Appendix 11.27-A

Wetland Compensation Plan

AJAX PROJECT

Wetland Compensation Plan

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GLOSSARY AND ABBREVIATIONS

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.

BC	British Columbia
BC MOE	British Columbia Ministry of Environment
CEAA	*Canadian Environmental Assessment Act*
EA	Environmental Assessment
ha	Hectares (10,000 m^2 or 0.01 km^2)
IDA	Infrastructure Disturbance Area
IF	Infrastructure Footprints
IDFxh2	Thompson Very Dry Hot Interior Douglas-fir Variant
LSA	Local Study Area
m	Metre
the Policy	Federal Policy on Wetland Conservation
the Project	Ajax Project
RIC	Resources Inventory Committee
RSA	Regional Study Area
SARA	*Species at Risk Act*
SSN	Stk'emlupsemc te Secwepemc Nation
TEM	Terrestrial Ecosystem Mapping
TSF	Tailings Storage Facility
WVMP	Wildlife and Vegetation Monitoring Plan

1. INTRODUCTION

1.1 PROJECT OVERVIEW

KGHM Ajax Mining Inc. proposes to develop the Ajax Project (the Project), an open pit copper-gold mine at the historic Afton Mining Camp, south of the City of Kamloops, British Columbia (BC). The Project is located in the South-Central Interior of British Columbia, southeast of the junction of the Trans-Canada Highway No. 1 and the Coquihalla Highway (No. 5), within the Thompson Nicola Regional District. The Project falls within the SSN, Secwépemc, and Nlaka'pamux Nation Traditional Territories..

The Ajax property includes two historic pits: the Ajax West Pit, and the Ajax East Pit. Both pits were formerly mined in the 1980s and 1990s. As many as 25 rock types have been recognized in the Project area, some of which are "hybrid" units resulting from the intermixing of multiple rock types.

Key Project facilities include the Tailings Storage Facility (TSF), which is planned as a conventional tailings storage facility; water management ponds; Peterson Creek diversion, and the Tailings Embankments, which will be constructed using mine rock; and four mine rock storage facilities (MRSFs). Several facilities that will be part of the operation phase but not remain after project closure include the: plant facilities and administration buildings, reclamation stockpiles, explosives facility, truck stop and fuel storage, power lines, and access roads.

The mine plan for the Project predicts an operation based on a mill throughput of 65,000 tonnes of ore per day from the Ajax Pit with up to a 23-year mine life. The Construction phase of the Project will be approximately 2.5 years, and following the 23-year Operation the Decommissioning and Closure phase is expected to take up to 5 years. Over the mine life the Project will produce approximately 140 million pounds of copper and 130,000 ounces of gold annually with the concentrate shipped by truck to the Port of Vancouver.

1.2 POLICY CONTEXT

The Federal Policy on Wetland Conservation was adopted by the Government of Canada in 1991 as a commitment to promoting wetland conservation within all federal decisions and responsibilities. Although it is not a regulatory document, the Cabinet-level direction has been to apply this Policy to all federal policies, plans, programs, projects and activities.

The Canadian Wildlife Service of Environment Canada is responsible for coordinating the implementation of the Policy whenever federal corporations, agents or authorities are making decisions that may affect wetlands such as granting permits, constructing facilities, leasing Crown land, or conducting land use planning.

In BC, wetlands designated as ecologically or socioeconomically important to a region are defined as provincially red-listed (threatened or endangered) and blue-listed (of special concern) wetland

ecological communities. A Wetland Action Plan was prepared in 2010 by the Province to maintain, restore and protect wetland ecosystems throughout BC.

Red- and blue-listed wetlands occur in the Project footprint. All wetlands within the Project footprint and Local Study Area (LSA) support migratory birds.

Corporations, agents or authorities aim to meet the objectives of the Policy by planning projects and activities using a mitigation hierarchy of: first, seeking to avoid any project-related effects on wetlands to the greatest extent possible; second, minimizing unavoidable effects; and last, compensating for remaining unavoidable wetland losses through reasonable and practical means (Lynch-Stewart et al. 1996). Without such compensation, a project's residual adverse environmental effects could be deemed significant, if a net loss of wetland functions were to occur.

1.3 PURPOSE

The purpose of this plan is to define, propose, and later execute activities that will compensate for lost wetland extent for the proposed Ajax Project.

