measures proposed to be implemented by the Proponent to mitigate adverse environmental effects, and the results of the consultation with Indigenous groups.	Not applicable. No activity undertaken.
<b>3</b>	<b>Fish and Fish Habitat</b>		
3.1		The Proponent shall implement erosion and sedimentation control measures within the Project area during all phases of the Designated Project to avoid the deposit of deleterious substances in waters frequented by fish.	Activities conducted were in accordance with the SEPSCP. Refer to 2018 CEAA Annual Report Section 3.1.

3.2		The Proponent shall, taking into consideration Fisheries and Oceans Canada's <i>Measures to Avoid Causing Harm to Fish and Fish Habitat Including Aquatic Species at Risk</i> , implement mitigation measures when conducting Designated Project activities to avoid causing harm to fish and fish habitat, including timing work in or around water to respect the timing windows identified to protect fish.	Refer to 2018 CEAA Annual Report Section 3.2.
3.3		The Proponent shall comply with the <i>Metal Mining Effluent Regulations</i> and subsection 36(3) of the <i>Fisheries Act</i> regarding the deposit of effluent from the Designated Project in water frequented by fish, taking into account the Canadian Council of Ministers of the Environment's <i>Water Quality Guidelines for the Protection of Aquatic Life</i> , from the start of construction to the end of decommissioning. In doing so, the Proponent shall:	Refer to 2018 CEAA Annual Report Section 3.3.
	3.3.1	place all acid-generating and potentially acid-generating material into the tailings storage facility and submerge all such materials placed in the tailings storage facility under a permanent water cover; and	Refer to 2018 CEAA Annual Report Section 3.3.1.
	3.3.2	collect and treat all waters affected by the Designated Project that do not meet the requirements of the <i>Metal Mining Effluent Regulations</i> and subsection 36(3) of the <i>Fisheries Act</i> , as applicable, prior to the affected waters being deposited in waters frequented by fish.	Refer to 2018 CEAA Annual Report Section 3.3.2.
3.4		The Proponent shall install hydraulic plugs in the declines before the underground mine is flooded to direct seepage from the flooded underground mine towards East Cirque Creek.	Not applicable in 2018. No underground construction activities took place.
3.5		The Proponent shall, in a manner that complies with the <i>Metal Mining Effluent Regulations</i> and subsection 36(3) of the <i>Fisheries Act</i> , discharge water from the tailings storage facility into Attichika Creek during construction and the first year of operation such that flow rates downstream of the discharge location are within the range of minimum and maximum flow rates naturally occurring in Attichika Creek and shall only discharge water into Attichika Creek during open water months.	Not applicable in 2018. No dewatering activities took place in 2018.
3.6		The Proponent shall divert all runoff from the East Pit quarry into the tailings storage facility during construction and operation.	This practice has been implemented in 2018 and will continue for the duration of the Project.
3.7		The Proponent shall develop, prior to construction and in consultation with Indigenous groups, Gitxsan Wilp Nii Kyap, and relevant authorities, and implement, from the start of construction to the end of decommissioning, a follow-up program to verify the accuracy of the environmental assessment as it pertains to fish and fish habitat and to	

		determine the effectiveness of mitigation measures referred to in conditions 3.1 to 3.6. As part of the follow-up program, the Proponent shall:	
	3.7.1	monitor quality of water discharged in Attichika Creek during the dewatering of the Kemess South Pit and treat that water to meet the requirements of subsection 36(3) of the <i>Fisheries Act</i> ;	Not applicable in 2018. No dewatering activities took place in 2018.
	3.7.2	monitor surface water quality in Amazay Lake and groundwater movement between the subsidence zone identified by the Proponent during the environmental assessment and Amazay Lake;	Not applicable in 2018. No dewatering activities took place in 2018.
	3.7.3	monitor changes in channel form and sediment load downstream of the discharge location in Attichika Creek;	Not applicable in 2018. No dewatering activities took place in 2018.
	3.7.4	monitor changes in water quality in Waste Rock Creek and the tailings storage facility, including changes in selenium concentrations;	This practice has been implemented in 2018 and will continue for the duration of the Project.
	3.7.5	monitor the presence and use of spawning habitat by bull trout ( <i>Salvelinus confluentus</i> ) and rainbow trout ( <i>Oncorhynchus mykiss</i> ) downstream of the discharge location in Attichika Creek prior to and after the installation of the discharge pipeline into Attichika Creek. The Proponent shall offset any loss of spawning habitat for bull trout ( <i>Salvelinus confluentus</i> ) and rainbow trout ( <i>Oncorhynchus mykiss</i> ) in Attichika Creek if monitoring results show that spawning habitat loss has occurred; and	Monitoring was initiated in 2017 and continued through 2018. Offsetting requirements have yet to be identified.
	3.7.6	monitor contaminants, including mercury, in the tissue of fish species harvested by Indigenous groups in Thutade Lake, including bull trout ( <i>Salvelinus confluentus</i> ).	This practice has been implemented in 2018 and will continue for the duration of the Project.
<b>4</b>	<b>Migratory Birds</b>		
4.1		The Proponent shall carry out Designated Project activities in a manner that protects migratory birds and avoids harming, killing, or disturbing migratory birds or destroying, disturbing, or taking their nests or eggs. In this regard, the Proponent shall take into account Environment and Climate Change Canada's <i>Avoidance Guidelines</i> . The Proponent's actions in applying the <i>Avoidance Guidelines</i> shall be in compliance with the <i>Migratory Birds Convention Act, 1994</i> and with the <i>Species at Risk Act</i> .	The condition is understood and will apply for the duration of the Project. Refer to 2018 CEAA Report Section 4.1.
4.2		The Proponent shall deter migratory birds from accessing the tailings storage facility and seepage ponds until water quality is not harmful to migratory birds.	This practice has been implemented in 2018 and will

			continue for the duration of the Project. Refer to 2018 CEAA Report Section 4.2
4.3		The Proponent shall develop, prior to construction and in consultation with Indigenous groups and relevant authorities, a follow-up program to determine the effectiveness of the mitigation measures to avoid harm to migratory birds, their eggs, and nests, including the mitigation measures used to comply with conditions 4.1 and 4.2. The Proponent shall implement the follow-up program from the start of construction to the end of decommissioning.	Refer to 2018 CEAA Annual Report section 4.
<b>5</b>	<b>Human Health</b>		
5.1		The Proponent shall develop, prior to construction and in consultation with Indigenous groups and relevant authorities, a follow-up program to verify the accuracy of the environmental assessment as it pertains to adverse effects on the health of Indigenous Peoples caused by changes in concentrations of contaminants of potential concern identified during the environmental assessment in air, soil, water, and sediment. The Proponent shall implement the follow-up program during construction and operation. As part of the development of the follow-up program, the Proponent shall:	Refer to 2018 CEAA Annual Report Section 5.1.
	5.1.1	identify levels of environmental change relative to established baseline conditions for contaminants of potential concern that would require the Proponent to implement modified or additional mitigation measure(s) to mitigate increased risks to human health; and	Not applicable in 2018, as follow up programs were initiated in 2018 and will continue for the duration of the project.
	5.1.2	if monitoring results demonstrate that concentration levels for contaminants of potential concern are greater than the identified levels of environmental change, update the human health risk assessment for the consumption of traditional foods exposed to these contaminants and communicate the results of the updated human health risk assessment to Indigenous groups.	Not applicable in 2018, as follow up programs were initiated in 2018 and will continue for the duration of the project.
<b>6</b>	<b>Current use of lands and resources for traditional purposes</b>		
6.1		The Proponent shall install and maintain, during construction and operation, ramps every 100 to 300 metres over the discharge line between the tailing storage facility and Attichika Creek to provide passage for moose ( <i>Alces alces</i> ), woodland caribou ( <i>Rangifer tarandus caribou</i> ), grizzly bear ( <i>Ursus arctos</i> ), and furbearers. The Proponent shall identify the locations of ramps in consultation with Indigenous groups and relevant authorities.	Not applicable. No ramps required as the entire discharge line between the tailing storage facility and Attichika Creek was buried during construction and installation. Refer to 2018 CEAA Annual Report section 6.1.

