

# **Granular Resource Requirements for Proposed Mackenzie Valley Pipelines:**

**Technical Papers and Workshop Proceedings**

**Sponsored by:  
Northern Oil and Gas Action Program (NOGAP) Project A4:  
Granular Resources Inventory and Management**

**NOGAP Project Manager:  
R.J. Gowan  
Department of Indian Affairs  
and Northern Development (DIAND)**

**Prepared by:  
R.J. Mahnic and T.J. Fujino  
Stanley Associates Engineering Ltd.**

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**SECTION 3.**

**TECHNICAL PANEL "A"**

**SOURCES OF INFORMATION ON  
GRANULAR RESOURCES**

## BORROW RESOURCES IN BIBLIOGRAPHIC DATABASES

Ross Goodwin

*Manager, ASTIS, Arctic Institute of North America  
University of Calgary, Calgary, Alberta*

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### ABSTRACT

This paper discusses the current granular resources coverage of the Arctic Science and Technology Information System (ASTIS), and describes a project to make this coverage comprehensive in order to produce a *Northern Granular Resources Bibliography* and database. The subject and scope of the proposed bibliography and database are described in detail, and feedback is encouraged from workshop attendees to ensure that the scope of the project meets the needs of potential users. Possible sources of additional citations are listed, and attendees are invited to add to this listing. The formats of the proposed bibliography and database are then described, and, once again, attendees are encouraged to provide feedback on whether these will meet the needs of the users. A draft copy of the *Northern Granular Resources Bibliography*, containing only citations that are already in the ASTIS database, will be distributed to workshop attendees for comment.

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### Introduction

The Arctic Science and Technology Information System (ASTIS) is a multidisciplinary arctic bibliographic and research project database (Figure 1). ASTIS abstracts and indexes recent literature about the Arctic, and provides descriptions of recent and ongoing arctic research projects. ASTIS is a program of the Arctic Institute of North America (AINA) of the University of Calgary.

The geographic emphasis of ASTIS is on the Canadian Arctic and Canadian arctic waters. ASTIS includes all subjects: the earth sciences, life sciences, engineering and technology, renewable and non-renewable resources, government, economic and social conditions, land use and native people. ASTIS gathers information from many sources, enters this information into an automated database, and then disseminates the contents of the database through a variety of publications and services. More information about ASTIS's information sources and products is contained in the ASTIS brochure.

Contract indexing projects for industry and government are a major source of both information and revenue for ASTIS, which is mandated to recover all of its costs through contracts, grants and sales of products. ASTIS can produce camera-ready bibliographies and microcomputer databases in a

