

### **Environmental Assessment**

for the proposed

# Centerpiece Project Owen County, Indiana



Committed to the future of rural communities.

## Hoosier Energy REC and USDA Rural Utilities Service

Project No. 67815

**November 2012** 

# Environmental Assessment Centerpiece Project Owen County, Indiana

prepared for

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November 2012

Project No. 67815

prepared by

Burns & McDonnell Engineering Company, Inc. Kansas City, Missouri

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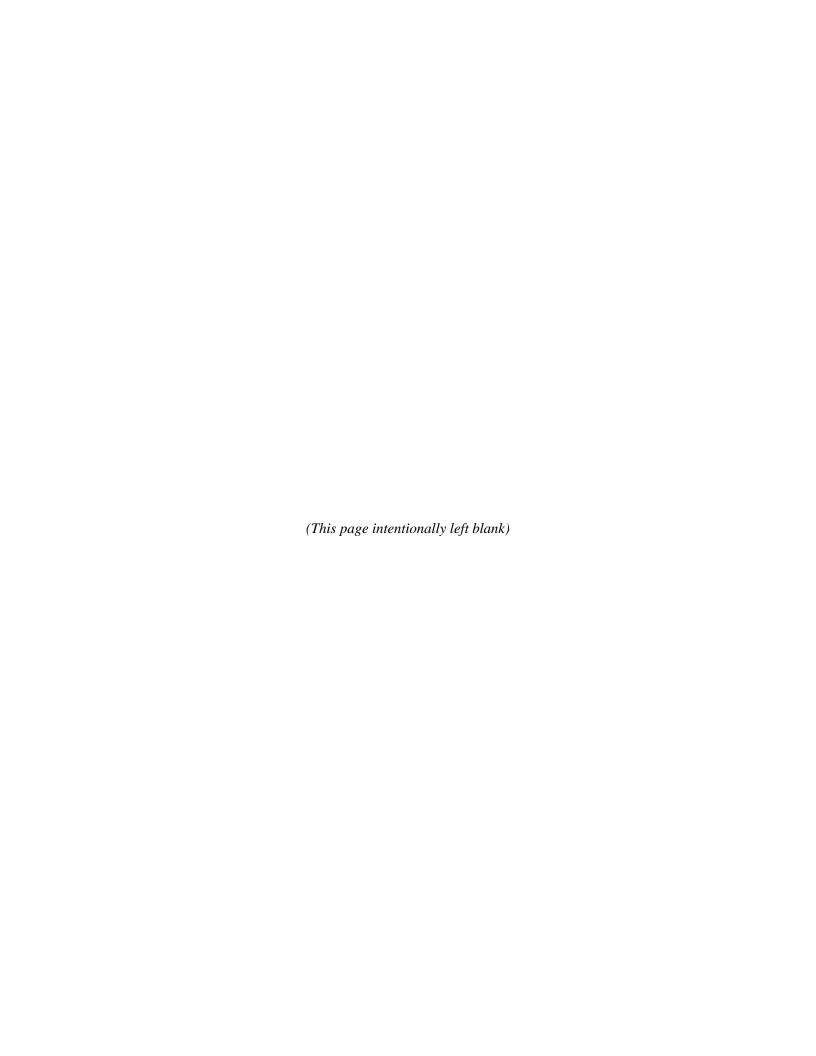
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#### **ACRONYM LIST**

ACHP	Advisory Council on Historic Preservation	INDOT	Indiana Department of Transportation	
ADA	Americans with Disabilities Act	IUH	Indiana University Health	
APE	area of potential effect	MSA	Metropolitan Statistical Area	
A&W	Alt & Witzig Consulting Services	MSL	mean sea level	
CEQ	Council on Environmental Quality	NAAQS	National Ambient Air Quality	
CERCLA	Comprehensive Environmental		Standards	
	Response, Compensation, and Liability Act	NEPA	National Environmental Policy Act	
CFR	Code of Federal Regulations	NERC	North American Electric Reliability Corporation	
DHPA	Division of Historic Preservation	NHPA	National Historic Preservation Act	
	and Archaeology	NRCS	Natural Resources Conservation	
EA	environmental assessment		Service	
EO	Executive Order	NWI	National Wetland Inventory	
EMT	Emergency medical technician	OCEMS	Owen County Emergency Medical	
EPA	U.S. Environmental Protection		Service	
	Agency	PCB	polychlorinated biphenyl	
ESA	Environmental Site Assessment	REC	Registered Environmental Concern	
FIRM	Flood Insurance Rate Map	RFFA	reasonably foreseeable future	
gpm	gallons per minute		actions	
HVAC	heating, ventilation, and air	ROI	Region of Influence	
	conditioning	RUS	Rural Utilities Service	
IDEM	Indiana Department of Environmental Management	SWPPP	Storm Water Pollution Prevention Plan	
ISDH	Indiana State Department of Health	USDA	U.S. Department of Agriculture	
IDNR	Indiana Department of Natural	USFWS	U.S. Fish and Wildlife Service	
	Resources	WCC	Williams Creek Consulting	
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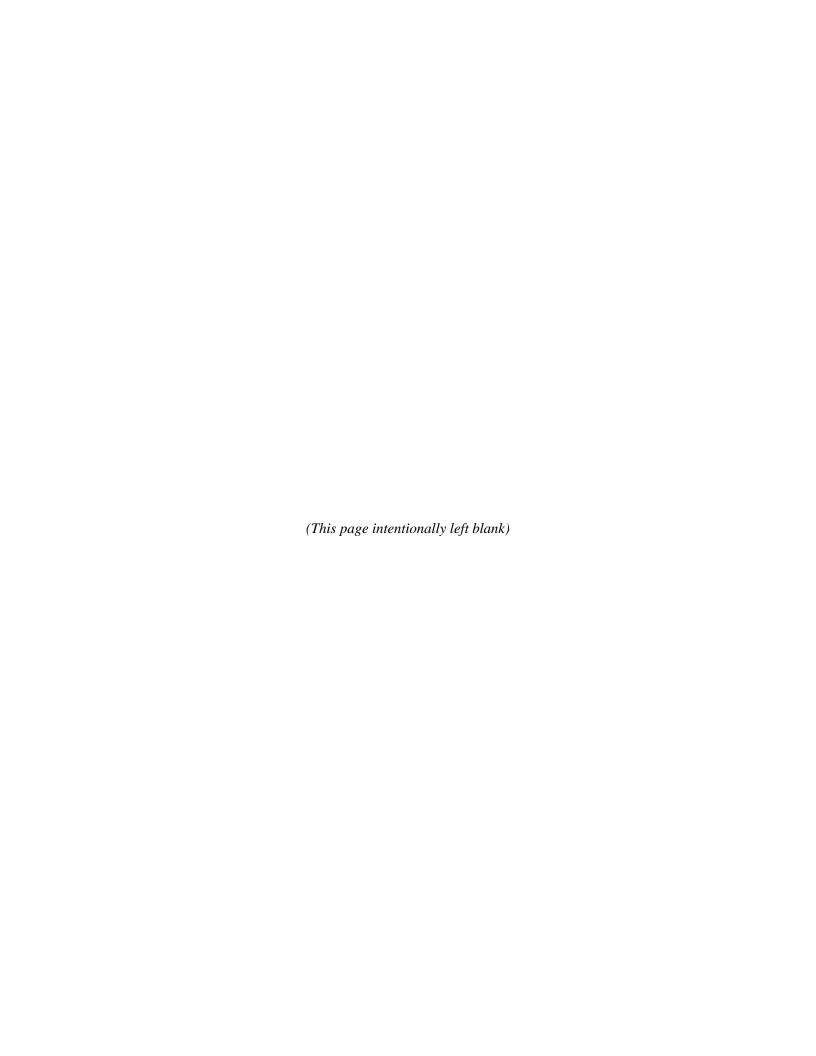
#### 1.0 INTRODUCTION

Hoosier Energy Rural Electric Cooperative, Inc. (Hoosier Energy), a generation and transmission cooperative that provides wholesale electric power and services to 18 member distribution cooperatives in central and southern Indiana and southeastern Illinois, is proposing to construct a new Power Delivery and System Control facility (Power Delivery) in Owen County, Indiana (the proposed Project). The proposed Project involves the relocation of Power Delivery functions from the existing Hoosier Energy headquarters site to a new location due to projected service territory and employee growth, space restrictions on expansion, the deteriorating condition of the existing facilities, and the potential limitations to access that may be imposed by the proposed Interstate 69 (I-69) highway project.

After assessing numerous alternatives for the potential renovation and relocation of the functions at the existing site, Hoosier Energy has proposed the construction of a new office building and warehouse for Power Delivery functions. Hoosier Energy then performed a site alternatives assessment, and has proposed construction at an 88.78-acre site in Owen County. In addition to the office building and warehouse, Hoosier Energy would also construct a microwave tower, equipment laydown area, storage tanks, and a septic system to support the anticipated 60-70 employees that would be employed at the new site.

Hoosier Energy intends to request financing assistance from the U.S. Department of Agriculture (USDA) Rural Utilities Service (RUS) for the proposed Project, which thereby makes it a federal action subject to review under the National Environmental Policy Act of 1969, the National Historic Preservation Act (NHPA), and all applicable federal environmental law and regulation. This Environmental Assessment (EA) was prepared in accordance with 7 Code of Federal Regulations (CFR) Part 1794, RUS' Environmental Policies and Procedures, and 40 CFR Parts 1500-1508, the regulations promulgated by the Council on Environmental Quality for implementing the National Environmental Policy Act (NEPA). This EA also addresses other laws, regulations, executive orders, and guidelines promulgated to protect and enhance environmental quality including, but not limited to, the Endangered Species Act, the Farmland Protection Policy Act, the Clean Water Act, and executive orders governing floodplain management, protection of wetlands, and environmental justice.

\* \* \* \* \*



#### 2.0 DESCRIPTION OF THE PROPOSED PROJECT

Hoosier Energy has proposed the relocation of the Power Delivery functions from their existing site in Bloomington, Indiana to a site in Owen County, near Spencer, Indiana (near the intersection of State Highways 43 and 46) (Figure 2.1). The existing site currently contains the corporate office functions of the chief executive office, business marketing, office services, human resources, administrative services, finance, accounting, plus operations systems functions of power delivery operations, systems control, asset management and fuels management.

The proposed Project involves the construction and/or installation of an 18,000-square foot one-story (over basement) office building, a 77,000-square foot warehouse, a 300-foot-tall microwave tower, a 3.5acre equipment laydown area, a septic system, five liquid storage tanks, and two driveway entrances (Figure 2.2). The office building will house the system control, design engineering, and planning departments. The warehouse operations facility will contain vehicle and equipment storage and repair shops, mobile substation storage bays, parts receiving and small parts storage, sandblasting and paint booths, a crew room, and offices for various Power Delivery staff, vegetation control staff, vehicle maintenance mechanics and others. The laydown area will store transformers, regulators, and other electrical equipment. The septic system will be designed to serve the estimated 60-70 operation personnel that will be employed on the premises of the proposed Project; it will be composed of a 1,200 gallon septic tank, a 1,200 gallon dosing tank, 900 linear feet of trenches, and a 52-foot by 128-foot mound bed with a 12-inch underlying sand bed. The five liquid storage tanks include four underground tanks that include a 15,000-gallon diesel tank, a 600-gallon diesel tank (for a generator), a 10,000-gallon gasoline tank, and a 600-gallon underground tank for waste oil plus a 1,200-gallon aboveground tank for mineral oil waste. All underground storage tanks will be fabricated with double wall containment and interstitial monitoring control equipment with alarming capabilities. Indiana State Highway 43 will be used for construction access to the new site and two permanent, Indiana Department of Transportation (INDOT)approved driveway entrances will be constructed for permanent access. Previous traffic studies concluded that a deceleration lane on State Highway 43 is not required for this project and no upgrades to off-site roads are anticipated.

Overall, approximately 18 acres of relatively flat lying agricultural land will be disturbed for construction and operation of the proposed Project. Preconstruction activities include the installation of site security lighting, video surveillance cameras, a field construction office trailer, temporary construction electrical power, temporary potable water service, and an Indiana State Department of Health (ISDH)-approved hold tank for construction trailer sanitary and gray water needs. In addition, a security trailer will be

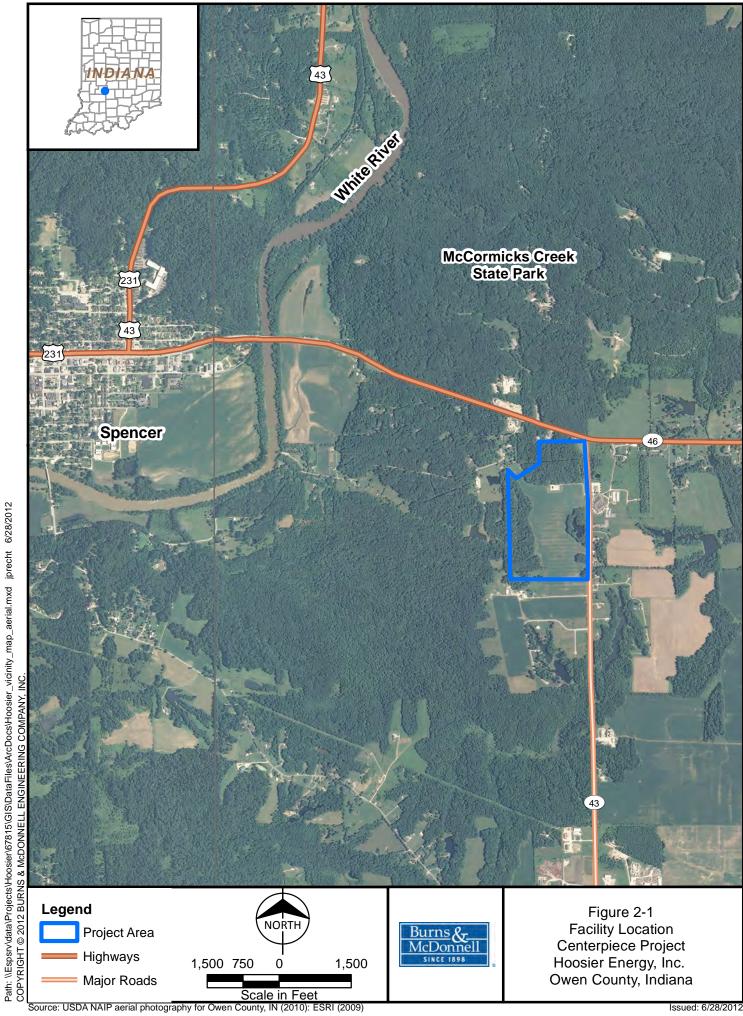
installed and will serve as the main point of entrance for construction workers, engineers, and Hoosier Energy employees. Other preconstruction activities include site surveying and installation of erosion control structures to comply with Indiana Department of Environmental Management (IDEM) Rule 5 Construction Plan/Storm Water Pollution Plan.

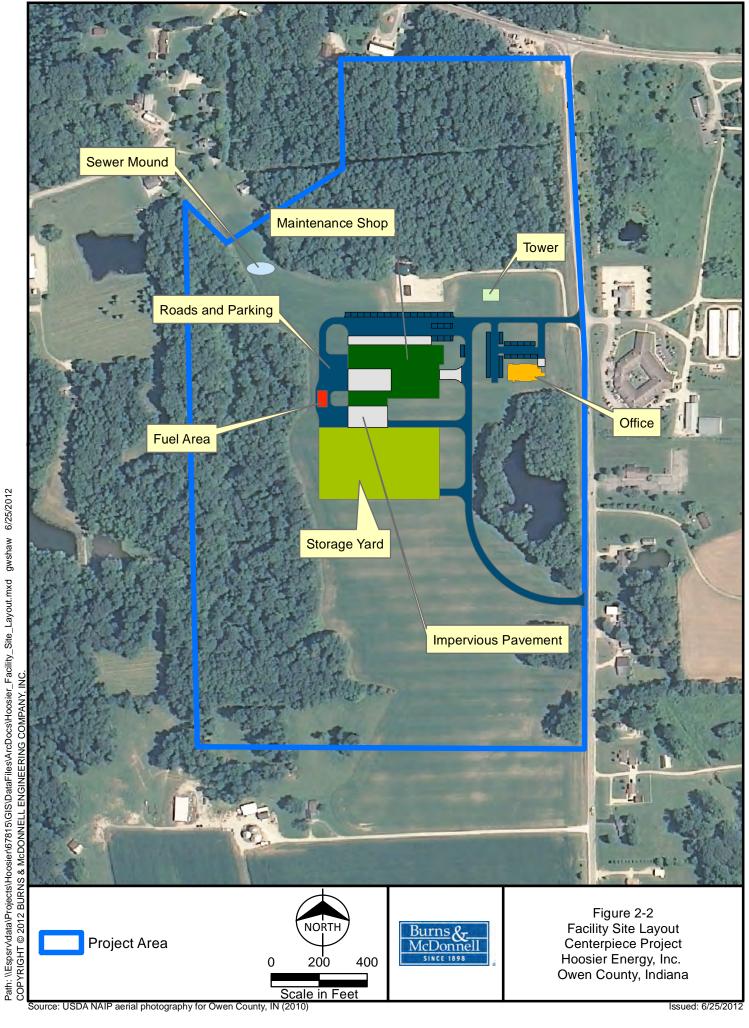
Site construction will begin with grading and excavation; excess soil from site preparation will be stored on the south side of the laydown area, graded, and seeded for future use. Given that the majority of the site is previously cleared, tree removal will only be required for the installation of the south driveway entrance (0.1 acre or less). The permanent site drainage system, which includes storm water piping and drains, sediment traps and geotextile fabric, will be installed during the grading activity. The site drainage system will be approved by the county commission and the applicable state agencies.

Setting of concrete foundations and erection of concrete walls and flatwork will occur next, and will be followed by steel shell erection, which will include the installation of all structural framing, posts, beams, trusses, girts, steel siding and roofing. The installation of the fire protection pipeline, fire hydrants, backflow preventers, permanent lighting, septic system including associated tanks, piping and tile, and construction of the interior road system, and laydown area will occur simultaneously with concrete foundation and steel erection. The fire protection systems will be constructed to standards which generally exceed State and local building code requirements. The 300-foot-tall microwave tower will be constructed towards the latter part of the project.

Following shell erection, interior construction measures will be undertaken to complete the buildings, including internal wall construction, mechanical, electrical and plumbing systems, interior finishes, flooring, lighting, and fixtures. The site will be landscaped to meet zoning requirements and site security fencing, which includes four motor operated security gates and four manual gates, will be erected. Finally, exterior lighting will be installed, and approximately 135 individual parking spaces will be provided.

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#### 3.0 PURPOSE AND NEED FOR THE PROPOSED PROJECT

In 2011, Hoosier Energy conducted a Facility Condition Assessment (the Assessment) of the existing site, which consists of headquarters and Power Delivery functions to develop a long term (20-year) facility plan to accommodate predicted future growth. The existing site, located in Bloomington, Indiana, serves not only as the central location for Hoosier Energy's administrative offices but also for the Power Delivery functions, maintenance garages, and warehouse facilities (Figure 3.1). The Assessment projected employee growth, compared the anticipated needed space versus the available space, and evaluated the efficiency of the existing site location as related to the ability of Power Delivery to efficiently respond to unplanned power line outages, emergencies, and routine maintenance and construction work. It also assessed the physical condition of the existing site and sought to understand the implications of the new Interstate 69 (I-69) highway construction project that proposes to pass immediately in front of the current ingress and egress driveways on the existing site.



Figure 3.1: Hoosier Energy Current Facilities

#### 3.1 Power Delivery Space Requirements

Hoosier Energy projects that the Power Delivery, which includes transmission design and planning, system control, and the executive office, will require a 2 percent annual increase in staff over the next 15 years. The Assessment concluded that the existing Power Delivery office space is inadequate, as there isn't sufficient conference room and break-room space available, and will not be able to accommodate staff increases. Power Delivery currently has 9,877 square feet of office space at the existing site. Based on the projected growth, Power Delivery will require a total of 17,000 square feet of office space with specific details as follows. Design and planning will require a 59 percent increase in office space to support current duties and allow for projected employee growth. System control will require a 37 percent increase in office space to accommodate employee growth and provide the restroom, shower, kitchen, and break area required to meet North American Electric Reliability Council (NERC) survivable event standards. Ancillary spaces will increase by 200 percent over current space to accommodate needed telecommunications room, mechanical room, break-room, and file storage spaces.

In addition to the required additional building office space, the Assessment found that the existing 56,224-square foot warehouse fails to provide adequate storage and office space. To compensate for the lack of adequate indoor storage space, Hoosier Energy leases 15,000 square feet of warehouse space for electrical equipment and other inventory. Hoosier Energy also stores service vehicles (boom and bucket trucks) outside; the vehicles are exposed to inclement weather, which shortens their useable lifetimes and inhibits Hoosier Energy's emergency response capabilities. Emergencies caused by inclement weather (primarily snow and ice) cannot be responded to in a timely manner because the vehicles stored outside must be de-iced (which can take up to two hours) prior to being dispatched. Hydraulic controls for booms and buckets are also affected during subzero weather and contribute to delayed dispatch. Further, the exterior storage of operations equipment is not fully secured, which has led to the already limited internal storage space for vehicles and that could otherwise be kept outside.

Not only is there insufficient space, but Power Delivery's location at the existing site fails to promote efficient and safe use. Both inbound and outbound high and wide loads are blocked for extended periods of time while waiting for completion of trailer loading or unloading because there is insufficient loading/unloading space. Additional buildings have been added throughout the years as needed, and the existing site is no longer laid out in a manner that promotes safe travel in and throughout the area. The warehouses, garage and warehouse offices are located on a site with sloping topography, which can cause unsafe conditions due to the potential for the shifting of loads during the loading of large equipment as a result of the uneven terrain. Pedestrian safety is another major concern because of multiple blind spots

due to the numerous buildings and uneven terrain that is compounded by the intermingling of industrial type activities with office workers and activities.

#### 3.2 Existing Facility Condition Evaluation

Power Delivery is presently housed in seven separate buildings, including the planning and design office, the technical services center, the vehicle service center, the mobile substation storage bays, stores receiving, and the warehouse. Each building was assessed utilizing a facility condition form that evaluated the buildings based on seven characteristics and associated attributes as evaluation factors.

**Table 3.1: Facility Condition Assessment Categories** 

Characteristics	Attributes		
Site	Walking safety Parking Sanitary Storm Lighting Security Fence		
Structural	Roof Gutters, Soffit and Fascia Exposed foundation		
Exterior Cladding	Aluminum siding		
Windows/Doors	Storefront Windows Headers/Sills Doors		
Building Climate and Environmental Conditions	Plumbing Fire Protection Electrical Lighting System Control Technology Security		
Interiors	Finishes Casework Doors Glazing Partitions/Walls Fixed Equipment		
Code	Accessibility Fire Alarms Means of Egress Sprinkler System Emergency Lighting		

A suitability rating was established from 0 to 5 with 5 being the most suitable and 0 the least suitable for each attribute. Each building was evaluated according to characteristics and attributes and a suitability percent was calculated as the total points scored divided by the number of points possible for all categories. The lower the percentage, the less likely the building was suitable for meeting the criteria. The weighted average suitability score for all buildings was 52.8 percent, with a range of 32 to 78 percent. The two highest suitability scores of 75 and 78 percent were for buildings that contained less than 9 percent of the total square footage. The overall results indicated that only approximately 50 percent of the existing buildings were suitable for their current use and function. The most common issues noted were: original roofs – 33 years old, building siding is dented/wavy, hardware not Americans with Disabilities Act (ADA) compliant, paint fumes entering office areas, no sprinkler system, poor sound insulation, poor heating, ventilation, and air conditioning (HVAC) zone control, inadequate parking spaces for employees and visitors from public and other company departments, poor lighting and poor energy efficiencies of the building mechanical systems.

#### 3.3 Interstate 69 (I-69) Construction Limitations to Access

The existing site is currently accessed by State Highway 37. Increased congestion on the highway has made accessing the existing site difficult; tractor trailer loads often wait up to 15 minutes before being able to enter or leave. A new interstate highway (I-69) is being constructed between Evansville and Indianapolis as part of an overall long range plan to connect Mexico to Canada in order to expedite the shipping of goods as part of the North American Free Trade Agreement and relieve congestion on state highways. The proposed I-69 corridor will pass directly in front of the existing site. Though the final alignment of the I-69 right-of-way has yet to be determined, it is predicted to expand up to and potentially include the existing parking lot, which may compromise access to the existing site. Hoosier Energy has informed INDOT of the need to maintain access; however, with the uncertainty comes risk to operation and, as a member owned cooperative, Hoosier Energy is unable to accept this magnitude of risk and must plan accordingly. Regardless of I-69's exact location, when the construction of the interstate reaches the southern part of Bloomington in 2014, the traffic count is expected to increase by 14,000 vehicles per day on the existing State Highway 37. This dramatic increase would make egress for Hoosier's Power Delivery high, wide, and heavy load equipment from the existing site extremely difficult. This creates an unsafe condition for public traffic as well as employees.

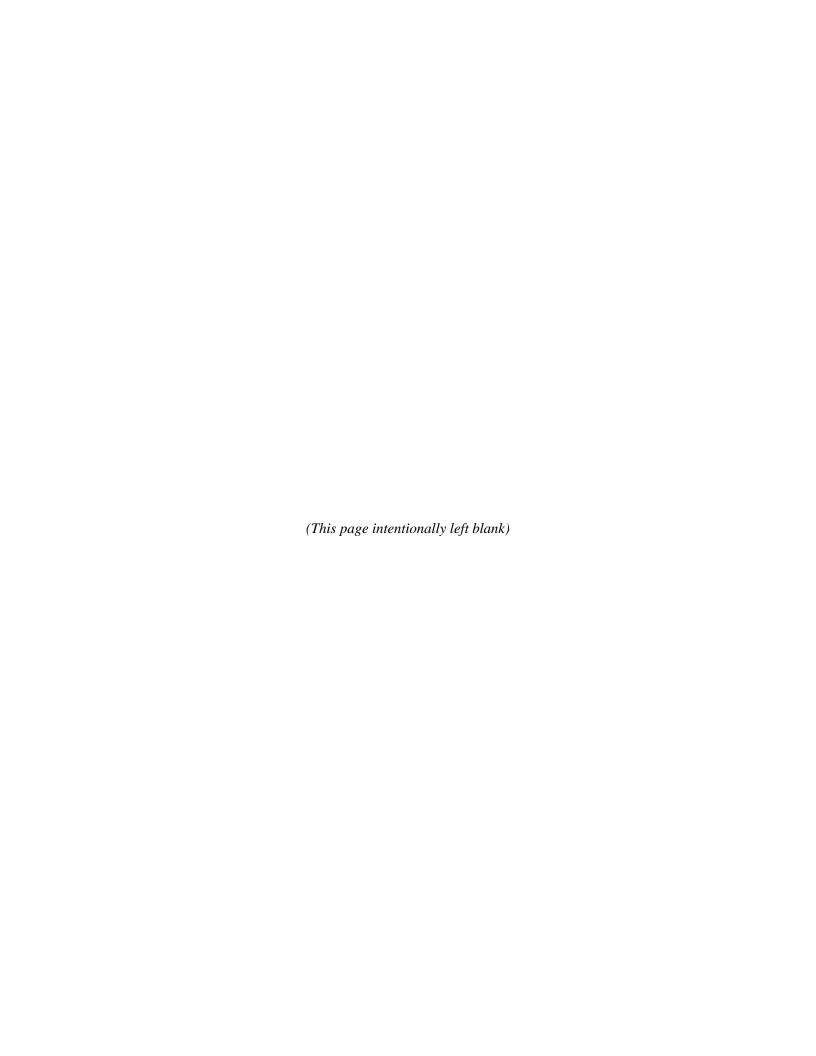
#### 3.4 Purpose and Need Summary

The Assessment revealed substantial issues with the current location when taking into consideration all health, safety and welfare factors, including code requirements, structural integrity, mechanical/electrical/technology, windows and doors and existing site issues. The warehouse fails to

provide adequate space for business operations; additional warehouse space is currently being leased at another location, which has created logistical issues. The physical condition of the warehouse and maintenance garage is deteriorating and requires significant upgrades. In addition, the flow of traffic at the present Power Delivery area is problematic; the terrain is uneven, there is little area for inbound delivery trucks and outbound transmission trucks to maneuver, and there is inadequate space for loading transmission materials such as transformers, regulators, switching structures and other gear while routine receiving and vehicle maintenance activities are performed. Lastly, the existing site has no space for expanding both facilities and infrastructure.

The Assessment recommended the relocation of the Power Delivery functions from the existing site to a new site of at least 20 acres in size, which would allow for the collocation of requisite equipment to maximize efficiency. The Assessment therefore also included a site location alternative analysis (see Section 4.0). Relocation of the Power Delivery is essential for Hoosier Energy to meet long term growth projections, improve site security and safety conditions, and maximize efficiencies to reduce delays during extreme weather events. The target completion date of the proposed Project is December 2013, which would provide sufficient time to occupy the facility prior to the projected increased traffic and allow for unforeseen delays in construction.

\* \* \* \* \*



#### 4.0 ALTERNATIVES ANALYSIS

#### 4.1 Relocation and Renovation Alternatives

Based on the findings of the Assessment, Hoosier Energy considered numerous potential renovation and relocation alternatives for resolving the deficiencies of the existing site. To provide a methodical approach to the alternative selection, an alternatives evaluation matrix was created jointly by Hoosier Energy executive staff and consultants. The evaluation matrix consisted of five individual design criteria and 28 evaluation factors (Table 4.1). The design criteria was created specifically for use in the alternative selection process and included (in priority order): space requirements, safety/security of the facility, cost of the project, location, and operations impact. Space requirements criteria was assigned a numerical value of 5, which is the highest priority on a scale of 1 to 5 because the purpose of considering a long range master facility plan centers on whether the alternatives being evaluated have sufficient land to meet the space requirements of the facility. Each design criteria was assigned evaluation factors (Table 4.1) which reflected specific factors crucial for operation and business. For each evaluation factor, a score of -3 to +3 was assigned with -3 being the least suitable or least agreeable to +3 being the most suitable or most agreeable. For each of the alternatives evaluated, a score was assigned, then multiplied by the priority rank, and totaled to arrive at a final score.

Table 4.1 Alternatives Evaluation Criteria and Factors

Priority	Design Criteria	Evaluation Factors		
5	Space Requirements	Meets office building program recommendations		
		Meet operations/Storage building program recommendations		
		Provides programmed parking spaces		
		Provides adequate lay down space		
		Design allows for flexibility in space use		
		Project does not require leased space		
		Site allows for future expansion		
4	Safety/Security	Site ideal per NERC requirements		
		Operations traffic flow is safe		
		Pedestrians are safe on site		
		Vehicular traffic on site is safe		
3	Costs	Least anticipated project cost		
		Middle anticipated project cost		
		Low anticipated project cost		

Priority	Design Criteria	Evaluation Factors		
2	Location	Site is not located within City of Bloomington		
		Site is located within 30 minutes of workforce commute		
		Site has no environmental issues/limitations		
		Location has high resale value		
		Location does not require additional towers		
		I-69 risk factor		
		Site has sewer and adequate capacity		
		Location has easy access to highway and interstate		
1	Impact	Project can be phased		
		Project has minimal impact on workforce		
		System control is not impacted		
		Duration of construction 20 months		
		Duration of construction 21-36 months		
		Duration of construction 36+ months		

The alternatives evaluated in the Assessment were ultimately vetted by a Hoosier Energy Headquarters Planning Subcommittee, a subset of the Board of Directors and Hoosier Energy executive staff. The following alternatives were considered:

#### 1. No Action/Maintenance of Headquarters and Power Delivery at the Existing Site

Under this alternative, Hoosier Energy would continue operations and maintenance at the existing location and would not build the proposed Project. Hoosier Energy would have to continue leasing additional space off site. Leaving Power Delivery at the existing site would expose Hoosier Energy to unacceptable risk in its ability to reliably provide service to its member distribution systems. Though there is uncertainty regarding the potential impacts of the proposed I-69 project to accessing the existing site, significant improvements would still be needed regardless of the selected route to provide alternative access options and to meet Hoosier Energy's current and projected future office and storage space needs.

The existing site conditions including topography, right-of-way, geotechnical conditions and layout prevent expansion of operational activities and employees at the current location. The existing site is not expandable as all of the flat/buildable land has been consumed for storage, laydown and normal business. Hoosier Energy has expanded the existing site to its limitations, and the expansion that has occurred requires constant erosion control upkeep through periodic replacement of rip rap. Maintenance and upkeep of the existing site would be very costly. This

option was not selected because the current location does not allow for future expansion of the business and work force.

#### 2. Upgrade/Renovation of Headquarters and Power Delivery at the Existing Site

This Alternative would involve investing in expansion and retrofitting within the boundaries of the existing site. As stated in Alternative 1, the facility cannot be expanded because there is no flat ground left and, the existing soils are not suitable for erecting a building or warehouse. Under this alternative, Hoosier Energy would have to continue leasing additional space off site. Without the ability to expand the existing site, Hoosier Energy could not reliably service its member cooperative systems.

Based on the Assessment's evaluation matrix, the renovation/additions at the existing site received negative scores and was no longer considered as a viable option. The Assessment determined that an investment of nearly \$4.1 million would be required to restore the Power Delivery facilities at the existing site to good condition. Such an investment in the existing site is unsound from a financial perspective, given that the existing site has been appraised at far less and thus, the return on the investment could not be realized. Furthermore, the upgrading would not include providing additional space; the 15,000 square feet warehouse would continue to be leased and the inefficient layout of the Power Delivery facilities would still exist. Leasing additional offsite space is inefficient, expensive, and impractical considering this scenario affects Hoosier Energy's ability to reliably maintain their electrical systems.

#### 3. Relocation/Collocation of Headquarters and Power Delivery to a New Site

This option was not selected because other properties evaluated could not accommodate the unique needs of the Power Delivery operations. Power Delivery operations require access to major highways, a site that will allow for the erection of a 300-foot-tall microwave tower and central access to existing transmission assets. Of all sites evaluated to co-locate headquarters and Power Delivery needs, none could meet the needs of Power Delivery while being collocated with headquarters.

# 4. Upgrade/Renovation of Headquarters at the Existing Site & Relocation of Power Delivery to a New Site

This option was not selected in totality for the same reasons as note in item 2 above; however, the Power Delivery operations are being relocated as part of the recommendation.

#### 5. Relocation of Headquarters and Power Delivery to Separate Sites

This option emerged as the preferred option, although this specific document refers only to the project to relocate Power Delivery to Owen County. A project to relocate the existing headquarters to a new location is being considered as a separate project.

The final scores ranked the last alternative. Relocation of Headquarters and Power Delivery to Separate Sites, as the preferred alternative.

#### 4.2 Power Delivery Site Selection

After determining that relocation of Power Delivery was the preferable alternative, the Assessment identified 24 potential sites that would provide sufficient space (at least 20 acres) within Monroe, Greene, Lawrence, and Owen Counties in Indiana. These counties were chosen because they are more central to Hoosier Energy's member territory and transmission assets (substations, switchyards, and transmission lines).

Based on the projected office and warehouse space requirements, the Assessment recommended that Hoosier Energy would require a site with at least 20 acres of space. Acknowledging that Hoosier Energy's service territory may continue to expand, potential for future expansion of territory coverage and workforce was a key consideration. Sites offering sufficient space were further assessed based on site topography; having large, flat area conducive to moving and storing large pieces of equipment safely and efficiently that would allow the construction of a large enough warehouse to locate all required office space, equipment, and inventory under one roof. Hoosier Energy also considered site security, restricting public access to warehouse yard, seclusion, not interfering with other businesses or residents in the area, and access efficiency, accessing a major highway with traffic lights. Work force commute, limiting unreasonable travel time, was also considered in an effort to retain and attract employees. Proximity of the site relative to member substations, communication towers, and the existing site was evaluated to promote efficiency. Financial criteria were also considered; the property acquisition costs and tax incentives offered by the local government were the two most important financial considerations. Another cost consideration in the selection process was availability of on-site utilities including electric, water and sewer.

Final vetting of the sites was achieved through the use of a suitability matrix of nine attributes including: meeting 10-year needs, flexibility, residual value, retaining/attracting work force, minimizing response time, workforce efficiency, energy efficiency, easy access for operations, and I-69 risk. Two sites were carried forward for serious consideration, including Victor Pike and Sargent Property (Owen County

Site). These sites were discussed in detail at multiple Headquarter Planning Subcommittee meetings, Operations Committee Meetings and Board of Director meetings.

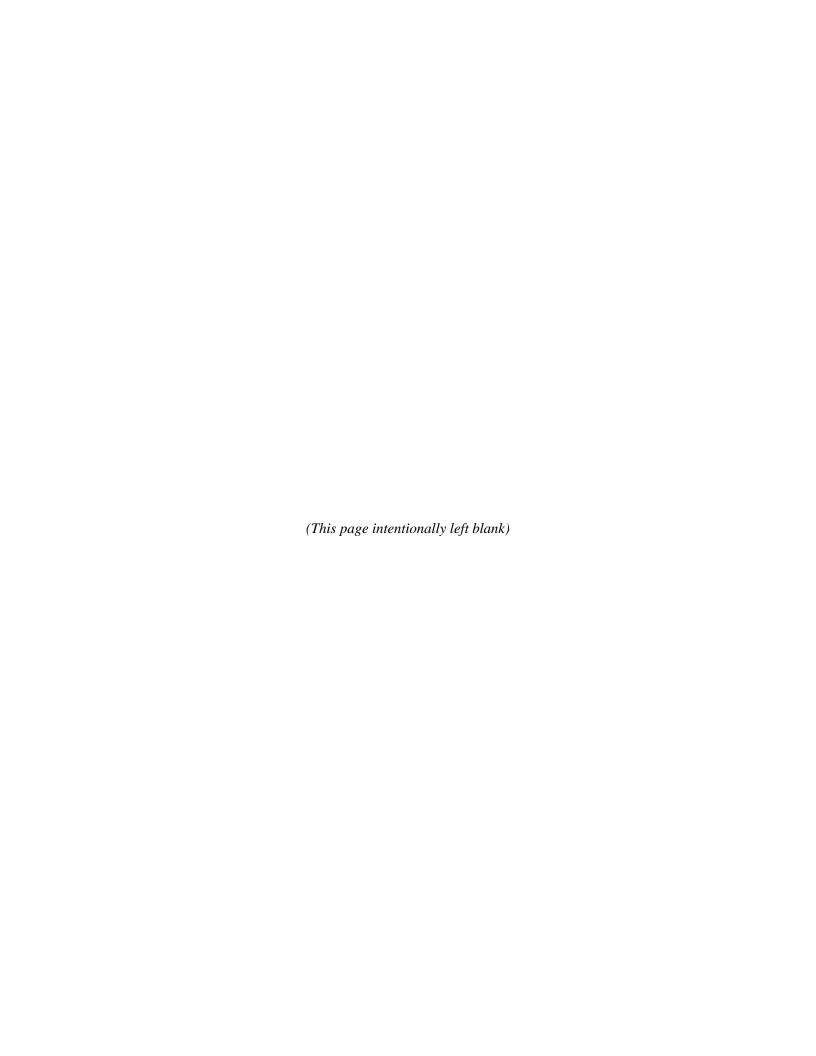
#### 4.1.1 Victor Pike

The Victor Pike site is an 88-acre site located about 12 miles south of the existing site. The Victor site, while having sufficient property to construct the Power Delivery center, has steeply sloping approaches and the geotechnical investigation suggests that bedrock would be encountered just below the ground surface during excavation. In addition, the proposed I-69 major interchange onto existing State Highway 37 is planned for this specific area, and final route alternatives plan for the interchange to bisect the site. Neither sanitary sewer nor electric service exists near the proposed constructions site; they would therefore have to be installed during construction.

#### 4.1.2 Owen County

The Owen County site is an 88-acre site located approximately 2 miles east of Spencer, Indiana. The geotechnical assessment showed that little bedrock would be encountered during foundation work. Water and electric service exists on the site; the local water utility has a 650,000 gallon tank with booster pumps within the site footprint. The Phase I environmental assessments, archaeological and wetland studies revealed no findings. In addition, the purchase price of the property was very attractive compared to urban areas considered, and the site has a favorable proximity to the existing site. The Owen County site was therefore selected as the preferred site.

\* \* \* \* \*



#### 5.0 AFFECTED ENVIRONMENT

This section provides a description of the existing natural and human resources present in the vicinity of the proposed Project. The proposed Project is located in the Interior Plateau Ecoregion, which is characterized by rolling to deeply dissected, rugged terrain with areas of karst topography common on the Mitchell Plain. Vegetation throughout the Ecoregion forms a mosaic of different community types. These types range from woodlands to warm and cool season pasture to cultivated cropland. Yearly precipitation is approximately 45.9 inches in this Ecoregion of Indiana (U.S. Climate Data 2012). Major population centers located near the proposed Project include Bloomington and Spencer; the proposed Project site is approximately 2 miles east of Spencer and 12 miles west of Bloomington.

Several studies were conducted to determine the resources within the proposed Project site and surrounding areas. These include a Natural Resource Assessment, Preliminary Subsurface Investigation and Geotechnical Study, a Phase I Environmental Site Assessment, Cultural Resource Management Report, Historic Structures Survey, and a Traffic Impact Report.

#### 5.1 Air Quality

According to the U.S. Environmental Protection Agency's (EPA) assessment of air quality attainment status (40 CFR Part 81), the existing air quality in the vicinity of the proposed Project has been designated as in attainment for all criteria pollutants (EPA 2012). Non-industrial primary pollutants in the area may include particulates (i.e., dust) generated from farming, traffic on unpaved roads, wind erosion, and smoke from burning trash or ground cover. These sources produce pollution that is temporary and intermittent. Most industrial sources in the county are located to the west of the proposed Project.

#### 5.2 Land Use

The proposed Project site is located in the east-central portion of Owen County, Indiana. Large areas of cropland are common in the vicinity of the Project site. Land use adjacent to the proposed Project site is with a mix of scattered residential, industrial, and agricultural uses. Indiana State Road 43 is located adjacent to the site on the east and Indiana State Road 46 runs east to west just north of the Project site McCormick's Creek State Park is located approximately 0.5 mile north of the Project site, across State Highway 46. Elliston Creek, located southwest of the proposed Project site, flows northwest to the West Fork White River, which is located approximately 5,000feet to the west of the Project site. There is an existing water tower which is located in the north central portion of the site.

Two churches are located on the east side of State Road 43 directly east of the proposed Project site. A nursing home is also located between the churches and across the street and to the east. The nearest

school is the McCormick Elementary School, approximately 1.4.miles southeast of the Project site. The nearest commercial airport, Monroe County Airport, is located west of Bloomington approximately 10 miles southeast of the site.

Owen County prepared a Comprehensive Land Use Plan in 2010 that defines areas of proposed growth for the county (Owen County 2010). The proposed Project is located in the SR43 Corridor Critical Sub Area (CSA), which has been identified as a good location for an industrial use given that its location is less than 15.miles from the interstate. Development at this site would avoid traffic congestion that affects downtown Spencer.

#### 5.3 Geology, Soils, and Farmland

#### 5.3.1 Geology

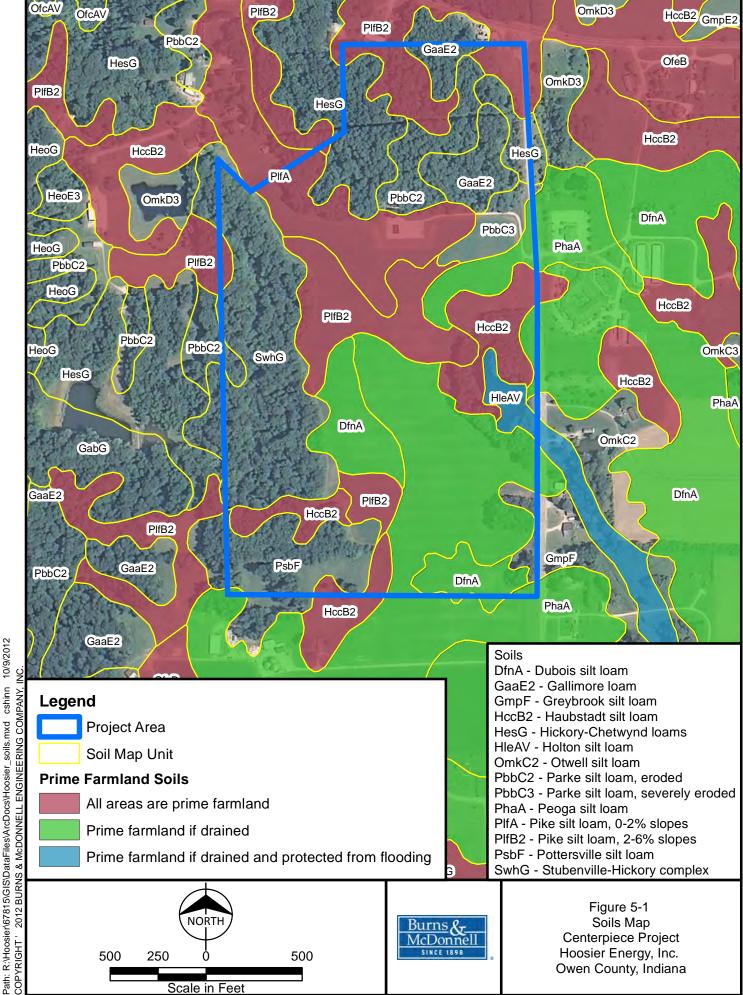
The Project site lies in the Mitchell Plateau physiographic unit located with the Southern Hills and Lowland Region of the state of Indiana. The Mitchell Plateau consists of rolling clay-covered upland of low relief and large areas of karst, entrenched by major valleys. For the most part, the area is unglaciated and Residuum is present throughout most of the area; however, it is covered by a cover of wind-blown silt or loess.

Bedrock beneath the site can be found between the depths of 80 to 100 feet below the ground surface. The bedrock consists of Blue River Group and Borden Group formations of the Mississippian Age. The Blue River Group consists mostly of limestone while the Borden Group consists mostly of siltstone with some limestone and dolomite. No indication of karst topography is shown on maps prepared by the Indiana Geological Survey and site reconnaissance.

Ground elevation at the Project site ranges from approximately 750 feet above mean sea level (MSL) in the northwest portion of the site to approximately 680 feet above MSL in the southwest portion of the site. In general, the land surface slopes from the west to east with an approximate relief of 15 to 20 feet. Drainage is primarily along the existing ground surface towards a ravine located to the west of the site and a pond located on the eastern edge of the site.

#### 5.3.2 Soils

The soils at the Project site are very diverse (Figure 5.1). The dominant soils are the Hickory, Pike, Parke, and Peoga Complexes. All four dominant Complexes are described as deep with loamy parent material, and all but the Peoga Complex are very well drained. The Hickory Complex is characterized by steep slopes and is usually found in forested areas. The Pike Complex is generally found in floodplains



Source: USDA NAIP aerial photography for Owen County, IN (2010): USDA SSURGO Soils for Owen County, IN (2012)

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with little slope. The Parke Complex is classed as having moderate slope and is found in outwash plains. The Peoga Complex is generally flat, can be found in lake plains, and is the only dominant soil with poor drainage (Sanders 1964).

Specific soils within the project site include the following:

Dubois silt loam - deep, somewhat poorly drained, 0-2 percent slopes,

Gallimore loam – deep, well drained, 18-25 percent slopes, eroded

Greybrook silt loam – deep, well drained, 25-35 percent slope, eroded

Haubstadt silt loam- deep, moderately well drained, 2-6 percent slope

Hickory soils - deep, well drained, 35-70 percent slopes, severely eroded

Holton silt loam – deep, somewhat poorly drained, 0-2 percent slope, frequently flooded but for brief duration

Otwell silt loam-deep, moderately well drained, 6-12 percent slope

Parke soils - deep, well drained, 6-12 percent slopes, severely eroded

Peoga silt loam – deep, poorly drained, 0-1 percent slopes

Pike silt loam – deep, well drained, 0-6 percent slopes, moderately eroded

Pottersville silt loam- deep, well drained, 4-12 percent slope

The soils in the immediate vicinity of the Project site are listed by the National Resources Conservation Service (NRCS) as having limitations for heavy equipment due to slope (Hickory Complex), low pH and water erosion, and ponding and trafficability limitations (Peoga Complex) (Sanders 1964). These constraints could cause some difficulty during construction due to steep slopes and erosion.

#### 5.3.3 Farmland

In 2007, Owen County had approximately 87,813.acres (roughly 35.6 percent of the total county area) classified as farmland from 570 farms (USDA 2007). The county ranked 85 out of 92 Indiana counties in the total value of agricultural products sold (2007).

Prime farmland is a valued resource in Owen County, with approximately 107,802 acres (44 percent) being classified as "prime." The NRCS evaluates and classifies soil mapping units (areas of soil delineated on county soil survey maps) as "prime" or "not prime" farmland based on characteristics that are necessary for economic crop production. In addition to these criteria, Indiana has specific criteria that define prime farmland in this state (Wheeler et al. 1983). These include the following:

- 1) Soils are deeper than 20 inches to rock or coarse sand (which reflects water-holding capacity)
- 2) The subsoils are finer in texture than sandy loam (which also reflects water-holding capacity)

- 3) The land has less than six percent slope (which reflects the erosion hazard)
- 4) The land is not subject to frequent flooding during any season of the year.

The NRCS soil types listed as occurring in the immediate vicinity of the Project site are classified by the NRCS as prime farmland if drained (NRCS 2011). These soils are designated as Pike silt loam (NRCS 2011c) (Figure 5.1). According to the NRCS, the area proposed for the Project includes a total of 56.8 acres of land classified as prime and unique farmland, representing less than one-tenth of one percent of the total prime and unique farmland in Owen County.

#### 5.4 Water Resources

Surface water resources are numerous in Owen County and the area surrounding or adjacent to the proposed Project; the majority of the water supply is provided by the White River and by groundwater sources. Water resources in Owen County consist of aquifers, man-made ponds, and the White River. These water resources are described below.

#### 5.4.1 Surface Water, Water Supply, and Discharge

The most prominent surface water resource near the proposed Project is the West Fork White River, located approximately one mile to the west of the proposed Project site (Figure 2.1). This river is considered the main fork of the White River and is approximately 312miles long. The West Fork White River flows through 10 counties on its southwesterly journey across the state.

#### 5.4.2 Groundwater

Groundwater wells in Owen County vary greatly in depth and yield; ranging from 20 to 550 feet deep and less than one to 300 gallons per minute (gpm). Four bedrock aquifer systems are identified for Owen County: Pennsylvanian Raccoon Creek Group; the Mississippian Buffalo Wallow, Stephensport, and West Baden Groups; the Mississippian Blue River and Sanders Groups; and the Mississippian Borden Group. The Blue River and Sanders Groups are present over portions of the eastern third of Owen County and the proposed Project site. This aquifer system is not regarded as a major groundwater resource in the county; well depths range from 90 to 200 feet, with capacities ranging from 3 to 20 gpm and depth to bedrock generally between 10 and 70 feet below land surface (Maier 2010).

Five unconsolidated aquifer systems have been mapped: the Dissected Till and Residuum/Unglaciated Southern Hills and Lowlands; the Alluvial, Lacustrine, and Backwater Deposits; the Martinsville Hills/Crawford Upland/Mitchell Plateau Till Subsystem; the White River and Tributaries Outwash; and the White River and the Tributaries Outwash Subsystem. The Martinsville Hills/Crawford Upland/Mitchell Plateau Till Subsystem is mapped throughout portions of northern and eastern Owen

County, including the proposed Project site. Well depths generally range from 20 to 156 feet, with capacities ranging from 5 to 30 gpm, and sand and gravel deposits generally between 2 and 11 feet thick that are capped by 15 to 90 feet of till. (Maier 2010).

#### 5.4.3 Water Quality

The 2012 Draft 303(d) List of Impaired Waters does not cite any portions of the West Fork White River in Owen County. Pollution sources in the West Fork White River watershed include nonpoint sources from agriculture and pastures, land application of manure and urban and rural run-off, as well as point sources from straight pipe discharges, home sewage treatment system disposal, and combined sewer overflow outlets.

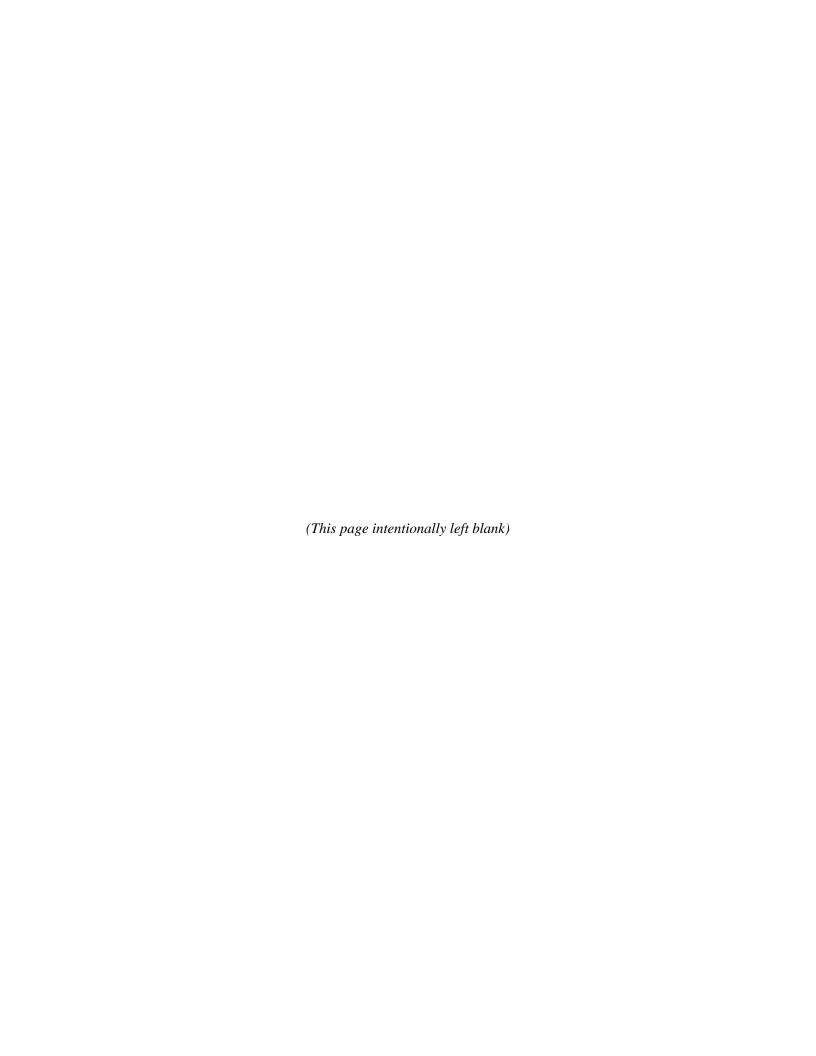
#### 5.4.4 Wetlands and Waters of the U.S.

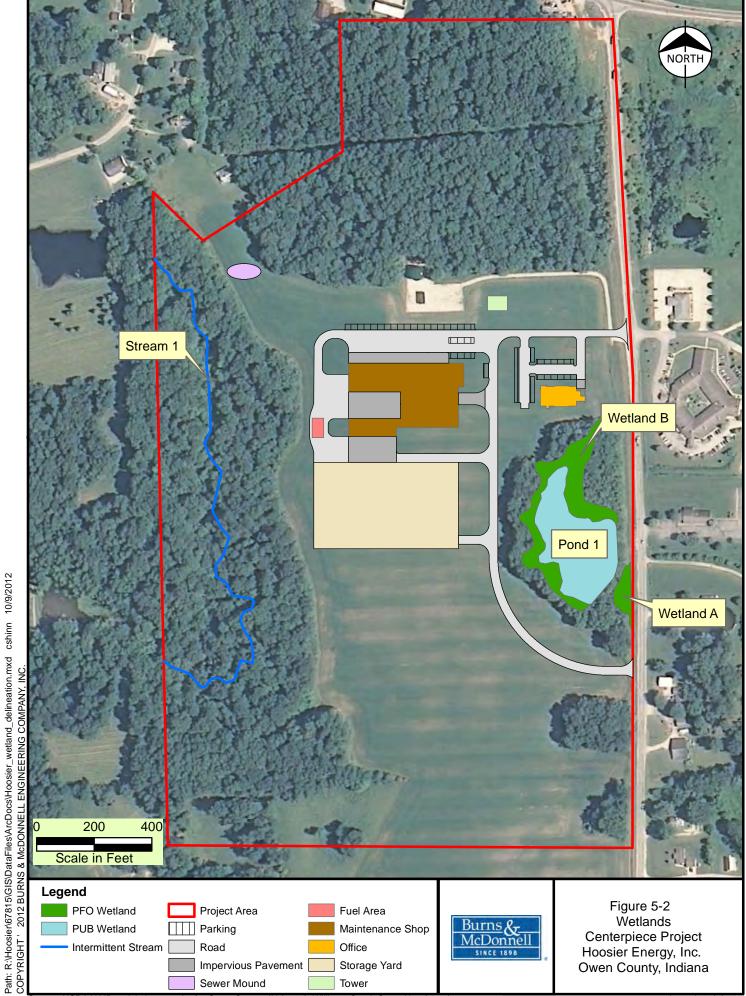
The Indiana Department of Environmental Management (IDEM), reviews and issues permits regarding isolated wetlands (Indiana Code 13-18-22). The Indiana Code recognizes three types of wetlands, Class I, Class II, and Class III. Class I isolated wetlands occur in areas that have been disturbed by human activity or development, have low species diversity or greater than 50 percent nonnative species, do not provide critical habitat for the support of significant wildlife or aquatic vegetation, or do not possess significant hydrologic function. Class III isolated wetlands are located in areas that are undisturbed or minimally disturbed by human activity or development, are composed of rare or important ecological types, and support more than minimal wildlife or aquatic habitat and hydrologic function. Class II isolated wetlands are those that do not fit the criteria set for either Class I or Class III isolated wetlands.

Williams Creek Consulting, Inc. (WCC) conducted a field investigation at the proposed Project site on January 3, 2012. Based on review of publicly available and reasonably ascertainable federal, state, and local resources, and a site inspection, WCC identified two palustrine forested wetlands (1.36acres). In addition, the investigation identified 1.75 acres of open water/constructed pond and 2,022 linear feet of an intermittent stream within the proposed Project site. No other drainage features, streams or potential "waters of the U.S." were observed on the Project site. A summary of the identified wetlands is shown in Figure 5.2 and provided in Table 5.1.

#### 5.4.5 Floodplains

According to the Flood Insurance Rate Map (FIRM) for Owen County unincorporated areas (Community – Panel Number 180481 0004 A), the closest designated 100-year flood zone is located along White River floodplain approximately one mile west of the Project site (Figure 5.3).





Source: USDA NAIP aerial photography for Owen County, IN (2010): Williams Creek Consulting (2012)

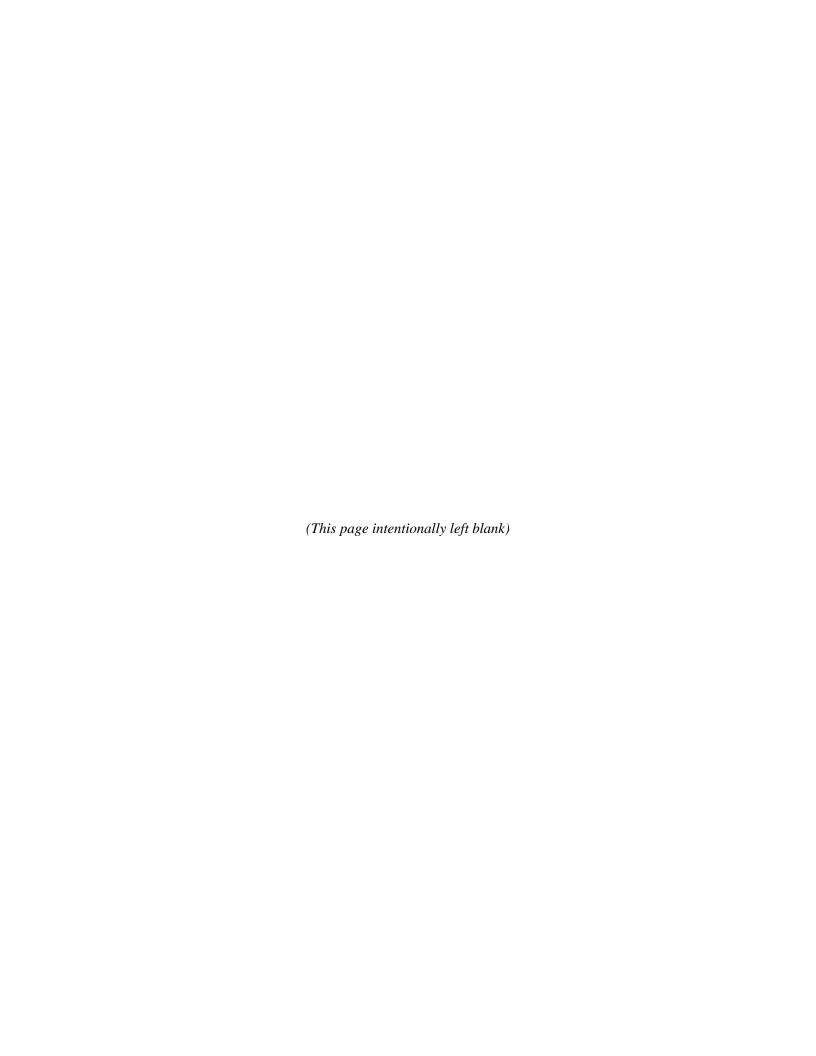


 Table 5.1: Identified Wetlands and Streams within Project site

Wetland	Estimated Size	Туре	"Waters of the U.S."
Wetland A	0.19 acre	Forested	Yes
Wetland B	1.17 acres	Forested	Yes
Pond 1	1.75 acres	Open Water/Constructed Pond	Yes
Total	3.11 acres		
Stream	Estimated Length	Туре	"Waters of the U.S."
Stream 1 (Unnamed Tributary to White River)	2,022 linear feet	Intermittent	Yes
Total	2,022 linear feet		

#### 5.5 Vegetation

The Project site is located within the Mitchell Plain Ecoregion (Woods et. al. 1998). The Mitchell Plain is an area of relatively low relief that is pockmarked by sinkholes and underlain by extensive cave systems that developed in the Mississippian age limestone bedrock (Hill 2012). Surface drainages in this region often disappear into caves and fissures that have developed within the rock. Historically, the dominant vegetation communities in this region consisted of western mesophytic forests, karst wetland communities, and limestone glades (Woods et al. 1998).

