

Holding the Line



A Preliminary Report of The Battle of the Crater 30 July 1864

Adrian Mandzy, Ph. D.
Michelle Sivilich, Ph. D.
Benjamin Lewis Fitzpatrick, Ph. D.
Dan Sivilich
Floyd Patrick Davis
Kelsey P. Becraft
Dakota Leigh Goedel
Jeffrey A. McFadden
Jessey C. Reed
Jaron A. Rucker

**A PRELIMINARY REPORT ON THE SURVEY OF THE BATTLE OF THE
CRATER, 30 JULY 1864**

By

Adrian Mandzy, Ph.D., Michelle Sivilich, Ph. D., Floyd Patrick Davis, Kelsey P. Becraft,
Dakota Leigh Goedel, Jeffrey A. McFadden, Jessey C. Reed, and Jaron A. Rucker

With a Contributions by Daniel Sivilich and Dr. Benjamin Lewis Fitzpatrick

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National Park Service
115 John Street, 4th Floor
Lowell, Massachusetts 01852-1195

Adrian Mandzy
Principal Investigator

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Abstract

In March 2015, faculty and students from Morehead State University's History program, along with members of the Battlefield Restoration and Archeological Volunteer Organization (BRAVO) conducted a survey of The Crater Battlefield. Fought on 30 July 1864, during the Siege of Petersburg, the Battle of the Crater, according to the National Park Service, is one of the most important events of the Civil War. The participation of African-American troops in the battle and the subsequent execution of black prisoners highlights the racial animosities that were the underpinning causes of this conflict. The goal of this project is to document the level of integrity of any archaeological resources connected with this field of conflict and to examine how far the Union troops advance beyond the mouth of the Crater.

Acknowledgments

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The project would not have occurred without the help of numerous officials. William Griswold, Ph.D., Archaeologist and Regional ARPA Coordinator at the National Parks Service and James W. Kendrick, Ph.D., Northeast Regional Archaeologist Chief, National Parks Service helped the project obtain the required research permits. Park Superintendent Lewis Rogers took an active interest in the project and worked strongly for its implementation. A special note of thanks to Park Archaeologist Julia Steele who devoted a great deal of time and energy to make this project a reality. The team thanks her for spending time with us in the field during the course of the project. We want to also thank Adam Baghetti, GIS/IT Specialist at Petersburg National Battlefield, for providing the project with a copy of a 1978 survey map.

A number of private individuals worked tirelessly to bring the project to fruition. Daniel Sivilich, the President of Battlefield Restoration and Volunteer Organization (BRAVO), helped develop the project, recruit BRAVO members and conducted analysis of the artifacts. Unfortunately, a physical injury prevented Dan from participating in the fieldwork and Michelle Sivilich took on his responsibility of transit work and data collection.

We would also like to thank the BRAVO members who made the project such a success, including: James Barnett, Glenn Gunther, Russ Balliet, Bill Hermstedt, Tim Reno, Ken Amman, Adrian Devine, and Bob Hall. Without their support and interest in the project, the survey would not have occurred.

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Introduction

The Battle of the Crater was one of the most important military engagements of the American Civil War. Fought on 30 July 30 1864, the Union attack sought to break the Confederate defenses surrounding the city of Petersburg, a major urban center in its own right and a life-line to the Confederate capital of Richmond, VA. The Civil War Sites Advisory Commission lists the engagement as a Class A, Decisive Battle having a “direct, observable impact on the direction, duration, conduct, or outcome of the war” (1993, Technical Volume I: Appendixes: 189).

Between the 15th and the 20th of March 2015, a metal detecting survey of the Battle of the Crater was conducted to assess the status of the cultural resources connected with the engagement and to examine how far Union troops advanced from the mouth of the Crater.

The survey was conducted by a team of scholars, volunteers, and students. Dr. Mandzy, who holds a PhD in History and an MA in Anthropology, served as the project’s PI. Dr. Fitzpatrick, a historian from Morehead State University and Dr. Michelle Sivilich, Assistant Director at the Gulf Archaeology Research Institute also took part in the project. Five undergraduate and one graduate student from Morehead State University participated in this survey, as did eight members of Battlefield Restoration and Archaeological Volunteer Organization (BRAVO).

The Project area stayed within the confines as demarcated within the archaeological ARPA permit. This area is generally defined as the area west of the Crater. The path that takes visitors around the Crater delineated the eastern boundary of the project area. The eastern boundary of the project area was defined by the Jerusalem Plank Rd. The northern boundary of the Project Area was the wooded area known as Elliott’s Salient. The southern boundary of the Project Area was the tree line north of Baxter Road (see Map 1).

As a result of the survey, approximately 740 find spots were identified. Of these find spots, most contained a single artifact. The distribution of these finds is shown below (see Map 2). During the survey, four features were identified, including: 1) an unexcavated pile of bricks, 2) an unexcavated post Civil War midden, most likely associated with the golf course, 3) a previously unreported sewer line collector, and 4) a water line.

Though analysis of the artifacts remains ongoing and will be conducted in the Fall 2015 semester by students from Morehead State University, a preliminary count of the artifacts notes an overwhelming amount of both dropped and impacted small arms ordinance (approximately 330 in number). Minié balls were the most common artifact type, and include numerous derivations and calibers. Some of the small quantity of round musket balls (approximately 12 in number) may relate to events before the 1864 battle, while the presence of 30.06 cartridges documents the reenactment at the Crater between World War One and World War Two. Other types of ordinance include exploded fragments of artillery shells and a possible sniper’s bullet, which was made by two lead slugs held together by an iron nail.