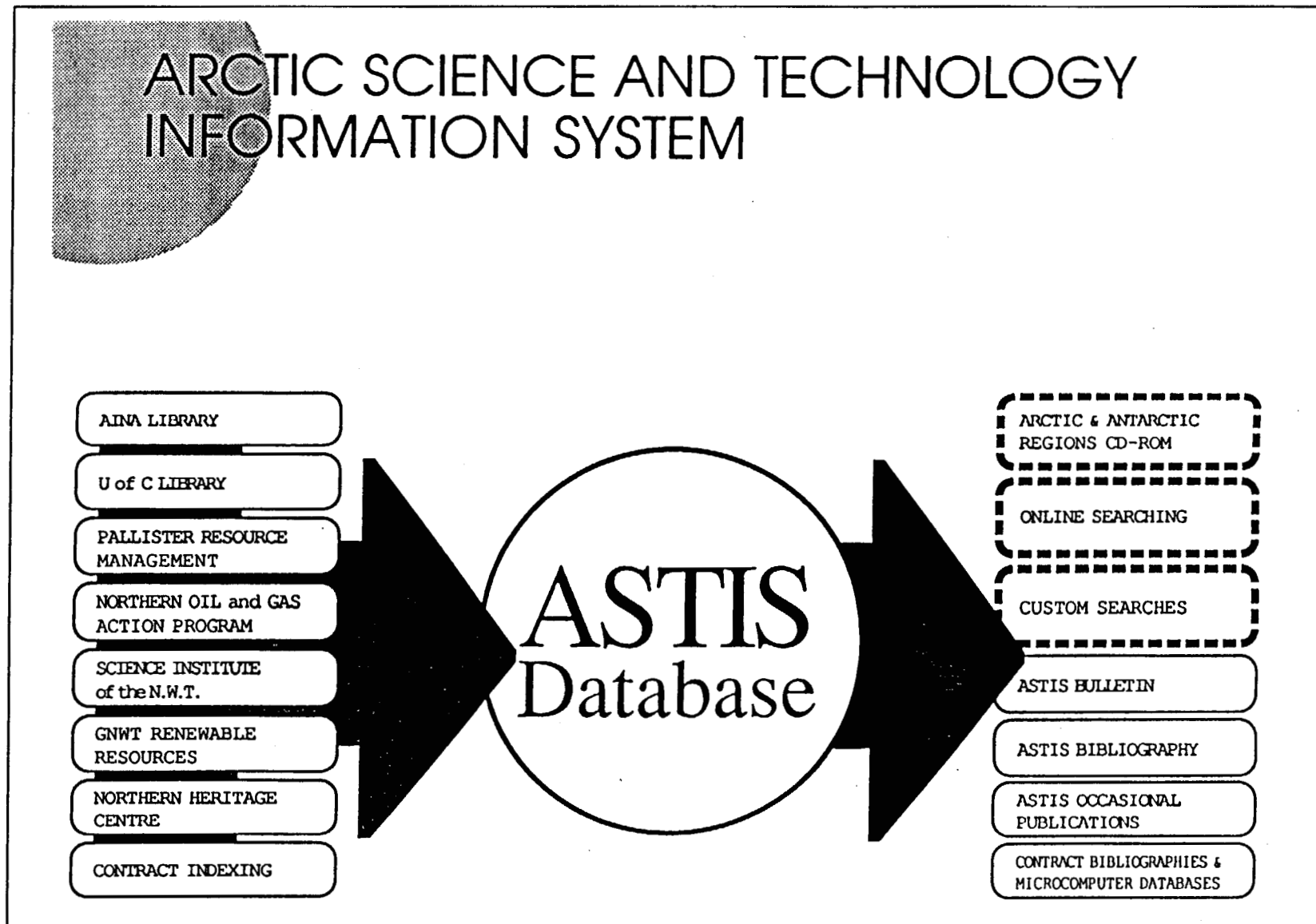
variety of formats. By making use of our software and expertise, as well as the thousands of citations and abstracts already contained in the ASTIS database, an organization can have customized databases and bibliographies produced very cost-effectively.

ASTIS is actively involved in an effort by a group of Canadian polar information centres to create a Canadian Polar Information System (CPIS). ASTIS, the Canadian Circumpolar Library in Edmonton, and a group of other organizations with an interest in polar information have, with funding from the DIAND Circumpolar and Scientific Affairs Directorate and the Canadian Polar Commission, completed much of the preliminary design of a CPIS. Further progress on a CPIS awaits the commitment of funding for implementation and operation of the system. All information currently contained in ASTIS will be included in any future CPIS database.

### The Northern Granular Resources Bibliography and Database

Over the next six months ASTIS will be preparing a comprehensive bibliography and microcomputer bibliographic database on granular resources in the Yukon and the Northwest Territories. This project is funded partly by the DIAND Land Management Division and partly by the Northern Oil and Gas Action Program (NOGAP).