Due to the productive soils of this ecoregion, the once common beech forests, oak-hickory forests, and scattered prairies have been converted to crop fields. Much of the land within and adjacent to the proposed Project site is currently being used for raising grain crops such as corn. Approximate 40 acres of cropland exist on the proposed Project site. What remains of the forested communities within this ecoregion are relatively small in size, fragmented, and located in areas that were not easily farmed. The woodland areas within the Project site (45 acres) consisted of American elm (*Ulmus Americana*), slippery elm (*U. rubra*), white oak (*Quercus alba*), pin oak (*Q. palustris*), red maple (*Acer rubrum*), silver maple (*A. saccharinum*), sugar maple (*A. saccharum*), eastern white pine (*Pinus strobus*), American beech (*Fagus grandifolia*), American hornbeam (*Carpinus caroliniana*), sycamore (*Platanus occidentalis*), and bald cypress (*Taxodium distichum*).

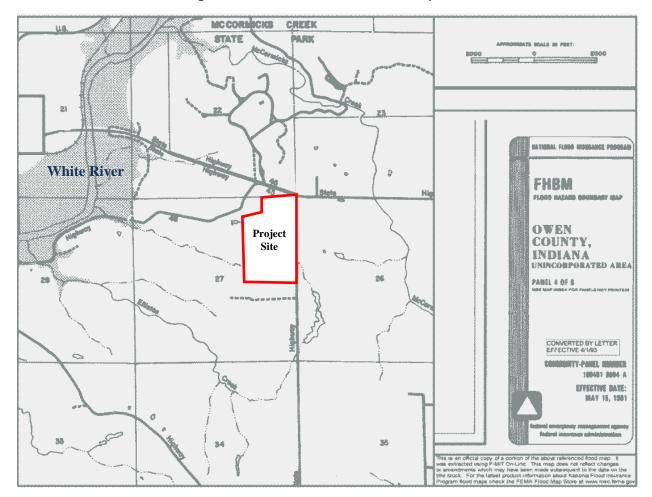


Figure 5.3: White Fork River Floodplain

### 5.6 Wildlife

Wildlife species vary widely across the proposed Project site due to the diversity of habitats and land uses. Common wildlife species such as fox and gray squirrels (*Sciurus niger* and *S. carolinensis*), gray fox (*Urocyon cinereoargenteus*), Red-bellied woodpecker (*Melanerpes carolinus*), Downey woodpecker (*Picoides pubescens*), Yellow warbler (*Dendroica petechia*), and Eastern kingbird (*Tyrannus tyrannus*) are expected to occupy forested areas within the proposed Project site. The crop field within the proposed Project site likely is frequented by wild turkey (*Meleagris gallopava*), Northern Bobwhite quail (*Colinus virginianus*), white-tailed deer (*Odocoilius virginianus*), deer mouse (*Peromyscus maniculatus*), red fox (*Vulpes vulpes*), eastern cottontail rabbit (*Sylvilagus floridanus*), and opossum (*Didelphis virginiana*) searching for food.

# 5.7 Threatened and Endangered Species

Based on a review of the U.S. Fish and Wildlife Service (USFWS) Endangered Species online database, one federally listed endangered species may be present within the proposed Project site, the Indiana Bat (*Myotis sodalist*). The USFWS Critical habitat portal was also reviewed, and no critical habitat for federally listed species is known to occur within the surrounding area of the proposed Project site (USFWS 2012). A review of the Indiana Natural Heritage Data Center database identified 23 state-protected species (20 endangered and 3 threatened), and 6 endangered and 1 candidate federally-listed species that are known or likely to occur in Owen County (Table 5.2) (IDNR 2010).

**Table 5.2: Owen County Listed Species** 

Common Name	Scientific Name	State Status	Federal Status
Eastern fanshell pearly mussel	Cyprogenia stegaria	Endangered	Endangered
Tubercled blossom	Epioblasma torulosa torulosa	Endangered	Endangered
Longsolid	Fusconaia subrotunda	Endangered	-
Clubshell	Pleurobema clava	Endangered	Endangered
Pyramid pigtoe	Pleurobema rubrum	Endangered	Endangered
Fat pocketbook	Potamilus capax	Endangered	Endangered
Rabbitsfoot	Quadrula cylindrica cylindrica	Endangered	Candidate
Monroe cave ground beetle	Pseudanophthalmus shilohensis mayfieldensis	Endangered	-
Least clubtail	Stylogomphus sigmastylus	Endangered	-
Four-toed salamander	Hemidactylium scutatum	Endangered	-
Northern crawfish frog	Rana areolata circulosa	Endangered	-
Timber rattlesnake	Crotalus horridus	Endangered	-
Smooth green snake	Liochlorophis vernalis	Endangered	-
Cerulean warbler	Dendroica cerulea	Endangered	-
Bald eagle	Haliaeetus leucocephalus	Endangered	-
Loggerhead shrike	Lanius ludovicianus	Endangered	-
Indiana bat	Myotis sodalis	Endangered	Endangered
Mountain spleenwort	Asplenium montanum	Endangered	-
Atlantic sedge	Carex atlantica spp. atlantica	Threatened	-
Cypress-knee sedge	Carex decomposita	Threatened	-
Water-purslane	Didiplis diandra	Endangered	-
Prairie-rocket wallflower	Erysimum capitatum	Threatened	-
Sharp-scaled manna-grass	Glyceria acutiflora	Endangered	-

Source: IDNR 2010.

Correspondence with the USFWS determined that the proposed Project site is within the range of the federally endangered Indiana Bat, and is located approximately five miles from the closest Indiana bat hibernating caves in western Monroe County (Appendix A). The USFWS does not have any summer records of this species near the Project site; however, the USFWS indicated in their correspondence that the forests on the site of the Project site likely contain good summer habitat. Correspondence with the Indiana Natural Heritage Data Center indicated that there are no known occurrences of state- or federally-listed species within the vicinity of the Project site (Appendix A).

# 5.8 Socioeconomics and Community Resources

In order to identify general socioeconomic patterns in the vicinity of the proposed Project site, population growth trends, racial and ethnic characteristics, economic indicators, and employment data were reviewed. In 2010, the population of Owen County was 21,575, a slight reduction from the 2000 population of 21,786 (U.S. Census Bureau 2000 and 2010). The 2010 population ranks Owen County 68 out of a total of 92 counties in Indiana. The largest town in Owen County is Spencer, with a 2010 population of 2,217, and the nearest urban area is Bloomington, Indiana Metropolitan Statistical Area (comprised of Owen, Monroe and Green Counties), with a 2010 population of 192,714 (2010).

# **5.8.1** Population Growth Trends

. The population of Spencer has experienced a decline over the last 20 years, with an 11.6 percent decline between 1990 and 2010. According to the U.S. Census Bureau, the population of Owen County increased from 1990 to 2000, and then declined by 0.97 percent from 2000 to 2010. From 1990 to 2000, the state population increased 9.7 percent, and also increased 6.6 percent between 2000 and 2010. Table 5.3 shows the trends in population change and population projections for Indiana, Owen County, Spencer, and the Bloomington MSA.

1990 2000 2010 % Change 2020 2030 2000-2010 Indiana 5,544,159 6,080,485 6,483,802 6.6% 6,739,126 7,018,710 -0.97% Owen County 17,281 21,786 21,575 21,302 20,649 2,508 NA NA Spencer 2,609 2,217 -11.6% Bloomington MSA 108,978 150,433 192,714 28% 205,618 216,476

**Table 5.3: Populations Trends and Projections** 

Source: U.S. Census Bureau, 2000 and 2010 Census; STATS Indiana 2010

## 5.8.2 Racial and Ethnic Characteristics

The proposed Project site is located within Census Tract 9559. Census tracts are small, relatively permanent statistical subdivisions of a county; the smallest census geography for which the 2006-2010 American Community Survey data is available. In general, Owen County and those cities and towns within Owen County are considered mainly rural, with less-than-average minority populations. A comparison of racial and ethnic characteristics among Indiana, Owen County, and the further detailed Census Tract is provided below in Table 5.4

Table 5.4: Racial Characteristics in the Vicinity of Project Site

	Total Population (2010)	White	Black or African American	Other	Hispanic	Total Minority
Indiana	6,483,802	84.3%	9.1%	6.6%	6.0%	15.7
Owen County	21,575	97.9%	0.3%	0.8%	0.9%	2.1%
Census Tract 9559	4,849	97.6%	0.3%	2.1%	1.0%	3.4%

Source: U.S. Census Bureau, 2010

# 5.8.3 Employment and Income

In 2010, Owen County's resident labor force, the population aged 16 and over, was 10,655 individuals, 62 percent of the total population); 9,826 of these workers were employed, resulting in an annual unemployment rate (for the civilian labor force) of 4.7 percent (U.S Census Bureau 2000). Major industries in Owen County include manufacturing (24.4 percent), education, health care and social services (16.6 percent), and retail (9.6 percent). Table 5.5 provides the employment characteristics for the state, county, local community, and the nearest MSA to the project.

Table 5.5: Employment, 2010

	Total Population (16 yrs. and over)	Employed	2010 Unemployment Rate
Indiana	4,996,762	2,999,570	5.5%
Owen County	17,231	9,826	4.7%
Spencer	2,101	1,109	5.0%
Bloomington MSA	157,765	87,557	4.4 %

Source: U.S. Census Bureau, 2006-2010 American Community Survey

In 2010, the town of Spencer had a lower percentage of resident labor force at 58 percent of the total population 16 and over compared to Owen County and 62 percent, as well as a higher unemployment rate at 5.0 percent. Major industries in Spencer include manufacturing (27.8 percent); arts, entertainment and food services (14 percent); education and healthcare (12.4 percent), and retail trade (12.2 percent). In

comparison, Indiana's resident labor force represented approximately 60 percent of the total state population 16 and over in 2010, and had an annual unemployment rate (for the civilian labor force) of 5.5 percent (U.S. Census Bureau 2010). Major industries in Indiana include education, health care and social services (22 percent); manufacturing (19 percent), and retail (11.3 percent).

. Spencer's per capita annual income and medium household income were considerably lower than Owen County, Bloomington MSA, and Indiana. Owen County and the Bloomington MSA had similar per capita incomes ranging between \$20,581 and \$21,522. The per capita income in Indiana was notably higher than Owen County, Spencer, and the Bloomington MSA at \$24,058 per year, and the median annual household income was also higher at approximately \$47,697. Table 5.6 provides the income characteristics for the state, county, local community and the nearest MSA to the proposed Project

	Per Capita Income	Median Household Income	Percent Population Below Poverty Level
Indiana	\$24,058	\$47,697	13.2%
Owen County	\$20,581	\$44,285	12.4%
Spencer	\$19,993	\$34,333	23.2%
Bloomington MSA	\$21,522	\$39,915	21.8%
Census Tract 9559	\$19,444	\$36,742	9.0%

Table 5.6: Income Characteristics, 2010

Source: U.S. Census Bureau, 2006-2010 American Community Survey 5-year Estimates

Spencer had the highest poverty level at 23.2 percent, followed by the Bloomington MSA at 21.8 percent. Poverty rates for the state as a whole were slightly higher (0.8 percent) compared to Owen County. Census Tract 9559 had the lowest poverty rate compared to the state, county, and other geographic entities.

#### 5.8.4 Environmental Justice

Environmental justice concerns may arise from human health or environmental effects of a project on either minority or low-income populations. The need to identify environmental justice issues is stated in Executive Order 12898 (EO), entitled "Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations." The EO states "each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations." A Presidential Memorandum accompanying the EO directed agencies to incorporate environmental justice concerns into their NEPA processes and practices.

Environmental justice issues are identified by determining whether minority or low-income populations are present in the project area. If so, disproportionate effects on these populations would be considered. The Council on Environmental Quality (CEQ) guidance states that minority populations should be identified when the percentage of minority residents in the affected area exceeds 50 percent or is meaningfully greater than the percentage of minority residents in the general population (CEQ 1997). If the percentage of minority residents of the population in the project area census tract exceeds the county level by more than 10 percent, it is considered to be "meaningfully greater" for the purposes of this analysis. The CEQ guidance also states that the low-income populations should be identified based on poverty thresholds as reported by the U.S. Census Bureau. If the poverty rate for the population of the project area census tract exceeds the county poverty rate by more than 10 percent, it is considered to be an area of environmental justice concern for the purposes of this analysis.

Based on this methodology, the proposed Project area, within Census Tract 9559, is not considered to be an area of environmental justice concern. As identified in Table 5.4, the percentage of minority residents in Census Tract 9559 is only slightly higher than percentage for Owen County as a whole. As identified in Table 5.6, the poverty rate for the project area census tract is lower than the county poverty rate. Therefore, the proposed Project area is not considered to be an area of environmental justice concern.

#### 5.9 Aesthetics

The proposed Project site is surrounded by various developed and undeveloped areas. McCormick's State Park, the first state park in Indiana, is located approximately 1,000feet to the north of the proposed Project site. The state park provides a hiking, camping, swimming, horseback riding, cave exploration and many other activities (Indiana Department of Natural Resources IDNR 2012). There are no designated natural areas in the surrounding area or adjacent to the proposed Project site. The topography is relatively rolling and forested, with riparian areas along the periphery of nearby streams. Man-made features include existing buildings, homes, and state highways. There is no planted landscaping, earthen berms, walls, or decorative fencing along the perimeter of the project boundary.

### 5.10 Transportation

The proposed Project site is served by an existing network of paved roads and is located on the west side of State Road (SR) 43, and a quarter to one half mile south of SR 46 in Owen County within the Seymour District of Indiana Department of Transportation. SR43 extends south to SR 54. SR46 extends east to SR 37 near Bloomington and extends west to Interstate 70 near Terre Haute.

The Project site is located in between Miller Airport, Timber Trails Airport, and Monroe County Airport. Miller and Timber Trails are small, private airports in Spencer; Miller is to the west of the proposed Project site and Timber Trails is to the northwest. Monroe County Airport is a public use airport located southeast of the Project site.

# 5.11 Human Health and Safety

The nearest major medical facilities to the proposed Project site include the Indiana University Health Bloomington Hospital and Monroe Hospital, located in Bloomington, Indiana, approximately 16 miles from the Project site. Bloomington Hospital is a private not-for-profit healthcare system with a 355-bed acute care facility and the Monroe Hospital is a non-profit 32-private room acute care facility. Both hospitals include emergency trauma services in addition to standard outpatient care services (Indiana University Health (IUH) 2012). Additional medical services are available in Martinsville, Indiana at the Morgan Hospital and Medical Center (approximately 22 miles from the Project site). Morgan Hospital is a fully licensed 116-bed acute care facility (IUH 2012). Owen County Emergency Medical Service (OCEMS) provides Advanced Life Support to the people of Owen County. OCEMS is based in Spencer, Indiana approximately two miles to the west of the Project site.

Public safety in the Town of Spencer is provided by the Spencer Police Department (approximately 2 miles from the Project site). The Owen County Sheriff's Department, also located in Spencer, currently employs 31 employees; consisting of 9 deputies, 1, courthouse security officer, 9 jailers, 7 communication officers, 3 cooks, 1 secretary, and a matron. In addition to the regular full-time personnel, there are also 15 reserve deputies. The Owen County Sheriff's Department road officers patrol 712 road miles of county roads and highways which include 450.7 square miles of Owen County roads and highways. In addition, the sheriff's department also has two K-9 units; one is trained to sniff out drugs and for tracking purposes and the other is trained to sniff out drugs, track, protect officers and apprehend suspects. The Owen County Security Center is a 66-bed facility that also accommodates the sheriff's office, an administrative office, chief deputy office, squad room, jailer's station, communications center, recreation room, and a kitchen.

Fire protection for the project area is provided by two local volunteer fire departments, the Spencer Volunteer Fire Department, and the Owen Valley Volunteer Fire Department, both based out of Spencer, Indiana. In addition to fire protection, OCEMS provides emergency medical service to Owen County. Based out of Spencer, the OCEMS uses three advanced emergency vehicles and an extractor unit to protect Owen County populations. OCEMS also provides certification classes for their employees as well

as for local police and fire professionals. OCEMS employs 12 advanced emergency medical technicians (EMTs) and 15 part time EMTs, many of whom are also trained in fire safety (Owen County 2012).

A Phase I Environmental Site Assessment (ESA) was performed for the proposed Project site; site reconnaissance was performed on December 28, 2011 (A&W 2011). An ESA is a common process conducted to permit the user to satisfy one of the requirements to qualify for the innocent landowner, contiguous property owner, or bona fide prospective purchase limitations on Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) liability. The ESA was prepared in accordance with the American Society for Testing and Materials (ASTM) Standard E1527-05.

No stains, unusual odors, stressed vegetation, or other physical evidence of adverse environmental impacts were identified during field reconnaissance. Two unlabeled containers, a 55-gallon drum and an approximately 30-gallon tank, were identified near the northwest corner of the site. Both containers were empty and do not represent a Registered Environmental Concern (REC). No sewage or waste is presently generated on the site. There are no underground storage tanks present. Three electrical transformers were observed on site; one pad-mounted and two pole-mounted. The pad-mounted transformer did not contain polychlorinated biphenyl (PCBs). Both of the pole-mounted transformers, owned by South Central Indiana REMC, contained PCBs; however, neither transformer had signs of leaking. One of the transformers was been recently replaced and the second transformer contained less than two parts per million PCBs.

The ESA concluded that the property had no known or suspected RECs, no historical RECs, no known or suspected De Minimus Environmental Conditions, nor any other environmental concerns.

### 5.12 Cultural Resources

In accordance with Section 106 of the National Historic Preservation Act (36 CFR Section 800), federal agencies are required to take into account the effects of their undertakings on historic properties and afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on such undertakings. Two surveys were conducted to identify historic properties in the area of potential effect. Archaeological Consultants of Ossian conducted an archeological survey of the 97.0 acre Project site; the report entitled *An Archeological Field Reconnaissance of a Proposed Development in Spencer, Owen County, Indiana (January 11, 2012)*, which included a cultural history review, a literature survey of previously recorded archeological sites, and reconnaissance field survey (Appendix C). Burns and McDonnell conducted background research and a historic structures reconnaissance on June 14, 2012; structures within a 0.75 mile visual area of potential effect were noted and photographed (Appendix D).

The findings of these surveys were provided to the Indiana State Historic Preservation Officer (SHPO) in accordance with 36 CFR 800.2(c)(4). In accordance with the Program Comment issued by the ACHP regarding avoidance of duplicative Section 106 processes related to the construction and modification of wireless communication facilities, 74 FR 60281, Burns and McDonnell used the Federal Communications Commission's (FCC) Tower Construction Notification System (TCNS) to contact potentially interested tribes.

# 5.12.1 Cultural History

The archaeological record for south central Indiana is divided into six periods: PaleoIndian (10,000 to 8,000 B.C.), Archaic (8,000 to 700 B.C.), Woodland (700 B.C. to A.D. 1200), Mississippian (A.D. 1000 to 1700, Historic Native Americans (ca. 1660 to A.D. 1846), and Euroamerican Historic (1660 – Present) (Stillwell 2012). The PaleoIndian peoples were highly mobile small groups with relatively simple social structure. Their sites are usually located on high river terraces or in upland areas on wetland edges such as the Magnet or Alton site located in southern Indiana.

The Archaic period can be noted as having a marked shift in tool technology and more intensive exploitation of the land. Archaic tool kits not only included projectile points and scrapers, but also the introduction of the atlatl as well as grinding slabs and pitted stone. The Late Archaic is characterized by grave offerings, mortuary or cemetery site, dog burials shell middens, large semi-permanent camps, and trade of exotic goods. Tool kits in the later period included specialized items made of bone and antler and later consisted of barbed projectile points.

The early Woodland years coincides with a shift from the hunter-gatherer way of life to a more agriculturally based economy. The mortuary activities include the building of earthen mounds with grave goods. Widespread trading was established; artifacts and raw materials such as obsidian (Rocky Mountains), copper (Michigan), mica (Appalachians), shark teeth and marine shell (Gulf of Mexico), and a wide variety of cherts were exchanged. Maize, a tropical import, was actively cultivated during the period along with appearance of the bow and arrow. The final years of the Woodland period showed decreased emphasis on both ceremonial and mortuary activities. New mounds are rare and small in size. Subsistency strategies are a mix of agricultural and hunting and gathering. Various theories as to why this shift include change of climate to shorter growing season, subsistency technology could not support the increasing population size, or disease and warfare caused from increasing populations.

Mississippian culture is characterized by a dependence on agriculture which intensively cultivated corn, beans, squash, and lesser seed crops and tobacco; the development of large platform mounds; use of shell-

tempered ceramics; nucleated villages and town with central plaza areas; large cemeteries; public ceremonial structures; and a hierarchically ordered social structure. Settlements were permanently established, with a population tied to ceremonial and/or trade centers.

The Historic Native American period begins as European explorers, trappers, missionaries, and traders initially penetrate the region. By the time of the European contact, the indigenous Mississippian groups had been replaced by the Potawatomi and Miami Indians, along with smaller groups such as the Ottawa and Fox. Euroamerican westward expansion resulted in the conflict between the Native Americans and the Euroamerican invaders. Most of the Potawatomi were removed to reservations in Wisconsin and Kansas by 1841 and the Miami were resettled in Kansas in 1846.

Euroamerican Historic period is characterized by the arrival of the French. The French lost control to the British after the French and Indian War (1754-1763) which the British lost to the American Colonists in 1783. Most of the settlers of central Indiana were American-born protestants of British descent. After 1830, non-American born immigrants began to arrive in greater numbers, principally from Germany and Ireland. By WWII, Indiana had made the transition to an industrialized economy.

### 5.12.2 Records Search

In an effort to identify known cultural resources that could be affected by this project, IDNR Division of Historic Preservation and Archaeology (DHPA) records were conducted. A review of the records revealed 24 known cultural resources within an approximate one mile radius of the Project site. Information of these cultural resources is provided in Table 5.7.

Table 5.7: Cultural Resources within One Mile of Project

Site Number	Туре	Period	NRHP Eligibility
Archaeologica	l Sites		
12-OW-0107	Camp	Unidentified	Unknown
12-OW-0228	Lithic Scatter	Archaic	Unknown
12-OW-0333	Lithic Scatter	Unidentified	Unknown
12-OW-0340	Lithic Scatter	Term Mid-Woodland	Unknown
12-OW-0347	Lithic Scatter	Early Archaic	Unknown
12-OW-0348	Lithic Scatter	Early Archaic	Unknown
12-OW-0489	Lithic Scatter	Mid/Late Archaic	Potentially Eligible
12-OW-0494	Camp	Archaic; Late Archaic	Indeterminate
12-OW-0495	Camp	Archaic	Potentially Eligible

Site Number	Туре	Period	NRHP Eligibility		
Historic Struc	Historic Structures				
35037	Farmstead	Snyder-Marshall Farm	Eligible		
39003	Camp	Camp McCormick	Eligible		
39004	Camp	Camp Na Wa Kwa	Eligible		
39005	Building	Red Bud Restroom	Eligible		
39006	Shelter	Red Bud Shelter	Eligible		
39007	Bridge	Stone Arch Bridge	Listed		
39008	Shelter	Creekside Shelter	Eligible		
39009	Building	Restrooms	Eligible		
39010	Structure	Amphitheater	Eligible		
39011	Shelter	Concession Shelter	Eligible		
39012	Shelter	Trailside Shelter	Eligible		
39013	Building	Recreation Hall	Listed		
39014	Shelter	Maple Grove Shelter	Eligible		
39015	Camp/Shelter	Camp Friendly/Shelter	Eligible		
39016	Building	Bath House	Eligible		

# 5.12.3 Field Surveys

During the course of Archaeological Consultants of Ossian's field reconnaissance conducted January 5<sup>th</sup> through 7<sup>th</sup>, 2012, no archaeological sites were identified within the proposed Project's Area of Potential Effect (APE), which was defined as the Project property boundary. Shovel tests were excavated within the project area; however, no cultural materials were encountered. Archaeological resources were not documented as a result of this reconnaissance.

A survey of historical sites was also conducted by Burns and McDonnell on June 13<sup>th</sup> through 14<sup>th</sup>, 2012. Eight historical sites were identified within a 0.75 mile radius of the Project site. This distance, as specified by the Federal Communications Commission for towers 200 to 400 feet in height, determines the APE for visual effects on historic structures from which the proposed microwave tower will be visible. Information on the historic structure type, age, and distance from the microwave tower is provided in Table 5.8.

Site numbers beginning with 35 and 39 are in Washington Township and within McCormick's Creek State Park, respectively. Site number 39019, the McCormick's Creek State Park Gatehouse, is a nationally registered historic site; all others are registered by the state of Indiana. Each of these sites has a

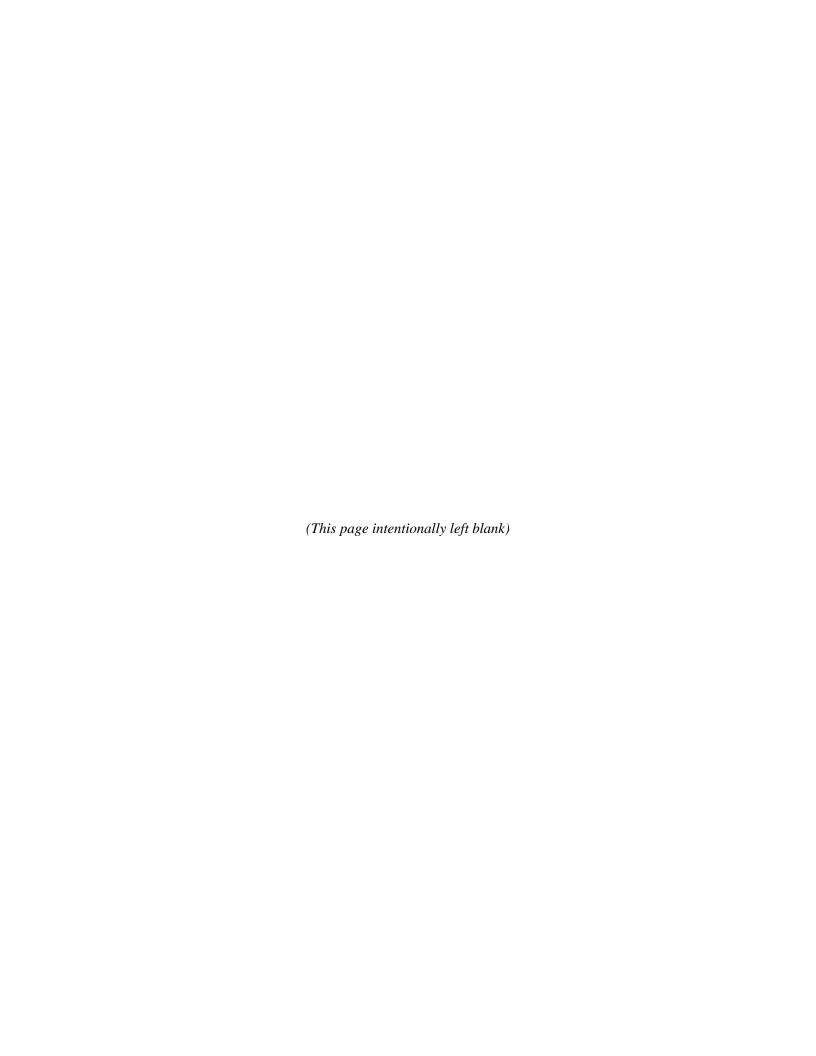
thick tree line buffer shielding them from the proposed Project site, dissipating the visual effect of the tower.

Table 5.8: Historical Sites within Visual APE

Site Number	Structure Type	Year Constructed	Distance from Tower (Miles)
35032	House	1940	0.29
35033	House	1901	0.23
35034	House	1900	0.28
35035	Cottage	1890	0.35
35046	Farm	1915	0.33
39017	Sanitarium	1880	0.72
39018	Fire Tower	1934	0.38
39019	Gatehouse	1935	0.41

Source: Historic Landmarks Association of Indiana (1994).

\* \* \* \* \*



## 6.0 ENVIRONMENTAL CONSEQUENCES

Based on the alternatives analysis (Section 4.0), two alternatives have been carried forward for assessment; the no action alternative and the construction and operation at the Owen County site (the Project). The No Action alternative serves as the benchmark for alternative comparison, under which the proposed Project would not be constructed and Hoosier would continue to use the existing facilities located at the Hoosier Energy's existing site. This alternative would not address the current deteriorating building conditions, traffic safety issues, security, or space limitation of the current facilities.

The new facility will employ an estimated 60 to 70 operation personnel. The proposed Project will be constructed using standard facility construction techniques and sequencing. Approximately 18 acres of relatively flat lying agricultural land will be disturbed for construction and less than 0.1 acre of tree removal is required for this project. State Highway 43 will be used for construction access and two permanent driveway entrances will be constructed (Figure 2.2).

This section of the EA describes the potential impacts of these two alternatives on air quality, land use, soils, surface and groundwater, water quality, vegetation, wildlife, threatened endangered or rare species, wetlands, floodplains, socioeconomics, aesthetics, transportation, noise, health and safety, and cultural resources. Both short-term and long-term impacts have been considered; all direct, indirect, and cumulative impacts associated with the proposed Project and the No Action Alternatives have been considered (Table 6.1). The CEQ regulations implementing NEPA defines cumulative impacts as, "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such action" (40 CFR §1508.7). Cumulative impacts are identified and summarized in Section 6.16.

Table 6.1: Summary Comparison of Alternatives and Impacts

Resource	Proposed Facility	No Action Alternative
Air Quality	Minimal impacts during construction. Operational impacts are expected to be below the National Ambient Air Quality Standards (NAAQS) standards.	No Impact
Greenhouse Gas (GHG) Emissions	Minimal impacts	No Impact
Land Use	Conversion of farmland to industrial use.	No Impact
Geology, Soils and	No impacts to geology; minimal impacts to prime	No Impact

Resource	Proposed Facility	No Action Alternative
Farmland	farmland or farmland of statewide importance	
Surface Water	Potential sedimentation from construction would be controlled by storm water pollution prevention measures.	No Impact
Groundwater	No impact	No Impact
Vegetation	Minimal impacts during construction.	No Impact
Wildlife	No Impact	No Impact
Threatened and Endangered Species	No Impact	No Impact
Wetlands	No Impact	No Impact
Floodplains	No floodplains on proposed Project site	No Impact
Socioeconomic and Community Resources	No Impact	No Impact
Environmental Justice	No Impact	No Impact
Aesthetics	No Impact	No Impact
Transportation	No Impact	No Impact
Human Health and Safety	No Impact	No Impact
Cultural Resources	No Impact	No Impact

# 6.1 Air Quality

### 6.1.1 No Action

The No Action Alternative would have no short- or long-term impacts to air because no construction would occur.

# 6.1.2 Construction and Operation Impacts of the Proposed Project

During construction of the proposed Project, small amounts of air pollutants will be temporarily generated. Temporary increases in fugitive dust from ground disturbing activities and combustive emissions from construction equipment would be generated during the construction of the proposed transmission lines. These emissions would be greatest during the initial site preparation activities and would vary from day to day depending on the construction phase, level of activity, and prevailing weather conditions. All of these emissions would be temporary in nature, fall off rapidly with distance from the proposed construction site, and would not result in any long-term impacts. Once the construction

activities are completed, emissions would subside and ambient air quality would return to preconstruction levels.

An emergency generator and paint booth would be installed on site for the proposed project. Hoosier Energy is working with IDEM to identify if any air permit would be required. The emergency generator would operate infrequently and would not be expected to affect air quality. Emissions from the generator and paint booth are expected to be below the Prevention of Significant Deterioration levels; therefore, it is assumes the project would not exceed the NAAQS.

Construction would also generate greenhouse gas emissions from trucks and construction equipment. If construction equipment to be used in the proposed Project operated for one year, it would generate fewer than 25,000 metric tons of carbon dioxide equivalent and would not contribute measurably to global warming impacts.

### 6.2 Land Use

#### 6.2.1 No Action

The No Action Alternative would have no short- or long-term impacts to land use at or in the vicinity of the proposed Project because no construction or changes in land development patterns would occur.

# 6.2.2 Construction and Operation Impacts of the Proposed Project

Construction and operation of the proposed Project would take place on property that is now used for cropland. According to the Owen County Comprehensive Plan, the Project site is zoned Industrial for future use. Construction staging and laydown areas as well as project offices would be located on site. The proposed construction and operation of the proposed Project would introduce additional traffic on local roadways during the construction period (see Section 4.10 Transportation). The proposed Project would have no effect on nearby parks including McCormick's Creek State Park (located approximately 1,000 feet north of the Project site).

# 6.3 Geology, Soils, and Farmland

This assessment focuses on impacts to geologic resources, soils, and prime or unique farmland at the proposed Project site

#### 6.3.1 No Action

The No Action Alternative would have no short- or long-term impacts to geology, soils or farmland at or in the vicinity of the project site because no construction would occur.

# 6.3.2 Construction and Operation Impacts of the Proposed Project

Construction and operation activities associated with the proposed Project could adversely affect the soils. Potential impacts include soil erosion, loss of soil productivity, and the establishment of noxious weeds on the soil surface. Construction activities, such as vegetation clearing, trenching, grading, topsoil segregation, and back filling, may also increase erosion potential by destabilizing the soil surface. Soil compaction can result from the movement of heavy construction vehicles on the poorly drained soils at the Project site. The degree of compaction would depend on the moisture content and texture of the soil. These impacts would be short-term in nature and minimized as much as possible through the use of Best Management Practices (BMPs). As noted in Section 5.3.2, some of the soils within the site have limitations for heavy equipment specifically on slopes; however, construction is proposed on the level or flat areas of the proposed Project site and on soils without this limitation.

During construction, soils at the Project site would be exposed to erosion. Hoosier Energy would implement soil erosion practices (BMPs) during the construction phase that would guard against soils leaving the construction site. BMPs may include silt fencing, fiber rolls or straw bale barriers, hydroseeding, soil binders, mulching, etc. Disturbed areas would be stabilized and re-vegetated, as soon as practicable, once construction activities are completed. As a result, no significant erosion problems would be anticipated from the construction of the proposed facilities.

As presented in Section 5.3.3, prime or otherwise important farmland soils are found in the project area. A total of 11.2 acres of farmland will be permanently affected by the proposed Project, and 16.7 acres of farmland will be temporarily impacted during construction. Of the acres permanently impacted, 6.1 acres are designated as prime farmland and 4.8 acres would be prime farmland if drained. During construction, 8.94 acres of prime farmland will be temporarily affected along with 7.14 acres of farmland that would be considered prime if drained.

### 6.4 Water Resources

## 6.4.1 Surface Water, Water Supply, and Discharge

According to the USGS topographic map and field surveys conducted for the proposed Project, one stream and a pond are within the footprint of the proposed Project.

#### 6.4.1.1 No Action

The No Action Alternative would have no short- or long-term impacts to surface waters, water supply, and discharge in the vicinity of the proposed Project because no construction would occur.

# 6.4.1.2 Construction and Operation Impacts of the Proposed Project

The proposed Project will not result in any impacts to the West Fork White River. Construction and operation of the proposed Project are not anticipated to result in any long-term or short-term impacts to surface waters. Before construction activities begin, a Storm Water Pollution Prevention Plan (SWPPP) would be prepared for all construction activities. The SWPPP would describe the best management practices that would be implemented during construction such as: silt fence, inlet protection, straw bale barriers, rip-rap, and erosion control blankets. All proposed sediment and erosion control measures would be installed prior to initiating soil-disturbing activities including installation of new foundations and piping for fuel and water supply, construction of foundations, buildings, asphalt drives, and concrete pads, cleanup, and revegetation. Existing roads would be used for construction access to the site. Perimeter silt fencing would be installed around the site.

#### 6.4.2 Groundwater

As indicated in Section 3.4.2, one bedrock aquifer and one unconsolidated aquifer systems (Blue River and Sanders Group and Martinsville Hills/Crawford Upland/Mitchell Plateau Till Subsystem) are located within and adjacent to the proposed Project.

#### 6.4.2.1 No Action

The No Action Alternative would have no short- or long-term impacts to groundwater at or in the vicinity of the proposed Project because no construction or changes in groundwater usage would occur.

# 6.4.2.2 Construction and Operation Impacts of the Proposed Project

The water needs for the proposed Project would be provided by the local rural water district. The proposed Project would have no short- or long-term impacts to groundwater.

## 6.4.3 Water Quality

#### 6.4.3.1 No Action

The No Action Alternative would have no short- or long-term impacts to water quality at or in the vicinity of the proposed Project because no construction or changes in water usage would occur.

# 6.4.3.2 Construction and Operation Impacts of the Proposed Project

The facility is not anticipated to generate industrial processed wastewater; however, occasional wastewater collection and proper disposal would be necessary as a result of rainfall or equipment maintenance, washing, etc. This would likely range from zero to a few hundred gallons per day. This wastewater would be directed to a holding tank or oil/water separator through an underground drainpipe

system. The wastewater collected in the holding tank or oil/water separator would be collected and disposed of by a licensed wastewater contractor. Sanitary wastewater would be generated as a result of staffing the facility and would be directed to a state-approved mound septic system.

#### 6.4.4 Wetlands

According to wetland survey that occurred in January 2012 (Appendix B), a total of three wetlands (two PFO wetlands and one PUB wetland) totaling 3.11 acres and one intermittent stream are located within the vicinity of the proposed Project site.

### 6.4.4.1 No Action

The No Action Alternative would have no short- or long-term impacts to wetlands within the Project site.

# 6.4.4.2 Construction and Operation Impacts of the Proposed Project

Construction and operation of the proposed Project is anticipated to have no short- or long-term impacts to wetlands or streams. Although three wetlands and an intermittent stream are located on the proposed Project site, they are not located within the proposed footprint of construction activities (Figure 2.2 and 5.2).

Appropriate best management practices would be implemented and maintained throughout construction to eliminate silt and sediments from washing into streams and wetlands that are located in the vicinity of the proposed Project. All areas disturbed by construction would be restored, reseeded, and mulched as necessary.

### 6.4.5 Floodplains

Within the area surrounding or adjacent to the proposed Project site, regulatory floodplains occur along the West Fork White River floodplain.

## 6.4.5.1 No Action

The No Action Alternative would have no short- or long-term impacts to floodplains since none exist at the proposed Project site.

# 6.4.5.2 Construction and Operation Impacts of the Proposed Project

The proposed Project is not anticipated to impact or alter the boundaries of any regulatory floodplains, given that there are no floodplains within the site.

# 6.5 Vegetation

#### 6.5.1 No Action

The No Action Alternative would have no short- or long-term impacts to the vegetation communities because no construction would occur. Community vegetation structure may continue to change within the area as crops are rotated, agricultural fields are left fallow, and opportunistic vegetation encroaches on the roadway corridors and within agricultural fields and pastures.

# 6.5.2 Construction and Operation Impacts of the Proposed Project

Approximately 45 acres (51 percent) of the Project site are forested and approximately 40 acres (45 percent) are within crop fields. Approximately 18 acres of the crop fields will be disturbed for construction and less than 0.1 acre of the forested area will be disturbed (tree removal) for the construction of the south driveway entrance.

#### 6.6 Wildlife

Few wildlife resources exist in the vicinity of the proposed Project, which consists of agricultural fields and woodlands; however, common wildlife species that are tolerant of human disturbances are likely to occur in relatively low densities within the area.

### 6.6.1 No Action

The No Action alternative would have no effect on wildlife within the proposed Project because no construction would occur. Normal rural disturbances such as agricultural activities would continue to affect wildlife populations in the area.

### 6.6.2 Construction and Operation Impacts of the Proposed Project

The proposed Project is not anticipated to result in any long-term or permanent impacts to wildlife species. Construction of the proposed Project will require the disturbance of agricultural fields, which will result in minor, temporary impacts to those wildlife species foraging in the field. Very minimal tree removal (less than 0.1 acres) will be required; therefore no impacts to species using that habitat will be affected. Noise and human activity that are associated with construction would result in short-term, temporary displacement impacts to wildlife species. The noise and human activity would temporarily deter wildlife species from using habitats within the immediate vicinity of construction; however, once construction is complete, the wildlife species would return.

# 6.7 Threatened and Endangered Species

#### 6.7.1 No Action

The No Action Alternative would have no short- or long-term impacts to state- or federal-protected species that could occur in the proposed Project site.

# 6.7.2 Construction and Operation Impacts of the Proposed Project

The proposed Project is not anticipated to impact or alter protected species or their critical habitats or result in short- or long-term impacts to protected species or critical habitats that may occur in Owen County. Field surveys completed by WCC in January 2012 did not identify any state- or federal-protected species or critical habitat within the Project site. Though consultation with the USFWS identified that the proposed Project is within the range of the Indiana Bat, there are no anticipated effects given that very minimal tree removal (less than 0.1 acres) will be required. Similarly, no impacts to state-protected species are anticipated because construction activities will occur primarily within existing agricultural fields and previously disturbed areas within the Project site.

# 6.8 Socioeconomics and Community Resources

# 6.8.1 Employment and Population

### 6.8.1.1 No Action

The No Action Alternative would not generate permanent or temporary jobs and would not impact local communities.

# 6.8.1.2 Construction and Operation Impacts of the Proposed Project

Construction of the proposed Project could temporarily stimulate additional jobs in the construction trades such as electricians, laborers, and carpenters. The majority of the construction workforce would be drawn from communities outside the immediate vicinity of the Project site, such as Spencer or the Bloomington MSA. These communities would be major sources of labor for construction of the proposed Project, and would provide services and housing for construction workforce. With an estimated construction schedule of 14 months; length of employment would range from a few weeks to several months dependent on skill and/or specialty. Construction of the proposed Project would not result in an increase in the number of permanent residents to nearby communities if workers are hired locally and commute to the site. Gas stations, convenience stores, and restaurants in communities such as Spencer may experience increases in business during the construction period in response to activity from construction workers.

The operational staff of the facility would be approximately 60 to 70 workers once construction is complete. A two percent increase in permanent employees is expected over the next 15 years, averaging approximately one employee a year. Because of the relatively low number of personnel and the location being near a major population center such as Bloomington, implementation of the proposed Project would not result in a large increase in the number of permanent residents in the communities near the new site.

### 6.8.2 Environmental Justice

As described in Section 5.8.4, the proposed Project is not considered to be in an area of environmental justice concern. The percentage of minority residents residing in the census tract where the proposed Project is located is only slightly higher compared to the percentage for Owen County as a whole, and the poverty rate for the census tract is lower than the county rate.

#### 6.8.2.1 No Action

The No Action Alternative would have no short- or long-term impacts to environmental justice issues at or in the vicinity of the Project site because no construction would occur.

The No Action Alternative would have no short- or long-term impacts on minority or low-income populations.

# 6.8.2.2 Construction and Operation Impacts of the Proposed Project

The proposed Project would be located in a rural area with no nearby neighborhoods and relatively few homes and businesses within close proximity to the proposed Project. Adverse human impacts as a result of the proposed Project would include additional noise and traffic impacts during construction, temporary visual impacts during construction, and long-term visual impacts during operation. However, because the site vicinity is not characterized by a high minority or low-income population, no disproportionate impacts would occur to minority or low-income populations as a result of the proposed Project.

### 6.9 Aesthetics

#### 6.9.1 No Action

The No Action Alternative would not change the aesthetics of the site and would have no short- or long-term impacts on the existing visual environment because no construction would occur.

## 6.9.2 Construction and Operation Impacts of the Proposed Project

The proposed tower would provide the most noticeable visual contrast, as it will be approximately 300 feet tall. Currently, other towers also exist in the viewing area, which includes a 93-foot-tall fire tower in

McCormick's Creek State Park a half mile to the north of the proposed Project, and 286-foot-tall communications tower a mile and a half to the east of the site (FCC 2012). The construction of the new tower will not have a new adverse effect on the view shed given that it is previously disturbed by these existing towers. Further, the area surrounding the entire Project site is forested, creating breaks in the viewshed and lowering the visual effect of the tower on surrounding structures. In addition, the thick tree line buffer on the southern edge of McCormick's Creek State Park will further minimize the visual effect of the proposed Project. These forested buffers also edge the eight historical structures within 0.75 miles of the proposed tower, reducing visual effect on them as well.

### 6.10 Transportation

### **6.10.1** No Action

The No Action Alternative would have no short- or long-term impacts to transportation at or near the proposed Project because no construction would occur.

# 6.10.2 Construction and Operation Impacts of the Proposed Project

Existing roads would be used for construction access to the site; no upgrades to off-site roads are anticipated. Construction of the proposed Project would have a minor and temporary impact on traffic within the immediate vicinity of the Project site. Travel by construction workers, and transport of equipment and materials would add to the current traffic volumes on State Road 43, and State Road 46. Impacts to local travel would most likely occur around starting and quitting times of the construction workforce. The amount of added traffic may fluctuate dependent on the phase of construction.

Construction traffic would include all craft labor, construction management staff, contractors, contractor equipment, vendors, and material and equipment deliveries. The frequency of the daily auto traffic would be proportionate to on-site labor projections. In addition to the normal vehicle auto traffic, deliveries of construction materials can average approximately two large trucks per day. Special deliveries for such items as structural steel and concrete may occasionally exceed five deliveries on a given day; however, such truck deliveries would not coincide with early morning or late afternoon labor vehicle traffic.

After construction is completed, there is not expected to be an increase in congestion for through traffic along State Roads 43 and 46. Traffic associated with operation of the facility would include traffic from staff, fleet, and occasional maintenance vehicles. The operational staff on site would account for approximately 60 vehicles per day. The additional traffic resulting from the proposed Project will not significantly change traffic levels at any of the three intersections along State Road 43, leaving service levels acceptable (A&W 2012).

# 6.11 Human Health and Safety

#### **6.11.1** No Action

The No Action Alternative would have no short- or long-term impacts to human health and safety at or in the vicinity of the study area because no construction would occur.

# 6.11.2 Construction and Operation Impacts of the Proposed Project

Potential health and safety hazards associated with the proposed Project exist for construction personnel as related to heavy equipment operation, overhead materials and cranes, and use of construction tools. Construction-related hazards can be effectively mitigated by complying with all applicable Federal and State occupational safety and health standards. Adherence to these standards, and applicable National Electrical Safety Code regulations and utility design and safety standards, would protect construction workers from unacceptable risks.

Hoosier Energy would develop a Health and Safety Plan to address public and worker safety during the construction and operation of the proposed Project. The Health and Safety Plan would identify requirements for minimum construction or operation distances from residences or businesses, as well as requirements for temporary fencing around staging, excavation, and laydown areas during construction. It would also include provisions for worker protection as is required under OSHA with emphasis on CFR 1926 – *Safety and Health Regulations for Construction. During* construction, all employees, contractors, and sub-contractors would be required to conform to OSHA safety procedures. Adequate training would be mandatory for all construction workers on site. Heavy equipment would be in compliance with OSHA requirements for safety devices such as back-up warnings, seat belts, and rollover protection. Personal safety equipment such as hard hats, ear and eye protection, and safety boots would be required for all workers on site. Accidents and injuries would be reported to the designated safety officer at each site.

Risk of accidental fire during construction would occur from human activities such as refueling, cigarette smoking, and use of vehicles and construction equipment in dry, grassy areas. The health and safety plan would address these risks, and the risks would be reduced to acceptable levels by restrictions or procedures regarding these activities. A risk of fire would be present during operation of the facility due to the use and storage of fuel and chemicals within the facility. Implementation of industry-approved design measures for all facility components would ensure that the risk of an incident causing injury or property damage would remain acceptably low. The proposed Project would have a built-in fire suppression system. However, if needed, fire services would be provided by the Spencer Indiana Volunteer Fire Department and the Owen Valley Volunteer Fire Department.

Construction and operation of the proposed Project would involve the use and storage of regulated and hazardous materials. During construction, diesel fuel, gasoline, and lubricating oils from heavy equipment and vehicles could be accidentally leaked or spilled. Hydraulic fluid, paints, and solvents would likely be used during the construction phase as well. All used oil generated at this site and other potentially hazardous materials (automotive fluids, spray paint cans etc.)would be collected by a licensed/permitted recycler. To reduce the potential for a release of regulated or hazardous materials during the construction phase of the proposed Project, work would be planned and performed in accordance with OSHA standards and protocols addressing the use of potentially hazardous materials and applicable Federal and State environmental regulations. If a hazardous release occurred, cleanup, management, and disposal of contaminated soils would be conducted according to EPA and State standards. Conformance to these standards and procedures should reduce the potential for significant impacts resulting from the release of hazardous materials during the construction phase.

All construction sites would be managed to prevent harm to the general public. The general public would not be allowed to enter any construction areas associated with the proposed Project. The major risk to the general public would be from increased traffic volume on the roadways near or adjacent to the proposed Project as a result of commuting construction workers and transportation of equipment and materials.

#### 6.12 Cultural Resources

#### **6.12.1** No Action

The No Action Alternative would have no short- or long-term impacts to cultural resources at or in the vicinity of the Project site because no construction would occur.

## 6.12.2 Construction and Operation Impacts of the Proposed Project

Based on the archeological survey conducted and consultation with the Indiana State Historic Preservation Officer (SHPO), there are no known archaeological resources listed on or eligible for listing on the National Register of Historic Properties (NRHP) in the proposed Project's APE. In the event that cultural resources are discovered during construction, Hoosier Energy would stop construction at that location and immediately coordinate with the SHPO to implement appropriate measures to protect any discovered resources.

Under the FCC's TCNS process, 13 Native American tribes were contacted based on present and ancestral geographic interest and the SHPO were contacted regarding potential visual effects of the proposed communications tower on the eight historical structures within 0.75miles of the tower Information on the proposed Project was forwarded to nine tribes requesting further details of the

proposed Project. As of the date of this EA five responses have been received with no objection to the Project (Appendix A).

The Indiana SHPO concurred in a letter dated October 4, 2012 that there are no historic buildings, structures, districts, objects, or archaeological resources within the APE that will be adversely affected by the proposed Project (Appendix A).

Trees surround both the Project site and the historical sites located within the McCormick's Creek State Park, creating a visual buffer that dissipates the tower's effect on the viewshed. The large number and size of trees present in the park, the fire tower, and a communications tower contribute to the viewshed of the historic sites.

#### 6.13 Cumulative Effects

This section describes the region of influence (ROI), or the physical area where the effects of the proposed Project would be noticeable. The ROI can vary for each resource assessed. This is followed by a listing of past, present, and reasonably foreseeable future actions (RFFAs) that have affected or may affect the same resources. Finally, an assessment of cumulative effects for each resource is included.

# 6.13.1 Region of Influence

To determine the contribution of the proposed Project to cumulative effects, impacts on each resource are analyzed for a geographic scope that includes a wider area than the footprint of the proposed Project. The expanded geographic scope for cumulative effects analysis for each resource or group of resources is described below.

For air resources, the area assessed includes a 50-kilometer radius of the site used for air quality modeling. There are no aquatic resources or drainages in the immediate vicinity West Fork White River Creek Reservoir. The major aquatic resource assessed for cumulative impacts is the West Fork White River.

For terrestrial resources, the area assessed includes the ecoregion where the facilities are to be located. Ecoregions denote areas of general similarity in the type, quality, and quantity of environmental resources. The proposed Project is within the Interior Plateau Ecoregion. This Ecoregion is characterized by rolling to deeply dissected, rugged terrain with areas of karst topography common on the Mitchell Plain. The original forest included beech forest with oak-hickory forest occurring on the well-drained upper slopes

For socioeconomic resources, the area assessed is the commuting distance of 30 miles with an emphasis on Owen County. Resources and issues with primarily local impacts from a cumulative standpoint, including environmental justice, land use, infrastructure, transportation, visual, noise, public health and safety, cultural resources, recreation, and waste, are assessed for Owen County.

## 6.13.2 Past, Present, and Reasonably Foreseeable Future Actions

Past, present, and RFFAs that have affected the resources of the Owen County area include:

- Private agricultural management.
- Residential and commercial development in the Spencer area, with associated utility lines, railroads, and roads. No specific large-scale RFFAs have been identified in the vicinity of the proposed Project, but occasional small rural subdivisions are expected to be platted, especially along the area's major roads.

### Air

Air quality in the region is generally considered good and there are no nearby non-attainment areas in the vicinity of the proposed Project. Construction activities would increase the level of exhaust emissions, fugitive dust, and other construction-related emissions above the current levels in the ROI. However, these increases are not anticipated to appreciably affect the area's overall air quality, and no cumulative impacts to air quality would occur as a result of construction activities. Overall, this proposed Project, when added to other past, present, and RFFAs, would not contribute to a violation of air quality standards and would not cause adverse cumulative effects to air quality.

### **Land Use**

The proposed Project is consistent with the character of the area, and adjacent other commercial properties. The proposed Project would be compatible with future land use. There are no other RFFAs identified that are incompatible with the proposed Project land use. Therefore, the proposed Project would not contribute to adverse cumulative land use impacts.

### Geology, Soils, and Farmland

The proposed Project would not affect geological resources; therefore, there are no cumulative geological effects. During construction activities planned for the proposed Project, disturbed areas would be exposed to erosion. However, Hoosier Energy would implement soil erosion practices during construction activities that would have the potential to impact soils at the site; these activities would help prevent soils from leaving the construction site and limit the potential for erosion. Any disturbed areas

would be stabilized and revegetated in the earliest timeframe. Because these projects would take a small amount of prime farmland out of production, the project would represent a minor contribution to ongoing cumulative effects from farmland depletion. This contribution would be less than one percent of the prime farmland in Owen County and would not represent a cumulative impact to the area's important farmland resource. Overall, cumulative impacts to the area's geology, soils, and farmland are not anticipated under the proposed Project.

### **Surface Water**

The proposed Project would have no impact on area surface waters; therefore, it would not contribute to cumulative effects on surface water.

### Groundwater

The proposed Project would have no impact on area groundwater; therefore, it would not contribute to cumulative effects on surface water.

# Vegetation

A portion of vegetative communities on the Project site would be permanently removed for required project components. However, when possible, areas not requiring permanent structures and/or impervious surfaces would be revegetated as soon as it is feasible to do so, and with the minimization of impacts from invasive plants.

#### Wildlife

The proposed Project would primarily affect low quality wildlife habitat consisting of pasture. It is likely that private agricultural activities would continue following the construction and operation of the proposed Project. Existing wildlife in the area that are sensitive to noise are likely to be impacted during extensive construction activities, but following major construction activities, wildlife are likely to return to the area. The proposed Project, when combined with other RFFAs, would not result in adverse cumulative impacts to valuable wildlife habitat.

### **Threatened and Endangered Species**

Because the proposed Project does not contain any habitat for state- or federally-listed species and would not directly or indirectly impact any sensitive species, the proposed Projects would not contribute to cumulative impacts on listed species.

#### Wetlands

The proposed Projects would not take place in wetlands; therefore, it would not contribute to cumulative effects on wetlands.

# **Floodplains**

The proposed Project would not take place in the floodplain or indirectly contribute to floodplain development; therefore, it would not contribute to cumulative effects on floodplains.

# **Socioeconomic and Community Resources**

Approximately 15 percent of the construction work force would be expected to come from within a 60-mile commuting radius, and the remainder would be non-local workers expected to require temporary housing, most likely in Spencer. Additional government revenues from taxes and fees would result from permanent jobs at the facility. These temporary and permanent employment levels would create additional demand for housing and public services, but would not create undue strain on existing community facilities in either the Owen County or Spencer area.

No reasonably foreseeable future actions have been identified that would add significantly to the direct and indirect employment increases generated by the proposed Project. The proposed Project would add generally positive socioeconomic impacts and would not contribute to any negative socioeconomic consequences such as losses of jobs in other industries.

#### **Environmental Justice**

As indicated in Section 4.11.2, the proposed Project is located in area census tract that is comparable to slightly higher in minority population compared to the percentage for Owen County as a whole, and the poverty rate for the census tract is lower than the county rate. There is not a substantial low-income population. No residents are being displaced. The noise and increased traffic from proposed Project operations would be minor. Therefore, there would not be disproportionate impacts to minority and low-income communities, and the proposed Project would not contribute to any disproportionate cumulative impacts.

#### **Aesthetics**

As indicated in Section 5.9, the proposed Project would introduce new elements into the predominantly agricultural landscape of eastern Owen County. However, because other types of towers exist in the vicinity of the proposed Project, the overall visual contrast in the landscape would be minor. No additional RFFAs are proposed that would introduce new elements into the local landscape of agricultural

lands and scattered rural housing and commercial developments. At this time, there are no specific RFFAs identified. At longer distances, the proposed Projects would blend in to the larger landscape and would be a small part of the overall vistas.

# **Transportation**

No major reasonably foreseeable future traffic-generating actions have been identified in the county that would cumulatively contribute to increased auto or truck traffic on local or state highways in the Owen or Spencer area.

### **Noise**

No additional RFFAs are proposed that would introduce additional noise into the existing setting. The proposed Project, when added to other past, present, and reasonably proposed future noise sources, would not create additional sound levels that require mitigation.

# **Human Health and Safety**

No additional RFFAs are proposed that would introduce additional public health and safety concerns into the Lovington area. The impacts of past and present actions on worker health and safety, traffic, and community services are addressed in the direct and indirect impacts section. The proposed Project would have infrastructure on site to address the facility needs and would not create additional demands that would cause adverse cumulative effects on community health and safety services.

#### **Cultural Resources**

Existing agricultural and development activities in the Spencer area have likely inadvertently affected some cultural sites; however, no past and present adverse impacts have been identified. The proposed Project would not impact any National Register-eligible resources. No RFFAs have been identified that would have adverse effects on historic and cultural resources. Future impacts from federally funded or permitted actions would be addressed by Section 106 of the National Historic Preservation Act. As a result, there would be no adverse cumulative effects from the proposed Project.

Table 6.2 summarizes the results of the cumulative effects analysis.

**Table 6.2: Summary of Cumulative Impacts Assessment** 

Resource Area	Region of Influence	Cumulative Impacts	Contribution of Project site to Cumulative Effects
Air	50 km radius	Rural area; no non- attainment areas nearby; GHG emissions from traffic	Minor; no violation of NAAQS; not a net contributor to GHG emissions
Land Use	Owen County	No conflicts	None
Geology, Soils and Farmland	Immediate site	None	No geological resource impacts; negligible soil and farmland impacts
Surface Water	Immediate site	None	None
Groundwater	Owen County	Aquifer depletion from private agricultural activities	Minimal
Vegetation	Immediate site	Losses from agricultural development	Negligible
Wildlife	Immediate site	Losses from agricultural development	Negligible
Threatened and Endangered Species	Owen County	None	None
Wetlands	Immediate site	No activities in wetlands	None
Floodplains	Immediate site	No activities in floodplain	None
Socioeconomic and Community Resources	Commuting distance (60 mi); emphasis on Owen County	Rural area; little ongoing development pressure	Generally positive
Environmental Justice	Owen County	No locally unwanted land uses with disproportionate impacts identified	No disproportionate impacts
Aesthetics	Owen County	Few visual intrusions	Minor
Transportation	Owen County	Few level of service problems	None
Noise	Owen County	None	Negligible
Human Health and Safety	Owen County	None	None
Cultural Resources	Owen County	No adverse effects identified from past actions	None

\* \* \* \* \*

# 7.0 PERMITTING

A list of potential permits, approval and authorizing actions for the project is provided in Table 7.1.

