



SIPA RESOURCES LIMITED

ABN 26 009 448 980

SIPA CODING SYSTEM

- ◆ **Coding Conventions**
 - **Drilling Data**
 - **Surface Sample Data**

- ◆ **Geological Reference**

DRILLING DATA

COLLAR DATA (*COL*.txt)

HOLE	drill hole no.
SOURCE	source of data, eg: <i>Sipa</i> <i>Open file data I10515 A54750 - 1997 Annual Report</i> <i>Golden Cross email</i> <i>Newcrest CD</i> <i>AGSO</i>
COMPNY/GEO	if SOURCE = <i>Sipa</i> , then name of geologist who logged the drill hole if SOURCE ≠ <i>Sipa</i> , then name of exploration company who collected the data
PROSPECT	prospect name
TENEMENT	if SOURCE = <i>Sipa</i> , then the current tenement number at the time of sampling is recorded if SOURCE ≠ <i>Sipa</i> , then the current tenement number at the time of entry into the database is recorded
MAP250NAME	name of 250K map sheet
MAP250NO	number of 250K map sheet
MAP100NAME	name of 100K map sheet
MAP100NO	number of 100K map sheet
LAT_GDA	Latitude in GDA94/WGS84
LONG_GDA	Longitude in GDA94/WGS84
ZONE	UTM projection zone
MGAE	Easting recorded in metres in GDA94/WGS84
MGAN	Northing recorded in metres in GDA94/WGS84
AMGE	Easting recorded in metres in AGD66 or AGD84
AMGN	Northing recorded in metres in AGD66 or AGD84
LOCAL_E	Easting recorded in metres in local grid coordinates (if applicable)
LOCAL_N	Northing recorded in metres in local grid coordinates (if applicable)
RL	relative level of drill collar
ORIG_COORD	coordinate system in which the original data has been recorded: MGA(+Zone) eg <i>MGA51</i> AMG(+Zone) eg <i>AMG51</i> LGRD Local grid GEOG Geographic grid (Lat/Long)
LOC_METHOD	location method of collar coordinates and accuracy of method used: AP Assumed position, real position unknown; see also COMMENTS DG Differential GPS DP Digitized from hard copy plans ES Estimated; estimation method not specified GS Surveyed grid IP Interpolated between known points NG Navigational GPS OP Orthophoto PS Surveyed planned position RG Real time kinematic GPS SM Estimated from standard issue map SV Surveyed; details unknown TC Tape and compass TD Theodolite XG Unspecified GPS XX Unknown
RL_METHOD	method and accuracy used, same codes as for LOC_METHOD

DRILL_TYPE	drilling method, as follows: DD Diamond RC Reverse circulation OP Open hole percussion XP Percussion (details not specified) RAB Rotary air blast OH Open hole (non-percussion) AC Aircore WB Water bore AUG Auger with more than one sampled interval (if only one sample, it is treated as a surface sample) CO Costean/trench TRAV Rock chip traverse VAC Vacuum XX Unspecified with two drilling methods separated by a '_', eg <i>RC_DD</i> indicates an RC precollared diamond hole
TOTAL_DTH	total depth of drill hole in metres
BCI	depth of <u>C</u> over- <u>B</u> edrock <u>I</u> nterface in metres
BASE_TL_OX	depth of base of total oxidation in metres, generally coincides with upper saprolite-lower saprolite interface
BASE_PL_OX	depth of base of partial oxidation in metres, generally coincides with saprock-bedrock interface
WATER_TBL	depth of water table in metres
DATE_COMP	date drilling ended (dd/mm/yyyy)
AZIM_UTM	UTM drill hole azimuth at collar
DIP	drill hole dip at collar in degrees (eg -90 for vertical holes)

DRILLING DATA (*DRI*.txt)

