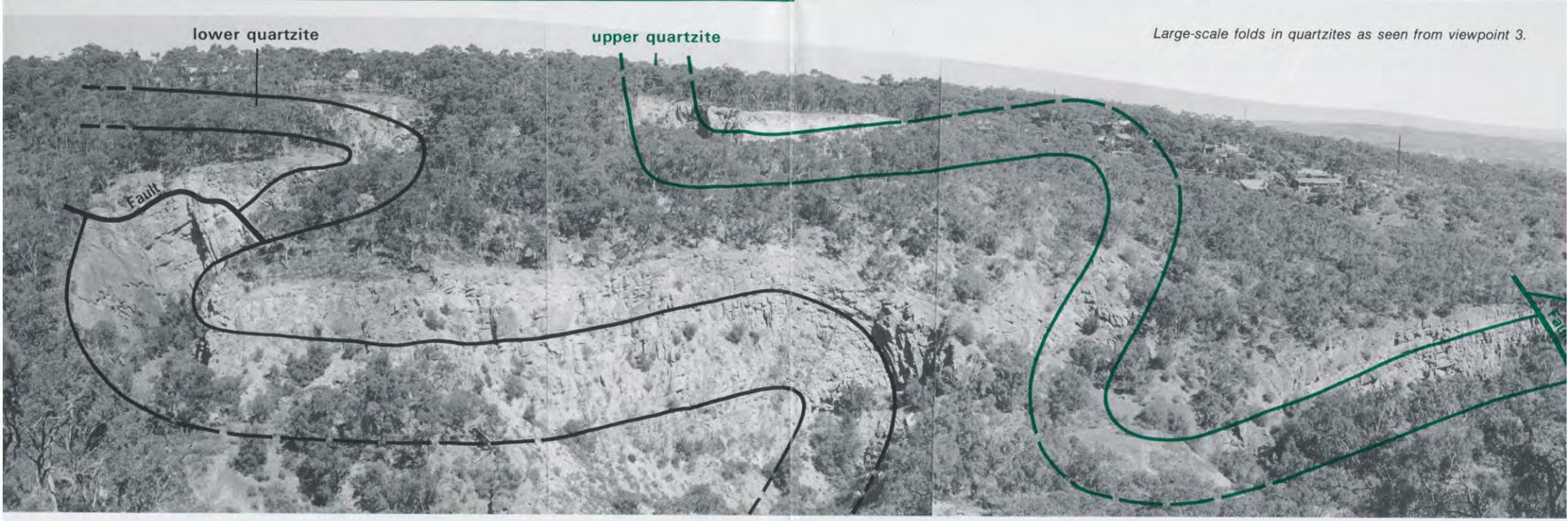
# SLEEPS HILL QUARRIES

## A guide to the walking trail

MINES AND ENERGY
SOUTH AUSTRALIA




*Large-scale folds in quartzites as seen from viewpoint 3.*

## INTRODUCTION

Twelve quarries were developed near Sleeps Hill in two separate beds of quartzite (the upper and lower quartzites), which crop out on both sides of a steep valley overlooking Adelaide. The lower outcrops were exploited first and operations gradually moved eastwards and higher up the valley.

The quarries are on a reserve managed by the Mitcham City Council, and an interpretive walking trail has been established in conjunction with the Department of Mines and Energy. Spectacular ripple-marked surfaces are preserved in the rocks and large-scale folds reflect the intensity of the forces which deformed the rocks nearly 500 million years ago.

## HISTORY

Quarries were opened in 1916 and were taken over by Adelaide Quarries Ltd in 1919. During the 1920s, the quarries were one of the leading producers of crushed rock in South Australia and employed up to 100 men. The rock was used as aggregate and sand for a variety of construction purposes. After 1930, the Depression seriously curtailed operations, and quarrying eventually ceased about 1950.

## GEOLOGY

Features within the rocks indicate that they were deposited as sand and silt in a shallow-water environment, such as a delta or along a coastline, about 750 million years ago. These sediments were converted to quartzite and slate and the rocks folded and faulted during a period of mountain building, about 500 to 450 million years ago.

