#### SHEAR DIAMONDS LTD.

# CARE AND MAINTENANCE PLAN JERICHO PROJECT, NUNAVUT













#### **REPORT**

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### TABLE OF CONTENTS

1.0	INTE	RODUCTION	1
	1.1	General	
	1.2	Objective of the Care and Maintenance Plan	2
2.0	SITE	WATER MANAGEMENT	2
3.0	WAS	STE MANAGEMENT	3
4.0	PKC	A MANAGEMENT	3
5.0	WAS	STE ROCK MANAGEMENT	3
6.0	WAS	STEWATER TREATMENT MANAGEMENT	3
7.0	LAN	DFILL MANAGEMENT	4
8.0	LAN	DFARM MANAGEMENT	4
9.0	CON	ITINGENCY MANAGEMENT	4
10.0	GEN	ERAL MONITORING	4
11.0	AQL	JATIC EFFECTS MONITORING	5
12.0	CLO	SURE AND RECLAMATION	5
13.0	CLO	SURE	6
2011	۱۸/Δ٦	TER LICENCE RENEWAL DOCUMENTS	7

#### **APPENDICES**

Appendix A Site Water Management Plan

Appendix B Processed Kimberlite Management Plan

Appendix C General Monitoring Plan

Appendix D Aquatic Effects Monitoring Plan

#### **ACRONYMS & ABBREVIATIONS**

AEMP Aquatic Effects Monitoring Plan
AIA Aquatic Impact Assessment
AQMP Air Quality Management Plan

BTEX Benzene, Toluene, Ethylbenzene, and Xylene

CAMP Care and Maintenance Plan
CMP Contingency Management Plan
CPK Coarse Processed Kimberlite
EIS Environmental Impact Statement

FPK Fine Processed Kimberlite
GMP General Monitoring Plan

ICRP Interim Closure and Reclamation Plan
INAC Indian and Northern Affairs Canada

LFMP Landfarm Management Plan
LFP Landfill Management Plan
NWB Nunavut Water Board
PHC Petroleum Hydrocarbons

PKCA Processed Kimberlite Containment Area
PKMP Processed Kimberlite Management Plan

Shear Shear Diamonds (Nunavut) Corp.

SWMP Site Water Management Plan

TDC Tahera Diamonds Corporation

WEMP Wildlife Effects Management Plan

WMP Waste Management Plan
WRMP Waste Rock Management Plan

WTMP Wastewater Treatment Management Plan

#### 1.0 INTRODUCTION

#### 1.1 General

The Jericho Diamond Mine is located approximately 260 km southeast of Kugluktuk, NU, and 30 km north of Lupin Mine. The Jericho Mine was constructed and operated by Tahera Diamond Corporation (TDC) between 2004 and 2008. In August 2010, Shear Diamonds (Nunavut) Corp. (Shear) purchased the Jericho Mine and its assets and assumed the responsibility for the site.

On January 16, 2008, TDC and its subsidiary Benachee Resources Inc. ("Benachee"), owners of the Jericho Diamond Mine, filed for protection under the *Companies' Creditors Arrangement Act* ("CCAA") due to a severe cashflow crisis. Pursuant to the initial order of the Ontario Superior Court of Justice, a stay of proceedings was granted, and all proceedings and enforcement processes against TDC and Benachee were stayed.

Through the course of the restructuring, TDC and Benachee identified two strategic goals to be achieved in the CCAA process. The first goal was to realize upon Benachee's non-strategic assets by selling its tax losses. The second goal was to restart the Jericho Diamond Mine through a recapitalization, a refinancing, a sale or some combination thereof. On June 3, 2009, after extensive negotiations and due diligence, TDC and Benachee achieved their first goal pursuant to a highly complex transaction with an income trust.

With respect to the second goal, during the CCAA process TDC and Benachee went through two unsuccessful attempts to find a purchaser for the Jericho Diamond Mine. On January 15, 2010, the Ontario Court approved and authorized TDC and Benachee to conduct a formal sales process inviting offers for either a sale *en bloc* to facilitate a going concern reopening or, alternatively, a liquidation, in whole or in part, of the Jericho Diamond Mine. After negotiations with various parties, TDC and Benachee entered into a letter of intent with Shear on May 5, 2010, which contemplated the sale of the Jericho Diamond Mine. The sale to Shear closed on August 27, 2010, and the Jericho Diamond Mine and substantially all the assets of TDC and Benachee were vested in Shear pursuant to an Order of the Ontario Court dated July 27, 2010.

