



September 30, 2015

Pamela Shellenberger
U.S. Fish and Wildlife Service
110 Radnor Rd; Suite 101
State College, PA 16801

**Subject: Request for Effects Determination Concurrence
Sunoco Pipeline, L.P. - Ohio Pipeline Project Washington County, PA
(Formerly part of the Mariner East 2 Pipeline Project - Project #2014-
0200)**

Dear Ms. Shellenberger:

Tetra Tech, Inc. (Tetra Tech) has been retained by Sunoco Pipeline, L.P. (SPLP) to conduct environmental field surveys and permitting services for the proposed Pennsylvania Pipeline Project (PPP) formerly part of the Mariner East 2 Pipeline Project (ME2). On behalf of SPLP, Tetra Tech is requesting effects determination concurrence from the U.S. Fish and Wildlife Service (Service)-Pennsylvania Field Office for the PPP.

On December 12, 2013 a Large Project Pennsylvania Natural Diversity Inventory (PNDI) Environmental Review Request including a large project form, project description, and preliminary project USGS topographic mapping was provided to the USFWS under the preliminary project name "Mariner East 2 Pipeline - Trans-Pennsylvania". The Mariner East 2 Project was described as traversing the state of Pennsylvania. However, after field activities began, the project was split into two separate and independent projects; the PPP and the Ohio Pipeline Project (OPP) (Attachment 1). The PPP involves the phased installation of approximately 561 miles of two parallel pipelines within a 306-mile, 50-foot-wide right-of-way (ROW) from Houston, Washington County, Pennsylvania to SPLP's Marcus Hook facility in Delaware County, Pennsylvania with the purpose of interconnecting with existing SPLP Mariner East pipelines. Initially, a 20-inch diameter pipeline would be installed within the ROW from Houston to Marcus Hook (306 miles) and a second, up to 20-inch diameter pipeline, would be installed in the same ROW. The second line is proposed to be installed from SPLP's Delmont Station, Westmoreland County, Pennsylvania to the Marcus Hook facility, paralleling the initial line for approximately 255 miles.

We received a response to our December 12, 2013 request for information dated March 19, 2014 from the Service and it is included as Attachment 2. The Service response identified the Indiana bat, northern long-eared bat, and bog turtle ESA species of concern and a number of follow-up conversations were held by phone for further clarification. One of those follow-up conversations on April 1, 2015, indicated that the northeastern bulrush was an additional species of concern. In response to USFWS survey requirements, qualified Biologists surveyed for Indiana and northern long-eared bats, bog turtle, and northeastern bulrush in appropriate locations along PPP. Bog turtles will be addressed in a separate submittal package.

As a result of these correspondences with the Service, mist-net surveys were implemented by Apogee Environmental and Archeological, Inc. (Apogee) in accordance with *Range-Wide*

Indiana Bat Summer Survey Guidelines and survey conditions listed under the Pennsylvania Game Commission (PGC) Special Use Permit. Surveys were conducted within 294, 1-km blocks along most of the PPP alignment in Pennsylvania and began in May 2014 and continued during the netting season through August 2015. Results of the 2014 surveys have been provided to USFWS, but are included in Attachment 3. This attachment also includes mapping of survey areas as a supplement. Additional surveys were completed during the 2015 netting season and survey results and locations are also provided in Attachment 3.

Per the Service, 100 of these survey blocks are within two known Indiana bat swarming habitat protection radii (Layton Fire Clay Mine swarming habitat radius in Allegheny and Westmoreland counties and Hart Mine swarming habitat radius in Cambria, Blair, and Huntingdon counties). Therefore mist-netting surveys were not completed in these areas due to the known habitat status. An additional 12 square km blocks were not surveyed due to a lack of tree cover within the entire block. Similarly, an additional 65 blocks occurring within a recently constructed SPLP project called Mariner East 1 were not surveyed due construction being restricted primarily to the same limits of disturbance (LOD) requiring minimal additional tree clearing and previous correspondence from the USFWS that directed concerns primarily to the swarming areas. No Indiana bats were captured during the mist net surveys, however, thirty-two (32) northern-long eared bats were captured. In addition, mine portal searches and netting of appropriate features were conducted. Mine portal and cave field location surveys began in August 2014 and were completed in September 2014 with netting surveys of appropriate features being completed in October 2014. No bats were captured during the mine portal survey efforts.

Through discussions with the Service, SPLP has decided to avoid take of Indiana and northern long-eared bats through the use of a *Myotis* Conservation Plan (Attachment 4), which also outlines how SPLP will offset habitat impacts for the Indiana bat. A summary of the results of the mist-net survey and mine portal surveys are also provided in this Plan. To summarize, as a standard practice for avoiding impacts to these bat species, SPLP will conduct tree clearing between November 15 and March 31 within the two known Indiana bat swarming habitat protection radii and between October 1 and March 31 within the protection radius of northern long-eared bat capture locations (1.5 miles centered on a roost tree for a tracked capture tracked or 3 miles centered on the capture location for non-tracked captures). This commitment is outlined within the attached *Myotis* Conservation Plan (Attachment 4). In addition, SPLP through the design of the project has minimized tree clearing as much as operationally possible. Within the project LOD and within the known Hartman Mine swarming habitat radius there are approximately 243 acres of forested area. Within the 0.25-mile buffer of the LOD and within the Hartman Mine swarming habitat, there are approximately 5,000 acres of forested area.

As a habitat impact off-set measure, a payment to the Indiana Bat Conservation Fund (IBCF) will be remitted for the tree acreage located within the Hartman Mine swarming habitat radius in Cambria, Blair, and Huntingdon counties that would need to be cleared as a result of the Project. The *Myotis* Conservation Plan (Attachment 4) includes the Calculation Sheet for Indiana Bat Habitat Compensation. In summary, the approximate tree clearing area within the swarming area radius in Cambria, Blair, and Huntingdon counties are 18, 128, and 97 acres, respectively. The multiplier for a P2 swarming area is 1.5. However, due to the co-location of the majority of the project and a larger portion of the impacted acreage occurring within temporary workspaces that will be allowed to re-vegetate and will not be included in any maintenance or operation plans, a multiplier of 1.0 was used. The total deposit amount will be \$667,187. A check payable to the Indiana Bat Conservation Fund (Acct #710621004) will be sent at a later date to First Commonwealth Bank – Trust Division. Proof of the deposit will then be sent to the USFWS and PADEP.

The Service identified the Northeastern bulrush as potentially occurring within the Project area in Cambria, Blair, Huntingdon, Juniata, and Perry Counties. Consultation with USFWS

determined that field surveys should focus on wetlands, waterbodies, and vernal pools within the Project area at 1,300 feet elevation or higher as suitable habitat. Northeastern bulrush surveys by Service approved biologists began in August 2014 and were completed in August 2015. The surveys were completed by Tetra Tech, PA Soil & Rock, and Skelly and Loy. Survey Reports for these activities are provided in Attachment 5.

Field surveys identified 231 total potential northeastern bulrush habitat areas (e.g. vernal pools, wetlands, floodplain depressions) within 46 Study Areas. Field surveys of these potential bulrush habitat areas identified two confirmed Northeastern bulrush populations, one in Cambria County and one in Blair County. The Cambria Co. population is located within the proposed LOD, approximately 75-ft from an existing access road. The Blair Co. population is located outside of the proposed LOD, approximately 340-ft from the edge of the proposed LOD. As outlined in the Northeastern Bulrush Conservation Plan (Attachment 6), SPLP has taken measures to ensure no direct impacts occur to these identified populations. SPLP anticipates that a Project re-route shifting the proposed LOD from 125 feet within the population to 340 feet away will avoid potential impacts to the Blair Co. population. SPLP anticipates that impacts to the Cambria Co. population will be avoided with the use of an HDD, along with exclusion fencing, signage, compliance inspection, and implementation of an inadvertent return contingency plan.

Based on the information provide herein, the attached survey reports and conservation plans, and what is known about the presence and/or potential presence of ESA listed species in the vicinity of the project areas, it is Tetra Tech's conclusion that the PPP is not likely to adversely affect the Indiana bat, northern long-eared bat, or northeastern bulrush. We request, on behalf of SPLP, the Service's concurrence with this determination to satisfy Federal and State permit requirements.

Thank you for your assistance in this matter and we look forward to your review and concurrence. If you have any questions regarding this request, please feel free to contact me at 412.921.8167 or preston.smith@tetrattech.com.

Sincerely,

Preston R. Smith
Manager, Wetlands and Ecological Services

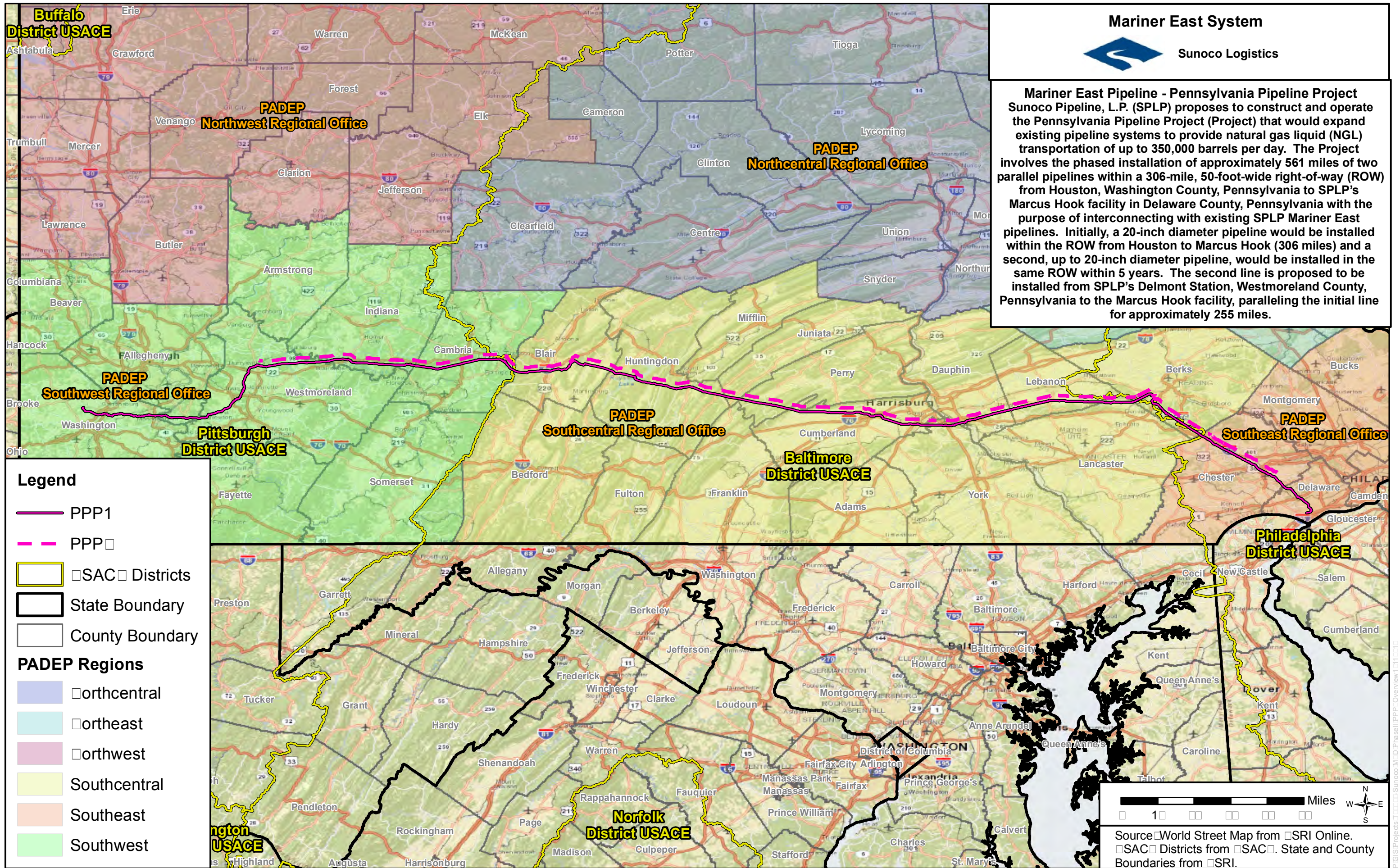
Attachments:

- PPP Project Overview Map (Attachment 1)
- USFWS Pennsylvania Field Office Response Letter (Attachment 2)
- Bat Survey Reports (Attachment 3)
- Myotis* Conservation Plan (Attachment 4)
- Northeastern Bulrush Survey Reports (Attachment 5)
- Northeastern Bulrush Conservation Plan (Attachment 6)

CC: Chris Embry, Sunoco Logistics;
Matt Gordon, Sunoco Logistics;
Brad Schaeffer, Tetra Tech;
Sandy Lare, Tetra Tech;
File 112IC05958

ATTACHMENT 1

PPP Project Overview Map



Mariner East System



Sunoco Logistics

Mariner East Pipeline - Pennsylvania Pipeline Project
 Sunoco Pipeline, L.P. (SPLP) proposes to construct and operate the Pennsylvania Pipeline Project (Project) that would expand existing pipeline systems to provide natural gas liquid (NGL) transportation of up to 350,000 barrels per day. The Project involves the phased installation of approximately 561 miles of two parallel pipelines within a 306-mile, 50-foot-wide right-of-way (ROW) from Houston, Washington County, Pennsylvania to SPLP's Marcus Hook facility in Delaware County, Pennsylvania with the purpose of interconnecting with existing SPLP Mariner East pipelines. Initially, a 20-inch diameter pipeline would be installed within the ROW from Houston to Marcus Hook (306 miles) and a second, up to 20-inch diameter pipeline, would be installed in the same ROW within 5 years. The second line is proposed to be installed from SPLP's Delmont Station, Westmoreland County, Pennsylvania to the Marcus Hook facility, paralleling the initial line for approximately 255 miles.

- Legend**
- PPP1
 - - - PPP2
 - SAC Districts
 - State Boundary
 - County Boundary
- PADEP Regions**
- Northcentral
 - Northeast
 - Northwest
 - Southcentral
 - Southeast
 - Southwest

0 1 2 3 4 5 Miles

Source: World Street Map from SRI Online.
 SAC Districts from SAC. State and County Boundaries from SRI.

ATTACHMENT 2

USFWS Pennsylvania Field Office Response Letter



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Pennsylvania Field Office
315 South Allen Street, Suite 322
State College, Pennsylvania 16801-4850

March 19, 2014

Preston Smith
661 Anderson Drive
Foster Plaza
Pittsburgh, PA 15220

RE: USFWS Project #2014-0200

Dear Mr. Smith:

This responds to your project information received by our office on December 13, 2013. You requested information about federally listed and proposed endangered and threatened species within the area affected by the proposed Sunoco Mariner East 2 Pipeline project located in Washington, Allegheny, Westmoreland, Indiana, Cambria, Blair, Huntington, Juniata, Perry, Cumberland, York, Dauphin, Lebanon, Lancaster, Berks, Chester, and Delaware counties, Pennsylvania. The following comments are provided pursuant to the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) to ensure the protection of endangered and threatened species and the Migratory Bird Treaty Act (MBTA, 16 U.S.C. 703-712; Ch. 128; July 13, 1918; 40 Stat. 755, as amended) to ensure the protection of migratory bird species.

Indiana bat

The project is within the range of the Indiana bat (*Myotis sodalis*), a species that is federally listed as endangered. Indiana bats hibernate in caves and abandoned mines during the winter months (November through March), and use a variety of upland, wetland and riparian habitats during the spring, summer and fall. Indiana bats usually roost in dead or living trees with exfoliating bark, crevices or cavities. Female Indiana bats form nursery colonies under the exfoliating bark of dead or living trees, such as shagbark hickory, black birch, red oak, white oak, and sugar maple, in upland or riparian areas.

Land-clearing, especially of forested areas, may adversely affect Indiana bats by killing, injuring or harassing roosting bats, and by removing or reducing the quality of foraging and roosting habitat. Therefore, to determine whether the proposed project will affect Indiana bats, we will need additional project information about how much forest disturbance will occur (area, tree species, and size classes).

Northern Long-Eared bat

The northern long-eared bat (*Myotis septentrionalis*) was proposed for listing as an endangered species on October 2, 2013. No critical habitat has been proposed at this time. Species proposed for listing are not afforded protection under the ESA; however, as soon as a listing becomes effective, the prohibition against jeopardizing its continued existence and “take”¹ applies **regardless of an action’s stage of completion**. Therefore, to avoid significant project delays we recommend that the effect of the project on northern long eared bats, and their habitat, be considered during the project planning and design. Additional information about northern long-eared bats, including ecology, habitat descriptions, listing status updates, and possible conservation measures may be found at www.fws.gov/midwest/endangered/mammals/nlba/index.html (click on Northern Long-eared Bat Interim Conference and Planning Guidance). We are available to discuss potential conservation measures specific to your project design.

Bog turtle

The project is within the known range of the bog turtle (*Clemmys muhlenbergii*), a species that is federally listed as threatened. Bog turtles inhabit shallow, spring-fed fens, sphagnum bogs, swamps, marshy meadows, and pastures characterized by soft, muddy bottoms; clear, cool, slow-flowing water, often forming a network of rivulets; high humidity; and an open canopy. Bog turtles usually occur in small, discrete populations occupying suitable wetland habitat dispersed along a watershed. The occupied “intermediate successional stage” wetland habitat is usually a mosaic of micro-habitats ranging from dry pockets, to areas that are saturated with water, to areas that are periodically flooded. Some wetlands occupied by bog turtles are located in agricultural areas and are subject to grazing by livestock.

To determine the potential effects of the proposed project on bog turtles and their habitat, begin by identifying all wetlands in, and within 300 feet of, the project area. The project area includes all areas that will be permanently or temporarily affected by any and all project features, including building, roads, staging areas, utility lines, outfall and intake structures, wells, stormwater retention or detention basins, parking lots, driveways, lawns, etc. The area of investigation should be expanded when project effects might extend more than 300 feet from the project footprint. For example, the hydrological effects of some projects (*e.g.*, large residential or commercial developments; golf courses; community water supply wells) might extend well beyond the project footprint due to the effects that impervious surfaces or groundwater pumping may have on the hydrology of nearby groundwater-dependent wetlands. Wetlands should be included on a map showing existing as well as proposed project features.

¹ As defined in the Act, take means “. . . to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct.” “Harm” in the definition of take means an act which kills or injures wildlife. Such act may include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering (50 CFR part 17.3). “Harass” means an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering.

If someone qualified to identify and delineate wetlands has, through a field investigation, determined that no wetlands are located in or within 300 feet of the project area (or within the expanded investigation area, as described above), it is not likely that your project will adversely affect the bog turtle. If this is the case, no further consultation with the Fish and Wildlife Service is necessary, although we would appreciate receiving a courtesy copy of the wetland investigator's findings for our files.

