ENVIRONMENTAL ASSESSMENT WITH DRAFT FINDING OF NO SIGNIFICANT IMPACT

ENVIRONMENTAL IMPACTS AND PROPOSED MITIGATION PLAN ASSOCIATED WITH
S Livingston Gas Leak 2019
LOCATED IN SPRINGFIELD, SANGAMON COUNTY, ILLINOIS

ILLINOIS
DEPARTMENT OF
NATURAL
RESOURCES

Office of Mines and Minerals,
Abandoned Mine Land Division

Rita Lee, Manager

S Livingston Gas Leak 2019
AML-ESaE-1964
July 24, 2020

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CHAPTER 1

Project Location:

The project site is in a residential area in the back yard of 306 South Livingston Street on the east side of Springfield, Illinois, located in Sangamon County.

A location map of the project site is presented on the following page.

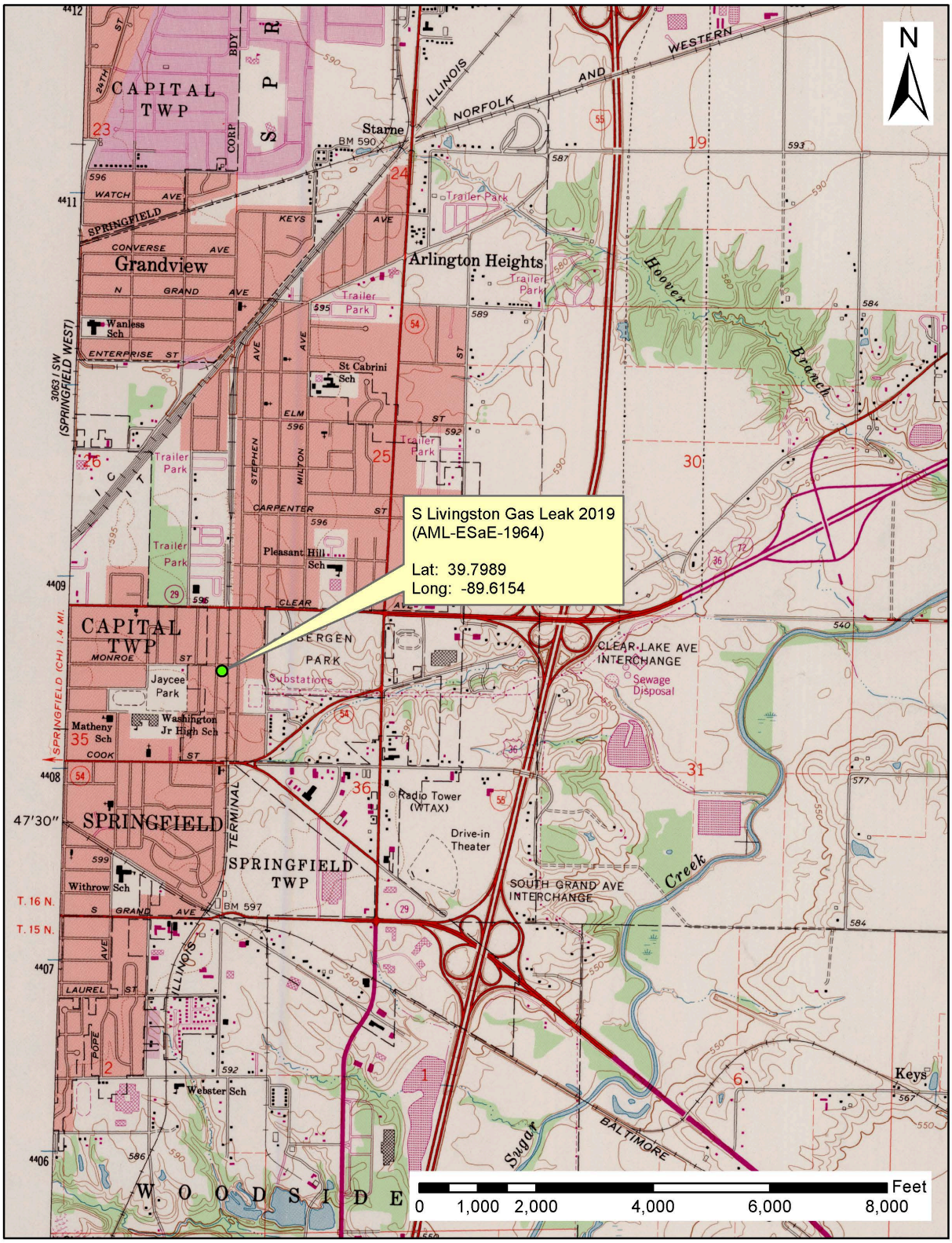
Project Investigation:

On December 4, 2019 personnel from the Illinois Department of Natural Resources Abandoned Mine Land Reclamation Division (AMLRD) Emergency Unit investigated a reported gas leak located at 306 South Livingston Street in Springfield, Illinois. The investigation revealed a buried 2 inch diameter steel pipe approximately 6 inches deep venting methane near the north property line of 306 South Livingston Street. A portable gas monitor was used to measure concentrations of the venting gas. At this location, the methane concentration was 23% by volume, and the oxygen concentration was 3%.

