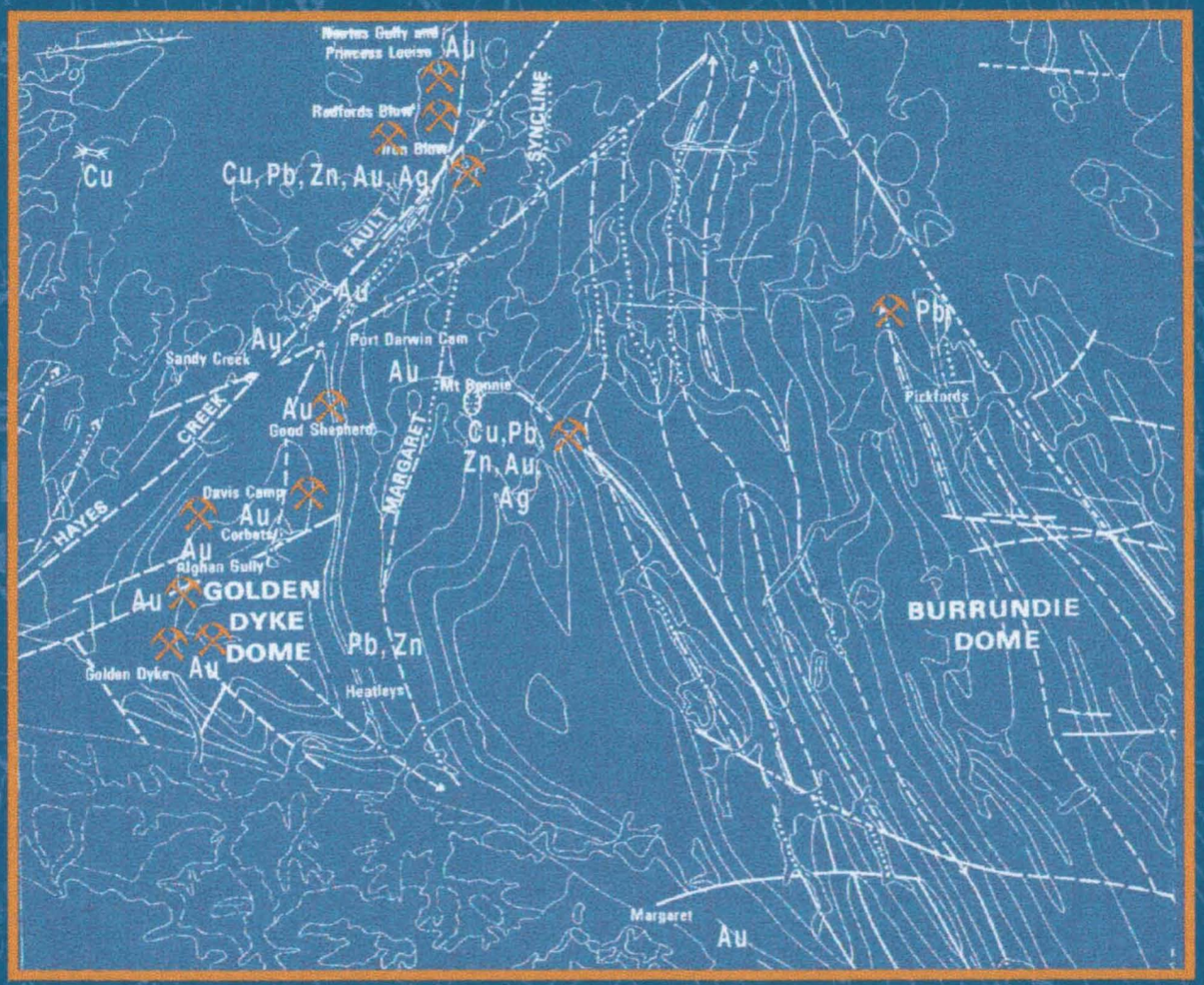
AGSO

AUSTRALIAN GEOLOGICAL SURVEY ORGANISATION

OZMIN DOCUMENTATION

Mount Isa Dataset

AGSO RECORD 1999/5



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AUSTRALIAN GEOLOGICAL SURVEY ORGANISATION
DEPARTMENT OF INDUSTRY, SCIENCE & RESOURCES

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Abstract

This documentation manual for the Mount Isa dataset provides the necessary description of AGSOs mineral deposit database (OZMIN) – its structure, the main data and authority tables used by OZMIN, database table definitions, details on the Microsoft Access version of the database and a listing of those deposits in the Mount Isa dataset. The 243 mineral deposits included in this digital dataset have been assembled in OZMIN from an earlier compilation of the most significant deposits in the Mount Isa region. Each of the mineral deposits described either has combined production and reserves equivalent in value to more than 20 tonnes of copper metal, or is a significant prospect typical of a particular deposit type. The original compilation was released in hard copy form as AGSO Record 1992/66 at a time when OZMIN was being developed. Further deposits discovered since 1992 have been added to the current dataset and a small number without accurate locations or falling outside the Mount Isa region have been excluded. Information provided in the original compilation has been upgraded in the current dataset with reference material published since 1992. This has resulted in updates to resource and production data where possible, new information on the geology and the listing of more recent reference material.

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Section 1 - Structure of OZMIN

1.1 Introduction

OZMIN is a mineral deposits database developed by the Australian Geological Survey Organisation (AGSO) to meet the needs of the National Geoscience Mapping Accord (NGMA) and for use in national metallogenic research. The attributes in OZMIN provide for structured responses: the use of free form text fields which leads to information being entered in an unstructured form that is not amenable to query and is therefore incapable of use in a geographic information system (GIS) has been discouraged. AGSO uses OZMIN to retrieve and analyse mineral deposit information in relation to spatial data sets in a GIS environment. This attribute data provides further layers of information and can be incorporated into thematic maps generated in a GIS.

OZMIN has been compiled from published references and has been tightly structured so that only valid values can be selected from an authority or reference table for a given attribute. Comment and description fields of limited length (64 to 255 characters) have been provided to capture any additional information not covered by structured responses, but generally these have been kept to a minimum. The effect of these changes has been to ensure that OZMIN can be supported, to standardise entries by different users, and to make interrogation of the database more effective.

The attributes selected for OZMIN have been restricted to those of key importance to maintain simplicity and to avoid a database that is too complex in design, maintenance, and operation. However, the database design allows for the addition of further attributes (i.e. extendable attributes) without the need to restructure. 'Unknown' (UN) is a valid value included in most tables: this value is important because it acknowledges that a particular attribute has been addressed and that the necessary information was found to be unavailable.

This manual describes the structure and the purpose of individual fields used by OZMIN. The authority tables (whether they are AGSO corporate authority tables or reference tables specifically designed for OZMIN) and the definitions of the main data tables that make up OZMIN are also described. The manual has been prepared on the assumption that the purchaser is setting up their own database.

OZMIN is currently implemented in AGSO's corporate Oracle database and as a stand alone Microsoft Access database available for clients to purchase. The main AGSO corporate database has been developed in the Oracle 7 relational database management system running on a UNIX server. Purchasers who buy the Oracle version of the database will find AGSO Record 1993/94 - 'Users' guide to the OZMIN mineral deposits database' - (Ewers & Ryburn, 1993) beneficial in describing the screen forms used by OZMIN. The Microsoft Access version is identical in structure, but is a stand alone PC database with graphical screen forms. It requires a PC with Windows 3.1 or Windows 95.

This manual has been provided in loose leaf format so that further information and documented modifications to the database can easily be added.

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1.2 Structure of OZMIN

This section describes OZMIN as it is implemented within the AGSO corporate Oracle database system. The Access implementation of OZMIN is the same except for some minor differences in some of the authority tables. OZMIN is one of a family of AGSO databases sharing the Oracle 7 corporate relational database environment. Its relationship to other field and laboratory databases is illustrated in Figure 1.

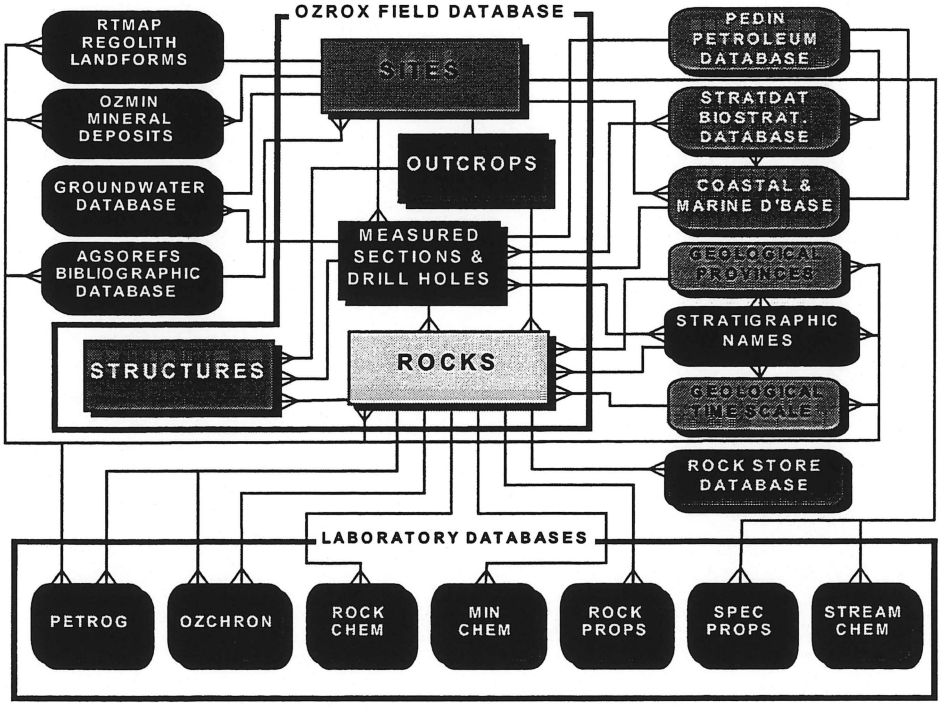

Figure 1 Simplified structure of AGSO's field and laboratory database system, with 'crows feet' at the 'many' end of the many-to-one links.

OZMIN has eight main data tables. It includes the SITES table, which is owned by the Oracle user 'NGMA' and is part of the OZROX Field Database. Those actually owned by 'OZMIN' include DEPOSITS, DEPOSDATA, COMMODS, REGROCKS, REGROCKDATA, REGSTRUCT, and DEPOSREFS. The relationships between these tables are indicated in Figure 2, together with the authority or look-up tables used to validate the classifications and nomenclature used in the main data tables.

Location data for mineral deposits are stored in the SITES table which standardises the way point data is recorded and ensures that the accuracy and lineage of coordinates are noted. The OZMIN tables contain data specific to the deposit, its host rocks, and the environment of the deposit (i.e. information about major structures and igneous bodies and their proximity to the deposit).

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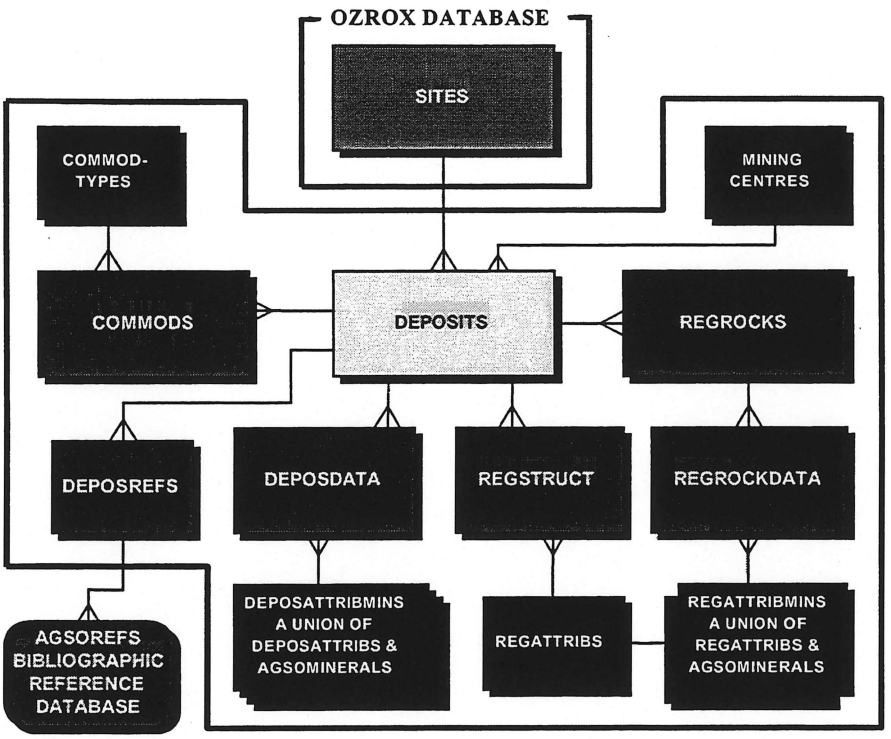

Figure 2 Structure of OZMIN showing relationships between tables, with 'crows feet' at the 'many' end of the many-to-one links. The look-up tables associated with the SITES table are not shown.

Where necessary, OZMIN draws on information contained in the authority tables listed below. Some of these tables are shared by other databases and therefore represent standard coding and attribute lists used by AGSO. These look up tables have been made available through the AGSO web site (http://www.agso.gov.au). The owner of each authority table is that part of the name before the full stop, but within Access the owner's name is separated from the table name by an underline (e.g. NGMA.AGSOCOUNTRIES becomes NGMA_AGSOCOUNTRIES). As there is only one owner in Access all tables automatically belong to the Access system owner ADMIN.

TABLE NAME	CONTENTS
NGMA.AGSOCOUNTRIES	List of valid countries
NGMA.AGSOMINERALS	List of valid mineral names
NGMA.AGSOSTATES	List of valid Australian States
NGMA.HMAPS	Valid Australian 1:100 000 map sheets
NGMA.LITHOLOGIES	List of valid lithological names
NGMA.LOCMETHODS	List of spatial location methods
NGMA.ORIGINATORS	List of contributors of data
NGMA.QMAPS	Valid Australian 1:250 000 map sheets

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NGMA.GEOREGIONS	List of Australian geological regions
GEODX. STRATNAMES	List of valid stratigraphic names
STRATA.GEOPROVS	List of valid Australian geological provinces
STRATA.GEOTIME	List of geological time, linked to stratigraphic lexicon

1.3 Site Identification

For the purpose of location on a map we assume that all mineral deposits in OZMIN can be represented by a point recorded in the SITES table. For large deposits plotted on detailed maps this may not be strictly true (eg. bauxite deposits), but in this case the centroid of the deposit is recorded in the SITES table.

A site in the SITES table is uniquely identified by the system-supplied 'Site No.'. The combination of the user-supplied Originator Number and Site ID is also unique, this being the old primary key of the SITES table. The Site ID is any sequence of numbers and letters up to 16 characters long. For example, the Dugald River deposit is uniquely identified in OZMIN by the Originator Number (219 equals Szychowska, L.) and by AIMM M14/44 as the SiteID. In the SITES table the uniqueness of an Originator Number/Site ID combination is enforced by a unique index that spans both of these fields.

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Section 2 - Description of Main Tables used by OZMIN

2.1 The SITES Table ('SITES')

The SITES table standardises the way geographic point location data are recorded in AGSO's corporate databases. The table draws on standard terms from associated look-up or authority tables. The SITES table is mainly intended for surface location data for field geological, geochemical and geophysical observations, but is used in this context by OZMIN for the location of a deposit, prospect, or mineral occurrence. Geographic coordinates are recorded as decimal latitudes and longitudes, and AMG eastings and northings. Information is also recorded on how the location was obtained and its accuracy.

The Primary Key for the SITES table is the Site No, although a site can also be uniquely identified by a combination of the Origno and Site ID fields.

Description of Columns

SITENO	A mandatory system generated integer of up to 7 digits.
ORIGNO	A mandatory integer of up to 5 digits. Only the number of an originator already in the ORIGINATORS authority table may be entered. The originator is usually the person or organisation that collected the data on the deposit, and is also an indication of where to go for more information.
SITEID	A mandatory column of up to 16 characters for a user-supplied number or ID for the deposit. Any combination of numbers and letters may be used but the Site ID must be unique to the originator.
FIELDID	An optional column of up to 16 characters for an alternative site number or ID.
OBSDATE	The date that the site was visited or observed in the standard Oracle date format of DD-MMM-YY - e.g. '23-JUL-92'.
OBSTIME	The time that the site was observed in Oracle's 24-hour format of HH:MM - e.g. '14:47'.
COUNTRYID	Mandatory 3 capital characters indicating the country or continent. Always set to 'AUS' in OZMIN. Valid capital letters are those in the AGSOCOUNTRIES authority table.
STATE	A column of up to 3 capital characters indicating the Australian state in which the deposit lies. Valid entries are those in the AGSOSTATES authority table, which currently has the following values -

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Letters	State
ACT	Australian Capital Territory
NSW	New South Wales
NT	Northern Territory
QLD	Queensland
SA	South Australia
TAS	Tasmania
VIC	Victoria
WA	Western Australia

REGNO — A mandatory integer of up to 5 digits pointing to the geological region in the GEOREGIONS authority table. The geological region is the two-dimensional geographical area within which a deposit may occur and could encompass geological provinces that are both exposed and extend beneath cover. For example, the Olympic Dam Cu-U-Au deposit occurs in the Stuart Shelf region but is hosted by rocks that are part of the Gawler Craton Province.

GEOGAREA — An optional descriptive column of 64 characters for the geographic area (e.g. - valley, plain, mountain range) from which the site comes (e.g. Hey Plain, Tuggeranong Valley, Selwyn Range)

LOCDESC — An optional descriptive column of 64 characters for additional information relating to to the site's location - e.g., '5 km SE of Brown's Bore'. Locality information available from much of the earlier published literature for abandoned mines is commonly imprecisely or poorly described. Hence there are a number of instances in the OZMIN database where deposit locations are interpolated or based on an educated guess.

HMAPNO — A mandatory 4-digit integer identifying the 1:100 000 map sheet-area on which the site falls. The integer must point to a 1:100 000 sheet in the HMAPS authority table.

QMAPID — The mandatory 6-character ID of the 1:250 000 map sheet-area on which the site falls - e.g., 'SF5402'. The ID must refer to a 1:250 000 map sheet in the QMAPS authority table. The first two letters in the ID record the 6^0 UTM (or AMG) zone and the four digits identify the 1:1 000 000 map.

EASTING — A 6-digit positive integer for the full AMG easting of the site in metres. Mandatory if a longitude is not entered.

NORTHING — A 7-digit positive integer for the full AMG northing of the site in metres. Mandatory if a latitude is not entered.

ACCURACY — A mandatory positive integer of up to 4 digits for the absolute accuracy of the given coordinates in metres on the ground. For

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example, points measured on a map at 1:250 000 scale are generally accurate to ±1 mm on the face of the map or ±250 metres on the ground. This column is important for assessing whether a point in the SITES table can be plotted at particular scales - it provides the table with a degree of scale independence.

It should be noted that where a deposit location is taken from a report giving latitude and longitude in degrees and minutes, a variation of one minute between different sources of information is equivalent to about 1800 metres on the ground.

HEIGHT — An integer of up to 5 digits for the elevation of the site in metres above mean sea level. Can be negative.

HEIGHTACC — A positive integer of up to 3 digits for the absolute error in metres of the elevation entered in the previous column.

DLAT — A positive numeric column with up to 2 digits in front of the decimal point, and up to 6 digits after the decimal point. Mandatory if an AMG northing is not entered.

NS — A single character column that can only take the values 'N', 'n', 'S', or 's' for northern hemisphere or southern hemisphere, respectively. The value is automatically set to capital 'S' when a latitude is entered. However, if the latitude has been calculated from the AMG Northing then the default will be a lower case 's'.

DLONG — A positive numeric column with up to 3 digits in front of the decimal point and up to 6 digits after the decimal point. Mandatory if an AMG easting is not entered.

EW — A single character column that can only take the values 'E', 'e', 'W', or 'w' for east or west, respectively. The value is automatically set to capital 'E' when a longitude is entered. However, if the longitude has been calculated from the AMG Easting then the default will be a lower case 'e'.

