

GRANULAR RESOURCE DATABASE MANUAL
TERRITORIAL LAND CLAIMS AREA

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by

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GRANULAR RESOURCE DATABASE
TERRITORIAL LAND CLAIMS AREA
PRELIMINARY REPORT

I Introduction

Granular resources have been a key consideration in land selections in previous and current land claims negotiations in the Territories. In many areas, sand and gravel materials are among a few resources upon which tangible economic value can be placed; thus, the location, quantity and quality of granular borrow materials may have a significant impact on the location and extent of lands claimed and eventually settled upon.

The Department of Indian Affairs and Northern Development (DIAND) has collected considerable information on borrow materials for specific areas within the territories as part of its granular resources inventory and management program. This information is contained in numerous regional and site-specific reports prepared by various consultants and government agencies. Although the data for particular areas may be extensive, it is often of limited use in the land claims selection process due to

the difficulties involved in manually locating, searching, manipulating, displaying and updating the available information. Further, since the data is not catalogued in a standardized format, inconsistent or mis-interpretation of the information is possible.

A microcomputer-based, descriptive database has been developed to overcome some of these problems. This database is designed to provide rapid access to specialized geological, geotechnical and other non-graphic data for any deposit in the area.

This work was carried out under Contract No. 87-0030. Mr. R.J. Gowan, P. Geol. of Indian and Northern Affairs was the Scientific Authority for this study.

1.1 Objectives

The primary objective of this contract was to research and interpret the available geotechnical data and compile a loaded computerized granular database containing information on granular borrow resources within selected areas under consideration in land claims negotiations. The objective was to be fulfilled by:

1) compiling the granular resource data:

- a) sorting and indexing, from existing DIAND files, the reports, maps, etc., which contain spatial and non-graphic granular resource

data for the land claims areas,

- b) checking or verifying geographical reference points against existing NTS 1:50000 photomaps for each data set,
- c) researching, interpreting and summarizing additional geological, geotechnical and other granular resource information (such as existing GSC Surficial Geology Maps) required for a comprehensive granular resource database,

2) compiling the granular resource database:

- d) determining, in consultation with the Departmental Representative, the anticipated future requirements for the various types of geological and geotechnical data used in granular resource evaluation,
- e) establishing a standardized format for evaluating, summarizing and presenting the geological, geotechnical and other descriptive information and for linking this non-graphic data with spatial data,
- f) interpreting, summarizing, and tabulating the geological, geotechnical and other non-graphic data as dBase records in the granular database and,
- g) reviewing these records for detail and

accuracy,

3) testing and demonstrating the computerized granular resource database .

1.2 The Granular Resource Database

The Granular Resource Database is a collection of information gleaned from several reports released over a fifteen year period (see Source References, Section V). The general structure of the database follows a series of summary tables on granular reserve deposits in the lower Mackenzie Valley, prepared by Hardy Associates (1978) Ltd. (1986), in conjunction with earlier reports. This comprehensive Database contains over 550 records each of which holds more than 70 fields of information.

It is not intended that the user be familiar with and use all fields in the Database. A simple procedure is provided which allows the creation of sub-databases containing only fields of immediate interest. The sub-databases, tailored to the specific needs of the user, are then employed for further study.

In general, the Database is divided into 3 major units:

- A) Deposit Location and Status,
- B) Source Investigation and Description and,
- C) Test Results and Material Quantity.

Individual fields provide a detailed description and analysis of the field reports. Cross-referencing allows the comparison of data provided by different studies at the same site. The Data Dictionary (Appendix A) provides a concise introduction to (and description of) all the information available in the present database.

1.3 Study Area

The study area chosen for this project was primarily based on that of Hardy (1986). However, as it was also based, in part, on data availability, pertinent information (from earlier studies) beyond these bounds was not necessarily excluded. The study area is illustrated in Figure 1.1.

The study centres upon the Lower Mackenzie Valley transportation corridor from the south border of Inuvialuit Lands (Inuvialuit Final Agreement) to Norman Wells. It includes the routes of several proposed pipelines and the proposed Mackenzie Highway. It also includes the area around communities in the Lower Mackenzie Valley (Fort Macpherson, Arctic Red River, Fort Good Hope, Norman Wells).

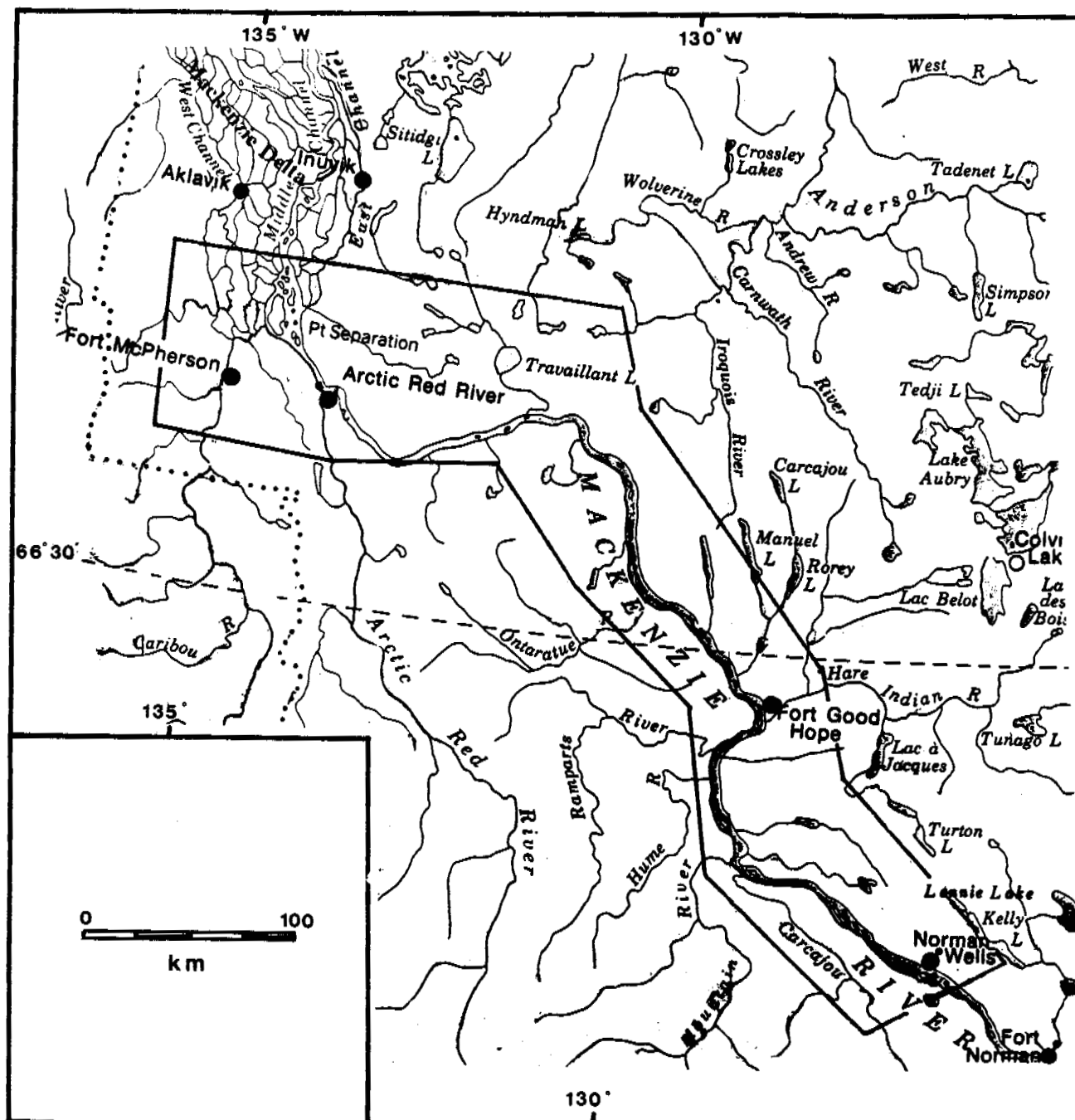


Figure 1.1 The Study Area

II Use of the Database

2.1 Introduction

Before attempting to use or manipulate the data, it is essential to create a backup diskette. Use standard DOS commands from the A prompt to format and create backup disks (i.e. format, diskcopy). Also, create a new backup after each modification of the database.

