TOWNEND

mineralogy laboratory

DENNIS GEE 26-3-2015

BUSSELTON

WESTERN AUSTRALIA

Our reference 23807

PREPARATION OF GLAUCONITE CONCENTRATE FROM ROCK SAMPLES.

ROGER TOWNEND

ACN: 069 920 476
Unit 4, 40 Irvine Drive
Malaga. Western Australia 6090
Box 3129, Malaga D.C. WA 6945

ABN: 92 076 109 663
t +61 8 9248 1674
f +61 8 9248 1502
roger@townendmineralogy.com.au

INTRODUCTION

Various glauconite sandstone rocks were submitted for treatment to produce a glauconite concentrate.

The rocks were very lightly crushed and screened through 500, 300 and 106 µ.

The -500+300, and the -300+106 µ fractions were magnetically separated. This produced a glauconite concentrate.

RESULTS

SUMMARY The glauconite content of the -500+106 µ fraction was about 27%.

+500 µ	314 g	6.2%		
-500 + 300 µ GLAUCONITE	272 g	5.4%		
-500 +300 µ NON-MAGS	1216 g	24.4%		
-300+106 µ GLAUCONITE	769 g	15.4%		
-300+106 µ NON-MAGS	1595 g	32%		
-106 µ	822 g	16.6%		

The -106 µ fraction is being wet screened at 53 µ, for magnetic separation of glauconite from the +53-106 µ fraction.

NON MAGS.

TBE SEPARATIONS

-500+ 300u TBE SKS 0.5%

-300 +106U TBE SKS 1.5%

Note by DGee: These are very low values and indicate that single-grain apatite is not a significant part of the TBE sinks of the non-mag fraction, and therefore needs not be included as a recoverable product in scoping studies. However this low level is contrary to the initial sample GNT014, and this aspect needs to be re-examined when the proper quantitative mineralogy is done on drill core.

MINERALOGY.

TBE SINKS.

Dominantly composed of collophane type APATITE

TBE FLOATS

Dominantly composed of QUARTZ , plus traces of CARBONATE.

Observation.

These samples differ from the earlier results , by the lack of K feldspar . This means that the K2O value could be used to calculate glauconite content , as its value in that mineral is pretty constant.
FRACTION -106 U.

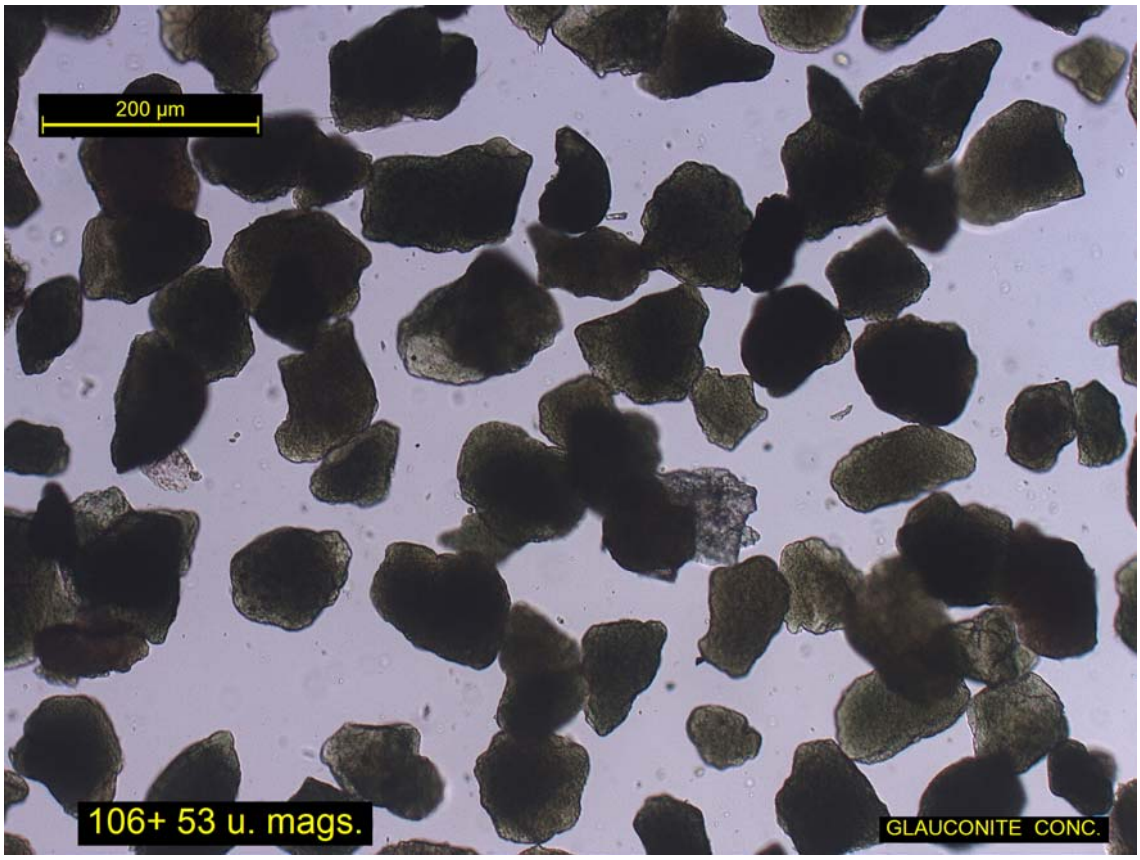
106 +53 u.	40%
-53 u	60%
-106+ 53 u MAGS.	7% (of 40%)

