

MINERAL IDENTIFICATION REPORT No. 83763

1. INTRODUCTION

Drill hole chip samples from Rum Jungle were received from Daniel Hatton of Territory Iron with a request for determination the presence of any asbestiform minerals.

2. PROCEDURE

The samples were examined using a stereomicroscope. Selected fibres or pulverized portions were examined using a polarized light microscope. Particular attention was given to particles that may be classed as asbestos fibres, using the classification of being less than 1 micrometer in width and at least 20 micrometers in length. A separate portion was pulverized then analysed by X-ray diffraction to identify the minerals present.

3. RESULTS - XRD

The semi-quantitative mineralogies of the samples follow. The amphibole is probably tremolite

Sample	Composition	TRK 1026	TRK 1026	TRK 1027	TRK 1028	TRK 1029
Hematite	Fe_2O_3	CD				CD
Goethite	FeOOH	CD				CD
Talc	$\text{Mg}_3\text{Si}_4\text{O}_{10}(\text{OH})_2$	A-SD	A	A	SD	Tr
Chlorite	$(\text{Mg},\text{Al},\text{Fe})_{12}(\text{Si},\text{Al})_8\text{O}_{20}(\text{OH})_{16}$		Tr-A	SD	SD	
Kaolinite	$\text{Al}_2\text{Si}_2\text{O}_5(\text{OH})_4$	A				A
Vermiculite	$(\text{Mg},\text{Fe},\text{Al})_3(\text{Si},\text{Al})_4\text{O}_{10}(\text{OH})_2 \cdot 4\text{H}_2\text{O}$	Tr	A	A	D	
Amphibole	$\text{Ca}_2\text{Mg}_5\text{Si}_8\text{O}_{22}(\text{OH})_2$		A	Tr-A	Tr	
Quartz	SiO_2	Tr				A
Minnesotaite	$(\text{Fe},\text{Mg})_3\text{Si}_4\text{O}_{10}(\text{OH})_2$?Tr
Dolomite	$\text{CaMg}(\text{CO}_3)_2$		D	D		
Magnesite	MgCO_3	Tr				

Semiquantitative Abbreviations

- D = Dominant. Used for the component apparently most abundant, regardless of its probable percentage level.
- CD = Co-dominant. Used for two (or more) predominating components, both or all of which are judged to be present, in roughly equal amounts.
- SD = Sub-dominant. The next most abundant component(s) providing its percentage level is judged above about 20.
- A = Accessory. Components judged to be present between the levels of roughly 5 and 20%.
- Tr = Trace. Components judged to be below about 5%.

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4. RESULTS - MICROSCOPY

TRK1025

This sample contains an appreciable content of coarse, white fibrous bundles with the morphology of chrysotile (white asbestos). However they were identified by XRD as talc. These bundles are highly resistant to pulverizing and hence not easily separated into individual fibres. The sample as whole contains a minor proportion of asbestos-sized particles and these are very likely to be of talc

TRK1026

This sample contains a minor proportion of elongated particles. Asbestos-sized fibres are rare and are likely to be of tremolite

TRK1027

This sample contains a minor proportion of elongated particles. Asbestos-sized fibres are low in abundance. It is not known if these are either talc or amphibole or both.

TRK1028

This sample contains a moderate proportion of elongated particles. Asbestos-sized fibres are low in abundance. It is not known if these are either talc or amphibole or both.

TRK1029

The sample is earthy. Talc was not detected microscopically. Asbestos-sized particles were not detected