TETRA TECH

June 17, 2020

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Via Email: Eamonn.Goggin@riotinto.com

Diavik Diamond Mines (2012) Inc.
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Attention: Eamonn Goggin, DDMI
Sarah Greenop, DDMI
Gord Macdonald, DDMI

Subject: Response to Decision #2 of the Board's Reasons for Decisions Letter, Thermal Properties and Water Content of Lakebed Sediment vs. Lakebed Till for the Closure Cover Atop the North Country Rock Pile

1.0 INTRODUCTION

Tetra Tech Canada Inc. (Tetra Tech) has been requested by Diavik Diamond Mines (2012) Inc. (DDMI) to provide assistance on a response to the decisions from the Wek'èezhìi Land and Water Board (the Board) regarding their request for modification to the closure cover for the North Country Rock Pile (NCRP). The current approved closure cover design for the NCRP consists of a 4.5 m cover layer with: 1.5 m glacial till and 3.0 m of Type I waste rock. Tetra Tech understands that lakebed sediments with higher percentage of fines compared to the till from the A21 pit were placed within regions 101 to 117 atop of the NCRP. DDMI is requesting to reduce the required cover thickness from approved 4.5 m to 4.0 m (consisting of 1.0 m thick lakebed sediment and 3.0 m thick waste rock) atop of the NCRP, where the lakebed sediment was placed, more specifically in regions 101 to 105. DDMI submitted *DDMI Request for WRSA-NCRP Cover Modification* memo (Cover Modification memo) to the Board on January 9, 2020.

On March 25, 2020, DDMI received the Reasons for Decision letter from the Board regarding the decision on DDMI's Cover Modification memo. Two decisions were made by the Board. This letter was prepared in response to Decision #2 of the Board's Reasons for Decisions letter.

2.0 DECISION #2 FROM THE BOARD

The Board reviewed the application from DDMI and requires a response to Decision #2:

Decision #2: *The Board requires DDMI to submit confirmation from Tetra Tech that the lakebed sediments have similar thermal properties and similar water retention to those used in the model, or commit to testing the lakebed sediment to verify that they are within range of properties used in the model. DDMI must submit a letter within 45 days of the dates of the Reasons for Decision with this information. If lakebed sediments lab testing is required, DDMI must indicate when the results and conclusions will be reported to the Board.*

3.0 RESPONSE

In 2017, Tetra Tech performed thermal modelling of the currently approved 4.5 m cover layer at the NCRP (3.0 m Type I waste rock overlying 1.5 m glacial till).

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In November 2019, Tetra Tech performed one additional thermal analysis as per the request of DDMI to evaluate the closure cover modification atop the NCRP from approved 4.5 m to 4.0 m (3.0 m Type I waste rock overlying 1.0 m glacial till). During the construction of closure cover, lakebed sediments were placed atop the NCRP instead of lakebed till which was assumed in both thermal analyses.

Tetra Tech evaluated the particle size and water content of the placed lakebed sediments based on the data presented in the DDMI's letter to the Board titled *DDMI Request for WRSA-NCRP Cover Modification* dated January 9, 2020. It was concluded that lakebed sediments have similar water content, thermal conductivity, and latent heat to glacial till assumed in Cases 2 and 3 (Table 8 of Tetra Tech 2017 Report) used in the model. DDMI's measured data shows that the water content in the lakebed sediments is expected to be similar or slightly higher to the glacial till in the thermal analysis performed in November 2019. Latent heat for placed lakebed sediments is also slightly higher than used for the lakebed till in the thermal analysis performed in November 2019. Higher latent heat is due to the higher fines content and higher water content in the placed lakebed sediments compared to the lakebed till. The predicted thaw depths from the thermal analysis performed in November 2019 are conservative by not considering the lakebed sediments placed on the top of the NCRP.

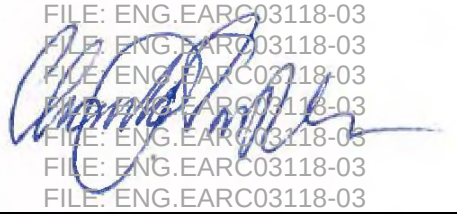
4.0 LIMITATIONS OF LETTER

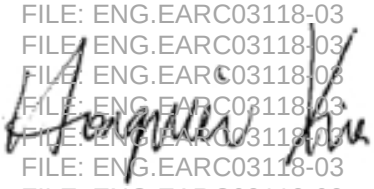
This letter and its contents are intended for the sole use of Diavik Diamond Mines (2012) Inc. and their agents. Tetra Tech Canada Inc. (operating as Tetra Tech) does not accept any responsibility for the accuracy of any of the data, the analysis, or the recommendations contained or referenced in the report when the report is used or relied upon by any Party other than Diavik Diamond Mines (2012) Inc., or for any Project other than the proposed development at the subject site. Any such unauthorized use of this report is at the sole risk of the user. Use of this document is subject to the Limitations on Use of this Document attached in the Appendix or Contractual Terms and Conditions executed by both parties.