This section provides a number of simple procedures for using and manipulating the data. All the procedures follow standard dBase commands and command formats which are described in the dBase "Help" files. "Help" may be activated at any time by pressing F1 and following the on-screen instructions. Return to the database by pressing the "Esc" key.

2.2 Viewing the Database

At the A> prompt, insert System Disk 1 and type

A> dbase

and then follow the prompts until the "Assistant" screen appears (e.g. Figure 2.1). Press escape (Esc key) to activate the dot prompt. Then, place one of the database disks in drive B and type

```
. use b:      (name of database)
. display structure
```

The basic structure of the database will appear on screen. It is necessary to become familiar with the coded fieldnames corresponding to the fields described in the Data Dictionary as they will be required when manipulating data (the Data Dictionary is found in Appendix A and a copy of the Database Structure with associated coded fieldnames is located in Appendix B).

In order to view part of the database, select a few fields of interest and type as in the following example:

```
.display source_no, location, latitude,
                                longitude
```

This command will display the information taken from one record. Adding the word 'all' to the command will prompt the computer to find and display the required information

A

Set Up Create Update Position Retrieve Organize Modify Tools 02:37:37 pm	
Database file	
Format for Screen Query	
Catalog View	
Quit dBASE III PLUS	

ASSIST	<A>	Opt: 1/6
--------	-----	----------

. Select - . Leave menu - . Help - Fl. Exit - Esc.
Select a database file.

B

Command Line	<A>
--------------	-----

Enter a dBASE III PLUS command.

Figure 2.1 A) The Assist screen; all commands and instructions in a menu format.
B) The Command screen

from all records, e.g.

```
.display all source_no, location, latitude,  
                                longitude
```

Each field occupies a predetermined width of screen or computer paper when displayed (see width column of Database Structure, Appendix B). If the fields require more width space than is allowed on screen, they will wrap around producing a display which is difficult to read. The screen allows 80 characters per line.

The same information may be sent to the printer for a hard copy by typing:

```
. display all source_no, location, latitude,  
                                longitude to print
```

The greatest convenience of dBase III is that a single command line is all that is required to bring on-screen whatever data is of particular interest to the user. For example, if one was interested in the source number, location and total volume of all granular sources with a development potential rated 'good', simply type in the following command:

```
.display all source_no, location, total_volu for
```

dev_potent = 'good'

The command requires field names in coded form and ' ' around character data. The coded field names and description of data type are given in Appendix B.

2.3 Creating Sub-Databases

Not all information in the Database is likely to be of interest or use to all users. In order to create a Sub-Database, open the main database and copy the fields of interest to the sub-database (in this example it is called "sub-data"):

```
. use b:           (name of main database)
. copy fields source_no, location, latitude,
longitude, x_ref, dev_potent, total_volu to subdata
```

A new file "subdata" will be created. The copy command may contain up to 254 characters (including blanks and commas).

2.4 Searching the Database

Finding records of interest within a database is

rather time-consuming without the aid of a computer. A computer search simply requires specification of the search conditions and the record will be quickly found, e.g.:

```
.locate for NTS_REF = '1060'
```

In this example, the fieldname is given (it could be any of the more than 70 in the database) and the scope of the search outlined (in this case, all sources located on map sheet 106 0). The search will be initiated and when the record is found, its number will be displayed on the screen:

```
Record = 51
```

If there is more than one record that satisfies the search condition(s), it (they) may be found by continuing the search:

```
.continue
```

If one is interested in all sources within a larger map region, it is possible to locate them as follows:

```
.display all source_no for NTS_REF = '1060' .or.
```

NTS_REF = '106H'

To determine all granular sources located in proximity to a specific site (e.g. Little Chicago), type as follows:

```
.display all for 'Little Chicago' $ LOCATION
```

This will display on screen all records containing the character string 'Little Chicago' within the Location field. Unfortunately, due to limited space; abbreviations are sometimes used and the computer will ignore any characters other than those listed within the quotations. A glance through the Data Sheet Manual should provide an indication of all common abbreviations. All granular sources located within proximity to Little Chicago will be located using the following command:

```
.display for 'Chica' $ LOCATION
```

Conditions may also be specified by using .or. or .not. . The number of conditions specified in a command is limited only by the fact that commands can be no longer than 254 characters. All operators (conditions) are shown in Figure 2.2.

Note that these commands ask the computer to display

LOGICAL OPERATORS:

.and.

.or.

.not.

(require two decimal places as shown)

COMPARISON OPERATORS:

< less than

> greater than

= equal

\$ contained in

<= less than or equal

>= greater than or equal

<> not equal

Figure 2.2 Command operators

on screen complete database records. Since the screen cannot accommodate complete records , some of the data will wrap-around making it difficult to read. The solution to this problem is to print the data (as discussed in Section 3.1 of this report) or to display on screen only those fields of interest; e.g.

```
.display source_no for 'Chica' $ LOCATION
```

Source numbers alone will appear on screen when this command is used.

2.5 Adding Records to the Database

Refer to the Data Dictionary when adding records to the Database. The records should be added to Database disk 3 or to a new Database disk 4 (see section 2.8). In order to add records, the required database must be in use:

```
. use b:      (name of database file)
. append
```

This places the proper file in use and provides a blank record at the end of the database for the new information.

If the record logically follows another already within the database, it may be placed after it:

```
. go 253  
. insert
```

or:

```
. go 254  
. insert before
```

Both commands place the new record in the same place in the database.

If several records from a new study are to be added to the database, and the records contain some fields with similar data, it is possible to save typing the data repeatedly; that is, the data may be carried over from one record to the next (study number, source reference, etc. are often repeated). A database must be opened to initiate the process:

```
.use b:          (name of a database)  
.set carry on  
.append
```

Similarly, if a record needs to be inserted in the

database, and it contains some data repeated from the previous record, the 'set carry on' command will reduce typing:

```
.use b:          (name of a database)
.go             (give number of record which
                precedes the new record)
.set carry on
.insert
.edit
```

If, during this procedure, a record is accidentally duplicated, it may be deleted by following instructions given in Section 2.6.

2.6 Updating Records in the Database

Each record may be found in the Granular Resource Database printout. In order to update any information in the database, find the appropriate record number and edit the data:

```
.. go 253      (or to any other record number)
. edit
```

The required record will appear on screen and new information may be added. In order to save the updated record, press:

Ctrl End (^End)

If the source number, rather than the record number is known, type the following:

. locate for source_no = '1054'

Similarly, the computer will index on any other field or combination of fields as required:

.locate for easting = '9-424000' .and. northing
= '7466400'

Easting and northing must be written exactly as listed in the Structure as shown in Appendix B and the characters between the quotations must appear exactly as they do in the record.