HOLE	drill hole no.
FROM	start depth of drilling type in metres
TO	end depth of drilling type in metres
DRILL_TYPE	drilling method, same codes as for DRILL_TYPE in COLLAR DATA file
BIT_TYPE	drill bit type, eg: BL Blade CH Conventional hammer FH Face hammer RL Roller XX Unknown
BIT SIZE	for core: <i>NQ, NQ2, HQ3, NQ_HQ</i> , etc for non-core: in <i>inches</i> or <i>mm</i>
DIAM_UNITS	bit diameter units
NON_CR_DTH	total depth of non-core drilling in metres
CASING	casing depth ± type, eg <i>6m PVC</i>
DATE_FROM	date drilling type started (dd/mm/yyyy)
DATE_TO	date drilling type ended (dd/mm/yyyy)
DRILL_COMPNY	name of drilling company (eg <i>Challenge Drilling</i>)
RIG	drill rig (eg <i>Longyear 44</i>)

SURVEY (DOWNHOLE) DATA (*SUR*.txt)

HOLE	drill hole no.
DEPTH	depth of survey in metres
DIP	drill hole dip in degrees (eg -90 for vertical holes)
DIP_REL	dip reliability, eg: 0 not reliable 1 reliable as method used allows (this includes vertical holes) E estimated

S assumed values of above reading; used for dip only downhole surveys
 C calculated from readings above and below; used for dip only downhole surveys

AZIM original drill hole azimuth; for vertical holes use 0

AZIM_TYPE original azimuth type, eg:
 MAG magnetic azimuth
 LOC local grid azimuth
 UTM UTM grid azimuth
 VER vertical hole azimuth (=0)

AZIM_REL azimuth reliability, same codes as for DIP_REL

UTM_ADJUST angle to add to original azimuth to obtain the UTM azimuth, eg 0 for vertical holes and blank, if UTM azimuth recorded originally

SURVEY_METH method of downhole survey:
 CG Conventional gyroscope
 CO Compass and/or clinometer
 ES Estimated
 MB Maxi bore
 MC Multi shot camera
 NG North seeking gyroscope
 RS Nominal survey (rig setup commonly based on surface grid)
 SC Single shot camera
 SS Single shot electronic camera
 XG Gyroscope (details unknown)
 XX Unknown/not specified

ROD_TYPE type of drill rods used during downhole survey:
 CR Conventional (magnetic) rods
 DD Conventional diamond drilling
 OH Open hole
 SR Stainless steel rods
 XX Unknown/not specified
 Note: Left blank for unsurveyed holes

ASSAY DATA (*ASS*.txt)

HOLE drill hole no.

SAMPLE sample number

FROM start of sample interval

TO end of sample interval

SMP_METHOD sampling method, eg:
 CC Chip core
 CP Laboratory composite during sample prep
 CS Cone splitter
 CU Laboratory composite of pulps
 DS Dry splitter
 FC Fillet core
 GB Grab
 HC Half core
 QC Quarter core
 SP Spear
 SR see COMMENTS
 TW Trowel, scoop
 WC Whole core
 WS Wet splitter
 XS Splitter (details unknown)
 XX Unknown

SMP_STATUS sample status, records intervals which have not been sampled:
 DIP Destroyed in preparation
 IS Insufficient sample
 NA Not analysed
 NS No sample (no recovery)
 PS Polished section
 PTS Polished thin section
 SNR Sample not received
 TS Thin section
 UR Unreliable result; not resampled
 XX Unknown; no result reported/available

SAMPLE_QC sample hierarchy:
 0 Original sample
 1 First repeat/duplicate sample
 2 Second repeat/duplicate sample
 3 Third repeat/duplicate sample
 B Check assay prior to using bulk sample as blank
 M Submitted for analysis by mistake
 R Resample over different interval
 S Selective sample
 U Unreliable sample/unreliable result

SUBSAMPLE records if original sample interval has been subsampled:
 N sample has not been subsampled, relates to Y
 X Only part of sample interval has been subsampled (preference given to original sample interval), relates to Z
 Y Whole sample has been subsampled, relates to N
 Z Subsample of X which has not been further subsampled

SDAN Sample Despatch Advice No.

SAMPLE_TAG same as SAMPLE except for lab repeats, when the sample no. will be suffixed 'rpt'

FRACTION fraction of the sample if appropriate

QC_TYPE analysis hierarchy:
 ROUTINE original analysis
 CHECK lab check
 SPLIT analysis of sample split
 REJECT analysis of reject portion of sample
 STANDARD analysis of standard

LITHOLOGICAL DATA (*GEO*.txt)

(refer to the Geological Reference for appropriate geological codes)

HOLE drill hole no.

