AS 2519—1993

Australian Standard®

Guide to the technical evaluation of higher rank coal deposits

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Australasian Institute of Mining and Metallurgy
Australian Chamber of Commerce and Industry
Australian Coal Association
Australian Coal Industry Research Laboratories
Australian Coal Preparation Society
Australian Institute of Energy
Australian Mining Industry Council
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PREFACE

This Standard was prepared by the Standards Australia Subcommittee on Coal Mining and Geology, under the supervision of the Committee on Coal and Coke and the direction of the Multitechnics Standards Policy Board, to supersede AS 2519—1982, *Guide to the evaluation of hard coal deposits using borehole techniques*. It has been prepared as a guide to the technical evaluation of higher rank coal deposits using borehole techniques, and was written to meet a longstanding need for a uniformity of approach to the evaluation of higher rank coal bore cores.

The guide is based on papers presented at the Symposium on Coal Borehole Evaluation (Brisbane 1977) conducted by the Australasian Institute of Mining and Metallurgy. It also incorporates relevant details from AS 2617, *Guide for the taking of samples from hard coal seams in situ*.

No single set of procedures will satisfy the varied objectives of all exploration drilling programs. This guide merely describes the options, together with sufficient explanation for readers to select the procedures appropriate to their needs. A bibliography of selected texts to allow for more detailed study is given in Appendix A.

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FOREWORD

The exploration of a coal prospect has to be carried out in a series of well-defined stages and should involve the combined efforts of a team comprising geologists, mining and coal preparation engineers, chemists and technologists. It is equally essential that those involved in management, marketing and finance have a fundamental understanding of the procedures involved.

In the initial exploration stages, techniques other than the drilling of bore cores may be used. These may include the appraisal of existing data, field mapping, the use of geophysical surveys and the lithological and instrumental logging of non-cored boreholes.

Small-diameter bore core samples of coal are subsequently taken and analysed to provide information on coal quality, to assist in the geological correlation of seams and the calculation of the amount of resources available for exploitation. Mechanical tests are carried out on certain cores to provide mining engineering data.

Large-diameter bore core samples of the proposed seam working section are pretreated, to produce the expected run-of-plant size distribution, then tested and analysed to predict the yield and quality of likely products and to generate coal preparation design data. These data are then used in the mine plan to calculate commercial reserves. Samples may also be prepared for bench-scale coke oven, or power station, performance tests.

In the final exploration stages, bulk samples are extracted from the seam to enable pilot-scale trials to be carried out and to provide large samples for evaluation by potential purchasers.

Exploration may continue, ahead of mining, for the life of the mine.

The major aim of this Standard is to provide guidelines for the laboratory testing of coal samples recovered by drilling.

Sections that cover exploration stages, other geological techniques and drilling methods are included to provide an understanding of the position and importance of sample testing in a coal exploration program.

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Guide to the technical evaluation of higher rank coal deposits

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE This Standard sets out recommended practices for the technical evaluation of a higher rank coal deposit, principally using borehole techniques.

It defines the various stages that comprise an exploration project, describes drilling equipment and methods, and makes specific recommendations concerning procedures that should be adopted in the logging, testing and analysis of a bore core.

This Standard recommends procedures for the technical evaluation of a coal deposit within the context of the entire exploration program. It provides a reference framework that will promote—

(a) greater appreciation, within an exploration team, of the individual needs of its members; and

(b) a uniformity of approach, from team to team, to the technology of coal exploration.

A bibliography of reference texts appropriate to the various clauses of the Standard is given in Appendix A.

1.2 REFERENCED DOCUMENTS The documents referred to in this Standard are listed in Appendix A.

1.3 DEFINITIONS For the purpose of this Standard, the definitions in AS 2418 apply.