2. METHODS

To meet the goals of the Policy, this wetland compensation plan provides an evaluation of wetland functions associated with the potentially affected wetlands, uses the results of the Project's effects assessment to identify loss of wetland functions, and proposes specific measures to compensate for the loss of identified wetland functions.

Hydrologic, biogeochemical, and habitat functions of wetlands were determined from literature review, mapping, and field studies. Many indicators of a wetlands' potential to provide particular functions were derived from wetland mapping, based on the defining characteristics of wetland classes or site associations.

Wetland functions often correlate with wetland classes in accordance with the defining hydrogeomorphic attributes of each class. Hydrogeomorphic attributes of wetlands refer to the position of the wetland on the landscape (geomorphic setting), its dominant source of water, and patterns of surface or subsurface water flow (wetland hydrology). The vegetation structure of particular wetland associations also affects the potential of wetlands to provide certain ecological functions. Vegetation structure refers to the growth form of the dominant vegetation, such as whether the wetland is dominated by trees, shrubs, emergent herbaceous plants, graminoids (grasses, rushes, and sedges), or floating aquatic plants, as well as the horizontal and vertical spatial distribution of vegetation within the wetland.

Wetlands were mapped following provincial standards (RIC 1998) for an Environmental Assessment (EA) as described in Appendix 6.8-A using Terrestrial Ecosystem Mapping (TEM) at a 1:20,000 scale with field surveys identifying wetlands to the ecological community level, or "association." Wetlands were classified according to *Wetlands of British Columbia: a Guide to Identification* (Mackenzie and Moran 2004). Additional details about the methods and results of wetland mapping are contained in the Terrestrial Wildlife and Vegetation Baseline Report (Appendix 6.8-A).

The following field surveys were conducted by wildlife biologists during the baseline studies to determine the presence and abundance of wetland-associated wildlife; additional information about the wildlife survey methods and results is contained in the Terrestrial Wildlife and Vegetation Baseline Report (Appendix 6.8-A):

- Wildlife habitat surveys were conducted as part of the TEM verification program in 2007, 2010, and 2014. This information supports the wildlife habitat suitability ratings that inform the habitat suitability models.
- Nocturnal auditory, road and larval surveys for amphibians were completed in 2008, 2010 and 2014.
- Breeding bird and migration surveys were completed for songbirds in 2007, 2008, 2010, and 2014.
- Waterfowl surveys for wetland birds were completed in 2007, 2010, and 2014.

- Call-playback surveys for American Bittern were completed in 2014.
- Bat acoustic surveys were completed in 2007, 2010, and 2014.
- Incidental observations of wildlife or wildlife sign, important habitat features (e.g., wildlife trees), and wildlife movement corridors were also recorded opportunistically outside structured surveys.

The spatial data file of the Project footprint was overlaid on the baseline wetland mapping to determine the direct losses of wetland area associated with construction.

A direct loss of wetland extent represents the equivalent loss of associated wetland functions. Additional details about the methods and results of the effects assessment pertaining to wetlands are contained in Section 6.9 of the EA Application.

Consultation with Environment Canada, Ministry of Forest Lands and Natural Resources, potentially affected Aboriginal groups and local environmental organizations is pending and may further refine the wetland compensation plan. This plan includes measures proposed to achieve no net loss of wetland functions, the general terms and conditions for implementation (i.e., schedule and location), and recommended monitoring requirements for compliance and performance.

3. WETLANDS IN ECOLOGICAL AND PROJECT CONTEXT

3.1 WETLANDS

Wetlands are defined as "land that is saturated with water long enough to promote wetland or aquatic processes as indicated by poorly drained soils, hydrophytic vegetation and various kinds of biological activities which are adapted to a wet environment" (National Wetlands Working Group 1988). Wetlands comprise only 7% of the province's total land area – including bogs, fens, swamps, and marshes – yet they provide vital habitat for more than 30% of BC's animal and plant species of conservation concern (Forrex 2009). The British Columbia Ministry of Environment has identified wetland habitats as "one of the most important life support systems on earth," providing critical habitat for birds, fish, and other wildlife. Most wildlife in the province use wetland habitat at some point in their life cycle, and many red- and blue-listed species are wetland-dependent.