Table 7.1: Federal, State, Local Permits, Approvals, and Authorizing Actions

ISSUING AGENCY	PERMIT/APPROVAL NAME	NATURE OF PERMIT	AUTHORITY
Federal Government			
Federal Aviation Administration	Notice of Proposed Construction or Alteration	Structure location and height relative to air traffic corridors	49 United States Code (USC.) 1501; 13 CFR §77, Objects affecting navigable air space
Federal Communications Commission	Antenna Structure Registration	Requires compliance with FCC NEPA checklist for towers greater than 200 feet in height or located near an airport	47 CFR §1.1307; 47 CFR §1.1311
U.S. Fish and Wildlife Service	Threatened and Endangered Species Consultation	Consultation to ensure that federal listed protected species and/or their habitat will not be impacted	Endangered Species Act (16 USC §1531 et seq.)
State Government			
IDEM,	Source Specific Operating Agreement (SSOA) or Federally Enforceable State Operating Permit (FESOP)	Air Pollution Control Permit	Clean Air Amendment of 1990
IDEM, Water Division	National Pollutant Discharge System (NPDES) Storm Water Discharges associated with Construction Activities and Storm Water Pollution Prevention Plan	Apply for coverage under General Permit in order to authorize storm water discharges to surface waters of the state associated with the construction of the project	Section 402 of the Clean Water Act
IDEM, Water Division	NPDES Storm Water Discharges associated with Facility Operation and SWPPP	Apply for coverage under General Permit in order to authorize stormwater discharges to surface waters of the state associated with the operation of the project	Section 402 of the Clean Water Act and 40 CFR 122.26
Indiana Department of Natural Resources, Division of Historic Preservation and Archaeology	Section 106 of the National Historic Preservation Act	Consult with project applicants and state agencies regarding impacts on cultural resources that are either listed or eligible for listing on the NRHP	National Historic Preservation Act

ISSUING AGENCY	PERMIT/APPROVAL NAME	NATURE OF PERMIT	AUTHORITY
INDOT, Seymour District	Driveway Permit	Apply for approval to construction entrance driveway off of State Highway Right-of-Way	
Indiana Department of Health	Commercial On-Site Wastewater Disposal Facility Construction Permit	Apply for permit to construct a commercial on-site wastewater disposal facility	410 IAC 6-10-6
Indiana Department of Homeland Security, Fire and	Construction Design Release Fire Suppression System Approval	Enables one to obtain construction permits Apply for approval of fire suppression	675 IAC 12-6-2 (C)
Building Safety Services	Storage Facilities for Flammable and	system Apply for approval to install fuel storage	675 IAC 12-6-2 4
	Combustible Liquids and Gases Approval Underground Storage Tank Certification	tanks Apply for certification of fuel storage tanks.	Indiana Code 22-15-3
Local Government			
Planning & Zoning Office	Special Use Permit/Rezone from agricultural to industrial Building Permit Entrance Permit	Obtain rezoning approval prior to construction Permit to construct buildings Permit for driveway or access road off of county road	County Regulations
County Health Department	Potable Water System Extension and Connection Septic System Permit	Extension of water supply pipelines to site Permit to construct on-site septic system	County Regulations
Town of Spencer	Wastewater Discharge Permit	Permit for discharge of wastewater to sewer system*	Town Regulations

<sup>\*</sup>A Master Taxpayer Agreement (MTA) was entered into and signed September 11, 2012 by Hoosier Energy, the Owen County Redevelopment Commission (RDC), Owen County Council, and Owen County Commissioners (collectively the "County"). The MTA contains provisions for the RDC, through Rural Utility Service Loan and Grant and, corporate bond financing a proposed sanitary sewer line installation from the town of Spencer to the project site. On January 2, 2013, the County will notify Hoosier Energy of its intent to definitely construct the sewer line to the project site from the town of Spencer and, in the event the sewer line is not constructed and available to Hoosier Energy by November 1, 2013 the mound system as proposed and approved by the Indiana State Department of Health will be installed at the expense of the County until such time the sewer line is complete. As of this submittal date, Hoosier Energy will proceed with construction of the proposed mound septic system until notification is received by the County on January 2, 2013, at which time the decision will be made to proceed with the proposed mound system or abandon the mound system. Should the sanitary sewer project commence, the County is responsible for obtaining all of the necessary permits and approvals from the respective jurisdictional agencies including wetlands, archaeological, construction in a floodway, Rule 5 and others.

\* \* \* \* \*

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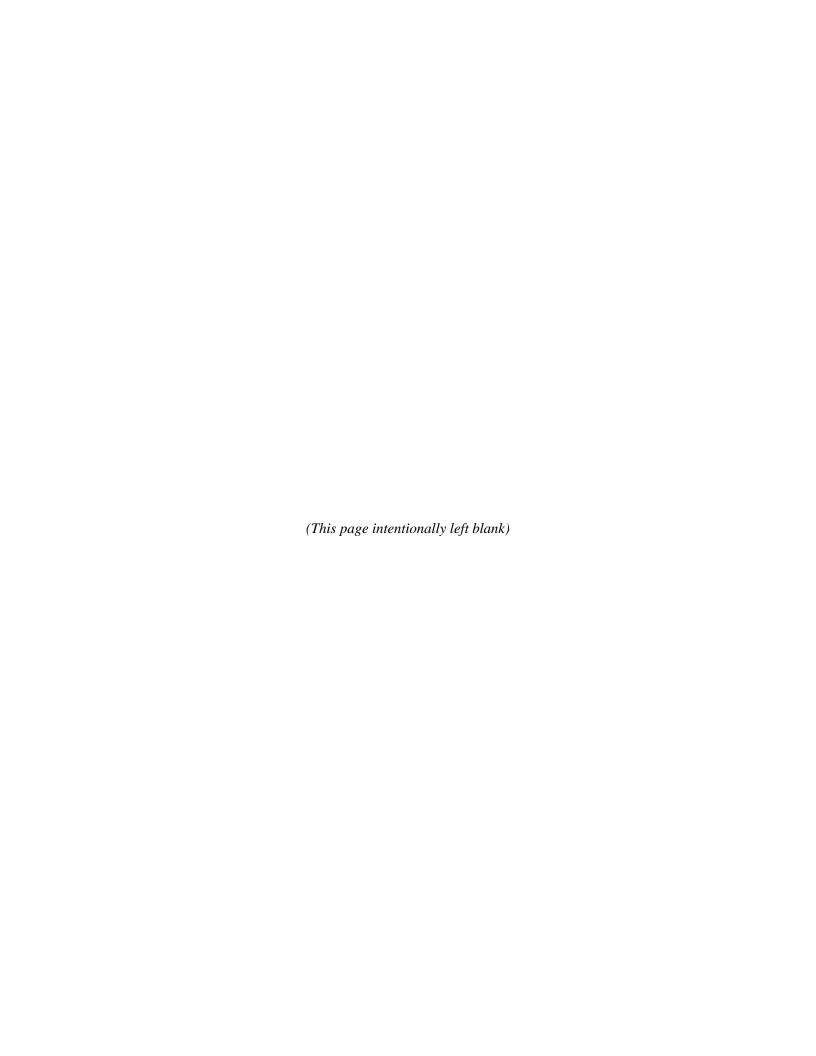
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## APPENDIX A – AGENCY LETTERS AND CORRESPONDENCE

# <u>List of Agency Correspondence</u>

Date	То	From	Туре
October 15, 2012	Rural Utilities Service	Indiana Department of Natural Resources, Division of Fish and Wildlife	Letter
October 4, 2012	Rural Utilities Service	Indiana Department of Natural Resources, Division of Fish and Wildlife	Letter
September 28, 2012	Indiana Department of Natural Resources, Division of Fish and Wildlife	Rural Utilities Service	Letter
September 7, 2012	Indiana Department of Natural Resources, Division of Historic Preservation and Archaeology	Burns & McDonnell	Letter
August 10, 2012	United States Army Corps of Engineers	Burns & McDonnell	Email
August 9, 2012	Burns & McDonnell	United States Army Corps of Engineers	Email
July 18, 2012	Burns & McDonnell	Indiana Department of Natural Resources, Division of Fish and Wildlife	Letter
July 16, 2012	Burns & McDonnell	Indiana Department of Natural Resources, Division of Historic Preservation and Archaeology	Letter
June 15, 2012	Indiana Department of Natural Resources, Division of Historic Preservation and Archaeology	Burns & McDonnell	Letter
June 15, 2012	e 15, 2012 Indiana Department of Natural Resources, Division of Fish and Wildlife Burns & McDonnell		Letter
June 14, 2012	United States Army Corps of Engineers	Burns & McDonnell	Letter
January 24, 2012	Williams Creek Consulting	Indiana Department of Natural Resources	Letter
January 19, 2012	Williams Creek Consulting	United Stated Fish and Wildlife Service	Email

# <u>List of Tribal Correspondence</u>

Date	From	Response	Туре
October 29, 2012	er 29, 2012 Seneca-Cayuga Tribe No objection		Letter
October 18, 2012	Ottawa Tribe of Oklahoma	No objection	Fax
October 17, 2012	Peoria Tribe of Indians of Oklahoma	No objection	Letter
October 17, 2012	Shawnee Tribe	No objection	Letter
October 18, 2012	Prairie Band Potawatomi	No Interest	Email
October 17, 2012	Miami Tribe of Oklahoma	No objection	Email
October 12, 2012	Chippewa Cree	Finding of No Properties	Letter
August 23, 2012 Citizen Potawatomi Nation		No Interest	Email
September 4, 2012	Pokagon Band of Potawatomi	No Interest	Email



#### Indiana Department of Natural Resources

Division of Historic Preservation & Archaeology • 402 W. Washington Street, W274 · Indianapolis, IN 46204-2739 Phone 317-232-1646 • Fax 317-232-0693 · dhpa@dnr.IN.gov



October 15, 2012

Emily Orler Environmental Protection Specialist USDA Rural Utilities Service 1400 Independence Ave., SW Mail Stop 1571, Rm 2244-S Washington, DC 20250-1571

Federal Agency: USDA Rural Utilities Service

Re: Notification of USDA Rural Utilities Service's finding of "no historic properties affected" regarding the

Hoosier Energy - CenterPiece Project (DHPA #13584)

Dear Ms. Orler:

Pursuant to Section 106 of the National Historic Preservation Act (16 U.S.C. § 470f) and 36 C.F.R. Part 800, the staff of the Indiana State Historic Preservation Officer ("Indiana SHPO") has conducted an analysis of the materials dated and received on September 28, 2012, for the above indicated project near Spencer, Owen County, Indiana.

We concur with the USDA Rural Utilities Service's September 28, 2012 finding that there are no historic buildings, structures, districts, objects, or archaeological resources within the area of potential effects that will be affected by the above indicated project.

If any archaeological artifacts or human remains are uncovered during construction, demolition, or earthmoving activities, state law (Indiana Code 14-21-1-27 and 29) requires that the discovery must be reported to the Department of Natural Resources within two (2) business days. In that event, please call (317) 232-1646. Be advised that adherence to Indiana Code 14-21-1-27 and 29 does not obviate the need to adhere to applicable federal statutes and regulations.

If you have questions about archaeological issues please contact Amy Johnson at (317) 232-6982 or ajohnson@dnr.IN.gov. If you have questions about buildings or structures please contact Kim Marie Padgett at (317) 234-6705 or kpadgett@dnr.IN.gov.

Very truly yours,

ames A. Glass, PhD

peputy State Historic Preservation Officer

JAG:KMP:kmp

cc: Carla D. Shinn, Burns & McDonnell John Humes, Hoosier Energy



#### Indiana Department of Natural Resources

Division of Historic Preservation & Archaeology • 402 W. Washington Street, W274 · Indianapolis, IN 46204-2739 Phone 317-232-1646 • Fax 317-232-0693 · dhpa@dnr.state.in.us



October 4, 2012

Susan M. Houghton Cultural Resources Specialist Burns & McDonnell 9400 Ward Parkway Kansas City, Missouri 64114-3319

Federal Agency: Federal Communications Commission

Re: Project information and notification of Burns & McDonnell's finding of "no adverse effect" regarding the Centerpiece Microwave Tower near the intersection of State Roads 43 and 46 (TCNS #87938; DHPA #13928)

#### Dear Ms. Houghton:

Pursuant to Section 106 of the National Historic Preservation Act (16 U.S.C. § 470f) and the Nationwide Programmatic Agreement for Review of Effects on Historic Properties for Certain Undertakings Approved by the Federal Communications Commission ("Nationwide Agreement"), the staff of the Indiana State Historic Preservation Officer ("Indiana SHPO") has conducted an analysis of the materials dated September 7, 2012 and received on September 12, 2012, for the above indicated project in Washington Township, Owen County, Indiana.

Based upon the documentation available to the staff of the Indiana SHPO, we have not identified any currently known archaeological resources listed in or eligible for inclusion in the National Register of Historic Places within the proposed project area.

If any archaeological artifacts or human remains are uncovered during construction, demolition, or earthmoving activities, state law (Indiana Code 14-21-1-27 and 29) requires that the discovery must be reported to the Department of Natural Resources within two (2) business days. In that event, please call (317) 232-1646. Be advised that adherence to Indiana Code 14-21-1-27 and 29 does not obviate the need to adhere to applicable federal statutes and regulations.

In regard to buildings and structures, we have identified the following property within the probable area of potential effects, and we believe that it may meet the criteria of eligibility for inclusion in the National Register of Historic Places:

Sloane-Moffett House, SR 46 (site #119-244-35033 per the Owen County Interim Report)

Additionally, we have identified the following property listed in the National Register of Historic Places within the probable area of potential effects:

McCormick's Creek State Park Gatehouse and Entrance, SR 46 (site #119-244-39019 per the *Owen County Interim Report*)

However, based on the information provided to our office, we do not believe the characteristics that qualify the above identified historic properties for inclusion in the National Register will be diminished as a result of this project.

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Susan Houghton October 4, 2012 Page 2

Therefore, we concur with Burns & McDonnell's September 7, 2012 finding that there are no historic buildings, structures, districts, objects, or archaeological resources within the area of potential effects that will be adversely affected by the above indicated project.

A copy of the Nationwide Agreement that went into effect on March 7, 2005, may be found on the Internet at <a href="http://wireless.fcc.gov/siting/environment.html">http://wireless.fcc.gov/siting/environment.html</a> for your reference. If you have questions about archaeological issues please contact Amy Johnson at (317) 232-6982 or ajohnson@dnr.IN.gov. If you have questions about buildings or structures please contact Kim Marie Padgett at (317) 234-6705 or kpadgett@dnr.IN.gov. Additionally, in all future correspondence regarding the above indicated project, please refer to DHPA #13928.

Very truly yours,

James A. Glass, Ph.D.

Deputy State Historic Preservation Officer

JAG:KMP:ALJ:aj

emc: Ivy Harris, Federal Communications Commission



#### United States Department of Agriculture Rural Development | Rural Utilities Service

#### **MEMORANDUM**

TO: James A. Glass, Ph.D.

Deputy State Historic Preservation Officer

Indiana DNR – Divison of Historic Preservation & Archaeology

FROM: Emily Orler

**Environmental Protection Specialist** 

Rural Utilities Service

DATE: September 28, 2012

**SUBJECT:** Hoosier Energy (IN-106) – Centerpiece Project (DHPA#13584)

Owen County, Indiana

The Rural Utilities Service (RUS) has determined that the referenced project proposed by Hoosier Energy is an undertaking subject to review under Section 106 of the National Historic Preservation Act, 16 U.S.C. 470f, and its implementing regulation, "Protection of Historic Properties" (36 CFR Part 800). In accordance with 36 CFR § 800.2(c)(4) and the RUS Blanket Delegation of Authority for Section 106 (dated August 14, 2012), RUS has authorized its borrowers to initiate consultation with State Historic Preservation Officers (SHPOs). Burns & McDonnell and Hoosier Energy contacted the Indiana Division of Historic Preservation and Archaeology (DAHP) and provided a copy of the cultural resource survey conducted for the undertaking, entitled An Archaeological Field Reconnaissance of a Proposed Development in Spencer, Owen County, Indiana (January 11, 2012) on June 15 and July 20, 2012, respectively. DAHP responded on July 16 and August 20, 2012, and stated that based on their review, there are no historic properties affected by the undertaking. The DAHP also stated that RUS has not provided a letter of authorization for the project. I have attached the previously referenced and recently updated RUS Blanket Delegation of Authority for Section 106, which should serve as the authorization required under 36 CFR § 800.2(c)(4) for this undertaking and future undertakings submitted to the DAHP.

Based on the January 2012 survey and the correspondence received from the Indiana DAHP, RUS has determined that a finding of *no historic properties affected* is appropriate for the undertaking (36 CFR § 800.4(d)(1)). RUS intends to fulfill its public involvement responsibilities through the publication of the Environmental Assessment (EA) that is currently being prepared, in accordance with 36 CFR § 800.2(d)(3). Please contact me if you have any questions regarding the finding of effect at <a href="mailto:emily.orler@wdc.usda.gov">emily.orler@wdc.usda.gov</a>.

1400 Independence Ave, SW • Mail Stop 1571 • Washington, DC 20250-1571 Web: http://www.usda.gov/rus/water/ees/environ.htm



September 7, 2012

Indiana Department of Natural Resources Division of Historic Preservation and Archaeology 402 W. Washington Street, W274 Indianapolis, IN 46204-2739

Re: Hoosier Energy: Centerpiece Tower, Owen County, Architectural Review and New Tower Submission FCC Form 620 (DHPA # 13584 Project No. 67815

Hoosier Energy Rural Electric Cooperative, Inc. (Hoosier) has retained the services of Burns & McDonnell Engineering Co., Inc. (Burns & McDonnell) to complete the New Tower Submission Packet Federal Communications Commission (FCC) Form 620 to assess cultural resource potential for a microwave tower site in Owen County, Indiana. The new tower facility (proposed Project) qualifies as an undertaking within the Nationwide Programmatic Agreement for Review of Effects on Historic Properties for Certain Undertakings Approved by the FCC. The enclosed FCC Architectural Review, Centerpiece Microwave Tower, Owen County, Indiana documents the current effort. The FCC Tower Construction Notification number is 87938. A cultural resources survey was conducted in 2012 by Archaeological Consultants of Ossian, and no cultural resources were recorded (Stillwell 2012; DNR letter dated July 16, 2012). Results of that survey are under review by the USDA Rural Utilities Service.

The proposed Centerpiece Microwave Tower is located on Route 43, east of Spencer, Owen County, Indiana. The site is located on uplands near McCormick's Creek and east of the West Fork of the White River. The proposed Project is in Section 27, Township 10 North, Range 3 West, of the U.S. Geological Survey 7.5-minute Gosport quadrangle. The proposed tower will be 300 feet in height within a construction area of approximately 0.1 acre, within a larger proposed facility (Figures 1 and 2; Stillwell 2012).

No cultural resources were located during the reconnaissance survey of the proposed Project (Stillwell 2012). The Owen County Interim Report (1994) indicated that eight historic structures are recorded within the 0.5 mile visual area of potential effect (APE) (Figure 3; Structure Photographs). Three of the structures are within McCormick's Creek State Park, and the Gatehouse and Entrance are listed on the National Register (Figure 3; Structure Photographs 8-9). In addition, one cemetery is recorded within the Park, but the location is unclear. One historic bridge is also located within the visual APE (Figure 3; Structure Photograph 1).

Construction activities associated with the proposed Project will result in temporary land disturbance impacts within the immediate vicinity of the proposed Project. Construction equipment will access the microwave tower site by existing public and private access roads. All construction areas within the temporary workspaces will be restored to pre-construction conditions once construction of the microwave tower has been completed.



September 7, 2012 Page 2

Burns & McDonnell's recommendation is that no known cultural resources will be adversely affected by the proposed Project, and that the Project be allowed to proceed. If cultural resources are encountered during construction, Hoosier will cease construction and contact the SHPO for further evaluation. If you have any questions or require any additional information, please contact me at (816) 823-6046, or by email at shoughton@burnsmd.com.

Sincerely,

Susan M. Houghton, MA, RPA Cultural Resources Specialist

SH

**Enclosure Attachments** 

cc: Dennis Rankin, USDA Rural Utility Service William C. (Chris) Ware, Hoosier Energy

#### **ATTACHMENTS**

Indiana Archaeological Short Report

Narrative

Figure 1 Tower Location Map

Figure 2 Aerial of Proposed Project Area

Figure 3 Structure Locations

Figure 4 Portion of 1947 Gosport USGS 7.5-Minute Topographic Quadrangle

Site Photographs

Structure Photographs

Correspondence

DNR, July 16, 2012

FAA 1-A Letter, July 25, 2012





# INDIANA DEPARTMENT OF NATURAL RESOURCES DIVISION OF HISTORIC PRESERVATION AND ARCHAEOLOGY

AND ARCHAEOLOGY
402 West Washington Street, Room W274
Indianapolis, Indiana 46204-2739
Telephone Number: (317) 232-1646
Fax Number: (317) 232-0693
E-mail: dhpa@dnr.IN.gov

Where applicable, the use of this form is recommended but not required by the Division of Historic Preservation and Archaeology.

Author: Susan M. Houghton	
Date (month, day, year): S	September 6, 2012
Project Title: Centerpiece Tower, Owen County, Architectural 620	Review and New Tower Submission FCC Form
PROJECT OV	ERVIEW
Project Description: Communications Tower	
INDOT Designation Number/ Contract Number:	Project Number: 67815
DHPA Number: 13584 Appro	oved DHPA Plan Number:
Prepared For: Hoosier Energy	
Contact Person: William C. (Chris) Ware	
Address: 7398 N State Road 37, PO Box 908	
City: Bloomington S	tate: IN ZIP Code: 47402
Telephone Number: 812-876-0366	mail Address: wware@hepn.com
Principal Investigator: Susan M. Houghton, MA, RPA	
Signature: Hough	
Company/Institution: Burns & McDonnell	
Address: 9400 Ward Parkway	
City: Kansas City Se	tate: MO ZIP Code: 64114
Telephone Number: 816-823-6046	Email Address: shoughton@burnsmcd.com

## PROJECT LOCATION

County: Owen				
USGS 7.5' series Topographic Quadrangle: Gosport				
Civil Township: Washington				
Legal Location:				
NE 1/4, SE 1/4, NE 1/4, NE 1/4, Section: 27 Township: 10N Range: 3W				
1/4, 1/4, 1/4, Section: Township: Range:				
1/4, 1/4, 1/4, Section: Township: Range:				
1/4, 1/4, 1/4, Section: Township: Range:				
Topographic Map Datum: NAD 1927 Grid Alignment:				
Comments:				
Property Owner:				
PROJECT AREA DETAILS				
Length meters: feet: width meters: feet: hectares: acres: 00.1				
Natural Region: Grand Prairie Section				
Topography: level upland				
Soil Association:				
Soils:				
Drainage: White River				
Current Land Use: agriculture				
Comments: the Phase 1a survey had been completed prior to review of area for FCC Form 620 (Stillwell 2012)				
RECORDS REVIEW (check all that apply) Date of Records Check (month, day, year): June 13, 2012				
SHAARD database				
⊠ Site Maps on file at DHPA				
Previously Reported Sites within One Mile of the Project (include citations):  OW-0228 all from SHAARD database OW-0333 OW-0340 Reported Site in area of proposed tower, Section 27 Several Reported Sites, SE 1/4, Section 26				

Cultural Resource Management reports, other research reports, grant reports on file at DHPA or other institutions

Previous Archaeological Studies within One Mile of the Project (include citations):	Archaeological Consultants of Ossian, Muncie, Indiana.			
List other institution	is:			
Cemetery Reco	rds			
Results: McCorr	nick's Creek Cemetery, reported in Section 22, location unknown			
McGregor Indu	strial Site records (in applicable counties)			
Results:				
County Interim	Report			
Results: 8 Struc	tures within Visual APE of 0.75 mile (see narrative and photographs)			
Historic Maps				
Results: 1947 G	osport USGS; 1974 Rockford Map Publishers, Inc.; c1920 Sidwell Studio			
Г				
Field Crew:				
Surface Visibility:				
Factors Affecting V	isibility:			
Visual Walkover	Pedestrian Survey Shovel Test Screened Mesh Size			
Interval 5 m 10	m 15 m Other (describe below)			
Number of Shovel	Test Units Excavated:			
Describe Methods:	Site and structure photographs for FCC Form 620 review			
Attach photographs	documenting disturbances below			
Describe Disturband	es:			
Comments: Record	ds review and site and structure photographs for RCC Rorm 620			

Results

T   T	
Phase Ia reconnai	ssance has located no archaeological resources in the project area.
Phase Ia reconnai	ssance has identified landforms conducive to buried archaeological deposits.
Actual Area Surveye	d hectares: acres:
Comments:	
	Recommendation
The archaeological res	al records check has determined that the project area has the potential to contain sources and a Phase Ia archaeological reconnaissance is recommended.
The archaeological res	al records check has determined that the project area does not have the potential to contain cources and no further work is recommended before the project is allowed to proceed.
The Phase Ia arch recommended that	aeological reconnaissance has located no archaeological sites within the project area and it the project be allowed to proceed as planned.
have the potential	aeological reconnaissance has determined that the project area includes landforms which to contain buried archaeological deposits. It is recommended that Phase Ic archaeological aissance be conducted before the project is allowed to proceed.
The Phase Ia archicemetery and a Ce	aeological reconnaissance has determined that the project area is within 100 feet of a emetery Development Plan is required per IC-14-21-1-26.5.
Cemetery Name:	
Other Recommendation	ons/Commitments:
demolition, or earthn	I-1, if any archaeological artifacts or human remains are nncovered during construction oving activities, state law (Indiana Code 14-21-1-27 and 29) requires that the discover the Department of Natural Resources within two (2) business days. In that event, please
	Attachments
Hannes	oject location within Indiana.
	the state of the s
□ USGS topographic     □ USGS topogr	e map showing the project area (1:24,000 scale).
<ul><li>☑ USGS topographic</li><li>☑ Aerial photograph</li></ul>	showing the project area, land use and survey methods.
<ul><li>✓ USGS topographic</li><li>✓ Aerial photograph</li><li>✓ Photographs of the</li></ul>	showing the project area, land use and survey methods. e project area.
<ul> <li>✓ USGS topographic</li> <li>✓ Aerial photograph</li> <li>✓ Photographs of the</li> <li>☐ Project plans (if au</li> </ul>	showing the project area, land use and survey methods. e project area. eailable)
☐ USGS topographic ☐ Aerial photograph ☐ Photographs of the ☐ Project plans (if av.) Other Attachments:	showing the project area, land use and survey methods.  project area.  pailable)  Jarrative, Site Photographs, Structure Photographs, Structure Location Figure
<ul> <li>✓ USGS topographic</li> <li>✓ Aerial photograph</li> <li>✓ Photographs of the</li> <li>☐ Project plans (if au</li> </ul>	showing the project area, land use and survey methods.  project area.  pailable)  Jarrative, Site Photographs, Structure Photographs, Structure Location Figure

#### **NARRATIVE**

The proposed Centerpiece Microwave Tower is located on Route 43, east of Spencer, Owen County, Indiana. The site is located on uplands near McCormick's Creek and east of the West Fork of the White River. The attached figures include the location on the USGS 7.5-minute topographic quadrangle, Gosport (1965, photorevised 1980), the location on current aerials derived from ESRI ArcGIS Online and their partners, and site plan information provided by Hoosier Energy and their associates. UTMs for the project location are in Table 1 (Zone 16 North, North American Datum 1983).

Table 1 UTMs for Proposed Tower Site

Point	Easting	Northing
Tower	523798	4347826

#### **Background Research**

The proposed Tower will be 300 feet in height and the area of potential effect (APE) is 0.75 mile from the proposed Tower. The location of the proposed Tower is Washington Township, Section 27, Township 10 North, Range 3 West. McCormick's State Park is to the north across State Road 46. The area along McCormick Creek has been considered a 'favorite resort for pleasure-seekers' since Euroamerican settlement in the 1800's (Blanchard 1997).

Background research on recorded cultural resources was conducted at the Indiana Department of Natural Resources Division of Historic Preservation and Archaeology office on June 13, 2012. Review of the State Historic Architectural and Archaeological Research Database indicates that no archaeological sites are located within the 0.75 mile APE. Additional research was conducted at the Midwest Genealogy Center, Mid-Continent Public Library, Independence, Missouri. Review of historic maps shows that no structures were recorded in or near the APE on the 1947 Gosport USGS 15-minute topographic map (Figure 4) or on the 1974 plat map (Rockford 1974). County histories state that milling and stone quarries were the primary early industries, and there was a tannery in Washington Township in the early 1800's (Blanchard 1997; Owen County Historical and Genealogical Society 1994).

#### **Direct Area of Potential Effect**

Review of the State Historic Architectural and Archaeological Research Database indicates that no recorded historic properties are located within the proposed direct APE. A cultural resources survey was conducted in 2012 by Archaeological Consultants of Ossian, and no cultural resources were recorded (Stillwell 2012). Based on their results, their recommendation was that no further archaeological work is



required (Stillwell 2012). The proposed Tower is located on property originally patented by Coonrod Hetrick in 1831 (Boyd 2009). No mention of him as a prominent individual was made in the county histories. The proposed Tower location was photographed on June 14, 2012. Access to the property was not currently available, so, as a cultural resources survey had been conducted earlier in 2012, no direct site inspection was attempted.

#### **Visual Area of Potential Effect**

Review of the State Historic Architectural and Archaeological Research Database indicates that no cultural resources or surveys have been recorded within the visual APE. On June 14, 2012, structures in the visual APE were photographed and a representative sample area included and keyed to Figure 3 (Structure Photographs 1 to 9). All photographs of structures were taken from the public roadway; no access was available to structures down private drives (Table 2). All structures recorded in the Owen County Interim Report were accounted for and photographed, except for the Sloane-Moffett house which was present, but screened from State Road 46 by vegetation (Indiana Historic Sites and Structures Inventory 1994). The Gatehouse and Entrance to McCormick's State Park are listed on the National Register of Historic Places. It appears that vegetation on the uneven ridges along State Road 46 will screen the Park Entrance from the proposed Tower (Structure Photograph 9). During the site visit a prominent communications tower was noted on State Road 46 1.5 miles to the east of the proposed Tower (Figure 4).

Table 2 Structures and Resources in the Visible Area of Potential Effect

ID Number	Name	Туре	Location	Photograph
HB-3079	46-10-597A	Bridge	SR46	1
35032		House	SR46	2
35033	Sloane-Moffett	House	SR46	Not visible
35034		House		3
35035		House		4
35046		Farm	SR43	5
39017	Denkewalter Sanitarium	Structure	McCormick's Creek State	6
	– Canyon Inn		Park	
39018	Fire Tower	Structure	McCormick's Creek State	7
			Park	
39019	Gate House & Entrance	NRHP Listed	McCormick's Creek State	8
		Structure	Park	
CR-60-173	McCormick's Creek	Cemetery	Section 22? Location	n/a
			unknown	



In the opinion of the investigator, the project will not affect cultural resources in either the direct or visual APEs. Construction activities associated with the proposed Project will result in temporary land disturbance impacts within the immediate vicinity of the proposed Project. Construction equipment will access the site by existing public and private access roads.



#### **REFERENCES**

#### Blanchard, Charles

1997 *County of Owen, Indiana*. Originally published 1884. Reprinted by Owen County Historical and Genealogical Society, Spencer, Indiana.

#### Boyd, Gregory A

2009 Family Maps of Owen County, Indiana, Deluxe Edition: With Homesteads, Roads, Waterways, Towns, Cemeteries, Railroads, and More. Arphax Pubilshing Co, Norman, Oklahoma.

#### Department of Natural Resources

State Historic Architectural and Archaeological Research Database. Website at http://www.in.gov/dnr/historic/4505.htm

#### Indiana Historic Sites and Structures Inventory

1994 *Owen County Interim Report.* Historic Landmarks Foundation of Indiana, Indianapolis, Indiana.

#### Owen County Historic and Genealogical Society

1994 *Owen County, Indiana: A History*. Owen County Historical and Genealogical Society, Spencer, Indiana.

#### Rockford Map Publishers, Inc.

1974 Atlas & Plat Book Owen County Indiana 1974. Rockford Map Publishers, Inc., Rockford, Illinois.

#### Sidwell Studio

C1920 *Plat Books of Indiana Counties, Volume 4*. Sidwell Studio, Lombard, Illinois. On-line at Indiana Plat Books Collection, University of Indiana http://indiamond6.ulib.iupui.edu/cdm/ref/collection/IndianaPlat/id/2147

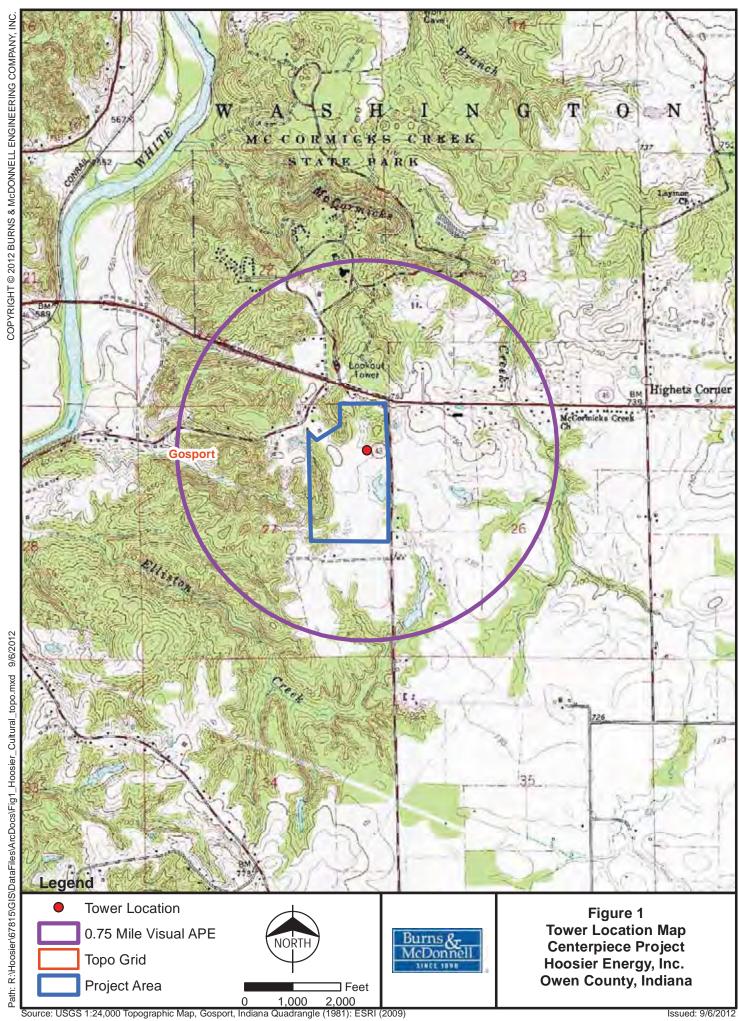
#### Stillwell, Larry N.

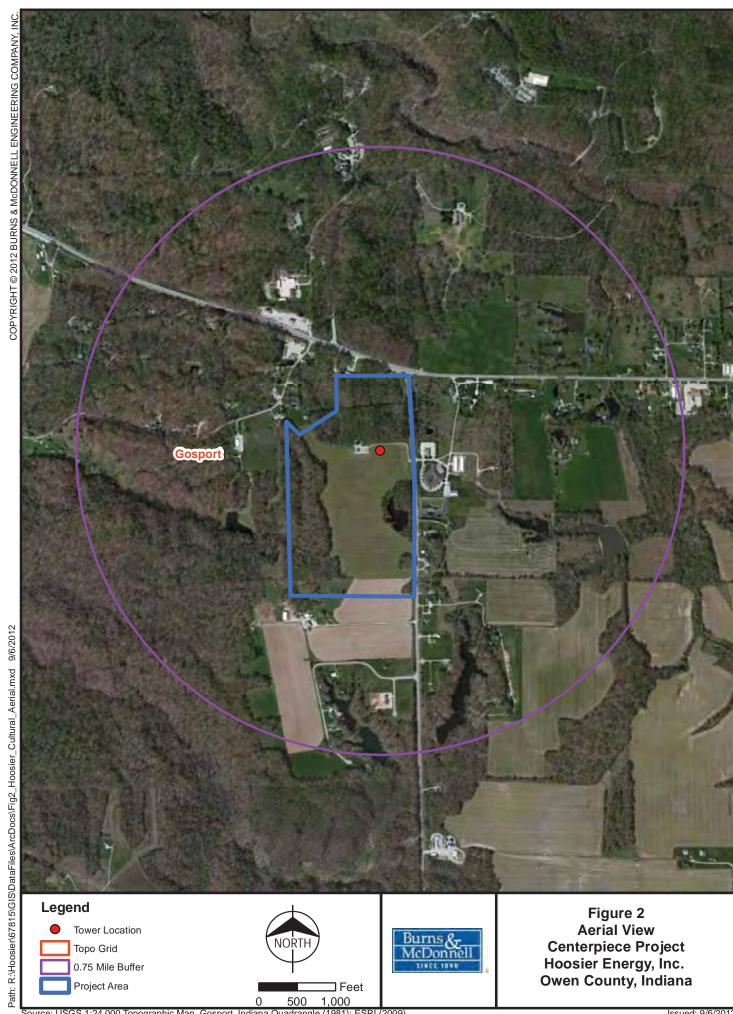
An Archaeological Field Reconnaissance of a Proposed Development in Spencer, Owen County, Indiana. Prepared for Alt & Witzig Engineering, Inc., Carmel, Indiana, by Archaeological Consultants of Ossian, Muncie, Indiana.

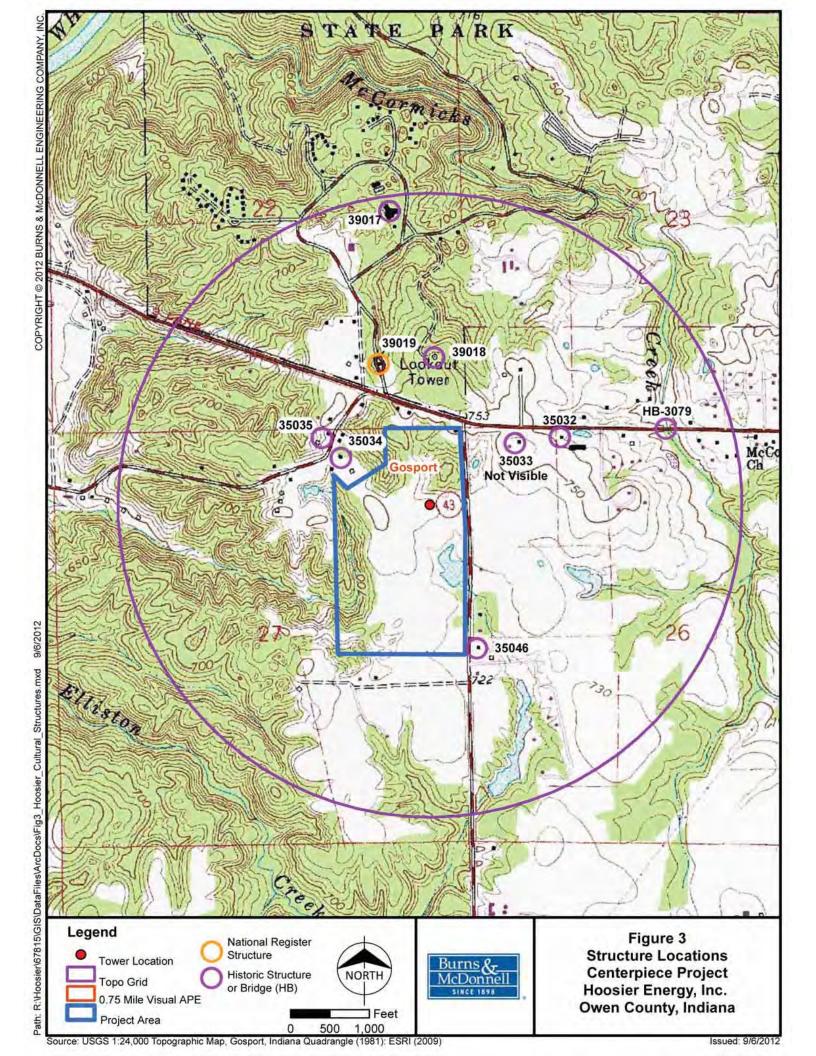
#### **USGS**

2010 Topographic Map Locator on-line at http://store.usgs.gov/ http://digital.library.umsystem.edu/cgi/i/image/image









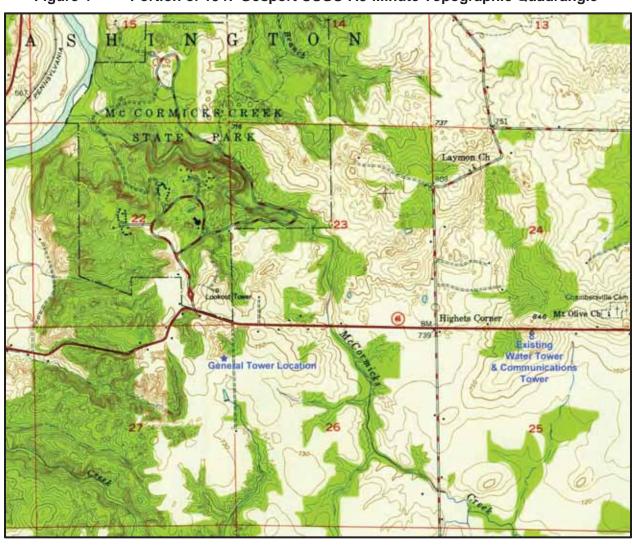


Figure 4 Portion of 1947 Gosport USGS 7.5-Minute Topographic Quadrangle



## Tower Location Photographs, Centerpiece Project



Photograph 1 General Tower location in foreground to right past lane, view to west



Photograph 2 View from general Tower location, view to south



## Tower Location Photographs, Centerpiece Project



Photograph 3 General Tower location to left past lane, view to north



Photograph 4 From general location of Tower, view to east



## Tower Location Photographs, Centerpiece Project



Photograph 5 From general location of Tower, view to southeast



Photograph 6 From general location of Tower, view to northeast





Photograph 1 Historic Bridge 3079, State Road 46, view to north



Photograph 2 Structure 35032, House, State Road 46, view to southwest





Photograph 3 Structure 35034, House, Old River Road or 325<sup>th</sup> East, view to east



Photograph 4 Structure 35035, House, Old River Road or 325<sup>th</sup> East, view to west





Photograph 5 Structure 35046, Farm house, State Road 43, view to east



Photograph 6 Structure 39017, Denkewalter Sanitarium – Canyon Inn, view to southwest



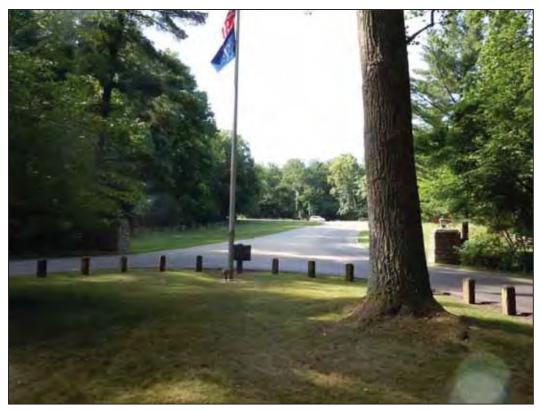


Photograph 7 Structure 39018, Fire Tower, view to north



Photograph 8 Structure 39019, Gatehouse and Entrance (NRHP listed), view to north





Photograph 9 View of NRHP Listed Park Entrance from Gatehouse, toward State Route 46 and Tower location beyond, view to southeast





#### Indiana Department of Natural Resources

Division of Historic Preservation & Archaeology 402 W. Washington Street, W274 · Indianapolis, IN 46204-2739 Phone 317-232-1646 • Fax 317-232-0693 · dhpa@dnr.IN.gov



July 16, 2012

Carla D. Shinn
NEPA Project Manager
Burns & McDonnell
9400 Ward Parkway
Kansas City, Missouri 64114-3319

Federal Agency: USDA Rural Utilities Service

Re: Archaeological field reconnaissance report (Stillwell, 1/11/12) regarding construction of a new operations facility near the intersection of State Roads 43 and 46 (DHPA #13584)

#### Dear Ms. Shinn:

Pursuant to Section 106 of the National Historic Preservation Act (16 U.S.C. § 470f) and 36 C.F.R. Part 800, the staff of the Indiana State Historic Preservation Officer ("Indiana SHPO") has conducted an analysis of the materials dated June 15, 2012 and received on June 19, 2012, for the above indicated project near Spencer, Owen County, Indiana.

Please note that our office has not received a letter of authorization from Rural Utilities Service for this project.

Based upon the documentation available to the staff of the Indiana SHPO, we have not identified any historic buildings, structures, districts or objects listed in or eligible for inclusion in the National Register of Historic Places within the probable area of potential effects. In addition, we have not identified any archaeological resources listed in or eligible or the National Register of Historic Places within the proposed project area.

If any archaeological artifacts or human remains are uncovered during construction, demolition, or earthmoving activities, state law (Indiana Code 14-21-1-27 and 29) requires that the discovery must be reported to the Department of Natural Resources within two (2) business days. In that event, please call (317) 232-1646. Be advised that adherence to Indiana Code 14-21-1-27 and 29 does not obviate the need to adhere to applicable federal statutes and regulations.

At this time, it would be appropriate for the Rural Utilities Service to analyze the information that has been gathered from the Indiana SHPO, the general public, and any other consulting parties and make the necessary determinations and findings. Please refer to the following comments for guidance:

- I) If the Rural Utilities Service believes that a determination of "no historic properties affected" accurately reflects its assessment, then it shall provide documentation of its finding as set forth in 36 C.F.R. § 800.11 to the Indiana SHPO, notify all consulting parties, and make the documentation available for public inspection (36 C.F.R. §§ 800.4[d][1] and 800.2[d][2]).
- If, on the other hand, the Rural Utilities Service finds that an historic property may be affected, then it shall notify the Indiana SHPO, the public and all consulting parties of its finding and seek views on effects in accordance with 36 C.F.R. §§ 800.4(d)(2) and 800.2(d)(2). Thereafter, the Rural Utilities Service may proceed to apply the criteria of adverse effect and determine whether the project will result in a "no adverse effect" or an "adverse effect" in accordance with 36 C.F.R. § 800.5.

A copy of the revised 36 C.F.R. Part 800 that went into effect on August 5, 2004, may be found on the Internet at www.achp.gov for your reference. If you have questions about archaeological issues please contact Amy Johnson at (317) 232-6982 or ajohnson@dnr.IN.gov. If you have questions about buildings or structures please contact Kim Marie Padgett at (317) 234-6705 or kpadgett@dnr.IN.gov. Additionally, in all future correspondence regarding the above indicated project, please refer to DHPA #13584.

Very truly yours,

James A. Glass, Ph.D.

Deputy State Historic Preservation Officer

JAG:KMP:ALJ:aj

emc: Kelsey S. Owens, State Environmental Coordinator, USDA Rural Development



July 25, 2012

Lance Simpson HOOSIER ENERGY REC INC. PO Box 908 7398 N. State Road 37 Bloomington, IN 47402-0908

RE: FAA 1-A Letter

Site Name:

Owen County Operations Site

Site Location:

SR 43, Owen County, Indiana

#### PROPOSED CENTER OF TOWER LOCATION

NAD83 (Cors96)

Latitude: 39° 16' 46.05172"

Longitude: 086° 43' 26.67631".

NAVD 1988 (Computed using GEOID09)

Ground Elevation:

Existing 741.8', Proposed 743' AMSL

Tower Height:

300'AGL (w/o appurtenances), 315'AGL (with appurtenances)

Lat./Long./Elevation were obtained from GPS Survey Grade control referenced to:

Monument:

**OPUS Solution** 

PID No.:

DM4642, DM4652, DM5389, DM4640, DM3505, DG4803, DM4662,

No. LS29900010

DM4656

I hereby certify that the above information is accurate to within:

±20 feet horizontal

±3 feet vertical

Date: July 25, 2012

Marty J. James

Registered Land Surveyor No. LS29900010

ames

State of Indiana Cc: File #7463

Bloomington - Budford - Paoli

1351 West Tapp Road - Bloomington, Indiana 47403 - p: 812-336-8277 - f: 812-336-0817

www.brgcivil.com

#### Shinn, Carla

From: Shinn, Carla

Sent: Friday, August 10, 2012 3:33 PM

To: 'Estill, Leslie A LRL'

Cc: John Humes (JHumes@HEPN.com)

Subject: RE: Hoosier Energy's proposed facility in Spencer, Indiana (UNCLASSIFIED)

Attachments: Hoosier\_wetland\_delineation.pdf

#### Ms. Leslie Estill,

Attached per your request is a wetland delineation map (see attached) illustrating the proposed site layout with the wetlands. If not this map does not meet your needs, just let us know and we can set up a conference call to discuss further. Please note that the project is not directly impacting the wetlands or the stream. Mr. John Humes (Hoosier Energy Environmental Specialist) and Mr. Jason Steckel (investigator for Williams Creek who perform the delineation) are both available any time after August 27th for a site visit. Please let us know what dates you are available.

If you have any questions, feel free to contact me (816-822-3508) or John Humes (812-923-4716). Thank you.

Carla D. Shinn

NEPA Compliance Specialist, Environmental Studies & Permitting Burns & McDonnell

Direct: 816.822.3508 Main: 816-333-9400 Fax: 816.822.4299 www.burnsmcd.com

Proud to be one of FORTUNE's 100 Best Companies To Work For Please consider the environment before printing this email.

----Original Message----

From: Estill, Leslie A LRL [mailto:Leslie.A.Estill@usace.army.mil]

Sent: Thursday, August 09, 2012 11:04 AM

To: Shinn, Carla

Subject: Hoosier Energy's proposed facility in Spencer, Indiana (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Ms. Carla Shinn

This in regard to your request for a jurisdictional determination on a site proposed for development by Hoosier Energy in Spencer, Indiana.

I need a waters map detailing the exact delineated boundaries of all waters within the site boundary. In addition, I will need to conduct a site visit to verify these waters and to verify that no additional waters are within the site.

Based on the findings during the site visit additional data points may be needed, and the waters map may need to be revised accordingly. After any additional/revised information is submitted, if needed, a completed preliminary JD form for the site needs to be emailed to me in a word document. I would then add our information, sign it, and email it back for the applicants signature.

I would prefer to do the site visit no later than the end of September, so please get back with me to schedule a date.

Sincerely,

Leslie Estill Project Manager North Section Louisville District US Army Corps of Engineers Office Phone (502) 315-6711

Classification: UNCLASSIFIED

Caveats: NONE

## Shinn, Carla

From: Estill, Leslie A LRL <Leslie.A.Estill@usace.army.mil>

Sent: Thursday, August 09, 2012 11:04 AM

To: Shinn, Carla

**Subject:** Hoosier Energy's proposed facility in Spencer, Indiana (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Ms. Carla Shinn

This in regard to your request for a jurisdictional determination on a site proposed for development by Hoosier Energy in Spencer, Indiana.

I need a waters map detailing the exact delineated boundaries of all waters within the site boundary. In addition, I will need to conduct a site visit to verify these waters and to verify that no additional waters are within the site.

Based on the findings during the site visit additional data points may be needed, and the waters map may need to be revised accordingly. After any additional/revised information is submitted, if needed, a completed preliminary JD form for the site needs to be emailed to me in a word document. I would then add our information, sign it, and email it back for the applicants signature.

I would prefer to do the site visit no later than the end of September, so please get back with me to schedule a date.

Sincerely,

Leslie Estill
Project Manager
North Section
Louisville District
US Army Corps of Engineers
Office Phone (502) 315-6711

Classification: UNCLASSIFIED

Caveats: NONE

# State of Indiana DEPARTMENT OF NATURAL RESOURCES Division of Fish and Wildlife

## Early Coordination/Environmental Assessment

DNR #:

ER-16384

Request Received: June 19, 2012

Requestor:

Burns & McDonnell Carla D Shinn 9400 Ward Parkway

Kansas City, MO 64114-3319

Project:

Construction of a new operations facility about 0.7 mile southeast of Spencer; Hoosier

Energy Rural Electric Cooperative

County/Site info:

Owen

The Indiana Department of Natural Resources has reviewed the above referenced project per your request. Our agency offers the following comments for your information and in accordance with the National Environmental Policy Act of 1969.

If our agency has regulatory jurisdiction over the project, the recommendations contained in this letter may become requirements of any permit issued. If we do not have permitting authority, all recommendations are voluntary.

Regulatory Assessment:

Formal approval by the Department of Natural Resources under the regulatory programs administered by the Division of Water is not required for this project.

Natural Heritage Database:

The Natural Heritage Program's data have been checked.

A state significant Dry-mesic Upland Forest and McCormick's Cove Nature Preserve occur within 1/2 mile of the project area. The Division of Nature Preserves does not anticipate any impacts to the high quality forest community or nature preserve.

Fish & Wildlife Comments:

We were not able to adequately assess impacts to fish, wildlife, and botanical resources resulting from the project with the information provided. As project plans develop, we recommend submitting more information for further review, if needed. However, we offer the following preliminary recommendations.

1) Habitat Impacts

Avoid developing or encroaching upon any of the forested parts of the site or areas containing sensitive natural resources such as wetlands, steep forested ravines, or karst features.

Impacts to non-wetland forest under one (1) acre should be mitigated at a 1:1 ratio, while impacts to non-wetland forest over one (1) acre should be mitigated at a minimum 2:1 ratio. Impacts to wetlands should be mitigated at the appropriate ratio as well (see http://www.in.gov/legislative/register/20061213-IR-312060562NRA.xml.pdf).

2) Karst Feature Impacts

A karst assessment should be conducted by a licensed professional geologist with experience in karst geology. Temporary and/or permanent construction should remain at least 25' outside the topmost closed contour of the forested karst features located in the north part of the site and the karst features located in the southwest part of the site. Construction and post-development runoff should be directed away from any karst features. Pre-treatment of site runoff should be done with detention basins and native vegetation filter strips.

The additional measures listed below should be implemented to avoid, minimize, or compensate for impacts to fish, wildlife, and botanical resources:

Revegetate all bare and disturbed areas with a mixture of grasses (excluding all

# State of Indiana DEPARTMENT OF NATURAL RESOURCES Division of Fish and Wildlife

## Early Coordination/Environmental Assessment

varieties of tall fescue), legumes, and native shrub and hardwood free species as soon as possible upon completion.

- 2. Minimize and contain within the project limits inchannel disturbance and the clearing of trees and brush.
- 3. Do not work in the waterway from April 1 through June 30 without the prior written approval of the Division of Fish and Wildlife.
- 4. Do not cut any trees suitable for Indiana bat roosting (greater than 3 inches dbh, living or dead, with loose hanging bark) from April 1 through September 30.
- 5. Appropriately designed measures for controlling erosion and sediment must be implemented to prevent sediment from entering the stream or leaving the construction site; maintain these measures until construction is complete and all disturbed areas are stabilized.
- 6. Seed and protect all disturbed slopes that are 3:1 or steeper with biodegradable heavy-duty erosion control blankets (follow manufacturer's recommendations for selection and installation; seed and apply mulch on all other disturbed areas.

Contact Staff:

Christie L. Stanifer, Environ. Coordinator, Fish & Wildlife
Our agency appreciates this opportunity to be of service. Please do not hesitate to
contact the above staff member at (317) 232-4160 or 1-877-928-3755 (toll free) if we
can be of further assistance.

Date: July 18, 2012

Christie L. Stanifer Environ. Coordinator

Division of Fish and Wildlife



## Indiana Department of Natural Resources

Division of Historic Preservation & Archaeology 402 W. Washington Street, W274 · Indianapolis, IN 46204-2739 Phone 317-232-1646 • Fax 317-232-0693 · dhpa@dnr.IN.gov



July 16, 2012

Carla D. Shinn
NEPA Project Manager
Burns & McDonnell
9400 Ward Parkway
Kansas City, Missouri 64114-3319

Federal Agency: USDA Rural Utilities Service

Re: Archaeological field reconnaissance report (Stillwell, 1/11/12) regarding construction of a new operations facility near the intersection of State Roads 43 and 46 (DHPA #13584)

#### Dear Ms. Shinn:

Pursuant to Section 106 of the National Historic Preservation Act (16 U.S.C. § 470f) and 36 C.F.R. Part 800, the staff of the Indiana State Historic Preservation Officer ("Indiana SHPO") has conducted an analysis of the materials dated June 15, 2012 and received on June 19, 2012, for the above indicated project near Spencer, Owen County, Indiana.

Please note that our office has not received a letter of authorization from Rural Utilities Service for this project.

Based upon the documentation available to the staff of the Indiana SHPO, we have not identified any historic buildings, structures, districts or objects listed in or eligible for inclusion in the National Register of Historic Places within the probable area of potential effects. In addition, we have not identified any archaeological resources listed in or eligible or the National Register of Historic Places within the proposed project area.

If any archaeological artifacts or human remains are uncovered during construction, demolition, or earthmoving activities, state law (Indiana Code 14-21-1-27 and 29) requires that the discovery must be reported to the Department of Natural Resources within two (2) business days. In that event, please call (317) 232-1646. Be advised that adherence to Indiana Code 14-21-1-27 and 29 does not obviate the need to adhere to applicable federal statutes and regulations.

At this time, it would be appropriate for the Rural Utilities Service to analyze the information that has been gathered from the Indiana SHPO, the general public, and any other consulting parties and make the necessary determinations and findings. Please refer to the following comments for guidance:

- I) If the Rural Utilities Service believes that a determination of "no historic properties affected" accurately reflects its assessment, then it shall provide documentation of its finding as set forth in 36 C.F.R. § 800.11 to the Indiana SHPO, notify all consulting parties, and make the documentation available for public inspection (36 C.F.R. §§ 800.4[d][1] and 800.2[d][2]).
- If, on the other hand, the Rural Utilities Service finds that an historic property may be affected, then it shall notify the Indiana SHPO, the public and all consulting parties of its finding and seek views on effects in accordance with 36 C.F.R. §§ 800.4(d)(2) and 800.2(d)(2). Thereafter, the Rural Utilities Service may proceed to apply the criteria of adverse effect and determine whether the project will result in a "no adverse effect" or an "adverse effect" in accordance with 36 C.F.R. § 800.5.

A copy of the revised 36 C.F.R. Part 800 that went into effect on August 5, 2004, may be found on the Internet at www.achp.gov for your reference. If you have questions about archaeological issues please contact Amy Johnson at (317) 232-6982 or ajohnson@dnr.IN.gov. If you have questions about buildings or structures please contact Kim Marie Padgett at (317) 234-6705 or kpadgett@dnr.IN.gov. Additionally, in all future correspondence regarding the above indicated project, please refer to DHPA #13584.

Very truly yours,

James A. Glass, Ph.D.

Deputy State Historic Preservation Officer

JAG:KMP:ALJ:aj

emc: Kelsey S. Owens, State Environmental Coordinator, USDA Rural Development



June 15, 2012

Ms. Amanda Ricketts
Assistant Director for Environmental Review
Indiana Department of Natural Resources
Division of Historic Preservation & Archaeology
402 W. Washington Street, Room W274
Indianapolis, IN 46204-2739

Re: Hoosier Energy Proposed New Facility Review

Dear Ms. Ricketts:

Burns & McDonnell, on behalf of Hoosier Energy Rural Electric Cooperative, Inc., is preparing an environmental report for the Rural Utilities Service (RUS) on the potential environmental impacts of constructing a new operations facility near Spencer, Owen County, Indiana. Construction of the facility would take place on a site located approximately 0.7 mile southeast of Spencer, Indiana near the intersection of State Roads 43 and 46. The site is located in Section 27, Range 3 West, Township 10 North (Washington Township) (Attachment 1). The new facility will consist of office and warehouse space, vehicle repair shop, vehicle storage and a microwave tower. Further information on the microwave tower will be provided during the FCC NEPA Checklist process.

Archaeological Consultants of Ossian performed for Hoosier Energy a Phase I survey of the project site that detected no properties eligible for nomination to the National Register of Historic Places. A copy of their report is attached for your review and comment (Attachment 2).

Hoosier Energy requests your comments on the potential of the project to impact historic properties. We would appreciate a response within 30 days. Should you have any questions or require additional information, please contact me at 816-822-3508.

