January 26, 2006

EBA File: 1100060.004

Tahera Diamond Corporation
Suite 803, 121 Richmond Street West
Toronto, Ontario M5H 2K1

Attention: Dan Johnson

Subject: Jericho Diamond Mine
Processed Kimberlite Containment Area
East and Southeast Dam – Reply to Acres and INAC Comments

1.0 INTRODUCTION

The following addresses technical questions raised in the letter to the Nunavut Water Board from Acres International Limited, dated October 20, 2005 regarding EBA's Jericho East and Southeast Dams Design Report.

In order to facilitate more efficient technical discussions, TDC and the INAC recommended direct communication amongst the technical parties and plan reviewers. EBA had discussions with Mr. R.A. Halim of Acres International Limited. The following addresses the issues raised by Mr. Halim.

2.0 STABILITY ANALYSES

- Material Properties
  - The upstream till zone is assumed to have the same properties as the ice-poor till
  - Coarse Tailings were assumed to have the following properties
    - Friction Angle 30°
    - Cohesion 0 kPa
    - Unit Weight 18.5 kN/m^3
  - The till foundation is a combination of ice poor and ice rich conditions. Stability analyses were carried out for both assumptions of ice rich, and ice poor strength parameters. The lowest factor of safety is reported. The ice contents in the foundation are expected to be relatively low based on the borehole information. It is not intended to excavate the till except in the key trench area; however if ice rich soils are observed during construction, additional excavation may be carried out.
- Graphical representations of the stability analysis are attached in memo describing the stability analysis.

EBA Engineering Consultants Ltd.
p. 780.451.2121 • f. 780.454.5688
14940 - 123 Avenue • Edmonton, Alberta T5V 1B4 • CANADA

- No excess pore pressures were assumed for the end of construction case. The dam will be constructed during the winter. Thaw consolidation is not expected to result in excess pore pressures due to the relatively slow thaw, and the coarse nature of the till.
- The rapid drawdown case assumed the water level as shown in Figure A.2 of the attached stability analyses memo.

3.0 GEOMEMBRANE LINER SYSTEM

The Jericho East and Southeast Dams are proposed to contain a single geomembrane, protected by geotextile. Acres is questioning the use of a single liner as opposed to a double liner system as used at the EKATI Diamond Mine in some of the dams.

The largest difference between the Jericho East and Southeast Dams compared to the EKATI dams is that the Jericho East and Southeast Dams are designed to retain fine processed kimberlite (fine PK) whereas the EKATI Dams were designed to contain water. Water maybe temporarily impounded above the fine PK in the early life of the facility; however eventually the upstream shell of the dam will be covered with a thick layer of coarse tailings and fine PK.

The Jericho East and Southeast Dams also differ from the dams at the EKATI Diamond Mine in that the EKATI dam liners are covered by bedding layers and run of mine rock. The Jericho East and Southeast Dam liners are covered by bedding layers and sand and gravel till with some, to a trace of fines and also are covered with a thick layer of coarse tailings. A portion of the till and coarse tailings is predicted to become permafrost.

There is precedent for using a single geomembrane for water retaining structures. It is our opinion that a secondary liner is not deemed necessary for this situation.

4.0 CONSTRUCTION QUALITY CONTROL

EBA Engineering Ltd. has been retained by Tahera to carry out the quality control of the dam construction. All aspects listed by Acres will be addressed.

5.0 DAM MONITORING

Acres is suggesting that a routine field survey of the dam crest be carried out in addition to installation and monitoring of survey monitoring points. It is expected that there will be inherent "noise" in a topographic survey of the dam surface but it will indicate if there are any large settlements. Tahera has agreed to carry out topographic surveys of the dam crest as suggested by Acres in conjunction with the dam monitoring program.

6.0 LINER BEDDING MATERIALS

Section 7.5 of the report indicated that the bedding material for the liner could be a natural material with maximum of 40 mm diameter or a crush material with a maximum of 20 mm size. It is our opinion that either material would be suitable given the thick geotextile of the liner; nevertheless due to the timing of construction the 20 mm crush will be used.

