



Government of **Western Australia**
Department of **Mines and Petroleum**

Spelling and other useful stuff 2011–12



**Geological Survey of
Western Australia**



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Western Australia**

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This guide is produced by the Editing and Publishing Section of GSWA with input from the Chief Geoscientist and has been endorsed by GSWA's Executive Team.

REFERENCE

The recommended reference for this publication is:

Geological Survey of Western Australia, 2011, Spelling and other useful stuff
2011–12: Geological Survey of Western Australia, 39p.

**National Library of Australia Card Number and ISBN 978-1-74168-337-0 (PDF);
978-1-74168-338-7 (Printed)**

**This publication is published in digital format (PDF), and is available online at
<www.dmp.wa.gov.au/GSWApublications>.**

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Geological Survey of Western Australia are available from:**

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Spelling and other useful stuff

The following house rules are in the form of an alphabetical list of GSWA preferred usage in such matters as spelling, punctuation, abbreviation, and selected style points. Their purpose is to promote consistency in GSWA publications and to avoid repetitious decision making. As new questions of usage arise, additional house rules will be added to the following list.

A

- abbreviation of elements** Use only in compound words or as adverbs where they are commonly accepted, e.g. ‘Ca-metasomatism’, ‘K-feldspar’
- about, approximately,
in the order of** ‘About’ is nearly always better, but use ‘approximately’ if fairly accurate figures are being given. ‘In the order of’ should be used only with an established order of intensity, magnitude, or velocity — it should not be substituted for ‘about’
- acid/acidic** Adjective used in igneous petrology for a rock with >63 wt% SiO₂ (cf. ‘basic’, ‘intermediate’, ‘ultrabasic’; synonymous with ‘silicic’; not synonymous with ‘felsic’, ‘sialic’). As ‘acidic’ is not synonymous with ‘felsic’, do not use it together with ‘mafic’ or ‘ultramafic’ when making petrologic comparisons
- acknowledgements** Mostly confined to external people or companies who have seriously contributed to the manuscript. If an author feels a GSWA colleague’s contribution was significant, co-authorship, or at least ‘With a contribution from ...’ should be considered

age	True time at which event occurred, interpreted using geological information and dates. Do not use when reporting an analytically determined value. See date
age dating	Give method of analysis and range, e.g. U–Pb in zircon
AGSO	Australian Geological Survey Organisation (old term; now Geoscience Australia, GA)
approximately	See about. Do not use ‘circa’ for anything other than dates
aeolian	Archaic; use ‘eolian’
affect	A verb; do not confuse with the noun ‘effect’
AHD	Australian Height Datum
airphoto	Alternative to ‘aerial photograph’
algal	Do not use when meaning is ‘cyanobacterial’, ‘microbial’, or ‘stromatolitic’, e.g. ‘microbial limestone’, ‘cyanobacterial mat’. See also blue-green algae
alkalis	
along-strike	
although	Use instead of ‘but’
among, amongst	Use ‘among’
amygdales	Preferred to ‘amygdules’
analyse	
and/or	Avoid. ‘Or’ or ‘and’ alone may suffice to make the meaning clear; ‘or both’ may be added
apatite fission-track data	
and others	For references, use ‘et al.’
API	American Petroleum Institute (gravity measurement of oil)

appendices

Archean

Preferred usage following the ICS-IUGS (International Commission on Stratigraphy and International Union of Geosciences) time chart 2008 (Gradstein et al., 2008). Older than 2500 Ma. Neoproterozoic = 2800–2500 Ma, Mesoproterozoic = 3200–2800 Ma, Palaeoproterozoic = 3600–3200 Ma, Eoproterozoic >3600 Ma (these replace informal use of ‘early’ and ‘late’)

arenite

Use only for sandstone unit with <10% matrix. Not synonymous with ‘sandstone’

argillite

Avoid; use ‘siltstone’ or ‘mudstone’

artifact

Preferable to ‘artifical’

ASCII

as well as

Avoid; use ‘and’

autobreccia

autobrecciated

B

back-arc

backshore

banded iron-formation

‘Iron formation’ on its own is not hyphenated

barite

base metals,

base metal deposit

Institutionalized phrase, thus, no need to add hyphens in compound modifier

basic

Adjective used in igneous petrology for a rock with $45 < \text{SiO}_2 < 52$ wt% (cf. ‘acidic’, ‘intermediate’, ‘ultrabasic’; not synonymous with ‘mafic’ or ‘femic’)

batholith

Use lower case in a formal name; ‘batholith’ is a structural, not stratigraphic, term

beach ridge	
beachrock	
bedding plane	But ‘bedding-plane view’
bedform	
bedrock	
beds	Not acceptable in a formal name. Use formal unit name instead. For regolith maps where mapping isn’t done, use the lower case ‘beds’ instead, with quotation marks
below-ground (adj)	
belt	All belts are in lower case, as in Yandal greenstone belt, Whim Creek greenstone belt. See fold belt
benefitting	
BIF	Preferred to ‘banded iron-formation’ where its use is repeated in a text
billion years	Use for expressing interval of time. For dates, use Ga in preference to 10 ⁹ years
black-and-white banded chert	
blowout	
blue-green algae	Do not use when ‘cyanobacteria’ is meant (previously ‘blue-green algae’). Unless the meaning is specific, use ‘microbial’
bluish-green	
BMR	Bureau of Mineral Resources (subsequently Australian Geological Survey Organisation, AGSO, now Geoscience Australia, GA)
bore	May be used as a synonym for ‘borehole’, or to refer to borehole and surface pumping equipment
boresite	

borehole	
borehole line	Not ‘boreline’
bottomhole	
BP	Before present (no full stops)
breakup	
brownfield	
bureaus	
but	‘although’ is preferable
byproduct	

