

**F  
O  
S  
S  
I  
L  
E  
E  
N  
E  
R  
G  
Y**

DOE/BC/14847-1  
(OSTI ID: 6709)

**NATIONAL GEOSCIENCE DATA REPOSITORY SYSTEM, PHASE III:  
IMPLEMENTATION AND OPERATION OF THE REPOSITORY**

First Quarter Progress Report  
January-March, 1999

**RECEIVED  
MAY 24 1999  
OSTI**

Date Published: May 1999

Work Performed Under Contract No. DE-FG22-97BC14847

American Geological Institute  
Alexandria, Virginia



**National Petroleum Technology Office  
U. S. DEPARTMENT OF ENERGY  
Tulsa, Oklahoma**

#### **DISCLAIMER**

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, expressed or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government.

This report has been reproduced directly from the best available copy.

Available to DOE and DOE contractors from the Office of Scientific and Technical Information, P.O. Box 62, Oak Ridge, TN 37831; prices available from (423) 576-8401.

Available to the public from the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Rd., Springfield, VA 22161

## **DISCLAIMER**

**Portions of this document may be illegible  
in electronic image products. Images are  
produced from the best available original  
document.**

## **NGDRS Phase III – Implementation**

### **First Quarter Progress Report**

#### **Table of Contents**

OVERVIEW .....	1
PROGRAM ACTIVITIES SUMMARY .....	1
1.0    NGDRS Steering Committee Meetings .....	1
ESTABLISHING THE CLEARINGHOUSE.....	2
2.1    Project Status.....	2
2.2    Data Targeting and Transfer.....	3
2.2.1    Unocal/Spirit Energy Cores and Cuttings .....	3
2.2.2    Chevron Cores and Cuttings.....	3
2.3    National Geoscience Data Repository and Research Center.....	3
2.4    Discussions with National Science Foundation .....	4
UTILIZING THE METADATA REPOSITORY.....	4
3.1    Operating the Metadata Catalog.....	4
ATTACHMENT 1 – IDENTIFIABLE ORGANIZATIONS ASSESSING THE NGDRS .....	7
Companies.....	7
Universities .....	8
Foreign Countries – Undifferential Organizations .....	9
Government Agencies.....	9
Organizations .....	9



# NGDRS Phase III — Implementation

## First Quarter Progress Report

April 1999

### Overview

The NGDRS steering committee met at Chevron's offices on March 2, 1999 in Houston, Texas to review and discuss issues of data transfer and the future of the Stapleton prospect for establishment of a national core repository. Company representatives reaffirmed their commitment in principal to the NGDRS project.

Given the downturn in oil prices and the final results from the due diligence of the Stapleton property, AGI has decided to forego pursuing acquisition and build-out of the Stapleton Airport property. The major petroleum companies indicated that raising the \$10-12 million endowment would be difficult in the current climate. The completion of the due diligence of the property also revealed major concerns about the environmental liability associated with the property, which would require indemnification of AGI by the City of Denver. Given these complicating results, AGI officially terminated efforts regarding the Stapleton property effective March 31, 1999.

Several steering committee members put forth a proposal that the companies make their non-proprietary holdings public and list them in the NGDRS GeoTrek metadata catalog. Most of these holdings are at C&M Storage in Schulemburg, Texas. The companies are discussing methods to allow for public access to these data with C&M.

Development and operation of the metadata catalog continues since its opening on May 14, 1998. Users around the world continue to access the system. In the 1<sup>st</sup> quarter 1999, there were 1134 unique visitors to the NGDRS metadata catalog website, including 72 companies, 88 universities, and 29 government agencies representing 29 countries (Attachment 1).

### Program Activities Summary

#### 1.0 NGDRS Steering Committee Meetings

The NGDRS steering committee met at the Chevron offices in Houston, Texas on March 2, 1999. Most of the major companies, as well as the USGS, MMS, BLM, DOE, Texas BEG, and Texas Railroad Commission were represented.

The meeting focused on the viability of establishing a central core facility at the former Stapleton Airport in Denver, and the overall priorities for the NGDRS given the downturn in crude oil prices.

Three central issues were discussed:

1. The viability of establishing an endowment to support the Stapleton initiative.
2. Defining viable near-term alternatives to a central facility.
3. Setting the NGDRS priorities in the new oil price climate.

