Reference Data Report

Reference data is standardised lookup information that is stored in DWER databases as codes, and provided in WIR reports as decoded names. This report provides full listings of reference code names and their descriptions where appropriate.

Domain: Site information

Information related to sites or locations, including identifiers, site classifications, geo-locational information, datums, purpose and status

Data table: Benchmarks

Domain: Site information

Definition: The Benchmark Location table describes the location of fixed benchmarks at a particular station. Each benchmark is numbered with a unique number at that station.

Code table/group: Datum

Data table: Benchmarks

Definition: The datum from which RL measurements are taken. The values of the DATUM field are validated against the DATUM codegroup.

Reference Code name	Code	Description	*Datum*
Above Sea Level	ASL		
Australian Height Datum	AHD		
Ground Level	GL		
Local Height Datum	LHD		
Mean Sea Level	MSL		
Not Applicable	NA		
Standard Level	SL		
Unknown	NULL		

Code table/group: Lat/Long Datum

Data table: Benchmarks

Definition: Spatial system used for lat/long. If you use a GPS this is likely to be WGS84, or in Australia, GDA94.

Reference Code name	Code	Description	*Lat/Long Datum*
Geodetic Datum of Australia 1994	GDA94		
Unknown			
World Geodetic System 1984	WGS84		

Code table/group: **Measuring point type** *Data table: Benchmarks*

Definition: The type of benchmark (measuring point) for measuring depths from.

Reference Code name	Code	Description	*Measuring point type*
(none)	()		
Air line	AIR		
Cease to flow	CTF		
Cease to flow permanent mark	CTFPM		
Float well permanent mark	FWPM		
Ground level	GL		
Inlet	INLET		
Measurement Point	MP		
Permanent mark	PM		
Pump Sampler Inlet	PSI		
Reference mark	RM		
Sediment Surface Level	SSL		
Temporary mark	TM		
Top of casing	TOC		
Top of cement/concrete block or pad	TOB		
Top of collar	TOCOL		
Top of inner casing	TOIC		
Top of protective headworks	TOHW		
Top of valve	TOVAL		
Unknown	NULL		
Water surface level	WSL		

Code table/group: **Method** *Data table: Benchmarks*

Definition: A coded value describing how the RLGD was derived

Reference Code name	Code	Description	*Method*
(none)	()		
Aneroid barometer	AB		
Digitally modeled elevation	DME		
Estimate (from adjacent site)	ESTADS		
Estimate (from map)	ESTMAP		
From Construction length/ref	BC		
Geographic Information System	GIS		
GPS - Differential (Surveyed)	GPSD		
GPS (Surveyed)	GPS		
Real Time Kinematic sat nav	RTK		
Surveyed	SV		
Tape measure	TMEAS		
Unknown	NULL		

Data table: Site

Domain: Site information

Definition: The SITE database contains details, such as location information, for each station, or site. Each site must be registered before data for that site can be imported or entered. In program documentation the words site and station are used interchangably to denote the place where data is measured.

Code table/group: **Basin** *Data table: Site*

Definition: The name of the AWRC River Basin in which the site resides, if applicable.

Code table/group: **Catchment** *Data table: Site*

Definition: The DOW Catchment in which the site resides, if applicable.

Code table/group: **Currently monitored** *Data table: Site*

Definition: Measurements are currently being obtained at the site

Code table/group: **Estuary** *Data table: Site*

Definition: The estuary in which the site resides, if applicable.

Code table/group: **Grid Datum** *Data table: Site*

Definition: Specify the datum used for grid references. If you are using a GPS, the datum is likely to be UTM or, in Australia, MGA94.

Reference Code name	Code	Description	*Grid Datum*
Map Grid of Australia 1994	MGA94		

Code table/group: **GW Area** *Data table: Site*

Definition: The groundwater area in which the site resides, if applicable.

Code table/group: **Infrastructure status** *Data table: Site*

Definition: The condition or status of the fixed infrastructure of a departmental site over time. Does not indicate if data is being collected at the site, just whether the fixed infrastructure is capable of supporting measurements or not.

Reference Code name	Code	Description *Infrastructure status*
Decommissioned	DEC	Decommissioned: existing fixed infrastructure has been removed as far as feasible and the site has been rehabilitated.
Hibernation	HIB	Hibernation: the fixed infrastructure at the site is not in use, however remains (for possible future use).
Non-Functional--Known reqrmnt	NFK	Non-Functional: the fixed infrastructure at the site such that valid measurements cannot be taken at this time e.g. bore blocked, site vandalized. Site has been assessed and ongoing measurement is required.
Non-Functional--Unkown reqrmnt	NFU	Non-Functional: the fixed infrastructure at the site such that valid measurements cannot be taken at this time e.g. bore blocked, site vandalized. Ongoing measurement requirement unknown.
Not applicable	NA	Not applicable: no fixed infrastructure exists at the site
Operational	OPR	Operational: the fixed infrastructure at the site is being maintained and supports valid measurements.
Proposed	PRP	Proposed: there is a proposal to install fixed infrastructure at this site sometime in the future.
Unknown	UNK	Unknown: the condition of the fixed infrastructure at the site is unknown.

Code table/group: **Lat/Long Datum** *Data table: Site*

Definition: Spatial system used for lat/long. If you use a GPS this is likely to be WGS84, or in Australia, GDA94.

Reference Code name	Code	Description *Lat/Long Datum*
Geodetic Datum of Australia 1994	GDA94	
Unknown		
World Geodetic System 1984	WGS84	

Code table/group: **Met district** *Data table: Site*

Definition: The Bureau of Meteorology rainfall district in which the site resides, if applicable.

Code table/group: **Position Accuracy** *Data table: Site*

Definition: Accuracy of the location data.

Reference Code name	Code	Description	*Position Accuracy*
+/-1000m	1000M		
+/-100m	100M		
+/-10m	10M		
+/-1m	1M		
+/-200m	200M		
+/-5000m	5000M		
+/-500m	500M		
+/-50m	50M		
+/-5m	5M		
Unknown	NULL		

Code table/group: **Region - geographic** *Data table: Site*

Definition: The departmental (DOW) management region in which the site resides, if applicable.

Code table/group: **Site geofeature** *Data table: Site*

Definition: The dominant geographic feature in which the site is situated.

Reference Code name	Code	Description	*Site geofeature*
Atmosphere	ATMOS		
Catchment	CATCH		
Cave	CAVE		
Dam	DAM		
Drain	DRN		
Estuary	EST		
Ground	GROUND		
Lake	LAKE		
Ocean	OCEAN		
Other	OTH		
River/Stream	RIVER		
Soak	SOAK		
Spring	SPRIN		
Unknown	NULL		

Code table/group: **Site subtype** *Data table: Site*

Definition: Refined categorization of the site type, based on the type of asset or infrastructure at the site or its primary usage.

Reference Code name	Code	Description	*Site subtype*
Bore or Well	BOREW		
Meter off take from a bore	METER		
Multi-port bore	MPORT		
Open hole	OPENH		
Production	PROD		
Rain/climate	RAINCLIM		
Sampling location	SAMPL		
Stream Gauging	STRMGAUG		
Trench	TRNCH		
Unknown	NULL		
Waste water - Sampling Point	WASTE		
Water Supply - Sampling Point	SUPP		

Code table/group: **Site Type ***

Definition: Broad categorization of the site in relation to the earths surface, the primary type of water system (source) it relates to and the type of infrastructure.

Reference Code name	Code	Description *Site Type **
Groundwater	GROUND	A site where the primary water source is below ground
Rain/climate	RAINCLIM	A site where the primary water source is the atmosphere
Stream Gauging	STRMGAUG	A site where the primary water source is at the surface, and open water surface levels, velocity or flow are measured continually
Surface (other)	SURFOTH	A site where the primary water source is at the surface, and other than continuous open water surface levels, velocity or flow are measured

Domain: Borehole information

Information related to boreholes, including drilling details, construction, lithology, stratigraphy, aquifers

Data table: Aquifer

Domain: Borehole information

Definition: An aquifer is a layer (strata) of rock which holds water and allows water to percolate through it. The groundwater AQUIFER table contains all the aquifer information for a site. A number of aquifers (at different depths) may exist for each site.

Code table/group: Name

Data table: Aquifer

Definition: A code referring to a named aquifer.

Data table: Bore casing

Domain: Borehole information

Definition: A casing is a solid or slotted length of pipe, typically steel or PVC plastic, that is used to keep a bore open in alluvial sediments, sand dunes or unstable rock. The groundwater CASING table contains the casing information for a bore. A number of records may exist for each site in this table - one for each casing in the bore. A site may consist of a number of bores. Each bore can contain a number of casings. A separate casing can be used for each aquifer in a hole.

Code table/group: Casing Type

Data table: Bore casing

Definition: The code describes the type of casing construction, for example, PVC plastic, threaded steel or concrete.

Code table/group: Element

Data table: Bore casing

Definition: The CASING table can hold records that correspond to more than one physical entity - for example Casing, Screen, Open Hole. This fields describes the entity that this entry relates to.

Reference Code name	Code	Description	*Element*
Casing	CASIG		
Centraliser	CENT		
Crossover/Reducer	CROSS		
End cap	ENDCP		
Float shoe	FLOASH		
Flush mounted cover	FLUSH		
Head works	HEADW		
Horizontal spear	HORSP		
Inlet (screen)	INLET		
Other	OTHER		
Packer	PACKR		
Plug	PLUG		
Pump	PUMP		
Pump intake	PUMPI		
Standpipe	SPIPE		
Sub-surface Pit	SUBSU		
Sump	SUMP		
Surface block	SURFBL		
Unknown	NULL		
Valve	VALVE		

Code table/group: Inlet type

Data table: Bore casing

Definition: A code for the type of inlet or screen construction. For example, PVC Perforated, PVC Slotted, Galvanised Screen or concrete.

