

**CULLATON LAKE GOLD MINES LTD.**  
**WATER LICENCE 1BR-CUL1118**

**ANNUAL WATER LICENCE REPORT 2014**

**PREPARED on behalf of:**

**BARRICK GOLD INC.**

**By P.J. Brugger and Associates**  
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**P7L 0B6**

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## **Table of Contents**

Executive Summary (Inuktitut)	i
Executive Summary (English)	ii
1.0 Site Background / Location	1
1.1 Closure and Post Closure Maintenance History	1
2.0 Water Licence Supplemental Conditions and Notes	6
3.0 2014 Activities	9
3.1 Annual Site Inspection Findings	9
3.2 Water Quality Monitoring	10
3.3 Thermistor Monitoring	11
3.4 Geotechnical Inspection	11
4.0 Annual Review of Spill Response Plan	11
5.0 Annual Review of Abandonment and Restoration Plan	11
6.0 Annual Review of Quality Assurance / Quality Control	11
7.0 2015 Proposed Program	12
 Appendix 1 – Site Photos	
Appendix 2 – Water Quality Monitoring Results August 12, 2014	
Appendix 3 – Thermistor Monitoring Results August 12, 2014	
Appendix 4 – 2015 Spill Response Plan	

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## **EXECUTIVE SUMMARY**

The Cullaton Lake Gold mine is a recognized closed mine site located in the southern part of the Kivalliq Region in the Nunavut Territory. The property is 645 km north of Thompson, Manitoba and 250 km west of Arviat, Nunavut.

The 2014 site activities consisted of an August 12, 2014 site visit to conduct the annual site inspection, water quality and thermistor monitoring and the tailings dam geotechnical inspection pursuant to Water Licence No. 1BR-CUL1118.

Summarized, the results of the annual site inspection and monitoring indicate that:

- Water quality continues to remain within the guidelines specified in the Water Licence.
- The tailings storage facility continues to remain stable.
- The permafrost in the tailings cover was found 1.07m below surface on August 12, 2014 by test pit at thermistor T4.

Discussions were also initiated in 2014 following receipt of a letter from AANDC outlining requirements for returning the property to the government. Additional discussions are planned for 2015.

## **1.0 SITE BACKGROUND / LOCATION**

Cullaton Lake Gold Mines Ltd. is a wholly owned subsidiary of Barrick Gold Inc. (Barrick) which in turn is a wholly owned subsidiary of Barrick Gold Corporation.

The Cullaton Lake Gold mine is a recognized closed mine site located in the south central part of the Kivalliq Region in the Nunavut Territory. The property is 250 km west of Arviat, Nunavut, 400 km northwest of Churchill, Manitoba, and 645 km north of Thompson, Manitoba (see figure 1). The mine was in operation for four years from 1981 to 1985. Following operation, the mine was in a care and maintenance mode from 1985 to 1991.

### **1.1 CLOSURE AND POST CLOSURE MAINTENANCE HISTORY**

Decommissioning was initiated in 1991 with the rehabilitation of Tailings Pond No. 1, which included construction of a spillway in the dam and the covering of exposed tailings with water or till/mine rock. In addition, the water level in Tailings Pond No. 2 (the polishing pond) was lowered by partial removal of the dam (see figures 2 and 3 for site features).

Between 1991 and 1993, the fresh water intake, pump house and pipelines at the old diamond drill camp on the Kognak River were dismantled and removed. In 1995 and 1996 the mill buildings were dismantled. Some of the inert, non-salvageable material was crushed and placed in the quarry pit. In 1997, additional cover material was placed over the tailings area and the area was seeded and fertilized with a special arctic seed mix, as was the former mill site. During the winter of 1998/99 some salvageable equipment and material was removed from the property.

During the summer of 2001, all remaining inert material was placed in the former quarry pit and covered with till. All waste oils and hydraulic fluids, as well as tires and batteries were removed from equipment prior to burial and subsequently airlifted to Thompson, Manitoba for proper disposal. In addition, low grade waste rock at the Shear Lake Portal area that had been determined to be acid generating was collected and encapsulated in till adjacent to the portal.

During the 2005 annual inspection, minor maintenance items identified during the 2004 inspection were corrected. These included a second application of seed and fertilizer on the Encapsulated Waste Rock (EWR) cover at Shear Lake and erosion repairs to the EWR cover, Tailings Pond No. 1 spillway and the quarry pit landfill cover.

During the 2006 annual inspection, a small above-water exposed section of rubber liner on the upstream side of the tailings dam south of the No.1 Spillway was removed.

In response to a request from Barrick in 2006 to return the property to the crown, Indian and Northern Affairs Canada (INAC) initiated a review to assess closure conditions. INAC visited the site in Sept 2006 and commissioned BGC Consulting Ltd. (BGC) to conduct a desk top review of the closure history and monitoring results.

The BGC report indicated for a variety of reasons that INAC should not accept return of the property. In response, INAC, BGC, Barrick and Trow Consulting personnel met on

the site during the 2007 annual inspection on July 5, to discuss the report findings and confirm a new pH issue at Shear Lake. In addition Barrick volunteered to complete an Ecological Risk Assessment (ERA) to determine a) whether the mitigation efforts at Cullaton Lake have adequately addressed the requirements of the approved 1996 Abandonment and Reclamation Plan, and b) whether the new ARD issue at Shear Lake is having any significant ecological effects.

In 2008 Barrick and Gartner Lee personnel visited the site on 4 occasions to collect field data for completing the ERA. During the August trip, a minor amount of scrap metal was also retrieved from the north bank of the Kognak river and from the former bunkhouse area.

The ERA was finalized and submitted to INAC in August 2009. Summarized the report indicated that the surface waters at the site are not significantly impacted by the former mine operation or existing conditions.

The site continues to be inspected on an annual basis in mid-summer to confirm chemical and physical stability.

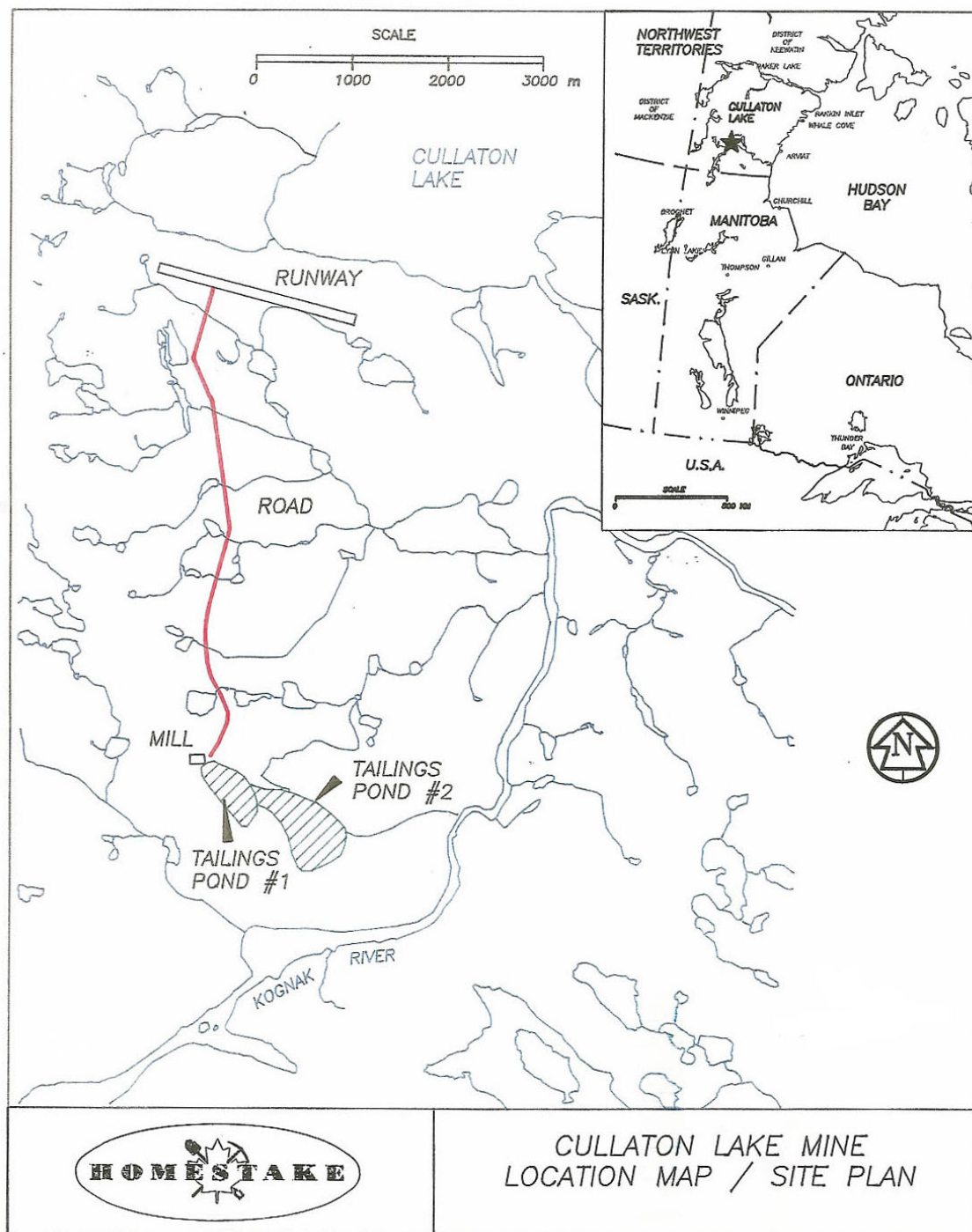
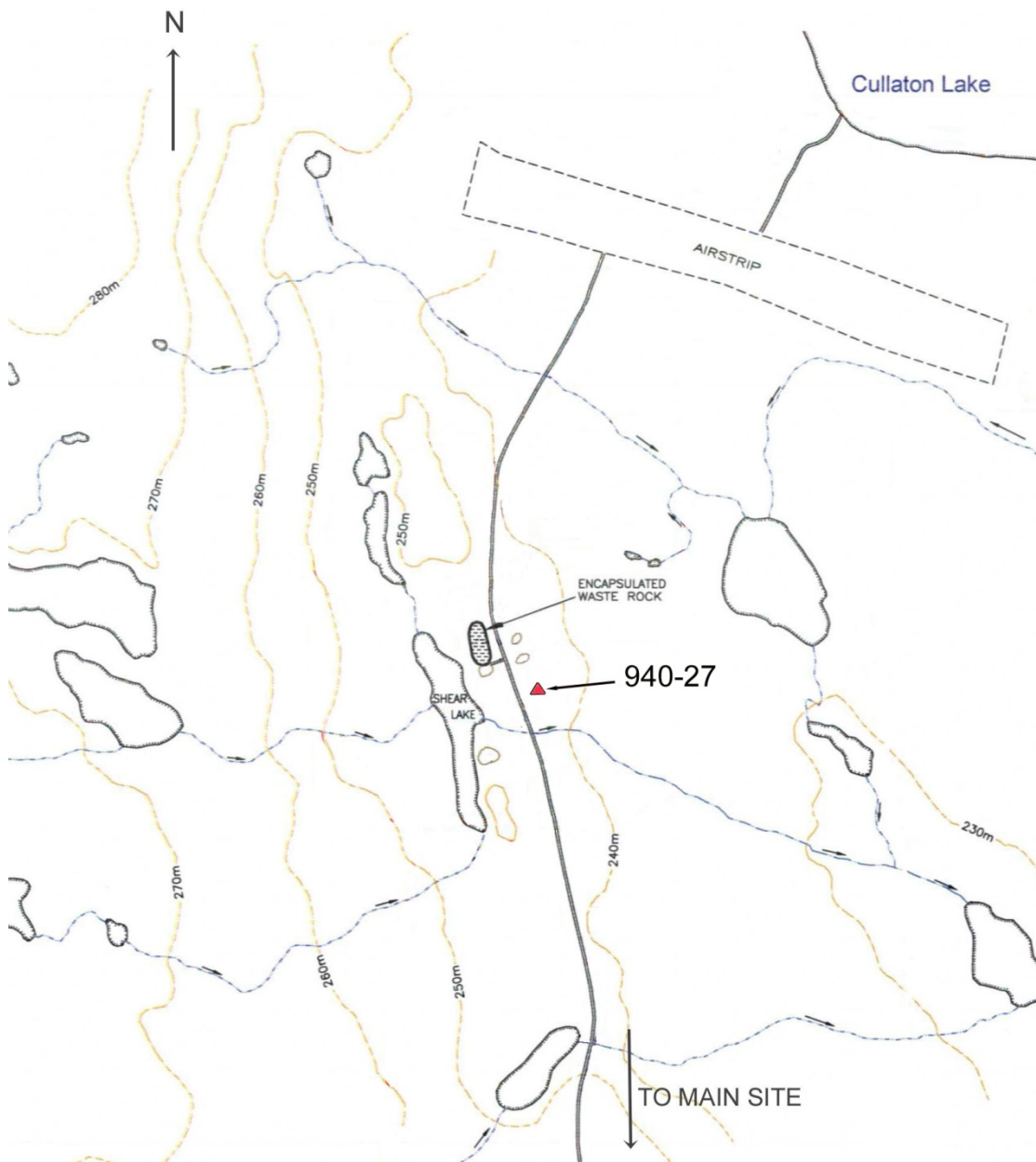


