

NATIONAL HISTORIC LANDMARK NOMINATION

NPS Form 10-900

USDI/NPS NRHP Registration Form (Rev. 8-86)

OMB No. 1024-0018

FARM CREEK SECTION

Page 1

United States Department of the Interior, National Park Service

National Register of Historic Places Registration Form

1. NAME OF PROPERTY

Historic Name: FARM CREEK SECTION

Other Name/Site Number: FARM CREEK/ FARMDALE GEOLOGIC EXPOSURE

2. LOCATION

Street & Number: South of Highway 8 between School Street and Bittersweet Rd. Not for publication: __

City/Town: East Peoria

Vicinity: X

State: Illinois

County: Tazewell

Code: IL179

Zip Code: 61611

3. CLASSIFICATION

Ownership of Property

Private: __

Public-Local: __

Public-State: __

Public-Federal: X

Category of Property

Building(s): __

District: __

Site: X

Structure: __

Object: __

Number of Resources within Property

Contributing

__

1

__

__

1

Noncontributing

__ buildings

__ sites

__ structures

__ objects

0 Total

Number of Contributing Resources Previously Listed in the National Register: 1

Name of Related Multiple Property Listing: N/A

NATIONAL HISTORIC LANDMARK NOMINATION

NPS Form 10-900

USDI/NPS NRHP Registration Form (Rev. 8-86)

OMB No. 1024-0018

FARM CREEK SECTION

Page 2

United States Department of the Interior, National Park Service

National Register of Historic Places Registration Form

4. STATE/FEDERAL AGENCY CERTIFICATION

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this nomination request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property meets does not meet the National Register Criteria.

Signature of Certifying Official

Date

State or Federal Agency and Bureau

In my opinion, the property meets does not meet the National Register criteria.

Signature of Commenting or Other Official

Date

State or Federal Agency and Bureau

5. NATIONAL PARK SERVICE CERTIFICATION

I hereby certify that this property is:

- Entered in the National Register
Determined eligible for the National Register
Determined not eligible for the National Register
Removed from the National Register
Other (explain):

Signature of Keeper

Date of Action

NATIONAL HISTORIC LANDMARK NOMINATION

NPS Form 10-900

USDI/NPS NRHP Registration Form (Rev. 8-86)

OMB No. 1024-0018

FARM CREEK SECTION

Page 3

United States Department of the Interior, National Park Service

National Register of Historic Places Registration Form

6. FUNCTION OR USE

Historic: Landscape

Sub: Natural Feature

Current: Landscape

Sub: Natural Feature

7. DESCRIPTION

ARCHITECTURAL CLASSIFICATION: N/A

MATERIALS: N/A

Foundation:

Walls:

Roof:

Other:

NATIONAL HISTORIC LANDMARK NOMINATION

NPS Form 10-900

USDI/NPS NRHP Registration Form (Rev. 8-86)

OMB No. 1024-0018

FARM CREEK SECTION

United States Department of the Interior, National Park Service

Page 4

National Register of Historic Places Registration Form

Describe Present and Historic Physical Appearance.

The Farm Creek Section exposes sediments deposited about 75,000 to 9,000 years ago during the Pleistocene Epoch of the Quaternary Period of Earth history. The exposure, which is approximately 100 feet high and 225 feet long, is located in a stream bank cut into a hill on the south side of Farm Creek, near East Peoria in Tazewell County, Illinois. Trees cover the top and sloping sides of the hill, whereas the stream bank is mostly nonvegetated.

A modern soil has developed on top of the irregular surface of the exposure. Below this the succession of Pleistocene sediments is as follows:¹ The late Wisconsinan Richland Loess forms a continuous bed from three to seven feet thick beneath the modern soil. This is underlain by the Henry Formation composed of outwash gravels derived from the Bloomington Morainic System to the east. The 25-foot-thick Delavan Till Member of the Wedron Formation, which forms the terminal Wisconsinan (basal Woodfordian) moraine south of Peoria, lies below this. It overlies the early Woodfordian Morton Loess, which is underlain by the windblown Roxana Silt belonging to the early Wisconsinan Altonian Substage and containing the Farmdale Silt. Fossil pine and spruce pollen in this soil indicate it developed during a cool interstadial climate. Lenses of resedimented Robein Silt derived from the Roxana are present. The Roxana overlies the Sangamon Soil, which is developed on the surface of the Illinoian till.