5.0 CLOSURE

We trust this letter meets your present requirements. If you have any questions or comments, please contact the undersigned.

Respectfully submitted,
Tetra Tech Canada Inc.





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Attachment: Limitations on Use of this Document

LIMITATIONS ON USE OF THIS DOCUMENT

GEOTECHNICAL

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This document pertains to a specific site, a specific development, and a specific scope of work. The document may include plans, drawings, profiles and other supporting documents that collectively constitute the document (the "Professional Document").

The Professional Document is intended for the sole use of TETRA TECH's Client (the "Client") as specifically identified in the TETRA TECH Services Agreement or other Contractual Agreement entered into with the Client (either of which is termed the "Contract" herein). TETRA TECH does not accept any responsibility for the accuracy of any of the data, analyses, recommendations or other contents of the Professional Document when it is used or relied upon by any party other than the Client, unless authorized in writing by TETRA TECH.

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1.2 ALTERNATIVE DOCUMENT FORMAT

Where TETRA TECH submits electronic file and/or hard copy versions of the Professional Document or any drawings or other project-related documents and deliverables (collectively termed TETRA TECH's "Instruments of Professional Service"), only the signed and/or sealed versions shall be considered final. The original signed and/or sealed electronic file and/or hard copy version archived by TETRA TECH shall be deemed to be the original. TETRA TECH will archive a protected digital copy of the original signed and/or sealed version for a period of 10 years.

Both electronic file and/or hard copy versions of TETRA TECH's Instruments of Professional Service shall not, under any circumstances, be altered by any party except TETRA TECH. TETRA TECH's Instruments of Professional Service will be used only and exactly as submitted by TETRA TECH.

Electronic files submitted by TETRA TECH have been prepared and submitted using specific software and hardware systems. TETRA TECH makes no representation about the compatibility of these files with the Client's current or future software and hardware systems.

1.3 STANDARD OF CARE

Services performed by TETRA TECH for the Professional Document have been conducted in accordance with the Contract, in a manner consistent with the level of skill ordinarily exercised by members of the profession currently practicing under similar conditions in the jurisdiction in which the services are provided. Professional judgment has been applied in developing the conclusions and/or recommendations provided in this Professional Document. No warranty or guarantee, express or implied, is made concerning the test results, comments, recommendations, or any other portion of the Professional Document.

If any error or omission is detected by the Client or an Authorized Party, the error or omission must be immediately brought to the attention of TETRA TECH.

1.4 DISCLOSURE OF INFORMATION BY CLIENT

The Client acknowledges that it has fully cooperated with TETRA TECH with respect to the provision of all available information on the past, present, and proposed conditions on the site, including historical information respecting the use of the site. The Client further acknowledges that in order for TETRA TECH to properly provide the services contracted for in the Contract, TETRA TECH has relied upon the Client with respect to both the full disclosure and accuracy of any such information.

1.5 INFORMATION PROVIDED TO TETRA TECH BY OTHERS

During the performance of the work and the preparation of this Professional Document, TETRA TECH may have relied on information provided by persons other than the Client.

While TETRA TECH endeavours to verify the accuracy of such information, TETRA TECH accepts no responsibility for the accuracy or the reliability of such information even where inaccurate or unreliable information impacts any recommendations, design or other deliverables and causes the Client or an Authorized Party loss or damage.

1.6 GENERAL LIMITATIONS OF DOCUMENT

This Professional Document is based solely on the conditions presented and the data available to TETRA TECH at the time the data were collected in the field or gathered from available databases.

The Client, and any Authorized Party, acknowledges that the Professional Document is based on limited data and that the conclusions, opinions, and recommendations contained in the Professional Document are the result of the application of professional judgment to such limited data.

The Professional Document is not applicable to any other sites, nor should it be relied upon for types of development other than those to which it refers. Any variation from the site conditions present, or variation in assumed conditions which might form the basis of design or recommendations as outlined in this report, at or on the development proposed as of the date of the Professional Document requires a supplementary investigation and assessment.

