APPENDIX 2 - LOGGING CODES

2.1 SAMPLE CODES

General Sample Codes

BLG	BLEG (bulk leach extractable gold)	**M**	Missing
C	Core	**MISC**	Miscellaneous
CC	Continuous Cut	**MLT**	Multielement
CF	Cemented Ferricrete	**OT**	Other Type
CL	Cemented Laterite	**P**	Precollar
CN	Cemented Nodules	**PC**	Precollar
COS	Costean	**PER**	Percussion
CP	Cemented Pisolites	**PET**	Petrology
CRC	Composite Rock Chip	**RAB**	Rotary Air Blasting
CV	Cemented Veriform	**RC**	Reverse Circulation
DBCL	Drainage Bulk Cyanide Leach	**SBCL**	Soil Bulk Cyanide Leach
DSL	Drill-derived Stone Line	**SCAN**	Scan
F	Frag	**SF**	Screen Fire
FA	Fire Assay	**SOIL**	Soil
FF	Ferricrete Fragments	**SSS**	Stream Sediment Sample
FN	Ferricrete Nodules	**STRM**	Stream
FP	Ferricrete Pisolites	**V**	Veriform
GVP	Gas Vapour	**VAC**	Vacuum
LAG	Lag	**VBCL**	Drill-derived BCL
LAT	Laterite	**VL**	Veriform Laterite
LF	Loose Fragments	**VSOL**	Drill-derived Soil
LN	Loose Nodules	**WRCK**	Whole Rock
LP	Loose Pisolites		

Lag Sample Logging Codes

TYPE	QUALITY	DESCRIPTIONS	SIZE
T (ransported)	**A** (bundant)	**L** (ateric)	**F** (ine)
R (esidual)	**C** (ommon)	**R** (ocky)	**M** (edium)
	P (atchy)	**Q** (uartzose)	**C** (oarse)
	R (are)	**F** (erruginous)	
		E (arthy)	

2.2 RAB SAMPLE LOGGING CODES

ROCK TYPE / LITHOLOGY

Rock type abbreviations always start with a capital. The capitals are chosen to show general categories:

B for base of oxidation categories

G for general igneous (including unclassified varieties of igneous rock as well as intrusive) but not known extrusive (G was chosen rather than I because of the problems of confusion of I with 1 and l).

M for metamorphic

O for regolith related rock types (includes regolith which is derived in situ as well as transported)

R for rock names outside these categories

S for sedimentary

T for tuff (separated from other volcanics to allow a simple tuff terminology)

V for volcanic/volcaniclastic (but note special tuff terminology above)

