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Geophysical Survey of Wisconsin Burial Site OU-0122: Outagamie County Insane Asylum Cemetery

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Geophysical Survey of Wisconsin Burial Site OU-0122: Outagamie County Insane Asylum Cemetery

Peter N. Peregrine, Lawrence University
November, 2014

Final Report

WHS Case # 14-0321/OU
Wisconsin PLP # 14-127

Abstract:

In September and October 2014 a magnetic gradiometer survey was conducted to identify the location of individual interments at Wisconsin Burial Site OU-0122 in anticipation of developing boundary markers and new signage for the cemetery. The survey discovered that the interments were located farther to the east and south than anticipated. Some of the interments in the easternmost row, particularly those at the southern end of that row, may be in danger of exposure due to modification of the site during the construction of an adjacent roadway. It is recommended that the eastern side of the cemetery be built up to the original ground level to mitigate the danger of exposure for these interments. It is also recommended that the cemetery access path, which currently cuts across the northern portion of the cemetery, be moved to the south and west to avoid crossing interments. Finally, it is recommended that the sign identifying the cemetery, which currently is located atop at least one interment, be moved.

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Introduction and Context

The Outagamie County Asylum for the Chronic Insane opened in 1890 as part of the “Wisconsin Plan” for dealing with the mentally ill in the state. Prior to this time mentally ill citizens who did not have family or friends willing to care for them were placed in county or city poor houses, often in horrendous conditions. The “Wisconsin Plan” created a network of state hospitals and county asylums in order to separate mentally ill patients who could be treated from those who needed to be institutionalized, and to create more humane living accommodations for those who required long-term care.¹ From the time of its construction the Outagamie County Asylum received county residents who had been evaluated as “chronically insane” at the Northern State Hospital for the Insane in Oshkosh (now the Winnebago Mental Health Institute). Very few patients were paroled once committed to the Outagamie County Asylum, though some were released to family shortly before their deaths. Most died at the Asylum itself. Of those who died at the Asylum roughly 25% (133) were buried in a small cemetery on the Asylum property.²

The research reported here was undertaken to locate the graves of the 133 individuals buried in the Outagamie County Asylum for the Chronic Insane cemetery. The Asylum cemetery is catalogued as Wisconsin Burial Site OU-0122 and is located adjacent to a circular roadway used for training truck drivers on the campus of Fox Valley Technical College in Section 20, Township 21, Range 17 East, Outagamie County, Wisconsin (see Figures 1-4). The cemetery itself is raised some six feet above the adjacent roadway, which borders the cemetery to the north, east, and south. To the west of the cemetery is a large retention pond. The cemetery itself is flat and contains roughly a dozen large trees arranged in three north-south rows. These tree rows were thought to mark the rows of interments within the cemetery. The cemetery is maintained by Fox Valley Technical College and is kept mowed and clean. It is accessible to the public via a walkway from a parking lot northeast of the county medical center (see Figure 3).

Interments were placed in the cemetery from 1891 until 1948. Extant records list 133 interments and give grave numbers, but no map of the graves or of the cemetery itself has been located. There were apparently stone markers with grave numbers but these were all removed more than thirty years ago. Because the location of these interments is unknown, Outagamie County has been concerned that planned improvements to the cemetery, including a memorial, might disturb them, and sought ways to identify their locations. Professor Peter Peregrine of Lawrence University offered to undertake a geophysical survey of the cemetery to identify the location of the interments. This report describes the findings of this geophysical survey and offers recommendations based upon it.

¹ Robison, Dale W. 1980. *Wisconsin and the Mentally Ill: A History of the "Wisconsin Plan" of State and County Care, 1860-1915*. New York: Arno Press.

² Ebert, Thomas G. 1998. *Treatment of the Insane in Wisconsin: A Case Study of Two County Asylums, 1890-1933*. PhD Dissertation, University of Wisconsin, Milwaukee.