TETRA TECH is neither qualified to, nor is it making, any recommendations with respect to the purchase, sale, investment or development of the property, the decisions on which are the sole responsibility of the Client.

1.7 ENVIRONMENTAL AND REGULATORY ISSUES

Unless stipulated in the report, TETRA TECH has not been retained to investigate, address or consider and has not investigated, addressed or considered any environmental or regulatory issues associated with development on the subject site.

1.8 NATURE AND EXACTNESS OF SOIL AND ROCK DESCRIPTIONS

Classification and identification of soils and rocks are based upon commonly accepted systems and methods employed in professional geotechnical practice. This report contains descriptions of the systems and methods used. Where deviations from the system or method prevail, they are specifically mentioned.

Classification and identification of geological units are judgmental in nature as to both type and condition. TETRA TECH does not warrant conditions represented herein as exact, but infers accuracy only to the extent that is common in practice.

Where subsurface conditions encountered during development are different from those described in this report, qualified geotechnical personnel should revisit the site and review recommendations in light of the actual conditions encountered.

1.9 LOGS OF TESTHOLES

The testhole logs are a compilation of conditions and classification of soils and rocks as obtained from field observations and laboratory testing of selected samples. Soil and rock zones have been interpreted. Change from one geological zone to the other, indicated on the logs as a distinct line, can be, in fact, transitional. The extent of transition is interpretive. Any circumstance which requires precise definition of soil or rock zone transition elevations may require further investigation and review.

1.10 STRATIGRAPHIC AND GEOLOGICAL INFORMATION

The stratigraphic and geological information indicated on drawings contained in this report are inferred from logs of test holes and/or soil/rock exposures. Stratigraphy is known only at the locations of the test hole or exposure. Actual geology and stratigraphy between test holes and/or exposures may vary from that shown on these drawings. Natural variations in geological conditions are inherent and are a function of the historic environment. TETRA TECH does not represent the conditions illustrated as exact but recognizes that variations will exist. Where knowledge of more precise locations of geological units is necessary, additional investigation and review may be necessary.

1.11 PROTECTION OF EXPOSED GROUND

Excavation and construction operations expose geological materials to climatic elements (freeze/thaw, wet/dry) and/or mechanical disturbance which can cause severe deterioration. Unless otherwise specifically indicated in this report, the walls and floors of excavations must be protected from the elements, particularly moisture, desiccation, frost action and construction traffic.

1.12 SUPPORT OF ADJACENT GROUND AND STRUCTURES

Unless otherwise specifically advised, support of ground and structures adjacent to the anticipated construction and preservation of adjacent ground and structures from the adverse impact of construction activity is required.

1.13 INFLUENCE OF CONSTRUCTION ACTIVITY

There is a direct correlation between construction activity and structural performance of adjacent buildings and other installations. The influence of all anticipated construction activities should be considered by the contractor, owner, architect and prime engineer in consultation with a geotechnical engineer when the final design and construction techniques are known.

1.14 OBSERVATIONS DURING CONSTRUCTION

Because of the nature of geological deposits, the judgmental nature of geotechnical engineering, as well as the potential of adverse circumstances arising from construction activity, observations during site preparation, excavation and construction should be carried out by a geotechnical engineer. These observations may then serve as the basis for confirmation and/or alteration of geotechnical recommendations or design guidelines presented herein.

1.15 DRAINAGE SYSTEMS

Where temporary or permanent drainage systems are installed within or around a structure, the systems which will be installed must protect the structure from loss of ground due to internal erosion and must be designed so as to assure continued performance of the drains. Specific design detail of such systems should be developed or reviewed by the geotechnical engineer. Unless otherwise specified, it is a condition of this report that effective temporary and permanent drainage systems are required and that they must be considered in relation to project purpose and function.

1.16 BEARING CAPACITY

Design bearing capacities, loads and allowable stresses quoted in this report relate to a specific soil or rock type and condition. Construction activity and environmental circumstances can materially change the condition of soil or rock. The elevation at which a soil or rock type occurs is variable. It is a requirement of this report that structural elements be founded in and/or upon geological materials of the type and in the condition assumed. Sufficient observations should be made by qualified geotechnical personnel during construction to assure that the soil and/or rock conditions assumed in this report in fact exist at the site.

1.17 SAMPLES

TETRA TECH will retain all soil and rock samples for 30 days after this report is issued. Further storage or transfer of samples can be made at the Client's expense upon written request, otherwise samples will be discarded.