6.2		The Proponent shall create and maintain, during construction and operation, escape pathways along all access roads associated with the Designated Project, including the northern section of the Omineca Resource Access Road, to allow ungulates to exit the plowed roads. The Proponent shall identify the locations of escape pathways in consultation with Indigenous groups and relevant authorities.	This practice has been implemented in 2018 and will continue for the duration of the Project. Refer to 2018 CEAA Annual Report section 6.2.
6.3		The Proponent shall, from the start of construction to the end of decommissioning, remove carrion within 24 hours of its discovery by the Proponent from all access roads associated with the Designated Project, including the northern section of the Omineca Resource Access Road.	This practice has been implemented in 2018 and will continue for the duration of the Project. Refer to 2018 CEAA Annual Report section 6.3.
6.4		The Proponent shall prohibit employees and contractors associated with the Designated Project from fishing, hunting, and trapping within the Project Area, unless an employee or a contractor is provided access by the Proponent for traditional purposes or for exercising Aboriginal rights, to the extent that such access is safe.	This practice has been implemented in 2018 and will continue for the duration of the Project. Refer to 2018 CEAA Annual Report section 6.4.
6.5		The Proponent shall, prior to construction and in consultation with Indigenous groups and relevant authorities, conduct pre-clearing surveys to identify Western toad ( <i>Anaxyrus boreas</i> ) breeding habitat, and shall implement measures to mitigate the loss of Western toad ( <i>Anaxyrus boreas</i> ) breeding habitat caused by the Designated Project.	This practice has been implemented prior to construction activities in 2018. Refer to 2018 CEAA Annual Report section 6.5.
6.6		The Proponent shall conduct pre-clearing surveys to determine the distribution of little brown myotis ( <i>Myotis lucifugus</i> ) and Northern myotis ( <i>Myotis septentrionalis</i> ), and establish, in consultation with Indigenous groups and relevant authorities, buffer zones around active hibernacula and active roosts.	This practice has been implemented prior to construction activities in 2018. Refer to 2018 CEAA Annual Report section 6.6.
6.7		The Proponent shall install, prior to construction, and maintain, during construction and operation, roosting structures to offset any loss of little brown myotis ( <i>Myotis lucifugus</i> ) and Northern myotis ( <i>Myotis septentrionalis</i> ) roosting habitat.	This practice has been implemented prior to construction activities in 2018. Refer to 2018 CEAA Annual Report section 6.6.
6.8		The Proponent shall develop and implement a follow-up program to monitor the little brown myotis ( <i>Myotis lucifugus</i> ) and Northern myotis ( <i>Myotis septentrionalis</i> ) usage of buffer zones and roosting structures to determine the effectiveness of the mitigation measures during construction and operation.	This program has been developed in 2018 and will be implemented throughout the Project.

6.9		The Proponent shall, in consultation with Indigenous groups, undertake progressive reclamation of the habitats disturbed by the Designated Project. The Proponent shall use native species when undertaking that progressive reclamation.	This practice has been implemented in 2018 and will continue for the duration of the Project.
6.10		The Proponent shall develop, prior to construction and in consultation with Indigenous groups and relevant authorities, a follow-up program to verify the accuracy of the environmental assessment as it pertains to the presence of hoary marmot ( <i>Marmota caligata</i> ), white-tailed ptarmigan ( <i>Lagopus leucura</i> ), and short-eared owl ( <i>Asio flammeus</i> ) within the subsidence zone identified by the Proponent during the environmental assessment and within a buffer area of 250 metres along the limits of that subsidence zone. The Proponent shall implement the follow-up program during construction and operation.	This practice has been implemented in 2018 and will continue for the duration of the Project. Refer to 2018 CEAA Report Section 6.7.
6.11		The Proponent shall develop, prior to construction and in consultation with Indigenous groups and relevant authorities, a follow-up program to verify the accuracy of the environmental assessment as it pertains to the effects of changes caused by the Designated Project to the Chase herd of Southern mountain caribou ( <i>Rangifer tarandus caribou</i> ) and the Thudade herd of Northern mountain caribou ( <i>Rangifer tarandus caribou</i> ) on caribou hunting activities for traditional purposes and to determine the effectiveness of the mitigation measures. The Proponent shall implement the follow-up program from the start of construction to the end of decommissioning. As part of the follow-up program, the Proponent shall:	Refer to 2018 CEAA Annual Report Section 6.8.
	6.11.1	monitor, during construction and the first three years of operation, the use by moose ( <i>Alces alces</i> ), woodland caribou ( <i>Rangifer tarandus caribou</i> ), grizzly bear ( <i>Ursus arctos</i> ), and furbearers of the ramps referred to in condition 6.1 and of the escape pathways referred to in condition 6.2; and	This practice has been implemented in 2018 and will continue for the duration of the Project.
	6.11.2	monitor mortality of wildlife on all access roads associated with the Designated Project, including the northern section of the Omineca Resource Access Road.	This practice has been implemented in 2018 and will continue for the duration of the Project.
6.12		The Proponent shall provide Indigenous groups with the implementation schedule, updates, or revisions to the implementation schedule pursuant to conditions 10.1 to 10.3 at the same time the Proponent provides these documents to the Agency.	This practice has been implemented in 2018 and will continue for the duration of the Project.
7	<b>Physical and cultural heritage structures, sites, or things of historical, archaeological, paleontological, or architectural significance</b>		

7.1		<p>The Proponent shall, for any previously unidentified archeological structures, sites, or things of historical, archaeological, paleontological, or architectural significance discovered by the Proponent or brought to the attention of the Proponent by an Indigenous group, Gitxsan Wilp Nii Kyap, or another party during any phase of the Designated Project:</p>	<p>A Heritage Management Plan and accompanying Heritage Chance Find Procedure was developed as part of the 2017 KUG permit application package. A draft pre-construction Archaeological Impact Assessment report received on February 14, 2018 identified one new site. Refer to 2018 CEAA Annual Report Section 7.1.</p>
	7.1.1	<p>immediately halt work at the location of the discovery;</p>	<p>A Heritage Management Plan and accompanying Heritage Chance Find Procedure was developed as part of the 2017 KUG permit application package. A draft pre-construction Archaeological Impact Assessment report received on February 14, 2018 identified one new site. Refer to 2018 CEAA Annual Report Section 7.1.</p>
	7.1.2	<p>have a qualified individual conduct an assessment at the location of the discovery;</p>	<p>A Heritage Management Plan and accompanying Heritage Chance Find Procedure was developed in as part of the 2017 KUG permit application package. A draft pre-construction Archaeological Impact Assessment report received on February 14, 2018 identified one new site. Refer to 2018 CEAA Annual Report Section 7.1.</p>

	7.1.3	inform, forthwith, in writing, Indigenous groups and Gitxsan Wilp Nii Kyap of the discovery, and allow for monitoring by Indigenous groups and Gitxsan Wilp Nii Kyap during archeological work; and	A Heritage Management Plan and accompanying Heritage Chance Find Procedure was developed as part of the 2017 KUG permit application package. A draft pre-construction Archaeological Impact Assessment report received on February 14, 2018 identified one new site. Refer to 2018 CEAA Annual Report Section 7.1.
	7.1.4	comply with all applicable legislative or legal requirements and associated regulations and protocols respecting the discovery, recording, transferring, and safekeeping of previously unidentified archeological structures, sites, or things of historical, archaeological, paleontological, or architectural significance.	A Heritage Management Plan and accompanying Heritage Chance Find Procedure was developed as part of the 2017 KUG permit application package. A draft pre-construction Archaeological Impact Assessment report received on February 14, 2018 identified one new site. Refer to 2018 CEAA Annual Report Section 7.1.
7.2		The Proponent shall not undertake any ground altering activities within 50 metres of the boundaries of archeological sites, unless authorized by relevant authorities.	A Heritage Management Plan and accompanying Heritage Chance Find Procedure was developed as part of the 2017 KUG permit application package. A draft pre-construction Archaeological Impact Assessment report received on February 14, 2018 identified one new site. Refer to 2018 CEAA Annual Report Section 7.1.
<b>8</b>	<b>Independent Environmental Monitor</b>		