Don Paul, Chevron Vice President, initiated the discussion about the viability of raising a \$10-12 million endowment for establishing a central facility at Stapleton. Given the current oil prices and the aggressive search for less expensive core storage options, a number of companies have lowered their core storage costs sufficiently that it is substantially more economical to continue to store core compared to either transfer to an NGDRS facility or disposal. A number of other companies agreed that the required \$4 per box contribution to an endowment was too high for the current climate, though they also recognized the numbers reflect the real costs.

Marcus Milling also outlined the current status of negotiations with the Stapleton Development Corporation. At the time, AGI had established that the initial environmental liability assessment for the site was insufficient, and that the City of Denver would need to indemnify AGI for any current or future environmental liability. Additionally, the Continental Airlines lease on the facility was expiring, endangering the maintenance of the building if AGI did not move expeditiously to settlement.

The committee recognized that the need for additional storage capacity continues to exist, however, the capital required to establish the facility does not appear to be available at the current time. Given that, a recommendation was put forward to facilitate a near-term solution that would parallel and support the goals and objectives of the NGDRS mission. Bob Merrill (Spirit Energy) and Jan Van Sant (AGI Foundation) were asked to visit with C&M Storage in Schulemburg, Texas concerning use of their facility for core storage. It was proposed that AGI establish a joint operating agreement with C&M. Coupled with this initiative was a pledge by Unocal/Spirit Energy and Chevron to open substantial portions of their core holdings at C&M to the public domain and into the GeoTrek catalog until conditions improve to institute a transfer of core to the NGDRS.

As part of this effort, Unocal and Chevron have completed a substantial portion of the indexing of their holdings for inclusion into the NGDRS GeoTrek Metadata catalog. Likewise, other companies participating in the NGDRS with core held at C&M would need to catalog their holdings as well.

At the root of this initiative was a call by the steering committee for the NGDRS to broaden to promote the public access of geoscience data, and where needed, for preservation, the transfer of data into the public domain.

## **Establishing the Clearinghouse**

### **2.1 Project status**

The ongoing component projects for the NGDRS and their status:

Project Name	Project Type	Status
Metadata Repository Infrastructure	Creation of the Metadata Repository	Completed
Metadata Repository Utilization	Utilization and Operations of the Metadata	Completed
Mineral Management Services (MMS)	Electronic Database Transfer	Completed
Oklahoma Geological Survey (OGS)	Electronic Database Transfer	Completed
PGS Project	Electronic Database Transfer	Completed
Eastern Gulf Region PTTC	Electronic Database Transfer	Completed
BEG Cores and Cuttings	Electronic Database Transfer	Completed
Seismic Data Tape Conversion Project	Transfer of Digital Data	Underway
Mobil Seismic Surveys	Electronic Database Transfer	Underway
Central Core Facility Project	Transfer of Core and Cuttings	Underway
Unocal/Spirit Energy Cores and Cuttings	Transfer of Core and Cuttings	Underway
Oregon Department of Geology & Mineral Industries	Electronic Database Transfer	Underway
Chevron Cores and Cuttings	Cataloging and Opening of Data	Underway
State of Arizona Core and Well Log Records	Electronic Database Transfer	Underway
Kansas Geological Survey Project	Electronic Database Transfer	Delayed
Well Log Data Tape Conversion Project	Transfer of Digital Data	Not defined

## 2.2 Data Targeting and Transfer

### 2.2.1 Unocal/Spirit Energy Cores and Cuttings

Unocal reported that they are nearing completion of cataloging and indexing their non-proprietary cores and cuttings. Unocal has expressed interest in the transfer of cores and cuttings to the NGDRS and the listing of their non-proprietary holdings in the NGDRS metadata catalog. However, given the current situation in the oil industry, Unocal has delayed the physical transfer of the cores and cuttings, but is willing to make their non-proprietary holdings available to the public through the NGDRS metadata catalog. Once Unocal has completed indexing and an arrangement made between Unocal, AGI, and C&M Storage, the holdings will be made publicly available on the metadata catalog.

### 2.2.2 Chevron Cores and Cuttings

Chevron has agreed to index their core and cutting holdings at the C&M Storage facility. The non-proprietary cores and cuttings records will be released to the NGDRS for inclusion in the metadata catalog. Similar to Unocal, once an agreement between AGI, Chevron, and C&M Storage is reached for access to the non-proprietary data, the Chevron holdings will be made publicly accessible.

