Mineral Tenements

Guidelines for Reporting

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Mineral Resources Tasmania
Department of Infrastructure, Energy and Resources

Tasmania
Explore the possibilities

1. INTRODUCTION

The purpose of these guidelines is to assist the holders of mineral tenements in Tasmania with the preparation and submission of reports on exploration activity. The guidelines are primarily concerned with requirements under the conditions of Exploration Licences and Retention Licences, but specific requirements for reporting of exploration on Mining Leases are also listed.

The reports are used to assess the progress of mineral exploration, and to provide information which will assist future prospectors and explorers in the search for new mineral deposits in Tasmania. These notes have been prepared as a general guide to ensure that the standard of exploration reports is consistently as high as possible, for the ultimate benefit of all those engaged in mineral exploration or geological research in Tasmania.

Close liaison is encouraged between the licensee's professional and technical staff and the staff of Mineral Resources Tasmania who are responsible for assessing the reports and monitoring exploration progress.

2. DIGITAL DATA

Reports should be submitted in their entirety in both hard copy and **digital format**. The format of digital reports must be in accordance with the *Australian Requirements for the Submission of Digital Exploration Data* (www.geoscience.gov.au/geoportal/ARSDEData.pdf).

Details should be discussed with MRT before preparation of the contents of the report.

Summary of requirements for digital versions of exploration reports

Mineral Resources Tasmania's requirements for digital reporting are the uniform digital reporting guidelines used throughout Australia.

Digital reports should retain the well-established structure and sequence of a hardcopy (paper) report. They should be submitted on Microsoft Windows-compatible disk media, with one report per disk. Files should be virus free and not have a password or other form of security protection. The main part of the report should be provided in Adobe Acrobat Portable Document format (PDF).

Each report must clearly state whether the Geodetic Datum is AGD66 or GDA94.

Composition of the digital report

- Summary list of all digital files comprising the digital report in PDF format.
- Report text, table of contents, abstracts, maps, small tables, plans and figures that are part of the main body of the report and small appendices as a single PDF file, size permitting.
- Tabular data (geochemistry, drilling, geophysics, etc.) should be supplied as American Standard Code for Integer Interchange (ASCII) files, tab or comma delimited.
- Separate appendices should be in PDF format.

Where the single report PDF is too large (over 5 Mb), data should be split into smaller PDF files named according to the file naming convention below.

File name convention

File names should conform to:

Tenement_id_YYYYMM_##_{data type}.eee

Tenement_id	Identifier for the tenement (e.g. EL232001)
YYYYMM	Report date, representing year and month
##	Sequential number for each file submitted
Data type	Data type contained in the file (e.g. report, map, geochem.)
.eee	The file extension. For example .pdf, .txt, .jpg, .tif

For example EL051999_200003_03_appendix.txt is the third file of the March 2000 report for EL 5/1999.

Metadata

Tabulated data must include a header containing essential information about the data (metadata). The header should also be converted to PDF and included in the main report PDF as appendices.

Metadata should provide sufficient information about the dataset for it to be used in the future, including:

- Name of the company for whom the data was produced, e.g. the tenement holder;
- Tenement(s) under which the data was produced;
- Activity which produced the data, e.g. drilling program;

- Location of the data (or a pointer to a file providing this information);
- Date the data were produced and/or altered;
- Parameters controlling the data acquisition and/or processing;
- Name of the contractor producing the data;
- Any translation parameters required for conversion of the data (especially location data);
- Equipment used to generate the data;
- Original format of the data;
- Definition of codes.

Acceptable file formats

The format of digital reports must be in accordance with the *Australian Requirements for the Submission of Digital Exploration Data* (www.geoscience.gov.au/geoportal/ARSDEData.pdf).

TASXPLOR database

All mineral exploration reports are catalogued upon receipt and are indexed, keyworded and abstracted for input into TASXPLOR, a digital index of exploration reports held in the TIGER system.

TASXPLOR contains **textual** information on author, title, company, licence/lease, location by geographic features and map sheets, subject (e.g. geological mapping, geophysics, geochemistry, drilling, etc.), minerals/commodities, mines/deposits, and stratigraphic units. A **spatial** index of reports described in TASXPLOR allows the user to search for reported exploration activities within a designated area.