Sincerely,

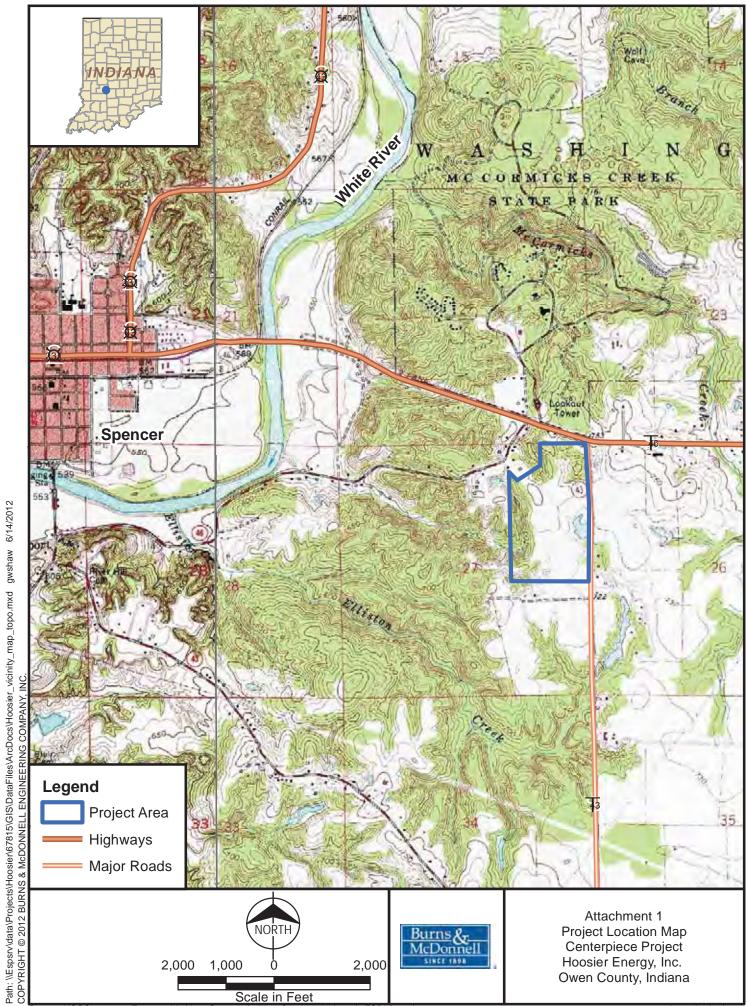
Carla D Shinn

Cala D. Shim

NEPA Project Manager

CB

Enclosure Attachments 1 and 2 cc: John Humes, Hoosier Energy





June 15, 2012

Christie Stanifer
Environmental Coordinator
IDNR Division of Fish and Wildlife
402 W. Washington Street, Room W273
Indianapolis, IN 46204

Re: Hoosier Energy Proposed New Facility Review

Dear Ms. Stanifer:

Burns & McDonnell, on behalf of Hoosier Energy Rural Electric Cooperative, Inc., is preparing an environmental report for the Rural Utilities Service (RUS) on the potential environmental impacts of constructing a new operations facility near Spencer, Owen County, Indiana. Construction of the facility would take place on a site located approximately 0.7 mile southeast of Spencer, Indiana near the intersection of State Roads 43 and 46. The site is located in Section 27, Range 3 West, Township 10 North (Washington Township) (Attachment 1). The new facility will consist of office and warehouse space, vehicle repair shop, vehicle storage and a microwave tower.

Hoosier Energy requests your comments on the potential of the project to impact historic properties. We would appreciate a response within 30 days. Should you have any questions or require additional information, please contact me at 816-822-3508.

Sincerely,

Carla D Shinn

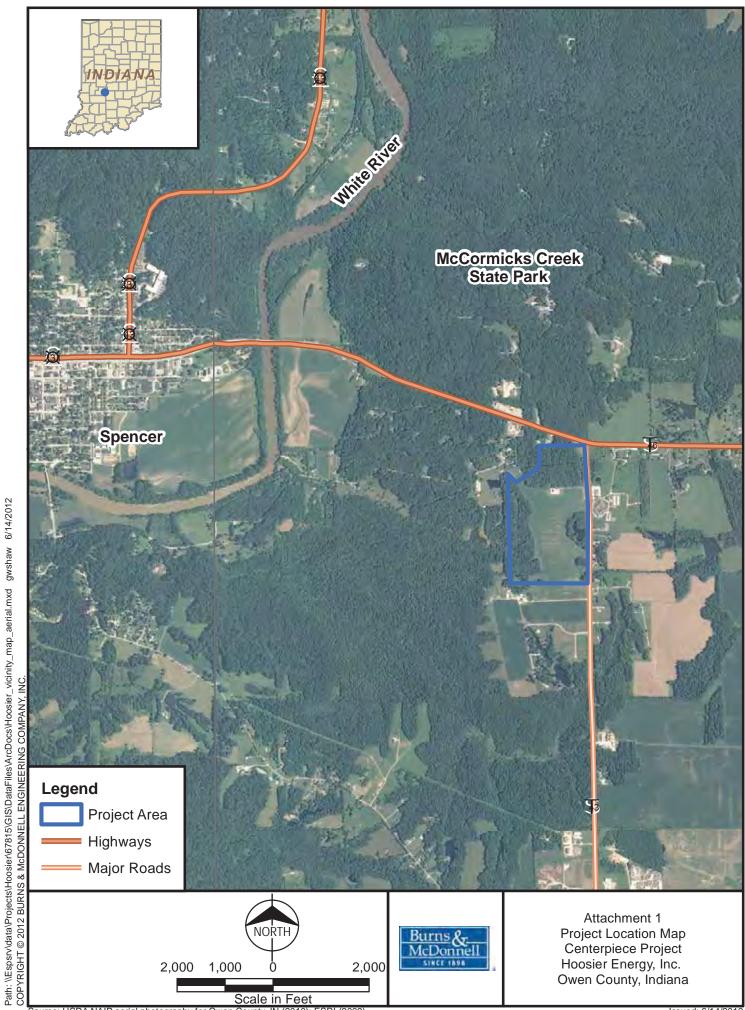
Carla Q. Shim

NEPA Project Manager

CB

**Enclosure Attachment** 

cc: John Humes, Hoosier Energy



Scale in Feet
Source: USDA NAIP aerial photography for Owen County, IN (2010): ESRI (2009)



June 14, 2012

Regulatory Branch U.S. Army Corps of Engineers P.O. Box 59 (Romano Mazzoli Federal Building 600 Dr. Martin Luther King, Jr. Place Louisville, KY 40202

Re: Hoosier Energy Proposed New Facility Review

Dear Sir or Madam:

Burns & McDonnell, on behalf of Hoosier Energy Rural Electric Cooperative, Inc., is preparing an environmental report for the Rural Utilities Service (RUS) on the potential environmental impacts of constructing a new operations facility near Spencer, Owen County, Indiana. Construction of the facility would take place on a site located approximately 0.7 mile southeast of Spencer, Indiana near the intersection of State Roads 43 and 46. The site is located in Section 27, Range 3 West, Township 10 North (Washington Township) (Attachment 1). The new facility will consist of office and warehouse space, vehicle repair shop, vehicle storage and a microwave tower.

Williams Creek Consulting, Inc. performed for Hoosier Energy a natural resource assessment (NRA) and wetland delineation on land where the new facilities are proposed in January 2012. One unnamed tributary to the White River, two wetlands, and one constructed pond were observed and delineated within the site boundary. Cumulative wetland acreage was estimated to be 1.36 acres. The area of the pond was estimated to be 1.75 acres. Attachment 2 provides further detail on these resources.

The proposed project layout has been designed to avoid impacts to wetlands, streams, or floodplains (Attachment 2). Your comments on these findings are requested. We would appreciate a response within 30 days. Should you have any questions or require additional information, please contact me at 816-822-3508.

Sincerely,

Carla D Shinn

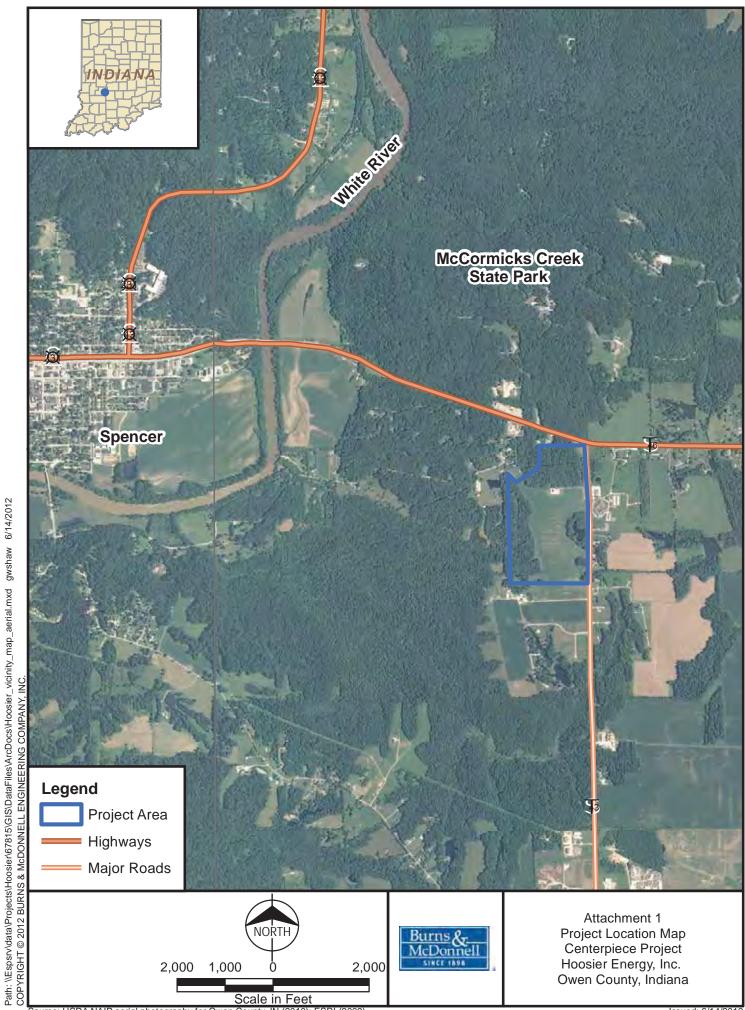
Cale D. Shim

NEPA Project Manager

CB

**Enclosure Attachments** 

cc: John Humes, Hoosier Energy



Scale in Feet
Source: USDA NAIP aerial photography for Owen County, IN (2010): ESRI (2009)





Division of Nature Preserves 402 W. Washington St., Rm W267 Indianapolis, IN 46204-2739

January 24, 2012

Jason Steckel
Williams Creek Consulting, Inc.
Babeca Building
919 North East Street
Indianapolis, IN 46202

Dear Jason Steckel:

I am responding to your request for information on the endangered, threatened, or rare (ETR) species, high quality natural communities, and natural areas documented from the Sargent Property project area, Owen County, Indiana. The Indiana Natural Heritage Data Center has been checked and following you will find information on the ETR species documented within 0.5 mile of the project area.

For more information on the animal species mentioned, please contact Christie Stanifer, Environmental Coordinator, Division of Fish and Wildlife, 402 W. Washington Room W273, Indianapolis, Indiana 46204, (317)232-4080.

The vascular plant and high quality natural community occurrences do not occur precisely at the project site. Therefore if construction activities are limited to the proposed construction area, no impacts are expected on these occurrences.

The information I am providing does not preclude the requirement for further consultation with the U.S. Fish and Wildlife Service as required under Section 7 of the Endangered Species Act of 1973. If you have concerns about potential Endangered Species Act issues you should contact the Service at their Bloomington, Indiana office.

U.S. Fish and Wildlife Service 620 South Walker St. Bloomington, Indiana 47403-2121 812-334-4261

At some point, you may need to contact the Department of Natural Resources' Environmental Review Coordinator so that other divisions within the department have the opportunity to review your proposal.

For more information, please contact:

Department of Natural Resources attn: Christie Stanifer Environmental Coordinator Division of Fish and Wildlife 402 W. Washington Street, Room W273 Indianapolis, IN 46204 (317)232-4080

Please note that the Indiana Natural Heritage Data Center relies on the observations of many individuals for our data. In most cases, the information is not the result of comprehensive field surveys conducted at particular sites. Therefore, our statement that there are no documented significant natural features at a site should not be interpreted to mean that the site does not support special plants or animals.

Due to the dynamic nature and sensitivity of the data, this information should not be used for any project other than that for which it was originally intended. It may be necessary for you to request updated material from us in order to base your planning decisions on the most current information.

Thank you for contacting the Indiana Natural Heritage Data Center. You may reach me at (317)232-8059 if you have any questions or need additional information.

Sincerely,

Ronald P. Hellmich

Ronald P. Hellmich Indiana Natural Heritage Data Center

Enclosure:

invoice Data sheet 01/24/12

## Endangered, Threatened and Rare Species Documented Within 0.5 mile of the Sargent Property, Owen County, Indiana

Туре	Species Name	Common Name	Fed	State	Town Range	Date	Comments
MCCORMICK'S	COVE NATURE PRESER	VE					
High Quality Natural	Forest - upland dry-mesic	Dry-mesic Upland Forest		SG	010N003W 22 NEQ SWQ & WH SEQ	1992	
Community High Quality Natural	Forest - upland mesic	Mesic Upland Forest		SG	010N003W 22 NEQ SWQ & WH SEQ	1992	
Community Vascular Plant	Panax quinquefolius	American Ginseng	3	WL	010N003W 22	1967-08-30	

### MCCORMICK'S CREEK STATE PARK

Bird Coragyps atratus Black Vulture 010N003W 22 1937

Fed: LE = listed federal endangered; C = federal candidate species

State: SE = state endangered; ST = state threatened; SR = state rare; SSC = state species of special concern; SG = state significant; WL = Watch List; no rank - not ranked but tracked to monitor status

## **Jason Steckel**

From: Michael\_Litwin@fws.gov

Sent: Thursday, January 19, 2012 10:10 AM

To: Jason Steckel

Subject: Re: ETR Requests; 3 sites

## **Endangered Species**

This responds to your email of January 18, 2012 requesting endangered species information for 3 project sites in Monroe and Owen Counties. We are providing site-specific comments for each site below.

## Sargent Property/Owen County

This site is in a karst landscape. It contains a small stream in a steep, forested valley and several forested surface karst features. We strongly recommend preservation of all those resources.

## **Endangered Species**

The proposed project is within the range of the Federally endangered Indiana bat (*Myotis sodalis*). Western Monroe County has several Indiana bat hibernating caves; the closest of which is approximately 5 miles from the project site. There are no summer records of that species near the project site, however the site contains good summer habitat. Depending on the extent of floodplain/riparian tree removal proposed, we might recommend a bat survey or conservation measures.

## Hoosier Energy Property/Monroe County

This site includes a forested portion of the Beanblossom Creek floodplain which should not be disturbed.

## **Endangered Species**

The proposed project is within the range of the Federally endangered Indiana bat (*Myotis sodalis*). Western Monroe County has several Indiana bat hibernating caves; the closest of which is approximately 7 miles from the project site. There is a summer record of a male Indiana bat approximately 1 mile from the project site, and the site contains good summer habitat. Depending on the extent of floodplain/riparian tree removal proposed, we might recommend a bat survey or conservation measures.

### Victor Pike Property/Monroe County

This parcel is in an area of extensive karst resources, which should be identified and protected.

### **Endangered Species**

The proposed project is within the range of the Federally endangered Indiana bat (*Myotis sodalis*). Western Monroe County has several Indiana bat hibernating caves; several of which are within 3 miles of the project site. There is a summer record of a male Indiana bat approximately 3 miles from the project site, and a nursery roost approximately 6 miles from the site, which contains scattered areas of suitable summer habitat.

The project site substantially overlaps the proposed right-of-way for I-69 Highway. This office of the FWS has conducted a formal consultation with the Federal Highway Administration and the Indiana Department of Transportation, resulting in mandatory Indiana bat conservation measures and mitigation for unavoidable impacts for all areas within the right-of-way.

Michael Litwin US Fish and Wildlife Service 620 South Walker Street Bloomington, IN 47403 (812) 334-4261 ext. 205

"Jason Steckel" <jsteckel@williamscreek.net>

To < Michael Litwin@fws.gov>

CC

01/18/2012 12:25 PM

Subject ETR Requests; 3 sites

Mr. Litwin,

Please find attached requests for information regarding the presence of ETR species for 3 sites located in Monroe and Owen Counties, Indiana.

Thank you

Jason Steckel Project Scientist Williams Creek Consulting Babeca Building 919 North East Street Indianapolis, IN 46202 p 317.423.0690 f 317.423.0696

### www.williamscreek.net

[attachment "Victor Pike Property ETR request USFWS.pdf" deleted by Michael Litwin/R3/FWS/DOI] [attachment "Sargent Property ETR request USFWS.pdf" deleted by Michael Litwin/R3/FWS/DOI] [attachment "Hoosier Energy Property ETR request USFWS.pdf" deleted by Michael Litwin/R3/FWS/DOI]



## SENECA-CAYUGA TRIBE

## OF OKLAHOMA

23701 S. 655 ROAD Grove, OK 74344 (918) 787-5452 Phone (918) 787-5521 Fax 866-787-5452 Toll Free

October 29, 2012

Burns & McDonnell 9400 Ward Parkway Kansas City, MO 64114-3319

RE:

Sec. 106, Tribal Consultation

TCNS No. 87938

Dear Ms. Carla Shinn:

The Seneca Cayuga Tribe received a letter regarding the above referenced project. The Seneca Cayuga Tribe is committed to protecting sites important to Tribal Heritage, Culture and Religion. Furthermore the Tribe is particularly concerned with historical sites that may contain but not limited to the burial(s) of human remains and associated funerary objects.

As described in your correspondence, and upon research of our database(s) and files, we find our people visited this area historically and portions of Owen County was apart of the emigration trial from Ohio to Indian Territory (The Seneca Cayuga Tribal Trail of Tears). However, the location of this project does not endanger known sites of interest to the Seneca Cayuga Tribe. Please continue the project as planned. However, should this project inadvertently uncover an archeological site(s) or object(s) we request that you immediately contact the Seneca Cayuga Tribe of Oklahoma, as well as the appropriate state agencies (within 24 hours). We also ask that all construction and ground disturbing activity stop until the Tribe and State agencies are consulted.

Thank you, for contacting the Seneca Cayuga Tribe, we appreciate your cooperation. Should you have any further questions or comments please contact, Paul Barton; Tribal Historic Preservation Officer.

Sincerely,

Paul Barton, Tribal Historic Preservation Officer (THPO)

Seneca Cayuga Tribe of Oklahoma

23701 South 655 Rd

Grove, OK 74344

(918) 787-7979

pbarton@sctribe.com





## Ottawa Tribe of Oklahoma

Environmental Services P.O. Box 110 10 NORTH 69A Miami, OK 74355

Phone; (918) 541-1902

Fax: (918) 541-1904

e-mail: cheryistafford@sbcglobal,net

To: BUMS &N	1c Donnell	TCNS #_87938
Attn:	hinn	DATE: 10-18-10
Fax number: 3/0-	<u> 232-364</u> 0	J
From: Cheryl Stafford	NO. OF PAGES INC	LUDING FAX COVER

MESSAGE: THE OTTAWA TRIBE OF OKLAHOMA CONCURS THAT NO KNOWN HISTORIC PROPERTIES WILL BE NEGATIVELY IMPACTED BY CONSTRUCTION OF THIS TOWER SITE OR SITES. OUR RESEARCH AND REVIEW EFFORTS DO NOT REVEAL ANY ISSUES CURRENTLY KNOWN TO BE OF CONCERN TO US AT THIS TOWER LOCATION OR LOCATIONS.

IN THE EVENT THAT ARCHAEOLOGICAL MATERIALS – INCLUDING HUMAN REMAINS – ARE ENCOUNTERED LATER DURING CONSTRUCTION, USE, OR MAINTENANCE OF THIS TOWER LOCATION OR LOCATIONS, PLEASE RE-NOTIFY US AT THAT TIME, AS WE WOULD LIKE TO RESUME CONSULTATION UNDER SUCH A CIRCUMSTANCE.

THE OTTAWA TRIBE OF OKLAHOMA TAKES THIS OPPORTUNITY TO EXPRESS ITS CONCERNS THAT TELECOMMUNICATIONS TOWERS CAN HAVE A POTENTIALLY DESTRUCTIVE IMPACT ON BATS AND BIRDS, ESPECIALLY MIGRATORY BIRDS. IMPACETED BIRDS AND BATS COULD INCLUDE SPECIES THAT ARE LISTED AS THREATENEDED OR ENDANGERED BY BOTH STATES AND THE PEDERAL GOVERNMENT. THE OTTAWA TRIBE STRONGLY SUGGESTS THAT THIS/THESE TOWER/TOWERS BE CONSTRUCTED IN ACCORDANCE WITH THE GUIDELINES AVAILABLE FROM THE US FISH AND WILDLIFE SERVICE IN ORDER TO REDUCE THE ADVERSE EFFECTS OF TELECOMMUNICATIONS TOWERS ON BIRDS AND BATS. THESE GUIDELINES MAY BE FOUND AT:

## WWW.FWS.GOV/MIGRATORYBIRDS/ISSUES/TOWERS/COMTOW.HTML

PLEASE DO NOT HESITATE TO CALL US FOR ADDITIONAL COMMENT.

## CHERYL STAFFORD ENVIRONMENTAL DIRECTOR

IF YOU HAVE DIFFICULTY RECEIVING THIS FAX, PLEASE CONTACT US AT 918-541-1902 EXT. 18 THE CONTENTS OF THIS FAX MAY CONTAIN CONFIDENTIAL INFORMATION, PLEASE DISTRIBUTE ONLY TO ADDRESSEE.

## PEORIA TRIBE OF INDIANS OF OKLAHOMA



118 S. Eight Tribes Trail (918) 540-2535 FAX (918) 540-2538 P.O. Box 1527 MIAMI, OKLAHOMA 74355 CHIEF John P. Froman

SECOND CHIEF Jason Dollarhide

October 17, 2012

Carla Shinn Project Manager Burns & McDonnell 9400 Ward Parkway Kansas City, MO 64114-3319

RE:

**TCNS #87938** 

Hoosier Energy Rural Electric Cooperative, Inc. Centerpiece Microwave Tower Project of the Rural Utilities Service

Owen County, Indiana

Burns & McDonnell Project Number 67815

Thank you for providing the requested materials for the referenced project along with our consultation fee. After review of the project packet our research concurs with the findings at this time. There appear to be no objects of cultural significance or artifacts linked to our tribe located on or near the project location.

The Peoria Tribe of Indians of Oklahoma is currently unaware of any items covered under NAGPRA (Native American Graves Protection and Repatriation Act) to be associated with the proposed construction site. These items include: funerary or sacred objects; objects of cultural patrimony; or ancestral human remains. The Peoria Tribe has no objection at this time to the proposed construction.

If, however, at any time items are discovered which fall under the protection of NAGPRA, the Peoria Tribe requests immediate notification and consultation.

In addition state, local and tribal authorities should be advised as to the findings and construction halted until consultation with all concerned parties has occurred.

John P. Froman

Chief





SHAWNEE TRIBE
HISTORIC PRESERVATION DEPARTMENT
29 SOUTH HIGHWAY 69A
MIAMI, OKLAHOMA 74354
918 \$ 542 \$ 2441 PHONE 918 \$ 542 \$ 9915 FAX

## **FACSIMILE COVER PAGE**

то: <u>Carla</u>	FROM: KIM JUMPER
FIRM/AGENCY: Burns & McDonnell	DATE/TIME: 101712
FAX NUMBER: 816-333-3690	No. of pages, including cover:
PHONE NUMBER:	МЕМО: 87938

**Message:** The Shawnee Tribe's Tribal Historic Preservation Officer concurs that no known historic properties will be negatively impacted by construction of this tower site (see memo line above for TCNS number/s). The Shawnee Tribe's archives do not reveal any issues of concern at this tower location. In the event that archaeological materials are encountered later during construction, use, or maintenance of this tower location, please re-notify us at that time as we would like to resume consultation under such a circumstance.

The Shawnee Tribe's Environmental and Natural Resources Department takes this opportunity to express its concerns that telecommunication towers can have a potentially destructive impact on bats and migratory birds, particularly those that migrate at night, including species listed'as threatened and endangered by both state's and the federal government, as well as other species. The Shawnee Tribe suggests that this tower be constructed in accordance with the guidelines available from the US Fish and Wildlife Service to reduce the adverse effects of telecommunications towers on migratory birds; these guidelines may be found at: www.fws.gov/migratorybirds/issues/towers/comtow.html.

The Shawnee Tribe's Environmental and Natural Resources Department is further concerned that the proliferation of cell towers may play a role in honey bee Colony Collapse Disorder. We acknowledge that cell phone technology may not be to blame, especially by itself, as other potential causative factors for the decline have been noted, such as insecticides, tracheal and varroa mites [an immunosuppressant], other parasites, pesticides used on hives to eliminate parasites, genetically modified plants, *Nosema* fungus, Israeli Acute Paralysis Viris (IAPV) perhaps introduced from Australia in 2004, Kashmir Bee Virus [KBV], climate change, and drought.

Finally, the Shawnee Tribe's Environmental and Natural Resources Department requests that cell tower sites, whenever remotely feasible, be restored to native vegetation. In all cases, habitat restoration can protect a variety of species, even in small project areas. The large number of cell tower sites provides an as yet unrealized opportunity for region-wide habitat restoration. The Tribe urges the cell phone industry to provide a model for native habitat restoration for other industries.

Please do not hesitate to call us for additional comment.

## Javers, Amber

From: Houghton, Susan

Sent: Thursday, October 18, 2012 2:23 PM

To: Javers, Amber

Subject: FW: Reply to Proposed Tower Structure (Notification ID: 87938) - Email ID #3121229

Ah. Now we're on the right batch, this gets us up to date.

----Original Message-----

From: towernotifyinfo@fcc.gov [mailto:towernotifyinfo@fcc.gov]

Sent: Thursday, October 18, 2012 1:49 PM

To: Houghton, Susan

Cc: tcns.fccarchive@fcc.gov; steveo@pbpnation.org

Subject: Reply to Proposed Tower Structure (Notification ID: 87938) - Email ID #3121229

Dear William C Ware.

Thank you for using the Federal Communications Commission's (FCC) Tower Construction Notification System (TCNS). The purpose of this email is to inform you that an authorized user of the TCNS has replied to a proposed tower construction notification that you had submitted through the TCNS.

The following message has been sent to you from Chairman Steve Ortiz (Mon-wah) of the Prairie Band Potawatomi Nation in reference to Notification ID #87938:

We have no interest in this site. However, if the Applicant discovers archaeological remains or resources during construction, the Applicant should immediately stop construction and notify the appropriate Federal Agency and the Tribe.

For your convenience, the information you submitted for this notification is detailed below.

Notification Received: 08/20/2012

Notification ID: 87938

Tower Owner Individual or Entity Name: Hoosier Energy REC, Inc.

Consultant Name: Susan M Houghton Street Address: Burns & McDonnell 9400 Ward Parkway

City: Kansas City State: MISSOURI Zip Code: 64114

Phone: 816-823-6046

Email: shoughton@burnsmcd.com

Structure Type: LTOWER - Lattice Tower Latitude: 39 deg 16 min 46.1 sec N Longitude: 86 deg 43 min 26.7 sec W

Location Description: South of entrance to McCormick's St Pk, on SR 43, Owen Co

City: Spencer State: INDIANA County: OWEN

Ground Elevation: 225.9 meters

Support Structure: 91.4 meters above ground level Overall Structure: 96.0 meters above ground level Overall Height AMSL: 321.9 meters above mean sea level

## Shinn, Carla

From: Scott Willard <swillard@miamination.com>
Sent: Wednesday, October 17, 2012 3:36 PM

Shing Confe

To: Shinn, Carla Subject: TCNS 87938

Greetings Carla,

Below is our response for TCNS 87938. If you have any questions, please let me know.

Thank you, Scott Willard Assist to THPO Miami Nation <a href="mailto:swillard@miamination.com">swillard@miamination.com</a> 918-541-2178

Re: TCNS 87938

The Miami Tribe of Oklahoma is satisfied with efforts conducted to be sure that no Miami historic properties or other Miami cultural resources will likely be adversely affected by construction and use of this tower. The Miami Tribe of Oklahoma is not currently aware of any specific Miami cultural or historic site in this project area. We therefore offer no objection to the proposed construction.

Because this tower lies in the homelands of the Miami, in the event that archaeological materials, including human remains, are discovered during construction or later ground-disturbing activities at this location, please re-open consultation at that time by contacting our THPO at <a href="mailto:gstrack@miamination.com">gstrack@miamination.com</a> or 317-625-1288. Similarly, if plans are considered to expand or modify this tower and cause additional ground disturbance in the future, please let us know. Please forward the Tribe's concerns regarding any such future work and unanticipated discoveries, as well as our contact information, to the appropriate parties.

We urge everyone involved with cell tower development to construct and maintain their projects in keeping with best practices for minimizing environmental impact – particularly on species, such as bird and bats, who might incur negative impacts from cell tower development and use. Please also re-vegetate with species native to the area.

We appreciate your efforts to consult with us.

Regards,

Scott Willard for

George Strack, THPO

Miami Tribe of Oklahoma

## Chippewa Cree Cultural Resource Preservation Department

Our mission is to maintain and inspire the traditional values that relate to the Ojibwa and Ne-hi-yah-w way of life for its people through established principles: Culture, History, Language, and Life.

PO BOX 230 Box Elder Montana 59521 (406)352-3077 email at info@cccrpd.com or on the web at http://cccrpd.com

To: Amber Javers

Burns and McDonnell 9400 Ward Parkway Kansas City, MO 64114

Date: October 12, 2012

Project: Hoosier Centerpiece Project

TCNS: 87938



FINDING OF NO PROPERTIES - No cultural resources should be adversely affected by your proposed undertaking. If cultural materials are discovered during construction please notify the Chippewa Cree Cultural Preservation Department or Tribal Historic Preservation Office.

Under the authority of Section 106 of the National Historic Preservation Act of 1966 and in accordance with 36CFR800.2A4, after reviewing the materials you sent about the Hoosier Centerpiece Project Project, the Chippewa Cree Cultural Resources Preservation Department finds there should be no properties affected by the proposed undertaking. Please be aware though, because cultural inventories are done at different times of the year and under different circumstances there can be variations in the effectiveness of pedestrian surveys. At times, certain resources are not visible. For instance, medicinal plants, some very significant to the ongoing traditions and lifeway of the Chippewa Cree people, may only be seen in the spring or summer of the year. Other times, the grass is too deep for certain features or artifacts to be located through pedestrian surveys. With this in mind, we recommend that cultural resources not be forgotten with this letter of finding of no properties affected. If resources are located during construction please notify our office.

Thank you for consulting with the Tribal Historic Preservation Office. If you have any questions please feel free to contact me at (406)352-3077 or (406)945-5880 or on the web at cccrpd.com.

Alvin Windy Day Cr

Alvin Windy Boy Sr.,

Tribal Historic Preservation Officer

Men Wing By S.

From: <u>Houghton, Susan</u>
To: <u>Javers, Amber</u>

Subject: FW: Reply to Proposed Tower Structure (Notification ID: 87938) - Email ID #3078703

Date: Tuesday, September 04, 2012 7:58:34 AM

----Original Message-----

From: towernotifyinfo@fcc.gov [mailto:towernotifyinfo@fcc.gov]

Sent: Thursday, August 23, 2012 11:34 AM

To: Houghton, Susan

Cc: jarnette@potawatomi.org

Subject: Reply to Proposed Tower Structure (Notification ID: 87938) - Email ID #3078703

Dear William C Ware,

Thank you for using the Federal Communications Commission's (FCC) Tower Construction Notification System (TCNS). The purpose of this email is to inform you that an authorized user of the TCNS has replied to a proposed tower construction notification that you had submitted through the TCNS.

The following message has been sent to you from Cultural Heritage Center Director Kelli Mosteller of the Citizen Potawatomi Nation in reference to Notification ID #87938:

We have no interest in this site. However, if the Applicant discovers archaeological remains or resources during construction, the Applicant should immediately stop construction and notify the appropriate Federal Agency and the Tribe.

For your convenience, the information you submitted for this notification is detailed below.

Notification Received: 08/20/2012

Notification ID: 87938

Tower Owner Individual or Entity Name: Hoosier Energy REC, Inc.

Consultant Name: Susan M Houghton Street Address: Burns & McDonnell 9400 Ward Parkway

City: Kansas City State: MISSOURI Zip Code: 64114 Phone: 816-823-6046

Email: shoughton@burnsmcd.com

Structure Type: LTOWER - Lattice Tower Latitude: 39 deg 16 min 46.1 sec N Longitude: 86 deg 43 min 26.7 sec W

Location Description: South of entrance to McCormick's St Pk, on SR 43, Owen Co

City: Spencer State: INDIANA County: OWEN

Ground Elevation: 225.9 meters

Support Structure: 91.4 meters above ground level Overall Structure: 94.5 meters above ground level Overall Height AMSL: 320.4 meters above mean sea level From: <u>Houghton, Susan</u>
To: <u>Javers, Amber</u>

Subject: FW: Reply to Proposed Tower Structure (Notification ID: 87938) - Email ID #3082483

**Date:** Tuesday, September 04, 2012 7:56:35 AM

----Original Message-----

From: towernotifyinfo@fcc.gov [mailto:towernotifyinfo@fcc.gov]

Sent: Tuesday, September 04, 2012 7:11 AM

To: Houghton, Susan Cc: tcns.fccarchive@fcc.gov

Subject: Reply to Proposed Tower Structure (Notification ID: 87938) - Email ID #3082483

Dear William C Ware,

Thank you for using the Federal Communications Commission's (FCC) Tower Construction Notification System (TCNS). The purpose of this email is to inform you that an authorized user of the TCNS has replied to a proposed tower construction notification that you had submitted through the TCNS.

The following message has been sent to you from Tribal Historic Preservation Officer Michael Zimmerman Jr of the Pokagon Band of Potawatomi Indians in reference to Notification ID #87938:

We have no interest in this site. However, if the Applicant discovers archaeological remains or resources during construction, the Applicant should immediately stop construction and notify the appropriate Federal Agency and the Tribe.

For your convenience, the information you submitted for this notification is detailed below.

Notification Received: 08/20/2012

Notification ID: 87938

Tower Owner Individual or Entity Name: Hoosier Energy REC, Inc.

Consultant Name: Susan M Houghton Street Address: Burns & McDonnell 9400 Ward Parkway

City: Kansas City State: MISSOURI Zip Code: 64114 Phone: 816-823-6046

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City: Spencer State: INDIANA County: OWEN

Ground Elevation: 225.9 meters

Support Structure: 91.4 meters above ground level Overall Structure: 94.5 meters above ground level Overall Height AMSL: 320.4 meters above mean sea level



# NATURAL RESOURCE ASSESSMENT





Sargent Property Owen County, Indiana

Prepared For:
Hoosier Energy
c/o Alt & Witzig Engineering , Inc.
4105 W. 99th Street
Carmel, Indiana 46032

January 2012



Williams Creek Consulting, Inc.
Corporate Office
919 North East Street
Indianapolis, Indiana 46202

Satellite Offices: Columbus, Ohio St. Louis, Missouri

1-877-668-8848 info@williamscreek.net

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## **Executive Summary**

Williams Creek Consulting, Inc. (WCC) performed a natural resource assessment (NRA) and wetland delineation of the Sargent Property located southwest of the intersection of State Route (SR) 46 and SR 43, Spencer, Owen County, Indiana (SITE) on January 3, 2012.

The following conclusions were reached by WCC based on review of available, and reasonably ascertainable federal, state, and local resources, and a SITE inspection conducted on the dates referenced above.

- One (1) unnamed tributary to the White River (Tributary 1) was identified on-SITE, exhibiting an ordinary high water mark (OHWM). Therefore, Tributary 1 is anticipated to be considered a jurisdictional "waters of the U.S." by the U.S. Army Corps of Engineers (USACE) and Indiana Department of Environmental Management (IDEM).
- Two (2) wetlands (Wetlands A and B) and one (1) constructed pond (Pond 1) were observed and delineated within the SITE boundary. Cumulative wetland acreage was estimated to be 1.36 acres. The Area of Pond 1 was estimated to be 1.75 acres.
- Wetlands A and B and Pond 1 were observed to be located within the headwaters of Elliston Creek, located off-SITE and identified on the USGS topographic map as an intermittent stream. Therefore, Wetlands A and B and Pond 1 are likely to be considered jurisdictional "waters of the U.S." by the USACE and IDEM.
- Tributary 1 appears to drain more than one (1) square mile, and therefore, may require a Construction-in-a-Floodway permit by the Indiana Department of Natural Resources (IDNR), Division of Water for any construction activities within the determined floodway.
- WCC requested information regarding the presence of endangered, threatened, and rare species near the site from the U.S. Fish and Wildlife Service (USFWS) and Indiana Department of Natural Resources (IDNR). At the time of this report, responses had not yet been received from these agencies. These responses will be provided upon receipt.
- Coordination with the Owen County Drainage Board did not indicate the presence of County regulated drains located within the SITE boundary.
- A Rule 5 Stormwater Run-off Permit is required for land disturbance activities greater than one (1) acre.

A Regional General Permit (RGP) and Water Quality Certification (WQC) will likely be required for impacts to Wetlands A and B, Pond 1, or Tributary 1 if proposed cumulative impacts are over 0.1 acre and below 1.0 acre or up to 150 linear feet (If) of stream. If anticipated impacts are 1.0 acre or greater or exceed 150 If of stream, then an Individual Permit (IP) may be necessary. Mitigation for impacts is required at a 1:1 ratio for drainage features and open water, 4:1 for forested wetlands, 3:1 for scrub/shrub wetlands, and 2:1 for emergent wetlands if verified as a USACE jurisdictional "waters of the U.S."

If development activities are proposed to impact any of these areas, WCC recommends that the final report and associated figures be submitted to the USACE for Jurisdictional Determination (JD).

#### 1.0 INTRODUCTION

The purpose of this investigation was to conduct an NRA and wetland delineation of the SITE to evaluate potential land development permitting requirements regarding natural resources. In this report, WCC provides a detailed description of the information reviewed and collected as part of the scope of work for this project. WCC summarizes the jurisdictional framework applicable to this project, provides a desktop review of relevant and publicly available documents, and details information collected during the SITE reconnaissance including a wetlands determination, an evaluation of the potential presence of other natural resources within the SITE boundary. The Conclusions section summarizes WCC's findings, addresses potential concern areas and permitting, regulatory, and other relevant issues.

The SITE is located in the Gosport, Indiana, United States Geological Survey (USGS) 7.5-Minute Quadrangle Map in Section 27, Township 10 North, and Range 3 West. The SITE is more specifically located southwest of the intersection of State Route (SR) 46 and SR 43, Spencer, Owen County, Indiana (Figure 1).

### 2.0 JURISDICTIONAL RESOURCES

## 2.1 U.S. Army Corps of Engineers

Through the Clean Water Act (CWA) of 1972, Section 404, the USACE maintains authority over "waters of the U.S." as defined in the Code of Federal Regulations (33 CFR 328.3). The limit of jurisdiction described in 33 CFR 328.4 for non-tidal waters is the "ordinary high water mark" if no adjacent wetlands are present. If wetlands are present, the limit of jurisdiction applies to the boundary of the adjacent wetland. Any wetland that has a hydrological connection to a "waters of the U.S." is also included. Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) also serves as a base of federal authority over certain waters. Definitions and permitting requirements for jurisdictional waters under Section 10 can be found in 33 CFR Parts 322 and 329.

A Section 404 permit must be obtained from the USACE before any fill or dredging activities are conducted within the boundary of a "waters of the U.S." including federal jurisdictional wetlands. The USACE uses three (3) types of permits: nationwide permits, regional general permits for Indiana, and individual permits. Furthermore, a Section 401 WQC must be filed with the IDEM concurrently with the Section 404 permit(s). Each permit is discussed in the following paragraphs.

<u>Nationwide Permits</u> have been developed for projects that meet a specific criterion and are deemed to have minimal impacts to the aquatic environment. There are 44 Nationwide Permits created to streamline the permit process for smaller, repetitive, low impact projects including, but not limited to Aids to Navigation, Fish and Wildlife Harvesting, Outfall Structures and Maintenance, Utility Line Activities, Stream and Wetland Restoration, Maintenance Dredging of Existing Basins, Agriculture Activities, and Mining Activities.

<u>Regional General Permits (RGP)</u> for Indiana authorize proposed impacts associated with any construction activities including agriculture and mining activities. Wetland impacts must be less than one (1) acre to qualify for this type of permit.

<u>RGP Notification</u> to IDEM may be used for impacts that are less than 0.1 acre of wetland or 300 linear feet of stream, and are deemed to have minimal impacts to the aquatic environment.

<u>Individual Permits (IP)</u> are required for proposed wetland impacts of one (1) acre and greater. The review process for this type of permit may take up to one (1) year due to the higher level of scrutiny by the regulatory agencies.

The Louisville District of the USACE developed new mitigation guidelines in September 2004 for the federal jurisdictional wetlands and "waters of the U.S." The guidelines require stream and wetland characterizations for all drainage features and wetlands proposed to be impacted. The document required for permitting must contain extensive detail of the proposed impact sites, the proposed mitigation sites, and information regarding the construction and monitoring of the mitigation sites.

Impacts to USACE jurisdictional wetlands or other "waters of the U.S." will require in-kind mitigation. The USACE and the IDEM prefer the mitigation to be on-site, but may allow off-site mitigation in some cases due to certain constraints of a property. The mitigation ratios for impacts to federally jurisdictional wetlands and other "waters of the U.S." are as follows:

Impact Type	Replacement
Emergent Wetland	2:1 Acres
Scrub-Shrub Wetland	3:1 Acres
Forested Wetland	4:1 Acres
Stream/Drainage Ways	1:1 Linear feet
Open Water	1:1 Acres

### 2.1.1 Waters of the U.S.

A "waters of the U.S." can be described as any waterway that appears to have a "clear, natural line impressed on the bank" that is caused by variations in water levels over a period of time. The USACE is the final authority on the determination of whether a waterway qualifies for jurisdiction under the Clean Water Act, but jurisdictional "waters of the U.S." can include ephemeral streams and drainage ditches, as well as large rivers. Several indicators that may be considered in determining an ordinary high water mark include, but are not limited to, changes in soil character, destruction of terrestrial vegetation, historical or recorded data, presence of litter and/or debris, scour, and water staining.

#### 2.1.2 Wetlands

Wetlands offer a variety of functions and values that may include, but are not limited to, groundwater recharge/discharge, flood flow alteration, sediment/toxicant retention, and fish and wildlife habitat. Because of the perceived functions and values of wetlands, the USACE developed the Wetlands Delineation Manual, (1987 Manual)<sup>2</sup> to identify wetlands.

Wetlands are defined in the 1987 Manual as, "Those areas that are inundated or saturated by

<sup>&</sup>lt;sup>1</sup> U.S. Army Corps of Engineers, *Regulatory Guidance Letter*, No. 05-05, date 7-12-05

<sup>&</sup>lt;sup>2</sup> U.S. Army Corps of Engineers, Wetlands Delineation Manual, (1987 Manual).

surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions."<sup>2</sup> The *1987 Manual* outlines the protocol for distinguishing wetland areas from "upland" areas. Wetland areas are delineated according to three (3) primary criteria: vegetation, soil, and hydrology. An area is determined to qualify as a wetland if it meets the following "general diagnostic environmental characteristics:"

Hydrophytic vegetationHydrologyHydric Soil

## Hydrophytic Vegetation

The <u>1987 Manual</u> defines hydrophytic vegetation as, "...the sum total of macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present..."

The USFWS and the National Plant List Panel developed the following categories to establish the relative probability of species occurring within the ranges between upland and wetland:

*Obligate Wetland Plants* (OBL) – Probability of >99% occurrence in wetlands with a 1% probability of occurrence in upland areas.

*Facultative Wetland Plants* (FACW) – Probability of 67% - 99% occurrence in wetlands with a 1% - 33% probability of occurrence in upland areas.

Facultative Plants (FAC) - Probability of 34% - 66% occurrence in either wetlands or upland areas.

*Facultative Upland Plants* (FACU) - Probability of 67% - 99% occurrence in upland areas with a 1% - 33% probability of occurrence in wetland areas.

**Obligate Upland Plants** (UPL) - Probability of >99% occurrence in upland areas with a 1% probability of occurrence in wetland areas.

The hydrophytic vegetation criterion is met if greater than 50% of dominant species are FAC, FACW, or OBL.

### <u>Hydrology</u>

Areas which are inundated or saturated to the surface for a significant time during the growing season will typically exhibit characteristics of wetland hydrology. Careful examination of the site conditions is needed to adequately identify wetland areas. The anaerobic and reducing conditions in inundated or saturated soils influence the plant community and may favor a dominance of hydrophytic species. It should be noted that the *1987 Manual* further defines the growing season and methodology for determining evidence of hydrology.

There are two (2) types of hydrologic indicators: primary and secondary. Primary indicators of hydrology are discussed in the *1987 Manual* and include, but are not limited to, inundation, and saturation within the upper 12 inches of soil, water marks, drift lines, sediment deposits, and drainage patterns. Secondary indicators may include, but are not limited to, oxidized root channels, water stained leaves, local soil survey data, FAC-Neutral test, etc. One (1) primary or two (2) secondary indicators are required to meet this criterion.

## Hydric Soil

"A hydric soil is formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part." <sup>3</sup> All organic soils (except Folists) are considered hydric, while mineral soils must be carefully examined to qualify as hydric. There are several indicators that suggest a soil is hydric. An inspection of the soil profile to a minimum depth of 16 inches below ground surface is required in order to make this determination. The soil data used is the horizon of soil immediately below the A-horizon, or at 10 inches below the soil surface. Hydric soils may be present in an upland position; however, there may be insufficient evidence of hydrology or vegetation for the area to qualify as wetland.

## 2.1.3 Regional Supplement Manuals

A series of regional supplements<sup>4</sup> to the 1987 manual are developed by the Army Engineer Research and Development Center (ERDC) to be more specific to regionally geographical conditions. Each supplement manual is developed to account for regional differences in climate, geology, soils, hydrology, plant and animal communities, etc. The intent of the regional supplements is to update the 1987 Manual with current information and technology rather than change the definition or manner that wetlands were delineated. The procedures for completing a wetland delineation is to use a combination of the 1987 Manual and the correct regional supplement manual.

Sections that replace the 1987 Manual for the Midwest supplement are summarized below:

Item	Replaced Portions of the 1987 Manual	Replacement Guidance	
Hydrophitic Vegetation Indicators	Paragraph 35, all subparts, and all reference to specific indicators in Part IV.	Chapter 2	
Hydric Soil Indicators	Paragraphs 44 and 45, all subparts, and all references to specific indicators in Park IV.	Chapter 3	
Wetland Hydrology Indicators	Paragraph 49(b), all subparts, and all references to specific indicators in Part IV.	Chapter 4	
Growing Season Definition	Glossary	Chapter 4, Growing Season; Glossary	
Hydrology Standard for Highly	Paragraph 48, including Table	Chapter 5, Wetlands that	

<sup>&</sup>lt;sup>3</sup> USDA-NRCS, HYDRIC SOIL TECH. NOTE 1: Proper use of Hydric Soil Terminology,

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<sup>&</sup>lt;sup>4</sup> U. S. Army Corps of Engineers. 2008. *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region*, ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-08-27. Vicksburg, MS: U.S. Army Engineer Research and Development Center

Disturbed or Problematic	5 and the accompanying User	Periodically Lack Indicators of
Wetland Situations	note in the online version of the	Wetland Hydrology, Procedure
	Manual.	item 3(g).

Regional Supplement Manuals will continue to be development and revised electronically with the improvement of technology and procedures.

#### 2.2 United States Fish and Wildlife Service

The Endangered Species Act (ESA) of 1973 intends to conserve the habitats of federally endangered or threatened species and to assist in the recovery of species listed. The USFWS is the regulating authority for this act and works with the states to provide additional conservation measures. The USFWS<sup>5</sup> defines two (2) classifications of protected species, endangered and threatened. An endangered species is an organism that is in danger of extinction throughout all or a significant portion of its range. A threatened species is an organism that is likely to become endangered within the foreseeable future throughout all or a significant portion of its range. All species of plants and animals are eligible for listing.

Any activity that may incidentally harm federally threatened or endangered species is prohibited by the ESA. For proposed development areas that contain listed species, private landowners may create a Habitat Conservation Plan to minimize the impact on the listed species. This plan should include the protection of breeding, foraging, and shelter requirements for the listed species. The USFWS may then grant an Incidental Take Permit for the project. In the event that any person knowingly violates any provision of the Act or Permit, the person may be assessed penalties.

Projects that involve federal funding or permitting on a site where endangered or threatened species are known to occur or where significant habitat is present will require an alternatives analysis and extensive documentation of agency coordination.

## 2.3 Indiana Department of Environmental Management

The IDEM is the State agency that reviews and issues permits regarding isolated wetlands (IAC 13-18). The law recognizes three (3) types of wetlands: Class I, Class II, and Class III. Class I isolated wetlands occur in areas that have been disturbed by human activity/development, have low species diversity or greater than 50% nonnative species, do not provide critical habitat for the support of significant wildlife or aquatic vegetation, or do not possess significant hydrologic function. Class III isolated wetlands are located in areas that are undisturbed or minimally disturbed by human activity/development, are composed of rare or important ecological types, and support more than minimal wildlife or aquatic habitat and hydrologic function. Class II isolated wetlands are those that do not fit the criteria set for either Class I or Class III isolated wetlands.

Exemptions are in place to allow impacts to Class I and Class II wetlands without requiring permitting and mitigation. Class I wetlands qualify for the exemption if the entire wetland does not exceed 0.5 acre. Any Class I wetland exceeding 0.5 acre will require mitigation. Class II wetlands qualify for the exemption if the entire wetland acreage does not exceed 0.25 acre. Any Class II wetland exceeding 0.25 acre will require mitigation. Any proposed impacts to Class III or nonexempt Class I or Class II wetlands will require an isolated wetlands and/or "waters of the

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<sup>&</sup>lt;sup>5</sup> U.S. Fish and Wildlife Service, ESA Basics, 2004

State" permit through IDEM. Such isolated wetland permit applications will be submitted concurrently with any USACE Section 404 jurisdictional wetland permits and IDEM Section 401 WQC if necessary.

According to IAC 13-18, impacts to isolated wetlands will require some form of compensatory mitigation. The law specifically states the amount of mitigation that must be created to offset impacts to isolated wetlands. These mitigation ratios do not apply to USACE jurisdictional wetlands. The mitigation ratios for impacts to state regulated wetlands (isolated) are as follows:

Impact Type	<u>Replacement</u>	On Site Ratio	Off -Site Ratio
Class I	Class I	1.5:1 Acres	1.5:1 Acres
Class I	Class II or III	1:1 Acres	1:1 Acres
Class II	Class II or III	Non-forested	Non-forested
		1.5:1 Acres	2:1 Acres
		<u>Forested</u>	<u>Forested</u>
		2:1 Acres	2.5:1 Acres
Class III	Class III	Non-forested	Non-forested
		2:1 Acres	2.5:1 Acres
		<u>Forested</u>	<u>Forested</u>
		2.5:1 Acres	3:1 Acres

## 2.4 Indiana Department of Natural Resources

The IDNR Division of Water has authority over the floodways of waterways that have a watershed greater than one (1) square mile. If construction activities are proposed in a regulated floodway then a Construction in a Floodway permit would be required. A watershed analysis would be required to determine the actual drainage for each waterway proposed to be impacted. In addition, trees cleared within a regulated floodway will require compensatory mitigation.

The IDNR Division of Nature Preserves provides a Natural Heritage Datacenter for the documentation of state and federally listed endangered, threatened, and rare species and high quality natural communities. The IDNR serves to identify, protect, and manage significant natural areas and ETR species through coordination with the land owner. Currently over 23,000 acres of dedicated Nature Preserves are located throughout the state. The preservation of natural communities supports species diversity and provides examples of historic conditions for recreational, educational, and scientific opportunities.

### 2.5 Soil and Water Conservation District

A Rule 5 Stormwater Run-off Permit is required for construction related activities that will disturb one (1) or more acres of land that is not within a designated Municipal Separate Storm Sewer System (MS4) entity or is in a MS4 entity that does not have a stormwater ordinance established. The purpose of Rule 5 is to reduce pollutants, mainly sediment from soil erosion, in stormwater discharges into surface waters of the State for the protection of public health, existing water uses, and aquatic biota.

A Construction Plan, including a Storm Water Pollution Prevention Plan, must be reviewed and approved by the Owen County Soil and Water Conservation District (SWCD) as part of the Rule 5 permit process. A public notice of the intent to operate under Rule 5 must be submitted in a newspaper of general circulation. A Notice of Intent (NOI) letter must then be submitted to IDEM

including a \$100 application fee, proof of the public notice, and the Construction Plan Review Approval Verification Form as received from the SWCD. A Rule 5 Stormwater Run-off Permit will be issued by IDEM if all materials are approved.

#### 2.6 Owen County Surveyor/Drainage Board

The Owen County Surveyor has authority over designated regulated drains. Drains could include subdivision drains, field tiles, or open ditches and creeks, within Owen County. The Owen County Surveyor would require authorization for any work conducted within the easement of a regulated drain. Any construction affecting a regulated drain, and/or the corresponding easement on either side of the drain must be reviewed and approved by the County Surveyor prior to disturbance.

#### 3.0 DESKTOP REVIEW

WCC reviewed applicable, readily available and accessible historical information for the potential presence of wetlands, "waters of the U.S.", and natural resources. The findings are presented below.

#### 3.1 United States Geological Survey 7.5-Minute Quadrangle Map

A USGS 7.5-Minute Quadrangle map displays contour lines to portray the shape and elevation of the land surface. Quadrangle maps render the three-dimensional changes in elevation of the terrain on a two-dimensional surface. The maps usually portray both manmade and natural topographic features. Although they show lakes, rivers, various surface water drainage trends, vegetation, etc., they typically do not provide the level of detail needed for accurate evaluation of wetlands. However, the existence of these features may suggest the potential presence of wetlands.

The SITE is located in the Gosport, Indiana USGS 7.5-Minute Quadrangle Map, Section 27, Township 10 North, and Range 3 West. WCC evaluated the topography and concluded that the elevation ranges from approximately 750 feet above mean sea level (AMSL) in the northwest portion of the SITE to approximately 680 feet AMSL in the southwestern portion of the SITE. One (1) pond is mapped within the eastern portion of the SITE and is shown to drain off-SITE to the East to the headwaters of Elliston Creek. Additionally, one (1) unnamed tributary is mapped in the western portion of the SITE, entering at the northwest SITE boundary and exiting at the southwest SITE boundary (Figure 1).

#### 3.2 National Wetlands Inventory Map

National Wetlands Inventory (NWI) maps were developed to meet a USFWS mandate to map the wetland and deepwater habitats of the U.S. These maps were developed using high altitude aerial photographs and USGS Quadrangle maps as a topographic base. Indicators noted in the photographs which exhibited pre-determined wetland characteristics were identified according to a detailed classification system. The NWI map retains some of the detail of the Quadrangle map; however, it is used primarily for demonstration of wetland areas identified by the agency. The maps are accurate to a scale of 1:24,000. In general, the NWI information requires field verification.

National Wetland Inventory data for the Gosport USGS Quadrangle map is included as Figure 2, and the associated key is provided as Figure 3. Based upon review of the NWI data, one (1)

8

palustrine, unconsolidated bottom, intermittently exposed, diked/impounded (PUBGh) aquatic feature is mapped adjacent to the eastern SITE boundary, consistent with the location of the pond identified in Section 3.1.

#### 3.3 United States Department of Agriculture Soil Survey

WCC reviewed NRCS soils data pertinent to the project SITE from the NRCS Geospatial Data Gateway. This data is presented in **Figure 4**, projected over aerial photography to depict distinct soil map unit boundaries. Other information contained within the soil survey may be used to further characterize the SITE for wetland characteristics, drainage features, or land use for example.

Twelve (12) soil units are classified on SITE: Dubois silt loam, 0 to 2 percent slopes (DfnA); Gallimore loam, 18 to 25 percent slopes, eroded (GaaE2); Greybrook silt loam, 25 to 35 percent slopes (GmpF); Haubstadt silt loam, 2 to 6 percent slopes (GmpF); Hickory-Chetwynd loams, 35 to 70 percent slopes (HesG); Holton silt loam, 0 to 2 percent slopes, frequently flooded, very brief duration (HleAV); Parke silt loam, 6 to 12 percent slopes, eroded (PbbC2); Parke silt loam, 6 to 12 percent slopes, severely eroded (PbbC3); Peoga silt loam, 0 to 1 percent slopes (PhaA); Pike silt loam, 2 to 6 percent slopes (PlfB2); Pottersville silt loam, karst, steep (PsbF); and Stubenville-Hickory complex, 35 to 70 percent slopes (SwhG). The PhaA map unit is included on the NRCS list of soils considered hydric in Owen County suggesting the potential for the presence of wetlands in these areas.

#### 3.4 Aerial Photography

Aerial photography provides a visual overview of the SITE and can provide information to assist in identifying land use practices, terrain, drainage, vegetated areas, wetlands, habitats, etc. Certain features, such as variegated soil patterns, may suggest the presence of wetlands.

WCC reviewed 2008 aerial photography of the SITE at a scale of 1:400 (in/ft) from the NRCS GIS Data Gateway website (**Figure 5**). The SITE appears to be a mixture of forested and agricultural land. The northern and western portions of the SITE appear to be forested suggesting the potential for the presence of wetlands in these areas. One apparent pond is visible adjacent to the east SITE boundary. Surrounding land use appears to be comprised of a mixture of low density residential and agriculture.

#### 3.5 Flood Insurance Rate Map

The Federal Emergency Management Agency (FEMA) was developed in 1979 to reform disaster relief and recovery, civil defense, and to prepare and mitigate for natural hazards. The Mitigation Division of FEMA manages the National Flood Insurance Program which provides guidance on how to lessen the impact of disasters on communities through flood insurance, floodplain management, and flood hazard mapping. Proper floodplain management has the ability to minimize the extent of flooding and flood damage and improve stormwater quality by reducing stormwater velocities and erosion. The one (1) percent annual chance flood (100 year flood) boundary must be kept free of encroachment as the national standard for the program.

WCC reviewed FEMA Flood Insurance Rate Map (FIRM) data applicable to the SITE, which was retrieved from the Indiana GIS Atlas (**Figure 6**). The FIRM indicates that the SITE is located entirely outside the flood zone, indicating that the SITE is not likely to be subject to flooding.

#### 3.6 Endangered, Threatened, and Rare Species Evaluation

WCC filed a request with the USFWS and IDNR Division of Nature Preserves for documentation of any federal ETR species on SITE. At the time of this report, responses from these agencies had not yet been received.

#### 4.0 SITE RECONNAISSANCE

#### 4.1 Methodology

WCC conducted a field investigation at the SITE on January 3, 2012. During this investigation, WCC noted the presumed land use of the SITE and surrounding area, as well as evaluated the SITE for the potential presence of wetlands, "waters of the U.S.", and natural resources using the findings of the desktop review and field observations. Photographs were taken during the field investigation and are provided in **Appendix B**.

WCC used the Routine Determination Method (RDM) with an established baseline and transects as described in the *1987 Manual* for typical sites over five (5) acres. WCC recorded data from a number of data points (DP) along the transect as a function of diversity of vegetation, property size, soil types, habitat variability, and other SITE features as deemed appropriate by WCC. Where evidence of a wetland was suspected, three (3) wetland criteria were applied to determine if the area in question was representative of a wetland using the methodology set forth by the USACE. More specifically, WCC visually examined and recorded the dominant vegetation, recorded soil properties such as texture and color using the Munsell Soil Color Chart (Munsell Color Chart), excavated soil pits and evaluated the primary and secondary hydrologic indicators as discussed in Section 2.1.2.

If all three (3) criteria were met, i.e. vegetation, soil properties, and hydrologic indicators, a second DP was established adjacent to the wetland DP in an area outside of the presumed wetland boundary for the purpose of delineating between the wetland and non-wetland areas. Once delineated, WCC continued the RDM to evaluate the remainder of the SITE.

#### 4.2 SITE and Adjacent Property Land Use

The area of the SITE subject to this assessment was approximately 97 acres in size and was observed to be a mixture of agricultural and forested land. One (1) water tower was observed in the north central portion of the SITE, which was not visible in **Figure 5**.

#### 4.3 Wetland Summary

Two (2) wetland areas were identified during this investigation based upon methodology set forth in the *1987 Manual* and the *Midwest Regional Supplement*. Information collected at each wetland and upland DP on January 3, 2012 is described in the appropriate sections below. This information is summarized on the forms provided in **Appendix C** and the DP locations are shown on **Figure 7**.

At the time of this report, the wetland boundaries had not been surveyed. Therefore, WCC estimated the approximate areas of the wetlands delineated on-SITE. A discussion of the wetlands and associated DPs are provided below.

#### 4.3.1 Wetland A – (estimated area 0.19 acres)

This wetland community was located adjacent to the eastern SITE boundary, extended beyond the SITE boundary, and was classified as a forested wetland (Figure 7). At the time of this report, a survey of Wetland A had not been completed; therefore acreage was estimated. Wetland A was observed to be located down grade from the dam of a constructed pond, with hydrology originating as seepage from the dam. The USGS topographic map identifies the location of Wetland A as the headwaters of Elliston Creek. Therefore, Wetland A is likely to be considered a jurisdictional "waters of the U.S." by the USACE and IDEM.

#### A-1

This DP was located in the central portion of Wetland A. The dominant vegetation present was American elm (*Ulmus americana*, FACW); pin oak (*Quercus palustris*, FACW); and panicled aster (*Aster simplex*, FACW). The dominant plant species present in this community were hydrophytic, which met the vegetation criterion.

Evidence of hydrological features included inundation, saturation less than 12 inches below the surface, oxidized rhizoshperes, the presence of reduced iron, and the FAC-Neutral test, which met the hydrology criterion. The soil profile was inspected by manual excavation of a test pit. Examination of the soil profile using the Munsell Color Chart revealed a matrix color 10YR 5/1 from 0 to 18 inches, meeting the hydric soil criterion. Since all three (3) criteria were met, this area qualified as a wetland.

#### A-2

The upland area adjacent to A-1 was dominated by pin oak (FACW); red maple (*Acer rubrum*, FAC); and multiflora rose (*Rosa multiflora*, *FACU*), which met the hydrophytic vegetation criterion. No evidence of hydrology was observed that would suggest the potential presence of wetlands. Examination of the soil profile using a Munsell Color Chart revealed a matrix color of 10YR 4/3 to a depth of 4 inches and a color of 10YR 3/2 from 4 to 18 inches, which did not meet the hydric soil criterion. Since all three (3) criteria were not met, this area did not qualify as a wetland.