Reference Code name	Code	Description	*Inlet type*
Filter sock	FILTSOCK		
Not applicable	NA		
Open	OPENIN		
Other	INOTHR		
Perforated	INPERF		
Screen	INSCRN		
Slotted	INSLOT		
Unknown	INUNK		
Wedgewire	INWEWI		
Wire-wound	INWIWO		

Data table: Drillers lithology logs

Domain: Borehole information

Definition: The groundwater LITHDRIL database holds geological strata information obtained during the construction of the bore and collected by the driller. A number of these records may exist for each site - one for each geological strata.

Code table/group: **Interpretation by**

Data table: Drillers lithology logs

Definition: A code to distinguish between multiple interpretations of the same sample

Data table: Drilling information

Domain: Borehole information

Definition: DRILLING stores information about drilling fluid at various depths down a groundwater bore.

Code table/group: **Drilling Fluid**

Data table: Drilling information

Definition: A code for the drilling fluid used to drill the hole

Reference Code name	Code	Description	*Drilling Fluid*
Mud	MD		
NULL	NULL		
Water	WA		

Data table: Gravel and fill

Domain: Borehole information

Definition: The gravel pack is inserted between the hole and the pipe (casing) to a particular depth in the hole. The gravel pack is used to screen out materials from the aquifer, like sand, that may damage the pump. The groundwater GRAVEL database contains gravel pack information for bores.

Code table/group: **Fill type**

Data table: Gravel and fill

Definition: The type of fill used

Reference Code name	Code	Description	*Fill type*
Annular Fill	ANFILL		
Seal	SEAL		
Unknown	NULL		
Void Fill	VOFILL		

Code table/group: **Material type**

Data table: Gravel and fill

Definition: The type of material used, for example, water worn, crushed or rounded.

Reference Code name	Code	Description	*Material type*
Bentonite	BENTO		
Cement	CEMEN		
Cemnt-Bentonite	CEMBE		
Collapsed formn	COLAP		
Concrete	CONCR		
Drill cuttings	DRILC		
Gravel	GRAVL		
Grit	GRIT		
Grout	GROUT		
Other	OTHER		
Quartz	QUARZ		
Sand	SAND		
Sand/grav-gradd	GSG		
Sand-graded	SANDG		
Unknown	NULL		

Data table: Groundwater (bore) development details

Domain: Borehole information

Definition: Details of any Developments applied during Bore construction

Data table: Groundwater hole

Domain: Borehole information

Definition: Each record in the GWHOLE table contains information for a hole at a groundwater bore.

Code table/group: **Drill method**

Data table: Groundwater hole

Definition: This code specifies the method of construction of the bore, for example, hand, rotary, cable tool or auger.

Reference Code name	Code	Description	*Drill method*
Air drill	AIRDRILL		
Auger	AUGER		
Cable tool	CABLTOOL		
Diamond core	DIAMDCOR		
Direct push	DIRTPUSH		
Hollow stm aug	HOLSTMAU		
None	NONE		
Percussion	PERCUSSN		
Revcirc aircor	RCAIRCOR		
Reverse circ	REVCIRC		
Rot air blast	ROTAIRBL		
Rot air drill	ROTRYAIR		
Rot mud drill	ROTRYMUD		
Rot rev circ	ROTRYRCI		
Rotary drill	ROTARY		
Rotary hammer	ROTRYHAM		
Rotary percuss	ROTRYPRC		
See Comment	DESC		
Sludge	SLUDGE		
Sonic coring	SONCCOR		
Unknown	NULL		
Wireline	WIRELINE		

Code table/group: **Drill rig**

Data table: Groundwater hole

Definition: This code specifies the rig used to drill the hole

Reference Code name	Code	Description	*Drill rig*
(none)	()		
Ruston bucyrus	RUSTONBU		
Schramm T685 rig	SCHT685		
Unknown	NULL		

Data table: Groundwater pipe

Domain: Borehole information

Definition: Each record in the GWHOLE table contains information for a pipe at a groundwater bore work. By convention, only one pipe is recorded per site. Multi-pipe bores are recorded as individual sites, to simplify data management and presentation.

Data table: **Stratigraphy** *Domain: Borehole information*

Definition: The groundwater LITHSTRA database contains information describing the age of the geological strata for a site. There may be more than one record for each site, one for each strata or depth of cored interval.

Code table/group: **Interpretation by** *Data table: Stratigraphy*

Definition: A code to distinguish between multiple interpretations of the same sample

Definition: A code for the source from which the intepration was made (e.g. cuttings, core)

Reference Code name	Code	Description	*Interpretation Source Code*
(none)	()		
? Archean	A?		
? Whitewater Volcanics	PRWV?		
? Amphibolite	AMA?		
? Anderson Fm	CA?		
? Andesite	AA?		
? Antrum Plateau Volcanics	CMAU?		
? Ascot Fm	TA?		
? Ashburton Fm	PWA?		
? Balfour Fm	MNB?		
? Basalt	AB?		
? Bassendean Sand	QD?		
? Becher Sand	QC?		
? Betty Fm	CPB?		
? Biscay Fm	AHR?		
? Blina Shl	TRBL?		
? Boolgeeda Iron Fm	PHO?		
? Boongal Fm	FOB?		
? Bow River Granite	PBO?		
? Brockman Iron Fm	PHB?		
? Broome Sandst	KB2?		
? Bunbury Basalt	KB?		
? Bunjinah Fm	FU?		
? Cainozoic	CZ?		
? Cainozoic to Cretaceous	CZK?		
? Cainozoic+Proterozoic	CZPR?		
? Callawa Fm	JKC?		
? Callytharra Fm	PCA?		
? Cambrian	CAM?		
? Carboniferous	C?		
? Carboniferous to Permian	CPE?		
? Cardabia Calcarenite	TCC?		
? Carolyn Fm	CPC?		
? Carson Volcanics	PKC?		
? Cattamarra Coal Measures	JC?		
? Champion Bay Grp	JM?		
? Champion Bay+Chapman Grps	JMJL?		
? Collie Coal Measures	PCM?		
? Condren Sandst	PCO?		
? Coomberarie Fm	PAC?		
? Coyrie Fm	PBC?		
? Creek Fm	CBK?		
? Cretaceous	K?		
? Devonian	D?		
? Diorite	AD?		
? Dirk Hartog Fm	SD?		
? Dolerite	ADO?		
? Dolerite	PRDO?		
? Duck Creek Fm	WD?		
? Elvire Fm	PRE?		

Reference Code name	Code	Description	*Interpretation Source Code*
? Emeriau Sandst	KR?		
? Eneabba Fm	JE?		
? Erskine Sandst	TRE?		
? Fairfield Grp	DCF?		
? Flat Rock Fm	PRF?		
? Frezier Sandst	KF?		
? Gage Fm	KWG?		
? Gearle Siltstone	KG?		
? Gingin Chalk	KCG?		
? Gnangara Sand	QN?		
? Granite	AG?		
? Granitoid Gneiss	AGN?		
? Granodiorite	AGG?		
? Grant Grp	CPG?		
? Guildford Clay	QG?		
? Hardey Fm	FH?		
? Hardman Fm	PHA?		
? Hart Dolerite	PRHD?		
? Henley Sandst Mbr	KCOH?		
? High Cliff Sandst	PG?		
? Irwin River Measure	PI?		
? Jarlemai Siltstone	JKR?		
? Jarrad Sandst Mbr	POJ?		
? Jeerinah Fm	PFJ?		
? Jurassic	J?		
? Jurassic to Cretaceous	JK?		
? Kardinya Shl Mbr	KCOK?		
? Kellys Knob Sandst Mbr	DUK?		
? Kings Park Fm	TK?		
? Kockatea Shl	TRK?		
? Lamboo Complex	PRL?		
? Lancelin Fm	KCL?		
? Laurel Fm	CLL?		
? Lawford Beds	TL?		
? Leederville Fm	KWL?		
? Lesueur Sandst	TRL?		
? Lightjack Fm	PLJ?		
? Liveringa Grp	PL?		
? Lyons Fm	CPL?		
? Maddina Volcanics	PFM?		
? Mafic Rock	AM?		
? Mafic Schist	AMS?		
? Mariginiup Mbr	KWLM?		
? Marra Mamba Iron Fm	PM?		
? McAlly Shl	PRMA?		
? McIntosh Gabro	PRMC?		
? Meda Fm	JKM?		
? Mesozoic	M?		
? Metasedimentary Rock	AS?		
? Migmatite	AGA?		
? Milligans Beds	CLM?		
? Millyit Sandst	TRM?		
? Mirrabooka Mbr	KCOM?		

