RB 52/42

DEPARTMENT OF MINES
SOUTH AUSTRALIA

Report on

COODAWA TALC DEPOSIT

APPROXIMATELY SIX MILES ENE OF THREESPRINGS

VICTORIA DISTRICT, SOUTH-WEST DIVISION WESTERN AUSTRALIA

(Universal Milling Pty. Ltd. and Western Mining Corporation Ltd.)

by

L. G. Nixon
Geologist

MINERAL RESOURCES SECTION

GEOLOGICAL SURVEY

CONTENTS

Map No.	Title	Scale
61-70	Geological Plan vicinity of "Coodawa" Talc Deposit, Approximately six miles ENE of Threesprings M. 839. Victoria District, Southwest Division, Western Australia. (Universal Milling Pty. Ltd. & Western Mining Corporation Ltd.)	1 inch = 100 feet

Rept. Bk. No. 52/42
G.S. No. 1939
D.M. 743/57

23rd February, 1961.

Rept. Bk. No. 52/42
G.S. No. 1939
D.M. 743/57

DEPARTMENT OF MINES
SOUTH AUSTRALIA

Report on

COODAWA TALC DEPOSIT

APPROXIMATELY SIX MILES ENE OF THREE SPRINGS

WESTERN AUSTRALIA

(Universal Milling Pty. Ltd. and Western Mining Corporation Ltd.)

ABSTRACT

The Coodawa Talc Deposit which is approximately 200 miles north of Perth is the product of alteration of sedimentary and probably basic igneous rocks of pre-Cambrian age. Reserves are estimated to exceed 1 million tons. Current mining is by open cut methods. Production is about 50 tons a day at an estimated cost of 4 shillings per ton. The colour of the talc compares favourably with the best Mt. Fitton material.

INTRODUCTION

On 17th January, 1961 the writer visited the above deposit which is located approximately 6 miles ENE of Threesprings in the centre of a prosperous wheat growing district. The topography in the area is mature with occasional salt pans between low hills in an undulating countryside.

The Geraldton Highway is a good bitumen road connecting Threesprings to Perth 200 miles to the south and Geraldton 112 miles to the north west. The road from Threesprings to the talc deposit is bitumen for a couple of miles then surfaced with loose gravel.

GEOLOGY

Apart from exposures in the existing workings outcrop is poor. The map appended to this report outlining the general geology is a copy of one produced by Matheson and published in "Report of the Department of Mines" for the year 1945. This map delineates the approximate boundaries of various rock types. Although no sediments are shown on the map,

samples of talc collected off the dumps show sedimentary features, a photograph of one such specimen is appended to this report.

TESTING

Subsurface investigation by Western Mining Corporation Ltd. included diamond drilling at approximately 100 feet centres to depths of about 160 feet in places and drilling with pneumatically operated augers at 10 feet centres between the diamond drill holes. Auger samples are taken every two feet and bagged, for the first six feet below the surface and every five feet thereafter.

Table I appended (see Appendix A) sets out the chemical analysis of samples taken from various South Australian deposits for comparison with analysis of talc samples taken from Coodawa Western Australia.

The percentage of impurities in the talc from Western Australia is greater than the Mt. Fitton rock, however colour comparisons carried out between 1st (T.S.) 2nd (TX) & 3rd (TL) grades of Mt. Fitton material and the Coodawa talc showed that most of the Coodawa material approximated 2nd (TX) grade Mt. Fitton material and the best grade Coodawa Talc slightly inferior in colour to the Mt. Fitton first grade talc.

Testing was done by placing different grades of talc of the same deposit alongside one another and flattening them with a spatula then placing equivalent grades from the deposit to be compared above or below them and wetting all the samples with mineral turpentine, this wetting accentuates any differences in colour between the grades.

MINING

The current mining practice at Coodawa is to clear the thin mantle of soil and then rip the underlying rock with a ripper attached to a dozer. The first three feet beneath the

surface are frequently contaminated with iron staining and soil and is dozed into what is called No. 7 dump. (Photograph No. 2 shows dumps No. 5, 6 and 7 from right to left). This material is used in road filling and spread as a floor to dumps of the better grade material. The next three feet are then ripped and the material carted to various dumps numbered from 1 to 6 for the various grades of talc. This rough sorting into various grades is done by estimating the percentage of good quality talc in the total amount being dumped. There is no hand sorting or brushing of talc as is done at Mt. Fitton. If massive talc is encountered, which the ripper cannot handle, the rock is bored and fired. Photograph No. 1 shows the first three feet ripped and cleared to the south of the open cut.

The talc is trucked to Threesprings where it is trans-shipped for railing to Perth, to be milled prior to shipping from Fremantle.

