



## WIRELESS MESH NETWORKS CASE STUDY Daqing Oilfield

### Daqing Oilfield chooses Aruba to meet aggressive wireless mesh network requirements

Daqing Oilfield is a major entity in the global oil industry. With nearly 50 years in development and construction, the Daqing Oilfield has become one of the most influential oil fields in China. It is indisputably the largest, covering approximately 3,000 square miles.

What really makes Daqing unique is not its size but its aggressive position as a technology pioneer, researching and adopting the latest digital technologies to drive operational efficiency and safety well beyond today's status quo.

Among these decisions is Daqing's choice of a next-generation wireless mesh network that would support the company's need for fixed and mobile wireless video surveillance across a large outdoor operational area.

Daqing Oilfield required an unusually large number of access points (APs) and faced additional challenges stemming from long-distance transport needs and a wide and complex outdoor geographic coverage area. The solution needed to be flexible and easy to deploy.

After extensive industry research, Daqing Oilfield selected Aruba Networks as the supplier for its outdoor industrial wireless mesh network. With high expectations for future performance and communications capabilities, Daqing trusted Aruba to support fixed and mobile video surveillance, as well as to streamline operations with better data collection, remote expert service and daily communications.

#### The ideal solution for Daqing Oilfield

Wireless mesh networking has been widely deployed in recent years as the technology has matured. It provides unparalleled benefits that other wireless technologies cannot compete with, including open frequency, flexible deployment, easy networking and expansion, high wireless throughput, roaming support, high compatibility, low investment cost, simple maintenance, and support for many types of devices.

Aruba is a leading provider of wireless mesh network technology that elevates it above other vendors who rely on high-latency Layer 2 switching with spanning tree. Aruba combines robust routing with

long-distance transmission technology, unique Active Video Transport™ AVT video packet protection and rapid cross-IP subnet MobileMatrix™ roaming to address the unique challenges of oilfield wireless communications.



Aruba Networks mobile surveillance video technology lets controllers clearly see video wherever needed at any time.



#### Challenges

- Oil exploration sites are typically found on hills, near swamps and other locations with complex landforms, and extend over vast, often harsh environments.
- Oilfield operations require high-bandwidth connections between oil well areas and factory areas to support HD-quality video monitoring and the capture and transmission of subsurface images.
- The wireless mesh network must be scalable as well as easily installed, removed and redeployed to different areas.

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After a strict investigation of the extensive coverage area, Daqing decided to deploy Aruba MSR Series wireless mesh routers in the project. Phase 1 of Daqing's wireless mesh network covers more than 70 square miles with the high reliability and future scalability that the company needs.

Aruba's wireless mesh network supports the key business requirements of Daqing Oilfield:

- Complete wireless coverage of the entire oilfield area and support for latency-sensitive video monitoring over multiple mesh router hops with no degradation in video quality
- Long-distance, high-bandwidth wireless mesh infrastructure between oil well areas and factory areas to support the transmission of high-quality video and still images
- Remote, centralized management of wireless mesh routers
- Wi-Fi voice communication with seamless roaming and under-well data collection

### Streamlined operations and exceptional manageability

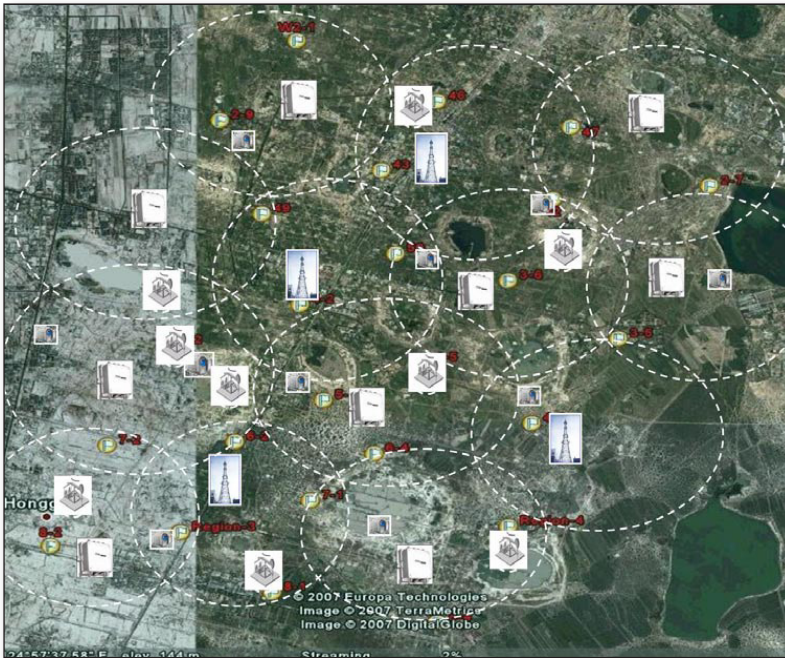
Using powerful Aruba MSR2000 wireless mesh routers, the outdoor infrastructure provides seamless coverage and stable, high-throughput performance under heavy loads, even when using multiple, bandwidth-intensive applications.

The Aruba wireless mesh network solution provides Daqing Oilfield with exceptional support for a wide range of fixed and mobile clients, security, scalability with no performance degradation and remote, centralized management. Daqing is achieving long-term economic benefit by deferring incremental network construction costs and other operational investments which are unnecessary thanks to the robustness and scalability of the Aruba solution.

### Company Overview

Daqing Oilfield Limited Company is a division of China National Petroleum Corporation (CNPC). Its primary concerns are oil and gas exploration and development, engineering services, facility manufacturing, chemical engineering, operation sustenance and field services. Daqing Oilfield is the largest company of its type in China, and it controls one of only a few giant sandstone oilfields in the world.

Daqing Oilfield covers an extensive oil-bearing area of more than 6,000 square kilometers comprising 52 oil and gas fields.



Coverage Demo of Daqing Oilfield - Phase I



[WWW.ARUBANETWORKS.COM](http://WWW.ARUBANETWORKS.COM) | 1344 Crossman Avenue, Sunnyvale, CA 94089  
1-866-55-ARUBA | Tel. +1 408.227.4500 | Fax. +1 408.227.4550 | [info@arubanetworks.com](mailto:info@arubanetworks.com)