DEPARTMENT OF MINES AND ENERGY
SOUTH AUSTRALIA

REPT.BK.NO. 83/81
GLEN OSMOND MINES - PROPOSED BROCHURE

GEOLOGICAL SURVEY

by

G.J. DREW

TECHNICAL INFORMATION SERVICES

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REPT.BK.NO: 83/81
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GLEN OSMOND MINES - PROPOSED BROCHURE

INTRODUCTION

The Glen Osmond mines consist of a number of individual mines, the most important being Wheal Gawler ('wheal' being a Cornish term for mine), Wheal Watkins, and the Glen Osmond Mine. Other mines in the Glen Osmond area include Wheal Augusta, Enterprise, Eagle, and Wheal Hardy.

The land at Glen Osmond was first surveyed and sold in the late 1830s and, according to the laws of that time, the mineral rights belonged to the purchasers. Silver-lead ore was discovered in the 1840s on various properties at Glen Osmond, the boundaries of which became the boundaries of the separate mines. The southern and western boundary of Wheal Gawler (section 910) is still marked by a line of sugar gums that were planted in the 1890s.

Historically the Glen Osmond group of mines are of national significance. Wheal Gawler was the first metalliferous mine in Australia and produced the first mineral exports from this country. The area is also the site of one of the earliest smelters in Australia, the smelting chimney still standing is the oldest remaining mine chimney in South Australia and possibly Australia.

Discovered at a time of economic difficulty in South Australia, these mines were the first indication that recovery of the State's fortunes would come from mining. Although the discovery of copper at Kapunda (1842) and Burra (1845) diminished the area's importance, the mines attracted Cornish miners as settlers to South Australia.

These miners, who were to assume a central role in the development of the Colony's mining industry, brought their mining traditions with them to Glen Osmond. These included the underground mining methods and management, mining vocabulary, the Cornish employment system of 'tribute' and 'tutwork', the washing

and dressing of ore at the surface by young boys and even girls, and the provision of Company housing for the miners and their families. Only traditional Cornish engine houses were missing since, unlike Burra and Kapunda, the mine workings were above the water level. However ample evidence still remains of the extensive Cornish underground workings.

HISTORY

WHEAL GAWLER

In September 1840 two Cornishmen, Thomas and Hutchins, discovered a vein of silver-lead ore on section 909. Assays of 10 oz of silver per ton and 75% lead proved promising and in March 1841 Governor Gawler inspected the discovery, which was named Wheal Gawler in his honour. In the same month a company calling itself the South Australian Mining Association was formed with a nominal capital of 6 000 pounds to purchase Wheal Gawler and six miners were immediately employed. On the 26 March 1841, forty boxes of ore were dispatched to London, this being the first mineral export from Australia. At that time wool was the main export and due to the lightness of the cargo, ships were happy to take ores as ballast at nominal freight rates. However, beyond raising a few tons of rich ore, no attempt was made to explore the mine and by 1842 the South Australian Mining Association had apparently discontinued operations after spending several hundred pounds.

The successful opening of the adjoining mines drew attention away from Wheal Gawler until February 1844 when Dickins and Reynolds leased the land from the owners of the section, Messrs Stephens, Morphett, Neales & Peacock. They discovered a 43 cm wide lode of galena and paid a royalty of one twelth of the produce. Unable to finance operations, the mine was sold for 2 000 pounds in July 1846 to a syndicate consisting of 128 shares held by a few private individuals, with H. Stakeman as managing director. Edward Henkel, an experienced German miner from the Hartz Mountains, was appointed mine captain ('captain' was the Cornish name for mine managers) and a number of miners, some German, came to South Australia to work at Wheal Gawler.

Up to twenty miners were employed between 1846 and 1848, mainly carrying out developmental work on the known mineralisation in Dickins Lode. In the levels on Dickins Lode lumps of pure galena weighing as much as 38 kg were recovered from the lode which averaged 1.2 m in width. A total of eleven lodes had been discovered running east-west across the property but only Dickins Lode was productive. An exploratory tunnel or adit (the Deep Cross Cut) was commenced in 1847 on the northern side of the hill to intersect the continuation of Dickins Lode and others further eastward into the hill and at a greater depth. The adit was eventually driven a total of 175 m into the hill, but no mineralisation was encountered.

In July 1848, the Wheal Gawler Mines Association was formed, consisting of 1280 shares of 10 pounds each, to raise money for the extensive working of the mine. John Alsop was appointed captain and in September the Association held an elaborate ceremony for the naming of the various lodes after the directors. A horse whim was erected beside the main shaft which was extended to 73 m. High quality ore was raised from two levels on Dickins Lode and several other lodes were opened up on the northern side of the hill, but by May 1849 operations had almost ceased.

In 1850 the mine was still being worked on a small scale, but operations on the northern side of the hill had proved unproductive and effort was now concentrated on sinking a shaft in the southern gully and cross cutting to the lodes. The exodus of miners to the Victorian gold rush led to closure of the mine in September 1851. About 100 tons of high grade ore per year had been produced between 1846 and 1849.