The portable gas monitor was also used to measure concentrations of the 7'-6" tall steel vent pipe that is located just east of the 306 South Livingston Street property. The diameter of this vent pipe was approximately 4 inches. The flowrate from the vent pipe was observed to be weaker than the flowrate from the buried 2 inch steel pipe. The gas concentrations from the vent pipe were 17% methane and 9% oxygen. The vent pipe is located at an abandoned borehole that penetrates the Peabody No. 57 coal mine at a depth of approximately 240 feet. This coal mine operated from 1888 to 1950.

A temporary 4 inch, 10-foot-tall PVC standpipe was erected over the buried 2-inch steel line to vent methane to the atmosphere at a higher elevation than nearby buildings. Based on continued observation by AML staff, both gas leak locations draw air into the mine during periods of high barometric pressure (above 30.3" Hg). This information will be used in planning how to safely seal the borehole.

Project Location Map:



Proposed Action:

DNR AMLRD staff is proposing an emergency project to seal the abandoned mine borehole with grout, thereby eliminating the potentially explosive safety hazard. A Finding of Fact and Authorization to Proceed was issued by the Department of Interior, Office of Surface Mining Reclamation and Enforcement, Alton Field Division on June 8, 2020.

Purpose and Need:

The Illinois Abandoned Mined Lands Reclamation Council was established in 1975 in accordance with Public Act 78-1293 to reclaim lands and abate hazards associated with abandoned mines.

Funding for the reclamation and abatement of mine related problems associated with abandoned coal mines is provided under Title IV of the Surface Mining Control and Reclamation Act, Public Law 95-87.

In 1984, the Illinois Abandoned Mined Lands Reclamation Council received authority and funding from the Office of Surface Mining Reclamation and Enforcement (OSMRE) to conduct an emergency program.

According to federal regulations (30 CFR 700.5) an emergency is defined as "a sudden danger of impairment that presents a high probability of substantial physical harm to the health, safety or general welfare of people before the danger can be abated under normal program operation procedures."

The purpose of this emergency project will be to eliminate the potentially explosive safety hazard. This action is needed since there is a high probability of substantial physical harm to people living in nearby residences. Additional reclamation activity at this site is not anticipated after completion of the emergency project.

CHAPTER 2

Proposed Action and Alternatives:

No Action Alternative. Allow mine gas to continue venting without permanent measures or direct controls.

Proposed Action. Implement a borehole sealing project to seal off the leaking mine gasses at both the borehole and associated two inch leaking buried tap connection.

Alternatives Considered but Eliminated from Detailed Analysis:

Restrict/Prohibit Site Access. Installation of a perimeter chain link safety fence to restrict access to the area and maintain a safety perimeter around borehole and associated leaking buried tap connection. Seek county health officials to condemn use of the surrounding homes. A detailed analysis of this alternative was not conducted due to the emergency

nature of the problem. This alternative does not permanently address the gas leak, leaving the public health and safety at risk.

Vent Mine Gasses in a Controlled Fashion. Maintain vent stack at borehole and construct permanent vent stack at associated leaking 2-inch buried tap connection. A detailed analysis of this alternative was not conducted due to the emergency nature of the problem. This alternative does not permanently address the gas leak, leaving the public health and safety at risk.

CHAPTER 3

Affected Environment:

This emergency project is in a developed residential area east of downtown Springfield, Illinois. Homes constructed in this area date back to the mid-1900s. An abandoned railroad right of way is present at the location of this emergency. The railroad property is now owned by the City of Springfield. A review of the historical plat maps (1858-1914) showed no houses, churches, schools, or cemeteries in the project area.

CHAPTER 4

Environmental Consequences:

It should be noted that the intent of all emergency projects is to abate "life threatening conditions" and not to mitigate environmental problems; however, in each emergency project, the selection of materials and abatement techniques are often based on environmental considerations.

No Action Alternative. The no action alternative is undesirable since the mine gas leak creates a high probability of substantial physical harm to the health, safety, and general welfare of people. Methane gas can be explosive at certain concentrations. In addition to this safety hazard, mine gasses can displace oxygen, creating an asphyxiation hazard for residents. This gas leak is in a heavily populated residential area and should be permanently addressed as soon as possible.