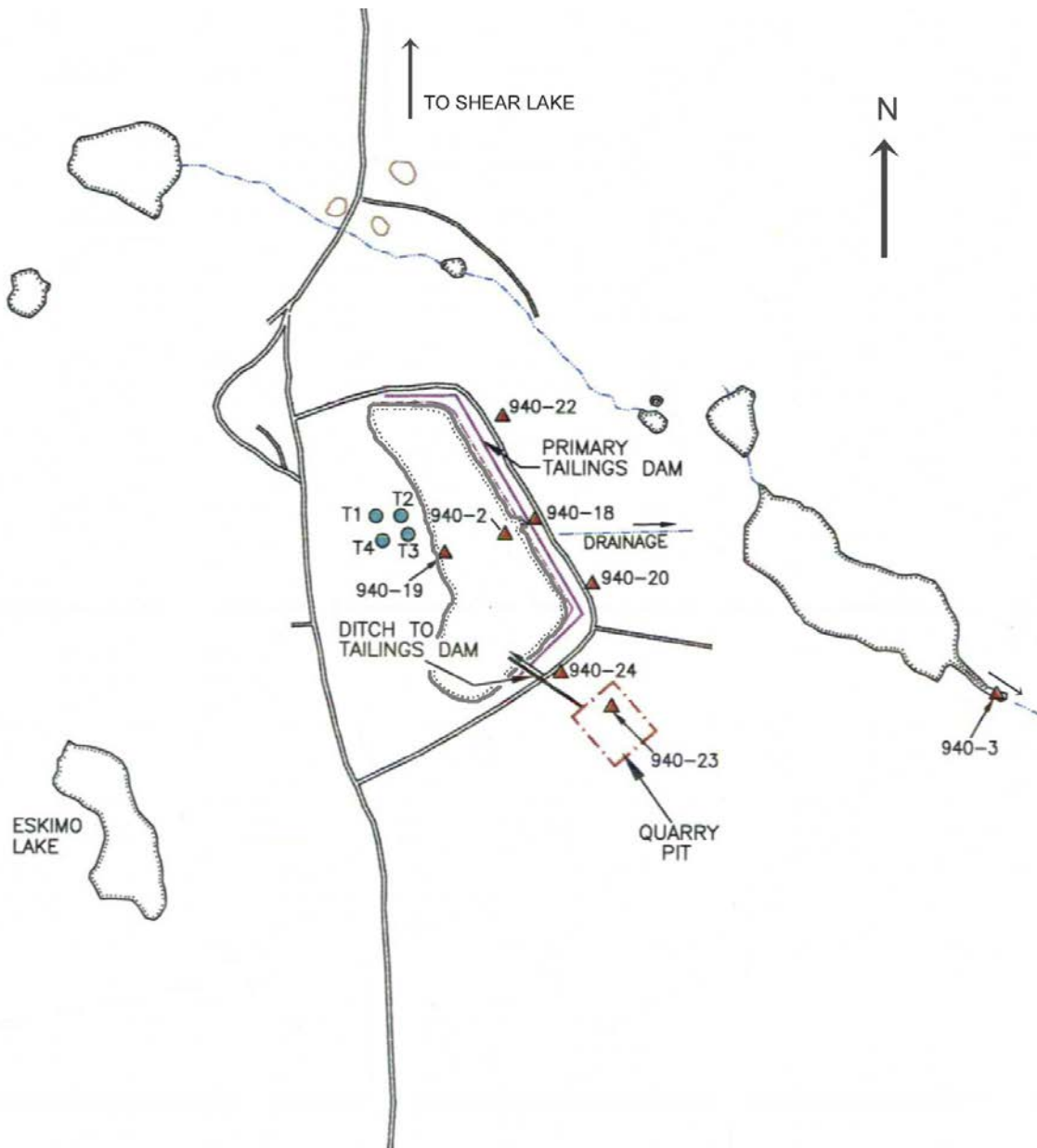
Figure 1: Cullaton Lake Mine location and general site layout



Legend:  
940-27 Water sample station

Figure 2: Cullaton Lake Shear Lake site showing features and water sampling station (not to scale).





Legend:  
 T1: Thermistor station  
 940-2: Water sample station

Figure 3: Cullaton Lake main site showing features, water sampling and thermistor stations (not to scale).

## **2.0 WATER LICENCE SUPPLEMENTAL CONDITIONS AND NOTES**

Management of Cullaton Lake is conducted pursuant to Water Licence 1BR-CUL1118, which was issued on February 9, 2011 to amend the expiry date of 1BR-CUL0911, in order to facilitate additional divestiture discussions and studies. 1BR-CUL1118 will expire on January 31, 2018. The following provides a historic summary of supplemental conditions and notes pursuant to previous licences:

### *Name Change:*

On November 13, 2003, application was made to the Nunavut Water Board to change the name on Licence NWB1CUL0207 from Homestake Canada Inc. to Barrick Gold Inc. to reflect changes resulting from the 2001 merger of Barrick Gold Corporation and Homestake Mining Company.

### *Amendment for Encapsulated Waste Rock at Shear Lake:*

Part F, Item 5 of Licence NWB1CUL0207 required submission of an application for amendment to the approved Abandonment and Restoration Plan by January 1, 2003 (subsequently extended to March 31, 2003) for the new waste rock disposal area on the shores of Shear Lake. The application for amendment with supporting documentation was submitted to the Nunavut Water Board on March 31, 2003. The amendment was granted on June 6, 2005. In addition, station 940-25 was removed from the monitoring program and replaced with station 940-27, intended to monitor any seepage from the encapsulated waste rock down-gradient to Shear Lake Creek.

The amendment required that suitable as-built drawings for the encapsulated waste rock be submitted within 6 months of the date of the amendment. Drawings were submitted on Dec 5, 2005.

The amendment also required that Section 4.4 of the Approved Abandonment and Restoration Plan be revised to incorporate the latest information with respect to the closure of the Shear Lake Waste Rock disposal area. The revision was submitted concurrent with the 2005 Annual Report.

### *Contingency Plan to Address Seepage Issues at the Encapsulated Waste Rock*

Part F, Item 6, Amendment No. 1 of Licence NWB1CUL0207 required the submission of a Contingency Plan to address the potential of the permafrost not to re-aggrade into the waste rock pile / cover as anticipated, the clogging of the passive treatment system due to the relatively flat terrain and the remediation or mitigation of sediments contaminated with levels of metals in excess of CCME guidelines due to seepage from the encapsulated waste rock pile. The contingency plan for clogging of the passive treatment system and contamination remediation was submitted concurrent with the 2005 Annual Report and under separate cover. In the same document Barrick requested that the requirement for a Contingency Plan to address the possibility of permafrost not

re-aggrading into the waste rock be deleted from the Licence since this condition was identified as an “added benefit” and not a design parameter as specified by URS <sup>1</sup>.

*Amendment for Encapsulated Waste Rock Thermistors:*

Water Licence NWB1CUL0207 required the installation of thermistors in the encapsulated waste rock at Shear Lake. An unsuccessful attempt to install the thermistors was made in July 2003. A report detailing this attempt was submitted to the Nunavut Water Board on November 25, 2003 and requested that this requirement be removed from the Licence. The request was granted on June 6, 2005 and station 940-26 was removed from the monitoring program.

*Site Map:*

Part G, Item 4a of Licence NWB1CUL0207 required submission to the Board of a Site Map of the Project Environmental Impact Area with active Surveillance Network Program (SNP) Stations within 60 days of issuance of the Licence. The required site map was submitted to the Nunavut Water Board on December 16, 2002.

*GPS Coordinates:*

Part G, Item 4b of Licence NWB1CUL0207 required submission of GPS coordinates of all surface and subsurface sampling points. The required GPS coordinates were submitted to the Nunavut Water Board on August 29, 2003.

*Miscellaneous:*

The NWB noted the following in their October 10, 2006 review of the 2005 Annual Water Licence report:

1. While the 2004 reported detection limit for nickel had been lowered as previously requested, the detection limit for arsenic was now higher than previously reported (1µg/l compared to 0.1 µg/l). To clarify the issue the NWB requested that detection limits proposed for the 2007 monitoring be included in the 2006 annual report.

The variability in detection limits is largely the result of the many recent laboratory acquisitions / mergers and procedure changes. After discussing the issue with the present laboratory and reviewing the associated methods and equipment limitations, the 2007 proposed detection limits were as follows:

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<sup>1</sup> Assessment of Closure Options and Impacts, Shear Lake Zone Waste Rock Dump, Cullaton Lake Mine Nunavut, March 2003, URS Norecol, Dames & Moore Inc.

Licence Parameter	Method Detection Limit
Total Suspended Solids	1 mg/l
Total Cyanide	0.005 mg/l
Total Arsenic	0.4 µg/l
Total Copper	1 µg/l
Total Lead	0.5 µg/l
Total Mercury	0.00005 mg/l
Total Nickel	1 µg/l
Total Zinc	5 µg/l

Following the 2007 sampling, the lab erroneously used a TSS detection limit of 10mg/l for the 2007 results. According to the lab, a correction to 1mg/l was not possible due the volume of analysis being less than 500ml. In 2008 the license required water samples were collected by Gartner Lee personnel along with the additional samples required for supporting their ERA. The 2008 and subsequent detection limits were equal to or lower than those shown above except for TSS in 2011 when the lab once again used a higher DL of 4mg/l. In addition to the foregoing, the lab also reported Weak Acid Dissociated (WAD) cyanide instead of the requested Total cyanide. Results were corrected for the 2012 monitoring round.

A new lab (ALS Environmental) was engaged in 2014 for logistical reasons and will the lab going forward for the foreseeable future. As a result detection limits have been adjusted slightly to reflect their standard. The new detection limits are:

Licence Parameter	Method Detection Limit
Total Suspended Solids	2 mg/l
Total Cyanide	0.002 mg/l
Total Arsenic	1 µg/l
Total Copper	1 µg/l
Total Lead	1 µg/l
Total Mercury	0.00001 mg/l
Total Nickel	2 µg/l
Total Zinc	3 µg/l

- The NWB commented on the 2005 anomalous zinc value at station 940-23 (.065 mg/l) Follow-up monitoring is summarized in the following table:

Station	Year	Zn (mg/l)
940-23 (Quarry Pit)	2005	0.065
	2006	0.012
	2007	0.006
	2008	0.009
	2009	0.023
	2010	0.030
	2011	0.014
	2012	0.0504
	2013	0.0119
	2014	0.0140

3. The NWB requested that the Spill Response Plan contact number for the INAC Water Resources Inspector be changed.

The required change was made to the 2006 and subsequent versions.

On review of the 2008 annual report, the NWB requested that the NT-NU spill report form be included with the spill contingency plan. The form was included with the 2009 plan and subsequent plans.

4. The NWB requested that water quality and thermistor data be also provided in Excel format, in order to allow for easier data analysis.

The 2006 data was provided in Excel format via e-mail on October 12, 2006. Subsequent results in Excel format are provided concurrent with the annual reports.

Water Licence 1BR-CUL1118 included a recommendation by Environment Canada and AANDC to replace the non-functioning tailings cover thermistors. Subsequent research has indicated that, unless the thermistors are properly anchored in the permafrost, replacements will be susceptible to frost heave upward movement similar to the original installations. However, in light of the subsequent 2009 screening level risk assessment that indicated there are no significant impacts at the Cullaton site, the License holder intends to request that this recommendation is no longer necessary and that it be removed from the license.