WHEAL WATKINS

In December 1841, Robert Watkins of Sussex bought section 910 adjoining the southern boundary of the Wheal Gawler property. Subsequently a lode was discovered by the owners' agent, Mr Peachey, and apparently first worked in 1843 with up to eighteen miners employed. By December 1844, about 150 tons of ore assaying 70% lead and 23 oz of silver per ton had been raised and 100 tons shipped, the price paid in London being thirteen pounds, thirteen shillings per ton.

Peacheys Lode contained galena up to 66 cm thick in places, with blocks of ore weighing as much as 200 kg and was worked from a main shaft and three main adits. Up to 1848 about 100 tons of ore per year were raised, mainly from shallow levels down to the 55 m level.

On Peachey's death in 1849, Wheal Watkins was leased to the Adelaide Silver-Lead Company, which called for tenders for the purchase of ore. Some 350 tons of ore were produced in 1849 and parcels of ore were still being sold in England in late 1850 at about thirteen pounds per ton.

Like the adjoining mines, Wheal Watkins had ceased operations by 1851 due to the exodus of miners to the Victorian goldfields. About 1 000 tons of ore, averaging 73% lead and 18 oz of silver per ton, had been produced and the main shaft had reached a depth of 91 m.

Prompted by public interest in silver mining following the discovery of Broken Hill several years earlier, the Wheal Watkins Silver and Lead Mining Syndicate reopened the mine in 1888. About ten men were employed under Captain Rowe and an enginehouse and blacksmith's shop constructed. The old workings were cleaned out and the main shaft retimbered and extended below the 91 m level. It was found that the ore bearing shoots had been virtually worked out above the 55 m level.

After water was struck at 115 m, operations were confined to the lode between water level and the 55 m level. The lode however was not payable and, although a pumping plant was installed in October 1889 and the main shaft extended to 128 m, operations were suspended at the end of the year due to a slump in ore prices. Approximately 100 tons of ore were sold to the Port Adelaide smelting works during this period.

In 1916 the Tarcoola Development Syndicate drove an adit along a thin seam of galena and two tons of ore were raised.

GLEN OSMOND MINE

Section 295, which adjoined the western boundaries of Wheal Gawler and Wheal Watkins, was purchased by Osmond Gilles (the first Colonial Secretary) in October 1839. His home was known as 'Glen Osmond Villa' during his lifetime, but after his death in

1866, was renamed 'Woodley' by his brother Lewis. A silver-lead lode had been discovered on this section by a Cornishman, James Nicholls, in 1838 but no efforts were made to develop the find at that time. The first mining operations were carried out by Gilles in September 1842 when four miners were employed to break open the lode, and about 10 tons of ore were shipped to England for experimental purposes.

In early 1844 additional men were engaged to sink a shaft and Gilles summoned his brother from Tasmania to direct operations. By December 1844 more than 200 tons of ore had been raised and up to twenty men were employed.

Lewis Gilles obtained a lease of the mine from his brother and in January 1845 returned to England to superintend the assays of the ore and to form a company to work the mine. The Glen Osmond Union Mining Company was formed in May 1846, with a paid up capital of 30 000 pounds consisting of 3 000 shares of 10 pounds each, and held a lease from Osmond Gilles for twenty one years at a royalty of one eighth of all ores raised. Lewis Gilles was appointed superintendant of operations and arrived back in Adelaide in November 1846, accompanied by Captain Pascoe and ten Cornish miners and their families. In December 1846 work recommenced at the mine in true Cornish fashion and even young girls were employed as 'bal-maidens' to wash and clean the ore, a Cornish custom that did not last long in South Australian mines.

In early 1847 the company erected a residence for Captain Pascoe and seven or eight cottages for the miners, and bought twenty one allotments in the corner of section 270 as proposed building sites for workmens' cottages in what was to be called the village of Harrow.

By October 1847 about 4 000 pounds had been expended on the mine and thirteen lodes had been discovered, but only four had been worked: the O.G., Victoria, Victoria North, and Gores lodes. Forty miners were employed, of whom only six were engaged in raising ore (under the tribute system); the remainder were employed in developing the mine by sinking shafts and driving adits under the tutwork system. In addition up to twenty surface workers or 'grass men' were employed in activities such as hauling, carting, and ore dressing. A horse whim for raising material to the surface was installed and the mine was worked on

the same principles as in Cornwall. An average of about 12 tons of ore raised per week was maintained until the end of 1848, giving a total production of 632 tons of ore from the start of the company's operations in December 1846. Most of the ore was shipped to England for smelting, but in September 1848 experimental smelting operations took place on Glen Osmond ore at Dr Kent's mill in East Terrace.