Frank Leverett first discovered the Farm Creek Section in 1897, around which time Samuel Calvin photographed the east end of the exposure. Comparison of his photograph and the present exposure shows that the Section has changed very little in nearly 100 years. Farm Creek has moved northward slightly, and stream erosion of the exposure has ceased temporarily. Instead, sediment washed down from the top of the hill has accumulated near the center of the exposure. This minor sediment accumulation has no negative effect on the integrity of the exposure or its scientific value.

The Farm Creek Section is now located in the Farmdale Recreation Area. It is readily accessible by vehicle or on foot via an unpaved road through the recreation area. This road follows in part the route of an abandoned right-of-way of the Toledo, Peoria and Western Railroad that runs just north of and parallel to Farm Creek opposite the Farm Creek Section.

¹ Description of geological succession taken from: Follmer, L. R. & McKay, E. D., III, "Farm Creek, central Illinois: A notable Pleistocene section." Boulder: Geological Society of America. *Centennial Field Guide-North Central Section*, vol 3, D. L. Biggs (ed.), pp. 231-236, 1987

NATIONAL HISTORIC LANDMARK NOMINATION

NPS Form 10-900

USDI/NPS NRHP Registration Form (Rev. 8-86)

OMB No. 1024-0018

FARM CREEK SECTION

United States Department of the Interior, National Park Service

National Register of Historic Places Registration Form

8. STATEMENT OF SIGNIFICANCE

Certifying official has considered the significance of this property in relation to other properties:

Nationally: X Statewide: _ Locally: _

Applicable National Register Criteria: A X B X C _ D X

Criteria Considerations (Exceptions): A _ B _ C _ D _ E _ F _ G _

NHL Criteria: 2,6

NHL Theme(s): VI. Expanding Science and Technology
3. Scientific thought and theory

Areas of Significance: Science

Period(s) of Significance: 1897-1947

Significant Dates: 1897

Significant Person(s): Leverett, Frank

Cultural Affiliation: N/A

Architect/Builder: N/A

NHL Comparative Categories: XIII. Science
B. Earth Science
2. Geology

NATIONAL HISTORIC LANDMARK NOMINATION

NPS Form 10-900

USDI/NPS NRHP Registration Form (Rev. 8-86)

OMB No. 1024-0018

FARM CREEK SECTION

Page 6

United States Department of the Interior, National Park Service

National Register of Historic Places Registration Form

State Significance of Property, and Justify Criteria, Criteria Considerations, and Areas and Periods of Significance Noted Above.

The Farm Creek Section meets Criteria 2 and 6 for designation as a National Historic Landmark. It is important in the history of geology in the United States because information derived from study of the exposure was key in the development of theories about Pleistocene continental glaciation, which, for the most part, were formulated in North America. It is also significant for its association with Frank Leverett, one of America's foremost glacial geologists, who discovered it in 1879 and described and pictured it in his classic monograph *The Illinois Glacial Lobe*. This exposure figured prominently in the interpretation of multiple glaciations, the cyclicity of glacial and interglacial climatic stages, the origin of loess, and the identification of fossil or buried soils. Although many researchers contributed to the knowledge of Pleistocene glaciation, Leverett carried out the largest part of the studies and did much to unify them.¹

The Farm Creek Section is the site most intimately linked with Leverett's most significant scientific contributions and it remains important to our understanding of glacial geology. Because it was used in the formulation of basic geological concepts and for regional and national stratigraphic classification, the exposure still attracts glacial geologists, who consider it an important reference section. The period of significance for this site begins with Leverett's discovery in 1897 and ends at 1947, the fifty-year cut-off.

History

Theories of continental glaciation were developed during the second half of the nineteenth century in North America. The Farm Creek Section played a significant part in the formulation and refinement of many of these important geological concepts, thereby meeting Criterion A. The Farm Creek Section was first discovered by the eminent glacial geologist Frank Leverett in 1897. Leverett was so impressed with the geological value of the exposure that he led a field party of prominent glacial geologists, including Thomas C. Chamberlin and Samuel Calvin, there in 1898. Since that time no exposure in Illinois has attracted more attention from glacial geologists.