Wetlands are a vital component of healthy grassland and dry forest communities of the region (BC MOE 2014). Many support rare and endangered species. While some wetlands are permanent and easily recognizable, others are more temporary. These vernal pools provide habitats for species that are adapted to conditions where water is a temporary feature (e.g., Great Basin Spadefoot toad), as well as seasonal habitats for migratory birds. These ponds may fill only in years of heavy precipitation; consequently, they may not be visible during drought years (BC MOE 2014).

3.2 WETLAND ECOSYSTEMS AT BASELINE

Wetland ecosystems accounted for approximately 1,007 ha representing less than 1% of land base within the Regional Study Area (Figure 3-1 Wetland Context in the Regional Study Area). The Local Study Area has approximately 1.7% mapped as wetlands. These figures are less than the published 5.6% estimated wetland land base in British Columbia.

Although wetlands are particularly important in the dry forests and grasslands of the southern interior, because the Region is hot and dry, wetlands are somewhat limited within the Project area.

Based on the TEM prepared for the project, wetlands were classified into vegetation association (MacKenzie & Moran 2004). Three of the five federal wetland classes (marsh, swamp, and shallow open water) were observed in the LSA, while no bogs of fens were present (Table 3-1).

3.2.1 Wetland Associations

Shallow Open Water (OW)

Shallow Open Water sites are dominated by rooted floating-leaved and submerged aquatic plant species and have less than 10% emergent cover. Like marshes, shallow-waters are often: simple communities dominated by one to several species; a wetland composed of permanent shallow open water and lacking extensive emergent plant cover; the water is less than 2 m deep.

Table 3-1. Area of Each Wetland Ecosystem Mapped in the Footprints (loss), Disturbance Area, and Local Study Area (LSA)

Biogeoclimatic Subzone Variant	Site Series	Wetland	BC List	Total Mapped in LSA (ha)	Max. Area Lost (ha) IDA	Min. Area Lost (ha) IF
BGxw1	OW	Open water		5.3	1.4	0
	Wm01	Beaked sedge -Water sedge		0.9	0.7	0.1
	Wm05	Common Cattail marsh	Blue	8	5	3.4
IDFxh2	Gs01	Alkali Saltgrass herbaceous meadow	Red	2.6	1.6	1.4
	Gs02	Nuttall's alkaligrass - Foxtail barley		9.9	0.9	0.9
	OW	Open water		15.1	10.9	8
	Wm01	Beaked sedge - Water sedge		7.4	4.7	3.6
	Wm05	Common Cattail marsh	Blue	12.2	11.1	5.4
	Wm06	Great bulrush marsh	Blue	10.9	9.6	8
	Wm07	Baltic rush saline marsh		7.7	2.4	1.9
	Ws04	Drummond's willow - Beaked sedge		2.5	2.5	2.1

Alkali Saltgrass Saline Meadow Site Association (Gs01)

The red-listed Alkali saltgrass Saline Meadow Site Association (Gs01) is uncommon in the BG, PP, and dry IDF of the Central Interior and Southern Interior at elevations below 1,000 m. Gs01 meadows occur in the seasonally flooded riparian zone of small potholes and shallow lakes where evaporation accumulates salts. Brief flooding in the early season is followed by pronounced surface drying, occasionally leaving a distinct salt crust.