In January 1849 the company suspended operations as the result of a dispute with Osmond Gilles. For the previous year and a half the working of the mine had proceeded vigorously and Osmond Gilles had not pressed for the payment of his agreed royalty. However, towards the end of 1848, reports of unsatisfactory work by the company reached Gilles who was determined to either have his dues paid or to have his mine back. The company claimed that it had spent 11 000 pounds on the mine (of which 3 000 pounds had been paid to Lewis Gilles for his lease on the mine, nearly 1 000 pounds had been spent on buildings at the mine and in the village of Harrow, and about 5 000 pounds on wages) but the proceeds of ore sold to date amounted to only 4 620 pounds. It therefore sought a reduction in the royalty from one eighth to one twentieth. Osmond Gilles refused and brought an action in the Supreme Court against the company in April 1849, seeking its ejectment. The company then retracted and offered to adhere to the original agreement.

In November 1849 Osmond Gilles received 20 tons of ore from the company, being a portion of the arrears of the dues. The ores were immediately transferred to the recently completed Pennys smelting works at Glen Osmond, for smelting into pig lead. The company dispensed with Lewis Gilles' services in 1850 and employed several miners in an effort to reduce the royalty arrears, which was finally completed in November 1850. Mr Alsop, the manager of Wheal Gawler, reported on the mine in late 1850 and the recommencement of large scale operations by the company were planned. However, due to the discovery of gold in Victoria, the Company was unable to obtain labour and decided to forego the agreement, the property therefore reverting to Osmond Gilles. Further attempts were made during his lifetime to obtain a lease of the mine but each such application was refused.

In 1855 the twenty one building lots fronting the main road on section 270, including several cottages belonging to the Glen Osmond Union Mining Company, were sold.

In 1888 the Woodley Estate was purchased by the newly formed Gilles Glen Osmond Silver Lead Mining Company for 8 000 pounds and Woodley House was sold. Work recommenced on the O.G. and Victoria lodes in April 1888. In March 1889 the Victoria Shaft was deepened from 61 m to 73 m and the Vineyard Level was cleaned out and extended from 180 m in length to 300 m to meet the Victoria Shaft at the 73 m level. Up to twenty four men were employed and several hundred tons of ore were mined from stopes at the 55 m level. This was concentrated on site and sold to the Port Adelaide smelting works. Work ceased in 1892 and the company was finally wound up in 1898.

Table 1: Summary of ore production 1841-1851

Production	Silver/lead ore (tons)
Wheal Gawler	300
Wheal Watkins	1000
Glen Osmond	1000
TOTAL	2300 tons averaging 70% lead and 20 oz of silver per ton, with a total value in London of about 30 000 pounds.*

*This would have yielded about 1 600 tons of lead and 45 000 ozs of silver.

GEOLOGY

The silver-lead lodes occur within near-horizontal calcareous slate along approximately east-west trending fractures, which dip at 70° to 80° to the north. The miners referred to these fracture zones as a 'cross course - a natural subterranean wall forming a clear and well defined line of demarcation as respects to the minerals deposited in them'. About thirty such lodes were recognised at Glen Osmond but only

six were ore producing: Dickins Lode at Wheal Gawler, Peacheys Lode at Wheal Watkins and O.G., Victoria, North Victoria and Gores Lodes at the Glen Osmond Mine. These lodes, varying from 0.3 m to 1.2 m in width, contained galena and cerussite in a matrix of iron oxide, calcite, barite, quartz and clay. Within the lodes solid veins or shoots of ore up to 0.6 m wide and 50 m in length were worked. Hand picked ore from Glen Osmond assayed on average 70% lead and 20 oz of silver per ton.

MINING METHODS

The lodes were worked mainly by Cornish mining captains and miners using the same principles used in Cornwall for several centuries. Adits and levels were driven along the lodes, cross cuts made across the direction of the main workings, and shafts and winzes were sunk upon a systematic plan calculated to develop the mine. The miners who sank the shafts and drove the levels through barren rock were known as tutworkers and were paid by the amount of ground mined and not by its value. Following the tutworkers were the tributers who worked the lodes (a process known as stoping) and were paid by the value of ore mined. The production of ore was considered a minor consideration to that of developing the mine and establishing reserves of ore, as illustrated at the Glen Osmond Mine where in 1847, only six out of forty miners were employed on tribute.

The miners had to find their own powder and quills, sharpen their own tools, pay for their candles, and bring all the mullock (rubbish) and ore to the surface. Horse whims were erected at several shafts to facilitate the hauling of material to the surface.

ORE TREATMENT

Once at the surface the ore was manually broken into small pieces and freed from the few impurities that were mixed with it, then washed and packed in bags weighing about 100 kg each. These were then carted by dray to Port Adelaide for shipping to the smelters in England. Since shipping costs of three pounds to four pounds per ton amounted to more than half of the total costs, there was an obvious need for a local smelter.

Experimental smelting operations were undertaken on Glen Osmond ore in 1845 at Mr Carleton's furnace in Rundle St and in 1848 pig lead was produced from Dr Kent's mill in East Terrace and sold in the Colony for 20 guineas per ton.