METHOD — A mandatory integer of up to 3 digits pointing to a record in the LOCMETHODS authority table showing the method used to obtain the geographic coordinates of the deposit. The LOC-METHODS authority table currently has the following entries -

Number	**Description**
0	unknown
1	GPS observation (WGS84)
2	GPS observation (AGD66)
3	GPS observation (AGD84)
4	GPS observation (GDA94)

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5	astronomical observation
6	surveyed from ground control
7	published report
8	unpublished report
10	non-standard topographic map
11	1:25 000 topographic map
12	1:50 000 topographic map
13	1:100 000 topographic map (AMG66)
14	1:250 000 topographic map
15	1:500 000 topographic map
16	1:1 000 000 topographic map
20	non-standard geological map
21	1:25 000 geological map
22	1:50 000 geological map
23	1:100 000 geological map (AMG66)
24	1:250 000 geological map
25	1:500 000 geological map
26	1:1 000 000 geological map
30	Differential GPS – survey quality
31	Differential GPS (AGD66)
40	Orthophoto image
41	Orthophoto image – 1:25 000 scale

BIBREF — An optional column of up to 9 characters for the ID of a bibliographic reference in the AGSOREFS Shared Reference Database. Such references should locate or refer to the site.

AIRPHOTO — An optional column of 36 characters to identify the airphoto on which the site is located and/or was plotted. The column is for the name of the airphoto series, the run number and the photo number - e.g. 'Cloncurry 8/2134'.

OC, RO, ST, PE, RC, OZ, OM, SC, RT, RP, SP, SH - Twelve single character columns that indicate what data sets join to the site. In all cases, OZMIN sites automatically receive an 'X' in the 'OM' column. Other than a null, only a capital 'X' is allowed in any of these columns - showing that the related data set exists.

ID	Related Data Set
OC	OUTCROPS Table - outcrop information
RO	ROCKS Table - sample & lithology information
ST	STRUCTURES Table - Structural information
PE	PETROGRAPHY Thin Section Database
RC	ROCKCHEM Whole-Rock Chemistry Database
OZ	OZCHRON Geochronolgy Database
OM	OZMIN Mineral Deposits Database
SC	STREAMCHEM Geochemical Database
RT	RTMAP Regolith Landform Database

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RP	ROCKPROPS Geophysical Properties Database
SP	SPECPROPS Spectral Properties Database
SH	SECTHOLES Measured Sections and Drillholes Table

ENTEREDBY — Mandatory column for the Oracle Owner (username) of the current record to identify the records to which a user has update privileges.

DATUM — A mandatory 8-character column for the datum of the coordinates used to locate the site. The value in this column may be set to "AGD66", "GDA64" or, as in the case of some of the very early SITES data, "unknown". The default value is "AGD66".

ENTERED_COORDS — A mandatory single character column used to identify whether the coordinates were originally entered as metric or as geographical latitudes and longitudes. This column is required because the SITES table stores both metric and geographical coordinates either of which can be derived from the other.

ENTRYDATE — Mandatory column for the date the current record was entered into the SITES table. This column is issued by AGSO's Oracle system.

LASTUPDATE — Optional column for the date the current record was last updated. Set the same as ENTRYDATE when the record is first entered.

2.2 The DEPOSITS Table ('DEPOSITS')

The DEPOSITS table summarises data that is specific to a deposit. Information concerned with the host rocks to the deposit, igneous rocks that may be genetically related to the deposit, and regional structural features that are proximal to the deposit belong in the REGROCKS, REGROCKDATA, and REGSTRUCT tables. Commodity information and some further deposit attribute data are covered in the COMMODS and DEPOSDATA tables outlined below, and are linked to the DEPOSITS table by the common deposit number (DEPOSNO). The DEPOSITS table shares the Site No, Originator Number and Site ID columns with the SITES table and it can thus have a many-to-one relationship with SITES.

Description of columns

DEPOSNO — Primary key for the DEPOSITS table. Mandatory positive integer of up to 5 digits. The number is unique to the deposit and is assigned sequentially starting from 1. This column provides a common linkage between the main OZMIN tables.

SITENO — Foreign key which links records in the DEPOSITS table to location information in the SITES table. The Site No is a mandatory integer of up to 7 digits.

ORIGNO — As for the SITES table.

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SITEID	As for the SITES table, but not necessarily unique in DEPOSITS (two deposits can occur at the one site). The Origno and Site ID must point to an existing record in the SITES table.
NAME	An 80-character column that stores the preferred name of the deposit as recorded on a map or other source reference.
RESTRICTED	A single character column for a yes (Y) or no (N) response, signifying whether the compiled data is available for public release.
MINCENTNO	An optional 4-digit column which identifies a centre in the Mining Centres authority table. The Mining Centre allows deposits to be grouped into camps or centres where they are spatially related and the commodities recovered are similar. Values described in this table are being progressively compiled.
MINRESNO	An optional 5-digit number which records the corresponding deposit number in the MINRES database developed by the Bureau of Resource Sciences. MINRES contains comprehensive resource information and has been used to calculate an overall published resource for use by OZMIN (i.e. ore grade, tonnage and resource categories included) where both databases report information for the same deposit.
SYNONYMS	An 80-character column that stores any alternative names that may have been given to the deposit.
GEOPROVNO	A mandatory integer of up to 5 digits pointing to the Geological Province in the GEOPROVS authority table.
FIELDCHECKED	A single character column for a yes (Y) or no (N) response, signifying whether the compiled data has been validated by field checking.
EXPOSED	A single character column for a yes (Y) or no (N) response to indicate whether the deposit is exposed at the surface (e.g. Mount Isa) or concealed by cover rocks (e.g. Olympic Dam).
AGEMETHOD	An optional 8-character column that enables the user to enter the geochronological method used to supply the *preferred* age of mineralisation. Valid values are K-Ar, Ar-Ar, Rb-Sr, Sm-Nd, U-Pb, and SHRIMP (these correlate with those methods covered by OZCHRON, AGSO's geochronological database).
OZCHRONREC	An optional 4-digit column for the record number of the pooled age determination in the OZCHRON table indicated by the previous field (e.g. record 54 in the OZCHRON RBSR_AGES table).

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MINAGE — An optional 32-character column that records the age of mineralisation with values derived from the GEOTIME authority table.

COMMENTS — An optional 255-character text column for any important additional information which has not been captured by the structured responses.

ENTEREDBY — As for the SITES table.

ENTRYDATE — As for the SITES table.

LASTUPDATE — As for the SITES table

2.3 The DEPOSITS DATA Table ('DEPOSDATA')

This is an inverted table that allows a variable number of attributes with values to be entered for a single deposit. The table is linked to the DEPOSITS table by a common deposit number (DEPOSNO). Attributes are sourced from the DEPOSATTRIBMINS view, which is a combination of the DEPOSATTRIBS table and the AGSOMINERALS table. A full listing of the attributes and their associated permissible values are set out in Section 3.2.

Description of columns

DEPOSNO — A mandatory positive integer of up to 5 digits. As a foreign key must point to an existing record in the DEPOSITS table

ATTRIBID — A mandatory column for an abbreviation of up to 4 capital letters pointing to an attribute in the DEPOSATTRIBMINS validation view. Only attributes from this view may be entered, but the same attribute may be inserted more than once (for example a deposit may exhibit several types of mineralisation style, and multiple ore and gangue mineral entries are to be expected). The DEPOSATTRIBMINS view currently contains the following attribute abbreviations and names:

Abbreviation	**Attribute**
CLA	Classification
CON	Ore controls
EXP	Expression
GMIN	Gangue minerals
MIS	Mineralisation style
MIT	Mineralisation texture
OBD	Orebodies
OMIN	Ore minerals
OPS	Operating status

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ORAZ	Orientation - dip direction
ORDI	Orientation - dip
ORPL	Orientation - plunge
RED	Relation to deformation
REH	Relation to host
SHA	Shape
WRK	Workings

VALUEID — A 4-character column consisting of an abbreviation (in capital letters) referring to a valid value of the attribute in the DEPOS-ATTRIBMINS view - for example, the actual mineral associated with the 'OMIN' or ore mineral attribute. Only the values specifically attached to an attribute in the DEPOSATTRIBMINS view may be entered. For example, one of the following values may be entered if the REH, 'Relation to host', attribute has already been specified -

Abbreviation	**Value**
CO	concordant
DI	discordant
IC	intrusive contact
SB	stratabound
SF	stratiform
STT	structurally transposed
UC	unconformity-related
UN	unknown

DESCRIPTION — An optional 64-character column for any additional descriptive information relating to the chosen attribute/value record.

ENTEREDBY — As for the SITES table.

ENTRYDATE — As for the SITES table.

2.4 The COMMODITIES Table ('COMMODS')

This table provides for production and/or resource data for each commodity within a deposit, and is linked to the DEPOSITS table by a common deposit number (DEPOSNO). Where the commodity data apply to several pits or orebodies within a single deposit an overall value for the production and/or resources has been given. The resource data make no distinction as to whether there are demonstrated or inferred, economic or subeconomic resources: these categories will change with time as a result of many factors (e.g. further successful exploration and mine development, changes in commodity prices, improvements in mining and extraction methods, etc), and the continued currency of information for a comprehensive resource classification is beyond the scope of this database.

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Description of columns

DEPOSNO	As for the DEPOSDATA table.
COMMODITY	A mandatory 4-character column. Many commodities can be entered for a given deposit (e.g. the Hilton silver-lead-zinc deposit), and valid values are drawn from the COMMODTYPES authority table.
PRODUCTION	An optional 14-digit column for the production of a given commodity from a deposit. For most commodities, production will be recorded in tonnes, though precious metals (i.e. Ag, Au, and platinum group elements) are given in grams, and diamonds would be recorded as carats.
PRODUNIT	A single character column that relates to the preceding Production column, where values are either 't' (tonnes), 'g' (grams), or 'c' (metric carats).
PRODYEAR	This is a 4-digit column which provides for entry of the year to which production figures have been compiled and entered in the Production column.
PRODMONTH	This is an optional column of up to three capital letters for an abbreviation of the month to the end of which the production figures were compiled. If no value is entered 'DEC' is assumed.
RESOURCES	A 12-digit column to record the resources (tonnes of ore) for a given commodity.
GRADE	This is an optional column with up to 4 digits before the decimal point and up to 2 digits after the decimal point in which the grade of the resource is given. If the resource is available only as the contained commodity with no grade specified (e.g. 9 million tonnes ilmenite or 200 million tonnes coal), the grade is recorded as 100 percent to enable the resource to be reported in OZMIN.
GRADEUNIT	An optional single character column that relates directly to the preceding Grade column, where values are given as 'P' (percent), 'G' (grams per tonne), or 'C' (metric carats per tonne).
TOTCOMMOD	An optional column of up to 14 digits giving the total metal content for each commodity in a deposit (based on total production and/or resources).
TOTUNIT	An optional single character column that relates directly to the preceding Total Commodity column, where values are as for PRODUNIT - either 't' (tonnes), 'g' (grams), or 'c' (metric carats).

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COMMENTS — An optional 64-character text column for additional information relevant to the commodities mined or present as a resource. Information covers relevant references and the resource categories adopted by industry that are included in the quoted resource figure. Abbreviations used for different categories of resource are:

Abbreviation	Category
MID	measured and indicated resource
MRS	measured resource
IDR	indicated resource
IFR	inferred resource
PPR	proved and probable (ore) reserve
PVR	proved (ore) reserve
PBR	probable (ore) reserve
POS	possible reserve
NRCG	no resource category given
CRC	combined resource category

ENTEREDBY — As for the SITES and DEPOSITS table.

ENTRYDATE — As for the SITES and DEPOSITS table.

2.5 The REGIONAL ROCKS Table ('REGROCKS')

The REGROCKS table and the associated REGROCKDATA table summarise information on the host rocks to the deposit, and major igneous bodies that are proximal to the deposit. The REGROCKS table is linked to the DEPOSITS table through a common deposit number (DEPOSNO) and is linked to the REGROCKDATA table through a common rock number (REGROCKNO) assigned by Oracle. REGROCKDATA is the expandable attributes table for REGROCKS and has a many-to-one relationship with that table. In turn, REGROCKS has a many-to-one relationship with DEPOSITS, since more than one host rock or proximal igneous body is commonly present at one deposit. Information has been structured around the lithology rather than the stratigraphic unit. Thus, a number of host rock lithologies or proximal igneous bodies from the one formation may be present at any given deposit. Note that a single character column (IGNEOUS) acts as a flag to indicate if a record in the REGROCKS table is a host lithology or igneous body proximal to the deposit. See the explanation for the Igneous column below for more detail.

Description of columns

REGROCKNO — Mandatory integer of up to 5 digits (primary key). The number is unique to the host rock in each deposit and is assigned sequentially. The user should be aware that the same host rock at an adjacent deposit will have a different 'Regrock' Number.

DEPOSNO — As for the DEPOSDATA table.

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STRATNO — An optional integer of up to 5 digits that identifies a unit in AGSO's Stratigraphic Names database (STRATNAMES authority table) - for example, '4727' corresponds with the 'Corella Formation'.

INFORMAL — An optional 64-character column for an informal stratigraphic name - in the absence of a registered name from the Stratigraphic Lexicon. This column has been used for new units not yet in STRATLEX, or for geological mapping units that will always be informal units.

QUALIFIER — This is a 32-character optional column for a qualifying term to be added to the lithology. The qualifier must be in the LITHOLOGIES authority table and classified as Type 'Q' for qualifier. An example of the usage is 'carbonaceous' as in 'carbonaceous shale'.

LITHNAME — A 32-character optional column for a lithology name. Only names already in the LITHOLOGIES authority table and classified as Type 'I', 'M', 'S', 'H', 'R', 'U', or 'Z' (igneous, metamorphic, sedimentary, hybrid, regolith, unspecified or mineralising system respectively) may be entered.

DESCRIPTION — A 64-character optional column for a description of the lithology where it is characterised insufficiently by the previous columns.

METAMAGE — An integer of up to 4 digits pointing to a valid geological time term in the GEOTIME authority table - eg, 'Late Permian'. This column records the metamorphism that has affected the host rock.

METAGRADE — A 3-character column that points to a value in the REGATTRIBS table providing information on the grade of regional metamorphism, and for the recognition of contact metamorphism. Permissible values are given below as:

Abbreviation	**Value**
AM	amphibolite
AAD	amphibolite- andalusite
AKY	amphibolite- kyanite
ASK	amphibolite- sillimanite/K-feldspar
ASL	amphibolite- sillimanite
AST	amphibolite- staurolite
BL	blueschist
EC	eclogite
GR	granulite
GS	greenschist
GSB	greenschist - biotite
GSC	greenschist - chlorite
GSG	greenschist - garnet
HF	hornfels

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HFA	hornfels - albite/epidote
HFH	hornfels - hornblende
HFP	hornfels - pyroxene
HFS	hornfels - sanidinite
PP	prehnite/pumpellyite
UN	unknown
ZE	zeolite

IGNEOUS

A mandatory 1-character field that can only take the values of 'Y' or 'N'. Where set to 'Y', this column flags a record referring to an igneous rock that may be genetically related to the deposit. This flag determines the records accessed by the Deposit Environment Form (Ewers & Ryburn, AGSO Record 1993/94, p. 29). If the flag is 'N', the record belongs to a host rock and is accessed by the Host Rocks Form

PROXIMITY

An optional 2-character column for an abbreviation in the REGATTRIBS table indicating the proximity of an igneous body to mineralisation. This information may have important genetic implications as these rocks could have been a source of heat, fluids, and/or metals in the ore-forming process. The proximity is a measure not only of the lateral distance to an outcrop, but could represent the distance to a buried intrusion as intersected by drilling or interpreted from geophysics. Permissible values are:

Abbreviation	**Value**
1	<0.1 km
2	0.1-1 km
3	1-5 km
4	>5 km
UN	unknown

IGAGE

An optional 4-digit column that enables the user to enter the age of magmatic activity (where the intrusive or extrusive is proximal to the deposit, rather than a host rock). Permissible values are geological time terms contained in the GEOTIME authority table.

COMMENTS

An optional 64-character column for any additional information that relates either to metamorphism or to igneous rocks proximal to the deposit.

ENTEREDBY

As for the SITES table.

ENTRYDATE

As for the SITES table.

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2.6 The REGIONAL ROCKS DATA Table ('REGROCKDATA')

This is an inverted table which allows a variable number of attributes with values to be entered for a single host rock. A mandatory attribute column (ATTRIBID) of up to 4 characters forms the first column. The table is linked to the REGROCKS table by a common rock number (REGROCKNO). Attributes are sourced from the REGATTRIBMINS view, which is a combination of the REGATTRIBS table and the AGSOMINERALS table. A full listing of the attributes and their associated permissible values is set out in Section 3.3.

Description of columns

REGROCKNO — As for the REGROCKS table, but not unique in REGROCKDATA (foreign key). Must point to an existing record in REGROCKS.

ATTRIBID — This 4-character column caters for an abbreviation (in capital letters) pointing to an attribute in the view REGATTRIBMINS. Only attributes already in the REGATTRIBMINS view may be entered, but the same attribute may be inserted more than once (for example the host rock mineralogy will lead to multiple entries, and more than one type of alteration often occurs). The REGATTRIBMINS view currently contains the following attributes:

Abbreviation	Attribute
ALT	Alteration Style
CM	Common Minerals
ITY	Igneous Rock-type
MMG	Metamorphic Grade

VALUEID — A 4-character column consisting of an abbreviation (in capital letters) referring to a permissible value of the attribute in REGATTRIBMINS view. For example, alteration may have values such as hematitic, propylitic, pyritic, etc. More than one value may be selected.

DESCRIPTION — An optional 64-character column for any additional descriptive information relating to the chosen attribute/value record.

ENTEREDBY — As for the SITES table.

ENTRYDATE — As for the SITES table.

2.7 The REGIONAL STRUCTURES Table ('REGSTRUCT')

The REGSTRUCT table summarises information on the nature of major structures and their proximity to a deposit. These structures could be important in establishing the genesis

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of a deposit because they have the potential to focus fluid flow and facilitate the emplacement of igneous rocks that are related to mineralisation.

The same type of structure can be entered more than once (e.g. there may be several major faults in the vicinity of mineralisation). The REGSTRUCT table is linked to the DEPOSITS table via the Deposno.

Description of columns

DEPOSNO — As for the DEPOSDATA table.

TYPE — An optional column of up to 4 characters for an abbreviation (in capital letters) indicating a permissible structure type:

Abbreviation	Value
FA	faults/shear zones
FO	folds
RC	igneous ring complex
UC	unconformity
UN	unknown

PROXIMITY — An optional 4-character column for an abbreviation in the REGATTRIBS table which provides an indication of how close the identified structure is to mineralisation. Permissible values are the same as those for PROXIMITY in the REGROCKS table. The proximity is a measure not only of the lateral distance to a structure, but could represent the distance to a buried structure intersected by drilling or interpreted from geophysics.

ENTEREDBY — As for the SITES table.

ENTRYDATE — As for the SITES table.

2.8 The DEPOSIT REFERENCES Table ('DEPOSREFS')

This table links OZMIN to AGSO's Shared Reference Database (AGSOREFS) in many-to-many mode. For any given deposit there can be many references, and any one reference may refer to many deposits (Ryburn, R.J and Bond, L.D., 'Guide to AGSOREFS: AGSO's Shared Bibliographic Reference Database' AGSO Record 1995/6).

Description of columns

DEPOSNO — As for the DEPOSDATA table.

AGSOREFID — A 9-character column for the ID of a bibliographic reference in the AGSOREFS database. Many references come from AGSO's existing tightly controlled GEODX database and have a variety of IDs (e.g. '79/20055', 'R156' and 'GOLD239'). Non-GEODX

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	references are able to be entered by AGSO users at large and are distinguished by a number starting with an asterix (e.g. '*10407').
ENTEREDBY	As for the SITES table.
ENTRYDATE	As for the SITES table.

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Section 3 - Description of Authority Tables

3.1 The Commodities Authority Table ('COMMODTYPES')

This authority table contains 122 permissible values covering the range of metallic and non-metallic commodities likely to be used in compiling data for OZMIN.

Description of columns

COMMODID — A mandatory column of up to 4 characters which provides an abbreviation for the selected commodity (the primary key).

COMMODNAME — A mandatory column of 32 characters for the full name of the commodity.

MINLOCID — An 11-character column which relates the OZMIN Commodity ID to the equivalent abbreviation used in the BRS/AGSO MINLOC database. The MINLOC ID abbreviation is always in capital letters.