7.0 SEEPAGE ANALYSIS

Seepage through the dam is designed to be minimal through the use of a geomembrane liner frozen into frozen ground.

A seepage analyses would indicate minimal seepage through the dam due to normally assumed liner defects. The upstream till layer will eventually saturate and freeze thereby reducing or eliminating water flow through the dam. No seepage analyses have been carried out for the dams; however, a thermal analysis has been carried out to illustrate that the foundation materials and a portion of the dam structure will remain frozen. The thermal analysis is attached.

It is recognized that there is a risk of seepage from the dam. If excessive seepage was observed, a collection system can be constructed downstream of the dam, and the seepage returned to the PKCA. An unexpected amount of significant seepage flow through the dam would not be expected to have an impact on the dam structural integrity as the rockfill structure would remain stable.

We trust this addresses the questions posed. Please contact the undersigned if you have any questions.

Yours truly,
EBA Engineering Consultants Ltd.

W.T. Horne, P.Eng.
Senior Project Engineer, Circumpolar Regions
Direct Line: 780.451.2130 x276
bhorne@eba.ca

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Appendix A: Stability Analyses Memo
Appendix B: Thermal Analyses Memo
Appendix C: Revised Construction Drawings

APPENDIX

APPENDIX A STABILITY ANALYSES MEMO

TO: File **DATE:** January 26, 2006

FROM: Bill Horne **FILE:** 1100060.004

SUBJECT: **Stability Analysis of East and South Dams Jericho Diamond Mine, Nunavut**

1.0 INTRODUCTION

This memo describes an update to the stability analysis EBA's report "Jericho Project East and Southeast Dam Design Report" dated August 2005. An update was required as the liner material for the dam was changed from a polypropylene liner to an HDPE liner. Additional analyses are also presented as requested by INAC 2005.

2.0 ANALYSES METHODOLOGY

Limit equilibrium analyses have been carried out to determine the factors of safety for slope stability during construction and operation of the East and Southeast Dams.

All analyses were conducted using the commercial, two-dimensional, slope stability computer program, SLOPE-W. The factors of safety have been computed using the Morgenstern - Price Method.

The dams are designed to meet Canadian Dam Association guidelines (CDA, 1999). The design criteria for computed minimum factors of safety are given in Table 1.

TABLE 1: SLOPE STABILITY DESIGN CRITERIA

Loading Conditions	Minimum Factor of Safety	Slope
Static Loading, full reservoir	1.5	Downstream and Upstream
Full or partial rapid drawdown	1.2 to 1.3	Upstream
Earthquake, full reservoir	1.1	Downstream and Upstream

The stability analyses were carried out for the deepest dyke cross-section, which is considered to be the worst cases in evaluating intermediate dyke stability.

3.0 MATERIAL PROPERTIES

The material properties chosen for the embankment and foundation materials in the stability analysis are presented in Table 2. The properties for granular materials were selected based on experience with similar materials used and encountered by EBA in dam designs at other sites across the Arctic.

TABLE 2: MATERIAL PROPERTIES USED IN STABILITY ANALYSES			
Material	**Angle of Internal Friction (°)**	**Cohesion (kPa)**	**Unit Weight (kN/m³)**
Run-of-Mine	42	--	20
200 mm Material	35	--	21
20 mm Material	32	--	20
Composite Liner System (Interface)	8	--	18
Ice-Poor Till Foundation	30	--	18.5
Ice-Rich Till Foundation	0	75	16.5
Upstream Till Fill	30	0	18.5
Coarse Processed Kimberlite	30	--	18.5
Fine Processed Kimberlite	0	0	15.0

The friction angle presented in Table 2 for the run-of-mine material is conservative for shallow depths where confining stresses are low (Jansen, 1988). The friction angle presented in Table 2 for rockfill is applicable for higher confining stresses that would be found at depth below the dam crest. The friction angle for similar rockfill under low confining stresses may approach 55°. The interface friction angle between the HDPE geomembrane and the nonwoven geotextile was based on published test results (Koerner, 1990).

