Building and Construction Authority

An MND Statutory Board
Our ref: APPBCA-2022-02

01 March 2022

Dear Sir/Madam

SUBMISSION OF SITE INVESTIGATION (SI) DATA IN STANDARDISED ELECTRONIC FORMAT TO COMPLY WITH THE IMPLEMENTATION OF NEW STRATIGRAPHIC FRAMEWORK

Objective

1. This circular is to inform the industry on adopting the geological unit name as established in the new stratigraphic framework of Singapore while submitting SI data both in borehole logs and standardised electronic format protocol AGS(SG).

Background

2. BCA has introduced a new publication for the geology of Singapore on 1st of October 2021 to launch the new stratigraphic framework, which consists of a 1:50,000 scale geological map including a memoir. In this publication, new geological units have been introduced and previous named units of DSTA (2009) Geology of Singapore have been re-classified in accordance with the guidelines of International Commission on Stratigraphy (ICS). Refer to Annex A showing comparison between the current units (DSTA, 2009) and new units of BCA, 2021. The sale and product info of this new publication can be accessed via: https://go.gov.sg/bundled-geomap-geomemoir

Requirement for Submission of SI Data in the AGS(SG) Electronic Format

3. We wish to inform the industry that the submission of SI data in the AGS(SG) electronic format based on the new stratigraphic framework will be a requirement **with effect from 1st October 2022 for all SI works carried out**. Examples highlighting on the representation of new geological unit name in borehole log are shown in Annex B. The addendum of the new abbreviations (codes) is presented in the latest edition of 'Guidelines for Electronic Transfer of Site Investigation Data', which can be downloaded from: https://www1.bca.gov.sg/docs/default-source/docs-corp-regulatory/building-control/electronic-transfer-si-data.pdf

Circulation and Enquiries

4. Please disseminate the contents of this circular to your members. If you need any clarification, you may contact officer Lau Sze Ghiong (Ms.), email: LAU_sze_ghiong@bca.gov.sg