C

c.	Abbreviation of ‘circa’ (not ca); applicable only to dates that are not precise (e.g. c. 2680 Ma; use 2.7 Ga if still less precise). Not to be used for other units of measurement and not a synonym for ‘approximately’. Always has a space after, not italicized
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Ca-metasomatism

Cainozoic	Archaic; use ‘Cenozoic’
calc-alkaline	An adjective, not a noun, e.g. ‘calc-alkaline rock’
calc-silicate	An adjective, not a noun, e.g. ‘calc-silicate rock’
cannot	Not ‘can not’
caprock	
carbon-14	
CD-ROM	
central Australia	
cement-bond log	Abbreviate to CBL

Cenozoic	Comprises Paleogene+Neogene+Quaternary; does not replace Tertiary. Quaternary will continue to be used by GSWA, to encompass the Holocene and Pleistocene until International usage is clarified
centre line	
cf.	(compare)
chemical symbols	Spell out chemical name in text, e.g. the rock is calcium rich, but use symbols with chemical assays, e.g. 65 ppm Sr
chondrite-normalized	
claypan	
cliff-foot slope	
coalfield	
coarsening-upwards	
coastline	Avoid; use ‘coast’. Exception is for phrases that describe the line on a map ‘the coastline on ROEBOURNE...’
columnar-jointed lava flow	
comagmatic	
commonly	Refers to something that is common in a spatial sense, e.g. ‘elongate and locally flat pebbles are commonly aligned’. Do not use ‘frequently’ (see time words)
company names	Can omit Pty Ltd or NL in text after first mention if it does not create confusion, but in references need to cite correct name (see References, Open-file and other company reports)
compare	Use ‘compare to’ when suggesting similarity of one thing to an unlike other, e.g. comparing a basalt to a sandstone. Use ‘compare with’ when estimating degrees of

similarity between entities of the same kind, e.g. this granite with that granite. The book 'Right Words' by Stephen Murray-Smith puts it nicely '...in other words, use "compare with" if an argument is involved, "compare to" if no argument is intended.'

compass directions

North-northeast, not north-north-east or NNE; also 285°, not N75°W (see also 'dip and strike'). Do not use superfluous directions in terms such as 'east-west dykes', 'northeast-southwest faults', etc. The preference is 'easterly trending dykes' or 'northeast-trending faults'. An exception is north-south compression, or tension. Avoid **hanging hyphens** if possible, e.g. 'east-northeast- and northeast-dipping strata' can be written 'east-northeasterly and northeasterly dipping strata', but ... 'fine- to coarse-grained sandstone'. 'North-northeasterly trending' to avoid three hyphens

comprise

This verb is never followed by the preposition 'of'; it is synonymous with 'consist of' and is not synonymous with 'contain' or 'include'. Correct usage of 'comprise' is in the sense that the whole comprises the parts not the other way round, as in 'The pegmatite comprises quartz, feldspar, mica, and tourmaline'

conodont colour-alteration index

convex-up

cooperation

coordinate

See **MGA coordinates**

coordination

core (or drillcore)

Always use in the singular sense, not as a plural, e.g. 'The core contains free gold'

core library	The formal name of the Kalgoorlie core library is the ‘JH (Joe) Lord Core Library and Operational Base’. When referring to the core library by itself, use ‘JH (Joe) Lord Core Library’. Can use Joe Lord Core Library in promotional and advertising material. The formal name for the Carlisle facility is the Perth Core Library
core-stone	
crop out	Avoid; use ‘outcrop’, or ‘are exposed’
cross-bedding	
cross-beds	
crosscut	
cross folds	
crossplot	
cross section	
cross-lamination, cross-stratification	
crossed nicols/polars	But cross-polarized light; see plane-polarized light
CSV file	Comma separated variable file
currency	Use ‘A\$’ as recommended by the Reserve Bank of Australia
Curtin University	Replaces ‘Curtin University of Technology’
cutoff	
cyanobacteria	Prefer ‘microbial organisms’ — less specific term
D	
dam site	
data	Plural (i.e. ‘data are’, ‘These data show’)

databank

database

data points

dataset

date

Space thus 2683 ± 7 Ma. An analytically determined estimate of age (applies to one analysis ‘point’ or sample, e.g. ‘the sample yielded a U–Pb date of 2870 Ma’). See **age**. Most dates are determined using isotopic systems, and therefore the specific isotopes involved should be joined by an en rule (^{206}Pb – ^{238}U date, ^{40}Ar – ^{39}Ar date) rather than a forward slash, which indicates a ratio ($^{207}\text{Pb}/^{206}\text{Pb}$ date)

depth to basement

diamond drillcore

For core material obtained through a diamond drillbit; not ‘diamond core’

different

Use ‘different from’, not ‘different to’ or ‘different than’

dip and strike

Use 35° for dip (and specify the dip direction — 35°N); use 045° instead of 45°NE for strike

domal

Avoid; use ‘domed’ or ‘domical’

dome-and-basin

downdip

downhole

download

downthrown

downwarp

drillbit

Can use ‘diamond bit’

drill chips

drillcore

drillhole
drillstring
drillsite
dunefield
dyke

E

e.g.