3.1 PORE WATER PRESSURE CONDITIONS

Pore water conditions for individual analyses are shown on the attached analyses schematics (Figures A.1 through A.17). The following further describes the assumed pore water conditions.

3.1.1 Coarse Tailings

The pore pressures assigned to the coarse tailings on the upstream face of the dam correspond to the pool level. It was assumed that phreatic surface would drop approximately 0.5 m from the dam face during rapid drawdown.

3.1.2 Till

The pore water pressures assigned to the till on the upstream side of the liner corresponded to the pond elevation for the static and seismic full reservoir stability analyses. Intermediate water levels were also analyzed to determine the minimum factor of safety for the upstream analyses. Pore pressures were conservatively assumed to remain approximately at the original level during rapid drawdown situations.

3.1.3 Rockfill

Pore water pressures assigned to the downstream rockfill equalled the original ground elevation. The liner is not expected to leak significant volumes of water and, furthermore, the rockfill is free draining and will not sustain a rising water level within it.

3.1.4 Liner System

The pore water pressures assigned to the nonwoven geotextile/HDPE interfaces corresponded to the maximum pond levels for the static, seismic, and rapid drawdown stability analyses.

3.1.5 Foundation Till

It was assumed that negligible excess pore water pressures would be generated due to thaw of the till under the upstream or downstream portions of the dams. This is considered to be appropriate for the following reasons:

- thaw progresses relatively slowly into the foundation, and
- the till is non-plastic and has a significant sand and gravel content, which increases permeability.

Given these conditions, the thaw consolidation parameter (Morgenstern and Nixon, 1971) will be low, indicating that excess pore water pressures generated in the till during thaw will be negligible. Furthermore, the permeability of the coarse-grained till is expected to prevent the build-up of excess pore water pressures during rapid drawdown.

3.2 SEISMICITY

The project area lies in a region of low seismicity, but magnitude 4+ earthquakes have recently occurred within a similar part of the shield. NRCan (NRCan 2003a and NRCan 2003b) recommends that a probabilistic approach should be adopted to estimate the peak ground accelerations (PGA).

The CDA indicates that the usual minimum criterion for the design earthquake for a dam, which coincides with the "low" consequence category, would be an earthquake with an annual exceedance with return periods of 100 to 1,000 years. NRCan (2003a and 2003b) indicates that the 1,000-year event has a peak acceleration of 0.016 g. However, in conjunction with proposed changes to the NBCC, NRCan indicates that performance of the Jericho dams be designed for an earthquake with a 2,475 year return period which has a peak ground acceleration of 0.06 g. This has been adopted as the design earthquake.

3.3 ANALYSES RESULTS

Table 3 summarizes the factors of safety under static, rapid drawdown and seismic conditions for different failure surfaces on the upstream and downstream slopes.

TABLE 3: SUMMARY OF STABILITY ANALYSIS RESULTS

Slip Surface	Location	Factor Safety			
		Static	Static, Rapid Drawdown of Reservoir	Seismic	End of Construction (No Coarse Tailings or Water)
1	Upstream, rotational	1.5	1.2	1.2	1.9
2	Upstream, along liner	2.0	1.4	1.5	1.4
3	Downstream rotational	1.6	1.6	1.4	1.6
4	Downstream along the liner	2.1	2.1	1.6	2.9
5	Downstream Overall Stability – Full Tailings Level	2.7	-	-	-

The computed minimum factors of safety exceed the design criteria of 1.5, 1.2 and 1.1 for static, rapid drawdown and seismic loading conditions, respectively, in accordance with the CDA, Dam Safety Guidelines (CDA 1999).

