

NPDES PERMIT NO. OK0044733
FACT SHEET

FOR THE DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
(NPDES) PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES

APPLICANT

Kickapoo Casino Wastewater Treatment Plant
25230 E. Highway 62
Harrah, OK 73045

ISSUING OFFICE

U.S. Environmental Protection Agency
Region 6
1445 Ross Avenue
Dallas, Texas 75202-2733

PREPARED BY

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DATE PREPARED

March 1, 2013

PERMIT ACTION

Proposed reissuance of the current NPDES permit issued June, 19 2007, with an effective date of August 1, 2007, and an expiration date of July 31, 2012.

RECEIVING WATER – BASIN

Quapaw Creek – Arkansas River Basin

DOCUMENT ABBREVIATIONS

In the document that follows, various abbreviations are used. They are as follows:

4Q3	Lowest four-day average flow rate expected to occur once every three years
BAT	Best available technology economically achievable
BCT	Best conventional pollutant control technology
BPT	Best practicable control technology currently available
BMP	Best management plan
BOD	Biochemical oxygen demand (five-day unless noted otherwise)
BPJ	Best professional judgment
CBOD ₅	Carbonaceous biochemical oxygen demand (five-day unless noted otherwise)
CD	Critical dilution
CFR	Code of Federal Regulations
Cfs	Cubic feet per second
COD	Chemical oxygen demand
COE	United States Corp of Engineers
CWA	Clean Water Act
DMR	Discharge monitoring report
ELG	Effluent limitations guidelines
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
FCB	Fecal coliform bacteria
F&WS	United States Fish and Wildlife Service
mg/l	Milligrams per liter
µg/l	Micrograms per liter
MGD	million gallons per day
OAC	Oklahoma Administrative Code
ODEQ	Oklahoma Department of Environmental Quality
OWQS	Oklahoma Water Quality Standards
NPDES	National Pollutant Discharge Elimination System
ML	Minimum quantification level
O&G	Oil and grease
PCB	Polychlorinated Biphenyl
POTW	Publically owned treatment works
RP	Reasonable potential
SIC	Standard industrial classification
s.u.	Standard units (for parameter pH)
TDS	Total dissolved solids
TMDL	Total maximum daily load
TRC	Total residual chlorine
TSS	Total suspended solids
UAA	Use attainability analysis
USGS	United States Geological Service
WLA	Wasteload allocation
WET	Whole effluent toxicity
WQMP	Water Quality Management Plan
WWTP	Wastewater treatment plant

In this document, references to State WQS and/or rules shall collectively mean the State of Oklahoma.

I. CHANGES FROM THE PREVIOUS PERMIT

Changes from the permit previously issued June 19, 2007, with an effective date of August 1, 2007, and an expiration date of July 31, 2012, are:

1. TSS concentration and loading limits have been modified. The 30-day averages were modified from 30 mg/l to 21 mg/l and from 12.5 lbs/day to 8.8 lbs/day. The 7-day averages were modified from 45 mg/l to 32 mg/l and from 18.8 lbs/day to 13.4 lbs/day.
2. TSS and CBOD₅ minimum percent removal limits have been added.
3. Fecal Coliform bacteria limits have been eliminated.
4. *E. coli* bacteria limits have been added. The monthly geometric mean and single grab limits are 126 cfu/100ml and 406 cfu/100ml, respectively.
5. TRC has been modified from 0.1 mg/l to 19 µg/l.

II. APPLICATION LOCATION and ACTIVITY

As described in the application, the plant is located 5 miles East of Harrah on U.S. Highway 62, Harrah, Lincoln County, Oklahoma. The effluent from the treatment plant is discharged into an unnamed tributary, thence Quapaw Creek, thence to Lake Arcadia. The discharge is located on that water at latitude 35° 29' 36.47" N and longitude 97° 04' 29.66" W, in Lincoln County, Oklahoma.



Under the SIC Code 4952, the applicant operates a domestic wastewater treatment plant for a casino and housing complex located on Kickapoo Indian trust land.

As described in supplemental application information received February 11 and 12, 2013, the facility's treatment processes are as follows:

The Kickapoo wastewater treatment plant consists of one 2.7 MG emergency overflow/sludge disposal lagoon (East lagoon) prior to the headworks, one mechanical bar screen, one influent lift station, two 2-stage aeration tanks, two clarifiers, one WAS lift station, two aerobic digesters, and a 0.05 MGD chlorine contact chamber. Following treatment, effluent is dechlorinated and

discharged via a 90 degree V-notch weir to the outfall. Cascade aeration prior to discharge into the unnamed tributary provides additional dissolved oxygen.