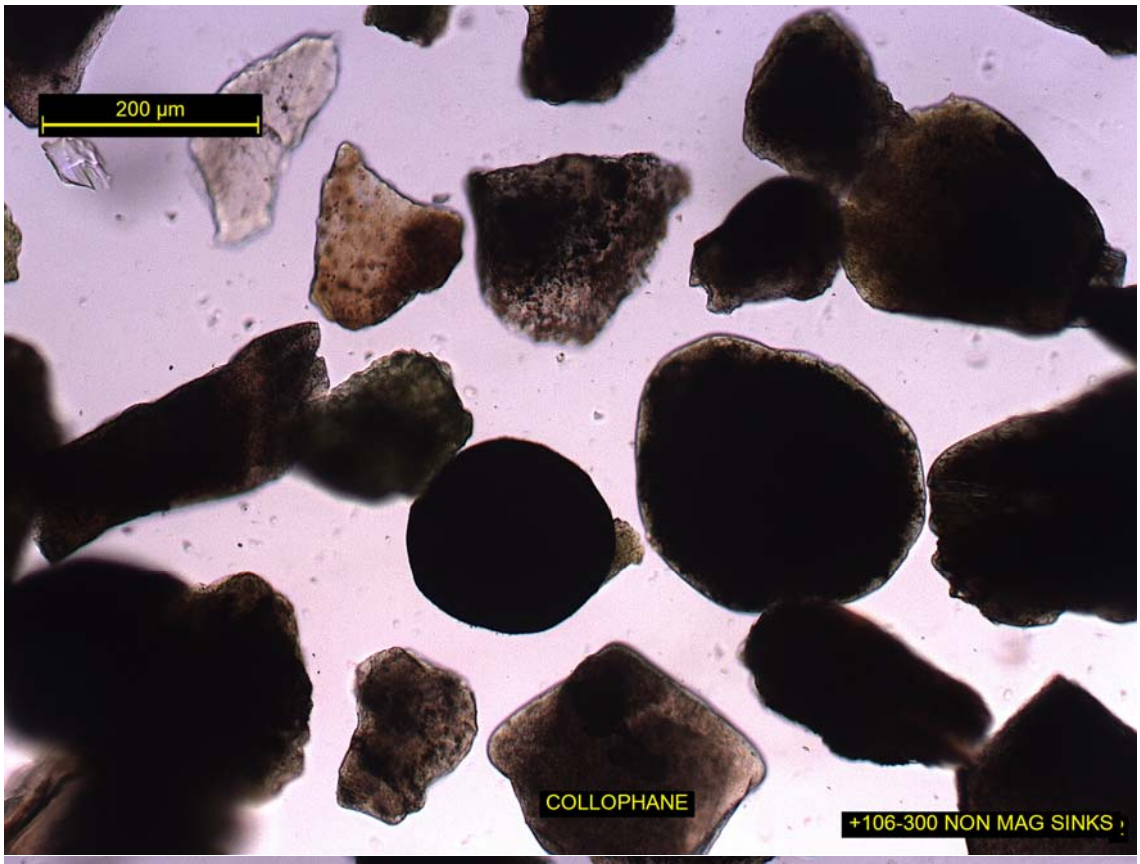
The -106+ 53 u mag. fraction is a GLAUCONITE concentrate, with traces of carbonate.

