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ARCHAEOLOGICAL SURVEY FOR THE GRAYMONT LAND TRANSFER PROJECT

Rexton Township, Mackinac County, Michigan

January 2026

Revised March 2026

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Rexton Township, Mackinac County, Michigan

106 Group Project No. 1990

SUBMITTED TO:

John Maitland
Graymont LLC
375 Graymont Road
Bellefonte, PA 16823

SUBMITTED BY:

106 Group
550 Vandalia St. #102
St. Paul, MN 55114

PRINCIPAL INVESTIGATOR:

Madeleine Bray, M.A., RPA

REPORT AUTHORS

Claire Nelson, M.A., RPA
Hollie Lincoln, Ph.D., RPA

January 2026

Revised March 2026

MANAGEMENT SUMMARY

During October 2025, 106 Group conducted an archaeological survey for the Graymont Land Transfer (Project) located in Rexton, Mackinac County, Michigan. The Project includes the activation of a 120-acre (48.6-hectare [ha]) Operating Area within the Upper Peninsula region of Michigan; this area had been previously transferred to the ownership of Graymont LLC (Graymont) from Michigan Department of Natural Resources (MI DNR) land holdings and remains subject to the land transfer agreement executed at that time. This study is being completed to comply with the terms of the 2015 Land Transaction Agreement (LTA) between Graymont and MI DNR. These terms are set forth in Exhibit D, Section 1.iv, which states that Graymont seek out, “a report prepared by a professional archeologist identifying archeologically significant sites, if any, located on or in close proximity to the proposed Operating Area and proposing appropriate measures for the protection and/or preservation of such sites or the culturally significant artifacts located on such sites.”

The project area is located in Section 24 of Township 44 N, Range 7 W, Mackinac County, Michigan. An appropriate study area for archaeology includes all areas of potential ground disturbing activities associated with the Project and includes the entire 120-acre (48.6-ha) Operating Area (study area).

106 Group previously completed an archaeological literature review and assessment for the Project in August 2025, which resulted in approximately 49 acres (20 ha) of the study area being assessed as possessing moderate to high potential to contain intact archaeological resources. Additional archaeological work was recommended within this 49-acre (20-ha) area of moderate to high potential (survey area) prior to any ground-disturbing activity.

The primary objective of the archaeological survey was to identify whether the survey area contained any intact archaeological resources. The archaeological survey included conducting an on-site visual assessment and an archaeological survey. Madeleine Bray, M.A., RPA served as Principal Investigator and the fieldwork was supervised by Claire Nelson, M.A., RPA.

106 Group has conducted an archaeological investigation on behalf of Graymont in order to fulfill the terms set forth in Exhibit D, Section 1. iv. of the 2015 LTA, which states that Graymont must seek out, “a report prepared by a professional archeologist identifying archeologically significant sites, if any, located on or in close proximity to the proposed Operating Area and proposing appropriate measures for the protection and/or preservation of such sites or the culturally significant artifacts located on such sites.”

As a result of archaeological survey, 106 Group identified one post-contact archaeological site (FS-01) within the survey area. Site FS-01 cannot be ascribed any degree of significance at this time due to a lack of additional contextual information, but is considered potentially related to previous logging activities within the area. Per the conditions of the 2015 LTA, Graymont will follow the *Archaeological Plan for Unanticipated Discovery of Cultural Resources or Human Remains during Operation* (Exhibit J of the LTA).

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1.0 INTRODUCTION

During October 2025, 106 Group conducted an archaeological survey for the Graymont Land Transfer (Project) located in Rexton, Mackinac County, Michigan. The Project includes the activation of a 120-acre (48.6-hectare [ha]) Operating Area within the Upper Peninsula region of Michigan; this area had been previously transferred to the ownership of Graymont LLC (Graymont) from Michigan Department of Natural Resources (MI DNR) land holdings and remains subject to the land transaction agreement executed at that time. This study is being completed to comply with the terms of the 2015 Land Transaction Agreement (LTA) between Graymont and MI DNR. These terms are set forth in Exhibit D, Section 1.iv, which states that Graymont seek out, “a report prepared by a professional archeologist identifying archeologically significant sites, if any, located on or in close proximity to the proposed Operating Area and proposing appropriate measures for the protection and/or preservation of such sites or the culturally significant artifacts located on such sites.”

The project area is located in Section 24 of Township 44 N, Range 7 W, Mackinac County, Michigan. An appropriate study area for archaeology includes all areas of potential ground disturbing activities associated and includes the entire 120-acre (48.6-ha) Operating Area (study area).

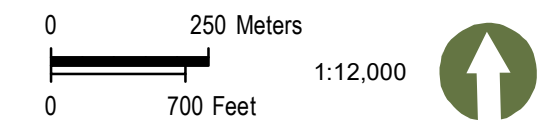
106 Group previously completed an archaeological literature review and assessment for the Project in August 2025, which resulted in approximately 49 acres (20 ha) of the study area being assessed as possessing moderate to high potential to contain intact archaeological resources (Nelson 2025). Additional archaeological work was recommended within this 49-acre (20-ha) area of moderate to high potential, constituting the survey area, prior to any ground-disturbing activity.

The primary objective of the archaeological survey was to identify whether the survey area contained any intact archaeological resources. The archaeological survey included conducting an on-site visual assessment and an archaeological survey to identify any archaeological sites within the survey area.

The following report describes the archaeological survey methodology and results for the Graymont Land Transfer Project. Madeleine Bray, M.A., RPA served as Principal Investigator and the fieldwork was supervised by Claire Nelson, M.A., RPA. Appendix A contains the 2025 archaeological literature review and desktop assessment, and Appendix B contains a list of Project personnel.

 Project Area

 Survey Area



Project Location and Survey Area

Figure 1

2.0 OBJECTIVES

The primary objective of the archaeological field survey was to identify whether the survey area contains or is likely to contain any intact archaeological resources, in fulfillment of the terms set forth in Exhibit D, Section 1.iv, of the 2015 LTA. The archaeological field survey was conducted to fulfill the 2015 LTA and in accordance with applicable professional standards, though it was not intended as a Phase I survey meeting Michigan SHPO standards under the Michigan state regulatory framework. The investigation and sampling methods were completed in accordance with guidelines outlined in *The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation*, including the section on sampling:

Reconnaissance or intensive survey methods may be employed according to a sampling procedure to examine less-than-the-total project or planning area...[enabling] characterization of both large and small areas with reduced effort...[providing] data to estimate frequencies of properties and types of properties within a specific area at various confidence levels [48 Federal Register 44716-44740] (National Park Service [NPS] 1983: 44722).

3.0 METHODS

3.1 Visual Assessment

Visual assessment was conducted to confirm or refine the results of the desktop assessment. Visual assessment was employed to gauge the archaeological potential of the study area, to identify areas of ground disturbance, and to ascertain whether above-ground features, such as earthworks or abandoned structural foundations, were present. Portions of the study area that were confirmed or identified through visual assessment as possessing moderate to high potential to contain archaeological resources were then subjected to survey methods.

3.2 Archaeological Survey

Pedestrian survey was employed during the archaeological survey in areas confirmed or identified during the visual assessment as possessing moderate to high potential to contain intact archaeological resources and where greater than 25 percent of the soil surface was visible. Survey was conducted in 10-meter (m) (33-foot [ft.]) intervals.

Shovel tests were excavated in areas identified during the visual assessment as possessing moderate to high potential to contain intact archaeological resources and where less than 25 percent of the soil surface was visible. Shovel tests were placed at intervals of 15 m (50 ft.) in a single transect down the center of a 30-m (98-ft.)-wide corridor that is situated immediately adjacent to wetland areas. Shovel tests were also placed at intervals of 30 m (98 ft.) in areas further than 30 m (98 ft.) from wetlands. As a result of the literature review and desktop assessment, this sampling method, in which shovel tests at both 15-m (50-

ft.) and 30-m (98-ft.) intervals were placed depending on the assessed archaeological potential and proximity to wetlands, was formulated. This system allowed for the most intensive sampling to be conducted in areas nearest the wetland, where sites were assessed as most likely to occur (Nelson 2025). This system also allowed for systematic shovel testing across a larger area, which supported a more informed assessment of the likelihood of sites occurring within the entire study area. Combining the use of both shovel testing intervals reduced the risk of overlooking potential site locations within areas nearest the wetlands, while also providing an efficient systematic sampling method to address the entire area assessed as possessing moderate to high archaeological potential.

Shovel tests consisted of small, circular excavations, each measuring approximately 35 to 45 centimeters (cm) (1 ft. 2 inches [in.] to 1 ft. 6 in.) in diameter. In addition to shovels, a dig bar was used to excavate compact soils. All excavated soil matrices were passed through 1/4-inch hardware mesh to ensure the consistent recovery of artifacts. Shovel tests were excavated down to the level of archaeologically sterile subsoil or until an impasse was reached, to a maximum depth of 1 m (3 ft. 3 in.) below the surface.

Survey data were recorded through standardized forms and the field director's daily log. Recorded information included: test locations and methods of testing; the numbers, types, and locations of recovered cultural materials; the depth of shovel tests and the thickness of excavated soil layers; soil textures and inclusions (both natural and cultural); and soil color according to Munsell color charts.

4.0 RESULTS

4.1 Cultural History Overview

4.1.1 Precontact Context

The Precontact context of Michigan is broadly organized into four categories based on material culture (e.g., tool use, composition, and trade), subsistence adaptations (e.g., the introduction of various cultivars, subsistence methods), and cultural practices (e.g., earthworks, societal systems, interactions) (University of Michigan 2020). These four general categories are the Paleoindian, Archaic, Woodland, and Upper Mississippian or Late Woodland periods. While each of these periods has subcategories, this overview will explain the general timeline for each of these broader periods.

4.1.1.1 Paleoindian

The Paleoindian period began approximately 11,000 to 12,000 years ago, following the retreat of the Laurentian Ice Sheet from the Upper and Lower Peninsulas, around 13,000 to 12,000 years ago (Ullman 2024). The earliest known archaeological evidence of human occupation in Michigan is present at the Belson Site, which provided artifacts from the Clovis culture, indicating the introduction of people to the Lower Peninsula around the tail end of the glacial retreat approximately 13,000 years ago (University of Michigan 2020). The earliest sites in the Upper Peninsula are from the Paleoindian period; this period is generally dated to be between 10,500 to 9,000 years ago (Anderton et al. 2002). Based on archaeological analyses, human activity in the Upper Peninsula during this period was characterized by stone tool making and subsistence foraging on large and medium faunal resources, such as deer (Kuehn 1998). The environment of the Upper Peninsula of this period is posited to be similar to what it is today, although moister and cooler, encompassing large areas of mixed coniferous and deciduous trees and dominated by wetlands, creating similar subsistence opportunities to the present day (Kuehn 1998).

