

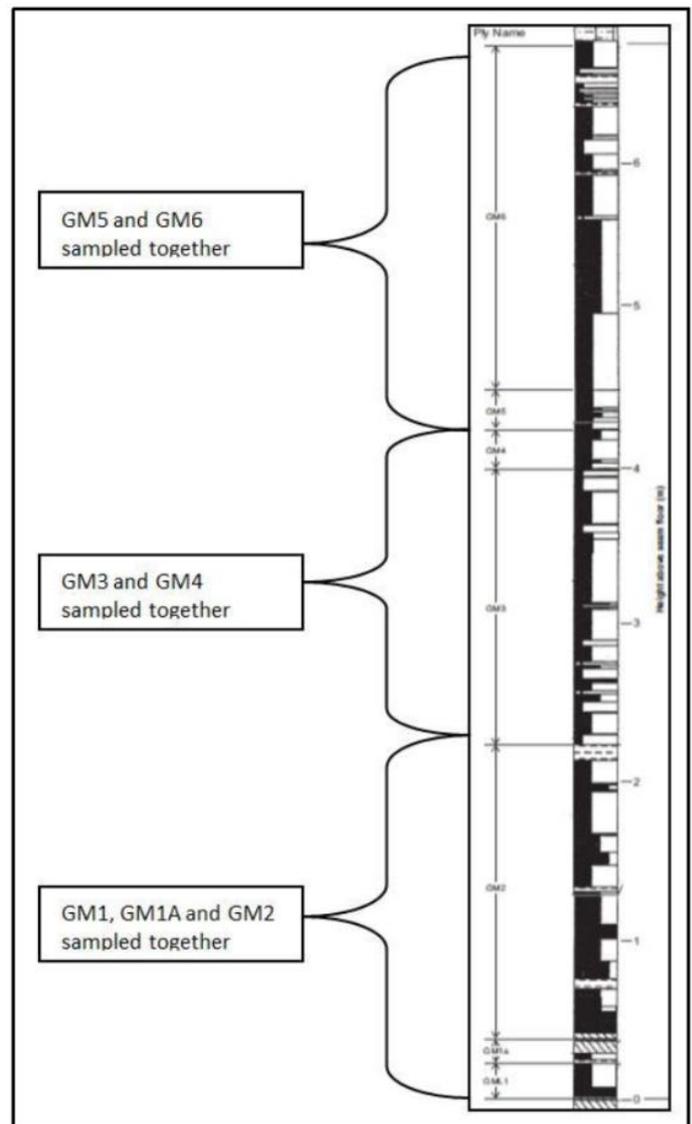
**Case Study 3**

**Channel Sampling Project conducted at North Goonyella Coal Mine (Peabody Energy Australia) to gain coal quality information prior to the installation of the new Longwall Top Coal Caving (LTCC) equipment in the LW8N panel.**

Channel sampling of the complete Goonyella Middle (GM) seam was conducted at North Goonyella as per the requests of Peabody Corporate in Brisbane. The work was conducted between June and September 2012. The project required the seam to be sampled on a ply-by-ply basis for the purpose of thorough coal quality analysis. This meant that each of the target plies had to be sampled and stored separately and in a way that would eliminate the chance of contamination from each other or non-target material. The samples would also need to be collected and deployed to the laboratory for analysis relatively quickly, which meant that minimising downtime, maintaining a window to conduct the required work and establishing communication between the surface and underground was of the utmost importance. The channel sampling project took place in the cut-throughs of Maingate 7 North (MG7N) which will become the tailgate of Longwall 8 North (LW8N).

The GM seam is split into 6 plies defined by penny bands (mudstone layers within the coal seam) and was collected in two separate ways depending on the type of analysis and testing required. Type A – LTCC testing, is shown in Figure 1, and Type B – CSR testing, is shown in Figure 2. The samples in the cut-throughs of 7N were obtained from the ribs within the 3.4m roadway. The use of an air chainsaw was used to remove the rib and access the coal a certain distance into the rib, in order to reduce any contamination effects. As the average seam thickness is 6.4m, a scorpion air-track was used to core the roof and collect samples from the plies outside of the roadway. The airtrack used NMLC (52mm) split coring barrels to obtain enough coal to complete the sampling process. For each sample collected a minimum of 60kg of coal was required.