During the following 400 million years, extensive erosion produced a flat landscape. About 50 million years ago, faults, which had developed during the period of mountain building, became active again and the Sleeps Hill area was uplifted on one of the blocks which make up the present Mount Lofty Ranges. At that time, the Adelaide Plains area became a basin where sediments accumulated.

About 2 million years ago, further uplift occurred, resulting in a period of erosion which has continued to the present.

## QUARRY METHODS

Quarrying methods were both labour-intensive and dangerous—four men were killed in accidents at Sleeps Hill.

Small ledges were cut into sheer quarry faces up to 40 metres high. Holes, drilled into the rock using compressed air drills, were loaded with dynamite and fired simultaneously by electrical detonators to bring down the stone. After blasting, the faces were made safe and large blocks of stone were drilled and further reduced by blasting.

The rock was broken manually and loaded into side-tipping rail trucks for delivery to a storage bin above the crushing plant. Stone from higher quarries was dumped from the trucks into a bin and reloaded into 6 ton trucks operated on an incline track. A full truck, gravitating to the crushing plant, was used to haul an empty truck back up the incline to the quarry by means of a wire rope.

A flying fox was installed in 1924 to handle large blocks of stone for use in breakwaters.

## CRUSHING

Two crushing plants were erected in the 1920s on either side of the valley and connected by a siding to the railway. Broken stone from the quarries was fed into a primary jaw crusher then a secondary gyratory crusher. The material was elevated to screens, where it was graded and deposited into a bin divided into compartments for the various sizes.

Crusher material from the northern crushing plant was conveyed to the storage bin by a conveyor belt supported on a trestle framework. All power was supplied by electric motors. Workshops for blacksmithing and fitting, and two compressors which supplied air via pipelines for rock drills at the quarries, were located nearby.

## VEGETATION

The native vegetation is open woodland with scattered shrubs, herbs and grasses. The most conspicuous trees are eucalypts and drooping sheoaks. The grey box with dark grey, rough-textured bark is the most common with a few smooth, pale-stemmed South Australian blue gums. Smaller native trees scattered throughout the woodland are golden wattle, graceful native apricot and semi-parasitic native cherry.

From the earliest days of European settlement, much timber has been cut from these hills. A few broken-off trunks, several metres in circumference, indicate the size of original trees.

During the past few decades, the woodland has been invaded by rapidly spreading plants brought from other countries with climates similar to ours. The most aggressive are the Mediterranean olive and South African boneseed. Both have fleshy fruits which are eaten by birds and foxes, which inadvertently spread the indigestible hard seeds. The pest plants compete for moisture and light, crowding out the less vigorous native plants.

Small native plants can be seen particularly near the Hill Street and Mead Street ends of the trail, where olives have been cut down and boneseed hand-pulled. You will see a range of shrubs such as kangaroo thorn, Christmas bush, hopbush, bushpea, native lilac and golden guinea flowers, as well as tussocks of native kangaroo grass and wallaby grass. In Spring, several small lilies send up flowering stalks. You may also find small sundews, native bluebells, the scarlet running postman and parsley fern.

## FAUNA

Early morning is the best time to see bush birds. Large conspicuous birds are the white-backed magpie, little raven and kookaburra.

Smaller birds include red-browed finch, superb blue wren, grey fantail, willie wagtail, striated pardalote, eastern spinebill, white-plumed and New Holland honeyeaters, noisy miner, rainbow and musk lorikeets, and the Adelaide and eastern rosellas.

On hot days you may glimpse a quick-moving small lizard, such as the common grass skink, or find a large scaly backed, stumpy tail lizard asleep in the sun.