Sludge is wasted from each digester to the East lagoon. Off-site disposal has not occurred. The East lagoon and the West lagoon (decommissioned 2.7 MG emergency overflow lagoon) were drained and cleaned in 2012. Accumulated sludge was disposed of in the West lagoon.

The Kickapoo WWTP is located on Kickapoo Tribal trust land. The legal description of the Kickapoo Tribal trust land located in Lincoln County is “Surface and surface rights only in and to all of Section 22-12N-2E of the Indian Meridian, Lincoln County, Oklahoma, less and except the S/2 SW/4 NW/4, of said Section 22, and less and except the W/2 W/2 SW/4 SW/4 of said Section 22, and less and except one square acre in the NW corner of the NE/4 of Section 22, previously conveyed for church purposes; and the SW/4 of Section 23-12N-2E of the Indian Meridian, Lincoln County, Oklahoma.”

The National Indian Gaming Commission (NIGC), in their “Finding of No Significant Impact (FONSI) and Notice” for the proposed Kickapoo casino expansion project, stated that “The Kickapoo Tribe currently owns and operates a tribal government gaming casino located on the south side of U.S. Highway 62, approximately ¼-mile northeast of the intersection with State Highway 102. This casino lies within a portion of an existing 609-acre tract of land owned by the United States, and held in Trust for the benefit of the Kickapoo Tribe and located in Section 22, Township 12 North, Range 2 East, in Lincoln County, Oklahoma.”

III. RECEIVING STREAM STANDARDS

The Kickapoo Tribe of Oklahoma does not currently have approved tribal water quality standards (WQS). Since 40 CFR 122.4(d) also requires protection of a downstream state’s WQS, Oklahoma WQS were used in development of this permit. The general and specific stream standards are provided in OWQS (785:45-5 OAC, amended through February 20, 2013). The facility discharges into an unnamed tributary on Kickapoo trust land, thence Quapaw Creek, thence to Lake Arcadia in WQM Segment No. 520700 of the Arkansas River Basin. The outfall is located near the Oklahoma-Kickapoo boundary and has potential to impact downstream waters in Oklahoma. Quapaw Creek has Oklahoma designated uses of public private water supplies, warm water aquatic community, agriculture, primary body contact recreation, and aesthetics.

IV. EFFLUENT CHARACTERISTICS

A quantitative description of the discharge(s) described in the EPA Permit Application Form 2A received January 13, 2012 are presented below in Table 1:

POLLUTANT TABLE – 1

Parameter	Max Daily Value	Max 30 Day Value	Long Term Avg Value
	(mg/l unless noted)		
Flow, million gallons/day (MGD)	0.02	0.01	NA
pH, minimum, standard units (SU)	6.8 su	6.6 su	N/A
pH, maximum, standard units (SU)	7.8 su	8.8 su	N/A
Carbonaceous Biochemical Oxygen Demand, 5-day (CBOD ₅)	15.00	8.00	NDR
Fecal Coliform (FCB) (colonies/100mL)	0 cfu	0 cfu	NDR
Total Suspended Solids (TSS)	8.00	6.00	NDR
Total Residual Chlorine (TRC)	NDR	NDR	NDR
Temperature, winter	11.6°C	13.2°C	NA
Temperature, summer	31.1°C	30°C	NA

NDR – no data received

ND – Not detected

A summary of the last 24 months of available pollutant data from July 2010 through June 2012, taken from DMRs, shows no exceedances of permit limits for pH, CBOD₅, NH₃-N, TSS, DO or TRC. However, no data was received for the December 2010, January 2011, and October 2011 through December 2011 reporting periods. Also, the 30 day average fecal coliform permit limit was reported as an exceeded for the July 2010 (240 cfu/100ml) reporting period.

V. REGULATORY AUTHORITY/PERMIT ACTION

In November 1972, Congress passed the Federal Water Pollution control Act establishing the NPDES permit program to control water pollution. These amendments established technology-based or end-of-pipe control mechanisms and an interim goal to achieve “water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water” more commonly known as the “swimmable, fishable” goal. Further amendments in 1977 of the CWA gave EPA the authority to implement pollution control programs such as setting wastewater standards for industry and established the basic structure for regulating pollutants discharges into the waters of the United States. In addition, it made it unlawful for any person to discharge any pollutant from a point source into navigable waters, unless a permit was obtained under its provisions. Regulations governing the EPA administered NPDES permit program are generally found at 40 CFR § 122 (program requirements & permit conditions), §124 (procedures for decision making), §125 (technology-based standards) and § 136 (analytical procedures). Other parts of 40 CFR provide guidance for specific activities and may be used in this document as required.