#### 4.3.1 Wetland B – (estimated area 1.17 acres)

This wetland community consisted of the wetland fringe of a pond constructed adjacent to the east SITE boundary. Wetland B was classified as a forested wetland (Figure 7). At the time of this report, a survey of Wetland B had not been completed; therefore acreage was estimated. Wetland B was observed to have a direct hydrological connection to Wetland A, and subsequently Elliston Creek. Therefore, Wetland B is likely to be considered a jurisdictional "waters of the U.S." by the USACE and IDEM.

#### B-1

This DP was located in the eastern portion of Wetland B. The dominant vegetation present was slippery elm (*Ulmus rubra*, FAC); silver maple (*Acer saccharinum*, FACW); and pin oak (FACW). The dominant plant species present in this community were hydrophytic, which met the vegetation criterion.

Evidence of hydrological features included inundation, saturation less than 12 inches below the surface and the FAC-Neutral test, which met the hydrology criterion. The soil profile was inspected by manual excavation of a test pit. Examination of the soil profile using the Munsell Color Chart

revealed a matrix color 10YR 4/2 from 0 to 3 inches and a color of 10YR 6/2 with 10YR 5/6 mottles from 3 to 18 inches, meeting the hydric soil criterion. Since all three (3) criteria were met, this area qualified as a wetland.

#### B-2

The upland area adjacent to B-1 was dominated by American elm (FACW); pin oak (FACW); and multiflora rose (FACU), which met the hydrophytic vegetation criterion. No evidence of hydrology was observed that would suggest the potential presence of wetlands. Examination of the soil profile using a Munsell Color Chart revealed a matrix color of 10YR 4/4 to a depth of 6 inches and a color of 10YR 4/3 from 6 to 18 inches, which did not meet the hydric soil criterion. Since all three (3) criteria were not met, this area did not qualify as a wetland.

#### B-3

This DP was located in the western portion of Wetland B. The dominant vegetation present was sycamore (*Platanus occidentalis*, FACW); pin oak (FACW); and bald cypress (*Taxodium distichum*, OBL). The dominant plant species present in this community were hydrophytic, which met the vegetation criterion.

Evidence of hydrological features included inundation, saturation less than 12 inches below the surface and the FAC-Neutral test, which met the hydrology criterion. The soil profile was inspected by manual excavation of a test pit. Examination of the soil profile using the Munsell Color Chart revealed a matrix color 10YR 5/1 to a depth of 18 inches, meeting the hydric soil criterion. Since all three (3) criteria were met, this area qualified as a wetland.

#### **B-4**

The upland area adjacent to B-3 was dominated by pin oak (FACW); eastern white pine (*Pinus strobus*, FACU); and multiflora rose (FACU), which did not meet the hydrophytic vegetation criterion. Evidence of hydrology observed consisted of saturation less than 12 inches below the surface, which satisfied the hydrology criterion. Examination of the soil profile using a Munsell Color Chart revealed a matrix color of 10YR 4/4 to a depth of 18 inches, which did not meet the hydric soil criterion. Since all three (3) criteria were not met, this area did not qualify as a wetland.

#### 4.4 Data Point Summary

Below is a description of the information collected at each additional DP during the field investigation that was not associated with a wetland. The purpose of collecting these DPs was to describe the remaining habitat of the SITE. Information that was collected at each DP is summarized on the forms provided in **Appendix B** and their locations are shown on **Figure 7**.

#### DP-1

This DP was located in the northern portion of the SITE. The dominant vegetation present was American beech (*Fagus grandifolia*, FACU); sugar maple (*Acer saccharum*, FACU); and American hornbeam (*Carpinus caroliniana*, FAC), which did not meet the hydrophytic vegetation criterion for a wetland. No evidence of hydrology was observed that would suggest the potential presence of a wetland. Examination of the soil profile using a Munsell Color Chart revealed a matrix color of 10YR 4/4 to a depth of 18 inches, which did not meet the hydric soil criterion. Since all three (3) criteria were not met, this area did not qualify as a wetland.

#### DP-2

This DP was located in the northeastern portion of the SITE. The dominant vegetation present was American beech (FACU); white oak (*Quercus alba*, FACU); and multiflora rose (FACU), which did not meet the hydrophytic vegetation criterion for a wetland. No evidence of hydrology was observed that would suggest the potential presence of a wetland. Examination of the soil profile using a Munsell Color Chart revealed a matrix color of 10YR 4/4 to a depth of 18 inches, which did not meet the hydric soil criterion. Since all three (3) criteria were not met, this area did not qualify as a wetland.

#### DP-3

This DP was located in the northern portion of the SITE. The dominant vegetation present was American beech (FACU); American hornbeam (FAC); white oak (FACU); and multiflora rose (FACU), which did not meet the hydrophytic vegetation criterion for a wetland. No evidence of hydrology was observed that would suggest the potential presence of a wetland. Examination of the soil profile using a Munsell Color Chart revealed a matrix color of 10YR 4/4 to a depth of 18 inches, which did not meet the hydric soil criterion. Since all three (3) criteria were not met, this area did not qualify as a wetland.

#### DP-4

This DP was located in the western portion of the SITE. The dominant vegetation present was corn (*Zea mays*, UPL), which did not meet the hydrophytic vegetation criterion for a wetland. No evidence of hydrology was observed that would suggest the potential presence of a wetland. Examination of the soil profile using a Munsell Color Chart revealed a matrix color of 10YR 4/4 to a depth of 18 inches, which did not meet the hydric soil criterion. Since all three (3) criteria were not met, this area did not qualify as a wetland.

#### DP-5

This DP was located in the western portion of the SITE. The dominant vegetation present was American beech (FACU); sycamore (FACW); and white oak (FACU), which did not meet the hydrophytic vegetation criterion for a wetland. No evidence of hydrology was observed that would suggest the potential presence of a wetland. Examination of the soil profile using a Munsell Color Chart revealed a matrix color of 10YR 4/4 to a depth of 6 inches and a color of 10YR 4/3 from 6 to 18 inches, which did not meet the hydric soil criterion. Since all three (3) criteria were not met, this area did not qualify as a wetland.

#### DP-6

This DP was located in the western portion of the SITE. The dominant vegetation present was American beech (FACU); sycamore (FACW); red maple (FACU); and multiflora rose (FACU), which did not meet the hydrophytic vegetation criterion for a wetland. No evidence of hydrology was observed that would suggest the potential presence of a wetland. Examination of the soil profile using a Munsell Color Chart revealed a matrix color of 10YR 4/4 to a depth of 18 inches, which did not meet the hydric soil criterion. Since all three (3) criteria were not met, this area did not qualify as a wetland.

#### DP-7

This DP was located in the southwestern portion of the SITE. The dominant vegetation present was sycamore (FACW) and American beech (FACU), which did not meet the hydrophytic vegetation criterion for a wetland. No evidence of hydrology was observed that would suggest the

potential presence of a wetland. Examination of the soil profile using a Munsell Color Chart revealed a matrix color of 10YR 4/4 to a depth of 18 inches, which did not meet the hydric soil criterion. Since all three (3) criteria were not met, this area did not qualify as a wetland.

#### DP-8

This DP was located in the western portion of the SITE. The dominant vegetation present was corn (UPL), which did not meet the hydrophytic vegetation criterion for a wetland. No evidence of hydrology was observed that would suggest the potential presence of a wetland. Examination of the soil profile using a Munsell Color Chart revealed a matrix color of 10YR 4/4 to a depth of 18 inches, which did not meet the hydric soil criterion. Since all three (3) criteria were not met, this area did not qualify as a wetland.

#### DP-9

This DP was located in the southeastern portion of the SITE. The dominant vegetation present was American elm (FACW); American beech (FACU); and sugar maple (FACU), which did not meet the hydrophytic vegetation criterion for a wetland. Evidence of hydrology observed included drainage patterns, which alone did not meet the hydrology criterion. Examination of the soil profile using a Munsell Color Chart revealed a matrix color of 10YR 4/3 to a depth of 18 inches, which did not meet the hydric soil criterion. Since all three (3) criteria were not met, this area did not qualify as a wetland.

#### **DP-10**

This DP was located in the southwestern portion of the SITE. The dominant vegetation present was American elm (FACW) and American beech (FACU), which met the hydrophytic vegetation criterion for a wetland. Evidence of hydrology observed included drainage patterns and the FAC-Neutral test, which met the hydrology criterion. Examination of the soil profile using a Munsell Color Chart revealed a matrix color of 10YR 4/3 to a depth of 18 inches, which did not meet the hydric soil criterion. Since all three (3) criteria were not met, this area did not qualify as a wetland.

#### 4.5 Drainage Features, Streams, and Other Potential "Waters of the U.S."

One (1) unnamed tributary to the White River (Tributary 1) was observed on-SITE (**Figure 7**). Tributary 1 enters the SITE at the northwest boundary, transects the western portion of the SITE from north to south and exits the SITE at the southwest boundary. The USGS topographic map identifies Tributary 1 as an intermittent stream which flows into the White River. Therefore, Tributary 1 is likely to be considered a jurisdictional "waters of the U.S." It is estimated that approximately 2,022 linear feet of Tributary 1 is located within the SITE boundary.

Wetland B was observed to be the wetland fringe of a pond constructed within the headwaters of Elliston Creek (Pond 1). Therefore, Pond 1 (as well as Wetlands A and B) would be considered to have an apparent hydrological connection to Elliston Creek and be a jurisdictional "waters of the U.S." regulated by the USACE and IDEM

#### 5.0 CONCLUSIONS

WCC performed a NRA and wetland delineation at the SITE located in the Gosport, Indiana USGS 7.5-Minute Quadrangle Map, Section 27, Township 10 North, and Range 1 West on January 3, 2012. The SITE is more specifically located southwest of the intersection of SR 46 and SR 43, Spencer, Owen County, Indiana. The SITE was approximately 97 acres in size and was observed to be comprised of a mixture of agricultural and forested land at the time of the inspection.

Based on review of publicly available and reasonably ascertainable federal, state, and local resources, and a SITE inspection, WCC identified two (2) wetlands (Wetlands A and B), one (1) constructed pond (Pond 1), and one (1) unnamed tributary (Tributary 1) within the SITE boundary. At the time of this report, the identified aquatic features had not been surveyed. Therefore, the wetland areas and length of tributary on-SITE were estimated. A summary of the identified aquatic features including anticipated jurisdiction is provided in the following table.

Aquatic Feature	Estimated Acres/ Length	Туре	Anticipated Jurisdiction	Anticipated Wetland Class	Anticipated Mitigation Ratio (if impacted)
Wetland A	0.19 ac	Forested	USACE/IDEM	Class II	4:1
Wetland B	1.17 ac	Forested	USACE/IDEM	Class II	4:1
Pond 1	1.75 ac	Open Water/ Constructed Pond	USACE/IDEM	Class I	1:1
Tributary 1	2,022 lf	Intermittent/ Perennial	USACE/IDEM	N/A	1:1

A Regional General Permit (RGP) and Water Quality Certification (WQC) will likely be required for impacts to Wetlands A and B, Pond 1, and Tributary 1 if proposed cumulative impacts are over 0.1 acre and below 1.0 acre or up to 150 linear feet (If) of stream. If anticipated impacts are 1.0 acre or greater or exceed 150 If of stream, then an Individual Permit (IP) may be necessary. Mitigation for impacts is required at a 1:1 ratio for drainage features and open water, 4:1 for forested wetlands, 3:1 for scrub/shrub wetlands, and 2:1 for emergent wetlands if verified as a USACE jurisdictional "waters of the U.S."

Correspondence from the USFWS and IDNR regarding the presence or absence of ETR species on the SITE had not yet been received at the time of this report. This information will be provided upon receipt from the respective agencies.

If proposed development activities will disturb one (1) or more acres of land, then a Rule 5 Stormwater Run-off Permit may be required.

If development activities are proposed to impact any of the aquatic features identified in this report, WCC recommends that the final report, including survey of Wetlands A and B, and associated figures be submitted to the USACE for Jurisdictional Determination. A summary of the anticipated permitting process would be as follows:

- 1. Obtainment of USACE Jurisdictional Determination (JD)
- 2. Qualitative assessment of wetlands to be impacted
- 3. Pre-application coordination meeting with the USACE and IDEM
- 4. Preparation and submittal of Section 404 Permit for the USACE and Section 401 WQC for the IDEM
- 5. Public notice by the IDEM, issued to adjacent landowners and other interested parties
- 6. Final review of the application materials and authorization

Mitigation for proposed wetland impacts is required to occur within the same 8-digit hydrologic unit code (HUC). The SITE is located in the Lower White 8-digit HUC, which includes portions of Brown, Monroe, Owen, Greene, Daviess, Martin, Pike, Knox, Sullivan and Gibson Counties<sup>6</sup>.

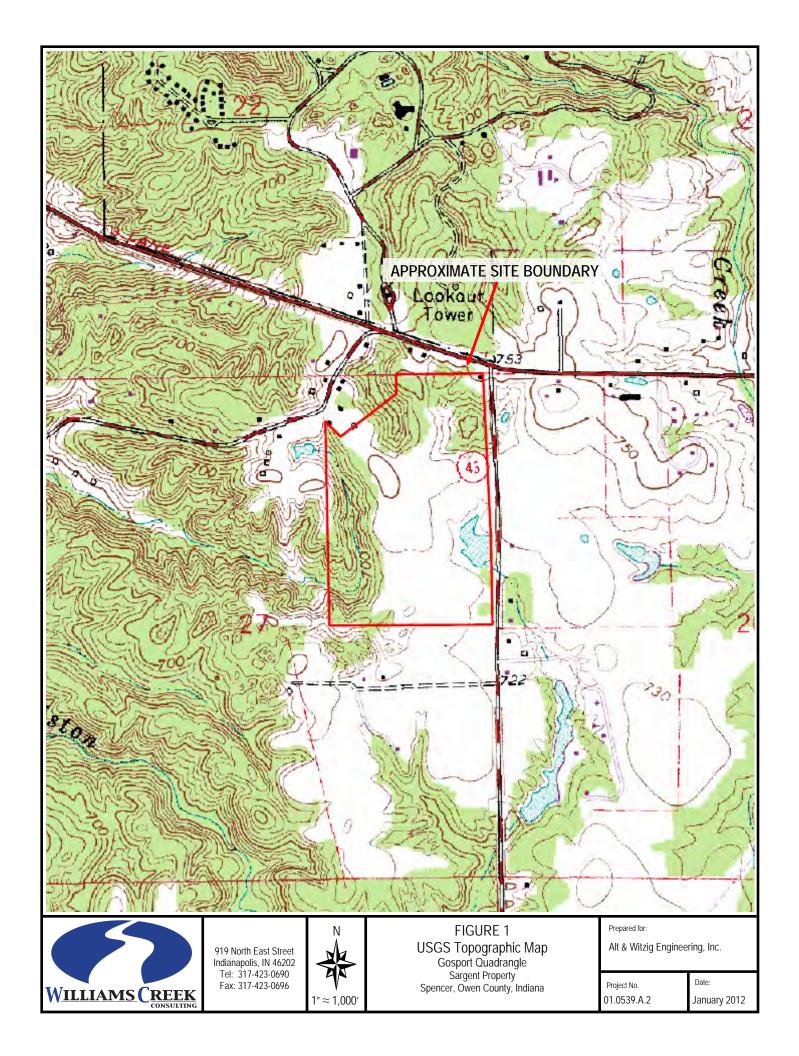
Reduction of the impacts and required mitigation could be implemented through avoidance and/or minimization. Avoidance may be accomplished through rerouting the proposed road or use of a bridge span over the wetland areas. An additional alternative may be incorporation of the wetlands into the design to be used as part of the storm water conveyance and storage system. However, identified wetlands cannot be used for treatment of storm water (i.e. storm water must enter a pretreatment best management practice prior to discharge of waters into the wetland).

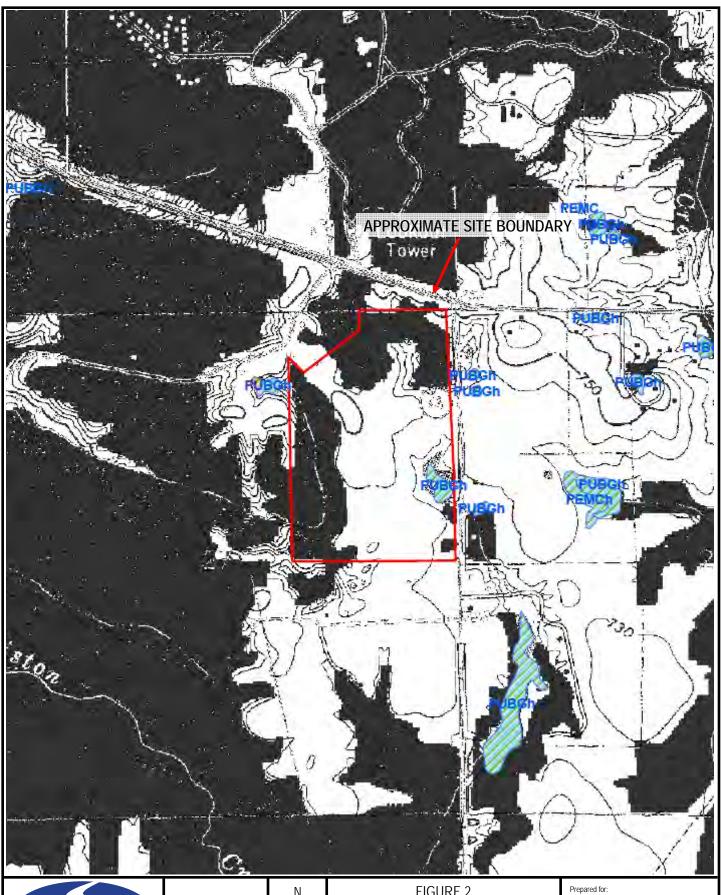
The timeframe for review and authorization by the USACE and IDEM is estimated to take between three (3) to six (6) months.

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<sup>&</sup>lt;sup>6</sup> Indiana State Department of Agriculture, http://www.in.gov/isda/2348.htm

# Figures









## FIGURE 2 National Wetland Inventory Map

Gosport Quadrangle Sargent Property Spencer, Owen County, Indiana Alt & Witzig Engineering, Inc.

Project No. 01.0539.A.2

Date:

#### SYSTEM P-PALUSTRINE CLASS RB-ROCK **UB-UNCONSOLIDATED** AB-AQUATIC BED US-UNCONSOLIDATED ML-MOSS-EM-EMERGENT SS-SCRUB-SHRUB FO-FORESTED OW-OPEN WATER/ **BOTTOM** BOTTOM SHORE LICHEN UNKNOWN BOTTOM Subclass 1 Bedrock 1 Cobble-Gravel 1 Algal 1 Cobble-Gravel 1 Moss 1 Persistent 1 Broad-Leaved 1 Broad-Leaved 2 Rubble 2 Sand 2 Aquatic Moss 2 Sand 2 Lichen 2 Nonpersistent Deciduous Deciduous 3 Mud 3 Rooted Vascular 3 Mud 2 Needle-Leaved 2 Needle -Leaved 4 Floating Vascular 4 Organic 4 Organic Deciduous Deciduous 5 Unknown 5 Vegetated 3 Broad-Leaved 3 Broad-Leaved Submergent Evergreen Evergreen 6 Unknown Surface 4 Needle-Leaved 4 Needle-Leaved Evergreen Evergreen 5 Dead 5 Dead 6 Deciduous 6 Deciduous 7 Evergreen 7 Evergreen

#### **MODIFIERS**

In order to more adequately describe wetland and deepwater habitats one or more of the water regime, water chemistry, soil, or special modifiers may be applied at the class or lower level in the hierarchy. The farmed modifier may also be applied to the ecological system.

WATER REGIME				WATER CHE	MISTRY		SOIL	SPECIAL MODIFIERS
Non-Tidal Tidal				Coastal Halinity	Inland Salinity	pH Modifiers for All Fresh Water		
A Temporarily Flooded B Saturated C Seasonally Flooded D Seasonally Flooded/ Well Drained E Seasonally Flooded/ Saturated F Semipermanently Flooded	H Permanently Flooded J Intermittently Flooded L Artificially Flooded W Intermittently Flooded/Temporary Y Saturated/Semipermanen Seasonal Z Intermittently Exposed/ Permanent	K Artificially Flooded L Subtidal M Irregularly Exposed N Regularly Flooded P Irregularly Flooded	*S Temporary-Tidal *R Seasonal-Tidal *T Semipermanent-Tidal V Permanent-Tidal U <i>Unknown</i>	Hyperhaline     Euhaline     Mixohaline ( <i>Brackish</i> )     Polyhaline     Mesohaline     Mesohaline     Oligohaline     Fresh	7 Hypersaline 8 Eusaline 9 Mixosaline 0 Fresh	a Acid t Circumneutral i Alkaline	g Organic n Mineral	b Beaver d <i>Partially Drained/Ditched</i> f Farmed h Diked/Impounded r Artificial Substrate s Spoil x Excavated
G Intermittently Exposed	U Unknown	*These water regimes a used in tidally influen	are only ced, freshwater systems.					

NOTE: Italicized items were added for mapping by National Wetlands Inventory program.



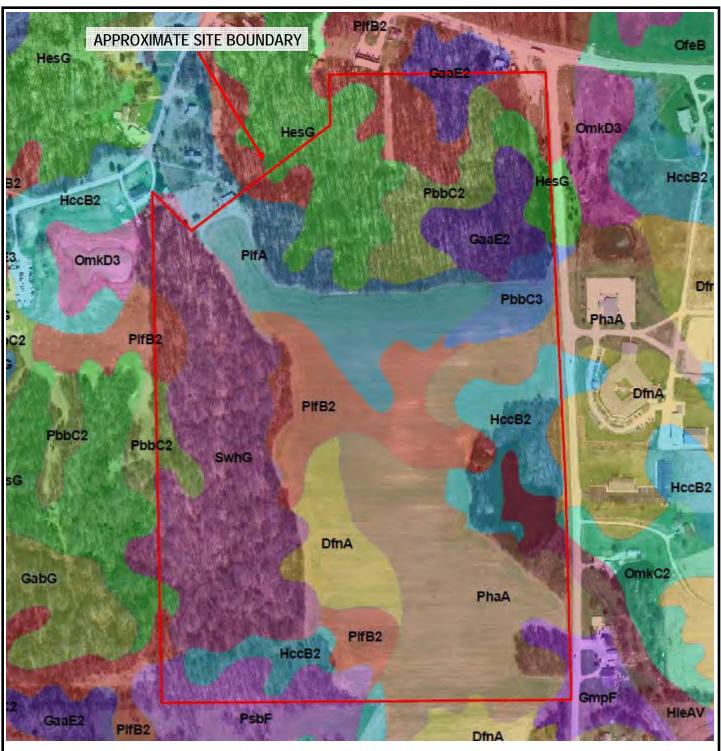
Babeca Building 919 North East Street Indianapolis, Indiana 46202 Tel: 317-423-0690 Fax: 317-423-0696

#### FIGURE 3 KEY TO NATIONAL WETLANDS INVENTORY MAP **Palustrine**

Sargent Property Owen County, Indiana Prepared for:

Alt & Witzig Engineering, Inc.

Project No. 01.0539.A.2



DfnA Dubois silt loam, 0 to 2 percent slopes
GaaE2 Gallimore loam, 18 to 25 percent slopes, eroded
GmpF Greybrook silt loam, 25 to 35 percent slopes
HccB2 Haubstadt silt loam, 2 to 6 percent slopes, eroded
HesG Hickory -Chetwynd loams, 35 to 70 percent slopes
HleAV Holton silt loam, 0 to 2 percent slopes, frequently
flooded, very brief duration

PbbC2 Parke silt loam, 6 to 12 percent slopes, eroded PbbC3 Parke silt loam, 6 to 12 percent slopes, severely eroded

PhaA Peoga silt loam, 0 to 1 percent slopes
PlfB2 Pike silt loam, 2 to 6 percent slopes
PsbF Pottersville silt loam, karst, steep

SwhG Stubenville-Hickory complex, 35 to 70 percent slopes



919 North East Street Indianapolis, IN 46202 Tel: 317-423-0690 Fax: 317-423-0696



FIGURE 4

NRCS Soil Survey of Monroe County

NRCS WebSoil Survey

Sargent Property

Spencer, Owen County, Indiana

Prepared for:

Alt & Witzig Engineering, Inc.

Project No. 01.0539.A.2







FIGURE 5
2008 Aerial Photo
NRCS Geospatial Data Gateway
Sargent Property
Spencer, Owen County, Indiana

Prepared for:

Alt & Witzig Engineering, Inc.

Project No. 01.0539.A.2

Date:

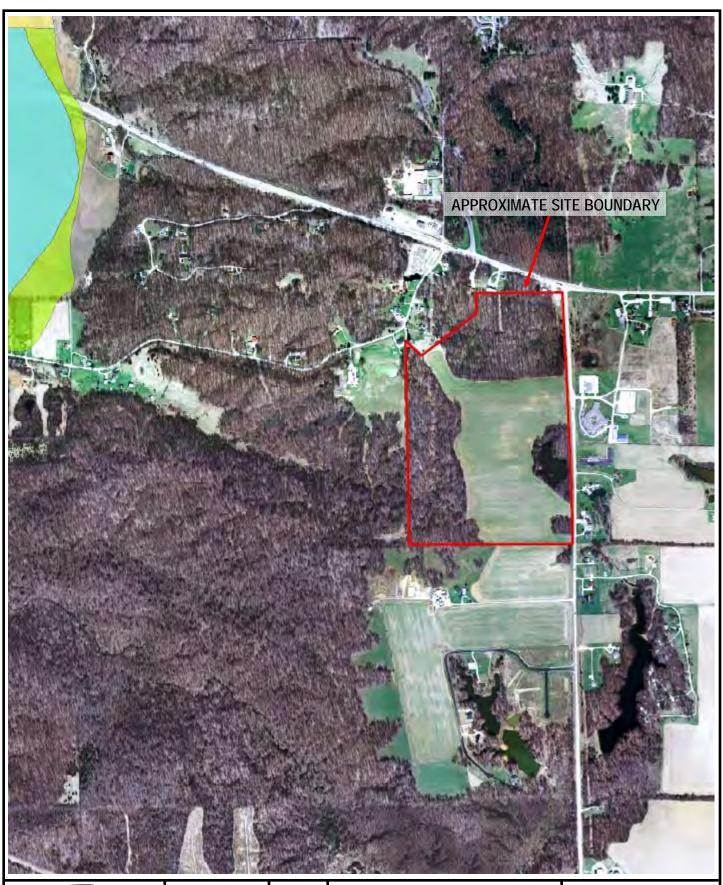




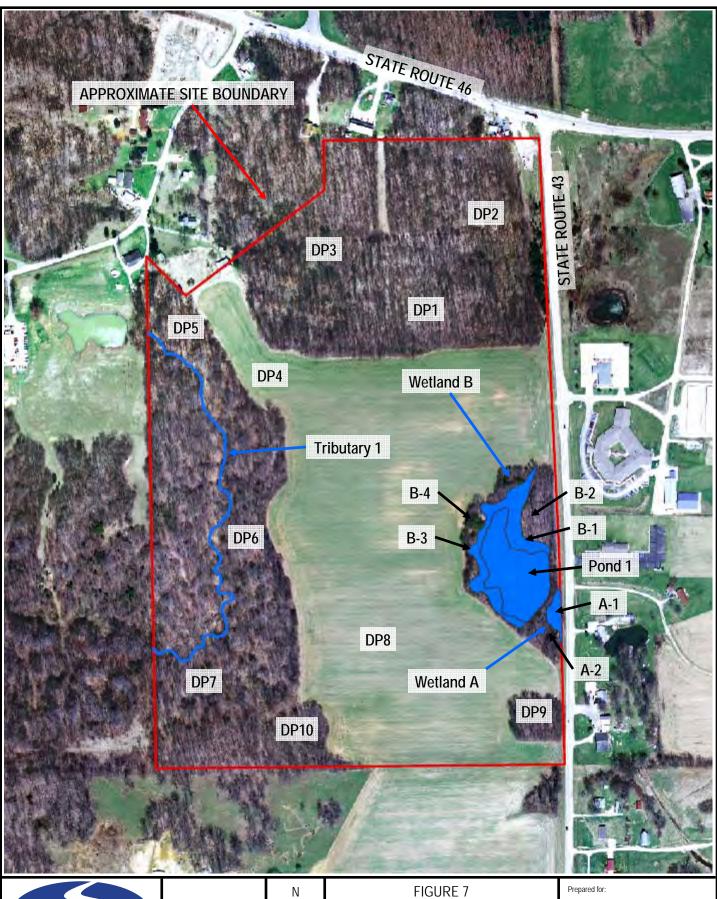


FIGURE 6 FEMA Flood Insurance Rate Map Indiana GIS Atlas Spencer Property Spencer, Owen County, Indiana

Prepared for:

Alt & Witzig Engineering, Inc.

Project No. 01.0539.A.2







Approximate Wetland Locations
NRCS Geospatial Data Gateway
Sargent Property
Spencer, Owen County, Indiana

Alt & Witzig Engineering, Inc.

Project No. 01.0539.A.2

## Appendix A

ETR Species Correspondence & County Species List



### **Indiana County Endangered, Threatened and Rare Species List**

County: Owen

Species Name		Common Name	FED	STATE	GRANK	SRANK
<b>Diplopoda</b> Conotyla bollmani		Bollman's Cave Milliped		WL	G5	S4
Crustacean: Malacostraca Orconectes inermis testii		Troglobitic Crayfish		SR	G5T3	S3
Mollusk: Bivalvia (Mussels)						
Cyprogenia stegaria		Eastern Fanshell Pearlymussel	LE	SE	G1Q	S1
Epioblasma torulosa torulosa		Tubercled Blossom	LE	SE	G2TX	SX
usconaia subrotunda		Longsolid		SE	G3	SX
Obovaria subrotunda		Round Hickorynut		SSC	G4	S1
Pleurobema clava		Clubshell	LE	SE	G2	S1
Pleurobema rubrum		Pyramid Pigtoe		SE	G2G3	SX
Potamilus capax		Fat Pocketbook	LE	SE	G1G2	S1
Ptychobranchus fasciolaris		Kidneyshell		SSC	G4G5	S2
Quadrula cylindrica cylindrica		Rabbitsfoot	C	SE	G3G4T3	S1
/illosa lienosa		Little Spectaclecase		SSC	G5	S3
nsect: Coleoptera (Beetles) Pseudanophthalmus shilohensis mayfielde	ensis	Monroe cave ground beetle		SE	G1G2T1T2	S1S2
insect: Odonata (Dragonflies & Damselflies) Hagenius brevistylus		Dragonhunter		SR	G5	S2S3
Stylogomphus sigmastylus		Dragonnunter Least Clubtail		SE	G5	S1
achopteryx thoreyi				SE SR	G3 G4	S2S3
		Gray Petaltail		SK	O4	3233
Amphibian Hemidactylium scutatum		Four-toed Salamander		SE	G5	S2
Rana areolata circulosa					G3 G4T4	S2 S2
Scaphiopus holbrookii		Northern Crawfish Frog		SE SSC	G414 G5	S2 S2
		Eastern Spadefoot		SSC	03	32
Reptile Crotalus horridus		T' 1 D 41 1		CE	G4	S2
		Timber Rattlesnake		SE		
iochlorophis vernalis		Smooth Green Snake		SE	G5	S2
Bird					0.5	COD
Accipiter striatus		Sharp-shinned Hawk	No Status	SSC	G5	S2B
Dendroica cerulea		Cerulean Warbler		SE	G4	S3B
Haliaeetus leucocephalus		Bald Eagle	LT,PDL	SE	G5	S2
anius ludovicianus		Loggerhead Shrike	No Status	SE	G4	S3B
Mammal			NT 0	000	C.F.	01
Lynx rufus		Bobcat	No Status	SSC	G5	S1
Myotis sodalis		Indiana Bat or Social Myotis	LE	SE	G2	S1
axidea taxus		American Badger		SSC	G5	S2
Vascular Plant Asplenium montanum		Mountain Spleenwort		SE	G5	S1
Indiana Natural Heritage Data Center Division of Nature Preserves Indiana Department of Natural Resources This data is not the result of comprehensive county surveys.	Fed: State: GRANK:	LE = Endangered; LT = Threatened; C = candid SE = state endangered; ST = state threatened; SF SX = state extirpated; SG = state significant; WI Global Heritage Rank: G1 = critically imperiled globally; G4 = widespread and abundant globall globally; G? = unranked; GX = extinct; Q = unc State Heritage Rank: S1 = critically imperiled in	R = state rare; SSC = L = watch list globally; G2 = impe y but with long term certain rank; T = taxo	state species riled globall concerns; G	s of special concern; y; G3 = rare or uncc 5 = widespread and nit rank	ommon abundant
	SIANK:	G4 = widespread and abundant in state but with state; SX = state extirpated; B = breeding status; unranked	long term concern; S	SG = state sig	gnificant; SH = histo	orical in

unranked

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#### **Indiana County Endangered, Threatened and Rare Species List**

County: Owen

Species Name	Common Name	FED	STATE	GRANK	SRANK
Carex atlantica ssp. atlantica	Atlantic Sedge		ST	G5T4	S2
Carex decomposita	Cypress-knee Sedge		ST	G3	S2
Chelone obliqua var. speciosa	Rose Turtlehead		WL	G4T3	S3
Didiplis diandra	Water-purslane		SE	G5	S2
Erysimum capitatum	Prairie-rocket Wallflower		ST	G5	S2
Glyceria acutiflora	Sharp-scaled Manna-grass		SE	G5	S1
Hydrastis canadensis	Golden Seal		WL	G4	S3
Juglans cinerea	Butternut		WL	G4	S3
Lycopodium obscurum	Tree Clubmoss		SR	G5	S2
Matteuccia struthiopteris	Ostrich Fern		SR	G5	S2
Panax quinquefolius	American Ginseng		WL	G3G4	S3
Platanthera psycodes	Small Purple-fringe Orchis		SR	G5	S2
Poa alsodes	Grove Meadow Grass		SR	G4G5	S2
Poa paludigena	Bog Bluegrass		WL	G3	S3
Poa wolfii	Wolf Bluegrass		SR	G4	S2
High Quality Natural Community					
Forest - floodplain mesic	Mesic Floodplain Forest		SG	G3?	S1
Forest - floodplain wet-mesic	Wet-mesic Floodplain Forest		SG	G3?	S3
Forest - upland dry-mesic	Dry-mesic Upland Forest		SG	G4	S4
Forest - upland mesic	Mesic Upland Forest		SG	G3?	S3
Primary - cliff sandstone	Sandstone Cliff		SG	GU	S3
Wetland - seep acid	Acid Seep		SG	GU	S1
Wetland - seep circumneutral	Circumneutral Seep		SG	GU	S1
Wetland - swamp shrub	Shrub Swamp		SG	GU	S2
Other Geomorphic - Nonglacial Erosional Feature - Water Fall and Cascade	Water Fall and Cascade			GNR	SNR

Indiana Natural Heritage Data Center
Division of Nature Preserves
Indiana Department of Natural Resources
This data is not the result of comprehensive county surveys.

Fed: LE = Endangered; LT = Threatened; C = candidate; PDL = proposed for delisting

SE = state endangered; ST = state threatened; SR = state rare; SSC = state species of special concern;

 $SX = state \ extirpated; \ SG = state \ significant; \ WL = watch \ list$ 

 $GRANK: \quad Global \ Heritage \ Rank: \ G1 = critically \ imperiled \ globally; \ G2 = imperiled \ globally; \ G3 = rare \ or \ uncommon$ 

globally; G4 = widespread and abundant globally but with long term concerns; G5 = widespread and abundant globally; G? = unranked; GX = extinct; Q = uncertain rank; T = taxonomic subunit rank

SRANK: State Heritage Rank: S1 = critically imperiled in state; S2 = imperiled in state; S3 = rare or uncommon in state; G4 = widespread and abundant in state but with long term concern; SG = state significant; SH = historical in state; SX = state extirpated; B = breeding status; S? = unranked; SNR = unranked; SNA = nonbreeding status

unranked

State:

## Appendix B

## **SITE Photographs**

Photo 1. Wetland A Facing northwest



Photo 2. Wetland B Facing northeast



Photo 3. Constructed Pond with wetland fringe Facing east



Photo 4. Dam of constructed pond Facing northeast



Photo 5. Typical agricultural upland Facing east



Photo 6. Typical forested upland Facing west



Photo 7. Tributary 1 Facing west



Photo 8. Typical karst sinkhole Facing west



## **Appendix C**

Wetland Data Forms

Client:	Site:	Sargent Property	City/County:	Spenc	er/Owen	Date:	1/4/2012 Data Point: A-1
Slope (%): 0   Nor.   4347669   Eas.   523708   Datum: 16NAD83   NWI Class:   PFO1A	Client:	Alt & Witzig	State: IN	Section, To	wnship, Range	e:	10N 3W Section 27
Soil Map Unit Name: Ross silt Ioam Climatichydrologic conditions typical for time of year? Y/N Y Vegetation Soil or Hydrology alignificantly disturbed naturally problematic Are Normal Circumstances Present? Yes X No Are Normal Circumstances Present? Yes X No Bummary OF FINDINGS  Hydrophytic Vegetation Present? Yes X No Hydrofosid Present? Yes X No Wetland Hydrology Present? Yes X No Wetland Hydrology Present? Yes X No Wetland Hydrology Present? Yes X No Bummarks:  VEGETATION  Tree Stratum Plot size: Cover Species Indicator Status 1. Ulfunus americana 30 Y FACW 2 Cuercus palustris 20 Y FACW 2 Cuercus bicolor 15 N FACW 2 that are OBL, FACW, or FAC: 3  4. Should Stratum Plot size: Total Cover Species across all strata: 3  Fercent of dominant species Shrub Stratum Plot size: Total Cover Species across all strata: 3  Fercent of dominant species that are OBL, FACW, or FAC: 100.00  Prevalence Index Worksheet Total % cover or:  1. Aster simplex 20 Y FACW 2 FACW 20 Prevalence Index Worksheet Total % cover or:  1. Aster simplex 20 Y FACW 20 Prevalence Index Stratum Plot size: Total Cover FACW species 5 X 1 0  Herb Stratum Plot size: Total Cover FACW prevalence Index: 2  FACW prevalence Index Worksheet Total % cover or:  1. Aster simplex 20 Y FACW 2 Prevalence Index: 2  FACW species 5 X 1 0  Herb Stratum Plot size: Dominance Test Borksheet Total % cover or:  1. Aster simplex 20 Y FACW 2 Prevalence Index: 2  Hydrophytic Vegetation Indicators: 2  Hydrophytic Vegetation Present; Present; unless disturbed or problematic Hydrophytic Vegetation Present; unless disturbed or problematic Hydrophytic Vegetation Present; Present; unless disturbed or problematic Hydrophytic Vegetation Present; Present; unless disturbed or problematic Hydrophytic Vegetation Present; Present Research Present; Present, unless disturbed or problematic Hydrophytic Vegetation Present; Present Research Present; Present Research Present Research Present; P		Investigator(s):			J. Stecke	el	
Climatic/hydrologic conditions typical for time of year? Y.N. Y Vegetation Soil or Hydrology anaturally problematic  Are Normal Circumstances Present? Yes X No  SUMMARY OF FINDINGS  Hydrophytic Vegetation Present? Yes X No Is the DP within a Wetland?  Hydrophytic Vegetation Present? Yes X No Is the DP within a Wetland?  Wetland Hydrology Present? Yes X No Is the DP within a Wetland?  Yes X No  Remarks:  VEGETATION  Absolute % Dominant Plot size: Cover Species Indicator Status 1. Ulmus americana 30 Y FACW 2 Number of dominant species 1. Ulmus americana 30 Y FACW 2 Number of dominant species 1. Ulmus americana 30 Y FACW 2 Number of dominant species 1. Ulmus americana 30 Y FACW 2 Number of dominant species 1. Ulmus americana 30 Percent of dominant species 1. Alter and DRI, FACW, or FAC: 3  4. Solute W Dominance Test Worksheet  5. Shrub Stratum Plot size: Office Shrub		Slope (%): 0 Nor.	4347669	Eas.	523708	Datum:	16NAD83 NWI Class: PFO1A
Vegetation	Soil M	ap Unit Name: Ross silt loam					
Vegetation   Soil   or Hydrology   naturally problematic	Clim		time of year?	Y/N Y			-
Vegetation   Soil   or Hydrology   naturally problematic		Vegetation, Soil _	or Hy	/drology	significantly	disturbe	d
SUMMARY OF FINDINGS			or Hy	/drology	naturally pro	blematio	
Hydrophytic Vegetation Present? Yes x No Hydric Soil Present? Yes x No Vetland Hydrology Present Potential Potential Hydrology Present Potential	Are No	ormal Circumstances Present?	Yes x	No	_		
Hydrophytic Vegetation Present? Yes x No Hydric Soil Present? Yes x No Vetland Hydrology Present Potential Potential Hydrology Present Potential							
Hydrophytic Vegetation Present? Yes x No Hydric Soil Present? Yes x No Vetland Hydrology Present Potential Potential Hydrology Present Potential	CHMM	AARY OF FINDINGS					
Hydric Soil Present? Yes   x No	SUIVIIV		Vac y	No			
Wetland Hydrology Present? Yes   x No   Ye					_	le the F	NP within a Wetland?
Number of dominant species across all strata: 3   Percent of dominant species across all strata: 3   Perce		•			_		
VEGETATION           Tree Stratum         Plot size:         Cover Species Species         Indicator Status         Dominance Test Worksheet           1. Ulmus americana         30 Y FACW 2         Number of dominant species           3. Quercus palustris         20 Y FACW 2         Number of dominant species           4.         15 N FACW 2         Total number of dominant species that are OBL, FACW, or FAC: 3         3           4.         5.         Percent of dominant species that are OBL, FACW, or FAC: 100.00         100.00           1.         Prevalence Index Worksheet         Total % cover of: 0BL species 0 x 1         100.00           2.         3.         Shrub Stratum Plot size: 0 X 5         Total Cover 0 X 1         Dominance Test Worksheet           3.         4.         Percent of dominant species that are OBL, FACW, or FAC: 3         100.00           4.         Prevalence Index Worksheet         Total Cover 0 X 2         Dominance Test Section 100.00           4.         Prevalence Index Worksheet         Total Section X 5         170           5.         Total Cover 0 X 2         Prevalence Index Worksheet         170           6.         Total Cover 0 X 3         10         Prevalence Index X 5         170           FACW species 0 X 5 0 X 5         0 X 1         0         0	Roma	, ,,	Yes x	No		res	X NO
Tree Stratum	Rema	iks:					
Tree Stratum							
Tree Stratum	VEGE	TATION					
Tree Stratum			Absolute %	Dominant			
1. Ulmus americana         30         Y         FACW         2         Dominance Test Worksheet           2. Quercus palustris         20         Y         FACW         2         Number of dominant species that are OBL, FACW, or FAC:         3           4.         5         Total Cover         Total number of dominant species across all strata:         3           Shrub Stratum         Plot size:         Prevalence Index Worksheet         1           1.         Prevalence Index Worksheet         100.00           2.         Total % cover of:         OBL species         0 x 1         0           3.         FACW species         0 x 1         0         0           4.         FACW species         0 x 3         0         0           5.         Total Cover         FACW species         0 x 5         0           4.         FACW species         0 x 5         0         0           5.         Total Cover         FACW species         0 x 5         0           4.         FACW species         0 x 5         0         0           5.         Total Cover         Prevalence Index:         2           4.         Total Stratum         Provalence Index:         2           4.<	Tree S	Stratum Plot size:				Status	
2. Quercus palustris       20       Y       FACW       2       Number of dominant species that are OBL, FACW, or FAC: 3       3         4							Dominance Test Worksheet
3.							
Total number of dominant species across all strata: 3							•
Shrub Stratum		Querous bicolor					
Description   Plot size:   Shrub Stratum   Plot size:   100.00				. —	_		
Shrub Stratum       Plot size:       that are OBL, FACW, or FAC: 100.00         1.       Prevalence Index Worksheet         7 Total % cover of:       Total % cover of:         3.       OBL species 0 x 1 0         4.       FACW species 0 x 2 170         5.       FAC species 0 x 4 0         Herb Stratum       Plot size:         1. Aster simplex       20 Y FACW 2 Total 85 170         2.       Prevalence Index: 2         4.       Hydrophytic Vegetation Indicators: 2         4.       Dominance Test is >50%         5.       Prevalence Index: 523.0*         6.       Morphological Adaptations*         7.       Problematic Hydrophytic Vegetation*         8.       Problematic Hydrophytic Vegetation*         Woody Vine Stratum       Plot size: 1.         1.       Problematic Hydrophytic Vegetation Present?	٥.		65	Total Cover	_		
Prevalence Index Worksheet         2.       3.       Cover of:       Cover	Shrub	Stratum Plot size:		Total Cover			· ·
2.       Total % cover of:         3.       OBL species       0 x 1       0         5.       FACW species       0 x 3       0         FAC species       0 x 4       0         Herb Stratum       Plot size:       FACW species       0 x 4       0         1. Aster simplex       20       Y       FACW 2       Total 85       170         2.       Total 85       170       Prevalence Index:       2         3.       Hydrophytic Vegetation Indicators:       Dominance Test is >50%       Prevalence Index is ≤3.0*         6.       Dominance Test is >50%       Prevalence Index is ≤3.0*       Problematic Hydrophytic Vegetation*         8.       Problematic Hydrophytic Vegetation*       *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic         1.       Total Cover       Hydrophytic Vegetaion Present?		Ottatum 1 lot size.					
3.       4.       FACW species       0 x 1 00       0         5.       FACW species       0 x 3 00       0         FAC species       0 x 4 00       0       0       0 x 5 00       0         1. Aster simplex       20 Y FACW 2 Total 85 170        0       0       0       0       0       0       0       0       0       0       0       0       0       0       0        0							
4.       5.       FACW species       85 x 2 170         5.       FAC species       0 x 3 0         FACU species       0 x 4 0       0         UPL species       0 x 5 0       0         1. Aster simplex       20 Y FACW 2 Total 85 170       Prevalence Index: 2         3.       Hydrophytic Vegetation Indicators: Dominance Test is >50%       Prevalence Index is ≤3.0*         5.       Prevalence Index is ≤3.0*       Morphological Adaptations*         7.       Morphological Adaptations*       Problematic Hydrophytic Vegetation*         8.       20 Total Cover       *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic         Woody Vine Stratum       Plot size:					_		
FAC species         0         x 3         0           Herb Stratum         Plot size:         1. Aster simplex         20         Y         FACW 2         Total Prevalence Index:         2         2         Total Representation Indicators:         2         1         Prevalence Index:         2         2         4         4         1         2         1         1         1         1         2         1         1         2         1         1         2         1         2         1         2         1         2         1         2         1         2         2         2         2         2         2         2         3         3         3         3         3         3         3         3         3         3         3         3         3         3         3         3         3         3							
Herb Stratum							
Herb Stratum         Plot size:         20         Y         FACW         2         Total         85         170           2.         3.         Hydrophytic Vegetation Indicators:         2           4.         5.         Prevalence Index is ≤50%         5           6.         Prevalence Index is ≤3.0°         Morphological Adaptations*           7.         Problematic Hydrophytic Vegetation*           8.         20         Total Cover           Woody Vine Stratum         Plot size:         "Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic           1.         0         Total Cover         Hydrophytic Vegetation Present?	٥.			Total Cover			
1. Aster simplex       20       Y       FACW       2       Total       85       170         2.       3.       Hydrophytic Vegetation Indicators:       2         4.       Dominance Test is >50%       50%       50%       50%       60%       70	Uarh (	Stratum Blot aiza:		Total Cover			·
2.       Prevalence Index: 2         3.       Hydrophytic Vegetation Indicators:         4.       Dominance Test is >50%         5.       Prevalence Index is ≤3.0*         6.       Morphological Adaptations*         7.       Problematic Hydrophytic Vegetation*         8.       20         Total Cover       *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic         1.       Total Cover         4.       Hydrophytic Vegetation Present?			20	V	E4C)4/	2	·
3. Hydrophytic Vegetation Indicators:  4. Dominance Test is >50%  5. Prevalence Index is ≤3.0*  6. Morphological Adaptations*  7. Problematic Hydrophytic Vegetation*  8. Problematic Hydrophytic Vegetation*  1. 20 Total Cover *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  1. Hydrophytic Vegetation Present?		Aster simplex		·	FACVV	2	
4. Dominance Test is >50%  5. Prevalence Index is ≤3.0*  Morphological Adaptations*  7. Problematic Hydrophytic Vegetation*  8. Problematic Hydrophytic Vegetation*  *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  1. O Total Cover Hydrophytic Vegetaion Present?							
5. Prevalence Index is ≤3.0* 6. Morphological Adaptations* 7. Problematic Hydrophytic Vegetation* 8. Problematic Hydrophytic Vegetation*  20 Total Cover *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  1. O Total Cover Hydrophytic Vegetation Present?	-						
6. Morphological Adaptations* 7. Problematic Hydrophytic Vegetation* 8.							
7. Problematic Hydrophytic Vegetation*  8. 20 Total Cover *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  1. 0 Total Cover *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  1. Hydrophytic Vegetation*  *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  1. Hydrophytic Vegetation*							<del></del>
8							
20   Total Cover   *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic   1.							Problematic Hydrophytic Vegetation*
Woody Vine Stratum  1. 2.  1 Total Cover  hydrology must be present, unless disturbed or problematic  Hydrophytic Vegetaion Present?	8.						
1 or problematic 2 0 Total Cover Hydrophytic Vegetaion Present?				Total Cover			
2. 0 Total Cover Hydrophytic Vegetaion Present?		Vine Stratum Plot size:					, ,
0 Total Cover Hydrophytic Vegetaion Present?							or problematic
, , , ,	2.						
Remarks:         Yes No			0	Total Cover			Hydrophytic Vegetaion Present?
	ı	Remarks:					Yes <u>x</u> No

Depth	•	ribe to de	ptn ne	eded to	aocum			r confirm a	bsence of indicators	.)
<u> </u>	Matrix	_	_	1	· .	Redox F				
_ `	olor %		olor	%	Type*	Loc**	Text		Remarks	
0-18 10YI	R 5/1 100	)					silt lo	am		
		-								
*Type: C=Concentra	tion. D=Dep	etion. RM	l=Redu	ced Matr	ix. CS=0	Coated San	d grains	**Location	: PL=Pore Lining, M=I	Matrix
.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		ic Soil Inc			,	oodioa odii	a granic		ators for Problemation	
Histosol (A1)	,		T		Gleved N	Matrix (S4)			t Prairie Redox (A16)	
Histic Epipedon (A2	)		1		Redox (S	, ,		Iron-l	Manganese Masses (F	-12)
Black Histic (A3)	,		1	Stripped	d Matrix	(S6)		Othe		
Hydrogen Sulfide (A	4)			Loamy	Mucky N	/lineral (F1)		•		
Stratified Layers (A5	5)			Loamy	Gleyed	Matrix (F2)				
2 cm Muck (A10)				Deplete	d Matrix	(F3)				
Depleted Below Dar	•	11)	Х			rface (F6)				
Thick Dark Surface	· /					Surface (F7)	)			
Sandy Mucky Miner	` '		1	Redox I	Depress	ions (F8)				
5cm Mucky Peat or	Peat		╛							
Remarks: HYDROLOGY					1					
Vetland Hydrology Indica	ators:									
	ary Indicator	s (check a							condary Indicators	
x Surface Water (A1)				r Stained	Leaves					
High Water Table (A					(5.40)	s (B9)			il Cracks (B6)	
0 ( ( ( ( ( ( ( ( ( ( ( ( ( ( ( ( ( ( (	(2)			tic Fauna	, ,	,		Drainage P	atterns (B10)	
x Saturation (A3)	12)		True	Aquatic F	Plants (E	314)		Drainage P Dry-Seasor	atterns (B10) n Water Table (C2)	
Water Marks (B1)	,		True Hydro	Aquatic F ogen Sulf	Plants (E	314) or (C1)		Drainage P Dry-Seasor Crayfish Bu	atterns (B10)  n Water Table (C2)  nrows (C8)	any (CQ)
Water Marks (B1) Sediment Deposits (	,		True Hydro Oxidi	Aquatic F ogen Sulf zed Rhiz	Plants (E	314)		Drainage P Dry-Seasor Crayfish Bu Saturation	atterns (B10)  N Water Table (C2)  Irrows (C8)  Visible on Aerial Image	ery (C9)
Water Marks (B1) Sediment Deposits ( Drift Deposits (B3)	(B2)	x	True Hydro Oxidi Roots	Aquatic Fogen Sulf zed Rhiz (C3)	Plants (E fide Odd osphere	314) or (C1) es on Living		Drainage P Dry-Seasor Crayfish Bu Saturation \ Stunted or	atterns (B10)  N Water Table (C2)  Irrows (C8)  Visible on Aerial Image  Stressed Plants (D1)	ery (C9)
Water Marks (B1) Sediment Deposits ( Drift Deposits (B3) Algal Mat or Crust (I	(B2)	×	True Hydro Oxidi Roots Prese	Aquatic Fogen Sulfized Rhizes (C3) ence of R	Plants (Efide Oddoosphere	B14) or (C1) es on Living Iron (C4)	×	Drainage P Dry-Seasor Crayfish Bu Saturation S Stunted or S Geomorphi	atterns (B10)  Nater Table (C2)  Prows (C8)  Visible on Aerial Image  Stressed Plants (D1)  C Position (D2)	ery (C9)
Water Marks (B1) Sediment Deposits ( Drift Deposits (B3) Algal Mat or Crust (I Iron Deposits (B5)	(B2) 34)	x	True Hydro Oxidi Roots Prese	Aquatic Fogen Sulfized Rhizes (C3) ence of R	Plants (Efide Oddoosphere	314) or (C1) es on Living	x	Drainage P Dry-Seasor Crayfish Bu Saturation \ Stunted or	atterns (B10)  Nater Table (C2)  Prows (C8)  Visible on Aerial Image  Stressed Plants (D1)  C Position (D2)	ery (C9)
Water Marks (B1) Sediment Deposits ( Drift Deposits (B3) Algal Mat or Crust (I	(B2) 34)	X	True Hydro Oxidi Roots Prese Rece Soil (	Aquatic Fogen Sulfized Rhizes (C3) ence of R	Plants (E fide Odd osphere educed eduction	B14) or (C1) es on Living Iron (C4) or in Tilled	x	Drainage P Dry-Seasor Crayfish Bu Saturation S Stunted or S Geomorphi	atterns (B10)  Nater Table (C2)  Prows (C8)  Visible on Aerial Image  Stressed Plants (D1)  C Position (D2)	ery (C9)
Water Marks (B1) Sediment Deposits (B3) Drift Deposits (B3) Algal Mat or Crust (I Iron Deposits (B5) Inundation Visible or	(B2) 34) n Aerial	x	True Hydro Oxidi Roots Prese Rece Soil (	Aquatic Fogen Sulfaced Rhizes (C3) ence of Rent Iron R	Plants (E fide Odd osphere educed eduction	314) or (C1) es on Living Iron (C4) n in Tilled	X	Drainage P Dry-Seasor Crayfish Bu Saturation S Stunted or S Geomorphi	atterns (B10)  Nater Table (C2)  Prows (C8)  Visible on Aerial Image  Stressed Plants (D1)  C Position (D2)	ery (C9)
Water Marks (B1) Sediment Deposits (B3) Drift Deposits (B3) Algal Mat or Crust (I Iron Deposits (B5) Inundation Visible of Imagery (B7)	(B2) 34) n Aerial	x	True Hydro Oxidi Roots Prese Rece Soil (	Aquatic Fogen Sulfaced Rhizes (C3) For ence of Roman R	Plants (E fide Odd osphere educed eduction	314) or (C1) es on Living Iron (C4) n in Tilled	x	Drainage P Dry-Seasor Crayfish Bu Saturation S Stunted or S Geomorphi	atterns (B10)  Nater Table (C2)  Prows (C8)  Visible on Aerial Image  Stressed Plants (D1)  C Position (D2)	ery (C9)
Water Marks (B1) Sediment Deposits (B3) Drift Deposits (B3) Algal Mat or Crust (I Iron Deposits (B5) Inundation Visible of Imagery (B7) Sparsely Vegetated Surface (B8)	(B2) 34) n Aerial	x	True Hydro Oxidi Roots Prese Rece Soil ( Thin	Aquatic Fogen Sulfaced Rhizes (C3) For ence of Roman R	Plants (E fide Odd osphere educed eduction	314) or (C1) es on Living Iron (C4) n in Tilled	x	Drainage P Dry-Seasor Crayfish Bu Saturation S Stunted or S Geomorphi	atterns (B10)  Nater Table (C2)  Prows (C8)  Visible on Aerial Image  Stressed Plants (D1)  C Position (D2)	ery (C9)
Water Marks (B1) Sediment Deposits (B3) Drift Deposits (B3) Algal Mat or Crust (E Iron Deposits (B5) Inundation Visible of Imagery (B7) Sparsely Vegetated Surface (B8)	(B2) 34) n Aerial Concave		True Hydro Oxidi Roots Prese Soil ( Thin Guag	Aquatic Fogen Sulfaced Rhizes (C3) For ence of Roman R	Plants (Efficiency Company) Pl	B14) or (C1) es on Living Iron (C4) on in Tilled 7)		Drainage P Dry-Seasor Crayfish Bu Saturation S Stunted or S Geomorphi	atterns (B10)  Nater Table (C2)  Prows (C8)  Visible on Aerial Image  Stressed Plants (D1)  C Position (D2)	ery (C9)
Water Marks (B1) Sediment Deposits (B3) Drift Deposits (B3) Algal Mat or Crust (I Iron Deposits (B5) Inundation Visible of Imagery (B7) Sparsely Vegetated Surface (B8) Steld Observations: Surface Water Present?	(B2) 34) n Aerial Concave	x	True Hydro Oxidi Roots Prese Rece Soil ( Thin Guag Other	Aquatic Fogen Sulfized Rhizs (C3) ence of R (T) Muck Sulfir (T) Muck Sulfir (T)	Plants (Efide Oddosphere educed eduction rface (CI Data (I	B14) or (C1) es on Living Iron (C4) n in Tilled 7) D9)	x 2	Drainage P Dry-Seasor Crayfish Bu Saturation S Stunted or S Geomorphi	atterns (B10)  Nater Table (C2)  Prows (C8)  Visible on Aerial Image  Stressed Plants (D1)  C Position (D2)	ery (C9)
Water Marks (B1) Sediment Deposits (B3) Drift Deposits (B3) Algal Mat or Crust (I Iron Deposits (B5) Inundation Visible of Imagery (B7) Sparsely Vegetated Surface (B8) Field Observations: Surface Water Present? Vater Table Present?	(B2)  34)  n Aerial  Concave  Yes Yes	x	True Hydro Oxidi Roots Press Rece Soil ( Thin Guag Other	Aquatic Fogen Sulfaced Rhizes (C3) For ence of Roman R	Plants (Efide Oddosphere educed eduction rface (CI Data (I	B14) or (C1) es on Living Iron (C4) n in Tilled 7) D9)	2	Drainage P Dry-Seasor Crayfish Bu Saturation S Stunted or S Geomorphi	atterns (B10)  Nater Table (C2)  Prows (C8)  Visible on Aerial Image  Stressed Plants (D1)  C Position (D2)	ery (C9)
Water Marks (B1) Sediment Deposits (B3) Drift Deposits (B3) Algal Mat or Crust (I Iron Deposits (B5) Inundation Visible of Imagery (B7) Sparsely Vegetated Surface (B8) Field Observations: Surface Water Present? Vater Table Present? Saturation Present?	(B2) B4) Concave Yes Yes Yes Yes	x	True Hydro Oxidi Roots Prese Soil ( Thin Guag Other	Aquatic Fogen Sulfized Rhizzed Rhizzes (C3) ence of Rnt Iron RC6) Muck Sulfie or Wel	Plants (Efide Oddosphere educed eductior face (CI Data (II Deptil Deptil Deptil	B14) or (C1) es on Living Iron (C4) in in Tilled 7) D9) in (inches) in (inches) in (inches)	2	Drainage P Dry-Seasor Crayfish Bu Saturation V Stunted or Geomorphi FAC-Neutra	atterns (B10)  n Water Table (C2)  strows (C8)  Visible on Aerial Image  Stressed Plants (D1)  c Position (D2)  al Test (D5)	ery (C9)
Water Marks (B1) Sediment Deposits (B3) Drift Deposits (B3) Algal Mat or Crust (I Iron Deposits (B5) Inundation Visible of Imagery (B7) Sparsely Vegetated Surface (B8) Field Observations: Surface Water Present?	(B2) B4) Concave Yes Yes Yes Yes	x	True Hydro Oxidi Roots Prese Soil ( Thin Guag Other	Aquatic Fogen Sulfized Rhizzed Rhizzes (C3) ence of Rnt Iron RC6) Muck Sulfie or Wel	Plants (Efide Oddosphere educed eductior face (CI Data (II Deptil Deptil Deptil	B14) or (C1) es on Living Iron (C4) in in Tilled 7) D9) in (inches) in (inches) in (inches)	2	Drainage P Dry-Seasor Crayfish Bu Saturation V Stunted or Geomorphi FAC-Neutra	atterns (B10)  n Water Table (C2)  strows (C8)  Visible on Aerial Image  Stressed Plants (D1)  c Position (D2)  al Test (D5)	ery (C9)