FIGURES

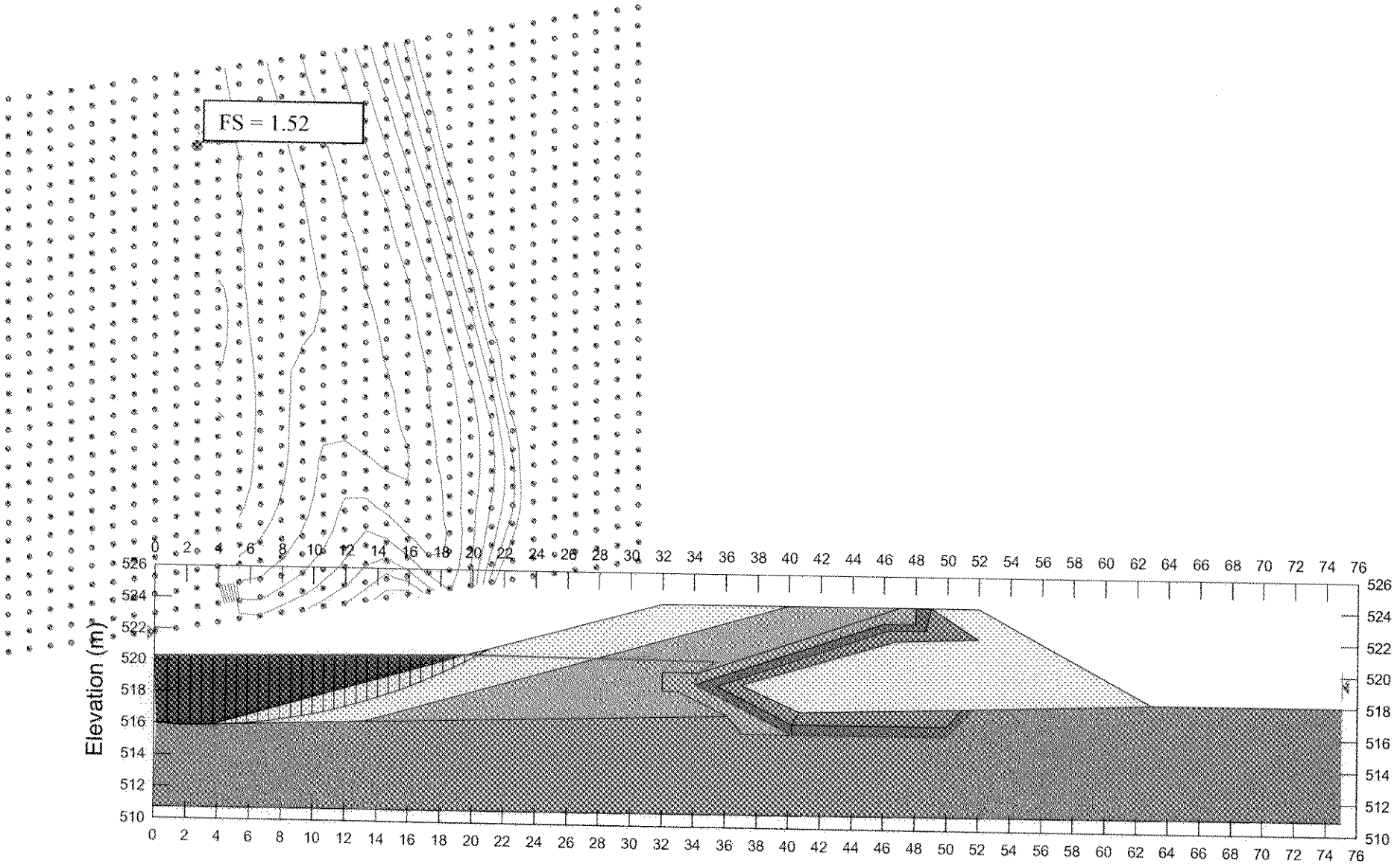

Figure A1
Stability Analysis - Upstream, Static – Rotational Slip Surface