The Jericho Mine Care and Maintenance Plan (CAMP), described herein, has been developed to provide a set of resources for Shear, its contractors, and the regulatory bodies to use while maintaining the Jericho Mine in a state of care and maintenance.

The plan fulfills the requirements specified in Part J, Item 6 and Part M, Item 1 of the Jericho water licence, NWB1JER0410. As part of the purchase process of the Jericho Diamond Project, Shear management entered discussions with the Nunavut Water Board (NWB) and Indian and Northern Affairs Canada (INAC). Shear committed to providing a CAMP outlining and describing activities and undertakings required to prevent the potential for harm to the environment and to maintain the site and infrastructure. This plan and the series of sub-plans contained herein are being submitted to the NWB based on the available information. However, comprehensive historical maintenance and monitoring records were not well maintained under previous ownership and management; therefore, available information is incomplete or lacking detail.



The CAMP is based on these existing records including previous site management plans, regulator comments, and external anecdotal information where available. That being said, the plan has been redeveloped for the current regulatory regime and to reflect Shear's commitment to the best practices in environmental stewardship. The property will remain under care and maintenance as Shear evaluates the mineral resource and confirms a mine plan.

#### 1.2 Objective of the Care and Maintenance Plan

The primary objective of the CAMP is to ensure the protection of the environment and the site infrastructure during the care and maintenance phase. This plan will provide Shear and its designated contractors with a collection of working documents to manage site activities during this phase. Mining operations at Jericho were suspended in May 2008. Care of the site was managed by INAC until Shear acquired the property. Activities during this period were limited in scope and addressed only the most urgent requirements. This document addresses the specific management requirements related to care and maintenance activities and does not cover those required for mining operations.

Previous site management plans were based exclusively on Jericho as an operating mine and did not consider care and maintenance. Shear determined that several of the management plans change significantly when the mine is under care and maintenance and, as such, specific care and maintenance versions of these plans have been developed. These plans are as follows:

- Aquatic Effects Monitoring Plan (AEMP, Section 10.0)
- General Monitoring Plan (GMP, Section 9.0);
- Processed Kimberlite Management Plan (PKMP, Section 4.0);
- Site Water Management Plan (SWMP, Section 2.0);
- Waste Management Plan (WMP, Section)
- Air Quality Management Plan (AQMP, Section); and
- Wildlife Effects Management Plan (WEMP, Section)

Shear has determined that the requirements for the other site management plans remain largely the same under care and maintenance and therefore will be submitted as such with the water licence renewal application late February 2011.

#### 2.0 SITE WATER MANAGEMENT

During care and maintenance, the management of site water remains a critical aspect of site activities. Annual precipitation and runoff must be managed to prevent potentially contaminated water from entering the receiving environment and to protect the integrity of site infrastructure such that structures designed to withhold, divert, and contain water are maintained.

A Site Water Management Plan – Care and Maintenance has been developed and is presented in Appendix A. The plan fulfills the requirements specified in Schedule F and Part F, Item 1 of the Jericho water licence and covers all aspects of site water management during care and maintenance. Once Shear

has completed the resource evaluation and is able to confirm the mine plan, a Site Water Management Plan – Operations will be submitted to the NWB for review and approval at least 60 days before the project resumes operations.

#### 3.0 WASTE MANAGEMENT

Personnel will reside at the Jericho site during care and maintenance to undertake the activities required under this plan and others associated with resource evaluation, construction, and maintenance. As such, Shear expects that the management of waste generated on site will follow the same procedures as when the mine is operating. A specific care and maintenance document has, therefore, not been produced; site personnel should refer to the Jericho Waste Management Plan (EBA 2011j). The plan fulfills the requirements specified in Schedule H and Part H of the Jericho water licence and covers all aspects of site water management during care and maintenance.