	Oxidation
Bow	base of partial oxidation
Box	base of total oxidation
	Igneous (non-extrusive)
Gad	adamellite
Gal	alaskite
Gan	andesite
Gao	anorthosite
Gap	aplite
Gau	acid rock (undifferentiated)
Gbu	basic rock (undifferentiated)
Gcb	carbonatite
Gcp	clinopyroxenite
Gdc	dacite
Gdl	dolerite
Gdn	dunite
Gdr	diorite
Gft	felsite
Gfu	felsic rock (undifferentiated)
Ggb	gabbro
Ggd	granodiorite
Ggp	granophyre
Ggt	granite (sensu stricto)
Ggu	granitic rock (undiff), granitoid
Ghb	hombledite
Ghz	harzburgite
Giu	intermediate rock unclassified
Gkb	kimberlite
Glg	leucrogranite
Glm	lamprophyre
Glt	latite
Gmu	mafic rock (undifferentiated)
Gmz	monzonite
Gnr	norite
Gop	orthopyroxenite
Gpg	pegmatite
Ggh	phonolite
Gpp	porphyry
Gpr	peridotite
Gpy	pyroxenite
Gqd	quartz diorite
Gqg	quartz gabbro
Gql	quartz latite
Gqm	quartz monzonite
Grd	rhyodacite
Gry	rhyolite
Gsp	serpentinite
Gsy	syenite
Gta	trachyandesite
Gtj	trondhjemite
Gto	tonalite
Gtr	trachyte
Gub	ultrabasic general
Gum	ultramafic general
Guu	igneous rock (undifferentiated)
	Metamorphic
Mam	amphibolite
Mcs	calc-silicate
Mes	endoskarn
Mfs	felsic schist
Mgf	granitels
Mgn	gneiss
Mgr	granulite
Mhf	hornfels
Mmb	marble
Mmi	migmatite
Mms	mafic schist
Mmu	metamorphic (undifferentiated)
Moa	orthoamphibolite
Mog	orthogneiss
Mpa	para-amphibolite
Mpg	paragneiss
Mph	phyllite
Msc	schist
Msk	skam
Mst	slate
Msu	metasediment general
Mvu	metavolcanic general
Mxs	exoskam
	Regolith and Overburden
Oal	alluvium
Obt	bauxite
Obx	regolithic breccia
Occ	calcrete
Ocl	colluvium
Ocp	caprock
Ocy	clay
Odu	duricrust general
Oel	eluvium
Ofc	ferricrete
Ogo	gossan
Ogv	gravel
Ogy	gypcrete
Ohm	humus
Ohp	hardpan
Ois	ironstone
Olg	lag (gravel)
Oln	lignite
Olo	loam
Olt	laterite
Omd	mud
Omg	magnesite rock (weathering related)
Oou	overburden general
Ops	podsol
Opt	plinthite
Orb	rubble
Osa	A-horizon soil
Osb	B-horizon soil
Osc	C-horizon soil
Osk	scree
Osl	silt, unconsolidated
Osn	sand, unconsolidated
Osp	saprolite
Osr	saprock
Ost	silcrete
Osu	soil general
Otr	Travertine
	Uncategorized
Rbx	breccia
Rcb	carbonate rock undifferentiated
Rcc	cataclasite
Rfb	fault breccia
Rfz	fault rock or fault zone (undiff)
Rgs	greisen
Rgx	gouge
Rku	rock general or rock type
Rln	rock - not logged
Rms	massive any mineral
Rmy	mylonite
Rnb	not rock - backfilled stope
Rnc	not rock - contamination
Rnh	not rock - hole
Rnp	not rock - stope
Rns	not rock - no sample return
Rnw	not rock - wood
Rph	phyllonite
Rsz	shear zone or sheared rock
Rtt	tectonite
Ruu	unidentified rock
Rvc	carbonate vein
Rvq	quartz vein
Rvu	vien general

	Sediments - general
Sbx	sedimentary breccia
Sco	coal
Sdi	diatomite
Sdu	sediment general
Sph	phosphorite
	Sediments - clastic
Sag	argillite
Sak	arkose
Sar	boundstone (carbonate)
Sca	calcarenite
Scg	conglomerate
Scl	calcilutite
Scr	calcirudite
Scy	claystone
Sdm	diamictite
Sgr	grit
Sgs	grainstone (carbonate)
Sgw	greywacke
Smc	micrite
Smd	mudstone
Sml	marl
Spa	packstone (carbonate)
Spe	pelite
Sqo	orthoquartzite
Sqt	quartzite
Srd	rudite
Srs	rudstone (carbonate)
Ssa	subarkose
Ssg	subgreywacke
Ssh	shale
Ssl	siltstone
Ssn	sandstone
Stb	turbidite
Sti	tillite
Swk	wacke

	Sediments - chemical
Sct	chert
Sdo	dolomite
Sex	exhalite
Sic	iron formation carbonate facies
Sif	iron formation general
Sil	iron formation silicate facies
Sio	iron formation oxide facies
Sis	iron formation sulphide facies
Sjs	jaspilite, jasper
Slm	limestone
Smg	magnesite rock (sedimentary)
	Tuff
Tan	andesitic tuff
Tac	acid tuff
Tdc	dacitic tuff
Tll	lithic tuff
Tlv	lithic vitric tuff
Tlx	lithic crystal tuff
Try	rhyolitic tuff
Tta	trachyandesitic tuff
Ttb	basic tuff
Ttc	trachytic tuff
Ttf	felsic tuff
Tti	intermediate tuff
Ttm	mafic tuff
Ttu	tuff generak
Tub	ultrabasic tuff
Tum	ultramafic tuff
Tvl	vitric lithic tuff
Tvv	vitric tuff
Tvx	vitric crystal tuff
Txl	crystal lthic tuff
Txv	crystal vitric tuff
Txx	crystal tuff

	Volcanics and Volcaniciastics (other than tuff)
Vag	agglomerate, volcanic
Van	andesitic volcanic
Vbs	basalt
Vdc	dacitic volcanic
Vft	felsitic volcanic
Vhc	hyaloclastite
Vhm	high magnesium basalt
Vig	ignimbrite
Vkm	komatiite
Vkt	keratophyre (volcanic)
Vlh	lahar
Vob	obsidian
Vpc	pyroclastic
Vpp	peperite
Vrd	rhyodacitic volcanic
Vry	rhyolitic volcanic
Vsp	spilite (volcanic)
Vta	trachyandesitic volcanic
Vtb	trachybasaltic volcanic
Vtc	trachytic volcanic
Vth	tholeiitic volcanic
Vub	ultrabasic volcanic
Vum	ultramafic volcanic
Vva	acid volcanic
Vvb	basic volcanic
Vvc	volcaniclastic
Vvf	felsic volcanic
Vvi	intermediate volcanic
Vvm	mafic volcanic
Vvu	volcanic undifferentiated