### **3.0 2014 ACTIVITIES**

The annual site inspection was conducted at the closed Cullaton Lake Gold Mine (Cullaton Lake) on August 12, 2014. Personnel attending the site during this trip included:

Barrick Personnel:

Walter Baumann, Manager Closure Projects  
Paul Brugger, Closed Properties Manager, Eastern Canada  
Ron Aubry, assistant

exp Services Inc. (formerly Trow Associates) Personnel:

Demetri Georgiou, Principle, qualified geotechnical engineer

Access to the site was via a chartered aircraft from Thompson, Manitoba. During this trip Mr. Brugger conducted visual inspections of the quarry pit, tailings cover, all former underground access areas, EWR and the site in general and collected water samples pursuant to Water Licence 1BR-CUL1118. Mr. Aubry excavated the test pit at Thermistor T4 to determine the depth of permafrost. Mr. Georgiou performed the annual geotechnical inspection. Mr. Baumann attended to familiarize himself with the site and assist in activities.

There were no weather related or other issues affecting the inspections.

### **3.1 ANNUAL SITE INSPECTION GENERAL FINDINGS**

The annual site inspection performed on August 12, 2014 indicated that the site remains undisturbed and in good condition. The following findings were noted:

The minor subsidence areas on the quarry pit landfill remain largely unchanged. Most of the affected areas are occupied by arctic ground squirrels.

Select photos are included in Appendix 1.

### 3.2 WATER QUALITY MONITORING

Duplicate water sampling was completed on August 12, 2014 at 4 of the 9 stations identified in the Water Licence (see Figures 2 and 3 for locations). All other stations were dry during the visit. Results are provided in Appendix 2. Recent historic results are also included for comparison. The following is a brief description of the sampling activities and results:

**Station 940-2 (Tailings Pond No. 1 at discharge to Tailings Pond No. 2)** – Duplicate water samples were collected on August 12, 2014. Results indicated that all parameters were below the limits prescribed in the Water Licence.

**Station 940-3 (Tailings Pond No. 2)** – Duplicate water samples were collected on August 12, 2014. Results indicated that all parameters were below the limits prescribed in the Water Licence.

**Station 940-18 (Tailings Pond No. 1 spillway)** – Duplicate water samples were collected on August 12, 2014. Results indicated that all parameters were below the limits prescribed in the Water Licence.

**Station 940-19 (Tailings Pond No. 1 at piezometer)** – Duplicate water samples were collected on August 12, 2014. Results indicated that all parameters were below the limits prescribed in the Water Licence.

**Station 940-20 (Tailings Pond No. 1 seepage at east side)** – Duplicate water samples were collected on August 12, 2014. Results indicated that all parameters were below the limits prescribed in the Water Licence.

**Station 940-22 (Tailings Pond No. 1 seepage at northeast corner)** – There was no flow observed on August 12, 2014 and consequently no samples were collected.

**Station 940-23 (Quarry Pit)** – Duplicate water samples were collected on August 12, 2014. Results indicated that all parameters were below the limits prescribed in the Water Licence. Zinc reported lower again this year and comparable to average historic values. Zinc will continue to be scrutinized in future campaigns. There was also no visible sheen indicating the presence of oil / grease.

**Station 940-24 (Quarry Pit flow to Tailings Pond No. 1)** - There was no flow from the Quarry Pit to Tailings Pond No. 1 on August 12, 2014 and consequently no samples were collected.

**Station 940-27 (Seepage from Encapsulated Waste Rock to Shear Lake Creek)** - There was no flow observed on August 12, 2014 and consequently no samples were collected.

### **3.3 THERMISTOR MONITORING**

A test pit excavated at Thermistor T4 in 2007 indicated that the thermistors are no longer providing correct readings. As in years subsequent to 2007, the T4 test pit was re-opened during the August 12, 2014 visit in order to visually ascertain the depth of permafrost. Thermistor readings were also recorded at all 4 stations and are provided for comparison in Appendix 3.

Based on the test pit finding, the permafrost was found at a depth of 1.07m on August 12, 2014. The till cover is 90cm thick at this location. The thawed 17cm of tailings above the permafrost was saturated (see field notes and photos in Appendix 3).

### **3.4 GEOTECHNICAL INSPECTION**

Demetri Georgiou (Trow Associates) performed the geotechnical inspection on August 12, 2014, pursuant to Part D, Article 8d of Water Licence 1BR-CUL1118. A copy of the inspection report was submitted to the NWB on October 14, 2014.

In summary the report indicates that the tailings dam remains stable. Continued monitoring for erosion in the No. 1 Spillway channel is also recommended.

Pursuant to Part D, Article 8e of Water Licence 1BR-CUL1118, the condition of the encapsulated waste rock cover at Shear Lake is to be monitored by the geotechnical engineer for erosion until vegetation is sufficiently established so as to stabilize the cover. At the time of the 2013 site inspection, the engineer noted the vegetation continues to take hold and is helping to reduce erosion. A recommendation for additional monitoring was also made.

As in the past 3 annual reports, the engineer has also recommended reducing the frequency of geotechnical inspections to once every 3 years.

### **4.0 ANNUAL REVIEW OF SPILL RESPONSE PLAN**

Pursuant to Part H, Article 1a, b and c of Water Licence 1BR- CUL1118, a review and update of the Spill Response Plan was conducted this month. An updated version is provided in Appendix 4.

### **5.0 ANNUAL REVIEW OF ABANDONMENT AND RESTORATION PLAN**

Pursuant to Part I, Article 2 of the Water Licence, an annual review of the Abandonment and Restoration Plan was completed. There were no changes to the plan.

### **6.0 ANNUAL REVIEW OF QUALITY ASSURANCE / QUALITY CONTROL**

A review of the approved quality assurance / quality control plan (QA/QC) was conducted with reference to the document "Quality Assurance (QA) and Quality Control (QC) Guidelines for use by Class B Licensees in Collecting Representative Water



Samples in the Field and for Submission of a QA/QC Plan, July 1996. There were no changes made to the plan. Lab QC results for the 2014 samples are included in Appendix 2.

## **7.0 2015 PROPOSED PROGRAM**

The 2015 program will consist of a site inspection, water quality monitoring, tailings dam geotechnical inspection and EWR cover stability inspection pursuant to Water Licence 1BR-CUL1118. The program is tentatively scheduled to occur during the first week of August.

In addition to the above, minor maintenance activities will be performed, including additional top dressing at previously filled areas of settlement and erosion channel repair as required. Regular maintenance of the airstrip will also be initiated in 2015 along with a program to remove all unauthorized third party fuel drums cached at the airstrip.

**Appendix 1**  
**Cullaton Lake Site Photos**  
**August 12, 2014**



Photo 1: Cullaton Lake main site, looking southeast, August 12, 2014.



Photo 2: Shear Lake site, looking southwest, August 12, 2014.





Photo 3: Tailings No.1 Pond spillway invert on August 12, 2014



Photo 4: Former Tailings Pond No. 2 spillway dry on August 12, 2014





Photo 5: Former Shear Lake Portal, August 12, 2014.



Photo 6: Former B Zone Portal and Fresh Air Raise, looking north on August 12, 2014.



Photo 7: Encapsulated Waste Rock at Shear Lake 9 years after the application of additional seed and fertilizer.





Photo 8: Shear Lake low pH pool area on August 12, 2014.



Photo 9: Tailings cover, looking southeast on August 12, 2014.



Photo 10: Tailings No 1 cover looking southwest on August 12, 2014.



Photo 11: Tailings No. 1 Pond looking northwest on August 12, 2014.





Photo 12: Subsidence area south of Quarry Pit pond on August 12, 2014.



Photo 13: Subsidence at southwest corner of Quarry Pit pond on August 12, 2014.

**Appendix 2**  
**August 12, 2014**  
**Water Quality Monitoring Results**

**Cullaton Lake  
Water Quality Monitoring Results  
August 12, 2014**

Location	Sample Number	Field PH	Temp °C	Lab PH	Suspended Solids mg/L	Total Cyanide mg/L	Total Arsenic mg/L	Total Copper mg/L	Total Lead mg/L	Total Mercury mg/L	Total Nickel mg/L	Total Zinc mg/L
<b>Tailings Pond No. 1 (at discharge)</b>	940-2A	8.34	15.0	8.25	<2.0	<0.0020	0.0023	0.0018	<0.0010	<0.000010	<0.0020	<0.0030
	940-2B			8.24	<2.0	<0.0020	0.0024	0.0013	<0.0010	<0.000010	<0.0020	<0.0030
<b>Tailings Pond No. 2</b>	940-3A	8.48	16.3	8.56	<2.0	<0.0020	0.0044	0.0046	<0.0010	<0.000010	0.0048	<0.0030
	940-3B			8.51	<2.0	<0.0020	0.0046	0.0045	<0.0010	<0.000010	0.0049	0.0053
<b>Tailings Pond No. 1 (spillway)</b>	940-18A	8.48	15.0	8.69	<2.0	0.0022	0.0055	0.0026	<0.0010	<0.000010	<0.0020	<0.0030
	940-18B			8.68	<2.0	0.0022	0.0055	0.0022	<0.0010	<0.000010	<0.0020	<0.0030
<b>Tailings Pond No. 1 (at piezometer)</b>	940-19A	8.58	15.8	8.19	<2.0	<0.0020	0.0023	0.0013	<0.0010	<0.000010	<0.0020	<0.0030
	940-19B			8.28	<2.0	<0.0020	0.0024	0.0012	<0.0010	<0.000010	<0.0020	<0.0030
<b>Tailings Pond No. 1 (seepage at east side)</b>	940-20A	8.96	21.0	9.14	<2.0	<0.0020	0.0042	0.0040	<0.0010	<0.000010	0.0041	0.0036
	940-20B			9.13	<2.0	<0.0020	0.0042	0.0039	<0.0010	<0.000010	0.0040	0.0034
<b>Tailings Pond No. 1 (seepage at northeast corner)</b>	940-22A 940-22B	Dry										
<b>Quarry Pit</b>	940-23A	8.19	14.1	8.26	<2.0	<0.0020	0.0033	0.0024	<0.0010	<0.000010	0.0034	0.0140
	940-23B			8.23	<2.0	<0.0020	0.0031	0.0022	<0.0010	<0.000010	0.0030	0.0129
<b>Quarry Pit (flow to Tailings Pond No. 1)</b>	940-24	Dry										
<b>Seepage from Shear Lake Encapsulated Waste Rock to Shear Lake Creek</b>	940-27	Dry										

**Cullaton Lake  
Water Quality Monitoring  
August 12, 2014  
Water Analysis Certificate and Quality Control Report**



Barrick Gold Corp.  
ATTN: PAUL BRUGGER  
171 COPPER CLIFF RD, E  
THUNDER BAY ON P7L 0B6

Date Received: 14-AUG-14  
Report Date: 24-AUG-14 20:42 (MT)  
Version: FINAL

Client Phone: 807-964-1657

## Certificate of Analysis

**Lab Work Order #:** L1502329  
**Project P.O. #:** NOT SUBMITTED  
**Job Reference:** CULLATON LAKE  
**C of C Numbers:**  
**Legal Site Desc:**

Bobbie Shortreed  
Project Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 1081 Barton Street, Thunder Bay, ON P7B 5N3 Canada | Phone: +1 807 623 6463 | Fax: +1 807 623 7598  
ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company

# ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1502329-1 WATER 12-AUG-14 12:41 TAILINGS POND NO 1 AT DISCHARGE 940 2A	L1502329-2 WATER 12-AUG-14 15:05 TAILINGS POND NO 2 940 3A	L1502329-3 WATER 12-AUG-14 13:10 TAILINGS POND NO 1 AT SPILLWAY 940 18A	L1502329-4 WATER 12-AUG-14 15:30 TAILINGS POND NO 1 AT PIEZOMETER 940 19A	L1502329-5 WATER 12-AUG-14 16:05 TAILINGS POND NO 1 SEEPAGE AT EAST SIDE 940 20A
Grouping	Analyte					
<b>WATER</b>						
<b>Physical Tests</b>	pH (pH)	8.25	8.56	8.69	8.19	9.14
	Total Suspended Solids (mg/L)	<2.0	<2.0	<2.0	<2.0	<2.0
<b>Cyanides</b>	Cyanide, Total (mg/L)	<0.0020	<0.0020	0.0022	<0.0020	<0.0020
<b>Total Metals</b>	Arsenic (As)-Total (mg/L)	0.0023	0.0044	0.0055	0.0023	0.0042
	Copper (Cu)-Total (mg/L)	0.0018	0.0046	0.0026	0.0013	0.0040
	Iron (Fe)-Total (mg/L)	0.020	0.180	0.177	0.020	0.132
	Lead (Pb)-Total (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Mercury (Hg)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Nickel (Ni)-Total (mg/L)	<0.0020	0.0048	<0.0020	<0.0020	0.0041
	Zinc (Zn)-Total (mg/L)	<0.0030	<0.0030	<0.0030	<0.0030	0.0036

# ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1502329-6 WATER 12-AUG-14 14:30 QUARRY PIT 940 23A	L1502329-7 WATER 12-AUG-14 11:55 SHEAR CREEK	L1502329-8 WATER 12-AUG-14 12:41 TAILINGS POND NO 1 AT DISCHARGE 940 2B	L1502329-9 WATER 12-AUG-14 15:05 TAILINGS POND NO 2 940 3B	L1502329-10 WATER 12-AUG-14 13:10 TAILINGS POND NO 1 AT SPILLWAY 940 18B
Grouping	Analyte					
<b>WATER</b>						
<b>Physical Tests</b>	pH (pH)	8.26	6.55	8.24	8.51	8.68
	Total Suspended Solids (mg/L)	<2.0	<2.0	<2.0	<2.0	<2.0
<b>Cyanides</b>	Cyanide, Total (mg/L)	<0.0020	<0.0020	<0.0020	<0.0020	0.0022
<b>Total Metals</b>	Arsenic (As)-Total (mg/L)	0.0033	<0.0010	0.0024	0.0046	0.0055
	Copper (Cu)-Total (mg/L)	0.0024	0.0029	0.0013	0.0045	0.0022
	Iron (Fe)-Total (mg/L)	0.060	0.997	0.024	0.182	0.176
	Lead (Pb)-Total (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Mercury (Hg)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Nickel (Ni)-Total (mg/L)	0.0034	0.0038	<0.0020	0.0049	<0.0020
	Zinc (Zn)-Total (mg/L)	0.0140	<0.0030	<0.0030	0.0053	<0.0030



# ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1502329-11 WATER 12-AUG-14 15:30 TAILINGS POND NO 1 PIEZOMETER 940 19B	L1502329-12 WATER 12-AUG-14 14:05 TAILINGS POND NO 1 AT SEEPAGE AT EAST SIDE 940 20B	L1502329-13 WATER 12-AUG-14 14:30 QUARRY PIT 940 23B		
Grouping	Analyte					
<b>WATER</b>						
<b>Physical Tests</b>	pH (pH)	8.28	9.13	8.23		
	Total Suspended Solids (mg/L)	<2.0	<2.0	<2.0		
<b>Cyanides</b>	Cyanide, Total (mg/L)	<0.0020	<0.0020	<0.0020		
<b>Total Metals</b>	Arsenic (As)-Total (mg/L)	0.0024	0.0042	0.0031		
	Copper (Cu)-Total (mg/L)	0.0012	0.0039	0.0022		
	Iron (Fe)-Total (mg/L)	<0.020	0.133	0.060		
	Lead (Pb)-Total (mg/L)	<0.0010	<0.0010	<0.0010		
	Mercury (Hg)-Total (mg/L)	<0.000010	<0.000010	<0.000010		
	Nickel (Ni)-Total (mg/L)	<0.0020	0.0040	0.0030		
	Zinc (Zn)-Total (mg/L)	<0.0030	0.0034	0.0129		



## Reference Information

### Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
<b>CN-T-CFA-TB</b>	Water	Total Cyanide by CFA	ISO 14403:2002 (modified)
This analysis is carried out using procedures adapted from ISO Method 14403:2002 "Determination of Total Cyanide using Flow Analysis (FIA and CFA)". Total or strong acid dissociable (SAD) cyanide is determined by in-line UV digestion along with sample distillation and final determination by colourimetric analysis.			
Method Limitation: This method is susceptible to interference from thiocyanate (SCN). If SCN is present in the sample, there could be a positive interference with this method, but it would be less than 1% and could be as low as zero.			
<b>HG-T-CVAF-TB</b>	Water	Total Mercury in Water by CVAFS	Modified from EPA1631 E
<b>MET-T-MS-TB</b>	Water	Total Metals by ICPMS	APHA 3030E/EPA 6020A
This analysis involves preliminary sample treatment by hotblock acid digestion (APHA 3030E). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).			
<b>PH-TITR-TB</b>	Water	pH	APHA 4500-H
This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode			
<b>SOLIDS-TOTSUS-TB</b>	Water	Total Suspended Solids	APHA 2540 D (modified)
Aqueous matrices are analyzed using gravimetry			

\*\* ALS test methods may incorporate modifications from specified reference methods to improve performance.

*The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:*

Laboratory Definition Code	Laboratory Location
TB	ALS ENVIRONMENTAL - THUNDER BAY, ONTARIO, CANADA

### Chain of Custody Numbers:

#### GLOSSARY OF REPORT TERMS

*Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.*

*mg/kg - milligrams per kilogram based on dry weight of sample.*

*mg/kg ww - milligrams per kilogram based on wet weight of sample.*

*mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.*

*mg/L - milligrams per litre.*

*< - Less than.*

*D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).*

*N/A - Result not available. Refer to qualifier code and definition for explanation.*

*Test results reported relate only to the samples as received by the laboratory.*

*UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.*

*Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.*

## Quality Control Report

Workorder: L1502329

Report Date: 10-MAR-15

Page 1 of 4

Client: Barrick Gold Corp.  
171 COPPER CLIFF RD, E  
THUNDER BAY ON P7L 0B6

Contact: PAUL BRUGGER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CN-T-CFA-TB		Water						
Batch	R2920386							
WG1931508-2	LCS							
Cyanide, Total			100.0		%		80-120	15-AUG-14
WG1931508-6	LCS							
Cyanide, Total			100.9		%		80-120	15-AUG-14
WG1931508-1	MB							
Cyanide, Total			<0.0020		mg/L		0.002	15-AUG-14
WG1931508-5	MB							
Cyanide, Total			<0.0020		mg/L		0.002	15-AUG-14
HG-T-CVAF-TB		Water						
Batch	R2920936							
WG1932376-2	LCS							
Mercury (Hg)-Total			98.8		%		80-120	16-AUG-14
WG1932376-1	MB							
Mercury (Hg)-Total			<0.000010		mg/L		0.00001	16-AUG-14
Batch	R2921210							
WG1932584-3	DUP	L1502329-2						
Mercury (Hg)-Total		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	17-AUG-14
WG1932584-2	LCS							
Mercury (Hg)-Total			97.4		%		80-120	17-AUG-14
WG1932584-1	MB							
Mercury (Hg)-Total			<0.000010		mg/L		0.00001	17-AUG-14
WG1932584-4	MS	L1502329-2						
Mercury (Hg)-Total			95.8		%		70-130	17-AUG-14
MET-T-MS-TB		Water						
Batch	R2925650							
WG1931885-10	LCS							
Arsenic (As)-Total			99.7		%		80-120	21-AUG-14
Copper (Cu)-Total			96.6		%		80-120	21-AUG-14
Iron (Fe)-Total			106.3		%		80-120	21-AUG-14
Lead (Pb)-Total			100.8		%		80-120	21-AUG-14
Nickel (Ni)-Total			99.3		%		80-120	21-AUG-14
Zinc (Zn)-Total			100.1		%		80-120	21-AUG-14
WG1931885-2	LCS							
Arsenic (As)-Total			99.6		%		80-120	21-AUG-14
Copper (Cu)-Total			97.1		%		80-120	21-AUG-14
Iron (Fe)-Total			106.7		%		80-120	21-AUG-14
Lead (Pb)-Total			101.6		%		80-120	21-AUG-14



Workorder: L1502329

Page 2 of 4

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-MS-TB		Water						
Batch	R2925650							
WG1931885-2		LCS						
Nickel (Ni)-Total			99.5		%		80-120	21-AUG-14
Zinc (Zn)-Total			98.9		%		80-120	21-AUG-14
WG1931885-6		LCS						
Arsenic (As)-Total			100.0		%		80-120	21-AUG-14
Copper (Cu)-Total			97.5		%		80-120	21-AUG-14
Iron (Fe)-Total			105.0		%		80-120	21-AUG-14
Lead (Pb)-Total			99.8		%		80-120	21-AUG-14
Nickel (Ni)-Total			100.5		%		80-120	21-AUG-14
Zinc (Zn)-Total			99.8		%		80-120	21-AUG-14
WG1931885-1		MB						
Arsenic (As)-Total			<0.0010		mg/L		0.001	21-AUG-14
Copper (Cu)-Total			<0.0010		mg/L		0.001	21-AUG-14
Iron (Fe)-Total			<0.020		mg/L		0.02	21-AUG-14
Lead (Pb)-Total			<0.0010		mg/L		0.001	21-AUG-14
Nickel (Ni)-Total			<0.0020		mg/L		0.002	21-AUG-14
Zinc (Zn)-Total			<0.0030		mg/L		0.003	21-AUG-14
WG1931885-5		MB						
Arsenic (As)-Total			<0.0010		mg/L		0.001	21-AUG-14
Copper (Cu)-Total			<0.0010		mg/L		0.001	21-AUG-14
Iron (Fe)-Total			<0.020		mg/L		0.02	21-AUG-14
Lead (Pb)-Total			<0.0010		mg/L		0.001	21-AUG-14
Nickel (Ni)-Total			<0.0020		mg/L		0.002	21-AUG-14
Zinc (Zn)-Total			<0.0030		mg/L		0.003	21-AUG-14
WG1931885-9		MB						
Arsenic (As)-Total			<0.0010		mg/L		0.001	21-AUG-14
Copper (Cu)-Total			<0.0010		mg/L		0.001	21-AUG-14
Iron (Fe)-Total			<0.020		mg/L		0.02	21-AUG-14
Lead (Pb)-Total			<0.0010		mg/L		0.001	21-AUG-14
Nickel (Ni)-Total			<0.0020		mg/L		0.002	21-AUG-14
Zinc (Zn)-Total			<0.0030		mg/L		0.003	21-AUG-14
PH-TITR-TB		Water						
Batch	R2921511							
WG1931726-11		LCS						
pH			6.02		pH		5.9-6.1	15-AUG-14
WG1931726-14		LCS						

## Quality Control Report

Workorder: L1502329

Report Date: 10-MAR-15

Page 3 of 4

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>PH-TITR-TB</b>								
Water								
Batch	R2921511							
WG1931726-14	LCS							
pH			6.02		pH		5.9-6.1	15-AUG-14
WG1931726-17	LCS							
pH			6.01		pH		5.9-6.1	15-AUG-14
WG1931726-2	LCS							
pH			6.01		pH		5.9-6.1	15-AUG-14
WG1931726-20	LCS							
pH			6.01		pH		5.9-6.1	15-AUG-14
<b>SOLIDS-TOTSUS-TB</b>								
Water								
Batch	R2920535							
WG1931227-2	LCS							
Total Suspended Solids			97.3		%		85-115	14-AUG-14
WG1931227-1	MB							
Total Suspended Solids			<2.0		mg/L		2	14-AUG-14

# Quality Control Report

Workorder: L1502329

Report Date: 10-MAR-15

Page 4 of 4

## Legend:

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Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

## Sample Parameter Qualifier Definitions:

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Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

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## Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

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The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.