**Please do not damage or remove any plants or animals; leave them for others to see and enjoy.**

*COVER: Ripple-marked rock surface in Quarry G at Sleeps Hill (viewpoint 21)*

**SA DEPARTMENT OF MINES AND ENERGY**
**191 GREENHILL ROAD, PARKSIDE 5063**
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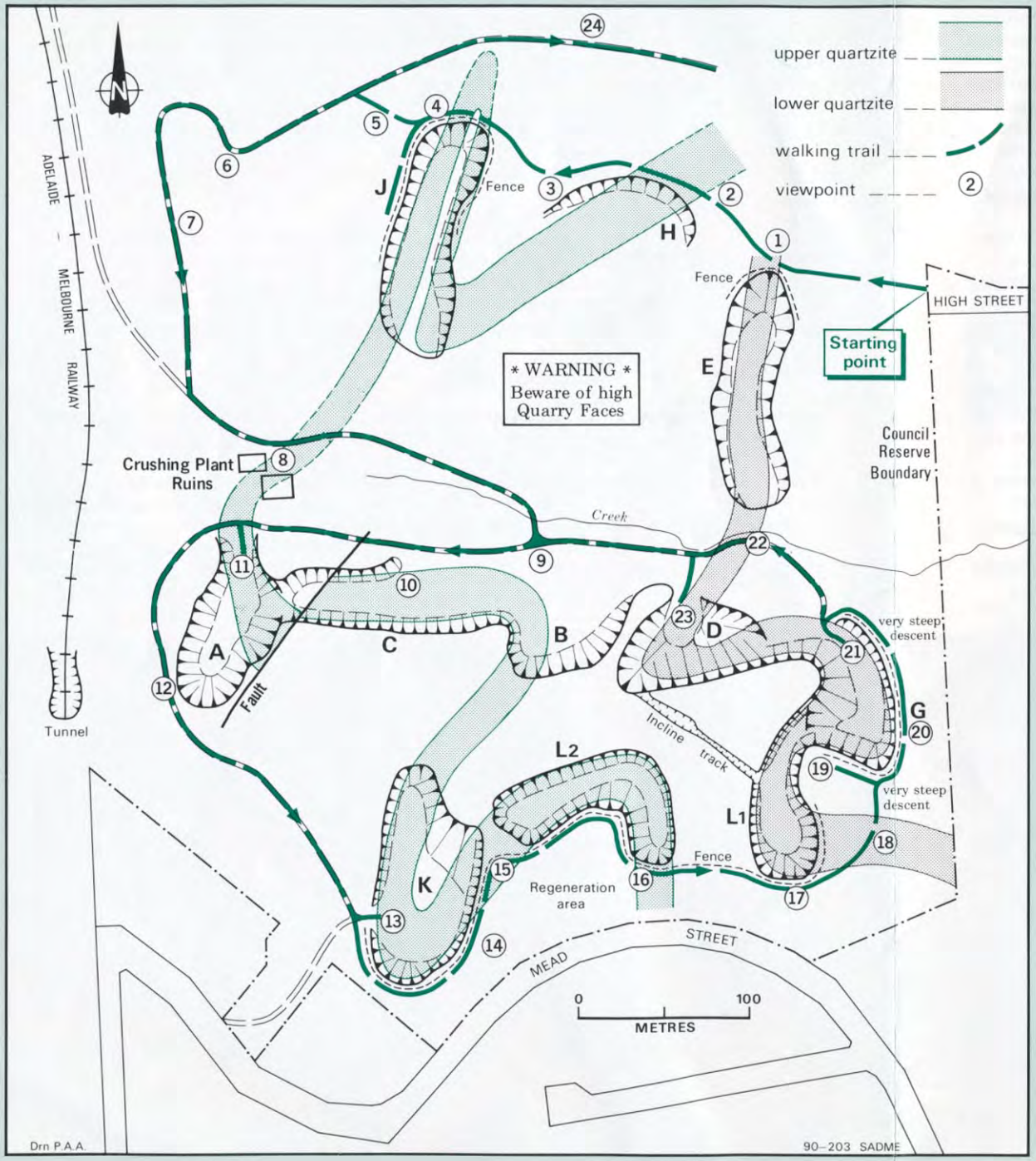
upper quartzite
lower quartzite
walking trail
viewpoint
ADELAIDE - MELBOURNE RAILWAY
Tunnel
Crushing Plant Ruins
Fence
HIGH STREET
Starting point
* WARNING *
Beware of high Quarry Faces
Council Reserve Boundary
Creek
Fault
Incline track
very steep descent
very steep descent
Regeneration area
Fence
MEAD STREET
0
100
METRES
A
B
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L1