8.1		Prior to the start of construction, the Proponent shall retain the service of an independent environmental monitor, who is a qualified individual as it pertains to environmental monitoring of mining projects in British Columbia, to observe, record, and report on the implementation of the mitigation measures set out in this Decision Statement.	This practice has been implemented in 2018 and will continue for the duration of the Project. Refer to 2018 CEAA Annual Report Section 8.1.
8.2		The Proponent shall give the independent environmental monitor the authority to stop Designated Project activities that do not comply with the conditions set out in this Decision Statement.	This practice has been implemented in 2018 and will continue for the duration of the Project. Refer to 2018 CEAA Annual Report Section 8.2.
8.3		The Proponent shall require the independent environmental monitor to prepare reports that include:	This practice has been implemented in 2018 and will continue for the duration of the Project. Refer to 2018 CEAA Annual Report Section 8.3.
	8.3.1	a description, including through photo evidence, of the Designated Project activities that occurred and the mitigation measures that were applied during the period covered by the report; and	This practice has been implemented in 2018 and will continue for the duration of the Project. Refer to 2018 CEAA Annual Report Section 8.3.
	8.3.2	a description, including through photo evidence, of occurrences of non-compliance related to the implementation of mitigation measures set out in this Decision Statement observed during the period covered by the report, the date of the occurrence(s) of non-compliance, whether Designated Project activities were stopped as a result of non-compliance, how the occurrence(s) of non-compliance was or were corrected by the Proponent, the date that the corrective action(s) was or were completed by the Proponent, or, if any, the status of pending occurrence(s) non-compliance that have not been corrected yet, and a description of any adverse environmental effect(s) associated with the occurrence(s) of non-compliance.	This practice has been implemented in 2018 and will continue for the duration of the Project. Refer to 2018 CEAA Annual Report Section 8.3.
8.4		The Proponent shall require the independent environmental monitor to retain the reports referred to in condition 8.3 until the end of decommissioning. The Proponent shall require the independent environmental monitor to provide the reports referred to in condition 8.3 to the Agency, Indigenous groups, and relevant federal authorities within 10 days of their production. If occurrence(s) of non-compliance are observed by	This practice has been implemented in 2018 and will continue for the duration of the Project. Refer to 2018 CEAA Annual Report Section 8.4.

		the independent environmental monitor, the Proponent shall require the independent environmental monitor to report all occurrence(s) of non-compliance directly to the Agency, Indigenous groups, and relevant federal authorities immediately.	
<b>9</b>	<b>Accidents and malfunctions</b>		
9.1		The Proponent shall take all reasonable measures to prevent accidents and malfunctions that may result in adverse environmental effects.	No accidents or malfunctions with the potential to cause adverse environmental effects occurred during 2018.
9.2		The Proponent shall, prior to construction, consult with Indigenous groups and relevant authorities on the measures to be implemented to prevent accidents and malfunctions.	Refer to 2018 CEAA Annual Report Section 9.2.
9.3		The Proponent shall, prior to construction and in consultation with Indigenous groups and relevant authorities, develop an emergency response plan in relation to the Designated Project.	Refer to 2018 CEAA Annual Report Section 9.3.
9.4		In the event of an accident or malfunction with the potential to cause adverse environmental effects, the Proponent shall implement the emergency response plan referred to in condition 9.3 and shall:	No accidents or malfunctions with the potential to cause adverse environmental effects occurred during 2018.
	9.4.1	notify Indigenous groups, Gitxsan Wilp Nii Kyap, and relevant authorities of the accident or malfunction as soon as possible, and notify the Agency in writing;	No accidents or malfunctions with the potential to cause adverse environmental effects occurred during 2018.
	9.4.2	implement immediate measures to mitigate any adverse environmental effects associated with the accident or malfunction;	No accidents or malfunctions with the potential to cause adverse environmental effects occurred during 2018.
	9.4.3	submit a written report to the Agency no later than 30 days after the day on which the accident or malfunction took place. The written report shall include:	No accidents or malfunctions with the potential to cause adverse environmental effects occurred during 2018.
	9.4.3.1	a description of the accident or malfunction and of its adverse environmental effects;	No accidents or malfunctions with the potential to cause adverse environmental effects occurred during 2018.

	9.4.3.2	the measures that were taken by the Proponent to mitigate the adverse environmental effects of the accident or malfunction;	No accidents or malfunctions with the potential to cause adverse environmental effects occurred during 2018.
	9.4.3.3	any views received from Indigenous groups, Gitxsan Wilp Nii Kyap, and relevant authorities with respect to the accident or malfunction, its adverse environmental effects, and measures taken by the Proponent to mitigate adverse environmental effects;	No accidents or malfunctions with the potential to cause adverse environmental effects occurred during 2018.
	9.4.3.4	a description of any residual adverse environmental effects and any modified or additional measures required by the Proponent to mitigate residual adverse environmental effects;	No accidents or malfunctions with the potential to cause adverse environmental effects occurred during 2018.
	9.4.3.5	details concerning the implementation of the emergency response plan referred to in condition 9.3; and	No accidents or malfunctions with the potential to cause adverse environmental effects occurred during 2018.
	9.4.4	submit a written report to the Agency, no later than 90 days after the day on which the accident or malfunction took place, on the changes made to avoid a subsequent occurrence of the accident or malfunction, and on the implementation of any modified or additional measures to mitigate and monitor residual adverse environmental effects and to carry out any required progressive reclamation, taking into account the information in the written report submitted pursuant to condition 9.4.3.	No accidents or malfunctions with the potential to cause adverse environmental effects occurred during 2018.
9.5		The Proponent shall develop and implement a communication plan in consultation with Indigenous groups and Gitxsan Wilp Nii Kyap. The Proponent shall develop the communication plan prior to construction and shall implement and maintain it up to date from the start of construction to the end of decommissioning. The plan shall include:	Refer to 2018 CEAA Annual Report Section 9.5.
	9.5.1	the types of accidents and malfunctions requiring the Proponent to notify the respective Indigenous groups and Gitxsan Wilp Nii Kyap;	Refer to 2018 CEAA Annual Report Section 9.5.
	9.5.2	the manner by which Indigenous groups and Gitxsan Wilp Nii Kyap shall be notified by the Proponent of an accident or malfunction and of any opportunities for the Indigenous groups and Gitxsan Wilp Nii Kyap to assist in the response to the accident or malfunction; and	Refer to 2018 CEAA Annual Report Section 9.5.