Yours faithfully

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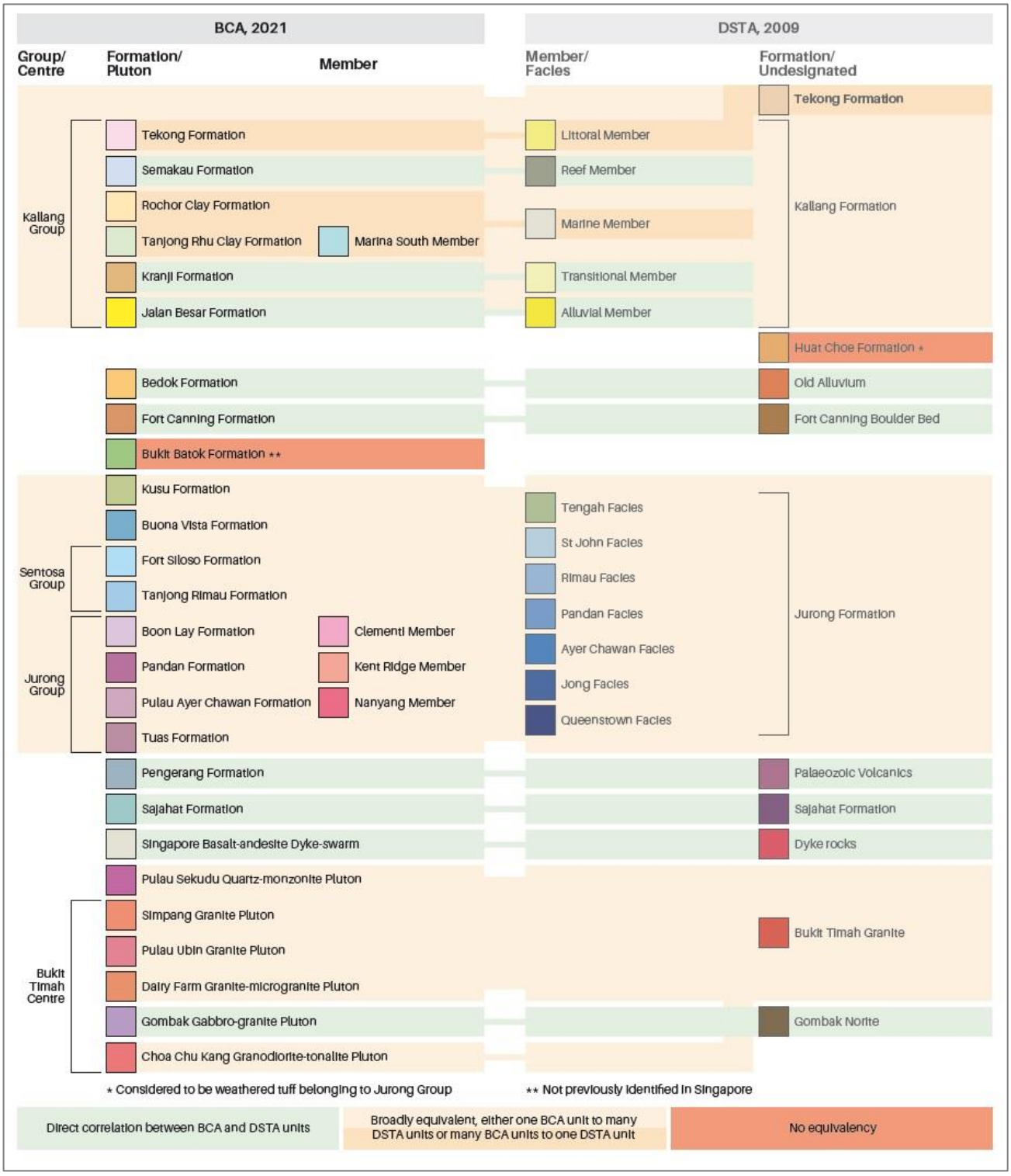
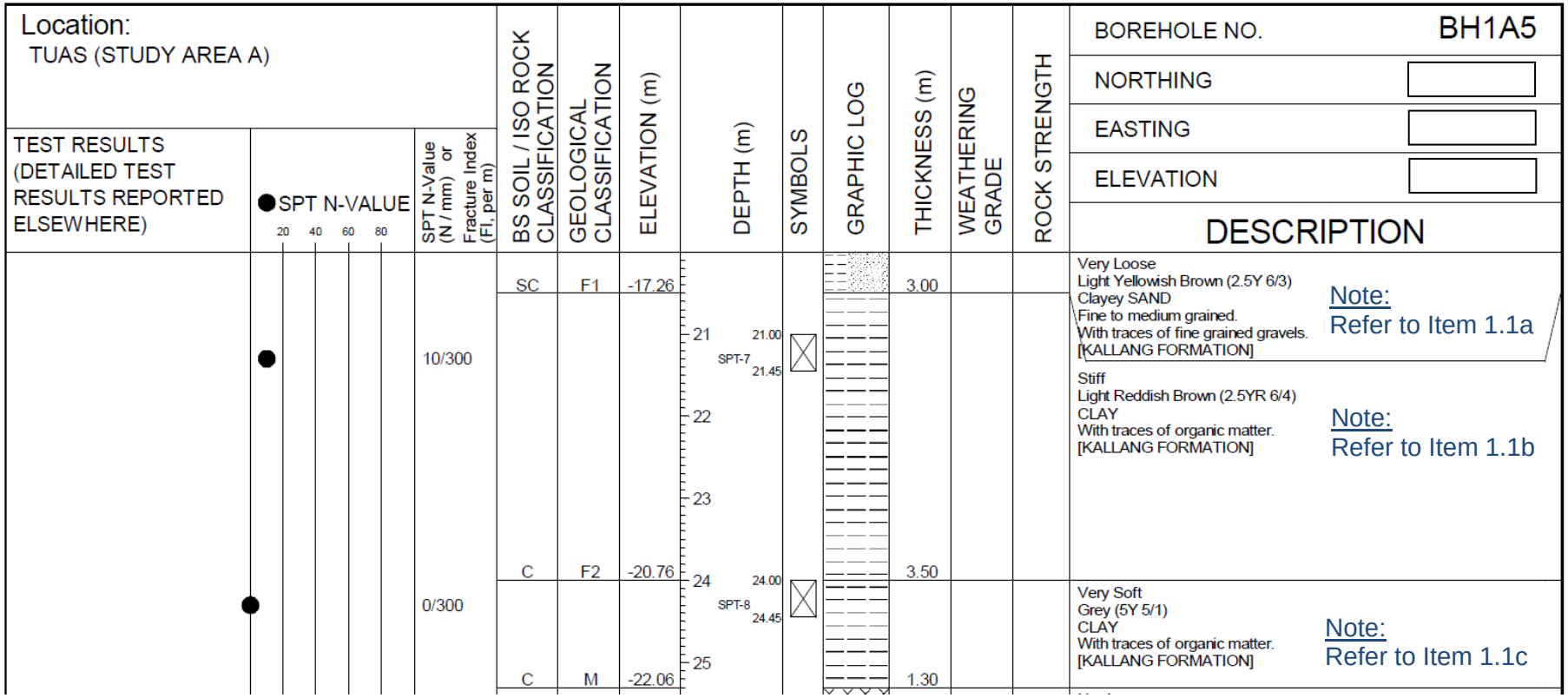
ANNEX A: NEW GEOLOGICAL UNITS IN COMPARISON WITH DSTA (2009)