If wetlands have been identified in or within 300 feet of the project area (or in an expanded investigation area, as described above), assess their potential suitability as bog turtle habitat, as described under “*Bog Turtle Habitat Survey*” (Phase 1 survey) of the *Guidelines for Bog Turtle Surveys* (revised April 2006). Survey results should be submitted to the Service for review and concurrence. The survey guidelines, as well as a Phase 1 field form and report template, are available from the Service upon request.

Due to the skill required to correctly identify potential bog turtle habitat, we recommend that the Phase 1 survey be done by a qualified surveyor (see enclosed list). If the Phase 1 survey is done by someone who is not on this list, it is likely that a site visit by a Fish and Wildlife Service biologist will be necessary to verify their findings. *Due to the limited availability of staff from this office, such a visit may not be possible for some time. Use of a qualified surveyor will expedite our review of the survey results.*

If potential bog turtle habitat is found in or near the project area, efforts should be made to avoid any direct or indirect impacts to those wetlands (see enclosed *Bog Turtle Conservation Zones*). Avoidance of direct and indirect effects means no disturbance to or encroachment into the wetlands (e.g., filling, ditching or draining) for any project-associated features or activities. Adverse effects may also be anticipated to occur when lot lines include portions of the wetland; when an adequate upland buffer is not retained around the wetland (see *Bog Turtle Conservation Zones*); or when roads, stormwater/sedimentation basins, impervious surfaces, or wells affect the hydrology of the wetland.

If potential habitat is found, submit (along with your Phase 1 survey results) a detailed project description and detailed project plans documenting how direct and indirect impacts to the wetlands will be avoided. If adverse effects to these wetlands cannot be avoided, a more detailed and thorough survey should be done, as described under “*Bog Turtle Survey*” (Phase 2 survey) of the *Guidelines*. The Phase 2 survey should be conducted by a qualified biologist with bog turtle field survey experience (see enclosed list of qualified surveyors). Submit survey results to the Service for review and concurrence.

In cases where adverse effects to federally listed species cannot be avoided, further consultation with the Service would be necessary to avoid potential violations of section 9 (prohibiting “take” of listed species) and/or section 7 (requiring federal agencies to consult) of the Endangered Species Act. Information about the section 7 and section 10 consultation processes (for federal and non-federal actions, respectively) can be obtained by contacting this office or accessing the Service’s Endangered Species Home Page (<http://endangered.fws.gov>).

Assessment of Risks to Migratory Birds

The Service is the principal Federal agency charged with protecting and enhancing populations and habitat of migratory bird species. The Migratory Bird Treaty Act (MBTA) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Department of the Interior. While the MBTA has no provision for authorizing incidental take, the Service recognizes that some birds may be killed even if all reasonable measures to avoid take are implemented.

The potential exists for avian mortality from habitat destruction and alteration within the project boundaries. Site-specific factors that should be considered in project siting to avoid and minimize the risk to birds include avian abundance; the quality, quantity and type of habitat; geographic location; type and extent of bird use (*e.g.* breeding, foraging, migrating, etc.); and landscape features. Please review the enclosed information for general recommendations for avoiding and minimizing impacts to migratory birds within and around the project area. Please be aware that since these are general guidelines, some of them may not be applicable to the current project design or they may have already been included in the project design.

This response relates only to endangered and threatened species under our jurisdiction, based on an office review of the proposed project's location. No field inspection of the project area has been conducted by this office. Consequently, this letter is not to be construed as addressing potential Service concerns under the Fish and Wildlife Coordination Act or other authorities. A compilation of certain federal status species in Pennsylvania is enclosed for your information.

To avoid potential delays in reviewing your project, please use the above-referenced USFWS project tracking number in any future correspondence regarding this project.

If you have questions about Indiana bat please contact Pamela Shellenberger at (814) 234-4090 x 241. For questions about the bog turtle please contact Kayla Easler at (814) 234-4090 x 234. For questions regarding the Migratory bird information please contact Jennifer Siani at (814) 234-4090 x 225.

Sincerely,



Lora L. Zimmerman
Field Office Supervisor

Enclosures

ATTACHMENT 3

Bat Survey Reports

INDIANA BAT (*MYOTIS SODALIS*) 2014 SUMMER MIST NET AND FALL PORTAL SURVEY SUMMARY FOR THE PROPOSED SUNOCO PIPELINE, LP PENNSYLVANIA PIPELINE PROJECT IN ALLEGHENY, BERKS, BLAIR, CAMBRIA, CHESTER, CUMBERLAND, DAUPHIN, DELAWARE, HUNTINGTON, INDIANA, JUNIATA, LANCASTER, LEBANON, PERRY, WESTMORELAND, WASHINGTON AND YORK COUNTIES, PENNSYLVANIA

PREPARED FOR:

Tetra Tech, Inc.

Pittsburgh, Pennsylvania

&

U.S Fish & Wildlife Service

State College, Pennsylvania

&

Pennsylvania Game Commission

Harrisburg, Pennsylvania

PREPARED BY:

Shane Roberts & Joel Beverly

December 2014

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1.0 INTRODUCTION

There are current plans by Sunoco Pipeline, LP (SPLP) to develop Liquefied Natural Gas (LNG) pipeline that spans the southern portion of Pennsylvania from east to west. Apogee Environmental & Archaeological, Inc. (Apogee) has been contracted by Tetra Tech, Inc. (Tetra Tech) to assess the status of the Indiana bat (*Myotis sodalis*) along the proposed pipeline route to ensure compliance with the Endangered Species Act Section 7(a)(2).

This Indiana bat summer mist net and fall portal survey summary report is hereby submitted on behalf of Sunoco Pipeline, LP and Tetra Tech, Inc. as required by the United States Fish & Wildlife Service (USFWS) Pennsylvania Ecological Field Office.

1.1 Project Overview

The proposed project is approximately 563 kilometers (km) in total length with approximately 505 km running between Marcus Hook and Independence, Pennsylvania. The project is located within Allegheny, Berks, Blair, Cambria, Chester, Cumberland, Dauphin, Delaware, Huntingdon, Indiana, Juniata, Lancaster, Lebanon, Perry, Westmoreland, Washington, and York Counties, Pennsylvania. Mapping showing survey locations has been provided to the USFWS's Pennsylvania Ecological Field Office with the required data submittal.

2.0 METHODS

2.1 Summer Habitat Evaluation

An Indiana bat desktop habitat assessment was performed for all known project areas and in-field assessments were conducted at each mist net site during survey efforts. The desktop habitat assessment focused on deciduous forested areas, whereas the subsequent in-field assessment focused on plant community type and structure, especially concerning canopy cover and species composition. Special attention was paid to large tree species (and snags) known to provide potential roost habitat for Indiana bats.

2.2 Summer Habitat Mist Net Survey

The work to be accomplished is completion of a presence/absence survey for the Indiana bat located within the proposed project area. Mist netting efforts were conducted in accordance with *Range-Wide Indiana Bat Summer Survey Guidelines* (2014) and survey conditions listed under the Pennsylvania Game Commission (PGC) Special Use Permit.

The minimum number of net nights required to be surveyed in the Northeast and Appalachian Recovery Units for linear projects is based upon suitable summer habitat per km for the proposed project (approximately 429 linear km of forested habitat). According to the *Range-Wide Indiana Bat Summer Survey Guidelines* (2014), the minimum level of survey effort for the proposed pipeline project from Marcus Hook to Independence would be 2,304 net nights. The USFWS's Pennsylvania Ecological Field Office provided known maternity and swarming areas that were excluded from summer mist net survey efforts. A desktop habitat analysis of the proposed route determined either no potential Indiana bat suitable summer habitat was present or proposed for

disturbance within certain 1 km bat survey plots and those survey plots were proposed to be excluded from survey efforts. These proposed excluded 1 km bat survey plots were approved by the USFWS and were not surveyed. Due to areas with access issues, known maternity and swarming habitat, mist net surveys were conducted at two hundred eighty eight (288) mist net sites, 3 nets/site for two calendar nights (for a total of 1,728 net nights of survey effort).

The exact locations of summer mist-net sites were depicted on maps previously submitted to the USFWS's Pennsylvania Ecological Field Office. Surveys were conducted following methods set forth by the USFWS and PGC (2014).

2.3 Summer Habitat Survey-White-Nose Syndrome

In an effort to minimize the potential transmission of white-nose syndrome on captured bats all netting and field activities followed the most recent decontamination protocols available from the USFWS.

2.4 Summer Habitat Survey-Radio Telemetry

After consultation with Pamela Shellenberger from the USFWS Pennsylvania Field Office, it was determined that radio transmitters will be placed on all captured Indiana and on up to two (2) captured northern long-eared (*Myotis septentrionalis*) bats (1 female, 1 male) per six miles (9.6 km) of suitable summer habitat.

In the event the survey captured an Indiana or northern long-eared bat a Phase 4 radio tracking and emergence survey was implemented. Each bat attached with a transmitter was tracked to their roosts for up to seven days or the life of the transmitter, whichever came first. Triangulation was used to determine roost locations when land access was an issue. Transmitters were only placed on bats in which the weight of the transmitter and glue did not exceed 10% of the bats body weight. Radio tracking methods were conducted in accordance with the *Range-Wide Indiana Bat Summer Survey Guidelines* (2014) and the PGC bat telemetry protocol.

2.5 Winter Habitat Evaluation

An Indiana bat (*Myotis sodalis*) winter habitat assessment was performed where access could be obtained, of all lands within one-half mile of the edge of the project footprint and documentation (i.e., literature search) of all known caves and abandoned mine portals within 3 miles of the outside edge of the project footprint when possible.

Identified potential hibernacula (i.e., caves and mine portals) were evaluated using the USFWS and PGC protocol for assessing bat use of potential hibernacula.

2.6 Fall Portal Mist Net and Acoustic Survey

Twelve potential hibernacula were identified as a result of the winter habitat evaluation. Mist netting and acoustic surveys were conducted in accordance with *Range-Wide Indiana Bat Summer Survey Guidelines* (2014) and survey conditions listed under the Pennsylvania Game Commission (PGC) Special Use Permit.

Mist net surveys were conducted at each of the 12 potential hibernacula sites for three nights (36 nights of survey effort). Bat calls were recorded in conjunction with portal mist

net surveys using an Anabat SD2 acoustical detector. Recorded bat vocalization files were subsequently filtered through the statistical software program EchoClass, which can be used to determine the probability of bat species calls.

The exact location of survey sites are shown on previously submitted maps.

2.7 Winter Habitat Survey - White-Nose Syndrome

In an effort to minimize the potential transmission of white-nose syndrome on captured bats all netting and field activities followed the most recent decontamination protocols available from the USFWS.

2.8 Winter Habitat Survey - Radio Telemetry

Phase 4 radio tracking was not proposed as part of the fall portal survey efforts.

3.0 RESULTS

3.1 Bat Captures

A. Summer Habitat Mist Net Survey

Two hundred eighty eight (288) sites were selected, as approved by the USFWS and PGC for survey efforts. Captures for the survey sites yielded a total of 1,487 bats. Bat species captured included: 1,244 big brown bats (*Eptesicus fuscus*), 200 eastern red bat (*Lasiurus borealis*) 1 tri-colored bat (*Perimyotis subflavus*), 1 silvered-hair bat (*Lasioncycteris noctivagans*), 5 hoary bats (*Lasiurus cinereus*) and 36 northern long-eared bats (*Myotis septentrionalis*). Locations and details of these captures are provided within the data previously submitted to the USFWS Pennsylvania Field Office per Apogee's survey permit requirements.

B. Winter Habitat Mist Net and Acoustic Survey

As a result of the background research and field investigations, twelve (12) portals were identified as potential winter habitat. Mist net surveys in conjunction with acoustic surveys were conducted at these 12 sites, as approved by the USFWS and PGC.

No bats were captured during the mist net survey efforts. Bat vocalization calls recorded and analyzed for the acoustic survey, did not yield any positive Indiana or northern-long eared bat calls. EchoClass did indicate a low probability of detection for big brown bats, eastern red bats and hoary bats. Acoustical surveys indicated the potential presence of eastern red bats and hoary bats at Portal PA-IN-P6 and eastern red bats and big brown bats at Portal PA-IN-P4. Acoustical data output files can be found in Appendix A.

3.2 Radio Telemetry

Transmitters were attached to sixteen (16) captured northern long-eared bats, 9 females and 7 males during the summer mist net surveys. Transmitted bats were discovered using a total of nineteen (19) different tree roost and one (1) residential bat box. Tree species utilized included bitternut hickory (*Carya cordiformis*), sugar maple (*Acer*

saccharum), red maple (*Acer rubrum*), sassafras (*Sassafras albidum*), red elm (*Ulmus rubra*), American beech (*Fagus grandifolia*), black gum (*Nyssa sylvatica*), snag (unknown species) and black cherry (*Prunus serotina*). Details of the radio telemetry results have been previously submitted to the USFWS's Pennsylvania Ecological Field Office.

4.0 DISCUSSION

The summer mist net and fall portal surveys were conducted with the appropriate level of effort and under the appropriate conditions to investigate presence/absence of Indiana bats. No federally endangered bats were captured during the summer mist net or fall portal surveys. One thousand four hundred eighty seven (1,487) bats comprised of six species were captured during the summer mist net survey and no bats were captured during the fall portal survey.

Acoustical surveys did not indicate the presence of Indiana or northern long-eared bats during survey efforts. EchoClass indicated a low probability of the potential presence of eastern red bats and hoary bats at Portal PA-IN-P6 and eastern red bats and big brown bats at Portal PA-IN-P4.

The results of this summer mist net and fall portal survey indicate that the proposed project will not likely adversely affect Indiana bat populations for areas surveyed.

**APENDIX A
ACOUSTICAL DATA OUTPUT FILES**

Adjusted Date	EPFU	LANO	LABO	LACI	MYAU	MYGR	MYLE	MYLU	MYSE	MYSO	NYHU	PESU
20141002 2014-Oct-02	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

Species set 3
-1 values represent species that were not detected at the site/night

Adjusted Date	EPFU	LANO	LABO	LACI	MYAU	MYGR	MYLE	MYLU	MYSE	MYSO	NYHU	PESU
20141003 2014-Oct-03	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

Species set 3
-1 values represent species that were not detected at the site/night

Adjusted Date	EPFU	LANO	LABO	LACI	MYAU	MYGR	MYLE	MYLU	MYSE	MYSO	NYHU	PESU
20141004 2014-Oct-04	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

Species set 3
-1 values represent species that were not detected at the site/night

Adjusted Date	EPFU	LANO	LABO	LACI	MYAU	MYGR	MYLE	MYLU	MYSE	MYSO	NYHU	PESU
20141002 2014-Oct-02	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

Species set 3
-1 values represent species that were not detected at the site/night

Adjusted Date	EPFU	LANO	LABO	LACI	MYAU	MYGR	MYLE	MYLU	MYSE	MYSO	NYHU	PESU
20141003 2014-Oct-03	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

Species set 3
-1 values represent species that were not detected at the site/night

Adjusted Date	EPFU	LANO	LABO	LACI	MYAU	MYGR	MYLE	MYLU	MYSE	MYSO	NYHU	PESU
20141004 2014-Oct-04	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

Species set 3
-1 values represent species that were not detected at the site/night

Adjusted Date	EPFU	LANO	LABO	LACI	MYAU	MYGR	MYLE	MYLU	MYSE	MYSO	NYHU	PESU
20141006 2014-Oct-04	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

Species set 3
-1 values represent species that were not detected at the site/night

Adjusted Date	EPFU	LANO	LABO	LACI	MYAU	MYGR	MYLE	MYLU	MYSE	MYSO	NYHU	PESU
20141007 2014-Oct-07	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

Species set 3
-1 values represent species that were not detected at the site/night

Adjusted Date	EPFU	LANO	LABO	LACI	MYAU	MYGR	MYLE	MYLU	MYSE	MYSO	NYHU	PESU
20141008 2014-Oct-08	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

Species set 3
-1 values represent species that were not detected at the site/night

Adjusted Date	EPFU	LANO	LABO	LACI	MYAU	MYGR	MYLE	MYLU	MYSE	MYSO	NYHU	PESU
20141010 2014-Oct-10	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

Species set 3
-1 values represent species that were not detected at the site/night

Adjusted Date	EPFU	LANO	LABO	LACI	MYAU	MYGR	MYLE	MYLU	MYSE	MYSO	NYHU	PESU
20140925 2014-Sep-25	1	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	-1

Species set 3
-1 values represent species that were not detected at the site/night

Adjusted Date	EPFU	LANO	LABO	LACI	MYAU	MYGR	MYLE	MYLU	MYSE	MYSO	NYHU	PESU
20140926 2014-Sep-26	-1	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	-1

Species set 3
-1 values represent species that were not detected at the site/night

Adjusted Date	EPFU	LANO	LABO	LACI	MYAU	MYGR	MYLE	MYLU	MYSE	MYSO	NYHU	PESU
20140927 2014-Sep-27	-1	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	-1

Species set 3
-1 values represent species that were not detected at the site/night

Adjusted Date	EPFU	LANO	LABO	LACI	MYAU	MYGR	MYLE	MYLU	MYSE	MYSO	NYHU	PESU
20140925 2014-Sep-25	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

Species set 3
-1 values represent species that were not detected at the site/night

Adjusted Date	EPFU	LANO	LABO	LACI	MYAU	MYGR	MYLE	MYLU	MYSE	MYSO	NYHU	PESU
20140926 2014-Sep-26	-1	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	-1

Species set 3
-1 values represent species that were not detected at the site/night

Adjusted Date	EPFU	LANO	LABO	LACI	MYAU	MYGR	MYLE	MYLU	MYSE	MYSO	NYHU	PESU
20140927 2014-Sep-27	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

Species set 3
-1 values represent species that were not detected at the site/night

Adjusted Date	EPFU	LANO	LABO	LACI	MYAU	MYGR	MYLE	MYLU	MYSE	MYSO	NYHU	PESU
20140925 2014-Sep-25	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1

Species set 3
-1 values represent species that were not detected at the site/night

Adjusted Date	EPFU	LANO	LABO	LACI	MYAU	MYGR	MYLE	MYLU	MYSE	MYSO	NYHU	PESU
20140926 2014-Sep-26	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1

Species set 3
-1 values represent species that were not detected at the site/night

Adjusted Date	EPFU	LANO	LABO	LACI	MYAU	MYGR	MYLE	MYLU	MYSE	MYSO	NYHU	PESU
20140927 2014-Sep-27	-1	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	-1

Species set 3
-1 values represent species that were not detected at the site/night

