



**GEOLOGY
LOGGING
CODES
May 2006**

Weathering and Other Events

| | |
|----------------------------|------|
| Base of transported | BOA |
| Base of complete oxidation | BOCO |
| Top of palaeochannel | TOP |
| Top of saprolite | TOSA |
| Top of saprock | TOSR |
| Top of fresh rock | TOFR |
| Top of basement | TOB |
| Water table | WT |

Colour

| | |
|--------------|----|
| Black | bk |
| Blue | bl |
| Blue-green | bg |
| Brown | br |
| Cream | cw |
| Green | gr |
| Green-grey | gg |
| Grey | gy |
| Grey-brown | gb |
| Olive green | og |
| Orange | or |
| Orange-brown | ob |
| Pink | pk |
| Purple | pu |
| Red | rd |
| Red-brown | rb |
| Translucent | tt |
| White | wh |
| Yellow | ye |
| Yellow-brown | yb |
| Yellow-green | yg |

* Light (l) and dark (d) prefix optional

Regolith Group

| | |
|-----------------------|----|
| Aeolian | EO |
| Alluvium | AL |
| Calcrete | CT |
| Clay Zone | CY |
| Colluvium | CV |
| Ferricrete | FK |
| Gossan | GS |
| Lacustrine | LA |
| Lacustrine Evaporites | LE |
| Lag | LG |
| Lateritic Residuum | LT |
| Mottled Zone | MZ |
| Saprock | SR |
| Saprolite | SA |
| Silcrete | SC |
| Soil | SL |
| Transported | TR |

Sample Condition

| | |
|---|---|
| Dry – no water | D |
| Moist – can be moulded by hand but not wet to the touch | M |
| Wet – a slurry that is wet to the touch, but no free water | W |
| Saturated – sample suspended in free running water, note that water may contain suspended clay particles and therefore be discoloured | S |

Regolith Variant

| | |
|------------------------|----|
| Bleached | bl |
| Breccia | bx |
| Calcareous | ca |
| Carbonaceous | cs |
| Chert | ch |
| Clay | cy |
| Duricrust | du |
| Ferruginous | fe |
| Goethite | go |
| Gravel | gv |
| Gypsum | gm |
| Haematite | hm |
| Halides | ha |
| Hardpanised/Indurated | hp |
| Iron Segregation | is |
| Kaolinite | kn |
| Lateritic | lt |
| Lignite/Plant material | lg |
| Limonitic | li |
| Lithic Fragments | lk |
| Loess | lo |
| Mega-Mottled | mb |
| Mn-Co-Fe | mf |
| Mottled | mu |
| Mud | md |
| Nodules | nd |
| Nontronitic | no |
| Pisoliths | ps |
| Quartz | qt |
| Sand | sd |
| Siliceous | si |
| Silt | st |
| Silty clay | ys |
| Smectite | sg |
| Oxidised sulphides | os |
| Talc | tc |
| White mica | wm |

Weathering

| | | |
|----------------------|--|----|
| Fresh rock | No visible signs of rock weathering | FR |
| Slightly weathered | Stained along discontinuity surfaces, original colour and texture recognisable | SW |
| Moderately weathered | Stained throughout, original texture recognisable throughout | MW |
| Highly weathered | Original colour and hardness severely altered, some texture visible | HW |
| Completely weathered | Rock exhibits soil-like properties (ie can be remoulded), some rock fragments may remain | CW |

Hardness

| | |
|---|----|
| Unconsolidated | UC |
| Very weak - may be broken by hand | VW |
| Weak - Crumbles under firm blow with sharp end of geological hammer | W |
| Moderately weak - Cannot be cut by hand into triaxial specimen | MW |
| Moderately strong - 5mm indentation with sharp end of geological hammer | MS |
| Strong - Hand held specimen can be broken with single blow of geological hammer | S |
| Very strong - More than one blow of geological hammer required to break specimen | VS |
| Extremely strong - More than one blow of geological hammer required to break specimen | ES |

| Rock Group | Rock Type |
|------------|-----------|
|------------|-----------|

| | | |
|----------------------|-----------------------------|----------|
| Ultramafic Extrusive | U Komatiite | K |
| | Undifferentiated Ultramafic | U |
| | Basaltic Komatiite | B |
| Ultramafic Intrusive | U Undifferentiated | U |
| | Pyroxenite | X |
| | Peridotite | P |
| | Dunite | D |
| | Hornblendeite | H |