	9.5.3	the contact information of the representatives of the Proponent that the Indigenous groups and Gitxsan Wilp Nii Kyap may contact and of the representatives of the respective Indigenous groups and Gitxsan Wilp Nii Kyap to which the Proponent provides notification.	Refer to 2018 CEAA Annual Report Section 9.5.
<b>10</b>	<b>Implementation schedule</b>		
10.1		The Proponent shall submit an implementation schedule for conditions contained in this Decision Statement to the Agency at least 30 days prior to the start of construction. The implementation schedule shall indicate the commencement and completion dates for each activity relating to conditions set out in this Decision Statement.	Initial implementation schedule for conditions contained in this Decision Statement to the Agency Submitted in 2018.
10.2		The Proponent shall submit an update to this implementation schedule in writing to the Agency every two years on or before March 31, until completion of the activities.	Initial implementation schedule for conditions contained in this Decision Statement to the Agency Submitted in 2018.
10.3		The Proponent shall provide the Agency with a revised implementation schedule if any material change(s) occur from the initial schedule referred to in condition 10.1 or any subsequent update(s). The Proponent shall provide the revised implementation schedule at least 30 days prior to the implementation of the change.	The condition is understood and will apply for the duration of the Project.
<b>11</b>	<b>Record keeping</b>		
11.1		The Proponent shall maintain all records relevant to the implementation of the conditions set out in this Decision Statement, including any records that the Agency considers relevant. The Proponent shall provide the aforementioned records to the Agency upon demand within a timeframe specified by the Agency.	This practice occurred in 2018 and will continue for the duration of the Project.
11.2		The Proponent shall retain all records referred to in condition 11.1 at a facility in Canada. The records shall be retained and made available throughout construction and operation and until the end of decommissioning. The Proponent shall notify the Agency at least 30 days prior to any change to the physical location of the facility where the records are retained and shall provide the address of the new location.	Required information can be accessed from the Kemess Mine Site or Centerra Gold office in Toronto.

## **Appendix B:**

### **Photo Plates**

**Plate 3.6-1 East Pit Quarry Drainage area into the KUG tailings storage facility**



**Plate 6.1-1 KUG tailing storage facility to Attichika Creek discharge line buried**



**Plate 4.1-1: Northern Waterthrush observed during the June 21,2018 pre-clearing survey**



**Plate 6.2.1 ORAR snowbank survey**





Plate 6.11-1 Wildlife Camera Setup



6°F -14°C

12-05-2018 15:41:30

## **Appendix C:**

### **Supporting Documents**



centerraGOLD



## KEMESS UNDERGROUND PROJECT

AuRico Metals Inc., a subsidiary of Centerra Gold Inc.

### **Accidents and Malfunctions Communications Plan**

Version: 3.0

Date: December 2018

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## DOCUMENT TRACKING

DATE ISSUED		Complies With:			
December 2018		EAC Condition #17 Federal EA conditions 2.11, 9.4, and 9.5			
EFFECTIVE DATE		Management Plan			
		Accidents and Malfunctions Communications Plan			ORIGINATING DEPARTMENT
Doc No.:					
REVISION	PREPARED	REVIEWED BY	APPROVED BY	DATE	DESCRIPTION
2.0	C.Gouger	J. Evans	S. Masse	July 2018	
3.0	J. Evans			Dec. 2018	



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## ACRONYMS, ABBREVIATIONS AND DEFINITIONS

Terminology used in this document is defined where it is first used. The following list will assist readers who may choose to review only portions of the document.

<b>Aboriginal Groups</b>	As defined in the BC EAO M-1701 the term used to describe Takla Lake First Nation, Tsay Keh Dene Nation and Kwadacha Nation.
<b>AuRico</b>	AuRico Metals Inc.
<b>BC</b>	British Columbia
<b>CEAA</b>	Canadian Environmental Assessment Agency
<b>CEAA 2012</b>	<i>Canadian Environmental Assessment Act, 2012</i>
<b>CEPA 1999</b>	<i>Canadian Environmental Protection Act, 1999</i>
<b>Code (the)</b>	Health, Safety and Reclamation Code for Mines in British Columbia
<b>EA</b>	Environmental Assessment
<b>EAO</b>	Environmental Assessment Office
<b>EMC</b>	Environmental Management Committee
<b>FLNRO</b>	Ministry of Forests, Lands and Natural Resource Operations (British Columbia)
<b>FMEA</b>	Failure Modes and Effects Analysis
<b>IBA</b>	Impact Benefit Agreement
<b>Indigenous Groups</b>	As defined by CEAA to mean Takla Lake First Nation, Tsay Keh Dene First Nation, and Kwadacha First Nation.
<b>KUG</b>	Kemess Underground
<b>MEM</b>	Ministry of Energy and Mines (British Columbia)
<b>MoE</b>	Ministry of Environment (British Columbia)
<b>Project</b>	KUG Project
<b>TKN</b>	Tse Keh Nay
<b>TSF</b>	Tailings Storage Facility

## 1. PURPOSE AND OBJECTIVES

The purpose of the Accidents and Malfunctions Administration Plan is to guide the co-ordination of communications between the organization and any applicable outside agencies (e.g. regulatory agencies, stakeholders, and the public) in the event of an accident and/or malfunction resulting from the KUG Project. This plan identifies the types of accidents and malfunctions requiring notification to external stakeholders and the timeframe of notification (including updates subsequent to the initial notification) to each Aboriginal Group community and other users of the area that could be affected by the accident and/or malfunction.

Internal communication requirements for accidents and malfunctions are presented in the *Environment Incident Categorization and Reporting Standard* (Centerra 2016) and are not included in the scope of this plan.

## 2. PLANNING

### 2.1 ROLES AND RESPONSIBILITIES

AuRico Metals will be responsible for implementing this plan and initiating the communication of Accidents and Malfunctions, if any occur, in accordance with timelines that are mandated by relevant legislation and conditions of the relevant permit.

#### 2.1.1 Mine Manager

The Mine Manager will carry the accountability for the Project's accidents and malfunctions performance. The Mine Manager will be responsible for ensuring that sufficient people, equipment and facilities are available for emergencies. As such, the Mine Manager will be responsible for the funding of all costs related to establishing, equipping, operating and maintaining Fire & Mine Rescue apparatus and equipment. The Mine Manager will be responsible for ensuring adequate training of all personnel involved in emergency operations, and will ultimately be responsible for the direction of the direction of Fire & Mine Rescue personnel.

#### 2.1.2 Safety Supervisor

The Safety Supervisor will be appointed to assist the Kemess Underground Project in developing and implementing this Emergency Response Plan. The Safety Supervisor will have the functional responsibility to develop a training plan for the Fire & Mine Rescue personnel in accordance with industry best practices. The Safety Supervisor will be accountable for ensuring that Fire & Mine Rescue personnel are adequately trained and equipped to deal with emergencies as mandated by the Mine Manager. The Safety Supervisor will be ultimately responsible for advising the Mine Manager of deficiencies pertaining to emergency response and making recommendations for addressing those deficiencies.

### 2.1.3 Management Staff and Key Designated Personnel

Select Management Staff and Key Designated Personnel shall be required to fill roles within the Incident Command System in the event of an emergency. Management Staff and Key Designated Personnel will be responsible for ensuring that they are prepared to fill incident command roles by keeping up with current training. As such, Management Staff will be responsible to participate in training and mock evolutions which demonstrate the effectiveness of the Mine Emergency Response Plan. Management Staff will be accountable to notify the Safety Supervisor of deficiencies in the Emergency Response Plan and make recommendations as necessary. Additionally, Management Staff will be responsible to notify the Safety Supervisor when a vacancy exists in their role or in their alternate's role to ensure that another individual can be appointed and trained to fill that vacancy. In the event of a loss of life or reportable dangerous occurrence (as defined in section 1.7.3 of the Code), the HR & Safety Department will coordinate notification of corporate contacts and regulatory agencies.

### 2.1.4 Stakeholders

The First Nations, FLNRO, MEM, MoE, and Northern Health Authority likewise have a responsibility to maintain their contact information up to date, and to respond in a timely manner with follow up questions, comments, observations, and offers of assistance.

Indigenous Groups have a responsibility to maintain an up to date register of Aboriginal Businesses that identifies to AuRico where they may have the capacity and resources to assist in the event of accidents and malfunctions for which AuRico has inadequate physical resources to deal with the event in question.

If there is a major accident or malfunction that has the potential to affect people who are on the land in the area of Kemess, Indigenous Groups will have the responsibility of notifying AuRico as to where these people are and how AuRico may communicate with them. Alternately members who are on the land may choose to notify Kemess Security of their whereabouts when they arrive in the area.

