



February 18, 2018

W2018L2-0002, W2018L2-0003

Joseph Mackenzie, Chair

Wek'èezhì Land and Water Board
#1-4905 48th St.
Yellowknife, NWT X1A 3S3

WATER USE PLAN FOR THE NIGHTHAWK GOLD CORP INDIN LAKE GOLD PROPERTY

Dear Mr. Mackenzie,

Nighthawk Gold Corp. (Nighthawk) submits the following Water Use Plan for approval by the Wek'èezhì Land and Water Board (the Board), pursuant to W2018L2-0002 and W2018L2-0003 (Part D Item 2). The purpose of this document is to outline planned water withdrawal for Indin Lake and Spider Lake required to support upcoming drilling in March and April 2019.

As required by W2018L2-0003 (Part D Item 2) the Water Use Plan is to include:

- a. Name and location of the lake(s) to be used as a Water Source;
- b. Anticipated daily withdrawal volumes and duration of use, including a comparison of the total water volume requested for use against the total water volume available;
- c. Any available bathymetric information, including maximum depths;
- d. Any available information on other water uses from the source(s).

This information is provided in the sections below, as well as other information relevant to conditions under Part D of the water licences. The drill program will not use more than the total water usage outlined in Part D(1), which is 120 m³.

With respect to the W2018L2-0002 Water Licence (federal lands), Nighthawk has provided information on Baton Lake and Steeves Lake in previous preliminary screenings. As such, the Board does not require Nighthawk to provide information prior to withdrawal from these water sources (W2018L2-0002 and W2018L2-0003 Reasons for Decision, page 13).

Names and Locations of the Lakes to be Used as a Water Source

The table below includes the water source lake names and locations.

Source Lake Name	Approximate centroid (DDD° MM')	NTS Mapsheet	Surface area (m ²)	Maximum depth (m)
Indin Lake	64° 14' N 115° 08' W	086B03 - Ranji Lake	164,597,116	71 (Falk 1979)

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Source Lake Name	Approximate centroid (DDD° MM')	NTS Mapsheet	Surface area (m ²)	Maximum depth (m)
Spider Lake	64° 30' N 115° 08' W	086B11 - Origin Lake	16,138,324	Unknown

Note: Lake surface area was computed using Global Mapper v18.0 GIS software from publicly available 1:50,000 scale CanVec hydrographic feature data published by Natural Resources Canada (2017).

Anticipated Daily and Total Withdrawal

The anticipated water use for the proposed March and April 2019 drilling program is estimated as follows:

- The drilling program will extend from March 10 to April 27, requiring up to 21 days of drilling water from Indin Lake, and 27 days of drilling water from Spider Lake.
- The daily drill water use is estimated at up to 31.04 m³ per drill per day. When all three drills are operational, maximum water withdrawal will be 93.12 m³ per day. This is below the limit of 120 m³ per day as required by W2018L2-0003 Part D Item 1.

Using these estimates, the maximum daily and total water use for three drills during March and April 2019 is presented in the table below.

Source	Daily withdrawal per drill (m ³)	Maximum total daily withdrawal for three drills *	Duration of drilling program (days)	Maximum anticipated withdrawal (m ³)
Indin Lake	31.04	93.12	21	1,955.52
Spider Lake	31.04	93.12	27	2,514.24

* Nighthawk will have a maximum of three drills in operation, thus the daily withdrawal estimates from Indin Lake and Spider Lake are not additive.

Available Bathymetric Information

Several sources were searched for available bathymetric information on Indin Lake and Spider Lake. This included Golder (1988), Gartner Lee (2008), Pacific Ecological (2004), Falk (1979), Puznicki (1996, 1997). From these, bathymetry information from Indin Lake was identified in Falk (1979). The remaining documents provided some isolated water depth measurements for surrounding lakes only. Falk (1979) presents 36 depth measurements in a 5 km² area in eastern Indin Lake. A maximum depth of 71.0 m was measured, and an average depth of 34.8 m was observed in that area.

Comparison of Water Requested with Water Available

The table below provides the estimated lake volumes, estimated below-ice volume (using an ice volume maximum thickness of 1.5 metres [DFO 2010]), anticipated withdrawal during the 2019 ice-covered season, and the percentage of withdrawal to the under-ice volume. Note that a conservative average depth of 5 m was used to estimate total lake volume for both Indin and Spider Lake.

Source	Estimated total volume* (m ³)	Estimated below-ice volume** (m ³)	Anticipated withdrawal (m ³)	Percent of total below-ice volume (%)
Indin Lake	822,985,580	576,089,906	2,205	0.0004%
Spider Lake	80,691,620	56,484,134	2,835	0.0050%

* Using a conservative estimated average lake depth of 5 m

** Using a maximum expected ice thickness of 1.5 metres (DFO 2010)

The minimum water body depth required for 10% water withdrawal for lakes south of the treeline is ≥ 3.0 metres (DFO 2010). Indin Lake as a maximum recorded depth of 71 metres. A minimum of three depth measurements within 500 metres of the proposed withdrawal sites will be used to confirm that Spider Lake has sufficient depth for water withdrawal. Based on conservative estimates, total water withdrawal in one ice-covered season, from a single waterbody is not calculated to exceed 10% of the available water under-ice water volume (W2018L2-0002 and W2018L2-0003 Part D Item 3).

Other Water Uses

Nighthawk is not aware of other users of water from Indin Lake and Spider Lake. The WLWB Current Authorizations webviewer did not indicate other active water licences on these lakes, as of 18 February 2019. The nearest active water licence was W2014L8-0003, issued to INAC Contaminants and Remediation Directorate for the former Colomac Mine.

Other Conditions

Nighthawk assumes both Indin Lake and Spider Lake are fish-bearing. As such, Nighthawk confirms that prior to locating a Water intake in a fish-bearing Watercourse, Nighthawk shall obtain written authorization for the location from an Inspector (W2018L2-0002 and W2018L2-0003 Part D Item 4).

Nighthawk also confirms that water intake(s) will use a fish screen designed to prevent impingement and/or entrainment of fish, considering guidelines provided by DFO (1995) (W2018L2-0002 and W2018L2-0003 Part D Item 5).

Closure

We trust this document provides the requirements of the Water Use Plan for the upcoming March and April drilling program. If you have any questions, please do not hesitate to contact Michael Byron at (647) 794-4359.

Regards,

Nighthawk Gold Corp.



Michael J Byron, PhD, PGeo
President and CEO

References

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- Gartner Lee. 2008. Damoti Gold Project, Aquatic Baseline Technical Report, 2007. Prepared for Anaconda Gold Corporation.
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- Natural Resources Canada. 2017. CanVec Geospatial Extraction Tool. [modified 28 June 2017; accessed 18 February 2019]. <http://maps.canada.ca/czs/index-en.html?service=canvec>.
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