At the time of this visit the position of a mill site at the open cut had been selected and surveyed. In Photograph No. 1 pegs to the south west of the open cut indicate the position of the future mill. The companies plan to mill the talc at Coodawa and rail it to Geraldton for shipping.

At present it is understood that the Coodawa talc can be delivered in Sydney at £3. 0. 0. per ton cheaper than the Mt. Fitton product.

WORKINGS

Underground workings inaccessible at the time of this visit include an inclined shaft 120 feet long to a vertical depth of 60 feet (inclined 30°) from which driving was commenced into the talc body. Pillars of talc left underground are reported to be 20 feet x 20 feet.

Current production is from the open cut illustrated in the photographs appended. The cut is relatively small comprising an access track about twelve feet wide to the deepest part of the cut which is approximately 18 feet below the natural

surface.

PRODUCTION & RESERVES

At the time of this visit production was estimated at 50 tons per day from the open cut at a cost of about 4/- per ton. This tonnage is mined by three men. The writer was informed that production was to be stepped up to 400 tons per week.

Reserves are estimated to exceed one million tons, and 200,000 tons are estimated to be in the pillars of the underground workings.

It is understood that some of the talc is being exported to Sweden, the remainder being used within the state and over in N.S.W., where it has been used in cosmetics, paint making and tile manufacture.

SUMMARY AND CONCLUSIONS

The Coodawa talc deposit is derived from the alteration of basic igneous and sedimentary rocks of Archaean age.

Reserves exceed one million tons of fairly high grade talc.

Production of 50 tons a day at present, is expected to be stepped up to 400 tons per week. At present this talc is mined by three men, the estimated cost of mining is 4/- per ton. It is understood that the talc from Coodawa can be delivered in Sydney at £3. 0. 0. per ton less than the Mt. Fitton material.

With the installation of a milling plant at the deposit and the rerouting of the talc through Geraldton for shipment, it is possible that the cost of talc delivered

overseas and in Sydney may be lowered.

It is known that the talc is suitable for use in cosmetics, paint making and tile manufacture.

L.G. Nixon
Geologist
MINERAL RESOURCES SECTION

LGN:AGK
23/2/61

APPENDIX A

TABLE I

CHEMICAL ANALYSIS OF TALC

	Theoretical	Tumby Bay	Gumeracha	Fitton No. 4 Best quality snow white	Fitton No. 5 Best quality off white	Fitton	Fitton	Fitton	Coodawa W.A.	Coodawa W.A.	Coodawa W.A.	Coodawa W.A.
SiO_2	63.50	61.26	61.90	62.16	59.06	58.46	60.52	58.74	62.08	62.47	62.07	60.52
Al_2O_3	-	1.76	1.88	0.61	1.81	1.97	1.56	2.73	0.46	0.58	0.72	1.23
Fe_2O_3	-	0.37	2.31	0.13	0.16	0.33	0.14	0.37	0.08	0.20	0.15	0.25
FeO	-			0.45	0.45	0.42	0.40	0.47	0.77	0.76	0.71	0.85
MnO	-	-	-	-	-	-	-	-	Trace	Trace	Trace	0.01
MgO	31.70	30.53	28.23	32.06	33.12	32.56	32.39	31.59	31.33	30.55	31.13	30.81
CaO	-	Nil	Nil	Nil	Nil	0.28	0.06	Nil	0.04	0.07	0.01	0.16
Na_2O	-	0.17	0.68	Nil	Nil	0.18	0.01	0.05	0.31	0.08	0.08	0.02
K_2O	-	0.10	Nil	Nil	Nil	Nil	Nil	Nil	0.01	Nil	Nil	0.02
H_2O	-	0.22	0.03	0.11	0.10	0.01	0.11	0.02	0.33	0.44	0.25	0.55
H_2O	4.80	4.90	4.66	4.51	5.17	5.36	5.17	5.72	4.68	4.80	4.92	5.19
TiO_2	-	-	-	0.02	0.21	0.30	0.10	0.15	0.01	0.02	0.01	0.03
CO_2	-	-	-	-	-	-	-	-	0.06	0.06	0.02	0.02
P_2O_5	-	-	-	Nil	0.08		0.66	0.10	Nil	0.03	0.15	0.04
Cr_2O_3	-	-	-	-	-	-	-	-	Nil	Trace	Nil	Trace
Cl	-	0.30		-	-	-	-	-	Nil	Nil	Nil	Trace
SO_3	-	-	-	-	-	-	-	-	Nil	Nil	Nil	0.01
	100.00	99.61	99.69	100.05	100.16	99.87	100.62	99.94	100.16	100.06	100.22	99.71

APPENDIX B

PHOTOGRAPHS

Photo No. 1. General view of the open cut looking South.