Figure 1. Arctic Science and Technology Information System (ASTIS): Database Components and Services



ASTIS already contains much of the required literature because of two indexing projects that it has recently completed. Under a contract from the NOGAP Secretariat all NOGAP-funded reports to October 1991, including those of Project A4 - Granular Resources Inventory, have been added to ASTIS. These citations were used to produce a NOGAP Cumulative Bibliography and a corresponding microcomputer database. Also in 1991, under a contract from Esso Resources (now Imperial Oil Resources), ASTIS added 800 reports to its database from a proprietary collection donated to AINA by Canadian Arctic Gas Study Limited (CAGSL). The reports to be indexed were selected from the CAGSL collection by Esso engineers, and the resulting citations were used to produce a microcomputer database. ASTIS also contains many of the reports produced for the Polar Gas, Maple Leaf and Alaska Highway natural gas pipeline proposals.

The preparation of this bibliography and database on northern granular resources will be undertaken in two phases, as described below.

#### Phase I

Phase I of the project, to be completed by March 31, 1993, consists of two tasks. The first of these tasks, the preparation of a draft Northern Granular Resources Bibliography, has recently been completed. The draft bibliography, containing 241 relevant citations that were already in the ASTIS database at the start of the project, is being distributed at this workshop. No sources other than ASTIS were checked during the preparation of this draft, and no new citations were added to ASTIS for inclusion in it.

Citations to be included in the draft bibliography were chosen by searching the appropriate ASTIS-controlled vocabulary terms, such as "Granular materials" and "Gravel", and by free-text searching for a broader group of terms in titles and abstracts. The search was then limited to the geographic area of interest and the resulting citations were examined online to select those that appeared to be relevant. Some additional irrelevant documents were eliminated while reading a preliminary printed draft of the bibliography. After checking preliminary versions of the bibliography indexes for consistency, camera-ready copy was produced and the bibliography was photocopied.

The draft bibliography has two purposes. The first is to allow potential users to comment on the scope and

format that we are proposing to use. A questionnaire included in the bibliography asks some specific questions, but all comments and suggestions are welcome. A second purpose of the draft is to provide a tool that organizations can use to determine if their granular resources publications are already in ASTIS. The final bibliography can only be made comprehensive with the cooperation of the many organizations that have reports on northern granular resources. We would very much appreciate your help in this endeavour. Additional copies of the draft bibliography will be available from ASTIS at no charge until May 1993.

The second task of Phase I of this project will be to examine the overlap between the draft bibliography and the Land Management Division's database of granular resources reports, which includes a collection of citations prepared for DIAND by EBA Engineering Consultants. The DIAND database may be the largest single source of relevant citations that are not yet in ASTIS. This task will therefore give us an idea of how many reports may need to be added to ASTIS in Phase II of this project in order to produce a comprehensive northern granular resources bibliography and database.

Before turning to a discussion of the searching and indexing that will make up Phase II of the project I will describe the proposed subject and geographic scope of our work in more detail, as well as the proposed format of the finished bibliography as illustrated in the draft version.

#### Subject and Geographic Scope

This project will cover all aspects of granular resources, defined as gravel, sand and crushed rock for use in construction. Documents on the availability of granular resources will be covered, including descriptions of specific sources, inventories of granular resources and the management of this resource. Methods of extracting and transporting granular resources will also be covered, including the environmental and socio-economic impacts of such work and methods of mitigating these impacts.

Documents on future requirements for granular resources in all types of construction will be covered, including conflicting demands for granular resources. Documents on geological or geotechnical surveys will only be included if they contain information on possible sources of granular resources.

We will try to restrict the bibliography to only those documents that contain original information on the subjects covered. General documents that make passing references to granular resources without providing any hard information will be excluded.

The bibliography and bibliographic database will cover both the Yukon and the Northwest Territories, and adjacent waters. Documents that overlap into Alaska and the provinces will be included as long as they contain some information about granular resources in either of the two Territories.

### Format of the Bibliography

The proposed format of the finished Northern Granular Resources Bibliography is illustrated in the draft version distributed at this workshop. Entries in the bibliography will consist of complete citations with full abstracts. In the main section of the bibliography citations will be sorted by author. Citations with no author will appear at the beginning. Citations with multiple authorship will be listed under their first author (usually a consulting company) and cross-referenced from all their other authors, including sponsors. The citations listed under each author will be sorted by title.