Methods

Initial geomagnetic survey of the Outagamie County Asylum for the Chronic Insane cemetery took place on September 27 and 28, 2014. Peregrine and four Lawrence University students collected geomagnetic data from nine 20 meter by 20meter grid units covering the entire mowed area of the cemetery. Peregrine returned on October 11, 2014 with two Lawrence University students to collect data from an additional two units on the south end of the cemetery and to extend the data collection area to the east beyond the mowed area of the cemetery. Long grass had prevented data collection in this area in September, but initial analyses of the data indicated that interments were likely in the un-mowed area. Fox Valley Technical College mowed this area to allow further data collection. The grid locations and survey area relative to the normally mowed section of the cemetery is shown in Figure 5.

The data themselves were collected using a Geoscan FM256 differential gradiometer. This instrument consists of two magnetometers arranged one atop the other with a 0.5 meter separation. Each magnetometer measures the earth's magnetic field and the difference between the two readings, which is equivalent to the vertical gradient of the earth's magnetic field, is recorded. The instrument is sensitive enough to measure tiny variations in the earth's magnetic field, variations that might be caused by subtle soil changes or the presence of buried materials. For this application sensitivity of the FM256 was set at 1.0 nanotesla, or about 1/25,000th of the earth's total magnetic field. Data were collected at 0.5 meter intervals along 0.5 meter spaced parallel north-south lines. Complete 20 meter by 20 meter grid units were each collected at a single time, without interruption. Zero logging was conducted before and after every grid to correct for diurnal variation in the earth's magnetic field.

The raw magnetic data were downloaded from the FM256 into the Geoplot 3.0 software package. Analyses conducted on the data involved (in the following order) (1) "clipping" to remove high and low data points more than one standard deviation from the mean; (2) "zero mean traverse" to balance the data values across the separate grids; (3) "despiking" to remove highs and lows more than two standard deviations from the mean, and (4) "interpolation" conducted twice in both the X and Y directions to improve the resolution of the data. The image resulting from this processing is presented as Figure 6. Magnetic highs appear here as darker grays; magnetic lows as lighter grays.

Results of Investigations

The grayscale map of magnetic readings indicates four rows of interments running the length of the eastern side of the cemetery. These interments are bounded on the west by a row of trees, visible in Figure 7 by a series of magnetic highs, re-colored red for better visibility. There are also magnetic highs at the northeast, southeast, and southwest corners of the area containing interments, and these are interpreted as being some form of markers that are no longer visible on the surface. Additional magnetic highs run along the eastern edge of the area containing interments, and perhaps indicate the remains of fencing.

Individual interments appear in Figure 7 as slight magnetic lows (lighter grays) surrounded by rectangular magnetic highs (darker grays). It is hypothesized that the rectangular highs are the result of nails holding together coffins and the incorporation of more organic topsoils into the ground around those coffins. It is further hypothesized that the lows are the result of a relative lack of organic topsoil within the coffins themselves (i.e. in the void where bodies are located).

Figure 7 also indicates the approximate boundaries of the cemetery area containing interments, the eastern edge of which is shown with a yellow line in Figure 8. Figure 8 indicates that the area with interments extends roughly 15 feet beyond the eastern edge of the currently mowed cemetery, and into an area with a marked slope. The green line in Figure 9 indicates the approximate edge of the currently mowed area, as well as a section of the southeastern corner of the area containing interments where the slope is quite steep. The steepness of the slope is evident in Figure 10. Indeed, this slope is steep enough that some of the interments located near it may be in danger of being exposed.

Summary and Recommendations

The geomagnetic survey found that the area containing interments in the Outagamie County Asylum for the Chronic Insane cemetery extends roughly fifteen feet farther to the east than expected. Much of this area is sloped, in some places rather steeply, leading to the possibility that some interments could be exposed by erosion. The danger that some interments might be exposed leads to the recommendation that *the entire eastern side of the area with interments be filled to the level of the currently mowed area, extending at least twenty feet to the east of where the slope now begins*. This would ensure that interments along this eastern edge would no longer be in danger of exposure through erosion, and would be in accordance with current state law.³

It is further recommended that *the area mowed be extended to include the new area of fill*, so that the entire area of the original cemetery is maintained in the same manner.