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Drn P.A.A.
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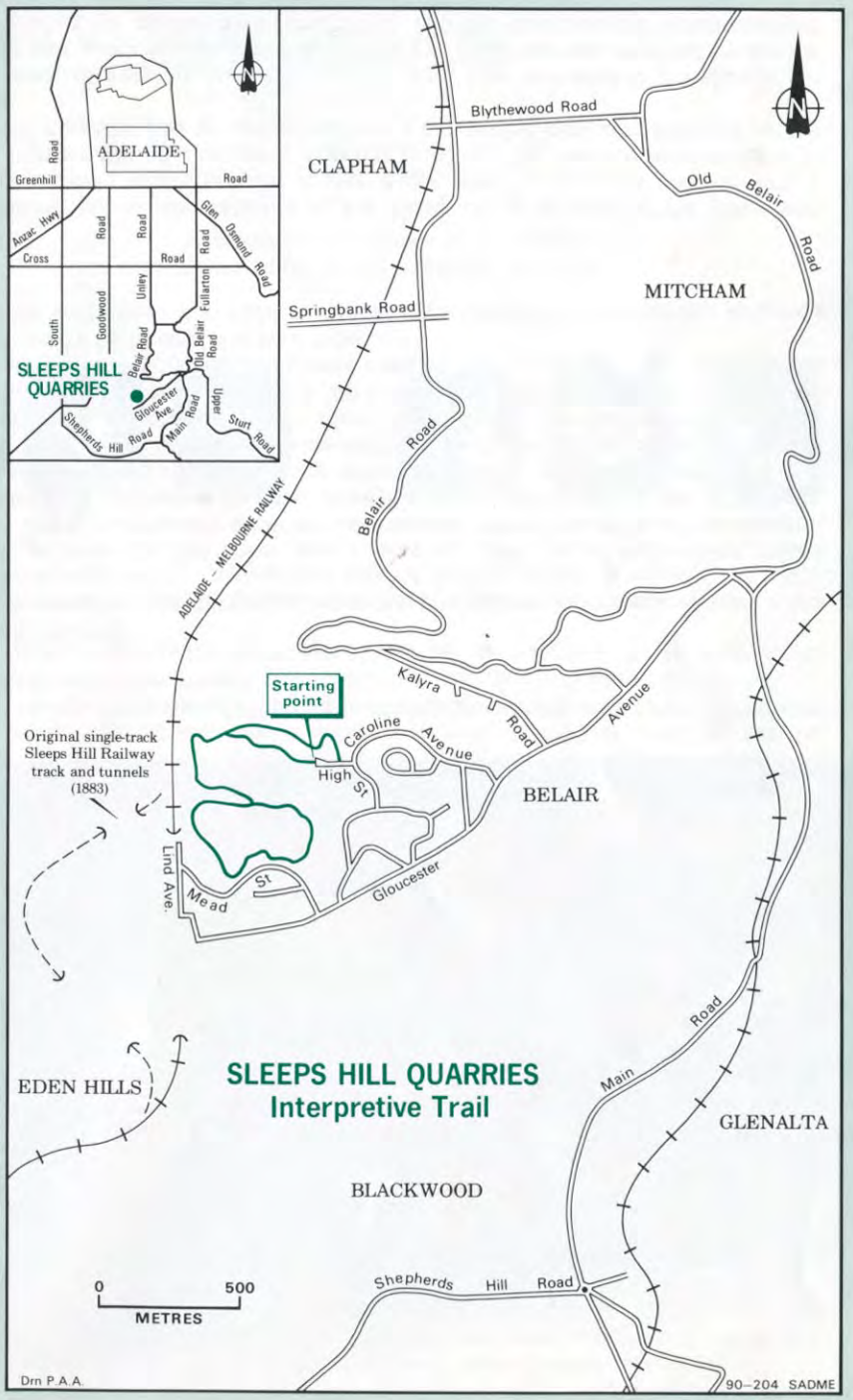
ADELAIDE
Greenhill Road
Anzac Hwy
Cross Road
Glen Osmond Road
SLEEPS HILL QUARRIES
Shepherds Hill Road
Gloucester Ave
Main Road
Sturt Road
Upper
Belair Road
Old Belair Road
Fullarton
Unley
Goodwood
South
CLAPHAM
Blythewood Road
Old Belair Road
MITCHAM
Springbank Road
Belair Road
ADELAIDE - MELBOURNE RAILWAY
Starting point
Original single-track Sleeps Hill Railway track and tunnels (1883)
Kalyra Road
Caroline Avenue
High St
BELAIR
Lind Ave.
Mead St
Gloucester Avenue
EDEN HILLS
SLEEPS HILL QUARRIES
Interpretive Trail
BLACKWOOD
Main Road
GLENALTA
Shepherds Hill Road
0
500
METRES
Drn P.A.A.
90–204 SADME