In 1849 the Glen Osmond Union Mining Company contracted Messrs Penny to erect one of the first smelting works in South Australia. The brick smelting house incorporating the latest smelting principles was erected on the floor of a valley close to the Glen Osmond Mine and a long underground flue carried the smoke up the hillside to a circular stone chimney. The smelting works were completed in late 1849, but only small amounts of ore were treated before the closure of the mines due to the exodus of miners to Victoria in 1851.

WOODLEY WINERY

Woodley is one of South Australia's oldest wineries, dating from 1858 when Osmond Gilles planted 7 200 cuttings on 20 acres of his land at Glen Osmond. Mr J.W. Bull managed the vineyard and found that, of the six varieties planted, grenache was the most promising on the deep red loam and limestone soil. The vineyard was named 'The Glen Osmond Villa Vineyard' after Osmond Gilles home and in 1862 a cellar was built at the entrance to the 73 m level of the Glen Osmond Mine.

Following Osmond Gilles death in 1866, Lewis Gilles renamed the estate 'Woodley'. The estate was purchased in 1888 by the Gilles Glen Osmond Silver-Lead Mining Company and the house and grounds were sold to Mr Benno Weidenbach. The next owner was H.V. Pridmore who had studied winemaking in California. Pridmore converted an old cottage, formerly used by Captain Pascoe, into a fermentation room and in 1900 had the old cellars rebuilt into the entrance of the 73 m level, where the draught keeps the cellars at an even temperature of 18.5°C all year. After he died in 1907 his wife Amy, who was possibly Australia's first female vigneron, carried on the business.

Except for the house and some land about it, the estate was sold in 1924 and subdivided into building blocks. The winery was sold to Colonel Fulton and Woodley Wines Pty Ltd was formed in 1926.

Although the major part of its operations are carried out at Dorrien in the Barossa Valley, grapes continue to be crushed at Woodley and wine is still made in the original fermenting house as the Vineyard Adit creates ideal conditions under which to store and mature wine.

STONE QUARRIES

Many older stone buildings in Adelaide including the Scots Church on North Terrace were constructed of Glen Osmond Slate, a blue-grey slate or 'bluestone' which breaks readily along bedding planes and is cut by two joint systems. The intersection of jointing and bedding results in stones that are fit for random coursed rubble walls with very little trimming. The joint planes are coated with iron and manganese oxides and when the stone is laid a pleasing effect is produced by the colour variation ranging from the blue, grey and buff of the slate to the black, brown and ochres of the joint stainings. This type of building stone became unfashionable early this century.

Stone mining accompanied silver-lead mining at Glen Osmond from the beginning, with stone from quarries near Wheal Watkins being used in local buildings. With the demise of metal mining by 1850 stone mining became prominent and in 1851 the Glen Osmond Quarries near the old toll house were opened by the owner, Arthur Hardy, supplying stone for buildings throughout Adelaide. Other quarries were opened in the 1850's along the Mt Barker Road southeast of the toll house. In 1859 Hardy formed the Glen Osmond Quarry and Silver Lead Mining Company to work the quarry and any silver-lead veins intersected during quarrying operations. The quarry was later worked for road metal and then from the 1920s it produced clay for the nearby brick kiln until closure in 1980.

SELECTED NEWSPAPER REFERENCES

1. Adelaide Chronicle, 3 March 1841.

VALUABLE DISCOVERY

During the past week, a discovery of some importance has been made in the Mount Lofty Range. Two miners, from Cornwall we believe, have discovered a splendid vein of lead ore in the mountains, a short distance above Mr. Gleeson's. The ore is said to yield 10 per cent of silver, and 75 per cent of lead. We do not state this on authority, however, as we have not seen it tested. We are informed his Excellency has visited the place, and examined the vein. If so, he will probably make public the result of his investigations.

We have heard that a company is about to be formed for the purpose of commencing to work a mine immediately.

2. S.A. Gazette and Mining Journal, 29 September 1849.

WHEAL GAWLER MINES ASSOCIATION

The works that have been prosecuted since the formation of the Company, have been, principally, the sinking of a shaft about thirty-five fathoms deep, the erection of a whim, and the driving of a deep cross-cut from the Northern Gully, to intersect, at about forty-five fathoms from the surface, the different lodes which had been ascertained to exist on the northern side of the centre hill. This cross-cut, having already been driven about seventy fathoms, there is every probability that it is now closely approaching a main lode.

The Directors are happy to state that, from the Dickins Lode, silver-lead ore of a very superior quality is being raised. Two levels having been previously driven upon this lode, the Directors were recently induced, on meeting with a bunch of ore in the upper level to resume the prosecution of the lower one also, which is about twelve fathoms deeper, and the lode yields, at this level likewise, ore of an equally rich description. These facts fully warrant the expectation that they are now in the immediate vicinity, on this lode also, of a considerable quantity of valuable ore.

The Directors have also much pleasure in reporting that, in addition to existing smelting establishments in the colony, a smelting establishment, in which the latest improvements in the process of separating the silver from the silver-lead ores will be adopted, is now in course of erection in the immediate contiguity, as promising to afford unusual and constant facilities for the rapid and most profitable realisations of their produce.