Contents of table

CommodID	Commodname	MINLOCID
Aga	Agate	AGATE
Agg	Aggregate	RC
Al	Aluminium	AL
Amet	Amethyst	AME
Anda	Andalusite	ANDL
Anhy	Anhydrite	AN
Sb	Antimony	SB
Apat	Apatite	AP
As	Arsenic	AS
Asb	Asbestos	ASB
Ba	Barium	BA
Bas	Basalt	BS
Bx	Bauxite	BX
Bent	Bentonite	BENT
Be	Beryllium	BE
Bi	Bismuth	BI
Cd	Cadmium	CD
Calc	Calcite	CALC
Ce	Cerium	CE
Cs	Cesium	CS
Cr	Chromium	CR
Chrp	Chrysoprase	CH
Chrt	Chrysotile	AC
Clay	Clay	CY
Coal	Coal	COAL
Co	Cobalt	CO

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Cu	Copper	CU
Cor	Corundum	CN
Croc	Crocidolite	AD
Dia	Diamond	DMD
Diat	Diatomite	DT
Dol	Dolomite	DO
Fel	Feldspar	FS
Fluo	Fluorite	FL
Gd	Gadolinium	GD
Ga	Gallium	GA
Grnt	Garnet	GRNT
Gems	Gemstones	GS
Ge	Germanium	GE
Au	Gold	AU
Gran	Granite	GR
Grap	Graphite	GT
Gvl	Gravel	GVL
Gyps	Gypsum	GYP
Hf	Hafnium	HF
HM	Heavy minerals	HM
Hem	Hematite	HEM
Ilm	Ilmenite	IM
In	Indium	IN
Ir	Iridium	IR
Fe	Iron	FE
Fest	Ironstone	FEST
Jade	Jade	JADE
Kaol	Kaolin	CK
Kyan	Kyanite	KY
La	Lanthanum	LA
Pb	Lead	PB
Lime	Lime	LIME
Lst	Limestone	LST
Li	Lithium	LI
Mags	Magnesite	MS
Mg	Magnesium	MG
Magn	Magnetite	MT
Mn	Manganese	MN
Marb	Marble	MAR
Hg	Mercury	HG
Mica	Mica	MI
Mnsd	Mineral sands	MNSLD
Mo	Molybdenum	MO
Mona	Monazite	MZ
Nd	Neodymium	ND
Ni	Nickel	NI
Nb	Niobium	NB
Och	Ochre	OC

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Osh	Oil shale	OSH
Opal	Opal	OP
Os	Osmium	OS
Pd	Palladium	PD
Peat	Peat	PEAT
Phos	Phosphate	PH
P	Phosphorous	P
Pgvl	Pisolitic gravel	GPL
Pt	Platinum	PT
PGE	Platinum Group Elements	PGM
Py	Pyrite	PY
REE	Rare Earth Elements	REM
Re	Rhenium	RE
Rh	Rhodium	RH
Rmet	Road metal	RM
Ru	Ruthenium	RU
Rut	Rutile	RUT
Salt	Salt	SALT
Sand	Sand	SV
Sst	Sandstone/Quartzite	SS
Sapr	Sapphire	SAPP
Sapn	Sapphirine	SA
Sc	Scandium	SC
Se	Selenium	SE
Sha	Shale	SH
Sil	Silica	SI
Ag	Silver	AG
Sla	Slate	SLS
Sto	Stone	ST
Talc	Talc	TC
Ta	Tantalum	TA
Te	Tellurium	TE
Tl	Thallium	TL
Th	Thorium	TH
Sn	Tin	SN
Ti	Titanium	TI
Tpz	Topaz	TOPAZ
W	Tungsten	W
Turq	Turquoise	TQ
U	Uranium	U
V	Vanadium	V
Verm	Vermiculite	VE
Woll	Wollastonite	WOL
Xeno	Xenotime	XENO
Y	Yttrium	Y
Zn	Zinc	ZN
Zrcn	Zircon	ZRCN
Zr	Zirconium	ZR

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3.2 The Deposit Attributes Authority View ('DEPOSATTRIBMINS' view)

This view is based on the DEPOSATTRIBS table and the AGSOMINERALS table and contains the attributes and associated permissible values used for information specifically related to the mineral deposit.

Description of columns

ATTRIBID — A mandatory column of up to 4 characters which contains the attribute abbreviation. The attributes in this authority table are as follows:

Abbreviation	Attribute
CLA	Classification
CON	Ore controls
EXP	Expression
GMIN	Gangue minerals
MIS	Mineralisation style
MIT	Mineralisation texture
OBD	Orebodies
OPS	Operating status
OMIN	Ore minerals
ORAZ	Orientation - dip direction
ORDI	Orientation - dip
ORPL	Orientation - plunge
RED	Relation to deformation
REH	Relation to host
SHA	Shape
WRK	Workings

ATTRIBNAME — A 32-character column for the full attribute name.

VALUEID — A mandatory 4-character column of capital letters for the value abbreviation. The value must be unique to the attribute. As already mentioned, 'UN' (unknown) is generally a valid value.

VALUENAME — A 32-character column for the full value name.

Description of extendable attributes (actual abbreviations are listed in brackets)

Classification - (CLA) This attribute provides for the classification of mineral deposits using mineral deposit models where sufficient information exists. In the absence of a published, uniquely Australian set of deposit models at the present time, the USGS scheme put forward by Cox and Singer (1986) has been adopted (see Section 3.10) and the user is referred to this publication for the detail of these models.

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Ore controls - (CON) This attribute provides (at a very basic level) information on the principal localising features or controls on the formation and distribution of ore minerals. Valid values are:

Abbreviation	Value
FM	fluid mixing
FRI	fluid-rock interaction
GC	geochemical
MAG	magmatic
MEC	mechanical
MET	metamorphic
PS	phase separation
STA	stratigraphic
STU	structural
UN	unknown
WE	weathering/supergene

Expression - (EXP) This attribute discloses whether the deposit has a surface expression or has been detected under cover rocks and gives a broad indication of the nature of that expression.

Abbreviation	Value
CON	concealed
GC	geochemical
GO	gossan
GP	geophysical
OUT	outcrop
UN	unknown

Gangue minerals - (GMIN) Those minerals which form that part of the ore which cannot be avoided in mining, are separated from the ore minerals during processing, and are economically undesirable are referred to as gangue minerals. Valid values are available in the AGSOMINERALS authority table which provides a comprehensive listing of accepted mineral names.

Mineralisation style - (MIS) This attribute describes the form of the mineralisation with the following values:

Abbreviation	Value
AL	alluvial
BE	bed
BR	breccia
EV	evaporitic
LAY	layered/stratified
MAG	magmatic
MB	multiple bed
MV	multiple vein

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RE	residual
RPL	replacement
SK	skarn
ST	stockwork
SUP	supergene
SUR	surficial
SV	single vein
SZ	shear zone
UN	unknown

Mineralisation texture - (MIT) This attribute describes the general physical appearance or character of the mineralisation with the following values:

Abbreviation	**Value**
BX	brecciated
CU	cumulus
DI	disseminated
IC	intercumulus
LA	laminated (or banded)
MA	massive
NO	nodular
PI	pisolitic
UN	unknown
ZO	zoned

Orebodies - (OBD) This attribute records the number of orebodies within a given deposit. Values are:

Abbreviation	**Value**
1	1 orebody
2	2 orebodies
3	3 orebodies
4	4 orebodies
5	5 orebodies
6	6-10 orebodies
7	11-20 orebodies
8	21-50 orebodies

Operating status - (OPS) This attribute describes the current stage of development of the deposit. Values are:

Abbreviation	**Value**
AM	abandoned mine
D	mineral deposit
O	occurrence
OM	operating mine
P	prospect
UN	unknown

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Ore minerals - (OMIN) Ore minerals are classed as those that are economically desirable. Permissible values are provided as a subset of ore minerals derived from the AGSOMINERALS authority table which provides a comprehensive listing of accepted mineral names.

Orientation - dip direction (ORAZ) Provides the dip azimuth or dip direction in degrees for the deposit as a whole or the major lode rather than individual orebodies. Values are from 0 to 359 degrees. Where a range of values is given, the median is quoted as the value and the range can be recorded in the associated description column.

Orientation - dip (ORDI) Provides the dip in degrees for the deposit as a whole or the major lode rather than individual orebodies. Values are from 0 to 90 degrees. Where a range of values is given, the median is quoted as the value and the range can be recorded in the associated description column.

Orientation - plunge (ORPL) Provides the plunge in degrees for the deposit as a whole or the major lode rather than individual orebodies. Values are from 0 to 90 degrees. Where a range of values is given, the median is quoted as the value and the range can be recorded in the associated description column.

Relation to deformation (RED) This attribute records whether the mineralising event pre-dates, is synchronous with, or post-dates deformation and has the following values:

Abbreviation	Value
PEFO	pre-folding
PEFA	pre-faulting/shearing
PEFR	pre-fracturing
SYFO	syn-folding
SYFA	syn-faulting/shearing
SYFR	syn-fracturing
POFO	post-folding
POFA	post-faulting/shearing
POFR	post-fracturing
UN	unknown

Relation to host - (REH) This attribute indicates the broad relationship of mineralisation to the enclosing host rocks and carries the following values:

Abbreviation	Value
CO	concordant
DI	discordant
IC	intrusive contact

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SB	stratabound
SF	stratiform
STT	structurally transposed
UC	unconformity-related
UN	unknown

Shape - (SHA) The gross geometry or morphology of the mineralised body is described by this attribute with the permissible values being:

Abbreviation	Value
AN	annular
CU	curvilinear
EE	en echelon
EL	ellipsoidal
EQ	equant
IR	irregular
LE	lenticular
PL	pipe-like/cylindrical
SH	sheeted
TA	tabular
UN	unknown

Workings - (WRK) This attribute records the nature of the workings associated with the deposit. Permissible values include:

Abbreviation	Value
AD	adit
CO	costean/trench
DE	decline
DS	dredging/sluicing
OC	open cut
PI	pit
SH	shaft
UG	underground
UN	unknown

3.3 The Regional Attributes Authority View ('REGATTRIBMINS' view)

This view is based on the REGATTRIBS table and the AGSOMINERALS table and lists the attributes and associated values used for describing the regional features of a mineral deposit.

Description of columns

ATTRIBID A mandatory column of up to 4 characters which contains the attribute abbreviation. The attributes in this authority table are as follows:

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Abbreviation	Attribute
ALT	Alteration Style
MMG	Metamorphic Grade
ITY	Igneous Rock-type
IPR	Igneous Rock-proximity
STY	Structure-type
SPR	Structure-proximity

ATTRIBNAME — A 32-character column for the full attribute name.

VALUEID — A mandatory 4-character column of capital letters for the value abbreviation. The value must be unique to the attribute. As already mentioned, 'unknown' (UN) is generally a valid value.

VALUENAME — A 32-character column for the permissible value name.

The permissible values for each of the attributes are outlined below -

Description of extendable attributes (actual abbreviations are listed in brackets)

Alteration Style - (ALT) Alteration style refers to host rock or wallrock alteration produced by fluids during the mineralising event. This attribute does not include alteration which is clearly the product of weathering (e.g. iron oxide staining on fracture surfaces). Permissible values are:

Abbreviation	Value
AAR	advanced argillic
AB	albitic
AR	argillic
CA	carbonate
CL	chloritic
DE	deuteric
GR	greisen
HM	hematitic
OTH	other
PO	potassic
PR	propylitic
PY	pyritic
SERC	sericitic
SI	silicification
SK	skarn
SP	serpentinisation
UN	unknown
ZE	zeolitic

OTHER is allowed as a valid value (30 character column) to record uncommon alteration styles which do not conform to any of the

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above valid values. Depending on usage, a given type of wallrock alteration frequently recorded as OTHER may be elevated to a valid value in future, if necessary.

Common Minerals - (CM) These are classed as the common rock-forming minerals. Permissible values are provided as a subset of common minerals derived from the AGSOMINERALS authority table which provides a comprehensive listing of accepted mineral names.

Metamorphic Grade - (MMG) The metamorphic grade can be used as an extendable attribute here to describe whether the igneous rocks spatially related to a deposit have been metamorphosed. The permissible values are the same as those described for the REGROCKS table.

Igneous Rocks - type - (ITY) This attribute provides a broad classification of the igneous rocks that are proximal to the deposit. This attribute may be useful to indicate, for example, which deposits are spatially related to mafic extrusive rocks or possibly associated with felsic intrusives, etc.

Abbreviation	Attribute
CA	carbonatite
FE	felsic extrusive
FI	felsic intrusive
IE	intermediate extrusive
II	intermediate intrusive
KI	kimberlite
LA	lamprophyre
ME	mafic extrusive
MI	mafic intrusive
UE	ultramafic extrusive
UI	ultramafic intrusive
UN	unknown

Igneous Rocks - proximity - (IPR) This attribute provides an indication of how close the identified igneous body is to mineralisation. Permissible values are the same as those described in the REGROCKS table:

Abbreviation	Value
1	<0.1 km
2	0.1-1 km
3	1-5 km
4	>5 km
UN	unknown

Structure - type - (STY) This attribute provides an indication of major structures that are proximal to the deposit. Permissible values are:

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Abbreviation	Value
FA	faults/shear zones
FO	folds
RC	igneous ring complex
UC	unconformity
UN	unknown

Structure - proximity - (SPR) This attribute provides an indication of how close the identified structure is to mineralisation. Permissible values are:

Abbreviation	Value
1	<0.1 km
2	0.1-1 km
3	1-5 km
4	>5 km
UN	unknown

3.4 The Stratigraphic Names Authority Table ('STRATNAMES')

This table contains the names of approximately 31 500 stratigraphic units which are in current usage, and is derived from the GEODX database of stratigraphic names administered by Stratigraphic Index staff of AGSO. Additional information for each unit covering age, parent units, and overlying and underlying units is continually being added. Due to the dynamic nature of the stratigraphic names database some units assigned as host rocks to deposits may have been superseded by redefined units and are therefore no longer classified as current units. For this reason, though we have endeavoured to ensure all host rock units are current, we are providing an export of the STRATNAMES table which includes all stratigraphic units whether current or superseded.

Information on stratigraphic names can now be viewed online through the AGSO home page on the world wide web. Information provided includes currency, superseded names, if the name has been replaced by another and defining references. The web address for the AGSO home page is: **http://www.agso.gov.au/**

Description of columns

STRATNO	System-supplied unique integer of up to 5 digits - the primary key.
GEODXNO	A 5-digit number for the unique number of the stratigraphic name in the STRATNAME table of the old GEODX database. This field is only displayed for historical reasons and will be phased out eventually. Due to changes in the database structure, not all of the old GEODX numbers are displayed for names that apply across State/Territory borders.
UNITNO	A 5-digit number for the unique number of the stratigraphic name in the old Stratigraphic Lexicon. This field is only displayed for historical reasons and will be phased out eventually.

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STRATNAME — Mandatory 50 character column for the name of the stratigraphic unit, including any rank term that may be part of the name - e.g. 'Soldiers Cap Group' (where 'Group' is the rank term).

TYPESTATE — Two or three capital letters indicating the State in Australia in which the type area occurs. Valid States are those in the AGSOSTATES table.

ENTRYDATE — The date the record was entered - in the standard Oracle date format of DD-MMM-YY - e.g. '23-JUL-92'.

ENTEREDBY — An 8-character column for the Oracle user ID of the person who entered the record.

APPROVED — A single character column for a yes (Y) or no (N) response used to record approval of unit definitions (card) by the relevant State Subcommittee.

APPRDATE — Date the unit definition was approved - in the standard Oracle date format of DD-MMM-YY - e.g. '23-JUL-92'.

APPRBY — An 8-character column for the (abbreviated) name of the person (Subcommittee Chairperson) approving a unit definition.

RANK — One-digit numeric column to indicate stratigraphic rank. Valid ranks are derived from the STRATRANK authority table listed below:

Rank No.	**Rank Name**
1	Supergroup
2	Group
3	Subgroup
4	Formation, beds
5	Member
6	Bed
7	unknown

STATUS — Mandatory two-digit numeric column for the status of the unit. Valid status codes are derived from the STRATSTATUS authority table listed below:

Status No.	**Status Description**
1	Redefined
2	Defined
3	Fully described
4	Described
5	Briefly described

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	6	Mentioned
	7	Reserved
	8	Informal

CATEGORY	Look up value for the stratname category corresponding to the value in the column *category* (not displayed). This mandatory column has a list function to display the permissible category types from the STRATSTATUS table. The column is used in combination with the STATUS column to distinguish different types of new stratigraphic names.
CARD	Mandatory single character column for a yes (Y) or no (N) response with the default being N. All new stratigraphic units should be defined and unit definitions should be approved by the State Stratigraphic Names Subcommittees, with a copy supplied to the National Register.
ISCURRENT	A single-character field for a 'Y' or 'N' to indicate whether the unit is current. Due to the continual updating taking place on the Australian Register of Stratigraphic Names the currency of some names may change from time to time. This could result in a stratno having no matching stratigraphic unit description in the STRATLEX view that AGSO has supplied. For this reason, AGSO has supplied the STRATNAMES table instead of the STRATLEX view for the OZMIN export.
MODDATE	The date the record was last updated - in the standard Oracle date format of DD-MMM-YY - e.g. '23-JUL-92'.
MODBY	An 8-character column for the Oracle user ID of the person who last updated the record.
ORIGINATOR	An 80-character column for the originator of a new reserved name. More than one person may be involved and credited.
RESDATE	Column for the date the name was reserved - in the standard Oracle date format of DD-MMM-YY - e.g. '23-JUL-92'.
AGEMAX	A positive integer of up to 4 digits pointing to a geologic age term in the GEOTIME authority table. This column is for the older age limit of the stratigraphic unit. Where no younger age limit is entered the AGEMAX is taken to be a general age for the unit as a whole.
AGEMIN	As for the AGEMAX column, but referring to a younger age limit for the unit - if one is known.

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GEOPROVNO	An integer of up to 5 digits pointing to a geological province in the GEOPROVS table.
SECTHOLENO	A 6-digit integer identifying a stratigraphic section or type section which defines the unit from the SECTHOLES table in AGSO's OZROX database. Currently no type section has been defined in the SECTHOLES table, but in the future AGSO is hoping to make these data available for newly defined units.
MAXTHICKNESS	A 7-digit number with up to 2 digits allowed after the decimal point for the maximum thickness of the unit.
OVERLYING	An integer of up to 5 digits. The Unit Number of the stratigraphically overlying unit.
OVEREL	An integer of up to 3 digits indicating the boundary relationship to the overlying unit. Valid numbers and terms are stored in the STRATRELS authority table.
UNDERLYING	An integer of up to 5 digits. The unit number of the stratigraphically underlying unit.
UNDEREL	An integer of up to 3 digits indicating the boundary relationship to the underlying unit. Valid numbers and terms are stored in the STRATRELS authority table.
FIRSTREF	A 9-character column for the entry of the reference ID of the first (oldest) article in GEODX which contains a reference to the stratigraphic unit.
DEFREF	A 9-character field pointing to the reference publication in GEODX which defines the unit.
PARENT	An integer of up to 5 digits. The unit number of the parent stratigraphic unit, i.e., the related unit that is higher in rank. For example, the parent unit for a Member would always be a Formation, while the parent unit for a Formation could be a Group or a Subgroup.
PREVNO	Look up value for the stratigraphic name corresponding to the value in the *prevno* column (not displayed). This column has a list function to display the relevant names from the STRATNAMES table and will have an entry if the unit has a former name.
USENO	Look up value for the stratigraphic name corresponding to the value in the *useno* column (not displayed). This column has a list function to display the relevant names from the STRATNAMES table and will have an entry if the unit has been replaced.

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COMMENTS	A 255-character column for comments on the unit, particularly those on any synonyms and the history of definition and nomenclature. Any conflicts with other stratigraphic names in STRATNAMES can also be noted.
ORIGNO	An integer of up to 5 digits for the originator of the information in the SITES table in OZROX. Only the number of an originator already in the ORIGINATORS authority table may be entered.
SITEID	A column of up to 16 characters for a user-supplied number or ID of the corresponding record in the SITES table in OZROX.

