

COMPUTERIZATION OF FORM 'J' HOLDERS, ACTIVE
MINERS AND QUARRY OPERATORS
(MINISTRY OF SOLID MINERALS DEVELOPMENT, ABUJA)

BY

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NIGER STATE

APRIL 2002

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**BEING A RESEARCH PROJECT SUBMITTED TO THE
DEPARTMENT OF MATHEMATICS/COMPUTER SCIENCE
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR
THE AWARD OF A POST GRADUATE DIPLOMA IN
COMPUTER SCIENCE OF THE FEDERAL UNIVERSITY OF
TECHNOLOGY, MINNA, NIGER STATE.**

APRIL 2002

CERTIFICATION

This is to certify that having read through this research work carried out by ONYERI NDUBUISI CHUKWUEMEKA, it is our opinion that it merits the acceptable standard for the award of Post Graduate Diploma in Computer Science.

L.M. EZEAKO
(PROJECT SUPERVISOR)

DATE

L.N. EZEAKO
(HEAD OF DEPARTMENT)

DATE

EXTERNAL EXAMINER

DATE

ACKNOWLEDGEMENT

I deeply thank the Lord for sustaining me throughout the programme.

I also gratefully appreciate my project supervisor, L. N. Ezeako for his valuable advise, guidance and patience.

The lecturers in mathematics/Computer Department deserve special mention severally for training me

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I must also thank the Ministry of Solid Minerals Development, Abuja for releasing me for the programming.

Finally, my course mates especially, David Nmalagu deserve special thanks for their cooperation and encouragement.

May the good Lord bless you all.

DEDICATION

This work is humbly dedicated to my LORD and SAVIOUR
JESUS CHRIST for His faithfulness.

ABSTRACT

This project briefly highlights the paucity of Solid Minerals data as a major impediment to investors in the sector. It emphasized the need for the development of an integrated database and management information system to deal with the different levels and types of information required by the different levels and categories of operators in the sector.

The project further made a practical attempt to develop a Database Management System (DBMS) for the Form 'J' holder as well as the active Miners and Quarry operators in the country. The software used for the DBMS is the Microsoft Visual FoxPro 6.0 version.

The DBMS should be able to generate different forms and levels of specific and summary reports on both Form 'J' holders and the active Miners/ Quarry operators.

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OVERVIEW

The Main Thrust of this project is to develop a computerized database for the Form "J" holders, the active Miners and Quarry operators, using the Microsoft Visual Fox Pro. Version 6.0. In doing this, the project will be divided into ^{five} chapters.

The chapter one will discuss the purpose of, and the necessity for database. The motivation for the study, as well as the objectives, the significance and the scope of the study will also be discussed in this chapter.

Chapter two will begin with a brief discussion on the evolution, structure and the functions of the Ministry of solid Minerals Development. The Laws and Regulation guiding the exploitation of solid Minerals in Nigeria as well as the definition of some technical terms will be found in this chapter. Also, there will be a highlight of the form "J" with emphasis on the conditions for the grant of the Licence. There will also short note on the obligations of the miners quarry operators.

In chapter three, we will be discussing Systems Analysis and Design. The system of data collection, storage and retrieval in the ministry of solid minerals with emphasis on the Form "J" and

mineral returns data. The limitation of the existing system will be highlighted. Also systems theory, investigation, analysis and design will form part of this chapter.

In chapter four, the software to be used, its programming language and programming details will be stated. This chapter will also discuss the system test, software documentation, training and maintenance.

Chapter five will give the general evaluation of the study as well as the summary/conclusion and recommendation.

CHAPTER ONE

BACKGROUND OF STUDY

1.0 INTRODUCTION

The computer is a useful tool to assist with the production of information as it provides an efficient medium for storing, describing, structuring and manipulating data. But, how can these data be organized so that information could be obtained? This is the tack of database design.

Database, which is the warehouse for the data needed to produce information, serves the purpose of organizing and storing data (specific to an organization) in a way that minimizes the repetition of information in the dataset and also provides a fast and easy access to the data.

With the advent of modern computers and the development of database management systems such as the ORACLE, DBASE, CLIPERS, FOXBASE, FOXPRO, ACCESS, REDARTAM, et cetera, many organizations are fast establishing integrated database and management information systems to deal with the different levels and types of information required by different levels of management.

The Ministry of Solid Minerals Development is among the government departments that are yet to join this trend. This study is therefore an attempt to prepare the ground for the ministry and particularly the Mines Department to develop a DBMS. This pioneer effort will consider the development of a DBMS for the form J. holders and the active mine and quarry operators in the country using the Microsoft Visual Fox Pro. 6.0

1.1 MOTIVATION

On several occasions the Mines Department had been unable to meet requests for data or information on solid minerals from world bodies like the British Geological Survey (publishers of World Mineral Statistics), the Association of Tin Producing Countries (ATPC), or local demands from the Federal Office of Statistics (FOS), the Central Bank Of Nigeria (CBN) and other organizations, institutions and individuals.

This is against the common knowledge that Nigeria's Solid Minerals potentials are believed to be very enormous. To state the fact, over thirty (30) varieties of solid Mineral Resources have been identified in more than four hundred

locations nation – wide. And the solid minerals map of Nigeria shows that no state in the federation is destitute of one economic solid mineral or the other.

Experts also strongly believe that the nation's solid minerals resources if properly harnessed can compete favourably with the oil sector and even surpass it. For instance, it is estimated that Nigeria's Bitumen reserve (which is the 2nd largest in the world after Venezuela) is worth more than the oil reserve.

In order to attract investors into the sector, the Federal Government has recently approved a new mining policy in favour of the private sector. This is in addition to other schemes that had been introduced to assist the small-scale miners.

In spite of all these gestures, the Nigeria mining industry has failed to attract big time investor especially foreigners into the industry. The major reason for this is the paucity of relevant data to facilitate meaningful investment plan. In fact investors can hardly be attracted where there is poor quality information at their disposal. Information is a major infrastructure needed to facilitate new activities or transform

current practices. Strategic information is needed to make long term plans, summary information is required to monitor and control the industry, to see that it is consistent with those plans, while detailed information is needed to deal with day – to – day activities, problems and inquiries.

Such data as the location, quantity and quality of solid minerals, as well as the depth and the type of machinery that could be used to extract the minerals will be of great benefit to investors. Also data on the number and the particulars of active mines, mining title holders, the minerals they mine, their output, method of mining, type of equipment used, labour employed etc will form valuable indices to the Government for planning and other economic appraisals. For the Mines Department which issues over ten (10) types of Licenses, Lease^s and Permits to the various categories of solid minerals dealers, the possession of accurate and easily accessible information about these dealers will place the department at a vantage stead to advise the Government in policy formulation with respect to solid minerals.

There is the need to capture all these information to form a resourceful databank on solid minerals for the nation. This

research work is therefore an attempt to initiate a solution to these problems by creating a database for form J. holders and the active mine^rs and quarry operators. The database will be developed using the Visual Fox Pro 6.0

1.2 OBJECTIVES OF THE STUDY

The main objective of this study is to develop a database application package using the MICROSOFT VISUAL FOX PRO VERSION 6.0 which will be used to record, store and manipulate data and information on the form J. holders and the active mine^rs and quarry operators. This will form the basis for future development of integrated database that will deal with the different levels and types of data required in the ministry and the department.

1.3 SIGNIFICANCE OF THE STUDY

This study is very significant for the following reasons;

- i) It will develop a format for updating the existing manual records with the developed database application package;
- ii) It will ensure data integrity and eliminate data inconsistency;
- iii) It will ensure data accuracy;

- iv) It will eliminate the incidence of data or information loss;
- v) It will enhance quick generation of information in either report or chart form;
- vi) It will serve as a basis for the establishment of a computerized solid minerals databank.

1.4. SCOPE AND LIMITATION OF THE STUDY

The database will cover form J records and returns from the active Mine and Quarry operators. The major constraints to this study are time, finance and the dearth of relevant data and information on the activities of Form J holders as well as the active Mine^s and Quarry operators.

CHAPTER TWO

LITERATURE REVIEW

Mining in Nigeria though then at rudimentary level, antedated the colonial era. The discovery of more solid minerals by the then Geological Survey of Nigeria on the Jos Plateau led to increased activities mostly in the plateau mine field which extended to Bauchi, Kaduna, Kano and Nasarawa states where Tin and other allied minerals were mined.

This chapter will discuss;

- ❖ The evolution of the Ministry of Solid Minerals Development;
- ❖ The functions of the ministry;
- ❖ The structure of the ministry
- ❖ Mineral laws and Explosives Regulations;
- ❖ The Form 'J' Licence;
- ❖ Returns from active Mine and Quarry operators;
- ❖ Definition of terms specific to the mining industry.

2.1 THE EVOLUTION OF THE MINISTRY OF SOLID MINERALS DEVELOPMENT

Organized mining in Nigeria began to crystallize between 1902 and 1923 following the commencing in 1903/4 of the Mineral Survey of Southern and Northern Protectorates by

the then Secretary of State for the Colonies. Tin deposits had been located in Jos Plateau and the Royal Niger Company initiated organized mining activities in 1905.

Apart from Tin and its associated minerals, Columbite and Tantalite, mining for Gold began in 1914 in what is now Niger and Kogi states. Exploration for Coal goes back to 1906, but production did not commence until 1916 in what is now Enugu state.

It was the wake of these developments that a Mines Inspectorate (Mines Department) was established in 1908 to oversee the activities of the organized miners through the enforcement of the Government Laws and Regulations.

By 1919, the Geological Survey of Nigeria was established as a department of Government to take over and continue the work of mineral surveys.

The Mines Department and the Geological Survey Department had at several periods co-existed under the Ministries of Mines, Power and Lagos Affairs; Mines and

Power; Power and Steel and lastly the Ministry of Petroleum and Mineral Resources.

Towards the end of 1995, the two departments were severed from the Ministry of Petroleum and Mineral Resources and upgraded to a full Ministry known as the Ministry of Solid Minerals Development.