3. S.A. Gazette and Mining Journal, 24 September 1847.

WHEAL WATKIN'S MINE

This is a mine of some sterling promise. The more the lode is laid open, the more its riches are displayed. In this mine three levels have been driven - the shallow, intermediate, and deep adits. The latter is about twenty-seven fathoms in depth from the surface; the intermediate level is eight fathoms above the deep adit: and the shallow adit is about eighteen fathoms deep from the surface. Six winzes have been sunk - four from the shallow adit to the intermediate level, and two from the intermediate level to the deep adit; and much of the bottom of the shallow adit has been stoped away for ores. The lode in the bottom of the shallow adit is about fifteen inches wide of solid ore, for several fathoms in length. The lode in the back of the intermediate level is about eight inches wide (of good galena lead) in places. The lode in the bottom of the deep adit is in places ten inches wide, of good ore, and seems to open as it goes down. There are good courses of ores in three of the winzes, from the shallow adit to the intermediate level averaging 50 per fathom. The deep adit end is now driving with two men, at 4 pounds 10 shillings per fathom; and two stopes working in the back of the intermediate level - and one with four men, at 10 s per ton for the ores, and 10 s per fathom for the ground; the other stope is worked with three men, at 15 s per fathom for the ground, and 10 s per ton for the ores.

4. Southern Australian, 23 February 1847.

We visited the mines worked by the Glen Osmond Mining Company of London under the able superintendence of L.W. Gilles, Esq. The first thing that attracted our attention was a number of new buildings in progress of erection... consisting of a residence of Mr. Pascoe, the Mining Captain, and seven or eight cottages for the miners. All around were symptoms of activity and well directed labour. At the foot of the hills a number of boys and girls were busy washing and cleaning the ore which was heaped up in large quantities and of all weights from that of 5 or 6 cwt to that of a grain. The process of cleaning is a very important operation as it saves paying freight on stones and sand and makes the ore very much more valuable. On the top of the hill a very fine lode is being worked - the OG Lode - and it does credit to its stout namesake for it is exceedingly well defined, well filled with good stuff and is at least a foot big. We visited a great variety of other lodes, some of which are extremely rich and yield a considerable percentage of silver. The miners indeed are quite astonished at the abundance of the ore and at its being so close to the surface. One man had made an incredible sum, whose amount we forgot, by working a lode after hours. Altogether these mines are particularly prosperous and promising.

5. Southern Australian, 29 April 1848.

GLEN OSMOND MINE

The miners work this lode for 2 pounds a fathom (6 feet in height and depth, and 3 in width). And as this width of mineral gives about 7 tons of ore to the fathom, it will be seen that the profit here is enormous. The price per fathom varies according to the nature of the ground. In another vein (which I shall describe), where the mineral is from 2 to 4 inches wide in a vein of 6 or 8 inches, the price is 3 pounds a fathom, and the produce about 1½ tons per fathom. In both cases the miners find their own powder and quills, sharpen their own tools, pay for their candles and their food, and bring all the rubbish and ore to the surface. The ore is worth, when sent to good order, 14 pounds a ton in England. So that the cost in working is an inconsiderable

item. The reader will, however, bear in mind that the 3 pounds per fathom goes on in the fathoms, more or less, that succeed the richer parts of the vein. As also that the 3 inches of metal may more probably be succeeded by 8, 12 or 20 inches of the same highly agreeable presence and then after a few fathoms be followed by some fathoms containing scarcely any ore. The practice is, to sink a shaft 20 or 30 fathoms lower, on the same vein, and to work on in the same way and direction at that level. The sinking of these additional shafts and connecting the workings of the various lodes and levels by cross outs or galleries, where no one is met with, is paid for generally in this mine at the rate of from 3 pounds to 5 pounds per fathom, finding everything. The Captain reckons that in the present state of the workings the ore may be got to the surface at an average of 2 pounds per ton. The ore has then to be broken small, and freed from the few impurities that are raised with it, washed where dirty, packed in bags weighing where full about 2 cwt each, and sent to the port for 7 shillings per ton. It is then conveyed to England, sometimes direct for from 3 pounds to 4 pounds per ton, sometimes by way of Sydney, for 2 pounds 10 shillings to 3 pounds per ton, leaving a profit to the owners of 6 pounds per ton. This profit will however increase as the number of tons sent to England increases, since there will be less per ton to deduct for expenses unconnected with the mere preparation of the ores for the market such as salaries to managers and others not immediately employed on the ores themselves.

The Glen Osmond Mine begins now to pay. The expense of putting up the necessary buildings, and doing a great deal of preparatory dead work is over. It seems that 700 to 800 tons of ore may be henceforth sent yearly to market, of which the net profit will be about 7 pounds per ton. And if they choose to smelt their ore then profits will be much greater.

GJD/GU

G.J. DREW
TECHNICAL INFORMATION SERVICES

REFERENCES

Borrow, K.T., 1955. The Glen Osmond Mines (unpublished).