The geomagnetic survey also found that the area containing interments extends farther to the north than anticipated, and that the current access path and sign are located atop interments. It is therefore recommended that *the access path be moved to the southern end of the cemetery* to avoid directing visitors to walk across interments.

It is further recommended that *the existing sign be removed* as it is located directly atop, and may be intruding upon, an individual interment. The planned new signage might be placed at the southern end of the cemetery, but should be located at least five feet from any interments in accordance with current state law.⁴

³ *Wisconsin Statutes* §§ 157.70 (2a).

⁴ *Ibid.*

Figures

Figure 1: General location of BOU-0122 within the State of Wisconsin.

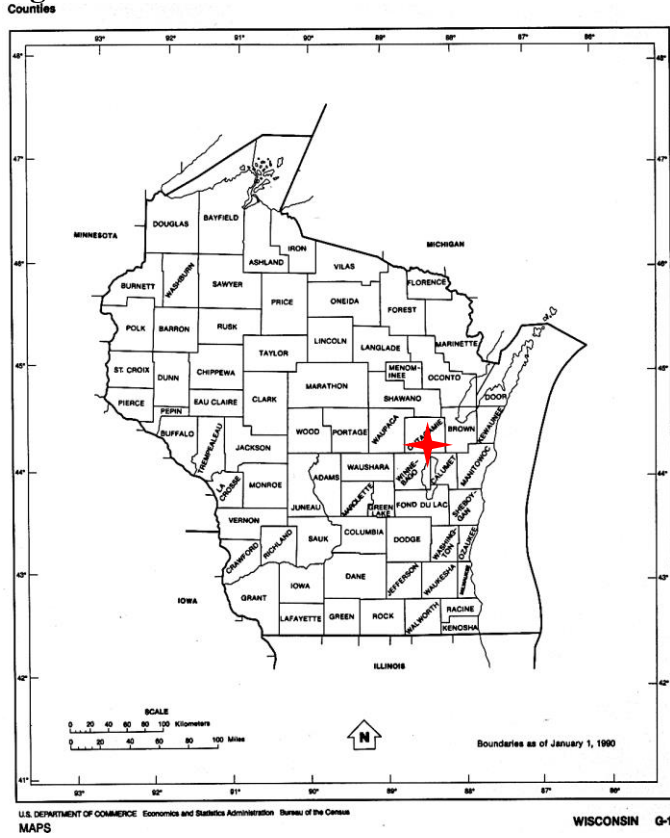


Figure 2: USGS 7.5 minute quad image showing the location of BOU-0122.