2.2 THE FUNCTIONS OF MINISTRY OF SOLID MINERALS DEVELOPMENT

The Ministry of solid Minerals Development was established in the last quarter of 1995 by the late General Sani Abacha's administration and saddled with the following functions;

- i) To acquire and disseminate detailed and reliable data on the geology of the country, and on the quantity and quality of the country's solid minerals resources;
- ii) To orderly develop the mineral resources of the nation with emphasis on the creation of favourable investment atmosphere, ensure real economic growth, boost employment and maximize revenue (local and foreign) to the government;

- iii) To ensure adequate supply of mineral resources from internal sources and where necessary, from external sources to maintain the security, national well being and the industrial development of the nation;
- iv) To ensure the conservation of mineral resources through research into different extractive methods and wider application and uses of minerals;
- v) To provide control, infrastructural support and all the wherewithal necessary to promote and sustain investment in mining and mineral processing.
- vi) To encourage the private sector to take leadership role in the exploration and exploitation of solid minerals.
- vii) To accelerate the development of technical and professional manpower required in the solid minerals sector.

2.3 THE STRUCTURE OF THE MINISTRY

The ministry is structured into seven departments comprising of four technical and three non – technical departments. The non – technical departments are Administration Department, Finance and Supplies Department, and the Department of

Planning, Research and Statistics. The technical departments are the Mines Department, the Regional Geology Department, the Mineral Investment Department and the Department of Applied Geology and Documentation.

2.3.1 THE GEOLOGICAL SURVEY DEPARTMENT (GSD).

The last three departments were formerly under one department called the Geological Survey Department. The major work of the geological or exploration engineer is to locate and evaluate mineral deposits. Hence the statutory functions of the GSD include the acquisition, documentation, storage and dissemination of data on the geology, mineral and engineering foundation characteristics of the land area of the country.

2.3.2 THE MINES DEPARTMENT

Whereas the Geologist locates and evaluates mineral deposits, it is the duty of the mining (Production) Engineer to consider the most appropriate and economical technique of extracting the minerals. The major responsibility of the Mines Department is therefore to advise the Federal Government on the formulation and implementation of Laws and Regulations governing the orderly extraction, handling,

sale and the consumption of all solid minerals in the country. The department has field offices in the 36 states of the Federation including the Federal Capital Territory.

Other functions of the Mines Department are;

- i) To supervise all mining and quarrying operations throughout the Federation;
- ii) To process and issue all Prospecting, Mining and Quarrying Licences, Leases and Permits;
- iii) To enter into healthy economic bi-lateral cooperation with other nations on behalf of the Federal Government;
- iv) To supervise the Nigerian Mining Corporation and the Nigerian Coal Corporation – the two parastatals under the ministry.
- v) To collect all Fees, Rents and Royalties accruing to the Federal Government from mineral prospecting and exploration.

2.4 MINERAL LAWS AND EXPLOSIVES REGULATIONS

The Laws and Regulations controlling the exploration, exploitation, use and, or exportation of solid minerals are contained in the following books;

- i) THE MINERALS AND MINING DECREE NO. 34, 1999
- ii) THE EXPLOSIVE ACT OF 1964
- iii) THE EXPLOSIVES REGULATION OF 1967

2.5 THE FORM J. LICENCE

The Form J, also known as the Licence to possess and purchase minerals is one of the many Licences issued by the Mines Department of the Ministry of Solid Minerals Development. It is issued to non -mining companies and individuals to enable them trade in all classes of solid minerals within Nigeria. Those who want to export the minerals abroad will in addition obtain an Export Permit from the Ministry, stating the type, quantity, quality and destination of the minerals.

An application for Form J. is addressed to the Director of Mines, Ministry of Solid Minerals Development, Abuja. The application is accompanied with the following documents;

- i) Evidence of registration of company under the Company's Act;
- ii) Evidence of source of supply which must be from licenced Mine or Quarry operator(s). This must be in

- written form giving details of licences, minerals and quantity anticipated.
- iii) Evidence of oversea market by way of a copy of the contractual agreement between the exporter and the importer;
 - iv) Evidence of registration with the Nigerian Export promotion Council. Conditions (iii) and (iv) are for those who want to export the minerals to other countries.
 - v) A copy recent tax clearance certificate
 - vi) Payment of a prescribed fee.

The Licence is valid for twelve (12) Calendar months and could be renewed upon the fulfillment of certain conditions.

The Form J. holder is expected to keep a book showing;

- i) Every purchase made by him and the nature and weight of the minerals purchased;
- ii) The name of the seller and the title of the authority for the seller to be in possession and to dispose of the minerals;
- iii) The date of each purchase;

- iv) Details of the means of disposal of the minerals by the Licencee after purchase.

The Form J. holder is also expected to produce such books for inspection by authorized persons, as well as make returns every six months to the ministry.

The Form J. is about the most popular Licence being issued by the Ministry. This is going by the growing number of people who apply for it because of the advantage it confers in the average individuals and companies to engage in solid minerals business.

Expectedly, the above scenario results to large volume of records being generated daily on form J. It is therefore very imperative that these records are properly kept and analysed for easy reference, decision-making and planning.

2.6 RETURNS FROM ACTIVE MINERS AND QUARRY OPERATORS

Whereas the Form 'J' holders are mere minerals traders or handlers, the active mine^s and quarry operators are those who are duly licenced through the issuance of quarry or mining

licence and, or quarry/mining lease to extract these minerals for economic and commercial purpose.

These categories of mineral operators are required by law to render statistical returns on their activities including the payment of royalties to the Federal Government in line with chapter 16, section 146 subsection 2d & f of Decree 34 of 1999.

Their returns provide the necessary indices for assessing the performance of government policies as well as her commitment to the sector. It is therefore also necessary that these returns are properly collated and organized for easy analysis and decision-making.

2.7 DEFINITION OF TERMS

2.7.1 SOLID MINERALS

In the new mining policy, solid minerals were defined as naturally occurring substances (excluding Oil, Gas and Water) derived from the earth's crust and upper mantle which are of value to man. They include broadly, minerals in the energy group, the ferrous group, the non-ferrous group, metallic and the non – metallic group.

According to chapter one of the minerals and mining Decree No. 34 of 1999, ownership of all solid minerals is vested with the Federal Government of Nigeria. Also all Lands in which minerals have been found in commercial quantities shall from the commencement of the Decree be acquired by the government of the federation in accordance with the provision of Land Use Act (Cap 202 LFN) and the Minister may from time to time with the approval of the Federal Executive Council designate such Lands as security Lands.

2.7.2 PROSPECTING

It is a deliberate search for the occurrence of economic mineral deposits. Prospecting is lawful in Nigeria only under a Prospecting Right (PR), Exclusive Prospecting Licence (E.P.L) or a Special Exclusive Prospecting Licence (S.E.P.L) which are issued on application using a prescribed form, and on specified condition.

The Prospecting Right (PR) is granted by the Director of Mines as delegated by the Honourable Minister. It confers

upon the holder (usually an individual not less than 21yrs on behalf of a company) the right to enter and prospect for minerals stated therein and within the area specified. It is renewable and non-transferable.

The Exclusive Prospecting Licence (E.P.L) is granted to the holder of a PR over an area not exceeding 20.72sq km and confers on him the exclusive right to prospect for minerals listed thereon but within the area of the Licence. It is granted by the Minister on the recommendation of the Director of Mines.

The Special Exclusive Prospecting Licence (S.E.P.L) is the same as the E.P.L but covers a much larger area than 20.72sq km. It is also usually granted for areas of difficult topography.

2.7.3 MINING

This is defined as an economic and profitable extraction of minerals from the earth's crust. In Nigeria mining is lawful under a mining lease. The lease confers upon the Leasee (who

must be a holder of a PR or EPL) the right to extract and dispose of minerals stated within the area of the Lease. It is granted for a specified number of years not exceeding 21yrs with provision for renewals in accordance with section 51 of minerals and mining Decree, 1999.

2.7.4 ENTRY PERMIT

This is the formal registration of a prospective operator with the Ministry of Solid Minerals prior to the grant of appropriate prospecting and mining permits. Before any individual or company can be granted the Entry Permit (i.e. be admitted into the Mining Industry) the following conditions must be met.

- i) A formal application for entry into the Mining/Quarrying industry addressed to the Hounorable Minister, Ministry of Solid Minerals Development, Abuja.
- ii) Submission of the name of a technically competent person (usually a mining engineer, mining technician or a geologist) to be in charge of the technical supervision as required by the relevant portions of the Minerals and Mining Decree No. 34 of 1999.

- iii) Provide a Bank Statement of Account of not less than ₦3 million.
- iv) A Banker's Guarantee of ₦ 1 million to pay for economic crops, trees or property that may be destroyed in the course of prospecting.
- v) Evidence of tax payment in the form of tax clearance certificate for a given period.
- vi) Application fee for certificate to enter into the mining industry of ₦ 20,000

The permit does not empower its holder to engage in actual mining or quarrying activities. He can only do so by acquisition (Purchase) of an extant mining or quarrying property (i.e. Mining Lease or Quarrying Lease) from the original owner, subject to sections 12 and 202 of the Minerals and Mining Decree of 1999; or by obtaining on application, a Prospecting Right (PR) and, or Exclusive Prospecting License (EPL) and thereafter obtain a Mining or Quarry Lease.

2.7.5 QUARRYING

Is the extraction of such minerals as Asbestos, China Clay, Fuller earth Gypsum, Marble, Limestone Mica Pipe clay

Slate, Sand Stone, Laterite, and Gravel etc. It is lawful in Nigeria under a quarry licence or lease.

2.7.6 QUARRYING LICENCE

“Application for a quarrying licence is submitted on Form 111 (Regulation 4 of the Quarries Regulation) in two copies together with the sketch plan of the area to the Federal Mines Officer who processes and issues the licence over 0.4047 hectares (1.00 acres). Part B of the application form must be endorsed by the local authority of the area to ensure that the land has been properly acquired before grant of licence. A fee of N5, 000.00 is required for one year, but is renewable. When granted, it confers upon the licensee the right to quarry for the mineral(s) so stated on and within the area of the licence. The operator may take up several adjoining aced licences which may be converted to a quarrying lease”.

