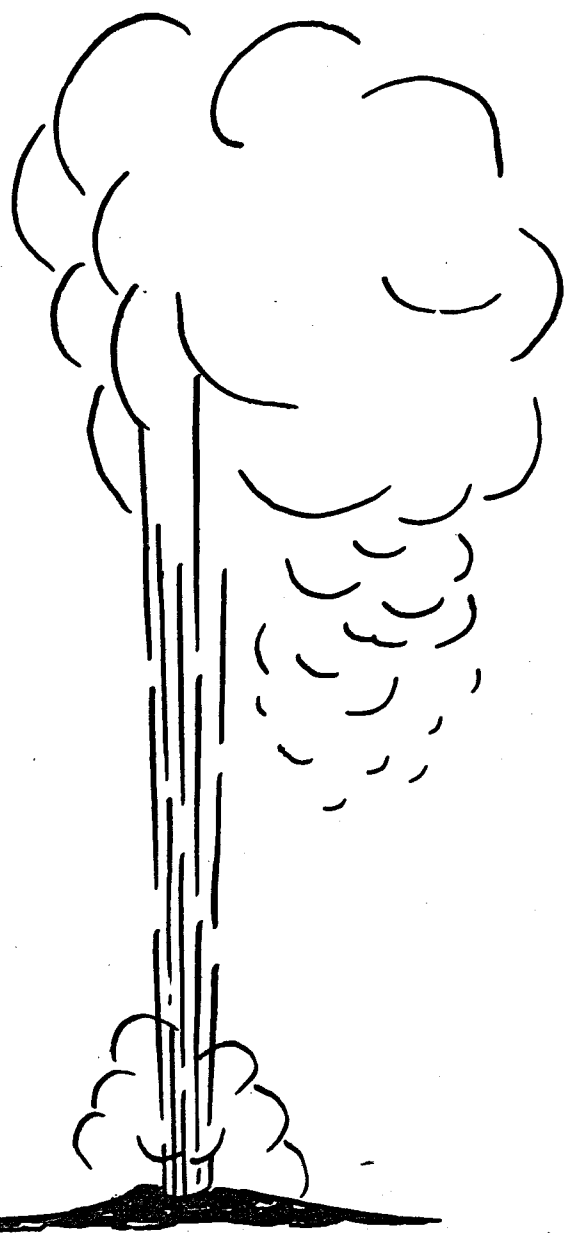


143  
8/16/79

Dr. # 3056

VPI-SU-5648-5



**EVALUATION AND TARGETING OF GEOTHERMAL  
ENERGY RESOURCES IN THE SOUTHEASTERN  
UNITED STATES**

Progress Report, October 1, 1978—March 30, 1979

By  
John K. Costain  
Lynn Glover III  
A. Krishna Sinha

Work Performed Under Contract No. ET-78-C-05-5648

Virginia Polytechnic Institute and State University  
Blacksburg, Virginia



**U. S. DEPARTMENT OF ENERGY  
Geothermal Energy**

**DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED**

**EVALUATION AND TARGETING OF GEOTHERMAL ENERGY RESOURCES  
IN THE SOUTHEASTERN UNITED STATES**

**Progress Report**

**John K. Costain, Lynn Glover III, and A. Krishna Sinha**

**Principal Investigators**

**Department of Geological Sciences**

**Virginia Polytechnic Institute and State University**

**Blacksburg, VA 24061**

**NOTICE**

This report was prepared as an account of work sponsored by the United States Government. Neither the United States nor the United States Department of Energy, nor any of their employees, nor any of their contractors, subcontractors, or their employees, makes any warranty, express 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.

**October 1, 1978 - March 30, 1979**

**PREPARED FOR THE U. S. DEPARTMENT OF ENERGY UNDER**

**CONTRACT NO. ET-78-C-05-5648**

**DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED** *EB*

## Lithologic Analysis of Sediment Samples from the Intermediate Drilling Program

Michael Svetlichny

During the period October 1, 1978 - March 15, 1979, 32 holes were completed as part of the Atlantic Coastal Plain drilling program. In each of the 300 m deep holes, drill cuttings were collected at 3.0 m intervals and sealed in airtight plastic bags to prevent sediments from drying out.

At least two attempts were made to recover core in each hole. A minimum of 15 m was cored. Recovery of unconsolidated, clean sand frequently was poor because material tends to be washed away by the coring process, and sediments were not always retained in the core barrel by the core catcher. In an effort to maximize core recovery and minimize drilling costs, one coring interval was selected to be within a thick (15 m) sequence of clayey, silty, or consolidated sediments, and the other coring attempt was made near the maximum depth of 300 m. Detailed analyses of the cores has begun, but there are no results to report as yet.

Lithologic descriptions of the drill cuttings have been completed for each hole; the results are presented as a table following this text. The descriptions are based on Folk's (1974) classification. Each category reflects the proportion of gravel, sand, and silt plus clay in that sample. In cases where well-sorted gravel was present, a distinction was made between granules, pebbles, and cobbles. Similarly, the sand fraction was subdivided into very fine, fine, medium, coarse, and very coarse sand. If silt and clay occurred in equal proportion, they were collectively referred to as mud. Whole and fragmented macrofossils were reported as shells.

Selected samples from each hole are being wet sieved with a number 230 U.S. standard sieve to determine the proportion of sediment that is finer than 4.0 phi. This work began recently so that the data set is incomplete. The results to date are included in the table that follows this text.

### ACKNOWLEDGEMENT

The following Gruy Federal Personnel assisted in sample descriptions and sieving: Kenneth Hurst, Ronald Herzick, Paul Caprio, Michael Hoffman, and Donald Hostvedt.

NO. 24 Norfolk, VA

INTERVAL (RS)	FORMATION-AGE	DESCRIPTION	COMMENTS	SAMPLES SIEVED	RATIO COARSE/FINE	PERCENT FINES
0-3.0		Fine-medium sand				
3.0-6.1		Silt with minute amount of fine sand				
6.1-42.7		Fine-medium sand	Minor shells			
42.7-51.8		Brown silty fine-medium sand				
51.8-94.5		Fine-medium sand with grey silt	Shells			
94.5-137.2		Grey silty fine-medium sand	Shells. Shell hash at 103.6-106.7			
137.2-140.2		Silty clay	Shells			
140.2-143.2			No samples			
143.2-146.3		Silty clay	Shells			
146.3-152.4		Slightly silty fine sand				
152.4-161.5		Fine sandy silt with clay				
161.5-170.7		Cored	Recovery from 163.1-170.7			
170.7-179.8		Fine sandy silt with clay	Shells			
179.8-274.3		Clay with some silt	Shells			
274.3-280.4		Fine sandy silty clay				
280.4-295.7		Silty clay with some fine sand				
295.7-306.3			No samples			
306.3-315.5		Cored	Recovery from 306.3-315.5			

C-116