As in most metal detecting surveys, iron nails and nail fragments were found in large quantities and they constitute the second most common artifact type. In the

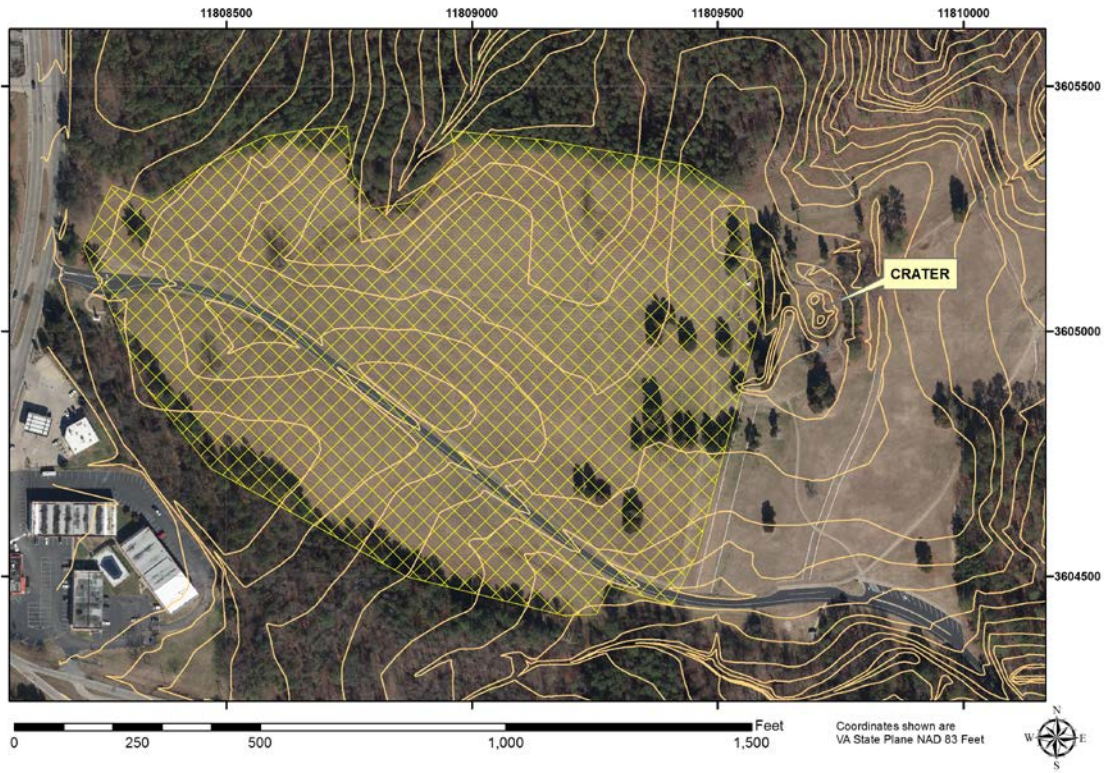
initial sorting of the collected artifacts, both hand wrought square nails and modern wire nails were noted.

Though five buttons were recovered from the survey, including a gold plated Virginia state seal button, there appears to be a significant lack of personal and uniform items. Other post-battle artifacts include personal beauty products (a lip stick case, a tin for face powder) and recreation (a child's broken 1950s Walt Disney Davy Crockett Frontier Marshall Badge, numerous aluminum pull tabs).

The survey indicates the presence of significant archaeological resources connected with the events of 1864. The majority of the recovered finds are expended small arms ordinance and it may be possible to reconstruct lines of battle and avenues of assault. The lack of large items brass items, such as belt buckles, plates, insignia and lettering, and percussion caps suggest that individuals using early types of metal detectors that were sensitive to large brass and copper items may have looted the area. Despite the known historical looting of the site, Battle of the Crater is an archaeological site with significant integrity. Since any metal detecting survey only recovers a very small fraction of the materials present, further fieldwork would provide additional data from which to model how the battle developed.

Map 1
Project Area

PETERSBURG CRATER ARCHAEOLOGICAL SURVEY APPROXIMATE PROJECT AREA



Map 2
Artifact Find Spots



Early Site History

Native Americans used the area of what is today Tidewater, Virginia as early as the Paleolithic. By the time of the arrival of the Europeans, the area around Petersburg was within the boundary of the Powhatan Confederation. This was an Algonquin speaking group, who inhabited the region for nearly 300 years prior to the arrival of British colonists. The confederation consisted of an interwoven conglomeration of villages, which answered to a central king (Rountree 1989).

English settlers appeared in the area by 1643 and they establish Bristol Parish. The construction of Fort Henry at the Falls of the Appomattox River spurred the development of Petersburg, first as a focal point for trade and later as a tobacco warehouse center (Oberseider and Savery 1995:6). By the early 18th century, two towns develop in the area, Petersburg and Blandford (Wallace 1983: 1). Blandford Church, built between 1734 and 1737, is the oldest standing structure in the city.

During the American War of Independence, Major General William Phillips and Brigadier General Benedict Arnold, now in service of the British crown, captured Petersburg on 25 April 1781. During the Battle of Petersburg, also known as the Battle of Blandford, the American forces retreated to Richmond and the British occupied the city (Wallace 1983:2). On 20 May Lord Cornwallis moved his force from South Carolina to Petersburg and took command of all the crown forces in the area (Johnson 1881: 28). The British forces then moved to Williamsburg and Yorktown.

Though devastated by the British occupation, the city continued to grow and develop as a central location. During the War of 1812, a volunteer company of about 100 men took the name Petersburg Volunteers and fought in the defense of Fort Meigs in northern Ohio (Ryan and Wallace 2004). Following the War of 1812, agricultural goods, primarily tobacco, cotton and grain, continued to flow through the city and locally manufactured goods, included iron cast in the city's foundries, were shipped by boat and later, by rail (Wallace 1983: 4).