## 2.2 COMPLIANCE OBLIGATIONS

### 2.2.1 Legislation and Regulations

Some of the Accidents and Malfunctions that were evaluated in the Failure Modes and Effects Analysis as part of the Environmental Assessment process, and as part of normal best management practice, are covered by Legislation and Regulation. Specifically, many of these potential Accidents and Malfunctions are regulated under the following:

- *Health, Safety and Reclamation Code for Mines in British Columbia* (Code; BC MEM 2017);
- *BC Mines Act* (1996a);
- *Occupational Health and Safety Regulation* (BC Reg. 296/97);
- *Public Health Act* (2009);

- *Drinking Water Protection Act (2003);*
- *Workers Compensation Act (1996b);*
- *BC Environmental Management Act (2003);*
- *Spill Reporting Regulation (BC Reg. 263/90);*
- *Fisheries Act (1985a);*
- *Wildlife Act;*
- *Transportation of Dangerous Goods Act (1992);*
- *Transportation of Dangerous Goods Regulations (SOR/2001-286);*
- *Canadian Environmental Protection Act, 1999 (CEPA; 1999) and Environmental Emergency Regulations (SOR/2003-307);*
- *Hazardous Products Act (1985c);*
- *Hazardous Materials Information Review Act (1985b);*
- *Controlled Products Regulations (SOR/88-66); and*
- *Workplace Hazardous Materials Information System Regulation (Mines) (BC Reg. 257/88).*

## **2.2.2 Provincial EA Certificate**

Condition #17 of the Provincial EA Certificate issued on March 15, 2017 under the BC *Environmental Assessment Act* (2002) specifically states:

*The Holder must develop a communication plan for accidents and malfunctions. The plan must be developed in consultation with FLNRO, MEM, ENV, Northern Health Authority and Aboriginal Groups.*

*The plan must include at least the following:*

- a) *The types of accidents and malfunctions requiring notification by the Holder and the timeframe of notifications (including updates subsequent to the initial notification) to each Aboriginal Group community and other users of the area that could be affected;*
- b) *Information to be included in the notifications required by bullet a), and subsequent notifications, include but are not limited to:*
  - I. *Health advisories;*
  - II. *Remedial action being taken by the Holder; and*
  - III. *Details of subsequent monitoring.*
- c) *The manner by which Aboriginal Groups, communities or other users of the area must be notified by the Holder of an accident or malfunction, and of any opportunities for the Aboriginal Groups, communities and other users of the area to assist in response to the accident or malfunction; and*
- d) *The contact information of the representatives of the Holder and the Aboriginal Groups, communities and other users of the area to which the Holder must provide notification and a plan to regularly update this information.*

*The Holder must provide this draft plan to FLNRO, MEM, ENV, Northern Health Authority, Aboriginal Groups and EAO for review a minimum of 45 days prior to the planned commencement of Construction.*

*The plan, and any amendments thereto, must be developed and implemented throughout Construction, Operations, Closure and Post Closure to the satisfaction of EAO.*

### **2.2.3      Federal EA Decision Statement**

Condition 2.11 of the Federal Decision Statement issued on March 15, 2017 under CEAA 2012 specifically states:

*The Proponent shall publish on the Internet, or any medium which is widely publicly available, the annual reports and the executive summaries referred to in conditions 2.9 and 2.10, the reports related to accidents and malfunctions referred to in conditions 9.4.3 and 9.4.4, the communication plan referred to in condition 9.5, the implementation schedule referred to in condition 10.1, and any update(s) or revision(s) to the above documents, upon submission of these documents to the parties referenced in the respective conditions. The Proponent shall keep these documents publicly available throughout construction and operation and until the end of decommissioning. The Proponent shall notify the Agency, Indigenous groups, and Gitxsan Wilp Nii Kyap of the availability of these documents upon publication.*

Condition 9.4 states:

*In the event of an accident or malfunction with the potential to cause adverse environmental effects, the Proponent shall implement the emergency response plan referred to in condition 9.3 and shall:*

- 9.4.1 - notify Indigenous groups, Gitxsan Wilp Nii Kyap, and relevant authorities of the accident or malfunction as soon as possible, and notify the Agency in writing;*
- 9.4.2 - implement immediate measures to mitigate any adverse environmental effects associated with the accident or malfunction;*
- 9.4.3 - submit a written report to the Agency no later than 30 days after the day on which the accident or malfunction took place. The written report shall include:*
  - 9.4.3.1 - a description of the accident or malfunction and of its adverse environmental effects;*
  - 9.4.3.2 - the measures that were taken by the Proponent to mitigate the adverse environmental effects of the accident or malfunction;*
  - 9.4.3.3 - any views received from Indigenous groups, Gitxsan Wilp Nii Kyap, and relevant authorities with respect to the accident or malfunction, its adverse environmental effects, and measures taken by the Proponent to mitigate adverse environmental effects;*
  - 9.4.3.4 - a description of any residual adverse environmental effects and any modified or additional measures required by the Proponent to mitigate residual adverse environmental effects;*
  - 9.4.3.5 - details concerning the implementation of the emergency response plan referred to in condition 9.3; and*
- 9.4.4 - submit a written report to the Agency, no later than 90 days after the day on which the accident or malfunction took place, on the changes made to avoid a subsequent occurrence of the accident or malfunction, and on the implementation of any modified or additional measures to mitigate and monitor residual adverse environmental effects and to carry out any required progressive*

*reclamation, taking into account the information in the written report submitted pursuant to condition 9.4.3.*

Condition #9.5 of the Federal Decision Statement specifically states:

*The Proponent shall develop and implement a communication plan in consultation with Indigenous groups (a defined term meaning Takla Lake, Tsay Keh Dene, and Kwadacha First Nations) and Gitxsan Wilp Nii Kyap. The Proponent shall develop the communication plan prior to construction and shall implement and maintain it up to date from the start of construction to the end of decommissioning. The plan shall include:*

*9.5.1 - the type of incidents and malfunctions requiring the Proponent to notify the respective Indigenous groups and Gitxsan Wilp Nii Kyap;*

*9.5.2 - the manner by which Indigenous groups and Gitxsan Wilp Nii Kyap shall be notified by the Proponent of an accident or malfunction and of any opportunities for the Indigenous groups and Gitxsan Wilp Nii Kyap to assist in the response to the accident or malfunction; and*

*9.5.3 - the contact information of the representatives of the Proponent that the Indigenous groups and Gitxsan Wilp Nii Kyap may contact and of the representatives of the respective Indigenous groups and Gitxsan Wilp Nii Kyap to which the Proponent provides notification.*

## **2.2.4 Health Safety and Reclamation Code for Mines in British Columbia**

Section 1.7.1 of the HSRC BC (2017) specifies the manager's responsibility in the event of an Accident or Dangerous Occurrence:

*(1) In the event of*

- a) any accident resulting in loss of life, or*
- b) any dangerous occurrence as specified in section 1.7.3, the manager shall inform an inspector, the OHSC, and the local union or worker representative as soon as practicable, but no later than 4 hours after an event under paragraph (a) or 16 hours after an event under paragraph (b), and within one week send a written notification to an inspector for an event under paragraph (a) or (b).*

*(2) In the case of any accident resulting in a worker seeking medical aid, the manager shall provide a monthly report to an inspector, the OHSC, and the local union or worker representative.*

*(3) For an event under section 1.7.1(1)(a) or (b) the manager shall ensure that, except for the purpose of saving life or relieving human suffering, the scene of the accident or occurrence is not disturbed without approval of*

- a) the OHSC,*
- b) an inspector, or*
- c) in the case of a fatal accident, the chief inspector.*

## 3. SUPPORT

### 3.1 INTERNAL COMMUNICATIONS

The approach to internal reporting requirements for material environmental incidents is presented in *Environment Incident Categorization & Reporting Standard* (Centerra 2016) and is not duplicated in this plan.