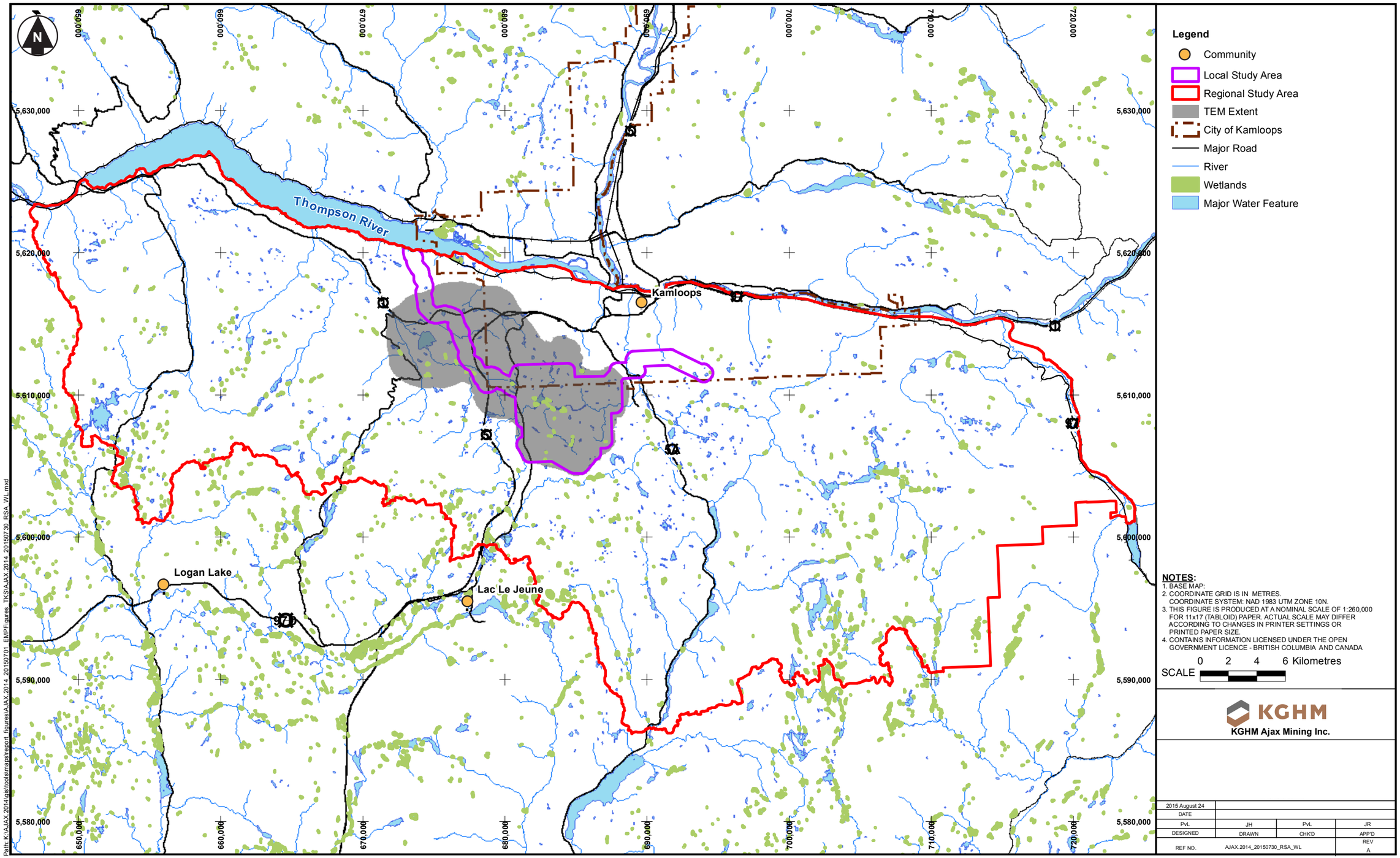
Only salt-tolerant plants are found on these sites; no shrubs or mosses occur. *Distichlis spicata* var. *stricta* is always prominent but some sites have high cover of *Spartina gracilis*, *Amphiscirpus nevadensis*, or *Poa secunda* ssp. *juncifolia*.

Nuttall's Alkaligrass – Foxtail Barley Saline Meadows (Gs02)

Nuttall's alkaligrass – Foxtail barley saline meadows are uncommon in the dry IDF, MS, and SBPS subzones of the Central Interior and Southern Interior at elevations between 800 and 1,200 m. Gs02 meadows occur in the seasonally flooded riparian zone of small alkali potholes and shallow lakes where evaporation accumulates salts. Brief flooding in the spring gives way to merely moist conditions during the summer.

High overall graminoid cover is common; *Puccinellia nuttalliana* is a constant dominant. *Hordeum jubatum* occurs naturally with low cover on most sites but increases and may become dominant with soil disturbance. Shrubs are absent and the moss layer is poorly developed.

Figure 3-1
Wetland Context in the Regional Study Area



Beaked Sedge – Water Sedge Marshes (Wm01)

Beaked sedge – Water sedge marshes constitute the most common and widespread Marsh Site Association in the province. The Wm01 occurs in all subzones from low to subalpine elevations on sites that are inundated by shallow, low-energy floodwaters and that experience some late-season drawdown. These marshes are found in a wide variety of landscape positions including flooded beaver ponds, lake margins, floodplains, and palustrine basins.

Species diversity is low and plant cover is strongly dominated by *Carex utriculata* and *C. aquatilis* with scattered forbs, aquatics, and mosses. On sites experiencing significant surface drying, species diversity increases and sites become more meadow-like. Species such as *Calamagrostis canadensis*, *Geum macrophyllum*, or *Deschampsia cespitosa* can become prominent.