4.1.1.2 Archaic

The Archaic period dates from approximately 10,000 to 5,000 years ago and is broadly known to be an important period for copper mining by Native American peoples (Hill 2012). Archaic period sites identified from this period tend to be from the Late Archaic, or between 5,000 and 2,000 years ago, and include the Sixty Islands site and those around St. Ignace (University of Michigan 2020; Hill 2012; Olson 2025). Evidence of scaled subsistence farming from the Sixty Islands site offers insight into subsistence developments around permanent or semi-permanent communities during this period (Olson 2025). Other studies have discussed the development of copper trade networks during the Early and Middle Archaic, and overlapping traits identified in various widespread sites within the Great Lakes region suggest copper trade interactions may have contributed to common regional identities during this period (Hill 2012).

4.1.1.3 Woodland

The Woodland period dates from approximately 2,500 to 800 years ago and is generally characterized by the development and use of ceramic vessels, earthworks such as mound building, and the development of complex social systems (University of Michigan 2020; Clark 2017). In the Upper Peninsula, introduction and reliance on ceramic vessels began around the Middle Woodland, sometimes referred to as the Initial

Woodland, about 1,500 years ago (Dunham 2014). During this time, the use of copper is still evident from artifact assemblages, but there appears to have been a shift away from copper tools toward a reliance on lithic materials for tool making and use (Clark 2017). This period also sees increased growth of semi-permanent communities, along both waterways and interior settings, and an increased reliance on agriculture supplemented with foraged foods (Dunham 2014).

4.1.1.4 Upper Mississippian

The Upper Mississippian period ranged from approximately 800 years ago until the first documented European contacts were made in Michigan in the 1600s. Prior to European contact, regional territories had emerged, demarcated by social groups. Interactions occurred between adjacent social groups and increased frequency of interactions with long-distance cultural groups outside of the Upper Peninsula region, including the Hopewell cultural sphere (Brashler et al. 2000). This period also saw the continued manufacture of and reliance on stone tools, including ground stone tools, projectile points, and a variety of other formal and non-formal tools. Ceramic vessels, copper implements, and bone tools are also found broadly throughout sites dating to this period. Subsistence strategies during the Upper Mississippian period appear to have been highly variable, and included fishing, intensified maize production using garden beds and ridged field complexes, and wild rice harvesting (Dunham 2014).

4.1.2 Contact Context

The Contact period in the Upper Peninsula is characterized by the introduction of French colonizers and explorers, starting around 1615, and first contact is commonly attributed to Frenchmen Samuel de Champlain and Etienne Brule (Michigan 2001). Local indigenous groups of Anishinaabe, and later Menominee and Ottawa, who were living within the Upper Peninsula prior to European influences, started to come into contact with the French as the establishment of fur trading and missionary work within the Upper Peninsula became more prevalent (North Michigan University [NMU] 2025; Native Land 2025). The attraction of these activities led to the establishment of the European communities of Sault Ste. Marie and St. Ignace along the south coast of the Upper Peninsula (NMU 2025).

4.1.3 Post-Contact Context

The post-contact period within the Upper Peninsula of Michigan saw the continued occupation of the French and the eventual introduction of the English and other Europeans to the area (NMU 2025a). The years between 1795 and 1864 saw the execution of 18 treaties between the United States federal government and various Tribes, including the Wyandot, Ottawa, Chippewa, Potawatomi, Menominee (Oklahoma State University 2025). For the Upper Peninsula, this included the 1836 treaty, between the United States government and the Ottawa and Chippewa nations, and the treaties of St. Peters (1837) and La Pointe (1842 and 1854), between the United States government and the Lac Vieux Desert Band; this treaty ceded a significant amount of Lac Vieux Desert Band territory within the Upper Peninsula to United States control (Oklahoma State University 2025).

European immigrants were attracted to the area throughout the 18th through 20th centuries by the employment opportunities related to copper and iron mining, logging, and trade within the growing communities (NMU 2025). The Upper Peninsula region is currently known for its prominent Finnish-

American population and the continuing cultural influence of the Finnish diaspora throughout the region. As of today, there remain five federally recognized Native American communities within the Upper Peninsula, including the Keweenaw Bay Indian Community, the Bay Mills Indian Community, the Sault Ste. Marie Tribe of Chippewa Indians (Soo Tribe), the Hannahville Indian Community Band of Potawatomi, and the Lac Vieux Desert Band of Lake Superior Chippewa Indians (Gete-gitigaaning) (Michigan 2025).

4.2 Archaeological Assessment

As part of the archaeological literature review (Nelson 2025), 106 Group personnel reviewed the historic background of the study area, totaling 120 acres (48.5 ha), included in the current Operating Area. As a result of that review, no previously identified archaeological sites were identified within the study area; however, 49 acres (20 ha) were identified as possessing moderate to high potential for containing archaeological resources. During the subsequent archaeological survey, conducted in October 2025, 106 Group personnel completed shovel testing within 20.4 acres (8.2 ha), or 42 percent, of the previously assessed moderate to high potential portions of the project area (survey area). Another 11.8 acres (4.8 ha) were confirmed during visual assessment as possessing moderate-to-high archaeological potential but were not shovel tested because these were areas of deadfall where the ground surface was not safely accessible. The remaining 16.8 acres (6.8 ha) of the survey area were reassessed as possessing low archaeological potential (Section 4.2.1).

4.2.1 Visual Assessment

A visual assessment was conducted across the entire study area prior to the archaeological field survey.

Surface conditions within the study area included densely wooded areas, cleared areas, and areas that had been reforested after previous logging activity (Figures 2-4). One surface feature, FS-01, was identified during visual assessment. This feature was documented and is discussed in Section 4.2.1.1. Areas of extensive disturbance, resulting from previous logging and soil removal, were identified in the middle portion of the study area, and wetlands were identified throughout, together totaling 16.8 acres (6.7 ha). Areas exhibiting these conditions were reassessed as possessing low potential and were omitted from further archaeological investigations. A total of 87.6 acres (35.4 ha) were categorized as possessing low archaeological potential as a result of all assessment efforts.

A total of 11.8 acres (4.8 ha) were confirmed during visual assessment as possessing moderate to high archaeological potential but were not shovel tested because the ground surface was not safely accessible due to deadfall and extremely dense undergrowth (Figure 5).



Figure 2. Example of the environment of the northern portion of the 30-m interval survey area with juvenile poplars, maples, and some mature pines.



Figure 3. Example of two clear-cut stumps within the groves of aspen, dogwood, and logging debris in the southern portion of the 30-m interval survey area.



Figure 4. View of the logged area which was excavated and graded down to bedrock. Personnel were also informed by the site manager that this area had been previously disturbed in these ways.

Approximately 32.4 acres (13.1 ha) of the study area that were not previously disturbed or characterized by wetlands, were assessed as possessing moderate to high potential to contain intact archaeological resources. These areas were subject to archaeological field survey sample methods.



Figure 5. Example of deadfall and dense ground cover in areas of moderate to high potential not surveyed.

During visual assessment of the northern portion of the 30-m (98-ft.) -interval survey area, one archaeological feature and one surface find were identified, categorized as a newly identified archaeological site, FS-01. The site is described in detail below.

4.2.1.1 FS-01

Site FS-01 was identified as a result of visual assessment during shovel testing within the northern portion of the 30-m (98-ft.) -interval survey area, between Shovel Tests 86 and 87. Site FS-01 consists of one surface feature, an organized stack of uniformly-sized rocks, and one surface find, a metal basin (Figure 6).



Figure 6. Site FS-01, facing northeast. Stacked stones are visible on the left, basin on the right.

The feature, which consists of several layers of stacked, uniformly sized stones, is roughly ovoid in shape, measuring approximately 2.6 m (8.5 ft.) along the north-south axis and 2.7 meters (8.9 ft.) along the east-west axis, sitting approximately 60 cm (23.6 in.) above the ground surface (Figure 7). The feature is positioned 1.4 m (4.6 ft.) west of the basin (Surface Find [SF]-02), separated by a slight depression. The basin was cracked and misshapen and formed an ovoid shape measuring approximately 63 cm (24.8 in.) by 57.5 cm (22.6 in.). The basin was partially embedded in the ground; 17 cm (6.7 in.) of the basin was exposed, while the total depth of the basin measured 17.5 cm (6.9 in.) (Figure 8).



Figure 7. Stone feature, facing west.



Figure 8. Metal basin, facing north.

A systematic pedestrian survey was conducted across an area measuring 40 m (131 ft.) by 20 m (65.6 ft.) around the site in order to identify any other potential surface components associated with the site. 106 Group personnel conducted additional visual inspection by walking the area in approximately 10-m (32.8-ft.) intervals to accomplish this survey. No additional surface finds or features were identified as a result of this inspection; additionally, none of the surrounding shovel tests yielded archaeological materials, and no shovel tests were conducted within the site boundaries.

While the Site FS-01 assemblage is not extensive, the site was identified within the reported location of a former logging camp, which a local informant estimated to have been active between 1916 and 1927 (Robert Cook, personal communication 2025). A comprehensive map of historic lumber mills, published by Michigan Technological University, shows a lumber mill near Caffey, approximately 4.8 kilometers (km) (3 miles) south of the location of FS-01, and two other mills further west of the site near Rexton, approximately 21 km (13 miles) away, and Garnet, approximately 26.5 km (16.5 miles) away (Johnson 2021). Based on the available SHPO data of sites within the Rexton and Trout Lake Townships, no previous logging sites have been identified within Rexton Township, but several previous logging camp sites have been identified within Trout Lake Township. Geographically and archaeologically, this suggests that this area was once a popular location for logging camps. The environmental setting of Site FS-01, near areas exhibiting evidence of having been cleared or logged, in addition to the presence of other logging camps and mills nearby, demonstrating the existence of local infrastructure to support this industry, creates a reasonable basis by which to interpret this site as a possible component or extension of a logging camp at this location.

4.3 Archaeological Field Survey

Archaeologists from 106 Group conducted an archaeological survey of the survey area from October 14 to October 23, 2025.

A total of 133 shovel tests were excavated within the survey area. A total of 49 shovel tests were excavated in the 15-meter (49-ft.) interval survey area, and a total of 84 shovel tests were excavated in the 30-meter (98-ft.) interval survey area. Soil patterns and excavation results from each area are discussed below.