The bibliography will contain four indexes that refer back to the main section by citation number. Terms in the Subject and Geographic Indexes will be taken from the ASTIS Subject and Geographic Thesauri. A Title Index will provide access by report title, with leading articles (A, The, etc.) removed. A Serial Index will allow citations to be found under the title of the journal, report series or proceedings in which they appeared.

As mentioned previously, comments on the proposed scope and format of the bibliography are welcome.

### Phase II

Phase II of this project will begin April 1, 1993, and should be completed by the summer of 1993. Tasks to be undertaken include the following:

1. Identify, locate, obtain (when possible) and add to the ASTIS database additional relevant documents.
2. Add unique DIAND identifier codes to ASTIS granular resources records to allow them to be

linked to GIS applications.

3. Produce camera-ready copy for the final printed version of the Northern Granular Resources Bibliography. The scope and format will be the same as for the draft version unless potential users of the bibliography request changes.
4. Produce two versions of the Northern Granular Resources Bibliographic Database. One of these versions will be distributed publicly using the Folio Views retrieval software. Folio Views is a fast full-text retrieval package that compresses files to approximately one-half their original size during indexing, will run on PC-compatible computers, and allows run-time versions of the retrieval software to be freely distributed. This package was used to produce the NOGAP Infobase. The other version of the database will be a tab-delimited one for input into FoxPro for internal use at DIAND.

Four additional tasks could also be undertaken to improve the usefulness of the bibliography and database, and the accessibility of the documents that they cite:

1. Most of the citations selected for inclusion in the draft bibliography were chosen based on the subject terms assigned to them when they were originally indexed by ASTIS. For this reason some of the citations in the bibliography make no mention of granular resources in their titles or abstracts. Information on granular resources is only a part of such publications. ASTIS could revisit such publications to ensure that they contain significant relevant information, and to add a sentence or two to their abstracts summarizing what they have to say about granular resources.
2. Twenty-three of the citations in the draft bibliography contain the note "*Document not seen by ASTIS. Citation from ...*". Such citations were taken from bibliographies prepared by organizations other than ASTIS, without ASTIS having seen the actual publication being cited. The purpose of the note is to warn users that such citations may not be as complete or as correct as if ASTIS

had seen the publication. ASTIS could attempt to obtain all such publications and upgrade their citations.

3. Seventy-six of the citations in this draft bibliography contain the note *"This is a proprietary report available only with the permission of Esso Resources Canada. Contact ASTIS for details."* These citations describe reports in a proprietary collection donated to the Arctic Institute by Canadian Arctic Gas Study Limited (CAGSL), access to which is now controlled by Imperial Oil Resources Limited. (We will change the note to read "Imperial Oil Resources" before the final version of the bibliography is produced.) While Imperial Oil Resources has so far never refused permission for someone to use these reports, it would be more convenient for users if as many of them as possible were shown as being available in publicly accessible library collections. We have noticed that some of these reports are not really proprietary, and are available from sources other than the CAGSL collection. ASTIS could attempt to identify publicly accessible locations for as many of these reports as possible.
4. The last line of most citations in the draft bibliography (i.e., the last line before the abstract) contains standard Canadian interlibrary loan symbols for one or more libraries that hold the document. (Except in the case of the proprietary CAGSL reports mentioned above, ASTIS does not supply documents.) Documents that have no interlibrary loan symbol may be available from a library or from their publisher. ASTIS could identify locations for all documents that will appear in the final bibliography and database.

The final printed bibliography, and the public microcomputer database containing the same citations, will be distributed by the Land Management Division in late summer 1993.

#### Sources of Additional Documents

Sources that will be checked in order to make the final bibliography and bibliographic database as comprehensive as possible include the following:

1. The database of granular resources reports

maintained by the DIAND Land Management Division, including those citations prepared for DIAND by EBA Engineering Consultants.

