From: John.Minder
To: Brett.Isbister
Subject: RE: Mine Water treatment Plant update
Date: November 24, 2022 3:47:58 PM
Attachments: image001.png

Thanks for that. I finally sent the cyanide destructo letter yesterday requiring more detailed info about how they intend to make it work and a demonstration prior to Phase 2 ore loading early next year… we'll see how that goes, should be interesting.

From: Brett.Isbister <Brett.Isbister@yukon.ca>
Sent: November 24, 2022 3:25 PM
To: John.Minder <John.Minder@yukon.ca>
Subject: FW: Mine Water treatment Plant update

As requested here is the ADR process diagrams from Hugh.

From: Hugh Coyle <hcoyle@vgcx.com>
Sent: August 9, 2022 2:06 PM
To: Brett.Isbister <Brett.Isbister@yukon.ca>
Subject: RE: Mine Water treatment Plant update

Hi Brett,

Apologies for the delay.

The system for treatment of HLF solution will be in the ADR Plant (as it was for startup of leaching operations) prior to ore loading on Phase 2 of the HLF. The design of the system will make use of the carbon columns for cyanide destruction with the treated water then transferred to the rest of the mine water treatment plant components so that other constituents of concern are treated in that plant. This treatment approach is consistent with the cyanide destruction circuit that is described in our Cyanide Management Plan (specifically the ADR Plant Operations Plan appendix) and we are ensuring that the equipment necessary to treat the 691 m3/day as required by the water use licence is available and fully operational. Please find attached the relevant pages from the ADR Plant Operations Plan that describe the process and provides process flow sheets.

Cheers,

Hugh

Hugh Coyle | VP Environment | T:604-696-6600 | C:604-349-6469 | F:604-682-5232

From: Hugh Coyle
Sent: Monday, August 8, 2022 11:39 AM
To: Brett.Isbister@yukon.ca

Subject: RE: Mine Water treatment Plant update

Hi Brett,

I have a follow up call with our leads today and hope to get some details over to you later today.

FYI - I am going to be away from the morning of August 10 to the end of the month but will still be keeping an eye on emails.

Cheers,

Hugh

Hugh Coyle | VP Environment | T:604-696-6600 | C:604-349-6469 | F:604-682-5232

From: Brett.Isbister@yukon.ca <Brett.Isbister@yukon.ca>
Sent: Monday, August 8, 2022 11:35 AM
To: Hugh Coyle <hcoyle@vgcx.com>
Subject: RE: Mine Water treatment Plant update

Good morning Hugh,

I am just looking to touch base regarding the MWTP capabilities at site from my inspection. Have you had a chance to look into the MWTP capabilities as it relates to the HLF solution treatment requirements outlined in QZ14-041? I was hopeful that I would have this information before you depart on your holidays.

Thanks,

Yukon

Brett Isbister | Natural Resource Officer

Compliance Monitoring and Inspections Branch
Department of Energy, Mines and Resources | Yukon Government
Box 2703 | Whitehorse, Yukon Y1A 2C6
P 867.334-9280

From: Brett.Isbister
Sent: July-29-22 1:17 PM
To: 'Hugh Coyle' <hcoyle@vgcx.com>
Subject: RE: Mine Water treatment Plant update

Afternoon Hugh,

I am going to be out of the office next week and returning on August 8th. I think John mentioned something about you also being on holidays during the middle of August, so enjoy your time off. I'll follow up on my return to the office.

Thanks,

Brett Isbister | Natural Resource Officer

Compliance Monitoring and Inspections Branch
Department of Energy, Mines and Resources | Yukon Government
Box 2703 | Whitehorse, Yukon Y1A 2C6
P 867.334-9280

From: Hugh Coyle <hcoyle@vgcx.com>
Sent: July-29-22 12:17 PM
To: Brett.Isbister <Brett.Isbister@yukon.ca>
Subject: RE: Mine Water treatment Plant update

Hi Brett,

Sorry – just working on a deadline for another matter. Will get back to you on this early next week.