4.3.1 Survey Area (15-m Interval)

The 15-m (49-ft.) interval survey area included all portions of the survey area immediately adjacent to, but outside of, the wetland portions of the larger project area. The previous Project assessment identified wetland boundaries based on United States Geological Survey (USGS) topographic maps; however, visual assessment refined the actual location of the wetlands (Nelson 2025) (Appendix A). The perimeters of the visually confirmed wetlands were used to inform shovel test placements. Of the 49 shovel tests placed along the wetland perimeter, 30 percent (N=15) of the tests were terminated, on average, at a depth of 70 centimeters below surface (cmbs) (27.6 in. below surface) due to water inundation (Figure 9). Consistent rain during shovel testing also likely contributed to early hydric encounters.



Figure 9. Example of water impasse encountered in the 15-meter interval survey area. This shovel test was excavated to a depth of 61 cmbs.

Bedrock impasses were also consistent in the 15-m (49-ft.) interval survey area and were consistent within the depth of the bedrock indicated in soil data and observed soil conditions throughout this area.

Of the 49 shovel tests, 53 percent (N=26) were terminated, on average, at a depth of 59 cmbs (23 in.) due to bedrock impasses (Figure 10).



Figure 10. Example of bedrock impasse encountered in the 15-meter interval survey area. This shovel test was excavated to a depth of 70 cmbs.

Soils within the 15-m (49-ft.) interval survey area were predominantly sandy. Topsoil layers, extending from 4 cmbs to 33 cmbs, were typically a black (10 YR 2/1) loam or a very dark grayish brown (10 YR 3/2) loam. While topsoil layers were fairly consistent across the survey area, secondary and tertiary layers, when encountered, were not. Secondary layers ranged from 4 cmbs to 57 cmbs, and soil textures remained similar (sandy) to the topsoil textures. Soil colors in secondary layers ranged from very dark brown (10 YR 2/2) to brown (7.5 YR 5/2). Tertiary layers ranged from depths between 16 cmbs to 67 cmbs and also remained predominantly sandy while showing no consistent colors. Soil colors in tertiary layers ranged from pinkish gray (7.5 YR 6/2) to very dark grayish brown (10 YR 3/2). Thirty-two percent (N=16) of shovel tests exhibited quaternary layers between 22 cmbs and 100 cmbs, which were also sandy in texture and predominantly strong brown (7.5 YR 5/6) or light yellowish brown (10 YR 6/4).

One surface find (SF-01), a metal can, was identified within the 15-m (49-ft.) interval survey area (Figure 11). This can was documented and photographed but not collected. No additional surface artifacts were identified, and nearby shovel tests did not identify any subsurface artifacts. Due to the lack of additional contextual material to indicate the presence of a site, this surface find was considered evidence of isolated discard and not documented as an archaeological site.



Figure 11. Surface Find 1 (Metal Can), facing west. Marker used as a north arrow.

Shovel testing in the 15-m (49-ft.) interval survey area yielded no archaeological discoveries.

4.3.2 Survey Area (30-m Interval)

The 30-m (98-ft.) interval survey area accounts for all portions of the survey area more than 30 m (98 ft.) away from the wetland perimeter. These areas included a forest of juvenile poplars and maples in the north, and in the south included an area of young aspens, dogwoods, and pines which were growing over deadfall from previous logging activities (Figures 3 and 5). The logging activities were evident from the presence of mature tree stumps. While the area showed signs of previous logging, the presence of these stumps also indicated that there was minimal ground disturbance in these areas as compared to the middle section of the 30-m (98-ft.) interval survey area, which had been logged, excavated and graded down to the bedrock (Figure 4). Due to the exposure of this bedrock and the experiences of shovel testing within the 15-m (49-ft.) interval area, personnel expected to encounter bedrock impasses throughout the 30-m (98-ft.) interval survey area, as well.

A total of 84 shovel tests were excavated in the 30-m (98-ft.) interval survey area, beginning in the northern portion. Of these shovel tests, 54 percent (N=46) were terminated, on average, at a depth of 58 cmbs due to bedrock or glacial till impasses. These impasses began occurring regularly when shovel testing moved closer to areas of exposed bedrock and shallower soils. Six percent of shovel tests (N=5) were terminated, on average, at a depth of 43 cmbs due to water inundation. These impasses were primarily encountered in the far western portion of the 30-m (98-ft.) interval survey area, where the survey area was closest to the wetland. These tests exhibited topsoil layers of very dark brown (10 YR

2/2) loam, with secondary layers of light brownish gray (10 YR 6/2) silt or dark yellowish brown (10 YR 3/4) sand. Shovel Test 107 exhibited a tertiary layer of dark yellowish brown (10 YR 3/4) clay sand.

Shovel tests conducted within the northern portion of the 30-m (98-ft.) interval survey area (Shovel Tests 50 through 103) exhibited primarily sandy soils. Topsoils within this portion of the survey area were predominantly very dark grayish brown (10 YR 3/2) loam and extended between 0 and 23 cmbs. Secondary layers, extending between 5 and 100 cmbs, were predominantly brown (10 YR 5/3) sand. Tertiary layers were presented in 50 percent (N=42) of shovel tests and extended to depths between 15 and 100 cmbs. These layers were predominantly between dark yellowish brown (10 YR 4/4) and light gray (10 YR 7/1) sand or silty sand.

Shovel tests conducted within the southern portion of the 30-m (98-ft.) interval survey area included tests 104, 105, and 109 through 133. These tests exhibited topsoil layers of predominantly very dark grayish brown (10 YR 3/2) sandy loam extending between 0 to 55 cmbs. Secondary soils in these tests varied greatly in color, switching without pattern between colors that included gray (10 YR 6/1), brown (10 YR 4/3), brown (10 YR 5/3), and dark yellowish brown (7.5 YR 3/4). Soil textures within these secondary layers were predominantly silty sand and extended between 5 and 100 cmbs. Tertiary layers were predominantly (10 YR 5/3) sand extended between 13 and 70 cmbs.

Shovel testing within this area yielded no archaeological discoveries.

**Graymont Land Transfer
Archaeological Survey**

Rexton, Mackinac County, Michigan

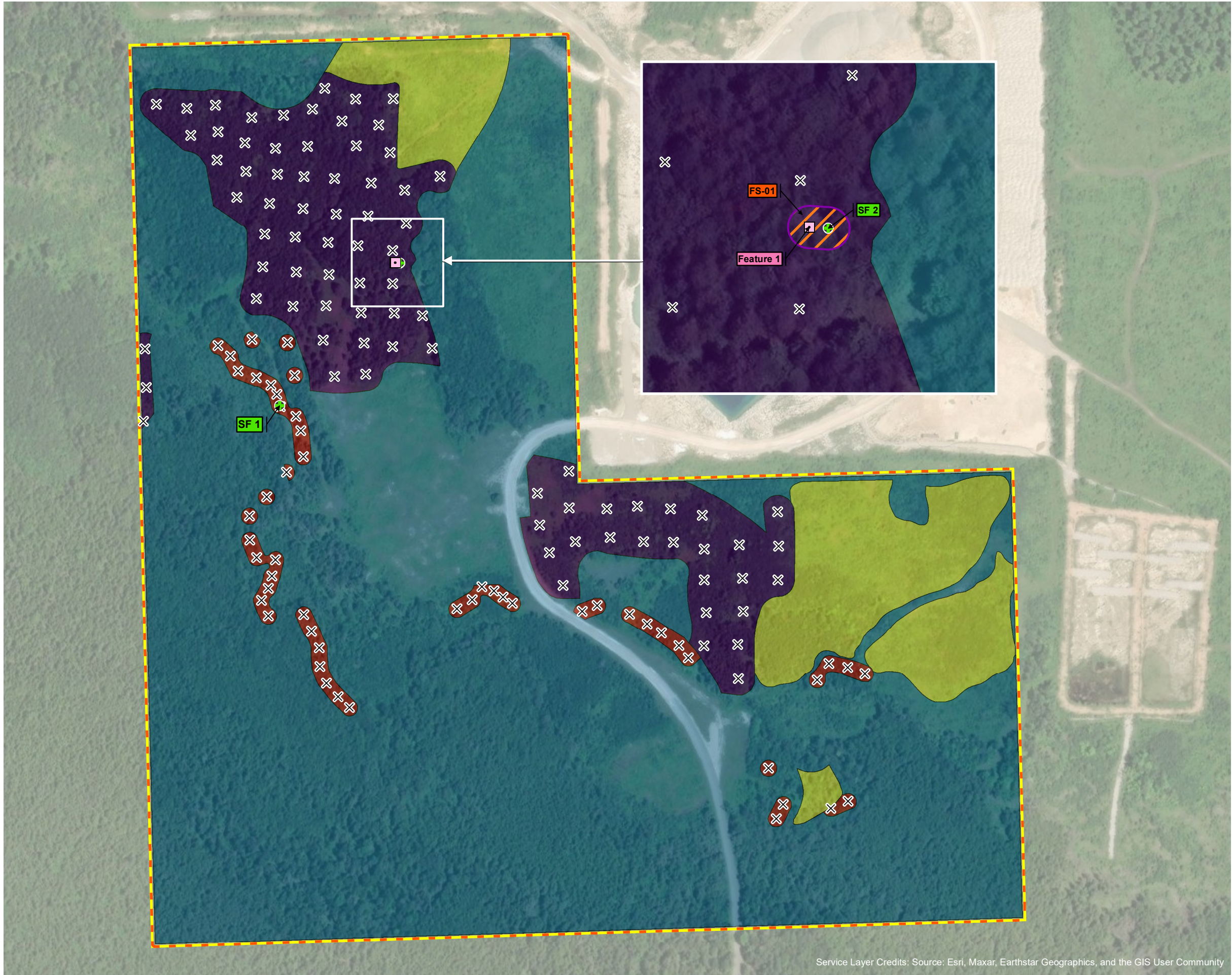
-  Project Area
-  Moderate to High Potential: Shovel Tested (15 m) – No further work recommended
-  Moderate to High Potential: Shovel Tested (30 m) – No further work recommended
-  Visually Assessed – Moderate to High Potential; No Shovel Testing Conducted
-  Visually Assessed – Low Potential
-  Post-Contact Archaeological Site
-  Feature
-  Surface Find
-  Negative Shovel Test

0 80 Meters
0 200 Feet 1:3,500



Archaeological Survey Results

Figure 12



4.4 Analysis and Summary of Results

4.4.1 Analysis of Survey Results

The study area is located within Section 24 of Township 44 N, Range 7 W, which is located within both Trout Lake and Rexton Townships. Based on available Michigan SHPO (MI SHPO) records, a total of approximately 6,711 acres (2,716 ha) have been previously surveyed within Trout Lake Township, with a total of 21 sites identified within these surveyed areas; within Rexton Township, an approximate 175 acres (71 ha) have been previously surveyed with no archaeological sites identified within these surveyed areas (MI SHPO 2025). In order to better understand the likelihood of archaeological sites with the study area, a statistical analysis of local site density was conducted in tandem with the field survey as part of the project investigation.