3.5 The Stratigraphic Relationships Authority Table ('STRATRELS')

The STRATRELS authority table is for indicating stratigraphic relationships to overlying and underlying stratigraphic units. Valid numbers and terms are:

Number	Relation Name
1	unknown
2	not exposed
3	conformity
4	unconformity
5	disconformity
6	nonconformity
7	paraconformity
8	diastem

3.6 The Geological Regions Authority Table ('GEOREGIONS')

Geological regions recorded in the SITES table are based on Palfreyman's Geological provinces (Palfreyman, 1984, BMR Bulletin 181). The geological region is the two-dimensional geographical area within which a deposit may occur and could encompass geological provinces that are both exposed and extend beneath cover. For example, the Olympic Dam Cu-U-Au deposit occurs in the Stuart Shelf region but is hosted by rocks that are part of the Gawler Craton Province.

Description of columns

REGNO	System supplied unique positive integer of up to 5 digits - the primary key for the GEOREGIONS table.
PROVNO	An integer of up to 3 digits which refers to the geological province in Palfreyman (1984) on whose spatial extent the geological region is based.
REGNAME	A 64-character mandatory column for the name of the region.

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REGLETS	Up to 4 capital letters for the abbreviation for the region which may be used to annotate a map.
COUNTRYID	Mandatory 3 capital characters indicating the country or continent. Always set to 'AUS' in OZMIN. Valid capital letters are those in the AGSOCOUNTRIES authority table.
COMMENTS	A column of 64 characters for any comments relating to the region.
ENTRYDATE	Mandatory column for the date the current record was entered.
ENTEREDBY	Mandatory column for the Oracle Owner (username) of the current record.

The following are permissible entries for regions in the GEOREGIONS table.

Regno	Region	Regno	Region
0	unknown	57	Murray Region
2	Adelaide Region	58	Musgrave Region
3	Albany Region	59	Nabberu Region
4	Amadeus Region	60	New England Region
5	Arafura Region	61	Ngalia Region
6	Anakie Region	62	Northhampton Region
7	Arnhem Region	64	Officer Region
8	Arrowie Region	65	Ord Region
9	Arunta Region	66	Otway Region
10	Bancannia Region	67	Paterson Region
11	Bangemall Region	68	Pedirka Region
12	Birrindudu Region	69	Perth Region
13	Bonaparte Region	70	Pilbara Region
14	Bowen Region	71	Pine Creek Region
15	Bremer Region	72	Polda Region
16	Broken Hill Region	73	Rocky Cape Region
17	Canning Region	75	South Nicholson Region
18	Torres Strait Region	77	Stuart Region
19	Carnarvon Region	78	St Vincent Region
20	Carpentaria Lowlands Region	79	Styx Region
21	Clarence-Moreton Region	80	Surat Region
22	Coen Region	81	Sydney Region
24	Daly River Region	82	Sylvania Region
25	Darling Region	83	Central Tasmania Region
26	Davenport Region	84	Tennant Creek Region
27	Denison Region	85	Tanami Region
28	Drummond Region	86	Torrens Region
29	Duaringa Region	87	Tyennan Region
30	Dundas Region	88	Victoria River Region
31	Eromanga Region	90	Wiso Region
33	Eucla Region	91	Wonominta Region

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34	Galilee Region	93	Yilgarn Region
35	Gascoyne Region	94	Bresnahan Region
36	Gawler Region	95	Burke River Region
37	Georgetown Region	96	Wilsons Promontory Region
38	Georgina Region	97	Caloola Region
39	Gippsland Region	98	Charters Towers Region
40	Halls Creek Region	99	Clarke River Region
41	Hamersley Region	100	Fraser Region
43	Cairns Region	101	King Island Region
44	Kanmantoo Region	102	King Leopold Region
46	Kimberley Region	103	Marymia Region
47	Lachlan Region	104	Nongra Region
48	Quinkan Region	105	Northeast Tasmania Region
49	Leeuwin Region	106	Proserpine Region
50	Litchfield Region	107	Savory Region
51	Maryborough Region	108	Tibooburra Region
52	McArthur Region	109	Winnecke Region
53	Money Shoal Region	112	Ashburton Region
54	Mount Isa Region	282	Fly-Highlands Region (PNG)
55	Mount Painter Region	357	New Zealand Intraplate Volcanic Region (NZ)
56	Murphy Region		

3.7 The Geological Provinces Authority Table ('GEOPROVS')

The GEOPROVS authority table provides a subdivision of the Australian continent into geological provinces based initially on the account of Palfreyman (BMR Bulletin 181, 1984). There are now three levels of formal hierarchy - super-provinces, provinces and sub-provinces with the Yilgarn Craton being the only super-province at this time. The table also has provision for domains and sub-domains, but at this level the terms used are not yet regarded as formal subdivisions.

Description of columns

PROVNO	System supplied unique positive integer of up to 3 digits - the primary key for the GEOPROVS table.
PROVNAME	A 64-character mandatory column for the name of the super-province, province, sub-province or domain. Super-province and province names are unique, but sub-province, domain or sub-domain names can recur in different provinces (e.g. 'Eastern Fold Belt').
PROVLETS	Up to 4 capital letters for the abbreviation for the province which may be used to annotate a map.
TYPE	A 16-character column for the type of province, sub-province, domain, etc. The only entries in this column at present are 'Basin' and 'Batholith', but others types may be added in future (e.g. 'Fold

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Belt'). This column will probably graduate to being controlled by a lookup table.

COUNTRYID — Mandatory 3 capital characters indicating the country or continent. Valid capital letters are those in the AGSOCOUNTRIES authority table.

RANK — A 1-digit number pointing to the rank of the province name. Possible ranks are -

Number	Rank
0	super-province
1	province
2	sub-province
3	domain
4	sub-domain

STATUS — A single digit number pointing to the status of the name.

Status No.	Status Description
1	defined
2	redefined
3	fully described
4	described
5	briefly described
6	mentioned
7	informal
8	deleted

PARENT — A 5-digit positive integer pointing to the parent unit of the province, sub-province or domain which is next highest in rank.

GEODX_REF — A 9-character column for the ID of a bibliographic reference in the GEODX Database. The reference should contain the definition or redefinition of the province, sub-province, etc.

COMMENTS — A 64-character column for any additional relevant information.

USERID — An 16-character column for the Oracle username (in capital letters) of the person who entered or last updated the record.

LASTCHANGED — A date indicates when the record was created or last updated.

ELON & WLON — A number field with the bounding longitudes of the minimum rectangle containing the province. Unused, as yet.

TLAT & BLAT — A number field with the bounding latitudes of the minimum rectangle containing the province. Unused, as yet.

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COORDS A long raw column intended for a string of vectors defining the bounding polygon of the province. Unused, as yet.

The following are permissible entries for provinces in the GEOPROVS table at super-province and province level.

Provno	Provname	Provno	Provname
0	unknown	58	Musgrave Block
1	Adavale Basin	59	Nabberu Basin
2	Adelaide Fold Belt	60	New England Fold Belt
3	Albany-Fraser Province	61	Ngalia Basin
4	Amadeus Basin	62	Northhampton Block
5	Arafura Basin	63	Oaklands Basin
6	Arckaringa Basin	64	Officer Basin
7	Arnhem Block	65	Ord Basin
8	Arrowie Basin	66	Otway Basin
9	Arunta Block	67	Paterson Province
10	Bancannia Trough	68	Pedirka Basin
11	Bangemall Basin	69	Perth Basin
12	Birrindudu Basin	70	Pilbara Block
13	Bonaparte Basin	71	Pine Creek Geosyncline
14	Bowen Basin	72	Polda Basin
15	Bremer Basin	73	Rocky Cape Block
16	Broken Hill Block	74	Rum Jungle Block
17	Canning Basin	75	South Nicholson Basin
18	Cape York-Oriomo Inlier	76	Stansbury Basin
19	Carnarvon Basin	77	Stuart Shelf
20	Carpentaria Basin	78	St Vincent Basin
21	Clarence-Moreton Basin	79	Styx Basin
22	Coen Block	80	Surat Basin
23	Cooper Basin	81	Sydney Basin
24	Daly River Basin	82	Sylvania Dome
25	Darling Basin	83	Tasmania Basin
26	Davenport Geosyncline	84	Tennant Creek Block
27	Denison Block	85	Granites-Tanami Block
28	Drummond Basin	86	Torrens Basin
29	Duaringa Basin	87	Tyenna Block
30	Dundas Trough	88	Victoria River Basin
31	Eromanga Basin	89	Warburton Basin
32	Esk Trough	90	Wiso Basin
33	Eucla Basin	91	Wonominta Block
34	Galilee Basin	92	Yambo Block
35	Gascoyne Block	93	Yilgarn Craton
36	Gawler Craton	94	Eastern Goldfields Province
37	Georgetown Block	95	Southern Cross Province
38	Georgina Basin	108	Willyama Block
39	Gippsland Basin	112	Ashburton Basin

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40	Halls Creek Province	120	Murchison Province
41	Hamersley Basin	121	Western Gneiss Terrane
42	Hillsborough Basin	191	Cape York Plutonic Belt
43	Hodgkinson Fold Belt	192	Broken River Province
44	Kanmantoo Fold Belt	193	North Queensland Igneous Province
45	Karumba Basin	204	Lolworth-Ravenswood Block
46	Kimberley Basin	220	Thompson Fold Belt
47	Lachlan Fold Belt	281	Lakefield Basin
48	Laura Basin	283	Tertiary Volcanic Province
49	Leeuwin Block	374	Lake Eyre Basin
50	Litchfield Block	378	Spencer Shelf
51	Maryborough Basin	379	Bight Basin
52	McArthur Basin	380	Barossa Basin
53	Money Shoal Basin	381	Berri Basin
54	Mount Isa Inlier	382	Billa Kalina Basin
55	Mount Painter Block	383	Denman Basin
56	Murphy Inlier	384	Itiledoo Basin
57	Murray Basin	387	Gunnedah Basin

For the Mount Isa dataset, the values used for the geological province extends from the province to the domain level. Values used in the dataset are:

54	Mount Isa Inlier	144	Quamby-Malbon Zone
97	Cloncurry-Selwyn Zone	145	Lawn Hill Platform
141	Kalkadoon Leichhardt Belt	146	Leichhardt River Fault Trough
143	Mary Kathleen Zone	148	Myally Shelf

The distribution and extent of these provinces, sub-provinces and domains is illustrated in the map of the Mount Isa region by Raymond and Needham (1993; Metallogeny of the Mount Isa Inlier and Environs, 1:500 000 scale, Australian Geological Survey Organisation, Canberra).

3.8 The Geological Time Scale Authority Table ('GEOTIME')

The GEOTIME authority table contains over 290 valid geological time terms.

Description of columns

AGENO	A system supplied mandatory unique integer of up to 4 digits that is the primary key for the GEOTIME table.
AGENAME	A mandatory column of 32 characters for the name of the geological age or time term - e.g. 'Late Permian'.
SCOPE	A mandatory integer of up to 2 digits indicating the scope of the time term - i.e. to what region does the term apply.

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Number	Description
1	International
2	Australia
3	Australasia
4	New Zealand
5	United Kingdom
6	North America
7	China

RANK — Mandatory single-digit column indicating the rank of the time term. In general, the time terms used by OZMIN are in the first five ranks listed below:

Number	Name
1	Eon
2	Erathem
3	Period
4	Epoch
5	Series
6	Stage
7	Substage
8	unknown

STATUS — Mandatory 1-digit column pointing to the Status of a time term.

Number	Description
1	Current
2	Obsolete
3	Deleted

PARENT — An integer of up to 4 digits that points to the Age Number of the term next higher in Rank in the GEOTIME table. For example, the parent age for the Ordovician Period is the Palaeozoic Era.

YNGBOUND & OLDBOUND - Two integer columns of up to 8 digits for the absolute age in millions of years of the younger and older boundaries of the geological time term - as published in the reference indicated by the GEODX reference ID column.

COMMENTS — A column of 64 characters for any comments relating to the time term or its absolute age boundaries.

GEODX ID — Up to 10 characters for the GEODX Reference ID of the primary reference to the time term. This is usually the most authoritative reference to the absolute age boundaries of the unit.

LASTALT — Date column indicating the date at which a new record was entered or an old one updated.

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3.9 The AGSO Minerals Authority Table ('AGSOMINERALS')

The AGSOMINERALS authority table contains an authoritative list of almost 850 mineral names. This authority table is used by OZMIN for the gangue mineralogy associated with a deposit, and subsets of the table are also used for the ore mineralogy and the mineralogy of host rock lithologies and spatially related igneous rocks.

Description of columns

MINABBREV	The primary key column of up to 4 capital characters for the abbreviation of a mineral name (e.g. QZ for quartz, ALT for altaite, etc).
MINNAME	A mandatory column of up to 32 characters for the name of the mineral. First letters of all names are in upper case.
COMMON	An optional one character column used as a flag to identify common minerals (C).
ORE	An optional one character column used as a flag to identify ore minerals (O).
ALTERATION	An optional one character column used as a flag to identify alteration minerals (A).

A sample of the entries in the AGSOMINERALS authority table is reproduced below.

Minabbrev	Minname	Common	Ore	Alteration
ACN	Acanthite		O	
ACT	Actinolite	C		A
ADU	Adularia			
AEG	Aegirine			
AGT	Aegirine-augite			
AEN	Aenigmatite			
AIK	Aikinite		O	
AK	Akermanite			
ALB	Alabandite		O	
AB	Albite	C		A
ALN	Allanite	C	O	A
ALG	Allargentum		O	
ALP	Allophane			
ALM	Almandine	C		
ALT	Altaite		O	
AKT	Aluminokataphorite			
ALU	Alunite			A
AMB	Amblygonite			
AMS	Amesite			

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AMPH	Amphibole	C		A
ANL	Analcime			A
ANT	Anatase		O	A
AND	Andalusite	C		
ADS	Andesine	C		
ADR	Andradite			
ANG	Anglesite		O	A
ANH	Anhydrite			
ANK	Ankerite			
ANN	Annite			
AN	Anorthite	C		
ANR	Anorthoclase	C		
ATH	Anthophyllite	C		A
ATG	Antigorite			A
SB	Antimony		O	
ATL	Antlerite			A
AP	Apatite	C	O	
APO	Apophyllite			A
ARG	Aragonite			
ARF	Arfvedsonite			
AS	Arsenic		O	
ARS	Arsenolite		O	A
APY	Arsenopyrite	C	O	
ART	Artinite			A
ATC	Atacamite		O	A
ATE	Atheneite		O	
AGL	Augelite			A
AUG	Augite	C		
ARC	Aurichalcite		O	A
AST	Aurostibite		O	
AUS	Austinite			
ATN	Autunite		O	A
AWR	Awaruite		O	
AX	Axinite			
AZ	Azurite	C	O	A

3.10 The Lithology Names Authority Table ('LITHOLOGIES')

The LITHOLOGIES authority table provides a detailed and authoritative classification of all lithologies and their qualifying terms. The table is used by other AGSO databases and contains a partial hierarchy which includes a pointer to the 'parent' lithology where this is appropriate. For example, the term 'norite' points to the parent term 'gabbro' (norite is a variety of gabbro). The table also has a single-letter column indicating the basic class of each term - igneous, sedimentary, metamorphic or qualifier.

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Description of columns

LITHID	Up to four capital letters for a unique abbreviation for the lithology or qualifying term.
QUALIFIER	A mandatory single capital letter indicating the basic class of the term - igneous (I), sedimentary (S), metamorphic (M), hybrid (H), regolith (R), unspecified (U), mineralising system (Z), or qualifier (Q). An example of a qualifier term is 'carbonaceous' as in 'carbonaceous shale'.
LITHNAME	A mandatory column of up to 32 characters for the lithological name or term - e.g. 'shale'.
PARENT	Optional. Similar to LITHID but used as a pointer to the abbreviation of a related term that is higher in the hierarchy.
ROCKTYPE	Optional column for the basic rocktype (e.g. felsic intrusive, etc)

The LITHOLOGIES authority table is reproduced below.

LITHID	Q	LITHNAME	PARENT
IGNEOUS ROCKS			
ADK	**I**	**adakite**	
AGL	**I**	**agglomerate**	
ALB	**I**	**albitite**	
AIRK	**I**	**alkaline intrusive**	
ANS	**I**	**anorthosite**	
FAN	I	foid-bearing anorthosite	ANS
QZA	I	quartz anorthosite	ANS
ANT	**I**	**andesite**	IVOL
APL	**I**	**aplite**	FIRK
ASH	**I**	**ash**	
BAD	**I**	**basaltic andesite**	IVOL
BLT	**I**	**basalt**	MVOL
PBT	I	picrobasalt	BLT

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BON	**I**	**boninite**	IVOL
BSN	**I**	**basanite**	
LBG	I	limburgite	BSN
PBS	I	phonolitic basanite	BSN
BTA	**I**	**basaltic trachyandesite**	IVOL
MUG	I	mugearite	BTA
SHT	I	shoshonite	BTA
CBT	**I**	**carbonatite**	
CCT	I	calciocarbonatite	CBT
FCT	I	ferrocarbonatite	CBT
MCT	I	magnesiocarbonatite	CBT
CHAR	**I**	**charnockite**	FIRK
CHT	**I**	**chromitite**	
DAC	**I**	**dacite**	FVOL
RHD	I	rhyodacite	DAC
TYD	I	trachydacite	DAC
DRT	**I**	**diorite**	IIRK
FDR	I	foid-bearing diorite	DRT
FDI	I	foid-diorite	DRT
ODT	I	opx diorite = norite	DRT
QZD	I	quartz diorite	DRT
FNT	**I**	**fenite**	
FRK	**I**	**felsic rock**	ROCK
FIRK	I	felsic intrusive	FRK
FDT	**I**	**foidite**	
ANA	I	analcimite	FDT
FGS	I	fergusite	FDT
LCTT	I	leucitite	FDT
MLG	I	melteigite	FDT
NPH	I	nephelinite	FDT
PFD	I	phonolitic foidite	FDT
SDT	I	sodalitite	FDT
TFD	I	tephritic foidite	FDT
FDL	**I**	**foidolite**	
IJL	I	ijolite	FDL
MSS	I	missourite	FDL
NLL	I	nephelinolite	FDL

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URT	I	urtite	FDL
GAB	**I**	**gabbro**	MIRK
AGB	I	analcime gabbro = teschenite	GAB
CPN	I	clinopyroxene norite	NRT
DLT	I	dolerite	GAB
FBG	I	foid-bearing gabbro	GAB
GBN	I	gabbronorite	GAB
HDG	I	hornblende gabbro	GAB
NGB	I	nepheline gabbro = theralite	GAB
NRT	I	norite	GAB
PHG	I	pyroxene hornblende gabbro	GAB
QGB	I	quartz gabbro	GAB
TTL	I	troctolite	GAB
GRD	**I**	**granodiorite**	FIRK
OGD	I	opx granodiorite = opdalite	GRD
GRP	**I**	**granophyre**	FIRK
GRT	**I**	**granite**	FIRK
AFG	I	alkali feldspar granite	GRT
MZG	I	monzogranite	GRT
OFG	I	opx alkali feldspar granite	GRT
OGT	I	opx granite = charnockite	GRT
SYG	I	syenogranite	GRT
HBT	**I**	**hornblendite**	
OHT	I	olivine hornblendite	HBT
PHD	I	plagioclase-bearing hornblendite	HBT
PHT	I	pyroxene hornblendite	HBT
HYA	**I**	**hyaloclastite**	
IRK	**I**	**intermediate rock**	ROCK
IIRK	I	intermediate intrusive	IRK
KBL	**I**	**kimberlite**	
KTT	**I**	**komatiite**	
LAVA	**I**	**lava**	VOLR
FLVA	I	felsic lava	LAVA
ILVA	I	intermediate lava	LAVA
MLAV	I	mafic lava	LAVA
LPR	**I**	**lamproite**	