Proposed Action. Implementing a borehole sealing project eliminates all explosive, combustion, and asphyxiation hazards. In addition, sealing the borehole reduces or eliminates emissions of methane gas from the borehole and associated tap connection into the atmosphere.

The decision to implement the proposed action was made primarily for the following reasons: It eliminates immediate life-threatening hazards while reducing methane gas emissions. Under this alternative, a packer will be placed above the Springfield, Number 5 coal seam. The borehole will then be filled with a neat cement grout. These materials were chosen because of their suitable engineering and environmental properties, relatively low

cost, and ease of placement. The neat cement grout will be used to construct a plug that is integral with the existing outside casing. The plug will be placed within bedrock to minimize gas leakage and to reduce flow rate of gas that does escape should the casing rust through time. The borehole will be left in such a manner that will allow the land to return to its established residential yard use. A borehole marker will be placed over the sealed borehole to identify it and discourage future development over the abandoned borehole.

Impact Analysis:

Resource Element	Impact/Comment
Cultural and Historic	No cultural or historic resources exist at the project site, therefore, no impact. This project complies with the State Agency Historic Resources Preservation Act – review by State Historical Preservation Office attached.
Water Quality	No appreciable change to water quality resulting from project work is anticipated.
Wetlands	No wetlands exist at the project site. Whether or not the project is implemented, no change in wetland status is anticipated.
Wildlife	Temporary impact. During construction, noise and air pollutants associated with work activity may exceed that already associated with normal residential land use. Such disturbance is believed to be minimal and temporary to expected land use by wildlife. There will be no long-term change in habitat resulting from the project.
Prime and Unique Farmland	Ipava Silt Loam. The Ipava Silt Loam soil is considered to be prime farmland soil. Regardless, the soil was previously disturbed during residential development. The current land-use negates any agricultural significance of the soil.
Recreational Resources	The potential recreational value for the site remains unchanged.
Air Quality	Potential short-term increase in pollutants resulting from drilling and grouting machinery and potential dust associated with grouting operations. Proper precautions will be taken to protect the public from nuisance dust during delivery of materials to the project site. Such impacts would be local and minimal with no long-term impact. Methane gas emissions will likely be decreased, assuming no other open conduits between the mine and surface exist. No significant impact.

Socioeconomic Factors	Construction equipment is limited and should provide little impact on the community.
Political Factors	The project is consistent and compatible with state and local land use plans.
Environmental Justice	No direct public involvement was conducted; however, no evidence of environmental injustice is apparent.
Potential Cumulative Impacts	Potential cumulative impacts were considered; however, no past, present, and reasonably foreseeable future actions were demonstrated that would adversely affect the environmental resources within the geographic scope and analysis timeframe.

CHAPTER 5

Consultation and Coordination:

- United States Department of the Interior, Fish and Wildlife Service, Illinois-Iowa Ecological Services Field Office, Consultation Code: 03E18000-2020-SLI-2238, Event Code: 03E18000-2020-E-05332, Project Name: S Livingston Gas Leak 2019.
- State Historical Preservation Office – Cultural and Historical Review March 10, 2020 – Dawn E. Cobb, Archaeologist, Office of Realty & Capital Planning, Illinois Department of Natural Resources.
- Soil survey staff, Natural Resources Conservation Services, United States Department of Agriculture, Web Soil Survey, Available online at http://websoilsurvey.nrcs.usda.gov/. Downloaded March 10, 2020.
- Office of Surface Mining Reclamation and Enforcement – Emergency Finding of Fact and Authorization to Proceed June 8, 2020 – Joy Schieferstein, Senior Program Specialist, Alton Field Division, Interior Regions 3, 4 & 6.

REFERENCES

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Illinois State Reclamation Plan for Abandoned Mined Lands, pursuant to Title IV of the Federal Surface Mining Control and Reclamation Act of 1977, Illinois Abandoned Mined Lands Reclamation Council with a supplementary resource document by Southern Illinois University Cooperative Wildlife Research Laboratory, July, 1980.

National Historic Preservation Act of 1966, as amended, The National Historic Preservation Act (16 U.S.C., 470 et seq.,) consists of Public Law 89-665 (October 15, 1966) and amendments thereto.

The National Register of Historic Places in Illinois, Illinois Preservation Series, Number 6, Illinois Places Listed in the National Register of Historic Places through April 10, 1985, Illinois Department of Conservation, Division of Historic Sites.

National Register Additions, April 10, 1985 - April 19, 1990.