FROM start of lithological unit

TO end of lithological unit

COLOUR1 primary colour } up to 3 colours can be used
 COLOUR2 secondary colour } for each

WEATH weathering:
 sw strongly weathered
 mw moderately weathered
 ww weakly weathered
 fr fresh

LITH1 main lithology } up to 4 character codes (5 for
 LITH2 secondary lithology } all saprolite/saprock codes) in
 } upper case letters, '#' can be
 } used to indicate uncertainty

Q1, Q2, Q3, Q4 fabric, textural, mineral and structural qualifiers (atypical or distinctive) relating to the main lithology

Q5, Q6 qualifiers relating to the secondary lithology

RELN relationship between the main lithology and the secondary lithology:
 + and, or hosted by
 / over, or after, or derived from, or interpreted as
 - transitional
 = or
 c clast lithology

ALTERATION DATA (*ALT*.txt)

HOLE drill hole no.

FROM start of altered interval

TO end of altered interval

INTENSITY overall alteration intensity:
 w weakly altered
 m moderately altered
 s strongly altered

	u	uncertain
STYLE	overall style of alteration:	
	pv	pervasive
	pj	patchy/blotchy
	vn	vein
	vs	selvage
	ws	wispy
	ds	disseminated
MIN1, MIN2	mineral qualifiers – refer to the Geological Reference for codes; common alteration minerals are:	
	cb	carbonate/calcareous
	ch	chlorite
	ep	epidote
	he	hematite
	py	pyrite
	qz	quartz
	se	sericite
	si	silicified/siliceous

SULPHIDE DATA (*SUL*.txt)

HOLE	drill hole no.	
FROM	start of sulphidic interval	
TO	end of sulphidic interval	
TOT_SULPC	total % of all sulphides*; if sulphide content <1%, 0.1 for rare or 0.5 for trace can be used Note: * means sulphides or any other economic or mineralisation-indicative mineral, eg ex-pyrite (xp), limonite (lm), ex-sulphide (xs)	
STYLE	overall style of mineralisation – refer to Qualifiers in the Geological Reference; up to two qualifiers can be used, eg <i>dsvr</i> ; some common mineralisation styles are:	
	at	aggregates
	bb	blebs & aggregated blebs
	bn	banded
	bx	breccia
	ci	clastic
	ds	disseminated
	fw	fracture fill
	gz	gossanous
	mv	massive
	mx	matrix sulphides
	rm	remobilised
	rp	replacive
	st	stringer
	sg	supergene
	vn	veining
	vs	vein selvage
	vc	veining, concordant
	vx	veining, crosscutting

PYPC	% of pyrite within sample interval; if pyrite content <1%, 0.1 for rare or 0.5 for trace can be used	
MIN1, MIN2, MIN3	sulphide* mineral – refer to Mineral Codes in the Geological Reference	
MIN1PC, MIN2PC, MIN3PC	% of individual sulphides*; if mineral content <1%, 0.1 for rare or 0.5 for trace can be used	

VEIN DATA (*VEI*.txt)

HOLE	drill hole no.	
FROM	start of interval with similar veining	
TO	end of interval with similar veining	
V1_TYPE,	primary and secondary veining material – see Mineral	
V2_TYPE	Codes in the Geological Reference; up to two minerals can be used, eg qzcb	
V1_ABUND,	abundance of veining:	
V2_ABUND	r	rare (<1%)
	t	trace (1-2%)
	m	minor (3-10%)
	c	common (11-50%)

a	abundant (>50%)
V1_STYLE,	The style of veining - see Qualifiers in the Geological Reference; common veining styles are:
V2_STYLE	
bc	bucky
dy	drusy
ee	en echelon
ir	irregular
la	laminated
pa	planar
pt	ptygmatic
sv	stepped
so	stockwork
st	stringer
vc	concordant
vx	crosscutting
ws	wispy

MAGNETIC SUSCEPTIBILITY DATA (*MAG*.txt)

