

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:)	
)	
MARATHON PETROLEUM)	
COMPANY LP,)	
)	
Petitioner,)	
)	
v.)	PCB No. 2018-049
)	
ILLINOIS ENVIRONMENTAL)	
PROTECTION AGENCY,)	
)	
Respondent.)	

NOTICE OF FILING

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Illinois Pollution Control Board
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(SEE PERSONS ON ATTACHED SERVICE LIST)

PLEASE TAKE NOTICE that I have today electronically filed with the Office of the Clerk of the Pollution Control Board ILLINOIS EPA'S ANSWERS TO QUESTIONS OF THE HEARING OFFICER FOR THE POLLUTION CONTROL BOARD, a copy of which is herewith served upon you.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL PROTECTION
AGENCY

Dated: July 9, 2020

1021 N. Grand Avenue East
P.O. Box 19276
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217-782-5544

By: /s/ Sara G. Terranova
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**ILLINOIS EPA'S ANSWERS TO QUESTIONS OF THE HEARING OFFICER FOR
THE ILLINOIS POLLUTION CONTROL BOARD**

NOW COMES the Illinois Environmental Protection Agency (Illinois EPA or Agency), by and through one of its attorneys, Sara G. Terranova, and hereby submits its ANSWERS TO QUESTIONS OF THE HEARING OFFICER FOR THE ILLINOIS POLLUTION CONTROL BOARD as follows:

Illinois Pollution Control Board (Board) Question 7:

IEPA recommendation states that the proposed mixing zone relief of using 100% of the volume of stream flow up to 1.7 miles downstream of Marathon's outfall is justified because "the stream biota indigenous to this small watershed possess thermal tolerance thresholds greater than that of the proposed alternative thermal effluent limitations... Further, any short-term exceedances of the maximum effluent limitations within the 1.7 mile mixing zone would be offset with stress recovery periods... Thus, the proposed alternative thermal effluent limitations are not expected to adversely impact the balanced, indigenous community of shellfish, fish, and wildlife that currently exist in the study area." 9/7/18 IEPA Rec. at 6.

a. Please comment on whether IEPA gave any special consideration to the presence of bigeye chub, an Illinois endangered species, in Robinson Creek when recommending the grant of the mixing zone relief with no zone of passage.

b. Has IEPA previously granted mixing zone relief in NPDES permits without a zone of passage? If so, please provide details of such permits.

Illinois EPA Answer to Board Question 7a:

The Agency did not give any special consideration to the presence of bigeye chub when recommending the grant of the mixing zone relief with no zone of passage. However, Marathon Petroleum Company LC (Petitioner or Marathon) is not proposing to increase their thermal discharge. The thermal regime in the receiving stream should not change. The bigeye chub was found at three sites in Robinson Creek, one bigeye chub was found upstream of the Marathon discharge, two bigeye chubs were found approximately 0.2 miles downstream of the Marathon discharge, and one bigeye chub was found approximately 4.1 miles downstream of the discharge. Additionally, there were four bigeye chubs found in an adjacent stream. *See* Marathon 316(a) TSD ADDENDUM, February 27, 2018.

It should be noted however, that the results from the UIUC study for the Bigeye Chub were included in the FTMS model in the Second Addendum as a RIS. The Bigeye Chub was not the most sensitive species in the revised RIS. *See* Exhibit 1 of Petitioner's Reply to Illinois Department of Natural Resources' Response to Agency's Recommendation, March 15, 2019.

Illinois EPA Answer to Board Question 7b:

The Agency has not granted mixing zone relief in NPDES permits without a zone of passage, except as authorized under 35 Ill. Adm. Code 302.102(b)(6) where a zone of passage is not required in receiving streams that have zero flow for at least seven consecutive days recurring on average in nine years out of 10. However, pursuant to Subpart K, the Agency believes that the Board has the authority to order the Agency to include thermal discharge effluent limitations or standards in a petitioner's NPDES permit that are less stringent than those required by applicable standards and limitations.¹ *See* 35 Ill. Adm. Code 106.1170.

¹ *See* PCB 2018-58: The Board granted a zone of passage of 50% instead of 75%.