The initial planning phase required a Risk Assessment to be undertaken. Once this was completed the required tools and equipment for the job were located and prepared for use underground. These included an appropriate air chainsaw to cut the coal from the rib and a jack-pick to remove any excess coal from the sample block. A



**Figure 1 – Type A LTCC sampling of GM seam**

man basket and loader was required to reach the upper plies within the roadway itself. Other equipment included an Air Track for coring of the roof and floor strata, as well as brattice, buckets and drums to collect and store the samples. Each cut-through had air and water services provided underground and management of any waste water from drilling was dammed and pumped out to the waste water line.

Once all of the channel samples were removed from the rib and roof, all ribs were meshed and re-supported with rib bolts - installed to the required standards of the pit. Each cut-through was inspected by a deputy after each channel sample area was completed and signed off for compliance. A number of obstacles were met along the way and therefore improvements could be made in future to fully eliminate the possibility of sample contamination, increasing the accuracy of extraction and ensuring the task is completed more efficiently. The major issue when conducting the channel sampling project was delays due to missing gear, other operations taking priority, accessibility into the cut-throughs and in-bye of the longwall.

The project was conducted in a safe manner with daily tool box talks, maintained work area, control of waste water and the use of trained, competent and authorised operators.

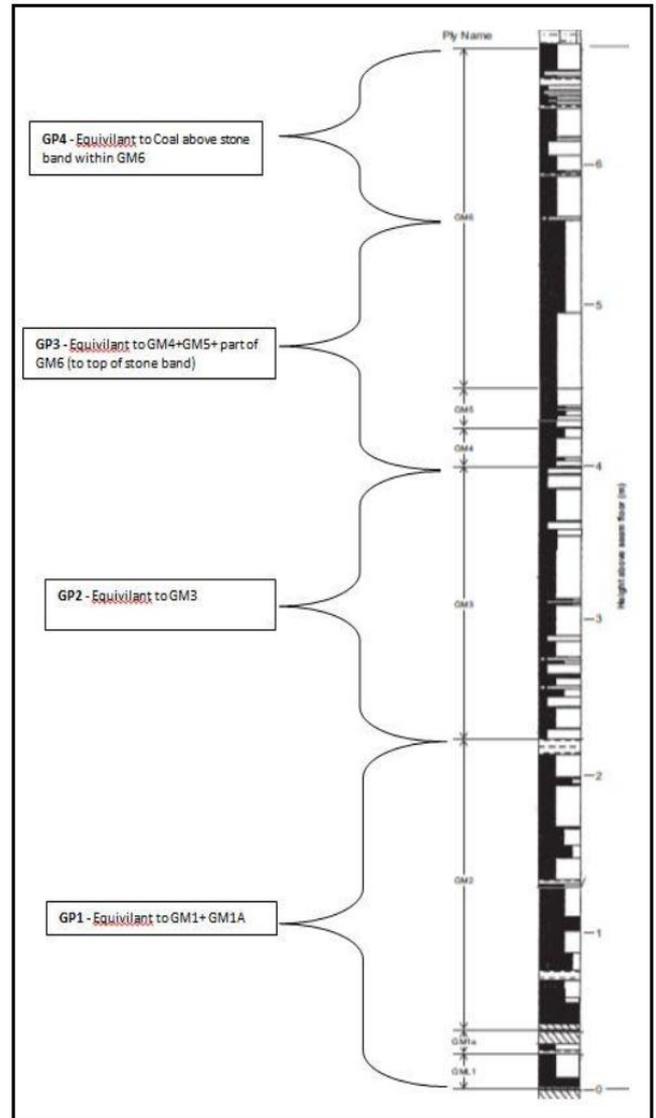


Figure 2 - Type B CSR sampling of GM seam



The procedures and experience gained during this project has ensured that future projects will benefit from maximum efficiency and increased accuracy of sample collection. The ability to be flexible and find a solution at the most trying of times is essential to channel sampling, as there were and will be many unplanned obstacles confronting the success of any similar project.