HOLE	drill hole no.
FROM	start of measured interval
TO	end of measured interval
MAG_SUS	magnetic susceptibility reading
INSTRUMENT	name of instrument
SI_UNITS	measurement unit (eg 10p-5 as 10 to the power of -5)

RECOVERY/RQD/FRACTURE DATA (*GEOT*.txt)

HOLE	drill hole no.
FROM	start of measured interval
TO	end of measured interval
PROPERTY	property of core being measured
VALUE	measured value of the property
RCV	recovery; metres of core recovered within the core run
HDS	hardness: 1 very weak - can be broken by hand 2 weak - cuts easily with knife 3 moderately weak - difficult to cut with knife, pick indents easily 4 moderately strong - cannot be cut with knife, pick can indent 5 strong - requires one hammer blow to break 6 very strong - requires several hammer blows to break 7 cannot be broken by hammer Note: can have two hardnesses if applicable, separated by '/', eg ¼
GT10CM	total length of core more or equal than 10cm within the core run (in metres)
LT10CM	total length of core less than 10cm within the core run (in metres)
FRC	fractured core; if core run contains one or more zones of strongly broken core, then indicated by 'X', otherwise left blank
NFR	no. of fractures; if an interval is very broken, it is counted as one (1) fracture and FRC is marked 'X'
WTH	weathering: sw strongly weathered - core can be broken by hand, strong discolouring, sulphides totally oxidised mw moderately weathered - core cannot be broken by hand, moderate discolouring, sulphides totally oxidised

ww weakly weathered - slight discolouring, sulphides partially oxidised
 fr fresh - no signs of colour change, sulphides unoxidised

STRUCTURAL DATA (*STR*.txt)

HOLE drill hole no.
 FROM depth of top of discontinuity (in metres)
 TO depth of bottom of zone of discontinuity, therefore only necessary where discontinuity covers a zone, eg a zone of fracturing (in metres)
 TYPE discontinuity type – refer to *Qualifiers in the Geological Reference*, eg:
 be bedding
 bn banding
 bx brecciation
 fc cleavage
 cz contact
 of fault
 fo foliation
 fa fracture (includes joints)
 ss shear
 vn vein
 TYPE_SEQ sequential number for multiple observations of the same feature
 ALPHA angle of discontinuity with core axis
 BETA second angle of discontinuity with core axis (if orientated core)
 BETA_LOC beta angle location; whether the measurement of the B angle is from the bottom or the top of the core:
 T Top
 B Bottom
 SHAPE shape of discontinuity:
 A Planar
 B Stepped
 C Wavy
 D Irregular
 ROUGHNESS roughness of discontinuity:
 R Rough
 S Smooth
 P Polished
 K Slickensided
 LENGTH length (not width) of discontinuity where applicable (in metres)
 MIN1, MIN2, MIN3, MIN4 infilling minerals within discontinuity in order of abundance - see *Mineral Codes in the Geological Reference*
 MIN1%, MIN2% percentage of MIN1 and MIN2 within discontinuity

SURFACE SAMPLE DATA

SEE DRILL HOLE COLLAR DATA FOR: SOURCE, COMPNY/GEO, PROSPECT, TENEMENT, MAP250NAME, MAP250NO, MAP100NAME, MAP100NO, LAT_GDA, LONG_GDA, ZONE, MGAE, MGAN, AMGE, AMGN, LOCAL_E, LOCAL_N, ORIG_COORD, LOC_METHOD

