

## Review Comment Table

<b>Board:</b>	WLWB
<b>Review Item:</b>	Nighthawk - Water Use Plan - Version 2.0 (W2018L2-0002 and W2018L2-0003)
<b>File(s):</b>	<a href="#">W2018L2-0002</a> <a href="#">W2018L2-0003</a>
<b>Proponent:</b>	Nighthawk Gold Corp.
<b>Document(s):</b>	<a href="#">Water Use Plan - Version 2.0</a> (1.6MB)
<b>Item For Review Distributed On:</b>	Apr 18 at 08:53 <a href="#">Distribution List</a>
<b>Reviewer Comments Due By:</b>	May 16, 2019
<b>Proponent Responses Due By:</b>	May 23, 2019
<b>Item Description:</b>	<p>On April 17, 2019, Nighthawk Gold Corp. (Nighthawk) submitted Version 2.0 of its Water Use Plan in accordance with Part D, Condition 2 of Water Licences W2018L2-0002 and W2018L2-0003.</p> <p>Parties are invited to submit comments and recommendations using the Online Review System (ORS) by the review comment deadline specified below. If Parties seek clarification on the submission, they are encouraged to correspond directly with the proponent prior to submitting comments and recommendations. If Parties do, however, submit questions or are seeking clarification, they are asked to provide specific recommendations on how the Board should consider the proponent's response in their decision.</p> <p>Parties may also wish to consider providing an overarching recommendation regarding whether the Board should approve the submission, to provide context for the comments and recommendations and assist the Board with its decision.</p> <p>All documents that have been uploaded to this review are also available on our public Registry. If you have any questions or comments about the ORS or this review, please contact Board staff identified below.</p>
<b>Contact Information:</b>	Anneli Jokela 867-765-4588 Brodie Costello 867-765-4583

## Comment Summary

Nighthawk Gold Corp. (Proponent)			
ID	Topic	Reviewer Comment/Recommendation	Proponent Response
1	General File	<b>Comment</b> <a href="#">(doc)</a> Cover Letter <b>Recommendation</b>	
2	General File	<b>Comment</b> <a href="#">(doc)</a> ENR confirmation on using 1 metre average water depth in lieu of full bathymetry. <b>Recommendation</b>	

Fisheries and Oceans Canada: Triage Group Fisheries Protection Program

ID	Topic	Reviewer Comment/Recommendation	Proponent Response
1	Water Usage: Fisheries Act	<p><b>Comment</b> (<a href="#">doc</a>) The Fisheries Act requires that projects avoid causing serious harm to fish unless authorized by the Minister of Fisheries and Oceans Canada. This applies to work being conducted in or near waterbodies that support fish that are part of, or that support a commercial, recreational or Aboriginal fishery. DFO has reviewed the Proponent's application pursuant to its mandate 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. The proposal includes water withdrawal for mineral exploration. Given the large number of lakes listed in the Water Use Plan Version 2.0, it is difficult for DFO to properly assess impacts to fish and fish habitat.</p> <p><b>Recommendation</b> In order for DFO to complete the review of your proposal, we ask that you complete the attached request for review form or visit our website to download the form (<a href="http://www.dfo-mpo.gc.ca/pnw-ppe/reviews-revues/index-eng.html">www.dfo-mpo.gc.ca/pnw-ppe/reviews-revues/index-eng.html</a>).</p>	<p><b>May 23:</b> During the review process for W2018L2-002 and W2018L2-003, DFO determined that the proposal will not result in serious harm to fish or prohibited effects on listed aquatic species at risk. A Request for Review was submitted to DFO on 21 May 2019. On 23 May 2019, DFO added a new response indicating that the proposal has been identified as a project where a Fisheries Act authorization is not required given that serious harm to fish can be avoided by following standard measures.</p>
2	General Application and Water Use Plan	<p><b>Comment</b> (<b>Submitted after Due Date</b>) The Fisheries Protection Program (the Program) of Fisheries and Oceans Canada received the proposal for the Nighthawk, Indin Lakes Gold Project, Water Use Plan, Version 2.0 (W2018L2-0002 and W2018L2-0003) which includes water taking, on April 18, 2019. The Program provided our comments to the Wek'èezhii Land and Water Board (the Board) on May 16, 2019. In response to our comments, the Program received a Request for Review form from D. Panayi, Golder Associates Ltd. on May 21, 2019. Based on the additional information provided by D. Panayi in a telephone conversation May 22, 2019, it is our understanding that water body volume calculations will be revised to reflect an assumed mean water depth of 1m and that total water withdrawal from a single waterbody will be significantly below the proposed maximum water taking volumes originally proposed. With this new information, the Program's concerns have been addressed.</p> <p><b>Recommendation</b> The proposal has been identified as a project where a <i>Fisheries Act</i> authorization is not required given that serious harm to fish can be avoided by following standard measures. In order to comply with the Act, it is</p>	<p><b>May 23:</b> No comment.</p>