If the exact location of a granular source is not known (and this will often be the case), an area search can be initiated:

.locate for easting > '9-423900' .and. easting

This command will narrow the search to a band of granular sources which may be studied in more detail by using the 'display' command. The search area may be more narrowly defined by using the same command in conjunction with the UTM northing field.

When a search is completed, the computer will indicate which record agrees with the specified conditions at which point one may view the complete record:

```
.go      (give number of required record)
.edit
```

One may also view specific parts of the record:

```
.go      (number of required record)
.? location
```

This command will print or display ('?') on screen the contents of the Location field.

It is possible to update records by going to the desired record (.go), and then using any one of the following commands:

```
.browse      (or)
```

.append

Always use Ctrl End (^End) to save updated records.

2.7 Removing Records from the Database

dBase provides a simple two-step procedure for removing records from the database. Records from the original Database will need not be deleted until the Source is depleted. However, blank records may be created when transferring the structure to a new disk or records may be duplicated when adding data.

To remove records from the database type the following:

```
.go          (to the record which is to be
              deleted)
.delete      (marks the record for deletion)
```

Note that the record is not actually deleted at this time, it is simply marked in the database file as "to be deleted".

```
.display for deleted ( )    (displays record to
                             be deleted)
```

If a mistake has been made (e.g. the wrong record has been marked for deletion), type:

```
.recall                (or)  
.recall record         (and give record number)
```

This command will bring the record back into the active database file. It cannot be deleted now unless a new 'delete' command is given.

If, however, the correct record is marked for deletion, simply type:

```
.pack
```

The record is then permanently removed from the Database.

2.8 Adding Records to a New Disk File

In order to add records to a new disk, it is necessary to transfer the database structure to the new disk. Simply open the database file on the filled disk, insert a new, formatted disk and then copy the structure as follows:

. use b: (name of database file on filled
disk)

---- insert new disk in b: ----

. copy structure to b: (give name of new
file on new disk)

To work with the new disk, type:

. append

Then add new data to the new disk. If several records are
to be added, each containing some repeated information,
use the "set carry on" command as described in Section 2.5.

III Capabilities of the Database

3.1 Creating a Report

A Report Generator is built into Dbase III Plus which is designed to produce custom reports. The Report Generator is initiated by typing:

```
..create report
```

The program will then require a filename:

Enter report file name:

Indicate where the report is to be created (which drive, a:, b: or c:) and give it a filename. Filenames can be up to eight characters long (but, cannot include imbedded blank spaces):

e.g. Enter report file name: b:granular

Dbase will then provide a series of on-screen prompts which allow the creation of a report to the user's specifications. An example of the report form is shown in Figure 3.1. When determining the number of fields to be used to create the report, it is important to remember the page width. It is not the number of characters of data that counts, rather the number of characters per field. The computer does not eliminate blanks from a field when producing a report; they are considered part of the data. If more fields are required than spaces on the printout paper, it is best to produce 2 separate reports rather than one since columns will overlap resulting in the production of a rather confusing table.

The report can be produced by typing:

`.report`

This will show the report on-screen. If a more permanent record is required, turn on the printer and type:

`.report to print`

3.2 Updating the Data Sheet Report

When records have been updated or added to the

Granular Resource Database
Territorial Land Claims Areas

SOURCE NUMBER	UTM ZONE EASTING NORTHING	GRANULAR TYPE	DEVELOPMENT POTENTIAL
BD7-33	9-514000 7368500		unsuitable
BD7-34	9-535000 7369000	SAND__-some gravel, little slt	unsuitable
BD7-35	9-536000 7367000	SAND__-AND GRAVEL	fair
BD7-37	9-540500 7363000	SAND__-fine to medium grained	poor
BD7-38	9-530000 7360000	SAND__-some silt	fair
BD7-39	9-529000 7363000	SAND__-AND GRAVEL	fair
BD7-40	9-526000 7361500	SAND__-AND GRAVEL	poor
BD7-41	9-523000 7363500	SAND__-fine, some silt	unsuitable
BD7-42	9-509600 7366800	SAND__-fine, some silt	unsuitable
BD7-43	9-517800 7361900	SAND__-some gravel	poor
BD7-44	9-535500 7358000	SILT__-clay and sand unsorted	poor
BD7-45	9-541000 7355000	SAND__-AND GRAVEL	fair
BD7-46	9-531000 7355500	SAND__-fine to medium-grained	poor
BD7-47	9-	GRAVEL-coarse, some f. sand	poor
BD7-48	9-528400 7355000	SAND__-tr. silt	poor
BD7-49	9-523000 7354000	SAND__-fine to medium-grained	poor
BD7-50	9-523100 7352100	GRAVEL-some sand	good
BD7-51	9-522000 7349000	SAND__-	poor
BD7-52	9-518100 7352400	GRAVEL-some sand	fair
BD7-53	9-519000 7351400	GRAVEL-some sand	good
BD7-54	9-518000 7349800	GRAVEL-little sand	fair
BD7-55	9-517500 7348000	SAND__-AND GRAVEL	fair
BD7-56	9-515000 7346000	SAND__-AND GRAVEL	fair
BD7-57	9-502000 7343000	SAND__-coarse grained	poor
BD7-58	9-504000 7347000	SAND__-AND GRAVEL	good
BD7-59	9-525100 7342200	SAND__-little silt	poor
BD7-60	9-535000 7337200	SAND__-some silt, little grav.	poor
BD7-61	9-536100 7336300	SAND__-some gravel, silty	poor
BD7-62	9-531100 7326600	GRAVEL-some sand, tr. silt	good
BD7-63	9-522500 7333900	SAND__-little gravel, silty	poor
BD7-64	9-520000 7320000	SILT__-sandy, clayey	unsuitable
BD7-65	9-542000 7400000	SAND__-AND GRAVEL	fair

Figure 3.1 An example of the report form. The number of fields is only limited by the width of the paper.

database, the Data Sheet Report must be updated to keep it current. A dBase program has been included to provide a simple one-step command to update the manual. The program sets up the data sheet by placing fieldnames in the appropriate spot, then fills in the associated blanks with relevant information. In order to print updated data sheets, the source file must be opened:

```
.use b:                (name of database file)
.do b: datash.prg
```

The computer will proceed to produce datasheets from all sources in the data file. If new data has been appended and this alone needs to be printed, set the file pointer to the first of these records and then initiate the program:

```
.use b:                (name of database file)
.go                    (add appropriate record number)
.do datash.prg
```

When single records have been updated and these alone need to be printed, go to the appropriate record number, initiate the program, print out the datasheet and then type Esc to cancel the program.

IV Limitations of the Database

Certain limitations may be linked to the comprehensiveness of the Database. Since the database is quite large, it cannot be conveniently stored on a single floppy disk. Also, while dBase III Plus is considered a good database program, the greater the quantity of data, the slower the program runs. Although the data may be manipulated with ease, it cannot be manipulated, in all cases, with speed. The solution to this problem is outlined in Section 2.2. Determine which parts of the database are of interest and create sub-databases. dBase III Plus will become more efficient when sub-databases are in use.

Another limitation relates to the length of fields within the database. Field length is limited and thus, in order to include all data, entries must be concise and precise. It is necessary that meaningful abbreviations be used; that is, abbreviations that will be understood by all potential users.