SAMPLE sample number

LOC_COMMENTS comments about how the sample was located
 SMPLE_DATE date sample collected (dd/mm/yyyy)
 SITE_TYPE Rock, Stream, Soil, Auger, Lag, Vegetation, XX (for Unknown)
 COMP_TYPE composite sample type:
 Point single point sample
 Line line sample
 Star star sample
 Comp'no of sample - 'sample interval'm (eg *Comp2-25m* describes a composite of 2 samples taken over 25m) Note: the coordinates for a composite sample are the midpoint of the sample interval
 ROCK_TYPE eg OCG:
 1^s character: Outcrop, Float, Mullock, Drillhole
 2nd character: Chip, Grab, Sieved, Trench/Channel, RAB chips, Percussion/RC chips
Diamond core, Air core
 3rd character Rock, Alteration, Gossan, Pseudo-gossan, Ironstone, Laterite, Vein, Zmineralisation
 REGOLITH soil sample medium (not applicable for stream samples): eg *RU*
 first character - R Residual
 T Transported
 U Unknown
 second character - A A horizon
 B B horizon
 C C horizon
 L Lag
 P Pisolites
 U Unknown
 vegetation sample medium: eg *bark, litter, leaf, seed, twig*
 PREP soil or stream sample preparation:
 NS Not sieved
 DS Dry sieved
 WS Wet sieved
 DP Dry panned concentrates
 WP Wet panned concentrates
 MF Magnetic fraction
 Note: can have two types of sample preparation, eg *WSWP*
 SMPLE_SIZE sample size in mm, micron or mesh (specified as mm, u or #) or 'BULK' if whole sample sent for analysis (eg *-2mm* for fine fraction material sieved with a 2mm sieve size or *+2mm* for coarse fraction material sieved with a 2mm sieve size)
 WEIGHT soil or stream sample weight in grams
 DEPTH soil sample depth in metres

SEE DRILL HOLE LITHOLOGY DATA FOR: COLOUR1, COLOUR2, WEATH, LITH1, Q1, Q2, Q3, Q4 RELN, LITH2, Q5, Q6

SEE DRILL HOLE ASSAY DATA FOR: SMP_STATUS, SAMPLE_QC, SUBSAMPLE, SDAN, SAMPLE_TAG, FRACTION, QC_TYPE

GEOLOGICAL REFERENCE

AGE AND AGE QUALIFIERS

Lower case qualifier, upper case age (only applicable to plans and sections)

e	early
m	middle
l	late
CZ	Cainozoic
MZ	Mesozoic
PZ	Palaeozoic
PC	Precambrian
Q	Quaternary
T	Tertiary
K	Cretaceous
J	Jurassic
TR	Triassic
P	Permian
C	Carboniferous
D	Devonian
S	Silurian
O	Ordovician
CM	Cambrian
PR	Proterozoic
A	Archaean

LITHOCODES

Up to four upper case letters (up to five for regoliths), followed by an optional '#' (in digital database) or '?' (on plans and sections) to indicate uncertainty

Regolith

RR	residual regime
RD	depositional (transported) regime
RE	erosional regime
RU	unknown regime
RL	laterite
RS	saprolite, unclassified
RSU	saprolite, upper
RSL	saprolite, lower
RP	saprock
RG	surficial gravel (lag)
RK	lacustrine
RN	eolian
RAS	soil/loam
RAL	alluvium
RAE	eluvium
RCL	colluvium/scree
RCC	calcrete
RCS	silcrete
RCF	ferricrete
RCM	magnesite
RCU	silica cap over cumulate ultramafics

Suffixes for regolith types

_G	gravelly
_S	sandy
_L	silty (RSL can no longer be used for "silty saprolite")
_C	clayey
_N	nodular
_P	pisolitic
_B	bleached/pallid
_M	mottled
_V	vermiform
_F	ferruginous
_K	calcareous
_Q	siliceous/quartzitic
_H	hardpan
_I	indurated
_W	sheetwash
_A	dune, eolian
_R	residual
_D	depositional (transported)
_E	erosional
_XF	after felsic
_XI	after intermediate
_XM	after mafic
_XU	after ultramafic

Note: more than one suffix can be used to make a total of four characters (five characters for all saprolite/saprock codes).