		recommended that the proponent follow our guidance tools which can be found at the following website ( <a href="http://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures/measures-mesures-eng.html">http://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures/measures-mesures-eng.html</a> ). It remains the proponent's responsibility to meet the other requirements of federal, territorial and municipal agencies. Should the plans change or if the proponent omitted some information in the proposal such that the proposal meets the criteria for a site specific review, as described on our website ( <a href="http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html">http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html</a> ), they should complete and submit the request for review form that is also available on the website.	
<b>GNWT - ENR: Central Email GNWT</b>			
ID	Topic	Reviewer Comment/Recommendation	Proponent Response
9	General File	<b>Comment</b> ( <a href="#">doc</a> ) ENR Letter with Comments and Recommendations <b>Recommendation</b>	
1	Topic 1: Lardass Lake Bathymetry	<b>Comment</b> According to Table 1, the mean and maximum depths of Lardass Lake are unknown. ENR notes that a bathymetry study for Lardass Lake is referenced in the Damoti Lake Site Interim Closure and Reclamation Plan Version 3.2. This study concluded that the lake has one deeper hole at the south end (4.55 m) and an average depth of 1.82 m (Gartner Lee, 2007). Section 3.1 explains that several assumptions were applied to estimate the maximum number of drilling days for each lake during open-water and under-ice conditions. One of these assumptions includes "Where bathymetry data were not available, mean water depth is assumed to be 3 m." ENR cautions that this could result in significantly over estimating the amount of water available in the lake for use (i.e. the maximum number of days of use prior to conducting a lake assessment). For example, since the actual average depth of Lardass Lake is 1.82 m instead of the assumed 3 m, this results in 154 maximum potential drill days under-ice, instead of the estimated 724 days listed in Table 2. According to Table 1, only three out of the 84 potential water sources have known mean and maximum depths. <b>Recommendation</b> 1) ENR recommends Nighthawk include the bathymetry information for Lardass Lake in Table 1 and adjust Table 2 accordingly.	<b>May 23:</b> This change will be made to the next version of the Water Use Plan.

2	None	<p><b>Comment</b> None</p> <p><b>Recommendation</b> 2) ENR recommends Nighthawk not use a mean depth of 3 m for lakes where bathymetry data is not available.</p>	<p><b>May 23:</b> Following discussions with ENR, Nighthawk is willing to revise the assumed mean depth from 3 metres to 1 metre to estimate lake volume when bathymetry is not available.</p>
3	Topic 2: Total Water Volume Estimates	<p><b>Comment</b> Water licence W2018L2-003 Part D, Item 2 requires a minimum of 60 days prior to the use of water, the Licensee shall submit a Water Use Plan to the Board, for approval. The Water Use Plan shall contain the following information: 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). The inclusion of Part D, Item 2 in the water licence is understood by ENR to require the submission of information outlining the total water volume available and total withdrawal volumes to allow reviewers the ability to assess the potential impacts to the source lakes. ENR previously commented in review of the water licence applications (ENR comment #20 &amp; #26), that water sources not be approved until additional information is provided including bathymetric information on each source (depths and available water under-ice).</p> <p><b>Recommendation</b> 1) Given the issue noted for Lardass Lake, ENR recommends the Board not approve the additional water sources proposed in the Water Use Plan Version 2.0 until more information is provided on these sources.</p>	<p><b>May 23:</b> Water Licence W2018L2-003 Part D, Item 2 requests 'any available bathymetric information'. This does not preclude the approval of water withdrawal from lakes where bathymetry is not available. Nighthawk has presented all the available bathymetric information that could be found from the references listed on Page 4 of the Water Use Plan. The Plan will be updated to include the information from Gartner Lee 2007 described above.</p>
4	Topic 3: Field Confirmation Approach	<p><b>Comment</b> In Version 1.0 of the Water Use Plan, Nighthawk proposed "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." Nighthawk has carried this approach into Version 2.0 and proposes in Section 3.2 that "Where no historic bathymetric information is available, or if lake depth is 3.0 metres or less at the withdrawal location, a minimum of three depth measurements within 500 metres of the proposed withdrawal sites will confirm that lakes have sufficient depth for water withdrawal." Nighthawk therefore proposes to apply this approach to 81 different water sources whose bathymetry is unknown and many of which have significantly smaller surface areas. ENR notes that it only supported this as an acceptable approach for Spider</p>	<p><b>May 23:</b> Nighthawk has proposed to add further precaution to the annual withdrawal limits by revising the assumed mean depth from 3 metres to 1 metre to estimate lake volume when bathymetry is not available. Nighthawk will continue to stay within the Water Licence limits (W2018L2-0002 for federal lands allows withdrawal of 179 m3 per day and W2018L2-0003 for territorial lands allows withdrawal of 120 m3 per day) and report actual water withdrawal by lake and month in the Annual Water Licence Report. It is unclear why ENR would request bathymetry for larger body lakes when the volume of water available for withdrawal from larger lakes far exceeds that allowable under the Water Licence, even when an average depth of 1 metre is assume (updated withdrawal limits are provided in the cover letter).</p>