Site:	Sargent Property	City/County:	Spend	cer/Owen Date:	1/4/2012 Data Point: A-2
Client:	Alt & Witzig	State: IN	Section, To	wnship, Range:	10N 3W Section 27
	Investigator(s):	_		J. Steckel	
	Slope (%): 0 Nor.	4347669	Eas.	523708 Datum:	: 16NAD83 NWI Class:
	ap Unit Name: Ross silt loam				
Clim	atic/hydrologic conditions typical for	•		,	
	Vegetation, Soil		/drology	significantly disturbe	
	Vegetation , Soil		/drology	naturally problemation	С
Are No	ormal Circumstances Present?	Yes x	No	_	
SUMN	MARY OF FINDINGS				
	Hydrophytic Vegetation Present?	Yes x	No	_	
	Hydric Soil Present?	Yes	No x	Is the	DP within a Wetland?
	Wetland Hydrology Present?	Yes	No x	Yes	No x
Rema	rks:				
VEGE	TATION				
		Absolute %	Dominant		7
Tree S	Stratum_ Plot size:	Cover	Species	Indicator Status	
1.	Quercus palustris	35	Y	FACW 2	Dominance Test Worksheet
2.	Acer rubrum	20	· · · · · · · · · · · · · · · · · · ·	FAC 3	Number of dominant species
3.	71001 Tubi um		· ———		that are OBL, FACW, or FAC: 2
4.		-		_	Total number of dominant
5.		-	. ———		species across all strata: 3
٥.		55	Total Cover		Percent of dominant species
Shrub	Stratum Plot size:		Total Gover		that are OBL, FACW, or FAC: 66.67
1.	Rosa multiflora	40	Υ	FACU 4	Prevalence Index Worksheet
2.	Nosa malanora		· ———	17.00 4	Total % cover of:
3.					OBL species 0 x 1 0
4.				_	FACW species 40 x 2 80
5.				_	FAC species 20 x 3 60
٥.		40	Total Cover	_	FACU species 40 x 4 160
Harh 9	Stratum Plot size:	40	- Total Gover		UPL species 0 x 5 0
1.	Aster simplex	5	N	FACW 2	Total 100 300
2.	Actor simplex				Prevalence Index: 3
3.		-	. ———		Hydrophytic Vegetation Indicators:
4.	<u> </u>	-			Dominance Test is >50%
5.	<u> </u>	-			x Prevalence Index is ≤3.0*
6.				_	Morphological Adaptations*
7.				_	Problematic Hydrophytic Vegetation*
8.					1 Tobiematic Hydrophytic vegetation
o.		5	Total Cover	_	*Indicators of budgio onli and westers
Woods	v Vine Stratum Plot size		- I Olai Covei		*Indicators of hydric soil and wetland hydrology must be present, unless disturbed
1.	y vine duatum Fiot Size	·			or problematic
1. 2.					or problematic
۷.		0	Total Cover	_	Hydrophytic Vegetaion Present?
<del>  </del>	Remarks:	U	i otal Covel		Yes x No
l '	nemans.				1 e2 <u>x</u> NO

	Profile De Depth	escription: Ma	•	to dept	n ne	eded to	docum		Features		firm absence of indicator	rs.) T
	(inches)	Color	W %	Cold	\r	%	Typo*	Loc**	Text		Remarks	1
	0-4	10YR 4/3	100	COIC	Л	/0	туре	LUC	silt lo		Remarks	4
	4-18	101R 4/3	100				-		silt lo			-
	4-18	101R 3/2	100			<del> </del>		<u> </u>	SIILIC	oam		┪
				<u> </u>								_
	*Type: C=Cond	centration.	D=Depletio	n. RM=F	Redu	ced Matı	rix. CS=	:Coated Sa	nd grains	**Lo	ocation: PL=Pore Lining, M	l=Matrix
	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		Hydric S	_			,		g		Indicators for Problema	
	Histosol (A1)		,				Gleved	Matrix (S4)			Coast Prairie Redox (A16	
	Histic Epipedo	n (A2)				Sandy I		,			Iron-Manganese Masses	,
	Black Histic (A	, ,				Strippe		,			Other	(* -=/
	Hydrogen Sulf	,						Mineral (F1	)		1	
	Stratified Laye	. ,						Matrix (F2)	,	1		
	2 cm Muck (A					Deplete		, ,		t		
	Depleted Belo	,	face (A11)					urface (F6)		t		
	Thick Dark Su		.acc (/ 1.1.1)	-				Surface (F	7)	t		
	Sandy Mucky	. ,	)					sions (F8)	.,	t		
	5cm Mucky Pe	•	/			rtodox	Бор. ос.	0.01.0 (1.0)		1		
	com wacky i c	out of 1 out										
Restr	ictive Layer (if	observed)										
	Type:											
De	pth (inches):	-					-	Hvdric S	oil Prese	ent?	Yes No x	
	Remarks:						-	•				_
нл	DROLOGY											
Wetla	nd Hydrology	Indicators:										
		Primary Ind	dicators (c	heck all	that a	apply)					Secondary Indicators	
	Surface Water	· (A1)		١	Vate	r Stained	Leave	s (B9)		Surfa	ce Soil Cracks (B6)	
	High Water Ta	ıble (A2)		P	Aqua	tic Fauna	a (B13)			Drain	age Patterns (B10)	
	Saturation (A3	5)			rue .	Aquatic I	Plants (	B14)		Dry-S	Season Water Table (C2)	
	Water Marks (	B1)		H	lydro	gen Sul	fide Od	or (C1)		Crayf	ish Burrows (C8)	
	Sediment Dep	osits (B2)		(	) Oxidi:	zed Rhiz	ospher	es on Living	3	Satur	ation Visible on Aerial Ima	gery (C9)
	Drift Deposits	(B3)		F	Roots	s (C3)				Stunt	ed or Stressed Plants (D1)	)
	Algal Mat or C	rust (B4)		F	rese	ence of R	Reduced	l Iron (C4)		Geon	norphic Position (D2)	
	Iron Deposits (	(B5)		F	Rece	nt Iron R	eductio	n in Tilled		FAC-	Neutral Test (D5)	
	Inundation Vis	ible on Aeri	al	5	Soil (	C6)						
	Imagery (B7)				hin I	Muck Su	rface (C	27)				
	Sparsely Vege	tated Conc	ave		Guag	e or Wel	l Data (	D9)				
	Surface (B8)				Other				7			
	-											
Field	Observations:											
Surfac	ce Water Preser	nt?	Yes	1	No	х	Dept	th (inches)		_		
Water	Table Present?	?	Yes		No	х	Dept	th (inches)		_		
Satura	ation Present?		Yes	1	No	Х	Dept	th (inches)	'	-		
Descr	ibe Recorded D	ata (stream	guage, m	onitoring	well	l, aerial p	ohotos,	previous in	spections	s), if av	/ailable:	<u>-</u>
Rema	rke:											

Site:	Sargent Property	City/County:	Spenc	er/Owen Date	: 1/4/2012 Data Point:	B-1
Client	: Alt & Witzig	State: IN	Section, To	wnship, Range:	10N 3W Section 27	7
	Investigator(s):	-		J. Steckel	-	
	Slope (%): 0 Nor.	4347669	Eas.	523708 Datu	m: 16NAD83 NWI Class:	PF01A
Soil N	Map Unit Name: Ross silt loam					
Clin	natic/hydrologic conditions typical for t	time of vear?	Y/N Y			
	Vegetation , Soil		ydrology	significantly distur	bed	
	Vegetation , Soil		ydrology	naturally problem		
Are N	ormal Circumstances Present?	Yes x	No			
,				_		
SUMI	MARY OF FINDINGS					
JOWN	Hydrophytic Vegetation Present?	Yes x	No			
	Hydric Soil Present?		No	_ ls th	e DP within a Wetland?	
	Wetland Hydrology Present?		No	_ Yes	x No	
Rema	, ,,	103 X	140	103	A 110	
COLLIC	ino.					
VEGE	ETATION					
VLO	TATION	Absolute %	Dominant			
Troo	Stratum Plot size:	Cover	Species	Indicator Statu		
		25		FAC 3	Dominance Test Work	-ht
1. 2.	Ulmus rubra		- <u>Y</u>			Sneet
	Acer saccharinum	20	Y Y	FACW 2	Number of dominant species	
3.	Quercus palustris	20	Y	FACW 2	that are OBL, FACW, or FAC:	3
4.	Carpinus caroliniana	15	N	FAC 3	Total number of dominant	
5.			-	_	species across all strata:	3
		80	Total Cover		Percent of dominant species	
Shrub	Stratum Plot size:				that are OBL, FACW, or FAC:	100.00
1.				_	Prevalence Index Worksheet	
2.					Total % cover of:	
3.					OBL species 0 x 1	
4.					FACW species 40 x 2	8
5.					FAC species 40 x 3	12
		0	Total Cover	-	FACU species 0 x 4	
Herb	Stratum Plot size:		-		UPL species 0 x 5	
1.					Total 80	20
2.					Prevalence Index:	2.
3.					Hydrophytic Vegetation Indica	
4.			-		x Dominance Test is >50%	
5.					x Prevalence Index is <3.0*	
6.					Morphological Adaptation	
7.				_	Problematic Hydrophytic \	
8.					1 robiomado riyarophytic	. ogolalion
٥.		0	Total Cover	_	*Indiantors of hydric!!	ام محالمین ا
Wood	ly Vine Stratum Plot size:		- I Olai Covel		*Indicators of hydric soil and	
	ly Vine Stratum Plot size:				hydrology must be present, unle	ses disturbed
1.				_	or problematic	
2.			<del>-</del>			
-		0	Total Cover		Hydrophytic Vegetaion F	resent?
l	Remarks:				Yes <u>x</u> No	_
					ĺ	

SOIL											
				e to depth ne	eded to	docum				firm absence of indicator	s.)
	Depth	Matri					Redox F	eature	S		
	(inches)	Color	%	Color	%	Type*	Loc**	Tex		Remarks	
	0-3	10YR 4/2	100	<u> </u>				silt lo			
	3-18	10YR 6/2	80	10YR 5/6	20			silt lo	oam		
											]
	*Type: C=Con			•		rix, CS=	:Coated San	d grains	s **Lo	ocation: PL=Pore Lining, M	
			Hydric S	Soil Indicator						Indicators for Problemat	
	Histosol (A1)						Matrix (S4)			Coast Prairie Redox (A16	,
	Histic Epipedo	, ,				Redox (				Iron-Manganese Masses	(F12)
	Black Histic (A					d Matrix	` '			Other	
	Hydrogen Sul				_		Mineral (F1)		I		
	Stratified Laye	. ,					Matrix (F2)		1		
	2 cm Muck (A	,				ed Matri:			1		
	Depleted Belo		ce (A11)	)			urface (F6)		]		
	Thick Dark Su	. ,					Surface (F7)	)	]		
	Sandy Mucky	. ,		Х	Redox	Depress	sions (F8)		]		
	5cm Mucky P	eat or Peat									
i	Type: pth (inches): Remarks:					-	Hydric So	il Pres	ent?	Yes <u>x</u> No	
	'DROLOGY nd Hydrology	In disators									
Vvena	na nyarology		cators (	check all that	annly)					Secondary Indicators	
	Surface Wate		Carors (C		er Stained	d Leave	c (RQ)		Surfa	ace Soil Cracks (B6)	
	High Water Ta	, ,			atic Fauna		3 (D3)		_	nage Patterns (B10)	
Х	Saturation (A3	\ /			Aquatic		R14)			Season Water Table (C2)	
	Water Marks	,			ogen Sul		,			fish Burrows (C8)	
	Sediment Dep	` /					es on Living			ration Visible on Aerial Imag	gery (C9)
	Drift Deposits			-	s (C3)	.000	30 3 2			ted or Stressed Plants (D1)	<u> </u>
	Algal Mat or C	,			. ,	Reduced	d Iron (C4)		_	morphic Position (D2)	
	Iron Deposits	, ,					n in Tilled	Х		Neutral Test (D5)	
	Inundation Vis	,	Ī	Soil (							
	Imagery (B7)			Thin	Muck Su	ırface (C	27)				
	Sparsely Veg	etated Conca	ve	Guaç	ge or Wel	II Data (	D9)				
	Surface (B8)			Othe	r						
	•										
Field	Observations:										
Surfac	e Water Prese	ent? Y	Yes	No	Х	Dept	th (inches)				
Water	Table Present	? Y	Yes _	No	Х	Dept	th (inches)				
Satura	ation Present?	Y	Yes	x No		Dept	th (inches)	3			
Descr	ibe Recorded [	Oata (stream o	guage, m	nonitoring wel	l, aerial p	ohotos, į	previous insp	pections	s), if av	vailable:	
Rema	rks: Presence	of buttressed	tree roof	ts							

Site:	Sargent Property	City/County:	Spence	er/Owen Date:	1/4/2012 Data Point: B-2
Client:	Alt & Witzig	State: IN	Section, Tov	wnship, Range:	10N 3W Section 27
	Investigator(s):			J. Steckel	
	Slope (%): 0 Nor.	4347669	Eas.	523708 Datum:	: 16NAD83 NWI Class:
Soil M	ap Unit Name: Ross silt loam				
Clim	atic/hydrologic conditions typical for t	ime of year?	Y/N Y	<del></del>	
	Vegetation, Soil		/drology	significantly disturbe	ed
	Vegetation , Soil	or Hy	/drology	naturally problemation	С
Are No	ormal Circumstances Present?	Yes x	No	_	
				_	
SUMN	MARY OF FINDINGS				
	Hydrophytic Vegetation Present?	Yes x	No		
	Hydric Soil Present?		No x	_ Is the I	DP within a Wetland?
	Wetland Hydrology Present?		No x	Yes	No x
Rema	, ,,				
VEGE	TATION				_
		Absolute %	Dominant		
Tree S	Stratum Plot size:	Cover	Species	Indicator Status	
1.	Ulmus americana	40	Y	FACW 2	Dominance Test Worksheet
2.	Quercus palustris	30	Υ	FACW 2	Number of dominant species
3.					that are OBL, FACW, or FAC: 2
4.					Total number of dominant
5.					species across all strata: 3
		70	Total Cover		Percent of dominant species
Shrub	Stratum Plot size:		r.		that are OBL, FACW, or FAC: 66.67
1.	Rosa multiflora	20	Υ	FACU 4	Prevalence Index Worksheet
2.					Total % cover of:
3.				-	OBL species 0 x 1 0
4.					FACW species 70 x 2 140
5.				_	FAC species 0 x 3 0
		20	Total Cover	_	FACU species 20 x 4 80
Herb S	Stratum Plot size:				UPL species 0 x 5 0
1.					Total 90 220
2.				-	Prevalence Index: 2.44444444
3.					Hydrophytic Vegetation Indicators:
4.					x Dominance Test is >50%
5.					x Prevalence Index is <3.0*
6.				_	Morphological Adaptations*
7.					Problematic Hydrophytic Vegetation*
7. 8.					FIODIEITIALIC Hydrophylic vegetation
٥.		0	Total Cover		*! - !!
Woods	v Vine Stratum Plot size:		10lai Covei		*Indicators of hydric soil and wetland
	7 VIIIe Stratum Piot Size.				hydrology must be present, unless disturbed
1.			. ———		or problematic
2.			Tatal Oassan		Ibidoobido Vanatalos Bossonto
<u> </u>		0	Total Cover		Hydrophytic Vegetaion Present?
Ι '	Remarks:				Yes <u>x</u> No

	Profile De Depth	scription: Ma	•	to depth	needed to	docum		Features	confirm absence of indicate	ors.)
	(inches)	Color	%	Color	%	Typo*	Loc**	Texture	e Remarks	_
	0-6	10YR 4/4	100	COIOI	/0	Type	LUC	silt loar		-
	6-18	101R 4/4 10YR 4/3	100					silt loar		
	0-18	101K 4/3	100			1		Sill loar	П	_
							l .			
	*Type: C=Cond	entration, D	D=Depletio	n, RM=Re	duced Mat	rix, CS=	Coated Sar	nd grains	**Location: PL=Pore Lining, I	M=Matrix
	71	·		oil Indicat		,			Indicators for Problem	
	Histosol (A1)		•			Gleyed	Matrix (S4)		Coast Prairie Redox (A1	(6)
	Histic Epipedo	n (A2)				Redox (	, ,		Iron-Manganese Masse	s (F12)
	Black Histic (A	. ,				d Matrix	,		Other	
	Hydrogen Sulfi	ide (A4)			Loamy	Mucky	Mineral (F1)	)	•	
	Stratified Laye	rs (A5)			Loamy	Gleyed	Matrix (F2)			
	2 cm Muck (A1				Deplete	ed Matri	x (F3)			
	Depleted Belov	w Dark Surf	ace (A11)		Redox	Dark Su	ırface (F6)			
	Thick Dark Sur		, ,				Surface (F7	7)		
	Sandy Mucky I	Mineral (S1	)		Redox	Depress	sions (F8)			
	5cm Mucky Pe	at or Peat	,			•	` '	•		
	•									
Restr	ictive Layer (if	observed)								
	Type:									
De	pth (inches):					_	Hydric So	oil Present	t? Yes No x	
	Remarks:					_				
н	DROLOGY									
Wetla	nd Hydrology I	Indicators:								
		Primary Inc	dicators (c	heck all tha	at apply)				Secondary Indicators	
	Surface Water	(A1)		Wa	ter Staine	d Leave	s (B9)	S	urface Soil Cracks (B6)	
	High Water Ta	ble (A2)		Aq	uatic Faun	a (B13)		D	rainage Patterns (B10)	
	Saturation (A3)	)		Tru	e Aquatic	Plants (	B14)	D	ry-Season Water Table (C2)	
	Water Marks (I	B1)		Ну	drogen Su	lfide Od	or (C1)	С	rayfish Burrows (C8)	
	Sediment Dep	osits (B2)		Ox	idized Rhiz	zosphere	es on Living	S	aturation Visible on Aerial Im	agery (C9)
	Drift Deposits (	(B3)		Ro	ots (C3)			S	tunted or Stressed Plants (D	1)
	Algal Mat or Ci	rust (B4)		Pre	sence of F	Reduced	Iron (C4)	G	eomorphic Position (D2)	
	Iron Deposits (	B5)		Re	cent Iron F	Reductio	n in Tilled	F.	AC-Neutral Test (D5)	
	Inundation Visi	ible on Aeri	al	Soi	I (C6)					
	Imagery (B7)			Thi	n Muck Su	urface (C	27)			
	Sparsely Vege	tated Conc	ave	Gu	age or We	ll Data (	D9)			
	Surface (B8)			Oth	ner					
Field	Observations:									
Surfa	ce Water Preser	nt?	Yes	No	Х	Dept	th (inches)			
Wate	Table Present?	)	Yes	No	Х	Dept	th (inches)			
	ation Present?		Yes	No	Х		h (inches)			
Door	ibe Recorded D	ata (stream	quage m	onitoring w	امرامو المر	nhotos	provious inc	enactione)	if available:	
Desci	.50 .1000.404 5	ala (oli oaiii	gaago,	ormorning w	eli, aeriai	priotos,	previous iris	spections),	ii available.	
Rema		a.a (00a	gaago,	orintoring w	eli, aeriai	priotos,	previous iris	вреснопъ),	ii avaliabie.	

Site:	Sargent Property	City/County:	Spenc	cer/Owen Date:	1/4/2012 Data Point: B-3
Client: Alt & Witzig		State: IN	Section, To	wnship, Range:	10N 3W Section 27
Investigator(s):  J. Steckel					
	Slope (%): 0 Nor.	4347669	Eas.	523708 Datum:	: 16NAD83 NWI Class: PFO1A
Soil Map Unit Name: Ross silt loam					
Clim	natic/hydrologic conditions typical for t	time of year?	Y/N Y	_	
	Vegetation, Soil _	or Hy	drology	significantly disturbe	ed
	Vegetation , Soil	or Hy	drology	naturally problemation	С
Are No	ormal Circumstances Present?	Yes x	No	<b>-</b> -	
			·	_	
CHMMADY OF FINDINGS					
SUMIN	MARY OF FINDINGS  Hydrophytic Vegetation Present?	Yes x	No		
J	Hydric Soil Present?		No	_ ls the l	DP within a Wetland?
J	Wetland Hydrology Present?		No	_ IS the l	x No
Rema	, ,,	162 7	NU	165	X NO
Nema	iks.				
<u> </u>					
VEGE	TATION				
		Absolute %	Dominant		1
Tree S	Stratum Plot size:	Cover	Species	Indicator Status	
1.	Platanus occidentalis	30	Y	FACW 2	Dominance Test Worksheet
2.	Quercus palustris	20	Y	FACW 2	Number of dominant species
3.	Taxodium distichum	20	Y	OBL 1	that are OBL, FACW, or FAC: 3
4.	, and an in the same of the sa				Total number of dominant
5.					species across all strata: 3
		70	Total Cover		Percent of dominant species
Shrub	Stratum Plot size:				that are OBL, FACW, or FAC: 100.00
1.	<u> </u>				Prevalence Index Worksheet
2.				_	Total % cover of:
3.					OBL species 20 x 1 20
4.					FACW species 50 x 2 100
5.		-			FAC species 0 x 3 0
Ŭ.		0	Total Cover		FACU species 0 x 4 0
Herb S	Stratum Plot size:				UPL species 0 x 5 0
1.	<u>Statum</u>				Total 70 120
2.					Prevalence Index: 1.71428571
3.					Hydrophytic Vegetation Indicators:
4.			. ——		Dominance Test is >50%
5.		-			Prevalence Index is ≤3.0*
6.			. ——		Morphological Adaptations*
7.			. ——		Problematic Hydrophytic Vegetation*
8.			. ——		r robiematic riyaropnytic vegetation
0.		0	Total Cover		*!adjectors of hydric soil and watland
///ood	ly Vine Stratum Plot size:		10tal Cover		*Indicators of hydric soil and wetland hydrology must be present, unless disturbed
1.	y ville Stlatum i lot 3126.				or problematic
2.	-		. ———		or problematic
۷.	-	0	Total Cover		Liverantica Veretaion Bresont?
<u> </u>	Remarks:		Total Cover		Hydrophytic Vegetaion Present?
'	Remarks:				Yes <u>x</u> No

	Profile De	escription:	(Describe	to de	oth ne	eded to	docum	ent the inc	dicator o	r con	firm absence of indicators.	.)
	Depth	Ma	trix					Redox	Features	}		
	(inches)	Color	%	Co	lor	%	Type*	Loc**	Text	ure	Remarks	
	0-18	10YR 5/1	100						silt lo	am		
	-											
	*Type: C=Con	centration, [	D=Depletio	n, RM=	-Redu	ced Matr	ix, CS=	Coated Sa	nd grains	**Lc	ocation: PL=Pore Lining, M=I	Matrix
			Hydric S	oil Ind	icator	s:					Indicators for Problematic	Soils
	Histosol (A1)					Sandy (	Gleyed I	Matrix (S4)			Coast Prairie Redox (A16)	
	Histic Epipedo	on (A2)			Sandy Redox (S5)						Iron-Manganese Masses (F	12)
	Black Histic (A			Stripped	d Matrix	(S6)			Other			
	Hydrogen Sul		Loamy	Mucky N	Mineral (F1	)						
	Stratified Laye	ers (A5)				Loamy	Gleyed	Matrix (F2)		I		
	2 cm Muck (A	10)			Х	Deplete	d Matrix	k (F3)		I		
	Depleted Belo	w Dark Sur	face (A11)			Redox I	Dark Su	rface (F6)		I		
	Thick Dark Su	ırface (A12)				Deplete	d Dark	Surface (F	7)	I		
	Sandy Mucky	Mineral (S1	)			Redox I	Depress	sions (F8)		I		
	5cm Mucky Po	eat or Peat								_		
Restr	ictive Layer (if	observed)										
	Type:						_					
	pth (inches):						_	Hydric S	oil Prese	ent?	Yes X No	
	Remarks:											
	YDROLOGY											
Wetla	nd Hydrology											
	Ta	Primary Inc	dicators (c	heck al	-	,		/= -\·		r	Secondary Indicators	
	Surface Wate	,			_	r Stained		s (B9)			ace Soil Cracks (B6)	
	High Water Ta	,				tic Fauna				_	nage Patterns (B10)	
Х	Saturation (A3	,			_	Aquatic F					Season Water Table (C2)	
	Water Marks (	` /				gen Sulf		, ,			fish Burrows (C8)	
	Sediment Dep	, ,					osphere	es on Living	·		ration Visible on Aerial Image	ery (C9)
	Drift Deposits	` '				(C3)					ted or Stressed Plants (D1)	
	Algal Mat or C				_			I Iron (C4)		_	morphic Position (D2)	
	Iron Deposits	` '					eductio	n in Tilled	Х	FAC-	Neutral Test (D5)	
	Inundation Vis	sible on Aeri	al		Soil (			_				
	Imagery (B7)				_	Muck Su		,				
	Sparsely Vege	etated Conc	ave		·	e or Wel	i Data (i	D9)	_			
	Surface (B8)				Other							
<u> </u>	O											
	Observations:		V		NI.		<b>.</b>	la (tara)				
	ce Water Prese		Yes _		No	X		h (inches)				
	ter Table Present? Yes			No	X		h (inches)					
	ation Present?	) oto /otro	Yes	X	No	aaria! -		h (inches)	2	\ :£	vallables	
Desci	ibe Recorded D	Jaia (stream	ı guage, m	onitorir	ig well	, aeriai p	motos, p	previous in	spections	s), ir av	valiable:	
Rema	rko:											
REIIIS	uno.											

4.     FACW species     40 x 2 80       5.     FAC species     0 x 3 00       20 Total Cover     FACU species     50 x 4 200       Herb Stratum     Plot size:     UPL species     0 x 5 00       1.     Total     90 280	Site:	Sargent Property	City/County:	Spence	er/Owen Date:	1/4/2012 Data Point: B-4
Slope (%): 0	Client:	Alt & Witzig	State: IN	Section, Tov	wnship, Range:	10N 3W Section 27
Soil Map Unit Name: Ross sill loam Climatic/hydrologic conditions typical for time of year? Y/N Y Vegetation Soil or Hydrology naturally problematic Are Normal Circumstances Present? Yes x No  SUMMARY OF FINDINGS  Hydrophytic Vegetation Present? Yes No x Is the DP within a Wetland? Wetland Hydrology Present? Yes No x Is the DP within a Wetland? Wetland Hydrology Present? Yes No x Is the DP within a Wetland? Wetland Hydrology Present? Yes No x Is the DP within a Wetland? Wetland Hydrology Present? Yes No x Is the DP within a Wetland? Wetland Hydrology Present? Yes No x Is the DP within a Wetland? Wetland Hydrology Present? Yes No x Is the DP within a Wetland? Wetland Hydrology Present? Yes No x Is the DP within a Wetland? Wetland Hydrology Present? Yes No x Is the DP within a Wetland? Wetland Hydrology Present? Yes No x Is the DP within a Wetland? Wetland Hydrology Present? Yes No x Is the DP within a Wetland? Wetland Hydrology Present? Yes No x Is the DP within a Wetland? Woody Vine Stratum Plot size: Cover Species around the Species around the Species Present of Dominant Species Hat are CBL, FACW, or FAC: 1 Total number of dominant species that are CBL, FACW, or FAC: 1 Total number of dominant species that are CBL, FACW, or FAC: 1 Total number of dominant species that are CBL, FACW, or FAC: 3.3.33 Percent of dominant species Total Worksheet Total % cover or: Total % cover or		9 17	•			
Climatic/hydrologic conditions typical for time of year? YN Y yegetation Soil or Hydrology naturally problematic vegetation Soil or Hydrology naturally problematic vegetation Soil or Hydrology naturally problematic vegetation Present? Yes X No SUMMARY OF FINDINGS  SUMMARY OF FINDINGS  Hydrophytic Vegetation Present? Yes No X Is the DP within a Wetland? Yes No X Vegetation Present? Yes No X Is the DP within a Wetland? Yes No X Vegetation Present? Yes No X Is the DP within a Wetland? Yes No X Vegetation Present? Yes No X Is the DP within a Wetland? Yes No X Vegetation Present? Yes No X Is the DP within a Wetland? Yes No X Is the DP within a Wetland? Yes No X Is the DP within a Wetland? Yes No X Is the DP within a Wetland? Yes No X Is the DP within a Wetland? Yes No X Is the DP within a Wetland? Yes No X Is the DP within a Wetland? Yes No X Is the DP within a Wetland? Yes No X Is the DP within a Wetland? Yes No X Is the DP within a Wetland? Yes No X Is the DP within a Wetland? Yes No X Is The DP within a Wetland? Yes No X Is the DP within a Wetland? Yes No X Is the DP within a Wetland? Yes No X Is the DP within a Wetland? Yes No X Is the DP within a Wetland? Yes No X Is the DP within a Wetland? Yes No X Is the DP within a Wetland? Yes No X Is the DP within a Wetland? Yes No X Is the DP within a Wetland?			4347669	Eas.	523708 Datum	: 16NAD83 NWI Class:
Vegetation   Soil   Or Hydrology   Significantly disturbed   Vegetation   Soil   Or Hydrology   Naturally problematic						
Vegetation   Soil   or Hydrology   naturally problematic	Clim		•		_	
SUMMARY OF FINDINGS  Hydrophytic Vegetation Present? Yes No X Is the DP within a Wetland? Wetland Hydrology Present? Yes No X Is the DP within a Wetland? Wetland Hydrology Present? Yes X No X Is the DP within a Wetland? Wetland Hydrology Present? Yes X No X Yes No X  Remarks:  VEGETATION  Tree Stratum Plot size: Cover Species Indicator Status 1. Quercus palustris 40 Y FACW 2 Number of dominant species that are DBL, FACW, or FAC: 1 Total number of dominant species that are DBL, FACW, or FAC: 1 Total number of dominant species that are DBL, FACW, or FAC: 1 Total number of dominant species that are DBL, FACW, or FAC: 1 Total number of dominant species that are DBL, FACW, or FAC: 1 Total number of dominant species that are DBL, FACW, or FAC: 3  4. Total number of dominant species that are DBL, FACW, or FAC: 3  Percent of dominant species that are DBL, FACW, or FAC: 3  Percent of dominant species that are DBL, FACW, or FAC: 33.33  Percent of dominant species that are DBL, FACW, or FAC: 33.33  Percent of dominant species that are DBL, FACW, or FAC: 33.33  Percent of dominant species that are DBL, FACW, or FAC: 33.33  Percent of dominant species that are DBL, FACW, or FAC: 33.33  Percent of dominant species that are DBL, FACW, or FAC: 33.33  Percent of dominant species that are DBL, FACW, or FAC: 33.33  Percent of dominant species that are DBL, FACW, or FAC: 33.33  Percent of dominant species that are DBL, FACW, or FAC: 33.33  Percent of dominant species that are DBL, FACW, or FAC: 33.33  Percent of dominant species that are DBL, FACW, or FAC: 33.33  Percent of dominant species that are DBL, FACW, or FAC: 33.33  Percent of dominant species that are DBL, FACW, or FAC: 1  Total 90						
SUMMARY OF FINDINGS  Hydrophytic Vegetation Present? Yes No x Is the DP within a Wetland?  Hydric Soil Present? Yes x No x Yes No x  Remarks:  VEGETATION  Tree Stratum Plot size: Cover Species Indicator Status FACW 2 Pinus strobus 30 Y FACU 4 Number of dominant species that are OBL, FACW, or FAC: 1 Total number of dominant species that are OBL, FACW, or FAC: 1 Total number of dominant species that are OBL, FACW, or FAC: 33.33  Shrub Stratum Plot size: 70 Total Cover PACU 4 Prevalence Index Worksheet  1. Rosa multiflora 20 Y FACU 4 Prevalence Index Worksheet  2. FACW species 20 X 1 Colleges 0 X 1 Colleges 1 Colleges 1 Colleges 1 Colleges 1 Colleges 2 Colleges 2 Colleges 2 Colleges 2 Colleges 3 C				- · · -	_naturally problemati	С
Hydrophytic Vegetation Present? Yes	Are No	ormal Circumstances Present?	Yes x	No	_	
Hydrophytic Vegetation Present? Yes						
Hydric Soil Present? Yes   No   X   Is the DP within a Wetland?	SUMM	IARY OF FINDINGS				
Wetland Hydrology Present? Yes x No Yes No x						
VEGETATION           Tree Stratum         Plot size:         Cover Species         Indicator Status           1. Quercus palustris         40         Y         FACW 2           2. Pinus strobus         30         Y         FACU 4           3. 4.         Total number of dominant species that are OBL, FACW, or FAC: 1         1           4. 5.         70         Total Cover         Percent of dominant species across all strata: 3           5. 5.         70         Total Cover         Percent of dominant species across all strata: 3           1. Rosa multiflora         20         Y         FACU 4         Prevalence Index Worksheet           2. 5.         Total Species         0 x 1         0           3. 4.         Species across all strata: 3         Prevalence Index Worksheet           1. Rosa multiflora         20         Y         FACU 4         Prevalence Index Worksheet           2. 5.         Species openies         0 x 1         0         0           4. 5.         FACW species openies         0 x 3         0         0           5. 5.         Total Cover         FACW species openies         0 x 4         20           6. 7. 7         Total Cover         Total Cover         Total Pyrophytic Vegetation Indicators: Dominanc		•		No <u>x</u>	Is the	DP within a Wetland?
VEGETATION           Tree Stratum         Plot size:         Cover Species Species         Indicator Status         Dominance Test Worksheet           1. Quercus palustris         40         Y         FACW 2         Number of dominant species that are OBL, FACW, or FAC: 1         1           3. 4. Species across all strata:         3         Percent of dominant species that are OBL, FACW, or FAC: 1         1           5. Shrub Stratum         Plot size:         Percent of dominant species that are OBL, FACW, or FAC: 33.33         3           1. Rosa multiflora         20         Y         FACU 4         Percent of dominant species that are OBL, FACW, or FAC: 33.33           2. 3. Shrub Stratum         Plot size:         Total Cover         Percent of dominant species that are OBL, FACW, or FAC: 33.33           4. Species adout some species across all strata: 3         Percent of dominant species that are OBL, FACW, or FAC: 33.33         3.33           5. Shrub Stratum         Plot size:         Total Cover         FACU 4         Prevalence Index Worksheet           1. Rosa multiflora         20         Y         FACU 4         Prevalence Index Worksheet           2. Shrub Stratum         Plot size:         Total Cover         FACU species 0 x 5 0 0 x 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		, ,,	Yes x	No	Yes	No x
Tree Stratum	Rema	ks:				
Tree Stratum						
Tree Stratum	VEGE	TATION				
Tree Stratum			Absolute %	Dominant		7
1.   Quercus palustris   40	Tree S	Stratum Plot size:			Indicator Status	
2. Pinus strobus       30       Y       FACU       4       Number of dominant species that are OBL, FACW, or FAC: 1       1         4						Dominance Test Worksheet
3.       that are OBL, FACW, or FAC: 1         4.       Total number of dominant species across all strata: 3         Shrub Stratum       Plot size: 1.       Percent of dominant species that are OBL, FACW, or FAC: 33.33         1.       Rosa multiflora       20       Y       FACU 4       Prevalence Index Worksheet Total % cover of: 0BL species 0 x 1       C         3.       —       FACW species 0 x 2       80         5.       —       FACW species 0 x 3       C         FACW species 0 x 3       C       C         FACU species 0 x 4       200       C         1.       Total Cover       FACU species 50 x 4       200         UPL species 0 x 5       C       C         Total 90       280       Prevalence Index: 3.11111111         3.       Hydrophytic Vegetation Indicators: Dominance Test is >50%       Prevalence Index: 3.11111111         4.       —       Dominance Test is >50%       Prevalence Index is ≤3.0*         6.       —       Morphological Adaptations*       Problematic Hydrophytic Vegetation*         7.       —       Problematic Hydrophytic Vegetation*         8.       —       *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic         1.       —       Hydrophytic Ve						-
4.	3.				- ·	-
Species across all strata: 3   Percent of dominant species that are OBL, FACW, or FAC: 33.33	4.					<del></del>
Shrub Stratum	5.					
Shrub Stratum         Plot size:         20         Y         FACU         4         Prevalence Index Worksheet           1. Rosa multiflora         20         Y         FACU         4         Prevalence Index Worksheet           3.         OBL species         0 x 1         0			70	Total Cover		<del></del>
1. Rosa multiflora       20       Y       FACU       4       Prevalence Index Worksheet         2.       Total % cover of:       OBL species       0 x 1       0         3. 4.       FACW species       40 x 2       80         5.       FAC species       0 x 3       0         FACU species       0 x 3       0         FACU species       0 x 4       200         FACU species       0 x 5       0       0         FACU species       0 x 5       0       0         FACU species       0 x 5       0       0         Total Over       Prevalence Index:       3.11111111         Hydrophytic Vegetation Indicators:       Dominance Test is >50%         Prevalence Index:       3.11111111         Hydrophytic Vegetation Indicators:       Dominance Test is >50%         Prevalence Index:       3.11111111         Hydrophytic Vegetation*       *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic         1.       *Indicators of hydric soil and wetland hydrology must be present;         Hydrophytic Vegetation Present?	Shrub	Stratum Plot size:				·
OBL species   O x 1   OC FACW species   40 x 2   80	1.	Rosa multiflora	20	Υ	FACU 4	
4.       FACW species       40 x 2 80 x 3 00 x 3 00 x 3 00 x 4 200 x 4 200 x 5 00 x 4 200 x 5 00 x	2.		-			Total % cover of:
4.       FACW species       40 x 2       80 x 3       00 x 3       00 x 3       00 x 3       00 x 4       200 x 4       200 x 4       200 x 4       200 x 5       00 x 5	3.		-			OBL species 0 x 1 0
FAC species	4.		-			
Herb Stratum	5.		-			- · ·
1.       Total       90       280         2.       Prevalence Index: 3.1111111         3.       Hydrophytic Vegetation Indicators: Dominance Test is >50%         5.       Prevalence Index is ≤3.0*         6.       Morphological Adaptations* Problematic Hydrophytic Vegetation*         8.       O         Woody Vine Stratum       Plot size: Hindicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic         1.       O         2.       Total Cover         Hydrophytic Vegetation Present?			20	Total Cover		- ·
2. Prevalence Index: 3.1111111 3. Hydrophytic Vegetation Indicators: Dominance Test is >50% 5. Dominance Test is >50% Prevalence Index is ≤3.0*  Morphological Adaptations* Problematic Hydrophytic Vegetation*  8. Problematic Hydrophytic Vegetation*  *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  1. Dominance Test is >50% Prevalence Index: 3.11111111  **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  **Indicators of hydric vegetation Present?**	Herb S	Stratum_ Plot size:		÷-		
3. Hydrophytic Vegetation Indicators:  4. Dominance Test is >50%  5. Prevalence Index is ≤3.0*  Morphological Adaptations*  7. Problematic Hydrophytic Vegetation*  8. O Total Cover  Woody Vine Stratum Plot size:  1. O Total Cover  1. O Total Cover  Hydrophytic Vegetation Indicators:  Dominance Test is >50% Prevalence Index is ≤3.0*  Morphological Adaptations* Problematic Hydrophytic Vegetation*  *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  0 Total Cover  Hydrophytic Vegetaion Present?	1.					Total 90 280
3. Hydrophytic Vegetation Indicators: 4. Dominance Test is >50% 5. Prevalence Index is ≤3.0* 6. Morphological Adaptations* 7. Problematic Hydrophytic Vegetation* 8. O Total Cover  Woody Vine Stratum Plot size: 1. O Total Cover  1. O Total Cover  Hydrophytic Vegetation Indicators:  Dominance Test is >50% Prevalence Index is >50% Prevalence Inde	2.					Prevalence Index: 3.11111111
5. Prevalence Index is ≤3.0* 6. Morphological Adaptations* 7. Problematic Hydrophytic Vegetation* 8. O Total Cover  Woody Vine Stratum Plot size: 1. Providence Index is ≤3.0* Morphological Adaptations* Problematic Hydrophytic Vegetation* *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic 2. Hydrophytic Vegetaion Present?	3.					Hydrophytic Vegetation Indicators:
6. Morphological Adaptations* 7. Problematic Hydrophytic Vegetation* 8. O Total Cover *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic 2. O Total Cover Hydrophytic Vegetaion Present?	4.					Dominance Test is >50%
6. Morphological Adaptations* 7. Problematic Hydrophytic Vegetation* 8. O Total Cover *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic 2. O Total Cover Hydrophytic Vegetaion Present?	5.					Prevalence Index is ≤3.0*
7. Problematic Hydrophytic Vegetation*  8. O Total Cover *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  1. O Total Cover Hydrophytic Vegetaion Present?	6.					Morphological Adaptations*
8. O Total Cover *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  1. O Total Cover Hydrophytic Vegetaion Present?	7.					Problematic Hydrophytic Vegetation*
Woody Vine Stratum  1. 2.  1 O Total Cover  hydrology must be present, unless disturbed or problematic  Hydrophytic Vegetaion Present?	8.					
Woody Vine Stratum     Plot size:     hydrology must be present, unless disturbed or problematic       2.     0     Total Cover   Hydrophytic Vegetaion Present?			0	Total Cover		*Indicators of hydric soil and wetland
2	Wood	Vine Stratum Plot size:	_			
0 Total Cover Hydrophytic Vegetaion Present?	1.					or problematic
, , ,	2.					·
Remarks: Yes No x			0	Total Cover		Hydrophytic Vegetaion Present?
		Remarks:				Yes No x

	Profile Description: (Describe to depth needed to document the indicator or confirm absence of indicators.)											
	Depth		trix					Redox	Features			
	(inches)	Color	%	Co	lor	%	Type*	Loc**	Text	ure	Remarks	
	0-18	10YR 4/4	100						silt lo	am		
	*Type: C=Cond	centration, [	D=Depletio	n, RM=	=Redu	ced Matr	rix, CS=	Coated Sar	nd grains	**Lc	ocation: PL=Pore Lining, M=Ma	ıtrix
			Hydric S	oil Ind	icator	s:					Indicators for Problematic S	oils
	Histosol (A1)					Sandy (	Gleyed	Matrix (S4)			Coast Prairie Redox (A16)	
	Histic Epipedo	n (A2)				Sandy I	Redox (	(S5)			Iron-Manganese Masses (F12	<u>2</u> )
	Black Histic (A	(3)				Strippe	d Matrix	(S6)			Other	
	Hydrogen Sulf	ide (A4)				Loamy	Mucky	Mineral (F1)	)			
	Stratified Laye	ers (A5)				Loamy	Gleyed	Matrix (F2)				
	2 cm Muck (A'	10)				Deplete	d Matri	x (F3)				
	Depleted Belo	w Dark Sur	face (A11)			Redox I	Dark Su	urface (F6)		Ī		
	Thick Dark Su	rface (A12)				Deplete	d Dark	Surface (F7	7)	Ī		
	Sandy Mucky	Mineral (S1	)			Redox I	Depress	sions (F8)		Ī		
	5cm Mucky Pe	eat or Peat								•		
Restr	ictive Layer (if Type:	observed)										
De	pth (inches):						_	Hydric So	oil Prese	nt?	Yes No X	
	Remarks:						-					
н	DROLOGY											
Wetla	nd Hydrology	Indicators:										
		Primary In	dicators (c	heck al							Secondary Indicators	
	Surface Water	· (A1)			Wate	r Stained	Leave	s (B9)		Surfa	ace Soil Cracks (B6)	
	High Water Ta	able (A2)			Aqua	tic Fauna	a (B13)			Drair	nage Patterns (B10)	
Х	Saturation (A3	3)			True	Aquatic I	Plants (	B14)		Dry-S	Season Water Table (C2)	
	Water Marks (	B1)			Hydro	gen Sul	fide Od	or (C1)		Cray	fish Burrows (C8)	
	Sediment Dep	osits (B2)			Oxidia	zed Rhiz	ospher	es on Living		Satu	ration Visible on Aerial Imagery	(C9)
	Drift Deposits	(B3)		1	Roots	(C3)				Stunt	ted or Stressed Plants (D1)	
	Algal Mat or C	rust (B4)			Prese	nce of R	Reduced	d Iron (C4)		Geor	norphic Position (D2)	
	Iron Deposits (	(B5)			Rece	nt Iron R	eductio	n in Tilled		FAC-	Neutral Test (D5)	
	Inundation Vis	ible on Aeri	ial	1	Soil (	C6)						
	Imagery (B7)				Thin I	Muck Su	rface (C	27)	1			
	Sparsely Vege	etated Conc	ave		Guag	e or Wel	l Data (	D9)	1			
	Surface (B8)				Other				1			
									-			
Field	Observations:											
Surfac	ce Water Preser	nt?	Yes		No	x	Dept	th (inches)				
Water	Table Present?	?	Yes		No	х	Dept	th (inches)		11		
Satura	ation Present?		Yes	Х	No			th (inches)	8	)		
	ibe Recorded D	ata (stream			_	, aerial r		. ,		), if a	vailable:	
		(	Jg-, · · ·		J J	,		,	,	,, u		
Rema	rks.											

Site:	Sargent Property	City/County:	Speno	er/Owen Date:	1/4/2012 Data Point: 1
Client		State: IN	Section, Tov	wnship, Range:	10N 3W Section 27
	Investigator(s):	-		J. Steckel	
	Slope (%): 0 Nor.	4347669	Eas.	523708 Datum:	: 16NAD83 NWI Class:
Soil M	lap Unit Name: Ross silt loam				
Clim	atic/hydrologic conditions typical for t	time of year?	Y/N Y		
	Vegetation, Soil _	or Hy	drology	significantly disturbe	ed
	Vegetation , Soil	or Hy	drology	naturally problemation	C
Are N	ormal Circumstances Present?	Yes x	No	-	
				_	
SUMN	MARY OF FINDINGS				
	Hydrophytic Vegetation Present?		No x		
	Hydric Soil Present?		No x	-	DP within a Wetland?
_	Wetland Hydrology Present?	Yes	No x	Yes	No x
Rema	rks:				
VECE	TATION				
VEGE	TATION	A l l t 0/	Daminant		7
T	Dist size	Absolute %	Dominant	la dia atau Otatua	
	Stratum Plot size:	Cover	Species	Indicator Status	Daminana Taat Wadahad
1.	Fagus grandifolia	45	Y Y	FACU 4	Dominance Test Worksheet
2.	Acer saccharum	20	<u>Y</u>	FACU 4	Number of dominant species
3.	Carpinus caroliniana	10	N	FAC 3	that are OBL, FACW, or FAC: 0
4.					Total number of dominant
5.					species across all strata: 2
		75	Total Cover		Percent of dominant species
	Stratum Plot size:				that are OBL, FACW, or FAC: 0.00
1.	Rosa multiflora	10	N	FACU 4	Prevalence Index Worksheet
2.				_	Total % cover of:
3.					OBL species <u>0</u> x 1 <u>0</u>
4.					FACW species 0 x 2 0
5.					FAC species 10 x 3 30
		10	Total Cover		FACU species 75 x 4 300
Herb S	Stratum Plot size:				UPL species 0 x 5 0
1.					Total 85 330
2.					Prevalence Index: 3.88235294
3.					Hydrophytic Vegetation Indicators:
4.	_				Dominance Test is >50%
5.				-! !	Prevalence Index is ≤3.0*
6.				-! !	Morphological Adaptations*
7.					Problematic Hydrophytic Vegetation*
8.					
		0	Total Cover		*Indicators of hydric soil and wetland
Wood	y Vine Stratum Plot size:		•		hydrology must be present, unless disturbed
1.	· ——				or problematic
2.			-		1
		0	Total Cover	- 1	Hydrophytic Vegetaion Present?
	Remarks:	-			Yes No x
I '					

		•	to depth n	eeded to	docum				firm absence of indicators.)	
Depth		trix	0.1				Features			
(inches)	Color	%	Color	%	Type*	Loc**	Text		Remarks	
0-18	10YR 4/4	100		-			silt lo	oam		
*Type: C=Cond	centration, [	D=Depletio	n, RM=Red	uced Mati	rix, CS=	Coated Sa	ind grains	**Lc	ocation: PL=Pore Lining, M=Ma	atrix
71	,		oil Indicato						Indicators for Problematic S	
Histosol (A1)		-		Sandy	Gleyed	Matrix (S4)	)		Coast Prairie Redox (A16)	
Histic Epipedo	n (A2)			Sandy I	Redox (	S5)			Iron-Manganese Masses (F12	2)
Black Histic (A	.3)			Strippe	d Matrix	(S6)			Other	
Hydrogen Sulf	ide (A4)			Loamy	Mucky I	Mineral (F1	)			
Stratified Laye	rs (A5)			Loamy	Gleyed	Matrix (F2)	)			
2 cm Muck (A	10)			Deplete	ed Matri	x (F3)				
Depleted Belo		, ,				ırface (F6)				
Thick Dark Su	. ,					Surface (F	7)	ļ		
Sandy Mucky	•	)		Redox	Depress	sions (F8)		ļ		
5cm Mucky Pe	eat or Peat									
Restrictive Layer (if	obsorved)									
Type:	observea)									
Depth (inches):					-	Hydric 9	oil Bross	n+2	Yes No x	
Remarks:					-	riyuric 3	oui Fiese	; 11L f	YesNox	
rtomano.					1					
HYDROLOGY										
Wetland Hydrology	Indicators:									
	Primary Inc	dicators (c	heck all that	apply)					Secondary Indicators	
Surface Water	· (A1)		Wat	er Stained	Leave	s (B9)		Surfa	ce Soil Cracks (B6)	
High Water Ta	ıble (A2)		Aqu	atic Fauna	a (B13)			Drain	age Patterns (B10)	
Saturation (A3	5)		True	Aquatic I	Plants (l	B14)		Dry-S	Season Water Table (C2)	
Water Marks (	B1)		Hyd	rogen Sul	fide Od	or (C1)			ish Burrows (C8)	
Sediment Dep	osits (B2)		Oxio	lized Rhiz	osphere	es on Livin	g	Satur	ation Visible on Aerial Imagery	y (C9)
Drift Deposits	(B3)			ts (C3)				Stunt	ed or Stressed Plants (D1)	
Algal Mat or C	rust (B4)		Pres	ence of R	Reduced	Iron (C4)		Geor	norphic Position (D2)	
Iron Deposits	(B5)		Rec	ent Iron R	eductio	n in Tilled		FAC-	Neutral Test (D5)	
Inundation Vis	ible on Aeri	al		(C6)						
Imagery (B7)			Thin	Muck Su	rface (C	27)				
Sparsely Vege	tated Conc	ave	Gua	ge or Wel	l Data (	D9)				
Surface (B8)			Othe	er						
Field Observed:										
Field Observations:	.0	.,			ъ.					
Surface Water Presen		Yes _	No No	X		h (inches)	-			
Water Table Present	?	Yes _	No	Х		h (inches)				
Saturation Present?	1-1- /-1	Yes	No	X		h (inches)		) :¢		
Describe Recorded D	ata (stream	ı guage, m	onitoring we	eii, aerial p	onotos,	previous in	spections	s), if a\	/aliable:	
Remarks:										
NUMBERS.										

Site:	Sargent Property	City/County:	Spend	cer/Owen Date:	1/4/2012 Data Point: 2
Client	Alt & Witzig	State: IN	Section, To	wnship, Range:	10N 3W Section 27
	Investigator(s):			J. Steckel	
	Slope (%): 0 Nor.	4347669	Eas.	523708 Datum	n: 16NAD83 NWI Class:
	ap Unit Name: Ross silt loam				
Clim	atic/hydrologic conditions typical for t			_	
	Vegetation, Soil _	or Hy	/drology	significantly disturb	ed
	Vegetation , Soil	or Hy	/drology	naturally problemat	ic
Are No	ormal Circumstances Present?	Yes x	No		
				<del>_</del>	
CHMA	MARY OF FINDINGS				
SUMIN	IARY OF FINDINGS  Hydrophytic Vegetation Present?	Ves	No x		
	Hydric Soil Present?		No x	le the	DP within a Wetland?
	Wetland Hydrology Present?		No x	_ Yes	No x
Rema		162	NO X	162	NO X
Kema	INS.				
VEGE	TATION				
	TATION	Absolute %	Dominant		7
Troo	Stratum Plot size:	Cover	Species	Indicator Status	
1.	Fagus grandifolia	40	Y	FACU 4	Dominance Test Worksheet
2.	Quercus alba	25	Y	FACU 4	
3.	Quercus aiba		· — <u>'</u>	TACO 4	Number of dominant species that are OBL. FACW, or FAC: 0
3. 4.			. ———		
5.			. ———		Total number of dominant species across all strata: 2
5.			T-t-LO		
o	0	65	Total Cover		Percent of dominant species
	Stratum Plot size:			=	that are OBL, FACW, or FAC: 0.00
1.	Rosa multiflora	15	N	FACU 4	Prevalence Index Worksheet
2.					Total % cover of:
3.					OBL species 0 x 1 0
4.					FACW species 0 x 2 0
5.					FAC species 0 x 3 0
		15	Total Cover		FACU species 80 x 4 320
	Stratum Plot size:				UPL species <u>0</u> x 5 <u>0</u>
1.				_	Total <u>80</u> <u>320</u>
2.					Prevalence Index: 4
3.				_	Hydrophytic Vegetation Indicators:
4.					Dominance Test is >50%
5.					Prevalence Index is ≤3.0*
6.					Morphological Adaptations*
7.					Problematic Hydrophytic Vegetation*
8.					
		0	Total Cover		*Indicators of hydric soil and wetland
Wood	y Vine Stratum Plot size:		-		hydrology must be present, unless disturbed
1.					or problematic
2.					
		0	Total Cover	_	Hydrophytic Vegetaion Present?
	Remarks:		-		Yes No x

		•	to depth n	eeded to	docum				firm absence of indicators.)	
Depth		trix	0.1				Features			
(inches)	Color	%	Color	%	Type*	Loc**	Text		Remarks	
0-18	10YR 4/4	100		-			silt lo	oam		
*Type: C=Cond	centration, [	D=Depletio	n, RM=Red	uced Mati	rix, CS=	Coated Sa	ind grains	**Lc	ocation: PL=Pore Lining, M=Ma	atrix
71	,		oil Indicato						Indicators for Problematic S	
Histosol (A1)		-		Sandy	Gleyed	Matrix (S4)	)		Coast Prairie Redox (A16)	
Histic Epipedo	n (A2)			Sandy I	Redox (	S5)			Iron-Manganese Masses (F12	2)
Black Histic (A	.3)			Strippe	d Matrix	(S6)			Other	
Hydrogen Sulf	ide (A4)			Loamy	Mucky I	Mineral (F1	)			
Stratified Laye	rs (A5)			Loamy	Gleyed	Matrix (F2)	)			
2 cm Muck (A	10)			Deplete	ed Matri	x (F3)				
Depleted Belo		, ,				ırface (F6)				
Thick Dark Su	. ,					Surface (F	7)	ļ		
Sandy Mucky	•	)		Redox	Depress	sions (F8)		ļ		
5cm Mucky Pe	eat or Peat									
Restrictive Layer (if	obsorved)									
Type:	observea)									
Depth (inches):					-	Hydric 9	oil Bross	n+2	Yes No x	
Remarks:					-	riyuric 3	oui Fiese	; 11L f	YesNox	
rtomano.					1					
HYDROLOGY										
Wetland Hydrology	Indicators:									
	Primary Inc	dicators (c	heck all that	apply)					Secondary Indicators	
Surface Water	· (A1)		Wat	er Stained	Leave	s (B9)		Surfa	ce Soil Cracks (B6)	
High Water Ta	ıble (A2)		Aqu	atic Fauna	a (B13)			Drain	age Patterns (B10)	
Saturation (A3	5)		True	Aquatic I	Plants (l	B14)		Dry-S	Season Water Table (C2)	
Water Marks (	B1)		Hyd	rogen Sul	fide Od	or (C1)			ish Burrows (C8)	
Sediment Dep	osits (B2)		Oxio	lized Rhiz	osphere	es on Livin	g	Satur	ation Visible on Aerial Imagery	y (C9)
Drift Deposits	(B3)			ts (C3)				Stunt	ed or Stressed Plants (D1)	
Algal Mat or C	rust (B4)		Pres	ence of R	Reduced	Iron (C4)		Geor	norphic Position (D2)	
Iron Deposits	(B5)		Rec	ent Iron R	eductio	n in Tilled		FAC-	Neutral Test (D5)	
Inundation Vis	ible on Aeri	al		(C6)						
Imagery (B7)			Thin	Muck Su	rface (C	27)				
Sparsely Vege	tated Conc	ave	Gua	ge or Wel	l Data (	D9)				
Surface (B8)			Othe	er						
Field Observed:										
Field Observations:	.0	.,			ъ.					
Surface Water Presen		Yes _	No No	X		h (inches)	-			
Water Table Present	?	Yes _	No	Х		h (inches)				
Saturation Present?	1-1- /-1	Yes	No	X		h (inches)		) :¢		
Describe Recorded D	ata (stream	ı guage, m	onitoring we	eii, aerial p	onotos,	previous in	spections	s), if a\	/aliable:	
Remarks:										
NUMBERS.										

Site:	Sargent Property	City/County:	Spence	er/Owen	Date:	1/4/2012 Data Point: 3
Client	:: Alt & Witzig	State: IN	Section, Tov	vnship, Range	e:	10N 3W Section 27
	Investigator(s):	<u>-</u>		J. Stecke	el	
	Slope (%): 0 Nor.	4347669	Eas.	523708	Datum:	16NAD83 NWI Class:
Soil N	lap Unit Name: Ross silt loam				·	
Clim	natic/hydrologic conditions typical for t	time of year?	Y/N Y			
	Vegetation , Soil	or Hy	drology	significantly	disturbe	d
	Vegetation , Soil	or Hy	/drology	naturally pro	blematic	
Are N	ormal Circumstances Present?	Yes x	No	- ''		
SUMI	MARY OF FINDINGS					
	Hydrophytic Vegetation Present?	Yes	No x			
	Hydric Soil Present?	Yes	No x	-	Is the D	OP within a Wetland?
	Wetland Hydrology Present?		No x	_	Yes	No x
Rema	, ,,					
VEGE	TATION					-
		Absolute %	Dominant			
Tree S	Stratum Plot size:	Cover	Species	Indicator	Status	
1.	Fagus grandifolia	35	Υ	FACU	4	Dominance Test Worksheet
2.	Carpinus caroliniana	20	Υ	FAC	3	Number of dominant species
3.	Quercus alba	20	Υ	FACU	4	that are OBL, FACW, or FAC: 1
4.			1			Total number of dominant
5.				·		species across all strata: 4
		75	Total Cover	- ·		Percent of dominant species
Shrub	Stratum Plot size:					that are OBL, FACW, or FAC: 25.00
1.	Rosa multiflora	20	Υ	FACU	4	Prevalence Index Worksheet
2.	rtoda matanora		· <del></del>	17100	•	Total % cover of:
3.			. ———	- ·		OBL species 0 x 1 0
4.				-		FACW species 0 x 2 0
5.				_		FAC species 20 x 3 60
J.		20	Total Cover			FACU species 75 x 4 300
Horb	Stratum Plot size:		Total Cover			
	Stratum Plot size:					·
1.	·					
2.						Prevalence Index: 3.78947368
3.						Hydrophytic Vegetation Indicators:
4.						Dominance Test is >50%
5.						Prevalence Index is <3.0*
6.						Morphological Adaptations*
7.						Problematic Hydrophytic Vegetation*
8.				-		
l		0	Total Cover			*Indicators of hydric soil and wetland
Wood	ly Vine Stratum Plot size:					hydrology must be present, unless disturbed
1.				-, . <u> </u>		or problematic
2.						
		0	Total Cover			Hydrophytic Vegetaion Present?
	Remarks:					Yes No x

		•	to depth n	eeded to	docum				firm absence of indicators.)	
Depth		trix	0.1				Features			
(inches)	Color	%	Color	%	Type*	Loc**	Text		Remarks	
0-18	10YR 4/4	100		-			silt lo	oam		
*Type: C=Cond	centration, [	D=Depletio	n, RM=Red	uced Mati	rix, CS=	Coated Sa	ind grains	**Lc	ocation: PL=Pore Lining, M=Ma	atrix
71	,		oil Indicato						Indicators for Problematic S	
Histosol (A1)		-		Sandy	Gleyed	Matrix (S4)	)		Coast Prairie Redox (A16)	
Histic Epipedo	n (A2)			Sandy I	Redox (	S5)			Iron-Manganese Masses (F12	2)
Black Histic (A	.3)			Strippe	d Matrix	(S6)			Other	
Hydrogen Sulf	ide (A4)			Loamy	Mucky I	Mineral (F1	)			
Stratified Laye	rs (A5)			Loamy	Gleyed	Matrix (F2)	)			
2 cm Muck (A	10)			Deplete	ed Matri	x (F3)				
Depleted Belo		, ,				ırface (F6)				
Thick Dark Su	. ,					Surface (F	7)	ļ		
Sandy Mucky	•	)		Redox	Depress	sions (F8)		ļ		
5cm Mucky Pe	eat or Peat									
Restrictive Layer (if	obsorved)									
Type:	observea)									
Depth (inches):					-	Hydric 9	oil Bross	n+2	Yes No x	
Remarks:					-	riyuric 3	oui Fiese	; 11L f	YesNox	
rtomanto.					1					
HYDROLOGY										
Wetland Hydrology	Indicators:									
	Primary Inc	dicators (c	heck all that	apply)					Secondary Indicators	
Surface Water	· (A1)		Wat	er Stained	Leave	s (B9)		Surfa	ce Soil Cracks (B6)	
High Water Ta	ıble (A2)		Aqu	atic Fauna	a (B13)			Drain	age Patterns (B10)	
Saturation (A3	5)		True	Aquatic I	Plants (l	B14)		Dry-S	Season Water Table (C2)	
Water Marks (	B1)		Hyd	rogen Sul	fide Od	or (C1)			ish Burrows (C8)	
Sediment Dep	osits (B2)		Oxio	lized Rhiz	osphere	es on Livin	g	Satur	ation Visible on Aerial Imagery	y (C9)
Drift Deposits	(B3)			ts (C3)				Stunt	ed or Stressed Plants (D1)	
Algal Mat or C	rust (B4)		Pres	ence of R	Reduced	Iron (C4)		Geor	norphic Position (D2)	
Iron Deposits	(B5)		Rec	ent Iron R	eductio	n in Tilled		FAC-	Neutral Test (D5)	
Inundation Vis	ible on Aeri	al		(C6)						
Imagery (B7)			Thin	Muck Su	rface (C	27)				
Sparsely Vege	tated Conc	ave	Gua	ge or Wel	l Data (	D9)				
Surface (B8)			Othe	er						
Field Observed:										
Field Observations:	.0	.,			ъ.					
Surface Water Presen		Yes _	No No	X		h (inches)	-			
Water Table Present	?	Yes _	No	Х		h (inches)				
Saturation Present?	1-1- /-1	Yes	No	X		h (inches)		) :¢		
Describe Recorded D	ata (stream	ı guage, m	onitoring we	eii, aerial p	onotos,	previous in	spections	s), if a\	/aliable:	
Remarks:										
NUMBERS.										