2. The considerable amount of northern material at the University of Calgary that is not yet in, or not yet all in, ASTIS. This includes about half of the CAGSL collection, the AINA Library's Pipeline Room, and material in the DOBIS and NOMADS online catalogues.
3. The databases other than ASTIS that are included on the NISC Arctic & Antarctic Regions CD-ROM. The most useful of these databases will likely be BOREAL, the catalogue of the Canadian Circumpolar Library in Edmonton. On the basis of a preliminary search of the NISC disc, however, we only expect to find about 10 new citations within the scope of this project.
4. The catalogues of the DIAND Departmental Library in Ottawa and the DIAND Technical Library in Yellowknife.
5. Other databases, catalogues, lists and bibliographies, as well as individual reports, suggested by DIAND, by the participants in this workshop and by other potential users of this bibliography. Our success in finding reports in this category will determine how comprehensive, and how useful, the final bibliography and database are.

#### How You Can Help

Does your organization have relevant reports that are not included in the draft Northern Granular Resources Bibliography? If you are able to send us a list of your granular resources reports we will check it against the ASTIS database and the other sources that we are examining. If you have no way to easily produce a list we can work from photocopies of title pages. We may get back to you later to borrow some of the reports briefly for indexing if we cannot locate them elsewhere. Your help is essential to the production of a comprehensive final bibliography and database, and will be very much appreciated. Thanks in advance for your assistance.

I would also like to acknowledge the efforts of ASTIS staff members Lynda Howard, Lynne Howard and Iola Phillips for their work on the draft bibliography.

**QUESTION PERIOD**

Question #1. I'm interested in the downcutting process that's going on now. Is that a reflection of isostatic rebound as well as natural forces?

Duk-Rodkin. It could be but we don't have very good statistics on the isostatic rebound. The thing I do know is that the quantity of material that was moved by the ice sheet was incredible.

Question #2. The GIS maps that are available from the Geological Survey of Canada, where can you get them and how much do they cost?

Duk-Rodkin. They are not sold but available on request.

Question #3. So you'd have to request them from the Geological Survey in order to get them?

Duk-Rodkin. Not too many are available in Calgary, there's quite a few maps completed. The only thing that's not included in those maps are the small kame deposits.

Question #4. Are all the Arctic Gas reports available at the Arctic Institute Library - can you go look at them or are they unaccessible.

Goodwin. They're not in the Institute Library, they're in our office at ASTIS and we have to get permission from Imperial for each person that wants to look at one of the reports. That's one of the reasons why I'd like to find out which of the reports aren't proprietary because it's been a lot of work for us to call them and get permission. Esso never says no, they've been very good about letting people look at these reports. Many of the reports are not proprietary in the sense that Imperial doesn't want people to look at them, they just want the collection kept together, they don't want it to go into a public

library because some of the reports are unique and the only copies they have and they don't want to lose track of them. Wherever you see that note, contact us and we'll arrange to get permission for you.

Question #5. On your database information on granular resources, particularly the environment of Alaska fisheries, how far can you go to that end?

Goodwin. We haven't decided yet. We list some specific places we think we should draw the line.

Question #6. Let's think about this in the Alaska scenario. There is quite a bit of information on existing impacts associated with pipelines. Not so much on the geological but the impacts associated with developments. I'm just curious, are you going into that area?

Goodwin. There will be reports about areas other than the Yukon and NWT that are relevant because they talk about impacts of construction or techniques of construction. I guess ultimately it's up to DIAND whether they want to pay for us to look a bit further into that area. I probably did exclude one or two studies on environmental impacts in Alaska. There may be things like that that should remain in the database.

Question #7. You mentioned that you were starting an inventory of remaining resources or remaining gravels. How do you perceive developing that and how current do you perceive keeping it?

Gowan. So far - we're pulling together information from reports. What we'd like to do now is to work with the resource management officers in various DIAND offices and also with the ILA to do a source-by-source checkup.