3. GENERAL INFORMATION

Exploration Licences

Holders of Exploration Licences are required to submit *quarterly* and *annual reports* during the tenure of a licence, and a *final report* upon expiry, relinquishment or cancellation of a licence or any part thereof.

It is the responsibility of the licensee to ensure that full details of all work carried out as part of the exploration program are submitted irrespective of whether the exploration is undertaken by the licensee, by consultants, or by joint venture partners.

Combined reporting

Where the licensee holds adjoining licences and is carrying out an integrated exploration program, combined annual reports are acceptable if the terms of the licences are similar and if approval has been obtained for combined reporting.

If regional surveys, such as airborne geophysical surveys and regional stream sediment geochemistry, have been carried out over a number of adjoining licences, a single report on such surveys should be submitted. In this case, the licences covered must be clearly indicated and reference must be made to that report in subsequent annual reports submitted for each of the individual licences.

Licence holders are advised that if combined annual reports are provided and a licence is relinquished, then the combined reports may be placed on open file, irrespective of the status of the adjoining licence(s).

Retention Licences and Mining Leases

Holders of Retention Licences are required to submit *quarterly* and *annual reports*, covering exploration and feasibility studies, during tenure of the licence. Holders of Mining Leases may also be required to report quarterly and annually. The reporting format for annual reports should be similar to that required for annual reports on Exploration Licences.

Research reports

If research is sponsored by the licensee and/or joint-venturer and is attributed to exploration activity and expenditure, a complete record must be presented to Mineral Resources Tasmania either under the same cover as the annual report, or provided directly from the author. This may be in the form of a University thesis or confidential report from a research organisation. Research reports will be subject to the same confidentiality restrictions as the covering annual reports, unless agreed otherwise with the licensee.

Copyright

With the submission of annual and quarterly reports to MRT, a non-exclusive licence, copyright included, is given to MRT to publish, print, adapt and reproduce the work in any form, subject to confidentiality as prescribed by the *Mineral Resources Development Act 1995* (see section 7).

4. QUARTERLY REPORTS

Quarterly reports must be lodged for the quarters ending 31 March, 30 June, 30 September and 31 December.

The quarterly reports shall be lodged within 31 days of the above dates.

The reports should be made on the appropriate form, available from Mineral Resources Tasmania, and must contain an expenditure statement, a brief progress report on exploration and full details of any activities completed, in progress or planned that have an environmental impact. A report form will be posted to each tenement holder before the end of each quarter.

The quarterly progress report on exploration should be a brief statement of work carried out and major results obtained, and the progress of long-term surveys. The progress report should be no more than one page. Detailed accounts and results of specific surveys are not required in quarterly reports. *Any detailed data given in a quarterly report must be resubmitted in the annual report.*

5. ANNUAL REPORTS

A report is required for all investigations undertaken during the term of the licence or lease. This report should be submitted to the Director of Mines *one month before the annual review date*.

Details of the content and format of annual reports are given in sections 9, 10 and 11, including instructions for submitting all available digital data.

For Exploration Licences, the first annual report should also contain a statement of the exploration philosophy and objectives (in particular, the type of mineral deposits sought and the reasons for considering the licence area prospective for these deposits).

When long-term surveys, such as regional geochemical surveys, are in progress at the time of submission of an annual report, it is acceptable to indicate the progress of such surveys, and to submit the full results in a subsequent report when the survey has been completed.

6. FINAL REPORTS ON EXPLORATION LICENCES

A final report is required to be submitted upon expiry, relinquishment or cancellation of all or part of an Exploration Licence, and must be submitted to the Director of Mines *no less than 30 days prior to the expiry or surrender date*.

The report must accompany a surrender application or an application for renewal of the reduced area of the licence, but be separate from the annual report supporting the area to be retained.

Final reports generally follow the content and format of annual reports, and are required to contain the following information:

(1) A résumé of the exploration philosophy.

