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## Project Summary

**Organization**
Anddes Asociados S.A.C.

**Solution**
Geotechnical Engineering

**Location**
Peru

**Project Objectives**

- To conduct a 3D slope stability analysis of a local mining company's waste dump
- To find a reliable 3D slow stability program to handle both strong and weak layers in the waste dump toe foundation, actual dike geometry, and actual 3D geometry

**Products Used**
SVSLOPE® 3D

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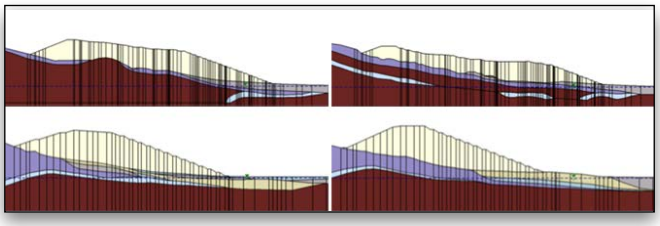
# Anddes Asociados Uses Innovative Technology to Analyze Mine Waste Dump

## SVSLOPE® 3D Increases Organization's Safety Factor by 10%

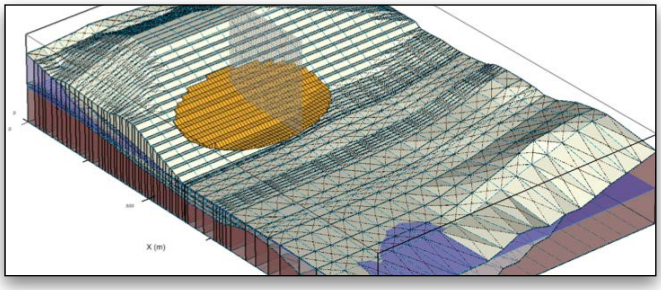
Anddes Asociados S.A.C., an innovative and rapidly growing Peruvian consulting company, recently used Bentley's SVSLOPE software to carry out a 3D slope stability analysis of a local mining company's waste dump. The facility layout included a complex mine waste rock layout and many different soil layers at the foundation, affecting the waste dump stability. The project involved an extensive geotechnical investigation program for waste rock and soil foundation characterization. The challenge was finding a reliable 3D slope stability program that could handle the variability of strong and weak layers in the waste dump toe foundation, actual dike geometry, and actual 3D geometry.

Therefore, SVSLOPE 3D was chosen as the modeling tool, successfully representing the 3D waste dump stacking. Anddes Asociados determined that the waste dump foundation contained very heterogeneous soil layers, most of them compromising the stability of this facility. By using SVSLOPE 3D, the organization's 3D factor of safety, or a system's structural capability to be viable beyond its expected or actual loads, was larger than the minimum required by the project. The 3D factor of safety was 10% larger than the 2D factor of safety because the 3D analysis includes both strong and weak layers while considering the 3D topography of the site.

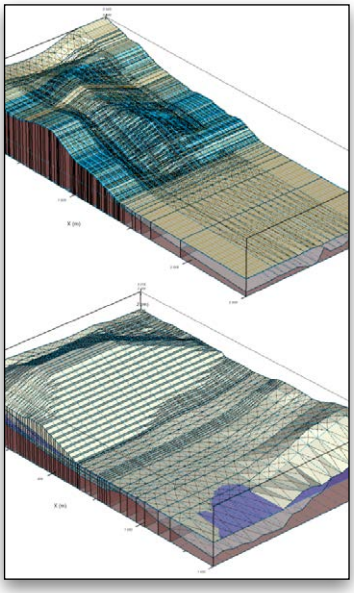
According to Anddes Asociados' Andrés Reyes Parra, geotechnical engineer, "We overcame some issues concerning cross-sectional data entry with the help of SVSLOPE 3D, and this is the final result of our work. We hope that we can continue working together."



*Different geotechnical cross-sections of the waste dump, showing the heterogeneous soils in the foundation and complex waste rock stored.*



*Most critical slip surface analyzed in Model 1.*



*3D view of Model 1 and 2 analyzed in SVSlope 3D.*

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