Adjusted Date	EPFU	LANO	LABO	LACI	MYAU	MYGR	MYLE	MYLU	MYSE	MYSO	NYHU	PESU
20140925 2014-Sep-25	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

Species set 3
-1 values represent species that were not detected at the site/night

Adjusted Date	EPFU	LANO	LABO	LACI	MYAU	MYGR	MYLE	MYLU	MYSE	MYSO	NYHU	PESU
20140926 2014-Sep-26	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

Species set 3
-1 values represent species that were not detected at the site/night

Adjusted Date	EPFU	LANO	LABO	LACI	MYAU	MYGR	MYLE	MYLU	MYSE	MYSO	NYHU	PESU
20140927 2014-Sep-27	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

Species set 3
-1 values represent species that were not detected at the site/night

Adjusted Date	EPFU	LANO	LABO	LACI	MYAU	MYGR	MYLE	MYLU	MYSE	MYSO	NYHU	PESU
20140925 2014-Sep-25	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

Species set 3
-1 values represent species that were not detected at the site/night

Adjusted Date	EPFU	LANO	LABO	LACI	MYAU	MYGR	MYLE	MYLU	MYSE	MYSO	NYHU	PESU
20140926 2014-Sep-26	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

Species set 3
-1 values represent species that were not detected at the site/night

Adjusted Date	EPFU	LANO	LABO	LACI	MYAU	MYGR	MYLE	MYLU	MYSE	MYSO	NYHU	PESU
20140927 2014-Sep-27	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

Species set 3
-1 values represent species that were not detected at the site/night

Adjusted Date	EPFU	LANO	LABO	LACI	MYAU	MYGR	MYLE	MYLU	MYSE	MYSO	NYHU	PESU
20140928 2014-Sep-28	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

Species set 3
-1 values represent species that were not detected at the site/night

Adjusted Date	EPFU	LANO	LABO	LACI	MYAU	MYGR	MYLE	MYLU	MYSE	MYSO	NYHU	PESU
20140929 2014-Sep-29	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

Species set 3
-1 values represent species that were not detected at the site/night

Adjusted Date	EPFU	LANO	LABO	LACI	MYAU	MYGR	MYLE	MYLU	MYSE	MYSO	NYHU	PESU
20140930 2014-Sep-30	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

Species set 3
-1 values represent species that were not detected at the site/night

Adjusted Date	EPFU	LANO	LABO	LACI	MYAU	MYGR	MYLE	MYLU	MYSE	MYSO	NYHU	PESU
20140928 2014-Sep-28	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

Species set 3
-1 values represent species that were not detected at the site/night

Adjusted Date	EPFU	LANO	LABO	LACI	MYAU	MYGR	MYLE	MYLU	MYSE	MYSO	NYHU	PESU
20140929 2014-Sep-29	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

Species set 3
-1 values represent species that were not detected at the site/night

Adjusted Date	EPFU	LANO	LABO	LACI	MYAU	MYGR	MYLE	MYLU	MYSE	MYSO	NYHU	PESU
20140930 2014-Sep-30	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

Species set 3
-1 values represent species that were not detected at the site/night

Adjusted Date	EPFU	LANO	LABO	LACI	MYAU	MYGR	MYLE	MYLU	MYSE	MYSO	NYHU	PESU
20140928 2014-Sep-28	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

Species set 3
-1 values represent species that were not detected at the site/night

Adjusted Date	EPFU	LANO	LABO	LACI	MYAU	MYGR	MYLE	MYLU	MYSE	MYSO	NYHU	PESU
20140929 2014-Sep-29	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

Species set 3
-1 values represent species that were not detected at the site/night

Adjusted Date	EPFU	LANO	LABO	LACI	MYAU	MYGR	MYLE	MYLU	MYSE	MYSO	NYHU	PESU
20140930 2014-Sep-30	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

Species set 3
-1 values represent species that were not detected at the site/night

Adjusted Date	EPFU	LANO	LABO	LACI	MYAU	MYGR	MYLE	MYLU	MYSE	MYSO	NYHU	PESU
20140928 2014-Sep-28	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

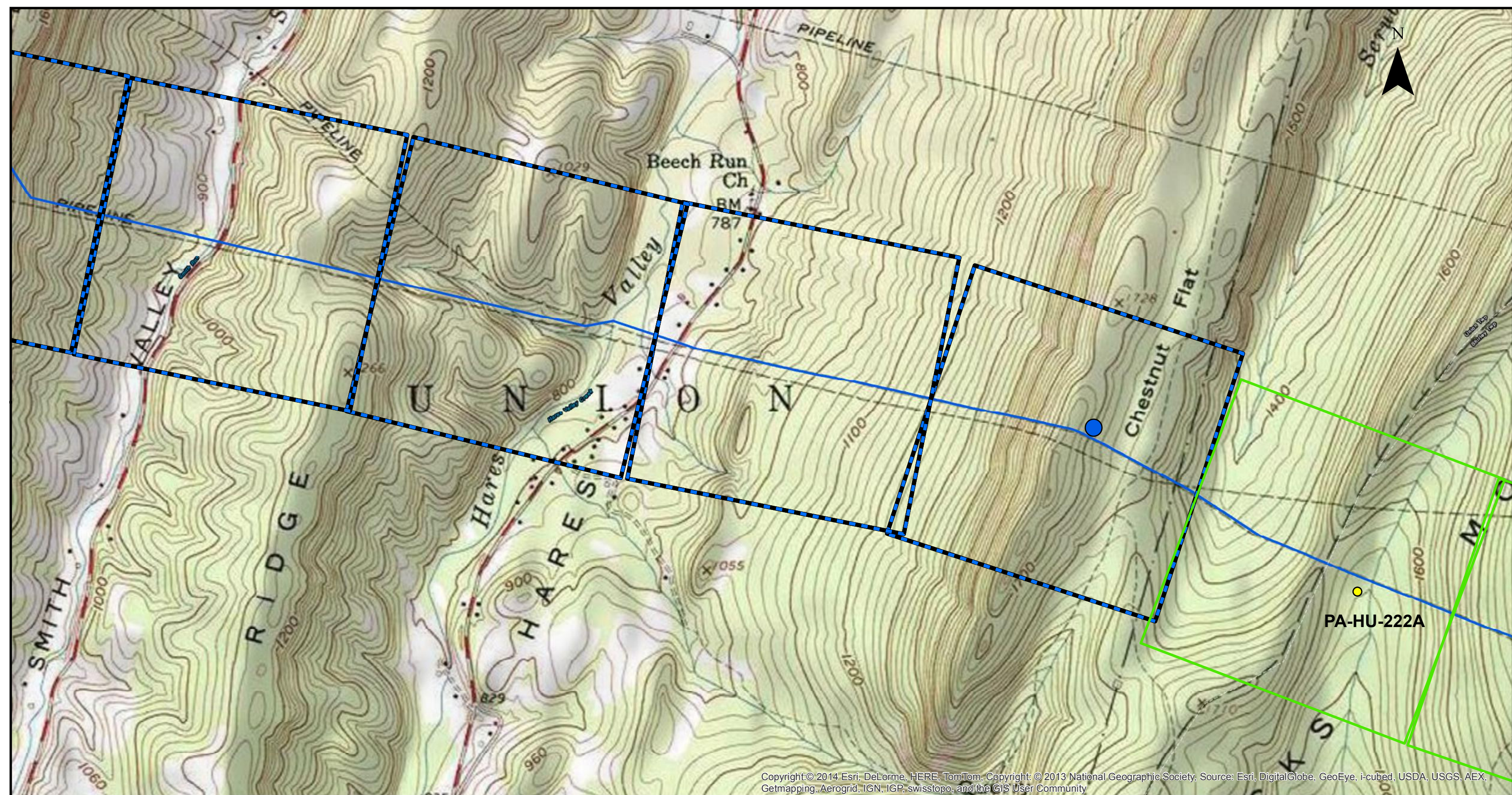
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20140929 2014-Sep-29	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

Species set 3
-1 values represent species that were not detected at the site/night

Adjusted Date	EPFU	LANO	LABO	LACI	MYAU	MYGR	MYLE	MYLU	MYSE	MYSO	NYHU	PESU
20140930 2014-Sep-30	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

Species set 3
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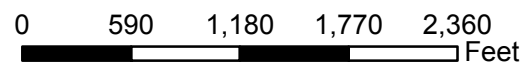


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Legend

- Indiana Bat Survey Locations
- Excluded 1KM Indiana Bat Survey Plot
- Excluded 1KM Bat Survey Plot Swarming Area
- Excluded 1KM Bat Survey Plot Maternity Area
- Included 1KM Indiana Bat Survey Plot

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INDIANA BAT SURVEY LOCATIONS MAP

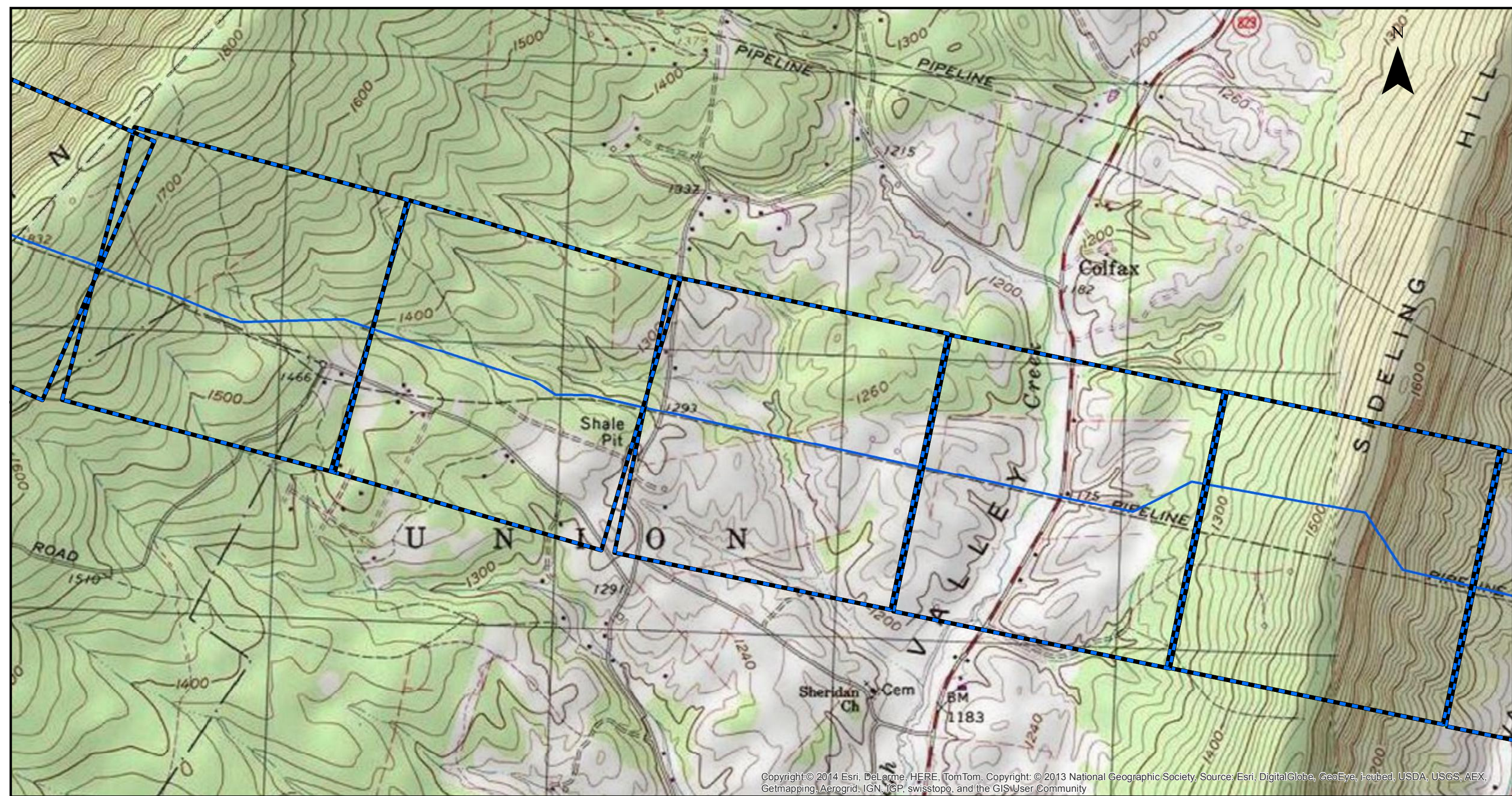
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June 2014

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1 in = 1,042 ft

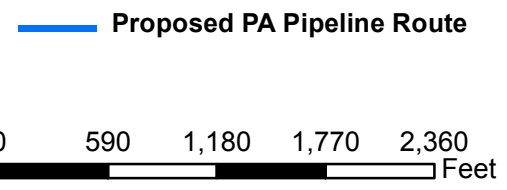
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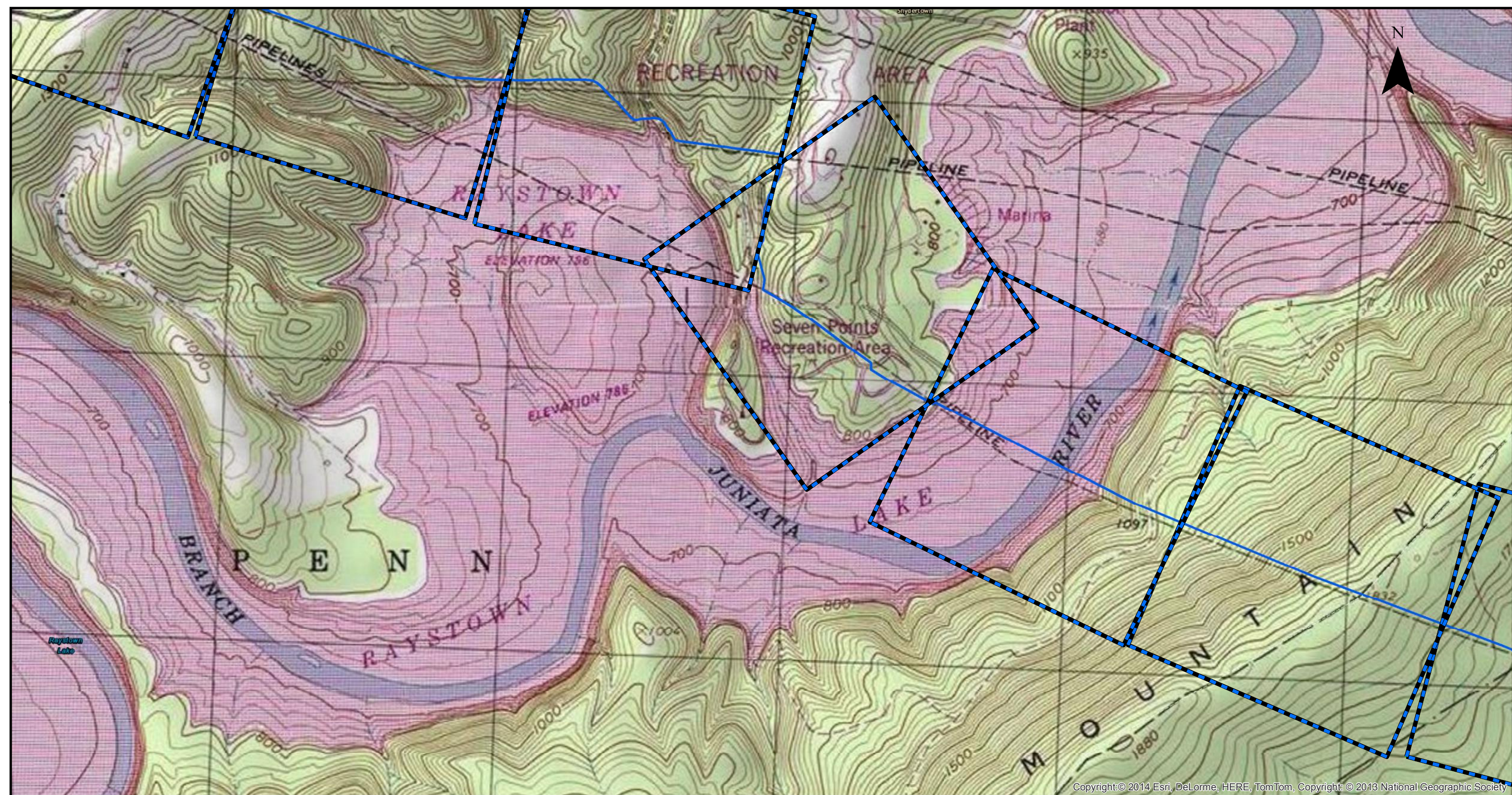
-  Excluded 1KM Indiana Bat Survey Plot
-  Excluded 1KM Bat Survey Plot Swarming Area
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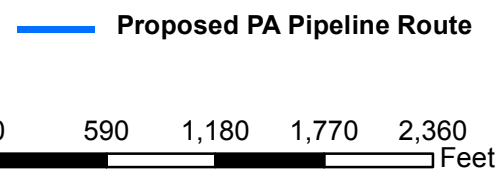
INDIANA BAT SURVEY LOCATIONS MAP