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LPY	**I**	**lamprophyre**	
ALO	I	alnoite	LPY
CMP	I	camptonite	LPY
KZT	I	kersantite	LPY
MNTT	I	minette	LPY
MCQ	I	monchiquite	LPY
PLZ	I	polzenite	LPY
SAN	I	sannaite	LPY
SPT	I	spessartite	LPY
VGT	I	vogesite	LPY
MCH	**I**	**meimechite**	
MGBS	**I**	**high Mg-basalt**	
MRK	**I**	**mafic rock**	ROCK
MIRK	I	mafic intrusive	MRK
MLL	**I**	**melilitolite**	
OML	I	olivine melilitolite	MLL
PML	I	pyroxene melilitolite	MLL
POM	I	pyroxene olivine melilitolite	MLL
MLT	**I**	**melilitite**	
MPD	I	melilite-bearing peridotite	MLT
MPT	I	melilite-bearing pyroxenite	MLT
MUV	I	melilite-bearing ultramafic volc	MLT
OMT	I	olivine melilitite	MLT
MSYN	**I**	**monzosyenite**	
MSK	I	miaskite	MSYN
MZB	**I**	**monzogabbro**	MIRK
FMG	I	foid-bearing monzogabbro	MZB
NMG	I	nepheline monzogabbro = essexite	MZB
QMG	I	quartz monzogabbro	MZB
MZD	**I**	**monzodiorite**	IIRK
FMD	I	foid-bearing monzodiorite	MZD
NMD	I	nepheline monzodiorite = essexite	MZD
OMD	I	opx monzodiorite = jotunite	MZD
QMD	I	quartz monzodiorite	MZD
SMD	I	sodalite monzodiorite	MZD
MZT	**I**	**monzonite**	IIRK
FBM	I	foid-bearing monzonite	MZT

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OMZ	I	opx monzonite = mangerite	MZT
QZM	I	quartz monzonite	MZT
OBS	**I**	**obsidian**	FVOL
OPHL	**I**	**ophiolite**	MVOL
PCT	**I**	**picrite**	MVOL
PEG	**I**	**pegmatite**	FIRK
PER	**I**	**peridotite**	
DUN	I	dunite	PER
HZB	I	harzburgite	PER
LHZ	I	lherzolite	PER
PHP	I	pyroxene hornblende peridotite	PER
PPD	I	pyroxene peridotite	PER
WHL	I	wehrlite	PER
PNT	**I**	**phonolite**	
TPL	I	tephritic phonolite	PNT
PHY	**I**	**porphyry**	
FPY	I	felsic porphyry	PHY
QFPY	I	quartz feldspar porphyry	PHY
QZPY	I	quartz porphyry	PHY
PRX	**I**	**pyroxenite**	
CPT	I	clinopyroxenite	PRX
OCP	I	olivine clinopyroxenite	PRX
OHP	I	olivine hornblende pyroxenite	PRX
OOP	I	olivine orthopyroxenite	PRX
OPT	I	orthopyroxenite	PRX
OWT	I	olivine websterite	PRX
PPX	I	plagioclase-bearing pyroxenite	PRX
WEB	I	websterite	PRX
QZG	**I**	**quartz-rich granitoid**	
QTE	I	quartzolite	QZG
RHY	**I**	**rhyolite**	FVOL
AFR	I	alkali feldspar rhyolite	RHY
COM	I	comendite	RHY
PKR	I	peralkaline rhyolite	RHY
PTT	I	pantellerite	RHY
QFRK	**I**	**quartz feldspar rock**	

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SPIL	**I**	**spilite**	MVOL
SYN	**I**	**syenite**	IIRK
AFS	I	alkali feldspar syenite	SYN
FFS	I	foid-bearing alkali feldspar syenite	SYN
FSY	I	foid-bearing syenite	SYN
NSY	I	nepheline syenite	SYN
OFS	I	opx alkali feldspar syenite	SYN
OST	I	opx syenite	SYN
QAS	I	quartz alkali feldspar syenite	SYN
QZS	I	quartz syenite	SYN
SHK	I	shonkinite	SYN
SSY	I	sodalite syenite	SYN
TFT	**I**	**tuffite**	
TNL	**I**	**tonalite**	FIRK
OTT	I	opx tonalite = enderbite	TNL
TDJ	I	trondhjemite	TNL
TPH	**I**	**tephra**	
BTH	I	bomb, block tephra	TPH
TPT	**I**	**tephrite**	
PTR	I	phonolitic tephrite	TPT
TRC	**I**	**trachyte**	IVOL
FAT	I	foid-bearing alkali feldspar trachyte	TRC
FTR	I	foid-bearing trachyte	TRC
QTY	I	quartz trachyte	TRC
TYA	**I**	**trachyandesite**	IVOL
BMT	I	benmoreite	TYA
LTT	I	latite	TYA
FLT	I	foid-bearing latite	TYA
QZL	I	quartz latite	TYA
TYB	**I**	**trachybasalt**	MVOL
HWT	I	hawaiite	TYB
PTB	I	potassic trachybasalt	TYB
TUF	**I**	**tuff**	
XTUF	I	crystal tuff	TUF
IGM	I	ignimbrite	TUF
LTUF	I	lapilli tuff	TUF
LITF	I	lithic tuff	TUF

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VTUF	I	vitric tuff	TUF
VOLR	**I**	**volcanic rock**	
FVOL	I	felsic volcanic	VOLR
IVOL	I	intermediate volcanic	VOLR
MVOL	I	mafic volcanic	VOLR
VCR	**I**	**volcaniclastic rock**	VOLR
EPCR	I	epiclastic rock	VCR
PYCR	I	pyroclastic rock	VCR
VBX	I	volcanic breccia	VCR

METAMORPHIC ROCKS

AMP	M	amphibolite	
CSRK	M	calc-silicate rock	
EGL	M	eclogite	
GFL	M	granofels	
GNS	**M**	**gneiss**	
AUGN	M	augen gneiss	GNS
GRN	M	granulite	
GRSN	M	greisen	
GST	M	greenstone	
HFL	M	hornfels	
MBL	M	marble	
METB	M	metabasite	
METS	M	metasediment	
MIG	M	migmatite	
MTS	M	metasomatite	
MYL	M	mylonite	
PHYL	M	phyllite	
PSAM	M	psammopelite	
QZT	M	quartzite	
SCHT	M	schist	
SKN	M	skarn	
SLA	M	slate	
SRP	M	serpentinite	

SEDIMENTARY ROCKS

AGLT	S	argillite	
AMBR	S	amber	
ARKS	S	arkose	
ARNT	**S**	**arenite**	
CALR	S	calcarenite	ARNT

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DLAR	S	dolarenite	ARNT
BDST	S	boundstone	
BHRK	S	beachrock	
BIOC	S	biocarbonate	
BIOM	S	biomicrite	
BIOS	S	biosparite	
BIT	S	bitumen	
BLD	S	boulder	
BNBD	S	bone bed	
CALU	S	calcilutite	
CBRK	S	carbonate rock	
CHLK	S	chalk	
CHRT	S	chert	
CLST	S	claystone	
CNGL	S	conglomerate	
COAL	**S**	**coal**	
ANTH	S	anthracite	COAL
LIG	S	lignite	COAL
CORL	S	coral	
CQNA	S	coquina	
CRNL	S	carnieule	
DLST	S	dolostone	
DMCT	S	diamictite	
DTMT	S	diatomite	
EVPT	S	evaporite	
FGLT	S	fanglomerate	
FLNT	S	flint	
FOS	S	fossil	
GNST	S	grainstone	
GPST	S	grapestone	
GSD	S	greensand	
GUN	S	guano	
GYST	S	geyserite	
GYT	S	gyttja	
GYWK	S	greywacke	
IRFM	**S**	**iron formation**	
JSPL	S	jaspilite	IRFM
IRST	S	ironstone	
JASP	S	jasper	
LMST	S	limestone	
MARL	S	marl	
MCRT	S	micrite	
MDST	S	mudstone	

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MGST	S	magnesite	
NFOS	S	nanofossil	
NVLT	S	novaculite	
OOZ	S	ooze	
PCLN	S	porcellanite	
PEAT	S	peat	
PELT	S	pelite	
PHSP	S	phosphorite	
PKST	S	packstone	
PSMT	S	psammite	
RDLT	S	radiolarite	
SDBX	S	sedimentary breccia	SED
SDST	S	sandstone	
SHLE	**S**	**shale**	
BLSH	S	black shale	SHLE
SLST	S	siltstone	
SPGT	S	sparagmite	
TBDT	S	turbidite	
TLL	S	till	
TLLD	S	tilloid	
TLLT	S	tillite	
TORB	S	torbanite	
TRVN	S	travertine	
WD	S	wood	

REGOLITH

ALUV	R	alluvium	
CLCR	R	calcrete	
CLY	R	clay	
COLV	R	colluvium	
DST	R	dust	
DUR	R	duricrust	
FRCT	R	ferricrete	
GO	R	gossan	
GRU	R	grus	
GSQ	R	gossanous quartz	
GVL	R	gravel	
LAG	R	lag	
LATT	R	laterite	
LOM	R	loam	
LOS	R	loess	
MUD	R	mud	
PIS	R	pisolite	
PIST	R	pisolitic ironstone	
PLDZ	R	pallid zone	

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SCRE	R	scree	
SLCT	R	silcrete	
SLT	R	silt	
SND	R	sand	
SOIL	R	soil	
SPLT	R	saprolite	
SPRK	R	saprock	

HYBRID ROCK TERMS

BX	**H**	**breccia**	
QHBX	H	quartz-hematite breccia	BX
QZBX	H	quartz breccia	BX
CLAS	H	clast	
GOUG	H	gouge	
MTX	H	matrix	
ORE	H	ore	
ROCK	H	rock	
SED	H	sediment	
SINT	H	sinter	
VEIN	**H**	**vein**	
CVN	H	carbonate vein	VEIN
QZVN	H	quartz vein	VEIN
TGWK	H	tuffaceous greywacke	TFT
TMST	H	tuffaceous mudstone	TFT
TSDS	H	tuffaceous sandstone	TFT
TSST	H	tuffaceous siltstone	TFT

UNSPECIFIED

CAV	U	cavity
MNRK	U	manganese rock
MSI	U	massive silica
QMRK	U	quartz magnetite rock

MINERALISING SYSTEM

MSU	Z	massive sulphide
MTRK	Z	magnetite rock
SURK	Z	sulphide-rich material

QUALIFIERS

ABND	abundant	LTH	lithic
ADC	adcumulate	MAF	mafic

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AEOL	aeolian
AGAL	algal
AL	aluminous
ALK	alkali
ALT	altered
AMY	amygdaloidal
APH	aphanitic
AR	argillic
ARE	arenaceous
ARK	arkosic
BA	banded
BAS	basic
BED	bedded
BLE	bleached
BLK	blocky
BLTC	basaltic
BO	bouldery
BOT	botryoidal
BR	brecciated
BTM	bitumenous
C	coarse
CALC	calcareous
CAR	carbonaceous
CGC	conglomeratic
CHEM	chemical
CHY	cherty
CLAC	clastic
CLC	calcic
CLSS	clast supported
CLT	chloritic
CS	calc-silicate
CUMM	cumulate
CYC	cyclic
DIA	diapiric
DK	dark
DMT	dolomitic
EPC	epiclastic
EQ	equigranular
EU	eutaxitic
EXV	extrusive
F	fine
FA	fault
FEL	feldspathic
FER	ferruginous
FGR	fine grained
FIA	fiamme
FLAG	flaggy
FLS	felsic
MAG	highly magnetic
MAS	massive
MCC	melanocratic
MCL	mesocumulate
MDY	muddy
MEG	megacrystic
MET	meta
METM	metamorphosed
MGSN	magnesian
MIC	micaceous
MIGM	migmatitic
MIK	milky
MIO	micro
MK	medium-K
MON	monomictic
MTXS	matrix supported
MX	microcrystalline
MY	mylonitic
NOD	nodular
OCL	orthocumulate
OO	oolitic
ORG	organic
ORT	ortho
P	poorly sorted
PALE	pale
PAR	para
PBX	pseudobrecciated
PBY	pebbly
PCR	picro
PEL	pelitic
PERA	peralkaline
PHC	phosphatic
PLY	polymict
POD	poddy
POIK	poikilitic
POOR	poor
POR	porphyritic
PORS	porous
POT	potassic
PSC	psammitic
PYC	pyroclastic
PYR	pyritic
QF	quartzo-feldspathic
RDL	radiolarian
RES	residual
REW	reworked
RICH	rich
RL	rhythmic-layered

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FO	foliated	RSNS	resinous
FOI	feldspathoidal	RTRO	retrograde
FOID	foid	SA	sandy
FR	fractured	SCHS	schistose
FRI	friable	SDC	sodic
GL	glassy	SERC	sericitic
GPT	graphitic	SH	sheared
GRAN	granitic	SI	silicified
GSN	gossanous	SILI	siliceous
GTY	gritty	SLY	silty
HET	heterolithic	SPCR	specular
HGR	high-grade	STRO	stromatilitic
HK	high-K	SUL	sulphidic
HM	hematitic	TCY	trachy
HMG	high-Mg	TFC	tuffaceous
ITM	intermediate	THL	tholeiitic
ITV	intrusive	TPI	tephri
JSP	jaspilitic	UB	ultrabasic
KA	kaolinised	UM	ultramafic
LA	laminated	UND	undifferentiated
LAT	lateritic	UNW	unwelded
LAY	layered	VCC	volcaniclastic
LCC	leucocratic	VE	vesicular
LEA	leached	VI	vitric
LGR	low-grade	VND	veined
LI	lineated	VOL	volcanic
LIM	limonitic	WEA	weathered
LK	low-K	WEL	welded
LPL	lapilli	XL	crystal
LT	light		

3.11 The Deposit Classification Authority Table

Provision has been made in OZMIN under the extendable attribute 'Classification (CLA)' in the DEPOSDATA table (Section 2.3) to classify deposits using mineral deposit models where sufficient information exists. In the absence of a published, uniquely Australian set of deposit models at the present time, the comprehensive USGS scheme put forward by Cox and Singer (1986; USGS Bulletin 1693) has been adopted. The deposit models are listed below and the user is referred to this publication for the details of each model. AGSO plans to extend this mineral deposit classification to include deposit models for those Australian deposit types not catered for by the Cox and Singer models (e.g. pegmatite deposits, ironstone Cu-Au deposits such as those at Tennant Creek, calcrete U deposits such as Yeelirrie, etc). The values listed below are part of the DEPOSATTRIBS authority table.

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0 Unknown

Deposits related to mafic and ultramafic intrusions in stable environments

1 Stratiform mafic/ultramafic Ni-Cu
2A Stratiform mafic/ultramafic Cr
2B Stratiform mafic/ultramafic PGE
3 Stratiform mafic/ultramafic Fe-Ti-V

Deposits related to mafic-ultramafic rocks in unstable areas

5A Duluth Cu-Ni-PGE
5B Noril'sk Cu-Ni-PGE
6A Komatiitic Ni-Cu
6B Dunitic Ni-Cu
7A Synorogenic-synvolcanic Ni-Cu
7B Anorthosite Ti
8A Alpine type podiform Cr
8C Limassol Forest Co-Ni
8D Serpentine-hosted asbestos
9 Alaskan PGE

Deposits related to alkaline intrusions

10 Carbonatite
12 Diamond pipes

Deposits related to felsic phanerocrystalline intrusive rocks

14A W skarn
14B Sn skarn
14C Replacement Sn
15A W veins
15B Sn veins
15C Sn greisen

Deposits related to felsic porphyroaphanitic intrusions

16 Climax Mo
17 Porphyry Cu
18A Porphyry Cu, skarn related
18B Cu skarn
18C Zn-Pb skarn
18D Fe skarn
18E Carbonate-hosted asbestos
19A Polymetallic replacement
19B Replacement Mn
20A Porphyry Sn
20B Sn-polymetallic veins
20C Porphyry Cu-Au
21A Porphyry Cu-Mo
21B Porphyry Mo, low F
22A Volcanic-hosted Cu-As-Sb

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22B Au-Ag-Te veins
22C Polymetallic Ag-Pb-Zn veins

Deposits related to subaerial mafic extrusive rocks
23 Basaltic Cu

Deposits related to marine mafic extrusive rocks
24A Cyprus massive sulphide
24B Besshi massive sulphide
24C Volcanogenic Mn
24D Blackbird Co-Cu

Deposits related to subaerial felsic to mafic extrusive rocks
25A Hot spring Au-Ag
25B Creede epithermal veins
25C Comstock epithermal veins
25D Sado epithermal veins
25E Epithermal quartz-alunite Au
25F Volcanogenic U
25G Epithermal Mn
25H Rhyolite-hosted Sn
25I Volcanic-hosted magnetite
26A Carbonate-hosted Au-Ag
27A Hot spring Hg
27B Almaden Hg
27C Silica-carbonate Hg
27D Simple Sb

Deposits related to marine felsic to mafic extrusive rocks
28A Volcanic-hosted massive sulphide
28B Volcanogenic iron formation

Deposits in clastic sedimentary rocks
29A Quartz pebble conglomerate U
29B Olympic Dam Cu-U-Au
30A Sandstone-hosted Pb-Zn
30B Sediment-hosted Cu
30C Sandstone U
31A Sediment-hosted Zn-Pb
31B Stratiform barite
31C Emerald veins

Deposits in carbonate rocks
32A Carbonate-hosted Pb-Zn
32B Carbonate-hosted Zn
32C Kipushi Cu-Pb-Zn

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Chemical-sedimentary rocks

34A Sedimentary Fe formation
34B Sedimentary Mn
34C Upwelling type phosphate
34D Warm-current type phosphate

Deposits related to regionally metamorphosed rocks

36A Low-sulphide Au-quartz veins
36B Archaean greenstone Au
37A Unconformity U-Au
37B Gold in flat faults

Deposits related to surficial processes and unconformities

38A Lateritic Ni
38B Laterite type bauxite
38C Karst type bauxite
39A Placer Au-PGE
39B Placer PGE-Au
39C Shoreline placer Ti
39D Diamond placers
39E Alluvial placer Sn

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Section 4 - OZMIN Database Definitions

4.1 SITES table definition

The SITES table is for the location of each deposit.

```
CREATE TABLE SITES (
        SITENO          NUMBER    (7)     NOT NULL,
        ORIGNO          NUMBER    (5)     NOT NULL,
        SITEID          VARCHAR2  (16)    NOT NULL,
        FIELDID         VARCHAR2  (16),
        OBSDATE         DATE,
        OBSTIME         NUMBER    (4,2),
        COUNTRYID       VARCHAR2  (3)     NOT NULL,
        STATE           VARCHAR2  (3),
        REGNO           NUMBER    (5),
        GEOGAREA        VARCHAR2  (64),
        LOCDESC         VARCHAR2  (64),
        HMAPNO          NUMBER    (4),
        QMAPID          VARCHAR2  (6),
        EASTING         NUMBER    (8,2),
        NORTHING        NUMBER    (9,2),
        ACCURACY        NUMBER    (5)     NOT NULL,
        HEIGHT          NUMBER    (5,0),
        HEIGHTACC       NUMBER    (3,0),
        DLAT            NUMBER    (8,6),
        NS              VARCHAR2  (1),
        DLONG           NUMBER    (9,6),
        EW              VARCHAR2  (1),
        METHOD          NUMBER    (3),
        BIBREF          VARCHAR2  (9),
        AIRPHOTO        VARCHAR2  (36),
        OC              VARCHAR2  (1),          /* OUTCROPS     TABLE     */
        SH              VARCHAR2  (1),          /* SECTHOLES    TABLE     */
        RO              VARCHAR2  (1),          /* ROCKS        TABLE     */
        ST              VARCHAR2  (1),          /* STRUCTURE    TABLE     */
        PE              VARCHAR2  (1),          /* PETROGRAPHY DATABASE */
        RC              VARCHAR2  (1),          /* ROCKCHEM     DATABASE */
        OZ              VARCHAR2  (1),          /* OZCHRON      DATABASE */
        OM              VARCHAR2  (1),          /* OZMIN        DATABASE */
        SC              VARCHAR2  (1),          /* STREAMCHEM   DATABASE */
        RT              VARCHAR2  (1),          /* REGOLITH     DATABASE */
        RP              VARCHAR2  (1),          /* ROCKPROPS    DATABASE */
        SP              VARCHAR2  (1),          /* SPECPROPS    DATABASE */
        DATUM           VARCHAR2  (8)   NOT NULL,
        ENTERED_COORDS  VARCHAR2  (1),
        ENTEREDBY       VARCHAR2  (8)   NOT NULL,
        ENTRYDATE       DATE            NOT NULL,
        LASTUPDATE      DATE );

ALTER TABLE SITES ADD CONSTRAINT UK_SITES UNIQUE ( ORIGNO, SITEID );

ALTER TABLE SITES ADD CONSTRAINT PK_SITES_SITENO PRIMARY KEY ( SITENO );
```