In the 1800s, the city had one of the largest populations of free blacks in the United States. Most of the free blacks in Petersburg lived in a section of town known as Pocahontas (Oberseider and Savery 1995: 10). The city's First Baptist Church is the oldest African American congregation in the United States (Oberseider and Savery 1995: 78).

In 1861, when Virginia seceded from the Union, Petersburg was a vital component in the regional economy. The city's manufactures provided the Confederate forces with cannons, knives, swords, gunpowder and rope (Wallace 1983: 7). After the failure of McClellan's Peninsula Campaign, the city began to plan for a Union attack. A series of defenses, known as the "Dimmock Line", so named for the Confederate engineer who designed them, ringed the city. These lines were built by African-American slaves and stretched for 10 miles around Petersburg (Wallace 1983: 8).

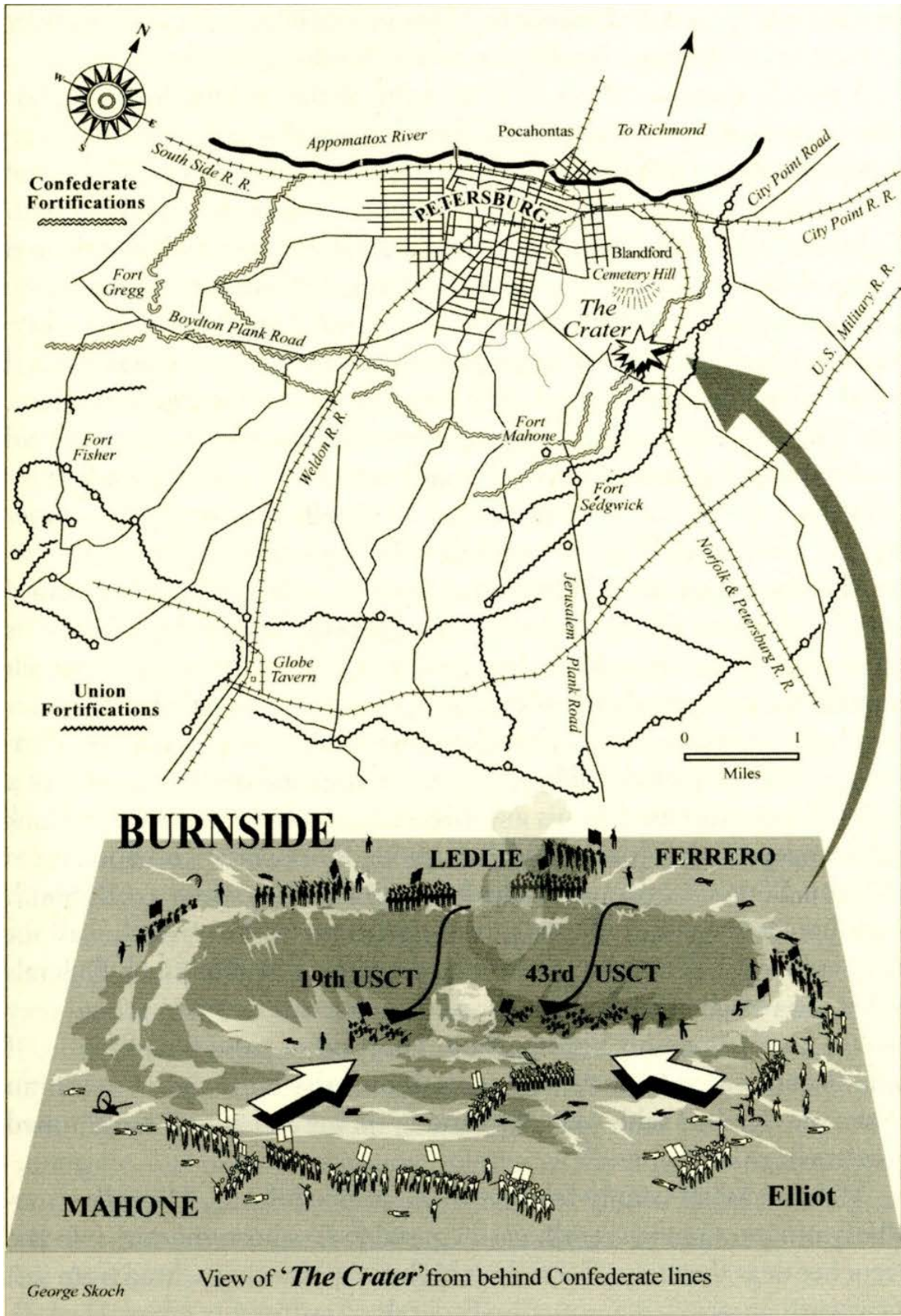
Historical Background of the Battle of the Crater

From May to early June 1864, Lt. General Ulysses S. Grant fought a series of battles against Robert E. Lee in an effort to either outmaneuver him so as to capture the Confederate capital of Richmond or destroy the Army of Northern Virginia in a decisive engagement. What followed is known as the Overland Campaign. Both Grant and Lee suffered heavy casualties and found themselves in a stalemate, with the Confederate forces losing the strategic initiative. With Lee entrenched around Richmond, the Army of the Potomac turned its attention towards Petersburg, which served as Richmond's last major railroad hub and source of supplies. The initial assault on the city was unsuccessful and Lee began to significantly re-enforce Petersburg's defenses. Grant maintained pressure on the Confederates and initiated what was to become an eight-month siege of the city of Petersburg.