Estimates of abundance and intensity

Quantitative estimates of abundance as percentages must directly follow the mineral or rock that they refer to, and consist of a two digit number ranging from 01 to 99. Quantitative estimates of intensity must consist of a number from 0 to 5, referring to a scale from absent to intense as listed below, and must directly follow the term referred to. Quantitative estimates should generally be for characteristics such as weathering for which a percentage is meaningless.

0	absent	3	moderate, common
1	trace, rare	4	strong, abundant
2	weak, minor	5	intense, very abundant

COLOUR

Colour codes have been organised to give the same descriptions as those listed in the Rock-Colour Chart prepared by the Geological Society of America. The colour chart should be used for any detailed logging, but the codes can also be used for rough descriptions (eg Ocyb meaning brown clay). The strongest hue is listed first, the weaker hue (if present) is listed second, and the strength/shade listed last eg (BY5 equals moderate yellowish brown).

Hues				Strength/Shade			
A	grey	O	orange	1	very pale	6	dusky
B	brown	P	purple	2	pale	7	very dusky
G	green	R	red	3	light	8	dark
I	pink	U	blue	4	medium light	9	very dark
L	olive	W	white	5	moderate		
N	black (noir)	Y	yellow				

QUALIFIERS

	Composition
acd	acid
alk	alkaline general
amb	amphibolitic
and	andesitic
apl	aplitic
arg	argillaceous
ark	arkosic
arn	arenaceous
ash	ash bearing
bas	basic
bic	bioclastic
bst	basaltic
cgt	conglomeratic
cln	clean (washed)
cly	clayey
cmt	cemented, cement
cty	cherty
dac	dacitic
dir	dioritic
dir	doleritic
dol	dolomitic
dty	dirty
dun	dunitic
fel	felsic
fer	ferruginous
fsp	feldspathic
fst	felsitic
gab	gabbroic
grd	granodioritic
grn	granitic
grp	granophyric
hmg	high magnesium (basalt)
int	intermediate
kom	komatiitic
lab	labile
leu	leucocratic
lim	limey as in limestone
lth	lithic
maf	mafic
mag	magnetic
mel	melanocratic
mgw	magnetic but weakly
mmc	monomictic
mnz	monzonitic
mud	muddy
olg	oligomictic
ool	oolitic, oolites, ooliths
peg	pegmatitic
pel	pelitic
plm	polymictic
pot	potassic
rhy	rhyolitic
ryd	rhyodacitic
shy	shaley
sly	silty
sty	slatey
sny	sandy
spl	spilitisrp serpentinized
syt	syenitic
thl	tholeiitlc
ton	tonalitic
umf	ultramafic
vcl	volcanolithic
vit	vitric
ubc	ultrabasic