61502320

AA-555326a v03 FrontM January 2014

1. If any water samples are taken from **Regulated Drinking Water (DW) System** please submit using an **Authorized DW COC form**

L1502329

<b>Report To</b>			<b>Report Format / Distribution</b>			<b>Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)</b>												
Company: <b>Barrick Golden Patricia</b>			Select Report Format: <input type="checkbox"/> PDF <input type="checkbox"/> EXCEL <input checked="" type="checkbox"/> EDD (DIGITAL)			R <input checked="" type="checkbox"/> Regular (Standard TAT if received by 3 pm - business days)												
Contact: <b>Paul Brugger</b>			Quality Control (QC) Report with Report <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			P <input type="checkbox"/> Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT												
Address: <b>171 COPPER CLIFF RD E NEEDSING ON P7L OBC</b>			<input type="checkbox"/> Criteria on Report - provide details below if box checked			E <input type="checkbox"/> Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT												
Phone: <b>807-969-1657</b>			Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			E2 <input type="checkbox"/> Same day or weekend emergency - contact ALS to confirm TAT and surcharge												
			Email 1 or Fax: <b>pbrugger@tbaytel.net</b>			Specify Date Required for E2, E or P:												
			Email 2			<b>Analysis Request</b>												
Invoice To: <b>Same as Report To</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			<b>Invoice Distribution</b>			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (FP) below												
Copy of Invoice with Report <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX															
Company:			Email 1 or Fax: <b>pbrugger@tbaytel.net</b>															
Contact:			Email 2															
<b>Project Information</b>			<b>Oil and Gas Required Fields (client use)</b>															
ALS Quote #:			Approver ID:			Cost Center:												
Job #: <b>Cullaton Lake</b>			GL Account:			Routing Code:												
PO / AFE:			Activity Code:															
LSD:			Location:															
ALS Lab Work Order # (lab use only)			ALS Contact: <b>B.S.</b>			Sampler: <b>PB</b>												
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)		Date (dd-mm-yy)	Time (hh:mm)	Sample Type	pH, TSS, Total Cyanide, Total Mercury	Total Metals - As, Cu, Pb, Ni, Zn											Number of Containers
	Tailings Pond No 1 at Discharge <b>940-2B</b>		<b>Aug 12/14</b>	<b>12:41</b>	<b>GRAB</b>	<b>X</b>	<b>X</b>											<b>3</b>
	Tailings Pond No 2 <b>940-3B</b>			<b>15:05</b>														
	Tailings Pond No 1 at Spillway <b>940-18B</b>			<b>13:10</b>														
	Tailings Pond No 1 at Piezometer <b>940-19B</b>			<b>15:30</b>														
	Tailings Pond No 1 Seepage at East Side <b>940-20B</b>			<b>14:05</b>														
	Tailings Pond No 1 Seepage at Northeast Corner <b>DRY</b>																	
	Quarry Pit <b>940-23B</b>			<b>14:30</b>														
	Quarry Pit Flow to Tailings Pond No 1 <b>DRY</b>																	
	Seepage from Shear Lake Encapsulated Waste Rock to Shear Lake Creek <b>DRY</b>																	
<b>Drinking Water (DW) Samples<sup>1</sup> (client use)</b>			<b>Special Instructions / Specify Criteria to add on report (client Use)</b>						<b>SAMPLE CONDITION AS RECEIVED (lab use only)</b>									
Are samples taken from a Regulated DW System? <input type="checkbox"/> Yes <input type="checkbox"/> No			<b>940-2B, 940-19A &amp; B, 940-23A &amp; B, SHEAR CREEK METALS SAMPLES ARE NOT PRESERVED</b>						Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>									
Are samples for human drinking water use? <input type="checkbox"/> Yes <input type="checkbox"/> No									Ice packs Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>									
									Cooling Initiated <input type="checkbox"/>									
									INITIAL COOLER TEMPERATURES °C									
									FINAL COOLER TEMPERATURES °C									
									<b>10.4 / 12.1</b>									
<b>SHIPMENT RELEASE (client use)</b>			<b>INITIAL SHIPMENT RECEPTION (lab use only)</b>						<b>FINAL SHIPMENT RECEPTION (lab use only)</b>									
Released by:		Date:	Time:	Received By:		Date:	Time:	Received by:		Date:	Time:							
								<b>RT</b>		<b>14-Aug-14</b>	<b>11:32</b>							

**Cullaton Lake  
Water Quality Monitoring Results  
2003 - 2014**



**CULLATON LAKE GOLD MINES LTD.**  
CULLATON LAKE MINE

**WATER ANALYSIS REPORT**  
**STATION 940-02A - TAILINGS POND NO. 1 DISCHARGE, 2003 - 2014**

Physical and General	Units	Water License	CCME Guidelines	July 29 2003	July 7 2004	Aug. 5 2005	Aug. 2 2006	July 5 2007	June 28 2008	Aug. 5 2009	Aug. 4 2010	Aug. 4 2011	Aug. 2 2012	Aug. 15 2013	Aug 12 2014	MINIMUM	MAXIMUM	AVERAGE
pH (lab)	units	<b>6.0 - 9.5</b>	<b>6.5-9.0</b>	8.07	7.77	7.8	8.0	7.7	7.5	8.0	7.8	7.8	7.7	8.1	8.25	7.5	8.3	7.9
Temperature	°C			21.0	15.3	NR	14.5	15.2	12.5	15.8	13.6	13.3	14.7	18.6	15.0	12.5	21.0	14.1
Suspended Solids (105°C)	mg/L	<b>25.0</b>		< 3	< 3	14	< 1	< 10	1	< 1	1	< 4	< 1	< 1	2	< 1	14	4
Total Cyanide (1)	mg/L	<b>0.80</b>		< 0.005	< 0.0050	0.006	< 0.005	< 0.005	0.0088	< 0.005	< 0.005	< 0.0005	0.00264	0.00150	< 0.0020	< 0.0005	0.0088	< 0.0043
Total Hardness	mg CaCO <sub>3</sub> /L				197	199	210	220	162	210	230	225	211	207	E	162	230	207
<b>Minor Cations</b>																		
Arsenic	mg/L	<b>0.30</b>	<b>0.005</b>	0.0025	0.00159	0.003	0.0018	0.0021	0.00563	0.0019	0.0027	0.0021	0.00212	0.00188	0.0023	0.00159	0.00563	0.0025
Copper	mg/L	<b>0.20</b>	<b>0.004</b>	0.002	0.0014	0.002	0.001	0.001	0.00136	0.0012	0.0010	0.0021	0.00115	0.00105	0.0018	0.0010	0.0021	0.0014
Lead	mg/L	<b>0.20</b>	<b>0.007</b>	< 0.001	< 0.0010	< 0.001	< 0.0005	< 0.0005	0.00146	0.00032	0.00038	0.00030	0.00033	< 0.00020	< 0.0010	< 0.00020	0.00146	0.0007
Mercury	mg/L		<b>0.0002</b>	< 0.00005	< 0.00005	< 0.0001	< 0.00005	< 0.00005	< 0.00001	< 0.00002	< 0.00001	< 0.00005	< 0.00005	< 0.00005	< 0.00001	< 0.00001	< 0.0001	< 0.00004
Nickel	mg/L	<b>0.30</b>	<b>0.150</b>	0.001	< 0.020	< 0.002	< 0.001	0.002	0.00258	0.001	0.0008	0.0010	< 0.001	< 0.001	< 0.0020	0.0008	< 0.020	< 0.0029
Zinc	mg/L	<b>0.30</b>	<b>0.030</b>	< 0.005	< 0.005	< 0.003	< 0.005	< 0.005	0.0011	< 0.0025	< 0.0025	0.006	< 0.005	< 0.005	< 0.0030	0.0011	0.006	0.0040

( ) Laboratory replicate.  
 [ ] Results re-checked.  
 (E) Not analyzed  
 NR: Not recorded due to equipment malfunction  
 (1) WAD Cn reported for 2011

**CULLATON LAKE GOLD MINES LTD.**  
CULLATON LAKE MINE

**WATER ANALYSIS REPORT**  
**STATION 940-03A - TAILINGS POND NO. 2 DISCHARGE, 2003 - 2014**

Physical and General	Units	Water License	CCME Guidelines	July 29 2003	July 7 2004	Aug. 5 2005	Aug. 2 2006	July 5 2007	June 28 2008	Aug. 5 2009	Aug. 4 2010	Aug. 4 2011	Aug. 2 2012	Aug. 15 2013	Aug. 12 2014	MINIMUM	MAXIMUM	AVERAGE
pH (lab)	units	<b>6.0 - 9.5</b>	<b>6.5-9.0</b>	8.07	7.96	7.7	7.9	7.8	7.7	8.0	8.2	7.9	7.8	8.4	8.56	7.7	8.6	8.0
Temperature	°C			20.8	19.3	NR	17.4	13.7	17.0	15.4	11.4	12.4	14.6	18.5	16.3	11.4	20.8	14.7
Suspended Solids (105°C)	mg/L	<b>25.0</b>		5	3	2	2	10	2	2	13	4	1	1.9	2	1	13	4
Total Cyanide (1)	mg/L	<b>0.80</b>		0.010	0.0072	< 0.0020	< 0.005	< 0.005	0.0016	< 0.005	< 0.005	< 0.0005	0.00192	0.00233	< 0.0020	< 0.0005	0.010	< 0.0040
Total Hardness	mg CaCO <sub>3</sub> /L				92.4	100	90	88	82.3	94	99	95.2	118	109	E	82.3	118	97
<b>Minor Cations</b>																		
Arsenic	mg/L	<b>0.30</b>	<b>0.005</b>	0.0059	0.00305	0.004	0.0037	0.0055	0.0032	0.0027	0.0046	0.0029	0.00293	0.00513	0.0044	0.0027	0.0059	0.0040
Copper	mg/L	<b>0.20</b>	<b>0.002</b>	0.003	0.0043	0.020	0.004	0.006	0.0037	0.0039	0.0035	0.0036	0.00367	0.00444	0.0046	0.003	0.020	0.005
Lead	mg/L	<b>0.20</b>	<b>0.002</b>	< 0.001	< 0.0010	< 0.001	< 0.0005	< 0.0005	0.00006	< 0.00005	0.00009	< 0.0002	< 0.0002	< 0.0002	< 0.0010	< 0.00005	< 0.0010	< 0.0005
Mercury	mg/L		<b>0.0002</b>	< 0.00005	< 0.00005	< 0.0001	< 0.00005	< 0.00005	0.00001	< 0.00002	< 0.00001	< 0.00005	< 0.00005	< 0.00005	< 0.00001	< 0.00001	< 0.00004	
Nickel	mg/L	<b>0.30</b>	<b>0.065</b>	0.004	< 0.020	0.003	0.005	0.005	0.00357	0.0036	0.0043	0.005	0.0034	0.0055	0.0048	0.003	< 0.020	< 0.006
Zinc	mg/L	<b>0.30</b>	<b>0.030</b>	< 0.005	< 0.005	0.015	< 0.005	< 0.005	0.0009	< 0.0005	0.0005	0.006	< 0.005	< 0.005	< 0.0030	< 0.0005	0.015	< 0.0047

( ) Laboratory replicate.

[ ] Results re-checked.

(E) Not analyzed

NR: Not recorded due to equipment malfunction

(1) WAD Cn reported for 2011

**CULLATON LAKE GOLD MINES LTD.**  
CULLATON LAKE MINE

**WATER ANALYSIS REPORT**  
**STATION 940-18A - TAILINGS POND NO. 1 SPILLWAY, 2003 - 2014**

Physical and General	Units	Water License	CCME Guidelines	July 29 2003	July 7 2004	Aug. 5 2005	Aug. 2 2006	July 5 2007	June 28 2008	Aug. 5 2009	Aug. 4 2010	Aug. 4 2011	Aug. 2 2012	Aug. 15 2013	Aug. 12 2014	MINIMUM	MAXIMUM	AVERAGE
pH (lab)	units	<b>6.0 - 9.5</b>	<b>6.5-9.0</b>	8.87	7.89	8.1	8.4	7.8	7.5	7.8	8.7	8.7	9.3	D	8.69	7.5	9.3	8.3
Temperature	°C			20.5	18.5	NR	21.4	15.2	15.8	15.8	12.8	12.6	16.9	D	15.0	12.6	21.4	16.5
Suspended Solids (105°C)	mg/L	<b>25.0</b>		4	3	2	3	10	1	1	1	4	1	D	2	1	10	3
Total Cyanide (1)	mg/L	<b>0.80</b>		0.009	0.0096	0.004	0.037	0.005	0.0077	0.005	0.006	0.0043	0.00361	D	0.0022	0.0022	0.0370	0.0085
Total Hardness	mg CaCO <sub>3</sub> /L				217	200	210	230	159	220	220	228	212	D	E	159	230	211
<b>Minor Cations</b>																		
Arsenic	mg/L	<b>0.30</b>	<b>0.005</b>	0.0029	0.00165	0.002	0.0055	0.0023	0.00133	0.0033	0.0057	0.0043	0.00375	D	0.0055	0.00133	0.0057	0.0035
Copper	mg/L	<b>0.20</b>	<b>0.004</b>	0.002	0.0018	0.001	0.005	0.002	0.00086	0.0012	0.0013	0.0021	0.0014	D	0.0026	0.00086	0.005	0.0019
Lead	mg/L	<b>0.20</b>	<b>0.007</b>	< 0.001	< 0.0010	< 0.001	< 0.0005	< 0.0005	0.00032	0.00011	0.00011	0.00030	< 0.00020	D	< 0.0010	0.00011	< 0.0010	< 0.0005
Mercury	mg/L		<b>0.0002</b>	< 0.00005	< 0.00005	< 0.0001	< 0.00005	< 0.00005	< 0.00001	< 0.00002	< 0.00001	< 0.00005	< 0.00005	D	< 0.00001	< 0.00001	< 0.0001	< 0.00004
Nickel	mg/L	<b>0.30</b>	<b>0.150</b>	0.001	< 0.020	< 0.002	0.002	0.001	0.00124	0.001	0.0009	0.003	0.001	D	< 0.0020	0.0009	< 0.020	< 0.0032
Zinc	mg/L	<b>0.30</b>	<b>0.030</b>	< 0.005	< 0.005	< 0.003	< 0.005	< 0.005	0.0003	< 0.0025	< 0.0025	0.010	< 0.005	D	< 0.0030	0.0003	0.010	0.0042