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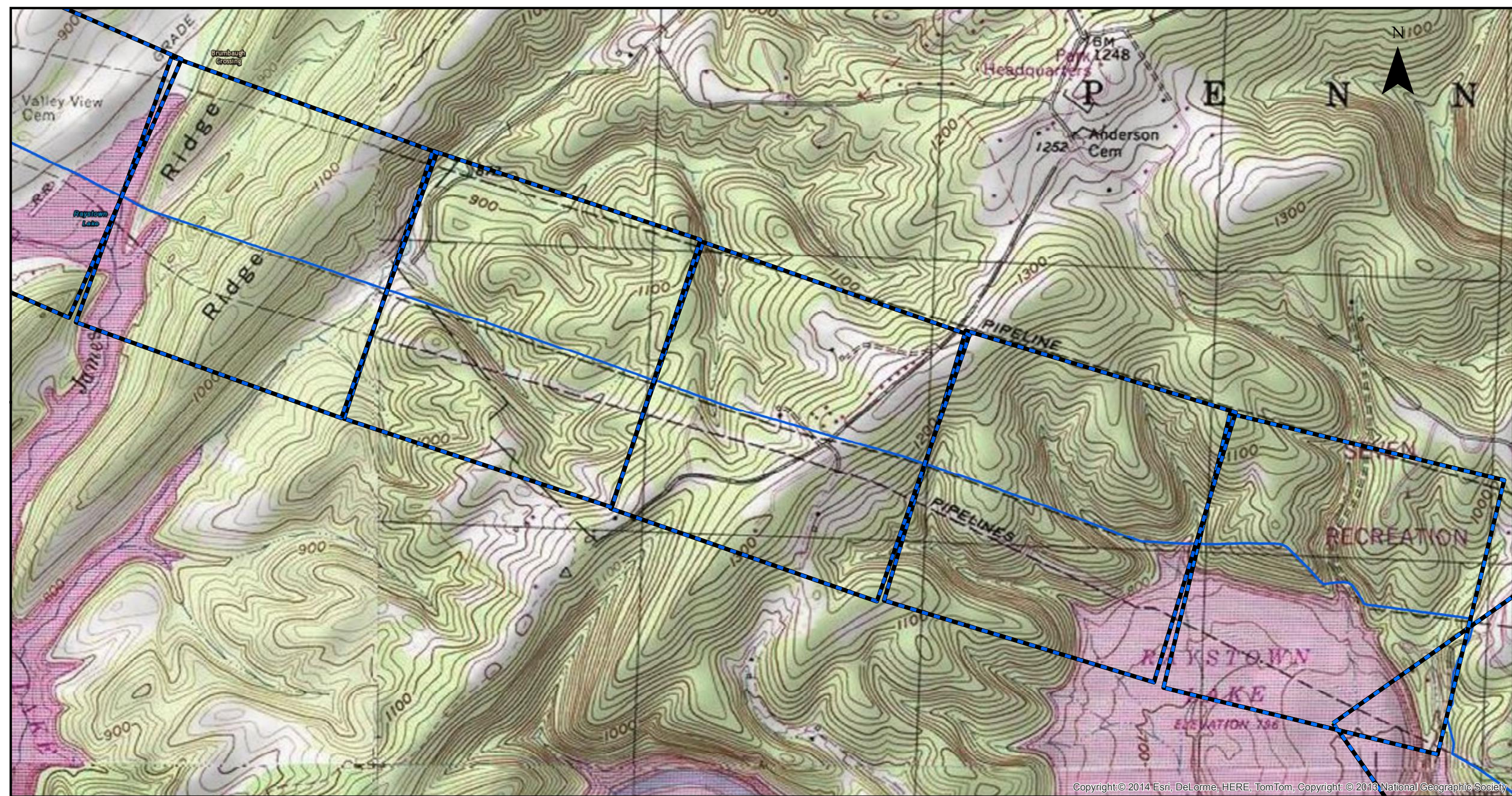
-  Excluded 1KM Indiana Bat Survey Plot
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INDIANA BAT SURVEY LOCATIONS MAP

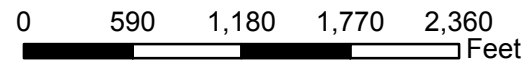


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Legend

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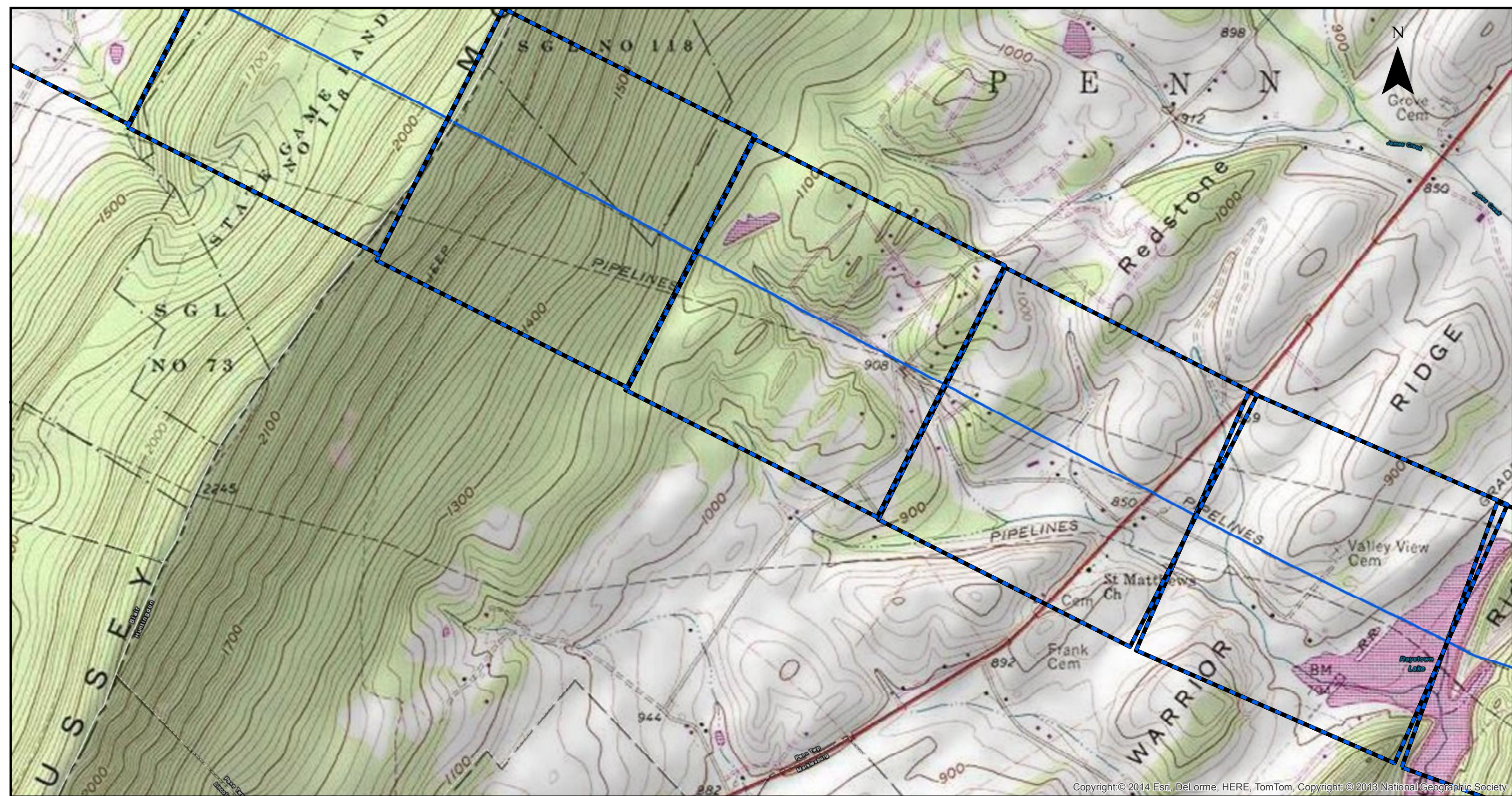
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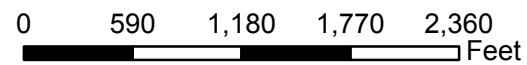


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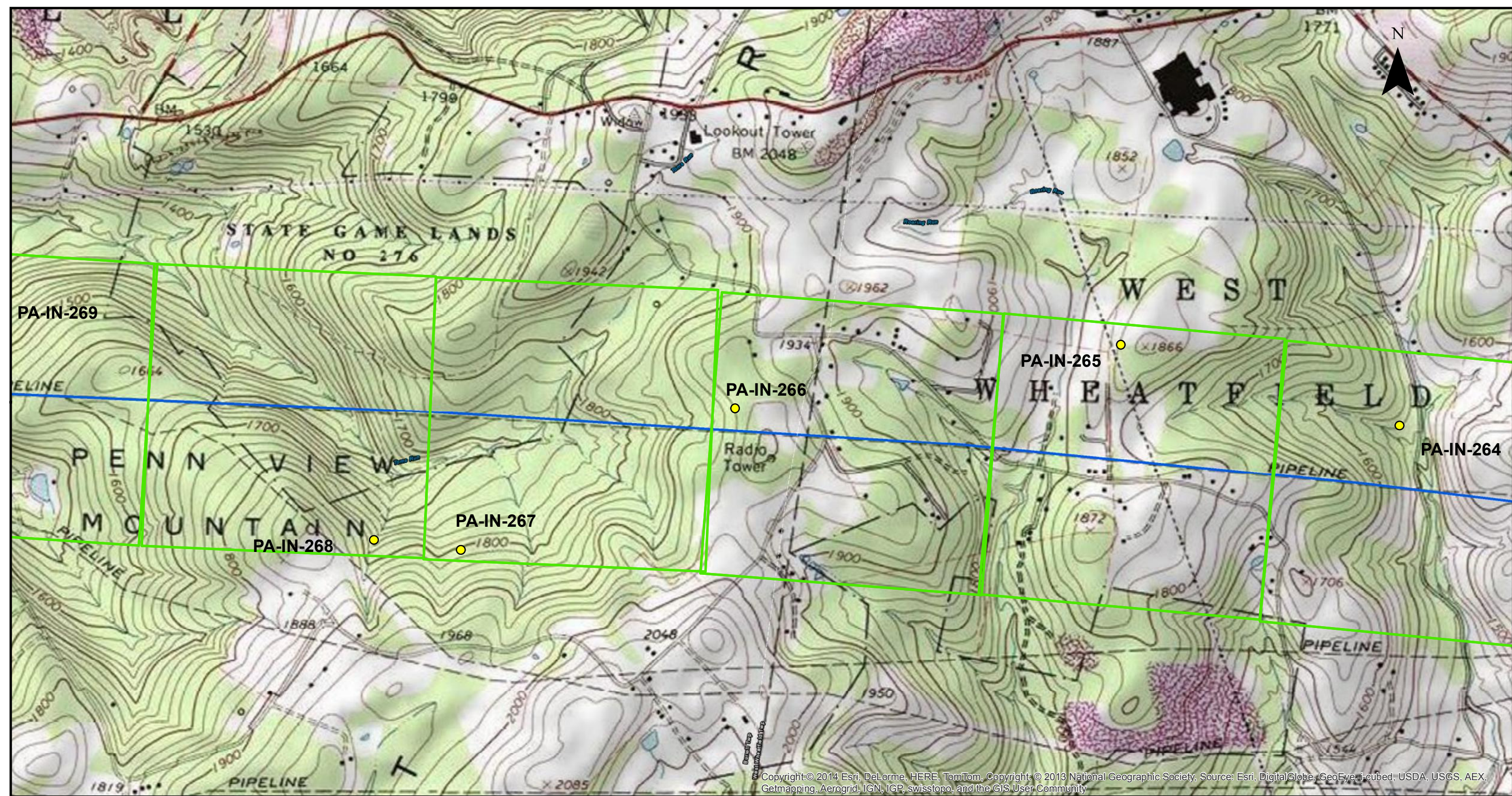
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August 2014

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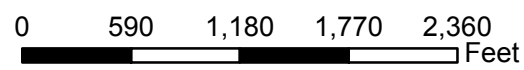


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INDIANA BAT SURVEY LOCATIONS MAP

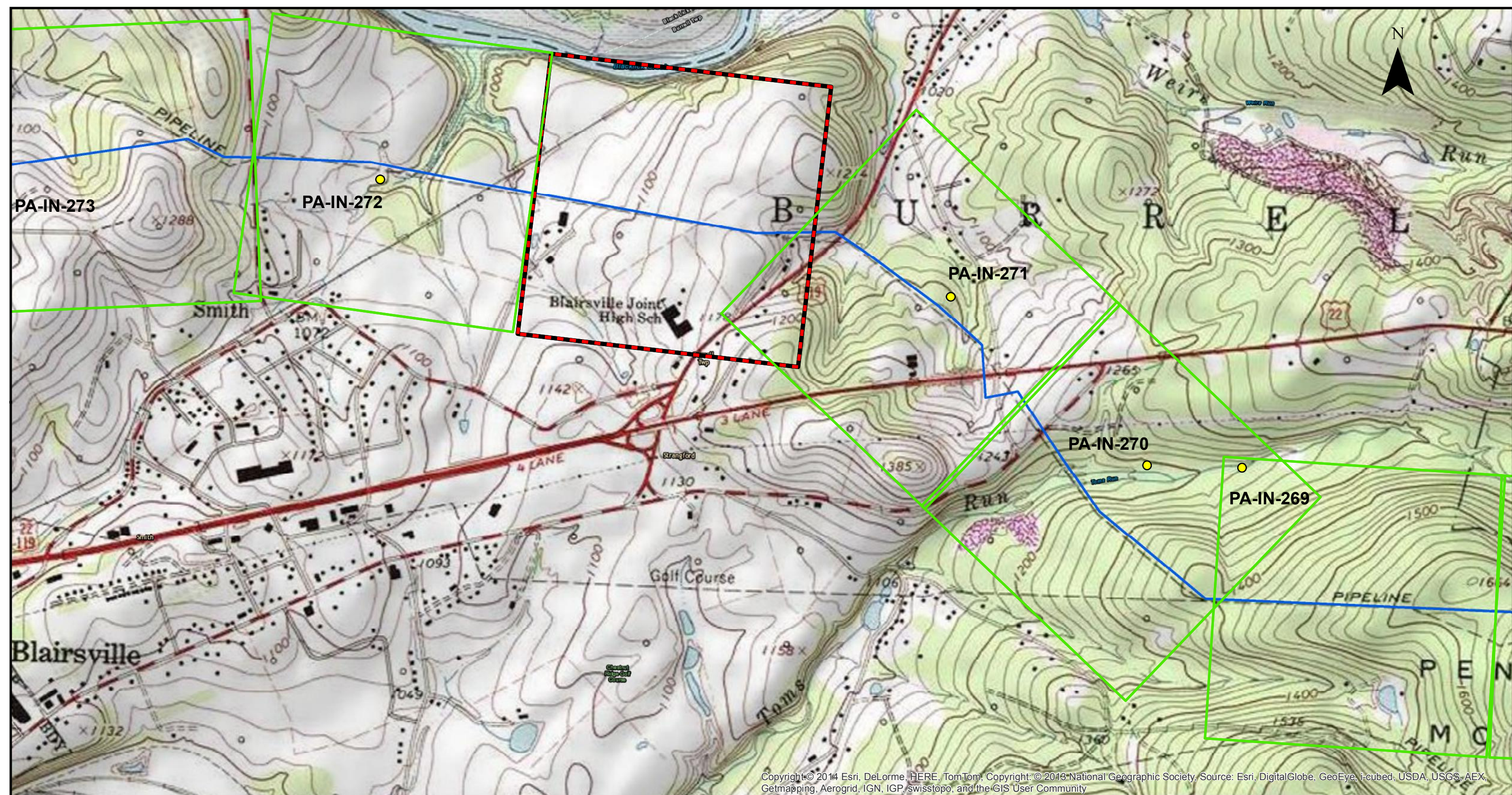
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June 2014

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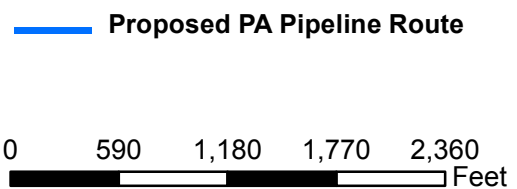
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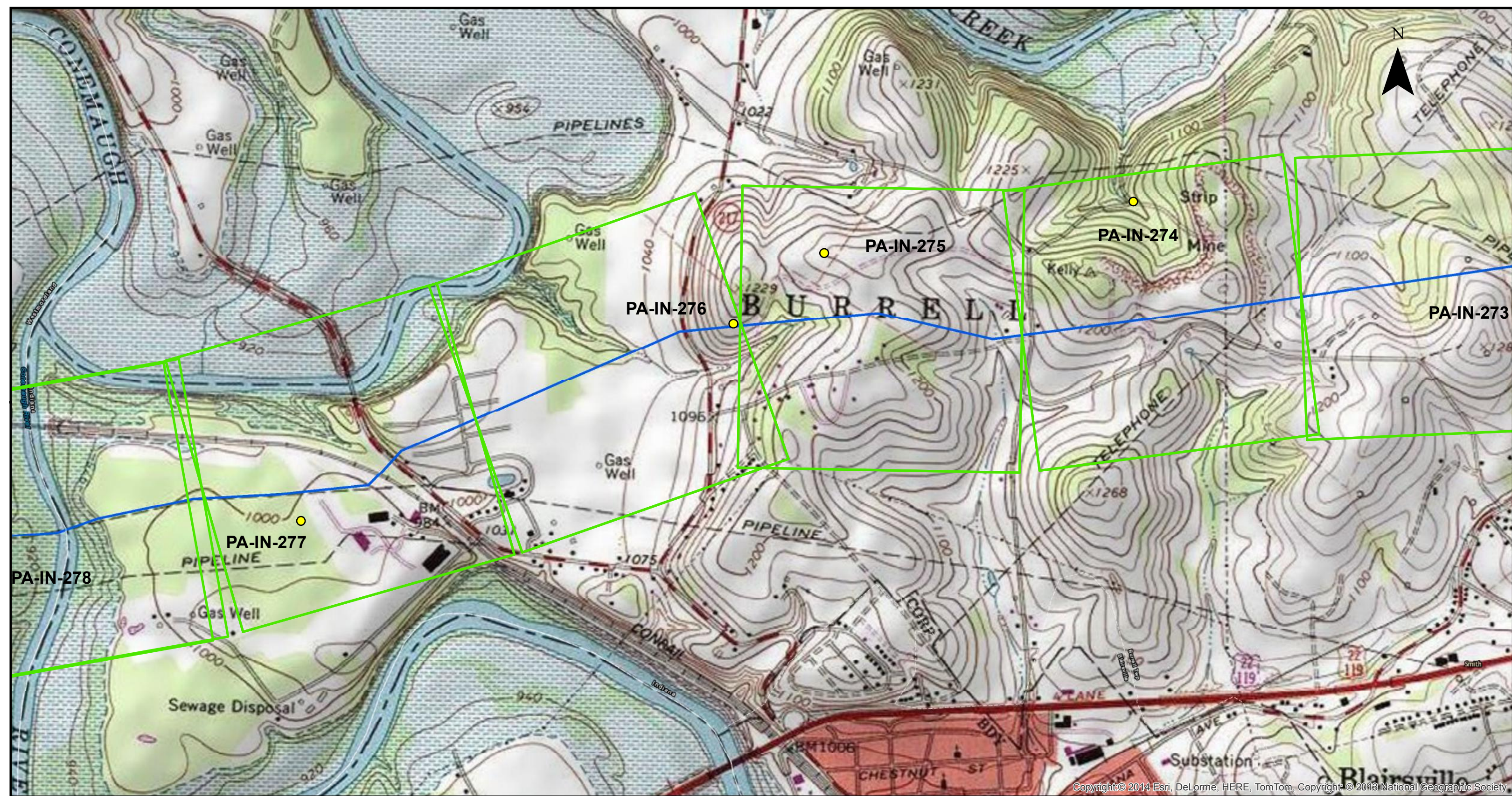
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June 2014

