

11. October 2012

To whom it may concern

Sealing of the Underground of Wadi Dayqah Dams in Oman

Dear Sirs and Madam,

Following the successful completion of the project of the Ministry of Regional Municipalities and Water Resources as head of the Panel of Experts, engaged for the project of building a reservoir with a RCC Dam and an Embankment Dam of each 75 m height under partly very difficult underground conditions I would like to express my appreciation for the means and methods in which BAUER has performed on the project.

Bauer Lebanon Foundation Specialists s.a.r.l Jdeidet El Metn - Beirut - Lebanon has been engaged by VINCY for the construction a grouted curtain (2200 LM length, depth ranging from 40 to 90 m) to reduce the permeability of the underground and related seepage losses of water for the two Dams located in Wadi Dayqah , Sultanate of Oman. The reservoir with a capacity of 70 Mio m³ serves in the future for water supply mainly the Capital of Oman, Muscat.

Geology:

The geology of the project area is quite varied containing moderately to highly fractured, sometimes Karstic in nature Limestone at the left and right abutment of the Main Dam and Central Area, where as alternate beds of Claystone and friable Sandstone are exposed in the Saddle Dam area. Highly fractured Limestone with associated Quartzite and Sandstone are exposed on the left flank of the Saddle Dam. A number of major faults are present along and across the Wadi bed with some associated local faults due to which the area is tectonically highly disturbed.

Grout curtain was realized along Main and Saddle Dams, the left and right abutments of each Dam and central area between them.



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Details of the Contract

The main works include the activities for all drilling and grouting operations from surface and from gallery.

- Drilling of primary, secondary, tertiary and quaternary holes, Water pressure testing and injection of cement grout.
- Drilling and injection of consolidation holes.
- Drilling of drainage holes in the dam body.
- Execution of water pressure tests in selected bore holes.
- Curtain grouting in the dam foundations.

There are two different conditions of works:

- Drilling and grouting from surface
- Drilling and grouting in gallery

The permanent grout curtain has an area of ~ 135,000 m² and was executed in 2008 and 2009.

The total Contract Value of the Project was 86 Mio €. The total value of grouting works including materials: 9.3 Mio. \$.

Bauer fully complied with the tight schedules and reacted proactive and flexibly regarding any changes imposed by the variable site situation

Yours faithfully



Prof. (em.) Dr.-Ing. Theodor Strobl
Head of Panel of Experts for Wadi Dayqah Dams