( ) Laboratory replicate.  
 [ ] Results re-checked.  
 (E) Not analyzed  
 NR: Not recorded due to equipment malfunction  
 (1) WAD Cn reported for 2011

**CULLATON LAKE GOLD MINES LTD.**  
CULLATON LAKE MINE

**WATER ANALYSIS REPORT**  
**STATION 940-19A - TAILINGS POND NO. 1 AT PIEZOMETER LOCATION 2003 - 2014**

Physical and General	Units	NWB Water License	CCME Guidelines	July 29 2003	July 7 2004	Aug. 5 2005	Aug. 2 2006	July 5 2007	June 28 2008	Aug. 5 2009	Aug. 4 2010	Aug. 4 2011	Aug. 2 2012	Aug. 15 2013	Aug. 12 2014	MINIMUM	MAXIMUM	AVERAGE
pH (lab)	units	<b>6.0 - 9.5</b>	<b>6.5-9.0</b>	8.08	7.69	7.9	7.9	7.8	7.9	7.9	7.9	8.1	8.0	8.1	8.19	7.7	8.2	8.0
Temperature	°C			20.8	16.3	NR	15.4	15.3	21.3	15.3	13.9	13.5	15.2	19.3	15.8	13.5	21.3	16.6
Suspended Solids (105°C)	mg/L	<b>25.0</b>		8	< 3	2	< 1	< 10	< 1	< 1	3	7	1.3	< 1	2	< 1	< 10	3
Total Cyanide (1)	mg/L	<b>0.80</b>		< 0.005	0.0074	0.006	< 0.005	< 0.005	0.0009	< 0.005	< 0.005	0.0074	0.00238	0.00168	0.0020	0.0009	0.0074	0.0044
Total Hardness	mg CaCO <sub>3</sub> /L				206	201	210	220	749	220	230	246	210	210	E	201	749	270
<b>Minor Cations</b>																		
Arsenic	mg/L	<b>0.30</b>	<b>0.005</b>	0.0036	0.00209	0.002	0.0019	0.0016	0.0025	0.0019	0.0030	0.0021	0.00209	0.00195	0.0023	0.0016	0.0036	0.0023
Copper	mg/L	<b>0.20</b>	<b>0.004</b>	0.002	0.0015	0.002	0.001	0.001	0.00143	0.0015	0.0010	0.0010	0.00102	0.00097	0.0013	0.0010	0.0020	0.0013
Lead	mg/L	<b>0.20</b>	<b>0.007</b>	< 0.001	< 0.0010	< 0.001	< 0.0005	< 0.0005	0.00182	0.00032	0.00036	< 0.0002	0.00034	< 0.0002	< 0.0010	< 0.0002	0.00182	< 0.0007
Mercury	mg/L		<b>0.0002</b>	< 0.00005	< 0.00005	< 0.0001	< 0.00005	< 0.00005	< 0.00001	< 0.00002	0.00001	< 0.00005	< 0.00005	< 0.00005	< 0.00001	< 0.00001	< 0.00010	< 0.00004
Nickel	mg/L	<b>0.30</b>	<b>0.150</b>	0.002	< 0.020	< 0.002	< 0.001	0.002	0.00858	0.001	0.0011	0.0010	< 0.001	< 0.001	< 0.0020	< 0.001	< 0.0200	< 0.0036
Zinc	mg/L	<b>0.30</b>	<b>0.030</b>	< 0.005	< 0.005	< 0.003	< 0.005	< 0.005	0.0161	< 0.0025	< 0.0025	< 0.005	< 0.005	< 0.005	< 0.0030	< 0.0025	0.0161	< 0.0052

( ) Laboratory replicate.

[ ] Results re-checked.

(E) Not analyzed

NR: Not recorded due to equipment malfunction

(1) WAD Cn reported for 2011

**CULLATON LAKE GOLD MINES LTD.**  
CULLATON LAKE MINE

**WATER ANALYSIS REPORT**

**STATION 940-20A - TAILINGS POND NO. 1 EAST SIDE SEEPAGE, 2003 - 2014**

Physical and General	Units	Water License	CCME Guidelines	July 29 2003	July 7 2004	Aug. 5 2005	Aug. 2 2006	July 5 2007	June 28 2008	Aug. 5 2009	Aug. 4 2010	Aug. 4 2011	Aug. 2 2012	Aug. 15 2013	Aug. 12 2014	MINIMUM	MAXIMUM	AVERAGE
pH (lab)	units	6.0 - 9.5	6.5-9.0	D	8.13	7.8	8.1	8.2	8.1	8.3	8.7	8.3	D	D	9.14	7.8	9.1	8.3
Temperature	°C			D	21.3	NR	22.0	17.9	19.6	18.9	13.8	13.3	D	D	21.0	13.3	22.0	18.5
Suspended Solids (105°C)	mg/L	25.0		D	< 3	2	1	< 10	4	1	1	< 4	D	D	< 2	1	10	3
Total Cyanide (l)	mg/L	0.80		D	0.0104	0.118	< 0.005	< 0.005	0.0038	< 0.005	< 0.005	0.0014	D	D	< 0.0020	0.0014	0.118	0.017
Total Hardness	mg CaCO <sub>3</sub> /L				310	338	220	620	370	240	230	215	D	D	E	215	620	318
<b>Minor Cations</b>																		
Arsenic	mg/L	0.30	0.005	D	0.00297	0.001	0.0044	0.0052	0.00337	0.0028	0.0042	0.0057	D	D	0.0042	0.001	0.0057	0.0038
Copper	mg/L	0.20	0.004	D	0.0041	0.004	0.004	0.005	0.00423	0.0031	0.0029	0.0044	D	D	0.0040	0.0029	0.005	0.0040
Lead	mg/L	0.20	0.007	D	< 0.0010	< 0.001	< 0.0005	< 0.0005	0.00023	< 0.00005	0.00005	< 0.0002	D	D	< 0.0010	< 0.00005	< 0.001	< 0.0005
Mercury	mg/L		0.0002	D	< 0.00005	< 0.0001	< 0.00005	< 0.00005	< 0.00001	< 0.00002	< 0.00001	< 0.00005	D	D	< 0.00001	< 0.00001	< 0.00010	< 0.00004
Nickel	mg/L	0.30	0.150	D	< 0.020	0.015	0.006	0.008	0.00644	0.0036	0.0033	0.006	D	D	0.0041	0.0033	< 0.020	< 0.0080
Zinc	mg/L	0.30	0.030	D	< 0.005	< 0.003	< 0.005	< 0.005	0.0016	0.0038	< 0.0025	0.007	D	D	0.0036	0.0016	< 0.007	< 0.0041

( ) Laboratory replicate.

[ ] Results re-checked.

D Dry

NR: Not recorded due to equipment malfunction

(1) WAD Cn reported for 2011

**CULLATON LAKE GOLD MINES LTD.**  
CULLATON LAKE MINE

WATER ANALYSIS REPORT

STATION 940-22A - TAILINGS POND NO. 1 NORTH SIDE SEEPAGE, 2003 - 2014

Physical and General	Units	Water License	CCME Guidelines	July 29 2003	July 7 2004	Aug. 5 2005	Aug. 2 2006	July 5 2007	Jun 28 2008	Aug. 5 2009	Aug. 4 2010	Aug. 4 2011	Aug. 2 2012	Aug. 15 2013	Aug. 12 2014	MINIMUM	MAXIMUM	AVERAGE
pH (lab)	units	6.0 - 9.5	6.5-9.0	D	D	7.7	D	D	8.0	D	D	D	D	D	D	7.7	8.0	7.9
Temperature	°C			D	D	NR	D	D	18.7	D	D	D	D	D	D	18.7	18.70	18.70
Suspended Solids (105°C)	mg/L	25.0		D	D	6	D	D	1	D	D	D	D	D	D	1	6	4
Total Cyanide	mg/L	0.80		D	D	0.073	D	D	0.0015	D	D	D	D	D	D	0.0015	0.073	0.037
Total Hardness	mg CaCO <sub>3</sub> /L			D	D	515	D	D	546	D	D	D	D	D	D	515	546	531
<b>Minor Cations</b>																		
Arsenic	mg/L	0.30	0.005	D	D	0.001	D	D	0.00339	D	D	D	D	D	D	0.001	0.00339	0.0022
Copper	mg/L	0.20	0.004	D	D	0.004	D	D	0.00239	D	D	D	D	D	D	0.00239	0.004	0.0032
Lead	mg/L	0.20	0.007	D	D	< 0.001	D	D	0.00057	D	D	D	D	D	D	0.00057	< 0.001	< 0.0008
Mercury	mg/L		0.0002	D	D	< 0.0001	D	D	< 0.00001	D	D	D	D	D	D	< 0.00001	< 0.0001	< 0.00006
Nickel	mg/L	0.30	0.150	D	D	0.045	D	D	0.00415	D	D	D	D	D	D	0.00415	0.045	0.0246
Zinc	mg/L	0.30	0.030	D	D	< 0.010	D	D	0.0022	D	D	D	D	D	D	0.0022	< 0.010	< 0.0061

( ) Laboratory replicate.

[ ] Results re-checked.

D Dry

NR: Not recorded due to equipment malfunction

**CULLATON LAKE GOLD MINES LTD.**  
CULLATON LAKE MINE

**WATER ANALYSIS REPORT**  
**STATION 940-23A - QUARRY PIT, 2003 - 2014**

Physical and General	Units	Water License	CCME Guidelines	July 29 2003	July 7 2004	Aug. 5 2005	Aug. 2 2006	July 5 2007	June 28 2008	Aug. 5 2009	Aug. 4 2010	Aug. 4 2011	Aug. 2 2012	Aug. 15 2013	Aug. 12 2014	MINIMUM	MAXIMUM	AVERAGE
pH (lab)	units	<b>6.0 - 9.5</b>	<b>6.5-9.0</b>	8.07	7.56	7.8	8.1	7.7	7.4	8.1	8.0	8.0	7.9	8.0	8.26	7.4	8.3	7.9
Temperature	°C			20.7	15.7	NR	15.5	14.4	14.5	14.3	13.8	13.0	14.7	18.3	14.1	13.0	20.7	15.4
Suspended Solids (105°C)	mg/L	<b>25.0</b>		10 <	3	4	1 <	10 <	1 <	1 <	2 <	4 <	1 <	1 <	2 <	1	10	3
Total Cyanide (1)	mg/L	<b>0.80</b>		< 0.006	< 0.0050	< 0.002	< 0.005	< 0.005	< 0.0005	< 0.005	< 0.005	< 0.00050	0.00074	0.00117	< 0.0020	< 0.0005	< 0.0060	< 0.0032
Total Hardness	mg CaCO <sub>3</sub> /L				37.9	104	120	78	46.7	100	110	93.6	110	106	E	38	120	91
<b>Minor Cations</b>																		
Arsenic	mg/L	<b>0.30</b>	<b>0.005</b>	0.0019	0.00096	0.002	0.0014	0.0011	0.00084	0.0013	0.0020	0.0017	0.00175	0.00235	0.0033	0.00084	0.0033	0.0017
Copper	mg/L	<b>0.20</b>	<b>0.002</b>	0.002	< 0.0010	0.002	0.002	< 0.001	0.00102	0.0024	0.0016	0.0022	0.00227	0.00188	0.0024	< 0.0010	0.0024	< 0.0018
Lead	mg/L	<b>0.20</b>	<b>0.002</b>	< 0.001	< 0.0010	< 0.001	< 0.0005	< 0.0005	0.00009	0.00014	0.00019	0.0003	0.00028	< 0.00020	< 0.0010	0.00009	< 0.0010	< 0.0005
Mercury	mg/L		<b>0.0002</b>	< 0.00005	< 0.00005	< 0.0001	< 0.00005	< 0.00005	0.00001	< 0.00002	< 0.00001	< 0.00005	< 0.00005	< 0.00005	< 0.00001	< 0.00001	< 0.00010	< 0.00004
Nickel	mg/L	<b>0.30</b>	<b>0.065</b>	0.002	< 0.020	0.002	0.002	0.001	0.00141	0.0023	0.0022	0.003	0.0026	0.0021	0.0034	0.0010	< 0.020	< 0.0037
Zinc	mg/L	<b>0.30</b>	<b>0.030</b>	0.007	0.0087	0.065	0.012	0.006	0.0086	0.0229	0.0301	0.0140	0.0504	0.0119	0.0140	0.0060	0.065	0.0209

( ) Laboratory replicate.