## THE TRAIL

**The trail is about 2.5 kilometres long, with several very steep sections, and takes 2 to 3 hours to complete. Interpretive signs illustrate geological features and how the rock was quarried and treated.**

**1. Quarry E:** a steeply dipping bed of lower quartzite.

**2. Grey box:** the most common tree is grey box (*Eucalyptus microcarpa*) with dark grey rough bark. Several large regenerated stumps show the size of original trees. Below the trees are boneseed, a shrubby pest plant with yellow daisy-like flowers in Spring, and a few slender golden wattles (*Acacia pycnantha*).

*Golden wattle leaves and flowers*

**3. Lookout:** an excellent panoramic view of the overall fold pattern from Quarry H.

**4. Quarry J:** an overturned anticline is exposed on the northern face of this quarry. In the distance to the southwest is the bricked entrance of the original single-track Sleeps Hill railway tunnel (1883).

**5. Kangaroo thorn:** a patch of bushy kangaroo thorn *(Acacia paradoxa)* with many small prickles.

*Kangaroo thorn leaves, flowers and prickles*

**6. Olives:** olive trees crowd out the native vegetation.

**7. Kangaroo grass:** patches of native kangaroo grass *(Themeda triandra)* up to 0.5 metres high, with attractive russet-brown seed heads in late Spring and Summer.

*Kangaroo grass, leaves and seed heads*

**8. Crushing plant:** concrete foundations mark the site of the crushing plant. Nearby, a spring encourages reeds and bullrushes to grow.

**9. Mistletoe:** large clumps of native parasitic mistletoe *(Amyema miquelii)* hang from grey box trees in this area. The mistletoe leaves are more yellow-green than the host.

*Grey box leaves, buds and fruits*

*From here, the trail follows the fire track out of the valley before passing across the top of the quarries and returning down a steep path past Quarry G. If time is limited, Quarries D and G, the most spectacular on the trail, are 200 metres up the valley.*

**10. Quarry C:** upper quartzite overlain by slate dips at a shallow angle into the hill. Nearby is the site of the incline railway.

**11. Quarry A:** upper quartzite occurs between slate on the western part of an anticline.

**12. Lookout:** a northerly view across Quarry A to the anticline in Quarry J. To the west is the present Sleeps Hill railway tunnel (1919).

**13. Quarry K:** an anticline is exposed on the southern face.

**14. Regeneration area:** Olive trees and boneseed have been removed, allowing regeneration of native plants such as wattles, native grasses, bushpeas, small lilies and sundews.

**15. Lookout:** panoramic view of the city and of the anticline in Quarry K.

**16. Quarry L2:** a steeply dipping bed of upper quartzite forms part of a synclinal fold. Ripple marks are exposed on the eastern face in underlying slate.

**17. Quarry L1:** the lower quartzite is folded into an anticline.

**18. Sheoaks:** a rocky outcrop of lower quartzite is covered by a stand of drooping sheoaks *(Allocasuarina verticillata)* up to 5 metres high.

*Drooping sheoak trees*

**19. Lookout:** an excellent view of the ripple-marked surface in Quarry G.

**20. Native cherry:** several yellow-green, pine-like native cherry trees *(Exocarpos cupressiformis)* occur here. These are 2 to 3 metres high and are semi-parasitic on roots of other plants.

*Native cherry tree*

**21. Quarry G:** a steeply dipping bed of lower quartzite is folded and faulted to the west near the top of the quarry. The eastern side displays a magnificent ripple-marked surface. The best time for viewing and photography is shortly after midday.

**22. Quarry E:** a view up the steep bed of quartzite to the starting point.

**23. Quarry D:** a very high sheer quarry face displays an overturned anticline in the lower quartzite.

**24. S.A. Railways Quarries:** to the north, below Windy Point, fold patterns are exposed in quarries used as a Council dump.