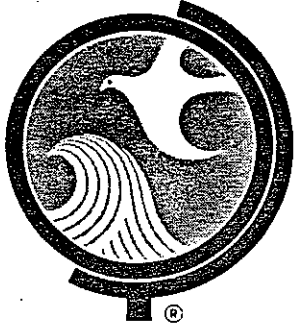


TM 84

(P)

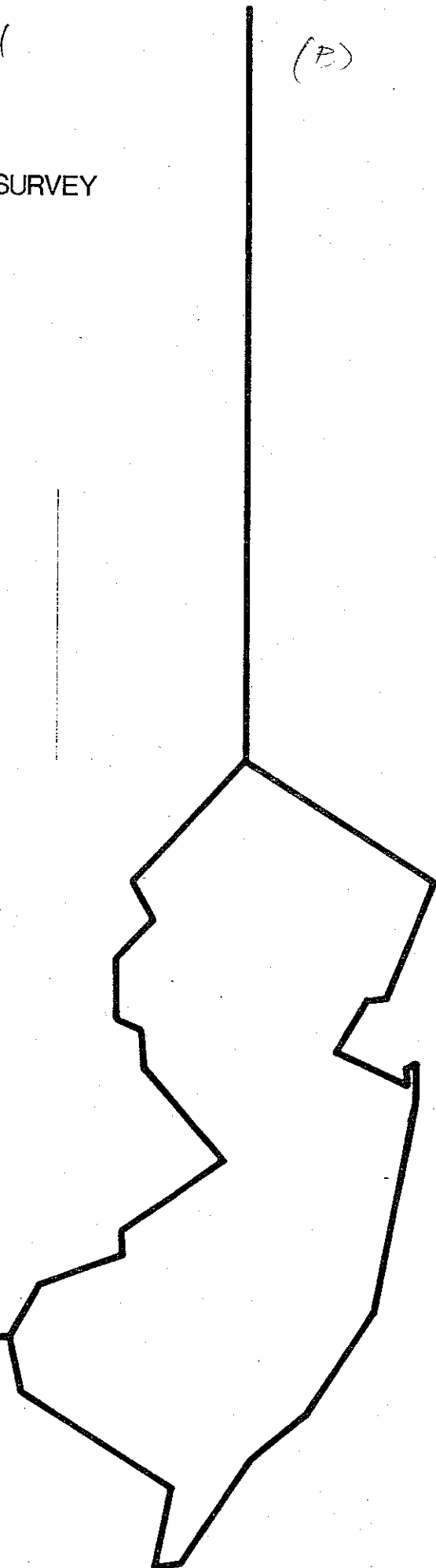


NEW JERSEY GEOLOGICAL SURVEY  
TECHNICAL MEMORANDUM

**Brief History  
of the  
New Jersey Geological Survey**

Department of Environmental Protection  
Division of Water Resources

1984



Thomas H. Kean, Governor  
Robert E. Hughey, Commissioner

BRIEF HISTORY  
OF THE  
NEW JERSEY GEOLOGICAL SURVEY

New Jersey Geological Survey  
Technical Memorandum

by

Daniel R. Dombroski, Jr., Principal Geologist

John W. Gaston, Jr., P.E., Director  
Haig F. Kasabach, Acting State Geologist

Division of Water Resources  
CN 029  
Trenton 08625

1984

## BRIEF HISTORY OF NEW JERSEY GEOLOGICAL SURVEY

In 1835 Harry Darwin Rogers was appointed State Geologist by the Governor "to provide a geological and mineralogical survey of the State of New Jersey." The final report of this survey was published in 1840. With the completion of the assigned task the office of State Geologist ceased to exist.

In 1854 William Kitchell was appointed State Geologist to complete a more extensive survey. The work proceeded until 1856 when appropriations were abruptly suspended by the Legislature. Without funding the office of State Geologist was abolished. The labors already expended seemed to be wasted effort.

In 1860 Kitchell obtained approval from the Legislature to continue work on the survey, at his own expense, under the auspices of the State Agricultural Society. He was allowed the use of "the apparatus and materials belonging to the State survey". Kitchell died suddenly in 1861. The Legislature, in 1863, authorized George H. Cook to continue Kitchell's project. Cook had been Assistant Geologist under Kitchell during the funded survey.

In 1864, after Cook presented his report "upon the Geological Survey of New Jersey and its progress during the year 1863", the Legislature restored funding, reimbursed Cook for his

1863 expenses and appointed him State Geologist. Annual reports of the State Geologist were submitted each year from 1864 to 1867. A final report, The Geology of New Jersey, by G.H. Cook, was submitted and published in 1868. This work completed the project begun by Kitchell.

Publication of Cook's Geology of New Jersey did not terminate the survey as did the Rogers' report. The Cook publication so impressed the Legislature that an even more extensive work was authorized. The results were published in the eight volume, Final Report of the State Geologist series. Publication began in 1889 with Volume I, Topography, Magnetism and Climate and ended in 1916 with Volume VIII, Surface Deposits.