		<p>Lake in Version 1.0 based on the large surface area of the lake of 16,138,324 m<sup>2</sup> (15,420,407 m<sup>2</sup> as noted in Version 2.0) and the limited volume proposed for removal within Version 1.0 (2,514.24 m<sup>3</sup> - which at a conservative estimate of even 1 m mean depth would equate to a water usage of a fraction of a percentage).</p> <p><b>Recommendation 1)</b> As outlined in previous comment significant uncertainty exists in volume estimates based on the use of 3m mean depth. ENR recommends that more accurate estimates be provided for select larger body lakes in quadrants where future drilling may occur. This approach would add water sources in areas where drilling may occur in the future but will also provide total water use amounts from these sources rather than restricting use to a fraction of the percentage available.</p>	
5	Topic 4: Lardass Lake Post-Closure	<p><b>Comment</b> The Water Use Plan includes Lardass Lake as a potential water source for drilling. As well, the Damoti Lake Site Interim Closure and Reclamation Plan Version 3.2 (ICRP v. 3.2) identifies that runoff from the waste rock piles and portal area discharges into Lardass Lake. To predict the quality of water in Lardass Lake post-closure, the ICRP v. 3.2 includes a water quality model that combines predicted site discharge, runoff from the remainder of the Lardass Lake catchment and the volume of Lardass Lake itself. ENR notes it is unclear if Nighthawk has considered the potential implications of withdrawing water from Lardass Lake in these model predictions. It is currently unclear if withdrawing water for drilling from Lardass Lake would change the model predictions for post-closure conditions and therefore impact the ability for closure activities to achieve closure criteria.</p> <p><b>Recommendation 1)</b> ENR recommends Nighthawk clarify if potential water withdrawals from Lardass Lake could impact the closure and reclamation of the Damoti Lake Site.</p>	<p><b>May 23:</b> The Water Use Plan can be updated to reflect the average depth of Lardass Lake 1.82 metres, based on bathymetry survey conducted by Gartner Lee (2007). Water quality in Lardass Lake is proposed to be monitored as part of the ICRP. It is therefore important that the volume of the lake does not change significantly as a result of water withdrawal, since this volume was used in the mixing model to predict water quality after closure of the waste rock piles. The Lardass Lake water balance model developed for the ICRP resulted in a net catchment inflow into the lake of 220,000 m<sup>3</sup>/year. The water balance assumes that the volume of the lake remains constant year-over-year, with an average outflow (inflow minus evaporative loss from the surface) of 165,000 m<sup>3</sup>. This indicates that the average volume discharged from the lake under natural conditions is much more than the proposed annual withdrawal limit. As such the impact on Lardass Lake will be negligible and within uncertainties associated with model error and interannual climate variability, if it is used as a source at all.</p>
6	Topic 5: Territorial and Federal Water Sources	<p><b>Comment</b> In the cover letter to the Water Use Plan Version 2.0, Nighthawk explains: Some of the lakes identified in this Water Use Plan span federal and territorial land (see Table 1 of the Plan), and so it is not clear if water use from these lakes will fall under W2018L2-0002 or W2018L2-0003. Nighthawk suggests that in these instances the withdrawal should be licenced and inspected as territorial waters under W2018L2-0003, as most water withdrawal will occur under this licence. We expect the Wek'èezhii Land and Water Board to make a final determination on this matter. ENR</p>	<p><b>May 23:</b> Nighthawk will defer to the decision of the WLWB, but would prefer that any water use discussions with Inspectors required by the Plan only involve one inspector in instances where a lake spans federal and territorial waters.</p>

		believes water sources that span federal and territorial land should be licenced and inspected under both the federal and territorial water licences. This would prevent situations where water use is authorized for the same water source from two separate areas resulting in over allocation. When reporting water use according to each licence, Nighthawk should ensure that it is clear which water sources are reported under both licences to make sure these quantities are not counted twice. <b>Recommendation 1)</b> ENR recommends the Board licence the use of water from water sources that span federal and territorial land under both the federal and territorial water licences for the reason noted above.	
7	None	<b>Comment</b> None <b>Recommendation 2)</b> ENR recommends Nighthawk ensure that when reporting water use, it is clear which sources are reported under both licences to make sure these quantities are not inadvertently counted twice.	<b>May 23:</b> Nighthawk will report water use as directed by the WLWB.
8	Topic 6: References	<b>Comment</b> Gartner Lee (Gartner Lee Limited). 2007. Aquatic Baseline Study; Technical Report for Damoti Gold Project 2006 draft for discussion. Prepared for Anaconda Gold Corp. <b>Recommendation 1)</b> ENR recommends that the Board note the reference supplied in support of ENR's comments and recommendations.	<b>May 23:</b> No comment.

**WLWB: Brodie Costello**

<b>ID</b>	<b>Topic</b>	<b>Reviewer Comment/Recommendation</b>	<b>Proponent Response</b>
1	Section 3.1 - Water withdrawal limits assumptions	<b>Comment</b> The Water Use Plan states the "daily drill water use is estimated at up to 31.04 m3 per drill per day". <b>Recommendation</b> Please explain how this daily drill water use estimate has been determined.	<b>May 23:</b> The estimated average daily water usage of 31.04 m3 per drill rig is based upon previous experience and legacy measurements and has been used to calculate water withdrawal in previous Nighthawk Annual Water Licence Report.
2	Section 3.1 - Water withdrawal limits assumptions	<b>Comment</b> The Water Use Plan states that "ice thickness during the winter is assumed to be 1.5m". <b>Recommendation (1)</b> Please provide rationale for the assumed ice thickness of 1.5m. (2) Explain, with supporting rationale, whether this assumption is considered conservative.	<b>May 23:</b> This estimate for ice thickness is provided by the DFO Protocol for Winter Water Withdrawal from Ice-covered Waterbodies in the Northwest Territories and Nunavut. This protocol suggests a Maximum Expected Ice Thickness of 1.5 m for areas "Below the Tree Line - North of Fort Simpson". Based on Nighthawk's observations, this is a very conservative estimate. The next version of the Plan can be updated to cite this Protocol for the ice thickness.
3	Section 3.1 - Water withdrawal limits assumptions	<b>Comment</b> The majority of proposed water sources in Table 1 have an unknown mean and maximum depth. In Table 2, Nighthawk provides estimates of available water for these lakes based on the assumption that mean water depth is 3	<b>May 23:</b> Three metres is the Minimum Waterbody depth Required for 10% Water Withdrawal in the DFO Protocol for Winter Water Withdrawal from Ice-covered Waterbodies in the Northwest Territories and Nunavut (the Protocol). Regardless, Nighthawk is willing to use an assumed depth of 1