Chert

C	chert, amorphous silica rock
CJ	Jaspilite/Jasperoid

CS	secondary chert
CV	vein chert

Sedimentary rocks

S	sedimentary rock, unclassified
SR	rudite, unclassified
SRB	breccia
SRC	conglomerate
SA	arenite (sandstone)
SAA	arkose
SAW	wacke
SAQ	quartz arenite (quartzitic)
SL	lutite (argillite, mudstone)
SLT	siltstone
SLH	shale
SLB	black shale

Suffixes for above sedimentary rocks

_E	epiclastic
_V	volcanogenic
_G	granitoid provenance
_F	felsic provenance
_I	intermediate provenance
_M	mafic provenance
_U	ultramafic provenance

Note: up to two suffixes can be used to make a total of four characters

SCI	chemical sediments (exhalite)
SCE	evaporitic chemical sediments
SCB	sedimentary carbonates
SCD	dolomite
SCL	limestone
SCM	marl (incl. silty carbonates and carbonate-rich siltstones)
SIF	banded iron formation
SOC	coal/lignite/etc
SGT	glacial sediment

Igneous rocks

G	granitoid, unclassified
GD	granodiorite
GG	granite
GN	syenite
GM	monzonite
GT	tonalite
GAP	aplite
GPG	pegmatite
F	felsic rock, unclassified
FR	rhyolite-rhyodacite
FD	dacite
I	intermediate rock, unclassified
IA	andesite
ID	diorite
IMD	microdiorite
M	mafic rock, unclassified
MB	basalt
MBK	komatiitic basalt
MD	dolerite
MDL	layered doleritic sill
MG	gabbroid
MGX	pyroxenitic gabbro
MGA	anorthosite

U	ultramafic rock, unclassified
UKO	komatiitic rock
UKB	basaltic komatiite
UKP	peridotitic komatiite
UD	dunite
UPD	peridotite
UPX	pyroxenite
US	serpentinite
UC	talc-carbonate ultramafic
UA	talc-amphibole (actinolite/anthophyllite) ultramafic
UR	tremolite-chlorite ultramafic
UT	talch-chlorite ultramafic
UOA	adcumulate
UOM	mesocumulate
UOO	orthocumulate

Suffixes for igneous rocks

_V	volcanic
_E	extrusive
_I	intrusive
_P	porphyry

_Y	dyke
_S	sill (cannot be used for "U")
_BX	breccia (sedimentary texture)
_AG	agglomerate
_LT	lapilli tuff
_AT	ash tuff
_XT	crystal tuff
_HC	hyaloclastite
_PP	peperite
_M	magnesian
_T	tholeiitic } cannot be used
_C	calc-alkaline } for IA

Note: above suffixes cannot be used for granitic rocks except for _P and _Y

Metamorphic rocks

X	metamorphic rock, unclassified
XP	phyllite
XL	slate
XS	schist
XA	amphibolite
XH	hornfels
XQZ	meta-quartzite
XQF	quartzo-feldspathic rock/schist
XGF	granulite
XGM	migmatite
XGN	gneiss
XCS	calc-silicate rock (incl. skarns)
XMB	marble/meta-carbonates
XIF	meta-iron formation

Suffixes for metamorphic rocks

_F	felsic (or of light minerals)
_I	intermediate
_M	mafic (or of dark minerals)
_U	ultramafic
_SO	metasedimentary
_SR	after conglomeratic sediments
_SA	after sandy sediments (psammites)
_SL	after muddy sediments (pelites)
_V	volcanogenic

Mineralisation

Z	mineralisation, ore
ZZ	massive sulphide (>50%)
ZS	semimassive sulphide (20-50%)
ZST	stringer mineralisation
ZD	disseminated mineralisation
ZSE	segregation/patchy mineralisation
ZL	loade
ZGOS	gossan
ZFE	ironstone (after mineralisation)

Others

V	vein, unclassified
O	rock, unclassified
OA	totally altered rock, unclassified
OI	intrusive rock, unclassified
OV	volcanic rock, unclassified
OBX	breccia, unclassified
OZP	possible gossan/pseudogossan
OFE	ironstone/ferruginous rock (not necessarily mineralised)

OF	fault (zone)
OC	cavity
OR	rubble (pad fill, tailings, etc)
ONL	not logged
ONS	no sample/core loss

Note: V, O and OA can have a mineral qualifier, eg VQZ, OACB

LITHOLOGICAL RELATIONSHIPS

+	and or hosted by
/	over or after or derived from or interpreted as
-	transitional
=	or
c	clast lithology (in digital database)
()	clast lithology (on plans and sections), eg SRB(C), or minor lithologies, eg SA+(SL), or local variations, eg (pw)