Gill, T., 1905. The History and Topography of Glen Osmond.

Pryor, O., 1962. Australia's Little Cornwall. Rigby Ltd., Adelaide.

Adelaide Chronicle

Adelaide Observer.

S.A. Gazette and Mining Journal

Southern Australian

South Australian Register

Job 3318

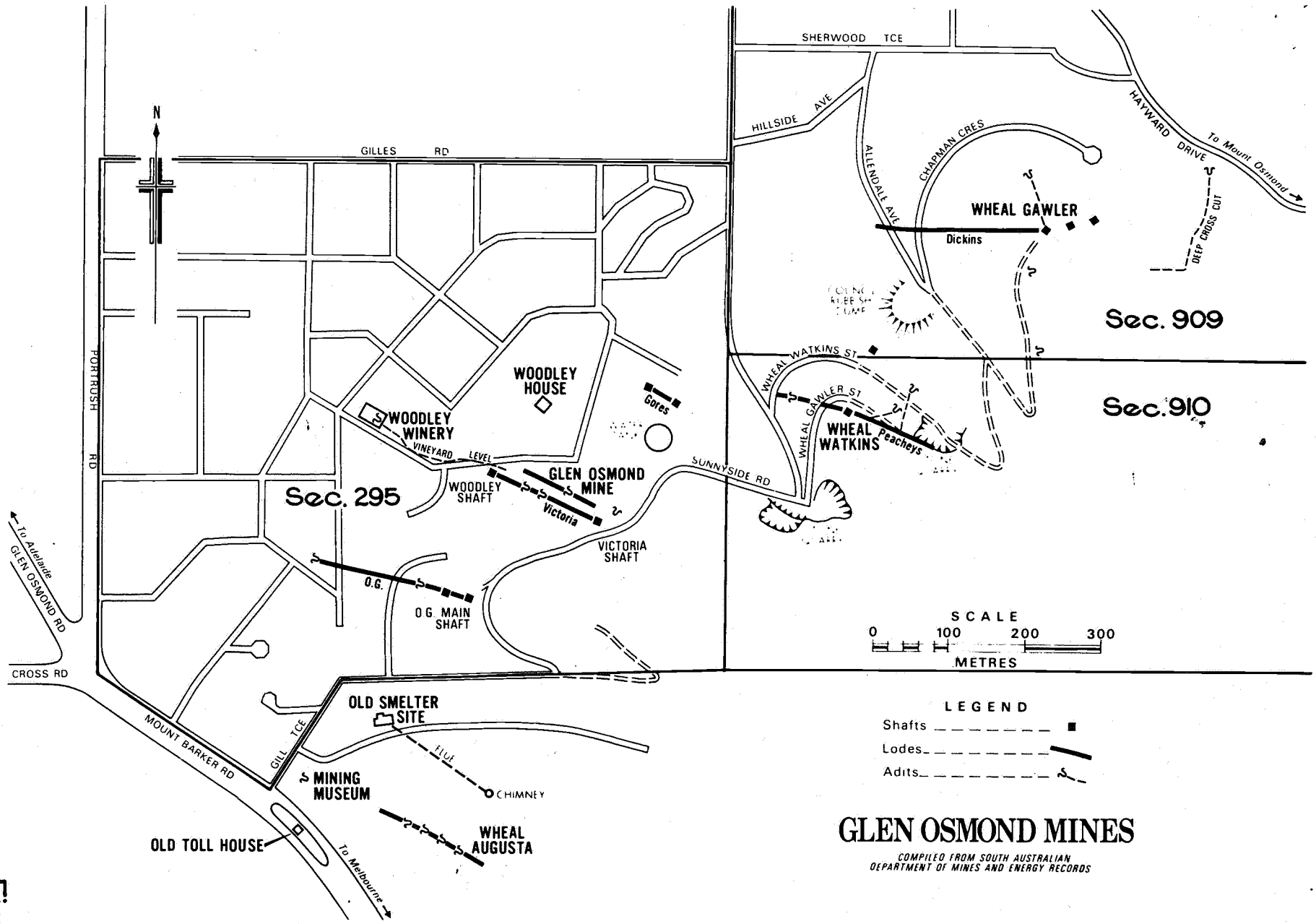


Fig. 1

GLEN OSMOND MINES

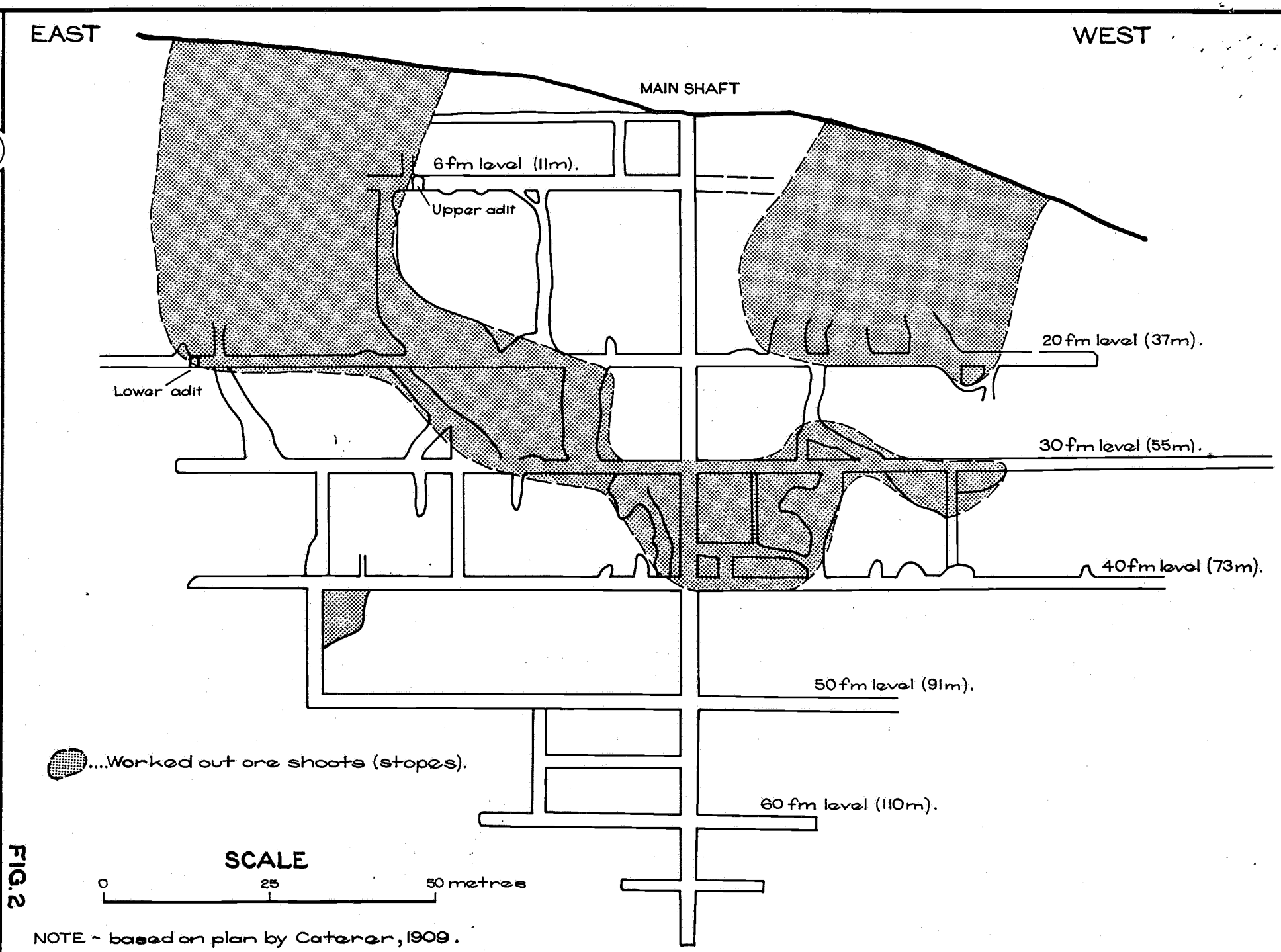
LOCALITY PLAN