## 4. IMPLEMENTATION

### 4.1 TYPE OF ACCIDENTS AND MALFUNCTIONS REQUIRING NOTIFICATION AND TIMELINE OF NOTIFICATION

#### 4.1.1 Human Health Risk Events

##### Loss of Life or reportable dangerous occurrence

In the event of a loss of life or reportable dangerous occurrence the General Manager will inform the mines inspector, the OHSC, and the local union or worker representative as soon as practicable but no later than **4 hours** after an incident resulting in loss of life or **16 hours** after an incident involving a dangerous occurrence. As well, within **one week**, a written notification must be provided to the mines inspector.

For Emergency events that require immediate connection with Northern Health, call HEMBC:  
855-554-3622 (or 855-55-HEMBC).

For non-urgent requests related to Emergency Response Plans, or emergency exercise planning/information, contact:

HEMBC North Director Jim Fitzpatrick, at 250-565-5584  
HEMBC@northernhealth.ca

##### Loss of or Abnormal Operation of Potable Water Supply System

In the event of a loss of or abnormal operation of a water supply system, the Northern Health Authority should be notified as soon as possible and within 24 hours of the event. Contact the Environmental Health Officer for Kemess:

Doug Gordon  
Environmental Health Officer, CPHI(C)  
Northern Health  
Smithers Health Unit  
3793 Alfred Ave. V0J 2N0  
Tel: 250 876 4518 Fax: 250 847 5908

### Communicable Disease Cases/Outbreak

For communicable disease cases/outbreaks (as defined in the Health and Medical Services Plan and the Communicable Disease Control Plan) the Medical Health Officer (MHO) must be contacted within 24 of a suspected outbreak.

Medical Health Officer, Northern Health (on call) - 1-250-565-2000

#### **4.1.2 Environmental Risk Events**

Notification protocols for environmental accidents and malfunctions and unplanned risk events that may occur in any phase of the Project are presented in Table 4.1-1. Events are grouped according to accident type but are not limited to those listed in Table 4.1-1. Contact details are provided in Table 4.1-2. Other stakeholders will be notified, as necessary, in consultation with key agencies.

**Table 4.1-1. Manner and timeline of notifying relevant agencies of accident or malfunction.**

Type of Accident or Malfunction	Agency/ Stakeholder to be Notified	Manner and Timeline of Initial Notification	Manner and Timeline of Updates
Spills of volume equal to or greater than the minimum quantity outlined in the Spill Reporting Regulation	ENV	Call within 24 hours; Initial Report to Emergency Management British Columbia (EMBC)	Update to Minister Report, if requested, asap or at least once every 30 days; End-of-Spill Report, if requested
	TKN	Email and Initial Report to the IBA EMC within 24hrs	Copy IBA EMC on gov't updates
Spill, or risk of a spill, of any substance near or on water as outlined in the Spill Reporting Regulation	ENV	Call within 24 hours; Initial Report to Emergency Management British Columbia (EMBC)	Update to Minister Report, if requested, asap or at least once every 30 days; End-of-Spill Report, if requested
	TKN	Email and Initial Report to the IBA EMC within 24hrs	Copy IBA EMC on gov't updates
Spill of any substance or thing that causes adverse impacts	ENV	Call within 24 hours; Initial Report to Emergency Management British Columbia (EMBC)	Update to Minister Report, if requested, asap or at least once every 30 days; End-of-Spill Report, if requested
	CEAA	ASAP, in writing (email) to CEAA	Written report within 30 days of the event
	TKN	phone call to Band offices within 24 hours; Email notification and Initial Report within 24 hours and copy of CEAA email to the IBA EMC	Copy IBA EMC on gov't updates and CEAA Reports
	Gitxsan	Email notification and Initial Report within 24 hrs	Copy Gitxsan on gov't updates and CEAA Reports
	739T006	Email notification and Initial Report within 24 hrs	Copy on gov't updates and CEAA Reports
	Ron Steffy	Email notification and Initial Report within 24 hrs	Copy on gov't updates and CEAA Reports
Breach or failure of tailings dam or other containment structure; extent of impact outside of Project footprint	EMPR	Call Chief Inspector ASAP	Updates provided as often as requested
	ENV	Call within 4 hours; Initial Report to Emergency Management British Columbia (EMBC)	Update to Minister Report, if requested, asap or at least once every 30 days; End-of-Spill Report, if requested
	CEAA	ASAP, in writing (email) to CEAA	Written report within 30 days of the event
	TKN	within 4 hours; phone call to Band offices	Copy IBA EMC on gov't updates and CEAA Reports
	Gitxsan	within 4 hours; phone call to Band office	Copy Gitxsan on gov't updates and CEAA Reports
	739T006	within 4 hours; phone call to Jean Tom; Email notification and Initial Report within 24 hrs	Copy on gov't updates and CEAA Reports
	Ron Steffy	within 4 hours; phone call to Ron Steffy; Email notification and Initial Report within 24 hrs	Copy on gov't updates and CEAA Reports

**Table 4.1-1. Manner and timeline of notifying relevant agencies of accident or malfunction. (continued)**

Type of Accident or Malfunction	Agency/ Stakeholder to be notified	Manner and timeline of initial notification	Manner and timeline of updates
Breach or failure of containment structure, extent of impact not outside of Project footprint	EMPR	Phone Inspector of Mines within 24 hrs; copy on email to ENV	Updates provided as often as requested; copy on Report to ENV
	ENV	Email None Compliance Report within 24 hrs	Submit written report within 30 days of the event
	TKN	Email notification and copy IBA EMC on email to ENV	Copy IBA EMC on Report to ENV
Accidental discharge of off-specification effluent from treatment plants;	ENV	Email None Compliance Report within 24 hrs	Submit written report within 30 days of the event
	TKN	Email notification and copy IBA EMC on email to ENV	Copy IBA EMC on Report to ENV
Sediment releases into watercourses, exceeding authorized limits;	ENV	Email None Compliance Report within 24 hrs	Submit written report within 30 days of the event
	TKN	Email notification to IBA EMC and copy on email to ENV	Copy IBA EMC on Report to ENV
Accidents related to construction and operation of underground facilities (inrushes, air blasts, ground instability or failure);	EMPR	Contact Inspector of Mines within 24 hrs	Updates provided as often as requested
Fire or explosion within Project footprint;	EMPR	Phone Inspector of Mines within 24 hrs;	Updates provided as often as requested
Fire or explosion outside of Project footprint	FLNRORD	Phone Forest Fire Centre	Updates provided as often as requested
	CEAA	ASAP, in writing to CEAA	Written report within 30 days of the event
	TKN	within 24 hours; phone call to Band offices	Copy IBA EMC on CEAA Reports
	Gitxsan	within 24 hours; phone call to Band office	Copy Gitxsan on CEAA Reports
	739T006	within 4 hours; phone call to Jean Tom	Copy on gov't updates and CEAA Reports
Failure of permanent and temporary waste rock dumps or stockpiles;	Ron Steffy	within 4 hours; phone call to Ron Steffy	Copy on gov't updates and CEAA Reports
Failure of permanent and temporary waste rock dumps or stockpiles;	EMPR	Contact Inspector of Mines within 24 hrs;	Updates provided as often as requested