2.7.7 QUARRYING LEASE

“Application for a quarrying lease is submitted in seven copies together with survey plan of the area. Form 11, Regulation 3 of the Quarries Regulation is used for application. Since there is no provision for the endorsement of the local authority on quarrying lease, Application Form 1,

schedule 1, regulation 5 of the Quarries Regulation is submitted in seven copies along with the application. This ensures that the owner/occupier of the land has been notified and that satisfactory arrangement for acquisition and compensation has been made. Quarrying lease application takes more time to process than Quarrying Licence because it requires much more details vis-à-vis, survey, land and registry, forestry and administrative reports.

These must be assembled from the respective departments of the state governments where the quarrying is to be located, and from the Federal Capital Development Authority in respect of applications lodged in the Abuja Capital Territory. These reports are assembled and a composite report with recommendations for approval or refusal put up to the minister by the director of mines.

Grant is made over 40.47 hectares (100 acres) and for a maximum of five years with a provision for temporary title for three years within the five year term. It is renewable for a term of five years..." The lease attracts a fee of ₦10, 000.

CHAPTER THREE

SYSTEM STUDY

3.1 INTRODUCTION: A system can be regarded as “a set of interacting elements responding to inputs to produce outputs “. System may consist of subsystems each of which has elements, interactions and objectives. For example, if we take the Mines Department as a system, we shall regard the parastatals, the state offices and the divisions under it as subsystems. Each subsystem performs specialized task related to the overall objectives of the department. The Statistics Unit is yet a subsystem under the Explosives and Statistics Division

3.2 SYSTEMS ANALYSIS AND DESIGN

The cycle of system analysis and design process involves the following steps.

- i. System investigation – involving problem definition and feasibility study.
- ii. System Analysis.
- iii. System Design

2.7.8 DATA

This defined as unstructured or raw facts that could undergo further processing to derive meaningful information.

2.7.9 DATABASE

Is an organized and integrated collection of data used by an organization.

2.7.10 DATABASE MANAGEMENT SYSTEM

Is simply a piece of software that manages a very large and complex data stored in a database.

2.7.11 ENTITY

An Entity is anything that can be quantified

2.7.12 FIELD

A Field is a property or characteristic that holds some information about an entity. In a relational DBMS it is the same as an 'Attribute'.

2.7.13 FIELD NAME

This is a name that is provided for a particular field. It makes it easy to identify the field and the data in it.

2.7.14 KEY

It is a field in a table that is used to sort data. Most DBMS allows more than one key in order to sort records in different ways. One of the keys is designated the primary key.

2.7.15 PRIMARY KEY

It is a field in a table that ensures that every record in a table is unique. It also speeds up the process of searching for records.

2.7.16 RECORD

This is a collection of data.

2.7.17 FILE

This is a collection of related records.

2.7.18 SQL

This is the abbreviation for Structured Query Language. It is the standard language used for requesting information from Dbase.

2.7.19 USER INTERFACE

This is that part of the application that the user interacts with to manipulate data that is stored in the system.

3.2.1 SYSTEMS INVESTIGATION

This involves problem definition to determine the nature and scope of the problem through interviews and questionnaires as well as feasibility study to determine whether a solution to the problem is feasible.

The problem on ground as already identified or defined in chapter one is the paucity of Solid Minerals data resulting poor record keeping.

The solution being proposed is an automated database using the Microsoft Visual FoxPro 6.0. It is a better alternative that is realistic, realizable and also affordable.

3.2.2 SYSTEM ANALYSIS

Systems analysis involves a thorough and objective appraisal of an existing system in order to uncover some of its inherent problems and limitations. The major steps to consider when analyzing a system are;

- (a) General evaluation of the existing system;
- (b) Collection of appropriate data including the opinion of the users of the proposed system;
- (c) Analysis of data and the existing system;
- (d) Benefits of the proposed system.

3.2.2.1 THE EXISTING SYSTEM

The Mines department has a statistics unit currently headed by a senior statistician. The unit is saddled with the following major duties:

- (i) Collection, collation and compilation of returns from the headquarters office, state offices and mineral operators.
- (ii) Preparation of half yearly and annual reports.
- (iii) Preparation of annual budgetary proposals and rolling plans for the department.
- (iv) Preparation of funds distribution schedules for the state offices.

Our items of data are;

- (i) Mineral production returns.
- (ii) Revenue returns.
- (iii) Statistics of Licences, Lease Permits.
- (iv) Budgetary allocation and releases to the department.

Data collection centres at the thirty six (36) state offices, the mineral operators and the headquarters.

These data are sourced through returns by means of administrative forms appropriately designed. The data are

manually extracted and stored in files and registers.

Thereafter some data items, which are considered relevant to the department, are compiled and analysed in the form of publications and annual reports.

THE FORM 'J': All applications for Form 'J' are made in company's letter headed paper and submitted to the office of the Director of Mines with the relevant requirements. Similar applications from the state offices are processed to the headquarters office for approval. These applications are filed and processed in one file. When the file is bulky, it is closed and a new one is opened.

A register is kept where the details of all the processed licences are recorded to show the licence number, name and address of the licensee, minerals of interest, mineral vendor, date of issue, expiry date, file reference number and other remarks.

Periodically, the statistic unit compiles the following reports from the Form 'J' register:

- (i) Number of applications for new license received.

- (ii) Number of applications for renewal of licenses received
- (iii) Number of licences granted.
- (iv) Number of applications rejected.

These reports are usually reflected in our publications e.g. the annual reports. No records are kept of the returns rendered by the Form J holders.

3.2.2.2 DATA GATHERING

The method of data collection used in this study is personal interview. In the course of this study therefore, useful deliberations were held with the relevant desk officers. We took a critical look at the existing forms used for capturing Form J records as well as returns from the quarry and mine operators. The limitations of the existing system as well as their expectations from the proposed system were taken into consideration.

3.2.2.3 ANALYSIS OF DATA AND THE EXISTING SYSTEM

After due appraisal of the existing system based on the data and other facts available, it is very obvious that the present system of storing data in files and registers is inadequate and

belongs to the past. The system is subject to the following limitations:

- (i) Duplication and inconsistency of data.
- (ii) Difficulty in accessing specific information to meet specific demands.
- (iii) Unprotected access to data.
- (iv) Difficulty in preparing summaries.
- (v) The final storage medium through publications, e.g. annual reports is subject to fragility.
- (vi) Since only data items considered relevant by the department are published, additional details by other users are often not contained in the publications.
- (vii) The fact that only limited copies of these publications are produced makes it difficult to obtain back issues of most publications, which are often out of print e.g. the 1996 Mines Department Annual Report. Reprints are generally not feasible because of escalating costs. The implication is that time series data are hardly available thereby defeating one of the major purposes of data collection.

3.2.2.4 REASONS FOR POOR DATA COLLECTION/RECORD KEEPING IN MINES DEPARTMENT

The major reasons for the limitations highlighted above could be summarized under the following headings:

- (i) Lack of adequate funding for statistical activities.
- (ii) Lack of skilled manpower.
- (iii) Inadequate conducive office accommodation.
- (iv) Lack of awareness in the part of the authorities on the need to invest in electronic data processing system.
- (v) Inadequate communication and transportation facilities such as Computers, Telephones, Fax machines and operational vehicles for data collection.
- (vi) Insufficient collaboration among units in the department leading to duplication of effort in data collection.

There are no computers in any of the state offices, while there are only two in the headquarters. The director's secretary is using one, while the second one is in the senior statistician's office. The two are mostly being used to type memos and letters.

3.3 COST BENEFIT ANALYSIS

The primary essence of cost benefit analysis is to determine whether it makes economic sense to invest in the project. In doing this, the following elements of cost are examined:

- (i) Equipment Cost - i.e. capital cost, leasing cost of computer and other peripheral devices.
- (ii) Installation Costs - new building if necessary, i.e. installation in a new computer room.
- (iii) Development Costs – i.e. software consultancy and change over costs.
- (iv) Personnel Costs – i.e. staff training, staff recruitment/relocation, staff salaries, allowances, pensions, redundancy payments and overheads.
- (v) Operating Costs – These will comprise: -
 - ▶ Consumable materials like tapes, diskettes and stationeries
 - ▶ Maintenance cost
 - ▶ Insurance/power/telephone
 - ▶ Miscellaneous costs.

(i) EQUIPMENT: The equipment needed to actualize the project are:

	₦
a. 3 personal Computers @ N100, 000	= 300, 000
b. Microsoft Visual Studio	= 40, 000
c. 3UPS @ N50, 000	= 150, 000
d. 3 stabilizers (1000 V)@ N5000	= 15, 000
e. 3 printers @ N70, 000	<u>= 210, 000</u>
	715, 000
(ii) INSTALLATION:	= 30, 000
(iii) DEVELOPMENT:	= 100, 000
(iv) TRAINING)	= 300, 000
(v) OPERATING COST	
▶ Maintenance	= 50, 000
▶ Power/phone	= 100, 000
▶ Stationeries	= 100,000
	<hr/>
	=250,000
GRAND TOTAL	= 1, 395, 000

The proposed system would require about ₦1, 370, 000 to implement. This may appear to be high. However, this cost is

quite recoverable in the long run in terms of both savings and better user satisfaction.

3.3.1 BENEFITS OF THE PROPOSED SYSTEM.

The benefits that could be derived from the new system include:

- (i) Elimination or reduction of data redundancy (the unnecessary storing of data in more than one place) by creating a single pool of data.
- (ii) Elimination or reduction of data inconsistency i.e. maintaining consistency of the same data in various files.
- (iii) Enhancement of security of data by denying access to data by unauthorized persons.
- (iv) Easy preparation of summaries and report.
- (v) Enhancement of access to, and retrieval of specific information to meet specific demands.
- (vi) Provision of backups for lasting archiving.
- (vii) Creation of room for easy updating of data.

