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IEST

Subject:

Marathon Petroleum Company LLC, Wood River Barge Dock Pipe Cluster Removal and Replacement, Mississippi River (RM 196.6), Hartford, Illinois; Conservation Plan for the State-Threatened Black Sandshell (*Ligumia recta*)

Date:  
February 27, 2015

Illinois Department of Natural Resources  
Conservation Plan  
(Application for an Incidental Take Authorization)  
Per 520 ILCS 10/5/5 and 17 Ill. Adm. Code 1080

Contact:  
Scott Walker

Phone:  
512-527-6076

Email:  
Scott Walker

PROJECT APPLICANT: Marathon Petroleum Company (MPC)

PROJECT NAME: Wood River Barge Dock Pipe Cluster Removal and Replacement

Our ref:  
03256212.0000

COUNTY: Madison

AREA OF IMPACT: Mississippi River

ARCADIS U.S., Inc.  
TX Engineering License # F-533

The incidental taking of endangered and threatened species would be authorized by the Illinois Department of Natural Resources (IDNR) only if an applicant submits a conservation plan to the IDNR Incidental Take Coordinator that meets the following criteria:

1. A description of the impact likely to result from the proposed taking:

A) **Area to be affected by the proposed action:**

The proposed pipe cluster replacement project is located on the left descending bank of the Mississippi River, Open River; Lock & Dam 26 to Grand Tower approximately at River Mile 196.6 (N 38.82662°, W 90.108847), Hartford, Illinois (See Attachment A Figure 1).

Imagine the result

The Wood River Barge Dock is located in the SW ¼ of Section 4, Township 4N, and Range 9W at the end of West 7<sup>th</sup> Street, Hartford, Illinois.

**B) Biological data on Black Sandshell (*Ligumia recta*):**

The black sandshell is typically found in medium to large rivers where it occurs in riffles or raceways in gravel or firm sand (Cummings and Mayer 1992). Black sandshell can be found in association with other mussel species in mussel beds at depths ranging from a few inches to 20 feet or more (personal experience; B. O'Neill; pers comms).

The following physical description of the species is taken from Cummings and Mayers 1992 Field Guide to Freshwater Mussels of the Midwest, Illinois Natural History Survey Manual 5:

*"Shell is elongate, solid and moderately compressed. Anterior end rounded, posterior end pointed in males, saber-shaped in females. Dorsal margin straight, ventral margin straight to curved. Umbos low, only slightly elevated above the hinge line. Beak sculpture, if visible, of two or three indistinct, double-looped bars. Shell smooth and shiny, dark green, brown or black, with green rays visible on some individuals. Length to 8 inches (20.3 cm).*

*Psuedocardinal teeth triangular, serrated, and divergent: two in left valve, one in right, occasionally with a small tooth anteriorly. Lateral teeth long, moderately thin, and straight. Beak cavity shallow. Nacre variable from white, pink, and salmon to deep purple, iridescent posteriorly."*

The black sandshell is known from the Mississippi river drainage of western New York, west to South Dakota and Kansas, north to Manitoba, Ontario and Quebec, Canada and south to Louisiana, Alabama, and Georgia (Parmalee 1967). The species was originally widespread within the state of Illinois being found in most major river systems but has shown evidence of decline based on lack of presence within counties of known historic occurrence (INHS Mollusk Collection, IDNR Heritage Database).

Black sandshell is widely distributed but uncommon in much of the Midwest and in Illinois where it is listed as "threatened". They occur from the Great Lakes basin south into the Mississippi River drainage to Louisiana and in some Gulf Coast drainages and with many occurrences represented by few individuals and little evidence of recruitment.

In addition to the above listed information a pre-construction survey was conducted on September 23-25, 2014 to assess the potential for impacts to state and federally listed freshwater mussel species within the potential area of impact. The completed survey report is included with this conservation plan as Attachment A.

### C) Description of the activities

The proposed project involves the installation of three (3) 72-inch diameter steel pipe monopiles filled with concrete and subsequent removal of three (3) existing adjacent pipe cluster mooring structures. Monopiles will be vibration/hammer driven into the riverbed to a depth to be determined at construction. Once the monopiles have been set within the riverbed they will be filled with concrete. Upon completion of monopile installation, the existing adjacent pipe clusters will be removed.

Figure 2 of Attachment A shows the area of survey focused around the vicinity of the existing pipe clusters and future site of replacement monopiles.

Total area of impact associated with installation of the three (3) 72-inch diameter monopiles is approximately 5.46 square meters (58.8 sq. ft.); approximately 1.82 square meters (19.6 sq. ft.) per monopile).

During a September 2014 survey divers conducted a 100% visual/tactile search at each of the three mooring pipe clusters including a 5-meter buffer around each cluster (see Attachment A). A single black sandshell individual was discovered in the vicinity of the downriver pipe cluster (Cell 3). Based on these survey results, density within the potential area of impacts was determined to be approximately 0.003 individuals/square meter. Black sandshell represented less than 1% of the 44 total mussels collected in the vicinity of the mooring pipe clusters (Cells 1, 2, and 3). In addition to the surveys focused at the pipe clusters additional transect and timed surveys were conducted within areas adjacent to the pipe clusters and future monopile locations (see Attachment A Figure 2). These additional surveys yielded a combined total of 114 individuals representing non-listed species (qualitative timed searches: 38 individuals, semi-quantitative transect searches: 76 individuals). No black sandshells were encountered during the additional surveys.