(2) A summary of all exploration undertaken on the relinquished area during tenure of the licence. Detailed information, such as results of geochemical and geophysical surveys, drill logs, etc., which have been included in previously submitted annual reports, need only be referred to in the final report but must be provided in partial relinquishment reports unless the licensee opts for the relevant reports to be released from confidential files, as detailed below.

(3) Full details of work undertaken during the final reporting period, and any data not previously reported.

(4) Conclusions as to the nature and distribution of any mineralisation in the relinquishment area.

(5) A complete bibliography of all reports on the relinquished area.

(6) Any transparencies of plans within the relinquishment area, cross-referenced with the relevant annual report where applicable.

(7) Details of tracks constructed, costeaning, drill sites cleared, etc. and details of rehabilitation undertaken.

(8) Complete digital datasets covering the life of the tenement should be lodged (and will be stored on MRT's TIGER system). This effectively provides subsequent explorers with easy access to all digital data pertaining to the tenement.

As an alternative to providing full details of all exploration within partial relinquishment areas (as required in item (2) above), the licensee may opt for previously submitted annual reports to be released from confidential files. This would also apply to reports on specific contracted surveys and regional surveys. This option does not release the licensee from providing a relinquishment report containing the other information listed above.

7. CONFIDENTIALITY

Exploration Licences and Retention Licences

Reports submitted under the terms of Exploration Licences are held for official purposes and remain confidential until:

(1) a period of five years has elapsed from the date on which a report was due to be submitted to the Director of Mines, and a period of five years from the date of acquisition of geophysical data; or

(2) a licence expires, is relinquished, or is cancelled;

whichever occurs first.

Reports submitted under the terms of Retention Licences remain confidential until the licence is either extended or surrendered.

Mining Leases

Reports on exploration on Mining Leases remain confidential whilst the lease is operated. Reports on current leases may be periodically released from confidential files, but only after permission has been sought from the lessee.

8. SUBMITTING REPORTS

All reports and correspondence must be submitted to:
The Director of Mines, Mineral Resources Tasmania,
PO Box 56, Rosny Park, Tasmania, 7018.

9. FORMAT OF ANNUAL AND FINAL REPORTS

To ensure that information in annual and final reports is submitted in an easily accessible and usable form, it is desirable for some standardisation of data presentation to be achieved. Hardcopy reports are commonly submitted in more than one medium, i.e. text, diagrams and maps on paper, and digital data on disc. The format of digital reports must be in accordance with the *Australian Requirements for the Submission of Digital Exploration Data* (www.geoscience.gov.au/geoportal/ARSDEData.pdf).

Hard copy

The binding of reports must be robust. The preferred bindings are GBC-type plastic coil binders, ring binders or screw-pin binders. Pages must be A4 size (i.e. 210 mm 297 mm) and paginated.

Reports containing large quantities of data should be divided into several small volumes rather than one or two bulky volumes.

As far as practicable, all data should be submitted in original, processed, and interpretative forms. This enables original data to be subjected to alternative methods of processing and interpretation, and at the same time allows an insight into the conclusions reached by the licensee from the results obtained.

General comments on maps and plans

All plans should be on A-series paper with an upper limit of A0 (i.e. 1189 mm 841 mm), and be at a scale related to that of the standard map series (e.g. 1:250 000, 1:100 000, 1:50 000, 1:25 000, 1:10 000, 1:5000, 1:2500, 1:2000, 1:1000).

Maps and plans should show the following:

- The Australian Map Grid (AMG) based on AGD66 or the Map Grid of Australia (MGA) based on GDA94 (specify which). Maps should show sufficient base information (i.e. geographic features) for the maps to be related to standard topographic maps.
- A graphic bar scale in metric units.
- A north point or arrow (grid/true and/or magnetic north), or orientation of sections.
- A clear and comprehensive legend [*Symbols used on geological maps*, AGSO (BMR); and the *Field Geologists' Manual*, Aus.IMM, are recommended references].

Shaded or coloured features should be designed so that black and white reproduction is possible, e.g. geological units should be bounded by closed polygons and include a code or mnemonic.