Attempting to avoid a lengthy siege, Grant searched for alternatives to quickly capture Petersburg. Major General Ambrose Burnside of the Ninth Corp proposed such an alternative. Under Burnside's command was Lt. Colonel Henry Pleasants, a former mining engineer, who now commanded the 48th Pennsylvania Infantry Regiment. This unit and its commanding officer had worked in the mines of Pennsylvania and had considerable experience in working underground (Burbank 1898: 283). Pleasants proposed a plan to tunnel underneath the Confederate works and place enough explosives to blow a hole in the defenses. The Union would then assault the gap in the line and make for the heights above the Confederate defenses, known as Cemetery Hill, and then from there advance and capture Petersburg. Major General George G. Meade opposed the plan and reduced the amount of powder from the twelve thousand pounds of powder called for in the original proposal to eight thousand pounds (Burkhardt 2007: 160-1). The plan called for Pleasants' men to tunnel nearly 130 yards and place the explosive charge beneath a salient in the defenses occupied by Confederate troops under the command of Brigadier General Stephen Elliot. Burnside enacted Pleasants' plan on 24 June.

At the same time that the 500 ft. long gallery underneath no man's land was being constructed, Edward Ferrero's nine regiment strong Fourth Division was chosen to spearhead the assault. Burnside specifically chose the Fourth Division as it was one of the most fresh and eager units under his command. Burnside picked the Fourth Division precisely for its lack of combat experience, believing that veterans would attempt to remain under cover (Cavanaugh and Marvel 1989: 17). In the weeks prior to the assault the men of the Fourth Division rehearsed and drilled for the assault on the breach. Confederate forces caught onto the Union mining efforts and dug countermines in an attempt to locate it, but to no avail. On 23 July, Pleasants' mine was completed.

On 29 July, the day before the mine was set to explode, General George Meade ordered Ferrero's division removed from leading the assault. Meade communicated to Burnside that Grant had agreed that black troops should not be used in favor of more experienced troops (Cavanaugh and Marvel 1989: 21). A few months later when testifying to Congress, Meade stated that he did not believe in the ability of the black regiments (Hess: 56). Morale plummeted amongst the USCT and they were replaced by Brigadier General James Ledlie's worn First Division.



(from Burkhardt 2007: 165).

The detonation of the mine on the morning of 30 July was initially unsuccessful. Union miners successfully relit the fuse and at 4:44 AM they successfully detonated 8,000 pounds of gunpowder. The resulting crater was 150-200 ft. long, 60 ft. wide, and 30 ft. deep. The magnitude of the blast stunned both sides and nearly three hundred Confederate soldiers were immediately killed by the blast (Axelrod 2007: 123). The Confederates were completely taken by surprise but it took almost an hour before the Union troops began to exploit the gap. General Ledlie, who remained in a bombproof rather than accompanying his men, had failed to properly inform his troops of the battle plan for assaulting the crater (Burbank 1898: 285). The soldiers of the First Division failed to exploit the hole in the Confederate line and many of the battle fatigued Union troops sought shelter in the Crater rather than charging around it.

The stunned Confederate forces did not instantly reply and Brigadier General Elliot sought to rally his Confederate forces to counterattack. Elliot was seriously wounded and Major General Bushrod Johnson took command of what remained of Elliot's troops. Confederate troops then reformed and fired down on the Union troops, halting their initial advance. Confederate artillerymen also were able to redirect their fire and bring fresh guns to bear on the advancing Union forces. More Union troops were fed into the assault. Orlando Wilcox's Third Division followed Ledlie's troops but they also were halted at the Crater. Only small portions of Wilcox's men successfully passed to the left of the Crater to continue their assault (Cozzens 2002: 550).

By 8:00 AM, Ferrero's Union forces advanced and engaged Confederate forces along the Crater. While under heavy fire, the leading two regiments of the Fourth Division were successful in making their way through the confusion and turned back part of the Confederate defensive line, capturing upwards of 200 men in the process. Brutal close quarters fighting left these brigades disorganized and, with difficulties reforming their line, the Union troops fell back into the Crater (Cozzens 2002: 51). General William Mahone reinforced the Confederate line troops from his division and advanced against the Federal troops. Between 9:30AM and 1:00PM at least four Confederate counterattacks were launched to deprive the Union forces of regaining any momentum (Sunderow 1997: 220). The sight of black troops participating in the battle enraged Mahone's men and they gave them no quarter. Confederate soldiers killed black soldiers who were either wounded or retreating. Black troops, who successfully surrendered, were also killed by Confederate troops while being taken to the rear (Burkhardt 2007: 167).

Shortly after 1:00 PM the Confederates rushed the Crater and began slaughtering the United States Colored Troops. Black troops were specifically targeted and white troops were generally spared. Mahone's men chanted "'Spare the white man, kill the nigger!" (Slotkin 2009: 289). The pit was covered with blood so thick that it "collected in puddles" (Burkhardt 2007: 169). By 2:00 PM the surviving Federals were able to surrender and were taken back to Petersburg.

Post Battle Site History

William H. Griffith returned to his farm after the end of the siege but was unable to resume his previous profession. The family house had burned in the earliest days of the siege and “he could only afford to build a small rude cabin” (Cavanaugh and Marvel 1989: 112). In 1868 a visitor wrote, “There is still a vast hollow in the earth, though the look of the place has changed in consequence of the falling in of the sides. Human bones were still lying about; shreds of uniform and cartridge-pouches and bayonet scabbards, some of them scorched and curled up as with fire” (Macrae 1870: 190).