Based on survey results, MPC anticipates the potential to take one (1) or fewer black sandshells as a result of the proposed activity.

**D) Anticipated adverse effects on listed species**

Black sandshell individuals present within the area of impact may be taken/lost if not relocated prior to construction. Based on minimal habitat impacts, surveyed densities, and planned relocation from the affected area, no adverse effects to black sandshell is anticipated.

**2) Measures to minimize and mitigate impacts:****A) Plans to minimize the area affected by the proposed action, the estimated number of individuals of each endangered or threatened species that will be taken, and the amount of habitat affected:**

The area to be impacted by monopile installation is estimated to be approximately 5.6 square meters (approximate cumulative footprint of the three monopile installations). Due to the minimal amount of impacted substrate, impacts to habitat and the threatened species will be negligible. MPC anticipates the potential to take one (1) or fewer black sandshells as a result of the proposed action.

**B) Plans for management of the area affected by the proposed action that will enable continued use of the area by endangered or threatened species:**

The proposed installation of monopiles is not anticipated to impact the continued use of the area by black sandshell's. It is likely that mussels will re-colonize the cleared areas. Similar habitat was located immediately downstream from the location of the proposed downriver monopile location during the previously conducted September 2014 survey. It is anticipated that mussels will be relocated immediately downstream from the downriver monopile location. It was noted during the survey that habitat improved as distance increased downstream from the stationary barge dock with a corresponding increase in mussel density. Non-Marathon owned docking facilities are located immediately upstream from the Marathon Wood River Barge Dock facility. There are no additional planned maintenance activities that would be expected to impact mussel resources.

**C) Description of all measures to be implemented to minimize and mitigate the effects of the proposed action on black sandshell.**

MPC will conduct a thorough search for freshwater mussels in the area of potential impacts during suitable mussel relocation periods no later than 45 days prior to commencement of the proposed activities. All native freshwater mussels will be removed from the footprint of the three proposed monopiles and from a 1.5 meter (5-foot) buffer area around each monopile installation and existing pipe cluster locations. All freshwater mussel species found will be identified to species and enumerated. Any state or federally listed freshwater species will be marked prior to relocation. During the relocation, any zebra mussels discovered attached to native freshwater mussels shall be removed prior to relocation. The mussels will be relocated to an area approximately 50 to 100 meters downstream from the downriver monopile installation location where suitable substrate is known to exist. Prior to relocation, a habitat survey will be conducted to confirm the presence of suitable habitat within the proposed downstream relocation area.

A report summarizing the survey methodology, species and numbers of mussels located, age and size of each individual sampled, and maps of area searched and the relocation site will be provided to IDNR within 60 days of completion of the survey and relocation.

This relocation effort will minimize the potential for direct impacts to mussels located within the footprint and immediate vicinity of the monopile installations. Indirect impacts from construction or vessel activity during operation of the facility are expected to be negligible.

Marathon will monitor and coordinate closely with the Contractor to ensure that relocation is carried out within the appropriate seasonal window and construction timeline as well as ensuring the accuracy of the removal locations.

**D) Plans for monitoring the effects of measures implemented to minimize or mitigate the effects of the proposed action on black sandshell.**

In the event that a black sandshell or other endangered or threatened species is encountered during relocation, MPC will perform a single thorough search for freshwater mussels at the relocation location 2 years from the date of relocation completion. A monitoring report would be submitted to Illinois DNR within 30-days of survey completion.

Should no black sandshell or other endangered or threatened species be encountered during the relocation, no follow-up monitoring survey shall occur.

**E) Adaptive management practices that will be used to deal with changed or unforeseen circumstances that affect the effectiveness of measures instituted to minimize or mitigate the effects of the proposed action on endangered or threatened species**

MPC does not foresee any additional modification to the existing barge dock facility beyond the proposed monopile installation and pipe cluster removals which would reduce the effectiveness of the proposed relocation action. A maintenance dredge to remove accumulated sediments along the bank side of the barge dock is planned; however based on survey results and utilization of best management practices to control sediments no impacts to black sandshell are anticipated. It is expected that the maintenance dredge will improve the habitat along the bank side by removal of loose sediments and exposure of gravel and sand substrate. Should any future changes to facility operations be proposed which may have the potential to impact black sandshell a separate coordination would be initiated with the Illinois DNR.

**F) Verification that adequate funding exists to support and implement all mitigation activities described in the conservation plan.**

MPC is committed to funding the construction and operation of the Wood River Barge Dock facility including any costs associated with constraints or conditions imposed by the permitting process. MPC has been anticipating the minimization and mitigation requirements addressed within this conservation plan and understand that if changes are made to the facility that could potentially impact mussel resources, coordination with Illinois DNR will be required.