3.4 SYSTEM DESIGN

The purpose of the system design is to work from the requirement specification to produce a system specification. The system specification will be a detailed set of input

document, forms and report layout, which will provide details of the feature of the new system. The specification will therefore contain the details of what the new system is expected to do and how it will achieve this goal.

It is also conventional at this stage to define the outline of how to solve the problem. The outline is usually in the form of an algorithm. An algorithm is a description of the step-by-step procedure of solving a particular problem.

There are many ways of implementing algorithms. These are, flowchart, pseudocodes (i.e. structured English), Nassi – shneiderman structured flow diagram (NSSF) and Simple English i.e. unstructured English. For this project, the simple English algorithm has been adopted. This is to facilitate better understanding and application of the program logics by users.

At this stage also, we equally determine the required input data and the output information including both the hardware and the software requirement.

The system design will therefore be discussed under three headings namely:

- (i) Input specification.
- (ii) Output specification.
- (iii) Requirements.

3.4.1 INPUT SPECIFICATION

For the Form 'J', the major input data are two fold, namely,

- (i) The particulars of licenses issued and
- (ii) The returns from the licensees.

The particulars of licenses issued will show the following records:

- (a) License number.
 - (b) Licensee.
 - (c) Address.
 - (d) State.
 - (e) Minerals.
 - (f) Vendors.
 - (g) Date issued.
 - (h) Expiry date.
 - (i) Status (i.e. new/renewal).
 - (j) Fee.
- (i) The returns from licensees will show:

- (a) Type of mineral purchased.
- (b) Weight.
- (c) Vendor.
- (d) Title number.
- (e) Means of disposal.

Two Dbase files will be created for the two groups under the following file names:

- (i) 02FJIS...DBF i.e. Form J Licenses issued in year 2002.
- (ii) 02FJRT...DBF i.e. Returns from Form J Licensees in year 2002.

These files will contain the following fields to accommodate the records. These are described below:

02FJIS...DBF has the following field description

FIELD NO	FIELD DESCRIPTION	FIELD NAME	FIELD TYPE	FIELD WIDTH	DEC
1	License Number	Lic Number	Character		

2	Holder	Holder	“		
3	Address	Address	“		
4	State	State	“		
5	Minerals	Minerals	“		
6	Vendor	Vendor	“		
7	Date issued	Date Issu	Date		
8	Expiring Date	Exp Date	“		
9	Status	Status	Character		
10	Fee	Fee	Currency		

02FJRT...DBF will have the following field description.

FIELD NO	FIELD DESCRIPTION	FIELD NAME	FIELD TYPE	FIELD WIDTH	DEC
1	Min				
2	Weight				
3	Vendors				
4	Title No.				
5	Means of disposal				

This file structure is to be used for future fields to be created. The files have been normalized to remove redundancy and replication of data.

A separate database file is also created for the active quarry and mine operators with the following filename:

02RQMO...DBF That is returns from quarry and mine operators, 2002.

02RQMO...DBF will have the following field description.

FIELD NO	FIELD DESCRIPTION	FIELD NAME	FIELD TYPE	FIELD WIDTH	DEC
1	Name of operator	Name of operator	Character		
2	State	State	"		
3	LGA	LGA	"		
4	Minerals	Minerals	"		
5	Royalty	Royalty	Currency		

3.4.2 OUTPUT SPECIFICATION

The proposed system should be capable of generating the following outputs:

- (i) Details of new licenses issued.
- (ii) Details of renewals generated.
- (iii) Details of form J holders on state basis.
- (iv) Details of form J holders according to minerals.
- (v) Details of mineral vendors.
- (vi) Details of the type and weight of minerals bought or sold.
- (vii) Details of fees and other revenues paid by each form J holder.
- (viii) List of active quarry/mine operators.
- (ix) The State/LGA where the minerals are produced.
- (x) Classification of operators by minerals mined or quarried.
- (xi) Type and quantity of mineral being produced by each operator.
- (xii) Classification of royalty payment according to companies or minerals.

3.4.3 REQUIREMENTS

These are the equipment, material and personnel that would be needed for the design and operation of the new system. They are grouped under three headings namely; hardware requirements, software requirements and human ware requirements.

3.4.3.1(a) The Hardware requirements are:

- (i) Three personal computers.
- (ii) Microsoft Visual Studio.
- (iii) Three UPS.
- (iv) Three stabilizers (1000V)
- (v) Three printers.

3.4.3.2 (b) SOFTWARE REQUIREMENT ANALYSIS AND SPECIFICATION

This is the process of establishing the services the new system should provide. It also involves specifying the behavioral characteristics and properties of the software system that is to be developed. It is infact the users' statement of requirements.

Generally, the proposed system will lead to the establishment of an automated Dbase and Database management system that will;

- (i) Eliminate or reduce data duplication.
- (ii) Eliminate data inconsistency.
- (iii) Enhance data integrity.
- (iv) Allow for the creation, deletion and update of records.
- (v) Allow multiple accesses to data by many users.
- (vi) Allow easy access to specific data items.
- (vii) Control access by unauthorized users.
- (viii) Enhance quick generation of summaries and reports.

Specifically, the new system should be able to generate different forms and levels of specific and summary reports on both the form J holders and the active Quarry and Mine operators.

The software requirements are:

- (i) Disk operating System; MS office 2000.
- (ii) DBMS package; MS Visual FoxPro 6.0.

3.4.3.3(c) HUMANWARE: This is the personnel needed for effective implementation of the new system.

3.5 FEASIBILITY

The need for another feasibility at this point cannot be over emphasized. This is because there is need to take stock at this stage in order to assure ourselves that the project is still attainable and cost effective. Here three aspects are considered, that is;

- (i) **Technical feasibility:** The question here is whether the technology is available and if available whether it is used. The technology is partially available and presently underutilized.
- (ii) **Operational feasibility:** This is to ascertain whether the proposed solution can fit in with the existing operation and whether the right information at the right time is provided to users. From every indication, it is my candid view that the proposed solution can fit in with the existing operations to give the desired output in time especially if the personnel are trained and if management is favourably disposed to investing in electronic data processing system.
- (iii) **Economic feasibility:** This has to do with the availability of funds to implement the proposed

system and whether the system can generate savings and or better user satisfaction. It is my conviction also that besides giving better user satisfaction, the long term benefit of the new system will justify its present cost.

CHAPTER FOUR

SYSTEMS DEVELOPMENT

This chapter will discuss the software to be used, its programming language and the programming details.

4.1 DATABASE MANAGEMENT PACKAGES.

There are quite a good number of database management packages available. Examples are DBASE THREE PLUS, DBASE FOUR, ORACLE, CLIPPER, MICROSOFT ACCESS AND MICROSOFT VISUAL FOXPRO 6.0.

These packages differ in brand name, services/facilities offered, user friendliness and some other enhancements.

Databases serve the purpose of organizing the data storage in a way that minimizes the repetition of information in the data set as well as provide easy and fast access to the data.

The database could be a file or a set of files comprising of records, which consist of one or more fields or variables.

Database management system is the software that manages the database. It could construct, maintain (i.e. add, delete or

amend records), process a database by providing facilities for different types of file processing namely:

- Process a complete file (serially or sequentially).
- Process required records (selective, Sequential or random).
- Retrieve individual records.

Database management system provides security for data in the base by:

- Protecting data against unauthorized access.
- Safeguarding data against corruption.
- Providing recovery and restart facilities after hardware or software failure.

It also keeps statistics of use made of the data in the base, removes redundant data, allows data that is frequently used to be kept in a readily accessible form so that time is saved.

4.2 MICROSOFT VISUAL FOXPRO 6.0

The Microsoft Visual FoxPro 6.0 will be used to develop the database software for this project.

Visual FoxPro is a relational database management system (RDBMS) that is totally dedicated to database and supports object oriented programming. Its object-oriented capability, which could facilitate the development of the proposed application, is its major advantage over Dbase IV and Clipper. FoxPro is also relatively cheaper than Oracle relational database management system. Besides, Oracle is technically complex and hence not commended to novices.

4.2.1 WHY VISUAL FOXPRO

The Microsoft Visual FoxPro has been considered the most Suitable Database software for this project for the following reasons:

- (i) The logic of the software developed using the Microsoft Visual FoxPro are easily understood by users because it ensures that program codes are written in modular structure with each form, report, menu or screen having individual modules.
- (ii) Microsoft Visual FoxPro enables the development of application with a graphic user interface, which is friendlier and enhances the ability of the user to

understand the application than any application using a command user interface.

- (iii) Visual FoxPro has enhanced project and database management; easier application development, improved debugging with the aid of debuggers, easier table design, enhanced query and view design, increased form functionality, more and better wizard application as well as adequate guide to developers in the various tasks.
- (iv) Visual FoxPro has a built – in data dictionary based on a data container, a table that has definitions for tables, persistent relationship between tables and connections to remote data sources such as Microsoft SQL Server and views both for local and remote data.
- (v) The Microsoft Visual FoxPro Has a general field in the table structure of its database that can be used to call in files from other applications such as MS Word, MS Excel, and graphics such as Pictures, graphs and charts.

Indeed, Microsoft, the manufacturers of Microsoft Visual FoxPro 6.0 in one of its publications summarized the new

features of visual FoxPro as “giving more of everything expected in **DBMS** – speed, power and flexibility”.

4.3 PROGRAM AND PROGRAMMING DETAILS

A good program is one that is efficient, user friendly, reliable, easily maintained, portable, cost effective and well documented. To develop a good program entails careful and adequate planning. Therefore a good program should embody the following techniques of program development:

- (i) Specification.
- (ii) Design.
- (iii) Coding.
- (iv) Testing.
- (v) Implementation.
- (vi) Maintenance.
- (vii) Documentation.

The first two stages namely, specification and design have already been discussed during the system design stage in chapter three.

3.1 CODING

From the algorithm obtained at the design stage, we proceeded to transform the outline into a form understandable by the computer. This involves coding the algorithm in a suitable language – Visual FoxPro in this case. The program details are found in the appendix.