Based on the number of previously recorded archaeological sites across the total surveyed land, comprising 6,886 acres (2,787 ha) within the two townships, a very generalized anticipated site density within the townships can be calculated as approximately one site per 328 acres (133 ha), or 0.003 sites per acre. Applying this density to the study area would suggest that 0.36 sites would exist within the entire 120-acre (48.5-ha) study area. Having identified FS-01 within the survey area, this predicted density has already been satisfied, and the probability of additional sites existing in the area is further reduced.

To provide estimations of further archaeological site potential in tandem with the results of the field investigations, a statistical analysis of local site density, and the implications of this within the study area, was conducted using a Poisson test. A Poisson test assumes a normal distribution and is used to identify and plot the probability of a certain number of *events* – in this case, the identification of sites – within a certain discrete *period* – in this case, the 120-acre (48.5-ha) study area. As discussed above, the site distribution mean, or the number of sites per 120 acres (48.5 ha), represented as λ below, is 0.36 sites. The probability is then calculated against x , an arbitrarily chosen number of *events* – in this case, the identification of 0, 1, 2, or 3 additional archaeological sites. This is then run through the following equation:

$$f(x) = \frac{\lambda^x e^{-\lambda}}{x!}$$

The result of this exercise is the calculated probability that 0, 1, 2, or 3 additional sites would be identified within the 120-acre (48.5-ha) area. This calculation was run to characterize the study area separate from and not including the results of the survey efforts discussed in this report. This exercise identified a 70 percent probability that zero additional sites would exist in the area; the subsequent calculations identified a 25 percent chance that one new site would be identified, the identification of two additional sites was calculated as a 4 percent probability, and there is a .05 percent chance that three additional sites would be identified.

The results of the Poisson testing exercise provide an additional perspective to the more generalized regional site density discussion above, supporting the initial suggestion that the identification of Site FS-

01 meets and exceeds the probability of additional sites to exist in the survey area. The Poisson testing further supports the interpretation that the probability of finding additional sites in the survey area remains possible but is statistically improbable. It is worth noting that both analyses – the simple, generalized discussion of site density throughout the townships and the more statistically sophisticated Poisson testing – rely on an assumption of uniform distribution of archaeological sites throughout the areas discussed. This assumed pattern of even distribution, while a known limitation of statistical modeling, is addressed through the targeted field investigation strategy employed, which directly investigated the areas of assessed highest archaeological potential with highest-intensity methods, and the additional testing of areas of reduced potential with reduced-intensity methods. The combination of the field survey approach and the statistical analyses provide relative confidence that after having directly investigated this specific sample of the study area, it can be assumed that no additional archaeological sites are likely to exist within the remainder of the study area.

5.0 RECOMMENDATIONS

106 Group has conducted an archaeological investigation on behalf of Graymont in order to fulfill the terms set forth in Exhibit D, Section 1. iv. of the 2015 LTA, which states that Graymont must seek out, “a report prepared by a professional archeologist identifying archeologically significant sites, if any, located on or in close proximity to the proposed Operating Area and proposing appropriate measures for the protection and/or preservation of such sites or the culturally significant artifacts located on such sites.”

As a result of archaeological survey, 106 Group identified one post-contact archaeological site (FS-01) within the survey area. Site FS-01 cannot be ascribed any degree of significance at this time due to a lack of additional contextual information but is considered potentially related to previous logging activities within the area. Per the conditions of the 2015 LTA, Graymont will follow the *Archaeological Plan for Unanticipated Discovery of Cultural Resources or Human Remains during Operation* (Exhibit J of the LTA).

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**APPENDIX A: ARCHAEOLOGICAL LITERATURE
REVIEW AND ASSESSMENT FOR THE
GRAYMONT LAND TRANSFER PROJECT
(NELSON 2025)**



106GROUP

Connecting People + Place + Time

ARCHAEOLOGICAL LITERATURE REVIEW AND ASSESSMENT FOR THE GRAYMONT LAND TRANSFER PROJECT

Rexton Township, Mackinac County, Michigan

August 2025



ARCHAEOLOGICAL LITERATURE REVIEW AND ASSESSMENT FOR THE GRAYMONT LAND TRANSFER PROJECT

Rexton Township, Mackinac County, Michigan

106 Group Project No. 1990

SUBMITTED TO:

John Maitland
Graymont LLC
375 Graymont Road
Bellefonte, PA 16823

SUBMITTED BY:

106 Group
550 Vandalia St.
Suite 102
Saint Paul, MN 55114

REPORT AUTHOR:

Claire S. Nelson, M.A., RPA

August 2025

MANAGEMENT SUMMARY

During July and August 2025, 106 Group conducted an archaeological literature review update and archaeological assessment for Graymont Land Transfer (Project) located in Rexton, Mackinac County, Michigan. The Project includes the activation of 120 acres (48.6 hectares [ha]) within the Upper Peninsula region of Michigan which had been previously transferred to the ownership of Graymont LLC (Graymont) from Michigan Department of Natural Resources [MI DNR] land holdings and remains subject to the land transfer agreement executed at that time. This study is being completed to comply with the terms of the Land Transfer Application between Graymont and MI DNR as set forth in Exhibit D Section 1.iv, which states that Graymont must seek out an archaeological review of any area proposed for operation to identify known archaeological sites within the area and to propose protections of those known sites.

106 Group previously completed a cultural resources literature review on behalf of Graymont in 2014 for a project proposing the transfer of 10,000 acres within the Upper Peninsula from the ownership of the Michigan Department of Natural Resources to Graymont. A portion of the 2014 study area is what is proposed for updated review and archaeological assessment in this 2025 study.

The project area is located in Section 24 of Township 44 N, Range 7 W, in Mackinac County, Michigan. An appropriate study area for archaeology includes the entire 120-acre (48.6-hectare [ha]) parcel. The archaeological investigation included a literature review and desktop assessment. The literature review consisted of a review of documentation recording previously identified archaeological sites within the study area and within one mile (1.6 km) of the study area, and of surveys previously conducted within the study area. Historical maps and aerial photographs were also reviewed to aid in the archaeological investigation. The desktop assessment identified whether the study area has the potential to contain unknown intact archaeological resources that may be potentially eligible for listing in the National Register of Historic Places (NRHP).

The results of the literature review indicated that no previously identified archaeological sites are within the study area, and no archaeological surveys have been previously conducted within the study area. Due to the proximity of portions of the study area to perennial wetlands, the patterns of site distribution within the watershed region, and the limited disturbance within the study area, 106 Group recommends that a total of 49 acres (20 ha) of the study area possesses moderate to high potential for intact archaeological resources. These portions of the study area possessing moderate to high potential may require further consideration, such as additional archaeological work to identify previously unknown archaeological sites. Should such efforts be deemed warranted by the appropriate agency or agencies, then Graymont intends to conduct those investigations prior to project-related ground disturbance within those locations.

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1.0 INTRODUCTION

During July and August 2025, 106 Group conducted an archaeological literature review update and archaeological assessment for Graymont Land Transfer (Project) located in Rexton, Mackinac County, Michigan. The Project includes the activation of a land transfer of 120 acres (48.6 hectares [ha]) (Project area) within the Upper Peninsula region of Michigan to the ownership of Graymont LLC (Graymont) from Michigan Department of Natural Resources (MI DNR) land holdings. This study is being completed to comply with the terms of the Land Transfer Application between Graymont and MI DNR as set forth in Exhibit D Section 1.iv which states that Graymont must seek out “a report prepared by a professional archaeologist identifying any archaeologically significant sites located on or in close proximity to the Easement Area and measures to be taken for the protection and/or preservation of any such sites and the culturally significant artifacts located on any such sites”(MI DNR 2015 Exhibit D, Section 1.iii: 23;).

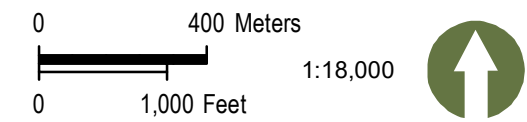
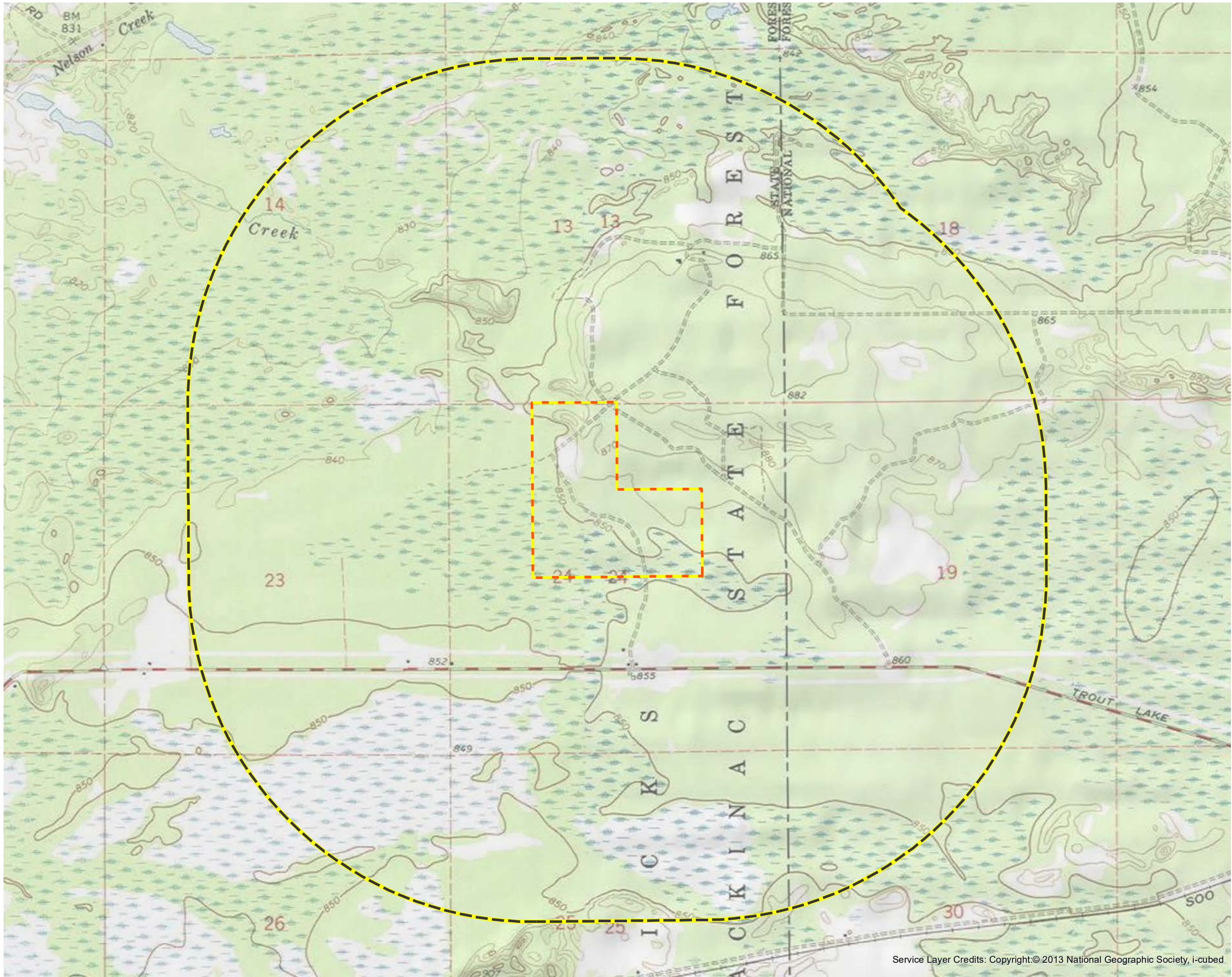
106 Group previously completed a cultural resources literature review on behalf of Graymont in 2014 for a project proposing the transfer of 10,000 acres within the Upper Peninsula from the ownership of the MI DNR to Graymont (Halvorsen and Bring 2014; see Appendix A). This 2025 study area consists of a portion of the 2014 study area.