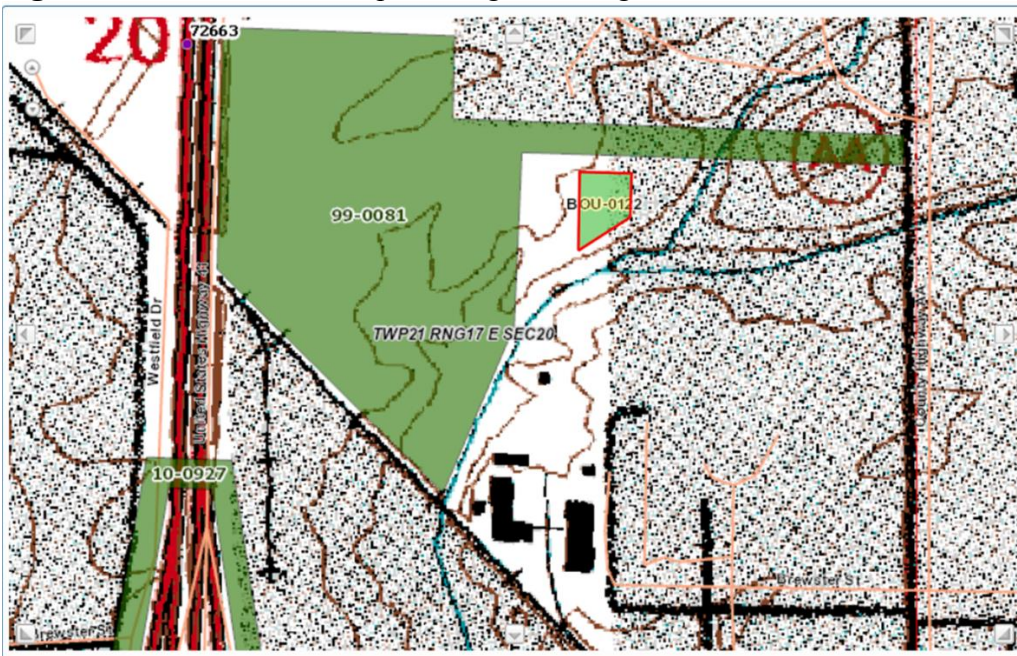


Figure 3: Areal image of BOU-0122 showing the surrounding driver training track.



Figure 4. Areal image from July 15, 1938 showing BOU-0122 and the Outagamie County Asylum for the Chronic Insane.



Figure 5. 20 meter by 20 meter survey grids superimposed upon the mowed area of the cemetery (in blue). The dotted red line shows the approximate area within the grid units from which data were collected.

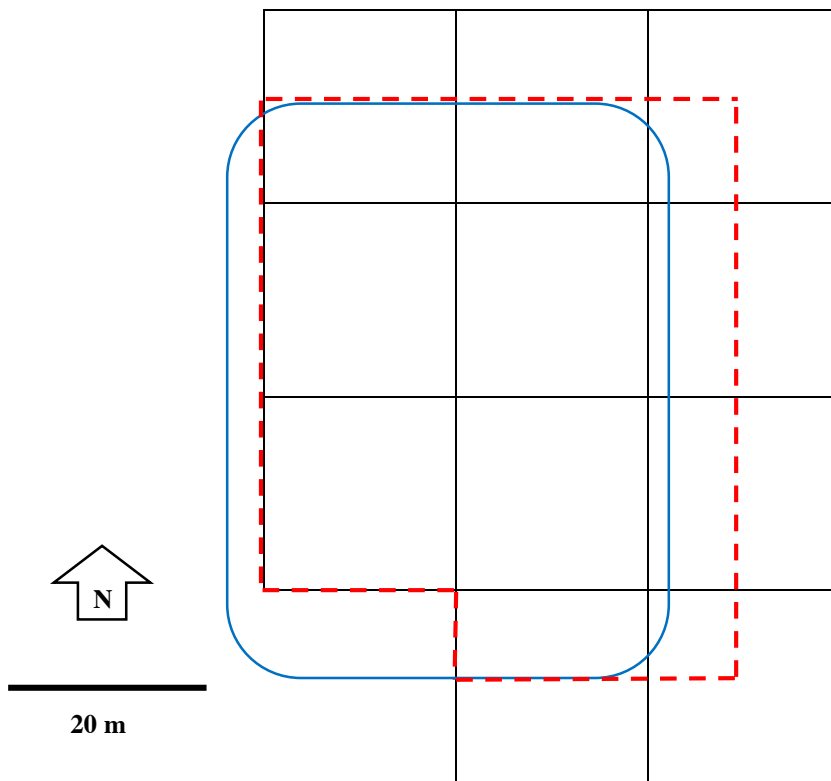


Figure 6. Grayscale plot of the magnetic data.