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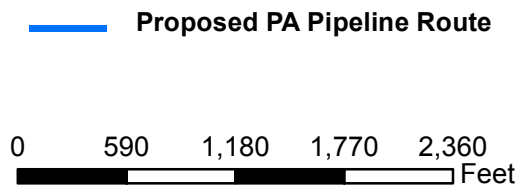
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Legend

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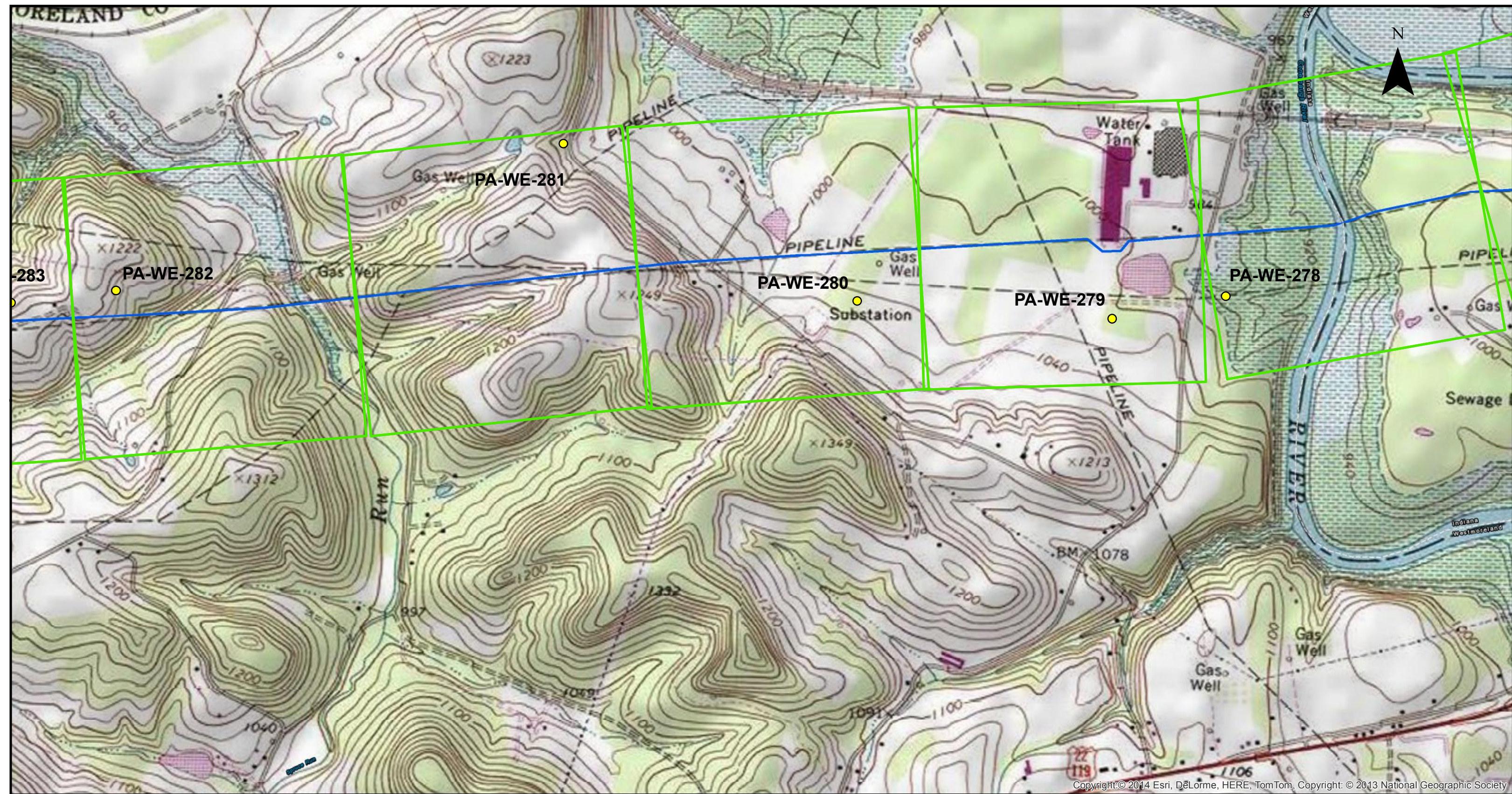
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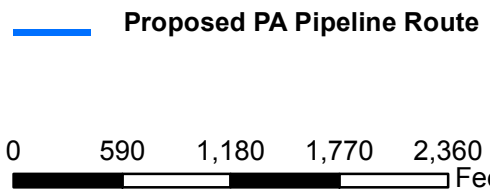
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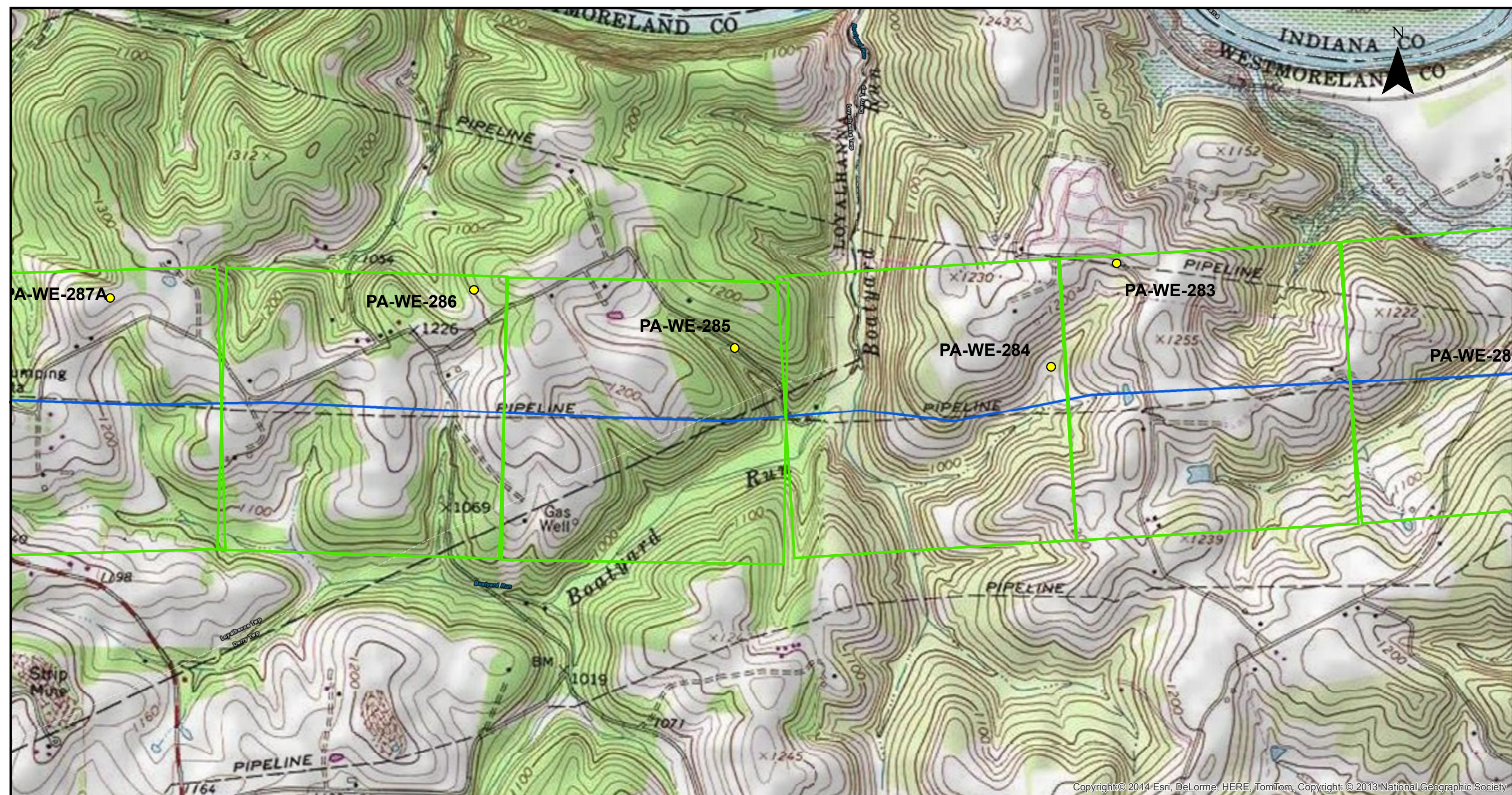
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INDIANA BAT SURVEY LOCATIONS MAP

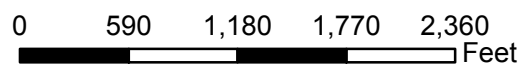


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Legend

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INDIANA BAT SURVEY LOCATIONS MAP

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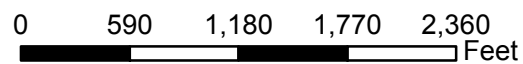


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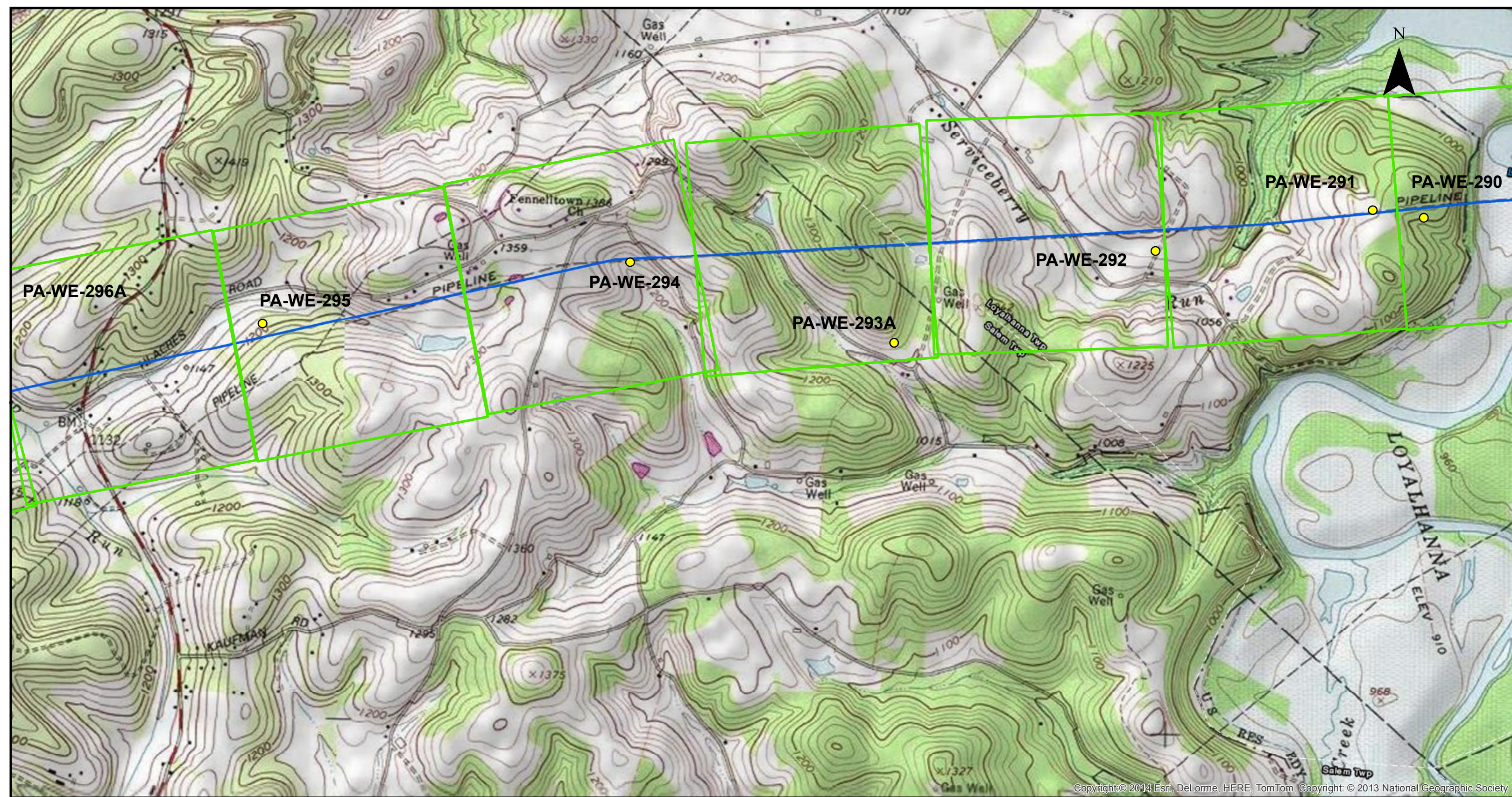
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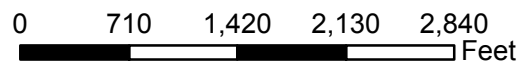


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INDIANA BAT SURVEY LOCATIONS MAP

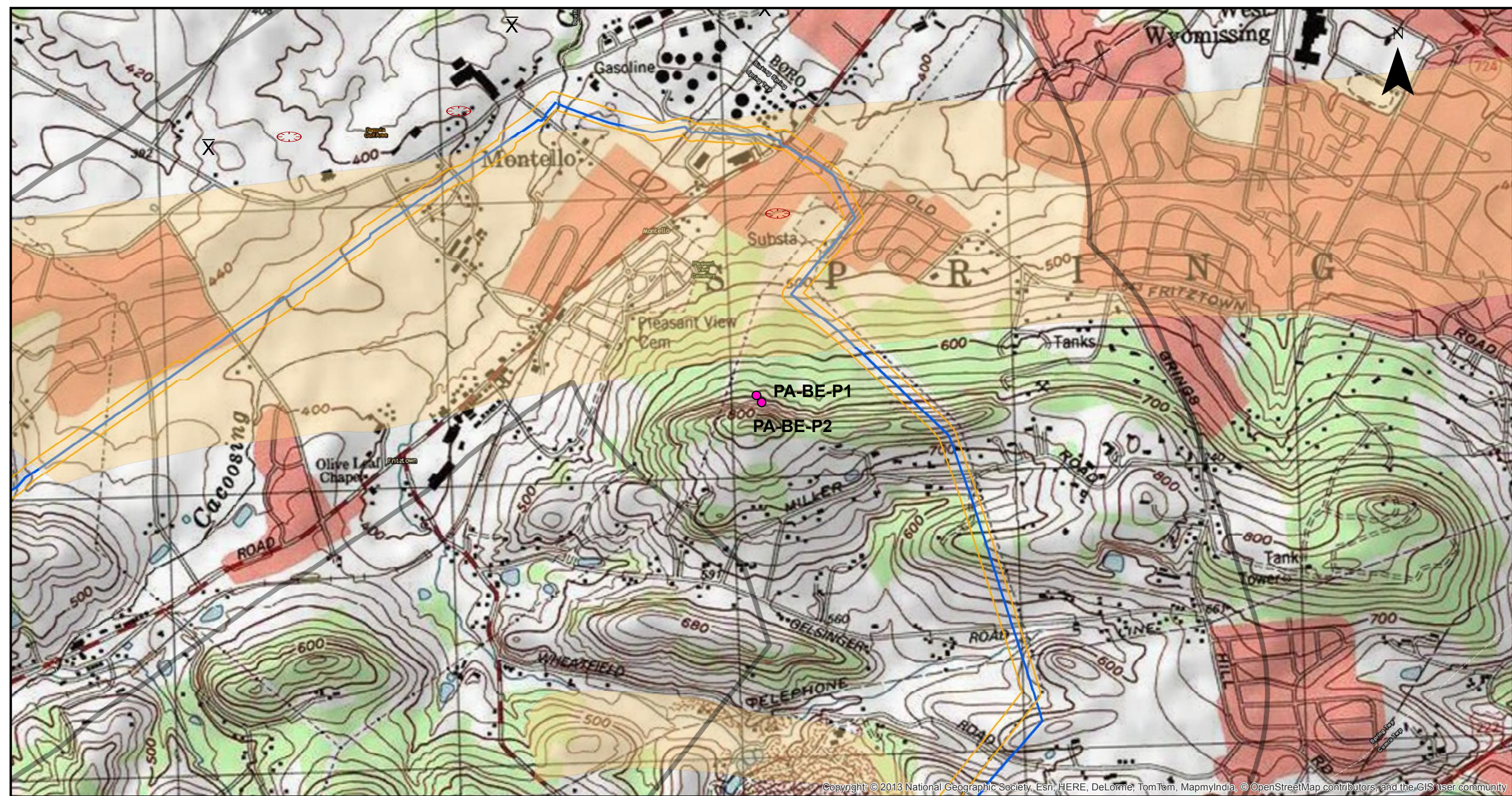
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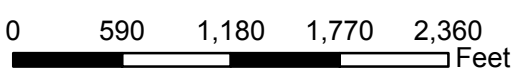
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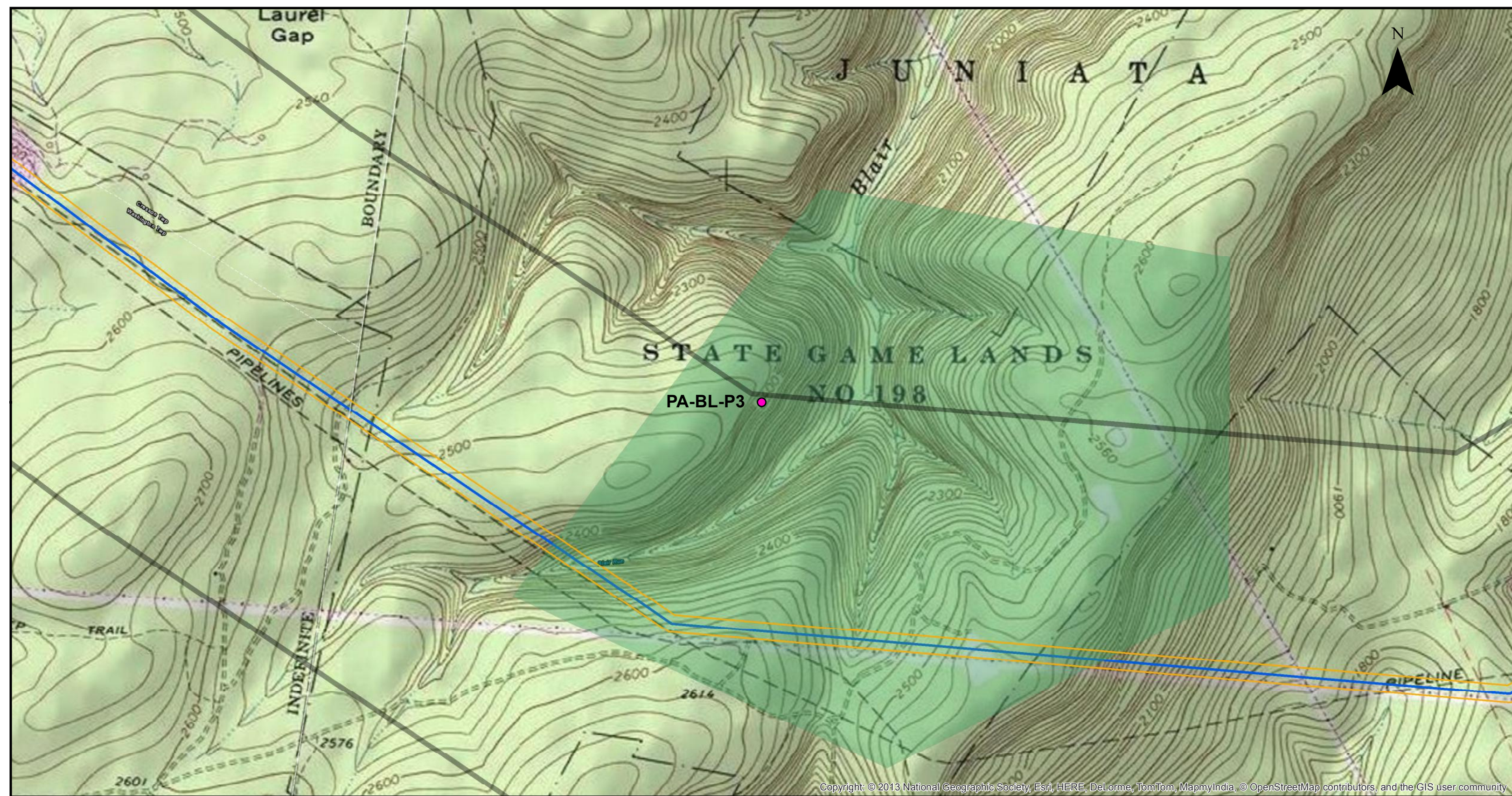
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- Known Sinkhole Locations
- X Known Surface Mine Locations
- Known Cave Locations
- ⌵ Entry Point/Opening
- Half Mile Buffer
- Limestone Area
- Abandoned Mine Land Inventory List
- Reclamation Complete
- Abandoned
- Limit of Disturbance Area