The Project area is located in Section 24 of Township 44 N, Range 7 W in Mackinac County, Michigan. An appropriate study area for archaeology includes the entire 120-acre (48.6-hectare [ha]) parcel. The archaeological investigation included a literature review and desktop assessment for the study area. The literature review consisted of a review of documentation recording previously identified archaeological sites within the study area and within one mile (1.6 km) of the study area, and of surveys previously conducted within the study area (Figure 1). Historical maps and aerial photographs were also reviewed to aid in the archaeological investigation. The desktop assessment identified whether the study area has the potential to contain unknown intact archaeological resources that may be potentially eligible for listing in the National Register of Historic Places (NRHP).

The following report describes literature review and assessment methodology, results, and recommendations for the Graymont Land Transfer project. Appendix A contains a copy of the cultural resources review completed by 106 Group in 2014 and Appendix B contains a list of project personnel.

**Graymont Land Transfer
Archaeological Literature
Review and Assessment**
Rexton, Mackinac County, Michigan

-  Study Area
-  One-Mile Context Area



Project Location and
Literature Review Results

Figure 1

2.0 OBJECTIVES

The primary objective of the literature review was to identify whether there are any known archaeological sites within the study area and one-mile context area, and to identify whether any portion of the study area may have been previously surveyed. The objective of the archaeological assessment was to gauge whether the study area has the potential to contain any unknown intact archaeological resources that may be potentially eligible for listing in the NRHP. The results of the literature review and assessment have been completed to fulfill the terms of the 2014 Land Transfer Application, Exhibit D Section 1.iv, between Graymont LLC and MI DNR, requiring archaeological review (Halvorsen and Bring 2014). All work was conducted in accordance with Michigan State Historic Preservation Office (MI SHPO) guidance and *The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* [48 Federal Register 44716-44740] (Michigan SHPO 2023; National Park Service [NPS] 1983).

3.0 METHODS

3.1 Literature Review

A literature review, including research through the MI SHPO, was completed for the project in July 2025 to obtain information regarding previously identified archaeological sites and previously conducted surveys within the study area. Information was gathered on archaeological sites within a one-mile (1.6-km) radius of the study area in order to provide a broader context of the study area and to provide a basis by which to assess the general potential for archaeological sites to be present within the vicinity of the study area. Reports of previous archaeological investigations were also reviewed to determine if any portion of the study area had been previously surveyed and, therefore, would not require further investigation. In addition, multiple documentary sources were consulted, including United States Geological Survey (USGS) topographic quadrangles, historic plat maps and aerial photographs, in order to identify portions of the study area that possess a higher potential for containing intact significant archaeological sites.

3.2 Archaeological Assessment

The assessment was based on the results of the background research only, and no site visit was conducted.

Areas generally assessed as having a greater probability to contain intact archaeological sites included undisturbed portions of the study area that are:

- located within 150 m (492 ft.) of an existing or former water source, including wetlands, of 40 acres (16 ha) or greater in extent or within 150 m (492 ft.) of a former or existing perennial stream;
- located on topographically prominent landscape features;
- located within 100 m (328 ft.) of a previously reported site; or
- located within 100 m (328 ft.) of a former or existing historical structure or feature (such as a building foundation or cellar depression); and

Areas assessed as having a relatively low potential for containing intact archaeological resources included inundated areas, areas within former or existing wetlands, poorly drained areas, areas with slope of 20 degrees or greater, and areas of extensive disturbance.

4.0 RESULTS

4.1 Literature Review

4.1.1 Previous Studies

Research indicates that no previous archaeological surveys have been conducted within the study area. In 2014, 106 Group conducted a cultural resources literature review of approximately 10,000 acres, including the entire 120 acres currently under review, for Graymont LLC (Halvorsen and Bring 2014). The results of the literature review indicated that no archaeological sites or historic properties existed within the study area that had been previously identified or inventoried as eligible or potentially eligible for listing on the National Register of Historic Places (NRHP) (Halvorsen and Bring 2014).

4.1.2 Previously Identified Resources

No archaeological sites are present within the study area or within one mile of the study area based on site and previous survey records available through MI SHPO (Figure 1).

4.1.3 Environmental History Overview

The study area is located within the Menominee-Drummon Lakeshore ecological region of Michigan (United States Environmental Protection Agency 2010). The nearest sources of perennial water are the South Branch Hendrie River and Anguilm Creek, which are both approximately 3 kilometers (km) (1.88 miles) from the study area boundaries. The majority of the study area, according to available USGS topographical maps, is located within a perennial wetland or within 150 m (492 ft.) of a perennial wetland (USGS 2025). The surrounding landscape is primarily flat, with elevation changes of up to 6 m (20 ft.) in places (USGS 2025).

Soils within the study area are predominantly Markey-Spot-Finch complex, characterized as outwash plains with minimal slope (0 to 3 percent), and Amadon-Longrie sandy loams, which are characterized by rocky soils and minimal slope (1 to 6 percent) (University of California Davis 2025).

4.1.4 Historical Research

A general historical context of the entire 10,000-acre land transfer area, including historic land use, can be found within the 2014 report provided by 106 Group, included below as Appendix A. This historic summary includes the 120 acres currently under review. The results of this 2014 report state that “very little development and change” occurred within the study area aside from unpaved access roads, which is corroborated by available maps and aerial images dating from 1840 to 2016 (Bureau of Land Management General Land Office [BLM GLO] 1854; Nationwide Environmental Title Research [NETR] 1955, 1975, 1986, 1998, 2009, 2016; Halvorsen and Bring 2014:8).

An aerial image from 2016 shows the removal of tree canopy, indicating some ground-disturbing activities begun between 2014 and 2016 within portions of the study area (NETR 2014, 2016). Aerial images from 2018 show no changes to the study area as compared to 2016 (NETR 2018). A 2020 aerial image shows some additional forest clearing and roadwork to connect the cleared area north of the study

area to Trout Lake Road (NETR 2020). This roadwork appears to be just the widening of the previous access roads; no excavation of roadbeds or paving is apparent. Aerial images from 2020 to present show no further expansion of the cleared area (NETR 2020, 2022; Google 2025).

4.2 Archaeological Assessment

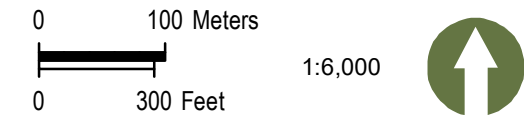
As indicated by the research conducted for this 2025 study, and the previously completed 2014 cultural resources review, there are no previously identified archaeological sites within the study area, or within one mile of the study area. There have been no previously conducted archaeological surveys within the study area. Portions of the study area are located within wetlands or within 150 m (492 ft.) of the perennial wetlands which make up the South Branch Hendrie River watershed. The study area is not located in proximity to a topographically prominent landscape feature.

Post-contact development within the study area has been recent, within the last 10 years, and concentrated in the north and east portions of the study area. This development has taken the form of the clearing of vegetation, as well as the development of an established unpaved access road bisecting the study area. There are no historically mapped structures or features within, or within 100 m (328 ft.) of, the study area.

Portions of the study area border wetland environments. Additionally, there has been minimal disturbance within the study area. Due to these indicators of moderate to high potential, and based on the patterns of site distribution within this watershed, portions of the study area within 150 m (492 ft.) of the wetland (but outside the wetland itself) are assessed as possessing moderate to high potential for intact archaeological resources (MI SHPO 2025). All other portions of the study area lack these indicators, and are therefore assessed as possessing low potential for intact archaeological resources (Figure 2).