		<p>m.</p> <p><b>Recommendation</b> (1) Provide rationale for the assumed 3 m mean depth for water sources with an unknown depth. (2) Explain, with supporting rationale, whether this assumption is considered conservative. (3) Please explain what the implications to the list of proposed water sources would be if a shallower mean depth were assumed.</p>	<p>metre for the purposes of calculating withdrawal limits, as described above. This change still allows for sufficient water withdrawal to support exploration in most cases. However it should be noted that the Protocol cautions against using water from lakes with less than 1.5 metres of water below the maximum expected ice thickness (also 1.5 metres).</p>
4	Section 3.1 - Estimated available water volumes	<p><b>Comment</b> The estimated available water volumes for lakes with no bathymetry data are based on the assumption of a mean water depth of 3m. While section 3.2 describes Nighthawk's proposed process for confirming whether water sources have sufficient depth for water withdrawal, it is not clear whether the depth measurements are intended to confirm the estimated available water volume as provided in Table 2.</p> <p><b>Recommendation</b> (1) Please confirm whether the intent of these measurements is to confirm the estimates of available water volume. If they are, please provide rationale for why the proposed number and method of measurements are sufficient to estimate the available water volume of the water source. If the measurements are not intended to confirm the available water volume estimates, can Nighthawk comment on whether it plans to confirm the water volume estimates that are provided in the Water Use Plan prior to drilling? (2) If the estimated available water volume was found to be less than that proposed in the Water Use Plan, how does Nighthawk propose to proceed? (3) Please discuss the feasibility of confirming estimates of available volumes of water sources in the field prior to drilling (e.g., when does Nighthawk typically identify and first access a water source it intends to withdraw from for drilling?)</p>	<p><b>May 23:</b> The intent of the measurements is to confirm that the lake meets the maximum depth requirement of the DFO Protocol, which states that 'Only waterbodies with maximum depths that are <math>\leq 1.5\text{m}</math> than their corresponding maximum expected ice thickness should be considered for water withdrawal'. Nighthawk does not plan to confirm the water volume estimates because, as described above, the Protocol do not allow for withdrawal from lakes that do not meet this minimum threshold (unless the lake freezes to bottom, in which case fish will not be present but water may not be available for withdrawal). Section 3.2 of the Plan requires Nighthawk to provide depth measurements to the Inspector before withdrawal may proceed. If the measured water depth was found to be less than assumed in the Plan, Nighthawk will defer to the Inspector to make a determination, depending on whether there is ice cover and the requested withdrawal volume. It is not always feasible to complete bathymetry prior to drilling. Undertaking bathymetry requires specialized equipment (such as a boat with paired depth sounder/GPS in summer, or ground penetrating radar in winter) and techniques, in remote lakes often accessible only by helicopter. The field component is typically collected by experienced personnel. Once the data is collected, specialized software is required to access and process the data. Access to the lakes can be difficult and is weather dependent. It is however possible to collect confirmatory, isolated depth measurements prior to drilling, as is proposed in the Water Use Plan.</p>
5	Section 3.1 - 10% lake volume estimates	<p><b>Comment</b> For each water source, Nighthawk has calculated the number of maximum drill days for the open water season based on being able to use 10% of the available lake volume.</p> <p><b>Recommendation</b> Please provide rationale for why 10% of the available water volume (for any given source) is used to estimate maximum water use during the open-water season.</p>	<p><b>May 23:</b> The proposed maximum withdrawal is based on the limit suggested within the DFO Protocol for Winter Water Withdrawal from Ice-covered Waterbodies in the Northwest Territories and Nunavut, and is defined in Water Licences W2018L2-0002 and W2018L2-0003 Part D. This remains a conservative threshold for lakes in summer also because the lake volumes are conservatively estimated, and will be used as an annual limit rather than a seasonal limit (as suggested by the DFO Protocol for Winter Water Withdrawal).</p>
6	Section 3.1 - Maximum potential drilling days	<p><b>Comment</b> The Water Use Plan states "maximum potential drilling days is based on the number of days to reach 10% of</p>	<p><b>May 23:</b> There has been and will continue to be instances where Nighthawk will draw water for more than one drill from a single water source. In these</p>

	and potential implications of multiple drills	<p>the lake volume in drill water use at a rate of 31.04 m3 per drill per day".</p> <p><b>Recommendation</b> (1) Is there any likelihood that more than one drill would be in use and withdrawing from the same water source at any given time? (2) If so, please explain what the implications to the list of proposed water sources would be if more than one drill were in use and withdrawing from the same water source.</p>	<p>cases, Nighthawk will continue to remain within limits outlined in the Water Use Plan and by the Water Licences. In all cases, Nighthawk will obtain approval from the Inspector prior to making any withdrawals and will report actual withdrawals.</p>
7	Section 3.1 - Maximum potential drilling days	<p><b>Comment</b> Nighthawk has identified "Maximum potential drill days" for both open-water and under-ice water withdrawal.</p> <p><b>Recommendation</b> (1) Is Nighthawk committing to not exceeding the maximum potential drill days identified in the Water Use Plan? (2) If not, can Nighthawk describe the commitment, if any, with respect to maximum drill days and/or maximum water use from a given water source.</p>	<p><b>May 23:</b> The maximum potential drill days were provided to show that the capacity of the lakes to support drilling is far beyond Nighthawk's requirements or capacity in most instances. Nighthawk commits to withdrawing no more than the daily water use limits prescribed in the water licences, and 10% of the volume of any one lake.</p>
8	Section 2.0 - Identifying water sources	<p><b>Comment</b> In the cover letter, Nighthawk states "there is little certainty as to which sources will be required". Section 2.0 of the Water Use Plan identifies over 80 potential water sources that may be used.</p> <p><b>Recommendation</b> (1) Does Nighthawk currently have surveys and/or a plan of where it intends to drill this summer and for the coming winter? (2) When does Nighthawk plan drilling operations for each season?</p>	<p><b>May 23:</b> The project is a mineral exploration program, so the ability to accurately identify where all drilling and camp activities will occur is not possible. In addition, the success of drilling cannot be pre-determined and total activity is unknown until the initial drilling has been completed and the results evaluated. Most areas will receive cursory examination, and never be visited again. Successful drilling results lead to increased levels of drilling in order to determine the economic significance of the initial success. High-level plans for each season's drilling are typical made early in the year, based on results from the previous year, but are adjusted continually based on results and available financing. Drilling typically starts in early March and extends until late September.</p>
9	Section 3.2 - Field Confirmation - Sufficient depth	<p><b>Comment</b> The Water Use Plan states "a minimum of three depth measurements within 500 metres of the proposed withdrawal sites will confirm that lakes have sufficient depth for water withdrawal". It is unclear what is meant by "sufficient depth".</p> <p><b>Recommendation</b> Please explain how Nighthawk would define and calculate "sufficient depth" as described in the Water Use Plan.</p>	<p><b>May 23:</b> "Sufficient depth" is a reference to the DFO Protocol, which states that "Only waterbodies with maximum depths that are <math>\leq 1.5\text{m}</math> than their corresponding maximum expected ice thickness should be considered for water withdrawal". This will be clarified in the next version of the Plan.</p>





