

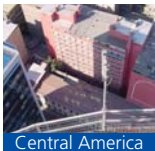
# Dead Sea Works, Israel

## BWA increases productivity and improves security for mining factory

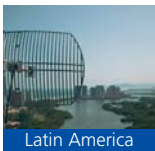
Dead Sea Works



North America



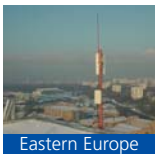
Central America



Latin America



Western Europe



Eastern Europe



Asia Pacific



Northern Africa



Southern Africa



Offshore

The Dead Sea Works (DSW) is a company located in one of the most fascinating and beautiful places in the world. But conditions are tough with extreme temperatures in and around the Dead Sea varying wildly from  $-5^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$  throughout the year.

As the lowest point on Earth, the level of salt and other minerals in the air means that a new car lasts for only three years before being sold for scrap.

### The Dead Sea Works (DSW) Ltd

- Part of ICL Fertilizers, a worldwide producer of fertilizers, some of which are based on minerals extracted from the Dead Sea
- Main mining area and processing plant of DSW located in the south of the Dead Sea

### The Challenge

- To build a data network that can operate and survive extreme conditions of altitude and heat
- To ensure that the same network can support a variety of different applications – including video - for CCTV and security, remote operation of heavy equipment, data collection and information transfer

### The Solution

- A broadband wireless network built using equipment from Alvarion's BreezeNET™ product suite for the unlicensed spectrum

### The Result

- A reliable data network operating in a remote location which has provided multiple cost and time savings, by enabling the company to improve communications, streamline manufacturing processes, increase production levels and meet its aggressive expansion targets
- Improved security and better protection of expensive equipment on remote stations and control rooms

[www.iclfertilizers.co.il](http://www.iclfertilizers.co.il)

This was the challenge faced by the DSW which, although unique in its business and manufacturing practices, shares a problem faced by mining and chemical operations around the world – how to connect remote locations in a harsh environment where no telecom infrastructure exists.

DSW is a part of ICL Fertilizers, a world wide producer of diversified fertilizers. The operations of the DSW (established at 1952) are spread across the southern end of the Dead Sea and include pump houses, generator rooms, extraction ponds, extraction dredges (large vessels that slowly move over the shallow pond surface and “harvest” the minerals) and a central control building.

With so many assets in multiple locations, company management knew that employing an advanced, broadband data network would streamline operations, while ultimately enabling the DSW to meet its aggressive and ambitious expansion plans. In particular, they needed a way to:

- Secure all remote sites and equipment
- Control remote equipment from a central office (thereby avoiding the need to dispatch a technician)
- Monitor the progress of extraction dredges working in the ponds
- Transport essential data collected from out in the field back to the control rooms

It was clear that building a fiber network was out of the question due to overall cost; as well as the low reliability and difficult maintenance expected in such extreme conditions.

Enter Broadband Wireless Access (BWA), a technology perfect for connecting all remote workers and equipment to the main headquarters.



“Alvarion’s wireless network is essential for the daily operations of the DSW. The increase in uptime and the improved productivity would not have been possible without the use of a wireless broadband network. Previously, any production equipment malfunction aboard the rafts would require time to drive to the site and repair. Now, remote monitoring fixes these issues. Uptime is increased and so has overall productivity. Alvarion products have proved to be reliable and robust, and have exceeded our expectations”.

Adi Babayof,  
Industrial  
Communication &  
Instrumentation  
Engineering  
Department  
Manager, Dead  
Sea Works, ICL  
Fertilizers

## Enter Alvarion

Having determined that they needed a BWA network, DSW began testing equipment from a variety of vendors, in partnership with their local system vendor, Taldor.

The team soon decided that Alvarion’s BreezeNET product line operating in 2.4 GHz, was superior on every level of performance, reliability and flexibility to the products of other vendors. In addition, the DSW selected BreezeNET for its ability to work in harsh environments - from hot deserts to windy and wet coastal areas.

## The Dead Sea Works Network

The DSW network has DS.11 and PRO.11 base stations covering the operation area that all ultimately feed back to the central control room.

### Monitoring the Dredges

Dredges are equipped with PRO.11 CPEs, which are connected and roaming between DS.11 base stations situated along the banks of every pond - thus enabling extraction and processing information to be transmitted from the dredges back to HQ. Although the BreezeNET PRO.11 CPE was originally designed for fixed installations, it works smoothly on the moving boat.

### Security Surveillance Network

Close circuit cameras monitor activities and movements and send a constant stream of images back over the DS.11 network to the main office for monitoring. Any unusual activity is alarmed and checked for possible damage or harm.

### Monitoring and Controlling Remote Equipment

Pumps are scattered around the huge plant in remote locations, sometimes tens of kilometers away from the control center. Using a combination of monitoring the pumps via CCTV links, and operating equipment remotely, technicians can complete work in less than half-an-hour that previously took an entire day.

### Communicating with Other Offices

The Alvarion network transmits to and from the headquarters as well as other sites further along the Dead Sea.

## Conclusion

Following the success of the original wireless solution, new manufacturing-oriented applications have been introduced to further improve productivity; for example, ERP and data-heavy specialist systems, over a VPN, are now being used on the dredges. As a result of these new requirements DSW is now looking into upgrading its network to Alvarion BreezeNET B series, improving performance, latency and throughput, and enabling new and enhanced manufacturing capabilities.



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