4.3.2 TESTING

This involves testing the program with artificial and life data to ascertain whether the program will produce the expected results. This is called dry run or desk check. If the program fails to run, then it may be that there exists some logic error in the program. This could be corrected by going through the specification and the design.

This program has been tested with artificial data and the results obtained satisfy the output specifications.

4.3.3 IMPLEMENTATION

Program implementation implies making a program fully operational once it has been tested and found to be working to specification. This simply means that the program is applied to solve the problem outlined in the specification.

4.3.4 MAINTENANCE

This is necessary to take care of future changes and enhancement as the need arises.

4.3.6 DOCUMENTATION

This is a description of what the program does, how the task is achieved and how to use the program to solve the problems.

Accordingly, the program enables us to manage the database. That is, we are able to add, delete, or modify any data in the base. It is also possible to view or print specific reports.

Below are some basic steps to use the program after installation;

- I. Boot the computer system
- II. Click the start button on the desktop task bar.
- III. Click on program on start menu.
- IV. Click on Solid Minerals on the program menu.
The Solid Mineral application will appear on the screen.
- V. Make the appropriate choice on the application main menu, for example;

- (a) Click on Forms to enter data into the system.
- (b) Click on Reports to view or print any of the reports.
- (c) Click on Utilities to back up or restore data.
- (d) Click on Quit to exit the application

CHAPTER FIVE

SUMMARIES

5.1 GENERAL EVALUATION

This study has revealed the lack of comprehensive records about the nation's Solid Mineral potentials. It has also shown that the activities of solid mineral dealers and operators are not properly documented. The development of a computerized solid minerals databank has therefore been identified as a major incentive to woo big time investors into the sector.

From the study also it is evident that for any organization to remain relevant in the present information age, it must have a vibrant integrated database and management information system to deal with its different levels of information needs.

The study also revealed that current non-committed attitude of the authorities towards investment in electronic data processing system has not helped matters.

Moreover, the computerization of government departments as well as computer education has not received enough practical attention.

SUMMARY AND CONCLUSION

The strength of modern nations is no longer determined by their population or even their economic strength any more but by the level of their information technology of which the computer is the back bone. Today, information is seen as an indispensable infrastructure to investment.

The Solid Minerals sector is looked upon as the closest alternative to oil sector. This is because Nigeria is generously endowed with vital economic solid minerals that are in high demand all over the world.

However, the technology, the expertise and the finance needed to fully harness and exploit these resources are presently outside the shores of the country. This is basically because information on the nation's abundant solid mineral endowment has not been properly packaged to attract both local and foreign investors. Simply put, an investor can hardly be attracted to a sector where he does not know what to expect.

Therefore such information as the location, quantity and the quality of the minerals as well as the depth and the type of technology needed to extract the minerals will be valuable to

investors. Also, information on the particulars and the activities of operators in the sector will help the government to assess the success of her policies in the sector.

This project is a modest but practical attempt to establish a computerized Solid Minerals databank. For now, the project is limited to a database management system on Microsoft Visual FoxPro version 6.0. for Form 'J' holders as well as the active mine and quarry operators.

The developed database management system has been able to generate detailed, specific as well as summary information on the Form 'J' holders and the active minerals operators.

RECOMMENDATIONS

In this study, it has been seen that the Ministry of Solid Minerals Development lacks good record keeping culture. The consequence is the dearth of relevant data to aid and encourage interested investors in the sector.

A few recommendations based on the findings of the study are given below. It is my candid believe that if the recommendations are implemented, the Solid Minerals sector will become attractive and more investor friendly.

- The Ministry of Solid Minerals Development and in particular the Mines Department should be computerized without further delay.
- The Department should embark on intensive and purposeful training of staff in computer application.
- System designers and programmers should be employed.
- There should be proper collaboration among the state offices and the various sections in the department.
- Reasonable and regular budgets should be made for statistical activities.

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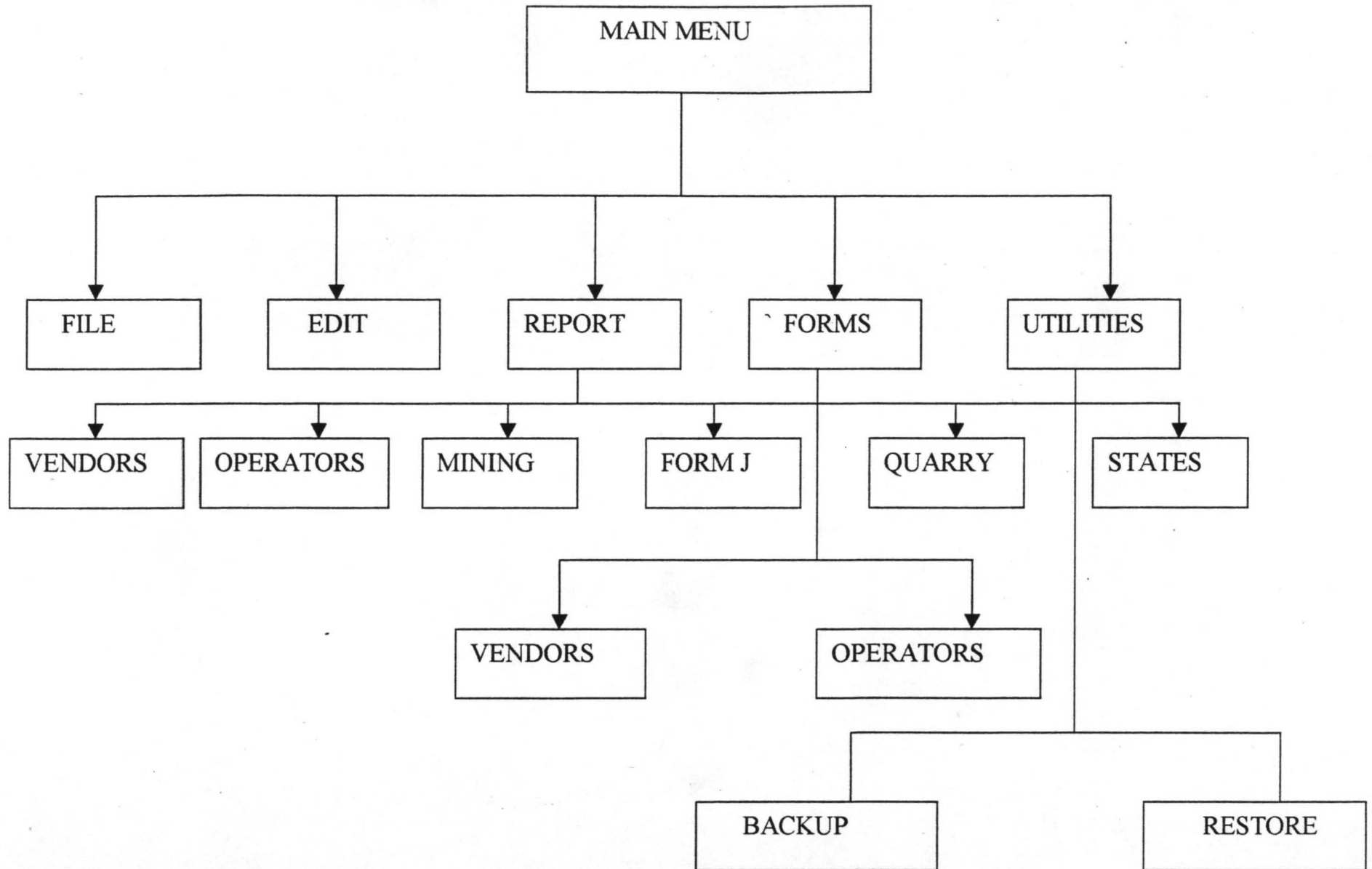
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APPENDIX A



MAIN MENU OF SOLID MINERALS PROGRAM: Description of the operation of the program

PROGRAM CODE

*

* 09/04/2002 SOLID.MPR 19:13:24

*

*

* Author's Name

*

* Copyright (C) 2002 Company Name

* Address

* City, Zip

*

* Description:

* This PROGRAM was automatically generated BY GENMENU.

*

*

Menu Definition

*

*

SET SYSMENU TO
SET SYSMENU AUTOMATIC

DEFINE PAD _msm_file OF _MSYSMENU PROMPT "\<File" COLOR
SCHEME 3 ;

 NEGOTIATE LEFT, NONE ;

 KEY ALT+F, "" ;

 MESSAGE "Creates, opens, saves, prints files or quits Visual
FoxPro"

DEFINE PAD _msm_edit OF _MSYSMENU PROMPT "\<Edit" COLOR
SCHEME 3 ;

 NEGOTIATE NONE, LEFT ;

 KEY ALT+E, "" ;