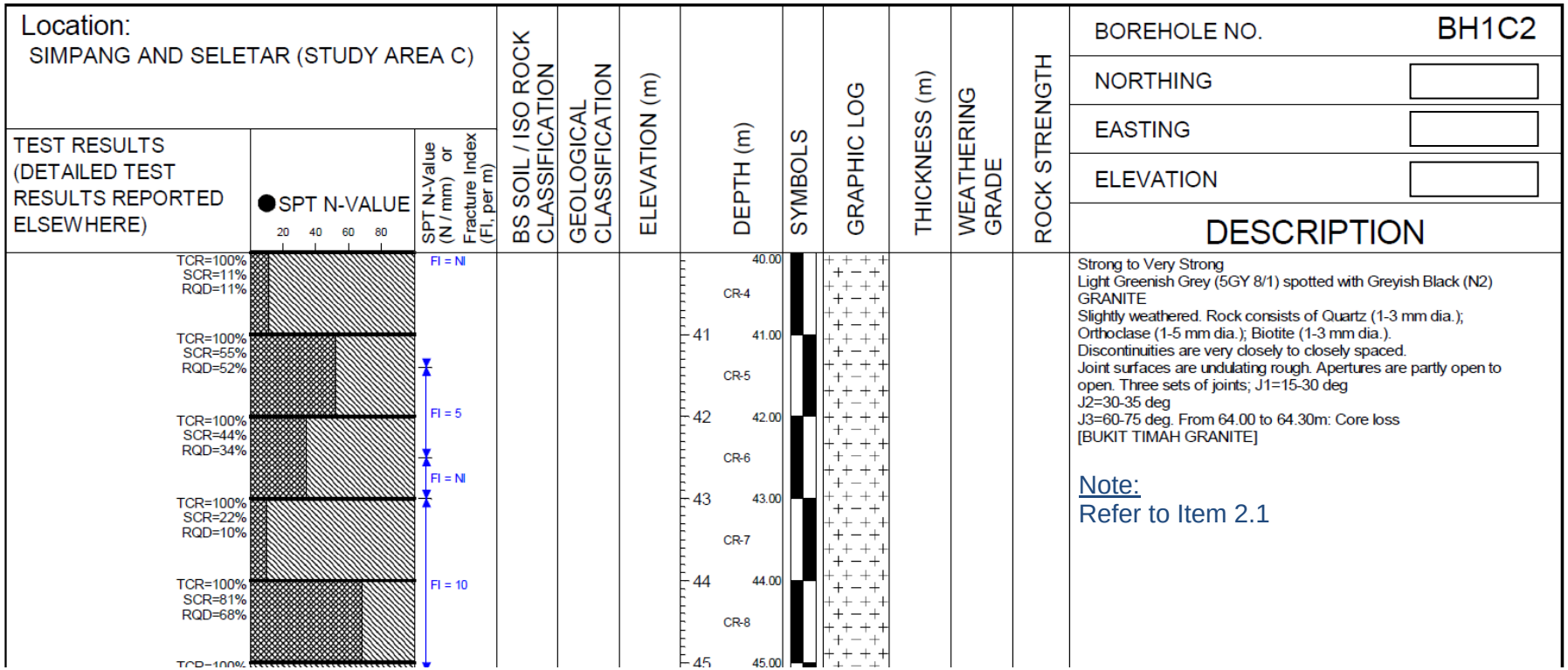


ANNEX B: EXAMPLES SHOWING BOREHOLE LOG (OF SI REPORT) IN THE USE OF NEW GEOLOGICAL UNITS WHILE DESCRIBING