Site:	Sargent Property	City/County:	Spend	cer/Owen Date:	1/4/2012 Data Point: 4
Client:	Alt & Witzig	State: IN	State: IN Section, Township, Range:		10N 3W Section 27
In	vestigator(s):			J. Steckel	
	Slope (%): 0 Nor.	4347669	Eas.	523708 Datum	: 16NAD83 NWI Class:
Soil Ma	p Unit Name: Ross silt loam	•			
Climat	tic/hydrologic conditions typical fo				
	Vegetation, Soil	or Hy	/drology	significantly disturbe	ed
	Vegetation , Soil			naturally problemati	С
Are Nor	mal Circumstances Present?	Yes x	No		
CI IMM/	ARV OF FINDINGS				
SUMMA	ARY OF FINDINGS  Hydrophytic Vegetation Presen	t? Yes	No x		
	Hydric Soil Presen		No x	Is the	DP within a Wetland?
	Wetland Hydrology Presen		No x	_ Yes	No x
Remark		1: 162	NO X	162	140 X
Remark					
					_
VEGET	ATION				_
		Absolute %	Dominant		
Tree Sti	ratum Plot size:	Cover	Species	Indicator Status	
1.		_			Dominance Test Worksheet
2.			11	-	Number of dominant species
3.					that are OBL, FACW, or FAC: 0
4.					Total number of dominant
5.		-			species across all strata: 1
_		0	Total Cover		Percent of dominant species
Shrub S	Stratum Plot size:	-	•		that are OBL, FACW, or FAC: 0.00
1.		_			Prevalence Index Worksheet
2.		-			Total % cover of:
3.		-	1.1		OBL species 0 x 1 0
4.		_		_	FACW species 0 x 2 0
5.		_		_	FAC species 0 x 3 0
-		0	Total Cover		FACU species 0 x 4 0
Herb St	ratum Plot size:				UPL species 100 x 5 500
	Zea mays	100	Υ	UPL 5	Total 100 500
2.	_oa mayo		· — ·		Prevalence Index: 5
3.					Hydrophytic Vegetation Indicators:
4.		-	-	<del>-</del>	Dominance Test is >50%
5.		_		_	Prevalence Index is ≤3.0*
6.		_		_	Morphological Adaptations*
7.					Problematic Hydrophytic Vegetation*
8.				_	1 Toblematic Hydrophytic vegetation
°.		100	Total Cover	_	*Indicators of hydric soil and wetter d
Woody	Vine Stratum Plot siz		- I Olai Covel		*Indicators of hydric soil and wetland
	VIIIe Stratum PIOL SIZ	e			hydrology must be present, unless disturbed
1					or problematic
2			Tatal Carrie	<del>-</del>	Ukadrombusia Vanasaian Brazzas
		0	Total Cover		Hydrophytic Vegetaion Present?
l R	emarks:				YesNox

		•	to depth n	eeded to	docum				firm absence of indicators.)	
Depth		trix	0.1				Features			
(inches)	Color	%	Color	%	Type*	Loc**	Text		Remarks	
0-18	10YR 4/4	100		-			silt lo	oam		
*Type: C=Cond	centration, [	D=Depletio	n, RM=Red	uced Mati	rix, CS=	Coated Sa	ind grains	**Lc	ocation: PL=Pore Lining, M=Ma	atrix
71	,		oil Indicato						Indicators for Problematic S	
Histosol (A1)		-		Sandy	Gleyed	Matrix (S4)	)		Coast Prairie Redox (A16)	
Histic Epipedo	n (A2)			Sandy I	Redox (	S5)			Iron-Manganese Masses (F12	2)
Black Histic (A	.3)			Strippe	d Matrix	(S6)			Other	
Hydrogen Sulf	ide (A4)			Loamy	Mucky I	Mineral (F1	)			
Stratified Laye	rs (A5)			Loamy	Gleyed	Matrix (F2)	)			
2 cm Muck (A	10)			Deplete	ed Matri	x (F3)				
Depleted Belo		, ,				ırface (F6)				
Thick Dark Su	. ,					Surface (F	7)	ļ		
Sandy Mucky	•	)		Redox	Depress	sions (F8)		ļ		
5cm Mucky Pe	eat or Peat									
Restrictive Layer (if	obsorved)									
Type:	observea)									
Depth (inches):					-	Hydric 9	oil Bross	n+2	Yes No x	
Remarks:					-	riyuric 3	oui Fiese	; 11L f	YesNox	
rtomanto.					1					
HYDROLOGY										
Wetland Hydrology	Indicators:									
	Primary Inc	dicators (c	heck all that	apply)					Secondary Indicators	
Surface Water	· (A1)		Wat	er Stained	Leave	s (B9)		Surfa	ce Soil Cracks (B6)	
High Water Ta	ıble (A2)		Aqu	atic Fauna	a (B13)			Drain	age Patterns (B10)	
Saturation (A3	5)		True	Aquatic I	Plants (l	B14)		Dry-S	Season Water Table (C2)	
Water Marks (	B1)		Hyd	rogen Sul	fide Od	or (C1)			ish Burrows (C8)	
Sediment Dep	osits (B2)		Oxio	lized Rhiz	osphere	es on Livin	g	Satur	ation Visible on Aerial Imagery	y (C9)
Drift Deposits	(B3)			ts (C3)				Stunt	ed or Stressed Plants (D1)	
Algal Mat or C	rust (B4)		Pres	ence of R	Reduced	Iron (C4)		Geor	norphic Position (D2)	
Iron Deposits	(B5)		Rec	ent Iron R	eductio	n in Tilled		FAC-	Neutral Test (D5)	
Inundation Vis	ible on Aeri	al		(C6)						
Imagery (B7)			Thin	Muck Su	rface (C	27)				
Sparsely Vege	tated Conc	ave	Gua	ge or Wel	l Data (	D9)				
Surface (B8)			Othe	er						
Field Observed:										
Field Observations:	.0	.,			ъ.					
Surface Water Presen		Yes _	No No	X		h (inches)	-			
Water Table Present	?	Yes _	No	Х		h (inches)				
Saturation Present?	1-1- /-1	Yes	No	X		h (inches)		) :¢		
Describe Recorded D	ata (stream	ı guage, m	onitoring we	eii, aerial p	onotos,	previous in	spections	s), if a\	/aliable:	
Remarks:										
NUMBERS.										

Site:	Sargent Property	City/County:	Spenc	er/Owen Date:	1/4/2012 Data Point: 5
Client	: Alt & Witzig	State: IN	Section, To	wnship, Range:	10N 3W Section 27
	Investigator(s):	_		J. Steckel	
	Slope (%): 0 Nor.	4347669	Eas.	523708 Datum	: 16NAD83 NWI Class:
Soil M	lap Unit Name: Ross silt loam				
Clim	natic/hydrologic conditions typical for	time of year?	Y/N Y		
	Vegetation , Soil	or Hy	/drology	significantly disturbe	ed
	Vegetation , Soil		drology	naturally problemati	
Are N	ormal Circumstances Present?	Yes x	No	, ,	
		-		_	
SUMI	MARY OF FINDINGS  Hydrophytic Vegetation Present?	Vaa	No v		
	, , , ,		No x		DD within - Wester 40
	Hydric Soil Present?		No x	_	DP within a Wetland?
D	Wetland Hydrology Present?	Yes	No x	Yes	No x
Rema	IFKS:				
VEGE	TATION				
		Absolute %	Dominant		7
Tree S	Stratum Plot size:	Cover	Species	Indicator Status	
1.	Fagus grandifolia	35	Y	FACU 4	Dominance Test Worksheet
2.	Platanus occidentalis	20	Y	FACW 2	Number of dominant species
3.	Quercus alba	25	- <u>·</u> Y	FACU 4	that are OBL, FACW, or FAC:
4.	Quereus and		· — ·	17.00 4	Total number of dominant
5.				_	species across all strata: 3
5.		80	Total Cover		· · · · · · · · · · · · · · · · · · ·
Ch w th	Ctroture District	- 60	Total Cover		Percent of dominant species
	Stratum Plot size:				that are OBL, FACW, or FAC: 33.33
1.				_	Prevalence Index Worksheet
2.					Total % cover of:
3.					OBL species 0 x 1 0
4.					FACW species 20 x 2 40
5.				_	FAC species 0 x 3 0
		0	Total Cover		FACU species 60 x 4 240
	Stratum Plot size:				UPL species <u>0</u> x 5 <u>0</u>
1.				_	Total <u>80</u> <u>280</u>
2.				_	Prevalence Index: 3.5
3.				_	Hydrophytic Vegetation Indicators:
4.			·		Dominance Test is >50%
5.					Prevalence Index is ≤3.0*
6.					Morphological Adaptations*
7.					Problematic Hydrophytic Vegetation*
8.					
		0	Total Cover		*Indicators of hydric soil and wetland
Wood	y Vine Stratum Plot size:		-		hydrology must be present, unless disturbed
1.					or problematic
2.					
		0	Total Cover		Hydrophytic Vegetaion Present?
	Remarks:				Yes No x
1					<u> </u>

	Profile De Depth	escription: Ma	•	to dept	n ne	eded to	docum		Features		firm absence of indicator	's.) T
	(inches)	Color	%	Colo	\r	%	Typo*	Loc**	Text		Remarks	
	0-6	10YR 4/4	100	Coic	,,	/0	Type	LUC	silt lo		Remarks	-
	6-18	101R 4/4 10YR 4/3	100						silt lo			-
	0-18	101K 4/3	100						SIILIC	oam		4
				<u> </u>								
	*Type: C=Cond	centration, [	D=Depletio	n, RM=F	Reduc	ced Mati	rix, CS=	Coated Sa	nd grains	**Lo	ocation: PL=Pore Lining, M	=Matrix
	71	,	Hydric S				,		Ŭ		Indicators for Problemat	
	Histosol (A1)		•				Gleyed	Matrix (S4)			Coast Prairie Redox (A16	5)
	Histic Epipedo	n (A2)				Sandy I		,			Iron-Manganese Masses	(F12)
	Black Histic (A	, ,				Strippe					Other	,
	Hydrogen Sulf	,						Mineral (F1	)			
	Stratified Laye	rs (A5)				Loamy	Gleved	Matrix (F2)	)	İ		
	2 cm Muck (A1					Deplete		. ,		İ		
	Depleted Below	,	ace (A11)					ırface (F6)		İ		
	Thick Dark Su		(					Surface (F	7)	İ		
	Sandy Mucky	. ,	)			_		sions (F8)	- /	İ		
	5cm Mucky Pe	•	/							ı		
	oom maony i o	out of 1 out										
Restr	ictive Layer (if	observed)										
	Type:	•										
De	pth (inches):						-	Hydric S	oil Prese	ent?	Yes No x	
	Remarks:						-	•				_
н	DROLOGY											
Wetla	nd Hydrology	Indicators:										
		Primary Ind	dicators (c	heck all t	hat a	ipply)					Secondary Indicators	
	Surface Water	· (A1)		٧	Vater	Stained	Leave	s (B9)		Surfa	ce Soil Cracks (B6)	
	High Water Ta	ıble (A2)		P	Aquat	ic Fauna	a (B13)			Drain	age Patterns (B10)	
	Saturation (A3	5)		T	rue /	Aquatic I	Plants (	B14)		Dry-S	Season Water Table (C2)	
	Water Marks (I	B1)		H	lydro	gen Sul	fide Od	or (C1)		Crayf	fish Burrows (C8)	
	Sediment Dep	osits (B2)			Oxidiz	zed Rhiz	ospher	es on Living	3	Satur	ation Visible on Aerial Imag	gery (C9)
	Drift Deposits	(B3)		F	Roots	(C3)				Stunt	ed or Stressed Plants (D1)	
	Algal Mat or C	rust (B4)		F	rese	nce of R	Reduced	Iron (C4)		Geon	norphic Position (D2)	
	Iron Deposits (	(B5)		F	Recer	nt Iron R	eductio	n in Tilled		FAC-	Neutral Test (D5)	
	Inundation Vis	ible on Aeri	al		Soil (C	26)				•		
	Imagery (B7)			T	hin N	Muck Su	rface (C	27)				
	Sparsely Vege	tated Conc	ave		Suage	e or Wel	l Data (	D9)				
	Surface (B8)				Other		,	,				
	-								_			
Field	Observations:											
Surfac	ce Water Preser	nt?	Yes	N	Ю	х	Dept	h (inches)				
Water	Table Present?	?	Yes		Ю	Х	Dept	h (inches)		_		
Satura	ation Present?		Yes	N	lо	х	Dept	h (inches)				
Descr	ibe Recorded D	ata (stream	guage, m	onitoring	well	, aerial p	hotos,	previous in	spections	s), if av	/ailable:	
	rks:											

Site:	Sargent Property	City/County:	Spence	er/Owen	Date:	1/4/2012 Data Point: 6
Clien	t: Alt & Witzig	State: IN	Section, Tov	vnship, Rang	je:	10N 3W Section 27
	Investigator(s):	_		J. Steck	el	
	Slope (%): 0 Nor.	4347669	Eas.	523708	Datum:	16NAD83 NWI Class:
Soil N	Map Unit Name: Ross silt loam				_	
Clin	natic/hydrologic conditions typical for t	time of year?	Y/N Y			
	Vegetation , Soil	or Hy	drology	significantly	disturbed	d
	Vegetation , Soil		drology	naturally pro		
Are N	Normal Circumstances Present?	Yes x	No	, ,		
				-		
SUM	MARY OF FINDINGS					
	Hydrophytic Vegetation Present?	Yes	No x			
	Hydric Soil Present?	Yes	No x	_	Is the D	P within a Wetland?
	Wetland Hydrology Present?	Yes	No x	_	Yes	No x
Rema	, ,,					
VEGI	ETATION					
		Absolute %	Dominant			
Tree	Stratum Plot size:	Cover	Species	Indicator	Status	
1.	Platanus occidentalis	30	Y	FACW	2	Dominance Test Worksheet
2.	Fagus grandifolia	20	Y	FACU	4	Number of dominant species
3.	Acer saccharum	20	Y	FACU	4	that are OBL, FACW, or FAC: 1
4.			-			Total number of dominant
5.		-				species across all strata: 3
	•	70	Total Cover			Percent of dominant species
Shruk	b Stratum Plot size:		Total Covol			that are OBL, FACW, or FAC: 33.33
1.	Rosa multiflora	15	N	FACU	4	Prevalence Index Worksheet
2.	Nosa malanora	- 10		17.00	-	Total % cover of:
3.						OBL species 0 x 1 0
4.			-			FACW species 30 x 2 60
5.						FAC species 0 x 3
٥.	-	15	Total Cover			FACU species 55 x 4 220
l lawla	Ctroture District	15	Total Cover			· — —
	Stratum Plot size:					· <u> </u>
1. 2.						
						Prevalence Index: 3.29411765
3.						Hydrophytic Vegetation Indicators:
4.						Dominance Test is >50%
5.						Prevalence Index is <3.0*
6.						Morphological Adaptations*
7.						Problematic Hydrophytic Vegetation*
8.						
		0	Total Cover			*Indicators of hydric soil and wetland
Wood	dy Vine Stratum Plot size:					hydrology must be present, unless disturbed
1.						or problematic
2.						
		0	Total Cover			Hydrophytic Vegetaion Present?
	Remarks:					Yes No x

		•	to depth r	eeded to	docum				firm absence of indicators.)	
Depth		trix					Features			
(inches)	Color	%	Color	%	Type*	Loc**	Text		Remarks	
0-18	10YR 4/4	100		4			silt lo	oam		
*Type: C=Cond	centration, [	D=Depletio	n, RM=Red	uced Mati	rix, CS=	Coated Sa	and grains	**Lc	ocation: PL=Pore Lining, M=Ma	atrix
71	,		oil Indicate						Indicators for Problematic S	
Histosol (A1)				Sandy	Gleyed	Matrix (S4)	)		Coast Prairie Redox (A16)	
Histic Epipedo	n (A2)			Sandy I	Redox (	S5)			Iron-Manganese Masses (F12	2)
Black Histic (A	.3)			Strippe	d Matrix	(S6)			Other	
Hydrogen Sulf	ide (A4)			Loamy	Mucky I	Mineral (F1	l)			
Stratified Laye	rs (A5)			Loamy	Gleyed	Matrix (F2)	)			
2 cm Muck (A	10)			Deplete	ed Matri	x (F3)				
Depleted Belo		, ,		_		ırface (F6)	-			
Thick Dark Su	. ,					Surface (F	7)	ļ		
Sandy Mucky	•	)		Redox	Depress	sions (F8)		ļ		
5cm Mucky Pe	eat or Peat									
Restrictive Layer (if	obsorved)									
Type:	observea)									
Depth (inches):					-	Hydric 9	Coil Bross	n+2	Yes No x	
Remarks:					-	riyuric 3	oui Fiese	; 11L f	YesNox	
rtomanto.					1					
HYDROLOGY										
Wetland Hydrology	Indicators:									
	Primary Inc	dicators (c	heck all that	apply)					Secondary Indicators	
Surface Water	· (A1)		Wat	er Stained	Leave	s (B9)		Surfa	ce Soil Cracks (B6)	
High Water Ta	ıble (A2)		Aqu	atic Fauna	a (B13)			Drain	age Patterns (B10)	
Saturation (A3	5)		True	e Aquatic I	Plants (l	B14)		Dry-S	Season Water Table (C2)	
Water Marks (	B1)		Hyd	rogen Sul	fide Od	or (C1)			fish Burrows (C8)	
Sediment Dep	osits (B2)		Oxio	dized Rhiz	osphere	es on Livin	g	Satur	ration Visible on Aerial Imagery	/ (C9)
Drift Deposits	(B3)			ts (C3)				Stunt	ed or Stressed Plants (D1)	
Algal Mat or C	rust (B4)		Pres	sence of R	Reduced	Iron (C4)		Geor	norphic Position (D2)	
Iron Deposits	(B5)		Rec	ent Iron R	eductio	n in Tilled		FAC-	Neutral Test (D5)	
Inundation Vis	ible on Aeri	al		(C6)						
Imagery (B7)			Thir	Muck Su	rface (C	27)				
Sparsely Vege	tated Conc	ave	Gua	ge or Wel	l Data (	D9)				
Surface (B8)			Oth	er						
Field Observed:										
Field Observations:	.0	.,			ъ.					
Surface Water Presen		Yes _	No	X		h (inches)				
Water Table Present		Yes _	No	X		h (inches)				
Saturation Present?	oto /stras	Yes	No onitoring w	X		h (inches)	onoction -	\ it =-	voilables	
Describe Recorded D	ata (stream	ı guage, m	onitoring we	ы, аепаі р	ภาบเอร,	previous in	spections	o), if a∖	valiable:	
Remarks:										

Site:	Sargent Property	City/County:	Spence	er/Owen	Date:	1/4/2012
Client	: Alt & Witzig	State: IN	Section, Tov	vnship, Rang	e:	10N 3W Section 27
	Investigator(s):	_		J. Steck	el	
	Slope (%): 0 Nor.	4347669	Eas.	523708	Datum:	16NAD83 NWI Class:
Soil N	lap Unit Name: Ross silt loam				-	
Clim	natic/hydrologic conditions typical for	time of year?	Y/N Y			
	Vegetation , Soil	or Hy	drology	significantly	disturbe	d
	Vegetation , Soil	or Hy	/drology	naturally pro	blematio	
Are N	ormal Circumstances Present?	Yes x	No			
SUMI	MARY OF FINDINGS					
<u> </u>	Hydrophytic Vegetation Present?	Yes	No			
	Hydric Soil Present?	Yes	No	-	Is the [	OP within a Wetland?
	Wetland Hydrology Present?		No	_	Yes	No
Rema	, ,,	. 00				
VEGE	TATION					1
		Absolute %	Dominant			
Tree :	Stratum Plot size:	Cover	Species	Indicator		
1.	Platanus occidentalis	30	Y	FACW	2	Dominance Test Worksheet
2.	Fagus grandifolia	20	Y	FACU	4	Number of dominant species
3.	Quercus alba	15	N	FACU	4	that are OBL, FACW, or FAC: 1
4.	-					Total number of dominant
5.	-	•				species across all strata: 2
		65	Total Cover	-0 (		Percent of dominant species
Shrub	Stratum Plot size:					that are OBL, FACW, or FAC: 50.00
1.	Rosa multiflora	10	N	FACU	4	Prevalence Index Worksheet
2.						Total % cover of:
3.						OBL species 0 x 1 0
4.	-	-				FACW species 30 x 2 60
5.	-	-				FAC species 0 x 3 0
		10	Total Cover			FACU species 45 x 4 180
Herb	Stratum Plot size:					UPL species 0 x 5 0
1.						Total 75 240
2.	1			_		Prevalence Index: 3.2
3.			. ———			Hydrophytic Vegetation Indicators:
4.		-				Dominance Test is >50%
5.		-	. —			Prevalence Index is ≤3.0*
6.						Morphological Adaptations*
7.						
7. 8.			-			Problematic Hydrophytic Vegetation*
ο.		0	Total Cover	-		*Indicators of hydric soil and wetland
Wood	v Vine Stratum Plot size:					hydrology must be present, unless disturbed
1.	i lot size.					or problematic
1. 2.						or problematic
۷.		0	Total Cover			Hydrophytic Vegetaion Present?
-	Remarks:	U	i otal Cover			
	Nemains.					YesNox

		•	to depth r	eeded to	docum				firm absence of indicators.)	
Depth		trix					Features			
(inches)	Color	%	Color	%	Type*	Loc**	Text		Remarks	
0-18	10YR 4/4	100		4			silt lo	oam		
*Type: C=Cond	centration, [	D=Depletio	n, RM=Red	uced Mati	rix, CS=	Coated Sa	and grains	**Lc	ocation: PL=Pore Lining, M=Ma	atrix
71	,		oil Indicate						Indicators for Problematic S	
Histosol (A1)				Sandy	Gleyed	Matrix (S4)	)		Coast Prairie Redox (A16)	
Histic Epipedo	n (A2)			Sandy I	Redox (	S5)			Iron-Manganese Masses (F12	2)
Black Histic (A	.3)			Strippe	d Matrix	(S6)			Other	
Hydrogen Sulf	ide (A4)			Loamy	Mucky I	Mineral (F1	I)			
Stratified Laye	rs (A5)			Loamy	Gleyed	Matrix (F2)	)			
2 cm Muck (A	10)			Deplete	ed Matri	x (F3)				
Depleted Belo		, ,		_		ırface (F6)	-			
Thick Dark Su	. ,					Surface (F	7)	ļ		
Sandy Mucky	•	)		Redox	Depress	sions (F8)		ļ		
5cm Mucky Pe	eat or Peat									
Restrictive Layer (if	obsorved)									
Type:	observea)									
Depth (inches):					-	Hydric 9	Coil Bross	n+2	Yes No x	
Remarks:					-	riyuric 3	oui Fiese	; 11L f	YesNox	
rtomanto.					1					
HYDROLOGY										
Wetland Hydrology	Indicators:									
	Primary Inc	dicators (c	heck all that	apply)					Secondary Indicators	
Surface Water	· (A1)		Wat	er Stained	Leave	s (B9)		Surfa	ce Soil Cracks (B6)	
High Water Ta	ıble (A2)		Aqu	atic Fauna	a (B13)			Drain	age Patterns (B10)	
Saturation (A3	5)		True	e Aquatic I	Plants (l	B14)		Dry-S	Season Water Table (C2)	
Water Marks (	B1)		Hyd	rogen Sul	fide Od	or (C1)			fish Burrows (C8)	
Sediment Dep	osits (B2)		Oxio	dized Rhiz	osphere	es on Livin	g	Satur	ration Visible on Aerial Imagery	/ (C9)
Drift Deposits	(B3)			ts (C3)				Stunt	ed or Stressed Plants (D1)	
Algal Mat or C	rust (B4)		Pres	sence of R	Reduced	Iron (C4)		Geor	norphic Position (D2)	
Iron Deposits	(B5)		Rec	ent Iron R	eductio	n in Tilled		FAC-	Neutral Test (D5)	
Inundation Vis	ible on Aeri	al		(C6)						
Imagery (B7)			Thir	Muck Su	rface (C	27)				
Sparsely Vege	tated Conc	ave	Gua	ge or Wel	l Data (	D9)				
Surface (B8)			Oth	er						
Field Observed:										
Field Observations:	.0	.,			ъ.					
Surface Water Presen		Yes _	No	X		h (inches)				
Water Table Present		Yes _	No	X		h (inches)				
Saturation Present?	oto /stras	Yes	No onitoring w	X		h (inches)	onoction -	\ it =-	voilables	
Describe Recorded D	ata (stream	ı guage, m	onitoring we	ы, аепаі р	ภาบเอร,	previous in	spections	o), if a∖	valiable:	
Remarks:										

Site:	Sargent Pro				er/Owen	Date:				
Client:	Alt & Wit	zig	State: IN	Sect	ion, To	wnship, Ran	ge:		10N 3W Section 27	,
Inv	estigator(s):					J. Sted				
	Slope (%): 0	Nor.	4347669	Eas.		523708	Datum:	16NAD83	NWI Class:	
Soil Map	Unit Name: Ross	silt loam								
Climatio	c/hydrologic condition	ons typical for	time of year?	Y/N	Υ	_				
	Vegetation	, Soil	or H	ydrolog	ıy	significantl	y disturbe	d		
	Vegetation	, Soil	or H	ydrolog		naturally p	roblematio			
Are Norm	nal Circumstances I	Present?	Yes x	No						
				_						
	RY OF FINDINGS									
	Hydrophytic Veget			No	Х	_				
		Soil Present?		No	Х	_		OP within a	Wetland?	
		ology Present?	Yes	No	Х		Yes	No	X	
Remarks:	:									
VEGETA	TION							7		
			Absolute %		minant					
Tree Stra	<u>itum</u> Plot si	ize:	Cover	Sp	ecies	Indicato	r Status			
1.								Do	minance Test Work	sheet
2.						_		Number o	f dominant species	
3.						_		that are Ol	BL, FACW, or FAC:	0
4.								Total nu	mber of dominant	
5.								species	across all strata:	1
			0	Total	Cover			Percent of	f dominant species	
Shrub Str	ratum Plot si	ize:						that are Ol	BL, FACW, or FAC:	0.00
1.								Prevalence	Index Worksheet	
2.								Total %	cover of:	
3.								OBL specie	s 0 x 1	0
4.								FACW spec	cies 0 x 2	0
5.								FAC specie		0
			0	Total	Cover			FACU spec		0
Herb Stra	atum Plot si	ize:						UPL specie		500
1. Ze	ea mays		100		Υ	UPL	5	Total		500
2.	,								Prevalence Index:	5
3.								Hydrophyt	ic Vegetation Indica	
4.									nance Test is >50%	
5.									alence Index is <3.0*	
6.				-		_			hological Adaptations	<u>*</u>
7.									ematic Hydrophytic \	
8.								1 1001	cinatic riyaropriyac v	cgctation
" -			100	Total	Cover			*Indiaa	tors of hydric soil and	l wotland
Woody V	ine Stratum	Plot size:		- I Olai	Covei				nust be present, unle	
1.	ino Stratum	1 101 3126						riyurology i	or problematic	รออ นเอเนเมชน
2.									or problematic	
			0	Total	Cover			ال ال	nhutia Vagataian D	rocent?
Da.	marks:		U	TOIAI	Covel				phytic Vegetaion P	i eseiit i
Rei	iiains.							Yes	Nox	

		•	to depth r	eeded to	docum				firm absence of indicators.)	
Depth		trix					Features			
(inches)	Color	%	Color	%	Type*	Loc**	Text		Remarks	
0-18	10YR 4/4	100		4			silt lo	oam		
*Type: C=Cond	centration, [	D=Depletio	n, RM=Red	uced Mati	rix, CS=	Coated Sa	and grains	**Lc	ocation: PL=Pore Lining, M=Ma	atrix
71	,		oil Indicate						Indicators for Problematic S	
Histosol (A1)				Sandy	Gleyed	Matrix (S4)	)		Coast Prairie Redox (A16)	
Histic Epipedo	n (A2)			Sandy I	Redox (	S5)			Iron-Manganese Masses (F12	2)
Black Histic (A	.3)			Strippe	d Matrix	(S6)			Other	
Hydrogen Sulf	ide (A4)			Loamy	Mucky I	Mineral (F1	l)			
Stratified Laye	rs (A5)			Loamy	Gleyed	Matrix (F2)	)			
2 cm Muck (A	10)			Deplete	ed Matri	x (F3)				
Depleted Belo		, ,		_		ırface (F6)	-			
Thick Dark Su	. ,					Surface (F	7)	ļ		
Sandy Mucky	•	)		Redox	Depress	sions (F8)		ļ		
5cm Mucky Pe	eat or Peat									
Restrictive Layer (if	obsorved)									
Type:	observea)									
Depth (inches):					-	Hydric 9	Coil Bross	n+2	Yes No x	
Remarks:					-	riyuric 3	oui Fiese	; 11L f	YesNox	
rtomanto.					1					
HYDROLOGY										
Wetland Hydrology	Indicators:									
	Primary Inc	dicators (c	heck all that	apply)					Secondary Indicators	
Surface Water	· (A1)		Wat	er Stained	Leave	s (B9)		Surfa	ce Soil Cracks (B6)	
High Water Ta	ıble (A2)		Aqu	atic Fauna	a (B13)			Drain	age Patterns (B10)	
Saturation (A3	5)		True	e Aquatic I	Plants (l	B14)		Dry-S	Season Water Table (C2)	
Water Marks (	B1)		Hyd	rogen Sul	fide Od	or (C1)			fish Burrows (C8)	
Sediment Dep	osits (B2)		Oxio	dized Rhiz	osphere	es on Livin	g	Satur	ration Visible on Aerial Imagery	/ (C9)
Drift Deposits	(B3)			ts (C3)				Stunt	ed or Stressed Plants (D1)	
Algal Mat or C	rust (B4)		Pres	sence of R	Reduced	Iron (C4)		Geor	norphic Position (D2)	
Iron Deposits	(B5)		Rec	ent Iron R	eductio	n in Tilled		FAC-	Neutral Test (D5)	
Inundation Vis	ible on Aeri	al		(C6)						
Imagery (B7)			Thir	Muck Su	rface (C	27)				
Sparsely Vege	tated Conc	ave	Gua	ge or Wel	l Data (	D9)				
Surface (B8)			Oth	er						
Field Observed:										
Field Observations:	.0	.,			ъ.					
Surface Water Presen		Yes _	No	X		h (inches)				
Water Table Present		Yes _	No	X		h (inches)				
Saturation Present?	oto /stras	Yes	No onitoring w	X		h (inches)	onoction -	\ it =-	voilables	
Describe Recorded D	ata (stream	ı guage, m	onitoring we	ы, аепаі р	ภาบเอร,	previous in	spections	o), if a∖	valiable:	
Remarks:										

Client:   All & Wilzig   State:   N   Section, Township, Range:   10N 3W Section 27	Site:	Sargent Property	City/County:	Spenc	er/Owen Date:	1/4/2012 Data Point: 9
Slope (%): O   Nor.   4347669   Eas.   523708   Datum: 16NAD83   NWI Class:	Client	: Alt & Witzig	State: IN	Section, To	wnship, Range:	10N 3W Section 27
Soil Map Unit Name: Ross slit loam Climatichydrologic conditions typical for time of year? Y/N Y Vegetation Soil or Hydrology or Hydrology Vegetation Are Normal Circumstances Present? Yes No or Hydrology No or Hydrology or Hyd		Investigator(s):	<u>-</u>		J. Steckel	
Climatic/hydrologic conditions typical for time of year? YNN Yegetation Soil or Hydrology Instituted Vegetation Soil or Hydrology Instituted Negatiation Soil or Hydrology Instituted Negatiation Soil Phydrology Instituted Negatiation Present? Yes No X Is the DP within a Wetland? Wetland Hydrology Present? Yes No X Is the DP within a Wetland? Yes No X Is The DP within a Wetland? Yes No X Is the DP within a Wetland? Yes No X Is The DP within a Wetland? Y		Slope (%): 0 Nor.	4347669	Eas.	523708 Datum	: 16NAD83 NWI Class:
Vegetation         Soil         or Hydrology         significantly disturbed naturally problematic           Are Normal Circumstances Present?         Yes         x         No           Yes         x         No         x           Hydrophytic Vegetation Present? Yes         No         x           Hydrophytic Vegetation Present? Yes         No         x           Hydrophytic Vegetation Present? Yes         No         x           Wetland Hydrology Present? Yes         No         x           Wetland Hydrology Present? Yes         No         x           Yes         No         x           Remarks:         VEGETATION           Tree Stratum         Plot size:         Cover         Species         Indicator Status           1. Ulmus americana         40         Y         FACU         2         Number of dominant species           1. Liman Agrandifola         25         Y         FACU         4         Number of dominant species         1 <t< td=""><td>Soil M</td><td>lap Unit Name: Ross silt loam</td><td></td><td></td><td></td><td></td></t<>	Soil M	lap Unit Name: Ross silt loam				
Vegetation	Clim	natic/hydrologic conditions typical for t	time of year?	Y/N Y		
Vegetation		Vegetation , Soil	or Hy	/drology	significantly disturbe	ed
SUMMARY OF FINDINGS		Vegetation , Soil	or Hy	/drology	naturally problemati	С
Hydrophytic Vegetation Present? Yes	Are N				- ''	
Hydrophytic Vegetation Present? Yes					_	
Hydrophytic Vegetation Present? Yes	SUMI	MARY OF FINDINGS				
Wetland Hydrology Present? Yes			Yes	No x		
Wetland Hydrology Present? Yes		Hydric Soil Present?	Yes	·	Is the	DP within a Wetland?
Name		•			Yes	No x
Tree Stratum	Rema	, ,,				
Tree Stratum						
Tree Stratum						
Tree Stratum         Plot size:         Cover 40         Species 7         Indicator Status FACW         2           1. Ulmus americana         40         Y         FACW         2           2. Fagus grandifolia         25         Y         FACU         4           3. Acer saccharum         25         Y         FACU         4           4.         Total number of dominant species that are OBL, FACW, or FAC:         1           5.         90         Total Cover         Percent of dominant species that are OBL, FACW, or FAC:         33.33           1.         90         Total Cover         Prevalence Index Worksheet           1.         0         Total % cover of:         33.33           3.         0         Species 0 0 x 1 0         0           4.         0         FACW species 0 0 x 3 0         0           5.         0         Total Cover         FACU species 0 x 4 20         0           Herb Stratum         Plot size:         0         Total Cover         Hydrophytic Vegetation Indicators:         0           1.         0         Total Cover         Hydrophytic Vegetation Indicators:         3.0*           6.         0         0         Total Cover         Problematic Hydrophytic Vegetation*	VEGE	TATION				_
1. Ulmus americana         40         Y         FACW         2         Dominance Test Worksheet           2. Fagus grandifolia         25         Y         FACU         4         Number of dominant species that are OBL, FACW, or FAC: 1         1           4.         Shrub Stratum         Plot size:         Pominance Test Worksheet         1           5.         John Total Cover         Prevalence Index Worksheet         3           1.         Prevalence Index Worksheet         33.33           2.         Total % cover of:         OBL species         0 x 1 0           3.         Prevalence Index Worksheet         0         0           5.         OBL species         0 x 1 0         0           6.         FACW species         0 x 3 0         0           9.         Total Cover         FACU species         0 x 5 0         0           1.         Prevalence Index is 50 x 4 200         0 <t< td=""><td></td><td></td><td>Absolute %</td><td>Dominant</td><td></td><td></td></t<>			Absolute %	Dominant		
2. Fagus grandifolia       25       Y       FACU       4         3. Acer saccharum       25       Y       FACU       4         4.       Total number of dominant species that are OBL, FACW, or FAC: 1       1         5.       90       Total Cover       Percent of dominant species that are OBL, FACW, or FAC: 33.33         1.       Prevalence Index Worksheet         2.       OBL, FACW, or FAC: 33.33         3.       OBL species 0 x 1 0 0         5.       FACW species 40 x 2 80         6.       FACS species 0 x 3 0 0         FACY species 50 x 4 200       Prevalence Index: 3.11111111         3.       Prevalence Index: 50 x 5 0         1.       Prevalence Index: 3.11111111         3.       Prevalence Index: 3.11111111         4.       Prevalence Index: 3.11111111         3.       Prevalence Index: 3.11111111         4.       Prevalence Index: 3.11111111         4.       Prevalence Index: 3.11111111         5.       Prevalence Index: 3.0*         6.       Prevalence Index: 3.0*         Morphological Adaptations*         7.       Prevalence Index: 3.0*         Morphological Adaptations*       Prevalence Index: 3.0*         *Indicators of hydric soil and wetland h	Tree S	Stratum Plot size:	Cover	Species	Indicator Status	
3.	1.	Ulmus americana	40	Υ	FACW 2	Dominance Test Worksheet
4.       Total number of dominant species across all strata:       3         Shrub Stratum       Plot size:       Percent of dominant species that are OBL, FACW, or FAC:       33.33         1.       Prevalence Index Worksheet       Total % cover of:         2.       OBL species       0 x 1       0         4.       FACW species       40 x 2       80         5.       FACW species       0 x 3       0         6.       O Total Cover       FACU species       0 x 5       0         90       Total Pover       Prevalence Index:       3.11111111         3.       Hydrophytic Vegetation Indicators:       0       280         1.       Prevalence Index:       3.11111111         3.       Hydrophytic Vegetation Indicators:       0         4.       Dominance Test is >50%         5.       Prevalence Index:       3.11111111         4.       Dominance Test is >50%         Prevalence Index:       3.11111111         8.       Problematic Hydrophytic Vegetation*         8.       Problematic Hydrophytic Vegetation by drology must be present, unless disturbed or problematic         1.       Total Cover       Hydrophytic Vegetation Present?	2.	Fagus grandifolia	25	Y	FACU 4	Number of dominant species
5.         90         Total Cover         species across all strata:         3           Shrub Stratum         Plot size:         Percent of dominant species that are OBL, FACW, or FAC:         33.33           1.         Prevalence Index Worksheet         Total % cover of:           2.         OBL species         0 x 1         0           4.         FACW species         40 x 2         80           5.         FAC species         0 x 3         0           FACU species         50 x 4         200           UPL species         0 x 5         0           1.         Total 90         280           Prevalence Index:         3.11111111           3.         Hydrophytic Vegetation Indicators:         Dominance Test is >50%           5.         Prevalence Index:         3.11111111           4.         Description of the prevalence Index:         3.11111111           5.         Dominance Test is >50%           Prevalence Index:         3.0*           6.         Prevalence Index:         3.11111111           8.         Problematic Hydrophytic Vegetation*           8.         Problematic Hydrophytic Vegetation Present?           4.         Problematic Hydrophytic Vegetation Present?	3.	Acer saccharum	25	Y	FACU 4	that are OBL, FACW, or FAC: 1
Shrub Stratum	4.					Total number of dominant
Shrub Stratum	5.					-1
Shrub Stratum         Plot size:         that are OBL, FACW, or FAC:         33.33           1.         Prevalence Index Worksheet         Total % cover of:           3.         OBL species         0 x 1         0           4.         FACW species         40 x 2         80           5.         FAC species         0 x 3         0           FAC species         50 x 4         200           UPL species         0 x 5         0           1.         Total 90         280           Prevalence Index:         3.11111111           3.         Hydrophytic Vegetation Indicators:           4.         Dominance Test is >50%           Prevalence Index is ≤3.0*         Prevalence Index is ≤3.0*           Morphological Adaptations*         Problematic Hydrophytic Vegetation*           8.         Problematic Hydrophytic Vegetation*           *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic           1.         Total Cover           Hydrophytic Vegetation Present?			90	Total Cover		
1.       Prevalence Index Worksheet         2.       Total % cover of:         3.       OBL species       0 x 1 0         4.       FACW species       40 x 2 80         5.       FAC species       0 x 3 0         FAC species       0 x 3 0         FACU species       50 x 4 200         UPL species       0 x 5 0         Total 90 280         Prevalence Index:       3.11111111         Hydrophytic Vegetation Indicators:         Dominance Test is >50%         5.       Prevalence Index is ≤3.0*         6.       Prevalence Index is ≤3.0*         7.       Problematic Hydrophytic Vegetation*         8.       Problematic Hydrophytic vegetation*         4.       Problematic Hydrophytic vegetation*         8.       Problematic Hydrophytic vegetation Indicators:         1.       Problematic Hydrophytic vegetation*         4.       Problematic Hydrophytic vegetation*         4.       Problematic	Shrub	Stratum Plot size:		•		· ·
2.       Total % cover of:         3.       OBL species       0 x 1 0         4.       FACW species       40 x 2 80         5.       FAC species       0 x 3 0         FACU species       50 x 4 200         UPL species       0 x 5 0         Total 90 280         Prevalence Index:       3.11111111         Hydrophytic Vegetation Indicators:         Dominance Test is >50%         FRCU species       50 x 4 200         UPL species       0 x 5 0         Prevalence Index:       3.11111111         Hydrophytic Vegetation Indicators:       Dominance Test is >50%         Prevalence Index is ≤3.0*       Morphological Adaptations*         Problematic Hydrophytic Vegetation*         *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic         0 Total Cover       Hydrophytic Vegetation Present?						
OBL species   O x 1   O FACW species   40 x 2   80						
4.       FACW species       40 x 2       80         5.       FAC species       0 x 3       0         FACU species       50 x 4       200         UPL species       0 x 5       0         Total       90       280         Prevalence Index:       3.11111111         Hydrophytic Vegetation Indicators:       Dominance Test is >50%         5.       Prevalence Index is ≤3.0*         6.       Prevalence Index is ≤3.0*         Morphological Adaptations*         7.       Problematic Hydrophytic Vegetation*         8.       Problematic Hydrophytic Vegetation hydrology must be present, unless disturbed or problematic         1.       0 Total Cover       Hydrophytic Vegetation Present?				-	-	
FAC species       0       x 3       0         Herb Stratum       Plot size:       Total Cover       FACU species       50       x 4       200         1.       UPL species       0       x 5       0         Total       90       280         Prevalence Index:       3.11111111         Hydrophytic Vegetation Indicators:       Dominance Test is >50%         Prevalence Index is ≤3.0*       Prevalence Index is ≤3.0*         Morphological Adaptations*       Problematic Hydrophytic Vegetation*         8.       Problematic Hydrophytic Vegetation hydrology must be present, unless disturbed or problematic         1.       Total Cover         4.       Hydrophytic Vegetation Present?					_	- · · · · · · · · · · · · · · · · · · ·
Herb Stratum			-		_	
Herb Stratum	5.			Total Cover		
1.       Total       90       280         2.       Prevalence Index: 3.11111111         3.       Hydrophytic Vegetation Indicators:	Llawh	Chrotum Distoins		- Total Cover		
2. Prevalence Index: 3.11111111 3. Hydrophytic Vegetation Indicators: 4. Dominance Test is >50% 5. Prevalence Index is ≤3.0* 6. Morphological Adaptations* 7. Problematic Hydrophytic Vegetation* 8. Problematic Hydrophytic Vegetation*    O Total Cover		Stratum Piot Size.				
3. Hydrophytic Vegetation Indicators:  4. Dominance Test is >50%  5. Prevalence Index is ≤3.0*  6. Morphological Adaptations*  7. Problematic Hydrophytic Vegetation*  8. Problematic Hydrophytic Vegetation*  1. O Total Cover *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  1. Hydrophytic Vegetation Present?						
4. Dominance Test is >50%  5. Prevalence Index is ≤3.0*  6. Morphological Adaptations*  7. Problematic Hydrophytic Vegetation*  8. Problematic Hydrophytic Vegetation*  1. O Total Cover *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  1. O Total Cover *Hydrophytic Vegetation Present?					_	
5. Prevalence Index is ≤3.0* 6. Morphological Adaptations* 7. Problematic Hydrophytic Vegetation* 8. Problematic Hydrophytic Vegetation*    O Total Cover						4
6						<u> </u>
7. Problematic Hydrophytic Vegetation*  8. O Total Cover *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  1. O Total Cover *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  1. O Total Cover *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  1. Hydrophytic Vegetaion Present?						<del>-</del>
8. O Total Cover *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  1. O Total Cover Hydrophytic Vegetaion Present?					_	
Woody Vine Stratum 1. 2. Total Cover  Total Cover  *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  Total Cover  *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  Hydrophytic Vegetaion Present?						Problematic Hydrophytic Vegetation*
Woody Vine Stratum 1. 2.  1 Total Cover  hydrology must be present, unless disturbed or problematic  Hydrophytic Vegetaion Present?	8.					4
1 or problematic 2 0 Total Cover Hydrophytic Vegetaion Present?	l			l otal Cover		,
2. 0 Total Cover Hydrophytic Vegetaion Present?		y Vine Stratum Plot size:				
0 Total Cover Hydrophytic Vegetaion Present?					-	or problematic
	2.					<u> </u>
Remarks: Yes No x			0	Total Cover		4
		Remarks:				Yes Nox

	ļ .		•	to dep	tn ne	eaea to	aocum				irm absence of indicators.)
	Depth	Ma					r		Features		
	(inches)	Color	%	Col	or	%	Type*	Loc**	Text		Remarks
	0-18	10YR 4/3	100						silt lo	am	
	*Type: C=Conc	entration, D					ix, CS=	Coated Sar	d grains	**Lo	cation: PL=Pore Lining, M=Matri
			Hydric S	oil Indi	cator						Indicators for Problematic So
	Histosol (A1)					_		Matrix (S4)			Coast Prairie Redox (A16)
	Histic Epipedor	, ,				Sandy I					Iron-Manganese Masses (F12)
	Black Histic (A	,				Strippe		` '			Other
	Hydrogen Sulfi	. ,						Mineral (F1)		ļ	
	Stratified Layer					_		Matrix (F2)			
	2 cm Muck (A1					Deplete		, ,		ļ	
	Depleted Below		ace (A11)					rface (F6)			
	Thick Dark Sur	\ /						Surface (F7	)		
	Sandy Mucky N	•	)			Redox I	Depress	ions (F8)		1	
	5cm Mucky Pe	at or Peat									
	ctive Layer (if										
	Remarks: 'DROLOGY										
Vetla	nd Hydrology I	ndicators:									
		Primary Inc	dicators (cl	neck all	that a	apply)					Secondary Indicators
	Surface Water	(A1)			Wate	r Stained	Leaves	s (B9)		Surfa	ce Soil Cracks (B6)
	High Water Tal	ble (A2)			Aqua	tic Fauna	a (B13)		Х	Drain	age Patterns (B10)
	Saturation (A3)	)			True	Aquatic I	Plants (E	314)		Dry-S	Season Water Table (C2)
	Water Marks (E	31)			Hydro	gen Sul	ide Odo	or (C1)		Crayf	ish Burrows (C8)
	Sediment Depo	osits (B2)			Oxidi:	zed Rhiz	osphere	es on Living		Satur	ation Visible on Aerial Imagery (
	Drift Deposits (	B3)			Roots	(C3)	•	_		Stunt	ed or Stressed Plants (D1)
	Algal Mat or Cr	ust (B4)			Prese	nce of R	educed	Iron (C4)		Geom	norphic Position (D2)
	Iron Deposits (	B5)			Rece	nt Iron R	eduction	n in Tilled		FAC-	Neutral Test (D5)
	Inundation Visi	ble on Aeri	al		Soil (	C6)					
					Thin I	Muck Su	rface (C	7)	1		
	Imagery (B7)				Cuan	e or Wel	l Data (I	D9)			
	Imagery (B7) Sparsely Veget	tated Conc	ave		Ouay						
		tated Conc	ave		Other						
	Sparsely Veget	tated Conc	ave								
Field	Sparsely Veget	tated Conc	ave						]		
	Sparsely Veger Surface (B8)		ave Yes				Deptl	h (inches)	]		
Surfac	Sparsely Veger Surface (B8) Observations:	nt?			Other			h (inches) h (inches)	]		
Surfac Water	Sparsely Veger Surface (B8)  Observations:	nt?	Yes _		Other No	X	Dept	, ,	]	• •	
Surfac Water Satura	Sparsely Veger Surface (B8)  Observations: De Water Present? Table Present?	nt?	Yes Yes Yes		Other No No No	х х х	Deptl Deptl	h (inches) h (inches)	pections	s), if av	/ailable:

Site:	Sargent Property	City/County:	Spenc	er/Owen Date	e: 1/4/2012 Data Point: 10
Client		State: IN	Section, To	wnship, Range:	10N 3W Section 27
	Investigator(s):	<u> </u>		J. Steckel	
	Slope (%): 0 Nor.	4347669	Eas.	523708 Datu	ım: 16NAD83 NWI Class:
Soil M	lap Unit Name: Ross silt loam				
Clim	atic/hydrologic conditions typical for t	time of year?	Y/N Y		
	Vegetation, Soil _	or Hy	drology	significantly distu	rbed
	Vegetation , Soil	or Hy	drology	naturally problem	atic
Are No	ormal Circumstances Present?	Yes x	No	_	
				_	
SHMM	MARY OF FINDINGS				
COMIN	Hydrophytic Vegetation Present?	Yes x	No		
	Hydric Soil Present?		No x	_ le th	e DP within a Wetland?
	Wetland Hydrology Present?		No X	_ Yes	
Rema	, ,,	103 X	140	103	ΝΟ Α
Itoma	iko.				
VEGE	TATION				
		Absolute %	Dominant		
Tree S	Stratum_ Plot size:	Cover	Species	Indicator Statu	s
1.	Ulmus americana	30	·Y	FACW 2	Dominance Test Worksheet
2.	Platanus occidentalis	15	N	FACW 2	
3.	Fagus grandifolia	20	Y	FACU 4	
4.	Carpinus caroliniana	15	N	FAC 3	
5.					species across all strata: 2
		80	Total Cover		Percent of dominant species
Shrub	Stratum Plot size:				that are OBL, FACW, or FAC: 50.00
1.	<u> </u>				Prevalence Index Worksheet
2.			-		Total % cover of:
3.			-		OBL species 0 x 1 0
4.			-	-	FACW species 45 x 2 90
5.				_	FAC species 15 x 3 45
٥.		0	Total Cover	_	FACU species 20 x 4 80
Harh 9	Stratum Plot size:		Total Gover		UPL species 0 x 5 0
1.	Stratum 1 lot size.				Total 80 215
2.				_	Prevalence Index: 2.6875
3.				_	Hydrophytic Vegetation Indicators:
4.					Dominance Test is >50%
5.					x Prevalence Index is <3.0*
		-	-		<del></del>
6.		-	-		Morphological Adaptations*
7. 8.	·			-	Problematic Hydrophytic Vegetation*
0.		0	Total Cover		
\\\ood	y Vine Stratum Plot size:		Total Cover		*Indicators of hydric soil and wetland
	y vine Stratum Piot Size:				hydrology must be present, unless disturbed
1. 2.	<del></del>				or problematic
۷.			T-4-1 O		Liberton Bernardo
<u> </u>		0	Total Cover		Hydrophytic Vegetaion Present?
'	Remarks:				Yes <u>x</u> No

	Profile De	scription:	(Describe	to dep	th ne	eded to	docum	ent the ind	icator o	r con	firm absence of indicators.)	
	Depth		trix						Features	5		
	(inches)	Color	%	Co	lor	%	Type*	Loc**	Text	ure	Remarks	
	0-18	10YR 4/3	100						silt lo	am		
	,										<u>.                                      </u>	
	*Type: C=Cond	centration, [	D=Depletio	n, RM=	Redu	ced Matr	ix, CS=	Coated Sar	nd grains	**Lc	ocation: PL=Pore Lining, M=Ma	atrix
			Hydric S	oil Indi	cator	s:					Indicators for Problematic	Soils
	Histosol (A1)					Sandy (	Gleyed	Matrix (S4)			Coast Prairie Redox (A16)	
	Histic Epipedo	n (A2)				Sandy F	Redox (	S5)			Iron-Manganese Masses (F1	2)
	Black Histic (A	.3)				Stripped		. ,			Other	
	Hydrogen Sulf	ide (A4)				Loamy	Mucky I	Mineral (F1)				
	Stratified Laye	rs (A5)				Loamy	Gleyed	Matrix (F2)		Ī		
	2 cm Muck (A1	10)				Deplete	d Matri	x (F3)				
	Depleted Below	w Dark Sur	face (A11)			Redox I	Dark Su	ırface (F6)				
	Thick Dark Sur	rface (A12)				Deplete	d Dark	Surface (F7	<i>'</i> )	I		
	Sandy Mucky	Mineral (S1	)			Redox I	Depress	sions (F8)				
	5cm Mucky Pe	eat or Peat										
Restri	ctive Layer (if	observed)										
	Type:						_					
De	oth (inches):							Hydric So	oil Prese	nt?	Yes No x	
I	Remarks:											
HY	DROLOGY											
Wetla	nd Hydrology l	Indicators:										
		Primary In	dicators (c								Secondary Indicators	
	Surface Water	· (A1)			Wate	r Stained	Leave	s (B9)		Surfa	ace Soil Cracks (B6)	
	High Water Ta	ıble (A2)			Aqua	tic Fauna	a (B13)		Х	Drain	nage Patterns (B10)	
	Saturation (A3	5)			True	Aquatic F	Plants (	B14)		Dry-S	Season Water Table (C2)	
	Water Marks (I	B1)			Hydro	gen Sulf	fide Odo	or (C1)		Cray	fish Burrows (C8)	
	Sediment Dep	osits (B2)			Oxidi	zed Rhiz	osphere	es on Living		Satu	ration Visible on Aerial Imager	y (C9)
	Drift Deposits	(B3)			Roots	(C3)				Stunt	ted or Stressed Plants (D1)	
	Algal Mat or C	rust (B4)			Prese	nce of R	educec	I Iron (C4)		Geor	morphic Position (D2)	
	Iron Deposits (	(B5)			Rece	nt Iron R	eductio	n in Tilled	Х	FAC-	Neutral Test (D5)	
	Inundation Vis	ible on Aeri	al		Soil (	C6)						
	Imagery (B7)				Thin I	Muck Su	rface (C	(7)	1			
	Sparsely Vege	tated Conc	ave		Guag	e or Wel	l Data (	D9)	1			
	Surface (B8)				Other		•		1			
	. , ,											
Field	Observations:											
Surfac	e Water Preser	nt?	Yes		No	х	Dept	h (inches)				
Water	Table Present?	?	Yes		No	х	Dept	h (inches)		•		
	ation Present?		Yes		No	X		h (inches)		•		
	be Recorded D	ata (stream			_			. ,	pections	), if a	vailable:	
		,	J		J	, P	,		,	,,		
Rema	rks.											



# Archaeological Consultants of Ossian

January 10, 2012

Mr. John Flannelly Alt & Witzig Engineering, Inc. 4105 W. 99th St. Carmel, IN 46032

Dear Mr. Flannelly:

Enclosed is a report entitled *An Archaeological Field Reconnaissance of a Proposed Development in Spencer. Owen County, Indiana.* Archaeological Consultants of Ossian Cultural Resource Management Report #12 FR 6. Please forward this report to the Indiana Division of Historic Preservation and Archaeology. Please make a copy of the report for your records. All original documents must be forwarded to the SHPO.

As you will see from the report, Phase I survey has detected no properties that are eligible for nomination to the National Register of Historic Places. Since no historically or archaeologically significant sites will be impacted by the proposed undertaking, we recommend that project clearance be granted.

Thank you very much for the opportunity to work with you. If there is anything more I can do for you, please do not hesitate to call me at 765 281-0969 or 765 730-0524.

Sincerely,

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Larry N. Stillwell Archaeologist

Enclosures: CRM Report 12 FR 6

# An Archaeological Field Reconnaissance of a Proposed Development in Spencer, Owen County, Indiana

by Larry N. Stillwell Principal Investigator

Submitted by:

Archaeological Consultants of Ossian

P.O. Box 2374 Muncie, IN 47307

Submitted to:
Alt & Witzig Engineering, Inc.
Carmel. IN

January 11, 2012

#### Introduction

As a result of a request by Alt-Witzig Engineering, Inc., Archaeological Consultants of Ossian (ACO) was contracted to evaluate the effects on cultural resources of a proposed development in Spencer, Owen County, Indiana (Figure 1). Between January 5 and 7, 2012, personnel from Archaeological Consultants of Ossian conducted an archaeological reconnaissance survey of an approximate 97.0 acre tract. The area surveyed is located in portions of the SE 1/4 of the SW 1/4 of the SE 1/4 of Section 27, Township 10 North, Range 3 West (Washington Township) in Spencer, Owen County, Indiana (Figure 2). No archaeological sites were located as a result of the survey. This report is a summary of the background review and the results of the Phase I archaeological investigation.

### **Physical Environment**

Owen County has a continental climate with cold winters and quite hot summers (average daily low in January = 22 degrees F, average daily high in July = 89 degrees F), with 44 inches of precipitation per year (Sanders et. al. 1959). Approximately 60% of the annual precipitation (26-inches) within the county falls between the months of May and September. The average number of days per year with minimum temperatures above 32 degrees (five in ten year probability) in the county is 175 (Sanders et. al. 1959).

The project area lies within the Wabash Lowland of southwestern Indiana (Schneider 1966: Homoya 1985). The Wabash Lowland, which borders the Crawford Upland, is the largest of Indiana's physiographic divisions. It is a broad lowland tract that is comprised of siltstones and shales of the Pennsylvanian age (Wayne 1963, 1966). The area, also called the Sullivan Lowland is characterized by generally subdued landforms consisting of broad valleys and smoothly rounded hills with gentle bedrock slopes (Gutschick 1966). The area was at one time modified by pre-Wisconsin glaciation, thus leaving a blanket of glacial till on much of the area (Schaal 1966). Additionally, the Wabash Lowland is underlain by widespread and in places thick lacustrine, outwash, and alluvial sediments. Upland tracts of the Wabash Lowland have been described as undulating to rolling plains (Ulrich 1966; Wayne 1966). In the Wabash Lowland, the underlying bedrock has little effect on present-day topographic features. The deep till deposits overlying bedrock has resulted in a relatively chert-poor environment. Bedrock exposures of chert in the study area are not known, but several chert types (i.e. Lead Creek, Harrodsburg, Indian Creek, and Plummer) do outcrop in the region (Cantin 1994; Tomak 1981). Other resources, siliceous materials are common components in the gravels of till and outwash deposits. These gravels tend to be small, poor quality, and prone to internal flaws and frost fractures owing to their transport and environment.

Soils in the project area are dominated by the Dubois-Otwell, Negley-Parke, and the Grayford Associations. The Dubois-Otwell Association is described as deep, nearly level to very steep, silty soils on old lake sediments. The Negley-Parke Association is classed as deep, nearly level to very steep, silty soils on outwash plains. The Grayford

Association is characterized by deep, nearly level to steep, silty soils over limestone bedrock (Sanders et. al. 1959; Ulrich 1966).