 MESSAGE "Edits text or current selection"

```
DEFINE PAD _0n5157atf OF _MSYSMENU PROMPT "\<Report"
COLOR SCHEME 3 ;
KEY ALT+R, ""
DEFINE PAD _0n5157ath OF _MSYSMENU PROMPT "\<Forms"
COLOR SCHEME 3 ;
KEY ALT+F, ""
DEFINE PAD _0n5157atj OF _MSYSMENU PROMPT "\<Utilities"
COLOR SCHEME 3 ;
KEY ALT+U, ""
DEFINE PAD _msm_tools OF _MSYSMENU PROMPT "\<Tools"
COLOR SCHEME 3 ;
NEGOTIATE NONE, LEFT ;
KEY ALT+T, "" ;
MESSAGE "Sets options, runs Wizards and other tools"
DEFINE PAD _msm_prog OF _MSYSMENU PROMPT "\<Program"
COLOR SCHEME 3 ;
NEGOTIATE MIDDLE, LEFT ;
KEY ALT+P, "" ;
MESSAGE "Runs, debugs, compiles, and suspends programs"
DEFINE PAD _msm_windo OF _MSYSMENU PROMPT "\<Window"
COLOR SCHEME 3 ;
NEGOTIATE RIGHT, LEFT ;
KEY ALT+W, "" ;
MESSAGE "Manipulates windows, displays Command and Data
Session windows"
DEFINE PAD _msm_system OF _MSYSMENU PROMPT "\<Help"
COLOR SCHEME 3 ;
NEGOTIATE NONE, RIGHT ;
KEY ALT+H, "" ;
MESSAGE "Displays Help on Visual FoxPro"
ON PAD _msm_file OF _MSYSMENU ACTIVATE POPUP _mfile
ON PAD _msm_edit OF _MSYSMENU ACTIVATE POPUP _medit
ON PAD _0n5157atf OF _MSYSMENU ACTIVATE POPUP report
ON PAD _0n5157ath OF _MSYSMENU ACTIVATE POPUP forms
ON PAD _0n5157atj OF _MSYSMENU ACTIVATE POPUP utilities
ON PAD _msm_tools OF _MSYSMENU ACTIVATE POPUP _mtools
ON PAD _msm_prog OF _MSYSMENU ACTIVATE POPUP _mprog
ON PAD _msm_windo OF _MSYSMENU ACTIVATE POPUP _mwindow
ON PAD _msm_system OF _MSYSMENU ACTIVATE POPUP _msystem
```

```

DEFINE POPUP _mfile MARGIN RELATIVE SHADOW COLOR
SCHEME 4
DEFINE BAR _mfi_new OF _mfile PROMPT "\<New...";
    KEY CTRL+N, "Ctrl+N";
    MESSAGE "Creates a new file"
DEFINE BAR _mfi_open OF _mfile PROMPT "\<Open...";
    KEY CTRL+O, "Ctrl+O";
    MESSAGE "Opens an existing file"
DEFINE BAR _mfi_close OF _mfile PROMPT "\<Close";
    MESSAGE "Closes the current file"
DEFINE BAR _mfi_clall OF _mfile PROMPT "Close All";
    MESSAGE "Closes all windows"
DEFINE BAR _mfi_sp100 OF _mfile PROMPT "\-"
DEFINE BAR _mfi_save OF _mfile PROMPT "\<Save";
    KEY CTRL+S, "Ctrl+S";
    MESSAGE "Saves changes to the current file"
DEFINE BAR _mfi_savas OF _mfile PROMPT "Save \<As...";
    MESSAGE "Saves changes to the current file with a new name"
DEFINE BAR _mfi_saveashtml OF _mfile PROMPT "Save As \<HTML..."
;
    MESSAGE "Saves the current file as HTML"
DEFINE BAR _mfi_revrt OF _mfile PROMPT "\<Revert";
    MESSAGE "Reverts the current file to the last saved version"
DEFINE BAR _mfi_sp200 OF _mfile PROMPT "\-"
DEFINE BAR _mfi_import OF _mfile PROMPT "\<Import...";
    MESSAGE "Imports a Visual FoxPro file or a file from another
application"
DEFINE BAR _mfi_export OF _mfile PROMPT "\<Export...";
    MESSAGE "Exports a Visual FoxPro file to another application's
file"
DEFINE BAR _mfi_sp300 OF _mfile PROMPT "\-"
DEFINE BAR _mfi_pgset OF _mfile PROMPT "Page Set\<up...";
    MESSAGE "Changes the page layout and printer settings"
DEFINE BAR _mfi_prevu OF _mfile PROMPT "Print Pre\<view";
    MESSAGE "Displays full pages as they will be printed"
DEFINE BAR _mfi_sysprint OF _mfile PROMPT "\<Print...";
    KEY CTRL+P, "Ctrl+P";
    MESSAGE "Prints a text file, report, label, contents of the Command
window, or contents of the Clipboard"
DEFINE BAR _mfi_send OF _mfile PROMPT "Sen\<d...";

```

```

MESSAGE "Displays Mail window for sending e-mail"
DEFINE BAR _mfi_sp400 OF _mfile PROMPT "\-"
DEFINE BAR _mfi_quit OF _mfile PROMPT "E\<xit" ;
MESSAGE "Quits Visual FoxPro"

DEFINE POPUP _medit MARGIN RELATIVE SHADOW COLOR
SCHEME 4
DEFINE BAR _med_undo OF _medit PROMPT "\<Undo" ;
KEY CTRL+Z, "Ctrl+Z" ;
MESSAGE "Undoes the last command or action"
DEFINE BAR _med_redo OF _medit PROMPT "Re\<do" ;
KEY CTRL+R, "Ctrl+R" ;
MESSAGE "Repeats the last command or action"
DEFINE BAR _med_sp100 OF _medit PROMPT "\-"
DEFINE BAR _med_cut OF _medit PROMPT "Cu\<t" ;
KEY CTRL+X, "Ctrl+X" ;
MESSAGE "Removes the selection and places it onto the Clipboard"
DEFINE BAR _med_copy OF _medit PROMPT "\<Copy" ;
KEY CTRL+C, "Ctrl+C" ;
MESSAGE "Copies the selection onto the Clipboard"
DEFINE BAR _med_paste OF _medit PROMPT "\<Paste" ;
KEY CTRL+V, "Ctrl+V" ;
MESSAGE "Pastes the contents of the Clipboard"
DEFINE BAR _med_pstlk OF _medit PROMPT "Paste \<Special..." ;
MESSAGE "Pastes the Clipboard contents as a linked object,
embedded object, or other object type"
DEFINE BAR _med_clear OF _medit PROMPT "Cle\<ar" ;
MESSAGE "Removes the selection and does not place it onto the
Clipboard"
DEFINE BAR _med_sp200 OF _medit PROMPT "\-"
DEFINE BAR _med_slcta OF _medit PROMPT "Se\<lect All" ;
KEY CTRL+A, "Ctrl+A" ;
MESSAGE "Selects all text or items in the current window"
DEFINE BAR _med_sp300 OF _medit PROMPT "\-"
DEFINE BAR _med_find OF _medit PROMPT "\<Find..." ;
KEY CTRL+F, "Ctrl+F" ;
MESSAGE "Searches for specified text"
DEFINE BAR _med_finda OF _medit PROMPT "Find A\<gain" ;
KEY CTRL+G, "Ctrl+G" ;
MESSAGE "Repeats the last search"

```

```
DEFINE BAR _med_repl OF _medit PROMPT "R\<eplace...";
  KEY CTRL+L, "Ctrl+L" ;
  MESSAGE "Replaces specified text with different text"
DEFINE BAR _med_sp400 OF _medit PROMPT "\-"
DEFINE BAR _med_insob OF _medit PROMPT "\<Insert Object...";
  MESSAGE "Embeds an object in a General field type"
DEFINE BAR _med_obj OF _medit PROMPT "\<Object...";
  MESSAGE "Edits the selected object"
DEFINE BAR _med_link OF _medit PROMPT "Lin\<ks...";
  MESSAGE "Opens linked files or changes links"
DEFINE BAR _med_sp500 OF _medit PROMPT "\-"
DEFINE BAR _med_pref OF _medit PROMPT "Prope\<rties...";
  MESSAGE "Set editor properties"
```

```
DEFINE POPUP report MARGIN RELATIVE SHADOW COLOR
SCHEME 4
```

```
DEFINE BAR 1 OF report PROMPT "Vendors"
DEFINE BAR 2 OF report PROMPT "Operators"
DEFINE BAR 3 OF report PROMPT "Mining"
DEFINE BAR 4 OF report PROMPT "Form J"
DEFINE BAR 5 OF report PROMPT "Quarry"
DEFINE BAR 6 OF report PROMPT "States"
ON SELECTION BAR 1 OF report ;
  DO _0n5157avp ;
  IN LOCFILE("..\SOLIDMINERALS\SOLID"
,"MPX;MPR\FXP;PRG" ,"WHERE is SOLID?")
ON SELECTION BAR 2 OF report ;
  DO _0n5157avt ;
  IN LOCFILE("..\SOLIDMINERALS\SOLID"
,"MPX;MPR\FXP;PRG" ,"WHERE is SOLID?")
ON SELECTION BAR 3 OF report ;
  DO _0n5157avx ;
  IN LOCFILE("..\SOLIDMINERALS\SOLID"
,"MPX;MPR\FXP;PRG" ,"WHERE is SOLID?")
ON SELECTION BAR 4 OF report ;
  DO _0n5157aw0 ;
  IN LOCFILE("..\SOLIDMINERALS\SOLID"
,"MPX;MPR\FXP;PRG" ,"WHERE is SOLID?")
ON SELECTION BAR 5 OF report ;
  DO _0n5157aw4 ;
```

```
IN LOCFILE("..\SOLIDMINERALS\SOLID"
,"MPX;MPR|FXP;PRG" ,"WHERE is SOLID?")
ON SELECTION BAR 6 OF report ;
DO _0n5157aw7 ;
IN LOCFILE("..\SOLIDMINERALS\SOLID"
,"MPX;MPR|FXP;PRG" ,"WHERE is SOLID?")
```

```
DEFINE POPUP forms MARGIN RELATIVE SHADOW COLOR
SCHEME 4
```

```
DEFINE BAR 1 OF forms PROMPT "Vendors"
DEFINE BAR 2 OF forms PROMPT "Operators"
ON SELECTION BAR 1 OF forms ;
```

```
DO _0n5157awf ;
IN LOCFILE("..\SOLIDMINERALS\SOLID"
,"MPX;MPR|FXP;PRG" ,"WHERE is SOLID?")
ON SELECTION BAR 2 OF forms ;
DO _0n5157awj ;
IN LOCFILE("..\SOLIDMINERALS\SOLID"
,"MPX;MPR|FXP;PRG" ,"WHERE is SOLID?")
```

```
DEFINE POPUP utilities MARGIN RELATIVE SHADOW COLOR
SCHEME 4
```

```
DEFINE BAR 1 OF utilities PROMPT "\<Backup"
DEFINE BAR 2 OF utilities PROMPT "R\<estore"
ON SELECTION BAR 1 OF utilities ;
```

```
DO _0n5157awq ;
IN LOCFILE("..\SOLIDMINERALS\SOLID"
,"MPX;MPR|FXP;PRG" ,"WHERE is SOLID?")
ON SELECTION BAR 2 OF utilities ;
DO _0n5157awu ;
IN LOCFILE("..\SOLIDMINERALS\SOLID"
,"MPX;MPR|FXP;PRG" ,"WHERE is SOLID?")
```

```
DEFINE POPUP _mtools MARGIN RELATIVE SHADOW COLOR
SCHEME 4
```

```
DEFINE BAR 1 OF _mtools PROMPT "\<Wizards" ;
MESSAGE "Runs the selected wizard"
DEFINE BAR _mtl_sp100 OF _mtools PROMPT "\-"
DEFINE BAR _mtl_spell OF _mtools PROMPT "\<Spelling..." ;
MESSAGE "Checks spelling"
```

```

DEFINE BAR _mst_macro OF _mtools PROMPT "M\<acros...";
    MESSAGE "Creates, deletes, or revises a keyboard macro"
DEFINE BAR _mtl_browser OF _mtools PROMPT "\<Class Browser";
    MESSAGE "Runs the Class Browser"
DEFINE BAR _mtl_gallery OF _mtools PROMPT "Component \<Gallery";
    MESSAGE "Runs the Component Gallery"
DEFINE BAR _mtl_coverage OF _mtools PROMPT "Coverage \<Profiler"
;
    MESSAGE "Runs the Coverage Profiler"
DEFINE BAR _med_beaut OF _mtools PROMPT "Beauti\<fy...";
    MESSAGE "Beautify a program"
DEFINE BAR _mti_runactivedoc OF _mtools PROMPT "\<Run Active
Document...";
    MESSAGE "Runs an Active Document"
DEFINE BAR _mtl_sp200 OF _mtools PROMPT "\-"
DEFINE BAR _mtl_debugger OF _mtools PROMPT "De\<bugger";
    MESSAGE "Displays the debugger"
DEFINE BAR _mtl_sp400 OF _mtools PROMPT "\-"
DEFINE BAR _mtl_optns OF _mtools PROMPT "\<Options...";
    MESSAGE "Changes various categories for Visual FoxPro options"
ON BAR 1 OF _mtools ACTIVATE POPUP _mwizards

DEFINE POPUP _mwizards MARGIN RELATIVE SHADOW COLOR
SCHEME 4
DEFINE BAR _mwz_table OF _mwizards PROMPT "\<Table";
    MESSAGE "Runs the Table Wizard"
DEFINE BAR _mwz_query OF _mwizards PROMPT "\<Query";
    MESSAGE "Runs the Query, Cross-Tab, Graph, Local View, and
Remote View Wizards"
DEFINE BAR _mwz_form OF _mwizards PROMPT "\<Form";
    MESSAGE "Runs the Form and One-to-Many Form Wizards"
DEFINE BAR _mwz_reprt OF _mwizards PROMPT "\<Report";
    MESSAGE "Runs the Report and One-to-Many Report Wizards"
DEFINE BAR _mwz_label OF _mwizards PROMPT "\<Label";
    MESSAGE "Runs the Label Wizard"
DEFINE BAR _mwz_mail OF _mwizards PROMPT "\<Mail Merge";
    MESSAGE "Runs the Mail Merge Wizard"
DEFINE BAR _mwz_pivot OF _mwizards PROMPT "\<PivotTable";
    MESSAGE "Runs the PivotTable Wizard"
DEFINE BAR _mwz_import OF _mwizards PROMPT "\<Import";