QUALIFIERS

Two lower case characters each

Colour

bk	black
bu	blue
br	brown
bf	buff
cm	cream
gr	green
gy	grey
kh	khaki
or	ochre (<i>yellow-brown</i>)
ov	olive
og	orange
pk	pink
pz	purple
rd	red
ta	tan
wh	white
ye	yellow
lt	light
dk	dark

Note: up to three colour qualifiers can be used, eg *ltgrgy*

Weathering

sw	strongly weathered
mw	moderately weathered
ww	weakly weathered
fr	fresh

General grain size

fg	fine grained
mg	medium grained
cg	coarse grained
	<i>Arenites Ore Igneous</i>
<i>fg</i>	<i><1/4mm <1/2mm <1mm</i>
<i>mg</i>	<i>1/4-1/2mm 1/2-2mm 1-5mm</i>
<i>cg</i>	<i>1/2-2mm >2mm >5mm</i>

Sedimentary

md	muddy
cy	clayey
sl	silty
sn	sandy
gv	gravelly (<i>>2mm</i>)
gl	granular (<i>2-4mm</i>)
pe	pebbly (<i>4-64mm</i>)
co	cobbly (<i>64-256mm</i>)
bd	bouldery (<i>>256mm</i>)
ms	matrix supported/loose packed
cs	clast supported/close packed
ru	rip up clasts
mm	monomictic
pm	polymictic
om	oligomictic
im	immature
me	mature
ag	angular
rn	rounded
la	laminated
xl	cross laminated } <i>>10mm</i>
pl	plane laminated } <i><10mm</i>
wl	wavy laminated } <i>>10mm</i>
be	bedded
tn	thin bedded (<i>10-100mm</i>)
mb	medium bedded (<i>100-300mm</i>)
tk	thick bedded (<i>>300mm</i>)
ib	interbedded
xb	cross bedded
gb	graded bedded
rb	ripple bedded

General

Note: qualifier denoted * to immediately precede qualifier it relates to, eg *wy py*, *syam*

ay*	accessory/trace
wy*	weakly
my*	moderately
sy*	strongly
al	accretionary lapilli
ar*	acicular
bb*	aggregated blebs & blebs
at*	aggregates
aa	altered
am	amygdaloidal
ap	aphanitic

fx	asbestos-form or fibrous
au	augen
ax	autobrecciated
ac	autoclastic
bn	banded
ub	beef spinifex
bi	bladed
bl	bleached
bb*	blebs & aggregated blebs
by	blocky
pj*	blotchy/patchy
bv	botryoidal
bw	boxwork
bx	brecciated/breccia
cq	chill margin
cj*	clastic
cf	colloform banding
xt	crystal
uc	cummulate
ds*	disseminated
eg	equigranular
eu*	euhedral
fk	felted
fi	fiamme
fx	fibrous or asbestos-form
fz	fissile
ft	float
fb	flow banded
ux	flow top breccia
os	fossiliferous
fw*	fracture fill
gs	glass shards
vt	glassy/vitric
gm	glomeroporphyritic
gi	gneissic
gz	gossanous
gk	granoblastic
gc	graphic/micrographic
hf	hornfels
hc	hyaloclastic
pv*	impregnation/pervasive
in	indurated
ix	ironstone matrix
ir*	irregular
ka	karst/ic
kn	knobbly
la	laminated
le	lenticular
lu	leucocratic
lc	lithic
lp	lithophysae
to	lobate/tongue shaped
mc	magnetic
mv	massive (<i>not to be used for structural fabrics - see uf</i>)
mx	matrix sulphides
mq	melanocratic
nr	mesocratic
gc	micrographic/graphic
mp	micropoikilitic
ml	mottled
mk	myrmikitic
nd	nodular
nm	non-magnetic
oc	ocelli-bearing/variolitic
oh	ophitic
pj*	patchy/blotchy
pp	peperitic
pc	perlitic
pv*	pervasive/impregnation
pw	pillowed
pi	pisolitic
bp	poikiloblastic
ps	porous
pr	porphyritic
ph	porphyroblastic
pd	porphyroclastic
pg	puggy
pu	pumiceous
rt*	radiating
uo	random olivine spinifex
re	reducing conditions
rm*	remobilised
rp*	replacive
ro	ropey

