Introduction

The surficial geology of the Cato 7.5 minute USGS quadrangle was mapped in 2012 as part of the Staking program. The quadrangle is located approximately 25 miles west of the city of Syracuse, in the northern part of Cayuga County. This quadrangle is adjacent to the Ithaca, Lyster, Wadsworth and Ira quadrangles which were drawn in an area currently being mapped through the Staking program. The quadrangle is one of 24 quadrangles which comprise Cayuga County, New York.

Geologic Setting

The surficial geology of this quadrangle varies widely, influenced by the Launcelot Ice Sheet, themodern topography of the quadrangle, Pleistocene sediments, and post glacial sediments. The quadrangle is currently occupied by a series of wetlands and represents a former drainage channel of meltwater from the glacier. Multiple water bodies and internal drainage features are contained within this channel. These features represent water flow beneath the ice as streams. The inner areas where the retreating ice stagnated for some time as the sediment load will disperse as it moves towards the ice.

Methodology

The surficial map was created using traditional field mapping techniques, water well records, and geophysical methods. The quadrangle was traversed by vehicle as well as foot. Sediment samples were collected at 150-foot intervals. Samples were collected between one and two meters below the surface where the ice was covered by water. A core was not used to identify the surficial materials. A total of 11 samples were collected. These samples were used to identify the surficial materials.

Conclusions

The pattern of surficial sediments is relative to the disintegrating edge of the glacier across the area. The glacier was deposited directly by the ice during deposition and retreat. As ice was retreating across the area, glacial sediments formed by meltwater channels and then filled those channels. As the ice melted, meltwater flowed across the landscape, carrying sediments that were being deposited by the glacier. The sediments formed by the retreating ice were then deposited by the glacial meltwater. As the ice melted, the sediments were then deposited by the glacial meltwater.

SYMBOLS

- Contours
- Streams
- Water Well Location
- Roads
- Water Well Location

SURFICIAL GEOLOGY OF THE CATO 7.5-MINUTE QUADRANGLE, CAYUGA COUNTY, NEW YORK

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