

GEOS 3008 Field Geology and Geophysics

A Geophysical Report

For this course you are required to compile a geophysical report which forms 20% of your assessment. Such reports are a final record describing all aspects and activities of the field work. In the real world, they can be published by a company and be the basis of a publication in a journal. Your report should have the form of a standard report, at least as much of it as applies in this case. To assist with this you should read “General Aspects of Geophysical Field Work” and relevant sections are indicated in the following.

A typical report format consists of a number of chapters, as follows:

1. Introduction

This includes general information such as the *purpose or objective* of the survey and the method(s) by which it will be approached. (If the objective is not achieved it would be stated and explained in a latter chapter). The *location* of the survey can be described here or if it warrants it, in a separate, next chapter titled “Location of Survey”. By far the best description of location is by diagrams and at least one should be included in your report showing the location in relation to major towns and how the area can be reached from them. Extra maps may show the location in ‘close-up’ as if ‘zoomed-in’ on. In this case, the earlier maps should show what part is detailed. In all cases, the scale and north direction (or global coordinates) should be shown.

2. Background AND/OR Previous Geophysics

Here is given relevant information such as *topography, geology* and the particular *physical properties* if known or assumed. Also the challenges and difficulties that the situation might present, can be discussed.

Any *previous geophysics* over the area should be described, such as regional airborne magnetics and radiometrics. The latter for this area will be given to you and its significance to your objectives explained.

3. Methods Used

Give the *reasons for choosing* the methods used, e.g., response to the physical properties of the objective, efficiency, etc. See ‘General Aspects..’sect. 3. Describe the *precautions* taken to achieve the best results and avoid unwanted readings. See G. A. sect. 7.

4. Description of Instrumentation

An efficient way to complete this chapter is in the form of sentences for each method. A sample format follows where the numbers relate to items in the attached table which is provided for you to record all the relevant facts that you will need. You

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should fill-in the table from information in the relevant instrument Manual and your experience with its use. Some illustrations of the type of record are given in one case

Clearly this format will depend on what information is deemed necessary in each case and not all instruments will have the same items.

“The (1) used, operating on the principle of (2), was a (3), model (4), with a serial no. (5). It measured the (7) with a sensitivity of (8). This instrument was (easy/difficult) to use and readings took (x) minutes at each station. It had the advantage(s) of (.....) but its limitations were (....).

5. Field Procedures

Describe *how* the survey was conducted and any particular aspects of the procedures including the establishment of base stations. Also include the *survey specifications* (sometimes in a separate chapter) such as line spacing and direction and station spacing and why the particular values. See G.A. sect. 8. If a *grid* was established, give a description of it , preferably with diagram(s).

6. Data Reduction & Presentation

Describe the *corrections* applied to the data and the way they were presented.

If there is extensive detail of this it may be added as an Appendix.

Discuss any *errors* that were detected and how they were dealt with. See G. A. sect. 9.

7. Description of Results

The profiles and plans of the results are displayed here and described and explained. A qualitative description of anomalies and their likely cause should be included.

8. Modelling and Interpretation

(For this course you are not required to include this chapter)

9. Conclusions and Recommendations

Summarise the general result of your investigations. Also you might recommend extra work had there been time and any follow-up by other methods or drilling.

Reports may also include:

A Table of Contents and a List of Illustrations can be included at the beginning.

And at the end, Acknowledgements and References can be included.

These are NOT required for this course.