DEPARTMENT OF MINES AND ENERGY
SOUTH AUSTRALIA

COMPILED G.J.Drew	DRAWN J.M.W.	DATE Sept '83
C D O DATE	SCALE	CHECKED

PLAN NUMBER
S16984

Job 3318



GLEN OSMOND MINES

LONGITUDINAL SECTION ALONG PEACHEY'S LODE

WHEAL WATKINS MINE

DEPARTMENT OF MINES AND ENERGY
SOUTH AUSTRALIA

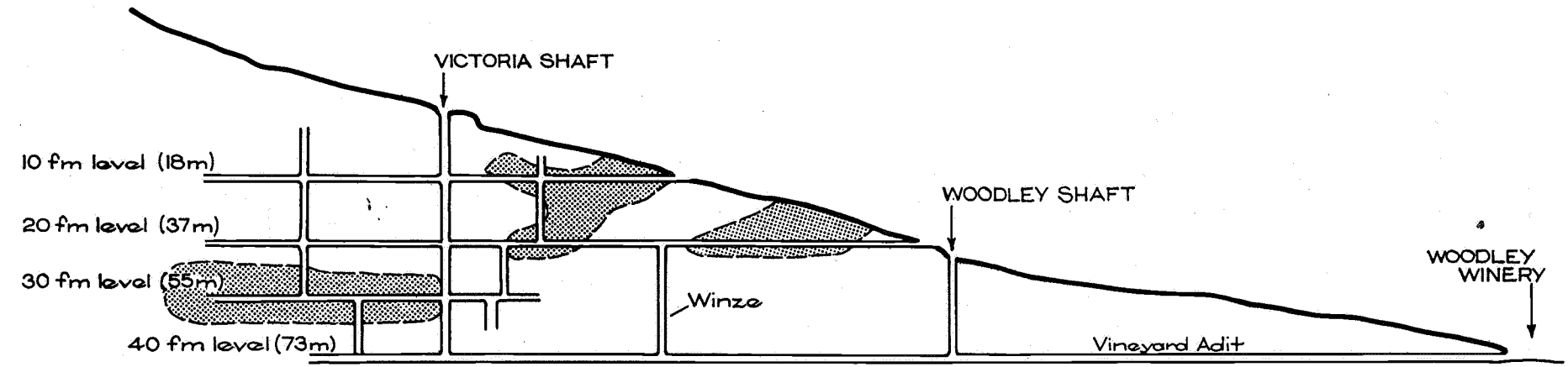
COMPILED G.J.Draw.	DRAWN J.W.	DATE Sept '83 CHECKED
C.D.O. DATE	SCALE	PLAN NUMBER SI6985