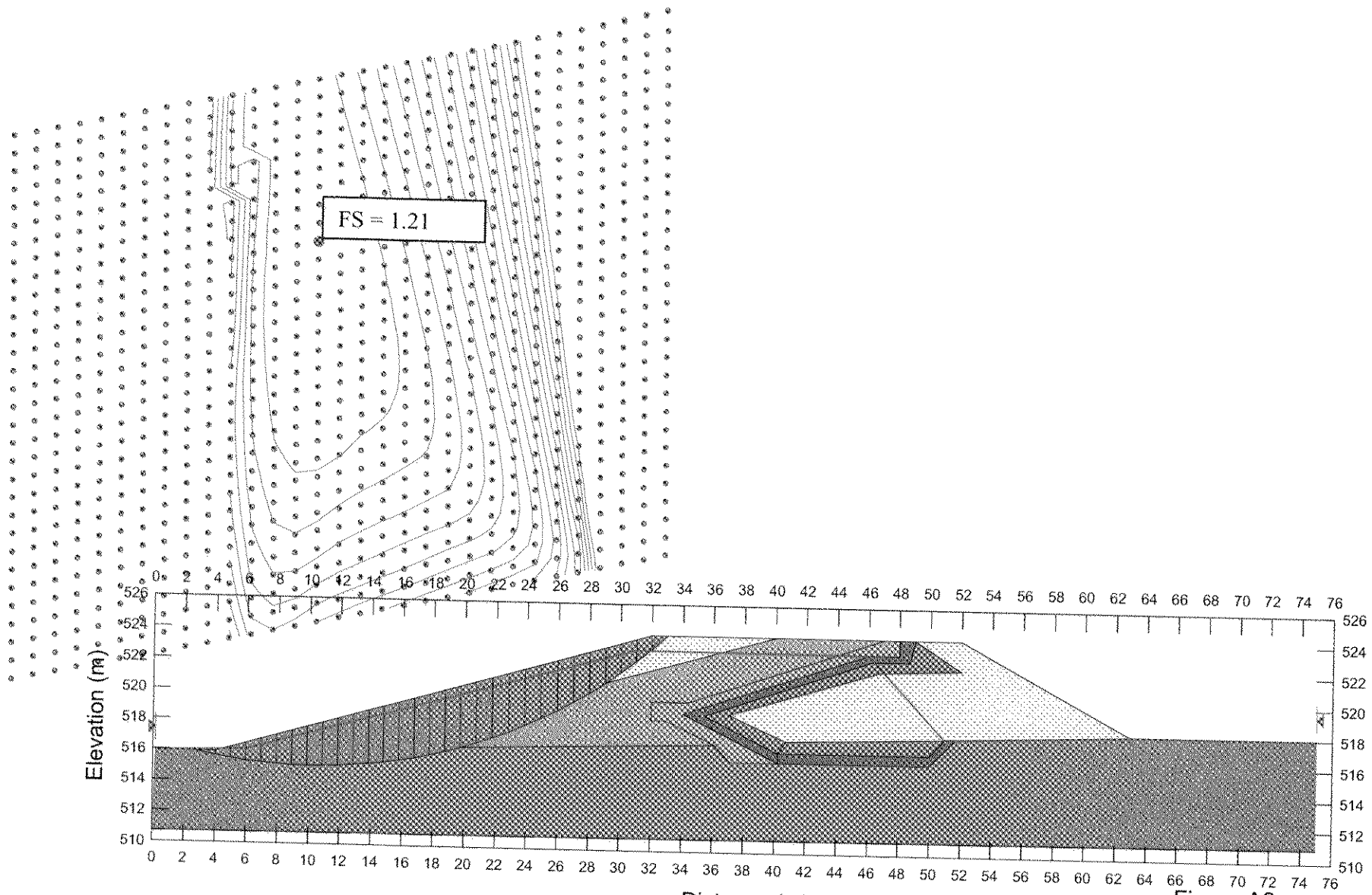

Figure A2
Stability Analysis - Upstream, Rapid Drawdown – Rotational Slip Surface