Organization and Procedures of the Illinois Mine Subsidence Response Team, Lundin, Tracy; Gibson, Robert; Mahar, Jim; Illinois Abandoned Mined Lands Reclamation Council in cooperation with Region III, Office of Surface Mining, U.S. Department of the Interior, June 19, 1980 through June 30, 1981.

A Procedure For Evaluating Environmental Impact, (Geological Survey Circular 645), Leopold, Luna B.; Clarke, E.; Hanshaw, Bruce B.; Balsley, James R.; United States Department of the Interior, Geological Survey, Washington, 1971.

Review of Underground Mining Practices in Illinois as Related to Aspects of Mine Subsidence with Recommendations for Legislation, (Document No. 80/10), Illinois State Geological Survey, Urbana, Illinois, May, 1980.

Sangamon County, Prime Farmland Mapping Units, U. S. Department of Agriculture, Soil Conservation Service, Illinois Agricultural Experiment Station.

Soil Survey of Sangamon County, Illinois, (Illinois Agricultural Experiment Station Soil Report No. 111), United States Department of Agriculture, Soil Conservation Service in cooperation with Illinois Agricultural Experiment Station, Issued May 1980.

State Agency Historic Resources Preservation Act, Public Act 86-707, S.B. 467.

Prepared and Reviewed by:

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APPENDIX A

AML-ESaE-1964/ S Livingston Gas Leak 2019 / Historic Preservation

Cobb, Dawn <Dawn.Cobb@illinois.gov>
Tue 3/10/2020 3:22 PM
To: Guttmann, Brent <Brent.Guttmann@illinois.gov>; Schroeder, Marge <Marge.Schroeder@Illinois.gov>

2 attachments (5 MB)
IR Form - S Livingston Gas Leak 2019.pdf; AML-ESaE-1964_Cultural.docx;

This project complies with the State Agency Historic Resources Preservation Act
Exempt 13

Property: Dakota Brummett, 306 South Livingston Street, Springfield
Section 35, T16N, R5W, 3PM, Sangamon County

Dawn E. Cobb
Archaeologist
Office of Realty & Capital Planning
Illinois Department of Natural Resources
217/785-4992

-----Original Message-----
From: Guttmann, Brent <Brent.Guttmann@illinois.gov>
Sent: Friday, March 6, 2020 3:03 PM
To: Cobb, Dawn <Dawn.Cobb@illinois.gov>
Cc: Fulton, Danielle <Danielle.Fulton@illinois.gov>
Subject: S Livingston Gas Leak 2019

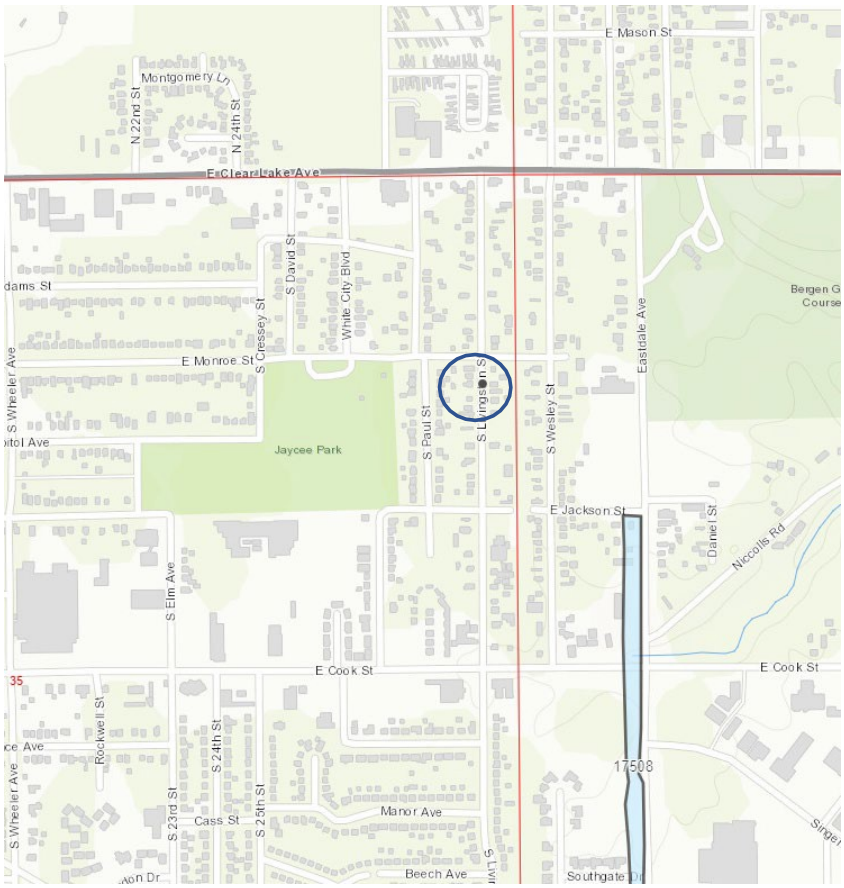
Dawn,

Attached is an Investigation Report along with associated maps/attachments for the S Livingston Gas Leak 2019 emergency project in Springfield. We would like to request Historic Preservation status at this time.