Cheers,

Hugh

Hugh Coyle | VP Environment | T:604-696-6600 | C:604-349-6469 | F:604-682-5232

From: Brett.Isbister@yukon.ca <Brett.Isbister@yukon.ca>
Sent: Thursday, July 28, 2022 1:31 PM
To: Hugh Coyle <hcoyle@vgcx.com>
Subject: Mine Water treatment Plant update

Good afternoon Hugh,

I am just looking to follow up on an aspect of the mine water treatment plant from my site visit. During the walkthrough with JDS on site, there was a comment regarding the Cyanide destruction component of the MWTP coming at a later date. I was a bit unclear if this comment was with regards to later phases of the HLF when rinsing/detox is to occur, or something else. Will the MWTP have the capability to treat HLF solution once commissioned this fall?

Thanks,

Yukon

Brett Isbister | Natural Resource Officer

Compliance Monitoring and Inspections Branch
Department of Energy, Mines and Resources | Yukon Government
Box 2703 | Whitehorse, Yukon Y1A 2C6
P 867.334-9280

From: Mark Ayranto
To: John.Minder
Cc: Millie Olsen; Briar.Young; Roger.Lockwood
Subject: [EXT] RE: VGC Water Licence QZ14-041 MWTP cyanide destruction requirements
Date: November 29, 2022 2:51:02 PM
Attachments: image001.png

Hi John
Apologies for the delayed response as I have been traveling this past week.

I do not believe you have characterized our discussion 100% correctly. More specifically, but not limited to, the company did ***not*** state 'will be relying on the existing ADR plant's capabilities for cyanide destruct' but rather that we would have dedicated equipment for cyanide destruction located within the ADR. I also have reviewed the terms of license referenced in your letter and fail to see how we are offside in any substantive way.

It is also worth noting Bill Slater, representing NND, was present at the meeting and I believe he was satisfied, subject to a physical confirmation test at site, the approach we are taking is acceptable and appropriate.

Prior to a more formal response I think it would be best to have another discussion for clarification. To that end I am available Monday Dec 5 or Dec 6 generally at your convenience.

Best regards, Mark

Mark Ayranto | Chief Operating Officer | T:604-696-6614 | C:778-888-4010 | F:604-682-5232

From: John.Minder <John.Minder@yukon.ca>
Sent: Wednesday, November 23, 2022 3:25 PM
To: Mark Ayranto <mayranto@vgcx.com>
Cc: Millie Olsen <nrc@nndfn.com>; Briar.Young <Briar.Young@yukon.ca>; Roger.Lockwood <Roger.Lockwood@yukonwaterboard.ca>
Subject: VGC Water Licence QZ14-041 MWTP cyanide destruction requirements

Hi Mark,

Please see the attached letter regarding the Mine Water Treatment Plant and cyanide destruction requirements of Water Licence QZ14-041.

I look forward to your response and further discussion of this important matter.

Thank you,

John

John Minder
Natural Resource Officer
Energy Mines and Resources | Compliance Monitoring and Inspections
T 867-334-9257 | Yukon.ca

Eagle Gold Technical meeting - October 31, 2022

FNNND: Bill and Helaina

VGC: Hugh, Mark, Jeff

YG: Monica, Johanna Caesar, John Minder, Matt Jenner, Bruce, Jacqueline, Denise McCann, Ty Heffner

Meeting agenda:

- VGC Overview of the CMP
    - Associated Site activities
- YG/VGC initiatives – information sharing
    - HLF and CN review - Piteau Report
    - Other License updates - Plans, WBM, OMS

Questions and Discussion

Hugh presentation

- Went through revisions history
- Went through sections of plan
- Overview of facilities
    - Bill asked about Seacans that are not open and their liner system - not lined area, seacan considered secondary containment at that stage
    - Discussion on spill response mitigations
- Bill: WTP rate vs. pumping rate while transferring water from LDSP to EP?
    - 5.5-6.5 thousand m3 pumped
    - Average MWTP rate is 8-8.5 thousand m3
    - VGC will need to plan to ensure LDSP is not full when peak flows hit during freshet
    - Particular focus on TSS