**Table 4.1-2. Contact Information for Agencies and Stakeholders**

Agency/Stakeholder/Reporting Requirement	Contact Details
<b>Ministry of Energy and Mines, Lands (EMPR)</b>	
Chief Inspector - Al Hoffman	250 952-0793
Al.Hoffman@gov.bc.ca	
Northeast/Central Regional Office, Inspector of Mines -	250 565-4327
Laurie Meade	Laurie.Meade@gov.bc.ca
<b>Ministry of Environment (ENV)</b>	
Emergency Management British Columbia (EMBC)	1-800-663-3456
Update to Minister Report, and End-of-Spill Report	SpillReports@gov.bc.ca
Non-Compliance Reporting	EnvironmentalNonCompliance@gov.bc.ca
<b>Ministry of Transportation and Highways</b>	1-250-565-6933
<b>Forests, Lands and Natural Resource Operations (FLNRORD)</b>	
Forest Fire Centre	1-800-663-5555
<b>Canadian Environmental Assessment Agency (CEAA)</b>	ceaa.compliance-conformite.acee@canada.ca
	eao.compliance@gov.bc.ca
<b>BC Environmental Assessment Office (EAO)</b>	
<b>Northern Health Authority</b>	
HEMBC	1-855-554-3622
Environmental Health Officer (EHO) - Doug Gordon	250 876 4518
Medical Health Officer (MHO)	250-565-2000
<b>Aboriginal/Indigenous Groups</b>	
Tsay Keh Dene - Band Office	250-993-2100
Tsay Keh Dene - Prince George Band Office	250-562-8882
Tsay Keh Dene - IBA EMC member - Hunter Wagner	Hunter@chuchoenvironmental.com
Tsay Keh Dene - IBA EMC Alternate - Raymond Lamont	rplamont@shaw.ca
Kwadacha - Band Office	250-471-2302
Kwadacha - Prince George Band Office	250-563-4161
Kwadacha - IBA EMC Member - Cary McCook	emcrep3@gmail.com
Kwadacha - IBA EMC Alternate - Shawna Case	kfmref@gmail.com
Takla - Band Office	250-564-9321
Takla - Prince George Band Office	250-996-7877
Takla - IBA EMC Member - Morgan Jackson	morgan@westernwater.ca
Takla - IBA EMC Alternate - Lisa Krebs	landsmanager@taklafn.ca
Gitxsan Wilp Nii Kyap - Band Office	250-842-6780
<b>Trapline Holders and Guide Outfitters</b>	
Trapline 739T006 – Jean Tom Lead Spokesperson	250-596-4649 jeanthom35@outlook.com
Ron Steffy - Moose Valley Guide Outfitters	604-484-8278 moosevalley@live.com

## 4.2 INFORMATION TO BE INCLUDED IN THE NOTIFICATION OF THE ACCIDENT AND MALFUNCTION

### 4.2.1 Initial Notification to Indigenous groups, Gitxan, and other Stakeholders

Information to be included in the initial notifications sent to Indigenous groups and Gitxan will include:

- Health advisories
- Remedial action being taken
- Details of subsequent monitoring
- Opportunities for TKN and Gitxan to assist in the response to the accident or malfunction;
- Contact info of AuRico representative
- Copies of correspondence to government agencies as specified in Table 4.1-1 (ie. – Initial Report to ENV, none-compliance reports, email to CEAA)

Health advisories will be included in the initial notification, as deemed necessary, in consultation with key agencies such as Northern Health and First Nations that are potentially affected. Subsequent monitoring requirements will be determined in consultation with the IBA EMC; and will also be in accordance with AuRico's commitment to a strategy of Adaptive Environmental Management, an Ecosystem-based Approach, the Precautionary Principle and Sustainable Development, as defined in the Impact Benefit Agreement (IBA) with TKN.

Opportunities for the Indigenous groups to assist in response to the accident or malfunction will be communicated to the the Tse Keh Nay designated Business Opportunities Committee members who have committed to maintaining a TKN Business Registry and to the Gitxsan Wilp Nii Kyap. If additional resources are required, communities and other users of the area will have the opportunity to assist in the response to the accident or malfunction if they have provided information about their potential services and their contact details to AuRico.

### 4.2.2 Initial Report to ENV

The Initial Report to ENV consists of a phone call to Emergency Management British Columbia (EMBC). The content of the Initial Report will be saved on an internal Spill Response Form (see Environmental Emergency Spill Plan), consisting of the following:

1. Contact information of the individual making the report
2. Contact information of the responsible person
3. Contact information for the owner of the substance spilled
4. Location, date, and time of the spill
5. Description of the spill site and surrounding area
6. A description of the source of the spill
7. Type and quantity of the substance spilled
8. Cause and impact of the spill

9. Details of the actions taken or proposed
10. The details of further action contemplated or required
11. The names of agencies on scene
12. The names of other persons or agencies advised concerning the spill

#### **4.2.3 Non-Compliance Report to ENV**

It is a requirement to self-report scheduled or un-scheduled events or incidents that do not comply with the conditions and requirements outlined in the applicable *Environmental Management Act* (EMA) authorization (i.e., PE-15335 or PE-14928). All non-compliance reporting must be completed within the timeframe specified in the authorization.

An authorization includes permits, approvals, waste management plans, operational certificates, registrations and activities guided by a code of practice. The specific authorization may require submitting both an immediate notification and a follow up report. Both items may be submitted to [EnvironmentalNonCompliance@gov.bc.ca](mailto:EnvironmentalNonCompliance@gov.bc.ca).

The information required in the ENV non-compliance report should include the following:

- authorization number
- legal name of the authorization holder (including 'doing business as' names)
- date of the event
- description of the non-compliance

If available, the report may also include test results, a summary of any remedial action taken and an explanation of the most probable cause(s) of the non-compliance.

#### **4.2.4 Updates**

Updates subsequent to the initial notification to each Aboriginal Group's, Gitxsan Wilp Nii Kyap, community and other users of the area that could be affected will be completed as outlined in Table 4.1-1 or on a case by case basis as requested by either the IBA EMC or the First Nations Chief of the potentially affected community in consultation with AuRico. Updates will use best practices and include communication process to clearly and carefully relay information to mitigate and minimize mental health impacts of an accident or malfunction resulting in adverse environmental effects. A variety of communication tools and methods will be used to reach the target audience, get information to the audience when they need it, for as long as they need it and can be accessed within resource limitations. These may include:

- Training and practice for emergency situations;
- Establish an Emergency Operations Centre;
- Establish a means of communication in which the public can contact the company with questions or comments (internal point person, email address and /or toll free number, webpage);
- Hosting community information sessions/ updates focused on users of the land in the area of the accident and/or malfunction;
- Through established IBA committees, gather feedback on community mental health and well-being;

- Create a Q&A sheet and talking points for employees, contractors, community leaders and committee members to field initial questions and concerns from community members.
- Issue regular written updates and or news releases that can be shared hard copy, electronically or on band social media channels.
- Co-operate and coordinate communication with Band offices, regional districts, local governments, health authorities and government agencies
- Engage with stakeholders to help identify mitigation measures to minimize long term impacts resulting from the accident and/or malfunction.

Some potential sources for best practices include:

- Emergency Management BC <https://www2.gov.bc.ca/gov/content/safety/emergency-preparedness-response-recovery/emergency-management-bc>
- IAP2- ( International Association for Public Participation) using techniques and tools by trained practitioners to manage emotion and outrage and promotion clear communication and stakeholder engagement in emergency situations. <https://www.iap2.org/>
- <https://ehsdailyadvisor.blr.com/2015/03/environmental-crisis-communication-how-to-avoid-community-outrage/>
- Connect with local communities who have experience with emergency communication ( ie wildfires to learn best practices and what worked for the region) ie Cariboo Regional District, City of Prince George, Regional District of Bulkley Nechako. <https://icma.org/articles/article/emergency-communications-best-practices>

#### 4.3 CONTACT INFORMATION

AuRico has a responsibility to inform the following agencies and stakeholders of changes in company contact information:

- Takla Lake (Band Office and EMC members),
- Kwadacha (Band Office and EMC members),
- Tsay Keh Dene (Band Office and EMC members),
- Gitxsan Wilp Nii Kyap First Nations,
- Trapline Holders of 739T006,
- Moose Valley Outfitters,
- BC Environmental Assessment Office (EAO),
- Canadian Environmental Assessment Agency (CEAA),
- Ministry of Forests, Lands and Natural Resource Operations (FLNRORD),
- Ministry of Energy and Mines (EMPR),
- Ministry of Environment (ENV), and
- Northern Health Authority