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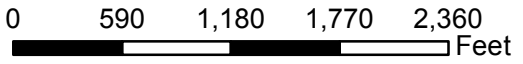
PORTAL SURVEY LOCATIONS MAP



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Legend

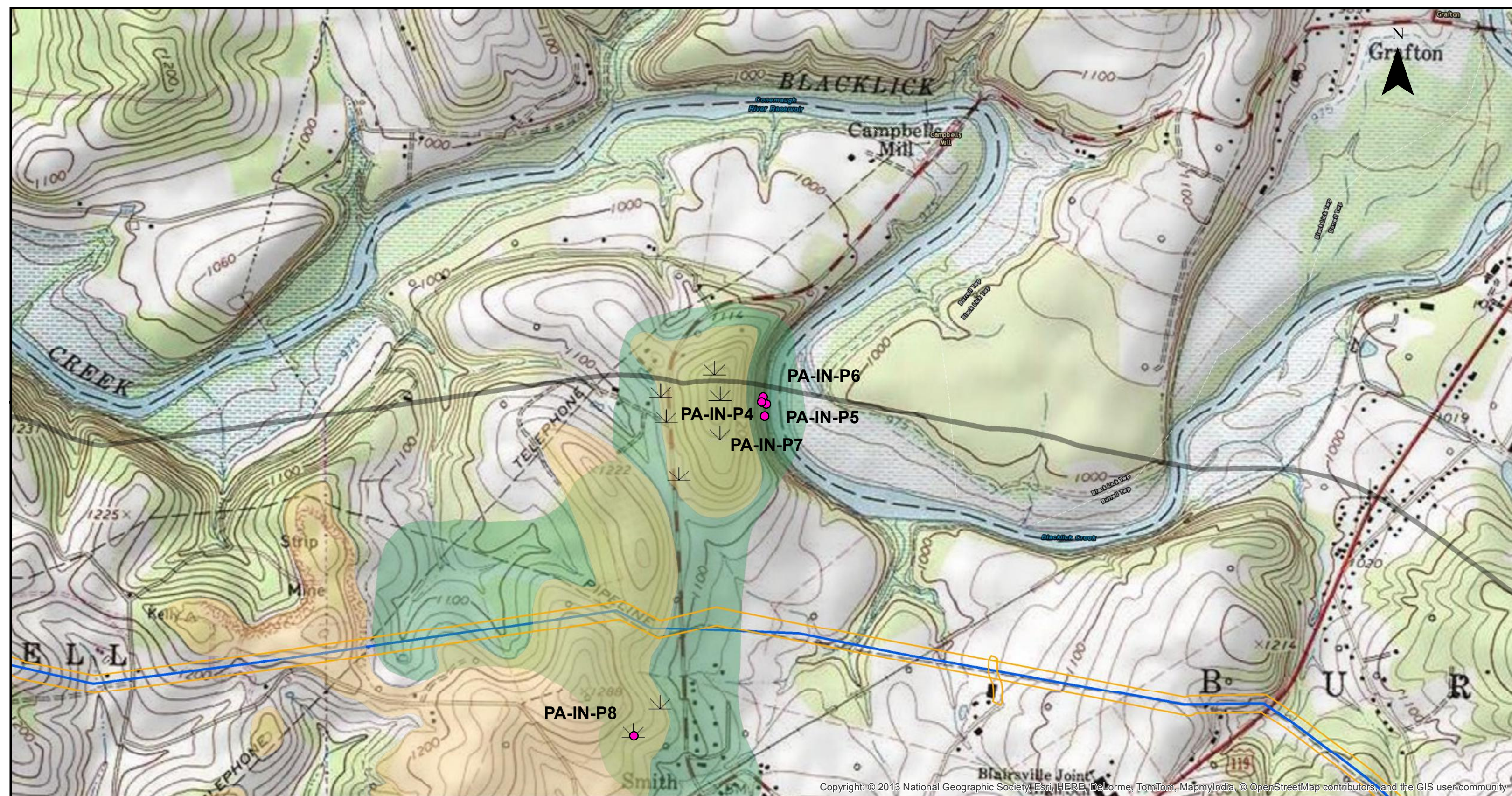
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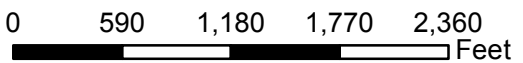
PORTAL SURVEY LOCATIONS MAP



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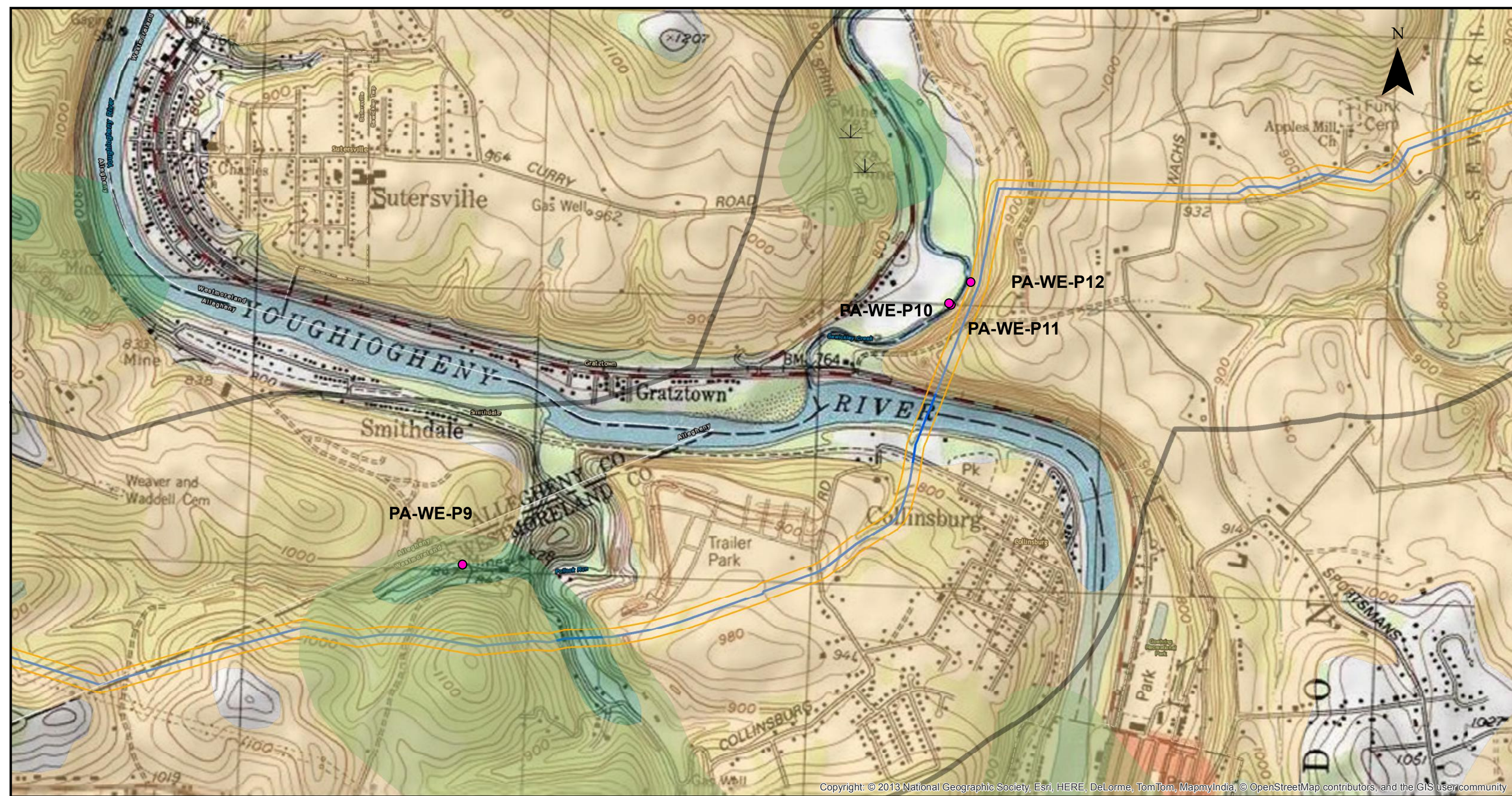
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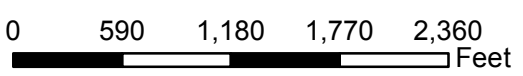
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PORTAL SURVEY LOCATIONS MAP



SUMMER MIST NET SURVEY FOR THE FEDERALLY ENDANGERED INDIANA BAT (*MYOTIS SODALIS*) AND FEDERALLY THREATENED NORTHERN LONG-EARED BAT (*MYOTIS SEPTENTRIONALIS*) FOR THE PROPOSED SUNOCO PIPELINE, L.P. PA PIPELINE PROJECT IN ALLEGHENY, BERKS, BLAIR, CAMBRIA, CHESTER, CUMBERLAND, DAUPHIN, DELAWARE, HUNTINGTON, INDIANA, JUNIATA, LANCASTER, LEBANON, PERRY, WESTMORELAND, WASHINGTON AND YORK COUNTIES, PENNSYLVANIA

PREPARED BY:

Shane Roberts & Joel Beverly
Apogee Environmental & Archaeological, Inc.

PREPARED FOR:

Tetra Tech, Inc. & U.S. Fish & Wildlife Service

APOGEE PROJECT NUMBER:

15-585.01

August 2015

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APPENDIX B: DATA SHEETS

APPENDIX C: PHOTOS

1.0 INTRODUCTION

There are current plans by Sunoco Pipeline, L.P. (SPLP) to develop a natural gas pipeline that spans the state of Pennsylvania (PA Pipeline Project). Apogee Environmental & Archaeological, Inc. (Apogee) has been contracted by Tetra Tech, Inc. (Tetra Tech) to assess the status of the Indiana bat (*Myotis sodalis*) and the northern long-eared bat (*Myotis septentrionalis*) along the proposed pipeline route to ensure compliance with the Endangered Species Act Section 7(a)(2).

This Indiana bat and northern long-eared bat summer mist net survey is hereby submitted on behalf of SPLP and Tetra Tech for the permitting process to fulfill Section 7 requirements set forth by the United States Fish & Wildlife Service (USFWS).

1.1 Project Overview

The proposed project is approximately 563 kilometers (km) in total length with approximately 505 km running between Marcus Hook and Independence, Pennsylvania. The project is located within Allegheny, Berks, Blair, Cambria, Chester, Cumberland, Dauphin, Delaware, Huntington, Indiana, Juniata, Lancaster, Lebanon, Perry, Westmoreland, Washington, and York Counties, Pennsylvania. The project consists of new 16-inch diameter pipeline construction that will carry Marcellus and Utica Shale natural gas from eastern Ohio east through the panhandle of West Virginia, across Pennsylvania into the Marcus Hook Industrial complex. The proposed pipeline construction right-of-way (ROW) will be 75 to 100 feet in width and will parallel an existing Sunoco pipeline throughout the majority of its length in Pennsylvania.

2.0 METHODS

2.1 Summer Habitat Evaluation

An Indiana bat and northern long-eared bat desktop habitat assessment was performed for all known project areas and in-field assessments were conducted at each mist net site during survey efforts. The desktop habitat assessment focused on deciduous forested areas, whereas the subsequent in-field assessment focused on plant community type and structure, especially concerning canopy cover and species composition. Special attention was paid to large tree species (and snags) known to provide potential roost habitat for Indiana bats.

2.2 Summer Mist Net Survey

The work to be accomplished is completion of a presence/absence survey for the Indiana bat and northern long-eared bat located within the proposed project area. Mist netting efforts will be in accordance with *Range-Wide Indiana Bat Summer Survey Guidelines* (2015) and survey conditions listed under the Pennsylvania Game Commission (PGC) Special Use Permit.

In addition to the previous two hundred eighty-eight (288) sites that were surveyed in 2014, mist net surveys were conducted at twenty-eight (28) sites where access was previously unavailable and to account for a proposed reroute. These surveys consisted of 3 nets/site for two calendar nights for a total of one hundred sixty-eight (168) net nights of survey effort.

The exact locations of summer mist-net sites are depicted on maps in Appendix A. Surveys were conducted following methods set forth by the USFWS and PGC (2015).

2.3 White-Nose Syndrome

In an effort to minimize the potential transmission of white-nose syndrome on captured bats, all netting and field activities followed the most recent decontamination protocols available from the USFWS.

2.4 Radio Telemetry

After consultation with Pamela Shellenberger from the USFWS Pennsylvania Field Office, it was determined that radio transmitters would be placed on all captured Indiana bats and on up to two (2) captured northern long-eared (*Myotis septentrionalis*) bats (1 female, 1 male) per six miles (9.6 km) of suitable summer habitat.

In the event the survey captured an Indiana bat or northern long-eared bat a Phase 4 radio tracking and emergence survey was implemented. Each bat attached with a transmitter was tracked to their diurnal roosts for up to seven days or the life of the transmitter. Triangulation was used to determine roost locations when land access was an issue. Transmitters were only placed on bats in which the weight of the transmitter and glue did not exceed 6% of the bats body weight. Radio tracking methods were conducted in accordance with the *Range-Wide Indiana Bat Summer Survey Guidelines* (2015) and the PGC bat telemetry protocol.

2.5 Winter Habitat Evaluation

An Indiana bat and northern long-eared bat winter habitat assessment was performed where access could be obtained, of all lands within one-half mile of the edge of the project footprint and documentation (i.e., literature search) of all known caves and abandoned mine portals within 3 miles of the outside edge of the project footprint when possible during the 2014 survey period.

2.6 Fall Portal Mist Net and Acoustical Surveys

All fall portal mist net and acoustic surveys were conducted during the 2014 survey period.

3.0 RESULTS

3.1 Bat Captures

A. Summer Mist Net Survey

Twenty-eight sites (28) were selected, as approved by the USFWS and PGC for survey efforts. Captures for the survey sites yielded a total of one hundred eighteen (118) bats. Bat species captured included: 93 big brown bats (*Eptesicus fuscus*), 20 eastern red bats (*Lasiurus borealis*) 3 hoary bats (*Lasiurus cinereus*) and 2 northern long-eared bats (*Myotis septentrionalis*). Data sheets and photos can be found in Appendix B and C.

B. Fall Portal Survey

No additional portals were found therefore, no portal surveys were conducted during the 2015 survey period.

3.2 Radio Telemetry

Transmitters were attached to two (2) pregnant female northern long-eared bats that were captured during the summer mist net surveys. Radio tagged bats were discovered using a total of three (3) different roost trees. Both bats were in the same roost at each occurrence. Red maple (*Acer rubrum*) was the only tree species that was utilized. Details of the radio telemetry results have been previously submitted to the USFWS's Pennsylvania Ecological Field Office.