**Graymont Land Transfer
Archaeological Literature
Review and Assessment**
Rexton, Mackinac County, Michigan

-  Study Area
-  Moderate to High Potential for Archaeological Resources
-  Low Potential for Archaeological Resources



Archaeological Assessment Results

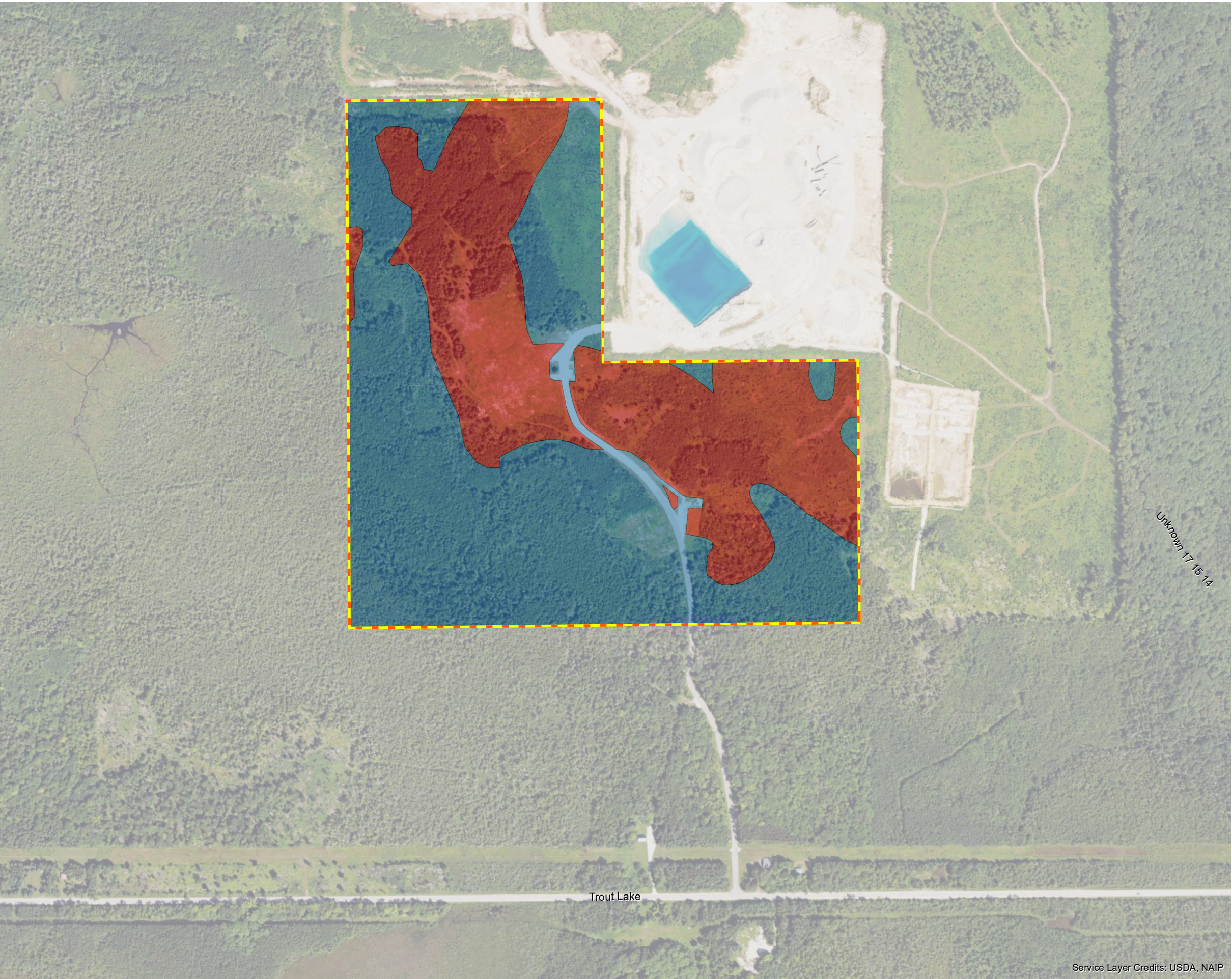


Figure 2

5.0 RECOMMENDATIONS

The results of the literature review indicated that no previously identified archaeological sites are within the study area, and no archaeological surveys have been previously conducted within the study area. Due to the proximity of portions of the study area to perennial wetlands, the patterns of site distribution within the watershed region, and the limited disturbance within the study area, 106 Group recommends that a total of 49 acres (20 ha) of the study area possesses moderate to high potential for intact archaeological resources. These portions of the study area possessing moderate to high potential may require further consideration, such as additional archaeological work to identify previously unknown archaeological sites. Should such efforts be deemed warranted by the appropriate agency or agencies, then Graymont intends to conduct those investigations prior to project-related ground disturbance within those locations.

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**APPENDIX A: CULTURAL RESOURCES
LITERATURE REVIEW FOR THE REXTON
PROJECT MDNR LAND TRANSACTION
(HALVORSEN AND BRING 2014)**



106GROUP

CULTURAL RESOURCES LITERATURE REVIEW FOR THE REXTON PROJECT MDNR LAND TRANSACTION

Luce and Mackinac Counties, Michigan

December 2014



CULTURAL RESOURCES LITERATURE REVIEW FOR THE REXTON PROJECT MDNR LAND TRANSACTION

Luce and Mackinac Counties, Michigan

106 Group Project No. 1990-1655

SUBMITTED TO:

Graymont (MI) LLC
West 7706 Hiawatha Trail
Naubinway, MI 49762

SUBMITTED BY:

106 Group
The Dacotah Building
370 Selby Avenue
St. Paul, MN 55102

PRINCIPAL INVESTIGATOR:

Anne Ketz, MA, RPA

REPORT AUTHOR(S):

Peer Halvorsen, B.A.
Jennifer Bring, B.A.

December 2014

MANAGEMENT SUMMARY

During June, July, and November of 2014, The 106 Group Ltd. (106 Group) conducted a cultural resources literature review for Graymont (MI) LLC (Graymont), which has proposed limestone quarrying and mining operations in the Rexton, Michigan vicinity (the Rexton Project). Graymont is currently proposing to complete a land transaction with the Michigan Department of Natural Resources (MDNR) in order to conduct limestone quarrying and mining operations within Luce and Mackinac counties, Michigan. The information from this literature review will inform MDNR's review concerning the land transaction and aid in complying with any applicable state laws.

The MDNR land transaction area encompasses approximately 10,000 acres (4,047 hectares [ha]). To provide a broader cultural context and guide future planning, previously identified archaeological sites and architecture/history properties located in and within one mile of the land transaction area were also identified (Study Area). This cultural resources literature review is intended to provide a preliminary understanding of what previously recorded cultural resources may be within the Study Area, and is a tool with which to inform further archaeological and architecture/history surveys, if deemed necessary. The cultural resources literature review consisted of background research to identify any known archaeological sites or architecture/history properties within the Study Area, and to determine if any portions of the MDNR land transaction area have been previously surveyed. In addition, historical maps and aerial photographs were reviewed to provide a general historical context/land use history for the land transaction area.

Should the area subject to the land transaction with the MDNR for the Rexton Project be altered from the present proposal, the Study Area for archaeological and architecture/history resources should be adjusted, as appropriate.

The results of the literature review indicated no archaeological sites have been recorded (confirmed) or reported (not field checked), and no architecture/history properties have been previously inventoried within the Study Area. One archaeological survey has been conducted within the MDNR land transaction area, but no architecture/history surveys have been conducted within that area.

Research indicates that the first potential human presence within Michigan's Upper Peninsula might be as early as the Late Paleo-Indian/Early Archaic period (9,000 years before present [B.P.]). However, most precontact period sites within the region likely date from the Woodland Period. Precontact sites from this time in the Upper Peninsula are located along rivers, lakes, and wetlands in inland areas, which most likely consist of smaller camps during the winter and early spring seasons. Land use in the region during the contact/post-contact period may have started with the arrival of the French in the seventeenth century. Fur traders frequented the missions and forts in the Upper Peninsula, including the mission at St. Ignace located approximately 40 miles from the land transaction area. However, based on historical maps and aerial review, it appears that the land transaction area was primarily used for logging and rock quarrying, with very few homesteads.

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1.0 Introduction

During June, July, and November of 2014, The 106 Group Ltd. (106 Group) conducted a cultural resources literature review for Graymont (MI) LLC (Graymont), which has proposed limestone quarrying and mining operations in the Rexton, Michigan vicinity (the Rexton Project). Graymont is currently proposing to complete a land transaction with the Michigan Department of Natural Resources (MDNR) in order to conduct limestone mining operations within Luce and Mackinac counties, Michigan. The information from this literature review will inform MDNR's review concerning the land transaction and aid in complying with applicable state laws. The MDNR land transaction area is located in Luce and Mackinac counties, Michigan (Figure 1, Table 1).

Table 1. Legal Description of Sections Crossed by the Rexton Project MDNR Land Transaction Area

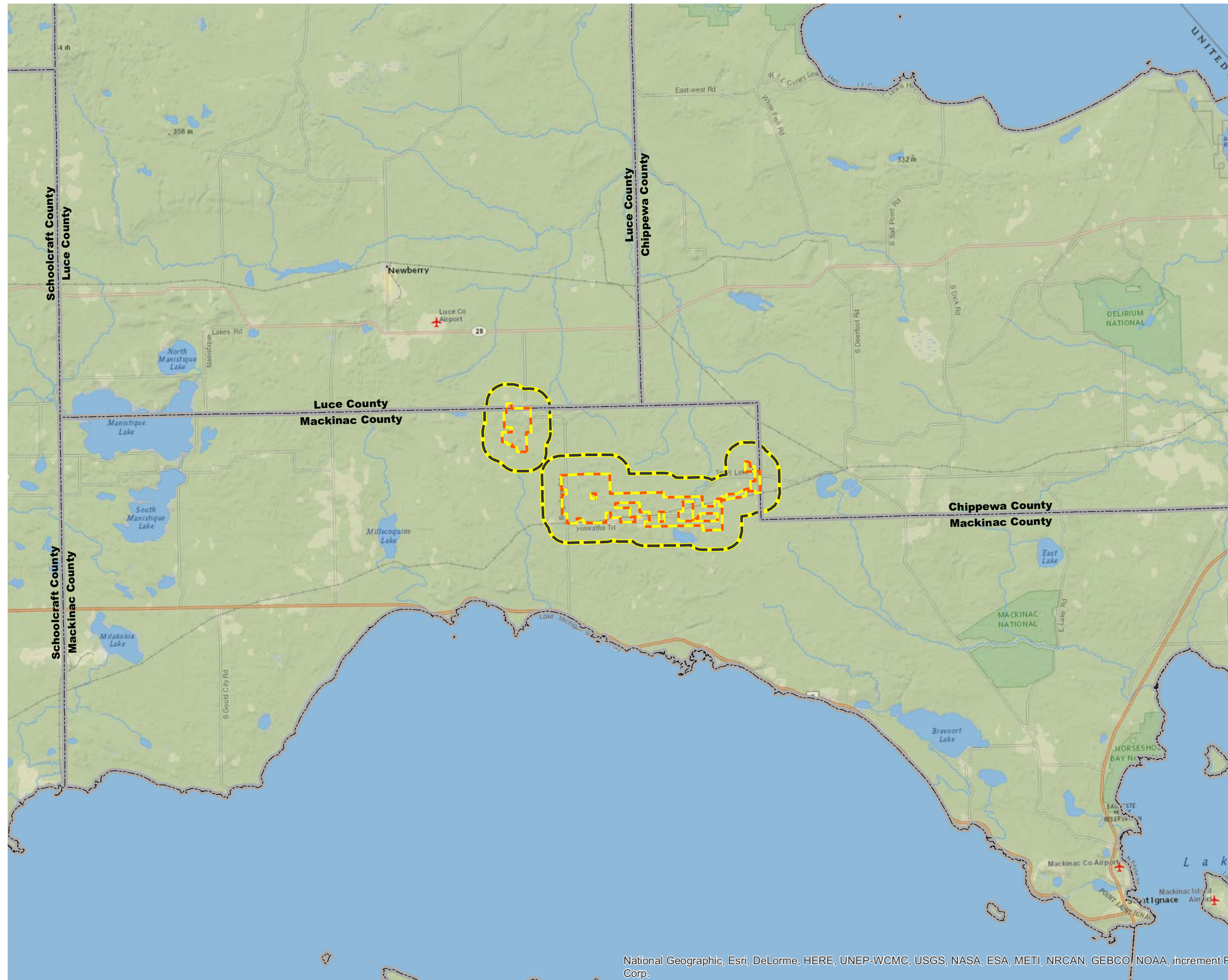
County	Township	Range	Sections
Luce	45N	9W	36
Mackinac	43N	7W	3, 4, 5, 6
	44N	7W	24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34
		8W	6, 7, 20, 21, 22, 23, 25, 26, 27, 28, 29, 32, 33, 34, 35, 36
		9W	1, 2, 11, 12, 13

The MDNR land transaction area encompasses approximately 10,000 acres (4,047 hectares [ha]). To provide a broader cultural context and guide future planning, previously identified archaeological sites and architecture/history properties located in and within one mile of the land transaction area were also identified (Study Area). This cultural resources literature review is intended to provide a preliminary understanding of what previously recorded cultural resources may be within the Study Area, and is a tool with which to inform further archaeological and architecture/history surveys, if deemed necessary. The cultural resources literature review consisted of background research to identify any known archaeological sites or architecture/history properties within the Study Area, as well as determine if any portions of the MDNR land transaction area have been previously surveyed. In addition, historical maps and aerial photographs were reviewed to provide a general historical context/land use history for the land transaction area.