Early/Late v. Lower/Upper Early/Late are purely time terms such as in ‘...fossils of Early Jurassic age’ and therefore associated with eras, periods, and epochs. Lower/Upper are time-rock (chronostratigraphic) adjectives and used with systems, series, and stages to indicate their place in the geological column. As the Glossary of Geology puts it, ‘rocks of the Lower Jurassic System were formed during the Early Jurassic Period’. Upper Devonian (rocks or strata thereof) may well be missing in a succession, but the Late Devonian is never absent. That period must, of course, have existed, and in this example is represented by the hiatus. Use capitals only if the Periods are formally divided (e.g. there is no Late Proterozoic and no Middle Cretaceous)

earthfill

Eastern Goldfields

But ‘north Eastern Goldfields’

Ediacaran Period

600–542 Ma, part of the Neoproterozoic

effect

A noun; do not confuse with the verb ‘affect’

elements

Can use symbols (Au) as nouns but not as adjectives

email	
en echelon	Do not italicize
end-product	
enquire	Avoid; use ‘inquire’
Eoarchean	See Archean
eolian	Not ‘aeolian’
EPIRB	emergency position indicating radio beacon
et al.	Preferred to ‘and others’; do not italicize
etc.	Avoid
F	
faceted	
farm out	
farm in	But ‘farm-in’ partner
farther	Refers to length or distance as the comparative of ‘far’. Less in use
feldspar	
feldspar-phyric	
felsic	A mnemonic adjective for feldspar + feldspathoid + quartz; applied to igneous rocks when such minerals are dominant. Refers to the modal mineralogy only (cf. ‘mafic’, ‘ultramafic’; not a synonym for ‘acidic’, or ‘salic’)
ferromagnesian	Adjective to describe minerals rich in iron and magnesium and to rocks when such minerals predominate; synonymous with ‘mafic’
few	For countable entities, use ‘fewer’ not ‘less’
fieldwork	
(Fig. 1)	Abbreviated as shown when in parentheses. Note ‘Figs’ has no full stop; in text ‘Figs 1, 2’

Figure 1

In full in body text and in figure captions where it is followed by a full stop. When referring to a figure or table in another publication, this distinction is conveyed by using a lower case ‘f’ or ‘t’

fine-grained sandstone

But ‘The sandstone is fine grained’. See also **very fine grained sandstone**

fining-downwards

fining-upwards
fining-upwards
sequence

But the sequence fines upwards (sedimentary sequences more commonly fine upwards than downwards; preferred phrase; fining upwards)

flood-out

floodplain

floodwater

flow banding

fluviodeltaic

fluvioglacial

focused, focusing

fold belt

Lower case except where formalized (e.g. Edmund Fold Belt)

follow-up (adj)

‘Follow-up sampling’

follow up (noun)

‘Follow up was recommended’

footslope

footwall

fore-arc

foredune

foreset

foreshore

formatting

found	Avoid ‘The rocks are found at...’. Rephrase as ‘The rocks are exposed at...’ Or, for example, use ‘defined’, ‘recorded’, ‘are’, ‘are developed’
four-wheel drive	or 4WD
fresh rock	
freshwater	
front-end (attrib.)	
further	Means ‘to a great degree’, ‘additional’, or ‘additionally’. It refers to time or amount

G

gamma-ray log	
Ga	Abbreviation for years $\times 10^9$ (giga anna or billion years). Use implies a date, not a time span
gasfield	
generally	Refers to something that is extensive but not universal; as in ‘The area is generally covered by colluvium’. In scientific writing, the term is superfluous or can be replaced with a more specific term, e.g. ‘commonly’ or ‘typically’
geographic names	For those ending in a possessive ‘s’, the apostrophe is usually not used. The ‘s’ may, or may not, be dropped depending on local usage
geological names	Where two or more formal geological names with the same generic element are combined in the same expression, the pluralized element remains upper case, e.g. the <i>Parmelia</i> and <i>Yarragadee Formations</i> , the <i>Darling</i> and <i>Urella Faults</i> . For topographical and general geographical names the plurals are lower case, e.g. the <i>Robe</i> and <i>Ashburton</i>

	<p>rivers, Byro and Landor homesteads. When Volcanics is used as a formation name, although it is singular in sense, it causes less confusion and reads better if used as a plural, e.g. ‘The Table Hill Volcanics are...’ or rephrase as ‘The rocks of the Table Hill Volcanics are...’</p>
GeoMap.WA	Replaces GeoVIEWER.WA; spell in full for legal trade name
Geoscience Australia	GA (formerly Australian Geological Survey Organisation, AGSO)
GeoVIEW.WA	Spell in full for legal trade name
GeoVIEWER.WA	Spell in full for legal trade name
GIS	Geographic Information System
glacigene	Not ‘glaciogene’
glaciofluvial	Avoid; use ‘fluvioglacial’
glaciomarine	
GPS	Global Positioning System
gold mine	
gnamma hole	Aboriginal term for ‘rockhole’
grabens	Plural of ‘graben’
graded bedding	
grain size	
granite	A plutonic rock consisting essentially of quartz ($\geq 5\%$), alkali feldspar, and sodic plagioclase in variable amounts with mica and/or hornblende. Use ‘monzogranite’ or ‘syenogranite’ for specific QAPF compositions
granite–greenstone terrane	With en rule
granitic rock	Same as ‘granite’

