

CASE STUDY Krechba, Algeria: The In Salah Project



THE CHALLENGE

In Salah Gas Joint Venture (ISG JV) between BP, Statoil, and Sonatrach wanted to convert a natural gas production site into a commercial demonstration site for Carbon Capture and Storage (CCS). The plan was to inject CO₂ into a saline aquifer located at a depth of two kilometers. One of the primary concerns for the project was determining a reliable and cost-effective approach to monitoring the CO₂ movement over a short- and long-term basis. The ISG JV team reviewed a number of available technologies and suppliers before selecting MDA's Interferometric Synthetic Aperture Radar (InSAR) data and analysis as the preferred methodology. Throughout the project, MDA was able to demonstrate surface changes and movement at the CO₂ storage site, assisting the injection program to optimize site integrity.

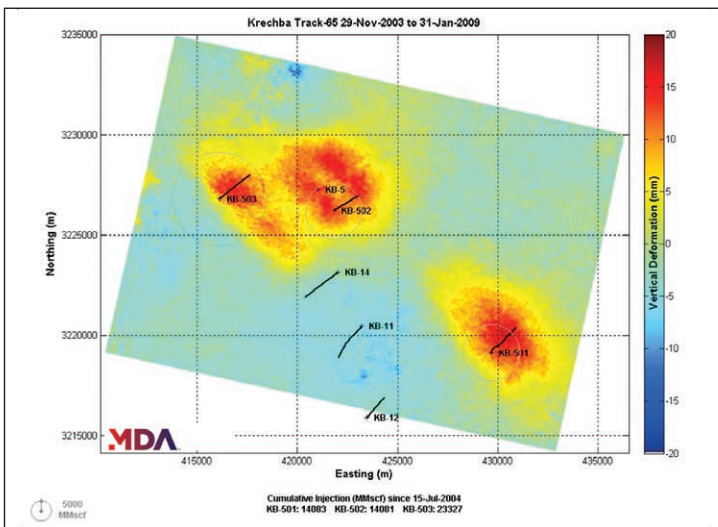
THE SOLUTION

MDA Surface Movement Monitoring

MDA InSAR produces high spatial resolution surface deformation maps for CCS facilities. Sub-centimeter to millimeter scale surface elevation change measurements are made possible by using the phase shift between repeat acquisitions by RADARSAT-2 over the area of interest. We then use our proprietary InSAR software to generate and deliver accurate and repeatable measurements of land surface changes.

MDA has been providing our Surface Movement Monitoring service for many years to the oil and gas industry to support enhanced oil recovery (EOR) processes that require monitoring of surface movement for reservoir modelling. In the case of EOR, the goals are efficiency gains and protection of equipment, but the technology to monitor potential movement is similar.

MDA Geospatial Services Inc. creates customized monitoring programs for each customer and site. Monitoring frequency and reporting can be tailored to suit specific requirements, ranging from weekly, to monthly, or quarterly. Regular monitoring of CCS sites rapidly identifies and flags areas of movement (hot spots), and creates surface motion displacement maps. Results can be readily integrated with other monitoring technologies and datasets including: levelling surveys, GPS, microseismic and tilt meters to provide full input to reservoir and CO₂ plume modelling and monitoring activities.



The dark red and orange areas in this MDA InSAR image indicates areas of the Krechba facility with the greatest amount of surface movement.

For more information, contact us at:

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