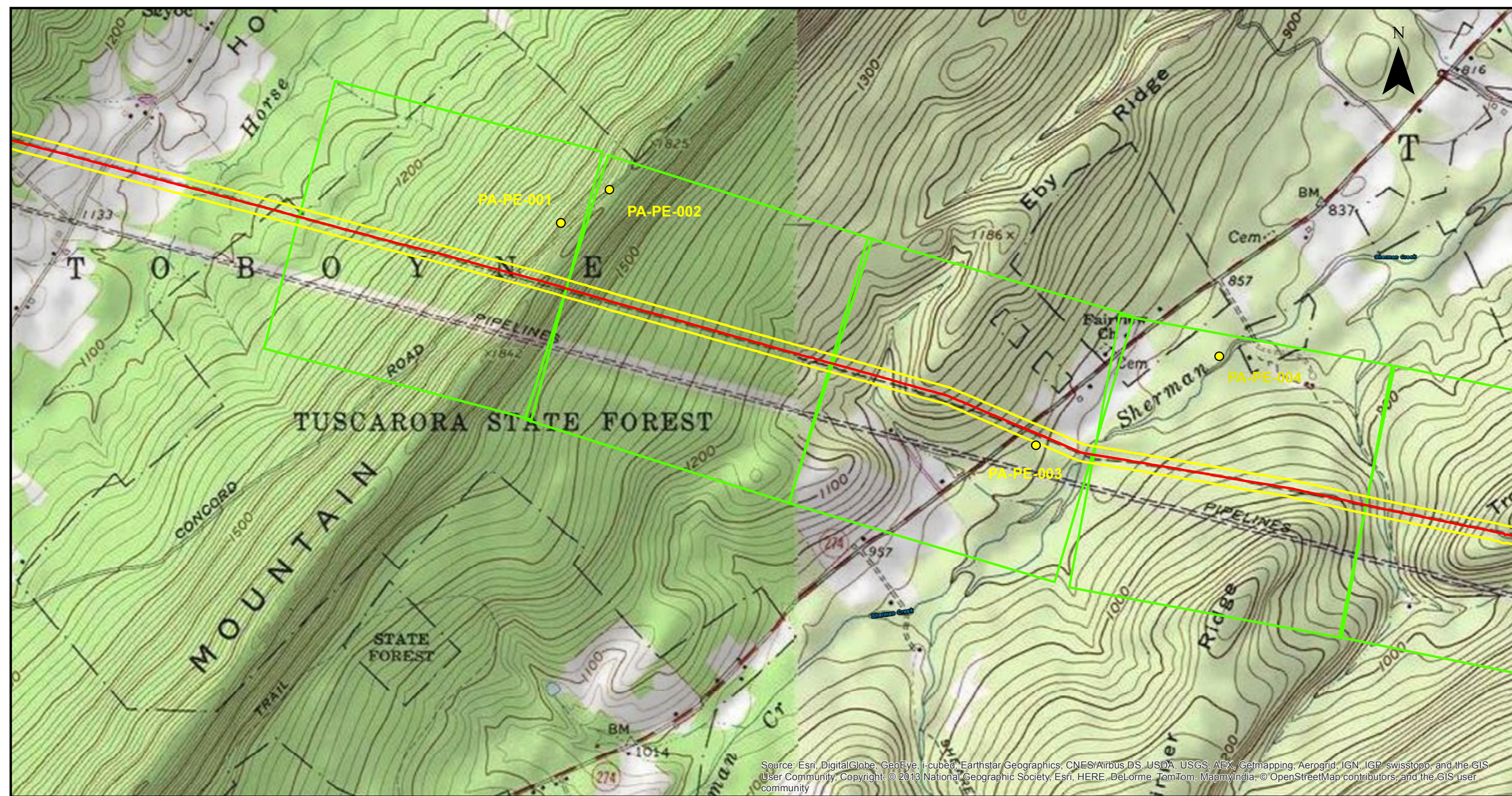
4.0 DISCUSSION

The summer mist net survey was conducted with the appropriate level of effort and under the appropriate conditions to investigate the presence/absence of Indiana and northern long-eared bats. No federally endangered bats were captured during the summer mist net survey however; two federally threatened northern long-eared bats were captured. One hundred eighteen (118) bats comprised of four species were captured during the summer mist net survey.

The results of this summer mist net survey indicate that the proposed project will not likely adversely affect Indiana bat populations for areas surveyed. Due to the low number of northern long-eared bats captured the project will not likely adversely affect northern long-eared bat populations for areas surveyed.

APPENDIX A

MAPS

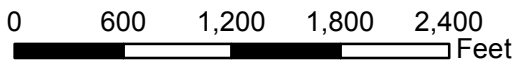


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Legend

- Indiana Bat Survey Locations
- MYSE Capture Locations
- Excluded 1KM Indiana Bat Survey Plot
- Excluded 1KM Indiana Bat Survey Plot Swarming Area
- Excluded 1KM Indiana Bat Survey Plot Maternity Area
- Included 1KM Indiana Bat Survey Plot

- Proposed PA Pipeline Centerline
- Proposed PA Pipeline ROW



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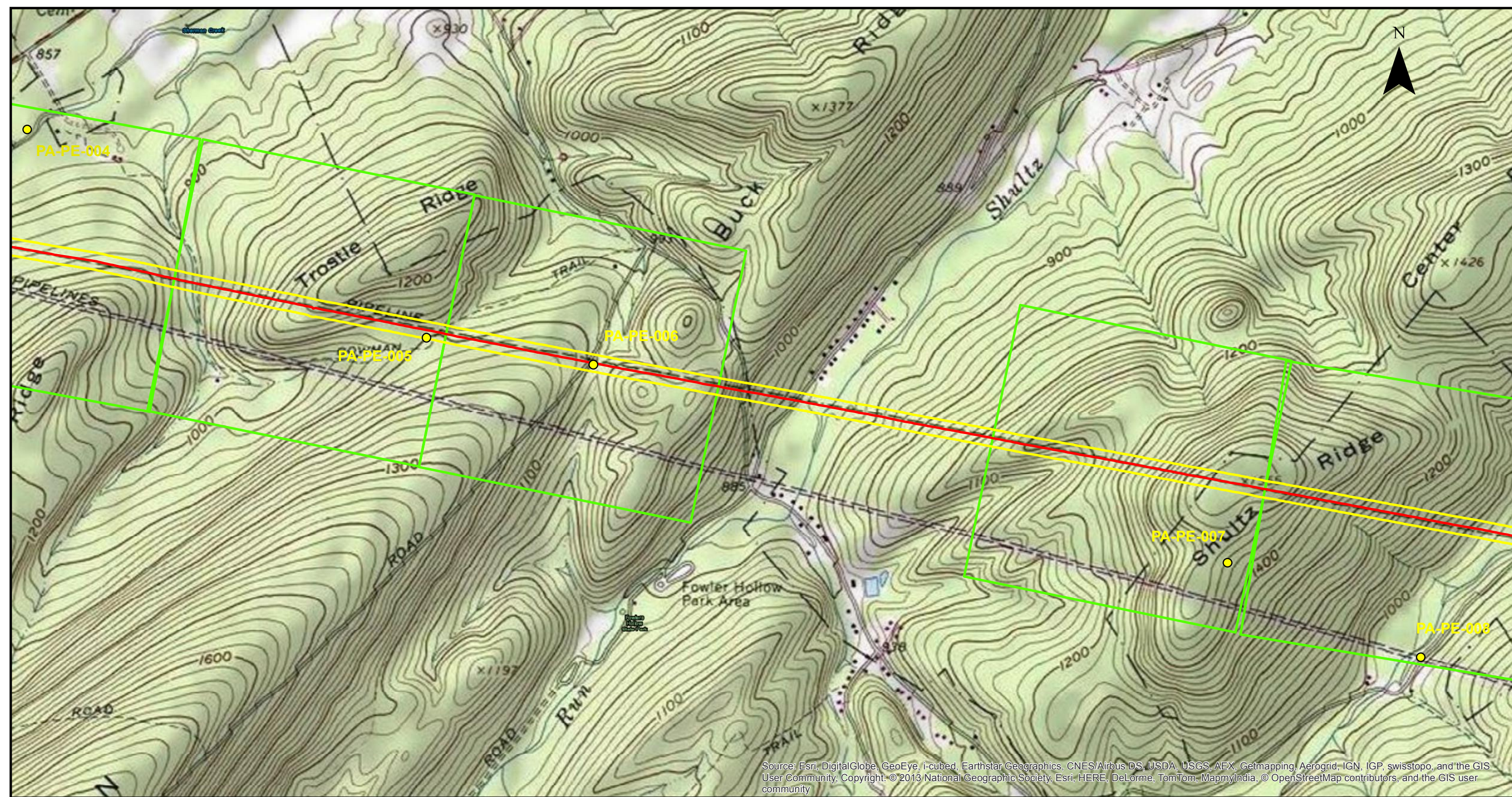
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BAT SURVEY LOCATIONS MAP

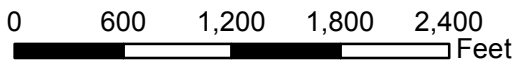


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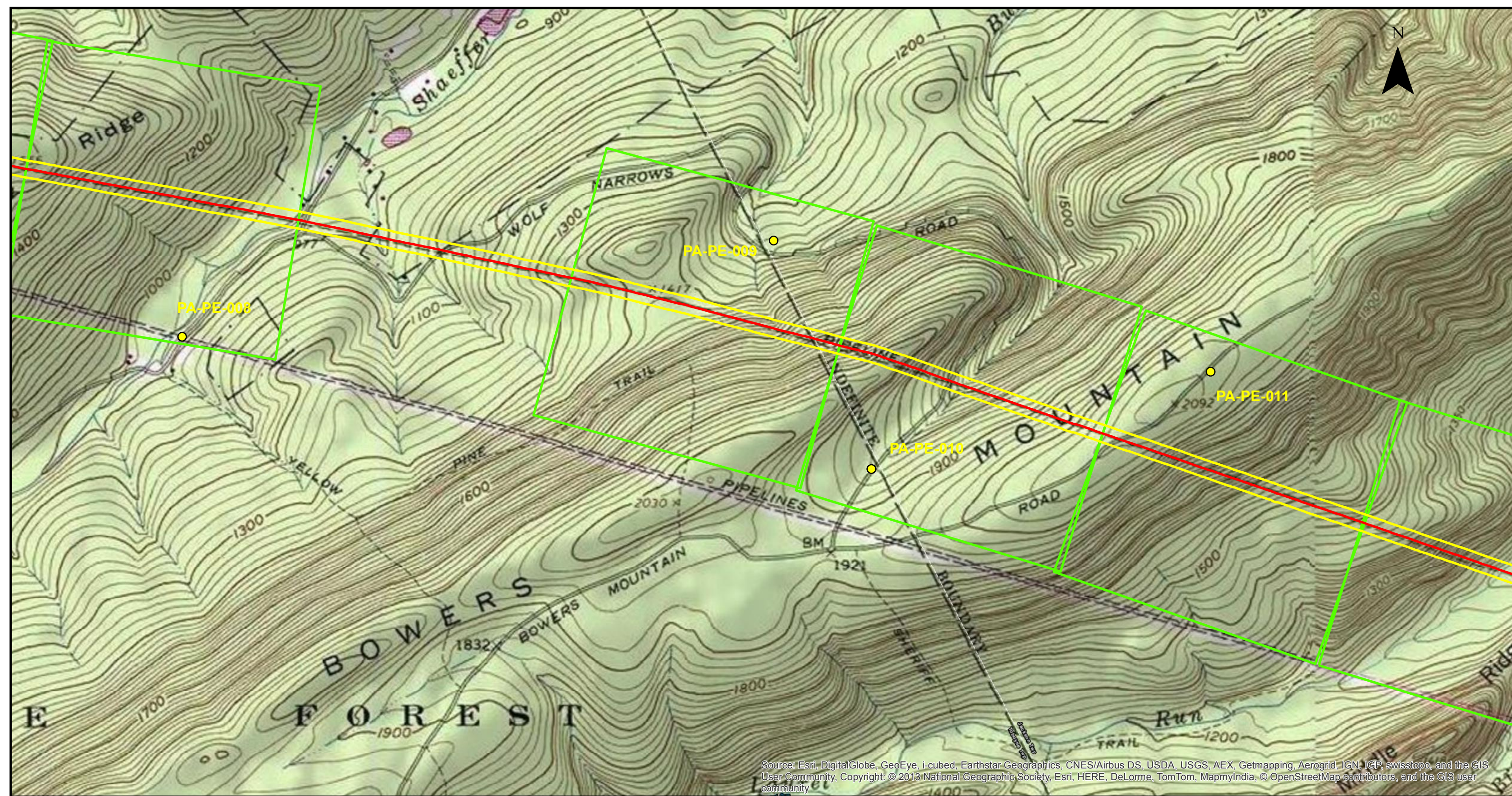
- Proposed PA Pipeline Centerline
- Proposed PA Pipeline ROW



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BAT SURVEY LOCATIONS MAP

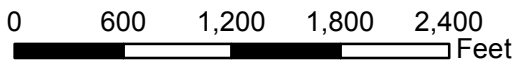


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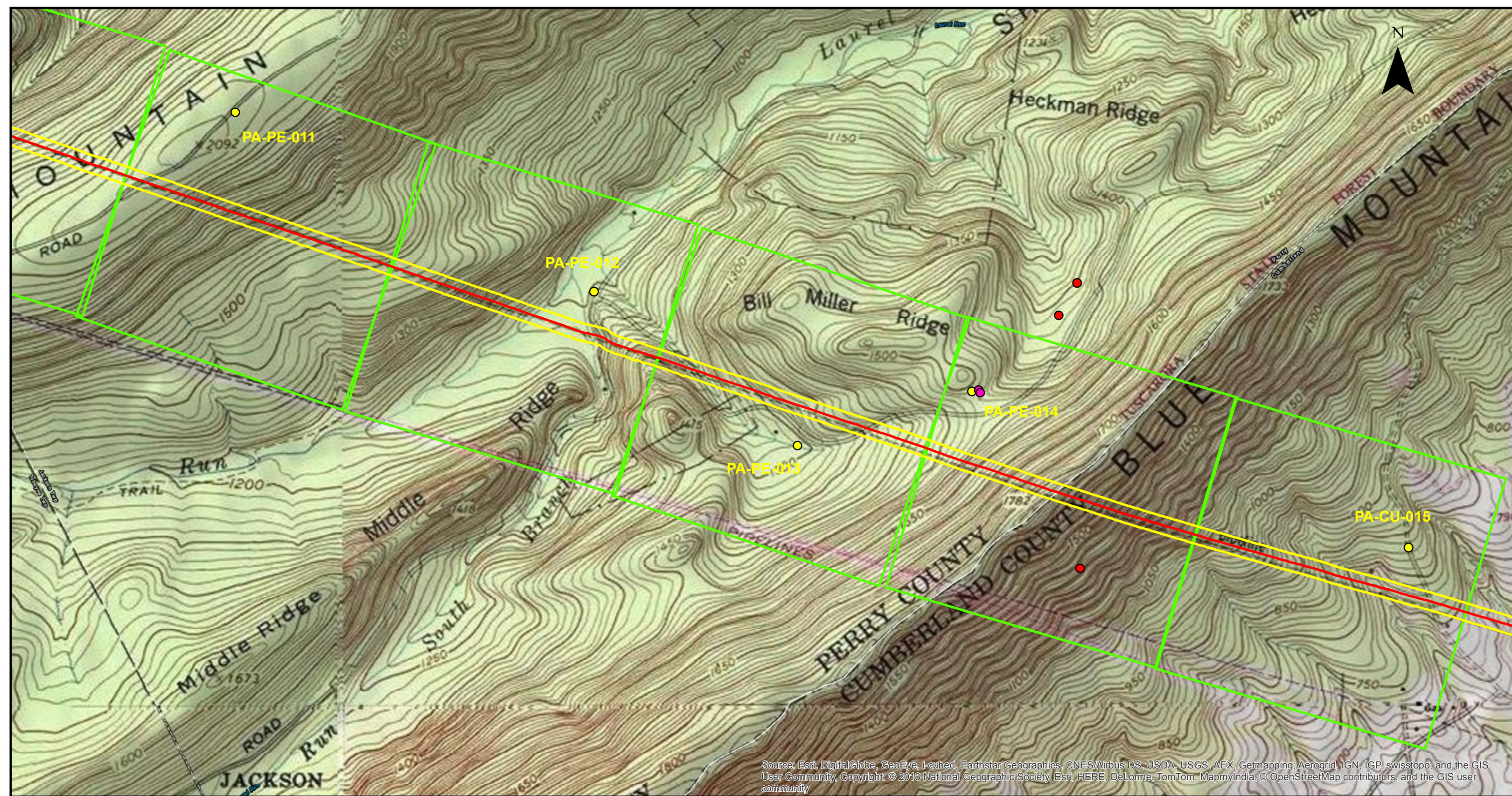
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BAT SURVEY LOCATIONS MAP

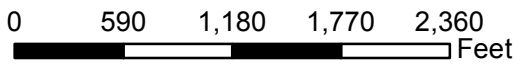


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- Proposed Included 1KM Indiana Bat Survey Plot

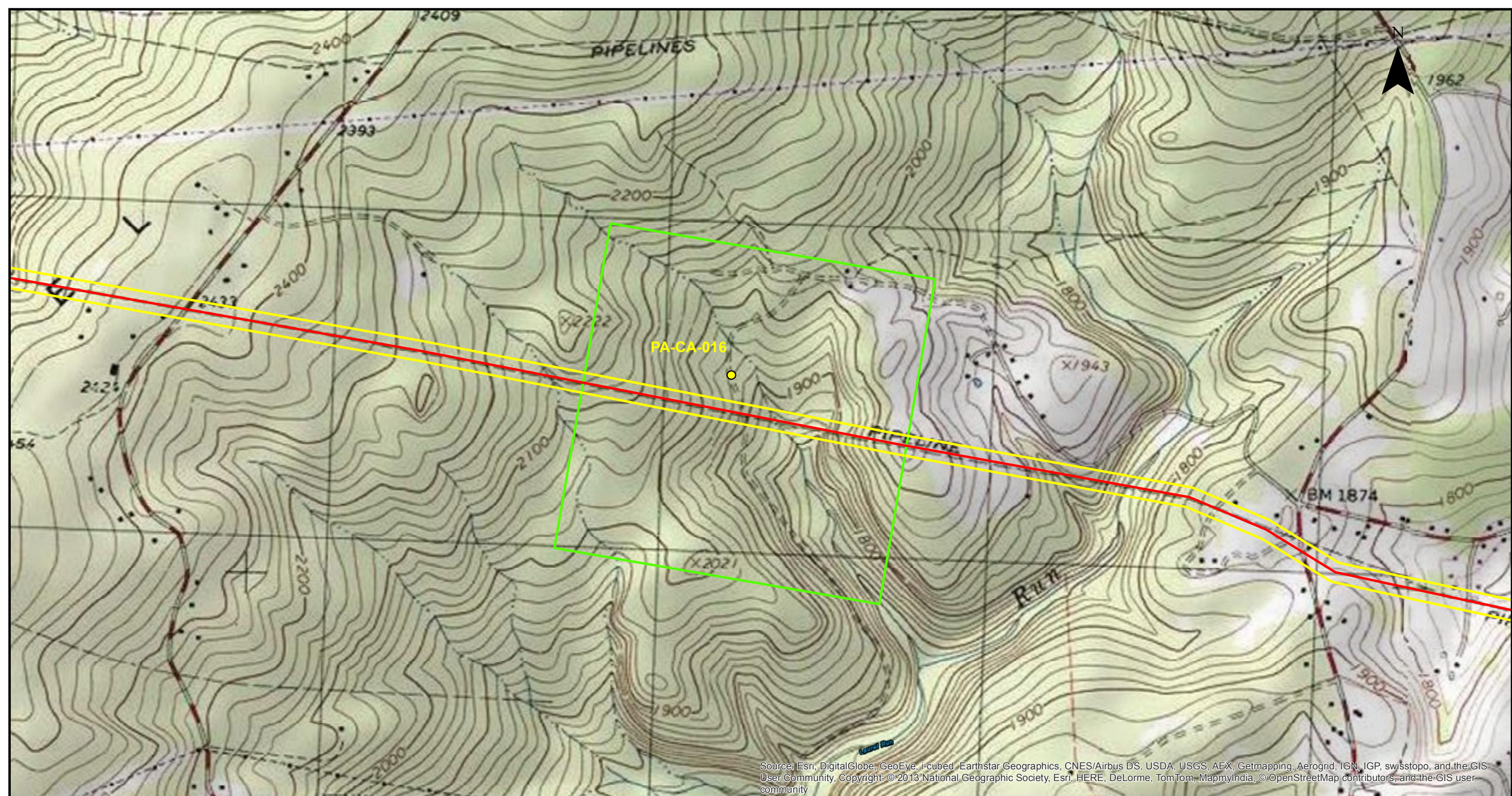
- MYSE Roost Tree Locations
- Proposed PA Pipeline Centerline
- Proposed PA Pipeline ROW