## 2.3 National Geoscience Data Repository and Research Center

AGI has completed its due diligence of the Stapleton property. The due diligence determined that substantial environmental concerns about the facility remained. Given the continued pressure on the petroleum industry from low oil prices, the steering committee also suggested that raising sufficient support for the needed endowment is not currently feasible.

Upon reviewing these circumstances, the American Geological Institute formally discontinued discussions with Stapleton Development Corporation on March 31, 1999 concerning the acquisition of the facility for use as a geoscience data repository and research center.

AGI also met with BP Amoco concerning the possible transfer of their core research facility in Houston. However, BP Amoco expressed interest in only selling the property to a company to then operate the facility for BP Amoco on a lease basis. AGI has likewise stopped pursuing the acquisition of this facility at this time.

## **2.4 Discussions with National Science Foundation**

Marcus Milling, David Applegate, and Christopher Keane met with Robert Corell of the National Science Foundation to discuss any interest NSF may have in supporting the development of a central geoscience data repository. Robert Corell detailed the requirements which the National Science Foundation would need in order to consider support for a central geoscience data repository. In particular, NSF would like to see a consortium of Universities be developed, which would be the base of developing NSF support. NSF does recognize the need for geoscience data curation, particularly as a number of major NSF programs generate cores and cuttings and are required by grant conditions to preserve the data. Corell recommended that AGI open discussions with the Drilling, Observation and Sampling of Earth's Continental Crust, Incorporated (DOSECC), an NSF supported consortium of 48 Universities and National Laboratories. DOSECC has and is continuing to produce new cores and cuttings, all in need of curation.

AGI has made initial contact with DOSECC and will be making a presentation about the NGDRS and opening formal discussions with the DOSECC Board of Directors concerning collaboration between the two projects during the DOSECC Annual Meeting in June, 1999.

## **Utilizing the metadata repository**

### **3.1 Operating the Metadata Catalog**

The operation of the metadata catalog continued during the first quarter of 1999. The system experienced growth in overall traffic. The following databases are currently available on the metadata catalog:

- Fairfield Seismic
- A2D Well Logs
- MMS Well Logs
- Alabama Eastern Gulf PTTC Well Logs
- BEG Well Logs
- BEG Cores
- Oklahoma Geological Survey Cores
- MMS Block and Lease Boundaries

PGS has opted to delay listing their holdings on the metadata catalog until they can provide sufficient quantity and quality of sample seismic sections for online viewing. A number of additional vendors are considering adding their catalogs to the NGDRS system as well.

The seven and one-half month 1998 and first quarter 1999 statistics for the use of the metadata catalog and the associated web pages concerning the NGDRS are as follows (attachment 1):

	<b>1998</b>	<b>January</b>	<b>February</b>	<b>March</b>	<b>YTD</b>
<b>NGDRS Website Hits</b>	30,911	6844	5904	6398	19,143
<b>Unique Visitors to NGDRS</b>	1331	344	334	456	1134
<b>Unique GeoTrek Users</b>	167	23	27	24	74
<b>Number of GeoTrek Searches</b>	2000	221	290	96	607
<b>Total GeoTrek databases transactions</b>	17,930	789	1196	605	2590



# Attachment 1

## Identifiable Organizations Accessing the NGDRS

### January – March 1999

#### Companies

Amoco	Norsk Hydro A/S
Arco	Northrup Grumman
Bankers Trust - UK	Optum Software
Benchmark Environmental Consultants	PanEnergy Corporation
Boeing	PEMEX
Buena Ventura - Peru	Petris
Burlington Northern Santa Fe Corporation	Phillips Petroleum
CADVision	Price Waterhouse
Caterpillar	Questa Engineering
Chevron	Randall and Dewey
Chevron – Canada	Roy F. Weston
Chubb Group of Insurance Companies	Royal Dutch Shell – Netherlands
CNF Transportation	SAS Institute Inc
Cominco, Ltd.	Schlumberger
Crestar Energy	SCS Engineers
Den norske stats oljeselskap a.s. (STATOIL)	SDC Consulting
Digimarc Corporation	Shell Oil - UK
Digital Equipment Corporation	Shell Oil - US
Dupont	Shigehiro Shimaba
Ecology and Environment, Inc.	Southern California Edison
EDS	Sovereign-Hill Software
EEX	SPOT-Image – France
ELF Exploration	Sundstrand Corporation
Enron	TECO Energy
Enterprise Oil PLC – UK	Texaco
ERIM International	Thompson and Thompson
ESRI, Inc.	Total
Exxon	Ultra Petroleum
Fairfield Industries	Western Atlas
Gardere and Wynn	Western Mining Corporation – Australia
General Dynamics	
Greentree Financial Corporation	
Hercules Incorporated	
Hughes STX Corporation	
IBM	
ICF Kaiser	
IT Corporation	
Jefferies and Company	
L'Air Liquide, S.A.	
Lockheed-Martin Corporation	
Lucent Technologies	
Morgan Keegan	