#### 4.0 PKCA MANAGEMENT

The Processed Kimberlite Containment Area (PKCA) serves a dual role in managing both processed kimberlite and site water. As site water management remains a critical aspect of care and maintenance activities, a Processed Kimberlite Management Plan (PKMP) – Care and Maintenance has been developed to address water management in the PKCA including discharges to the receiving environment.

The PKMP, presented in Appendix B, fulfills the requirements specified in Schedule H and Part H, Item 1 of the Jericho water licence and covers all aspects of PKCA water management during care and maintenance. The PKMP – Operations will be submitted to the NWB for review at least 60 days before the project resumes operations.

#### 5.0 WASTEROCK MANAGEMENT

During care and maintenance activities in 2011, mining operations, and consequently waste rock generation, are suspended, so waste rock management is not required. If information on Waste Rock Management is required, it can be found in the Jericho Waste Rock Management Plan (WRMP, EBA 2011k) to be submitted to the NWB with the water licence renewal application late February 2011.

The plan fulfills the requirements specified in Schedule H and Part H, Item 3 of the Jericho water licence and covers the present requirements of waste rock management during operations.

#### 6.0 WASTEWATER TREATMENT MANAGEMENT

Personnel will reside at the Jericho site during care and maintenance to undertake the activities required under this plan and others associated with resource evaluation, construction, and maintenance. As such, the main camp will be opened and the facility's wastewater treatment plant (WWTP) will be operational. The management of the WWTP will follow the same procedures as when the mine is operational. The Wastewater Treatment Management Plan (EBA 2011l), to be submitted late February 2011, fulfills the requirements specified in Schedule H and Part H, Item 5 of the Jericho water licence.



#### 7.0 LANDFILL MANAGEMENT

Personnel will reside at the Jericho site during care and maintenance to undertake the activities required under this plan and others associated with resource evaluation, construction, and maintenance. The management of waste landfilled on site will follow the same procedures as when the mine is operating; therefore, a specific care and maintenance document is not required. The Landfill Management Plan (EBA 2011g) fulfills the requirements specified in Schedule H and Part H, Item 5 of the Jericho water licence and will be submitted late February 2011 with the water licence renewal application.

#### 8.0 LANDFARM MANAGEMENT

TDC submitted a landfarm design and management plan that was never approved or constructed. Shear will be submitting a Landfarm Management Plan as part of the water licence renewal application. The plan will include an engineered design and specific operational procedures. In summer 2011, Shear will confirm the volume of contaminated material on site and sample the material to establish the extent of the contamination in order to confirm the design. Placement of the facility will also be investigated during the summer with input from the engineers and regulators. The Landfarm Management Plan (EBA 2011f) fulfills the requirements specified in Schedule H and Part H, Item 5 of the Jericho water licence.

#### 9.0 CONTINGENCY MANAGEMENT

The mine rescue team and full-scale medical resources will not be necessary while the site is on the reduced activities of care and maintenance. A first aid responder and/or medic will be on site as required by the *Nunavut Mine Health and Safety Act*. The Contingency Management Plan (EBA 2011c) will be submitted with the water licence renewal. This plan fulfills the requirements specified in Schedule J and Part J, Items 1 and 6 of the Jericho water licence and covers all aspects of Contingency Management.

#### 10.0 GENERAL MONITORING

During care and maintenance, the monitoring of site water and infrastructure remains an important aspect of site activities. While mine operations are suspended, site water continues to flow and accumulate, posing potential harm to the environment and jeopardizing the integrity of structures designed to withhold, divert, and contain water. A General Monitoring Plan – Care and Maintenance has been developed to address this risk, presented in Appendix C. The plan fulfills the requirements specified in Schedule L and Part L, Item 1 of the Jericho water licence and covers all aspects of general monitoring during care and maintenance. The Site Water Management Plan – Operations will be submitted to the NWB for review and approval at least 60 days prior to commencing mining operations.

#### 11.0 AQUATIC EFFECTS MONITORING

Although water use is reduced during care and maintenance, monitoring discharge water and its effect on the receiving environment remains a critical aspect of site activities. An Aquatic Effects Monitoring Plan (AEMP) — Care and Maintenance has been developed and is presented in Appendix D. The AEMP during care and maintenance is the same program proposed for operations with the exception of frequency and fish sampling.