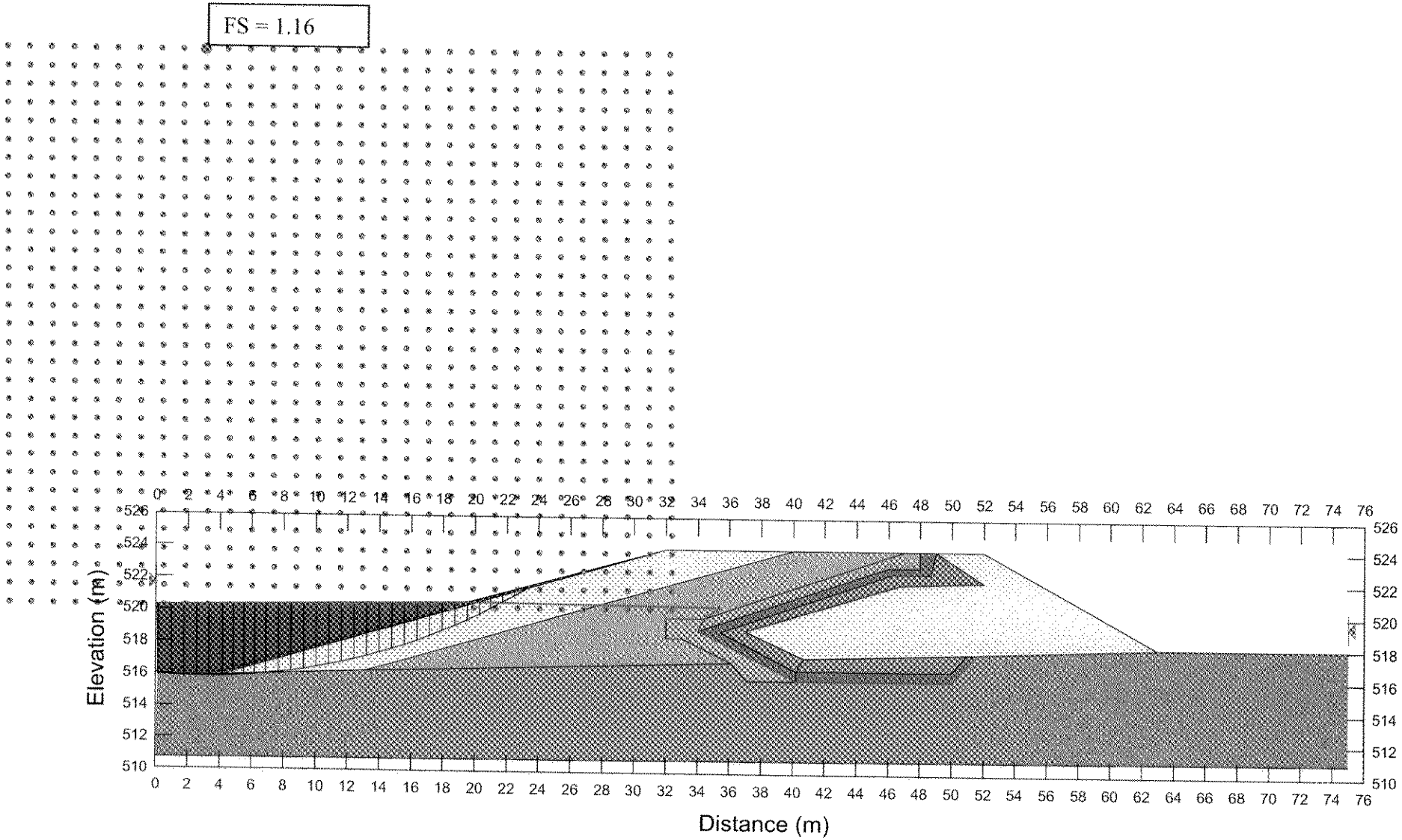

Figure A3

Stability Analysis - Upstream, Seismic Analysis – Rotational Slip Surface