ADR cyanide destruction

- Mark: MWTP doesn't have the ability to break down CN
    - 691 m3 per day going into EP - lots of storage as long as levels are kept relatively low
- Jeff: ADR destruction - how does it work, will it work, etc. (Bill question)
    - Currently run 2000 m3 per hour
    - EP is going to be where things go if an upset condition
    - Would use the EP fill up time to design the destruction process if needed, set up equipment, etc.
    - If we kill the cyanide, it's no longer process water
    - There are many examples of this working in the industry
        - Alkaline chlorination centre - does not allow gold processing at the same time as destruction
        - Caros acid method - mixed with solution, by product is water and sulphate (300 ppm) - would require tank system set-up
    - Bill worried about certainty that these processes would actually work
        - Jeff: one tank two metering pumps, very simple set up for Caros method (preferred by VGC)
        - Gold strike runs the circuit in a purpose-built facility, so not quite comparable
    - Does need reasonable reaction time - Mark Ayranto talked about mock drill, but it's not ideal...could do mock scenario without process water, to ensure there are no hiccups in an emergency scenario
- Matt brought up imbalance with WL conditions
    - Mark A disagrees with interpretation
- The CMP will be submitted the Water Board with the annual report

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Yukon Government
Compliance Monitoring and Inspections
PO Box 2703 (K-325)
Whitehorse, Yukon Y1A 2C3

December 13, 2022

ATTENTION: John Minder

Re: Mine Water Treatment Plant and Cyanide Destruction: WUL QZ14-041

Thank you for your November 22 letter outlining your observations regarding Victoria Gold's proposed cyanide destruction capabilities.

As you rightly point out, the exact physical location of the Eagle Gold Mine treatment system for cyanide destruction is essentially a design issue. The detailed design of the Mine Water Treatment System has been, as in all designs, an evolving and adaptive process. While the final design for cyanide destruction may not conform to preliminary design drawings submitted during the regulatory proceedings, Victoria confirms the system meets the operating parameters for water treatment and cyanide destruction mandated in WUL QZ14-041-1. You are likely aware from your review of filed documents that the preliminary designs submitted during the regulatory process have always considered mine water treatment to include two distinct treatment processes, each of which to be conducted in separate buildings, with the cyanide destruction process occurring on the pad adjacent to the Heap Leach Facility. Victoria has been, and continues to be, of the opinion that meeting the overall intent and objective of the related clauses (i.e., treatment of site waters to the effluent quality standards (EQS) of QZ14-041-1 at the required rates) is the fundamental requirement. The approach being undertaken by Victoria satisfies this requirement.

Note the utilization of the ADR building for housing the cyanide destruction circuit is now organized in a manner that does not compromise gold recovery. As discussed at the meeting it is not correct to categorize this as a "repurposing of components involved in gold production." We say that for the reasons outlined in the attached Schedule A which may be of interest to your technical personnel.

In closing Victoria has completed final detailed design of the original preliminary design water treatment and cyanide destruction flowsheet to arrive at a comprehensive and fully detailed approach to mine water quality, while ensuring compliance with the conditions of WUL QZ14 041 1.

Should you require any further information regarding this matter, please feel free to contact me.

Suite 1000 – 1050 W. Pender Street
Vancouver, BC V6E 3S7 CANADA

TEL 604-682-5122
FAX 604 682-5232

VGCX.com

VICTORIA GOLD CORP
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Sincerely,

Mark Ayranto
Chief Operating Officer

Suite 1000 – 1050 W. Pender Street
Vancouver, BC V6E 3S7 CANADA

TEL 604-682-5122
FAX 604 682-5232

VGCX.com

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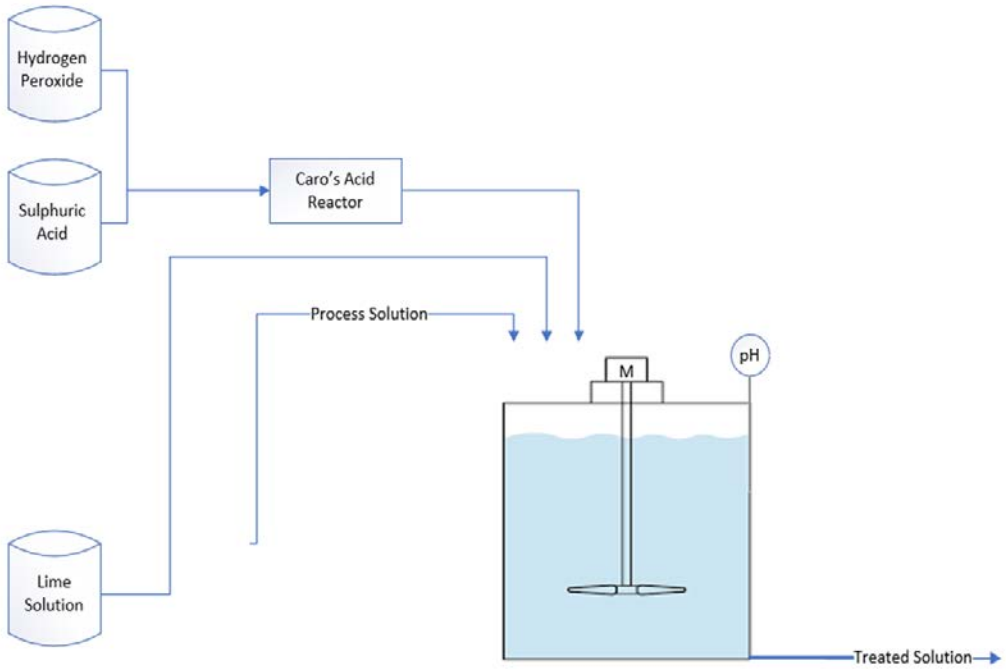
SCHEDULE A – RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