Reference Code name	Code	Description	*Interpretation Source Code*
? Molecap Greensand	KCM?		
? Moola Bulla Fm	PRMB?		
? Mosquito Creek Fm	AMC?		
? Mount Mc Rae Shl	PHS?		
? Mount McGrath Fm	WM?		
? Mount Roe Basalt	FR?		
? Muderong Shl	KM?		
? Mullaloo Sandst Mbr	TKM?		
? Munkayarra Fm	TRY?		
? Nakina Fm	KNA?		
? Nanutarra Fm	KNY?		
? Noonkanbah Fm	PNO?		
? Olympio Fm	AHO?		
? Ordovician	O?		
? Osborne Fm	KCO?		
? Otorowiri Siltstone Mbr	JKO?		
? Palaeozoic	PA?		
? Pallinup Siltstone	TPP?		
? Parmelia Fm	JKP?		
? Paterson Fm	PAT?		
? Permian	PE?		
? Permian to Jurassic	PEJ?		
? Pillara Limest	DPL?		
? Pinjar Mbr	KWLP?		
? Poison Hill Greensand	KCP?		
? Poole Sandst	PP?		
? Precambrian	PRC?		
? Proterozoic	PR?		
? Quartz+Mica Schist	ALM?		
? Quaternary	Q?		
? Quaternary+Superficial Fms	QTSF?		
? Quaternary+Tertiary	QT?		
? RaggedRangeConglomerate Mbr	DUR?		
? Rockingham Sand	TRO?		
? Roy Hill Shl Mbr	PFJR?		
? South Perth Shl	KWS?		
? Stockton Fm	PS?		
? Tamala Limest	QTL?		
? Tertiary	T?		
? Throssell Shale	PRTH?		
? Toolonga Calcilutite	KT?		
? Triassic	TR?		
? Tumblagooda Sandst	ST?		
? Tunganary Fm	PRT?		
? Turee Creek Fm	PWT?		
? Ultramafic Rock	AU?		
? Wallal Sandst	JLL?		
? Wanneroo Mbr	KWLW?		
? Weeli Wolli Fm	PHJ?		
? Werillup Fm	TPW?		
? Windalia Radiolarite	KW?		
? Winifred Fm	CPW?		
? Wittenoom Dolomite	PHD?		

Reference Code name	Code	Description	*Interpretation Source Code*
? Woodada Fm	TRW?		
? Woodward Dolerite	PRWD?		
? Woongarra Volcanics	PHWV?		
? Wthrd Amphibolite	AMAW?		
? Wthrd Andesite	AAW?		
? Wthrd Banded Iron Fm	ACIW?		
? Wthrd Basalt	ABW?		
? Wthrd Bedrock	AEW?		
? Wthrd Boongal Fm	FOBW?		
? Wthrd Bow River Granite	PBOW?		
? Wthrd Brockman Iron Fm	PHBW?		
? Wthrd Bunjinah Fm	FUW?		
? Wthrd Coomberarie Fm	PACW?		
? Wthrd Diorite	ADW?		
? Wthrd Dolerite	ADOW?		
? Wthrd Dolerite	PRDOW?		
? Wthrd Duck Creek Fm	WDW?		
? Wthrd Felsic Volcanics	AFVW?		
? Wthrd Gabbro	AOGW?		
? Wthrd Gneiss	ANW?		
? Wthrd Granite	AGW?		
? Wthrd Granitoid Gneiss	AGNW?		
? Wthrd Granitoid Gneiss	AW?		
? Wthrd Hardey Fm	FHW?		
? Wthrd King Leopold Sandst	PKLW?		
? Wthrd Lyons Fm	CPLW?		
? Wthrd Mafic Intrusive	AOW?		
? Wthrd Mafic Rock	AMW?		
? Wthrd Mafic Schist	AMSW?		
? Wthrd Marra Mamba Fm	PMW?		
? Wthrd Metasedimentary Rock	ASW?		
? Wthrd Migmatite	AGAW?		
? Wthrd Mosquito Creek Fm	AMCW?		
? Wthrd Mount McGrath Fm	WMW?		
? Wthrd Parmelia Fm	JKPW?		
? Wthrd Precambrian	PRCW?		
? Wthrd Proterozoic	PRTW?		
? Wthrd Proterozoic Gneiss	PRNW?		
? Wthrd Proterozoic Granite	PRGW?		
? Wthrd Schist	AHW?		
? Wthrd Ultramafic Rock	AUW?		
? Wthrd Weeli Wolli Fm	PHJW?		
? Wthrd Wittenoom Dolomite	PHDW?		
? Wthrd Yarrawolya Fm	PAYW?		
? Wyndham Shl	PTW?		
? Yarragadee Fm	JY?		
? Yarraloola Conglomerate	KNY1?		
? Yarrawolya Fm	PAY?		
? Yoganup Fm	TY?		
? Yurabi Fm	PRY?		
Alexander Fm	JA		
Alinga Fm	KA		
Amphibolite	AMA		

Reference Code name	Code	Description	*Interpretation Source Code*
Amphibolitic Basalt	AUB		
Anderson Fm	CA		
Andesite	AA		
Antrum Plateau Volcanics	CMAU		
Archean	A		
Ascot Fm	TA		
Ashburton Fm	PWA		
Babbagoola Fm	PRBB		
Balfour Fm	MNB		
Banded Iron Fm	ACI		
Basal Triassic Sand	TRB		
Basalt	AB		
Bassendean Sand	QD		
Bassendean Sand+Guildford Clay	QDG		
Becher Sand	QC		
Bedrock	AE		
Betty Fm	CPB		
Birdrong Sandst	KB1		
Biscay Fm	AHR		
Blina Shl	TRBL		
Boolgeeda Iron Fm	PHO		
Boonall Dolomite	PRBO		
Boongal Fm	FOB		
Border Creek Fm	CBK		
Bossut Fm	QB		
Bow River Granite	PBO		
Brockman Iron Fm	PHB		
Broome Sandst	KB2		
Bulgadoo Shl	PBB		
Bunbury Basalt	KB		
Bunjinah Fm	FU		
Burt Range Fm	CLB		
Buttons Beds	DUB		
Cadda Fm	JD		
Cainozoic	CZ		
Cainozoic/Proterozoic	CZPR		
Cainozoic+Carboniferous	CZC		
Cainozoic+Devonian	CZD		
Cainozoic+Permian	CZPE		
Callawa Fm	JKC		
Callytharra Fm	PCA		
Cambrian	CAM		
Carboniferous	C		
Carboniferous to Permian	CPE		
Cardabia Calcarenite	TCC		
Carnac Mbr	JKPC		
Carolyn Fm	CPC		
Carr Boyd Grp	PRCB		
Carribuddy Fm	SDC		
Carson Volcanics	PKC		
Carynginia Fm	PC		
Cattamarra Coal Measures	JC		
Cecil Sandst Mbr	DUE		

Reference Code name	Code	Description	*Interpretation Source Code*
Cement Plug	CP		
Champion Bay Grp	JM		
Champion Bay Grp+Chapman Grp	JMJL		
Chapman Grp	JL		
Chert	AC		
Clanmeyer Siltstone Fm	DC		
Cockatoo Fm (Grp)	DUC		
Cockburn Sandst	PTC		
Cockleshell Gully Fm	JO		
Colalura Sandst	JMC		
Collie Coal Measures	PCM		
Colville Sandst	TC		
Como Sandst Mbr	TKC		
Coomberarie Fm	PAC		
Coyrie Fm	PBC		
Cretaceous	K		
Cronin Sandst	JCR		
Cundlego Fm	PBU		
Dandaragan Sandst	KD		
Devonian	D		
Devonian+ ?Permian	D+PE?		
Diorite	AD		
Dirk Hartog Fm	SD		
Dolerite	ADO		
Dolerite	PRDO		
Donnybrook Sandst	PD		
Duck Creek Fm	WD		
Elder Sandst	DE		
Emeriau Sandst	KR		
Eneabba Fm	JE		
Enga Sandst	CE		
Errabiddy Sandst	PAE		
Erskine Sandst	TRE		
Fairfield Grp	DCF		
Felsic Volcanics	AFV		
Flat Rock Fm	PRF		
Frezier Sandst	KF		
Gabbro	AOG		
Gage Fm	KWG		
Gardiner Beds	PRGB		
Gearle Siltstone	KG		
Gingin Chalk	KCG		
Glenhill Fm	PCG		
Gnangara Sand	QN		
Gneiss	AN		
Goldwyer Fm	OG		
Granite	AG		
Granitoid Gneiss	AGN		
Granodiorite	AGG		
Grant Grp	CPG		
Greenough Sandst	JLG		
Guildford Clay	QG		
Gumhole Fm	DUG		

Reference Code name	Code	Description	*Interpretation Source Code*
Hampton Sandst	TH		
Hardey Fm	FH		
Hardman Fm	PHA		
Hart Dolerite	PRHD		
Henley Sandst Mbr	KCOH		
High Cliff Sandst	PG		
High Cliff Sandst+Holmwood Shl	PGPH		
Holmwood Shl	PH		
Ilma Fm	PRI		
Irregully Fm	PRIR		
Irwin River Measure	PI		
Jarlemai Siltstone	JKR		
Jarrad Sandst Mbr	POJ		
Jeerinah Fm	PFJ		
Jillawarra Fm	PRJ		
Jingemia Dolomite	PRID		
Jurassic	J		
Jurassic to Cretaceous	JK		
Kardinya Shl Mbr	KCOK		
Keep Inlet Beds	PKI		
Kellys Knob Sandst Mbr	DUK		
Keogh Fm	PWK		
King Leopold Sandst	PKL		
Kings Park Fm	TK		
Kockatea Shl	TRK		
Kojarena Sandst	JMK		
Korojon Calcarenite	KK		
Kundip Quartzite	PRKQ		
Kybulup Schist	PRK		
Kylena Volcanics	PFK		
Lamboo Complex	PRL		
Lancelin Fm	KCL		
Laurel Fm	CLL		
Lawford Fm	TL		
Leederville Fm	KWL		
Leederville Fm Mowen Mbr	KWLMO		
Leederville Fm Quindalup Mbr	KWLQ		
Leederville Fm Vasse Mbr	KWLV		
Lennis Sandst	DLE		
Lerida Granite	PRLG		
Lesueur Sandst	TRL		
Lightjack Fm	PLJ		
Linnekar Fm	CML		
Liveringa Grp	PL		
Loongana Sandst	KL		
Lower Callawa Formation	KCA_L		
Luluigui Fm	DL		
Lyons Fm	CPL		
Maddina Volcanics	PFM		
Madura Fm	KMA		
Mafic Intrusive	AO		
Mafic Rock	AM		
Mafic Schist	AMS		