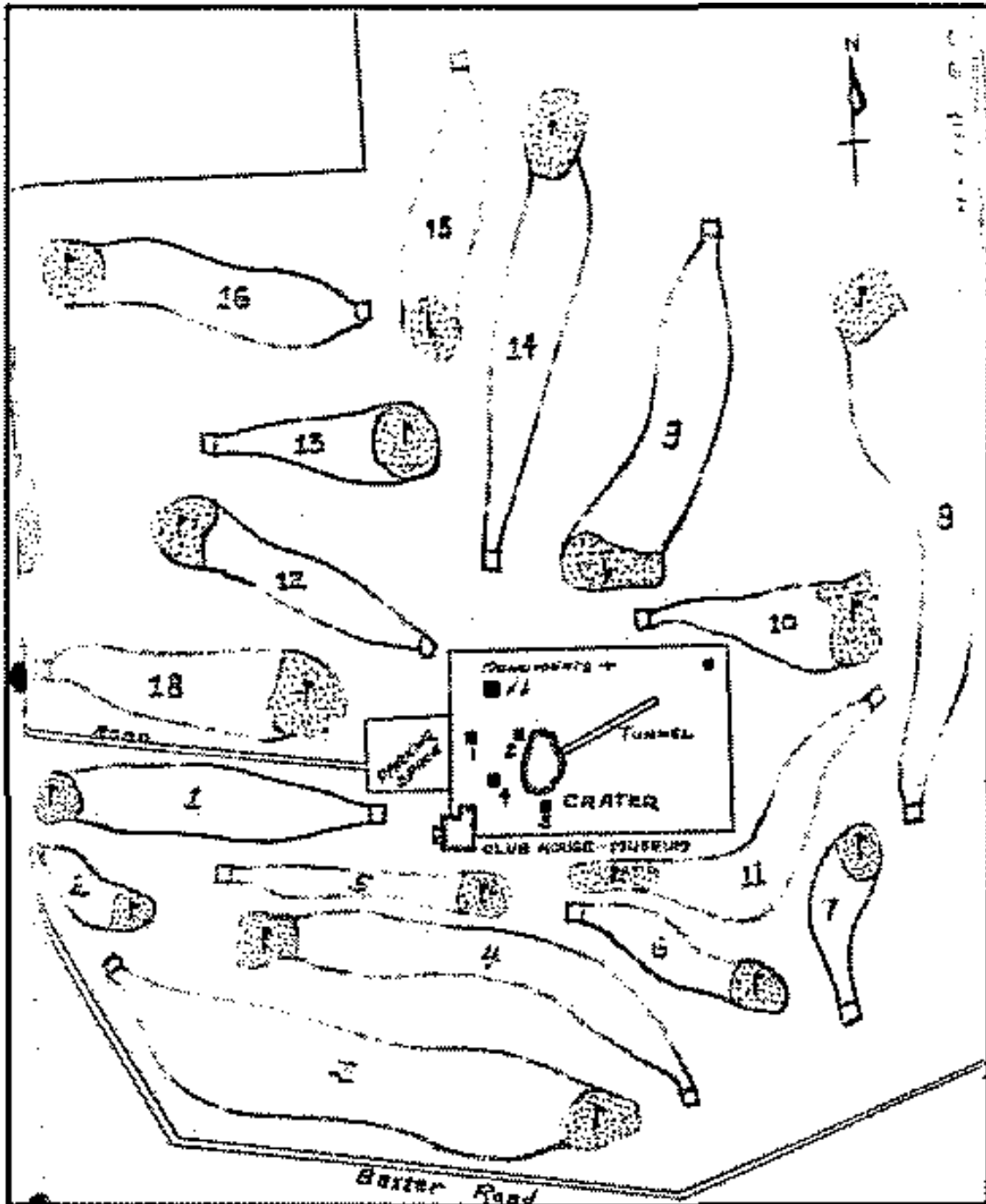
Capitalizing on the tourists who passed by to view the Crater, Mr. Griffith fenced off the site of the explosion and charged an admission fee of twenty-five cents (Kinard 1995:80). He soon added a relic shop and added flagstone walkways to the Crater (Cavanaugh and Marvel 1989: 112). A few years later, as the tourist business continued to grow, Mr. Griffith built the Crater Saloon. To provide better access to the Crater itself, a series of steps were dug into the pit. Note the skulls and the unexploded ordinance on the lip of the Crater in this circa 1870 photograph. After the death of William Griffith in 1873, his son Timothy R. Griffith operated the farm until his death in 1903 (Levin 2006: 8).



(from <http://civilwartalk.com/threads/veterans-of-the-crater.98225/> accessed on 29 May 2015)

That same year, a reenactment of the Battle of the Crater took place. Veterans of Mahone’s Virginia Brigade charged a position held by cadets from a military school (Levin 2012). In 1925, a commercial enterprise, the Crater Battlefield

Association, acquired the land and established a visitor center near the Crater. The Association also constructed an 18-hole golf course on the surrounding grounds and had re-dug the tunnel and electrically illuminated it for visitors (Wilson 1976: 5).



Plan of Golf Course (from Brown 2000: 8)

On 3 July 1926, "An Act To Establish a National Military Park on the Battlefields of the Siege of Petersburg" was passed (Federal Law PN 467-69 HR 7817) (Wilson 1976: 6). In 1932, the Petersburg National Park was dedicated and in 1936 the National Park Service took over stewardship from the War Department. That same year, the NPS purchased the holdings of the bankrupt Crater Battlefield Association and acquired the Carter battlefield area.

In 1937, 3,000 men took part in a re-enactment that involved the U.S. Marine Corps and Cadets from the Virginia Military Institute, Army and National Guard units. It has been estimated that 50,000 people came to see the reenactment of the Battle of the Crater (Wilson 1976: Figure 4).

line, which now held 15,000 Federals. The colored troops, encouraged by their initial success, began reforming to press on toward Petersburg.

Meanwhile General Lee had ordered all available troops of Mahone's Division, stationed on the lines south of Petersburg, to march to the threatened point. By the time the Negro troops charged, Mahone had arrived with Weisiger's Brigade, with Wright's and Saunders' Brigades following. Sending Weisiger's men into a ravine within two hundred yards of the crater, Mahone ordered them to fix bayonets for a charge. Just then the Negro troops appeared, moving out toward Mahone's men. Mahone at once ordered a counter-attack. His eight hundred Virginians rushed forward and with a close range volley and bayonets, forced the Federals from the portion of the Confederate line north of the crater. Many retreated within the Federal lines, but others pushed in with the mass of men in the crater.