Cattail Marshes (Wm05)

The Blue-listed Cattail marshes are common throughout the Coast and Interior at low elevations in subzones with warm summers. They occur most commonly in protected lake embayments and potholes or even roadside ditches, where the surface substrate remains saturated for most of the growing season.

Typha latifolia dominates, often with few other rooted plants present, especially where nutrient levels are high and *T. latifolia* growth profuse. Occasionally there is significant cover of *Carex utriculata*, *Schoenoplectus acutus*, or *Lemna* spp.

Great Bulrush Marshes (Wm06)

The Blue-listed Great bulrush marshes occur widely in subzones with warm and dry summers. Wave-exposed lake embayments with significant water movements, and grassland potholes with occasional substrate exposure (conditions that provide abundant aeration and limit organic accumulations), are the most common locations for this Site Association.

Plant diversity is low; typically, *Schoenoplectus acutus* is the only species with significant cover. Bulrush marshes are usually adjacent to open water in wetland mosaics and can sometimes be found in complex with the Wm05.

Floodwaters to 1.5 m depth in the spring are typical, with significant growing-season drawdown occurring in potholes. Great bulrush is tolerant of alkali soils and often dominates in brackish potholes.

Baltic Rush Saline Meadows/Marshes (Wm07)

Baltic rush saline meadows/marshes are common in the Chilcotin Plateau and uncommon in the dry climates of the Southern Interior and Southern Interior Mountains. The Wm07 occurs in alkaline or saline potholes, primarily closed basins, where there is early-season inundation followed by gradual watertable drop to below the surface.

Juncus balticus is always dominant on Wm07 sites. Other saline-tolerant species such as *Carex praegracilis*, *Potentilla anserina*, and *Puccinellia nuttalliana* may occur, especially on drier sites.

Bebb's Willow – Bluejoint Swamps (Ws03)

Bebb's willow – Bluejoint swamps are uncommon but widespread throughout the drier climates of the Interior at elevations below 1,200 m. They occur on lake flats, pond margins, fluvial terraces, seasonal creeks, and palustrine basins where early-season shallow standing water draws down to very moist conditions by late growing season.

Salix bebbiana forms an open canopy, often with a significant component of *Alnus incana*. Scattered spruce trees can occur. Various other shrub species are common in the understorey. *Calamagrostis canadensis* is a constant dominant but usually occurs only on raised microsites. *Equisetum arvense* and other horsetails can also be prominent. A diversity of other forbs with low cover is typical. Sites often have distinct mounds created by fallen trees, interspersed with sparsely vegetated pools of water; however, some stands are drier and have a more continuous herbaceous understorey.

Drummond's Willow – Beaked Sedge Swamps/Fens (Ws04)

Drummond's willow – Beaked sedge swamps/fens (Ws04) are common in the Central and Sub-Boreal Interior in back-levee depressions of low-gradient creeks or channel margins in peatland streams. Ws04 sites can be deeply flooded during the spring freshet and after drawdown maintain a high water table due to fine-textured soils or low lying position relative to the water table.

Salix drummondiana dominates these sites, with other shrubs such as *Lonicera involucrate* and *Spiraea douglasii* common in the lowshrub layer. The herb layer is moderately well developed and predominantly *Carex aquatilis* and *C. utriculata*.

3.3 WETLAND FUNCTION

Wetlands provide three primary ecological functions that are beneficial to local and regional ecosystems: hydrological, biogeochemical and habitat.

3.3.1 Hydrological

Hydrological function is the capacity of a wetland to store, moderate, and release water in a watershed (i.e., providing groundwater recharge, flood flow alteration, or base flow augmentation). This function also maintains human and ecological life support systems, protects infrastructure, and enhances social values. This function of a wetland is driven by its hydrogeomorphic setting, its basin form, and its water balance: water quantity and velocity moving through the system (Hanson et al. 2008).

Wetlands present in the LSA have limited hydrological function due to small size and moisture deficits.

3.3.2 Biogeochemical

Biogeochemical function refers to the capacity of the wetland to improve water quality or store carbon. The wetlands in the Project footprint have the potential to improve water quality by retaining suspended sediments and absorbing excess nutrients (nitrogen). The wetlands in the LSA also have the potential to store carbon in soils and biomass. The ability of a wetland complex to

sequester and store carbon contributes to maintenance of the global carbon cycle and its role in global climate regulation.