The applicant submitted a complete permit application on January 13, 2012. Supplemental application information was received on February 12, 2013. It is proposed that the permit be reissued for a 5-year term following regulations promulgated at 40 CFR §122.46(a). The existing NPDES permit initially issued June 19, 2007, with an effective date of August 1, 2007, expired on July 31, 2012.

VI. DRAFT PERMIT RATIONALE AND PROPOSED PERMIT CONDITIONS

A. OVERVIEW OF TECHNOLOGY-BASED VERSUS WATER QUALITY STANDARDS-BASED EFFLUENT LIMITATIONS AND CONDITIONS

Regulations contained in 40 CFR §122.44 require that NPDES permit limits are developed that meet the more stringent of either technology-based effluent limitation guidelines (ELGs), numerical and/or narrative water quality standard-based effluent limits, or the previous permit.

Technology-based effluent limitations are established in the draft permit for CBOD₅ and TSS percent removal. Water quality-based effluent limitations are established in the proposed draft permit for CBOD₅, TSS, NH₃-N, DO, *E. coli* bacteria, TRC, and pH.

B. TECHNOLOGY-BASED EFFLUENT LIMITATIONS/CONDITIONS

Regulations promulgated at 40 CFR §122.44 (a) require technology-based effluent limitations to be placed in NPDES permits based on ELGs where applicable, on BPJ in the absence of guidelines, or on a combination of the two. In the absence of promulgated guidelines for the discharge, permit conditions may be established using BPJ procedures. EPA establishes limitations based on the following technology-based controls: BPT, BCT, and BAT. These levels of treatment are:

BPT - The first level of technology-based standards generally based on the average of the best existing performance facilities within an industrial category or subcategory.

BCT - Technology-based standard for the discharge from existing industrial point sources of conventional pollutants including BOD, TSS, fecal coliform, pH, and O&G.

BAT - The most appropriate means available on a national basis for controlling the direct discharge of toxic and non-conventional pollutants to navigable waters. BAT effluent limits represent the best existing performance of treatment technologies that are economically achievable within an industrial point source category or subcategory.

The Kickapoo WWTP is a privately owned facility which treats sanitary wastewater. Secondary treatment technology-based ELGs for CBOD₅ and TSS percent removal, and pH are established at 40 CFR §133.102 (a), 40 CFR §133.102 (b) and 40 CFR §133.102 (c), respectively. The percent removal ELGs for CBOD₅ and TSS are 85 percent removal (minimum). ELGs for pH are between 6-9 s.u. Additionally, regulations at 40 CFR §122.45 (f)(1) require all pollutants limited

in permits to have limitations expressed in terms of mass, such as pounds per day. When determining mass limits for POTWs, the plant's design flow is used to establish the mass load. Mass limits are determined by the following mathematical relationship:

Loading in lbs/day = pollutant concentration in mg/l * 8.345 lbs/gal * design flow in MGD
 30-day average BOD₅/TSS loading = 30 mg/l * 8.345 lbs/gal * 0.05 MGD = 12.5 lbs/day
 7-day average BOD₅/TSS loading = 45 mg/l * 8.345 lbs/gal * 0.05 MGD = 18.8 lbs/day

A summary of the technology-based limits for the Kickapoo facility is:

Technology-Based Effluent Limits – 0.05 MGD Design flow.

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS			
	lbs/Day		mg/l (unless noted)	
Parameter	30-Day Avg.	7-Day Avg.	30-Day Avg.	7-Day Avg.
Flow	N/A	N/A	Measure MGD	Measure MGD
CBOD ₅	12.5	18.8	30	45
CBOD ₅ , % removal, minimum	≥ 85% (*1)	---	---	---
TSS	12.5	18.8	30	45
TSS, % removal, minimum	≥ 85% (*1)	---	---	---
pH	NA	NA	6.0 - 9.0 s.u.	

FOOTNOTE:

*1 Percent removal is calculated using the following equation: [(influent concentration – effluent concentration) ÷ influent concentration] x 100.