We have had a bit of a holdup on this project due to difficulty determining property ownership, but plan to move forward soon to permanently address the problem with an emergency contract.

Thanks,

Brent Guttmann, PE
Illinois Department of Natural Resources Office of Mines & Minerals, AMLR Division SIUE – Box 1459 – Alumni Hall Room 1302 Edwardsville, IL 62026 Phone 618-650-3197 Fax 618-650-2350



AML-ESaE-1964, S. Livingston Gas Leak 2019
Sec. 35, T16N, R5W, 3PM

There are no recorded archaeological surveys or sites within the project area (blue circle). A nearby archaeological survey (blue polygon) is unrelated to the current project. A review of the historical plat maps (1858-1914) showed no houses, churches, schools, or cemeteries in the project area. By 1942 the area was located within city limits and individual structures are not illustrated on the maps.

APPENDIX B

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Illinois-Iowa Ecological Services Field Office
Illinois & Iowa Ecological Services Field Office
1511 47th Ave
Moline, IL 61265-7022
Phone: (309) 757-5800 Fax: (309) 757-5807

In Reply Refer To: July 23, 2020
Consultation Code: 03E18000-2020-SLI-2238
Event Code: 03E18000-2020-E-05332
Project Name: S Livingston Gas Leak 2019

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The attached species list identifies any federally threatened, endangered, proposed and candidate species that may occur within the boundary of your proposed project or may be affected by your proposed project. The list also includes designated critical habitat if present within your proposed project area or affected by your project. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

Section 7 of the Endangered Species Act of 1973 requires that actions authorized, funded, or carried out by Federal agencies not jeopardize federally threatened or endangered species or adversely modify designated critical habitat. To fulfill this mandate, Federal agencies (or their designated non-federal representative) must consult with the Service if they determine their project "may affect" listed species or critical habitat.

Under 50 CFR 402.12(e) (the regulations that implement Section 7 of the Endangered Species Act) the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally. You may verify the list by visiting the ECOS-IPaC website http://ecos.fws.gov/ipac/ at regular intervals during project planning and implementation and completing the same process you used to receive the attached list. As an alternative, you may contact this Ecological Services Field Office for updates.

Please use the species list provided and visit the U.S. Fish and Wildlife Service's Region 3 Section 7 Technical Assistance website at - http://www.fws.gov/midwest/endangered/section7/s7process/index.html. This website contains step-by-step instructions which will help you

determine if your project will have an adverse effect on listed species and will help lead you through the Section 7 process.

For all wind energy projects, please contact this field office directly for assistance, even if no federally listed plants, animals or critical habitat are present within your proposed project or may be affected by your proposed project.

Although no longer protected under the Endangered Species Act, be aware that bald eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.) and Migratory Bird Treaty Act (16 U.S.C. 703 et seq), as are golden eagles. Projects affecting these species may require measures to avoid harming eagles or may require a permit. If your project is near an eagle nest or winter roost area, see our Eagle Permits website at http://www.fws.gov/midwest/midwestbird/EaglePermits/index.html to help you determine if you can avoid impacting eagles or if a permit may be necessary.

We appreciate your concern for threatened and endangered species. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Illinois-Iowa Ecological Services Field Office
Illinois & Iowa Ecological Services Field Office
1511 47th Ave
Moline, IL 61265-7022
(309) 757-5800

Project Summary

Consultation Code: 03E18000-2020-SLI-2238

Event Code: 03E18000-2020-E-05332

Project Name: S Livingston Gas Leak 2019

Project Type: MINING

Project Description: Located at the rear lot line of 306 S Livingston Street in Springfield, Illinois. The project will seal an abandoned coal mine borehole that is currently leaking mine gasses. This is an emergency project which will take place within the next 60 days.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/39.799057358342836N89.61541100287734W

Counties: Sangamon, IL

Endangered Species Act Species

There is a total of 3 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Flowering Plants

NAME	STATUS
Eastern Prairie Fringed Orchid *Platanthera leucophaea* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/601	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

THERE ARE NO WETLANDS WITHIN YOUR PROJECT AREA.