Reference Code name	Code	Description	*Interpretation Source Code*
Mallens Sandst	PBM		
Mariginiup Mbr	KWLM		
Marra Mamba Iron Fm	PM		
McAlly Shl	PRMA		
McIntosh Gabro	PRMC		
Meda Fm	JKM		
Mellinjerie Limest	DM		
Mendena Fm	PTM		
Mesozoic	M		
Metasedimentary Rock	AS		
Migmatite	AGA		
Milligans Beds	CLM		
Mirrabooka Mbr	KCOM		
Molecap Greensand	KCM		
Moogooloo Sandst	PWM		
Moola Bulla Fm	PRMB		
Moonyoonooka Sandst	JLM		
Mosquito Creek Fm	AMC		
Mount Mc Rae Shl	PHS		
Mount McGrath Fm	WM		
Mount Roe Basalt	FR		
Mt. Parker Sandst	PRP		
Muderong Shl	KM		
Mulkerins Granite	PRM		
Mullaloo Sandst Mbr	TKM		
Munkayarra Fm	TRY		
Nakina Fm	KNA		
Nallanaring Volcanic Mbr	PFJN		
Nambeet Fm	ONA		
Nanarup Limest	TPWN		
Nangetty Fm	PN		
Nanutarra Fm	KNY		
Napier Fm	DUN		
Newmarracarra Limest	JMM		
Nita Fm	ON		
Noonkanbah Fm	PNO		
Not Logged	NL		
Nullara Limest	DN		
Nullarbor+Wilson Bluff Limest	TNW		
Nura Nura Mbr	PPN		
Olympio Fm	AHO		
Ordovician	O		
Osborne Fm	KCO		
Otorowiri Siltstone Mbr	JKO		
Palaeozoic	PA		
Pallinup Siltstone	TPP		
Parda Formation	KPR		
Parmelia Fm	JKP		
Paterson Fm	PAT		
Pegmatite	AGP		
Pentecost Sandst	PKP		
Permian	PE		
Permian to Jurassic	PEJ		

Reference Code name	Code	Description	*Interpretation Source Code*
Pillara Limest	DPL		
Pillingini Tuff	PFP		
Pincombe Fm	PCP		
Pinjar Mbr	KWLP		
Plantagenet Grp	TP		
Point Spring Sandst	CLP		
Poison Hill Greensand	KCP		
Poole Sandst	PP		
Poulton Fm	DP		
Precambrian	PRC		
Proterozoic	PR		
Proterozoic Dolomite	PRB		
Proterozoic Dyke	PRD		
Proterozoic Gneiss	PRN		
Proterozoic Granite	PRG		
Proterozoic Quartz	PRQ		
Pyroxenite	AUX		
Quartz Gabbro	AOQ		
Quartz+Mica Schist	ALM		
Quaternary	Q		
Quaternary+Cainozoic	Q+CZ		
Quaternary+Superficial Fms	QTSF		
Quaternary+Tertiary	QT		
Ragged Range Conglomerate Mbr	DUR		
Rockingham Sand	TRO		
Roy Hill Shl Mbr	PFJR		
Sabina Sandst	TRS		
Safety Bay Sand	QS		
Schist	AH		
Septimus Limest	CS		
Serpentinite	AUS		
South Perth Shl	KWS		
Stirling Range Fm	PRS		
Stockton Fm	PS		
Stonewall Sandst	PRST		
Sue Coal Measures	PSC		
Surficial deposits	CZS		
Talc Carbonate Rock	AUC		
Tamala Limest	QTL		
Tandalgoo Sandst	DT		
Tertiary	T		
Throssell Shl	PRTH		
Tickalara Metamorphics	PRTM		
Toolonga Calcilutite	KT		
Triassic	TR		
Tumblagooda Sandst	ST		
Tunganary Fm	PRT		
Turee Creek Fm	PWT		
Ultramafic Rock	AU		
Unknown	NULL		
Upper Callawa Formation	KCA_U		
Wade Creek Sandst	PRWC		
Wagina Sandst	PW		

Reference Code name	Code	Description	*Interpretation Source Code*
Wallal Sandst	JLL		
Wanna Fm	DWA		
Wanneroo Mbr	KWLW		
Warnbro Grp	KLW		
Warrie Mbr	PFJWA		
Weathered Bunbury Basalt	KBW		
Weeli Wolli Fm	PHJ		
Werillup Fm	TPW		
Whitewater Volcanics	PRWV		
Wicherina Sandst Mbr	PNW		
Windalia Radiolarite	KW		
WindaliaRadiolarite+Muderong Shl	KWKM		
Windjana Limest	DW		
Winifred Fm	CPW		
Wittenoom Dolomite	PHD		
Woodada Fm	TRW		
Woodrarrung Sandst	PAW		
Woongarra Volcanics	PHWV		
Wthrd Coomberarie Fm	PACW		
Wthrd Amphibolite	AMAW		
Wthrd Andesite	AAW		
Wthrd Archean	AWE		
Wthrd Banded Iron Fm	ACIW		
Wthrd Basalt	ABW		
Wthrd Bedrock	AEW		
Wthrd Boongal Fm	FOBW		
Wthrd Bow River Granite	PBOW		
Wthrd Brockman Iron Fm	PHBW		
Wthrd Bunjinah Fm	FUW		
Wthrd Chert	ACW		
Wthrd Diorite	ADW		
Wthrd Dolerite	ADOW		
Wthrd Dolerite	PRDOW		
Wthrd Duck Creek Fm	WDW		
Wthrd Felsic Volcanics	AFVW		
Wthrd Gabbro	AOGW		
Wthrd Gneiss	ANW		
Wthrd Granite	AGW		
Wthrd Granitoid Gneiss	AGNW		
Wthrd Granitoid Gneiss	AW		
Wthrd Granodiorite	AGGW		
Wthrd Hardey Fm	FHW		
Wthrd King Leopold Sandst	PKLW		
Wthrd Kylena Volcanics	PFKW		
Wthrd Lyons Fm	CPLW		
Wthrd Maddina Volcanics	PFMW		
Wthrd Mafic Intrusive	AOW		
Wthrd Mafic Rock	AMW		
Wthrd Mafic Schist	AMSW		
Wthrd Marra Mamba Iron Fm	PMW		
Wthrd Metasedimentary Rock	ASW		
Wthrd Migmatite	AGAW		
Wthrd Mosquito Creek Fm	AMCW		

Reference Code name	Code	Description	*Interpretation Source Code*
Wthrd Mount McGrath Fm	WMW		
Wthrd Mount Roe Basalt	FRW		
Wthrd Nallanaring Volcanic Mbr	PFJNW		
Wthrd Noonkanbah Fm	PNOW		
Wthrd Parmelia Fm	JKPW		
Wthrd Pegmatite	AGPW		
Wthrd Pillingini Tuff	PFPW		
Wthrd Precambrian	PRCW		
Wthrd Proterozoic	PRTW		
Wthrd Proterozoic Gneiss	PRNW		
Wthrd Proterozoic Granite	PRGW		
Wthrd Quartz+Mica Schist	ALMW		
Wthrd Schist	AHW		
Wthrd Tumblagooda Sandst	STW		
Wthrd Turee Creek Fm	PWTW		
Wthrd Ultramafic Rock	AUW		
Wthrd Weeli Wolli Fm	PHJW		
Wthrd Wittenoom Dolomite	PHDW		
Wthrd Yarrawolya Fm	PAYW		
Wthrd Yeerinah Fm	PFJW		
Wyndham Shl	PTW		
Yarragadee Fm	JY		
Yarragadee Fm+Champion Bay Grp	JYJM		
Yarragadee+Cockleshell Gully Fms	JYJO		
Yarraloola Conglomerate	KNY1		
Yarrawolya Fm	PAY		
Yellow Drum Fm	DUY		
Yoganup Fm	TY		
Yurabi Fm	PRY		

Definition: Lithology 1.