**3) A description of alternative actions the applicant considered that would not result in take.**

The three (3) existing pipe clusters have suffered damage through normal operations and exposure to the elements resulting in structural integrity issues necessitating replacement.

The No-action alternative would result in continued loss of pipe cluster structural integrity which could increase the probability of property damage,

petroleum products release, and impacts to surrounding habitat and species present.

Replacement of the pipe clusters using single monopiles will result in more durable structures that exhibit a smaller individual and cumulative footprint verses replacement using techniques that mirror the existing structures.

4) Data and information regarding survival of the species after the proposed take is complete.

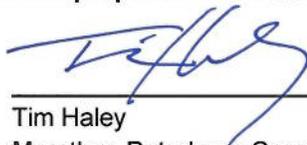
Recent black sandshell distribution data provided by Illinois DNR Natural Heritage Database lists the black sandshell as occurring within 28 counties. The listing includes:

- All counties along the Mississippi River upstream from Hartford in Madison County.
- All counties on the Rock River.
- Vermillion County on the Vermillion River.
- Stephen County on the Pecatonica River.
- Boone and DeKalb Counties on the Kishwaukee River.
- Kane and Mc Henry Counties on the Fox River.
- Shelby County on the Kaskaskia River.
- Clay County on the Wabash River.
- Iroquois, Kankakee, and Will Counties on the Iroquois and Kankakee Rivers.
- Pulaski and Massac Counties on the Ohio River.

Black sandshell are known to parasitize bluegill (*Lepomis macrochirus*), largemouth bass (*Micropterus salmoides*), sauger (*Stzostedion canadense*), and white crappie (*Pomoxis annularis*). The proposed project will not negatively impact any of these host species or jeopardize the continued health of the black sandshell.

5) Implementing agreement:

A) **The name and signature of the participant who can confirm that all actions proposed in the conservation plan will be performed.**



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Tim Haley  
Marathon Petroleum Company  
Environment, Safety & Regulatory Compliance Manager

**B) The names of other participants in the execution of the conservation plan.**

Sara Greer  
Marathon Petroleum Company  
Project Leader; Compliance Assurance

Bill Coulter  
Marathon Petroleum Company  
Area Manager; Compliance Assurance

Pipe Cluster Removal and Monopile Installation  
Contractor TBD

Scott Walker  
Principle Ecologist  
ARCADIS U.S., Inc.

Courtney Abshire  
Environmental  
Scientist ARCADIS  
U.S., Inc.

**C) The obligations and responsibilities of each of the identified participants with schedules and deadlines for completion of activities included in the conservation plan and a schedule for preparation of progress reports to be provided to the IDNR;**

The IDNR is responsible for the review of the conservation plan and any subsequent issuance of an Incidental Take Authorization

MPC is responsible for securing authorization for incidental take as well as acquiring all necessary Section 404 U.S. Army Corps of Engineering and Illinois DNR State permits.

ARCADIS, U.S, Inc. is the consulting agent retained by MPC to assist with preparation of the Incidental Take Authorization Application and any required relocation effort.

Construction is scheduled to begin in September 2015 once the ITA has been granted and relocation is complete. Relocation will be conducted within 45 days prior to start of monopile installation and pipe cluster removal.

**D) Certification that each participant in the execution of the conservation plan has the legal authority to carry out their respective obligations and responsibilities under the conservation plan;**

MPC's Contractor will remove pipe clusters and construct the monopiles at their existing barge dock facility. All appropriate state and federal permits and notifications will be completed prior to installation.

**E) Assurance of compliance with all other federal, State and local regulations pertinent to the proposed action and to execution of the conservation plan;**

MPC submitted a Joint Permit Application with the Corps of Engineers for a Section 404 and acquired approval for this project in the form of permit authorization MVS-2014-670 received from the St. Louis District Regulatory District (see Attachment B).

**E) Copies of any final federal authorizations for a taking already issued to the applicant, if any.**

Not applicable.

6) Attachments:

A – Wood River Mussel Survey Report  
Marathon Pipe Line LLC Wood River Barge Dock Pipe Cluster Replacement and Maintenance Dredge Project

B – U.S. Army Corps of Engineers Authorization File Number: MVS-2014-670

7) Bibliography:

Cummings K.S. and Mayer C.A. 1992. Field Guide to Freshwater Mussels of the Midwest; Illinois Natural History Survey Manual 5. 197 pp.

Illinois Natural Heritage Database. Email inquiry to Tara Kieninger (tara.kieninger@illinois.gov), Heritage Database Program Manager; February 9, 2015.

Illinois Natural History Survey Mollusk Collection Database. Online database query; <http://ellipse.inhs.uiuc.edu:591/INHSCollections/mollsearch.html>, February 10, 2015.

O'Neill, B.J. EA Engineering, Science, and Technology Inc. Malacologist Personal Communication, October 2014.

Parmalee, P.W. 1967. The fresh-water mussels of Illinois. Popular Science Series Vol. 8. Illinois State Museum, Springfield. 108 pp.