```



```

MESSAGE "Runs the Import Wizard"
DEFINE BAR _mwz_foxdoc OF _mwizards PROMPT "\<Documenting" ;
MESSAGE "Runs the Documenting Wizard"
DEFINE BAR _mwz_setup OF _mwizards PROMPT "\<Setup" ;
MESSAGE "Runs the Setup Wizard"
DEFINE BAR _mwz_upsizing OF _mwizards PROMPT "\<Upsizing" ;
MESSAGE "Runs the Upsizing Wizard"
DEFINE BAR _mwz_application OF _mwizards PROMPT "Applicatio\n"
;
MESSAGE "Runs the Application Wizard"
DEFINE BAR _mwz_database OF _mwizards PROMPT "Data\<base" ;
MESSAGE "Runs the Database Wizard"
DEFINE BAR _mwz_webpublishing OF _mwizards PROMPT "\<Web
Publishing" ;
MESSAGE "Runs the Web Publishing Wizard"
DEFINE BAR _mwz_all OF _mwizards PROMPT "\<All" ;
MESSAGE "Displays a list of all wizards"

```

```

DEFINE POPUP _mprog MARGIN RELATIVE SHADOW COLOR
SCHEME 4

```

```

DEFINE BAR _mpr_do OF _mprog PROMPT "\<Do..." ;
KEY CTRL+D, "Ctrl+D" ;
MESSAGE "Runs a program, application, form, report, query, or
menu"
DEFINE BAR _mpr_cancel OF _mprog PROMPT "\<Cancel" ;
MESSAGE "Stops running the current program"
DEFINE BAR _mpr_resume OF _mprog PROMPT "\<Resume" ;
KEY CTRL+M, "Ctrl+M" ;
MESSAGE "Resumes running the current suspended program"
DEFINE BAR _mpr_suspend OF _mprog PROMPT "\<Suspend" ;
MESSAGE "Suspends the currently running program"
DEFINE BAR _mpr_sp100 OF _mprog PROMPT "\-"
DEFINE BAR _mpr_compl OF _mprog PROMPT "Co\<mpile..." ;
MESSAGE "Compiles the current or selected program"

```

```

DEFINE POPUP _mwindow MARGIN RELATIVE SHADOW COLOR
SCHEME 4

```

```

DEFINE BAR _mwi_arran OF _mwindow PROMPT "\<Arrange All" ;
MESSAGE "Arranges windows as non-overlapping tiles"
DEFINE BAR _mwi_sp100 OF _mwindow PROMPT "\-"

```

```

DEFINE BAR _mwi_hide OF _mwindow PROMPT "\<Hide" ;
    MESSAGE "Hides the active window"
DEFINE BAR _mwi_hidea OF _mwindow PROMPT "Hide All" ;
    MESSAGE "Hides all windows"
DEFINE BAR _mwi_showa OF _mwindow PROMPT "Sh\<ow All" ;
    MESSAGE "Shows all hidden windows"
DEFINE BAR _mwi_clear OF _mwindow PROMPT "Clea\<r" ;
    MESSAGE "Clears text from the application workspace or the current
output window"
DEFINE BAR _mwi_rotat OF _mwindow PROMPT "C\<ycle" ;
    KEY CTRL+F1, "Ctrl+F1" ;
    MESSAGE "Cycles through all open windows"
DEFINE BAR _mwi_sp200 OF _mwindow PROMPT "\-"
DEFINE BAR _mwi_cmd OF _mwindow PROMPT "\<Command
Window" ;
    KEY CTRL+F2, "Ctrl+F2" ;
    MESSAGE "Displays the Command window"
DEFINE BAR _mwi_view OF _mwindow PROMPT "\<Data Session" ;
    MESSAGE "Displays the Data Session window"

DEFINE POPUP _msystem MARGIN RELATIVE SHADOW COLOR
SCHEME 4
DEFINE BAR _mst_hpsch OF _msystem PROMPT "Microsoft \<Visual
FoxPro Help Topics" ;
    KEY F1, "F1" ;
    MESSAGE "Locates Help topics based on keywords you enter"
DEFINE BAR _mst_sp100 OF _msystem PROMPT "\-"
DEFINE BAR _mst_msdcn OF _msystem PROMPT "\<Contents" ;
    MESSAGE "Provides access to MSDN Contents tab."
DEFINE BAR _mst_msdni OF _msystem PROMPT "\<Index" ;
    MESSAGE "Provides access to MSDN Index tab."
DEFINE BAR _mst_msdns OF _msystem PROMPT "\<Search" ;
    MESSAGE "Provides access to MSDN Search tab."
DEFINE BAR 6 OF _msystem PROMPT "\-"
DEFINE BAR _mst_techs OF _msystem PROMPT "\<Technical Support" ;
    MESSAGE "Provides information on how to obtain additional
technical help"
DEFINE BAR _helpwebvfpfreestuff OF _msystem PROMPT "Microsoft on
the \<Web" ;

```

```
MESSAGE "Launches your web browser to go to Microsoft's Web
sites"
DEFINE BAR _mst_sp200 OF _msystem PROMPT "\-"
DEFINE BAR _mst_about OF _msystem PROMPT "\<About Microsoft
Visual FoxPro..." ;
    MESSAGE "Displays version and copyright information about Visual
FoxPro"
ON BAR 6 OF _msystem ACTIVATE POPUP _webmenu

DEFINE POPUP _webmenu MARGIN RELATIVE SHADOW COLOR
SCHEME 4
DEFINE BAR _helpwebvfpfreestuff OF _webmenu PROMPT "\<Free
Stuff" ;
    MESSAGE "Opens the Visual FoxPro free stuff page"
DEFINE BAR _helpwebvfphomepage OF _webmenu PROMPT "\<Product
News" ;
    MESSAGE "Opens the Visual FoxPro product news page"
DEFINE BAR _helpwebvfpfaq OF _webmenu PROMPT "Frequently asked
\<Questions" ;
    MESSAGE "Opens the Visual FoxPro FAQ page"
DEFINE BAR _helpwebvfpnlinesupport OF _webmenu PROMPT "Online
\<Support" ;
    MESSAGE "Opens the Visual FoxPro online support page"
DEFINE BAR _helpwebfiller1 OF _webmenu PROMPT "\-"
DEFINE BAR _helpwebmsdnonline OF _webmenu PROMPT "MS\<DN
Online" ;
    MESSAGE "Opens the MSDN home page"
DEFINE BAR _helpwebvsprodnews OF _webmenu PROMPT "Visual
Studio Product News" ;
    MESSAGE "Opens the VStudio home page"
DEFINE BAR _helpwebvfpsendfeedback OF _webmenu PROMPT "Send
Feedback\<k..." ;
    MESSAGE "Opens the Visual FoxPro feedback page"
DEFINE BAR _helpwebdirectory OF _webmenu PROMPT "\<Best of the
Web" ;
    MESSAGE "Opens the Best of the Web page"
DEFINE BAR _helpwebsearch OF _webmenu PROMPT "Search the
\<Web..." ;
    MESSAGE "Opens the Search page"
```

```
DEFINE BAR _helpwebtutorial OF _webmenu PROMPT "Web \<Tutorial"
;
MESSAGE "Opens the Web Tutorial page"
DEFINE BAR _helpwebfiller2 OF _webmenu PROMPT "\-"
DEFINE BAR _helpwebmsfthomepage OF _webmenu PROMPT
"\<Microsoft Home Page" ;
MESSAGE "Opens the Microsoft home page"
```

```
* *****
*
* *_0N5157AVP ON SELECTION BAR 1 OF POPUP report
*
* * Procedure Origin:
*
* * From Menu: SOLID.MPR, Record: 48
* * Called By: ON SELECTION BAR 1 OF POPUP report
* * Prompt: Vendors
* * Snippet: 1
*
* *****
*
```

```
PROCEDURE _0n5157avp
REPORT FORM RPTVENDORS PREVIEW
```

```
* *****
*
* *_0N5157AVT ON SELECTION BAR 2 OF POPUP report
*
* * Procedure Origin:
*
* * From Menu: SOLID.MPR, Record: 49
* * Called By: ON SELECTION BAR 2 OF POPUP report
* * Prompt: Operators
* * Snippet: 2
*
* *****
*
```

```
PROCEDURE _0n5157avt
```