Reference Code name	Code	Description	*Lithology 1*
(none)	()		
actionalite	ACT		
agglomerate	AGGL		
aggregate	AGGR		
alluvium	ALV		
amphiboles	AMPH		
amphibolite	AMA		
andesite	AD		
anorthosite	AN		
anthropogenic material	ANTHR		
apatite	APA		
aplite	AP		
arenite	ARE		
arkose (ic)	ARK		
asbestos	GNST		
ash	AS		
asphalt	ASP		
banded iron fm	BIF		
basalt	BAS		
basic rock	BRK		
bauxite	BX		
bedrock	BDR		
biotite	BIO		
bitumen	BI		
black	BLK		
black mud	BMUD		
black sand	BKSD		
blue	BL		
boulders	BLD		
breccia	BREC		
brown	BR		
burrow	BU		
calcarenite	CALCA		
calcareous	CALC		
calcilutite	CALCI		
calcite	CALCT		
calcrete	CAL		
cap rock	CA		
carbonaceous	CARB		
carbonate	CAR		
cavernous	CAV		
cavity	CVY		
cement	CMT		
cemented	CMTD		
chalcedonic	CHALC		
chalcedony	CHAL		
chalk	CHK		
chert	CHT		
chlorite (ic)	CHL		
clay	CL		

Reference Code name	Code	Description	*Lithology 1*
clayey	CLY		
clayey sand	CLYSD		
clayey silt	CLSLT		
claystone	CLST		
coal	COL		
coarse	CSE		
coarse river wash	CSER		
coarse sand	CSD		
cobbles	COB		
coffee rock	COFR		
colluvium	CLV		
concrete	CO		
conglomerate	CGL		
coral	COR		
dacite(ic)	DAC		
dark	DK		
debris	DE		
diorite	DI		
dolerite	DO		
dolerite dyke	D		
doleritic	DOC		
dolomite	DOL		
dunite	DU		
dyke	DY		
eluvium	ELV		
epidote	EP		
feldspar	FS		
felsic extrusive rock	FELEX		
felsic intrusive rock	FELI		
felsic volcanic rock	FELV		
ferricrete	FECT		
ferruginous	FERR		
fill	FI		
fine sand	FSD		
foliated	FOL		
formation	FM		
fossiliferous	FOSS		
fractured	FRA		
fractured rock	FRK		
fragments	FRG		
gabbro	GAB		
garnet	GT		
glauconite	GLAU		
gneiss	GNS		
goethite	GO		
gossan	GSN		
grainstone	GRA		
granite	GRT		
granite gneiss	GRG		
granitic material	GRM		
granitic rock	GRTR		
granodiorite	GDI		
granulite	GRN		

Reference Code name	Code	Description	*Lithology 1*
graphite (ic)	GRAPH		
gravel	GR		
gravelly	GRVY		
green	GN		
greenstone	GNT		
grey	GRY		
greywacke	GW		
grit	GRI		
gritty	GRIT		
gypsum	GYP		
haematite	HA		
hardpan	HAP		
heavy minerals	HMIN		
humic material	HM		
hydrocarbon odour	HYO		
ilmenite	IM		
indurated material	IND		
iron staining	FEST		
ironstone	IRST		
ironstone gravel	IRSTG		
jasper	JS		
jaspilite	JAS		
joints	JTS		
kaolin	KAOL		
kaolinite	KAO		
Kaolinitic	KAOLI		
komatiite	KO		
lamprophyre	LAM		
laterite	LAT		
lateritic	LATE		
lava	LAV		
lignite	LIG		
lime	LS		
lime sand	LSD		
limestone	LST		
limonite	LMNT		
loam	LM		
loamy	LMY		
mafic minerals	MFM		
mafic rock	AM		
mafic rock	MF		
mafic volcanic	MFV		
magnesite	MS		
magnetic	MAG		
magnetite	MT		
manganese	MA		
marl	MARL		
metabasalt	MBAS		
metal	MTL		
metamorphic	META		
metamorphic dolerite	MDO		
metaquartzite	MTQZ		
metasediments	MET		

Reference Code name	Code	Description	*Lithology 1*
mica	MIC		
micaceous	MICA		
micrite	MICR		
migmatite	MIG		
millimetres	MM		
monzodiorite	MOD		
monzonite	MON		
mottled zone	MZ		
mud	MD		
mudstone	MDST		
mylonite	MYL		
nodules	NDL		
orange	ORNG		
ore	OR		
organic	ORG		
organic material	ORGM		
overburden	OVBD		
packstone	PAC		
peat	PT		
peaty	PTY		
pebbles	PBL		
pegmatite	PEG		
pelite	PEL		
phyllite	PHY		
pink	PK		
pisolites	PSL		
porphyritic	PORP		
porphyry	POR		
pyrite	PYR		
pyritic	PY		
pyroxenite	PYX		
quartz	QTZ		
quartz vein	QTZV		
quartzite	QTZT		
red	RD		
rhyolite	RHY		
riebeckite	RIE		
roadbase	RB		
rock	RK		
rubble	RBL		
salt	SALT		
salt - sodium chlrde	NA		
sand	SD		
sandstone	SS		
sandy	SDY		
sandy clay	SDYCL		
sandy silt	SDSLT		
saprolite	SAP		
schist	SCH		
schistose	SCHI		
seaweed	SWD		
sedimentary rock	SED		
sediments	SEDS		

Reference Code name	Code	Description	*Lithology 1*
sericite	SER		
serpentine	SERPE		
serpentinite	SERP		
shale	SH		
sheared	SHD		
shells	SHEL		
shelly	SHELY		
silcrete	SLC		
silica	SI		
silicate (opaline)	SILC		
siliceous	SIL		
siliceous iron formation	SIF		
silicified	SILI		
silt, silty	SLT		
siltstone	SLST		
silty clay	SLTCL		
silty sand	SLTSD		
slate	SLTE		
sludge	SLD		
soil	SL		
sponglite	SPG		
stones	ST		
stoney	STY		
sulphides	SLPH		
talc	TA		
tar	TAR		
tillite	TILL		
tillite shale	TISH		
tillitic sandstone	TISS		
travertine	TRA		
tremolite	TR		
tuff	TF		
tuffaceous rock	TFC		
ultramafic	UM		
Unknown			
vermiculite	VE		
volcanics	VLCS		
vuggy	VU		
wacke	WA		
wackestone	WAST		
waste sludge	WSL		
waste, landfill waste	WAS		
water	WTR		
water injection	WTIN		
weathered	WD		
weathered basement rock	WDR		
white	WH		
yellow	Y		

Domain: Project information

Information related to projects (sampling programs), including project types, objectives, purposes, sampling regimes and sites sampled

Data table: Projects

Domain: Project information

Definition: A project (sampling program / data capture program) is a means of collecting and grouping data with a common objective.

Code table/group: Project objectives

Data table: Projects

Definition: The overall goal that a project is trying to attain; the reason for data collection

Reference Code name	Code	Description *Project objectives*
(none)	()	(none)
Administer individual water allocations and manage disputes	AWAD	Administer individual water allocations and manage disputes
Asset Maintenance	ASSMA	Asset Maintenance
Environmental characteristics research	RSRCH	Environmental characteristics research
Environmental quality classification	CLASS	Environmental quality classification
Establish environmental water requirements	EEWAR	Establish environmental water requirements
Event impact measurement	IMPCT	Event impact measurement
Identify future water supply needs, sources and values	WSSV	Identify future water supply needs, sources and values
Identify possible contamination	IDC	Identify possible contamination
Location of environmental degradation	LOCAT	Location of environmental degradation
Long-term/seasonal trend measurement	TREND	Long-term/seasonal trend measurement
Manage and monitor compliance	MMC	Manage and monitor compliance
Model Development	MODE	Model Development
Monitor and evaluate the impacts of land use activities on water resources	MEILU	Monitor and evaluate the impacts of land use activities on water resources
Nutrient reduction	NUTRE	Nutrient reduction
Provide flood warnings and forecasts	PFWFC	Provide flood warnings and forecasts
Review and quantify availability of water resources	WATRE	Review and quantify availability of water resources
Understand catchment and regional water quality	UCRWQ	Understand catchment and regional water quality
Unknown	UNKWN	Unknown
Water Quality Monitoring Protocols	WQMPR	Water Quality Monitoring Protocols
Water treatment methods trial	TRIAL	Water treatment methods trial

Definition: Classification of projects into types according to the general means and purpose of data collection or capture.

Reference Code name	Code	Description *Project types*
(none)	()	(none)
Data Extraction from Paper Records	DATEXT	Data Extraction from Paper Records
Groundwater contamination investigation	GCI	Groundwater contamination investigation
Once off project	ONEOF	Once off project
Research and investigation project	RSRCH	Research and investigation project
Resource Review	RESREV	Resource Review
Routine monitoring project	ROUTN	Routine monitoring project
Surfacewater Contamination Investigation	SCI	Surfacewater Contamination Investigation
Waterway Restoration	WARES	Waterway Restoration

Domain: Sample information

Information related to samples, including site, date-time, depth, matrix, collection method, collection instrument and other sampling regime details

Data table: Samples

Domain: Sample information

Definition: A representative portion of matrix (sample medium), or a set of measurements or observations, collected at a singular site, date, time and depth by a particular collection regime.

Code table/group: Sample collection devices

Data table: Samples

Definition: The device used to physically collect a sample from the environment. Not to be confused with the instrument used to obtain measurements (analysis instrument).