In order to simplify data entry and control the size

of the database, certain numeric values (e.g. granular thickness, total volume of granular, etc.) have been stored as characters. dBase III Plus requires information to be stored primarily as character or numeric data. Unfortunately, it is impossible to manipulate character values mathematically and difficult to convert character values to numeric values. The solution to this problem, as with others, appears to be in creating separate sub-databases.

V Source References

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Appendix A

Northern Granular Resource Deposit Database

DATA DICTIONARY

NORTHERN GRANULAR RESOURCE DEPOSIT DATABASE

DATA DICTIONARY

PART A: DEPOSIT LOCATION AND STATUS

AA - STUDY NUMBER:

A unique number which identifies the study in which the source was first described in detail and provides a link to INAC's granular resource study catalogue database. This number consists of an alphabet prefix representing the study catalogue database, a four digit study number, and where necessary, a one digit sub-number to separate, for example, geophysical and geotechnical portions of the same study. (e.g. A-0137-1)

AB - SOURCE NUMBER:

Each source will require a unique source identifier number, normally the number of the source in the original study which located the source, which will serve as a link to other databases (e.g. borehole database). This number will consist of an alphanumeric sequence of up to eight digits. (e.g. 311)

AC - NTS MAP REFERENCE:

The National Topographic Series (NTS) 1:50,000 scale map reference number of the map containing the majority of the outlined deposit. (e.g. 107A/15)

AD - SOURCE REFERENCE:

The bibliographic citation, by author and year, of the report describing the deposit. (e.g. Northern Engineering, 1976.)

AE - LOCATION MAP/PLAN SCALE:

The scale, expressed in terms of the representative fraction (e.g. 1:250,000) of any small scale accompanying regional map which indicates the location of separate study/borrow sites. The denominator only of the representative fraction is given since by definition the numerator is unity. (e.g. 250000)

AF - MAP DIGITIZER NUMBER:

A unique five digit identifier number, to be assigned later by INAC, which identifies a data set of points, lines, or polygons to be digitized from the location plan. This number links the granular deposit database to INAC's spatial database system.

AG - LOCAL NAME(S):

Many sources are known locally by a name or more than one names, rather than the designated source number. Although these names may vary over time or be duplicated between sources, they should be recorded as is. (e.g. Callison Pit)

AH - CROSS-REFERENCES:

The bibliographic citation(s), by author and year, of any other reports which include granular resource data on the subject deposit; and any alternative source number or name included in the cross-referenced report. (e.g. Hardy, 1986: 3-34)

AI - LOCATION:

The location of the deposit may be described in terms of its proximity to a community or other prominent geographical feature and/or in up to three separate sets of co-ordinates due to the varying requirements of granular resource data users. This field (AI) includes the descriptive location (e.g. Hay River; Mt. Fitton). The next seven fields (AJ - AP) provide location co-ordinates. These include the geographic co-ordinates, the Universal Transverse Mercator (UTM) co-ordinates, and transportation system (e.g. highway or pipeline) co-ordinates. In each case, the co-ordinates are normally determined for the approximate centre of the deposit.

AJ - LATITUDE:

The distance, in degrees, minutes, and seconds, and direction, of the deposit from the Equator. (e.g. 67-36-45.9N)

AK - LONGITUDE:

The distance, in degrees, minutes, and seconds, and direction, of the deposit from the Prime Meridian. (e.g. 132-27-12.3W)

AL - UTM ZONE/EASTING:

The UTM zone in which the deposit occurs, and the north-south oriented UTM grid line passing through the centre of the deposit. (e.g. 7-381987)

AM - NORTHING:

The east-west oriented UTM grid line passing through the centre of the deposit. (e.g. 7548335)

AN - CORRIDOR NUMBER AND NAME:

The number (i.e. Territorial Highway number, where appropriate) and the name of the transportation route within whose corridor the deposit occurs. (e.g. 05-Robert Campbell Highway; 00-Foothills Pipeline - Dempster Lateral)

AO - KILOMETER-POST:

The kilometer-post (KP) of the point along the transportation corridor at which access is relatively direct to the deposit, or the most nearly adjacent point on the corridor to the location of the deposit.

AP - OFFSET: DISTANCE AND DIRECTION:

The distance in meters from the corridor centreline to the centre of the deposit and the direction, determined facing towards the increasing kilometer-post, to the deposit from the corridor. (e.g. 35-L(ef)t; 1500-R(igh)t)

AQ - AREA:

The total areal extent, in hectares, of potentially usable granular resources which comprise the deposit. (e.g. 1; 10; 100)

AR - ACCESS:

A short description of the most practical route leading from the corridor to the deposit. Where the access route does not lead directly from the corridor to the source, the KP of the corridor at the location of the access route should be given (e.g. series of seismic cutlines; along north bank of river; follows ridge crest from KP 265.7; shorter but steeper alternative at KP 576)

AS - DISTANCE:

The distance along the above described access route from the corridor to the deposit. Ideally, this should be the same as the offset distance; however, where

this is not possible due to steep slopes or rivers, the access distance can vary significantly from offset. (e.g. 40; 1250)

AT - CONDITION:

A description of the type and condition of the access route, (e.g. seismic line; undeveloped; winter road; ice road)

AU - SITE PLAN SCALE:

The scale, expressed in terms of the representative fraction (e.g. 1:10,000) of any larger scale accompanying site plan which indicates the location of boreholes/testpits/grab samples or geophysical survey grids. The denominator only of the representative fraction is given since the numerator is consistently "1" (e.g. 10000)

AV - PLAN DIGITIZER NUMBER(S):

A unique five digit identifier number or series of numbers, to be assigned later by INAC, which identifies a data set of points, lines, or polygons to be digitized from the site plan. This number links the granular deposit database to INAC's spatial database system.

AW - LAND TENURE:

The legal status of the land upon which the deposit is located. (e.g. Inuvialuit 7(1)a; private; Territorial)

AX - STATUS:

The current status of the deposit in terms of development of granular resources. (e.g. active; inactive; abandoned; depleted; undeveloped; stripped; unproven)

AY - PAST USE:

A summary of any known previous source development or exploitation activity in terms of type and amount of material removed and use of material. (e.g. 12,000 cu.m of silty sand removed by YTG in 1979 for gravel surfacing)

AZ - PERFORMANCE RATING:

A summary of any known assessment of the performance of previously used material from the source. (e.g. poor binding, segregates with minimal traffic)

PART B: SOURCE INVESTIGATION AND DESCRIPTION INFORMATION

BB - INVESTIGATION LEVEL:

The greatest level of detail of previous site investigation work at the subject deposit. (e.g. airphoto interpretation; reconnaissance; exploratory drilling; delineation drilling; production drilling)

BC - LAST DATE:

The year in which the most recent site investigation work was completed.

BD - GEOPHYSICAL DATA:

The type and length of any geophysical surveys completed at the deposit. TYPE: LINE M:(e.g. EM-31 : 1550 m)

SUBSURFACE DATA:

The number, and range and average depth of subsurface penetration of various site investigation methods, presented in the following format: METHOD OF INVESTIGATION: NUMBER OF: MIN./AVG./MAX. PENETRATION:

BE - BOREHOLES: NUMBER:

The total number of boreholes (augerings, borings, coreholes, etc.) completed and logged within, or immediately adjacent to the deposit, which provide subsurface information defining the type, extent and quality of granular materials.