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```
ALTER TABLE SITES ADD CONSTRAINT FK_SITES_ORIGNO
        FOREIGN KEY ( ORIGNO ) REFERENCES NGMA.ORIGINATORS ( ORIGNO );

ALTER TABLE SITES ADD CONSTRAINT FK_SITES_COUNTRYID
        FOREIGN KEY ( COUNTRYID ) REFERENCES NGMA.AGSOCOUNTRIES ( COUNTRYID );

ALTER TABLE SITES ADD CONSTRAINT FK_SITES_STATE
        FOREIGN KEY ( STATE ) REFERENCES NGMA.AGSOSTATES ( STATEID );

ALTER TABLE SITES ADD CONSTRAINT FK_SITES_GEOREGIONS
        FOREIGN KEY ( REGNO ) REFERENCES NGMA.GEOREGIONS ( REGNO );

ALTER TABLE SITES ADD CONSTRAINT FK_SITES_QMAPID
        FOREIGN KEY ( QMAPID ) REFERENCES NGMA.QMAPS ( MAPNO );

ALTER TABLE SITES ADD CONSTRAINT FK_SITES_HMAPNO
        FOREIGN KEY ( HMAPNO ) REFERENCES NGMA.HMAPS ( HMAPNO );

ALTER TABLE SITES ADD CONSTRAINT FK_SITES_METHOD
        FOREIGN KEY ( METHOD ) REFERENCES NGMA.LOCMETHODS ( LOCMETHNO );


REM TRIGGER FOR AUTOMATICALLY INSERTING NEXT SITENO IN NEW RECORDS

CREATE SEQUENCE SEQ_SITES_SITENO INCREMENT BY 1 START WITH 1;
CREATE OR REPLACE TRIGGER SITES_INSERT BEFORE INSERT ON SITES
FOR EACH ROW
BEGIN
    SELECT SEQ_SITES_SITENO.NEXTVAL, USER, TRUNC (SYSDATE)
    INTO :NEW.SITENO. :NEW ENTEREDBY, :NEW.ENTRYDATE
    FROM DUAL;
END;
/
```

4.2 DEPOSITS table definition

The DEPOSITS table is for data on mineral deposits and occurrences

```
CREATE TABLE DEPOSITS (
        DEPOSNO         NUMBER    (5,0)  NOT NULL,
        SITENO          NUMBER    (7)    NOT NULL,
        ORIGNO          NUMBER    (5,0)  NOT NULL,
        SITEID          VARCHAR2  (16)   NOT NULL,
        NAME            VARCHAR2  (80),
        RESTRICTED      VARCHAR2  (1),
        MINCENTNO       NUMBER    (4),
        MINRESNO        NUMBER    (5),
        SYNONYMS        VARCHAR2  (80),
        GEOPROVNO       NUMBER    (5),
        FIELDCHECKED    VARCHAR2  (1),
        EXPOSED         VARCHAR2  (1),
        AGEMETHOD       VARCHAR2  (8),
        OZCHRONREC      NUMBER    (4,0),
        MINAGE          VARCHAR2  (32),
        COMMENTS        VARCHAR2  (255),
        ENTEREDBY       VARCHAR2  (8)    NOT NULL,
```

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```
        ENTRYDATE       DATE            NOT NULL,
        LASTUPDATE      DATE );

ALTER TABLE DEPOSITS ADD CONSTRAINT PK_DEPOSITS PRIMARY KEY ( DEPOSNO );

ALTER TABLE DEPOSITS ADD CONSTRAINT FK_DEPOSITS_ORIGNO
        FOREIGN KEY ( ORIGNO ) REFERENCES NGMA.ORIGINATORS ( ORIGNO );

ALTER TABLE DEPOSITS ADD CONSTRAINT FK_DEPOSITS_MINCENTNO
        FOREIGN KEY ( MINCENTNO ) REFERENCES MININGCENTERS ( MINCENTNO );

ALTER TABLE DEPOSITS ADD CONSTRAINT FK_DEPOSITS_GEOPROVNO
        FOREIGN KEY ( GEOPROVNO ) REFERENCES STRATA.GEOPROVS ( PROVNO );
```

4.3 DEPOSDATA table definition

The DEPOSDATA table is for extendable attribute data on mineral deposits and occurrences

```
CREATE TABLE DEPOSDATA (
        DEPOSNO         NUMBER    (5,0)  NOT NULL,
        ATTRIBID        VARCHAR2  (4)    NOT NULL,
        VALUEID         VARCHAR2  (4),
        DESCRIPTION     VARCHAR2  (64),
        ENTEREDBY       VARCHAR2  (16)   NOT NULL,
        ENTRYDATE       DATE             NOT NULL );

ALTER TABLE DEPOSDATA ADD CONSTRAINT PK_DEPOSDATA
        PRIMARY KEY ( DEPOSNO, ATTRIBID, VALUEID);

ALTER TABLE DEPOSDATA ADD CONSTRAINT FK_DEPOSDATA_DEPOSNO
        FOREIGN KEY ( DEPOSNO ) REFERENCES DEPOSITS ( DEPOSNO );
```

4.4 COMMODITIES table definition

The COMMODITIES table is for commodity (production and resources) data on mineral deposits and occurrences

```
CREATE TABLE COMMODS (
        DEPOSNO         NUMBER    (5,0)  NOT NULL,
        COMMODITY       VARCHAR2  (4)    NOT NULL,
        PRODUCTION      NUMBER    (14,0),
        PRODUNIT        VARCHAR2  (1),
        PRODYEAR        NUMBER    (4,0),
        PRODMONTH       VARCHAR2  (3),
        RESOURCES       NUMBER    (12,0),
        GRADE           NUMBER    (6,2),
        GRADEUNIT       VARCHAR2  (1),
        TOTCOMMOD       NUMBER    (14,0),
        TOTUNIT         VARCHAR2  (1),
        COMMENTS        VARCHAR2  (64),
        ENTEREDBY       VARCHAR2  (8)    NOT NULL,
        ENTRYDATE       DATE             NOT NULL );
```

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```
ALTER TABLE COMMODS ADD CONSTRAINT PK_COMMODS PRIMARY KEY ( DEPOSNO, COMMODITY );

ALTER TABLE COMMODS ADD CONSTRAINT FK_COMMODS_DEPOSNO
        FOREIGN KEY ( DEPOSNO ) REFERENCES DEPOSITS ( DEPOSNO );
```

4.5 REGROCKS table definition

The REGROCKS table is for regional rock attribute data on mineral deposits and occurrences

```
CREATE TABLE REGROCKS (
        REGROCKNO       NUMBER    (5,0)  NOT NULL,
        DEPOSNO         NUMBER    (5,0)  NOT NULL,
        STRATNO         NUMBER    (5,0),
        INFORMAL        VARCHAR2  (64),
        QUALIFIER       VARCHAR2  (32),
        LITHNAME        VARCHAR2  (32),
        DESCRIPTION     VARCHAR2  (64),
        METAMAGE        NUMBER    (4,0),
        METAGRADE       VARCHAR2  (3),
        IGNEOUS         VARCHAR2  (1)     NOT NULL,
        PROXIMITY       VARCHAR2  (2),
        IGAGE           NUMBER    (4,0),
        COMMENTS        VARCHAR2  (64),
        ENTEREDBY       VARCHAR2  (8)     NOT NULL,
        ENTRYDATE       DATE              NOT NULL );

ALTER TABLE REGROCKS ADD CONSTRAINT PK_REGROCKS PRIMARY KEY ( REGROCKNO );

ALTER TABLE REGROCKS ADD CONSTRAINT FK_REGROCKS_DEPOSNO
        FOREIGN KEY ( DEPOSNO ) REFERENCES DEPOSITS ( DEPOSNO );
```

4.6 REGROCKDATA table definition

The REGROCKDATA table is extendable attribute data for the REGROCKS table used for mineral deposits and occurrences

```
CREATE TABLE REGROCKDATA (
        REGROCKNO       NUMBER    (5,0)  NOT NULL,
        ATTRIBID        VARCHAR2  (4)     NOT NULL,
        VALUEID         VARCHAR2  (4),
        DESCRIPTION     VARCHAR2  (64),
        ENTEREDBY       VARCHAR2  (8)     NOT NULL,
        ENTRYDATE       DATE              NOT NULL );

ALTER TABLE REGROCKS ADD CONSTRAINT PK_REGROCKDATA
        PRIMARY KEY ( REGROCKNO, ATTRIBID, VALUEID);

ALTER TABLE REGROCKS ADD CONSTRAINT FK_REGROCKDATA_REGROCKNO
        FOREIGN KEY ( REGROCKNO ) REFERENCES REGROCKS ( REGROCKNO );
```

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4.7 REGSTRUCT table definition

The REGSTRUCT table is for major structures proximal to mineral deposits and occurrences

```
CREATE TABLE REGSTRUCT (
        DEPOSNO          NUMBER    (5,0)  NOT NULL,
        TYPE             VARCHAR2  (4),
        PROXIMITY        VARCHAR2  (4),
        ENTEREDBY        VARCHAR2  (8)    NOT NULL,
        ENTRYDATE        DATE             NOT NULL );

ALTER TABLE REGSTRUCT ADD CONSTRAINT PK_REGSTRUCT
        PRIMARY KEY ( DEPOSNO, TYPE, PROXIMITY );

ALTER TABLE REGSTRUCT ADD CONSTRAINT FK_REGSTRUCT_DEPOSNO
        FOREIGN KEY ( DEPOSNO ) REFERENCES DEPOSITS ( DEPOSNO );
```

4.8 DEPOSREFS table definition

The DEPOSREFS table is for bibliographic references relating to mineral deposits and occurrences

```
CREATE TABLE DEPOSREFS (
        DEPOSNO          NUMBER    (5,0)  NOT NULL,
        AGSREFID         VARCHAR2  (9)    NOT NULL,
        ENTEREDBY        VARCHAR2  (8)    NOT NULL,
        ENTRYDATE        DATE             NOT NULL,

ALTER TABLE DEPOSREFS ADD CONSTRAINT PK_DEPOSREFS
        PRIMARY KEY ( DEPOSNO, AGSREFID );

ALTER TABLE DEPOSREFS ADD CONSTRAINT FK_DEPOSREFS_DEPOSNO
        FOREIGN KEY ( DEPOSNO ) REFERENCES DEPOSITS ( DEPOSNO );
```

4.9 OZMINOS table definition

The OZMINOS table is to keep track of maximum primary key numbers in OZMIN

```
CREATE TABLE OZMINOS (
        IDMAXNO          VARCHAR2  (10)   NOT NULL,
        OZMAXNO          NUMBER    (5,0)  NOT NULL );

ALTER TABLE OZMINOS ADD CONSTRAINT PK_OZMINOS PRIMARY KEY ( IDMAXNO );
```

4.10 DEPOSATTRIBS authority table definition

The DEPOSATTRIBS table validates extendable attributes in the DEPOSDATA table

```
CREATE TABLE DEPOSATTRIBS (
        ATTRIBID         VARCHAR2  (4)    NOT NULL,
        ATTRIBNAME       VARCHAR2  (32),
```

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```
        VALUEID         VARCHAR2 (4)     NOT NULL,
        VALUENAME       VARCHAR2 (32)    NOT NULL,

ALTER TABLE DEPOSATTRIBS ADD CONSTRAINT PK_DEPOSATTRIBS
        PRIMARY KEY ( ATTRIBID, VALUEID );

REM VIEW COMBINING DEPOSATTRIBS WITH AGSOMINERALS USING UNIONS

CREATE VIEW DEPOSATTRIBMINS AS (
        SELECT ATTRIBID, ATTRIBNAME, VALUEID, VALUENAME
            FROM OZMIN.DEPOSATTRIBS
        UNION
        SELECT 'OMIN', 'Ore mineral', MINABBREV, MINNAME
            FROM NGMA.AGSOMINERALS
            WHERE ORE = 'O'
        UNION
        SELECT 'GMIN', 'Gangue mineral', MINABBREV, MINNAME
            FROM NGMA.AGSOMINERALS );
```

4.11 REGATTRIBS authority table definition

The REGATTRIBS table validates extendable attributes in the REGROCKSDATA table

```
CREATE TABLE REGATTRIBS (
        ATTRIBID        VARCHAR2 (4)      NOT NULL,
        ATTRIBNAME      VARCHAR2 (32),
        VALUEID         VARCHAR2 (4)      NOT NULL,
        VALUENAME       VARCHAR2 (32)     NOT NULL );

ALTER TABLE REGATTRIBS ADD CONSTRAINT PK_REGATTRIBS
        PRIMARY KEY ( ATTRIBID, VALUEID );

REM VIEW COMBINING REGATTRIBS WITH AGSOMINERALS USING A UNION

CREATE VIEW REGATTRIBMINS AS (
        SELECT ATTRIBID, ATTRIBNAME, VALUEID, VALUENAME
            FROM OZMIN.REGATTRIBS
    UNION
        SELECT 'CM', 'Common mineral', MINABBREV, MINNAME
            FROM NGMA.AGSOMINERALS
            WHERE COMMON = 'C' );
```

4.12 COMMODTYPES authority table definition

The COMMODTYPES table is for those commodities used by the COMMODITIES table (eg. Au, Cu, Zn, etc)

```
CREATE TABLE COMMODTYPES (
        COMMODID        VARCHAR2 (4)      NOT NULL,
        COMMODNAME      VARCHAR2 (32)     NOT NULL,
        MINLOCID        VARCHAR2 (11) );

ALTER TABLE COMMODTYPES ADD CONSTRAINT PK_COMMODTYPES PRIMARY KEY ( COMMODID );
```

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4.13 MININGCENTERS authority table definition

The MININGCENTERS table allows deposits to be grouped into camps or centres where these deposits are spatially related and the commodities recovered are similar. Values described in this table are being progressively compiled.

```
CREATE TABLE MININGCENTERS
        MINCENTNO       NUMBER (4,0)        NOT NULL,
        MINCENTNAME     VARCHAR2 (80)       NOT NULL, );

ALTER TABLE MININGCENTERS ADD CONSTRAINT PK_MININGCENTERS PRIMARY KEY ( MINCENTNO
);
```

The following tables belong to other databases but are used by OZMIN and are therefore described below.

4.14 STRATNAMES authority table definition

The STRATNAMES table contains all Australian stratigraphic units used.

```
CREATE TABLE STRATNAMES (
        STRATNO         NUMBER    (5)       NOT NULL,
        GEODXNO         NUMBER(5),
        UNITNO          NUMBER(5),
        STRATNAME       VARCHAR2  (50)      NOT NULL,
        TYPESTATE       VARCHAR2  (3),
        ENTRYDATE       DATE                NOT NULL,
        ENTEREDBY       VARCHAR2  (8)       NOT NULL,
        APPROVED        VARCHAR2  (1),
        APPRDATE        DATE,
        APPRBY          VARCHAR2  (8),
        RANK            NUMBER(1),
        STATUS          NUMBER(2)           NOT NULL,
        CATEGORY        NUMBER(2)           NOT NULL,
        CARD            VARCHAR2  (1)       NOT NULL,
        ISCURRENT       VARCHAR2  (1)       NOT NULL,
        MODDATE         DATE,
        MODBY           VARCHAR2  (8),
        ORIGINATOR      VARCHAR2  (80),
        RESDATE         DATE,
        AGEMAX          NUMBER(4),
        AGEMIN          NUMBER(4),
        GEOPROVNO       NUMBER(5),
        SECTHOLENO      NUMBER(6),
        MAXTHICKNESS    NUMBER(7,2),
        OVERLYING       NUMBER(5),
        OVEREL          NUMBER(3),
        UNDERLYING      NUMBER(5),
        UNDEREL         NUMBER(3),
        FIRSTREF        VARCHAR2(9)
        DEFREF          VARCHAR2(9),
        PARENT          NUMBER(5),
        PREVNO          NUMBER(5),
        USENO           NUMBER(5),
        COMMENTS        VARCHAR2  (255),
        ORIGNO          NUMBER(5),
        SITEID          VARCHAR2(16) );
```

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4.15 GEOREGIONS authority table definition

Geological regions are based on Palfreyman's Geological provinces (see Palfreyman, 1984). The Geological region is similar to the geological province however it only represents the two-dimensional geographical region in which the deposit occurs.

```
CREATE TABLE GEOREGIONS (
        REGNO           NUMBER    (3),      NOT NULL,
        PROVNO          NUMBER    (3)       NOT NULL,
        REGNAME         VARCHAR2  (64)      NOT NULL,
        REGLETS         VARCHAR2  (4)       NOT NULL,
        COUNTRYID       VARCHAR2  (3)       NOT NULL,
        COMMENTS        VARCHAR2  (64),
        ENTEREDBY       VARCHAR2  (8)       NOT NULL,
        ENTRYDATE       DATE                NOT NULL );
```

4.16 GEOPROVS authority table definition

This table provides a subdivision of the Australian continent in geological provinces and for their further subdivision into sub-provinces, domains, and sub-domains.

```
CREATE TABLE GEOPROVS (
        PROVNO          NUMBER    (3,0)     NOT NULL,
        PROVNAME        VARCHAR2  (64)      NOT NULL,
        PROVLETS        VARCHAR2  (4),
        TYPE            VARCHAR2  (16),
        COUNTRYID       VARCHAR2  (3),
        RANK            NUMBER    (1,0),
        STATUS          NUMBER    (1,0)     NOT NULL,
        PARENT          NUMBER    (3,0),
        GEODX_REF       VARCHAR2  (9,0)         /* POINTS TO GEODX REFERENCE */
        COMMENTS        VARCHAR2  (64),
        USERID          VARCHAR2  (16),
        LASTCHANGED     DATE,
        ELON            NUMBER    (5,2),
        WLON            NUMBER    (5,2),
        TLAT            NUMBER    (5,2),
        BLAT            NUMBER    (5,2),
        COORDS          LONG RAW );
```

4.17 GEOTIME authority table definition

The GEOTIME table is AGSO's authority table for geological time terms, which is also used by STRATLEX.

```
CREATE TABLE GEOTIME (
        AGENO           NUMBER    (4,0)     NOT NULL,
        AGENAME         VARCHAR2  (24)      NOT NULL,
        SCOPE           NUMBER    (2,0)     NOT NULL,
        RANK            NUMBER    (1,0)     NOT NULL,
        STATUS          NUMBER    (1,0)     NOT NULL,
        PARENT          NUMBER    (4,0),
        YNGBOUND        NUMBER    (8,3),
        OLDBOUND        NUMBER    (8,3),
```

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```
        COMMENTS        VARCHAR2 (64),
        GEODXID         VARCHAR2 (10),          /* POINTS TO GEODX REFERENCE */
        LASTALT         DATE );
```

4.18 AGSOMINERALS authority table definition

This table provides an authoritative list of almost 800 mineral names.

```
CREATE TABLE AGSOMINERALS (
        MINABBREV       VARCHAR2 (4)        NOT NULL,
        MINNAME         VARCHAR2 (32)       NOT NULL,
        COMMON          VARCHAR2 (1),
        ORE             VARCHAR2 (1),
        ALTERATION      VARCHAR2 (1) );
```

4.19 LITHOLOGIES authority table definition

The LITHOLOGIES table provides a detailed and authoritative classification of all lithologies and their qualifying terms.