Reference Code name	Code	Description *Sample collection devices*
Autosampler (composite)	AUTOC	Composite Autosampler - composite of discrete times
Autosampler (discrete)	AUTOD	Discrete Autosampler - single shot taken
Bailer	BAILR	Bailer - bore sample extraction carried out with a bailer (scoop or bucket)
Benthic chamber	BENTH	Benthic chamber
Box trap - 2cm mesh, 470mm x 210mm x 600mm	BTRAP2CM	Box trap - 2cm mesh, 470mm x 210mm x 600mm
Box trap - 3mm mesh, 260mm x 260mm x 460mm	BTRAP3MM	Box trap - 3mm mesh, 260mm x 260mm x 460mm
Container	CONT	Container
Corer	CORER	Core sample taken within a localised radius of a sampling point
Diffusion cell	DIFFC	A device that collects samples via diffusion
Extendable pole sampler	EXTPS	Extendable pole sampler
Fyke net - 105cm x 75cm opening	FYKE105CM	Fyke net - 105cm x 75cm opening
Fyke net - 70cm x 55cm opening	FYKE70CM	Fyke net - 70cm x 55cm opening
Integrating hose/pipe (25mm int diam)	IHP25	A hose or pipe with a 25mm internal diameter that is used for taking an integrated-over-depth sample
Net	NET	Sampling net
None	()	None
Pump (Airlift)	PUMPA	Airlift pump - bore sample extraction using high-pressure air to lift the sample
Pump (Centrifugal)	PUMPC	Centrifugal pump - bore sample extraction carried out with a centrifugal (impellor) pump
Pump (Electric)	PUMPE	Electric pump - bore sample extraction carried out with an electric pump (centrifugal or submersible)
Pump (Inertial valve)	PUMPI	Inertial valve pump - bore sample extraction carried out with an inertial valve pump (eg Waterra)
Pump (Jet)	PUMPJ	Jet pump - bore sample extraction carried out with a jet pump (combined centrifugal and nozzle-venturi arrangement)
Pump (Low Flow Air)	PUMPLFA	Low flow air pump. Uses low-pressure air to prevent sample contamination or loss through turbulence
Pump (Low Flow)	PUMPLF	Low flow pump - bore sample extraction carried out with a low flow bladder pump.
Pump (Peristaltic)	PUMPP	Peristaltic pump - bore sample extraction carried out with a peristaltic pump (employs wave-like constriction of a flexible tube)

Reference Code name	Code	Description *Sample collection devices*
Pump (Submersible)	PUMPS	Submersible pump - bore sample extraction carried out with a submersible pump (combined centrifugal pump and electric motor that can be submerged in water)
Pump (Submersible) with copper tube	PUMPSCT	Submersible pump - bore sample extraction carried out with a submersible pump (combined centrifugal pump and electric motor that can be submerged in water) into copper tube sampler
Pump (Turbine)	PUMPU	Turbine pump - bore sample extraction carried out with a turbine pump (type of centrifugal pump)
Pump (unspecified)	PUMP	Pump of an unspecified type
Pump (Wind)	PUMPW	Wind pump - bore sample extraction carried out with a wind(mill) pump (usually a single-action piston pump powered by wind)
Reverse Circulation Air Core	RCCOR	Reverse Circulation Air Core
Sampling Tube	SAMPT	Sampling tube - a thin walled tube that allows the passage of formation sample material and fits inside an outer drive tube. For bore sediment sample extraction.
Scraping	SCRPG	Scraping of substance from a substrate
Screened auger	SNAUG	Screened auger - a screened hollow auger section, generally just behind the bit, that allows the entry and removal of bore formation fluid for sampling at specific depths.
Sweep net - 250 micron mesh, D-frame.	SNET250	Sweep net - 250 micron mesh, D-frame.
Unknown	UNKWN	Unknown method
Vacuum sampler	VACSA	Vacuum sampler
Weighted bottle	WTBTL	Weighted bottle - a 2L bottle lowered slowly through the water column to collect an integrated sample

Code table/group: **Sample collection frequencies** *Data table: Samples*

Definition: The general type of frequency at which samples or data are collected.

Reference Code name	Code	Description *Sample collection frequencies*
Continuous / Logger	CONT	Continuous / Logger
Event	EVENT	Event
Irregular	IRREG	Irregular
Once off	ONCE	Once off
Regular	REG	Regular
Unknown	UNK	Unknown

Definition: The means by which the sample matrix was captured or collected from the environment in order to be measured. It is not the instrument used to collect the sample, but rather the type of methodology employed.

Reference Code name	Code	Description *Sample collection methods*
Artesian Flow	ARTFL	Artesian Flow - sample taken from a surface-flowing well or bore
Benthic sample	BENTH	Benthic samples from water-sediment interface
Bore development	DEV	Bore development
Composite depths	COMDE	Composite sample of discrete depths taken from the same location
Composite localised radius	CLOC	Composite localised radius
Composite sites	CSITE	Composite sample of discrete sites
Composite sites intd over depth	CSINT	Composite sample of discrete sites each integrated over depth
Composite times	CTIME	Composite sample of discrete times
Cutting	CUT	Cutting - portion of plant cut from main body
Data Logger	LOG	Data Logger
Grab phyto	GRABP	Grab sample for phytoplankton analysis. Means of identifying and securing phytoplankton data.
Grab sample	GRAB	Grab - discrete sample taken at a singular place, depth and time.
Inert gas lift	INGAS	Inert gas lift
Injection test Bore	INJEC	Injection test Bore
Insitu	INSIT	Insitu reading or observation
Integrated over depth	INTDE	Integrated over depth
Integrated phyto	INTDEP	Integrated over depth for phytoplankton analysis. Means of identifying and securing phytoplankton data.
Laboratory sample	LAB	Laboratory sample
Over-time	OVERT	Over time - a sample that is taken within or over a specified period of time. Period start is defined by a variable and end is defined by the sample collection date.
Pumped	PUMPD	Pumped
Pumping test	PUMPT	Pumping (test) - constant-rate or step-drawdown pumping test to determine the hydrogeological character of an aquifer
Purge	PURGE	Purge
Reverse Circulation Air Core	RCCOR	Reverse Circulation Air Core
Splitspoon sample	SPLIT	Splitspoon sample - a longitudinally split sampling tube that is split apart on retrieval to access the bore formation sample obtained.
Unknown method	UNKWN	Unknown method

Code table/group: **Sample matrices** *Data table: Samples*

Definition: The physical medium being sampled or measured

Reference Code name	Code	Description *Sample matrices*
(none)	()	(none)
Air	AIR	Air
Animal tissues analysed for constituents	TISSA	Animal tissues analysed for constituents
Leachate	LEACH	Leachate
Macroinvertebrate tissue (aquatic insects, crustaceans, molluscs and worms) analysed for constituents	MACIN	Macroinvertebrate tissue (aquatic insects, crustaceans, molluscs and worms) analysed for constituents
Periphyton (attached algae) analysed for constituents	PERIP	Periphyton (attached algae) analysed for constituents
Plant tissues analysed for constituents	TISSP	Plant tissues analysed for constituents
Pore water	POREW	Pore water - the water filling the spaces between grains of sediment
Regolith - weathered or transported material overlying more coherent bedrock	REGOL	Regolith - weathered or transported material overlying more coherent bedrock
Sediment sample	SEDIM	Sediment sample
Sludge sample	SLUDG	Sludge sample
Soil sample	SOIL	Soil sample
Water sample	WATER	Water sample

Code table/group: **Sample types** *Data table: Samples*

Definition: A categorization of types of sample, broadly based on Standard (i.e. actual measurement) and QA/QC samples, and further divided into individual subtypes where appropriate.

Reference Code name	Code	Description *Sample types*
Bottom sample	ST_BOTT	Bottom sample
Container blank - QA	QA_CTRBK	Container blank - QA
Field blank - QA	QA_FLDBK	Field blank - QA
Field duplicate - QA	QA_FLDDP	Field duplicate - QA
Field duplicate spiked - QA	QA_FLDDS	Field duplicate spiked - QA
Laboratory blank - QA	QA_LABBK	Laboratory blank - QA
Laboratory duplicate - QA	QA_LABDU	Laboratory duplicate - QA
Level only - STAND	ST_LEVLO	Level only - STAND
Pollution - STAND	ST_POLL	Pollution - STAND
Profile	ST_PROFL	Profile
Recovery obtained from addition of a known concentration of spike to sample - QA	QA_RECOV	Recovery obtained from addition of a known concentration of spike to sample - QA
Replicate sample - QA	QA_REP	Replicate sample - QA
Rinsate blank sample obtained from rinsing collection equipment - QA	QA_RINBK	Rinsate blank sample obtained from rinsing collection equipment - QA
Solution from a laboratory - QA	QA_LABSO	Solution from a laboratory - QA
Source solution blank - QA	QA_SOSBK	Source solution blank - QA
Standard	ST_STAND	Standard
Surface sample	ST_SURF	Surface sample
Trip or transport blank - QA	QA_TRPBK	Trip or transport blank - QA

Domain: Reading information

Information related to readings, including variables, units, original and standard values, analysis methods and quality ratings

Data table: Readings

Domain: Reading information

Definition: A field measurement, observation or result from laboratory analysis, captured from a sample and identified by a variable (mandatory), a variable qualifier (optional), units (mandatory), and a taxonomic name (optional and used for identification of biota), and expressed as a reading value of type number, range, date or text, optionally prefixed with a value qualifier such as ~, < or >. Refer also to the WIR Variables and Analysis Methods listings available from the Help and references page.

Code table/group: Variable types

Data table: Readings

Definition: A means of classifying variables into groups having similar chemical structure, end use, biological order, physical characteristics and/or measurement technique.