Below is our response to the four areas identified in your letter:

1. Cyanide destruction will be completed using the Caro's acid process. Caro's acid or peroxymonosulfuric acid (H_2SO_5) is produced by reacting sulfuric acid (H_2SO_4) with hydrogen peroxide (H_2O_2). Caro's acid is not stable for long periods and thus it is produced on as needed basis by introducing hydrogen peroxide through a first fed line into a first reactor conduit and sulfuric acid through a second feed line into a second reactor conduit independently into a baffled, plug flow mixing reactor. This configuration is known simply as a Caro's Acid Reactor and is commonly used to breakdown cyanide

   The pH of the process is controlled by the addition of lime to ensure that a pH range of 9-11 is maintained.

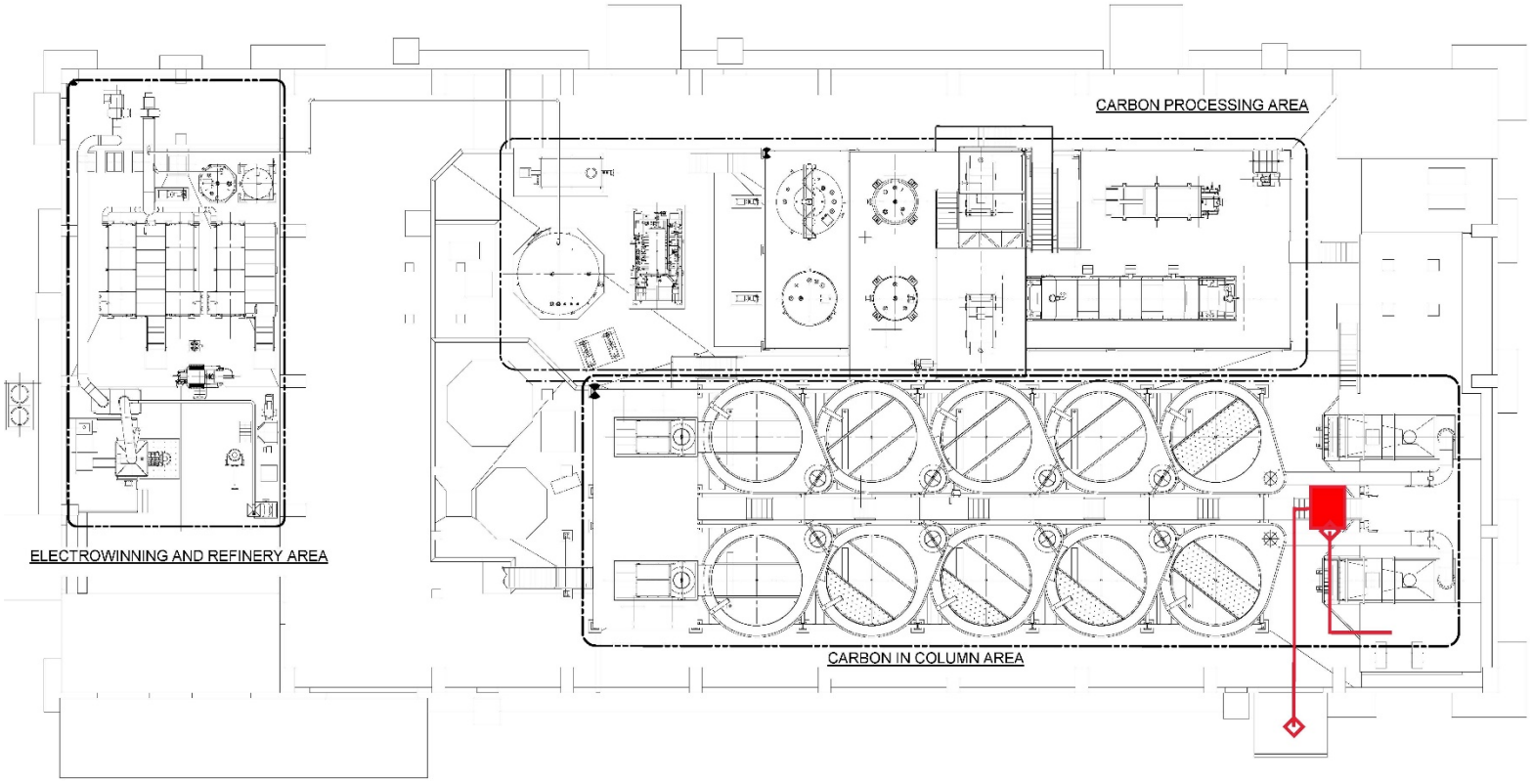
   The Caro's acid, lime solution and process solution are then fed into a reaction tank equipped with a static mixer where the cyanide destruction process occurs. The configuration of this system is shown in the graphic below:



Reactor Tank

   The hydrogen peroxide, sulphuric acid, and lime solution would be piped into the reactor tank from vendor supplied totes.

Victoria has procured the dedicated reactor tank for this process. It will be installed adjacent to the barren solution tank (as shown in the figure below) and is a dedicated purely to cyanide destruction.



The calculations for chemical additions, target concentrations, and tank sizing is provided below.

For reference purposes, and as the potential for utilizing a single tank from the CIC was previously proposed, if one of the CIC tanks was ever deemed necessary to supplement the dedicated tank (which, again, has been procured and will be used) it would allow for a reaction time 21 times longer than is necessary, or destruction of cyanide in up to roughly 16,000 m^3 of solution.

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Caro's Acid Cyanide Destruct

Formula Weight		
H_2O_2	34.0	g/mol
H_2SO_4	98.1	g/mol
H_2SO_5	114.1	g/mol
CN^-	26.0	g/mol

Reagent Properties		
H_2O_2	50.0%	wt %
	1.29	g/ml
H_2SO_4	94.5%	wt %
	1.84	g/ml

Discharge Water Quality Requirements		
Effluent CN Max	0.03	ppm

CN Destruction Circuit		
MWTP Throughput Average	8,500	m^3/day
	354	m^3/hr
CDC Throughput	691	m^3/day
	29	m^3/hr
	8.0	L/s
CDC Influent CN Concentration*	220	ppm
** Includes Free and WAD*		
CDC Effluent CN^- Concentration Max	0.37	ppm
CDC Effluent CN^- Concentration Removed	219.63	ppm
	99.8%	%
CDC CN^- Removal Rate	6.33	kg/hr

Caro's Acid Circuit Sizing		
H_2SO_5:CN^-	3.00	mol/mol
H_2SO_4:H_2O_2	2.00	mol/mol
Reaction Efficiency	75%	
H_2SO_5 mass flow	19.0	kg/hr
	0.46	tonne/day
H_2O_2 Solution Requirement	15.1	kg/hr
	0.36	tonne/day
H_2SO_4 Solution Requirement	110	kg/hr
	2.63	tonne/day
H_2O_2 Solution Flow Rate	11.7	L/hr
	0.20	L/min
H_2SO_4 Solution Flow Rate	59.6	L/hr
	0.99	L/min
Reaction Time	5.0	min
Reaction Tank Size	2.4	m^3
CIC Tank Size (Single)	52.2	m^3
Size Factor	21.8	---
Residence Time	**108.8**	**min**

Suite 1000 – 1050 W. Pender Street
Vancouver, BC V6E 3S7 CANADA

TEL 604-682-5122
FAX 604 682-5232

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The fluid which has been treated to the EQS for cyanide would then be piped via a HDPE pipe to the Events Pond. The water contained in the Events Pond can then be pumped to the Phase 2-5 MWTP for treatment of the residual constituents to achieve all EQS of the licence. Thus, the MWTP has been constructed and commissioned prior to loading of ore in Phase 2 of the HLF and the MWTP will be able to treat, on a daily basis, a minimum of: a) 13,824 m^3 of Mine Water; and b) 691 m^3 of HLF Solution.

