Newsletter Fourth Edition on LinkedIn

Kathleen Valley - First Full Year of Operations

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Kathleen Valley Mine. Copyright Liontown Resources.

Welcome to this fourth issue of the Lithium Briefing from thelithiumreport.com.

Kathleen Valley (KV) is the **fifth largest lithium deposit in Australia**, holding about **5.1 Mt LCE** of spodumene, making it about one third the size of Greenbushes. It is being developed by Liontown Resources, an Australian mining company.

The project made the news in 2023 during the height of the lithium price bubble when Albemarle made a A$5.5 B bid for the mine. Liontown rejected it and Albemarle increased their bid to A$6.6 B, which was accepted. But the well known Australian mining magnate Gina Rinehart, through her iron ore company Hancock Prospecting, took a 19% blocking stake in Liontown and Albemarle withdrew.

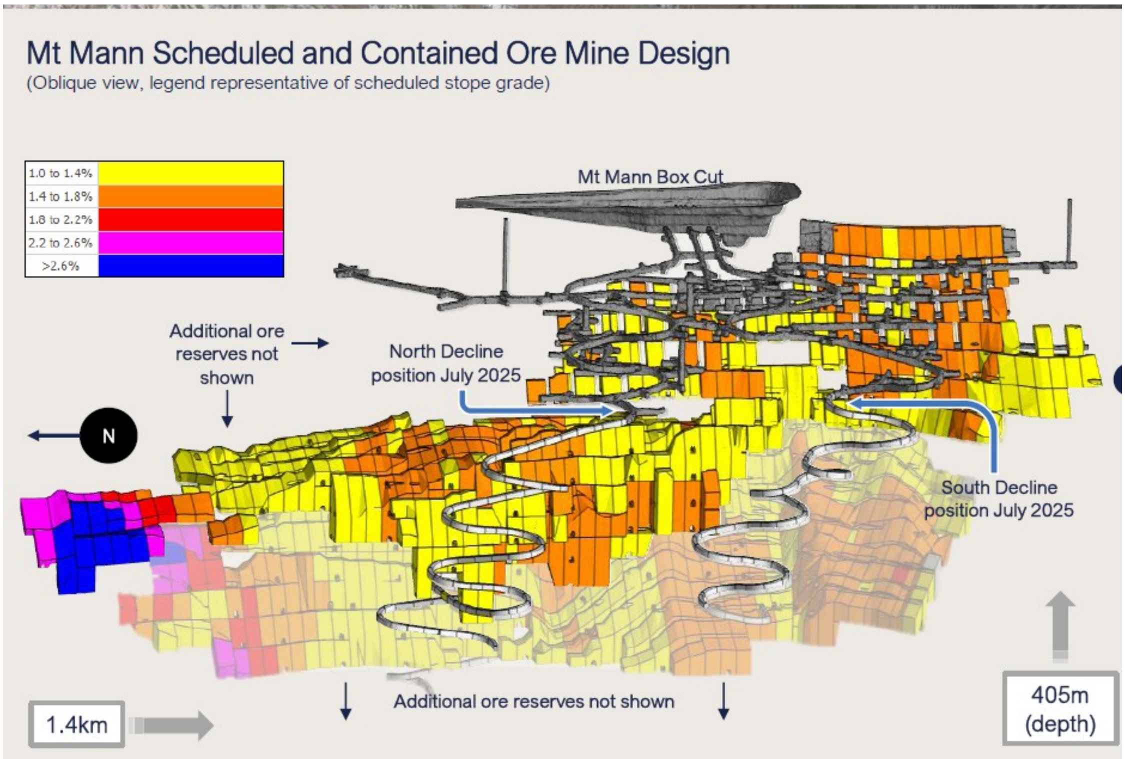
Open pit lithium **production commenced** as planned in **July 2024**, by which time the company's value had fallen to A$2.3 B. Given what has happened to lithium prices since 2023, Gina Rinehart did Albemarle a favour.

The current reserve is put at 65.2 Mt @ 1.34% Li_2O. If they can recover 70% of that, that would equate to 10.2 Mt of SC6 concentrate. The **total value of the resource** would therefore be in the region of **US$8.2 billion** in today's dollars. In that light, Albemarle would have been paying far too much for the resource.

In their first year KV only achieved **58% recovery overall** so that is a priority for future improvement. New technology is being brought in to do that.

The KV deposit consists of two ore bodies which are being addressed initially by two separate open pits. However the highest grade material is too deep for open pit operations and will be accessed by an underground mine. Underground production started in April 2025 and open pit operations will then cease in the first half of 2026. The average grade of the material coming out of the open pits is 1.0% Li_2O whereas the underground mine is already producing 1.5% Li_2O. Deeper down, there is a **region that reaches well over 2.0% Li_2O**. This lode is of course highly attractive but it is currently limited in extent. No doubt, longer term, Liontown will want to see if they can expand it.

The following diagram from a recent Liontown presentation shows the deposit in cross section, with the "Mt Mann" open pit at the top. The underground tunnels start from this pit.



KV deposit cross section. From Liontown Presentation "Transitioning Underground 2025 Diggers and Dealers", 5th August 2025.

High Profile Offtakes

The project is **high profile for other reasons** too. Offtakes were signed with **LG Energy** in May 2022 and with **Ford** and **Tesla** the following month, June 2022. Ford also gave Liontown a $300 M loan. In August 2023, Liontown agreed with **Sumitomo** of Japan to carry out a two year feasibility study into producing **lithium hydroxide in Japan** from KV feedstock. Nothing has been heard since. In July 2024 they signed a strategic partnership with **LG Energy**, extending the **offtake to 15 years**. LG invested $250 M in the mine and agreed a joint feasibility study into developing a **downstream chemicals plant** that would be IRA compliant.