## Universities

Amarillo College  
Amherst College  
Arizona State University  
Austin Community College  
Austin Peay State University  
Boise State University  
Bowling Green State University  
Brandon University – Canada  
Cal State - Long Beach  
Cal State - Hayward  
College of William and Mary  
Colorado School of Mines  
Cornell University  
Dartmouth University  
Desert Research Institute  
Fort Hays State University  
Iowa State University  
John Curtin University – Australia  
Louisiana State University  
Massachusetts Institute of Technology  
McMaster University – Canada  
Miami University of Ohio  
Michigan Tech University  
Middlebury College  
Northeastern Illinois University  
Northwestern University  
Old Dominion University  
Osaka University – Japan  
Palomar Community College  
Purdue University  
Rice  
Rose-Hulman College  
Rutgers University  
San Jose State University  
Slippery Rock University  
Southern Illinois University  
St. Mary's College of Maryland  
Stanford University  
Stanislaw Staszic University of Mining and Metallurgy in Kracow, Poland  
SUNY - Oswego  
SUNY - Oneonta  
Syracuse University  
Texas A&M University  
UCLA  
Uni. Of California Fullerton  
Uni. Of California Berkeley  
University - Savoie - France  
University of Alabama  
University of Alberta - Canada  
University of Arizona  
University of Bordeaux - France  
University of California David  
University of California San Diego  
University of Cologne - Germany  
University of Colorado  
University of Frankfurt - Germany  
University of Georgia  
University of Hannover – Germany  
University of Hawaii  
University of Houston  
University of Idaho  
University of Illinois Urban-Champaign  
University of Indiana  
University of London – UK  
University of Maine  
University of Manitoba – Canada  
University of Michigan  
University of Minnesota  
University of Missouri-Rolla  
University of Nevada Reno  
University of New Hampshire  
University of North Texas  
University of Northern Iowa  
University of Oregon  
University of Paderborn - Germany  
University of Pittsburg  
University of South Carolina  
University of Southern Indiana  
University of St. Thomas  
University of Tennessee – Knoxville  
University of Texas at Austin  
University of Texas at Dallas  
University of Trier - Germany  
University of Vermont  
University of Virginia  
University of Washington  
University of West Virginia  
University of Western Ontario – Canada  
University of Wyoming  
University of Wisconsin  
Washington State University  
West Virginia University  
Western Washington University  
Wittenberg University

## Foreign Countries – Undifferential Organizations

Argentina  
Australia  
Austria  
Brazil  
Canada  
Denmark  
Finland  
France  
Germany  
Iceland  
India  
Ireland  
Japan  
Lithuania  
Malaysia  
Namibia  
Netherlands  
New Zealand  
Norway  
Poland  
Portugal  
Russia  
South Africa  
Spain  
Sweden  
Taiwan  
Trinidad and Tobago  
UK  
Venezuela

Navy Facilities Engineering Center  
Pacific Northwestern National Lab  
State of Florida  
State of Ohio  
Texas Railroad Commission  
US Army  
US Army Corp of Engineers  
US Department of Energy  
USGS - Central Region  
USGS - Eastern Region  
USGS – Western Region

## Organizations

Environmental Defense Fund  
Hudson River Clearwater Organization  
Royal Society of Chemistry  
Search for Extraterrestrial Intelligence  
The Institute for Scientific Information

## Government Agencies

Alberta Provincial Government  
Belgium Military  
Bureau of Economic Geology  
Bureau of Land Management  
Defense Logistics Agency  
General Services Administration  
Geological Survey of Finland  
Housing and Urban Development  
Indiana State Government  
Kentucky State Government  
Lawrence Livermore National Laboratory  
Los Alamos National Laboratory  
Marshall Space Flight Center  
Missouri Department of Natural Resources  
NASA Jet Propulsion Lab