By the late 1890s, the concept of multiple glaciations had been largely accepted by the geological community. A controversy over the importance of fluctuations between ice advance and retreat had developed, however. One side held that the fluctuations were minor and short-lived occurring within a single glacial episode, whereas the other side believed that the intervals of ice retreat were prolonged and widespread and separated episodes of glaciation. The Farm Creek Section, which contains ample evidence of two glacial and two interglacial stages within a single 100-foot-high exposure, helped to resolve this dispute in favor of prolonged interglacial stages. The recognition of multiple glaciations led to a formal

¹ Leighton, Morris, "A notable type Pleistocene section: the Farm Creek exposure near Peoria, Illinois." Chicago: *Journal of Geology*, vol. 34, pp. 167-174, 1926; James, Edward T., ed. "Frank Leverett," *Dictionary of American Biography, Supplement 3: 1941-45*. New York: Charles Scribner's Son's, 1973. pp. 455-456.

NATIONAL HISTORIC LANDMARK NOMINATION

NPS Form 10-900

USDI/NPS NRHP Registration Form (Rev. 8-86)

OMB No. 1024-0018

FARM CREEK SECTION

Page 7

United States Department of the Interior, National Park Service

National Register of Historic Places Registration Form

stratigraphic classification of glacial and interglacial stages, half of which were named by Leverett who based one of them (Peorian) on the exposures along Farm Creek.

Pine and spruce pollen indicative of colder climates than typical interglacial forest species were found at Farm Creek. These were used to demonstrate that interstadial periods could be distinguished from interglacial periods by differences in vegetation that reflected climatic variations.

Fundamental evidence for an interglacial stage is the development of a fossil or buried soil horizon, indicating that the ice had retreated and surficial weathering of sediments took place. The concept of a buried soil is based largely on the Sangamon Soil at the top of the Illinoian till in Illinois. Although recognized some years earlier by Amos Worthen, first State Geologist of Illinois, this soil was characterized and formally named by Leverett in 1898. In doing so, he relied heavily on the exposure on Farm Creek--although the soil is named for Sangamon County. Much research on the glacial stratigraphy of Illinois is related to the Sangamon Soil, and it is recognized as the most famous Quaternary soil in North America. Leverett chose this term to identify the interruption of glaciation represented by the soil of the same name; Sangamon(ian) became widely used outside of Illinois and remains a formal interglacial stage name.

The Farm Creek Section contributed significantly to determining the origin of loess. Loess, an unconsolidated fine silt that covers much of the Midwest and locally forms steep cliffs, was first described in North America by pioneer geologist David Dale Owen in 1840. From then until the early twentieth century, North American geologists considered loess a lake deposit, even though a windblown or eolian origin had been proposed for loess in China as early as 1877. Leverett believed that at least some loess was wind-derived, but much of the work establishing the eolian nature of loess was conducted by Morris Leighton in the 1920s and 30s. Although numerous new exposures had become available to Leighton during this time period as the result of a surge of road building, he was forced to return to the Farm Creek Section for evidence. There, he found a soil horizon on loess that elsewhere had been cut off by overriding ice sheets, making the Farm Creek Section "worth going far to see" because it provided "an impressive view to the scientist" of conditions prevailing during loess accumulation.²

At the time of his death in 1943, Frank Leverett was regarded not only as the greatest American glacial geologist of his time but as one of the greatest of all time and in all countries. It is said that he contributed more than any other person to our knowledge of Midwestern glacial geology. Leverett was born in Denmark, Iowa, on March 10, 1859. He graduated with a Bachelor of Science degree from Iowa State College of Agriculture and Mechanic Arts (now Iowa State University) in Ames in 1885. The following year, Thomas C. Chamberlin, Head of the Division of Glacial Geology at the U. S. Geological Survey, hired Leverett as an assistant to continue his glacial mapping program. Leverett remained with the Survey his entire career and went on to map and describe more glacial landforms over a wider geographical area than anyone previously. He was appointed an Assistant Geologist in 1890, Geologist in 1901, and Senior Geologist in 1928. He retired from the Survey in 1929, and in 1930 he received an honorary doctorate from the University

² Leighton, Morris, The Peorian loess and the classification of the glacial drift sheets of the Mississippi Valley. Chicago: *Journal of Geology*, vol. 39, pp. 45-53, 1933.

