SpiderPlow™

Leaders in trenchless utility infrastructure construction

Intensive work in the most sensitive environment

Challenge

Working with various contractors to build a 6,000 kilometer fiber optic network, SpiderPlow™ has been engaged in projects all over the rocky and drought ridden Southern African Region including the isolated Kalahari Desert of Botswana from 2014 – 2017.

The environmental impact impact studies and permitting issues were often severe, especially at the Okavango River Delta as it is listed as One of the Seven Natural

Wonders of Africa. It also became the 1000th site to be officially inscribed on the UNESCO World Heritage List just recently.

The ground conditions were mainly rocky (65%) and ranged from large boulders over soft to medium rock.

Drought and desertification are the major ecological problems throughout 3/4 of the region's areas.

The short period to implement the construction of the network was another key factor.

Challenge Resolution

To overcome the hard ground conditions, the SPIDERPLOW™ 220 SERIES had to be engaged, being winched with over 300 tons by using two winch crawlers. Several pre-ripping passes using the SPIDERPLOW™ FSP 220 enabled us to install the cables and conduits without the addition of sand or other protective measures. It also saved the client significant budget as there was no need for rock blasting, cutting, hammering and cable protective sanding, padding and bedding measures.

SpiderPlow™ has been engaged on the project to eliminate the negative environmental impact of open cut trenching that would have contributed to the desertification of the region.

In complete contrast, we also installed cables in the swampy, crocodile and hippo infested wetlands of the Okavango Delta.

Results

The project is now in the final stages, one year ahead of schedule.

Production rates of 8 - 12 kilometres per day were achieved.

Native bushes and trees were preserved.

Environmental impact studies and permits were issued in a very short period of time when the environmental impact assessment consultants recognized there was no mixing of valuable topsoil with subsoils.

The plowing installation of four 110 mm diameter conduits in the crocodile infested Okavango Delta swamps only left a small construction footprint that had completely disappeared the following week.

The contractor's fibre optic cable blowing and splicing subcontractors were able to blow the fibre cables four kilometres from manhole to manhole in one single shot without having to dig up the land in between. As a result of the SPIDERPLOW™ installation process, the conduits were 100% straight without any horizontal or vertical irregularities.

Projects considered "rock jobs" have been successfully pre-ripped and cable installation completed with the SPIDERPLOW™FSP 220 in unprecedented time frames and without any blasting, or rock cutting and with only minimal involvement of rock hammering.

The quality and speed of installation triggered the client to specify SpiderPlow™ machines in all tenders since 2015.

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