SOIL AND ROCK PROPERTIES

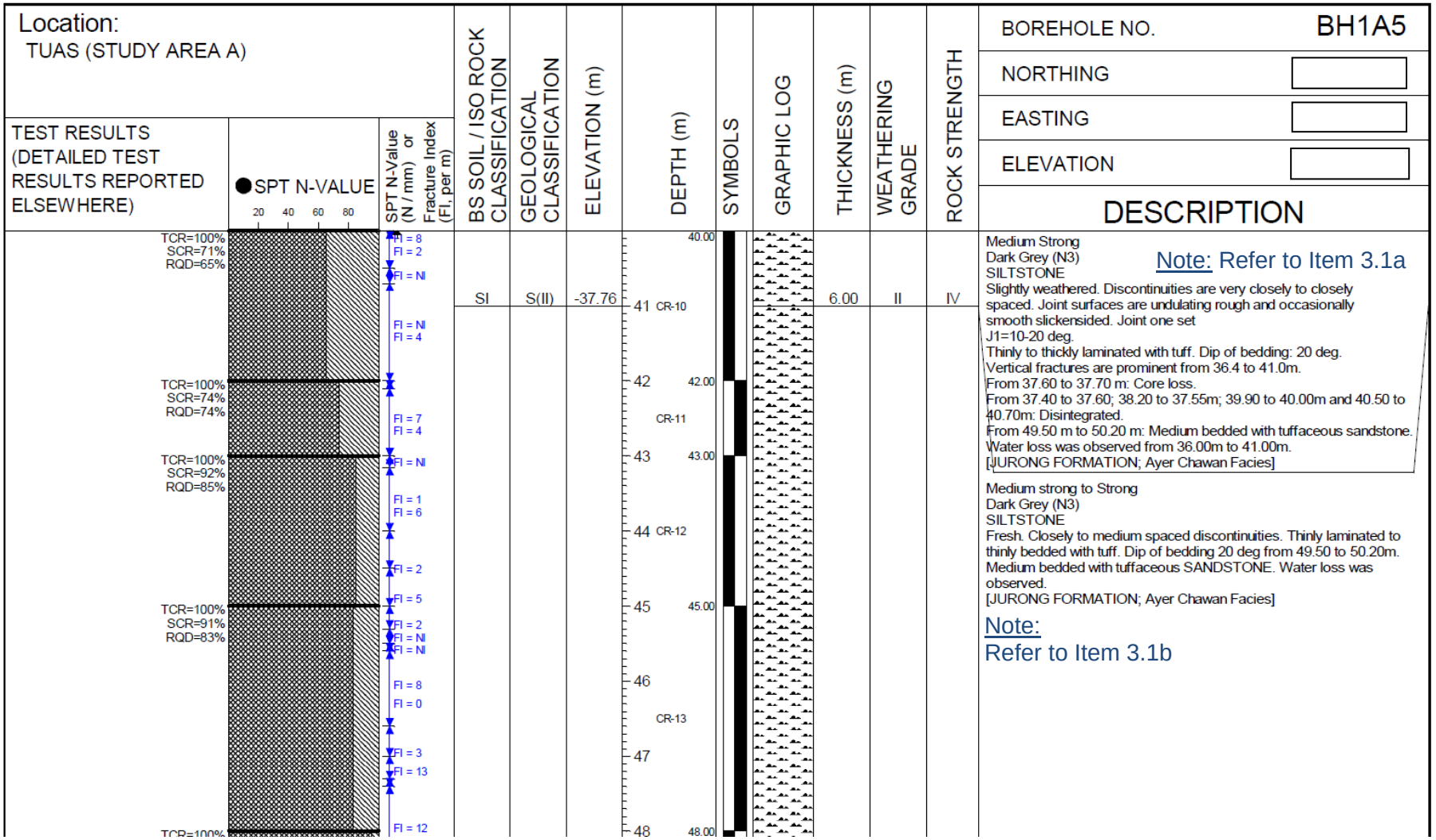
Item	Soil Description
1.0	Example of borehole log (current practice):



