



Guinea Bauxite Export Project EGA - GAC

Location: Kamsar, Guinea

Date: 2017 - present

Structure: Car Dumper Excavation and Support

Length: 150 m by 300 m long footprint

Cross-Section: -

Geology: Various layers of sands and normally consolidated clays with contrasting permeabilities.

Cost: Not Available

Client: EGA - GAC

Owner: EGA - GAC

reports, and assessing the dewatering system in place and its decommissioning program.



Figure 1. View from South of the excavation, showing the landslide on the right side (courtesy of GAC).

Assessment of Car Dumper Excavation Re-Design:

COLAS Group was commissioned by EGA GAC for the construction of a Car Dumper at Kamsar Port site for the Guinea Alumina Project.

The excavation and support for the Car Dumper structure and consisted of 3 rows of sheet piles around the excavation, with an approximate slope of 1:2 between pile rows, to excavate down to 74.85 m AD from an approximate ground level of 100 m AD.

When the excavation was near to completion, a major hydraulic ground failure followed by a landslide occurred on the East slope. The sheet piles were bent and translated over 10 m towards the excavation, and the base of the slope was subject to considerable uplift. After the landslide, the excavation was backfilled, in order to prevent any further ground movement. This measure stabilised the slope and excavation bottom heave.

Following the incident, GAC has involved Gall Zeidler Consultants (GZ) to carry an independent assessment of the Car Dumper excavation re-design, provide technical consultancy for the associated recovery works and act as independent geotechnical verification engineer. The work produced by GZ includes evaluating the geotechnical and hydrogeological information available, producing various numerical analysis models of the excavation, assessing the validity of the recovery measures, defining critical groundwater levels at different stages of the recovery work, reviewing and interpreting groundwater monitoring



Figure 2. Car Dumper Excavation after the recovery of the excavation), during construction of the base slab.