Mahone's Second Brigade, Wright's Georgians, having formed in the ravine used by Mahone's men, then charged directly at the crater, but the Federal musketry fire caused a shift in their direction, so that they joined Weisiger's troops. Orders to retire were received by the Federal troops in the crater, but most of the men preferred to remain rather than cross the fire-swept field between the lines. Mahone's Third Brigade, Saunders' Alabamians, attacked from the ravine at about 1 p. m., forcing the Federals from the short sector of Confederate line just south of the crater. The Federals in the crater itself were now practically surrounded; mortars were dropping shells among them at a range of only a few feet. At 2 p. m., hearing Saunders' troops forming for a final charge, the Federal survivors, about 1,000 men, surrendered. The Federal loss in this engagement counting casualties of all kinds, was 4,400; the Confederate 1,500.

Battle OF THE CRATER

• RE-ENACTMENT •

PETERSBURG, VIRGINIA

Friday, April 30, 1937

... PROGRAM ...

for Exercises Starting at 11 A. M.

Under Auspices of the
PETERSBURG BATTLEFIELD PARK ASSOCIATION
and
THE NATIONAL PARK SERVICE
Petersburg National Military Park

(from <http://cwmemory.com/wp-content/uploads/2013/07/Screen-Shot-2013-07-09-at-1.21.40-PM.png> accessed on 25 May 2015)

The original master plan for the park, drafted in the early 1940s, was not implemented and a second master plan was created in 1962 (Wilson 1976: 7). The park used the existing visitor center until 1966 when the present day Eastern Front Visitor Center was built.

Previous Fieldwork

Since the battle, a number of excavations were conducted on the Crater Battlefield. Lieutenant Colonel James Moore, who was tasked with recovering the Union dead from the siege, undertook the first excavations. After acquiring grounds for a cemetery, Moore sent out his 100 men in a line five feet apart to look for graves. At the Crater, Moore's men found 669 graves (Cavanaugh and Marvel 1989: 112). Others also found graves and Mr. Griffith "unearthed a mass grave of Negroes" (Cavanaugh and Marvel 1989: 113).

According to the park supervisor's reports of 1937 and 1938, two archaeological projects were conducted in 1937 by Foreman, a CCC engineer and Hargrave, a historian (Wilson 1976: 8). At least part of their work focused on mine entrance. Though some photographs of their research exists, no archaeological reports from this fieldwork are on file with the NPS.

In 1958, NPS historian T. J. Harrison conducted work at the site and located his test area relative to a monument that had been removed by 1976. Wilson reports that no report was found for this work (1976: 8).

In 1962, two NPS archaeologists, John Griffith and Rex Wilson dug a 6 by 9 foot test unit. In the process of their work, the archaeologists found the original tunnel and some of the 1937 work (Wilson 1976: 8).

In September and October 1975, Charles I. Wilson of Historic Conservation & Interpretation, Inc. was contracted to conduct a research project on the Crater (Wilson 1976). His work was focused on three areas: Area A explored an area where part of the tunnel had recently collapsed, Area B looked at the conjectural Crater end of the tunnel and Area C was a series of small auger holes sunk across the Crater. As a result of these excavations, the location of the entire tunnel was determined and it was found to be in extremely poor condition.

In the summer of 1999, archaeologists from the University of Maryland excavated part of the Federal picket line near the Crater (Brown 2000: i). Four units were opened and archaeologists excavated a seven-foot section of the Federal picket trench and features associated with the Battle of the Crater. Several features were noted beneath the plow zone and individual battle related artifacts were found in the plow zone layer. The low number of recovered military artifacts from the trench areas is possibly attributed to Mr. Griffith, or others, who may have mined the trench for relics and scrap metal before they filled it in (Brown 2000: 54).

More recently, Julia Steele, the park archaeologist at Petersburg National Battlefield, excavated a small section of the battlefield near the relocated Massachusetts Monument. The monument was originally located near the Crater, but was moved to the edge of the battlefield near the Jerusalem Plank Road. According to the archaeologist, quantities of spent ordinance were located in the area, which suggested that the area may have been involved in the Battle of the Crater (Steele: pers. comm., July 2014).

Research Design

A metal detecting survey of the Battle of the Crater can assess the status of the cultural resources connected with the engagement and to examine how far did Union troops advanced from the mouth of the Crater.

Throughout the world, archaeologists have a long-standing tradition of studying military conflicts. Battlefield studies, such as Harrington's work at Fort Necessity, the scholarship done by Thordeman, Noörlund and Ingelmark at Wisby, and the research conducted by Hanson and Hsu at Fort Stanwix all share a trait of highlighting the multi-disciplinary nature of studying past human conflict. Yet as battlefields tend to occupy large tracks of land and artifacts are generally not distributed in depth, shovel testing, units, and trenching of areas over which large bodies of men fought for a very brief period of time have produced results that are not reflective of past human activity (Babits 2001:118). Because of the methodological limitations of excavating the thousands of square meters that compose a field of conflict, archaeologists, not surprising, focused their attention toward particular features, such as campgrounds, hospitals and burial grounds. As a result, Ivor Noel Hume, one of the founders of American historical archaeology, went so far as to state a battlefield "will have little to distinguish it, except perhaps some graves and a scatter of hardware... there can be no meaningful stratigraphy (as far as the battle is concerned) and the salvage of relics becomes the be all and end all" (Hume 1971:188).