Standard specifications for drafting of plans are also provided in the AGSO (BMR) publication *Symbols used on geological maps* (1988).

Metric measurements are to be used throughout.

Digital data

Digital data supplied by companies will be stored on the MRT TIGER system. The TIGER system contains data exactly as supplied by companies. This should include all data that are available in digital format, including text, tabular data, geophysical data, and images.

The format of digital reports must be in accordance with the *Australian Requirements for the Submission of Digital Exploration Data* (www.geoscience.gov.au/geoportal/ARSDEData.pdf).

Where lodgement of a dataset would breach licence conditions alternatives are acceptable. For example a Landsat scene cannot be lodged in ERMapper format, but can be lodged as a TIF format image.

10. LAYOUT OF ANNUAL REPORTS

Title page

- Report title;

- Licence number, nature of report (i.e. annual, final, relinquishment), period covered, name and address of licensee (and/or operator/manager);
- Author(s) of the report;
- Date of report.

Abstract

- Objective, methodology, results, recommendations.

Contents

- Including lists of figures and plates, loose plans, non-paper media (transparencies, computer discs and types, etc), and appendices.

1. Introduction

- Exploration rationale (objective) and geological setting;
- Licence, tenement number, tenement name, tenement location, reporting period, tenement holder;
- Location;
- Tenure, including joint venture details and title transfers.

2. Review of previous work

- Prior to current tenement;
- During current tenement.

3. Exploration completed during the report period

- Literature review (if first annual report);
- Regional exploration activities;
- Prospect-based exploration activities.

4. Discussion of results

5. Conclusions

- Including recommendations and proposed future exploration.

6. Environment

- Including surface-disturbing operations, surveys (e.g. archaeological, botanical) and rehabilitation.

Expenditure

References

Keywords

11. NOTES ON REPORTING OF EXPLORATION ACTIVITIES

Prospect-based exploration activities

Reports are normally ordered by work site or prospect, with work programs and results described for each. Topics considered for each area should normally include gridding, geology, geophysics, geochemistry, drilling, remote sensing, ore reserves and resources, environment, other work, discussion and future work. Most of the actual data should be included as appendices, rather than in the main part of the report. While spatial data is commonly presented in large format plans (in the map supplement folder at the rear of the report), readers usually appreciate A4 summaries in this section.

Exploration activity map

- Exploration activity is captured from exploration reports, including consultants reports, for input into a digital spatial index for the TASXPLOR database. Reports should include a summary map of the licence area showing the particular area(s) covered by the report with the location and type of surveys conducted to allow digital capture of boundaries to an accuracy of 500 metres. The map should also show topographic features and the Australian Map Grid or the Map Grid of Australia.
- The types of activities conducted should be categorised under the following themes:
  - geological mapping;
  - soil geochemistry;
  - rock-chip and whole-rock geochemistry;
  - stream-sediment geochemistry;
  - drilling;
  - gridding;
  - track/road construction;
  - site investigations (for development or rehabilitation);
  - remote sensing investigations;
  - airborne radiometric surveys;
  - airborne magnetic surveys;
  - airborne electromagnetic surveys;
  - ground magnetic surveys;
  - gravity surveys;
  - IP/SP surveys;
  - ground electromagnetic surveys;
  - ground radiometric surveys;
  - seismic refraction surveys;
  - seismic reflection surveys;
  - other activities.

Geology

- All geological maps must be line drawings with graphical and/or alphabetical symbols for rock units, and should show geographic features, local grid lines and the AMG or MGA.
- Results of geological mapping should be presented as geological 'fact' maps and as interpretative geological maps.
- Where a complicated system of abbreviations is used on geological 'fact' maps, an index should be included in the report, but not necessarily listed on each map. All interpretative maps should have a legend.
- Geological information used on maps and in the text which is not the result of original work should be acknowledged.
- Petrological descriptions should be appended to the report, and sample locations shown on appropriate plans (or listed in drilling logs) and/or indicated by AMG or MGA co-ordinates or local grid co-ordinates. Where local grid co-ordinates are used the conversion formula from these to AMG or MGA must be provided.