Photo No. 2. Looking North across the open cut and towards talc dumps.

Photo No. 3. Bedding in talc specimen.

Farther north talc rock becomes very siliceous and contains abundant cellular quartz, banded quartz and reef quartz.

York gum and jam

Decomposed Talc and cellular quartz

Reef quartz and cellular quartz

York gum and jam

Siliceous Quartz breccia

Scattered boulders of Talc, cellular quartz and reef quartz.

Scattered boulders of Talc, cellular quartz and reef quartz

Cleared country

Scattered boulders of Talc, cellular quartz and reef quartz

Talc. Boulders

F

ULTRA-BASIC ROCK

Grey Talc

Bouldery Quartz-dolerite

No outcrops Red soil

Prospecting Pit. 41' V.D.

TALC

Scattered boulders of Talc. cellular quartz and reef quartz

D

Cleared country

Scattered boulders of Talc. cellular quartz and reef quartz

York gum and jam

Scattered boulders of Talc, cellular quartz, and reef quartz

METAMORPHOSED

No outcrops Red soil

York gum and jam

Abundant scattered boulders of cellular quartz and reef quartz

No.1 WELL 70' V.D.

York gum and jam

Bouldery Quartz-dolerite

TALC ROCK (PROBABLY

A

Cleared country

York gum and jam

White decomposed Talc, with quartz veinlets

No.3 WELL 62'-6" V.D.

B

House Limits Approx.

DOLERITE

No outcrops Red soil, Quartz and ironstone pebbles

No.2 WELL 52'-6" V.D.

Bouldery Quartz-dolerite

York gum and jam

QUARTZ

Quartz. dolerite with Travertine capping

C

Cleared country

White weathered Talc.

Weathered Talc.

Weathered Talc.

INTRUSIVE

White talc with Quartz veinlets

E

Bouldery quartz dolerite

Numerous boulders of cellular quartz and reef quartz

York gum and jam

SILICEOUS QUARTZ BRECCIA

No outcrops Red soil

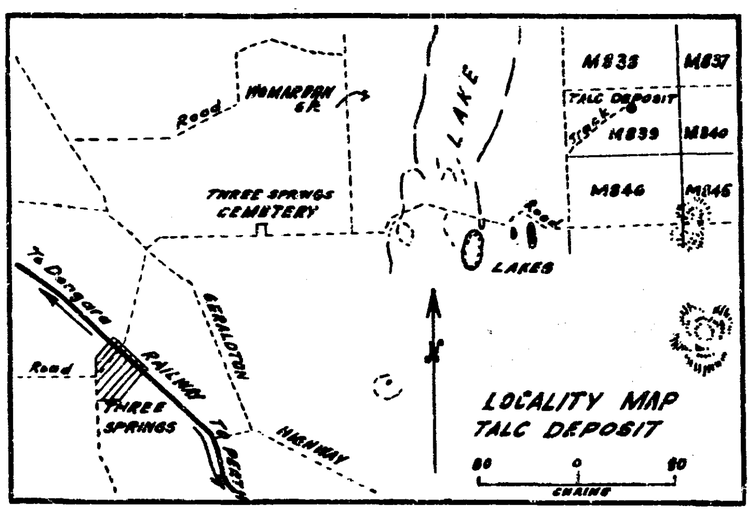
Bouldery quartz-dolerite

Cleared country

York gum and jam

SCALE

FEET 100 50 0 100 FEET



— LEGEND —

Soil _____

Siliceous quartz breccia (may be fault-breccia or cement capping) _____

Quartz-dolerite (intrusive) _____

Talc Rock (probably metamorphosed ultra basic rock) _____

Observed geological bounderies _____

Doubtful geological bounderies _____?_____

Stations _____ ○A

Outcrops _____ + + +

NOTES :-

Geology and Prismatic compass and pace survey by R.S. Matheson September 1944.

Copied from Western Australian Dept. of Mines Annual Report for 1945.

(Universal Milling Pty. Ltd. and Western Mining Corporation Ltd.)

S.A. DEPARTMENT OF MINES

No.	Amendment	Exd.	Date

GEOGOGICAL MAP VICINITY OF COODAWA TALC DEPOSIT APPROX. 6 MILES ENE. OF THREE SPRINGS M839 VICTORIA DISTRICT SOUTH WEST DIVISION — WESTERN AUSTRALIA

Approved	Passed		Scale :
		Drn.	61-70
		Tcd. A.W	994.1
		Ckd. R.R.	
Director		Exd.	Date 24-2-61