May 16, 2019

Joseph Mackenzie  
Chair  
Wekeezhii Land and Water Board  
#1-4905 48<sup>th</sup> Street  
Yellowknife, NT  
X1A 3S3

Dear Ms. Elsasser,

**Re: Nighthawk Gold Corp.  
Water Licence – W2018L2-0002 and W2018L2-0003  
Water Use Plan Version 2.0  
Request for Comment**

The Department of Environment and Natural Resources (ENR), Government of the Northwest Territories has reviewed the plan at reference based on its mandated responsibilities under the Environmental Protection Act, the Forest Management Act, the Forest Protection Act, the Species at Risk (NWT) Act, the Waters Act and the Wildlife Act and provides the following comments and recommendations for the consideration of the Board.

**Topic 1: Lardass Lake Bathymetry**

**Comment(s):**

According to Table 1, the mean and maximum depths of Lardass Lake are unknown. ENR notes that a bathymetry study for Lardass Lake is referenced in the Damoti Lake Site Interim Closure and Reclamation Plan Version 3.2. This study concluded that the lake has one deeper hole at the south end (4.55 m) and an average depth of 1.82 m (Gartner Lee, 2007).

Section 3.1 explains that several assumptions were applied to estimate the maximum number of drilling days for each lake during open-water and under-ice conditions. One of these assumptions includes “Where bathymetry data were not available, mean water depth is assumed to be 3 m.” ENR cautions that this could result in significantly over estimating the amount of water available in the lake for use (i.e. the maximum number of days of use prior to conducting a lake assessment). For example, since the actual average depth of Lardass Lake is 1.82 m instead of the assumed 3 m, this results in 154 maximum potential drill days under-ice, instead of

the estimated 724 days listed in Table 2. According to Table 1, only three out of the 84 potential water sources have known mean and maximum depths.

**Recommendation(s):**

- 1) ENR recommends Nighthawk include the bathymetry information for Lardass Lake in Table 1 and adjust Table 2 accordingly.
- 2) ENR recommends Nighthawk not use a mean depth of 3 m for lakes where bathymetry data is not available.

**Topic 2: Total Water Volume Estimates**

**Comment(s):**

Water licence W2018L2-003 Part D, Item 2 requires a minimum of 60 days prior to the use of water, the Licensee shall submit a Water Use Plan to the Board, for approval. The Water Use Plan shall contain the following information:

- 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).

The inclusion of Part D, Item 2 in the water licence is understood by ENR to require the submission of information outlining the total water volume available and total withdrawal volumes to allow reviewers the ability to assess the potential impacts to the source lakes. ENR previously commented in review of the water licence applications (ENR comment #20 & #26), that water sources not be approved until additional information is provided including bathymetric information on each source (depths and available water under-ice).

**Recommendation(s):**

- 1) Given the issue noted for Lardass Lake, ENR recommends the Board not approve the additional water sources proposed in the Water Use Plan Version 2.0 until more information is provided on these sources.

### **Topic 3: Field Confirmation Approach**

#### **Comment(s):**

In Version 1.0 of the Water Use Plan, Nighthawk proposed “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.”

Nighthawk has carried this approach into Version 2.0 and proposes in Section 3.2 that “Where no historic bathymetric information is available, or if lake depth is 3.0 metres or less at the withdrawal location, a minimum of three depth measurements within 500 metres of the proposed withdrawal sites will confirm that lakes have sufficient depth for water withdrawal.” Nighthawk therefore proposes to apply this approach to 81 different water sources whose bathymetry is unknown and many of which have significantly smaller surface areas.

ENR notes that it only supported this as an acceptable approach for Spider Lake in Version 1.0 based on the large surface area of the lake of 16,138,324 m<sup>2</sup> (15,420,407 m<sup>2</sup> as noted in Version 2.0) and the limited volume proposed for removal within Version 1.0 (2,514.24 m<sup>3</sup> – which at a conservative estimate of even 1 m mean depth would equate to a water usage of a fraction of a percentage).