Geochemistry

- Geochemical data should be submitted in table format with AMG or MGA location and analyses for all labelled samples. Digital geochemical databases under continuous development should also be submitted. Sample numbers and locations must be presented on base maps showing relevant geographic features (including drainage) and the AMG or MGA.
- Full analytical results should be supplied by presentation either on maps or in tables, with sample numbers.
- Sampling procedures, such as sample depth, sample weight, method of collection, and sample type, e.g.:
  - water: surface or underground;
  - stream sediment;
  - soil (hand or power auger, horizon sampled);
  - rock: surface or underground;
  - gossan or mineralisation;
  - drill sample: core, chips, sludge;

- others, such as air, vegetation, etc.

- Description of sample preparation, such as sieving and size fraction analysed, any concentration of sample (e.g. heavy mineral separation, magnetic or non-magnetic fraction, panned concentrate).
- Description of analytical procedures, including:
  - name of analytical laboratory;
  - analytical method, limits of detection, and precision;
  - method of extraction/digestion, if applicable;
  - values for repeat samples and standards.
- Methods used for processing and interpretation of data should be described, particularly if advanced data-processing methods have been employed.

Geophysics

The principal requirements for reporting of geophysical investigations are:

- Submission of relevant operations and processing reports.
- Specifications of geophysical surveys (e.g. for airborne geophysical surveys: altitude, line spacing, station spacing, type of aircraft).
- Specifications of instruments (notably type, design, power, accuracy, precision), units of measurement (preferably SI units) and mode of recording data (i.e. analog or digital).
- Traverse lines, and station intervals on lines, should be presented on maps showing geographic features and the AMG or MGA, together with significant cultural features which may affect results (e.g. power lines).
- All data should be presented both as original basic data (tabulated, line profiles) and as processed data (e.g. contoured interpretative maps). Gravity surveys should include details of position (AMG or MGA co-ordinates), elevation and observed gravity for each station.
- Geophysical survey data must be presented digitally for lodgment in the TIGER system and be accompanied by a detailed description of the data on the medium. The format should allow easy duplication.
- Data on each medium should be free from error, that is all useless records edited out and all spurious data removed. All drift/diurnal/tie corrections should have been made and location and geophysical data merged. Field tapes are not required.
- Examples:
  - Gravity survey: station number, AMG/MGA co-ordinates, AHD elevation, absolute observed gravity (specify which datum), terrain correction;
  - Aerial survey: AMG/MGA or AGD66/GDA94 latitude/longitude co-ordinates, parameters after correction in located data tape format.

Remote sensing

- A description of the type of scan;
- Image location, description, presentation and interpretation.

Drilling

- A plan showing the precise location of the drill holes. This plan should include geographic features and the AMG or MGA.
- A typed cover sheet should be provided for each drill log and should contain details of:
  - Type of drilling (e.g. diamond, percussion, auger) and drill rig and drilling company.
  - Grid reference and collar elevation for each drill hole, both in terms of the AMG or GMA and any local grid (drill hole collars should be surveyed in accurately, wherever possible).
  - Orientation of the drill hole (declination and direction at collar, and the results of, and instruments used in, any down-the-hole surveys).
  - A very brief summary log, including significant assay results.
- Detailed geological log of the core, cuttings, etc. in metric units, and name of the geologist who logged the core.
- Full results of any down-hole geophysical logging.
- Details of any samples taken and full results of testing of the samples (geochemical, petrological, geophysical, metallurgical, etc.).
- Graphic cross sections.
- The location of drill core, cuttings, etc.

Licensees are required to deposit drill core and representative cuttings from exploration drilling with Mineral Resources Tasmania prior to the expiry of a licence unless permission is obtained to dispose of the drill core.

Ore reserves and resources

- Ore reserves and/or resource estimations are to be reported in full (including the method(s) used for calculating ore reserves) and should be in accordance with the classification and terminology defined in the Australasian Code for *Reporting of Identified Mineral Resources and Ore Reserves* (The JORC Code), Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists, and the Australian Mining Industry Council (2004). Reporting of coal reserves should follow the guidelines in AS2519–1986.

For further information contact:

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