The Geological Survey became permanent in 1915 with the creation of the Department of Conservation and Development. The Geological Survey became Division of Geology and Waters within this Department. The title Geological Survey was retained semi-officially, appearing on most of its publications.

Several departmental level reorganizations have occurred since 1915 (see table), the most recent being the formation of the Department of Environmental Protection in 1970.

The objectives of the Survey have always been practical in nature rather than strictly academic. The legislative act which

created the "Rogers Survey" in 1835 simply asked that "...a geological and mineralogical survey..." be made. The legislative act creating the "Kitchell Survey" in 1854 required that "...an accurate, thorough and complete geological survey... (be made)...with a full and practical description of the rocks, minerals,...and other substances...which may be valuable to the people..." This act also applied to the resumption in 1863 by Cook and the continuation to present.

In New Jersey, the most pressing geologic needs are related to water. For that reason the Survey is currently part of the Division of Water Resources within the Department of Environmental Protection. The Survey had become involved in the study of both surface and ground water as early as 1874 when water pollution became a concern, especially in heavily populated areas. The Survey's research on artesian water helped provide adequate, safe water supplies for the expanding centers of population.

Within recent years water pollution and other environmental problems have demanded increasing geologic expertise within the Division of Water Resources. The Bureau of Ground Water Management, which performed functions in both ground water pollution and ground water supply, had its own ground water geologists. In 1983 the ground water geology functions of this Bureau were merged with the functions of the Geological Survey to

form the Geological Survey Element within the Division of Water Resources. Frank J. Markewicz, Acting State Geologist, became head of the new Element. Haig F. Kasabach, formerly Chief of the Bureau of Ground Water Management, became Deputy State Geologist.

In 1984 the functions of the Survey were reorganized among three bureaus 1) Geology and Topography 2) Ground Water Pollution Analysis, and 3) Ground Water Resources Evaluation. Haig F. Kasabach was appointed Acting State Geologist.

Cooperative programs between the New Jersey and United States Geological Surveys have existed since the early days of the New Jersey Survey. Five geologic folios covering New Jersey areas, for example, were co-authored by the two surveys in the early 1900's.

Cooperative programs were also carried out with other state agencies. The Division of Water Policy and Supply published portions of the Survey's work in its Special Report series.

The maps and publications produced by the Survey largely reflect its practical objectives. A topographic program of the geologic survey began almost concurrently with the geologic program. The topographic survey produced the base maps necessary to the geologic investigations. It also provided maps of the

state to citizens and to industry, commerce and agriculture. The entire state was mapped at a scale of one mile to the inch. A two thousand foot to the inch series was started but never completed since it duplicated the U.S.G.S efforts. A mile to the inch series is still available but is no longer being revised. The Topographic Survey currently maintains about 6,000 horizontal and vertical control monuments of its own and also maintains the federal monumentation in the state.

Geologic publications, in addition to those already mentioned, include major reports on clays, iron mines, physical geography, glacial geology, mineralogy, botany and zoology. These reports are mainly from the Final Report series completed in 1916. A four volume paleontology series was published in about the same time period. Other major studies published in the Bulletin and Geologic Report series include geology of the Newark Basin, copper mines, Cretaceous Fossils and several county geology and ground water reports. Other studies range in diversity from soils to archaeology.

Dates	State Geologist
1835-1840	Henry D. Rogers
1841-1853	none (survey completed and published)
1854-1856	William Kitchell
1856-1860	none (appropriations withdrawn)
1860-1861	William Kitchell (at own expense)
1861-1863	none (Kitchell died)
1863-1864	George H. Cook (at own expense)
1864-1889	George H. Cook (appropriations restored)
1889-1900	John C. Smock
1901-1937	Henry B. Kummel
1937-1958	Meredith E. Johnson
1958-1980	Kemble Widmer
1981-1983	Frank J. Markewicz (acting State Geologist)
1983-pres.	Haig F. Kasabach (acting State Geologist)

Dates	Organizational Superstructure and Highlights
1835-1840	"Rogers Survey" supervised by Governor (survey completed)
1840-1854	no survey
1854-1856	"Kitchell Survey" under Governor (funding withdrawn, 1856)
1856-1860	survey suspended
1860-1861	"Kitchell Survey" continued at Kitchell's expense under State Agricultural Society (Kitchell dies, 1861)
1861-1863	survey suspended
1863-1864	"Kitchell Survey" continued by Cook at his expense under State Agricultural Society (funding restored, Cook reimbursed for 1863 expenses, 1864)
1864-1915	"Cook Survey" (continuation of "Kitchell Survey") under the board of managers of the geological survey
1915-1945	Survey under Dept. of Conservation & Development
1945-1948	" " Dept. of Conservation
1948-1970	" " Dept. of Conservation & Economic Development
1970-pres.	" " Dept. of Environmental Protection
1980	The N.J. Bureau of Geology and Topography is officially renamed The N.J. Geological Survey.
1983	The Geological Survey merged w. the Bureau of Ground Water Management to form The Geological Survey Element within the Division of Water Resources of the DEP.