	Example of soil description (to include additional features and name of new geological unit):
1.1a	Very loose, light yellowish brown (2.5Y 6/3), clayey SAND, fine to medium grained (subrounded) with traces of fine-grained gravels. [KALLANG GROUP; Jalan Besar Formation]
1.1b	Stiff, light reddish brown (2.5YR 6/4), streaked/mottled, CLAY with traces of organic matter. [KALLANG GROUP; Jalan Besar Formation]
1.1c	Very soft, grey (5Y 5/1), CLAY with traces of organic matter. [KALLANG GROUP; Tanjong Rhu Clay Formation]

Item	Rock Description
2.0	<u>Example of borehole log (current practice):</u> 
2.1	<u>Example of rock description (to include additional features and name of new geological unit):</u> Strong to very strong, light greenish grey (5GY 8/1) spotted with greyish black (N2), equigranular, coarse-grained GRANITE, slightly weathered, rock consists of quartz (1-3 mm dia.), orthoclase (1-5 mm dia.), biotite (1-3 mm dia.), mafic minerals ~15%, weak/subtle magmatic lineation, slight discolouration of minerals (along discontinuities), discontinuities are very closely to closely spaced, joint surfaces are undulating rough, apertures are partly open to open, three sets of joints; J1= 15-30 deg, J2= 30-35 deg, J3= 60-75 deg, from 64.00 to 64.30m: core loss. [BUKIT TIMAH CENTRE; Simpang Granite Pluton]

Item	Rock Description
3.0	Example of borehole log (current practice):



Example of rock description (to include additional features and name of new geological unit):	
3.1a	Medium Strong, Dark Grey (N3), SILTSTONE, Slightly weathered. Discontinuities are very closely to closely spaced. Joint surfaces are undulating rough and occasionally smooth slickensided. Joint one set J1=10-20 deg. Thinly to thickly laminated with tuff. Dip of bedding: 20 deg. Minor folds/soft sediment structures (of distorted features) from ~41.0 (bottom) to ~39.0m (top). Vertical fractures are prominent from 36.4 to 41.0m. From 37.60 to 37.70 m: Core loss. From 37.40 to 37.60; 38.20 to 37.55m; 39.90 to 40.00m and 40.50 to 40.70m: Disintegrated. From 49.50 m to 50.20 m: Medium bedded with tuffaceous sandstone (sand grains are subangular). Water loss was observed from 36.00m to 41.00m. [JURONG GROUP; Pulau Ayer Chawan Formation]
3.1b	Medium strong to Strong, Dark Grey (N3), SILTSTONE, Fresh. Closely to medium spaced discontinuities. Thinly laminated to thinly bedded with tuff. Parallel lamination/bedding. Dip of bedding 20 deg from 49.50 to 50.20m. Medium bedded with tuffaceous SANDSTONE (sand grains typically are subangular to subrounded). Soft sediment structures from ~42.8 (bottom) to ~42.2m (top). Normal graded bedding from ~44.7 (bottom) to ~44.5m (top). Water loss was observed. [JURONG GROUP; Pulau Ayer Chawan Formation]