The plan fulfills the requirements specified in Schedule K and Part K of the Jericho water licence and covers all aspects of aquatic effects monitoring during care and maintenance. The AEMP – Operations will be submitted to the NWB for review and approval at least 60 days prior to commencing mining operations.

#### 12.0 CLOSURE AND RECLAMATION

In 2011, Shear will resume vegetation studies collaboratively with the University of Alberta. The Interim Closure and Reclamation Plan (ICRP, EBA 2011e) will be submitted with the water licence renewal application late February 2011.

The plan fulfills the requirements specified in Schedule M and Part M, Item 2 of the Jericho water licence and represents the current conditions, infrastructure, and requirements of closure and reclamation planning.



#### 13.0 CLOSURE

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#### 2011 WATER LICENCE RENEWAL DOCUMENTS

#### Management Plans

- EBA, A Tetra Tech Company (EBA), 2011a. Aquatic Effects Monitoring Plan, Jericho Diamond Mine, Nunavut. Prepared for Shear Diamonds Ltd., February 2011.
- EBA, A Tetra Tech Company (EBA), 2011b. Care and Maintenance Plan, Jericho Diamond Mine, Nunavut. Prepared for Shear Diamonds Ltd., February 2011.
- EBA, A Tetra Tech Company (EBA), 2011c. Contingency Management Plan, Jericho Diamond Mine, Nunavut. Prepared for Shear Diamonds Ltd., February 2011.
- EBA, A Tetra Tech Company (EBA), 2011d. General Monitoring Plan, Jericho Diamond Mine, Nunavut. Prepared for Shear Diamonds Ltd., February 2011.
- EBA, A Tetra Tech Company (EBA), 2011e. Interim Closure and Reclamation Plan, Jericho Diamond Mine, Nunavut. Prepared for Shear Diamonds Ltd., February 2011.
- EBA, A Tetra Tech Company (EBA), 2011f. Landfarm Management Plan, Jericho Diamond Mine, Nunavut. Prepared for Shear Diamonds Ltd., February 2011.
- EBA, A Tetra Tech Company (EBA), 2011g. Landfill Management Plan, Jericho Diamond Mine, Nunavut. Prepared for Shear Diamonds Ltd., February 2011.
- EBA, A Tetra Tech Company (EBA), 2011h. Processed Kimberlite Management Plan, Jericho Diamond Mine, Nunavut. Prepared for Shear Diamonds Ltd., February 2011.
- EBA, A Tetra Tech Company (EBA), 2011i. Site Water Management Plan, Jericho Diamond Mine, Nunavut. Prepared for Shear Diamonds Ltd., February 2011.
- EBA, A Tetra Tech Company (EBA), 2011j. Waste Management Plan, Jericho Diamond Mine, Nunavut. Prepared for Shear Diamonds Ltd., February 2011.
- EBA, A Tetra Tech Company (EBA), 2011k. Waste Rock Management Plan, Jericho Diamond Mine, Nunavut. Prepared for Shear Diamonds Ltd., February 2011.
- EBA, A Tetra Tech Company (EBA), 2011l. Wastewater Treatment Management Plan, Jericho Diamond Mine, Nunavut. Prepared for Shear Diamonds Ltd., February 2011.

#### **Design Reports**

- EBA, A Tetra Tech Company (EBA), 2011m. C1 Diversion Construction Summary, Jericho Diamond Mine, Nunavut. Prepared for Tahera Diamond Corporation, February 2011.
- EBA, A Tetra Tech Company (EBA), 2011n. Geotechnical Design Report Set 3 Tank Farm of Fuel Storage Facilities, Jericho Diamond Mine, Nunavut. Prepared for Shear Diamonds Ltd., February 2011.
- EBA, A Tetra Tech Company (EBA), 2011o. Preliminary Landfarm Design Plan, Jericho Diamond Mine, Nunavut. Prepared for Shear Diamonds Ltd., February 2011.



### **APPENDIX A**

APPENDIX A SITE WATER MANAGEMENT PLAN



### **APPENDIX B**

APPENDIX B PROCESSED KIMBERLITE MANAGEMENT PLAN



## **APPENDIX C**

APPENDIX C GENERAL MONITORING PLAN



### APPENDIX D

APPENDIX D AQUATIC EFFECTS MONITORING PLAN

