

Mining Excavator

R 9800

Job Report

Liebherr Mining Excavators located at a coal mine in East Kalimantan province, Indonesia. Operated by PT Kaltim Prima Coal (KPC).



LIEBHERR

Situation

PT Kaltim Prima Coal (KPC), a majority-owned subsidiary of Bumi Resources Tbk, is the world's largest exporter of thermal coal. KPC operates a coal mine in East Kalimantan province under a contract granted by the government in 1982 that will remain valid until 2021.

KPC's coal concession is located around Sangatta, some 50 km north of the equator on the east coast of Kalimantan Island, 180 km north of the provincial capital Samarinda. The mine currently covers an area of 90,938 ha and is situated in a rainforest with annual average temperatures close to 30° C (86° F) and year-round humidity levels up to 80%. Average annual precipitation level can reach 2.500 mm (98 inches). Considering these mining conditions, reliable products and dedicated customer support are the keys to success in this region.

Assignment Report

With an initial production capacity of around 1,8 million metric tonnes (2.1 million tons) in 1991, KPC has steadily increased its coal production to 40,5 million metric tonnes (44.6 million tons) in 2011. With a current production capacity of 46 million metric tonnes (51 million tons) per year, KPC expects coal output to reach 43 million metric tonnes (47.4 million tons) in 2012 (+ 6%).

In order to satisfy increasing global demand, Bumi Resources Tbk is proceeding with a growth strategy to expand its mining properties and to increase production in order to deliver more coal to global markets. To meet this plan, reliable, higher capacity loading and haulage equipment with low maintenance costs were identified as a necessity.



Solution

In 2012, KPC is utilising a fleet of eighteen Liebherr R 996 and R 996 B hydraulic excavators, in both front shovel and backhoe configurations, and two Liebherr R 9800 hydraulic backhoes in conjunction with a fleet of thirty one Liebherr T 282 B mining trucks (among others). KPC has already purchased an additional unit of Liebherr R 996 B and a third Liebherr R 9800 which are expected to be commissioned by the end of 2012.

Designed for large scale mining operations, these machines were purchased to deliver a superior rate of productivity while minimising the operating and owning cost per BCM moved. Today, KPC's Liebherr fleet of mining equipment efficiently contributes to Bumi Resources Tbk reaching their forecasted yearly production increase and sustaining their ambitious economical growth plans.



Performance

The first Liebherr R 996s were delivered to the KPC operation in 1997. Since their commissioning, these excavators have continued to offer consistent reliability and minimal downtime. The oldest units have accumulated over 100,000 operating hours with an annual usage close to 6,700 hours. The Liebherr fleet operates six open coal pits in KPC mine site, 24 hours a day, 365 days a year.

Driven by two powerful diesel engines offering a combined output of 2.982 kW (4,000 HP), both of KPC's Liebherr R 9800 backhoes provide extremely rapid loading cycles, as low as 28 seconds per pass. Boasting a bucket of 45 m³ (59 yd³) to load overburden with a loose density around 1,6-1,7 t/m³, both Liebherr R 9800 backhoes offer instantaneous production capacity of around 3.750 BCM/hour and 3.000 BCM/hour in long term production. Offering an extremely low rate of fuel consumption, and equipped with an oversized fuel tank of 19.690 L (5,202 gal), the R 9800 offers more than 35 hours of fuel autonomy contributing to the maximisation of machine uptime to minimise KPC's global cost per tonne of coal.

The KPC fleet of R 996 and R 996 B reflects 50 years of Liebherr experience in hydraulic excavator design and manufacturing by exceeding the customer's expectations in terms of reliability. Driven by a 2.237 kW (3,000 HP) diesel engine and boasting a 34 m³ (44 yd³) bucket, these machines in face shovel configuration reach an average long term productivity of 2.100 BCM/hour and 3.000 BCM/hour of instantaneous production. The robust central service station accessible from the ground level allows for fast fluid refilling and drainage, and contributes to maximum availability.

The R 9800 excavators are used largely in conjunction with Liebherr T 282 B mining trucks. The T 282 B can be loaded in around 4 passes by the R 9800 and in 6 passes by the R 996 and R 996 B. In this way KPC's fleet of Liebherr hydraulic excavators help fulfill KPC's increased production requirements.

Day to day maintenance requirements are addressed by the Liebherr on site service support centre, PT Liebherr-Indonesia Perkasa. Maintenance is performed on a contract basis with initial operator and maintenance training provided by Liebherr Mining Equipment factories.

Technical Data

R 9800 Backhoe Attachment

Operating Weight _____ 800.000 kg / 1,763,700 lb
Engine Model _____ Cummins QSK60 (USA/EPA Tier2)
Engine Output _____ 2x 1.492 kW / 2x 2,000 HP at 1,800 rpm
Bucket Capacity (ISO 7451) _____ 45 m³ / 59 yd³
Max. Digging Force (ISO 6015) _____ 1.760 kN / 395,664 lbf
Max. Breakout Force (ISO 6015) _____ 1.980 kN / 445,121 lbf

R 996 B Face Shovel Attachment

Operating Weight _____ 676.000 kg / 1,490,300 lb
Engine Model _____ Cummins K 1800 E
Engine Output _____ 2x 1.120 kW / 2x 1,500 HP at 1,800 rpm
Bucket Capacity (ISO 7451) _____ 34 m³ / 44.5 yd³
Max. Crowd Force
at Ground Level (ISO 6015*) _____ 2.245 kN / 504,696 lbf
Max. Crowd Force (ISO 6015*) _____ 2.330 kN / 523,804 lbf
Max. Breakout Force (ISO 6015) _____ 1.930 kN / 433,881 lbf

* including attachment weight