FIG. 2

Job 3318

GLEN OSMOND MINES

LONGITUDINAL SECTION ALONG VICTORIA LODE



..... Worked out ore shoots (stopes).

SCALE

0 50 100 metres

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SOUTH AUSTRALIA

COMPILED G.J.Drew	DRAWN J.W	DATE Sept '83 CHECKED
C D O DATE	SCALE	PLAN NUMBER SI6986

FIG.3

PLATE 1 Glen Osmond mines looking north c. 1846 by S.T. Gill.
Trans. No. T24190

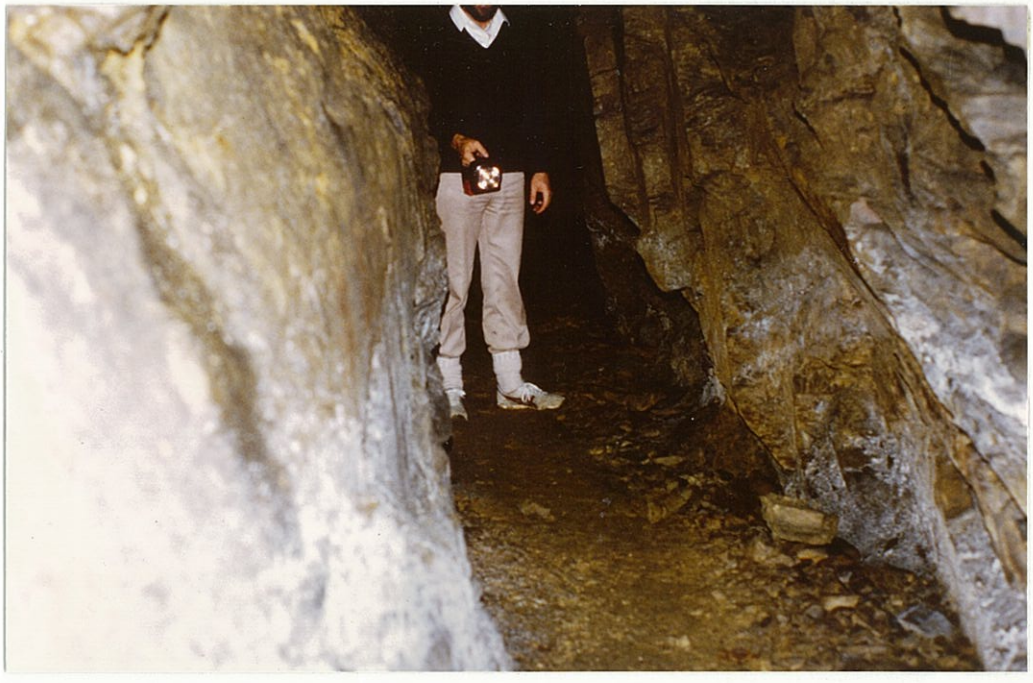

PLATE 2 Wheal Gawler - typical narrow underground workings in the Deep Cross Cut.
Trans. No. T24191

PLATE 3 Typical massive galena ore with barite from Wheal Gawler.
Trans. No. T24192

PLATE 4 Wheal Watkins looking south from Wheal Gawler. Compare with Figure 2. Line of sugar gums in foreground marks boundary between Wheal Gawler and Wheal Watkins.
Trans. No. T24193

PLATE 3 Typical massive galena ore with barite from Wheal Gawler.
Trans. No. T24192

PLATE 4 Wheal Watkins looking south from Wheal Gawler. Compare with Figure 2. Line of sugar gums in foreground marks boundary between Wheal Gawler and Wheal Watkins.
Trans. No. T24193

PLATE 5. Steep northerly dipping fracture zone in calcareous siltstone at the end of the Deep Cross Cut, Wheal Gawler.
Trans. No. T24194

PLATE 6. Glen Osmond smelter chimney built 1849. Probably the oldest remaining mine chimney in Australia.
Trans. No. T24195

PLATE 7. Excavating the wine cellar at the entrance to the 40 fathom level of the Glen Osmond Mine in 1900. Note the Victoria Shaft in the background.
Neg. No. N34027