#### **Recommendation(s):**

- 1) As outlined in previous comment significant uncertainty exists in volume estimates based on the use of 3m mean depth. ENR recommends that more accurate estimates be provided for select larger body lakes in quadrants where future drilling may occur. This approach would add water sources in areas where drilling may occur in the future but will also provide total water use amounts from these sources rather than restricting use to a fraction of the percentage available.

### **Topic 4: Lardass Lake Post-Closure**

#### **Comment(s):**

The Water Use Plan includes Lardass Lake as a potential water source for drilling. As well, the Damoti Lake Site Interim Closure and Reclamation Plan Version 3.2 (ICRP v. 3.2) identifies that runoff from the waste rock piles and portal area discharges into Lardass Lake. To predict the quality of water in Lardass Lake post-closure, the ICRP v. 3.2 includes a water quality model that combines predicted site discharge, runoff from the remainder of the Lardass Lake catchment and the volume of Lardass Lake itself. ENR notes it is unclear if Nighthawk has considered the potential implications of withdrawing water from Lardass Lake in these model

predictions. It is currently unclear if withdrawing water for drilling from Lardass Lake would change the model predictions for post-closure conditions and therefore impact the ability for closure activities to achieve closure criteria.

**Recommendation(s):**

- 1) ENR recommends Nighthawk clarify if potential water withdrawals from Lardass Lake could impact the closure and reclamation of the Damoti Lake Site.

**Topic 5: Territorial and Federal Water Sources**

**Comment(s):**

In the cover letter to the Water Use Plan Version 2.0, Nighthawk explains:

*Some of the lakes identified in this Water Use Plan span federal and territorial land (see Table 1 of the Plan), and so it is not clear if water use from these lakes will fall under W2018L2-0002 or W2018L2-0003. Nighthawk suggests that in these instances the withdrawal should be licenced and inspected as territorial waters under W2018L2-0003, as most water withdrawal will occur under this licence. We expect the Wek'èezhì Land and Water Board to make a final determination on this matter.*

ENR believes water sources that span federal and territorial land should be licenced and inspected under both the federal and territorial water licences. This would prevent situations where water use is authorized for the same water source from two separate areas resulting in over allocation. When reporting water use according to each licence, Nighthawk should ensure that it is clear which water sources are reported under both licences to make sure these quantities are not counted twice.

**Recommendation(s):**

- 1) ENR recommends the Board licence the use of water from water sources that span federal and territorial land under both the federal and territorial water licences for the reason noted above.
- 2) ENR recommends Nighthawk ensure that when reporting water use, it is clear which sources are reported under both licences to make sure these quantities are not inadvertently counted twice.

## Topic 6: References

### Comment(s):

Gartner Lee (Gartner Lee Limited). 2007. Aquatic Baseline Study; Technical Report for Damoti Gold Project 2006 draft for discussion. Prepared for Anaconda Gold Corp.

### Recommendation(s):

- 1) ENR recommends that the Board note the reference supplied in support of ENR's comments and recommendations.

Comments and recommendations were provided by ENR technical experts in the Water Management and Monitoring Division and the North Slave Region and were coordinated and collated by the Environmental Assessment and Monitoring Section (EAM), Environmental Stewardship and Climate Change Division.

Should you have any questions or concerns, please do not hesitate to contact Patrick Clancy, Environmental Regulatory Analyst at (867) 767-9233 Ext: 53096 or email [patrick\\_clancy@gov.nt.ca](mailto:patrick_clancy@gov.nt.ca).

Sincerely,



Patrick Clancy  
Environmental Regulatory Analyst  
Environmental Assessment and Monitoring Section  
Environmental Stewardship and Climate Change Division  
Department of Environment and Natural Resources  
Government of the Northwest Territories



23 May 2019

W2018L2-0002, W2018L2-0003

**Joseph Mackenzie, Chair**

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

**RESPONSE TO COMMENTS ON WATER USE PLAN VERSION 2 FOR THE NIGHTHAWK GOLD CORP  
INDIN LAKE GOLD PROPERTY**

Dear Mr. Mackenzie,

Nighthawk Gold Corp. (Nighthawk) submitted Version 2 of the Water Use Plan for approval by the Wek'èezhì Land and Water Board (the Board), pursuant to W2018L2-0002 (federal lands) and W2018L2-0003 (territorial lands) Part D Item 2. The purpose of the Water Use Plan is to identify water sources and obtain approval for water withdrawal for ongoing mineral exploration drilling at the Indin Lake Gold Property.

In addition to comments provided by the Board, comments on this document were provided by Government of the Northwest Territories Department of Environment and Natural Resources (ENR), and Fisheries and Oceans Canada (DFO). Nighthawk notes that no responses indicated other users of the water sources.

As the Board is aware, DFO requested that a Request for Review be submitted. Nighthawk provided this on 21 May 2019, and DFO helpfully responded today on the Online Review System with confirmation that Fisheries Act authorization is not required given that serious harm to fish can be avoided by following standard measures. We consider the matter closed, but will update DFO if there is a change in operations.