**Table 4.3-1. Contact Information for Kemess Mine**

Prince George Office		Toronto Office		
AuRico Metals Inc 299 Victoria St Suite 200, Prince George, BC V2L 5R8		AuRico Metals Inc. 1 University Ave Suite 1500 Toronto, ON Canada M5J 2P1 T: (416) 204-1953 F: (416) 204-1954		
Name	Title	Ext.	Direct	Mobile
Sean Masse	Project Manager	3820	778-724-4429	604-754-9671
Bruce Grau	Site Superintendent	3825	778 724-4425	NA
Gord Shepherd	Site Superintendent	3826	778 724-4426	NA
Jordan Evans Security Gatehouse	Environmental Manager	jordan.evans@centerragold.com 3802	250-318-6348 778 724 4431	NA

## 5. REPORTING AND RECORDKEEPING

CEAA shall be notified of the accident or malfunction with the potential to cause adverse environmental effects, as outlined in Table 4.1.1, as soon as possible, in writing. Within 30 days of the accident or malfunction a written report will be submitted to the Agency which includes:

- a description of the accident or malfunction and of its adverse environmental effects;
- the measures that were taken by the Proponent to mitigate the adverse environmental effects of the accident or malfunction;
- any views received from Indigenous groups, Gitxsan Wilp Nii Kyap, and relevant authorities with respect to the accident or malfunction, its adverse environmental effects, and measures taken by the Proponent to mitigate adverse environmental effects;
- a description of any residual adverse environmental effects and any modified or additional measures required by the Proponent to mitigate residual adverse environmental effects; and
- details concerning the implementation of the emergency response plan referred to in condition 9.3.

Furthermore, a written report will be submitted to the Agency, no later than 90 days after the day on which the accident or malfunction took place, on the changes made to avoid a subsequent occurrence of the accident or malfunction, and on the implementation of any modified or additional measures to mitigate and monitor residual adverse environmental effects and to carry out any required progressive reclamation, taking into account the information in the written report submitted within 30 days of the accident or malfunction.

These reports will be published on the Company's website,  
<https://www.centerragold.com/operations/kemess>.

## 6. EVALUATION AND ADAPTIVE MANAGEMENT

Annual reports for various management plans as well as reports to CEAA will evaluate the effectiveness of the mitigation measures used to address the environmental accidents and malfunctions that occur through the year and identify any modifications to the mitigation measures included in respective plans. Adaptive management will address effects resulting from the Project if they are not mitigated to the extent contemplated in the Application and will include, updating management plans as required to address adverse effects from environmental risk accidents resulting from the Project that are not mitigated to the extent contemplated in the Application, or are not predicted in the Application, or that are not already addressed in existing plans.

## 7. PLAN REVISION

The Accidents and Malfunctions Communication Plan will be revised regularly and as needed to incorporate new contact information and communication requirements.

### 7.1 NOTIFICATION AND CONSULTATION REQUIRED UPON PLAN REVISION

EAO, TKN and Gitxsan Wilp Nii Kyap will be notified and consulted about revisions to the Accidents and Malfunctions Communications Plan. This Plan, and any amendments thereto, will be developed and implemented throughout Construction, Operations, Closure and Post Closure to the satisfaction of EAO.

## 8. QUALIFIED PROFESSIONALS

This management plan has been prepared and reviewed by, or under the direct supervision of, the following qualified professional:

Prepared by:

---

Jordan Evans, M.Sc, P.Ag., R.P. Bio.  
AuRico Metals Inc.

## REFERENCES

Definitions of the acronyms and abbreviations used in this reference list can be found in the Glossary and Abbreviations section.

- 1985a. *Fisheries Act*, RS. C. F-14. s. 1.
- 1985b. *Hazardous Materials Information Review Act*, RSC. C. 24 (3rd Supp.), Part III. s. 9.
- 1985c. *Hazardous Products Act*, RSC. C. H-3.
- 1992. *Transportation of Dangerous Goods Act*, SC. C. 34.
- 1996a. *Mines Act*, RSBC. C. 293.
- 1996b. *Workers Compensation Act*, RSBC. C. 492.
- 1999. *Canadian Environmental Protection Act, 1999*, SC. C. 33.
- 2002. *Environmental Assessment Act*, RSBC. C. 43.
- 2003. *Environmental Management Act*, SBC. C. 53.
- 2012. *Canadian Environmental Assessment Act, 2012*, SC. C. 19. s. 52.
- Centerra Gold Inc. 2016. Environment Incident Categorization and Reporting Standard.
- Workplace Hazardous Materials Information System Regulation (Mines), BC Reg. 257/88.
- Spill Reporting Regulation, BC Reg. 263/90.
- Occupational Health and Safety Regulation, BC Reg. 296/97.
- Controlled Products Regulations SOR/88-66.
- Transportation of Dangerous Goods Regulations, SOR/2001-286.
- Environmental Emergency Regulations, SOR/2003-307.



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July 23, 2018

*Our file*   *Notre référence*

18-HPAC-00634

Jordan Evans  
AuRico Metals Inc.  
1500-1 University Avenue, Toronto, ON, M5J 2P1  
By Email: [Jordan.Evans@centerragold.com](mailto:Jordan.Evans@centerragold.com)

**Subject: Diffuser Installation, Attichika Creek, Fort Ware – Implementation of Measures to Avoid and Mitigate Serious Harm to Fish and Prohibited Effects on Listed Aquatic Species at Risk**

Dear Ms. Evans:

The Fisheries Protection Program (the Program) of Fisheries and Oceans Canada (DFO) received your proposal on June 25, 2018. We understand that you propose to:

- Install two precast concrete piers to support a diffuser pipe in Attichika Creek.

Our review considered the following information:

- Request for Review form received June 25, 2018, and;
- Request for Review supporting letter prepared by Hatfield Consultants, Dated June 25, 2018.

Your proposal has been reviewed to determine whether it is likely to result in serious harm to fish which is prohibited under subsection 35(1) of the *Fisheries Act* unless authorized. Your proposal has also been reviewed to determine whether it is likely to affect listed aquatic species at risk, any part of their critical habitat or the residences of their individuals in a manner which is prohibited under sections 32, 33 and subsection 58(1) of the *Species at Risk Act*, unless authorized.

To avoid and mitigate the potential for serious harm to fish we recommend implementing the measures listed below:

- Works to be completed after the bull trout migration period that occurs onsite between July and August, during Sept/Oct low flow period,
- A qualified environmental professional needs to be present to monitor for fish presence in immediate construction area, and;
- Limit riparian clearing to a minimum.

Provided that you incorporate these measures into your plans, the Program is of the view that your proposal will not result in serious harm to fish or prohibited effects on listed aquatic species at risk. As such, an authorization under the *Fisheries Act* or a permit under the *Species at Risk Act* is not required.

Should your plans change or if you have omitted some information in your proposal, further review by the Program may be required. Consult our website (<http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html>) or consult with a qualified environmental consultant to determine if further review may be necessary. It remains your responsibility to avoid causing serious harm to fish and avoid prohibited effects on listed aquatic species at risk, any part of their critical habitat or the residences of their individuals.

It is also your *Duty to Notify* DFO if you have caused, or are about to cause, serious harm to fish that are part of or support a commercial, recreational or Aboriginal fishery. Such notifications should be directed to the DFO-Pacific Region Observe, Record and Report phone line (toll free) at 1-800-465-4336; or in Greater Vancouver at 604-607-4186.

Please notify this office at least 10 days before starting your project. A copy of this letter should be kept on site while the work is in progress. It remains your responsibility to meet all other federal, territorial, provincial and municipal requirements that apply to your proposal.

If you have any questions with the content of this letter, please contact Clint Carl at our Vancouver office at 604-666-2442, by fax at 604-666-0417, or by email at [Clint.Carl@dfo-mpo.gc.ca](mailto:Clint.Carl@dfo-mpo.gc.ca). Please refer to the file number referenced above when corresponding with the Program.

Sincerely,



Michael Engelsjord

Team Leader

Fisheries Protection Program

Tim Poulton

Hatfield Consultants