Reference Code name	Code	Description *Variable types*
(none)	()	(none)
Benzene toluene ethylbenzene xylene	BTEX	Benzene toluene ethylbenzene xylene
Dithiocarbamates	DTCF	Dithiocarbamates
Hormones	HORMONES	Hormones
Hydrocarbon gases	HCGAS	Hydrocarbon gases that occur only in the gas phase at standard temperature and pressure
Inorganic metals	INORGMETAL	Inorganic metals
Inorganic non-metals	INORGNOMET	Inorganic non-metals
Isotope Ratios	ISOTOPERAT	Isotope Ratios
Micro-organisms	MICROORGAN	Micro-organisms
Noble gases	NGAS	Noble gases
Non-OC/OP pest/herbicides	NONOCOP	Non-OC and non-OP pesticides and herbicides
Nutrients	NUTRIENTS	Nutrients
Organic metals	ORGMET	Organic metals
Organic non-metals	ORGNOMET	Organic non-metals
Organics	ORGANICS	Organics
Organochlorine pest/herbicides	OCPH	Organochlorine pesticides and herbicides
Organophosphate pest/herbicides	OPPH	Organophosphate pesticides and herbicides
Other Aromatic Hydrocarbons	OTHERAH	Other Aromatic Hydrocarbons
Phenols	PHENOLS	Phenol compounds
Physical	PHYSICAL	Physical
Plant pigments	PIGS	Plant pigments
Plasticisers	PLASTICISE	Plasticisers
Poly-Aromatic Hydrocarbons	PAH	Polynuclear Aromatic Hydrocarbons or Polycyclic Aromatic Hydrocarbons
Polychorinated biphenyls	PCB	Polychorinated biphenyls
Pyridines	PY	Pyridines
Radioanuclides	RADNUC	Radioactive element
Rate (factor/coefficient)	RATE	Rate (factor or coefficient) that varies according to reading.
Sample qualifier	SAMPQUALIF	Sample qualifier
Serotype	SEROTYPE	Serotype - an antigenic property of a cell or virus identified by serological methods
Surfactant	SURFACTANT	Surface Acting Agent
Surrogate recovery	SUREC	Surrogate recovery
Time-Series Meteorological	TSMET	Time-Series Meteorological variables. WIN-equivalent representations of Hydstra rain / climate variables. Not to be used for WIN data.

Reference Code name	Code	Description *Variable types*
Time-Series Water Levels	TSWL	Time-Series Water Level variables, including derived levels and flow. WIN-equivalent representations of Hydstra water level variables. Not to be used for WIN data.
Time-Series Water Quality	TSWQ	Time-Series Water Quality variables. WIN-equivalent representations of Hydstra water quality variables. Not to be used for WIN data.
Total Petroleum Hydrocarbons	TPHF	Total Petroleum Hydrocarbons
Unknown	UNKNOWN	Unknown
Water Level (discrete)	WATERLVL	A discrete (non-continuous) measurement of water level

Domain: Universal

System-wide Information

Data table: Quality codes

Domain: Universal

Definition: The QUALITY database defines the data quality codes that are stored in Hydstra data files. In particular, it holds a single character flag which is used to flag data on reports. Note that any number of numeric quality codes may share the same print quality flags. In general it is wise to limit the number of print quality flags, as there may not be enough space at the bottom of reports to list them if too many are used.

Code table/group: **Quality codes**

Data table: Quality codes

Definition: Codes to indicate the quality of data

Reference Code name	Code	Description *Quality codes*
Accumulated record	25	Accumulated record. Report print char: A
Deaccumulated using interpolated data	32	Deaccumulated using interpolated data.
Deaccumulated using nearby station	31	Deaccumulated using nearby station.
Estimated error +/-10%	3	Estimated error +/-10%. Report print char: "
Estimated error +/-15%	4	Estimated error +/-15%. Report print char: #
Estimated error +/-2%	1	Estimated error +/-2%.
Estimated error +/-20%	5	Estimated error +/-20%. Report print char: $
Estimated error +/-5%	2	Estimated error +/-5%.
Estimated error > +/-20%	6	Estimated error > +/-20%. Report print char: &
Gauging - Excellent	41	Gauging - Excellent.
Gauging - Fair	43	Gauging - Fair.
Gauging - Good	42	Gauging - Good.
Gauging - Poor	44	Gauging - Poor.
Interpolated daily observations	34	Interpolated daily observations.
Interpolated long term average	35	Interpolated long term average.
Nearby station, data from BoM	33	Nearby station, data from BoM.
Not available	152	Not available. Report print char: [
Not reviewed / Quality not known	10	Not reviewed / Quality not known. Report print char: !
Outside measured range	151	Outside measured range. Report print char: B
Provisional	150	Provisional. Report print char: P
Rainday within period of accumulated record	24	Rainday within period of accumulated record. Report print char: R
Station data, as supplied by BoM	30	Station data, as supplied by BoM.
Unrated	161	Unrated. Report print char: U

Definition: Various data tables that make use of Unversal or common codes and reference information.

Code table/group: **Date accuracy** *Data table: Various*

Definition: The unit of measurement to which a given date or time is known to be accurately recorded.

Reference Code name	Code	Description *Date accuracy*
Known day	DAY	The associated Date-Time field is known to be accurate to the nearest Day
Known hour	HOUR	The associated Date-Time field is known to be accurate to the nearest Hour
Known minute	MIN	The associated Date-Time field is known to be accurate to the nearest Minute
Known month	MONTH	The associated Date-Time field is known to be accurate to the nearest Month
Known second	SEC	The associated Date-Time field is known to be accurate to the nearest Second
Known year	YEAR	The associated Date-Time field is known to be accurate to the nearest Year
Unknown	UNKWN	The associated Date-Time field has an unknown accuracy. The accuracy could be as broad as the nearest Century.

Code table/group: **Units** *Data table: Various*

Definition: Units of measurement; standard amounts of physical quantities that are used to express magnitudes of that physical quantity.

Reference Code name	Code	Description *Units*
$	DOLL	dollars
%	PERC	percent
%w/v	PERWV	percent weight by volume
%w/w	PERWW	percent weight for weight
+/- 1 SD	PM1SD	+/- one standard deviation
A	AMP	amperes
A.h	AMPH	ampere hours
A/m	AMPM	amperes per metre
ac	ACRE	acres
ac.ft	ACFT	acre feet
ac.in	ACIN	acre inches
AMG	AMG	Australian Map Grid
angstrom	ANGS	angstroms
APHA	APHA	measurement
atm	ATM	atmospheres
atom/L	ATPL	atoms per litre
AU	AU	astronomical units
b	BARN	barns
bar	BAR	bars
Bq	BECQ	becquerels
Bq/L	BL	becquerels per litre
Btu	BTU	British thermal unit
C	COUL	coulombs
cal	CAL	calories
cal/c2/d	CCD	calories per square cm per day
ccSTP/g	CCSTG	cm3 gas at std temp & press /g
cd	CAND	candela
cd/m2	CAM2	candela per square metre
cell/cm2	CCM2	cells per square centimetre
cells	TCEL	total cells
cells/dL	CDL	cells per decilitre (100mL)
cells/mL	CML	cells per millilitre
CFU/dL	CFDL	colony forming units per 100mL
CFU/mL	CFML	colony forming units per mL
ch	CHN	chains
Ci	CI	Curie
cm	CM	centimetres
cm.km	CMKM	centimetre kilometres
cm/h	CMH	centimetres per hour
cm/s	CMS	centimetres per second
cm/s2	CMS2	centimetres per second squared
cm-1	PCM	per centimetre
cm2	CM2	square centimetres
cm3	CM3	cubic centimetres
comment	COMM	comment
cSt	CST	centistokes
ct	CNT	counts
ct/100mL	CPHM	count per 100 millilitres
ct/area	CPA	count per area

Reference Code name	Code	Description	*Units*
ct/min	CPM	count per minute	
ct/mL	CPML	count per millilitre	
ct/s	CPS	count per second	
CU	TCU	colour units	
date	DATE	date	
day	DAY	day	
ddmmyy	DMY	day month 2 digit year	
ddmmyyyy	DM4Y	day month 4 digit year	
deg	DEG	degrees	
deg C	DEGC	degrees Celsius	
deg F	DEGF	degrees Fahrenheit	
dils	DILS	dilutions	
dioptre	DIOP	dioptre	
dyne/cm	DYCM	dyne per centimetre	
e/L	EL	equivalents per litre	
error	ERR	error	
eV	EV	electron volts	
F	FARD	farads	
FAU	FAU	formazin attenuated units	
fib/L	FIBL	fibres per litre	
fm	FATH	fathoms	
fmol/L	FMOLL	femtomol per litre	
FNU	FNU	Formazine nephelometric units	
ft	FOOT	feet	
ft.lb	FTPD	foot pounds	
ft/s	FTS	feet per second	
ft/s2	FTS2	feet per second squared	
ft2	FT2	square feet	
ft3	FT3	cubic feet	
ft3/s	CFS	cubic feet per second	
FTU	FRMZ	formazin turbidity units	
g	G	grams	
g/100g	G100	grams per 100 grams	
g/24h	G24H	grams per 24 hours	
g/kg	GKG	grams per kilogram	
g/L	GML	grams per litre	
g/m3	GM3	grams per cubic metre	
g/mL	GM	grams per millilitre	
g/sec	GMS	grams per second	
g440/m	G440	Gilvin-440 per metre	
gal	GALI	gallons	
gal/day	GIPD	gallons per day	
gal/hr	GALH	gallons per hour	
gal/min	GIPM	gallons per minute	
GL	GL	gigalitres	
GL/day	GLD	gigalitres per day	
gn	GS	gravity	
gr/gal	GRGL	grains per gallon	
gr/galCl	GRGC	grains per gallon as Cl	
gr/gNaCl	GRGN	grains per gal as NaCl	
grade	GRAD	grade	
Gy	GRAY	gray	
H	HENR	henries	