Outagamie County Asylum Cemetery

Geomagnetic Survey, October 2014

Peter N Peregrine, Lawrence University

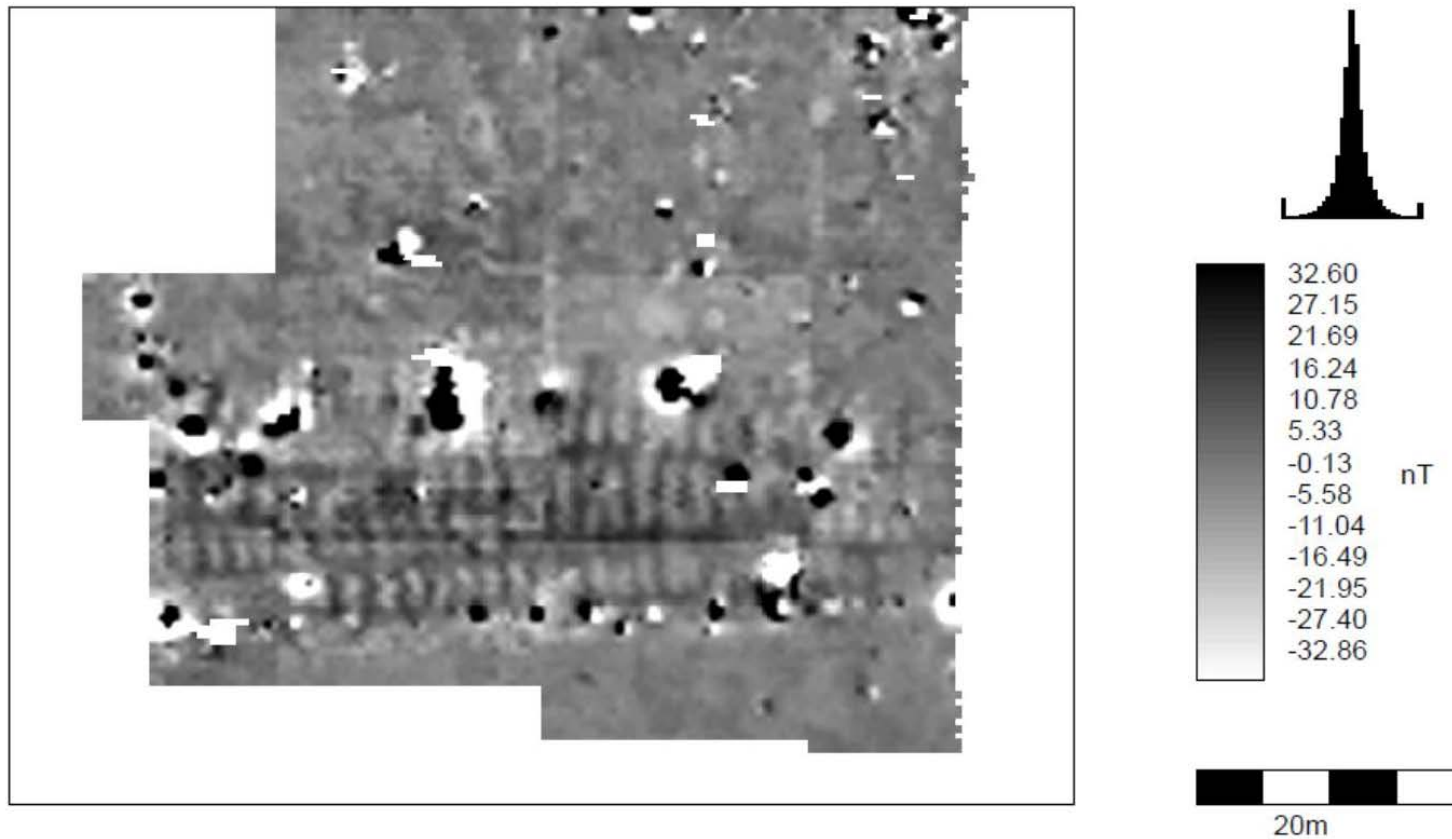


Figure 7. Grayscale plot of the magnetic data with magnetic highs re-colored red for better visibility. Darker shades indicate higher magnetic readings.