	Texture
acc	acicular
adc	adcumulate textured
agg	agglomeratic
alt	alternating
amd	amygdaloidal or as amygdules
ams	amorphous
ang	angular
anh	anhedral
aph	aphanitic
apy	aphyric
bdb	bedded, banded
bdc	bedded, convoluted
bdg	bedded, graded
bdi	interbedded
bdk	bedded, thick
bdl	bedded, laminar
bdm	bedded, medium
bdn	bedded, thin
bdr	bedded, irregular
bds	bedded, massive
bdt	bedded, turbiditic
bdv	bedded, varved
bdw	bedded, wavy
bdx	bedded, cross
bed	bedded, bedding
blb	blebs
blk	blocky
bot	botryoidal or as botryoids
brn	brachings, anastomosing
cch	conchoidal
cls	clastic or as clasts
cnv	convoluted (but not bedding -see bdc)
con	concretionary, concretions
cry	cryptocrystalline
csp	clast supported
ctg	coatings
dis	disseminated/disseminations
dlr	doleritic
ear	earthy
eqg	equigranular
euh	euhedral
fgm	fragmental or as fragments
fib	fibrous
fis	fissile
flb	flow banded
flg	flaggy
flt	flattened
fri	friable, loose
fst	felsitic
glp	glomero-porphyritic
gls	glassey or 1 glass
gns	gneissic
grb	granoblastic
het	heterogeneous
hft	hornfelsic
horn	hornogeneous
hrd	hard, hardened
ing	intergranular
inq	inequigranular
irr	irregular (but not bedding, see "bdr")
ist	interstitial
knt	knotted
lap	lapilli textured, lapilli
len	lenticular or as lenticles
lmb	imbricated
mas	massive (not bedding, see "bds")
mct	mesocumulate textured
mig	migmatitic
mtx	matrix (in or of)
mxs	matrix supported
nod	nodular or as nodules
ocl	ocellar, ocelli
oct	orthocumulate textured
pil	pillowed
plt	peletoidal
por	prophyritic or as phenocrysts
ppb	porphyroblastic or as porphyroblasts
prd	predominant or main
prs	porous
ptc	perthitic
rad	radiating
rdd	rounded
rel	relict
rex	recrystallized
rip	rippled, ripples
rod	rodded, columnar
san	subangular
sbh	subhedral
sbo	subordinate
sbr	subrounded
sfx	spinifex textured
skl	skeletal
sph	spherulitic, spherules
stg	sorting good
stm	sorting moderate
stp	sorting poor
stl	stylolitic
sug	sugary
thk	thick, large
thn	thin, small
trc	trachytic
trn	transitional
ufx	uniform textured
var	variolitic
ves	vesicular or in vesicles
vgd	variegated
vrm	vermiform
vug	vuggy
vvd	varved
wld	welded
wvb	wavey bedded
xen	xenolith or xenolithic
xsb	crossbedded
xtl	crystalline

	Veining
vcb	carbonate veined
vlc	vein on lithologic contact
vlt	veinlet
vmr	massive vein, reef
vqc	quartz carbonate veined
vqz	quartz veined
vsk	stockworked or as stockworks
vst	stringers
vsv	vein subvertical

QUALIFIERS (continued)

	Regolith		Structure		Genetic
ars	arenose (weathering profile term)	aug	augen textured or as augen	aeo	aeolian
blc	bleached	bou	boudinaged	agg	agglomeratic
bxw	boxworked (eg limonite-after-sulphide)	bxx	brecciated	all	allochthonous
cap	cap or capping	cbx	crackle brecciated	alv	alluvial
ccr	calcreted	clv	cleaved, cleavage	aqu	aqueous
fcr	ferricreted	crn	crenulated	aug	authigenic
frs	fresh	cta	cataclastic	aut	autochthonous
gly	gley	ctt	contorted	clp	collapse (as in collapse breccia)
gos	gossanous	fau	faulted, fault	col	colluvial
hpn	hardpanized, hardpanned	fld	folded, folds	dep	depositional
ind	indurated	fol	foliated, foliation	dig	diagenetic
lat	lateritic	frc	fracture, in fractures	dyk	occuring as a dyke
lch	leached	iso	isoclinal	elv	eluvial
lir	lithorelics	jnt	jointed, jointing	epc	epiclastic
lom	loamy	lin	lineated or forming lineation	qpg	epigenetic
lsg	liesegang	mas	massive	ept	epithermal
mot	mottled or as mottles	myl	mylonitic	ext	extrucive
oxd	oxidized	phy	phyllitic	flt	float
pal	pallid	ptg	ptygmatic	flv	fluviatile
ped	pedogenic	sch	schistose, schistosity	flw	occuring as a flow
pis	pisolitic, pisolites, pisoliths	scl	schlieren textured, schlieren	glc	glacigenic
plm	plasmic	shd	sheared	lgb	lgnimbritic
res	residual	sls	slickensided	inf	intraformational
sap	saprolitic	tec	tectonic	ins	in situ
sfl	surficial	unf	unfoliated	itv	intrusive
sit	silcreted			mmc	metamorphic, metamorphosed
spg	supergene		**Grain Size**	mmg	greenschist facies
whl	weathered, highly	gzv	very fine grained (<0.1mm)	mma	amphibolite facies
wmd	weathered, moderatley	gzf	fine grained (0.1-0.25mm)	mmn	granulite facies
wsl	weathered, slightly	gzm	medium grained (0.25-0.5mm)	mml	low grade metamorphism
wtd	weathered, weathering	gzc	coarse grained (0.5-1.0mm)	mmm	medium grade metamorphism
		gzy	very coarse grained (1.0-2.0mm)	mmh	high grade metamorphism
	Alteration	gzg	granule, gritty (2.0-4.0mm)	ocp	outcrop
aag	advanced argillic	gzp	pebbly (4-16mm)	pmy	primary
abl	biotite alteration	gzo	cobbly (16-256mm)	pyc	pyrociastic
acb	carbonate alteration	gzb	bouldery (>256mm)	rew	reworked
acl	chlorite alteration			sll	occurring as a sill
acy	clay alteration			stm	stromatolitic
asl	silica alteration			syg	syngenetic
asr	sericite alteration			trn	transported
atm	tourmaline alteration			tuf	tuffaceous
blc	bleached, bleaching			tur	turbiditic
grs	greisenized			vlc	volcaniclastic
hyd	hydrothermal			vol	volcanic
hyp	hypogene				
mts	metasomatic				
per	pervasive				
phc	phyllic				
pot	potassic				
prp	propylitic				
spl	spilitic				
srp	serpentinized				