ENR indicated in their comments that Nighthawk should not use an assumed mean depth of 3 meters for lakes where bathymetry data is not available. To provide further assurance that our proposed approach is cautious and protective of fish and aquatic environments, Nighthawk is willing to revise the requested withdrawal limits using an assumed average lake depth of 1 metre. This approach was developed through discussions with both ENR and DFO, and the ENR assessment of this approach will be provided to the Board as soon as possible. This is considered a conservative approach to calculating withdrawal limits and protective of lakes because:

- All available bathymetry indicates that lakes in the area have an average depth greater than 1 metre.
- Many of the water sources have more water available for withdrawal than is allowable under the current water licences, even with the conservative assumption of 1 metre average depth and a withdrawal limit of 10% of lake volume
  - W2018L2-0002 for federal lands allows withdrawal of 179 m<sup>3</sup> per day, or 65,335 m<sup>3</sup> per year from all sources combined (or approximately 38,485 m<sup>3</sup> per year considering a drilling season of up to 215 days from early March to late September)

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**Nighthawk Gold Corp.**

141 Adelaide St. W., Suite 301, Toronto, Ontario M5H 3L5  
Tel: (647) 794-4313  
Fax: (416) 628-5911

- W2018L2-0003 for territorial lands allows withdrawal of 120 m<sup>3</sup> per day, or 43,800 m<sup>3</sup> per year from all sources combined (or approximately 25,800 m<sup>3</sup> per year considering a drilling season of up to 215 days)
- Nighthawk will not exceed the Water Licence daily limits.
- The associated Land Use Permit W2018C0007 permits a maximum of five drills at site, and there are currently three at site.
- Prior to any withdrawal, water depth checks will be completed, and the Inspector notified to confirm that average lake depth is greater than 1 metre.
- Actual water use will be far below these limits in most instances.

Table 1 the revised withdrawal limits using these new assumptions.

**Table 1: Revised Lake Withdrawal Limits**

Water source	Surface area (m <sup>2</sup> )	Lake volume assuming average depth of 1 metre (m <sup>3</sup> )	Annual withdrawal limit based on 10% of volume* (m <sup>3</sup> )
AL1	80,013	80,013	8,001
AL2	10,733	10,733	1,073
AL3	14,756	14,756	1,476
AL4	114,421	114,421	11,442
AL5	66,836	66,836	6,684
Andy Lake	678,263	678,263	67,826
Baton Lake	1,597,739	15,977,388	1,597,739
BVL1	18,543	18,543	1,854
BVL2	17,855	17,855	1,785
BVL3	70,706	70,706	7,071
BVL4	209,099	209,099	20,910
CL1	29,191	29,191	2,919
CL10	1,498,280	1,498,280	149,828
CL11	537,257	537,257	53,726
CL12	73,755	73,755	7,375
CL13	308,889	308,889	30,889
CL14	111,043	111,043	11,104
CL15	17,352	17,352	1,735
CL16	1,589,340	1,589,340	158,934

<b>Water source</b>	<b>Surface area (m<sup>2</sup>)</b>	<b>Lake volume assuming average depth of 1 metre (m<sup>3</sup>)</b>	<b>Annual withdrawal limit based on 10% of volume* (m<sup>3</sup>)</b>
CL17	6,135	6,135	613
CL18	93,561	93,561	9,356
CL2	1,106,220	1,106,220	110,622
CL3	184,693	184,693	18,469
CL4	544,294	544,294	54,429
CL5	206,497	206,497	20,650
CL6	178,410	178,410	17,841
CL7	64,323	64,323	6,432
CL8	59,564	59,564	5,956
CL9	38,935	38,935	3,893
EIL1	46,019	46,019	4,602
EIL2	79,161	79,161	7,916
EIL3	94,829	94,829	9,483
EIL4	34,250	34,250	3,425
EIL5	20,920	20,920	2,092
EIL6	40,353	40,353	4,035
EIL7	35,874	35,874	3,587
Fishook Lake	5,977,493	5,977,493	597,749
FL1	99,881	99,881	9,988
FL2	1,372,811	1,372,811	137,281
FL3	128,814	128,814	12,881
FL4	152,679	152,679	15,268
FL5	209,501	209,501	20,950
FL6	282,647	282,647	28,265
Float Lake	4,935,848	4,935,848	493,585
Fortune Lake	641,960	641,960	64,196
Indin Lake	117,422,270	4,086,294,983	408,629,498
Lardass	149,833	272,696	27,270
Laurie Lake	447,149	447,149	44,715
ML1	40,780	40,780	4,078



<b>Water source</b>	<b>Surface area (m<sup>2</sup>)</b>	<b>Lake volume assuming average depth of 1 metre (m<sup>3</sup>)</b>	<b>Annual withdrawal limit based on 10% of volume* (m<sup>3</sup>)</b>
ML2	33,429	33,429	3,343
ML3	148,694	148,694	14,869
ML4	236,088	236,088	23,609
ML5	129,094	129,094	12,909
ML6	34,724	34,724	3,472
ML7	14,478	14,478	1,448
ML8	6,878	6,878	688
ML9	51,599	51,599	5,160
Nautilus Lake	780,944	780,944	78,094
Nice Lake	430,333	430,333	43,033
Northeast Lake	28,221	28,221	2,822
Ranji Lake	9,895,739	9,895,739	989,574
Riss Lake	1,547,656	1,547,656	154,766
Schwerdt Lake	1,129,174	1,129,174	112,917
SL1	4,859	4,859	486
SL2	6,559	6,559	656
SL3	35,220	35,220	3,522
SL4	72,779	72,779	7,278
SL5	124,426	124,426	12,443
SL6	56,495	56,495	5,649
SL7	111,799	111,799	11,180
SL8	156,441	156,441	15,644
SL9	130,168	130,168	13,017
Snare River	1,301,466	1,301,466	130,147
Spider Lake	15,420,407	15,420,407	1,542,041
Steeves Lake	1,424,161	7,832,888	783,289
TIL1	43,354	43,354	4,335
TIL2	50,682	50,682	5,068
TIL3	193,986	193,986	19,399
TIL4	148,098	148,098	14,810

Water source	Surface area (m <sup>2</sup> )	Lake volume assuming average depth of 1 metre (m <sup>3</sup> )	Annual withdrawal limit based on 10% of volume* (m <sup>3</sup> )
TIL5	90,174	90,174	9,017
TIL6	150,797	150,797	15,080
TIL7	115,299	115,299	11,530
TIL8	115,956	115,956	11,596
TL9	184,885	184,885	18,489

\* Regardless of the available water, total daily withdrawal limits cannot exceed that allowed by W2018L2-002 and W2018L2-003.