| | | |
|-----------------|---------------------------|----------|
| Mafic Extrusive | B Undifferentiated | V |
| | Tholeiitic Basalt | T |
| | High-mag Basalt | M |
| | Picritic Basalt | P |
| | Spilitic Basalt | S |
| Mafic Intrusive | O Undifferentiated | U |
| | Gabbro | G |
| | Troctolite | T |
| | Norite | N |
| | Anorthosite | A |
| | Dolerite | D |
| | Gabbronorite | B |
| | Magnetite | M |

| | | |
|------------------------|---------------------------|----------|
| Intermediate Extrusive | I Undifferentiated | U |
| | Andesite | V |
| | Trachyte | T |
| | Trachy-andesite | Y |
| Intermediate Intrusive | I Undifferentiated | I |
| | Diorite | D |
| | Monzonite | M |
| | Syenite | S |
| | Porphyry | P |

| | | |
|----------------|---------------------------|----------|
| Acid Extrusive | F Undifferentiated | U |
| | Rhyolite | R |
| | Dacite | C |
| | Rhyodacite | O |
| Acid Intrusive | G Undifferentiated | U |
| | Granite | G |
| | Monzogranite | M |
| | Syenogranite | S |
| | Alkali feldspar granite | A |
| | Granodiorite | D |
| | Tonalite | T |
| | Porphyry | P |
| | Pegmatite | Z |
| | Aplite | L |

| | | |
|-----------------------------|---------------------------|----------|
| Lamprophyre/ Kimberlites | L Undifferentiated | U |
| | Phyric lamprophyre | P |
| | Lamproite | L |
| | Kimberlite | K |
| | Carbonatite | C |

| | |
|------------------|-----------|
| Vein material | VN |
| Massive sulphide | AM |
| Contamination | XX |

| Rock Group | Rock Type |
|------------|-----------|
|------------|-----------|

| | | |
|----------|---------------------------|----------|
| Sediment | S Undifferentiated | U |
| | Mudstone | M |
| | Siltstone | T |
| | Sandstone | S |
| | Interbedded - mud & silt | F |
| | Interbedded - sand & silt | N |
| | Conglomerate | C |
| | Breccia | B |
| | Limestone | L |
| | Dolomite | D |
| | Coal | K |

| | | |
|--------------------|---------------------------|----------|
| Chemical Sediments | C Undifferentiated | U |
| | BIF | I |
| | Chert | H |
| | Evaporites | E |
| | Massive Ironstone | F |
| | Phosphorites | Z |

| | | |
|----------------------------------|----------------|----------|
| Metamorphic Unknown protolith | M Slate | L |
| | Schist | S |
| | Gneiss | G |
| | Granulite | N |
| | Marble | B |
| | Amphibolite | A |
| | Hornfels | H |

| | | |
|--------------------------------------|----------------------|----------|
| Metamorphic Sedimentary protolith | P Quartzite | Q |
| | Psammite | M |
| | Semipelite | E |
| | Pelite | P |
| | Slate | L |
| | Metacarbonate/marble | B |
| | Calcsilicate | X |
| | Schist | S |
| | Gneiss | G |
| | Granulite | N |
| | Amphibolite | A |
| | Hornfels | H |

| | | |
|----------------------------------|---------------------|----------|
| Metamorphic Igneous protolith | R Metafelsic | F |
| | Metamafic | M |
| | Meta-ultramafic | U |
| | Schist | S |
| | Gneiss | G |
| | Granulite | N |
| | Amphibolite | A |

| | | |
|-----------------------------------|-------------------|----------|
| Metamorphic Intensely deformed | Y Mylonite | M |
| | Cataclasite | C |

| | | |
|--------------|---------------------------|----------|
| Hydrothermal | H Undifferentiated | U |
| | Mylonite | Y |
| | Skarn | S |

| | | |
|--------------|------------------------|----------|
| Mining Codes | W Mullock/Waste | W |
| | Tailings | T |
| | cavity | C |
| | Stope | S |
| | Backfill | B |
| | Stockpile | P |
| | Lost Core | L |