REPORT FORM RPTFORMJ PREVIEW

```
* *****  
* *  
* * _0N5157AVX ON SELECTION BAR 3 OF POPUP report  
* *  
* * Procedure Origin:  
* *  
* * From Menu: SOLID.MPR, Record: 50  
* * Called By: ON SELECTION BAR 3 OF POPUP report  
* * Prompt: Mining  
* * Snippet: 3  
* *  
* *****  
*
```

PROCEDURE _0n5157avx
REPORT FORM RMINING PREVIEW

```
* *****  
* *  
* * _0N5157AW0 ON SELECTION BAR 4 OF POPUP report  
* *  
* * Procedure Origin:  
* *  
* * From Menu: SOLID.MPR, Record: 51  
* * Called By: ON SELECTION BAR 4 OF POPUP report  
* * Prompt: Form J  
* * Snippet: 4  
* *  
* *****  
*
```

PROCEDURE _0n5157aw0
REPORT FORM TRPTFORMJ PREVIEW

```
* *****  
* *  
* * _0N5157AW4 ON SELECTION BAR 5 OF POPUP report
```

* *
* * Procedure Origin:
* *
* * From Menu: SOLID.MPR, Record: 52
* * Called By: ON SELECTION BAR 5 OF POPUP report
* * Prompt: Quarry
* * Snippet: 5
* *
* *****
*

PROCEDURE _0n5157aw4
REPORT FORM RQUARRY PREVIEW

* *****
* *
* * _0N5157AW7 ON SELECTION BAR 6 OF POPUP report
* *
* * Procedure Origin:
* *
* * From Menu: SOLID.MPR, Record: 53
* * Called By: ON SELECTION BAR 6 OF POPUP report
* * Prompt: States
* * Snippet: 6
* *
* *****
*

PROCEDURE _0n5157aw7
REPORT FORM RSTATES PREVIEW

* *****
* *
* * _0N5157AWF ON SELECTION BAR 1 OF POPUP forms
* *
* * Procedure Origin:
* *
* * From Menu: SOLID.MPR, Record: 56
* * Called By: ON SELECTION BAR 1 OF POPUP forms
* * Prompt: Vendors

* * Snippet: 7
* *
* *****
*

PROCEDURE _0n5157awf
DO FORM FRMVENDOR

* *****
* *
* * _0N5157AWJ ON SELECTION BAR 2 OF POPUP forms
* *
* * Procedure Origin:
* *
* * From Menu: SOLID.MPR, Record: 57
* * Called By: ON SELECTION BAR 2 OF POPUP forms
* * Prompt: Operators
* * Snippet: 8
* *
* *****
*

PROCEDURE _0n5157awj
DO FORM FRMOPERATORS

* *****
* *
* * _0N5157AWQ ON SELECTION BAR 1 OF POPUP utilities
* *
* * Procedure Origin:
* *
* * From Menu: SOLID.MPR, Record: 60
* * Called By: ON SELECTION BAR 1 OF POPUP utilities
* * Prompt: Backup
* * Snippet: 9
* *
* *****
*

PROCEDURE _0n5157awq

```
ans = MESSAGEBOX("Are you sure you want to BACKUP your files?", 4  
+ 32,"Warning")
```

```
IF ans = 6
```

```
    MESSAGEBOX("Please insert a formatted Diskette into Floppy  
Drive!", 0 + 48, "Warning")
```

```
    USE
```

```
    !COPY c:\SOLIDMINERALS\T*.* a:
```

```
    !COPY c:\SOLIDMINERALS\MINERALS.* a:
```

```
    MESSAGEBOX("You have successfully BACKUP Files ...", 0 + 48,  
"Congratulations")
```

```
ELSE
```

```
    MESSAGEBOX("Please, backup your files at the right time!", 0 + 48,  
"Warning")
```

```
ENDIF
```

```
* *****  
* *  
* * _0N5157AWU ON SELECTION BAR 2 OF POPUP utilities  
* *  
* * Procedure Origin:  
* *  
* * From Menu: SOLID.MPR, Record: 61  
* * Called By: ON SELECTION BAR 2 OF POPUP utilities  
* * Prompt: Restore  
* * Snippet: 10  
* *  
* *****  
*
```

```
PROCEDURE _0n5157awu
```

```
ans = MESSAGEBOX("Are you sure you want to RESTORE files?", 4 +  
32,"Warning!")
```

```
IF ans = 6
```

```
    MESSAGEBOX("Please insert the BACKUP Diskette into Floppy  
Drive!", 0 + 48, "Warning!")
```

```
    USE
```


SET DIRE TO a:
SET PATH TO a:

!COPY a:\T*.* c:\SOLIDMINERALS
!COPY a:\MINERALS.* c:\SOLIDMINERALS

SET DIRE TO c:\SOLIDMINERALS
SET PATH TO c:\SOLIDMINERALS

MESSAGEBOX("You have successfully RESTORED data....", 0 +
48, "Congratulations!")

ELSE

MESSAGEBOX("You can always RESTORE your files from the
backup diskettes....", 0 + 48, "Take note!")

ENDIF



**MINISTRY OF SOLID MINERALS DEVELOPMENT
NIGERIA**

FORM J

Section 88(2)

MINERALS AND MINING DECREE NO.34 OF 1999

LICENCE TO POSSESS (OR PURCHASE) MINERALS

PM. LPM 176

License is hereby granted to..... F.G.GYANG,
13 MAICHIBI ST. JOS

to possess (purchase or handle) the following minerals..... TIN/COLUMBITE

by..... T.M. HANKURI

in accordance with the provisions of the Mineral and Mining Decree of 1999 and the regulations made thereunder it for the time being in force.

Amount Paid N..... 5000.0000

Receipt No. 2001312546 of..... 10/09/2001

Date Issued..... 15/08/1999 Expiry Date..... 14/08/0200

Note: This is not an export clearance. Royalty is payable on every mineral consignment purchased as follows

.....
Honourable Minister

(see overleaf)

APPENDIX C



MINISTRY OF SOLID MINERALS DEVELOPMENT NIGERIA

LIST OF MINES AND QUARRIES IN NIGERIA

OPERATOR NAME	MINERAL	TITLE	LOCATION	LOCAL GOVT. AREA	STATE
ZENITH INTERBIZ LTD	AGGREAGATES/STONES	QUARRY LICENCE	UMUAHIA	OHAOZARA	ABIA
AGU MINES & QUARRY	AGGREAGATES/STONES	QUARRY LICENCE	UMUAHIA	OHAOZARA	ABIA
KINGSGWE LTD	AGGREAGATES/STONES	QUARRY LICENCE	UMUAHIA	OHAOZARA	ABIA
MAGNUS & TIJANI CO.LTD	AGGREAGATES/STONES	QUARRY LICENCE	UMUAHIA	ISIKWUATO	ABIA
YAMANI LTD	AGGREAGATES/STONES	QUARRY LICENCE	YOLA	YOLA	ADAMAWA
APEX VENTURES LTD	AGGREAGATES/STONES	QUARRY LICENCE	NUMAN	FURORE	ADAMAWA



MINISTRY OF SOLID MINERALS DEVELOPMENT NIGERIA

LIST OF MINING & QUARRIES LEASES ACCORDING TO STATES IN NIGERIA (ADAMAWA STATE)

NAME OF OPERATOR	MINERALS	STATE	LGA
N. P JATAU	AGGREGATES/STONES	ADAMAWA	NUMAN
MUSA NYAMEN	BASALT	ADAMAWA	NUMAN
YAMANI LTD	AGGREGATES/STONES	ADAMAWA	YOLA
APEX VENTURES LTD	AGGREGATES/STONES	ADAMAWA	NUMAN
INTEGRATED MINES LTD	AGGREGATES/STONES	ADAMAWA	DEMSA
COVENANT INVESTMENTS LTD	AGGREGATES/STONES	ADAMAWA	LAMURDE
UNITED MINERS (NIG) PLC.	AGGREGATES/STONES	ADAMAWA	LAMURDE
B.B.YARO & CO.LTD	AGGREGATES/STONES	ADAMAWA	
SPECTRA CONSORTIUM	AGGREGATES/STONES	ADAMAWA	
HOSANNA VENTURES LTD	AGGREGATES/STONES	ADAMAWA	
SPRINGFIELD MINES & QUARRY	BASALT	ADAMAWA	
A.B.CHUKKOI LTD	QUARRY	ADAMAWA	