NATIONAL HISTORIC LANDMARK NOMINATION

NPS Form 10-900

USDI/NPS NRHP Registration Form (Rev. 8-86)

OMB No. 1024-0018

FARM CREEK SECTION

Page 8

United States Department of the Interior, National Park Service

National Register of Historic Places Registration Form

of Michigan where he served as Staff Lecturer in glacial geology from 1901 until 1929. During his 43 year career, Leverett authored a greater volume of Survey publications than any other member since its founding. Among these was his classic monograph on Illinois glacial geology *The Illinois Glacial Lobe*, in which he first described the Farm Creek Section. On the basis of this and other work, Leverett contributed more to our understanding of the Quaternary history of Illinois than any other geologist. Leverett was renowned as a tireless field geologist. He spent nearly 200 days of every year walking through the Midwest observing glacial landforms and attempting to reconstruct Quaternary history. During his career, he covered more than 100,000 miles on foot³ and filled more than 300 notebooks with his detailed observations.⁴

It is fortunate that this important exposure has survived virtually unchanged for nearly a century. Glacial features which are composed of unconsolidated sediment commonly are destroyed by agriculture, succumb to natural weathering, or are mined out for natural resources such as sand and gravel. Farm Creek Section is the most complete late Pleistocene section in Illinois, and the most accessible exposure in the area. A featured stop on in many geological field trip guidebooks, it is visited regularly by students and professional geologists. The Farm Creek Section remains an important type or reference section for numerous rock-, time- and soil-stratigraphic units. It presently serves as the type section for the Farndalian Substage, the Robein Silt, the Morton Loess, and the Farndale Soil. Such type sections are important to our understanding of past studies and to the progress of future research. Farm Creek continues to stimulate new research and is important for refining and clarifying geological concepts, which evolve as new techniques and ideas present themselves. Just like an archeological site that has been only partially excavated may hold clues about our human history or prehistory, a geological exposure such as the Farm Creek section may disclose important clues to the history of Earth. Because of its contribution to the fundamental understanding of our geological past, especially to the field of glaciology, and its potential future contributions, the Farm Creek Section meets Criterion 6.

³ Hobbs, William H, "Memorial to Frank Leverett." Proceedings volume of the *Geological Society of America Annual Report* for 1943, pp. 183-193, 1944

⁴ Rieck, R. L., and Winters, H. A., "Frank Leverett—Pleistocene scholar and field worker." Kenosha: *Journal of Geological Education*, volume 29, pp. 222-227, 1981.

NATIONAL HISTORIC LANDMARK NOMINATION

NPS Form 10-900

USDI/NPS NRHP Registration Form (Rev. 8-86)

OMB No. 1024-0018

FARM CREEK SECTION

Page 9

United States Department of the Interior, National Park Service

National Register of Historic Places Registration Form

9. MAJOR BIBLIOGRAPHICAL REFERENCES

Bergquist, S. G., "Memorial to Frank Leverett." *Science*, vol. 90, pp. 312-313, 1944.

Follmer, L. R., "The Sangamon Soil in its type area—a review." Norwich, England: *Quaternary Soils*, pp. 125-165, 1978.

Follmer, L. R. & McKay, E. D., III, "Farm Creek, central Illinois: A notable Pleistocene section." *Boulder: Geological Society of America Centennial Field Guide-North Central Section*, vol 3, D. L. Biggs (ed.), pp. 231-236, 1987.

Follmer, L. R., and McKay, E. D., III, "Farm Creek: a notable Pleistocene exposure." in *Quaternary records of central and northern Illinois*, L. R. Follmer, et al. (eds.). Champaign: *Illinois State Geological Survey Guidebook 20*, pp. 21-28, 1990.

Hobbs, William H, "Memorial to Frank Leverett." Proceedings volume of the *Geological Society of America Annual Report* for 1943,

NATIONAL HISTORIC LANDMARK NOMINATION

NPS Form 10-900

USDI/NPS NRHP Registration Form (Rev. 8-86)

OMB No. 1024-0018

FARM CREEK SECTION

United States Department of the Interior, National Park Service

National Register of Historic Places Registration Form

pp.
183-
193,
1944.