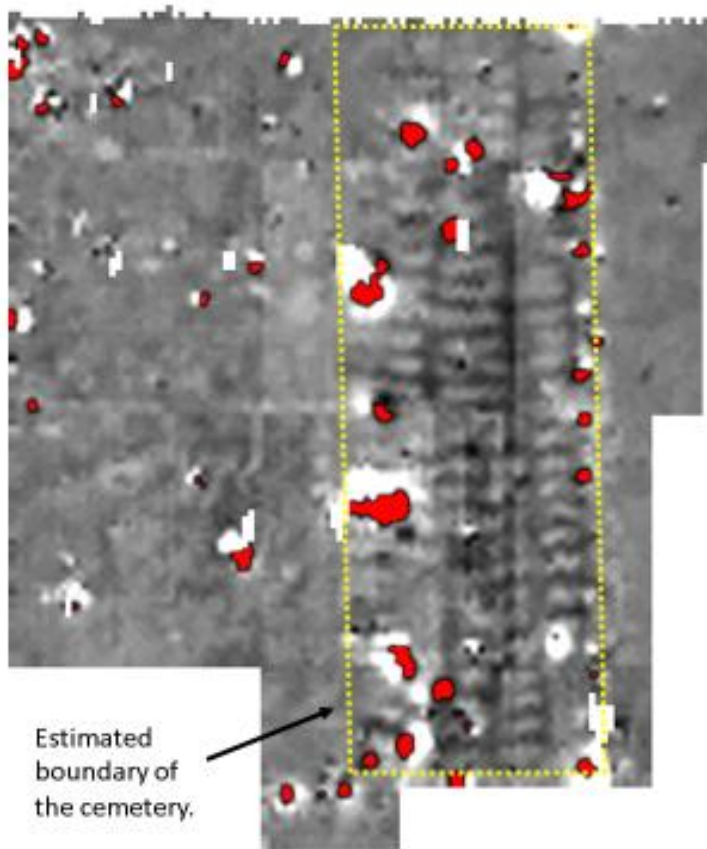


Figure 8. Cemetery area looking south from the northeast corner. The yellow line marks the approximate position of the eastern edge of interments.



Figure 9. Grayscale plot of the magnetic data showing the approximate edge of the currently mowed area and the area where erosion may expose interments in the future.

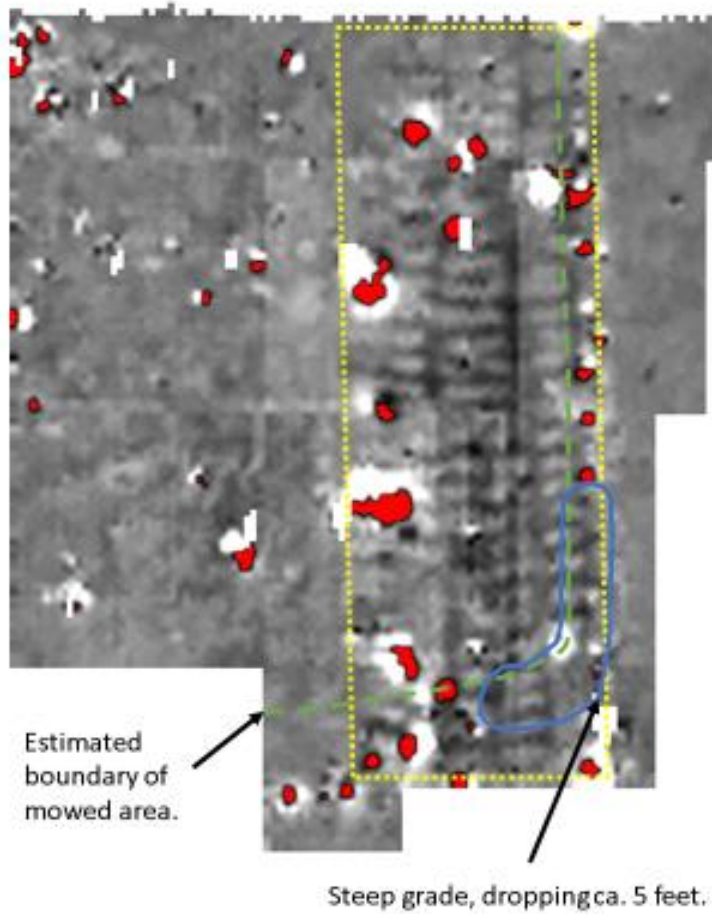


Figure 10. Looking west from the southeast corner of the cemetery. The photographer is six feet tall, and the camera is at the level of the mowed area. This steep grade may lead to interments being exposed if not corrected.