| Variants - Minerals | |
|---------------------|----|
| Albite | ab |
| Actinolite | ac |
| Andalusite | ad |
| Anhydrite | ai |
| Ankerite | ak |
| Amphibole | am |
| Asbestos | ao |
| Apatite | ap |
| Barite | ba |
| Biotite | bi |
| Calcite | ca |
| Carbonate | cb |
| Chloritoid | cd |
| Chlorite | cl |
| Cordierite | co |
| Carbonaceous | cs |
| Clay | cy |
| Clinopyroxene | cx |
| Dolomite(ic) | do |
| Diopside | dp |
| Epidote | ep |
| Feldspar | fd |
| Ferruginous | fe |
| Fluorite | fi |
| Fuchsite | fu |
| Garnet | ga |
| Graphite | gf |
| Gypsum | gm |
| Goethite | go |
| Gossan | gs |
| Grunerite | gu |
| Halite | ha |
| Hornblende | hb |
| Haematite | hm |
| Ilmenite | im |
| Kaolinite | kn |
| K-feldspar | ks |
| Kyanite | ky |
| Limonite | li |
| Leucite | lu |
| Leucoxene | lx |
| Magnesite | me |
| Manganese-Co-Fe | mf |
| Mica | mi |
| Manganese | mn |
| Montmorillonite | mr |
| Muscovite | ms |
| Magnetite | mt |
| Monazite | mz |
| Nontronite | no |
| Nepheline | np |
| Oxide | od |
| Olivine | ol |
| Opalised | op |

| Variants - Minerals | |
|---------------------|----|
| Oxidised sulphide | os |
| Orthopyroxene | ox |
| Phlogopite | pg |
| Phosphate(ic) | ph |
| Plagioclase | pl |
| Pyroxene | px |
| Quartz | qt |
| Rutile | ru |
| Sanidine | se |
| Sphene | sf |
| Smectite | sg |
| Siderite | sj |
| Sillimanite | sm |
| Cassiterite | sn |
| Staurolite | so |
| Sphalerite | sp |
| Serpentine | sr |
| Sulphur | sv |
| Sylvite | sy |
| Talc | tc |
| Tremolite | tm |
| Tourmaline | to |
| Wolframite | wf |
| White Mica | wm |
| Zircon | zr |
| Zeolite | zt |

| Variants - Sulphides / Ore Minerals | |
|-------------------------------------|----|
| Arsenopyrite | as |
| Azurite | az |
| Bornite | bn |
| Chalcocite | cc |
| Chalcopyrite | cp |
| Chromite | cr |
| Copper, native | cu |
| Covellite | cv |
| Cuprite | ct |
| Electrum | el |
| Enargite | en |
| Galena | gl |
| Gold, native | au |
| Malachite | ml |
| Molybdenite | mo |
| Nickeliferous | nk |
| Pentlandite | pn |
| Pyrite | py |
| Pyrrhotite | po |
| Scheelite | sc |
| Silver | ag |
| Stibnite | sb |
| Sulphide | su |
| Tellurides | te |

| Variants - Texture | |
|--------------------|----|
| Adcumulate | at |
| Agglomerate | al |
| Amygdaloidal | ay |
| Banded | bd |
| Breccia | bx |
| Cherty | ch |
| Chill margin | cz |
| Coarse-grained | cg |
| Crystal Tuff | tx |
| Cumulus | cm |
| Downhole fining | df |
| Fine-grained | fg |
| Flaser bedding | fz |
| Flow top breccia | fx |
| Gradational | gt |
| Granophyric | gp |
| Groundmass | gd |
| Lamination | lm |
| Lapilli Tuff | tl |
| Lenticular bedding | lc |
| Lithic | lk |
| Massive | ma |
| Matrix | mx |
| Medium-grained | mg |
| Mesocumulate | mc |
| Migmatitic | mm |
| Muddy | md |
| Oolitic | oo |
| Orthocumulate | oc |
| Phyllitic | pi |
| Pillowed | pw |
| Poorly sorted | ps |
| Porphyritic | pp |
| Porphyroblastic | pb |
| Porphyroclastic | pc |
| Sandy | sd |
| Shaley | sh |
| Silicification | si |
| Silty | st |
| Spinifex | sx |
| Tuff | tf |
| Uphole fining | uf |
| Volcanic breccia | vb |
| Volcaniclastic | vc |
| Wallrock | wr |
| Welded Tuff | tw |