Should the area subject to the land transaction with the MDNR for the Rexton Project be altered from the present proposal, the Study Area for archaeological and architecture/history resources should be adjusted, as appropriate.

Rexton Project MDNR Land Transaction Area Cultural Resources Literature Review

Luce and Mackinac Counties, Michigan



Project Location

2.0 Methods

2.1 Background Research

On June 24th and 25th, 2014, background research was conducted using the Michigan State Historic Preservation Office (SHPO) and Office of the State Archaeologist (OSA) site files for information on previously identified archaeological sites and architecture/history properties, and on cultural resources surveys previously conducted within the MDNR land transaction area. In addition, to provide a broader context for the area, previously identified archaeology sites and previously inventoried architectural properties located within one mile (1.6 kilometers [km]) of the land transaction area (Study Area) were also reviewed (see Figure 1). In addition, historical maps and plat maps, historical aerial photographs, and historical and archaeological literature were reviewed to provide an understanding of the historical context and past land use for the land transaction area. No site visit was undertaken.

2.2 Study Area

To provide a broader cultural context for the MDNR land transaction area and guide future planning, the Study Area encompasses the land transaction area and a one-mile radius around it (see Figure 1).

3.0 Literature Review Results

3.1 Archaeology

3.1.1 PREVIOUS STUDIES

Research indicated that no archaeological surveys have previously been conducted within the land transaction area (Figure 2).

3.1.2 PREVIOUSLY RECORDED ARCHAEOLOGICAL SITES

No archaeological sites have been recorded (confirmed) and no sites have been reported (not field checked) within the Study Area.

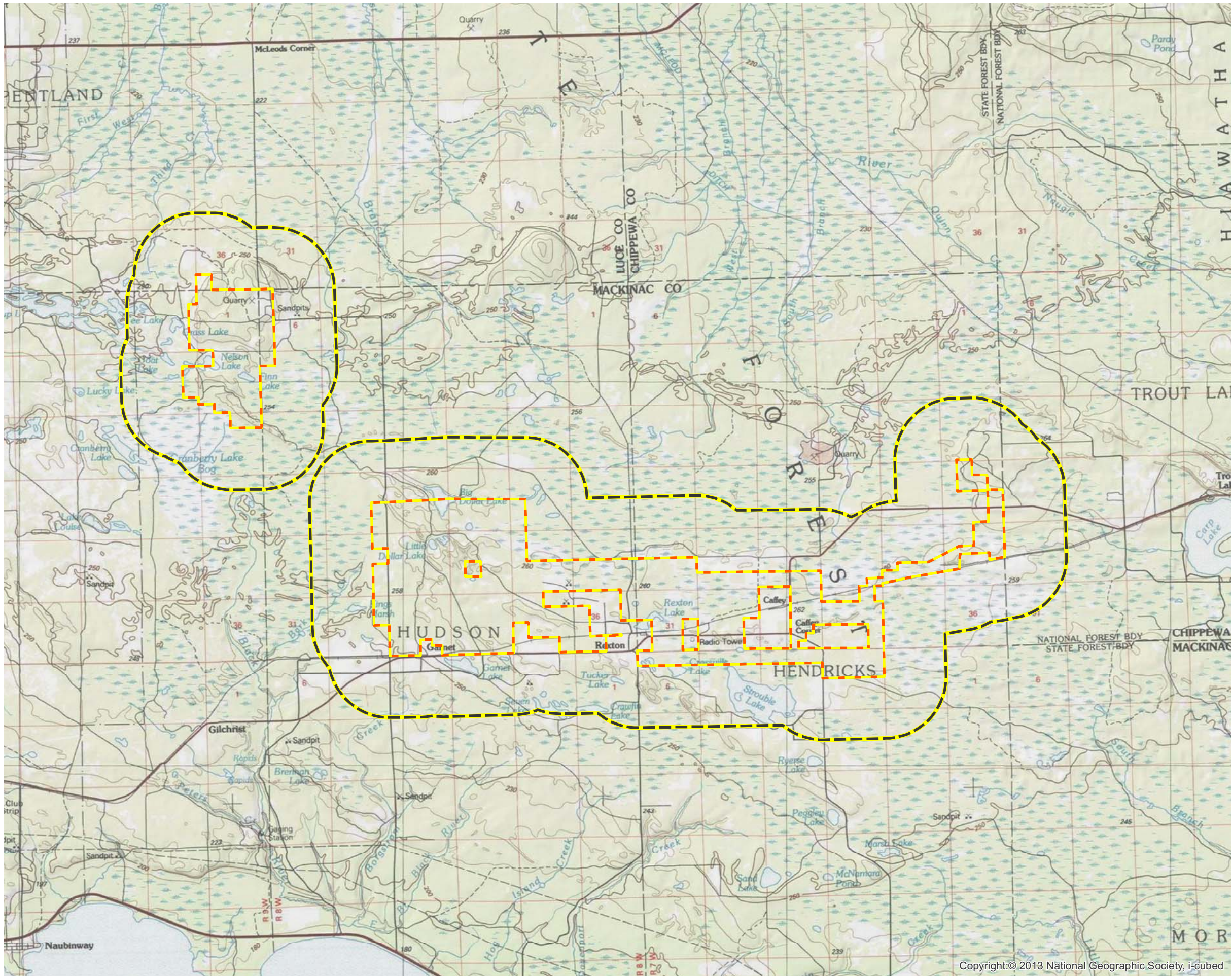
3.2 Architecture/History

3.2.1 PREVIOUS STUDIES

Research indicated that no architecture/history surveys have been conducted within the land transaction area.

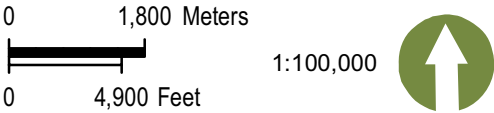
3.2.2 PREVIOUSLY RECORDED ARCHITECTURE/HISTORY PROPERTIES

No properties have been previously inventoried within the Study Area.



Rexton Project MDNR Land Transaction Area Cultural Resources Literature Review
Luce and Mackinac Counties, Michigan

- MDNR Land Transaction Area
- Study Area



Literature Review Results

Figure 2

4.0 Historical Context and Land Use

4.1 Historical Context of Michigan's Upper Peninsula

4.1.1 PRECONTACT PERIOD

Portions of the Upper Peninsula of Michigan remained glaciated longer than the lower part of the state (Larsen 1999). As such, the earliest known site in Michigan's Upper Peninsula is the Gorto Site in Marquette County, which is situated in the Deer Lake basin approximately 100 miles to the northwest of the current land transaction area. The Gorto Site is thought to be from the Late Paleo-Indian/Early Archaic period and consists of small, but dense concentrations of Eden-Scottsbluff bifaces dating to as recently as 9,000 years before present (B.P.) (Shott 1999). Detailed studies on land use during this time are lacking, but what is known is that people seemed to have subsisted primarily on large game, small game, plant products, and fish. Reliance on fish also seems to have increased during the Middle to Late Archaic periods (Shott 1999).

Relatively few archaeological sites have been identified from the Middle Archaic period in Michigan. It has been argued that water levels were lower during this time period such that current shoreline was in actuality an interior region. Site densities are generally lower in interior regions during the precontact period and, therefore, it is likely that the largest, most dense sites from the Middle Archaic period would be located underneath the water of the Great Lakes (Robertson et al. 1999). There are more identified sites from the Late Archaic period (5,000 B.P. to 2,500 B.P.) in the Upper Peninsula than from earlier periods. This is likely because water levels during this time were more likely to be similar to current water levels. Subsistence in the Archaic period is marked by a greater emphasis on diverse sources of food and a shift away from large game hunting, which characterized the Paleo-Indian period. The Archaic Period is also notable for increased mining, trade, and use of native copper from the Upper Peninsula (Robertson et al. 1999).

The Woodland Period in Michigan is characterized by the creation of ceramics, domesticated plant use, and the appearance of various earthworks or "mounds" (Garland and Beld 1999; Brose and Hambacher 1999; Martin 1999). In the Upper Peninsula, ceramic technology was developed at a later stage (circa 1 Common Era [CE]) than further south and the Late Archaic adaptation continues longer in this region (Robertson et al. 1999). There is also evidence of Upper Mississippian cultures in the Upper Peninsula dating between 1200 – 1400 CE. The evidence is scant, but is primarily found in the presence of shell-tempered pottery. However, few major Upper Mississippian sites have been found in the Upper Peninsula. Therefore, it is likely that northern Michigan represents a region of cultural contact between Upper Mississippian cultures and Woodland cultures. Moreover, the environment of the Upper Peninsula likely made large-scale agriculture, which is characteristic of Mississippian cultures, impossible (Halsey 1999).

The Hiawatha National Forest has created a model for finding precontact period sites (particularly Woodland Period) in the Upper Peninsula, which provides a starting point for predicting the type and

location of late precontact period sites within the region. This model has generally identified that late prehistoric sites will overall include:

- large multi-family summer and fall season fishing villages near the Great Lakes; and
- smaller winter and early spring sites in the inland areas (usually along rivers, interior lakes and the edges of wetlands) (Franzen, 1986).