BF - BOREHOLES: DEPTH:

A listing of the minimum, average and maximum depth of penetration of the total collection of boreholes for the deposit, in tenths of metres. (e.g. 03.1-05.6-10.3)

BG - TESTPITS: NUMBER:

The total number of hand- or equipment-excavated testpits or trenches completed and logged within, or immediately adjacent to the deposit, which provide

subsurface information defining the type, extent and quality of granular materials.

BH - TESTPITS: DEPTH:

A listing of the minimum, average and maximum depth of penetration of the total collection of testpits for the deposit, in tenths of metres. (e.g. 0.5-2.6-5.3)

BI - EXPOSURES: NUMBER:

The total number of natural or man-made exposures or outcrops (e.g. on steep slopes, stream banks; or exposed pit faces, cutbanks), within, or immediately adjacent to the deposit, which have been logged to provide subsurface information defining the type, extent and quality of granular materials.

BJ - EXPOSURES: DEPTH:

A listing of the minimum, average and maximum depth of subsurface materials exposed in the total collection of exposures for the deposit, in tenths of metres. (e.g. 01.5-06.1-15.0)

SOURCE DESCRIPTION:

A brief summary of the physical setting of the deposit which will aid in the analysis and understanding of the type, extent, quality and uniformity of the available granular materials and the suitability of the deposit for development and exploitation.

BK - TOPOGRAPHY:

A general description of the collective physical features, relief and contour of the area. (e.g. flat, gently rolling, rolling, hummocky, undulating, ridged, dissected, plateau, mountainous)

BL - SLOPE:

A general description of the slopes on and immediately adjacent to the deposit in terms of type (e.g. simple; compound; complex), degree (e.g. flat; gentle; moderate; steep; precipitous) and direction (e.g. to NNW).

BM - VEGETATION:

A general description of the most significant features of the vegetation cover on and immediately adjacent to the deposit which may provide an indication of the type of materials within the deposit, the presence or absence of permafrost or wet conditions, or potential site development or restoration difficulties. Vegetation should be described, as appropriate, in terms of age, size or complexity (e.g. mixed; sapling; mature), density (eg. nil; sparse; moderate; dense) and type (e.g. poplar; black/white spruce; jackpine; willow) for each of tree cover, understorey and ground cover. (e.g. mature mixed poplar and white spruce to 15 m, few tamarack /sparse poplar saplings / dense bearberry, sparse sphagnum and sedges)

BN - DRAINAGE:

A general description of the general direction and apparent condition (e.g. well; moderate; poor; saturated; flooded) of surface and subsurface drainage at the site. (e.g. SSE-moderate, flooded to S)

BO - PERMAFROST FEATURES:

A general description of surface and/or subsurface features which demonstrate or indicate the presence of permafrost conditions within or adjacent to the deposit. (e.g. low-centre polygons and thermokarst to W; sparse stunted black spruce and thick sphagnum; trace Vx in 2 BHs)

BP - ACTIVE LAYER THICKNESS:

A listing of the minimum, average and maximum measured thickness of the seasonally thawed and frozen active layer within and adjacent to the deposit, determined from the boreholes, testpits, probings and exposures which encountered apparently perennially frozen materials, in tenths of metres. (e.g. 0.2-1.0-1.8)

BQ - SITE DESCRIPTION DATE:

The date on which the site description was completed, or where more than one site visit was involved, the date upon which the maximum active layer thickness was measured, presented in the format: yy-mm-dd (e.g. 79-09-13).

BR - GENERIC ORIGIN:

The environment of deposition or geologic process

believed to be responsible for the formation of the subject surficial feature or deposit comprised of granular materials. (e.g. alluvial; fluvial; glacial; glaciofluvial; glaciomarine; lacustrine)

BS - LANDFORM:

The type of surficial feature comprising the subject granular materials, within which geologic conditions are interpreted to be relatively uniform or are variable within limits characteristic of the type of feature. (e.g. delta; esker; fan; kame; outwash plain; terrace)

SOURCE STRATIGRAPHY:

A general description of the type and range and average thickness of the main surficial materials units comprising the granular source, based on subsurface information from only those boreholes, testpits and exposures which encountered granular materials, and presented in the format: UNIT: MATERIAL TYPE:
MIN./AVG./MAX. THICKNESS

BT - OVERBURDEN: TYPE:

A brief description of the type of overburden materials present over the area containing granular materials. (e.g. PEAT____- over silt) **BU - OVERBURDEN: THICKNESS:**

A listing of the minimum, average and maximum thickness of overburden materials over the deposit, determined from the boreholes, testpits and exposures which encountered granular materials, in tenths of metres. (e.g. 0.0-1.2-2.8)

BV - GRANULAR: TYPE:

A brief description of the type of granular materials encountered within the area delineated as a granular source. (e.g. GRAVEL- AND SAND, well-graded; SAND__- gravelly, some silt)

BW - GRANULAR: THICKNESS:

A listing of the minimum, average and maximum thickness of granular materials over the deposit, determined from the boreholes, testpits and exposures in the area delineated as a granular source, in tenths of metres. (e.g. 01.0-05.2-12.8)

BX - UNDERBURDEN: TYPE:

A brief description of the type of materials underlying the granular materials in the source area. (e.g. CLAY____ - (Till) wet)

BY - DEVELOPMENT CONSTRAINTS:

A general indication of any potential constraints to short or long term development of the source, expressed in terms of the type of constraint, (e.g. access; materials; drainage; permafrost; environmental; socio-economic) with details, as appropriate, on the nature and impact of the constraint.

BZ - DEVELOPMENT POTENTIAL:

A summary comment, expressed in qualitative terms, of the general suitability of the deposit for development. The potential is based essentially on the anticipated overall extent and quality of the available granular materials, but also considers the level of detail of existing site investigation, the presence, extent and type of overburden, drainage and permafrost conditions, other surface or sub-surface characteristics and general accessibility. (e.g. unknown; unsuitable; poor; fair; good; excellent)

PART C: TEST RESULTS AND MATERIAL QUANTITY

TEST RESULTS:

A summary of the cumulative results of laboratory testing, completed in accordance with ASTM or CSA standard test procedures, of samples from the deposit in terms of test name, number of samples tested, and ranges and averages of test results, presented in the following format:

TEST: NO. SAMPLES: MIN./AVG./MAX.
TEST RESULTS:

CC - UNIFIED SOIL: NUMBER:

The number of samples classified under the Unified Soil Classification (USC) system, in accordance with ASTM standard D 2487. (e.g. 121)

CD - UNIFIED SOIL: CLASS:

The range and most common material types sampled from the deposit as classified by the Unified Soil Classification (USC) system and presented in the order: poorest/most/best. (e.g. SM-SP/SP-GP/GW-...)