| Grainsize | | Sed | Ig/Meta |
|-------------|----|-----------------|-----------|
| Clay | cy | <1/256 mm | NA |
| Silt | st | 1/256 - 1/32 mm | NA |
| Very Fine | vf | 1/32 - 1/8 mm | <0.1 mm |
| Fine | fg | 1/8 - 1/4 mm | 0.1 - 1mm |
| Medium | mg | 1/4 - 1/2 mm | 1 - 3 mm |
| Coarse | cg | 1/2 - 1mm | 3 - 10 mm |
| Very coarse | vg | 1 - 2 mm | >10mm |
| Granule | gn | 2 - 4mm | NA |
| Pebble | pb | 4 - 64 mm | NA |
| Cobble | cb | 64 - 256 mm | NA |
| Boulder | bu | >256 | NA |
| Pegmatitic | pa | NA | >30mm |

| Facing |
|--------|
| Up |
| Down |
| Both |

| Contact | |
|-----------------|---|
| Sharp | S |
| Undulose | U |
| Gradational | G |
| Vein | V |
| Faulted/sheared | F |

| Stratigraphy/Beds | | | | | |
|-----------------------|----|----------------------------|-----|-------------------|----|
| Formal | | Informal | | Regolith | |
| Gardiner Sandstone | GS | Phat Sandstone | PS | Regolith Layer A | LA |
| Antrim Plateau Basalt | AP | Marker Siltstone | MS | Regolith Layer B | LB |
| Killi Killi Fm | KK | Marker Siltstone, inferred | iMS | Regolith Layer C | LC |
| Bald Hill Sequence | BH | Irvine Conglomerate | IG | Regolith Layer D | LD |
| | | Black Shale Bed | BS | Upper Mobile Zone | UM |
| | | Coyote No.1 Fault | CF | Lower Mobile Zone | LM |
| | | Coyote fold hinge | FA | | |

| Deformation Type | | |
|----------------------|----|---|
| Boudinaged | BD | |
| Brecciated | BX | |
| Crenulated | CR | |
| Folded | FD | |
| Fractured weakly | CW | more than 10cm fracture spacing |
| Fractured moderately | CM | 2-10cm fracture spacing |
| Fractured strongly | CS | less than 2cm fracture spacing |
| Foliation weak | FW | most grains undeformed, deformation restricted to discrete planes |
| Foliation moderate | FM | more than half grains broken, flattened or elongated |
| Foliation strong | FS | primary textures completely destroyed |
| Lineated | LN | |

| Alteration Style | |
|-----------------------|----|
| Fracture Controlled | FC |
| Foot wall (VMS) | FW |
| Hanging wall (VMS) | HW |
| Patchy | PT |
| Pervasive | PV |
| Selective Replacement | SR |
| Vein Selvedge | SV |

| Alteration Intensity | |
|---|----|
| Weak: partial replacement of primary minerals | WA |
| Moderate: alteration approx. equal proportion to primary minerals | MA |
| Strong: alteration dominant, some primary minerals remain | SA |
| Intense: total replacement of primary minerals | IA |

| Vein Style | |
|--------------|----|
| Anastomosing | AN |
| Boudinage | BO |
| En echelon | EE |
| Folded | FD |
| Planar | PL |
| Ptygmatic | PT |
| Sigmoidal | SG |
| Stockwork | SW |

| Vein texture | |
|----------------|----|
| Buck | BK |
| Breccia | BX |
| Comb-cockade | CB |
| Colloform | CF |
| Chalcedonic | CH |
| Fibrous | FB |
| Infill | IN |
| Laminated | LM |
| Recrystallised | RX |
| Replacement | RP |
| Saccaroidal | SC |
| Vuggy | VG |
| Tension gashes | VT |

| Structure / Lithology Events | |
|------------------------------|------|
| Bedding | BED |
| Cleavage | CLV |
| Contact | CNT |
| Crenulation | CRN |
| Fault | FLT |
| Fold axis (plane) | FLD |
| Fold hinge (lineation) | HNG |
| Foliation | FOL |
| Fracture | FRK |
| Joint | JNT |
| Lineation | LIN |
| Layering | LYR |
| Schistosity (s-fabric) | SCH |
| Shear zone/plane (c-fabric) | SHZ |
| Slickenside | SLK |
| Vein | VEIN |

| Mineralisation Style | |
|----------------------|----|
| Blebs | BB |
| Disseminated | DS |
| Interstitial Network | NW |
| Massive | MA |
| Stockwork | MW |
| Stringers/Veinlets | SE |
| Vein halo | VH |