granitoid	Do not use. The term is ambiguous because in the IUGS scheme it can be used as a synonym for ‘granite’, or in a more restricted sense to rocks ranging from alkali granite to tonalite
greater than	>100 (no space)
greenfield	
greenstone belt	
greenschist	
grey-scale	
gypswacke	Avoid; use ‘wacke’ or more specific terms, e.g. ‘lithic wacke’, ‘feldspathic wacke’, ‘quartz wacke’
groundwater	
GSWA	In references, use ‘Geological Survey of Western Australia’ (not ‘Western Australia Geological Survey’)
gypseous	Resembling gypsum
gypsiferous	Containing gypsum
H	
halfway	
hand-sorted	
hand specimen	
hangingwall	
hardcopy	
hardpan	
hard-rock aggregate	
headwaters	
heavy mineral sands	

heavy mineral sands mine	Institutionalized phrase, no hyphenation
hematite	
herringbone	
high-grade (adj)	‘High-grade ore’
high-Mg basalt	Only use if chemistry is known, otherwise use ‘komatiitic basalt’
high tide	
high-tide mark	
high-water mark	
hillcrest	
hole-deviation data	
Holocene	Replaces the term ‘Recent’
Homestead	Capitalize for proper noun, e.g. ‘Byro Homestead’
homogeneous	
however	Often used where the simpler ‘although’ is meant, e.g. ‘There is an abundance of epidote, however, other evidence of metamorphism has not been found’ is wrong. The author means ‘There is an abundance of epidote, although other evidence of metamorphism has not been found’. Recommend ‘although’ in preference to ‘but’. Frequently, use of ‘however’ will carry a connotation of ‘nevertheless’, in which case it will either start a sentence and be followed by a comma (Nevertheless, ...) or be found mid-sentence, still followed by a comma, but now preceded by a semicolon (...; nevertheless, ...)

I

ice sheet
i.e.

ill-defined (adj)

immediately

Use carefully as can have a time connotation. When in doubt, use alternatives such as ‘just’ or ‘directly’ ‘...just north of Sandstone’ or ‘...directly overlying the Cooya Pooya Dolerite’

imply/infer

To imply is to signify or to suggest; to infer is to draw a conclusion from

in contrast

Avoid ‘by contrast’

infill

in-house

in situ

in the vicinity of

Avoid; use ‘near’, ‘about’ or ‘proximal’

information

Singular, e.g. ‘The information is ...’

inquire

interdune

interfinger

intermediate

Adjective used in igneous petrology for a rock with $52 < \text{SiO}_2 < 63$ wt% (cf. ‘acidic’, ‘basic’, ‘ultrabasic’). Do not pair with ‘felsic’ or ‘mafic’

intertidal

into and in to

Slightly different meanings, as in ‘we turned into the carpark’ and ‘we went in to the exhibition’. See **on to** and **onto**

intra-oceanic arc

IOCG

iron-oxide–copper–gold

iron formation

Not hyphenated, except when preceded by ‘banded’, ‘granular’, or ‘siliceous’

iron ore, iron ore deposit

Institutionalized phrase, no hyphenation

iron ore mining

iron ore railways

-ize/-ise

Use 'z'. Some exceptions to this are advertise, advise, apprise, analyse, comprise, compromise, demise, despise, devise, enterprise, excise, exercise, improvise, incise, premise, revise, realise, supervise, surmise, surprise, televise, verbalise, otherwise, precise

J

JORC Code

The Joint Ore Reserves Committee sets out minimum standards, recommendations, and guidelines for public reporting of Exploration Results, Mineral Resources, and Ore Reserves. The first edition was published in 1989 and the JORC Code is revised and updated periodically. See **mineral resources** and **ore reserves**

JORC-compliant

Said of mineral resources or reserves; do not use even if original references used this term

judgement

K

K-feldspar

ka

Thousand years abbreviation in 'date' form. See also **Ga, Ma**

kankar

kaolinized/kaolinitized

Use 'kaolinized' when rock is strongly altered to clay broadly referred to as kaolin (may be mixture of related clay types); use 'kaolinitized' to mean alteration (e.g. of alkali feldspar) to specific clay mineral (kaolinite); map legend narratives typically use 'kaolinized'

keywords The author and project manager must ensure that correct and appropriate key-words are included in a manuscript. Editing and Publishing ensures adherence to the Australian Geoscience, Minerals and Petroleum Thesaurus (GeMPet). Hardcopies and digital versions of the thesaurus are in the library and Editing and Publishing. Broadterms are added in Pubstats after publication to enable Internet users to search the online catalogue