In the early 1980s, the battlefield scholarship took a significant leap forward with the archaeological survey of the Little Bighorn battlefield. Conducted by Doug Scott and Richard Fox, this pioneering work combined non-standard equipment (metal detectors) with modern survey technology. As a result of this work, scholars for the first time had a way of looking at an entire battlefield. Not only did the methodology allow for the recovery of items that were scattered over vast distances, but detailed mapping of artifacts allowed scholars to plot out their distributions. Further study identified relationships between the artifacts and when combined with topography, historical maps and documentary sources, allowed for a nonpartisan analysis of the events that transpired at a particular day.

In the thirty years since the study of the Little Bighorn battlefield was published, scholars continued to expand and build on the groundbreaking success of this pioneering work. Advances in GPS systems and GIS computer technology make it even easier to undertake a survey of a wide area. Grant funding opportunities have allowed scholars to look at battlefields in different ways and provide a much more comprehensive approach to examining past behavior.



Prof. Mandzy's crew working at the 1649 Zboriv Battlefield (Ukraine)

The first question revolves around the issue of archaeological resources connected with the Battle of the Crater. The area of the Crater itself is demarcated on the battlefield by a circle of stones. The documentary evidence is quite clear that the explosion had left a significant hole in the ground and a comparison between the current topography and photographs taken shortly after the battle show that the area has changed significantly over the last 150 years. Much of the hole was filled in, either by natural erosion or by post battle activity. The existence of a souvenir stand near the mouth of the Crater in the 19th century, as well as the construction of a golf course in the early 20th century have all negatively impacted the archaeological resources connect with the battle. Nevertheless, as numerous battlefield surveys have documented, it is difficult to completely eradicate all evidence of past fields of conflicts and the current methodology allows us to document areas and degrees of disturbance.

The second research question examines how far did the Union troops advance out past the Crater. One account, published shortly after the war, states that "Then the division of colored soldiers, under General Ferrero, was sent forward to storm the (Cemetery) hill ... They pushed well up toward the crest, and captured some men; but they too, were soon hurled back by a heavy fire. They rallied and again advanced, when they were repulsed a second time" (Lossing 1874:352-3). A more recent scholar states that "The Federals got stuck in the five-hundred yard breach of the Confederate line" (Hess 2010:xi), "320 yards of the Confederate line north of the crater and about 150 yards south of it (Hess 2009:97). Although the Confederates were able to contain the breakthrough and later that day successfully counter-attacked, the question remains how far did the Union assault get beyond the mouth of the Crater?

Field Methodology

A metal detecting survey of the Battle of the Crater was conducted between 15 and 20 March 2015 to assess the status of the cultural resources connected with the engagement and to examine how far did Union troops advanced from the mouth of the Crater.

Working in teams of two, a student from Morehead State University was paired with a volunteer metal detectorist from the Battlefield Restoration and Archaeological Volunteer Organization (BRAVO). Such pairings allowed students to learn from the skilled detectorists, many of whom have multiple decades worth of metal detecting experience. Such partnerships also significantly reduced mistakes and prevent data loss.



MSU student and BRAVO member the first Minié Ball of the Survey Project

To maintain better control of the large project area, the field was arbitrarily divided into four quadrants. The southeast, or first quadrant, was designated as the area south of the old service road that took visitors to the Crater/golf course/visitor center. Each artifact had its own particular GPS coordinates and was shot in using a laser Total Station. As the quadrants would not matter in the final analysis, a tree was chosen to separate the southeast and southwest quadrants. The second, or southwest quadrant, was designated as the area due west of the first quadrant. As the park archaeologist Julia Steele identified an area which she had previously excavated near the recently moved Massachusetts monument, we included the area into our sweep but spent most of our time working in areas to the east of her project area. The third quadrant was the area north of the old service road and to the east of the same tree used on the previous days. The fourth quadrant included the northwest percale of the project area.

All teams were assigned to one quadrant at a time to ensure adequate ground coverage by multiple machines. Each team swept their designated section of the battlefield. Once a metal detector registered a potential artifact, the team excavated the artifact from the ground using small hand trowels. At the request of the park superintendent, who wanted as few artifacts retained as possible, and the park archaeologist, who wanted to collect as much information as feasible, the only items not recovered were items dated less than fifty years old. This was limited to modern (post 1965) US coins, tin foil fragments, and pull-tabs. This follows the spirit of the National Historic Preservation Act of 1966, were policy of preserving all items that are more than fifty years old. All items with no discernable date or those that were more than fifty years old were collected and processed.

All items were then placed in a plastic zippered bag. Within each bag we placed an artifact card. The card contained such information as the date of find, its location, the excavator and a brief identification.

Battlefield Restoration and Archaeology Volunteer Organization
bravodigs.org

SITE: C 1 **DATE:** 3/10/15

NAME: Tim RENO

DESCRIPTION: MINI BAIL

Sample Artifact Tag

Each artifact was individually bagged and the find spot was marked with a plastic pin flag - an 18-inch long plastic pin to which a large bright pink plastic flag was attached. Each bagged artifact was placed in the exposed hole with the pin flag going through the bag. The hole was left open for inspection by one of the archeologists for potential features or non-metallic artifacts. The team then moved on to search for more artifacts.



Field with Pink Flags Showing Artifact Locations

The next step in the field procedure was to record the GPS coordinates of the find spot using a hand held Garmin GPSmap 60C GPS. In an open sky area, such as the project area, accuracy of Garmin GPSmap 60C GPS is within 3 to 4 meters. At this point the artifacts were collected and assigned a unique Field Identification Number (or *FIN*). The field numbers were based on the date and the artifact found that day - thus the 12th artifact recovered on the 13th of March 2015 would be recorded as such as 13.3.15.12. An artifact tag with the GPS coordinates was then placed in a bag with the other finds from that day's morning or afternoon session. To prevent loss of data, the artifact number was recorded on the bag, the flag, and in the field notebook.

