

CASE STUDY:

PT Bayan Resources Tbk

MAKING MINING SAFER

OPTIMISING COAL RECOVERY IN A TIME OF DECLINING COAL PRICES

“The deployment of the Slope Stability Systems at our key mine sites has empowered our geotechnical staff to be proactive in the communication of timely, accurate and reliable slide movement information to our mine safety, operations and production teams.”

Warren Tamblyn, Manager Mine Geotechnical Services, PT Bayan Resources Tbk.

The Geotechnical team at PT Bayan Resources Tbk (PT Bayan) knew that there was potential for improved coal recovery at a number of their Indonesian mine sites.

The location of the coal seams and the adverse geotechnical condition of the open cut pit slopes meant that in areas adjacent to unstable sections of the pit the cost of additional overburden removal and the risks of coal extraction outweighed the benefits to production.

With declining global coal prices, PT Bayan developed a strategy to address these challenges. They undertook a

number of pit design changes to economically optimise the coal seam reserves. Ground control systems were installed to enhance mine safety and provide reliable and accurate slope movement data to the geotechnical, mine operations and coal production teams. An upgrade of slope monitoring and reporting systems was carried out at four key mine sites. To maximise coal recovery in unstable pit areas, the GroundProbe Slope Stability Radar (SSR™XT) was deployed. The results speak for themselves.

1. LOW WALL FAILURE BLOCK, WAHANA – JANUARY 2010

At the Wahana open cut pit, more than 8,000 tonnes of coal were recovered from the low wall toe area, prior to the cracking, break-up and destruction of the coal seams in the slide mass. 24/7 monitoring with SSR-XT™, in combination with Bayan best practice safety procedures, made the coal recovery possible with no injuries or loss of equipment. Coal recovery value \$1m.

2. FLOOR SLIDE AREA, WAHANA – JUNE 2011 TO MAY 2012

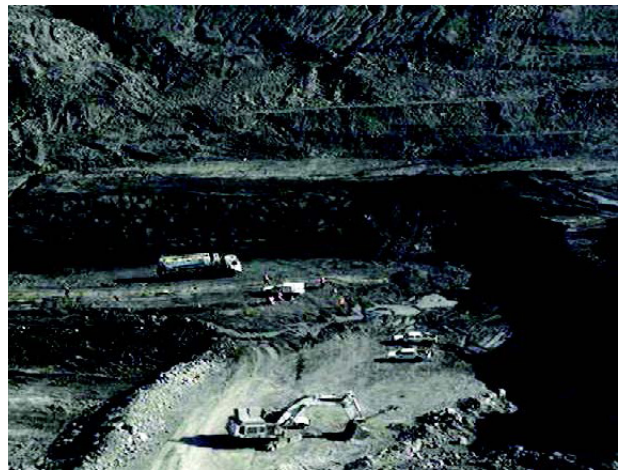
Through a remote monitoring service, GroundProbe's and personnel were removed from the site and SSR™XT was left to monitor. Once the slide movement had stopped, PT Bayan, utilizing best practice mining and safety procedures recovered an additional 45,000 tonnes of coal from the area below the slide mass. Coal recovery value \$4-5m.



3. HIGH WALL AREA, MELAK PROJECT – JUNE 2012

Initial geotechnical assessment showed limited access for mining below the unstable high wall slope. A safety exclusion zone of 30-40 metres was recommended, thus restricting coal recovery. The deployment of SSR™-XT, allowed mining of the coal seam to continue down to another bench. An additional 12,000-14,000 tonnes in this area of the open cut was recovered. Coal recovery value \$1-2m.

The SSR™-XT monitoring data provides hard “real time” data



for mining operations. With this information, PT Bayan is able to give clear direction on whether to proceed with coal extraction.

The Bayan Group is engaged in open cut mining of various coal quality from mines located primarily in East and South Kalimantan. Being an integrated coal producer in Indonesia the Bayan Group through its various mines, produces coal ranging from semi-soft coking coal to environmentally-friendly low sulphur, sub-bituminous coal.