Kimberley region

L

lakebed

lake floor

Landgate

The Western Australian Land Information Authority (formerly Department of Land Information)

landmass

landslide

land use

And 'land use planning', except where the sense is affected by the lack of a hyphen

large-scale (adj)

last appearance datum/

first appearance datum

lateritization

latitude and longitude

Of a point latitude 22°S, longitude 117°E; of an area latitudes 22°S and 23°S and longitudes 117°E and 118°E. Do not use decimals when referring to latitudes and longitudes, e.g. use 22°30'S, not 22.5°S'; 22°47'30"S, 116°21'40"E

layered-mafic intrusions

lens-shaped, lenticular

Avoid 'lensoid' or 'lentic'

lesser

Use 'lesser amounts of' plagioclase, rather than 'lesser plagioclase' (which suggests it is inferior in some way)

limesand

lithology

To quote from Glover (1992), AIG Handbook 1 'Lithology, like petrography, means the description or study of rocks, on the basis of their minerals, mineral interrelationships and other features. Lithology is used at the scale of outcrop or hand specimen, whereas petrography is generally applied to discussion involving thin sections.' Alternatives are 'rock', 'rock type', and 'sample', depending on the context

located

Avoid (superfluous)

**lower greenschist
facies metamorphism**

low-grade (adj)

lower level platform

low-water spring tide

lutetium–hafnium

M

Ma

Abbreviation for million years $\times 10^6$ (mega-anna) when referring to a date. For a time span use m.y. (million years)

mafic

A mnemonic adjective for dark-coloured minerals rich in iron and magnesium; applied to igneous rocks when such minerals predominate. May also be used for the minerals alone, when it is synonymous with

	ferromagnesian. ‘Mafic’ refers to the modal mineralogy (cf. ‘felsic’, ‘ultramafic’; not a synonym for ‘femic’ or ‘basic’)
major element analysis	
mantle source component	
mantle source region	Add hyphen if there is an extra modifier, e.g. ‘common’, ‘depleted’, ‘Archean’
map sheet	
mean sea level	
megacrystic	Hyphenate with phenocryst mineralogy, e.g. ‘feldspar-megacrystic granodiorite’
Mesoarchean	See Archean
Mesoproterozoic	Instead of Middle Proterozoic; see Proterozoic subdivisions
meta	Prefix — forms one word for all metamorphosed lithologies (e.g. ‘metarhyolite’, ‘metagabbro’) except when prefix is followed by a vowel (e.g. ‘meta-arkose’). ‘Metapsammite’ and ‘metapelite’ are not acceptable (see psammite and pelite) or where there is an additional qualifier, so ‘metamorphosed quartz-gabbro’ not ‘metaquartz gabbro’
metasediment	Use ‘metasedimentary rock’
metre/meter	Use ‘metre’ for unit of distance; use ‘meter’ to refer to any device that measures something (also ‘diameter’ or ‘perimeter’)
MGA coordinates	Convert all local or old AMG grids into GDA94 (MGA) coordinates, using easting and northing coordinates. There are no spaces or commas in the coordinates. MGA coordinates should always be used in brackets, not as a locality name in a sentence, e.g. ‘The unit outcrops 2 km northeast

	of White Springs Well (MGA 720720E 7704155N)’ not ‘The unit outcrops at MGA 720720E 7704155N’
mg/L	not mgL ⁻¹ (milligrams per litre)
mid-	Always hyphenated with years, e.g. ‘mid-2001’; also when modifying other terms, such as ‘mid-amphibolite facies’
mid-ocean ridge basalt	
Mid West region	
migmatize	
million years	Preferred term for 10 ⁶ years in ‘date’ form is Ma (mega anna; see also Ga, ka). See billion years
mine	Do not use upper case M for named mine, e.g. Mount Belches mine, New Celebration mine (or just ‘New Celebration’) unless formalized by mine owner
mineable, mineability	
MINEDEX	The Department’s mines and mineral deposits information database. When quoting estimates of Mineral Resources and Ore Reserves from MINEDEX, please ensure that the original source of the estimate(s) is included. Remember that MINEDEX is a database that is a compilation of estimates prepared by industry, and resource or reserve estimates should not be attributed in such a way that infers the primary compilation was done by MINEDEX, GSWA, or the Department. See JORC Code, mineral resources and ore reserves
mineral assemblages	Use an en rule in between minerals and in brackets for minerals that are only present in some samples, e.g. quartz–plagioclase–mica(–tourmaline)

**mineral/petroleum
exploration well**

mineral resources

Under the JORC Code, Mineral Resources are subdivided, in order of increasing geological confidence, into Inferred, Indicated, and Measured categories, and any reporting of Mineral Resources must specify one or more of these categories, as estimations. The words ‘ore’ and ‘reserves’ must not be used in stating mineral resource estimates as they imply technical feasibility and economic viability. See **JORC Code** and **ore reserves**

**mineralization,
mineralized**

Use ‘occurrence’ or ‘deposit’ for new mines

mine site

Mississippi Valley-type

deposit; MVT deposit

monomictic

Use ‘oligomictic’

Mount/Mt

Use ‘Mount’ in text where this is meant, to avoid confusion with the abbreviation for ‘megatonnes’ (Mt). Acceptable to use ‘Mt’ in tables

MORB-normalized

Mid-ocean ridge basalt

mud clasts

mudcrack

mudflats

m.y.