3.3.3 Habitat

Habitat function refers to the manner in which a wetland contributes to biological productivity and diversity. Known habitat functions provided by wetlands within the Project footprint include the following:

- foraging, nesting and stopover habitat for migratory birds, including songbirds, which totalled 85 species according to breeding bird survey results (Appendix 6.8-A);
- habitat for 40 waterfowl/shorebird/water bird species (Appendix 6.8-A);
- providing breeding and/or dispersal habitat for listed amphibians such as the western toad (*Anaxyrus boreas*), and Great Basin Spadefoot (*Spea intermontana*) which were found during the field studies (Appendix 6.8-A);
- foraging habitat for bats;
- contributing to habitat diversity, as indicated by supporting one red-listed and two blue-listed wetland communities at risk (Table 3-1); and

3.3.4 Social / Cultural / Commercial

Wetlands are a highly valued resource to many Aboriginal Groups for whom they provide a myriad of traditional uses. (Section 8.5 Cultural Land and Resource Use for Traditional Purposes)

4. COMPENSATION

Wetland compensation will address the loss of wetland extent and overtime the loss of wetland functions. Wetland function is difficult to quantify and directly compensate for because of the myriad of site specific variables. As wetland function is generally related to the classes of wetland ecosystems present and the complexity of these ecosystems, compensation efforts will focus on providing target ecosystems that are predicted to provide similar functions to those ecosystems that will be lost during development. This is known as "like for like" compensation.

4.1 COMPENSATION METRICS

There are no regulations or policy statements regarding wetland compensation ratios currently in place in BC.

Area ratios are used for determination of potential Wetland compensation due to the operational simplicity of measuring area, which in turn enables regulators to readily identify "success" or short comings of a compensation goal rather than determining complex ecological functions and values gained or lost.

As equivalent wetland classes are targeted a range of ratio's was used for the red and blue-listed ecosystems for a compensation target of 25.2 ha (Table 4-1).

Table 4-1. Wetland Compensation Metrics

Wetland Site Series	BC List	Area Lost (ha)	Offset Ratio	Compensation Target
Gs01	Red	1.4	2:1	2.8
Gs02		0.9	1:1	0.9
Wm01, Wm07		5.6	1:1	5.6
Wm05, Wm06	Blue	13.8	1:1	13.8
Ws04		2.1	1:1	2.1
Total		**23.8**		**25.2**

A long-term monitoring plan and adaptive management plan are essential requirements to maximize potential restoration success. The monitoring program will track vegetation composition and structure, hydric soils development, wetland extent, vegetation species composition and biomass at permanent plot centres within compensation areas. This program will include a photo point monitoring component that will be used to visually track ecosystem development and supplement annual data collection and analysis. Collected data will facilitate adaptive management strategies driving the final trajectory of the compensation project. The wetland compensation monitoring program is independent of the long-term Wildlife and Vegetation Monitoring Plan (WVMP) proposed for ecosystems located near Project operations (Section 11.27).

4.1.1 Compensation Sites

Potential areas for compensation were selected in close proximity to the LSA (Figure 4-1).

Reclamation

The Landscape Design and Restoration Plan (Section 11.26) includes 12 ha of herbaceous wetland habitat (marsh) and 2 ha of shrub wetland (swamp) to be reclaimed. These areas have not been spatially identified.

Inks West ORV Mud Bog

There is potential to restore some small wetlands that have been damaged due to Off-road Vehicles use following recommendations in Thompson Rivers Natural Resource District Off-road Vehicle Recreation Strategy (2015). This area has not been spatially identified.

Inks Lake

In conjunction with the Conceptual Fish Habitat Offsetting Plan littoral habitat will be created around Inks Lake. The 3.6 ha of saline meadow habitats to the north of Inks Lake will also be conserved.

Jacko Lake (west arm)

Enhancement of 1.3 ha of marsh wetland habitats on the west arm of Jacko Lake is being considered.

Jacko Lake (southwest arm)

Enhancement of the large wetland complex on the southwest arm of Jacko Lake is being considered, which includes 3 ha of blue-listed marsh habitat.

Peterson Creek Downstream Pond and Humphrey Creek

Enhancement of the large marsh complex around the Peterson Creek downstream pond is being considered. Creation of wetland habitat along Humphrey Creek is also being considered.