James, Edward T., ed. "Frank Leverett," *Dictionary of American Biography, Supplement 3: 1941-45*. New York: Charles Scribner's Son's, 1973. pp. 455-456.

Leighton, Morris, "A notable type Pleistocene section: the Farm Creek exposure near Peoria, Illinois." Chicago: *Journal of Geology*, vol. 34, pp. 167-174, 1926.

Leighton, Morris, "The Peorian loess and the classification of the glacial drift sheets of the Mississippi Valley." Chicago: *Journal of Geology*, vol. 39, pp. 45-53, 1933.

Leverett, F., *The Illinois Glacial Lobe*. Washington, D. C.: U. S. Geological Survey Monograph 38, 1899.

Rieck, R. L., and Winters, H. A., "Frank Leverett--Pleistocene scholar and field worker." Kenosha: *Journal of Geological Education*, vol. 29, pp. 222-227, 1981.

Stanley, G. M., "Memorial to Frank Leverett." Ann Arbor: *Contributions from the Department of Geology, University of*

NATIONAL HISTORIC LANDMARK NOMINATION

NPS Form 10-900

USDI/NPS NRHP Registration Form (Rev. 8-86)

OMB No. 1024-0018

FARM CREEK SECTION

United States Department of the Interior, National Park Service

Page 11

National Register of Historic Places Registration Form

Michigan, No.
1, pp. 49-53,
1945.

Totten, S. M., and White, G. M., "Glacial geology and the North American craton: Significant concepts and contributions of the nineteenth century" in *Geologists and Ideas: A History of North American Geology*, E. T. Drake and W. M. Jordan (eds.). Boulder: Geological Society of America Centennial Special Volume I, pp. 125-141.

NATIONAL HISTORIC LANDMARK NOMINATION

NPS Form 10-900

USDI/NPS NRHP Registration Form (Rev. 8-86)

OMB No. 1024-0018

FARM CREEK SECTION

United States Department of the Interior, National Park Service

National Register of Historic Places Registration Form

Previous documentation on file (NPS):

- Preliminary Determination of Individual Listing (36 CFR 67) has been requested.
- Previously Listed in the National Register.
- Previously Determined Eligible by the National Register.
- Designated a National Historic Landmark.
- Recorded by Historic American Buildings Survey: #
- Recorded by Historic American Engineering Record: #

Primary Location of Additional Data:

- State Historic Preservation Office
- Other State Agency
- Federal Agency
- Local Government
- University
- Other (Specify Repository):

10. GEOGRAPHICAL DATA

Acreage of Property: 15 acres

UTM References:	Zone	Easting	Northing
A	16	289700	4505760
B	16	289700	4505620
C	16	289460	4505640
D	16	289440	4505820

Verbal Boundary Description:

Hill and stream bank on the south side of Farm Creek in NE 1/4, SW 1/4, SE 1/4, Section 30, T26N, R3W, Washington 7.5' quadrangle, U.S. Army Corps of Engineers Farmdale Flood Control Project (Farmdale Recreation Area), Tazewell County, Illinois. The northern and western boundaries are defined by the 590-foot elevation contour line; the eastern boundary by the 600-foot elevation contour line, and the southern boundary is marked by a line drawn between UTM points B and C.

Boundary Justification:

The boundary conforms to the original stream bank pictured in Leverett's *The Illinois Glacial Lobe*, and the hill into which the bank is cut.

NATIONAL HISTORIC LANDMARK NOMINATION

NPS Form 10-900

USDI/NPS NRHP Registration Form (Rev. 8-86)

OMB No. 1024-0018

FARM CREEK SECTION

Page 13

United States Department of the Interior, National Park Service

National Register of Historic Places Registration Form

11. FORM PREPARED BY

Name/Title: Dr. Joanne Kluessendorf
Department of Geology, University of Illinois
1301 W. Green St.
Urbana, IL 61801

Telephone: (217) 367-5916

Date: 20 August, 1991 (NR Nomination)

Edited by: Kira Badamo
National Historic Landmarks Survey
National Park Service
P.O. Box 37127, Suite 390
Washington, DC 20013-7127

Telephone: 202/343-5279