sq	saccharoidal/sugary
sc	scoriaceous
us	sheaf spinifex
sk	skeletal
sh	spheroidal, spherulitic
sx	spinifex-textured
so	stockwork
st	stringer
sm	stromatolitic
sq	sugary/saccharoidal
sg	supergene
to	tongue shaped/lobate
tu	tubular
tf	tuffaceous
oc	variolitic/ocelli-bearing
ve	vesicular
vt	vitric/glassy
vu	vuggy
wk	webwork
wd	welded
ws*	wispy
xo	xenoliths/blasts/clasts

Veining

bc	bucky
vc	concordant
vx	crosscutting
dy	drusy
la	laminated
ee	en echelon
ir	irregular
pa	planar
pt	ptygmatic
sv	stepped
so	stockwork
st	stringer
qs	quartz stringers
qv	quartz veining
vn	veining
cv	comb veining
vs	vein selvage
ws	wispy

Structural

uf	unfoliated (<i>do not use mv</i>)
fo	foliated
wf	weakly foliated
mf	moderately foliated
sf	strongly foliated
ss	sheared
fc	cleaved
fs	schistose
fl	linear fabric
fv	crenulated fabric
df	folded/contorted/deformed
fa	fractured/broken
of	faulted/fault
cz	contact
fm	mylonitic fabric
fp	fault pug/gouge/cataclaste
ff	brittle fault (<i>with slickenlines</i>)
fj	jointed
wj	weakly jointed
mj	moderately jointed
sj	strongly jointed
cj	columnar jointed
bx	brecciated/breccia
xj	jig saw breccias
xf	fault breccias

Mineral

Note: mineral codes also relate to adjectives, eg *py* can be *pyrite* or *pyritic*

Silicates

ae	actinolite
ab	albite
af	alkali feldspar
ad	andalusite
ah	anthophyllite
qb	blue quartz
bt	biotite
ch	chlorite
cx	clinopyroxene
cd	cordierite
ep	epidote
fd	feldspar
fu	fuchsite
gt	garnet

gu	grunerite/cumingtonite
hb	hornblende, dark amphibole
js	jasper
ky	kyanite
lz	lizardite
mi	mica
mu	muscovite
ol	olivine
op	orthopyroxene
pf	plagioclase feldspar
kf	potassium feldspar
pq	pyrophyllite
px	pyroxene
qz	quartz
se	sericite
sr	serpentine
sa	silica, amorphous
sz	sillimanite
tc	talc
tm	tourmaline
tr	tremolite
wo	wollastonite
zo	zoisite

Oxides

cr	chromite
gh	gahnite
go	goethite
he	hematite
il	ilmenite
lx	leucoxene
lm	limonite
mh	maghemite
mt	magnetite

Carbonates

ak	ankerite
ca	calcite
cb	carbonate/calcareous
do	dolomite
ma	magnesite
nc	nickel carbonates, unclassified
sd	siderite

Sulphates

ai	alunite
an	anhydrite
ba	barite
gp	gypsum
ja	jarosite

Sulphides

as	arsenopyrite
bo	bornite
bs	bismuthinite
cc	chalcocite-covellite
cp	chalcopyrite
hg	cinnabar/mercury minerals
xp	ex-pyrite
xs	ex-sulphide
gn	galena
mo	molybdenite
ns	nickel sulphides, unclassified
pn	pentlandite
py	pyrite
po	pyrrhotite
sp	sphalerite
sb	stibnite
su	sulphides, unclassified
tt	tennantite-tetrahedrite
vi	violarite

Others

ao	arsenic minerals, secondary
cu	copper minerals, secondary
ni	nickel minerals, secondary
pb	lead minerals, secondary
zn	zinc minerals, secondary
ck	calcrete
cn	carbonaceous
ct	chert
cl	clay
fe	ferruginous
au	gold
ga	glauconite
gf	graphite
mn	manganiferous
si	siliceous/silicified