Million years as a time span (see **Ma**)

multi-element

N

nearshore

Neoproterozoic

See also **Archean**

Neoproterozoic	Instead of ‘Late (or Upper) Proterozoic’; see Proterozoic subdivisions
no.	Abbreviation for ‘number’
nondeposition	
non-vegetated	
normalized trace element pattern	
northwest	
north-northwest	
North West region	
North West Shelf	
number	Abbreviation is no. (see no. above) except when part of a formal name, e.g. ‘Bore No. 2’. When using numbers such as ‘2nd edition’ or ‘8th Geological Convention’, do not use superscripts; write 1st, 2nd, 3rd, or 4th. Default settings in MS Word automatically superscript these, so you will have to undo this or change your settings
numerals	Numbers with four digits in body text should have no space, e.g. 1966 m, not 1 966 m, 2096 Ma not 2 096 Ma. However, use a space in tables, and for numbers greater than 9999 in text, e.g. 13 462. Numbers with five or more digits have a space 23 420, 6 740 332. Use numerals for numbers over ‘nine’ in text
O	
observed	Redundant in most cases; rephrase
occasionally	Usually means ‘locally’; can use ‘in places’ (see time words). Can use ‘commonly’

occurs	Use a more appropriate verb: is, is exposed, is present, outcrops, be, exist, appear(s), pervade, happen, adjacent, forms, consists of, lie(s), overlies, intergrown with, is identified, is encountered, occupies, extends, and constitutes
often	Use only for expressions relating to time, e.g. ‘Phenocrysts are often corroded’ should be changed to ‘Many phenocrysts are corroded’ (see time words)
oil-generating potential	
oil-generative window	
oilfield	
oligomictic	Preferable to ‘monomictic’
online	
onshore, offshore	
on-site	
on to and onto	Slightly different meanings, as in ‘we drove on to the beach’ (i.e. in that direction) and ‘we drove onto the beach’ (i.e. into contact with it; see into and in to)
opaline	Use with silica (e.g. opaline silica) and chalcedony (opaline chalcedony); avoid ‘real opal’
opalized	Avoid ‘opalized’; refers to alteration of rock or mineral to, or replacement by, cryptocrystalline silica
opencut	
open-file	
openpit	
orebody	

ore reserves	Under the JORC Code, an Ore Reserve is the economically mineable part of a Measured or Indicated Mineral Resource, including dilution and losses that may occur during mining. Any reporting of Ore Reserves must specify one or both of the ore reserve categories of ‘Probable’ or ‘Proved’, as estimations. See JORC Code and mineral resources
organization	Singular (‘it’, ‘its’, not ‘they’, ‘their’)
orient, oriented	Avoid ‘orientate’, ‘orientated’
orogeny	Plural is ‘orogenies’
outcrop	May be used as a noun (The outcrop...) or verb (...outcrops at...). Can also use ‘exposure’ (see crop out)
P	
paleo	Prefix; no hyphenation
Paleoarchean	See Archean
Paleocene	Derived from ‘Pal’ and ‘Eocene’
paleochannel	
Paleogene	
Paleoproterozoic	
paleovalley	
Paleozoic	
parallel to	e.g. The gneiss unit is parallel to the overlying foliated eclogite
parallel with	e.g. We can draw a close parallel with another example. Avoid ‘paralleling’, ‘paralleled’
PDF	Portable document format
pelite, pelitic	Metamorphic rock term referring to siltstone/ mudstone protolith. The prefix ‘meta’ is not

	necessary and pelite is not acceptable as a sedimentary term. Can be used as a noun or as an adjective (pelitic). See also psammite , psammitic
percent	Use the symbol % if attached to a number, e.g. 50%, not 50 percent
Permo-Carboniferous/ Permo-Triassic	Use 'Permian–Carboniferous' or 'Permian–Triassic' or the specific Series or Stage names
personal communication	Abbreviated to written comm. including initials and date in parenthesis, e.g. (Trendall, AF, 1989, written comm.)
Perth Metropolitan region	
PGE	Platinum group elements (not PGEs)
PGM	Sometimes used as the abbreviation for platinum group metals. Use 'platinum group elements' (PGE)
PhD	Also MSc, BSc, DipEd
phosphorus	
photo-interpretation	
photo-lineament	
photo-pattern	
Pilbara region	
pipeline	
plagioclase-phyric	
plagioclase-porphyritic andesite	
plane-polarized light	
plateaus	
platinum group elements	Not PGEs
platy	

podsolized	
porcelanous	
porphyritic	Hyphenated with phenocryst mineralogy, e.g. ‘feldspar-porphyritic monzogranite’
possessive ‘s’	‘Jones’s’ (singular), ‘All the Joneses’ houses’ (plural), ‘geologists’ work’
post-date	
post-depositional	
pothole	
ppb	
ppm	
Precambrian	
pre-date	Not ‘predate’ which means ‘to hunt and feed on prey’
pre-mining	
pre-1914	But ‘pre–World War War I, ‘pre–Mount Roe Basalt’
primitive mantle source	
primitive mantle values	
primitive mantle-normalized trace element plot	
primordial mantle-normalized PGE plot	
program	
Proterozoic subdivisions	Use ‘Paleoproterozoic’ instead of ‘Early’ (or Lower) Proterozoic’, ‘Mesoproterozoic’ instead of ‘Middle Proterozoic’, ‘Neoproterozoic’ instead of ‘Late (or Upper) Proterozoic’. But these are not synonymous. Follow the ICS-IUGS (International Commission on Stratigraphy and International Union of