Specific soils within the project area consist of the deep, somewhat poorly drained Dubois silt loam, 2-6% slopes, both eroded and non-eroded varieties; the deep, well drained Hickory soils, 18-25% slopes, severely eroded; the very deep, well drained Negley loam, 18-70% slopes; the deep, moderately well drained Otwell silt loam. Calcareous substratum, 25-70% slopes; the deep, moderately well drained Otwell soils, 6-12% slopes, severely eroded; the deep, well drained Parke silt loam, 2-18% slopes, both moderately eroded and non-eroded varieties; the deep, well drained Parke soils, 6-12% slopes, severely eroded; and the deep, well drained Pike silt loam, 0-6% slopes, both moderately eroded and non-eroded varieties (Sanders et. al. 1959).

The parent material for the abover referenced soil types is as follows: Dubois soils are formed in strongly weathered lake laid clay and silt. They are found on lake plains. Hickory soils are created in till that can be capped with up to 20 inches of loess. They are located on dissected till plains within the county. Negley and Pike soils are developed in loess and the underlying stratified outwash deposits. These soils are on outwash terraces, kames, eskers, and kame terraces. Otwell soils originate in loess and in the underlying lacustrine or glaciofluvial sediments. They are located on loess covered lake plains. Parke soils are formed in loess or other silty material and in the underlying paleosol in outwash. Parke soils are found on eskers, crevasse fillings, and outwash plains (Sanders et. al. 1959).

The hydrology of the area suggests that lack of water would not have been a concern for prehistoric and early historic occupants of the project area. Owen County is drained by both the Eel River and the White River. The proposed project area is contained within the watershed known as the West Fork of the Lower White River. The project area is drained by intermittent tributaries of McCormick's Creek. Other sources of water located near the survey area include Elliston Creek and the West Fork of the White River.

Presettlement vegetation of the area was beech-maple forest (Petty and Jackson 1966). The General Land Office survey notes of the township documented maple as the dominate tree species. Other tree species noted were ironwood, hornbeam, cherry, buckeye, redbud, hackberry, hickory, basswood, etc. (GLO 1820). Lindsey (1965 et. al.) also cites similar vegetation for the project area. The diversity of trees, plus other hydrologic variables suggest that the environment was relatively rich, and likely to attract human occupation.

Taken as a whole, the environmental data (soils, hydrologic, and vegetational) all suggest that the area has a probability to contain archaeological sites and was likely to have been occupied and/or exploited by prehistoric Native Americans as well as Euroamerican settlers. The combination of well drained soils (i.e. Cincinnati soils) near constant waterways (i.e. the West Fork of Lick Creek), in a vegetational zone that provides abundant resources has consistently yielded relatively moderate densities of archaeological sites in previous surveys (e.g., Hart and Jeske 1988, 1991; Jeske 1992). Climatological, vegetational, and edaphic variables all point to the probability that the

area would have been an attractive draw to both hunter-gatherers and early horticulturalists in this portion of the Midwest.

#### **Culture Sequence**

The archaeology of Owen County is relatively poorly known, although some study has been conducted as a result of cultural resource management surveys and sponsored research. The following section, largely taken from data compiled by the Indiana Department of Natural Resources-Division of Historic Preservation and Archaeology's cultural resources management plan, attempts to organize certain salient information on the archaeology of the region. Because of a lack of knowledge specific to the project area, this discussion is seated within a general prehistory of Indiana. The discussion of the culture history of Indiana is not intended to be an exhaustive synthesis of past research in the area. Rather, it is meant to serve as a contextual framework for the archaeological sites discussed later in this report. The interpretations and dates given here are tentative and meant to serve as general guides.

#### Paleoindian Period (10,000— 8,000 B.C.)

The first people to reach the interior of the New World are known to archaeologists as PaleoIndians. The PaleoIndian peoples lived in a changing environment during the last stages of the last glacial advance on through to a time where the climate began to resemble that of today. These people produced an efficient chipped-stone tool kit, which included distinctive tools such as lanceolate spear points, fluted points, blades, and scrapers. These tools are almost always made of high quality cherts that were often imported to other parts of Indiana (Dorwin 1984; Tankersley 1987). Lanceolate blades and fluted projectile points are found throughout North America and much of South America. One of the earlier fluted points found in Indiana is the Clovis point. Other PaleoIndian projectile point types found in the state include Folsom, Holcombe, Cumberland, Quad, Agate Basin, Beaver Lake, Hi-Lo, Plainview, and Dalton (Justice 1987; Tankersley et. al. 1990). These tools were first found at sites on the Great Plains in association with the remains of mammoths and bison, giving rise to the mistaken notion that PaleoIndians were primarily big-game hunters. From sites found all over the continent, we now know that PaleoIndian peoples hunted and gathered a variety of foods. including deer, small mammals, and nuts (Fagan 1991). Large mammals were most likely a rare or seasonally taken resource; in fact, there are disproportionately few sites east of the Mississippi River with evidence for the hunting of elephants or other megafauna by humans as compared to the western United States. Evidence also suggests that PaleoIndian groups were highly mobile, and traveled across large territories in order to exploit resources when and where they became available. Population size was small, and local groups were likely no larger than 25 or 30 related individuals with a relatively simple social structure. One consequence of this highly mobile lifestyle is that little trash accumulated in one spot, making the location and identification of PaleoIndian sites very difficult. Identification of intact PaleoIndian materials have been further compromised by almost 150 years of often intensive agricultural activity that has taken place within the state and has disturbed the context of the shallow deposits. PaleoIndian sites are usually located on high river terraces or in upland areas on wetland edges (Haynes 1983). These locations did not flood, offered easy access to aquatic plant and animal resources and

served as vantage points for locating larger game. An example of one these sites is the Magnet or Alton site located in southern Indiana (Smith 1984). The site is situated on a terrace of the Ohio River near a high quality (Wyandotte) chert resource.

#### **Archaic Period (8,000—700 B.C.)**

The Archaic is a long period of time during which important long-term trends in Indiana prehistory are begun. One of these trends is increasing regional specialization/stabilization brought on by a post-glacial environment. Archaeologists usually divide the Archaic into three parts (Kellar 1993).

The Early Archaic (8,000-6.000 B.C.) is separated from the preceding PaleoIndian period primarily by a marked shift in tool technology and a more intensive exploitation of the land. Projectile points from the Early Archaic period exhibit a different hafting technology from their predecessors through either notching or through the use of bifurcate bases. This change in technology may have been born out of necessity as the large Pleistocene megafauna from the glacial period began to be replaced by modern woodland fauna (Collins 1979). Many of the spear points or knives from the period contain beveled edges from tool resharpening and may exhibit pronounced blade serration (Broyles 1969; Justice 1987; Springer, Karch, and Harrison 1978). Early Archaic tool kits not only included projectile points and scrapers, but also saw the introduction of the atlatl as well as grinding slabs and pitted stone. These later tools are significant in that they demonstrate an increased utilization of plant species within the environment (Bailey 1972; Binford 1980). Specific projectile points from the Early Archaic include: St. Charles, Thebes, Lost Lake, Big Sandy, Charleston, Kirk, MacCorkle, St. Albans, LeCroy, Stilwell, etc. (DeRegnaucourt 1992; Justice 1987). Sites from this time period are commonly found throughout the state as well as the rest of the midwest (Springer 1985). In fact, Early Archaic sites have been found on virtually every type of topography within the state. Division of Historic Preservation site records indicate at least two Early Archaic ceremonial/mortuary sites are present within the state. This indicates growing prehistoric populations within the region as well as growing reverence for the dead.

The Middle Archaic (6,000-3,500 B.C.) is a period of continued population growth in Indiana. New projectile point forms appear such as Matanzas, Godar, and Radditz (Justice 1987). Many of the point types of the period tend to be manufactured with side notches and straight bases. T-shaped drills are also common. In addition, a wide variety of polished and ground stone tools such as milling stones, pestles and grooved axes are found from this period. During the Middle Archaic, a long-term warming and drying period, called the hypsithermal, reached its peak. This warming and drying trend led to the eastward expansion of the prairie in the state. In the northern and eastern portions of Indiana this climatic change caused the growth of savannah dotted with stands of oak (Williams 1974). Previously pine dominated forests were replaced by deciduous forests dominated by oak, hickory, and elm, which is more productive for human needs. In addition, all of the major rivers and their associated floodplains in the region were established by this time. Because of the rich resources available on river floodplains, people settled into larger, more permanent villages. Also, there is increased evidence of

mortuary activities (or at least more sites are known). Evidence of at least some of these trends can be found at the Bluegrass site in Indiana, where Anslinger (1988) noted human and dog burials as well as sustained trash pits and hearths. Foods utilized during the Middle Archaic included deer, small mammals, fish, migratory waterfowl. a wide variety of nuts, and some domesticated plants such as squash.

Shell middens also appear during the Middle Archaic period. It is also during this period of increased sedentism and regional diversification that two distinct influences appear to emerge within the state that may have had their roots in the Early Archaic period. These influences are associated with the Ohio River Valley and the Lake Erie Basin. In fact, Matanzas points appear to be indicative of the growing western Ohio River Valley Tradition in southern Indiana, while the manufacture of bifurcate points from the Early Archaic period appear to be influenced by the Lake Erie Basin Tradition in northern Indiana.

The Late Archaic (3,500-1,500 B.C.) is a period in which a number of trends (e.g., increased population, decreased mobility, domestication of plants) initiated in the Middle Archaic period are refined to more efficient subsistence strategies. The Late Archaic period in Indiana is related to the Midcontinental Archaic Tradition. This tradition is characterized by grave offerings, mortuary or cemetery sites, dog burials, shell middens. large semi-permanent camps, and trade of exotic goods. The trade network developed during the Late Archaic in Indiana exchanged resources such as galena and copper. These traded materials often were deposited in burials (Fagan 1991; Kellar 1993). Late Archaic phases in the state include French Lick, Stalcup, Scherschel, Bluegrass, Maple Creek, Glacial Kame, and Early Red Ochre. These latter two complexes appear to be directly influenced by Great Lakes cultures and appear to continue a divisional trend between the Lake Erie Basin Tradition in northern Indiana and traditions emerging in the Ohio River Valley (Cunningham 1948; Faulkner 1966; Lilly 1942; Mason 1981). Several technological innovations were introduced during the Late Archaic period. Most notably the manufacture of pottery (which is still disputed) as well as a proliferation of tools (i.e. axes, adzes, pestles, celts, mortars, etc.). There is also increased emphasis on ornamental items such as beads (manufactured from shell, copper, or pearl), gorgets. hairpins, and pendants. Tool kits also include specialized items made of bone and antler. Typical projectile points from the period include Lamoka. Brewerton, and McWhinney (DeRegnaucourt 1992; Justice 1987). Generally, projectile points from the period lack the sophisticated craftsmanship seen in previous periods of Indiana prehistory, and the raw materials from which they are manufactured consist of inferior or lower quality cherts.

Resources utilized during the Late Archaic include all those mentioned for the Middle Archaic, with an increasing utilization of seed plants such as goosefoot (lamb's quarters) and sumpweed. The Late Archaic is probably best described as a period marking the transition from a hunting-gathering way of life to one where subsistence is at least partially dependent upon agriculture. The Late Archaic is well represented in Indiana, with sites located on virtually every topographic landform (i.e. flood plain, lake plains, till plains, moraines, etc.). Late Archaic sites tend to be larger and contain more

tools and debris than sites of any preceding time period. They are usually located on well-drained soil near water. The McCain site in Dubois County is a notable Late Archaic site (Miller 1941).

The Terminal Late Archaic (ca. 1.500-700 B.C.) is best described as a transitional period between the Late Archaic period and the Early Woodland periods in Indiana. However, the Terminal Late Archaic period in Indiana appears to be a phase of the Late Archaic period which is restricted to portions of the southern half of the state. The period is marked by the use of Terminal Archaic Barbed projectile points (i.e. Buck Creek Barbed) as well as larger more ornate forms such as Turkeytail points. Perhaps the best represented culture of the Terminal Late Archaic period in Indiana is that of the Riverton (Anslinger 1988; Winters 1967). The Riverton Culture is described as a riverine-based complex with small projectile points (i.e. Merom and Trimble points) that was predominantly situated within the Lower Wabash River Valley, the Ohio River Valley, and the East and West Forks of the White River Valley. Although point types from the period can be found in northern Indiana, they are not found in the same density or frequency as in the Lower Wabash River drainage. Examination of burials by Winters (1967) at a Riverton site also noted trauma to human skeletons most likely caused by warfare.

#### Woodland Period (700 B.C.—1,200 A.D.)

The Woodland period was a time of major changes in food choices and social organization in the Midwest. Like the Archaic, the Woodland period is divided into three parts. Until recently, one of the defining characteristics that separated the Archaic period from the Woodland period was the use of pottery. However, in the southern Midwest, pottery is now known to have been utilized as early as 2550 B.C. (well within the Late Archaic period) (Reid 1984). Another ongoing excavation taking place on Stallings Island in Georgia has also carbon dated pottery sherds to 2500 B.C.

The Early Woodland (700-200 B.C.) period in Indiana coincides with a shift from a hunter-gatherer way of life to a more agriculturally based economy. Large bladed projectile point forms also appear during this period. Some of these point types include Adena, Kramer, Motley, and Meadowood (Justice 1987). Pottery of the period tends to be thick and porous manufactured with fiber or course grit temper. Pottery types of the period include Marion Thick, Fayette Thick, and Early Crab Orchard. It is also during this period that mortuary activities first included the building of earthen mounds (some that contain log tombs) with grave goods (Kellar 1993). Other earthworks such as large rectangular or circular enclosures are constructed during this period, and the people who built these structures are referred to as Adena. Adena culture is well represented in Indiana with numerous structures and mounds located along the Ohio, White, and Whitewater River Valleys (Kolbe 1992).

There is little doubt that Adena peoples channeled significant resources and labor into the construction of their mounds and enclosures as well as into the cult of the dead. This is reflected by the remnants of earthworks located in New Castle, Cambridge City, and Anderson. Until recently, these large complexes were thought to be primarily

ceremonial. However, recent evidence suggests that these earthworks were much more. Cochran (1992) notes that mounds and other earthworks of the period were laid out along various astrological alignments. These alignments were not only important in Adena (and Hopewell) cosmology, but they also served as markers for seasonal change. This latter practical aspect of the earthworks would have been extremely important for a culture that was growing increasingly reliant on agriculture for stability to deal with increasing population growth.

The Middle Woodland (200 B.C.-500 A.D.) is most notable for the extensive use of large burial mounds and geometric earthworks that were more complex or were continuations of building phases that were initiated during the Early Woodland period (Cochran 1992). A widespread trading network known as the Hopewell Interaction Sphere was also established. Artifacts and raw materials such as obsidian from the Rocky Mountains, copper from northern Michigan, mica from the Appalachians, shark teeth and marine shells from the Gulf of Mexico, and a wide variety of cherts were exchanged throughout most of the eastern United States. Some of these materials have been documented in the GE Mound site in southwestern Indiana (Tomak 1993). Centers for this activity were the Scioto River Valley in south-central Ohio, and the Illinois River Valley in west-central Illinois (Struever 1964). Specific phases that have been identified in Indiana include Crab Orchard, Mann, Allison-Lamotte, Havanna, Scioto, and Goodall (Bettarel and Smith 1973; Ruby 1993). Projectile points of the period include Snyders. Steuben, Lowe Flared, and Chesser (Justice 1987). Pottery was grit tempered, better made, and more often decorated than in the Early Woodland period. Pottery types of the period consist of Havana Hopewell, Crab Orchard, Scioto, and Mann Phase sherds (Wolforth 1996). Goosefoot, sumpweed, and sunflower were important plants which were actively cultivated during the period. Maize (corn), a tropical import, was beginning to become an important part of the diet at this time. Northern Indiana, while not a central region of the Hopewell phenomenon, has a number of Middle Woodland villages, earthworks, and mound sites (Quimby 1941).

The Late Woodland (ca. 500-1,200 A.D.) is a period of decreased emphasis on both ceremonial and mortuary activities. The Hopewell Interaction Sphere of the Middle Woodland period was no longer a part of the social and economic lives of Midwesterners. Intrusive burials can be found in mounds of the preceding period. New mounds are rare and small in size. Subsistence strategies not only rely on agricultural (increasing dependence on maize cultivation), but hunting and gathering seasonal rounds appear to become necessary and may explain why large nucleated villages shift to smaller habitation sites (McCord & Cochran 1994). Conjecture as to why this happened includes change of climate resulting in shorter growing seasons; subsistence technology could not support the increasing population size; or disease and warfare caused from increasing populations. At least six Late Woodland enclosures known in central Indiana demonstrate defensive fortifications or postures (Cochran 1980). It was also during this time period that the bow and arrow was introduced along with true arrowheads (Justice 1987). Tool kits from the period include Madison and Jack's Reef projectile points as well as Commissary knives.

Pottery was typically grit-tempered or grog-tempered, and is harder and thinner than Middle Woodland pottery (Redmond 1986). Although the Albee Phase or complex appears to be the most dominant culture in the state during the period, other phases known to be contemporary in Indiana at the time include Yankeetown. Allison-Lamotte, and Newtown.

# Mississippian (ca. 1,000-1,700 A.D.)

After A.D. 1000, people in the Ohio river valley of the Midwest began to follow a lifestyle termed Mississippian. Classic Mississippian culture in Indiana is generally characterized by a dependence on agriculture which intensively cultivated corn, beans. squash, as well as lesser seed crops and tobacco; the use of shell-tempered pottery; the building of flat topped pyramid-shaped mounds; nucleated villages and towns (often palisaded) with central plaza areas: large cemeteries; public ceremonial structures; and a hierarchically ordered social structure which may have dominated over populations of several thousand (Black 1967, Kellar 1993). The settlements were permanently established, with a population that was tied to ceremonial and/or trade centers like those found at Cahokia and Angel Mounds. The placement of these centers appears to indicate long-range planning. Unlike previous periods in prehistory, stylistic changes in artifact forms such as projectile points and pottery occur on a more rapid scale and the quantity of goods appear in greater numbers. Artifacts from this period include Nodena points, Cahokia points, ceramic ladles, trowels, balls, effigies, discs, discoidals, and balls (Black 1967; Justice 1987). However, classic Mississippian culture appears confined to southern Indiana along the Ohio and Wabash River Valleys. Classic Mississippian culture in southwestern Indiana includes the Angel Phase (1,050-1,450 A.D.), the Caborn-Welborn Phase (c.a. 1,400 A.D.-1,700 A.D.), and the Vincennes Phase (Black 1967; Munson 1995; Stafford, Anslinger, Cantin, and Pace 1988: Tomak 1970; Winters 1967).

In northern Indiana, classic Mississippian cultural manifestations evolved to a different degree and are termed "Upper Mississippian." These Upper Mississippian groups appear to live a more basic lifestyle that lack the large earthworks and mounds that are present at places like the Angel site (Brown 1961; Brown and O'Brien 1990; Faulkner 1972). Upper Mississippian groups from northwestern Indiana include Huber and Fisher. The is little archaeological evidence to suggest that Mississippian tradition was present in northeastern Indiana especially north of the St. Mary's River Valley (Jeske 1996). Instead. it appears that Native Americans in the region continued to live a basic Late Woodland lifestyle.

In central and southeastern Indiana. Fort Ancient culture is the best known of the Upper Mississippian groups. The Oliver Phase and Yankeetown Phase are part of Fort Ancient culture. Many of the Oliver Phase sites in Indiana are contained in the White River drainage (Dorwin 1971; Redmond and McCullough 1993). Oliver Phase occupations are often characterized as horticultural villages.

# Historic Native Americans (c.a. 1660—A.D. 1846)

The Historic Native American Period (ca. A.D. 1660-1846) begins as European explorers, trappers, missionaries, and traders initially penetrate the region and begin to

record their dealings with the Native Americans. Prior to European contact Upper Mississippian groups of the Midwest appear to have suffered a dramatic population decline. This decline may have been the result of increased warfare, the spread of European disease, and a shortened growing season caused by the Little Ice Age after A.D. 1450 (Hicks 1992). By the time of European contact in the late seventeenth century, the indigenous (?) Mississippian and Upper Mississippian groups of Indiana had been replaced by the historic Potawatomi and Miami (including Piankashaw, Wea, and Shawnee) Indians, along with smaller groups such as the Ottawa and Fox (Kinietz 1995). Shortly after encountering European culture, most native artifacts such as pottery and stone tools were abandoned in favor of trade goods such as brass kettles, crockery, and steel knives. Evidence from the "Mouth of the Wabash Site" in Posey County indicates that Mississippian material culture was starting to be impacted by European trade goods probably through trade routes to the southern United States. In 1973, Munson and Green reexamined artifacts from the site and noted that at least one brass artifact was contained within the assemblage (Higginbotham 1983).

The Potawatomi were Algonquian speakers who began expanding their control of trade and territory south from Green Bay along the western shore of Lake Michigan by 1670. In 1695, they moved around the southern end of the Lake, eventually extending their territory across all of northern Indiana and southern Michigan to Detroit (Berthrong 1974). The Miami also were Algonquian speakers with close ties to the peoples of the Illini confederacy. Widely dispersed throughout the western Great Lakes region, the Miami originally comprised at least six bands or groups: the Atchatchakonguen (Crane), Kilatika, Mengakonkia. Pepicokea, Wea and Piankashaw. By 1680, the Atchatchakonguen were referred to as the Miami by the French. Some Miami-speakers were living near Chicago/South Bend and the area around southern Lake Michigan, although other Miami-speaking groups were scattered throughout northern Indiana, Illinois, and Wisconsin. The Mengakonkia, Kilatika, and Pepicokea disappear from historical documents during the next century, probably incorporated into the Crane, Wea, and Piankashaw bands (Berthrong 1974; Goddard 1978). The Miami were displaced from the Lake Michigan area by the aggressive Potawatomi and migrated east into northern Indiana after 1695, eventually settling along the Upper Wabash River Valley and at the three rivers junction in Fort Wayne. The area is the continental divide between the Mississippi River Drainage and the Lake Erie Basin, and the Miami were able to take advantage of their control of this strategic portage area in their relationships with Europeans and other historic tribes.

EuroAmerican westward expansion resulted in the conflict between the Native Americans and EuroAmerican invaders. Despite the victories of Little Turtle over the American army in the late 18th century, the Miami were broken by military forces of the United States in 1795. The Wea were removed in 1805, the Piankashaw in 1820. Most of the bands of Potawatomi were removed to reservations in Wisconsin and Kansas by 1841. The last remaining bands of Miamis were resettled in Kansas in 1846, although many of the tribe evaded removal, thanks to the negotiations of Jean Baptiste de Richardville, the Miami Civil chief who engineered land grants to individual Miami families in exchange for territory. A small number of Miami retained personal

reservations or reserves (i.e., Richardville, Cicott, Seek) and continued to reside in the state. Nonetheless, the settlement of Indiana after 1846 by EuroAmericans was swift and complete, effectively ending a successful and rich cultural Native American tradition that spanned some 14,000 years. The Eastern Miami, those left with private landholdings, became largely assimilated into White Society, and in 1898, they were removed illegally from the Department of Interior's roll of Indian Tribes.

#### Euroamerican Historic (ca. 1660-present)

The first Europeans who came to what is known as Indiana were French traders, missionaries, and trappers. LaSalle portaged near South Bend in 1679 (Lockridge 1980). Shortly after, other Frenchmen came to the river valleys of the area to trap fur and trade with the Native Americans. Set astride the most direct link between the St. Lawrence and the Mississippi, the French had established three main centers to help control the flow of goods and people through the territory. Fort Miamis (Fort Wayne) was established at the junction of the St. Joseph, St. Mary's, and Maumee River in northeastern Indiana before 1700, while Fort Ouiatanon. on the Wabash River near modern Lafayette, was settled in 1717 (Carmony 1966). These two forts were within Canada. Fort Vincennes, established in 1732, was located on the lower Wabash, and was considered part of the Louisiana Territory. Although there was no permanent settlement at Indianapolis, it is highly likely that the French exploited the area.

The French lost control of this strategic territory to the British after the French and Indian War (1754-1763). The British never had a strong presence in the region, not occupying Vincennes until 1777 (Barnhart and Riker 1971). They lost control of the region to the American Colonists in 1783, who began to exert their power in the area. Known as the Northwest Territory, the region included all of the area which was to become Ohio, Indiana, Illinois, Michigan. Wisconsin, and eastern Minnesota. Gaining military victory and political control of the territory in 1795, the Americans began to settle the region in earnest.

The settlement of Indiana was part of a westward flow of immigrants into the valley of the Mississippi between 1792 and 1860 that resulted in 15 new states admitted to the Union (Carmony 1966). Indiana was settled initially by people from the upper south (i.e. Virginia, North Carolina, and Kentucky), along with some smaller number from the middle atlantic states (Hudson 1988). White settlement in Indiana generally was a northward flow from which began in the Ohio Valley. Most of the settlers of central Indiana were American-born protestants of British descent, and moved to central Indiana from southern Indiana (Rudolph 1980).

The population grew quickly, and in 1816, Indiana entered the Union with its capitol at Corydon. Corydon was far too south for convenience, and Indianapolis, at the confluence of the White River and Fall Creek was established by commission as the new capitol in January, 1821. After 1830, non-American born immigrants began to arrive in Indiana in greater numbers, principally from Germany and Ireland. The growth of the largely Catholic immigrant population was viewed with alarm by the protestant residents

from the upper south, and paved the way for the rise of the Ku Klux Klan within the state (Carmony 1966).

The Civil War impacted the state politically and economically. While considered by some an "ambiguous" state, Indiana sent over 200,000 men to the Union cause, and was a critical supplier of food and other war-related material (Rudolph 1980). Along with other impacts, the state began a long, slow transition from a strictly agricultural economy to an industrial economy.

Immigration into the state peaked during the years between the Civil War and World War I (Carmony 1966). These immigrants were still principally Germans and Irish, but included southern and eastern Europeans as well. In addition, the African American population increased. The large immigrant population and the changing economy resulted in enough fear among long-established protestant populations that the Ku Klux Klan became a dominant political force in the 1920's, but whose influence waned shortly after (Carmony 1966). By World War II, Indiana had made the transition to an industrialized economy and the Klan was no longer a major political force.

# **Background Review**

The archaeological site files and maps at the Indiana Department of Historic Preservation and Archaeology and at Archaeological Consultants of Ossian were examined as part of the background review for this project. Historical documents such as county plat maps (Anonymous 1876) and notes and maps of the General Land Office were also examined. Cultural resources within the county have been documented from interviews with private collectors, while others are known from historic sources (e.g., Miller 1941; Guernsey 1932; Helmen 1950; etc.). Most of the archaeological sites on file for the county have been discovered as a result of cultural resource management projects (Baltz 1984; Beard 1990a, 1990b; Brinker 1985; Cox 2002; Dietrich 1985; French and Smith 1990; Howe 1997; Kearney 1991; Krause 1995; Kuns and Pope 2001; Lantham 1996; Meadows and Bair 2001; O'Brien 1995; Sipes 1997; Snyder 1994; Stewart and Stafford 1992; Strezewski 2002; Tomak 1984, 1986; etc.). The author has conducted numerous field surveys within the county as well (Stillwell 1994, 1997, 2000a, 2000b, 2000c, 2001, 2002, 2003, 2004, 2005a, 2005b, 2005c, 2008, 2009a, 2009b). All of these were reviewed for comparative data.

The results of the above referenced field surveys suggest that sites contained within the region vary in size from small ephemeral lithic scatters to fairly significant prehistoric deposits. This is especially true for neighboring Greene County, where over 1,400 archaeological sites have been previously recorded. Owen County currently contains at least 520 documented archaeological resources.

The archaeology of Owen County is somewhat poorly known, although some study has been conducted as a result of data enhancement surveys. Most of the sponsored research has focused on the West Fork of the White River Valley. The data enhancement surveys were conducted by Indiana University. These surveys documented numerous collector reported sites (i.e. Meadows and Bair 2001). Many of the known archaeological

resources within Owen County consist of collector reported sites, which have never been systematically field checked or verified by a professional archaeologist.

The prehistoric cultural chronology of Owen County is in large part based on data gathered from surrounding counties such as Greene, Monroe, and Clay, where either large scale coal field examinations or more intensive cultural resource management survey has taken place. Indiana University states that all periods of prehistoric occupation are represented in the Greene/Owen County area. This includes over 11 Paleo-Indian sites (Tankersley et. al. 1990). Other phases of prehistoric occupation are noted in Tomak's (1970) survey of Greene County with some sites like the Beehunter site showing multicomponent features. Tomak (1970) notes many archaeological manifestations during his survey of the region. They include Albee, Yankeetown, and Oliver. Many of the Albee Phase cemeteries in the region are located in Greene County. Cantin (1991) states, "...All periods of Indiana prehistory are represented by archaeological sites in both Greene and Owen Counties, reflecting some 12,000 years of human habitation. Perhaps most frequently identified in the relatively well drained. upland interior are sites of Early Archaic (ca. 10.000-8.000 BP), Middle-Late Archaic (ca. 6,000-4,500 BP), and Late Woodland/Albee (ca 1,500-1,000 BP) affiliation. Nearer to major drainages Terminal Archaic/Riverton (ca 3,500-2,700 BP), Early Woodland (ca 2,700-2,200 BP), and Middle Woodland (ca 2,200-1,500 BP) sites increase in relative frequency. Most typically occurring along former marshes are Middle-Late Archaic, Middle Woodland/Allison-Lamotte (ca 1,900-1,400 BP), and Late Woodland/Albee sites. A full range of site types from small transient camps to base camps, villages, cemeteries. mounds, lithic reduction stations, and special function camps have been documented in the counties...". Mississippian cultural manifestations in the region are for the most part confined to Oliver Phase agricultural communities as described by Redmond and McCullough (1993). One Oliver phase village known to exist within the county is 12-Ow-431 (Strezewski 2002)

The Indiana Division of Historic Preservation and Archaeology archives indicated that at least 19 known cultural resources have been recorded within an approximate 1.0 mile radius of the survey area. The sites included 12-Ow-94, 12-Ow-107, 12-Ow-320, 12-Ow-333, 12-Ow-340, 12-Ow-347, 12-Ow-348, 12-Ow-362, 12-Ow-364, 12-Ow-446, 12-Ow-447, 12-Ow-450, 12-Ow-489, and 12-Ow-494 through 12-Ow-499. Know of the sites were located within the project limits. However, one cultural resource has been reported within the project area. The alleged cultural resource is not on file with the Indiana SHPO and contains no designated site number. It is simply listed as a "reported site".

Historically, during the territorial period of Indiana, the population was so sparse that the few counties which had been organized comprised large tracts of wild country. Knox County was one of the earliest created, and not only included its present limits; but all of Indiana west of the West Fork of the White River, and southwest of the Indian boundary line separating Harrison's purchase of 1809 from the New Purchase of 1818. All of Greene and Owen County west of the West Fork of the White River were part of Knox County, and so remained until 1816, when they were constituted a part of the new

county of Sullivan. By the late 1820's both Owen and Greene Counties had been established (Barnhart and Riker 1971; Carmony 1966; Lockridge 1980; Rudolph 1980). Owen County was named in honor of Colonel Abraham Owen. The colonel was killed in the Battle of Tippecanoe in 1811. The first settlers in the county were thought to be John Dunn and General Bartholomew. By 1820, the City of Spencer was founded. In 1820, the population of Owen County was 838. By 1990, it had risen to 17,281. The rough terrain of the county proved inhospitable for early road systems and the county remained fairly isolated. Between 1853 and 1869, railroads began to open up the region. Timber harvesting and agriculture were the chief economies in the early development of the county (Barnhart and Riker 1971; Carmony 1966; Lockridge 1980; Rudolph 1980).

An examination of the General Land Office survey notes for the township did not indicate any cultural resources present within the project area. Historic plat maps of Owen County (Anonymous 1876) revealed the presence of two schools, a railroad, and the City of Spencer within an approximate 1.0 mile radius of the proposed project area.

A review of the Division of Historic Preservation cemetery records for Washington Township showed no historic graveyards would be impacted by the project. However, the same records indicated that McCormick's Creek Cemetery was located within an approximate 1.0 mile radius of the project.

# **Archaeological Survey Methods**

The approximate 97.0 acre parcel examined for the proposed development was currently situated within portions of either harvested cornfield or woods. Ground surface visibility within the project area was estimated to have ranged between 0-40%. Due to the varying ground surface visibility within the project limits, both pedestrian walkover survey and shovel testing were utilized within the development land tract.

Where ground surface visibility was thought to be 30% or greater, pedestrian walkover survey was utilized. Pedestrian survey of the project area consisted of archaeologists walking abreast at 10-meter intervals visually examining the ground for cultural debris. Where cultural materials were located, survey flags were placed, and sites were then rewalked at 2-meter intervals to determine the artifact density and boundary of each site.

In areas where ground surface visibility was determined to be less than 30%, shovel probe survey was implemented. Shovel probe survey consisted of small test holes, approximately 35-cm in diameter and 35-cm deep, that were excavated across the project area at intervals of 15-meters along transects spaced 15-meters apart. Soil from the probes was screened through 6.4 mm mesh in an attempt to locate cultural materials. Soil conditions and the presence or absence of cultural materials were noted for each hole. In areas where shovel probes tested positive for cultural materials, additional probes were excavated at 5-meter intervals in the cardinal directions around the positive shovel test pit. Although the shovel probe technique will not find deeply buried sites, and may miss small or ephemeral sites, it is the most cost-effective, reliable form of archaeological survey in areas of low or zero surface visibility (Lightfoot 1986; Nance & Ball 1986).

If applicable, fire-cracked rock was noted but not collected during the survey. All cultural materials recovered during the course of the survey were taken to the ACO office for processing. All artifacts from the survey will be taken to Indiana State Museum for curation.

# Archaeological Reconnaissance Survey

Between January 5 and 7, 2012, personnel from Archaeological Consultants of Ossian conducted a reconnaissance level survey for the project area. The project area was examined by Alan Miller, Brent Alexander, and Arturo Fernandez with the author serving as Principal Investigator. The project consisted of an approximate 97.0 acre tract that was to be utilized for a development (Figures 2 and 3).

The project area was bordered by S.R. 43 to the east; by a woods/tree farm to the west; by woods and a farmstead to the north; and by woods and agricultural field to the south (Figure 3). The project area contained approximately 68 acres of harvested cornfield and 29 acres of woods (Figure 3). All areas of harvested cornfield were subjected to pedestrian survey by the archaeologists. The wooded tracts were shovel tested where slopes permitted (Figure 4).

The Indiana SHPO GIS system indicated that the area of the "reported site" within the proposed development was located in the central portion of the project. The mapped location of the suspected cultural resource placed it within the harvested cornfield situated within the survey limits. Repeated attempts were made by the archaeologists to verify the existence of the site, but no cultural materials were found. This indicated that the site did not exist or the locational information of the plotted suspected site was in error.

Shovel testing was conducted in all wooded areas of the project. Shovel probes indicated that the wooded areas had not been cultivated (Figure 5). This was not surprising given the steepness of most of the terrain. Generally, loess deposits overlying blocky limestone were encountered within the shovel tests. That factor along with moderate to severe soil erosion in most of the steeply sloping uplands contributed to shallow "A" horizon deposition.

Two areas of minor non-agricultural disturbance were identified in the project area. One of the disturbances consisted of a manmade pond located along portions of the eastern perimeter of the project (Figure 3). Spoil from the pond excavation had been placed around the margins of the water feature creating an artificial levee. The other disturbance consisted of the construction of a water tower that was located in central portions of the project (Figure 3).

During the course of the field investigation, no archaeological sites were located. Nor was any fire-cracked rock observed. The field reconnaissance determined that the project area had been agriculturally disturbed, or was situated upon steeply sloping dissected uplands that had not been cultivated. Minor areas of non-agricultural disturbance were identified during the field survey as well.

Prehistoric densities for the Greene/Owen County region have been tabulated at one site per 12.08 acres. This figure was attained from an archaeological field reconnaissance conducted around Mineral City by Indiana State University (Stafford et. al. 1988). Although Stafford (et. al. 1988) suggests a probable prehistoric site density within the region of one site per 12 acres surveyed, this density obviously fluctuates depending on the closeness of the survey area to major water resources (i.e. the White River) as demonstrated through numerous river valley surveys conducted within the state. The current survey examined an area of approximately 97.0 acres and located no cultural resources. The results of the current field reconnaissance fell below the anticipated prehistoric site density estimates established by Stafford (et. al. 1988) for the region. It is believed that the steeply sloping nature of the upland terrain combined with the somewhat poorly drained lowland soils was the reason why no archaeological sites were documented.

#### Conclusions and Recommendations

An archaeological field reconnaissance for a proposed development in Spencer. Owen County, Indiana, located no archaeological sites. The field reconnaissance determined that the project area had been agriculturally disturbed, or was situated upon steeply sloping dissected uplands that had not been cultivated. Minor areas of non-agricultural disturbance were identified during the field survey as well. Known prehistoric sites in the region range in size and significance from single artifact finds to high density lithic scatters of Paleo-Indian to Late Woodland/Mississippian age. Because no archaeological sites were located during the field reconnaissance, it is also the opinion of the archaeologist that the proposed undertaking will not affect any archaeological properties eligible for listing on the National Register of Historic Places, and no further archaeological work is warranted. Project clearance is recommended. However, if any unanticipated artifact concentrations, burials, or features become apparent during construction of the project, work should be halted until the archaeologist in the Department of Natural Resources-Division of Historic Preservation and Archaeology is contacted.

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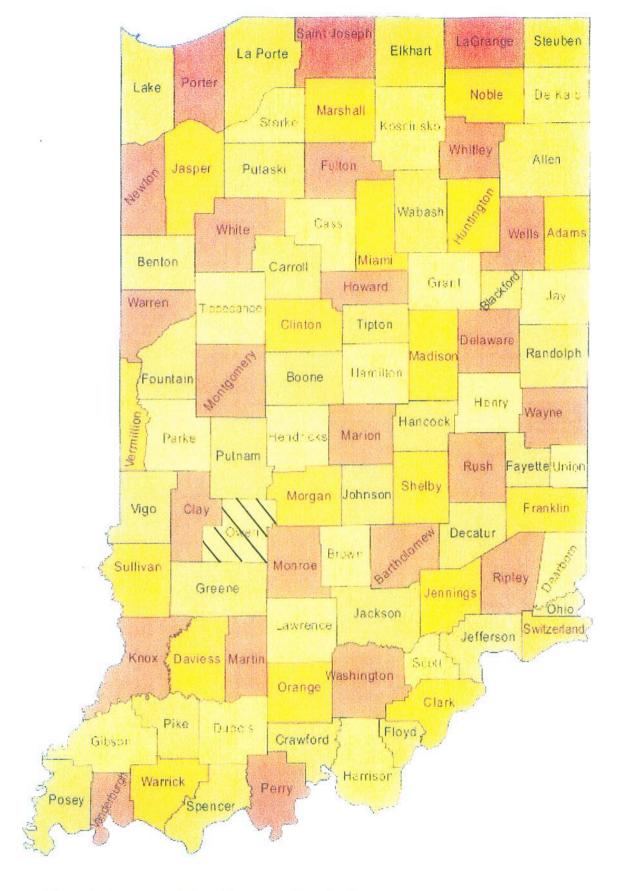


Figure 1. Location of Owen County within the State.

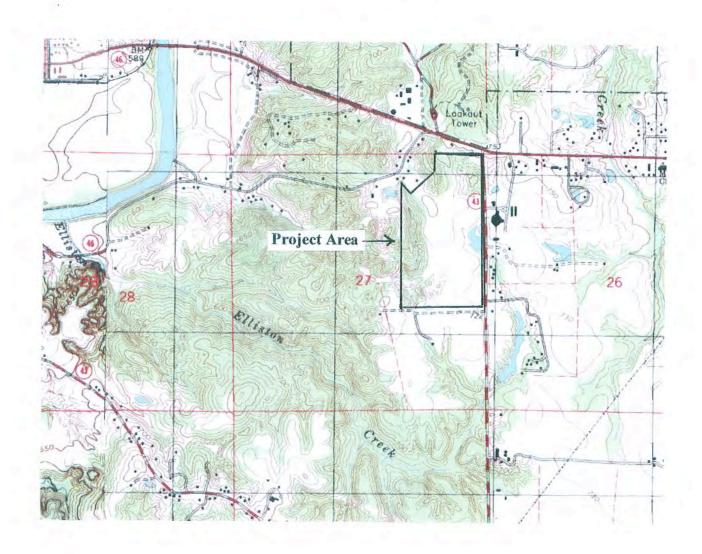


Figure 2. Portion of the Gosport, Indiana USGS 7.5' Quadrangle showing the project location.



Figure 3. Aerial Map of Survey Area.



Figure 4. Some of the steeply sloping terrain within the survey area.



Figure 5. Upland shovel test showing lack of plowzone within the wooded areas of the project.



## **NARRATIVE**

The proposed Centerpiece Microwave Tower is located on Route 43, east of Spencer, Owen County, Indiana. The site is located on uplands near McCormick's Creek and east of the West Fork of the White River. The attached figures include the location on the USGS 7.5-minute topographic quadrangle, Gosport (1965, photorevised 1980), the location on current aerials derived from ESRI ArcGIS Online and their partners, and site plan information provided by Hoosier Energy and their associates. UTMs for the project location are in Table 1 (Zone 16 North, North American Datum 1983).

Table 1 UTMs for Proposed Tower Site

Point	Easting	Northing
Tower	523798	4347826

## **Background Research**

The proposed Tower will be 300 feet in height and the area of potential effect (APE) is 0.75 mile from the proposed Tower. The location of the proposed Tower is Washington Township, Section 27, Township 10 North, Range 3 West. McCormick's State Park is to the north across State Road 46. The area along McCormick Creek has been considered a 'favorite resort for pleasure-seekers' since Euroamerican settlement in the 1800's (Blanchard 1997).

Background research on recorded cultural resources was conducted at the Indiana Department of Natural Resources Division of Historic Preservation and Archaeology office on June 13, 2012. Review of the State Historic Architectural and Archaeological Research Database indicates that no archaeological sites are located within the 0.75 mile APE. Additional research was conducted at the Midwest Genealogy Center, Mid-Continent Public Library, Independence, Missouri. Review of historic maps shows that no structures were recorded in or near the APE on the 1947 Gosport USGS 15-minute topographic map (Figure 4) or on the 1974 plat map (Rockford 1974). County histories state that milling and stone quarries were the primary early industries, and there was a tannery in Washington Township in the early 1800's (Blanchard 1997; Owen County Historical and Genealogical Society 1994).

#### **Direct Area of Potential Effect**

Review of the State Historic Architectural and Archaeological Research Database indicates that no recorded historic properties are located within the proposed direct APE. A cultural resources survey was conducted in 2012 by Archaeological Consultants of Ossian, and no cultural resources were recorded (Stillwell 2012). Based on their results, their recommendation was that no further archaeological work is



required (Stillwell 2012). The proposed Tower is located on property originally patented by Coonrod Hetrick in 1831 (Boyd 2009). No mention of him as a prominent individual was made in the county histories. The proposed Tower location was photographed on June 14, 2012. Access to the property was not currently available, so, as a cultural resources survey had been conducted earlier in 2012, no direct site inspection was attempted.

#### **Visual Area of Potential Effect**

Review of the State Historic Architectural and Archaeological Research Database indicates that no cultural resources or surveys have been recorded within the visual APE. On June 14, 2012, structures in the visual APE were photographed and a representative sample area included and keyed to Figure 3 (Structure Photographs 1 to 9). All photographs of structures were taken from the public roadway; no access was available to structures down private drives (Table 2). All structures recorded in the Owen County Interim Report were accounted for and photographed, except for the Sloane-Moffett house which was present, but screened from State Road 46 by vegetation (Indiana Historic Sites and Structures Inventory 1994). The Gatehouse and Entrance to McCormick's State Park are listed on the National Register of Historic Places. It appears that vegetation on the uneven ridges along State Road 46 will screen the Park Entrance from the proposed Tower (Structure Photograph 9). During the site visit a prominent communications tower was noted on State Road 46 1.5 miles to the east of the proposed Tower (Figure 4).

Table 2 Structures and Resources in the Visible Area of Potential Effect

ID Number	Name	Туре	Location	Photograph
HB-3079	46-10-597A	Bridge	SR46	1
35032		House	SR46	2
35033	Sloane-Moffett	House	SR46	Not visible
35034		House		3
35035		House		4
35046		Farm	SR43	5
39017	Denkewalter Sanitarium	Structure	McCormick's Creek State	6
	– Canyon Inn		Park	
39018	Fire Tower	Structure	McCormick's Creek State	7
			Park	
39019	Gate House & Entrance	NRHP Listed	McCormick's Creek State	8
		Structure	Park	
CR-60-173	McCormick's Creek	Cemetery	Section 22? Location	n/a
			unknown	



In the opinion of the investigator, the project will not affect cultural resources in either the direct or visual APEs. Construction activities associated with the proposed Project will result in temporary land disturbance impacts within the immediate vicinity of the proposed Project. Construction equipment will access the site by existing public and private access roads.



#### **REFERENCES**

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1997 *County of Owen, Indiana*. Originally published 1884. Reprinted by Owen County Historical and Genealogical Society, Spencer, Indiana.

## Boyd, Gregory A

2009 Family Maps of Owen County, Indiana, Deluxe Edition: With Homesteads, Roads, Waterways, Towns, Cemeteries, Railroads, and More. Arphax Pubilshing Co, Norman, Oklahoma.

# Department of Natural Resources

State Historic Architectural and Archaeological Research Database. Website at http://www.in.gov/dnr/historic/4505.htm

## Indiana Historic Sites and Structures Inventory

1994 *Owen County Interim Report.* Historic Landmarks Foundation of Indiana, Indianapolis, Indiana.

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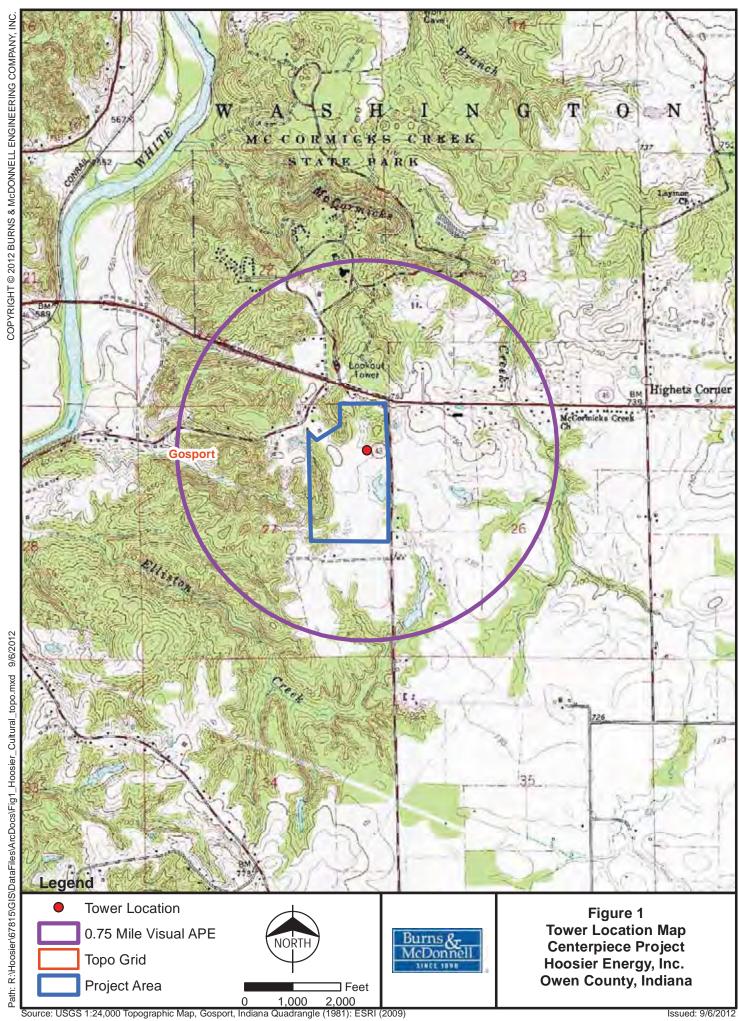
## Stillwell, Larry N.

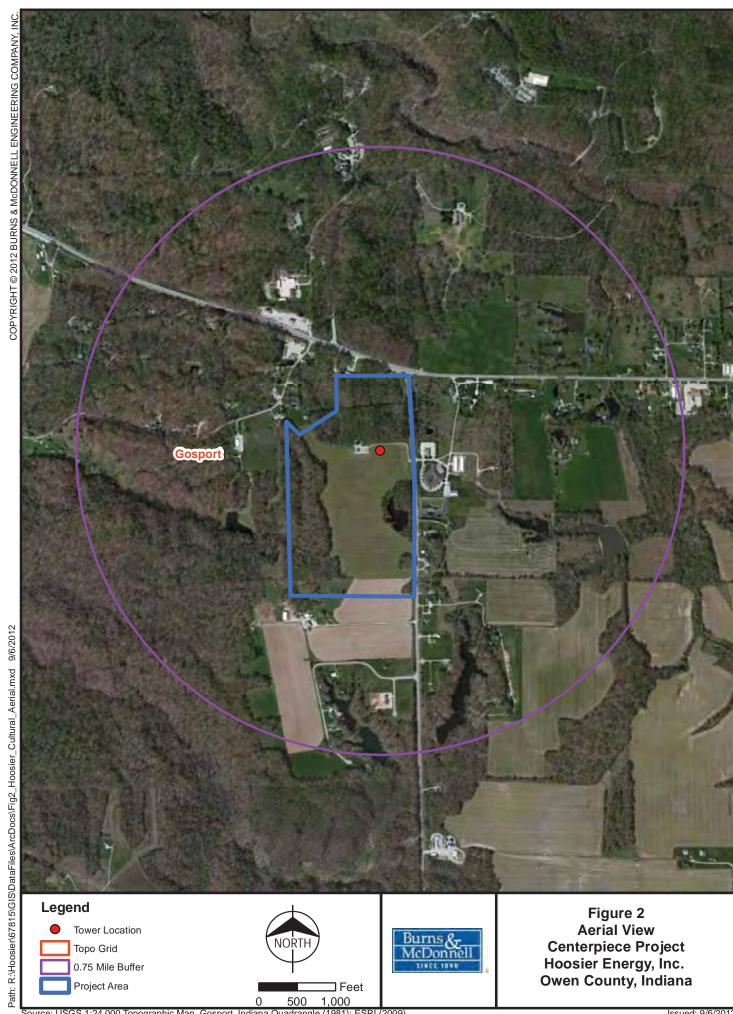
An Archaeological Field Reconnaissance of a Proposed Development in Spencer, Owen County, Indiana. Prepared for Alt & Witzig Engineering, Inc., Carmel, Indiana, by Archaeological Consultants of Ossian, Muncie, Indiana.

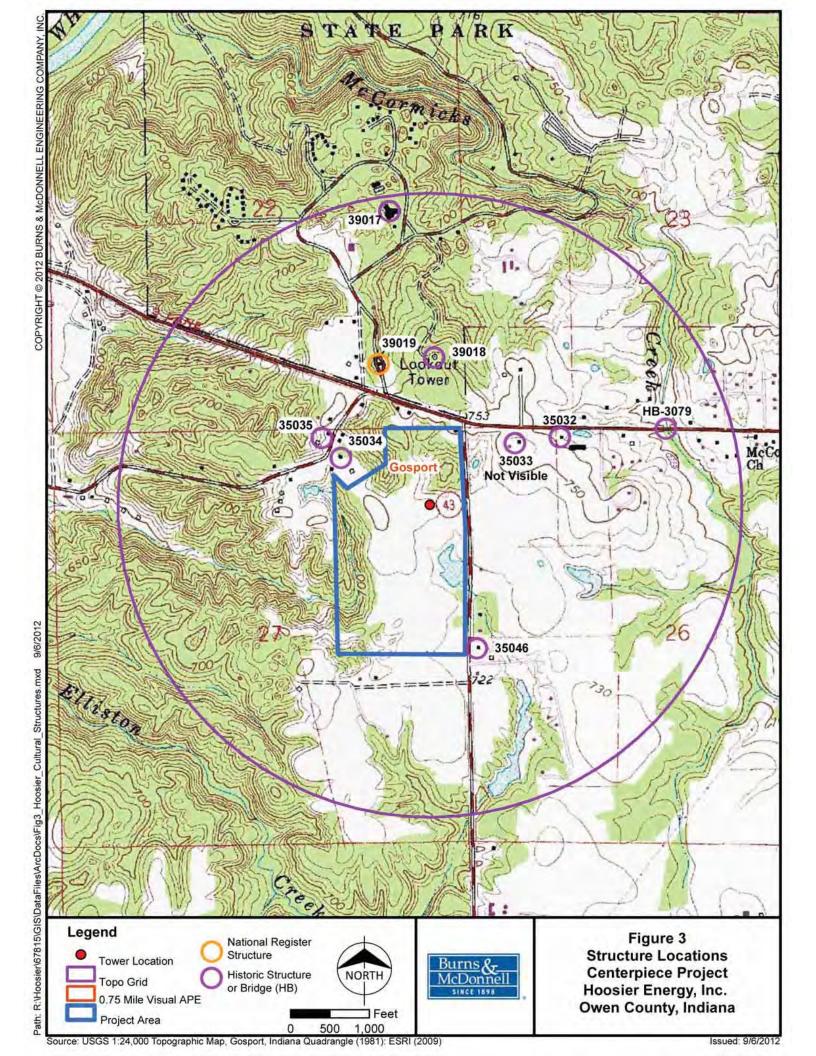
## **USGS**

2010 Topographic Map Locator on-line at http://store.usgs.gov/ http://digital.library.umsystem.edu/cgi/i/image/image









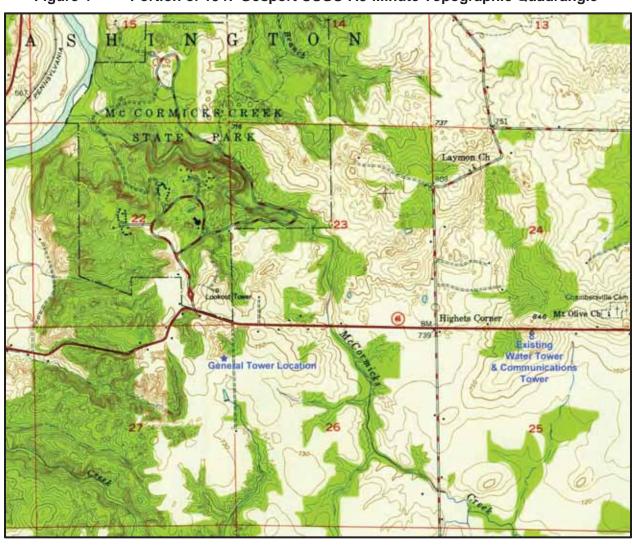


Figure 4 Portion of 1947 Gosport USGS 7.5-Minute Topographic Quadrangle



# Tower Location Photographs, Centerpiece Project



Photograph 1 General Tower location in foreground to right past lane, view to west



Photograph 2 View from general Tower location, view to south



# Tower Location Photographs, Centerpiece Project



Photograph 3 General Tower location to left past lane, view to north



Photograph 4 From general location of Tower, view to east



# Tower Location Photographs, Centerpiece Project



Photograph 5 From general location of Tower, view to southeast



Photograph 6 From general location of Tower, view to northeast





Photograph 1 Historic Bridge 3079, State Road 46, view to north



Photograph 2 Structure 35032, House, State Road 46, view to southwest





Photograph 3 Structure 35034, House, Old River Road or 325<sup>th</sup> East, view to east



Photograph 4 Structure 35035, House, Old River Road or 325<sup>th</sup> East, view to west





Photograph 5 Structure 35046, Farm house, State Road 43, view to east



Photograph 6 Structure 39017, Denkewalter Sanitarium – Canyon Inn, view to southwest



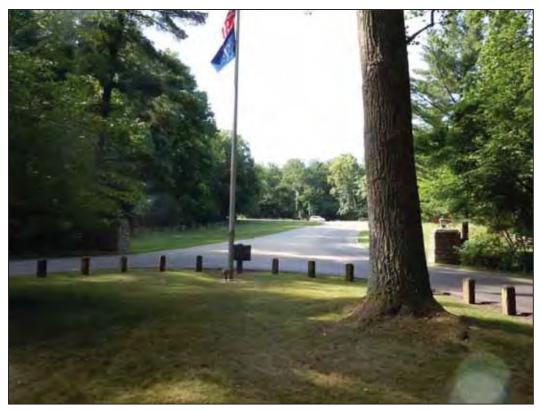


Photograph 7 Structure 39018, Fire Tower, view to north



Photograph 8 Structure 39019, Gatehouse and Entrance (NRHP listed), view to north





Photograph 9 View of NRHP Listed Park Entrance from Gatehouse, toward State Route 46 and Tower location beyond, view to southeast





# Indiana Department of Natural Resources

Division of Historic Preservation & Archaeology 402 W. Washington Street, W274 · Indianapolis, IN 46204-2739 Phone 317-232-1646 • Fax 317-232-0693 · dhpa@dnr.IN.gov



July 16, 2012

Carla D. Shinn
NEPA Project Manager
Burns & McDonnell
9400 Ward Parkway
Kansas City, Missouri 64114-3319

Federal Agency: USDA Rural Utilities Service

Re: Archaeological field reconnaissance report (Stillwell, 1/11/12) regarding construction of a new operations facility near the intersection of State Roads 43 and 46 (DHPA #13584)

#### Dear Ms. Shinn:

Pursuant to Section 106 of the National Historic Preservation Act (16 U.S.C. § 470f) and 36 C.F.R. Part 800, the staff of the Indiana State Historic Preservation Officer ("Indiana SHPO") has conducted an analysis of the materials dated June 15, 2012 and received on June 19, 2012, for the above indicated project near Spencer, Owen County, Indiana.

Please note that our office has not received a letter of authorization from Rural Utilities Service for this project.

Based upon the documentation available to the staff of the Indiana SHPO, we have not identified any historic buildings, structures, districts or objects listed in or eligible for inclusion in the National Register of Historic Places within the probable area of potential effects. In addition, we have not identified any archaeological resources listed in or eligible or the National Register of Historic Places within the proposed project area.

If any archaeological artifacts or human remains are uncovered during construction, demolition, or earthmoving activities, state law (Indiana Code 14-21-1-27 and 29) requires that the discovery must be reported to the Department of Natural Resources within two (2) business days. In that event, please call (317) 232-1646. Be advised that adherence to Indiana Code 14-21-1-27 and 29 does not obviate the need to adhere to applicable federal statutes and regulations.

At this time, it would be appropriate for the Rural Utilities Service to analyze the information that has been gathered from the Indiana SHPO, the general public, and any other consulting parties and make the necessary determinations and findings. Please refer to the following comments for guidance:

- I) If the Rural Utilities Service believes that a determination of "no historic properties affected" accurately reflects its assessment, then it shall provide documentation of its finding as set forth in 36 C.F.R. § 800.11 to the Indiana SHPO, notify all consulting parties, and make the documentation available for public inspection (36 C.F.R. §§ 800.4[d][1] and 800.2[d][2]).
- If, on the other hand, the Rural Utilities Service finds that an historic property may be affected, then it shall notify the Indiana SHPO, the public and all consulting parties of its finding and seek views on effects in accordance with 36 C.F.R. §§ 800.4(d)(2) and 800.2(d)(2). Thereafter, the Rural Utilities Service may proceed to apply the criteria of adverse effect and determine whether the project will result in a "no adverse effect" or an "adverse effect" in accordance with 36 C.F.R. § 800.5.

A copy of the revised 36 C.F.R. Part 800 that went into effect on August 5, 2004, may be found on the Internet at www.achp.gov for your reference. If you have questions about archaeological issues please contact Amy Johnson at (317) 232-6982 or ajohnson@dnr.IN.gov. If you have questions about buildings or structures please contact Kim Marie Padgett at (317) 234-6705 or kpadgett@dnr.IN.gov. Additionally, in all future correspondence regarding the above indicated project, please refer to DHPA #13584.

Very truly yours,

James A. Glass, Ph.D.

Deputy State Historic Preservation Officer

JAG:KMP:ALJ:aj

emc: Kelsey S. Owens, State Environmental Coordinator, USDA Rural Development



July 25, 2012

Lance Simpson HOOSIER ENERGY REC INC. PO Box 908 7398 N. State Road 37 Bloomington, IN 47402-0908

RE: FAA 1-A Letter

Site Name:

Owen County Operations Site

Site Location:

SR 43, Owen County, Indiana

## PROPOSED CENTER OF TOWER LOCATION

NAD83 (Cors96)

Latitude: 39° 16' 46.05172"

Longitude: 086° 43' 26.67631".

NAVD 1988 (Computed using GEOID09)

Ground Elevation:

Existing 741.8', Proposed 743' AMSL

Tower Height:

300'AGL (w/o appurtenances), 315'AGL (with appurtenances)

Lat./Long./Elevation were obtained from GPS Survey Grade control referenced to:

Monument:

**OPUS Solution** 

PID No.:

DM4642, DM4652, DM5389, DM4640, DM3505, DG4803, DM4662,

No. LS29900010

DM4656

I hereby certify that the above information is accurate to within:

±20 feet horizontal

±3 feet vertical

Date: July 25, 2012

Marty J. James

Registered Land Surveyor No. LS29900010

ames

State of Indiana Cc: File #7463

Bloomington - Budford - Paoli

1351 West Tapp Road - Bloomington, Indiana 47403 - p: 812-336-8277 - f: 812-336-0817

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