Finally, Nighthawk respectfully requests that the Board approve the Water Use Plan Version 2 so that exploration may continue uninterrupted. At the request of the Board, Nighthawk can submit an updated version of the Water Use Plan with the changes noted above and any other changes requested by the Board.

We trust this document provides the requirements of the Water Use Plan to allow our ongoing exploration to continue. If you have any questions, please do not hesitate to contact me at (647) 794-4359.

Regards,

**Nighthawk Gold Corp.**



Michael J Byron, PhD, PGeo  
*President and CEO*



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**From:** Panayi, Damian [mailto:Damian\_Panayi@golder.com]  
**Sent:** Sunday, May 19, 2019 9:49 AM  
**To:** Rick Walbourne  
**Subject:** Nighthawk Water Use Plan

Hi Rick,

Thanks again for taking the time to meet regarding the Nighthawk Water Use Plan Version 2 (for W2018L2-0002 and W2018L2-003), to discuss the comments submitted by GNWT-ENR on 16 May 2019.

As noted in the comments, ENR has concerns with the assumed average depth of 3 metres to calculate the volume of water available for use in lakes where no bathymetry is available.

We would like to know if ENR would be comfortable with the Plan if the assumption was reduced to an average of 1 metre depth, thus reducing the threshold for water withdrawal from the lakes where no bathymetry is available and providing more protection to shallow lakes (notwithstanding the other ENR comments on the Plan)?

Would be great to have a response by noon on 23 May, as the Nighthawk responses are due by end of day on 23 May. We may include your response in our submission to the WLWB.

Thanks again for your help with this,

Damian Panayi  
Golder Associates Ltd.  
Yellowknife, Northwest Territories  
Office: 1-867-873-6319 x 224  
Cell: 1-867-444-8805

**From:** Rick Walbourne  
**To:** [Panayi, Damian](#)  
**Cc:** [Bryana Matthews](#)  
**Subject:** RE: Nighthawk Water Use Plan  
**Date:** May 24, 2019 7:41:54 AM  
**Attachments:** [image001.png](#)

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## EXTERNAL EMAIL

Hi Damien,

Thanks for meeting with us to provide additional information on your water use proposal.

It is our understanding that you have requested to provide conservative balances for the water sources included in the plan using 1m average depth in lieu of full bathymetry. Also, of note, while 10% of water available is being proposed as a maximum usage, historic program information indicates that usage is much lower.

We also understand that Nighthawk will still confirm a maximum depth of 3m prior to use to ensure water bodies with less than a 3m maximum depth are avoided as they may be especially sensitive to water withdrawal in this region (i.e. areas with estimated 1.5 m ice depth).

Based on the additional information provided outlining proposed methods for volume calculations, we have no further concerns on this topic.

Of note, if any additional sources may be required in the future (i.e. sources not currently listed in the plan), the plan will need to be updated for approval by the Board.

Rick

Rick Walbourne  
A/Manager, Water Regulatory  
Water Management and Monitoring Division  
Department of Environment and Natural Resources  
Government of the Northwest Territories

3<sup>rd</sup> floor, Scotiacentre  
PO Box 1320  
5102, 50<sup>th</sup> Avenue  
Yellowknife, NT X1A 2L9

Phone: 867-767-9234 Ext. 53113

[www.gov.nt.ca](http://www.gov.nt.ca)

**From:** [Panayi, Damian](#)  
**To:** [Anneli Jokela](#)  
**Cc:** [Michael J Byron](#); [Brodie Costello](#)  
**Subject:** RE: Nighthawk Water Use Plan - Version 2.0 - Follow-up Question  
**Date:** June 3, 2019 11:05:35 AM

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Thanks for picking that up, Anneli. Yes, that is a typo on my part. Should read =1.5m.

Damian

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**From:** Anneli Jokela <ajokela@wlwb.ca>  
**Sent:** June 3, 2019 11:02 AM  
**To:** Panayi, Damian <Damian\_Panayi@golder.com>  
**Cc:** Michael J Byron <mbyron@nighthawkgold.com>; Brodie Costello <bcostello@wlwb.ca>  
**Subject:** Nighthawk Water Use Plan - Version 2.0 - Follow-up Question

## EXTERNAL EMAIL

Good morning Damian,

The WLWB has a follow up clarification question regarding Nighthawk's ORS responses for Version 2.0 of the Water Use Plan. In response to WLWB staff comments 4 and 9, Nighthawk references the DFO protocol, stating "Only waterbodies with maximum depths that are =1.5m than their corresponding maximum expected ice thickness should be considered for water withdrawal". The DFO protocol found [here](#) states "Only waterbodies with maximum depths that are =1.5m than their corresponding maximum expected ice thickness should be considered for water withdrawal".

Can you confirm if Nighthawk meant "= 1.5 m" or "= 1.5 m" in its responses?

Masi,  
Anneli

### **Anneli Jokela, PhD**

Regulatory Manager

### **Wek'èezhì Land and Water Board**

#1-4905 48th St. | Yellowknife, NT | X1A 3S3

ph 867.765.4588 | fax 867.765.4593

✉ [ajokela@wlwb.ca](mailto:ajokela@wlwb.ca) | [www.wlwb.ca](http://www.wlwb.ca)



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