At the end of the artifact collection phase, the location of each artifact was measured using a Trimble 5600 total station laser transit with a TDS Ranger 500 data collector operated by Michelle Sivilich, PhD. The transit has a specification accuracy of ± 2 mm at a range of 5,000 meters.



Control points for the transit work were established by Adam Baghetti, GIS/IT Specialist at Petersburg National Battlefield. He provided a copy of a 1978 survey map of a series of brass-capped concrete monuments that were set to delineate the park boundary around the crater. Note: elevation data was not measured during the 1978 survey.



The format for the control point data was in Virginia State Plane coordinates in North American Datum (NAD) 1927 feet and was converted to NAD 1983 feet using Corpscon software developed by the US Army Corps of Engineers. All data was collected in this coordinate system. Control points C23 and C24 were selected as the base points for the survey since they were the only points with lines of sight that were not obstructed by trees. These points were in a ravine to the east of the Crater

and were used to establish a temporary control point using a two-point resection procedure. The monument for C24 was destroyed, but its location could be estimated with the rebar that was remaining. The temporary point and C23 were used to establish additional control points within the project area.

2013 high resolution digital aerial orthophotographs and a contour data shape file of the project area were also provided by Adam Baghetti. The artifact locations were mapped onto the aerial photographs using ESRI ArcView 10.2 GIS (Geographic Information System) software for spatial relationship and KOCOAs analyses.

Our initial plan was to leave the excavated holes open in order to see if any stratigraphic profiles could be noted. Unfortunately, the only soil changes noted were within two features encountered during our survey. As the excavation of these features was beyond the purview of our permit, the features were noted and left *in situ*. During the survey, a total of four features were identified, including: 1) an unexcavated pile of bricks, 2) an unexcavated post Civil War midden, most likely associated with the golf course, 3) a previously unreported sewer line collector, and 4) a water line.

During the course of our excavations, almost all artifacts were found within the plow zone and at a depth between 4 to 6 inches. At the weather forecast indicated rain at end of the week, we postponed the washing of artifacts until the last two days in the field. All items were washed in warm water and allowed to air dry. The absence of any noticeable humidity in the covered garage and the basement in the field house allowed for the air-drying artifacts over a 24-hour period. The artifacts underwent preliminary analysis and the data was added to an excel database. All of the artifacts were then repacked in their field zippered bags for transportation to Morehead State University for further analysis. The artifacts are temporary housed in a secure location in the Special Collections of the Camden-Carroll Library.

Preliminary Results

The fieldwork was very successful and yielded significant amounts of information. Though analysis of the artifacts remains ongoing and will be conducted in the Fall 2015 semester by students from the Morehead State University, a few remarks may be made at this time. This analysis is not statistically supported and notes initial observations only.

During the preliminary sorting of artifacts after washing we noted the predominance of small arms ordinance. At this time, approximately 400 pieces of ammunition were noted. These include approximately 330 pieces of both dropped and impacted small arms ordinance. Minié balls, of various derivations and calibers, are the most numerous artifact type. Various types of cleaner bullets, which were used to remove powder residue from a gun barrel, were also found.

In addition to the Minié balls noted above, other types of munitions were noted. Approximately twelve round musket balls were found. Although the round balls were used for two hundred years before the Battle of the Crater and were commonly used by civilians in hunting, at least one musket ball has three distinct dimples, which suggest that that it was part of a "buck and ball" load (Bilby 1996: 20). Buck and ball ammunition is a military load, traditionally used by American forces since the War of Independence. The recovery of a possible sniper's bullet, which was made by two lead slugs held together by an iron nail, raises new questions as to the use of snipers at the Crater. The recovery of significant quantities of 30.06 cartridges and stripper clips is thought to be related to the 1937 reenactment.

Large artillery shell fragments were recovered in the project area and document the use of both round and shell munitions. The discovery of three large pieces of an explosive shell, two of which fit together, suggests that the round did not explode in the air, but rather hit the earth and then detonated. Laboratory analysis will help identify the shell and determine its caliber, which may allow us to link it to a particular gun battery. The recovery of three large round iron canister or grape shot near the old golf Clubhouse needs further analysis, but it suggests anti-personal artillery fire was directed at this area.

As in most metal detecting surveys, the iron nails and nail fragments were found in significant quantities and are the second most common artifact type. Although no formal analysis of the nails has yet been undertaken, both hand wrought square nails and modern wire nails were noted during the washing of the artifacts.

Five buttons were recovered from the survey, including what appears to be a post-Civil War gold plated Virginia state seal button. Other post-battle artifacts include personal beauty products (a lip stick case, a tin for face powder) and recreation (a child's broken 1950s Walt Disney Davy Crockett Frontier Marshall Badge, numerous beer pull tabs).

Recommendations

The survey indicates the presence of large quantities of archaeological resources connected with the events of 1864. The majority of the recovered artifacts are expended small arms ordinance and it may be possible to hypothesize lines of battle and avenues of assault. The lack of large brass items, such as belt buckles, plates, insignia and lettering suggest that the area may have been looted by individuals using an early type of metal detector that was sensitive to brass and copper items but lacked the discrimination to identify iron and small objects. The lack of any recovered percussion caps also supports this hypothesis. It is also possible that such large and shiny artifacts were coveted by the early tourists and were collected shortly after the battle by souvenir hunters.

Since any metal detecting survey only recovers a fraction of the materials present, further fieldwork would provide additional data from which to plot how the battle developed. The quantity of small arms ammunition recovered from the Project Area is immense, but most likely represents only a small sample of what remains. Additional fieldwork within the topsoil can provide more data to better reconstruct the Union advance.

The project has clearly demonstrated that the Battle of the Crater is an archaeological site with significant integrity. It is recommended that further work will be carried out to help define the boundaries of the Crater Battlefield Archeological Site and provide additional information of site usage, troop movements during the time of the engagement, and visitor use of the Crater Battlefield.

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