[ ] Results re-checked.

(E) Not analyzed

NR: Not recorded due to equipment malfunction

(1) WAD Cn reported for 2011

**CULLATON LAKE GOLD MINES LTD.**  
CULLATON LAKE MINE

WATER ANALYSIS REPORT

STATION 940-24A - AREA OF SEEPAGE FROM QUARY PIT TO TAILINGS POND, 2003 - 2014

Physical and General	Units	Water License	CCME Guidelines	July 29 2003	July 7 2004	Aug. 5 2005	Aug. 2 2006	July 5 2007	June 28 2008	Aug. 5 2009	Aug. 4 2010	Aug. 4 2011	Aug. 2 2012	Aug. 15 2013	Aug. 12 2014	MINIMUM	MAXIMUM	AVERAGE
pH (lab)	units	6.0 - 9.5	6.5-9.0	D	D	D	D	D	D	D	D	D	D	D	D			
Temperature	°C			D	D	D	D	D	D	D	D	D	D	D	D			
Suspended Solids (105°C)	mg/L	25.0		D	D	D	D	D	D	D	D	D	D	D	D			
Total Cyanide	mg/L	0.80		D	D	D	D	D	D	D	D	D	D	D	D			
Total Hardness	mg CaCO <sub>3</sub> /L			D	D	D	D	D	D	D	D	D	D	D	D			
Oil and Grease	mg/L	Visible		D	D	D	D	D	D	D	D	D	D	D	D			
Minor Cations																		
Arsenic	mg/L	0.30	0.005	D	D	D	D	D	D	D	D	D	D	D	D			
Copper	mg/L	0.20	0.004	D	D	D	D	D	D	D	D	D	D	D	D			
Lead	mg/L	0.20	0.007	D	D	D	D	D	D	D	D	D	D	D	D			
Mercury	mg/L		0.0002	D	D	D	D	D	D	D	D	D	D	D	D			
Nickel	mg/L	0.30	0.150	D	D	D	D	D	D	D	D	D	D	D	D			
Zinc	mg/L	0.30	0.030	D	D	D	D	D	D	D	D	D	D	D	D			

( ) Laboratory replicate.  
[ ] Results re-checked.  
D: Dry



**CULLATON LAKE GOLD MINES LTD.**  
CULLATON LAKE MINE

**WATER ANALYSIS REPORT**  
**STATION 940-27A - AREA OF SEEPAGE FROM EWR TO SHEAR LAKE CREEK (1), 2003 - 2014**

Physical and General	Units	Water License	CCME Guidelines	July 29 2003	July 7 2004	Aug 5 2005	Aug 2 2006	July 5 2007	June 28 2008	Aug 5 2009	Aug. 4 2010	Aug. 4 2011	Aug. 2 2012	Aug. 15 2013	Aug. 12 2014	MINIMUM	MAXIMUM	AVERAGE
pH (lab)	units	6.0 - 9.5	6.5-9.0			D	D	D	D	D	D	D	D	D	D			
Temperature	°C					D	D	D	D	D	D	D	D	D	D			
Suspended Solids (105°C)	mg/L	25.0				D	D	D	D	D	D	D	D	D	D			
Total Cyanide	mg/L	0.80				D	D	D	D	D	D	D	D	D	D			
Total Hardness	mg CaCO <sub>3</sub> /L					D	D	D	D	D	D	D	D	D	D			
Sulphate	mg/L					D	D	D	D	D	D	D	D	D	D			
<b>Minor Cations</b>																		
Arsenic	mg/L	0.30	0.005			D	D	D	D	D	D	D	D	D	D			
Copper	mg/L	0.20	0.004			D	D	D	D	D	D	D	D	D	D			
Lead	mg/L	0.20	0.007			D	D	D	D	D	D	D	D	D	D			
Mercury	mg/L		0.0002			D	D	D	D	D	D	D	D	D	D			
Nickel	mg/L	0.30	0.150			D	D	D	D	D	D	D	D	D	D			
Zinc	mg/L	0.30	0.030			D	D	D	D	D	D	D	D	D	D			

(1) Station added in 2005  
( ) Laboratory replicate.  
[ ] Results re-checked.  
D: Dry

**Appendix 3**  
**August 12, 2014**  
**Thermistor Monitoring Results**

## **THERMISTOR MONITORING RESULTS**

### **Station 940-21**

Field notes for pit excavated on August 12, 2014 at same location as last year.  
(immediately north of T4)

0 – 0.9m: till cover

0.9m – 1.07m: saturated tailings

1.07m: Permafrost

(2014 photo unrecoverable)



Test pit excavated at T4 on August 15, 2013 – permafrost at 1.4m.

## Thermistor Reading - Test Pit Comparison

### August 12, 2014 T4 Test Pit Field Notes:

0 -0.9m: till cover

0.9m -1.07m: saturated tailings

1.07m: permafrost

### August 12, 2014 Thermistor Readings (See Notes Below)

Depth (m)	T1 (°C)	T2 (°C)	T3 (°C)	T4 (°C)
0.3	NR(3)	21.26	18.45	NR(3)
0.8	NR(3)	Nr	15.67	NR(3)
1.3	NR(3)	7.02	17.50	NR(3)
11.8	NR(3)	5.49	9.09	NR(3)
2.3	NR(3)	1.68	8.50	NR(3)
2.8	NR(3)	-0.66	NR(3)	NR(3)

### August 15, 2013 T4 Test Pit Field Notes:

0 -0.9m: till cover

0.9m -1.35m: saturated tailings

1.4m: permafrost

### August 15, 2013 Thermistor Readings (See Notes Below)

Depth (m)	T1 (°C)	T2 (°C)	T3 (°C)	T4 (°C)
0.3	NR(3)	NR(3)	18.45	NR(3)
0.8	NR(3)	13.57	17.81	NR(3)
1.3	NR(3)	9.69	19.12	NR(3)
1.8	NR(3)	6.84	13.32	NR(3)
2.3	NR(3)	2.08	9.69	NR(3)
2.8	NR(3)	-0.66	NR(3)	NR(3)

### Notes:

- (1) Thermistor readings are suspect and are included for comparison with test pit findings. High temperature readings for the top 2 sensors (0.3m and 0.8m) indicate they are above ground level and reflect daytime heating in the exposed black plastic casing.
- (2) Cable was not accessible.
- (3) Reading indicated open circuit.

**Appendix 4**  
**2015 Spill Response Plan**

## **CULLATON LAKE ENVIRONMENTAL SPILL RESPONSE PLAN**

### **COMPANY INFORMATION**

Cullaton Lake Gold Mines Ltd. is wholly owned by Barrick Gold Inc. The Barrick head office responsible for the site is located at:

Barrick Gold Inc.  
BCE Place, Canada Trust Tower, Suite 3700  
161 Bay Street, P.O. Box 212  
Toronto, Ontario  
M5J 2S1

The site manager is:

Paul Brugger,  
Barrick Gold Inc.  
171 Copper Cliff Road East  
Neebing, Ontario  
P7L 0B6  
Phone: 807-964-1657 (Thunder Bay, Ontario)  
Cell: 807-631-4895  
e-mail: [pbrugger@barrick.com](mailto:pbrugger@barrick.com)

### **SITE LOCATION:**

The Cullaton Lake property is located in the southern part of the District of Keewatin in the Nunavut Territory. The property is 250 km west of Arviat, NU, 400 km northwest of Churchill, Manitoba and 645 km north of Thompson, Manitoba. A topographic map is attached as Figure 1.

### **PROJECT HISTORY AND CURRENT ACTIVITY:**

Cullaton Lake operated as an underground gold mine for four years from 1981 to 1985. Decommissioning and reclamation began in 1991 and was completed in 2001. By the end of 2001, all mine buildings had been removed, roads were decommissioned and the tailings impoundment area was reclaimed. No chemicals, fuels or reagents remain on site.

Remaining activities on the site consist of a one-day annual visit for inspection and monitoring purposes. The site is dormant and uninhabited for the remainder of the year.

### **REVISIONS AND EFFECTIVE DATE OF PLAN:**

This plan was reviewed and revised on March 10, 2015 and is effective until March 31, 2016.

## **SPILL CONTROL AND REPORTING PROCEDURES:**

Should it be necessary to mobilize contractors to the site for any reason in the future, the contractor will be required to supply spill control and clean up materials, have a spill control plan and train personnel in spill response procedures.

Upon discovery of a spill, the person discovering the spill will take the following actions:

### **INITIAL ACTIONS:**

- a. Stop the flow if possible.
- b. Eliminate open flame ignition sources (i.e. extinguish cigarettes, shut off motors (from a remote location if surrounded by vapours)).
- c. Contain flow of fuel by dyking, barricading or blocking flow by any means available. Use earth-moving equipment if available. A dam made of earth or other available fill can be quickly constructed to contain and prevent a spill from spreading. If the ground is permeable, it may be necessary to excavate a shallow depression and line it with plastic to prevent the oil from seeping away.

### **ACTION IN CASE OF FIRE:**

- a. Use CO<sub>2</sub>, dry chemical, foam or water spray (fog), although water may spread the fire.
- b. Use jet streams to wash away burning gasoline.
- c. Use fog streams to protect any rescue team and trapped people.
- d. Use water to cool surface of tanks.
- e. Divert the oil or gasoline to an open area and let it burn off under control. If the fire is put out before all the fuel is consumed, beware of re-ignition. Rubber tires are almost impossible to extinguish after igniting with fire. Remove vehicles with burning tires from the danger area.

### **RECOVERY PROCEDURE:**

- a. Unburned oil or gasoline can be soaked up by sand and peat moss, or by commercial absorbents such as Graboil.
- b. If necessary, contaminated soil should be excavated and disposed of as per the following section.
- c. Fuel entering the ground can be recovered by digging sumps or trenches.

### **DISPOSAL:**

- a. Evaporation may be used if appropriate.
- b. Disposal as per the approved Abandonment and Restoration (1996) Plan.

## REPORTING:

An individual discovering a spill must report it as soon as possible to the 24 hour Spill Report Line by calling:

**(867) 920-8130**

(1) A person reporting a spill shall give as much of the following information as possible:

- date and time of spill
- location of spill
- direction spill is moving
- name and phone number of a contact person close to the location of the spill
- type and description of contaminant spilled including an estimate of the quantity
- cause of spill
- status of spill (i.e. continuing or stopped)
- action taken to contain, recover, clean-up, and dispose of contaminant
- name, address and phone number of person reporting the spill
- name of owner, or person in charge or control of contaminant at time of spill

(2) No person shall delay reporting a spill because of lack of knowledge of the factors listed in subsection (1).