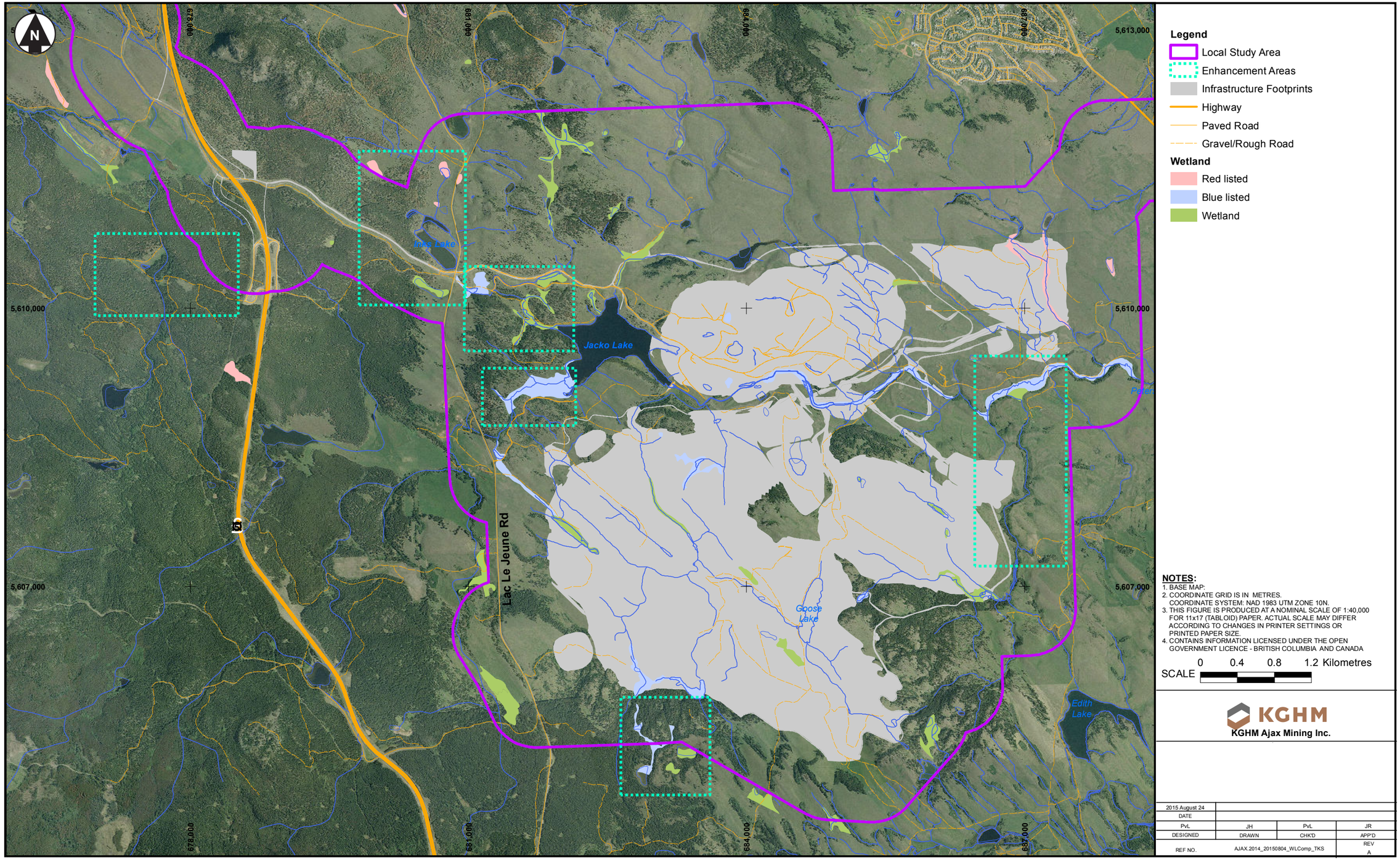
Goose Lake Road

The marsh complex south of the TSF was also selected as a potential site for enhancement as it includes 2 ha of blue-listed marsh habitat.

4.1.2 Compensation Activities

Wetland compensation can entail restoration, enhancement or creation. Restoration is defined as returning a damaged wetland as close as possible to its original condition prior to the damage; enhancement is making changes or improvements to wetlands to enhance existing functions performed by the wetlands; and creation is shaping dry land so that it will become wetlands with the physical and biological characteristics of the area lost or damaged (Cox and Cullington 2009). Environment Canada recommends wetland restoration over enhancement and enhancement over creation (Environment Canada 2014).