The facility will be required to maintain a log kept at the facility showing the influent of CBOD₅ and TSS on a once per month frequency to be used to determine the removal percentage. The influent data is not required to be submitted but must be made available to EPA or its agents upon request.

C. WATER QUALITY BASED LIMITATIONS

1. General Comments

Water quality based requirements are necessary where effluent limits more stringent than technology-based limits are necessary to maintain or achieve federal or state water quality limits. Under Section 301 (b)(1)(C) of the CWA, discharges are subject to effluent limitations based on federal, state or tribal WQS. In the absence of approved tribal WQS, effluent limitations and/or conditions established in the draft permit were based on the state of Oklahoma's WQS and applicable State water quality management plans to assure that surface WQS of the receiving waters are protected and maintained, or attained. Permit limits will ensure downstream WQS will be met in accordance with 40 CFR §122.4(d).

2. Implementation

The NPDES permits contain technology-based effluent limitations reflecting the best controls available. Where these technology-based permit limits do not protect water quality or the designated uses, additional water quality-based effluent limitations and/or conditions are included in the NPDES permits. State narrative and numerical water quality standards are used in conjunction with EPA criteria and other available toxicity information to determine the adequacy of technology-based permit limits and the need for additional water quality-based controls.

3. State Water Quality Standards

As stated above, the Kickapoo WWTP is located on tribal trust land. Because the Kickapoo Tribe does not have EPA approved water quality standards, EPA has established monitoring requirements and effluent limitations to protect not only Tribal waters, but also the downstream State waters.

The WWTP's discharge to the unnamed tributary flows north on Kickapoo land for approximately one mile prior to reaching Oklahoma State water. Because the WWTP's discharge to the unnamed tributary is located on Kickapoo Tribal trust land, Oklahoma WQS and implementation procedures do not apply directly to the discharge. However, because the discharge has potential to reach Oklahoma waters (Quapaw Creek, thence Lake Arcadia in WQM Segment No. 520700 of the Arkansas River Basin), EPA used a 2007 wasteload allocation model provided by ODEQ to simulate the below WQ-based CBOD₅, ammonia nitrogen (NH₃-N), and dissolved oxygen (DO) limitations to protect downstream waters. The general and specific stream standards are provided in OWQS (785:45-5 OAC, amended through February 20, 2013). Quapaw Creek has designated uses of public and private water supplies, warm water aquatic community, agriculture, primary body contact recreation, and aesthetics.

4. Permit Action – Water Quality-Based Limits

Regulations promulgated at 40 CFR 122.44(d) require limits in addition to, or more stringent than ELGs (technology based). State WQS that are more stringent than ELGs are as follows:

a. pH

The State of Oklahoma WQS criteria applicable to the warm water aquatic community designated use require pH to be between 6.5 and 9.0 s.u. This is more limiting than the technology-based limit presented above. Therefore, the draft permit will maintain a limit of 6.5 to 9.0 s.u.

b. Bacteria

The OWQS criteria require an *E. coli* bacteria of 126 cfu/100 mL monthly geometric mean and single sample of 406 cfu/100 mL end-of-pipe to protect the primary body contact recreation designated use. The draft permit will maintain these limits.

c. Total Residual Chlorine

Because Oklahoma's WQS criteria applicable to the fish and wildlife propagation designated use is narrative for TRC, EPA will apply the national water quality criteria recommended in "The Gold Book." The national water quality criteria for TRC is 11 µg/l for chronic aquatic life, and 19 µg/l for acute aquatic life. The 19 µg/l acute aquatic life criteria will be the TRC limit proposed in the draft permit.

5. Wasteload Allocation Model Derived Effluent Limitations

The previous permit established limits for CBOD₅, NH₃-N and DO based on a desktop model to protect DO and downstream WQS. Those limits will be continued in the draft permit.