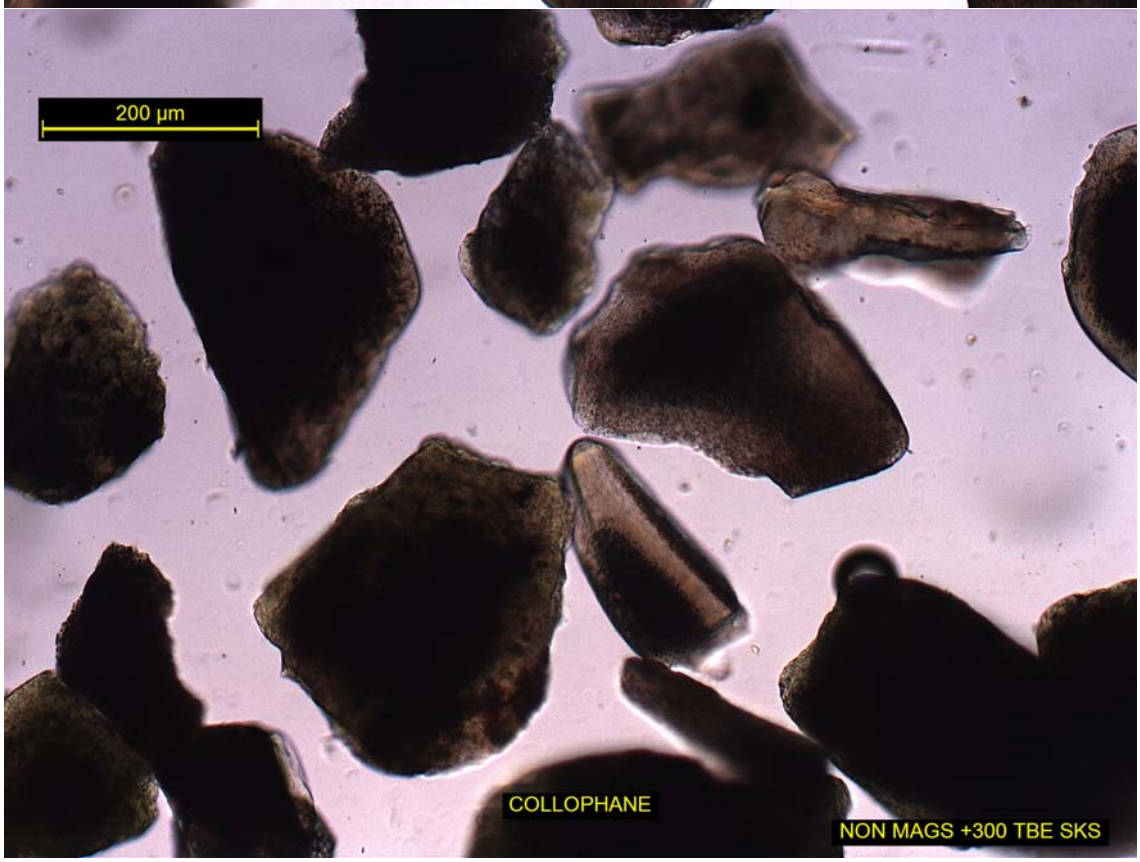
Note this table below inserted by DGee to amalgamate the fine <106 fraction into the other size fractions used in the preparation of the mini-bulk separation. It shows that very little glauconite occurs in the -106 +53µm fraction, indicating that relatively coarse grinding is sufficient to produce a quality concentrate.

+500 µ	314g	6.2%		
-500 + 300 µ GLAUCONITE	272g	5.4%		
-500 +300 µ NON-MAGS	1216g	24.4%		
-300+106 µ GLAUCONITE	769g	15.4%		
-300+106 µ NON-MAGS	1595g	32%		
-106 +53 GLAUCONITE	23g	0.5%		
-106 +53	305g	6.1%		
-53 fines	493g	10.0%		
Total	4987g	100%		

This is probably a minimum value . See image below.


200 µm
106+ 53 u. mags.
GLAUCONITE CONC.


200 µm
COLLOPHANE
+106-300 NON MAG SINKS


200 µm
COLLOPHANE
NON MAGS +300 TBE SKS