2. The Caro's acid reactor, dedicated reactor tank, static mixer, piping, metering pumps, and pH monitor have all been ordered and are expected on site in mid-December. Installation of this equipment is expected to be complete prior to year end. Once the equipment is installed, it can be activated for the destruction of cyanide in an emergency situation within a matter of hours and certainly within a standard shift.

3. The Phase 2-5 MWTP (i.e., the plant in the building located in the lower Dublin Gulch valley) has now undergone commissioning trials. This work, which includes treatment of site contact water that is then returned to the Lower Dublin South Pond while laboratory confirmation is undertaken, commenced on Tuesday December 6, 2022. This testing phase was run until Sunday December 11, 2022. The plant equipment is now being winterized for the Christmas and New Year period. In early January, the Phase 2-5 commissioning team will remobilize to address any outstanding items identified from the December test work. It is currently expected that the Phase 2-5 MWTP will be fully operational in mid-January 2023.

   The cyanide destruction circuit will be operational prior to year-end. As discussed above, the water that has undergone cyanide destruction will be pumped to the Events Pond where the existing water management piping direct it to the Lower Dublin South Pond for further treatment at the MWTP prior to any discharge.

4. The current operational timing of ore loading and application of cyanide on solution Phase 2 of the HLF is for the first week of February.

Suite 1000 – 1050 W. Pender Street
Vancouver, BC V6E 3S7 CANADA

TEL 604-682-5122
FAX 604 682-5232

VGCX.com

Compliance Monitoring and Inspections
PO Box 2703 (K-325)
Whitehorse, Yukon
Y1A 2C6

November 23, 2022

Mark Ayranto
Victoria Gold (Yukon) Corp
1000 – 1050 West Pender Street
Vancouver, BC V6E 3S7

Dear Mr. Mark Ayranto:

Re: Mine Water Treatment Plant and cyanide destruction requirements of Water Licence QZ14-041

This letter serves as follow up from meetings held on September 13, 2022 and October 31, 2022 involving Victoria Gold (Yukon) Corp (the "company") representatives and Compliance Monitoring and Inspections Branch, Yukon Government, in which details of the company's Mine Water Treatment Plant ("MWTP") and Cyanide Management Plan ("CMP") were discussed. During the meetings, the company clarified that the MWTP does not include cyanide destruction capabilities and that the company will be relying on the existing Adsorption, Desorption, and Recovery ("ADR") plant's capabilities for cyanide destruction. During the October 31, 2022 meeting, the company indicated their intention to build a cyanide destruction demonstration system in the ADR plant capable of treating Heap Leach Facility ("HLF") solution.

A review of the water license application was undertaken by Compliance Monitoring and Inspections Branch as it relates to Conditions 75, 76, and 77 of QZ14-041:

> "75. The Licensee must ensure that a cyanide detoxification plant is constructed and operational prior to HLF Phase 1 so that it is readily available to treat excess cyanide contaminated water should the need arise."

> "76. Prior to the loading of ore in Phase 2 of the HLF, the Licensee must construct and commission an MWTP that is capable of achieving the effluent quality standards in clause 108."
>
> "77. Prior to HLF Phase 2, the MWTP must be able to treat, on a daily basis, a minimum of: a) 13,824 cubic metres of Mine Water; and b) 691 cubic metres of HLF Solution."