```
CREATE TABLE LITHOLOGIES (
        LITHID          VARCHAR2 (4)        NOT NULL,
        QUALIFIER       VARCHAR2 (1)        NOT NULL,
        LITHNAME        VARCHAR2 (32)       NOT NULL,
        PARENT          VARCHAR2 (4)
        ROCKTYPE        NUMBER   (2) );
```

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Section 5 - OZMIN Microsoft Access Forms

A Microsoft Access version was developed for version 2.0 of the major mineral deposits dataset released in 1997. The database design, structure, attributes and values used in the Access version are the same as those described for the Oracle export in the earlier sections of this manual with a few minor exceptions. The purpose of this section is to introduce the Access forms developed for OZMIN and provide some general guidance in their use.

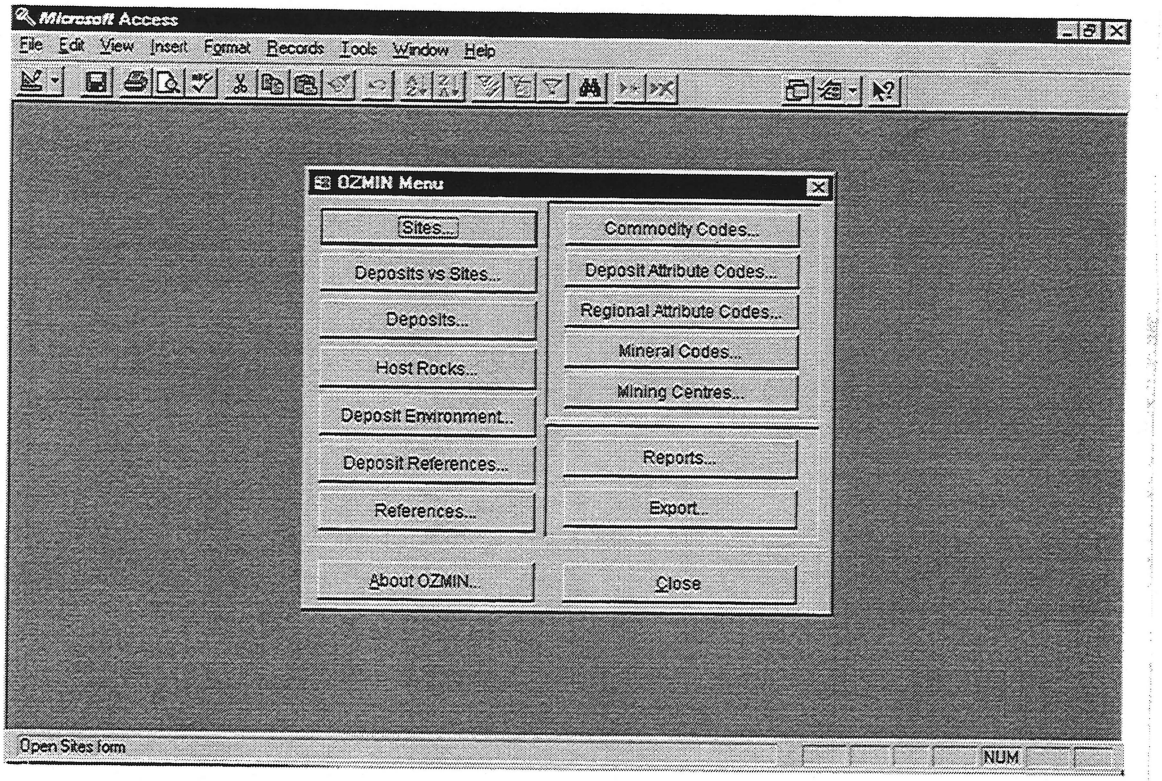

Figure 3 The main menu for OZMIN

The OZMIN main menu is illustrated in Figure 3 and is the entry point for the various forms describing the features and regional setting of deposits. The standard 'Sites' form (Figure 4) that is a feature of most AGSO databases displays the full locational information contained in the SITES table for a given deposit. The 'Deposits vs Sites' form (Figure 5) gives a view that includes the deposit name, provides the relevant key locational information from the SITES table, and has buttons which provide entry to the 'Deposits' and full 'Sites' forms .

The 'Deposits' form (Figure 6) summarises data that is specific to the deposit and displays information from the DEPOSITS, COMMODITIES, and DEPOSITS DATA tables in OZMIN. The 'Host Rocks' form (Figure 7) summarises information concerned with the host rocks to the deposit and draws from both the REGIONAL ROCKS and REGIONAL

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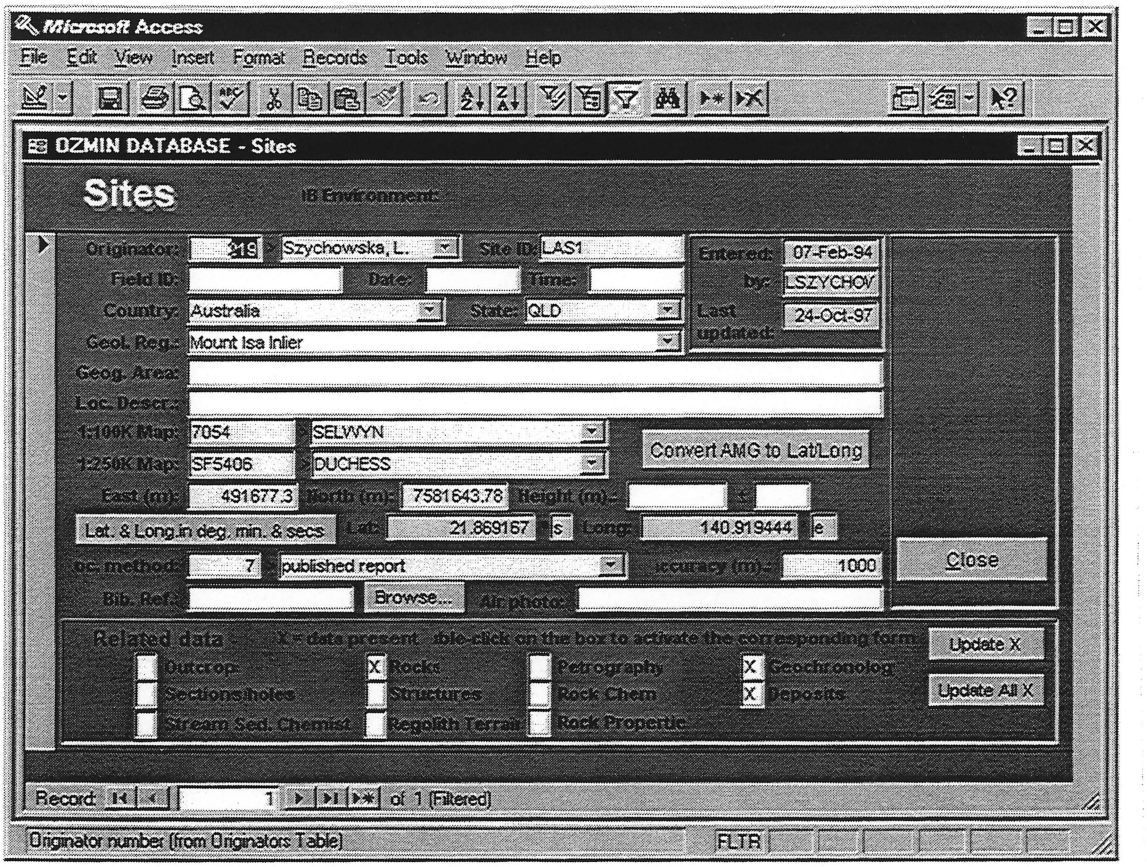

Figure 4 The 'Sites' form

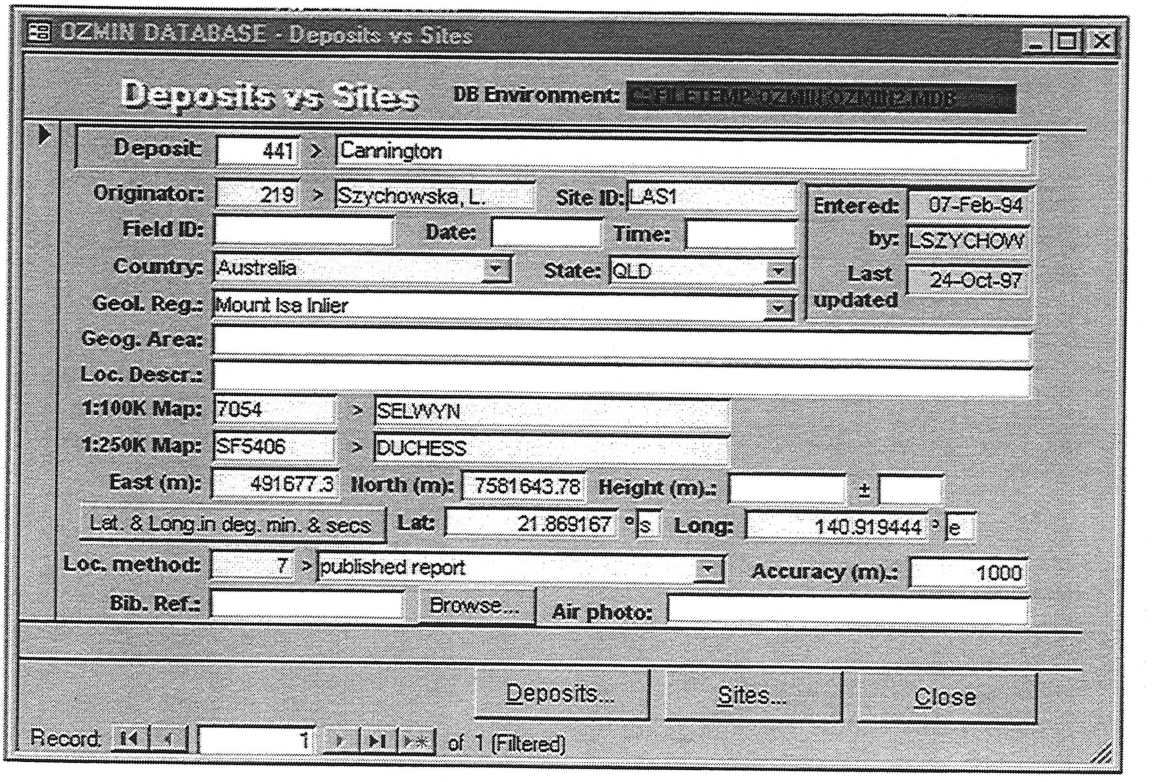

Figure 5 The 'Deposits vs Sites' form

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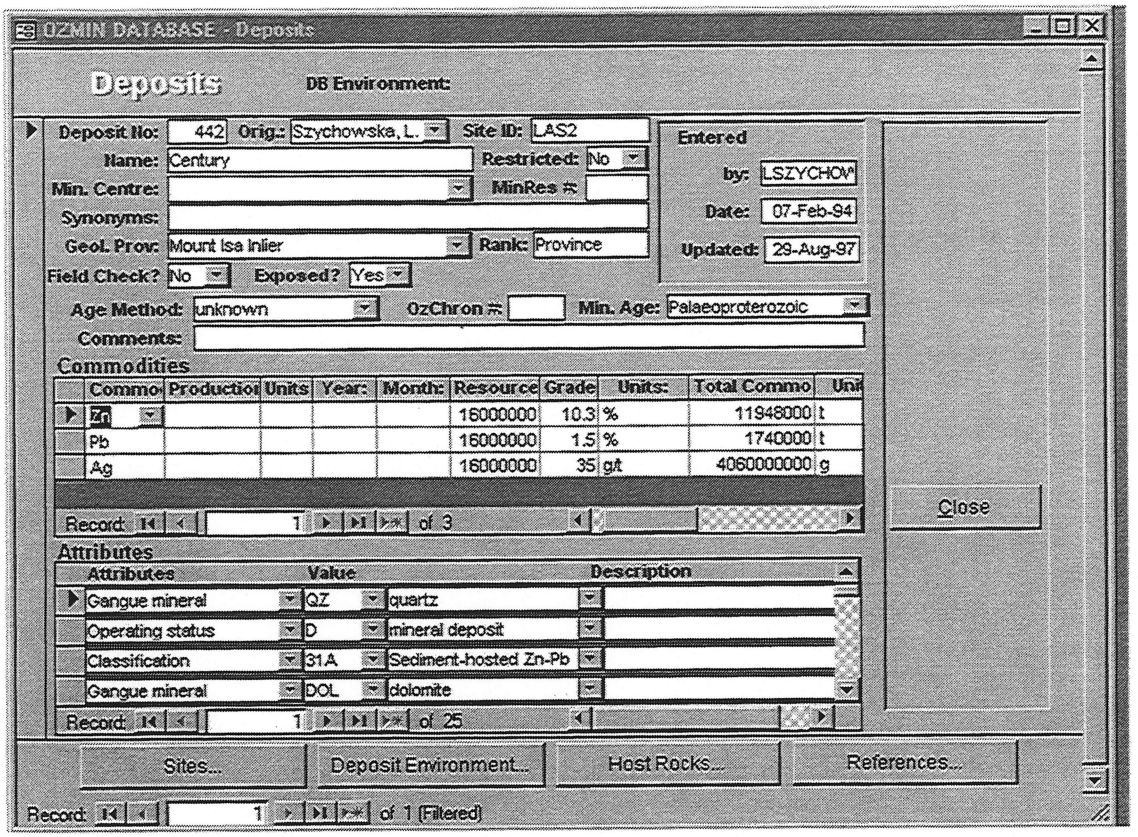

Figure 6 The 'Deposits' form

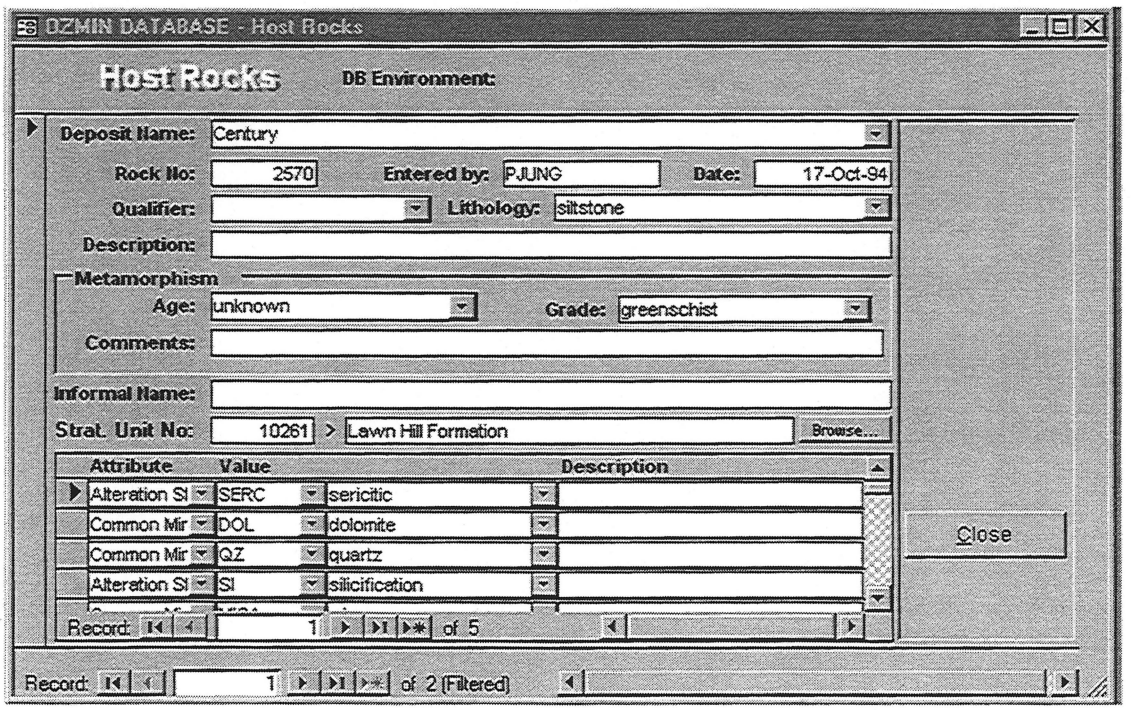

Figure 7 The 'Host Rocks' form

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ROCKS DATA tables. The information has been structured around the host rock lithology rather than the stratigraphic unit. This means that a number of host-rock lithologies from one or more formations may be present.

The 'Deposit Environment' form (Figure 8) summarises information about major structures and igneous bodies and their proximity to a given deposit. The form is derived from the REGIONAL ROCKS, REGIONAL STRUCTURES, and REGIONAL ROCK DATA tables and has a many-to-one relationship with the DEPOSITS table, since more than one igneous body and structure may be present.

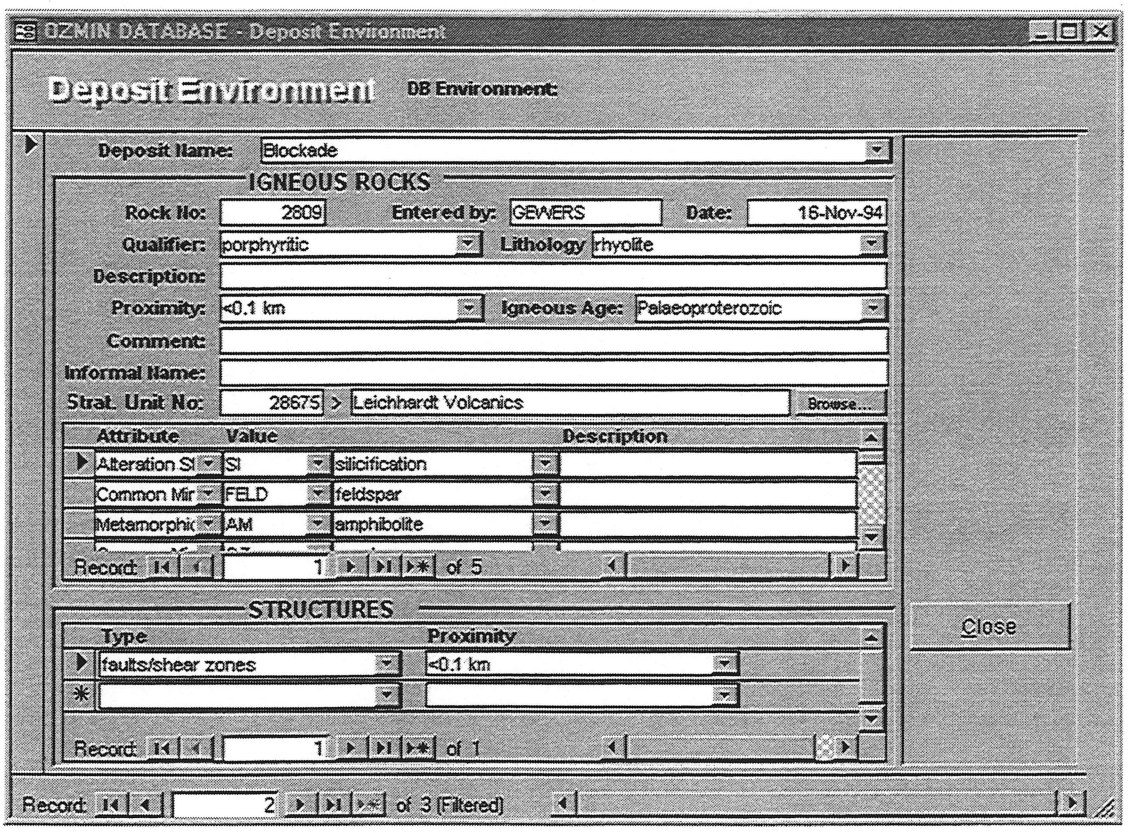

Figure 8 The 'Deposit Environment' form

The 'Deposit References' form (Figure 9) links mineral deposits in OZMIN to AGSO's Reference Database in many-to-many mode. For any given deposit there can be many references, and any one reference may deal with many deposits. The 'Deposit References' form enables a deposit to be selected and details of the associated references to be displayed. The 'References' form (Figure 10) is for entering reference details, and can be used to query the OZMIN reference listing as a whole.

Look-up values for a given attribute are available as drop down menus within most forms or can be viewed by accessing the relevant codes through the main menu. Queries on the dataset are best handled by using the Filter by Form query button on the icon bar. Where a form has one or more subforms the query parameters can only be applied to the main form fields.

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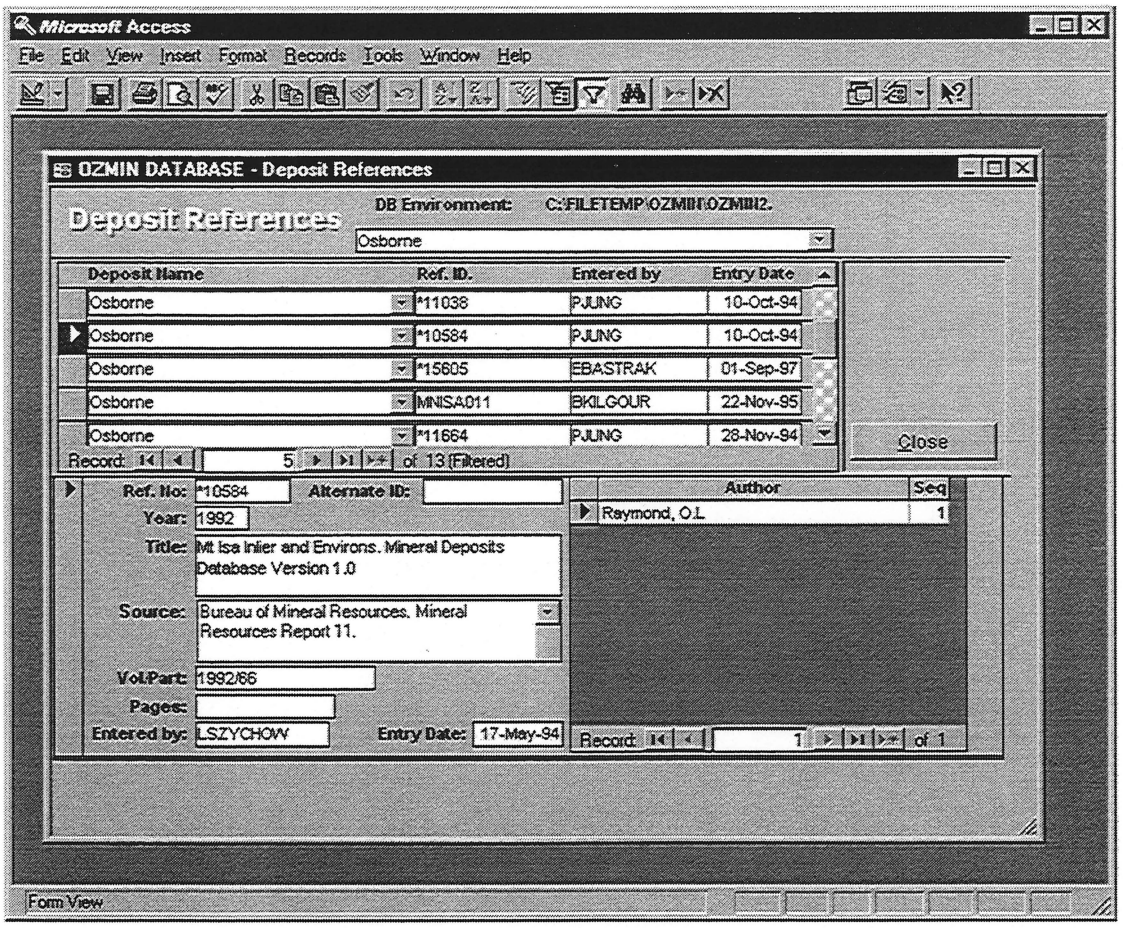

Figure 9 The 'Deposit References' form

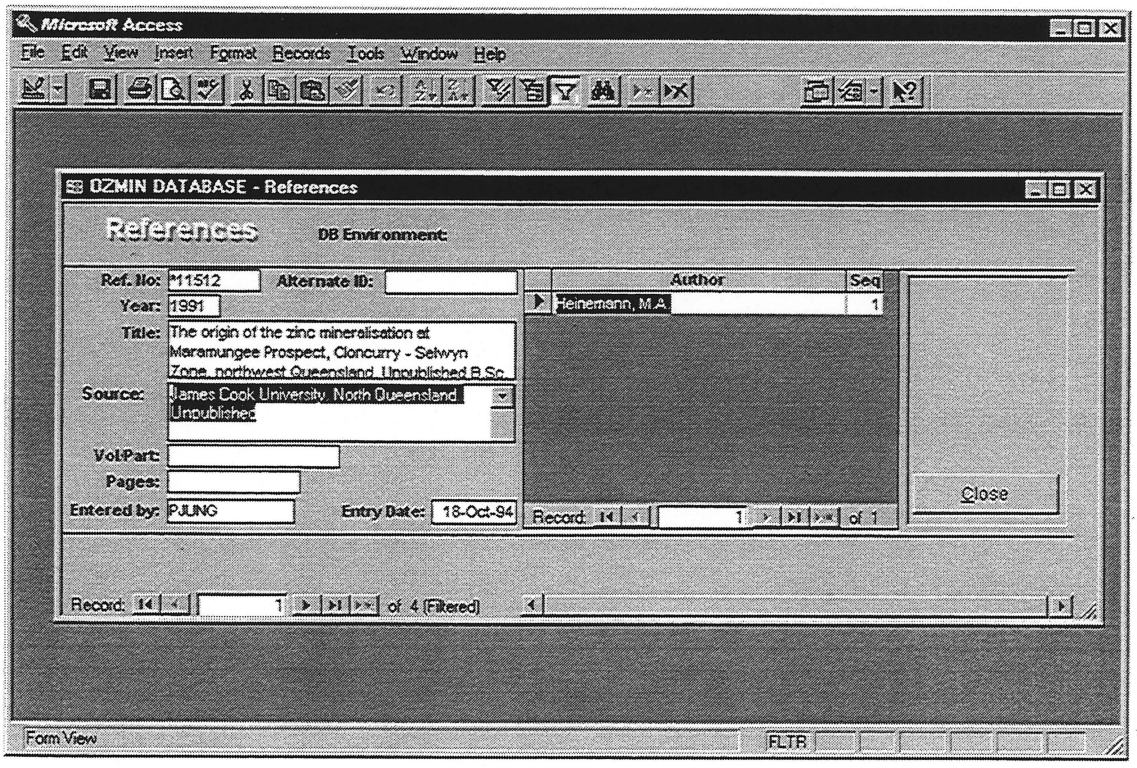

Figure 10 The 'References' form

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The Access version of OZMIN also includes two fully formatted A4 size reports. These are run from the Reports menu which is activated by clicking on the Reports button on the main menu (Figure 11). A report can be produced of all deposits, all references or selected deposits or references. Clicking on the Deposits button or the References button will produce a report of all deposits or references in the database.

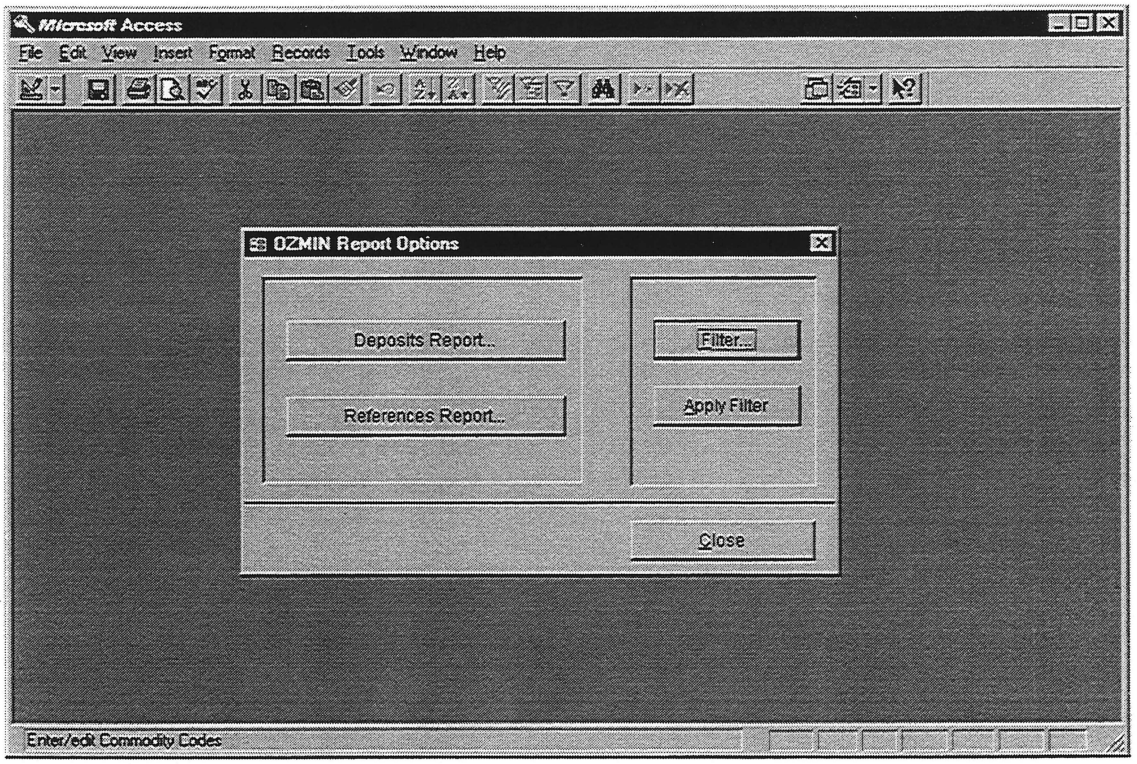

Figure 11 The 'Reports' menu

Producing a report of selected deposits:

Step 1: Click on the Filter button to display the deposits query form.

Step 2: Click on Clear to clear any unwanted query parameters.

Step 3: Enter your query parameters into the query form and then click on OK. Access will then advise you as to how many records will be returned by the query.

Step 4: Click on OK to accept the query results and you will drop back to the Reports menu.

Step 5: In the Reports menu click on Apply Filter.

Step 6: When this process has been completed click on the Deposits Report button to display the results of your query in print preview mode.

Step 7: You can now either choose to print the report or return to the Reports Menu and redefine the Filter.

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Producing a report of selected references:

Step 1: Click on the Filter button to display the Deposits Query Form.

Step 2: Click on the Clear button to clear any values in the Deposits Query Form.

Step 3: Click on the References button at the bottom of the Deposits Query Form.

Step 4: Click on Clear to clear any unwanted query parameters from the form.

Step 5: Enter the query criteria into the References Query Form and then click on OK. Access will then advise you as to how many records will be returned by the query.

Step 6: Click on OK to accept the query results and you will drop back to the Reports menu.

Step 7: In the Reports menu click on Apply Filter.

Step 8: When this process has completed click on the References Report button to display the results of your query in print preview mode.

Step 9: You can now either choose to print the report or return to the Reports Menu and redefine the Filter.

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Section 6 - OZMIN Mount Isa dataset

This Mount Isa dataset is based on a compilation first assembled in 1992 in Microsoft Excel and released as AGSO Record 1992/66 at a time when OZMIN was being developed. The dataset omits those deposits from the original compilation that were not able to be properly located or are outside the Mount Isa region (either in the South Nicholson Basin or the Murphy Tectonic Ridge). However, further deposits have been added and the resource and production information for each of the 243 deposits has been updated.