Board Question 8:

IEPA states that the maximum temperature limits requested by Marathon do not exceed the Upper Incipient Lethal Temperatures (UILT) of the RIS (4-12-19 IEPA Reply at 3), however as noted by IDNR, temperatures within the mixing zone have reached 100°F, which is significantly higher than the UIUC bioassay's upper incipient avoidance temperature (AT_{max}) and critical thermal maxima (CT_{max}). Exh. 3; 12-28-18 IDNR Reply Att. B at 3.

a. Please clarify whether the proposed ATEs apply only at the edge of the mixing zone. If so, comment on whether Marathon's thermal data indicate temperature levels periodically exceed UILT of the RIS, and UIUC bioassay's AT_{max} and CT_{max} .

b. Please comment on whether the proposed 1.7-mile mixing zone with no zone of passage provides any thermal refuge to bigeye chub or the RIS when temperature is above the AT_{max} and CT_{max} for big eye chub or UILT for the RIS.

Illinois EPA Answer to Board Question 8a:

The alternate effluent limits apply only at the edge of the mixing zone. The area within the mixing zone could be above the alternate effluent limits.

According to Table 11 in Exhibit 4 of the petition, the UILT for the most sensitive species of the RIS (Emerald Shiner) is 94.1 °F.

According to the UIUC bioassay, the AT_{max} of bigeye chub in this study was approximately 30 °C and 33 °C for animals acclimated to 21 °C and 26 °C respectively while CT_{max} was 33 °C and 36 °C respectively. For comparison to summer-time values, it would be more appropriate to use the acclimation temperature of 26 °C, therefore the AT_{max} of the bigeye chub is 33 °C (91.4 °F) and CT_{max} was 36 °C (96.8 °F).

Table 2 in Exhibit 4 of the petition is a summary of temperature results from Datasonde continuous monitor deployments over 3-4 day periods once each month in 2016. The maximum temperature according to Table 2 in Exhibit 4 of the petition was 92 °F for site RC-05 (Robinson Creek Immediately Dst. MPC 001 Outfall). Therefore, the temperature results from Datasonde continuous monitor deployments over 3-4 day periods each month in 2016 indicate that the AT_{max}

of the bigeye chub would have been exceeded, however the CT_{max} for the bigeye chub and UILT for the RIS would not have been exceeded.

Table 3 in Exhibit 4 of the petition is a summary of temperature results from HOBO continuous monitor deployments in July to November 2016. The maximum temperature according to Table 3 in Exhibit 4 of the petition was 92.3 °F for site RC-05 (Robinson Creek Immediately Dst. MPC 001 Outfall). Therefore, the temperature results from HOBO continuous monitor deployments in July to November 2016 indicate that the AT_{max} of the bigeye chub would have been exceeded, however the CT_{max} for the bigeye chub and UILT for the RIS would not have been exceeded.

Table 4 in Exhibit 4 of the petition is a summary of temperature monitoring results from EFDC Temperature model for Robinson Creek in 2011-2016. The maximum temperature according to Table 4 in Exhibit 4 of the petition was 92.6 °F for site RC05 (Robinson Creek Immediately Dst. MPC 001 Outfall) and 94.7 °F for the site RC07 (Robinson Creek at IL Route 1 – 1.7 mi. Dst. PC 001). It should be noted that the temperature of 94.7 °F would not be allowable with the requested relief. The maximum temperature allowable at the Route 1 bridge would be 90 °F except that 1 percent of the time it could go up to 93 °F. Therefore, the temperature monitoring results from EFDC Temperature model for Robinson Creek indicate that the AT_{max} of the bigeye chub would have been exceeded, however the CT_{max} for the bigeye chub and UILT for the RAS would not have been exceeded at RC05. The temperature results from EFDC Temperature model for Robinson Creek indicate that the AT_{max} for the bigeye chub and the UILT for the RIS would have been exceeded, however the CT_{max} for bigeye chub would not have been exceeded at RC07.

It should be noted that the AT_{max} should not be compared to the maximum temperature

reported because it is not a lethal endpoint. The AT_{max} is a sublethal endpoint when the fish begin to show avoidance behaviors.

Illinois EPA Answer to Board Question 8b:

Based on the above answer, Robinson Creek would not be above the CT_{max} for bigeye chub.

There would be no refuge in the mixing zone other than the ability of the fish to move upstream or downstream to avoid the higher temperature.