The review included the Type A water license application (Exhibit 1.2), the Technical Pre-Hearing Conference Record of Proceedings (Exhibit 11.7), the Public hearing transcript (Exhibit 10.1), and the Reasons for Decision (Exhibit 12.2). The issue of the MWTP's capabilities was discussed during the Technical Pre-Hearing Conference ("TPHC") in which clarification was sought by the Yukon Water Board ("YWB") regarding the timing of the cyanide destruction capabilities at the MWTP[1]. At the TPHC, the company committed to a cyanide destruction unit in the MWTP at the start of Phase 2 in addition to the cyanide destruction capabilities of the ADR plant. During the Public Hearing, additional clarity as to the timing of the MWTP's cyanide destruction capabilities was discussed by both the YWB[2] and the First Nation of Na-Cho Nyàk Dun[3]. The Reasons for Decision also state:

> "At the TPHC, SGC (Strata Gold Corp, succeeded by Victoria Gold (Yukon) Corp) committed to a cyanide destruction unit in the MWTP at the start of Phase 2."

During the TPHC, the topic of relying on the ADR plant for cyanide destruction was discussed and then subsequently the terms and conditions of QZ14-041 were issued. Continuing to rely only on the ADR plant for cyanide destruction capabilities during HLF Phase 2 will not comply with QZ14-041 Conditions 76 and 77 since these conditions require cyanide destruction capabilities to be located within the MWTP. Additionally, it is not clear if the ADR plant meets the requirement of Condition 75 to have a cyanide detoxification plant that is "readily available to treat excess cyanide contaminated water" since it is normally engaged in gold recovery.

Although Conditions 76 and 77 require cyanide destruction capabilities in the MWTP (as outlined in the application Exhibit 1.2 page 121), it is recognized that the exact physical location of this treatment system can be considered a design issue which may reasonably be modified to account for various factors not anticipated earlier in the mine development. During meetings and in email correspondence, the company has claimed that retaining cyanide destruction capabilities within the ADR plant keeps cyanide contaminated water contained within the larger HLF solution circuit and thereby reduces both safety and environmental risks.

---

[1] Exhibit 11.7 of QZ14-041 Pages 162-165
[2] Exhibit 10.1 of QZ14-041 Pages 58-64
[3] Exhibit 10.1 of QZ14-041 Pages 296-297

The company has further claimed that the ADR plant is capable of providing the cyanide destruction capabilities required by QZ14-041. However, the ADR plant has not been proven to be capable of providing readily available cyanide destruction capabilities which meet the cyanide effluent quality standards and minimum rate of HLF solution treatment specified in QZ14-041. These capabilities are required to be in place and functional prior to commencing with HLF Phase 2 regardless of their precise physical location.

The MWTP is currently nearing completion and cyanide destruction capabilities have not been installed as required by QZ14-041, nor has the ADR plant been proven to provide equivalent capabilities. In order to mitigate the anticipated non-compliance this may cause, the company has the opportunity to support their preferred cyanide destruction system by providing further information and a demonstration of its capabilities.

The company is therefore required to respond to this letter addressing the following:

1. Describe in detail the method, design, and location of the cyanide destruction system to be operational prior to HLF Phase 2 and explain how it is consistent with water licence requirements.
2. Provide a clear timeline for the process of activating the cyanide destruction system to when needed to treat HLF solution in an emergency situation.
3. Identify when the MWTP will be commissioned and describe how it will be capable of supporting the cyanide destruction system with treatment of HLF solution to meet all effluent quality standards.
4. Identify the operational timing of ore loading and application of cyanide solution on HLF Phase 2.

Following this response, the company must provide a demonstration of the cyanide destruction capabilities of the described treatment system prior to commencing with loading ore on HLF Phase 2. This demonstration will require advanced notice to allow for coordination of an inspection and confirmatory sample collection. The inspection and sample results will determine if the system complies with the cyanide destruction capability requirements of QZ14-041.

The company is advised to fully consider the operational advantages of a dedicated cyanide treatment system that does not require repurposing of components involved in gold production. Relevant operating plans (HLF, ADR, MWTP, CMP, etc.) must be revised and updated as necessary to include any changes resulting from the implemented cyanide treatment system.

Victoria Gold (Yukon) Corp remains obligated to ensure that all activities conducted at the Eagle Gold Mine are done so in accordance with QZ14-041 and QML-0011. Should you require clarity on the obligations identified in QZ14-041 or QML-0011, please contact me.

Sincerely,

John Minder
Natural Resource Officer
867-334-9257
John.Minder@yukon.ca

Cc:
Millie Olsen – A/Lands Manager, First Nation of Na-Cho Nyàk Dun
Briar Young – Director, Compliance Monitoring and Inspections
Roger Lockwood – Director, Yukon Water Board Secretariat