4.1.2 CONTACT/POST-CONTACT PERIOD

The Contact/Post-Contact Period marks the arrival of Europeans to the Upper Peninsula and the archaeological record not only contains the activities of Native peoples during this time, but the activities of these immigrants as well. This period begins with the arrival of French fur traders, explorers, and priests in the seventeenth century and is marked by the establishment of various missions, forts, and villages alongside Native American villages, such as the mission at St. Ignace and the adjacent Fort de Buade located approximately 40 miles southeast of the land transaction area (Heldman 1999). The French and Indian War (1754-1761 CE) effectively ended the French influence in this region. This period is followed by a relatively short period of British involvement in Michigan until the Americans took control of Detroit in 1794 (Piling and Anderson 1999).

Michigan's first state geologist, Douglass Houghton, brought national attention to the state's copper deposits in 1841. The copper mining industry took off in the 1840s with the first successful mines opening near Eagle River in Keweenaw County and Rockland in Ontonagon County. Copper mining in Michigan declined in the twentieth century as competition from mines in Montana and Arizona, as well as workers strikes contributed to a decrease in Michigan's share of the national total. The last operating copper mine in Michigan closed in 1997 (Michigan Department of Natural Resources 2014a). Keweenaw and Ontonagon Counties are located approximately 180 miles to the northwest of the land transaction area.

Iron Mining also played a significant role in the Upper Peninsula with some of the first specimens of magnetic ore discovered in 1844. By 1890, Michigan's iron mines produced 80 percent of the nation's ore but Michigan lost its lead to Minnesota's more easily mined Mesabi Range in 1900. However, production increased during World War II with new methods of processing low-grade ore in open pit mines, which continues today (Michigan Department of Natural Resources 2014b). As with the copper mines in the Upper Peninsula, the iron ranges are located to the west of the current land transaction area, the nearest being the Marquette Iron Range, which is approximately 100 miles northwest.

Large-scale alteration of the landscape in the Upper Peninsula did not start until the logging industry spread to the region in the 1870's and 1880's, when the industry's focus shifted away from the valleys of the Saginaw and the Muskegon (Franzen 1999; Karamanski 1984). The logging industry declined sharply after 1900 as the massive deforestation and a series of devastating wildfires diminished yields. However, policies enacted in the early twentieth century stabilized the forest products industry in the local economy (Karamanski 1984).

4.2 Historical Land Use

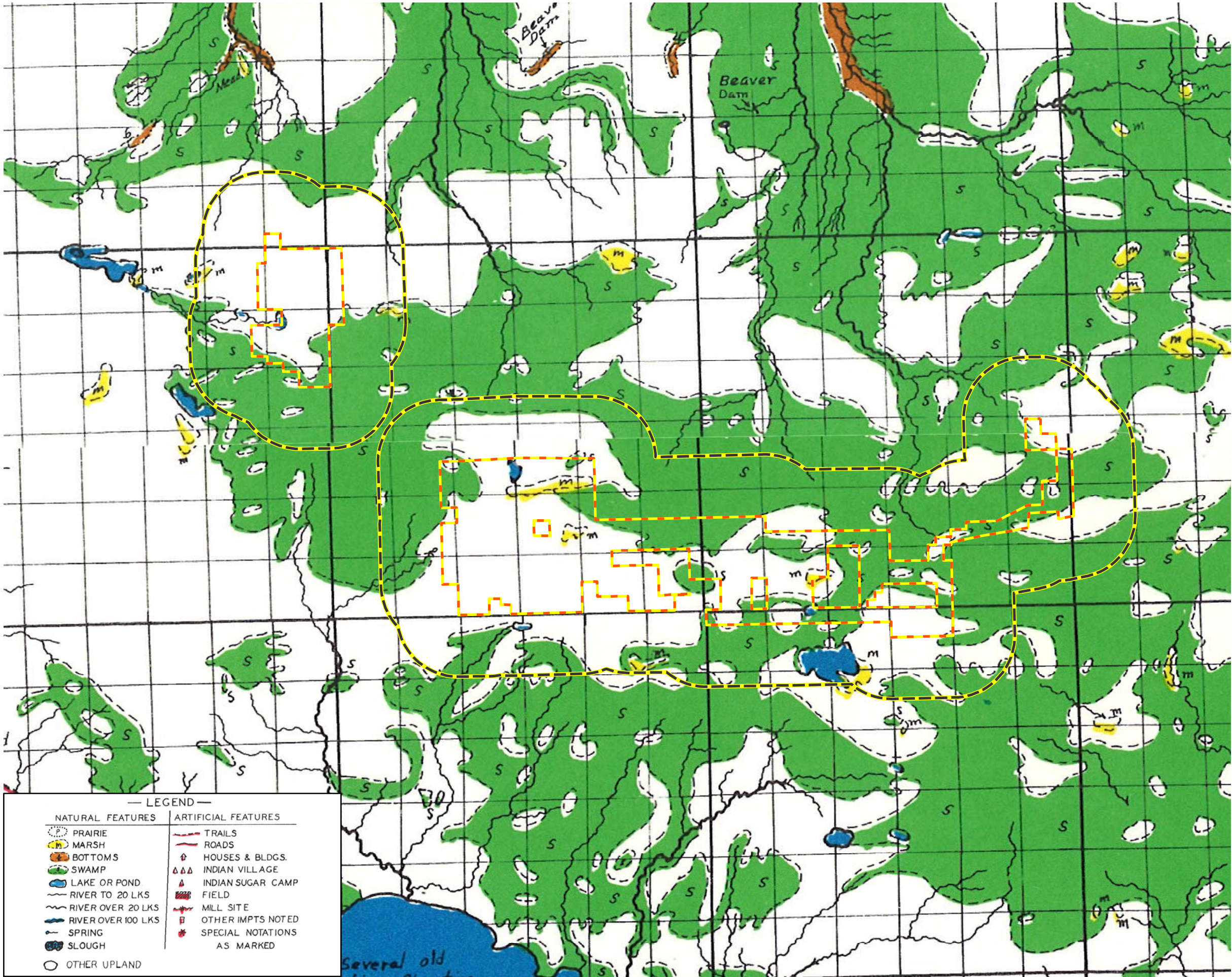
The original General Land Office plat maps for Garfield, Hendricks, and Hudson Townships in Mackinac County and Pentland Township in Luce County date from 1840-1845. They do not indicate any homesteads or any other structures so it is likely that European settlement in the land transaction area did not occur until after 1845. Mackinac County, originally named Michilimackinac, was laid out in 1818, but was later organized as Mackinac County in 1849 (Clarke Historical Library 2014a). Luce County was organized in 1887 (Clarke Historical Library 2014b). Review of Trygg (1964) historical maps (Figure 3) does not indicate any historical features within the current land transaction area.

Review of Hinsdale's Archaeological Atlas of Michigan (1931) shows four potential historical features within or near the Study Area. Two are the Hendricks and Fiborn Quarries, and the other two are the unincorporated communities of Rexton and Garnet. The Fiborn Quarry was a limestone mine that operated from 1905 to 1936. The quarry was later purchased by the Michigan Karst Conservancy in 1987, which established the Fiborn Karst Preserve and manages it as a natural area open to the public (Michigan Karst Conservancy 2012). The Hendricks Quarry was also a limestone mine that opened circa 1915. Historically, limestone was shipped to the Union Carbide Company plant in Sault Ste. Marie, Michigan in order to produce calcium carbide (Johnson and Sorensen 1978). According to information provided by Graymont, which currently has a limestone mineral lease with the MDNR for the Hendricks Quarry, currently the quarry is active with relatively small volumes of stone extracted in recent years (personal communication with Graymont, November 18, 2014). Current satellite imagery indicates that there are approximately two to three buildings on the site. The community of Garnet was originally called Welch in 1891 and was a stop on the Minneapolis St. Paul and Sault Ste. Marie Railway. It was later renamed to Garnet in 1904 (Romig 1986). The community of Rexton was the headquarters for the D.N. McLeod Lumber Company and a post office opened in the town in 1901 (Romig 1986).

Review of historical aerial photographs obtained from Michigan State University and dating from 1939, 1953, 1983, and 1993 shows very little development and change within the land transaction area as compared to current satellite imagery. The land transaction area currently consists of mostly forest and wetland, along with a few homesteads along roadways, as well as what appears to be four to five limestone quarries in varying stages of operation. Based on the historical context and known trends in the logging industry, it is likely that most, if not all, of the project area was previously logged in the late nineteenth century. Land use trends in the logging industry shifted during the early twentieth century towards less intensive logging and sustainable forest management. Current satellite imagery indicates that approximately 30 percent of the land transaction area appears to be maintained as tree farms for the lumber industry, as indicated by visible rows of standing pine trees. Review of the historical aerial photographs indicates that these areas have consistently been maintained as tree farms since 1939 at the earliest. Most of these farms appear to have been cleared in the 1939 photographs and become visible as standing tree farms in the photographs from 1983, which persist today as indicated by current satellite imagery.

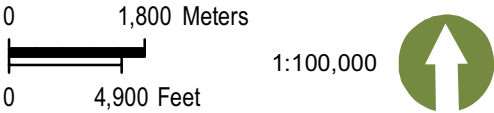
Rexton Project MDNR Land Transaction Area
Cultural Resources
Literature Review
Luce and Mackinac Counties, Michigan

- MDNR Land Transaction Area
- Study Area



Source: Graymont; 106 Group

Map Produced by 106 Group 11/20/2014



Trygg Historical Map

Figure 3

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APPENDIX A: PROJECT PERSONNEL

LIST OF PERSONNEL

Project Manager

Jennifer Bring, B.A.

Principal Investigator

Anne Ketz, M.A., RPA

Researcher

Peer Halvorsen, B.A.

Graphics and GIS

Nathan Moe, B.A.

APPENDIX B: PROJECT PERSONNEL

LIST OF PERSONNEL

Project Manager

Kat Keljik, M.A.

Principal Investigator

Madeleine Bray, M.A., RPA

Researcher and Report Author

Claire Nelson, M.A., RPA

Graphics and GIS

Josh Peterson, B.S.

APPENDIX B: PROJECT PERSONNEL

LIST OF PERSONNEL

Project Manager

Kat Keljik, M.A.

Principal Investigator

Madeleine Bray, M.A., RPA

Researcher and Report Authors

Claire Nelson, M.A., RPA

Hollie Lincoln, Ph.D., RPA

Graphics and GIS

Josh Peterson, B.S.

Field Personnel

Claire Nelson, M.A., RPA

Lillian Warner, B.A.

Kalju Maegi, B.A.

Maggie Martin-Kolcinski, B.A.