CE - MOISTURE (%): NUMBER:

The number of samples for which soil Moisture Content (MC%) has been determined, in accordance with ASTM standard D 2216. (e.g. 102)

CF - MOISTURE (MC%): RESULTS:

The range and average soil Moisture Content (MC%), based on percentage of dry soil weight, for the collection of samples tested, presented in the format: minimum-average-maximum MC%. (e.g. 03-12-021)

CG - OVERSIZE (O/S%):

The range and average percentage of oversized (O/S%) material; that is, cobble- and boulder-size material (Size Fraction over 75 mm diam.), in pit run material from the source, as determined by field estimates, field seiving, or laboratory testing. (e.g. 00-10-35)

CH - SIZE ANALYSIS: NUMBER:

The number of samples for which particle-size analysis testing has been completed, in accordance with ASTM standards D 421 and D 422. (e.g. 111)

CI - GRAVEL (Grav%):

The range and average percentage of gravel-sized (Grav%) material; that is, material in the Size Fraction 4.76 mm - 75 mm diam., as determined by particle-size analysis testing. (e.g. 05-45-85)

CJ - SAND (Sand%):

The range and average percentage of sand-sized (Sand%) material; that is material in the Size Fraction 0.074 mm - 4.76 mm diam., as determined by particle-size analysis testing. (e.g. 25-37-52)

CK - FINES (Fine%):

The range and average percentage of silt- and clay-sized (Fine%) material; that is material in the Size Fraction under 0.074 mm diam., as determined by particle-size analysis testing. (e.g. 02-07-12)

CL - D-50:

The range and average Median Diameter (D-50), in microns, of samples subjected to particle-size analysis testing. (e.g. 00210-01200-03600)

CM - PETROGR. NO.: NUMBER:

The number of samples for which Petrographic Analysis testing has been completed to determine the Petrographic Number (PN) of samples from the deposit, in accordance with CSA standard A23.2, Appendix B. (e.g. 01, 10)

CN - PETROGR. NO.: RESULTS:

The range and average Petrographic Number (PN) for the deposit, based on petrographic analysis, for the above collection of samples, presented in the format: minimum-average-maximum. (e.g. 102-114-123)

CO - OTHER TESTS:

A listing of up to eight other types of tests conducted on samples from the deposit, the number of samples tested, and the average values of the test results, presented in the format: test (11 digits)-number (2 digits)-average results (4 digits). Typical entries, Organ Plate-02-03.5; Durab Index-01-0063; React Pr 3M-01-0.08%; LA Abrasion-05-23.2; Sulph Sd Mg-03-05.8; Rel Density-03-2.64; Absorption%-06-1.11; Other Tests-11-vary)

ABSORPTION%:

The number and average of all results, expressed in terms of weight percentage, of all Absorption testing on samples from the deposit, in accordance with CSA standard A23.2-12A. (e.g. Absorption%-12-01.1)

CLEANESS(C/F):

The number and average of all results of Cleaness of Aggregate testing on samples of coarse or fine aggregate from the deposit, in accordance with California Test Method 224. (e.g. Cleaness(C)-04-50.5)

DURAB_INDEX:

The number and average of all results of durability index testing on samples from the deposit. (e.g. Durab_Index-03-65.3)

LA_ABRASION:

The number and average of all results, expressed in percentage weight loss, of Los Angeles (LA) Abrasion Testing on samples from the deposit, in accordance with CSA A23.2-16A. (e.g. LA Abrasion-03-26.3)

ORGAN_PLATE:

The number and average of all results, expressed in terms of reference plate number, of Organic Plate testing on samples from the deposit. (e.g. Organ Plate-05-03.2)

ORG_CONTENT:

The number and average of all results, expressed in terms of percentage weight loss, of Organic Content testing, in accordance with the Alaskan test method. (e.g. Org Content-12-00.5)

SULPH_SD_MG/NA:

The number and average of all results, expressed in percentage weight loss, of all Sulphate Soundness (Magnesium or Sodium, Mg/Na) testing on samples from the deposit, in accordance with CSA standard A23.2-9A. (e.g. Sulph Sd Na-02-03.2)

REACT_PR/MB_3M/6M/12/18:

The number and average of all results, expressed in terms of percentage expansion, of alkali-aggregate reactivity testing on concrete prisms, or mortar bars, after three, six, twelve or eighteen months, in accordance with CSA A23.2-14A-M77 or ASTM C-227, respectively. (e.g. React_Mb_3M-02-.085)

REL_DENSITY:

The number and average of all results, expressed in terms of saturated surface dry conditions, of all Relative Density testing on samples from the deposit, in accordance with CSA standard A23.2-12A. (e.g. Rel Density-12-2.62)

MATERIAL QUANTITY:

Calculated and/or estimated volumes of granular material contained in the deposit, expressed in terms of DIAND-designated material classes, and in terms of

confidence level of the quantities determined in accordance with the following definitions:

CLASS:

DIAND has developed a simple classification system for granular resources, presented in the draft Territorial and Public Lands Pits and Quarries Regulations, which considers both the Unified Soil Classification of materials, and their most suitable end use. The quantity estimates should be given, where possible, in terms of each of the five material classes, as defined in each class field (see CP to CT, below), and in terms of the total (see CU) for the deposit.

PROVEN VOLUME:

Material in each class whose occurrence, distribution, thickness and quality is supported with a high degree of confidence by ground truth such as geotechnical drilling, test pitting, and/or exposed stratigraphic sections. The thickness of material encountered in a borehole is usually extrapolated to a radius not exceeding 50 metres around the hole, with adjustments applied by assessing landform type and anticipated or known deposit homogeneity.

PROBABLE VOLUME:

Material in each class whose existence and extent is inferred on the basis of several types of direct and indirect evidence, including topography, landform characteristics, airphoto interpretation, extrapolation of stratigraphy, geophysical data and/or limited sampling. Additional investigation is needed to determine a reliable material volume. The volume is estimated by projecting known parameters (typically those of proven resources) over the entire deposit, with adjustments for landform type, anticipated homogeneity and other site characteristics such as ice content and drainage.

PROSPECTIVE VOLUME:

Material in each class whose existence is merely speculated on the basis of limited indirect evidence, such as airphoto interpretation and/or general geological considerations. The volume is typically estimated for the maximum areal extent of the deposit and the estimated relief of the geomorphic feature, with adjustments for anticipated site and deposit characteristics. The material quantities are presented in the following format:

CLASS:

PROVEN/PROBABLE/PROSPECTIVE VOLUMES:

CP - CLASS 1:

The calculated and/or estimated volumes of excellent quality granular material, consisting of clean, well-graded, structurally sound sands and gravels suitable for use as high quality surfacing materials, or as high quality asphalt or concrete aggregate, with a minimum of processing.

CQ - CLASS 2:

The calculated and/or estimated volumes of good quality granular material, consisting of well-graded sands and gravels with varying, limited quantities of silt (fines), and suitable for use as good quality base and surface course aggregates, embankment or structure-supporting fill. May be suitable for production of concrete aggregate with extensive processing, except where deleterious material is present.

CR - CLASS 3:

The calculated and/or estimated volumes of fair quality granular material, consisting of generally poorly-graded sands and gravels with or without substantial quantities of silt (fines), and suitable for fair quality general fill (subbase, base, embankment fill) for roads, flexible foundation pads, or lay-down yards.

CS - CLASS 4:

The calculated and/or estimated volumes of poor quality granular material, consisting of generally poorly-graded, silty fine sands with minor gravels, with or without weak particles and deleterious materials, and suitable for marginal general (non-structural) fill.

CT - CLASS 5:

The calculated and/or estimated volumes of fair to excellent quality bedrock, felsenmeer, talus or similar extremely coarse granular material, suitable for quarrying and processing to produce potentially excellent construction materials ranging from general fill, to concrete aggregate, building stone, and erosion control materials such as rip rap or armour stone.

CU - TOTAL VOLUME:

The calculated and/or estimated volume of all of the above classes of granular materials potentially available in the deposit.