MINERAL NAMES

ac	actinolite
ad	adularia
aa	agate
ab	albite
aw	allanite
af	allophane
ai	almandine
al	alunite
am	amphibole (general)
ax	anatase
an	andalusite
ae	andradite
ag	anglesite
ah	anhydrite
ak	ankerite
ay	anthophyllite
at	antigorite
ap	apatite
ar	aragonite
as	arsenopyrite
ao	asbestos
au	auridium, gold
az	azurite
ba	barite
bi	biotite
bs	bismuthinite
bn	bornite
ca	calcite
cn	carbon (as in carbonaceous)
cb	carbonate (see also 'vein carbonate')
cl	carnotite
ct	cassiterite
cg	cerargyrite
ce	cerussite
cj	chabazite
ck	chalcedony
cc	chalcocite
cp	chalcopyrite
cs	cherty silica
cl	chlorite
cd	chloritoid
cm	chromite
ch	chrysocolla
cq	chrysoprase
cy	clay (general)
cz	clinozoisite
cx	clinophyroxene (general)
cf	coffinite
cu	copper, native
co	cordierite
cv	covellite
cr	cuprite
di	diopside
do	dolomite
dr	dravite
en	enargite
ep	epidote
er	erythrite
fx	feldspar (general)
fe	ferric iron oxides (goethite, hematite, limonite)
fm	ferromagnesian mineral (genl)
fl	fluorite
fu	fuchsite
gh	gahnite
ga	galena
gn	garnet
gi	garnierite
gl	glauconite
go	goethite
gr	graphite
gs	grossularite
gt	grunerite
gy	gypsum
hm	heavy minerals (general)
hd	hedenbergite
he	hematite
hb	hornblende
im	ilmenite
ja	jarosite
ka	kaolin
kf	K-feldspar
ky	kyanite
lx	leucoxene
ll	lepidolite
li	limonite
lc	limonite after carbonate
ls	limonite after sulphide
lp	limonite after pyrite
lz	lizardite
mg	magnesite
mh	maghemite
mt	magnetite
mk	malachite
mn	manganese oxides (general)
mr	marcasite
mi	mica (general)
mc	microcline
ml	mineral (general)
mo	molybdenite
mz	monazite
mu	muscovite
ne	meotocite
nf	nepheline
nt	nontronite
ol	olivine
op	opaline sillca
oc	orthoclase
ox	orthopyroxene
pn	pentlandite
pp	phlogopite
ph	phosphate (general)
pi	pitchblende
pl	plagioclase
pt	platinum
pr	prehnite
ps	psilomelane
py	pyrite
pz	pyrolusite
pm	pyromorphite
pf	pyrophyllite
px	pyroxene
po	pyrrhotite
qz	quartz (see also 'silica'&'vein quartz')
qc	quartz-carbonate mixture
rc	rhodochrosite
rd	rhodorite
rb	riebeckite
ru	rutile
sa	sanidine
sc	scapolite
sh	scheelite
so	scorodite
sr	sericite
se	serpentine
sd	siderite
sl	silliminite
si	silica (general as in silicification; see qz, cs, op)
sm	smectite, montmorillonite
ss	smithsonite
sp	sphalerite
sf	sphene
st	staurolite
sb	stibrite
sx	sulphates (general)
su	sulphides (general)
tc	talc
tt	tetrahedrite
tn	tennantite
tz	topaz
tm	tourmaline
tr	tremolite
tb	torbanite
ur	uraninite
ux	uranium minerals (general)
vc	vein carbonate
vq	vein quartz
vs	vesuvianite
vl	violarite
wl	willernite
wo	wollastonite
wf	wolframite
ze	zeolite
zo	zoisite