Board Question 9:

IEPA notes that any short-term exceedances of the maximum effluent limitations within the 1.7-mile mixing zone would be offset with stress recovery periods (cooler temperatures) of longer durations.” 9/7/18 IEPA Rec. at 6. MBI’s analysis of the duration and severity of thermal stress periods refers to temperatures recorded at the R07 sampling point approximately 1.7 miles downstream of Outfall 001, which is near the proposed location for compliance sampling and the edge of the mixing zone in Marathon’s petition. Pet. Exh. 4, Table 14, Fig. 10 at 65-66. MBI also provided daily temperature profiles during the summer of 2016 for Robinson Creek at the RC05 sampling point, approximately 750 feet downstream from Outfall 001 and within the proposed mixing zone. The temperature profiles show the number of hours and days when temperatures at RC05 were above and below 90°F. Pet. Exh. 4, Table 14, Fig. 10 at 65-66; Exh. 6, Figure 5-1. The actual temperatures based on HOBO deployment as shown in Figure 10 were above 90°F standard for as long as 4 days at a time. Pet. Exh. 4 at 65-66.

a. Please clarify whether MBI’s analysis of the duration and severity of thermal stress periods based on temperatures recorded near the compliance point is applicable within the mixing zone without a zone of passage when considering the protection of bigeye chub or the RIS.

b. Given that the UIUC Bioassay indicates erratic behavioral responses of Bigeye Chub to temperatures approaching the AT_{max}/CT_{max} occurred within minutes, and temperature profiles indicating levels above 90°F standard lasting as long as 4 days at a time, please comment on whether Marathon has adequately demonstrated that a fish traversing this 1.7-mile segment, behaving erratically or near loss of equilibrium, would be expected to successfully navigate the 1.7-mile segment upstream or downstream to find thermal refuge during the times when cooler temperatures exist to experience an adequate period of stress recovery.

Illinois EPA Answer to Board Question 9a:

The Agency believes that it is reasonable to assume that areas inside of the mixing zone will have more periods of thermal stress and fewer periods of stress recovery. The mixing zone will exclude some fish, on a temporary basis, during periods of high temperature because of thermal avoidance by the fish.

Illinois EPA Answer to Board Question 9b:

It is the Agency's opinion that fish will avoid temperatures that are outside of their preferred temperatures. The mixing zone will exclude some fish, on a temporary basis, during periods of high temperature because of thermal avoidance by the fish.

Board Question 10:

Marathon's current NPDES permit requires temperature sampling frequency of 2 grab samples per week. The 2 grab samples per week is significantly less frequent than the daily frequency and continuous sampling required for other NPDES thermal discharges for which the Board has considered thermal relief or Alternative Thermal Effluent Limitations. See Coffeen Power Station, NPDES Permit No. IL0000108 (PCB 09-38); Dresden, NPDES Permit No. IL0002224 (PCB 15-204, IEPA Rec. Att. 1.) Please comment on whether the thermal data relied upon by Marathon based on two grab samples on weekly basis is adequate to discern temperature peaks within the 1.7-mile mixing zone that might adversely affect bigeye chub or the RIS.

Illinois EPA Answer to Board Question 10:

The reissued NPDES permit will have continuous monitoring at the point of compliance.

Board Question 11:

If the Board decides to grant the requested ATEL with mixing zone relief that includes a zone of passage, please comment on the appropriate percentage of the volume of stream flow of that must be allowed for mixing instead of the proposed 100 percent. Also comment on whether inclusion of a zone of passage will affect the size of the mixing zone.

Illinois EPA Answer to Board Question 11:

Due to the size of the stream and that the upstream flow from the Robinson treatment facility (DAF = 2.5 MGD) is about the same volume of flow as the effluent (average flow of 2.66 MGD), the Agency believes that the upstream flow from the Robinson treatment facility and

effluent would readily mix and not provide a zone of passage. If the Board decides that a zone of passage is necessary, the petitioner will need to model the discharge to determine if a zone of passage is feasible and how it impacts the size of the mixing zone.

WHEREFORE, the Illinois EPA submits the above stated answers to questions from the Hearing Officer for the Illinois Pollution Control Board.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL PROTECTION
AGENCY

Dated: July 9, 2019

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CERTIFICATE OF SERVICE

I, Sara G. Terranova, Assistant Counsel for the Illinois EPA, herein certifies that I have served a copy of the foregoing Notice of Filing and the Illinois EPA's ILLINOIS EPA'S ANSWERS TO QUESTIONS OF THE HEARING OFFICER FOR THE POLLUTION CONTROL BOARD, via electronic mail upon:

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Respectfully submitted,

ILLINOIS ENVIRONMENTAL PROTECTION
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