A full alphabetical listing of the deposits in the digital dataset is provided below. The listing gives the preferred name for each deposit, any other names which have been commonly applied, and the commodities (in order of importance) associated with each deposit.

Mount Isa Deposits

Deposit	Synonyms	Commodities
Again		Cu
Amy	Amy North, Amy South, Lady Amy	Cu
Andersons Lode	Counter	U
Angel		Cu
Anglo-American	Union Jack	Pb, Ag
Answer		Cu, Au
Apple Pie	Apple Extended, Apple Pie 2	Cu, Au
Australian Margaret		Cu
Bald Hills		Cu
Barbara		Cu
Bedford	Bedford North	Cu
Belgium		Cu
Bernborough		Pb, Ag
Big Beryl		Be
Black Mountain	Mt Leviathan	Fe
Black Rock		Cu
Black Rock		Pb, Zn, Ag
Blackard Creek	Mt Roseby	Cu
Blockade	Blockade North, Blockade South, Argylla	Cu
Blue Star	Blue Star 2, Blue Star Extended, Double F	Cu
Bobby Rod		Cu
Bohemian Girl		Cu, Au
Boomerang	Mt Maggie, Lady Maggie, Matlock	Cu
Brilliant	Brilliant Extended	Cu, Au
Brumby		Cu, Au
Buka		Mn
Cannington		Pb, Zn, Ag
Celestial	Telegraph	Cu
Century		Zn, Pb, Ag
Chinaman		Cu
Chum		Cu, Au
Comstock		Au
Copalot		Pb, Ag
Copper Blonde		Cu
Copper Canyon		Cu, As

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Cowie		Pb, Zn, Ag
Cresant	Crescent	Cu
Crusader	Crusader North, Crusader South, Crusader Endeavour, Young Crusader	Cu, Au
Daisy		Cu
Deadlock		Cu
Diagonal		Cu, Au
Dingo		Cu
Dinkum Digger		Cu, Au
Dobbyn	Dobbyn North, Dobbyn South	Cu, Au
Dolomite		Cu, Au
Double Oxide	New Chum	Cu
Duchess		Cu, Au, Ag
Dugald River		Zn, Pb, Ag
Eclipse	Eclipse West	Cu, Au
Edna May	Edna May West, Edna May West Extended, Willsburgh	Cu
Eloise		Cu, Au, Ag
Elsie	Elsie Siding	Cu, Au
Ernest Henry	Mt Fort Constantine	Cu, Au
Even Steven		Cu
Evening Star	Mt Wheeler	Cu, Au, Ag
Fairfield		Cu, Au
Fairmile		Pb, Zn, Ag
Falcon	Rose and Thistle, Shamrock	Au, Ag
Federal	Mt Moffat	Cu, Au, Ag
Flagship	Flagship 1, Flagship 2	Cu, Au
Gertrude	Doughboy Creek	Au
Gilded Rose Group	Victory, La France, Sauce Bottle, Comet, Boomerang, Gilt Edge, Silver Lining etc	Au
Gosp	Gosp South, Gosp West, Blue Moon	Cu
Great Australia	Paddock Lode	Cu, Au
Great Central	Grand Central	Cu
Greenmount		Cu, Au, Co, As, Ba
Hampden	Hampden Consols, Hampden Queen, Block 37, Block 15	Cu, Au
Hann's Ridge	Axis Hill, Silver Queen	Pb, Ag
Hidden Treasure		Cu
Hilton	North Hilton, George Fisher	Zn, Pb, Ag
Horse Creek		Cu
IXL		Cu
Inheritance	Inherited	Cu, Au
Inkerman		Cu
Iron Duke	Iron Duke Extended	Cu
Ivena	Ivena North	Cu
Jasper Block		Cu
Jessie		Cu
Jubilee	Jubilee North	Cu
Just In Time		Cu, Au
Kafani		Mn
Kalkadoon		Cu, Au
Kalman		Au
Kangaroo Rat	Wallace	Cu, Au
King Edward	King Edward VII	Cu, Au
King Solomon 1	King Solomon 2, King Solomon 3, King Solomon North, King Solomon South	Cu
Kings Cross		Cu
Kohinoor		Cu, Au

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Labour Victory		Cu, Au
Lady Agnes		Cu
Lady Annie	Flying Pig	Cu, Au
Lady Clayre		Cu, Ag
Lady Ethleen		Cu
Lady Fanny Group	Lady Fanny, Lady Fanny North, Brightlights, Burke and Wills, Juno	Cu, Au
Lady Jenny		Cu, Au
Lady Loretta		Zn, Pb, Ag
Lady Rose	Jola Rose, Rose	Cu, Au
Lady Vera		Cu
Lakeview	Lakeview No. 1	Cu
Last Call		Au
Lead Hill		Pb, Zn, Ag
Lightning Creek		Cu, Au
Lillimay	Lillimay 1, Lillimay Extended 1, Royal	Cu
Lilydale		Pb, Ag
Little Beauty	Little Beauty 2, McMillans	Cu
Little Bit	Little Bit Extended, Big Bit	Cu
Little Eva	Cabbage Tree	Cu
Little Wonder Group	Little Wonder, Cosmopolitan, Mussolini, Trump	Cu
Longara		Cu
Lorena		Au
Magnet		Cu, Au
Magpie		Cu, Au
Malbon		Cu, Au
Mammoth	Gunpowder, Esperanza, Mammoth South, Mammoth Extended, North Portal, Kabunga	Cu
Mangano		Mn
Manxman		Cu
Maramungee		Zn
Maria Dell	IXL	Cu, Au
Marilyn		Cu
Mary Kathleen		U
McLennon's Claim	The General	W
McLeod Hill	Mt McLeod	Cu
McPhail	Florence	Cu, Au
Megaphone	The Belfast	Cu
Melba		Cu
Mended Hill		Pb, Ag
Mighty Atom	Mighty Atom South	Cu, Au
Mike		Cu
Milo		U
Mobs Lease		Cu, Au
Mona	Joy	Co
Monakoff	Tinboll	Cu, Au, Ag, U
Mt Cobalt		Co
Mt Colin		Cu
Mt Cuthbert	Mt Cuthbert South	Cu, Au, Ag
Mt Debbie		Cu
Mt Devencourt	Kangaroo	Cu
Mt Devine		Cu
Mt Dore		Cu
Mt Elliott		Cu, Au
Mt Freda	Saracanesca, Soldiers Cap	Au
Mt Frosty		Cu

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Mt Gordon		Cu
Mt Hope Group	Mt Hope North, South, and West, Greens Creek, Binna Burra, Regina, The Stubbie	Cu, Au
Mt Isa (Cu orebody)		Cu
Mt Isa (Pb-Zn-Ag orebody)		Pb, Zn, Ag
Mt Kalkadoon		Cu
Mt Kelly		Cu
Mt Lindsay		Cu
Mt Mascotte		Cu, Au
Mt McCabe		Cu
Mt McNamara		Cu, Au
Mt Metallic		Cu
Mt Minde		Cu
Mt Norna	Mountain Home	Cu, Ag, Au
Mt Novit		Pb, Zn, Ag
Mt Olive	Mt Olive 3	Cu, Au
Mt Oxide		Cu
Mt Philp		Fe
Mt Quamby	Quamby	Au
Mt Remarkable		Cu
Native Bee		Cu
Native Companion		Cu, Au
Nil Desperandum 2	Nil Desperandum 3	Cu, Au
Non Pariel		Cu
O'Brien's Soak		Ag
O.P.	Proxham Park	Cu
Orphan		Cu, Au, Ag
Osborne	Trough Tank	Cu, Au
Overhang		Mn
Overlander	Overlander 1, Overlander 4	Cu
P.A.		Cu
Pearl	Pearl Extended	Cu
Pegmont		Pb, Zn, Ag
Pelican		Cu, Mo, Au
Perseverence		Cu, Au
Pile	Bikini	U
Pindora 1	Pindora 2	Cu, Au
Pioneer		Cu, Au
Pommern	Pommern 2	Cu, Au
Prince of Wales		Cu
Pup		Cu
Queen Elizabeth	Patsy Lorraine	Cu
Queen Sally		Co
Referee	Referee Extended, Referee Extended 1, Referee West, South, Referee 1, 2, 3, Ruth	Cu, Au, Ag
Revenue Central		Cu
Revenue Extended	Revenue Extended 3, Revenue, Revenue North	Cu, Au
Robur	Robur 3	Cu
Rocky Home		Cu
Rosebud		Cu
Rosebud Extended	Rosebud 2	Cu
Secret		Cu
Selwyn		Cu
Selwyn	Starra	Cu, Au
Silver King		Pb, Zn, Ag
Silver Phantom		Ag

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Skal		U
Southern Cross		Cu, Au
Springs	Springs Extended	Cu
St Andrews		Cu
St George		Cu
St Mungo		Cu
Stardust	East Star, Silver Star	Pb, Ag
Straight Eight		Cu
Stuart	Stuart 186	Cu
Success	Varie's Success	Cu, Co, Au, Ag
Sunset	Sunset North, Sunset South	Cu, Au
Surprise	Surprise North	Cu, Au
Surprise	Cloncurry Surprise	Au
Swan		Cu, Au
Sweet William		Cu, Au
T.C.		Cu, Au
The Joker	Old Joker	Cu, Au
Tick Hill		Au
Timberoo		Cu
Tip Top Camp	Agate Downs	Au
Tom Cat		Cu
Top Camp	Eldorado	Au
Trafalgar		Cu, Au
Trekelano	Inheritance, Trekelano 2	Cu, Au, Ag
Trey Bit	Tray Bit	Au, Cu
True Blue		Cu
Two Bobs		Cu, Au, Ag
Two Macs		Cu
Two Mile Creek		Au
Una		Cu, Au
Uncle Tom		Au
Valhalla		U
Victoria		Au
Volga	Volga North, Late Volga	Cu, Au
Wallaroo		Cu, Au
Warwai	Watta	U, Cu
Warwick Castle		Cu, Au
Waterhole	Waterhole 2	Cu
Watson's Lode	Wooden Duck	Pb, Ag
Wee MacGregor		Cu, Au
Western		Cu, Au
Winston Churchill		Cu
Wonder Valley		Cu
Woolondonga	Wollondonga	Cu, Au
Wynberg		Au
Yammamilla	Yamamiller	Cu, Au
Young Australian	Monitor, Young Australia	Cu

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