CV - TOTAL RECOVERABLE:

The calculated or estimated volume of useable granular material from the deposit, based on the maximum areal extent of useable material in the deposit, and the anticipated maximum recoverable thickness, as determined from test pit and borehole information or inferred from assessment of deposit and site characteristics.

CW - ANNUAL RECOVERABLE:

The calculated or estimated volume of material which is likely to be recovered in a single extraction season, based on the maximum areal extent of useable material in the deposit, and the anticipated maximum thickness of annual thawing of surficial materials, as determined from test pit and borehole information or inferred from assessment of deposit and site characteristics.

CY - COMPILED BY:

The name of the contractor or person who originally compiled the database and a listing of contractors or persons who have subsequently undertaken significant updating of the content of the database (e.g. A. Compiler/Granular Resource Consultants Ltd./J. Doe)

CZ - LAST UPDATE:

The date of the last update of the information presented for the subject granular materials deposit, presented in the format: yy-mm-dd. (e.g. 87-12-13)

Appendix B
Northern Granular Resource Deposit Database

DATABASE STRUCTURE

GRANULAR RESOURCE DEPOSIT DATABASE STRUCTURE

PART A: DEPOSIT LOCATION AND STATUS

Code	Field Description	Field	Field Name	Type	Width	Dec
AA	STUDY NUMBER	01	STUDY_NO	Char	8	
AB	SOURCE NUMBER	02	SOURCE_NO	Char	8	
AC	NTS MAP REFERENCE	03	NTS_REF	Char	7	
AD	SOURCE REFERENCE	04	SOURCE_REF	Char	30	
AE	LOCATION MAP/ MAP SCALE	05	LOC_MAP_SC	Char	6	
AF	MAP DIGITIZER NUMBER	06	MAP_DIG_NO	Char	5	
AG	LOCAL NAME(S)	07	LOCAL_NAME	Char	25	
AH	CROSS-REFERENCES	08	X_REF	Char	75	
AI	LOCATION	09	LOCATION	Char	25	
AJ	LATITUDE	10	LATITUDE	Char	11	
AK	LONGITUDE	11	LONGITUDE	Char	12	
AL	UTM ZONE/ EASTING	12	UTM_EAST_	Char	8	
AM	NORTHING	13	NORTHING	Char	7	
AN	CORRIDOR NUMBER AND NAME	14	COR_NO_NAM	Char	50	
AO	KILOMETER-POST	15	KILO_POST	Num	6	1
AP	OFFSET: DISTANCE & DIRECTION	16	OFST_DS_DR	Char	6	
AQ	AREA	17	AREA	Num	4	
AR	ACCESS	18	ACCESS	Char	60	
AS	DISTANCE	19	DISTANCE	Num	4	
AT	CONDITION	20	CONDITION	Char	40	
AU	SITE PLAN SCALE	21	SYTPLN_SCL	Char	6	
AV	PLAN DIGITIZER NUMBER(S)	22	PLN_DIGINO	Char	5	
AW	LAND TENURE	23	LND_TENURE	Char	30	
AX	STATUS	24	STATUS	Char	15	
AY	PAST USE	25	PAST_USE	Char	75	
AZ	PERFORMANCE RATING	26	PERF_RATIN	Char	50	

PART B: SOURCE INVESTIGATION AND DESCRIPTION

Code	Field Description	Field	Field Name	Type	Width	Dec
BB	INVESTIGATION LEVEL	27	INVEST_LEV	Char	25	
BC	LAST DATE	28	LAST_DATE	Char	4	
BD	GEOPHYSICAL DATA	29	GEPHYS_DAT	Char	60	

SUBSURFACE DATA:

Code	Field Description	Field	Field Name	Type	Width	Dec
BE	BOREHOLES: NUMBER	30	BHOLE_NO	Num	3	

BF	BOREHOLES: DEPTH	31	BHOLE_DEPT	Char	14
BG	TESTPITS : NUMBER	32	TESTP_NO	Num	2
BH	TESTPITS : DEPTH	33	TESTP_DEPT	Char	11
BI	EXPOSURES: NUMBER	34	ESPOS_NO	Num	2
BJ	EXPOSURES: DEPTH	35	EXPOS_DEPT	Char	14

SOURCE DESCRIPTION:

Code	Field Description	Field	Field Name	Type	Width	Dec
BK	TOPOGRAPHY	36	TOPOGRAPHY	Char	20	
BL	SLOPE	37	SLOPE	Char	25	
BM	VEGETATION	38	VEGETATION	Char	75	
BN	DRAINAGE	39	DRAINAGE	Char	40	
BO	PERMAFROST FEATURES	40	PERMF_FEAT	Char	60	
BP	ACTIVE LAYER THICKNESS	41	ACT_LAY	Char	11	
BQ	SITE DESCRIPTION DATE	42	DESC_DAT	Date	8	
BR	GENERIC ORIGIN	43	GENERIC_OR	Char	20	
BS	LANDFORM	44	LANDFORM	Char	20	

SOURCE STRATIGRAPHY:

Code	Field Description	Field	Field Name	Type	Width	Dec
BT	OVERBURDEN: TYPE	45	OVRBURD_TP	Char	30	
BU	OVERBURDEN: THICKNESS	46	OVRBURD_TH	Char	11	
BV	GRANULAR: TYPE	47	GRANULR_TP	Char	30	
BW	GRANULAR: THICKNESS	48	GRANULR_TH	Char	14	
BX	UNDERBURDEN: TYPE	49	UNDRBUR_TP	Char	30	
BY	DEVELOPMENT CONSTRAINTS	50	DEV_CONSTR	Char	50	
BZ	DEVELOPMENT POTENTIAL	51	DEV_POTENT	Char	15	

PART C: TEST RESULTS AND MATERIAL QUANTITY

TEST RESULTS:

Code	Field Description	Field	Field Name	Type	Width	Dec
CC	UNIFIED SOIL: NUMBER	52	USC_NO	Num	3	
CD	UNIFIED SOIL: CLASS	53	USC_CLASS	Char	30	
CE	MOISTURE (MC%): NUMBER	54	MC_NO	Num	3	
CF	MOISTURE (MC%): RESULTS	55	MC_RESULTS	Char	9	
CG	OVERSIZE (O/S%)	56	OVERSIZE	Char	8	
CH	SIZE ANALYSIS: NUMBER	57	SYZANAL_NO	Num	3	
CI	GRAVEL (grav%)	58	GRAVEL	Char	8	
CJ	SAND (sand%)	59	SAND	Char	8	
CK	FINES (fines%)	60	FINES	Char	8	

CL	D-50	61	D_50	Char	17
CM	PETROGRAPHIC NO: NUMBER	62	PETRO_NO	Num	2
CN	PETROGRAPHIC NO: RESULTS	63	PETRO_RESU	Char	11
CO	OTHER TESTS:	64	OTHERTESTS	Char	152

ABSORPTION%: CLEANESS(C/F): DURAB_INDEX: LA_ABRASION: ORGAN_PLATE:
 ORG_CONTENT: SULPH_SD_MG/NA: REACT_PR/MB_3M/6M/12/18: REL_DENSITY:

MATERIAL QUANTITY:

Code	Field Description	Field	Field Name	Type	Width	Dec
CP	CLASS 1	65	CLASS_1	Char	27	
CQ	CLASS 2	66	CLASS_2	Char	27	
CR	CLASS 3	67	CLASS_3	Char	27	
CS	CLASS 4	68	CLASS_4	Char	27	
CT	CLASS 5	69	CLASS_5	Char	27	
CU	TOTAL VOLUME	70	TOTAL_VOLU	Num	9	
CV	TOTAL RECOVERABLE	71	TOTAL_RECO	Num	9	
CW	ANNUAL RECOVERABLE	72	ANNUAL_REC	Num	8	
CY	COMPILED BY	73	COMPILER	Char	75	
CZ	LAST UPDATE	74	LASTUPDATE	Date	8	
-- Total --					1679	

Appendix C

Northern Granular Resource Deposit Database

EXAMPLE DATASHEET

Granular Resource Database
Territorial Land Claims Areas
Source Data Sheet

A. Location and Status

SOURCE NUMBER : BD6-21 STUDY NO. : A-105-01 REFERENCE : Techman Ltd., 1976
NTS MAP REFERENCE: 106I/ DIGITIZ AF: MAP SCALE : 1/125000
UTM ZONE/EASTING: 9-490000 LATITUDE : LOCATION : E side of Yeltea Lake
UTM NORTHING: 7420000 LONGITUDE :
LOCAL NAME(S) :
CORRIDOR NO./NAME:
KILOMETER-POST : 0.0 OFFSET :

SOURCE ACCESS : winter road over thermally sens. terrain
ACCESS DISTANCE : 0 CONDITION : undeveloped; winter road
AREA (ha.) : 220 SITE SCALE: 1/ DIGITIZ AV:

LAND TENURE : STATUS : undeveloped
PAST USE - SOURCE:
PERFORM. RATING :
CROSS-REFERENCES :

B: Source Investigation and Descriptive Information

INVESTIGATION LEVEL: air photo interpretation LAST INVEST DATE: 1976
GEOPHYSICAL DATA :
BOREHOLES - NUMBER: 0 TEST PITS - NO.: 0 EXPOSURES - NO.: 0
DEPTH : DEPTH: DEPTH:

SOURCE TOPOGRAPHY : generally flat SLOPE:
AREA DRAINAGE :
SOURCE VEGETATION :
PERMAFROST FEATURES:
ACTIVE LAYER (m) : DESCRIP. DATE: / /
GENERIC ORIGIN : glaciofluv. & alluv. LANDFORM(S) : outwash - plains
GRANULAR - TYPE : SAND AND GRAVEL OVERBURD-TYPE:
GRANULAR THICKNESS: 07.5-07.5-07.5 THICKNESS :
UNDERBURDEN :

DEVELOP. CONSTRAINT:
DEVELOP. POTENTIAL: fair

C: Test Results and Material Quantity

USC - NUMBER : 0 MOISTURE CONTENT- NUMBER : 0
CLASS : RESULTS:
SIZE ANALYSIS - NO.: 0 GRAVEL : SAND: FINES :
OVERSIZE: D-50 :
PETROGRAPHIC NUMBER - NUMBER OF TESTS : 0
RESULTS:
OTHER TESTS (see the DATA DICTIONARY):

MATERIAL QUANTITY

TOTAL RECOVERABLE : 0 CLASS 1:
ANNUAL RECOVERABLE : 0 CLASS 2:
TOTAL VOLUME : 12000000 CLASS 3:12000000/12000000/012000000
RECORD UPDATED BY: L. Bennett, l. con; CLASS 4:
LAST UPDATE : 12/10/87 CLASS 5:

Granular Resource Database
Territorial Land Claims Areas
Source Data Sheet

A. Location and Status

SOURCE NUMBER : BD6-22 STUDY NO. : A-105-01 REFERENCE : Techman Ltd., 1976
NTS MAP REFERENCE: 1061/ DIGITIZ AF: MAP SCALE : 1/125000
UTM ZONE/EASTING: 9-528000 LATITUDE : LOCATION : E side of Rorey Lake
UTM NORTHING: 7410500 LONGITUDE :
LOCAL NAME(S) :
CORRIDOR NO./NAME:
KILOMETER-POST : 0.0 OFFSET :

SOURCE ACCESS : winter road over flat to rolling terrain
ACCESS DISTANCE : 0 CONDITION : undeveloped; winter road
AREA (ha.) : 200 SITE SCALE: 1/ DIGITIZ AV:

LAND TENURE : STATUS : undeveloped
PAST USE - SOURCE:
PERFORM. RATING :
CROSS-REFERENCES :

B. Source Investigation and Descriptive Information

INVESTIGATION LEVEL: air photo interpretation LAST INVEST DATE: 1976
GEOPHYSICAL DATA :
BOREHOLES - NUMBER: 0 TEST PITS - NO.: 0 EXPOSURES - NO.: 0
DEPTH : DEPTH: DEPTH:

SOURCE TOPOGRAPHY : ridged SLOPE:
AREA DRAINAGE :
SOURCE VEGETATION :
PERMAFROST FEATURES:
ACTIVE LAYER (m) : DESCRIP. DATE: / /
GENERIC ORIGIN : glaciofluvial LANDFORM(S) : outwash deposit
GRANULAR - TYPE : SAND -AND GRAVEL OVERBURD-TYPE:
GRANULAR THICKNESS: 07.5-07.5-07.5 THICKNESS :
UNDERBURDEN :

DEVELOP. CONSTRAINT: access (long)
DEVELOP. POTENTIAL: fair

C. Test Results and Material Quantity

USC - NUMBER : 0 MOISTURE CONTENT- NUMBER : 0
CLASS : RESULTS:
SIZE ANALYSIS - NO.: 0 GRAVEL : SAND: FINES :
OVERSIZE: D-50 :
PETROGRAPHIC NUMBER - NUMBER OF TESTS : 0
RESULTS:
OTHER TESTS (see the DATA DICTIONARY):

MATERIAL QUANTITY

TOTAL RECOVERABLE : 0
ANNUAL RECOVERABLE : 0
TOTAL VOLUME : 7500000
RECORD UPDATED BY: L. Bennett, LB con;
LAST UPDATE : 12/10/87

CLASS 1:
CLASS 2:
CLASS 3: 07500000/07500000/007500000
CLASS 4:
CLASS 5:

GRANULAR RESOURCE DATABASE
TERRITORIAL LAND CLAIMS AREA

TRIAL DISKETTE

The enclosed diskette includes a portion (138 records) of the prototype database of granular resource deposits prepared by Lorne Bennett as part of the above-titled project. This trial diskette is intended to permit the user to manipulate and evaluate the prototype database, using the operations described in the accompanying manual. Also included on the diskette are several dBase report forms and a simple dBase program to print deposit summary sheets. A copy of the remaining 420 records in the database may be obtained by sending one formatted 1.2Meg or 720K (micro), or two formatted 360K, floppy diskette(s) to the address below.

The information contained in the database was obtained primarily from the reference sources listed in the manual. No attempt was made to either verify or update the original source data. The contractor, Lorne Bennett, is responsible only for the completeness and accuracy of its transferral to the database. Any summarization or other interpretation of information from more than one source has been undertaken in accordance with accepted scientific practice; however, the original source(s) should be consulted for further verification of data accuracy and precision as warranted by the intended application of this information.

Indian and Northern Affairs Canada welcomes any comments and suggestions regarding the database structure, and any further information on, or revisions to, its content. These should be sent to:

Geotechnical Advisor
Land Management Division
Natural Resources and Economic Development
Indian and Northern Affairs Canada
6th Floor, North Tower,
Les Terrasses de la Chaudiere
OTTAWA, ON K1A 0H4