Geosciences) time chart 2004 as shown in Gradstein et al. (2004) for exact subdivisions. Do not write ‘Meso–Neoproterozoic’; always write in full

psammite, psammitic

Metamorphic rock term referring to sandstone protolith. The prefix ‘meta’ is unnecessary and psammite is not acceptable as a sedimentary term. Can be used as a noun or as an adjective (psammitic). See **pelite**, **pelitic**

pump-test

Q

Quaternary

GSWA uses this term to encompass the Holocene and Pleistocene, younger than, but not part of, the Neogene

quartz arenite

quartzite

Metamorphic term (orthoquartzite); not to be used for strongly cemented, unmetamorphosed quartz sandstone

quartzofeldspathic

quartz-phyric

query (?)

Should precede doubtful entity, e.g. ‘?Permian’, ‘?garnet’

quotation marks

Use single quotation marks, e.g. ‘quote’. Double quotation marks should be used for quotes within quotes

R

rainwater

range

When ‘range’ is used, the prepositions ‘from’ and ‘to’ must also be used. The use of ‘range’ requires two limits so don’t write ‘ranges up

	to...'. If only the upper limit is stated then use 'reaches a maximum of..' or 'is as much as...'
rare earth elements	REE (not REEs)
ratios	In the text, ratios should be expressed with a colon (4:1), not spelt out (4 to 1; four to one). Also, be aware that a ratio is not synonymous with a fraction. The following usage should be avoided 'Mg/(Mg+Fe) ratios range from 0.51 to 0.58' (here the term 'values' would be better)
re	Prefix generally not hyphenated (see re-sorted)
REE	Rare earth elements; avoid 'REEs'
Recent	Avoid; use 'Holocene'
redbeds	
relic/relict	These terms are not synonymous. Refer to the AGI Glossary of Geology for correct usage
re-sorted	When the meaning is 'to sort again'
resources and reserves	See JORC Code, mineral resources and ore reserves
retro-arc	
ripple marks	
rock codes	All rock codes in text should be italicized and in parentheses. However, rock codes on figures should appear as on the map. New regolith codes are italicized anyway, but the context in text will define whether it is a rock or regolith code. Rock codes should not be used as nouns in the text. Rock unit codes in the Explanatory Notes database should match those on the map exactly. Hence, be aware that many codes on the maps employ both caps and small caps (although, in rare cases two caps may appear side by side)

rock-chip sampling

rockfill

rockhole

rockslide

rock type

rubidium–strontium

rudite

Avoid; use ‘conglomerate’ or ‘breccia’

runoff

S

salic/sialic

Former refers in a general way to Si–Al-rich minerals; latter refers to parts of the Earth comprising dominantly felsic minerals, such as continental crust

salt lake

salt pan

saltwater

sand dune

sandplain

scales (comparison of)

Smaller scale maps show more area of ground on the same amount of paper. Thus, 1:250 000 is a smaller scale than 1:100 000 (the scale is actually a fraction and $1/250\,000 < 1/100\,000$)

seabed

sea floor

sea-floor spreading

sea level

sea-level changes (attrib.)

sea stacks

seawater sections	Cross sections should be presented as viewed from the south, except where they trend between 357° and 0°, when they should be presented as viewed from the east. North or east will therefore be at the right-hand end of a section
sedex-type deposit	Sedimentary exhalative mineral deposit
sediments	Use only if unconsolidated; otherwise use 'sedimentary rocks'
semi	Prefix most often used without hyphen
semipelitic	
semiprecious	
sequence	Avoid; use 'succession'
shallow-marine	
shallow-water (attrib.)	
shelf deposit	
shaly	
sheetwash	
shelves	
shoreline	
shotpoint	
SHRIMP	Sensitive high-resolution ion microprobe
SI units	Separated by a space from the numerical value (with no full stops), except for symbols for degree, degree Celsius, minute, and second, e.g. 20 L, 12 km, 22 m, but 112°, 35°C, 22°30'S
silicic	Avoid; use 'acidic'
siliciclastic	
situated	Avoid (superfluous)

slaty

small-scale (adj)

soft-sediment deformation

source-rock potential

southwest

**South West Division/
region/Terrane**

South West Highway

South West Mineral Field

spillway

**spinifex-textured
komatiites**

‘Spinifex-textured komatiites’ but ‘coarse olivine (sheath)-spinifex textures’; ‘pyroxene-spinifex textures’; ‘olivine spinifex-textured komatiite’

standalone

State

Use when referring to a State, e.g. Western Australia, New South Wales

Station

Capitalize for pastoral stations and railway stations

strandline

stratabound

stratigraphic names usage

Superseded names should be defined as such in their first usage in a document, and then placed in inverted commas thereafter wherever it may be ambiguous as to whether they are currently accepted or not (see the Chief Geoscientist and Terrane Custodians Intranet page for the latest rock codes list and the Geoscience Australia stratigraphic units database at <http://www.ga.gov.au/oracle/stratnames_info.jsp>)

