# WOODLEIGH NOMINEES PTY. LTD.

Phone: (08) 89886037
Mobile: 0414680837
A.C.N. 050 120 057
GPO Box 286
Darwin NT 0801

The Casey family has been operating in the "Top End" of the N.T. (Aust) for 50 yrs. next year with mixed success, as is the lot of many small private operators. We purchased the first KC in the N.T. after Byron Knelson attended a Mining Expo in Darwin. This was a 7.5" unit, which was located after the ball mill in our alluvial plant at Fountain Head, south of Darwin. The ball mill was added to grind the secondary jig concentrates as 20-30% of our gold was locked in ironstone pebbles or had heavy iron staining and would not amalgamate. The KC tails were then pumped back over the secondary jig to ensure that any gold still held in ironstone would be liberated. We later upgraded the plant to 60-80tph. and replaced the jigs which had been recovering approx. 30% of the minus 30 micron gold, with two manual 30" KC and increased our overall recovery by 15-20%. The ball mill now only ground the amalgam tails before returning them to the KC feed circuit. I don't recall doing any maintenance to the KC beyond one pump of grease each morning. All water used was filtered to 40 mesh in a self-cleaning filter we designed and built at Fountain Head.

The 7.5” concentrator treated the output from the ball mill (3’x 3’, with 1” steel balls). The tailings from the concentrator were fed into the secondary jig feed and retreated to catch any gold, which may have been held in gangue material. These particles are rejected by the concentrator due to the dominant presence of heavier particles of gold and iron. They will be caught again by the secondary jig and reground to liberate the gold. In the centre background is the apron feeder and bin (20c.yds.), which was filled directly by truck. To the left is the earlier scrubber/trommel, which was built on site.
Behind “Snow” Casey (my father) is the secondary jig. The tailings from the secondary jig were retreated by the primary jig (not in picture).

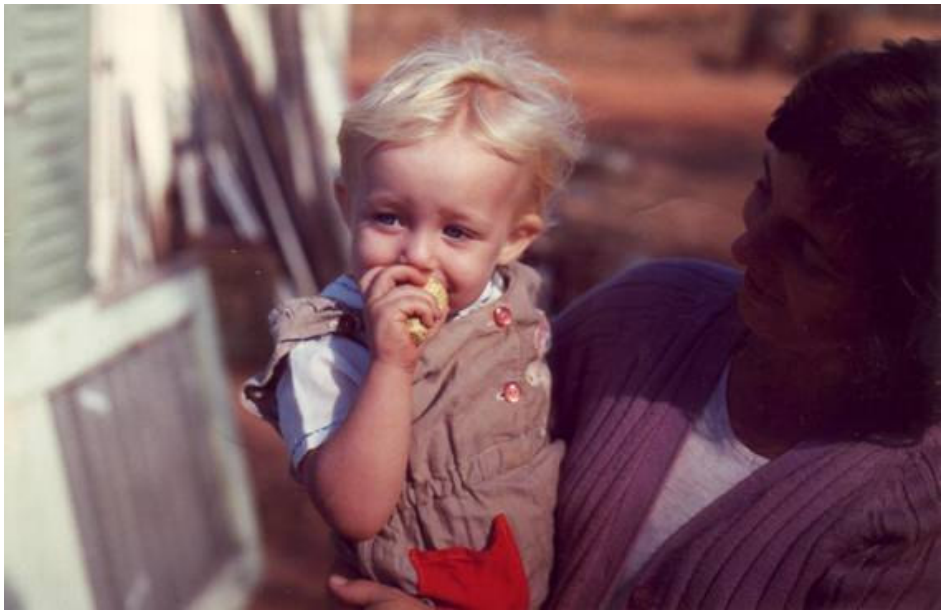
A close up of the feed coming from the ball mill to 7.5” concentrator.

This is a view of the upgraded plant (60-80 tph) with the two Canadian built 30” manual concentrators.

Feed to the scrubber/trommel was from the apron feeder in the first photo. The two KC’s were gravity fed with feed split and regulated by two 4’” manual pinch valves. The air operated pinch valves were used to shut off the feed during the “clean-out” cycle. The procedure was to slow the feed to approx. 50-60%, this was not critical as the KC’s could handle the 100% overload for the 5-10 minutes it took to clean out the pair of KC’s. Our best time for a “clean out” was 90 seconds with two of us on the job.

The concentrates drain via the white pipe into a sump in the floor.  2” gravel pump, pumped the concentrates into the cone shaped hopper. Concentrates are stored here and transferred to the amalgamator below weekly. Amalgamation took 12-16Hrs. with amalgam being recovered with the small jig (in the shadows). Amalgam tailings were stored in the trough above the ball mill for grinding before being pumped into the trommel to go back through the 30” KC’s.

The plant was powered by a NH220 Cummins engine (under the roof). Behind the amalgamator is the mobile workshop used to build and/or maintain the bulk of the Fountain Head operation. The upgraded plant was built with components refurbished on site with the exception of the 30”KCs which were built in Canada.



My daughter with the finished product, “I might be blond but I do know what’s good for me”, my wife does not seem to disagree.

The mining was done with a hydraulic excavator (PC400) loading into trucks dumping directly into the feed bin or dumping onto the stockpile for the night shift.

I hope this little run down has been of interest. The Fountain Head Alluvial mine has had a checkered history but was closed down when the Alice Springs to Darwin railway line was constructed.  This cut off our access to the main road and divided our group of mining leases in two.  Approximately 2/3 of our ore reserves were on the opposite side of the railway line to our treatment plant. The alternate haul route was 10-11 Km. as opposed to 1-1.5Km. With an average grade of .4g/t. the mine was no longer economic to operate.