Figure 4-1
Wetland Enhancement Areas



Specific compensation activities will be selected based on the chosen compensation site. Best management practices for wetland compensation are typically one of the following, in order of preference :

1. **Restoration** – returning a damaged wetland as close as possible to its original condition prior to the damage.
2. **Enhancement** – making changes or improvements to wetlands to enhance existing functions or values performed by the wetlands.
3. **Conservation** – conserving wetlands in an adjacent area that are equivalent or exceed the area damaged and that might otherwise be subject to an unregulated activity.
4. **Creation** – shaping dry land so that it will become wetland with the physical and biological characteristics of the area lost or damaged. Creation of a properly functioning wetland can be difficult to achieve, expensive, often unsuccessful in meeting the goals set out, and should be a last resort for mitigation.

This compensation plan will use a combination of wetland restoration, enhancement, and creation methodologies. For example, development of wetlands at fish habitat offsetting sites will focus on the enhancement of existing wetland areas in conjunction with the creation of shallow open water features and shallow vegetated riparian wetlands. Restoration of vegetation and hydrology will also be used outside of the fish habitat offsetting areas on identified degraded and impacted wetlands.

5. MONITORING

Compensation monitoring for each site will be initiated in the year following creation, enhancement, and restoration efforts. The intent is to use an adaptive management strategy.

This adaptive management strategy relies heavily on monitoring to identify potential issues with the enacted plan and a commitment by the proponent to make reasonable changes to mitigate negative outcomes and ensure that wetlands can reach a preferred outcome over time. This plan has been developed following the latest methodology in peer reviewed science; however, every site is unique and thus variable. Using this strategy will allow for the adaptation of unforeseen and unpredictable events within the compensation areas and will provide some variability of the species composition within the re-vegetation zones. Aboriginal groups will be engaged in development of the planning, establishment, and monitoring of the compensation areas. Where appropriate, traditional plants will be used.

The primary concern will be maintenance of wetland hydrology and the development of wetland vegetation towards a preferred trajectory. Specific monitoring criteria at each compensation site will include:

- conducting wetland plant inventories recording:
  - general plant species composition,
  - prevalence index of hydrophytic wetland species,
  - ratio of non-native and invasive species to native species,
  - presence of rare or threatened species;
- identifying and recording the locations of high water marks, and identifying wetted elevations of open water;
- assessing soil moisture and the development of hydric soil characteristics;
- identifying and recording the wetland edge based on wetland hydrology indicators, the dominance of hydrophytic vegetation, and the presence of hydric soil characteristics;
- conducting general wildlife use observations within the compensation area;
- recording water quality metrics within shallow open water habitats; and
- conducting fixed photo point monitoring to track ecosystem succession.

5.1 WORK PLANNING AND SCHEDULE

It is expected that monitoring will be conducted annually for a minimum period of 10 years with long term monitoring continuing throughout the life of the mine at reduced frequencies. This effectively enables adaptive management strategies as well as ongoing maintenance.

At Year 11 monitoring intensity and frequency will be reduced to once every five years, for the remainder of the Project (until Closure). This monitoring strategy and length will enable the proponent

to improve efficiency of plan delivery as well as efficacy of future compensation activities that may arise. This will also ensure that wetland ecosystems persist in these compensation areas for as long as the Project is in Operation and as long as wetlands have been removed from the Project location. During Final Closure and Reclamation planning for the Project the development of wetland habitat in association with Water Management Ponds will be included (Section 11.26 Reclamation and Restoration Plan). Monitoring will be conducted annually for the first five years and reduced to bi-annually to Year 10 after Closure.

5.2 REPORTING

Monitoring reports will be submitted to regulators at Years 1 through 5 with the expectation of a "project complete" sign-off in regards to wetland compensation by Year 5. Monitoring will continue annually at each site for Years 6 through 10 with reporting as an addendum to the WVMP during odd years. This monitoring is required to establish a "stable" successional trajectory for the vegetation, which will in turn ensure that functionality has been mitigated and compensated for in some way. Year 10 of the monitoring plan will be the last year that the wetland areas will be reported. Wetland development and monitoring associated with Reclamation of Water Management Ponds will be included in Annual Closure and Reclamation reports.

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

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