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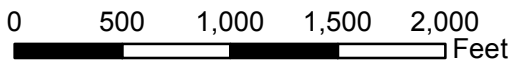


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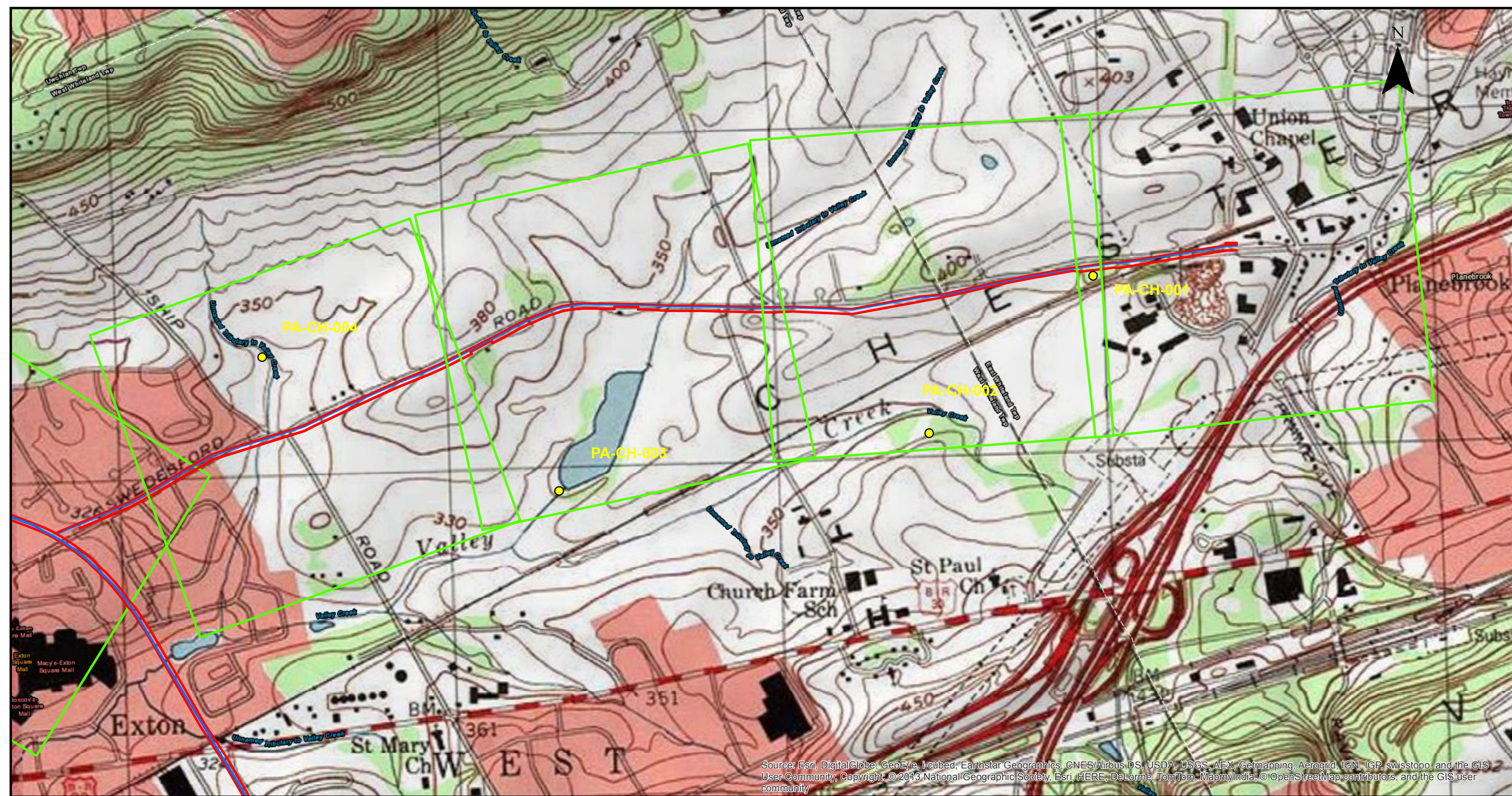
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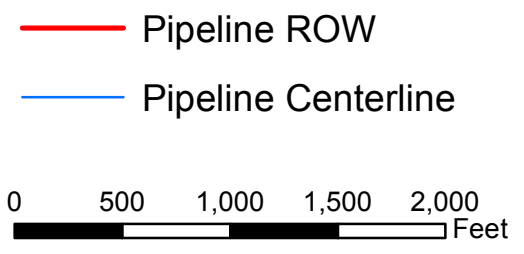
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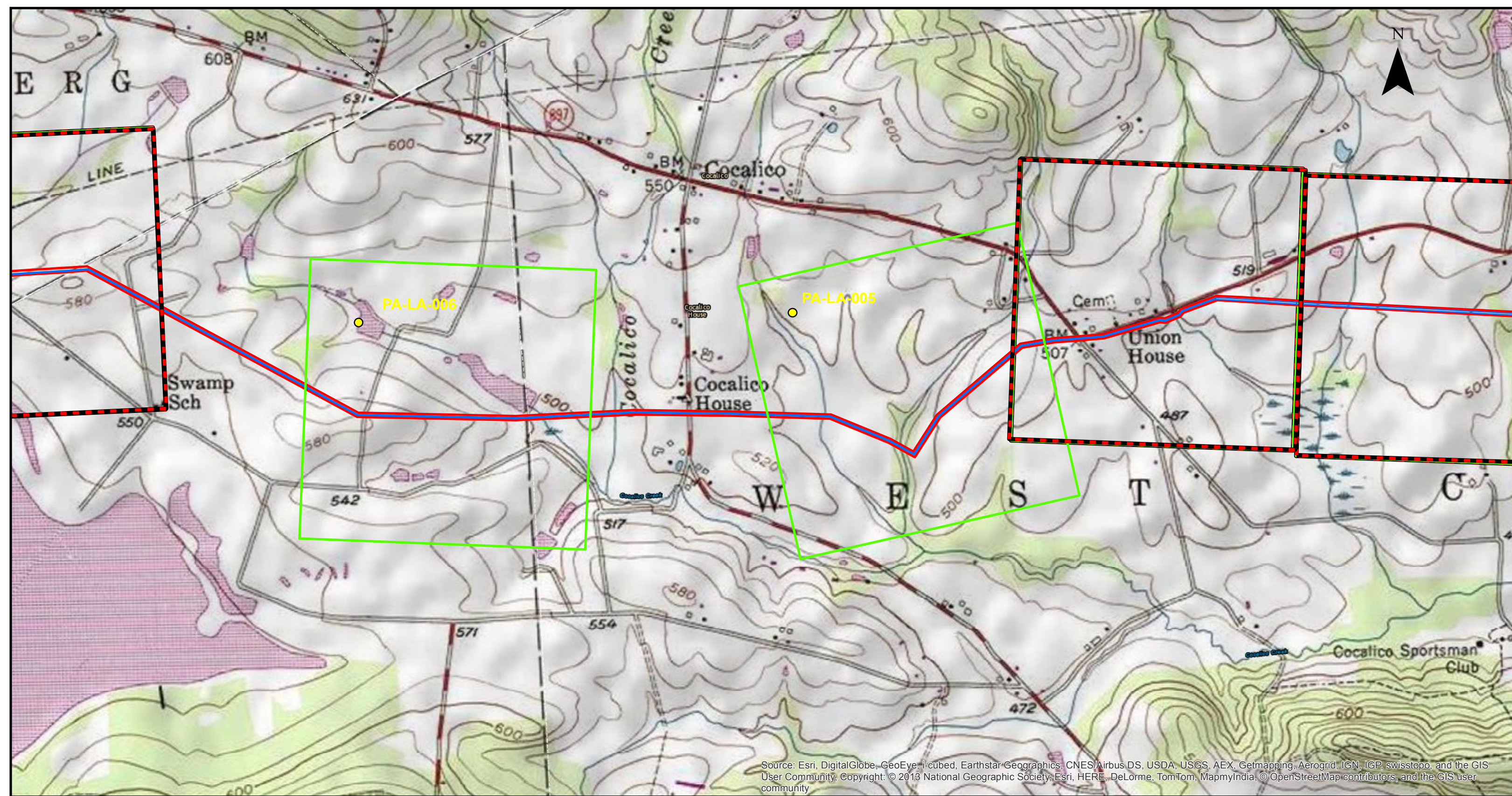
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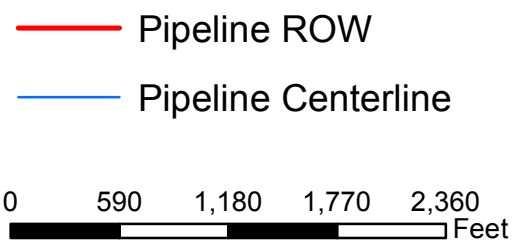
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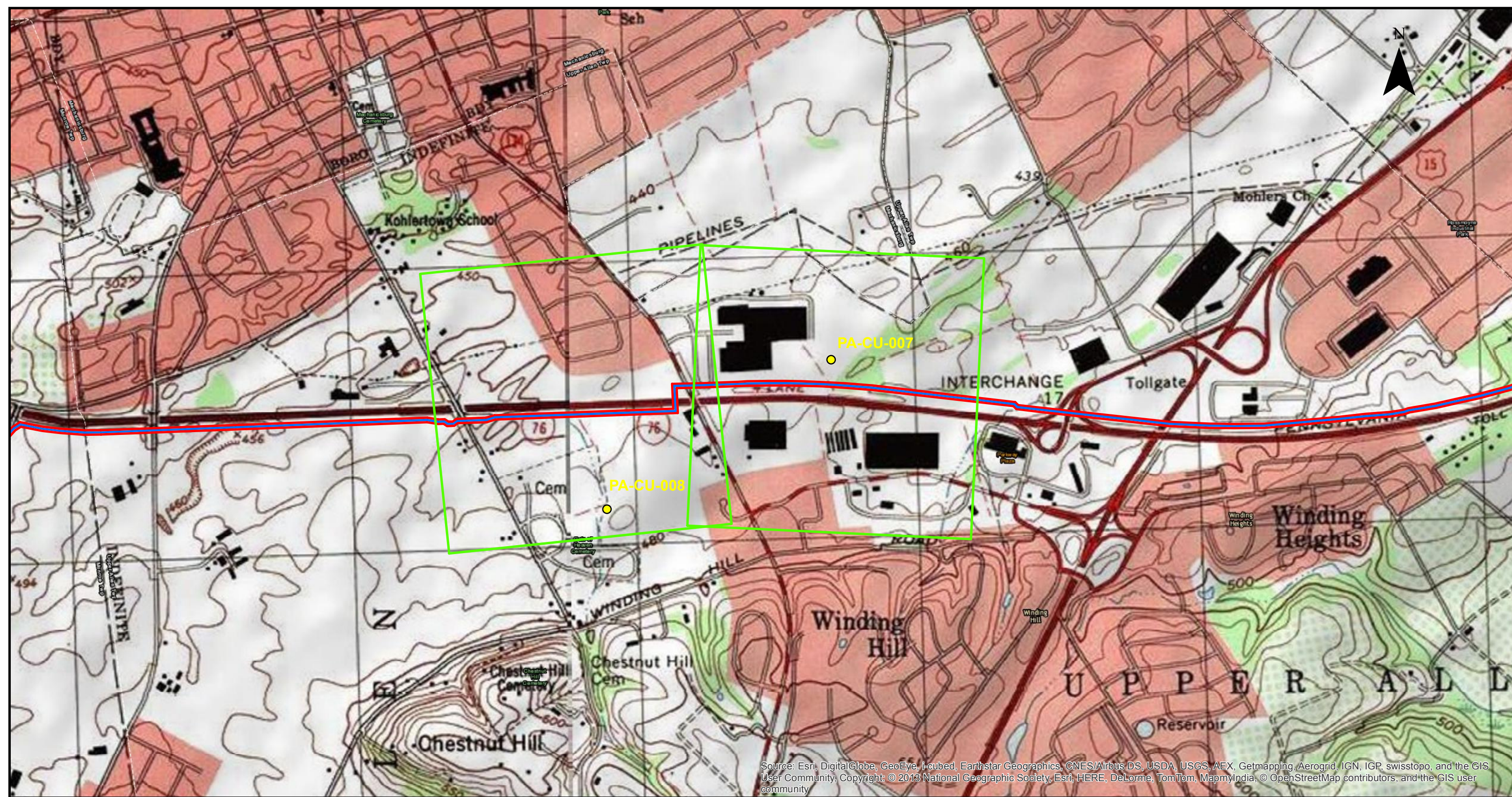
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PAGE 2 of 5

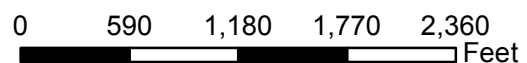


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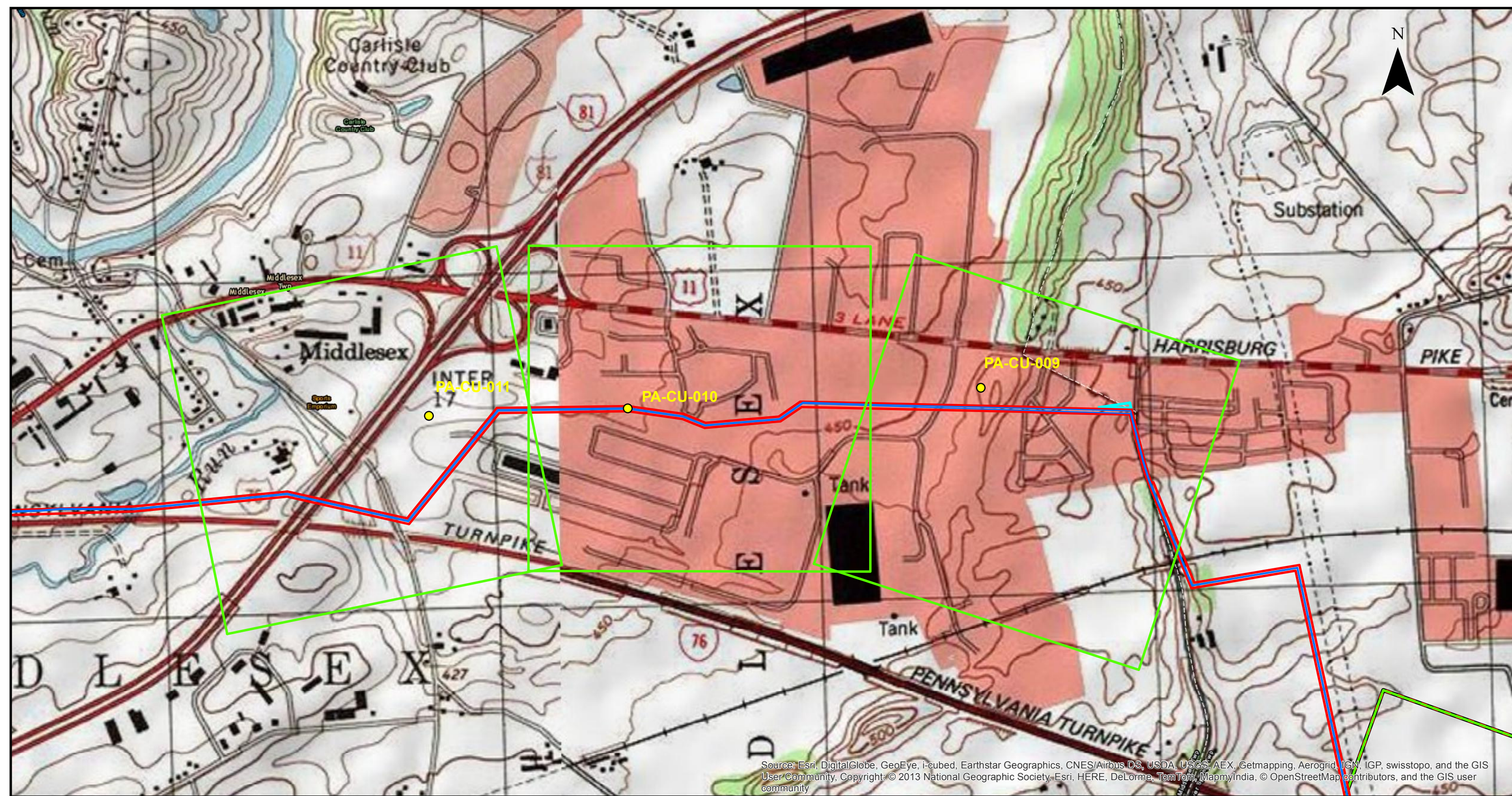
- Pipeline ROW
- Pipeline Centerline



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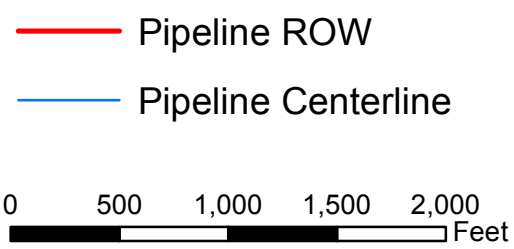
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BAT SURVEY LOCATIONS MAP

Drawn By: CO

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1 in = 882 ft

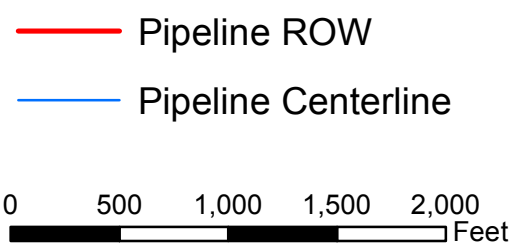
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BAT SURVEY LOCATIONS MAP

APPENDIX B

DATA SHEETS

Note: Appendix B Data Sheets have been omitted from this report as no additional surveys were conducted by Apogee on USACE properties.

APPENDIX C

PHOTOS

Note: Appendix C Photos have been omitted from this report as no additional surveys were conducted by Apogee on USACE properties.

ATTACHMENT 4

***Myotis* Conservation Plan**

Note: The *Myotis* Conservation Plan was revised in April 2016. Please refer to the No Impact Request Letter to the USFWS dated April 2016 and attachments for the updated *Myotis* Conservation Plan.