stratotype

sub	Prefix generally not hyphenated, e.g. ‘subaerial’, ‘subangular’, ‘subaqueous’, ‘subdivide’, ‘subgroup’, ‘subrounded’, ‘subduction’ but ‘sub-basin’)
subcrop	The area within which a formation occurs directly beneath an unconformity; a ‘subsurface outcrop’. Does not mean ‘to occur in the subsurface’, nor a ‘poor surface exposure’
subparallel	
sulfate	
sulfide	
sulfur	Preferred
sulphur	Avoid; use ‘sulfur’
supergroup	
superficial	
supersede	
surficial	
syn	Prefix generally not hyphenated, e.g. ‘syntectonic’, ‘synmetamorphic’, ‘syn-depositional’
T	
Table	Capitalized when referring to, or captioning, tabulation (except in reference to ‘other works’). See also Figure
targeted, targeting	
taxonomic nomenclature	See Citing fossil names under Methods of citation (GSWA guide for authors)
TDS	Total dissolved solids
tectonic units	Only the tectonic units shown on the most recent Tectonic units of Western Australia

map should be used as the GSWA standard for tectonic units. Find at <\\internal\corp\ourdocs\perth\ian.tyler\000170V2.ian.tyler.xls>

tectono-magmatic

tectono-metamorphic

tectono-stratigraphic

tenses

‘Authors concluded’; ‘the figures show’, i.e. past tense for authors; present tense for book, map, figure

terrain

A tract or region of the Earth’s surface considered as a physical feature, an ecological environment, or a site of some planned human activity. Avoid use in geological context; use ‘terrane’

terrane

A fault-bounded body of rock of regional extent, characterized by a geological history different to that of contiguous bodies of rock

Tertiary

Not currently recommended by IUGS. Use Cenozoic, Paleogene or Neogene, or more specific subdivisions of these depending on age control, unless use of Tertiary is warranted by context

thin section

But ‘thin-section view’

timeframe

time span

Within a single stratigraphic division write ‘Middle–Late Devonian’ (not Mid–Late or Middle to Late)

time scale

time words

These words (mostly adverbs such as ‘usually’, ‘frequently’, ‘often’, ‘while’, ‘since’, ‘occasionally’) denote time and can be confusing if used to denote place or

state. Try to rephrase the sentence to avoid use. Examples (and intended meanings in parentheses) always (everywhere), frequently, often (commonly, many of), now and then (here and there), occasionally (locally), since (inasmuch as), sometimes (in places, some of), usually (commonly, most of), when (where), while (although, whereas)

tonnage

topographical names

See **geological names**

topset

town site

township

trace element analysis

trace element-enriched

trademarks

The use of registered trademarks is not encouraged. Crown Law has advised that there is no need to include symbols such as ©, ®, or ™ after company or product names

tufflava

typically

refers to something that applies to most members of a class, e.g. 'the granite is typically medium grained'. See **time words**

U

ultrabasic

Adjective used in igneous petrology for rocks with <45 wt% SiO₂ (cf. 'acidic', 'basic', 'intermediate'). Not a synonym for 'ultramafic'

ultramafic

Said of an igneous rock when mafic minerals total >90% of the modal mineralogy; not a synonym for 'ultrabasic'

un

Prefix generally not hyphenated

under-explored ground	When compound modifier, ‘but the ground is under explored’
units of measurement	Space between numbers and their units, e.g. 15 km, not 15km (but...15% and 15°C)
unnamed	
upper level platform	
US	Noun and adjective (United States)
usually	‘Usually’ has a temporal connotation for something that is customary or regular but not universal (it should not be confused with generally), e.g. ‘cyclones and thunderstorms usually occur between November and April’. See time words
utilized	Avoid; prefer ‘used’

V

valley-fill deposits	
vein banding	
vermin-proof fence	
very fine grained sandstone	Not hyphenated because the fine is itself modified by an adverb
vicinity of	Avoid. Sometimes used unnecessarily for ‘about’, ‘proximal’ or ‘nearly’. See also ‘in the vicinity of’
vitronite reflectance data	
VMS, VHMS	volcanogenic massive sulfide, volcanic-hosted massive sulfide
volcanicity	
volcaniclastic	
volcanics	Avoid; use ‘volcanic rocks’. See geological names

volcanism
volcanogenic
volcanology
volcano-sedimentary
vug, vuggy

W

wacke A sandstone with >10% matrix. Use instead of 'greywacke'

wallrock

WAMEX GSWA's Western Australian mineral exploration database

WAPIMS GSWA's Western Australian petroleum and geothermal information management system

washout

water bore

watercourse

water-cut

water depth

waterhole

waterlevel

watermark

watertable

water well

wave-cut platform

web

web-based (adj)

website

well	Common petroleum industry nomenclature (see AGI Glossary of Geology); drillhole also acceptable for petroleum manuscripts and maps
well-being	
well-defined (adj)	
well-rounded (adj)	
west Pilbara	
while/whilst	Avoid 'whilst'. For clarity use 'while' to mean 'at the time that', but not to mean 'although', 'whereas', 'and' or 'but'
whole-rock geochemistry	
whose	Formerly considered to be necessarily personal; permissible in phrases such as '. . . those basalts whose MgO contents are 10%'
wind-blown sand	
wireline	
worldwide	
written communication	To be used instead of personal communication. In text mention as (Clark, FH, 2002, written comm.)
wt% (no space)	For 'weight percent'
X	
X-ray	

Further details of geological publications and maps produced by the Geological Survey of Western Australia can be obtained by contacting:
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