In September and October 2025, Liontown **renegotiated their offtakes with Ford and Tesla**. Tesla agreed to pay based on spodumene concentrate pricing rather than lithium hydroxide pricing.

As for the Ford agreement, **deliveries were cut in half** to ~256,250 t of concentrate and will not start before CY2029. That volume is about 8 months production. Ford also agreed to defer capital and interest repayments on their loan for one year until September 2026.

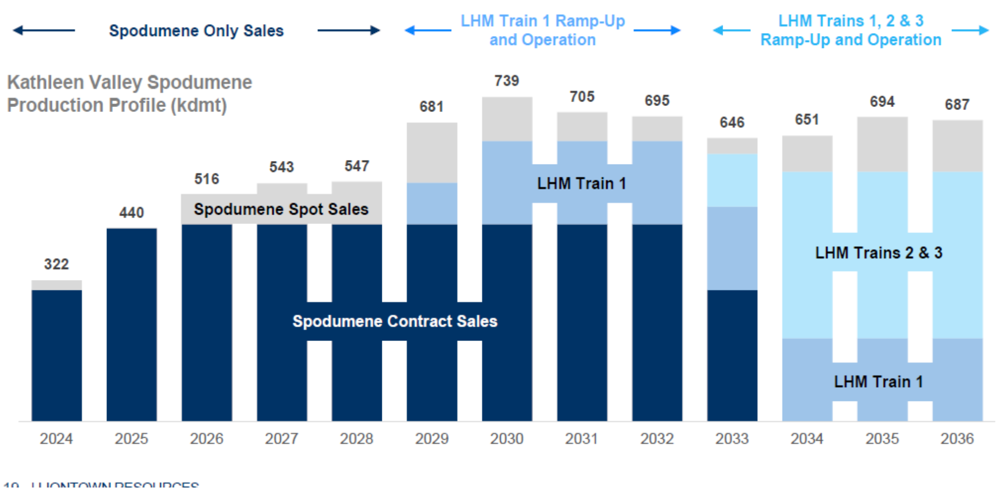
There have been quite a few changes to the planned production as well, as lithium prices have moved.

In 2021 the **original plan** was for an ore throughput of **2.5 Mtpa**. In early 2023, they increased their start up plan to **3 Mtpa** of ore. In September 2023, they intended to bring forward future expansion to **4 Mtpa** by 2027. In November 2024, they scaled back future production to **2.8 Mtpa** in the 2026 – 2027 timeframe.

Downstream Chemicals Plans

Liontown also **originally intended to start producing lithium hydroxide in 2029**, transitioning to being a supplier of LHM almost entirely by 2034.

As you can see in the following chart from their 2021 Downstream Scoping Study, they planned to start LHM production in 2029 and quickly build two more trains. This schedule was never realistic.



November 2021 DSS Presentation by Liontown Resources. Page 19.

Construction of a **downstream** plant was originally going to be **the major plank of the whole operation**. That was in the heady days of 2022 – 2023 when every mine in Australia was going to be an integrated lithium hydroxide producer. Studies were started with Sumitomo in 2023 and LG Energy in 2024 in line with this.

However, in 2023 they were already reconsidering what to produce, as the market shifted from

NMC to LFP cathodes, reducing the demand for LiOH.

In their **annual report**, published in **September 2025**, Liontown now indicate that they have essentially put downstream development on the **back burner**.

The problem is, it is eminently foreseeable what could happen. Driven by pressure for "shareholder value", they won't proceed with a hydroxide plant until prices recover to say $15,000/t. By the time studies have been done, finance obtained, infrastructure and equipment procured and the plant built, the next lithium price boom will be over and prices are likely to have crashed again. The $2B -$3B plant they just built during the boom will then be an albatross.

What about the other plants that were planned in line with **Australia's Critical Minerals Strategy**, launched in 2019?

Both Albemarle and IGO have experienced **extraordinary setbacks** in attempting to build downstream LHM plants at Kwinana and Kemerton on the West Australian coast. We qualify these projects as a **strategic and industrial disaster**. In July this year, IGO wrote off their entire investment in their Kwinana plant, taking a **$615 M** hit.

Minres, operator of the **Wodgina** and **Mt Marion lithium mines** in West Australia, had ambitious plans to build an **LHM plant in Kalgoorlie** and ultimately become an integrated producer of LHM exclusively. By August 2024, they had performed a **complete U-turn** and announced they would never become a downstream producer.

A **third LHM plant** at Kwinana **started operation on schedule** this year in **August 2025**. Owned by the **Wesfarmers/ SQM** JV, it is processing concentrate from the **Mt Holland** mine, which started operating at a similar time to Kathleen Valley. It is too early to say whether the plant will encounter the same technical problems as the other two: we sincerely hope not.

Conclusion

So is Australia destined to remain a producer of raw lithium feedstock or **can it still make the transition to be an added-value chemicals producer?** That question we will look at in another article in which we will cover the Kemerton/ Kwinana debacle in more detail. But it is worth noting that the Albemarle/ IGO plants process ore from Greenbushes, nearly all of which is currently exported to China. In 2023, Chinese LC and LHM production was 715 kt LCE. If Kemerton and Kwinana achieve their planned capacity, the amount of ore they consume **would reduce Chinese domestic production by 24%**.

Rather than each mine building their own converter, it would make more economic sense to build **a central jointly owned plant** to serve a number of mines. Kalgoorlie or even the port of Esperance would be the best locations for the Yilgarn lithium province in the south and Port Hedland in the north to serve the Wodgina, Pilgangoora and Andover projects. That would share the risk of the technically complex and expensive undertaking of commissioning lithium refineries, eliminate duplication, achieve greater economies of scale and would improve Australia's chances of competing with China.