Reference Code name	Code	Description	*Units*
h	HOUR	hours	
ha	HA	hectares	
ha.m	HAM	hectare metres	
hh:mm	HCM	hours colon minutes	
hhmm	HM	hours no colon minutes	
hp	HP	horsepower	
hPa	HPA	hectopascals	
Hu	HAZN	Hazen units	
Hz	HZ	hertz	
in	INCH	inches	
in.mile	INMI	inch miles	
in/hr	INH	inches per hour	
in/sec	INS	inch per second	
in/sec2	INS2	inches per second squared	
in2	IN2	square inches	
in3	IN3	cubic inches	
J	J	joules	
J/m2	JM2	joules per square metre	
JTU	JCU	Jackson turbidity units	
K	KELV	kelvin	
kcal	KCAL	kilocalories	
kcal/cm2	KCCM	kilocalories per square cm	
kg	KG	kilograms	
kg/d/km2	KDK2	kilograms per day per km2	
kg/day	KGD	kilograms per day	
kg/ha	KGH	kilograms per hectare	
kg/kg	KGKG	kilograms per kilogram	
kg/L	KGL	kilograms per litre	
kg/m	KGM	kilograms per metre	
kg/m2	KGM2	kilograms per square metre	
kg/m3	KGM3	kilograms per cubic metre	
kg/min	GD	kilograms per minute	
kg/sec	KGS	kilograms per second	
kg/t	KGTO	kilograms per tonne	
kg/yr	KGY	kilograms per year	
kJ	KJ	kilojoules	
kJ/m2	JM	kilojoules per square metre	
kJ/m3/h	JH	kilojoules per m3 per hour	
kL	KL	kilolitres	
kL/day	KLD	kilolitres per day	
kL/hr	KLH	kilolitres per hour	
km	KM	kilometres	
km/day	KMD	kilometres per day	
km/h/sec	KMHS	kilometres per hour second	
km/hr	KMH	kilometres per hour	
km2	KM2	square kilometres	
kn	KNOT	knots	
kohms	KOHM	kilohms	
kPa	KP	kilopascals	
kW	KW	kilowatts	
kW.hr	KWH	kilowatt hours	
L	L	litres	
L/hr	LTHR	litres per hour	

Reference Code name	Code	Description	Units
L/L-AGD	LATAG	Latitude/Longitude - AGD66/84	
L/L-GDA	LATLO	Latitude/Longitude - GDA94	
L/min	LMIN	litres per minute	
L/s/ha.h	LSHH	litres per second hectare hour	
L/s/ha.m	LSHM	litres per second hectare min	
L/sec	LS	litres per second	
L/sec/ha	LSH	litres per second per hectare	
lb	PND	pounds	
lbf	PNDF	pound-force	
lm	LUMF	lumens	
lx	LUX	lux	
m	M	metres	
m head	MHD	metres head	
m/area	MPAR	meters per area	
m/day	MD	metres per day	
m/hr	MHR	metres per hour	
m/m	MPM	metres per metre	
m/sec	MS	metres per second	
m/sec2	MS2	metres per second squared	
m2	M2	square metres	
m2/m2	M2M2	square metre per square metre	
m2/sec	M2S	square metres per second	
m3	M3	cubic metres	
m3 thou	THCM	thousands of cubic metres	
m3/day	M3D	cubic metres per day	
m3/h	M3H	cubic metres per hour	
m3/kg	M3KG	cubic metres per kilogram	
m3/s	CUMC	cubic metres per second	
m3/sec2	M3S2	cubic metres per second sq	
mA	MA	milliAmps	
mbar	MBAR	millibars	
mBq/L	MBPL	millibecquerels per litre	
meq/100g	ME100	milliequivalents per 100 grams	
meq/L	MEL	milliequivalents per litre	
mg	MG	milligrams	
mg/g	MGG	milligram per gram	
mg/kg	MGKG	milligrams per kilogram	
mg/L	MGL	milligrams per litre	
mg/lNaCl	MGLN	milligrams per litre as NaCl	
mg/m2	MGM2	milligrams per square metre	
mg/m3	MGM3	milligrams per cubic metre	
mg/sec	MGS	milligrams per second	
MGA94	MGA94	Map Grid of Australia 1994	
mgal/d	MGID	million gallons per day	
mi	MILE	miles	
mi/hr	MPH	miles per hour	
mi2	MI2	square miles	
micron	MICR	microns	
mil m3	MCM	million cubic metres	
min	MIN	minutes	
mina	MINA	minutes (angle)	
MJ	MJ	megajoules	
MJ/m2	MJSM	megajoules per square metre	

Reference Code name	Code	Description	*Units*
ML	ML	megalitres	
mL	MIL	millilitres	
ML/d/km2	MDSK	megalitres per day per km2	
ML/day	MLD	megalitres per day	
mL/g	MLG	millilitres per gram	
mL/L	MLL	millilitres per litre	
mL/sec	MLS	millilitres per second	
mm	MM	millimetres	
mm.km	MMKM	millimetre kilometres	
mm/day	MMD	millimetres per day	
mm/hr	MMH	millimetres per hour	
mm/m	MMM	millimetre per metre	
mm/sec	MMS	millimetres per second	
mm2	MM2	square millimetres	
mmHg	MMHG	millimetres Mercury	
mmol	MMOL	millimoles	
mmol/kg	MMKG	millimoles per kilogram	
Mohms	MOHM	megaohms	
mol	MOLE	moles	
mol H+/t	MTON	moles H+ per tonne	
mol/kg	MKG	moles per kilogram	
mol/L	MOLL	moles per litre (molarity)	
mol/m3	MM3	moles per cubic metre	
MPa	MPA	megapascals	
mPa	MIPA	millipascals	
mPa.sec	MPAS	millipascal seconds	
MPN/dL	MPNDL	Most Probable Number per 100mL	
MPN/g	MPNG	Most Probable Number per gram	
mrad	MRAD	milliradians	
mS	MSEI	millisiemens	
mS/cm	MSCM	millisiemens per centimetre	
mS/m	MSM	millisiemens per metre	
msec	MSEC	milliseconds	
mV	MV	millivolts	
N	NEWT	newtons	
n mile	NAUT	nautical miles	
ng/g	NGG	nanogram per gram	
ng/L	NGL	nanograms per litre	
no units	()	No units	
NTU	NTU	nephelometric turbidity units	
Num code	NUMCD	Number that signifies a code	
o/oo	PML	per mil	
o/oo CDT	PTCDT	ppt deviation from CDT	
o/oo PDB	PTDBW	ppt deviation from PDB	
o/ooSMOW	PTDOW	ppt deviation from SMOW	
o/ooVPDB	PTDVB	ppt deviation from VPDB	
o/ooVSMO	PTDVW	ppt deviation from VSMOW	
ohm.m	OHMM	ohms per metre	
ohms	OHM	ohms	
okta	OKTA	okta	
oz	OUNC	ounces	
Pa	PA	pascals	
PA.sec	PAS	pascal seconds	

Reference Code name	Code	Description	*Units*
pCi	PCI	picoCuries	
pCi/L	PCUR	picocuries per litre	
per day	PERD	per day	
per hr	PERH	per hour	
per m	PM	per metre	
per min	PERM	per minute	
per sec	PERS	per second	
pg/g	PGRM	picograms per gram	
pg/kg	PGKG	picograms per kilogram	
plant/ha	PLTHA	plants per hectare	
pMC	PMC	percent Modern Carbon	
pmol/kg	PMKG	picomoles per kilogram	
point	PT	points	
ppb	PPB	part per billion	
ppm	PPM	part per million	
ppt	PPT	part per thousand	
psi	PSI	pound per square inch	
qt	QRT	quarts	
quadrant	QUAD	quadrants	
r	REV	revolutions	
r/day	RPD	revolutions per day	
r/hr	RPH	revolutions per hour	
r/min	RPM	revolutions per minute	
r/sec	RPS	revolutions per second	
rad	RAD	radians	
Ratio	RATI	Ratio	
RF%	RFRQ	Relative frequency	
rod	ROD	rods	
S	SM	siemens	
S/cm	SIECM	Siemens per centimetre	
S/m	SIEM	siemens per metre	
scalar	SCAL	scalar	
sec	SEC	seconds	
seca	SECA	second (angle)	
sr	STRAD	steradian	
Sv	SIEV	sievert	
T	TESL	tesla	
t	TONN	tonnes	
t/day	TOND	tonnes per day	
t/dy/km2	TDK2	tonnes per day per km2	
t/sec	TONS	tonnes per second	
t/yr	TONY	tonnes per year	
terraL	TL	terralitres	
tex	TEX	tex	
ton	TON	tons	
total	TOTL	Total	
u	UAMU	unified atomic mass unit	
uei/s/m2	UEISM	microeinsteins / sec / metre2	
ueinst	UEIN	microeinsteins	
ug	MICG	micrograms	
ug/kg	UGKG	micrograms per kilogram	
ug/L	UT	micrograms per litre	
ug/m3	UGM3	micrograms per cubic metre	

Reference Code name	Code	Description	*Units*
uin	MINC	microinches	
uL	MLIT	microlitres	
um	UM	micrometres	
umhos/cm	UMCM	micromhos per centimetre	
units	RUNT	relative units	
unknown	UNKWN	unknown	
uohm.cm	MOCM	microhm centimetre	
urad	URAD	microradians	
uS	US	microsiemens	
US ac	ACRU	acres (US Survey)	
US ac.ft	ACFU	acre feet (US Survey)	
US gal	GAL	US gallons	
US gpd	GPD	US gallon per day	
US gpm	GPM	US gallon per minute	
US mg	MGAL	US million gallons	
US mgpd	MGD	US million gallons per day	
uS/cm	MISC	microsiemens per centimetre	
uS/m	MISM	microsiemens per metre	
V	VOLT	volts	
W	WATT	watts	
W/h/m2	WHSM	watts hour per square metre	
W/m2	WSM	watts per square metre	
W/s/m2	WSSM	watt second per sq. metre	
Wb	WEBR	webers	
Wb/m2	WBM2	Webers per Square metre	
yd	YARD	yards	
yd2	YD2	square yards	
yd3	YD3	cubic yard	
years	YEAR	years	
yyyyddd	YRDY	year day	