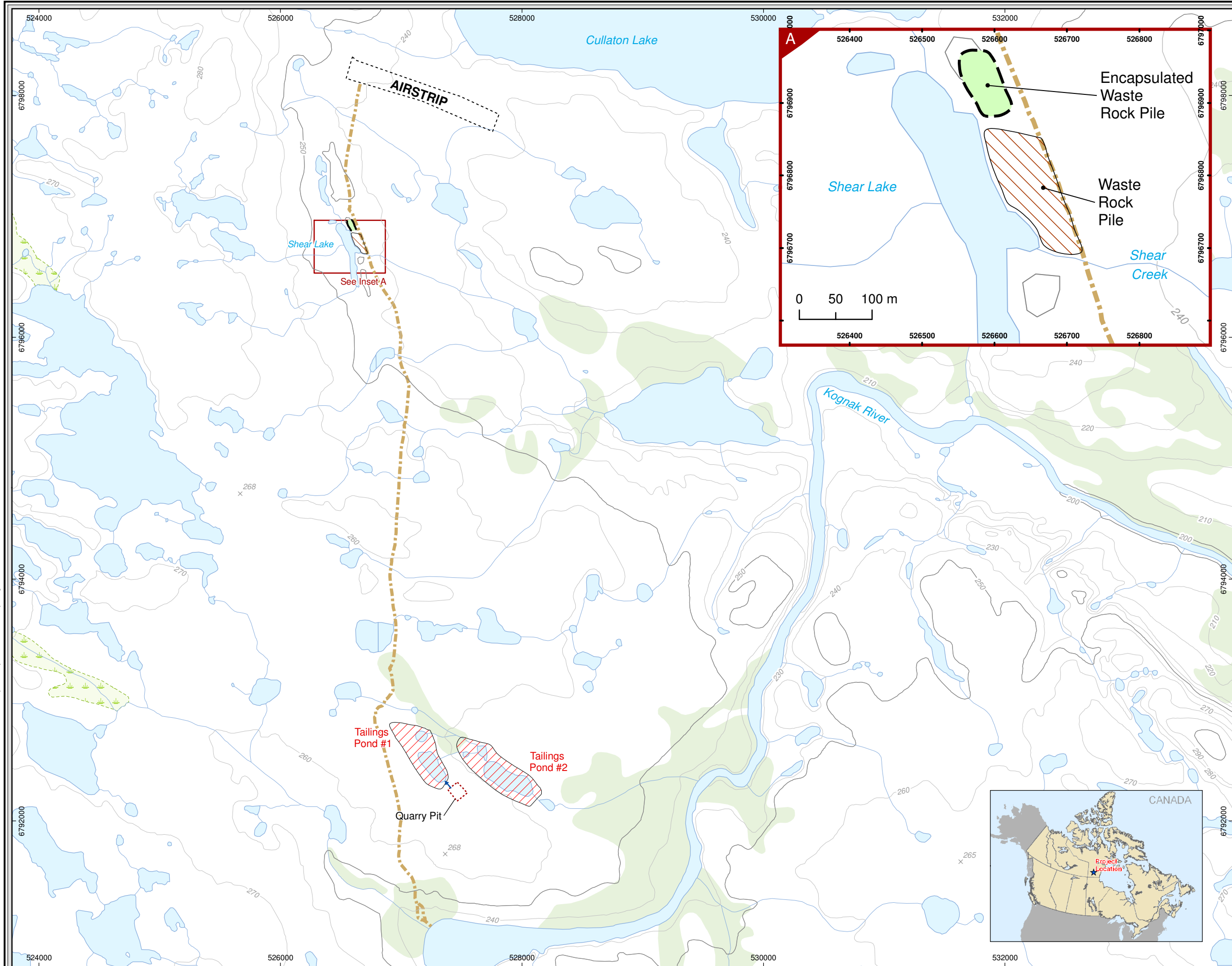
(3) The person reporting the spill shall also contact:

- AANDC Manager of Field Operations at: **(867) 975-4295**
- Environment Canada at **(867) 975-4644**
- Government of Nunavut Environmental Protection at **(867) 857-3174 Contact Alain Shouinard**
- Kivalliq Inuit Association at **(867) 645-5735** or **1-800-220-6581 Contact Jeff Tulugak**
- Barrick Gold Corporation :
  - Paul Brugger,  
Site Manager  
Phone: **807-964-1657**  
Cell: 807-631-4895
  - Alternate:  
Walter Baumann,  
Manager, Closure Program  
North American Region  
Phone: **801-990-3746**  
Cell: 801-244-3540
- If required:
  - RCMP – Arviat at **(867) 857-0123**
  - Arviat Hospital at **(867) 857-3100**
  - Arviat Fire Response at **(867) 857-9999**

(4) The attached NT-NU Spill Report will also be completed and submitted to the Nunavut spills reporting office at fax: (867) 873-6924 or email [spills@gov.nt.ca](mailto:spills@gov.nt.ca)



Date Revised: March 17, 2011  
Date Plotted: March 17, 2011  
File Location: P:\6014695\000-CADD\050 GIS WP\ByZ\_Grizzly\_Habitat\107651\_By1\_Fig1\_CullatonLake\_Mar17\_2011.mxd



### Legend

- Quarry Pit
- Encapsulated Waste Rock Pile
- Waste Rock Pile
- Tailings Pond
- Flow Direction

### Base Mapping

Contours

- Index (50m)
- Intermediate (10m)

Hydrology

- Waterbody
- Watercourse

- Vegetation
- Wetland
- Road (decommissioned)

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Base data: National Topographic Database (NTDB) compiled by Natural Resources Canada at 1:50,000 scale. Sampling performed by Gartner Lee Ltd., June 2008. Road GPS-tracked by Gartner Lee Ltd., June 2008. Airport footprint approximate; for reference purposes only. EWR pile, tailings ponds and quarry outlines, BGC Engineering, Inc. (2006). All other data, AECOM 2009.

0 0.5 1  
Kilometres  
1:30,000  
UTM Zone 14N, NAD 83

File Name: 107651\_By1\_Fig1\_CullatonLake\_Mar17\_2011.mxd  
Prepared By: MM Date Issued: Mar, 2011  
Reviewed By: KW Project Number: 107651

**Barrick Gold**

Project: Cullaton Lake Project  
Location: Nunavut

**Cullaton Lake Site**

**Figure 1**



Canada

# NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

NT-NU 24-HOUR SPILL REPORT LINE

TEL: (867) 920-8130

FAX: (867) 873-6924

EMAIL: spills@gov.nt.ca

REPORT LINE USE ONLY

A	REPORT DATE: MONTH – DAY – YEAR		REPORT TIME		<input type="checkbox"/> ORIGINAL SPILL REPORT, OR <input type="checkbox"/> UPDATE # _____ TO THE ORIGINAL SPILL REPORT	REPORT NUMBER _____-_____
	OCCURRENCE DATE: MONTH – DAY – YEAR		OCCURRENCE TIME			
C	LAND USE PERMIT NUMBER (IF APPLICABLE)			WATER LICENCE NUMBER (IF APPLICABLE)		
	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION				REGION <input type="checkbox"/> NWT <input type="checkbox"/> NUNAVUT <input type="checkbox"/> ADJACENT JURISDICTION OR OCEAN	
E	LATITUDE			LONGITUDE		
	DEGREES	MINUTES	SECONDS	DEGREES	MINUTES	SECONDS
F	RESPONSIBLE PARTY OR VESSEL NAME		RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION			
	ANY CONTRACTOR INVOLVED		CONTRACTOR ADDRESS OR OFFICE LOCATION			
H	PRODUCT SPILLED		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES		U.N. NUMBER	
	SECOND PRODUCT SPILLED (IF APPLICABLE)		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES		U.N. NUMBER	
I	SPILL SOURCE		SPILL CAUSE		AREA OF CONTAMINATION IN SQUARE METRES	
	FACTORS AFFECTING SPILL OR RECOVERY		DESCRIBE ANY ASSISTANCE REQUIRED		HAZARDS TO PERSONS, PROPERTY OR ENVIRONMENT	
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS					
L	REPORTED TO SPILL LINE BY	POSITION	EMPLOYER	LOCATION CALLING FROM	TELEPHONE	
	ANY ALTERNATE CONTACT	POSITION	EMPLOYER	ALTERNATE CONTACT LOCATION	ALTERNATE TELEPHONE	

## REPORT LINE USE ONLY

N	RECEIVED AT SPILL LINE BY	POSITION	EMPLOYER	LOCATION CALLED	REPORT LINE NUMBER
		STATION OPERATOR		YELLOWKNIFE, NT	(867) 920-8130
LEAD AGENCY <input type="checkbox"/> EC <input type="checkbox"/> CCG <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> INAC <input type="checkbox"/> NEB <input type="checkbox"/> TC			SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN		FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED
AGENCY		CONTACT NAME	CONTACT TIME	REMARKS	
LEAD AGENCY					
FIRST SUPPORT AGENCY					
SECOND SUPPORT AGENCY					
THIRD SUPPORT AGENCY					

## Instructions for Completing the NT-NU Spill Report Form

This form can be filled out electronically and e-mailed as an attachment to [spills@gov.nt.ca](mailto:spills@gov.nt.ca). Until further notice, please verify receipt of e-mail transmissions with a follow-up telephone call to the spill line. Forms can also be printed and faxed to the spill line at 867-873-6924. Spills can still be phoned in by calling collect at 867-920-8130.

<b>A. Report Date/Time</b>	The actual date and time that the spill was reported to the spill line. If the spill is phoned in, the Spill Line will fill this out. <b>Please do not fill in the Report Number:</b> the spill line will assign a number after the spill is reported.
<b>B. Occurrence Date/Time</b>	Indicate, to the best of your knowledge, the exact date and time that the spill occurred. Not to be confused with the report date and time (see above).
<b>C. Land Use Permit Number /Water Licence Number</b>	This only needs to be filled in if the activity has been licenced by the Nunavut Water Board and/or if a Land Use Permit has been issued. Applies primarily to mines and mineral exploration sites.
<b>D. Geographic Place Name</b>	In most cases, this will be the name of the city or town in which the spill occurred. For remote locations – outside of human habitations – identify the most prominent geographic feature, such as a lake or mountain and/or the distance and direction from the nearest population center. <b>You must include the geographic coordinates</b> (Refer to Section E).
<b>E. Geographic Coordinates</b>	This only needs to be filled out if the spill occurred outside of an established community such as a mine site. Please note that the location should be stated in degrees, minutes and seconds of Latitude and Longitude.
<b>F. Responsible Party Or Vessel Name</b>	This is the person who was in management/control/ownership of the substance at the time that it was spilled. In the case of a spill from a ship/vessel, include the name of the ship/vessel. Please include full address, telephone number and e-mail. Use box K if there is insufficient space. <b>Please note that, the owner of the spilled substance is ultimately responsible for any spills of that substance, regardless of who may have actually caused the spill.</b>
<b>G. Contractor involved?</b>	Were there any other parties/contractors involved? An example would be a construction company who is undertaking work on behalf of the owner of the spilled substance and who may have contributed to, or directly caused the spill and/or is responding to the spill.
<b>H. Product Spilled</b>	Identify the product spilled; most commonly, it is gasoline, diesel fuel or sewage. For other substances, avoid trade names. Wherever possible, use the chemical name of the substance and further, identify the product using the four digit UN number (eg: UN1203 for gasoline; UN1202 for diesel fuel; UN1863 for Jet A & B)
<b>I. Spill Source</b>	Identify the source of the spill: truck, ship, home heating fuel tank and, if known, the cause (eg: fuel tank overfill, leaking tank; ship ran aground; traffic accident, vandalism, storm, etc.). Provide an estimate of the extent of the contaminated/impacted area (eg: 10 m <sup>2</sup> )
<b>J. Factors Affecting Spill</b>	Any factors which might make it difficult to clean up the spill: rough terrain, bad weather, remote location, lack of equipment. Do you require advice and/or assistance with the cleanup operation? Identify any hazards to persons, property or environment: for example, a gasoline spill beside a daycare centre would pose a safety hazard to children. Use box K if there is insufficient space.
<b>K. Additional Information</b>	Provide any additional, pertinent details about the spill, such as any peculiar/unique hazards associated with the spilled material. State what action is being taken towards cleaning up the spill; disposal of spilled material; notification of affected parties. If necessary, append additional sheets to the spill report. Number the pages in the same format found in the lower right hand corner of the spill form: eg. "Page 1 of 2", "Page 2 of 2" etc. <b>Please number the pages to ensure that recipients can be certain that they received all pertinent documents.</b> If only the spill report form was filled out, number the form as "Page 1 of 1".
<b>L. Reported to Spill Line by</b>	Include your full name, employer, contact number and the location from which you are reporting the spill. Use box K if there is insufficient space.
<b>M. Alternate Contact</b>	Identify any alternate contacts. This information assists regulatory agencies to obtain additional information if they cannot reach the individual who reported the spill.
<b>N. Report Line Use Only</b>	<b>Leave Blank.</b> This box is for the <b>Spill Line's use only.</b>