	CBOD ₅ (mg/l)	NH ₃ -N (mg/l)	DO (mg/l)
Summer	10	2	4
Spring	12	6	4
Winter	18	6	4

6. 303(d) List Impacts and TMDL Derived Effluent Limitations

Although the unnamed tributary of Quapaw Creek to which the permittee discharges, was not identified as impaired in the "2010 Oklahoma Integrated Report," Quapaw Creek was identified as impaired for *Enterococcus* bacteria on the 2010 303(d) list. Further, Quapaw Creek was determined to be impaired for turbidity during the TMDL preparation though the impairment was not listed on the 2010 303(d) list. The Final TMDL titled, "Bacteria and Turbidity Total Maximum Daily Loads for the Upper Deep Fork Area, Oklahoma (OK520700)" was approved by EPA on September 30, 2011. End-of-pipe effluent limitations for *E. coli* bacteria have been established in this proposed permit. EPA has determined the established limitations do not cause or contribute to further impairment. Additionally, the *E. coli* limitations are considered to be protective of the primary body contact recreation designated use. The underlying assumption of the TSS limitation is based on a linear regression of 50 NTU which correlates to 21 mg/l TSS. A 30-day average of 21 mg/l TSS and a 7-day average of 32 mg/l has been established in this proposed permit. This limit is more restrictive than the previous technology-based limits shown above, and are proposed in the draft permit.

D. MONITORING FREQUENCY FOR LIMITED PARAMETERS

Regulations require permits to establish monitoring requirements to yield data representative of the monitored activity 40 CFR 122.48(b) and to assure compliance with permit limitations 40 CFR 122.44(i)(1). Technology based pollutants, CBOD₅ and TSS percent removal, are proposed to be monitored one (1) time per month by instantaneous grab sample. Flow is proposed to be monitored daily by continuous recorder. The flow frequency is consistent with the current permit.

Water quality-based pollutant monitoring frequencies for CBOD₅ and NH₃-N shall be monitored one (1) time per week. TSS is proposed to be monitored one (1) time per month. DO shall be monitored one (1) time per week by grab sample. *E. coli* shall be monitored one (1) time per month by grab sample. TRC shall be monitored one (1) time per month by instantaneous grab sample. The pH shall be monitored five (5) times per week by grab sample, consistent with the previous permit. These frequencies are consistent with the current permit. The sample type for CBOD₅, NH₃-N, and TSS shall be by 24-hr composite, also consistent with the current permit. Regulations at 40 CFR §136 define instantaneous grab as being analyzed within 15-minutes of collection.

VII. ANTIDegradation

The State of Oklahoma has antidegradation requirements to protect existing uses through implementation of their WQS. However, the State antidegradation regulations do not apply on tribal land. The limitations and monitoring requirements set forth in the draft permit are developed from the appropriate State WQS and are protective of those designated uses. Furthermore, the policy's set forth the intent to protect the existing quality of those waters, whose quality exceeds their designated use. The permit requirements and the limits are protective of the assimilative capacity of the receiving waters, which is protective of the designated uses of that water.

IX. ANTIBACKSLIDING

The draft permit is consistent with the requirements to meet antibacksliding provisions of the Clean Water Act, Section 402(o) and 40 CFR 122.44(l)(1) or (l)(2)(i)(B)(1), which state in part that interim or final effluent limitations must be as stringent as those in the previous permit, unless information is available which was not available at the time of permit issuance. The draft permit maintains the effluent limitations of the previous permit for CBOD₅, NH₃-N, DO, and pH.

The draft permit amends the effluent limitations of the previous permit for the TSS average concentrations and loadings; TRC; and, Fecal coliform bacteria with *E. coli* bacteria. See Part VI.C.3 above. The permit writer has determined that this change meets the exception to the antibacksliding provisions established at 40 CFR 122.44(l)(i)(B)(1).

X. ENDANGERED SPECIES CONSIDERATIONS

According to the most recent county listing available at US Fish and Wildlife Service (USFWS), Southwest Region 2 website, <http://www.fws.gov/southwest/es/Oklahoma/>, three species in Lincoln County are listed as endangered (E) or threatened (T). The three species are avian and include the Least Tern (*Sterna antillarum*) (E), the Whooping crane (*Grus americana*) (E), and the Piping Plover (*Charadrius melodus*) (T). The American bald eagle (*Haliaeetus leucocephalus*) was previously listed in Otero County; however, the USFWS, removed the American bald eagle in the lower 48 states from the Federal List of Endangered and Threatened Wildlife Federal Register, July 9, 2007, (Volume 72, Number 130).

In accordance with requirements under section 7(a)(2) of the Endangered Species Act, EPA has reviewed this permit for its effect on listed threatened and endangered species and designated critical habitat. After review, the EPA has determined that the reissuance of this permit will have “no effect” on listed threatened and endangered species nor will adversely modify designated critical habitat. The EPA makes this determination based on the following:

1. The EPA determined that the previous permit, issued on November 15, 2006, would have “no effect” on listed threatened and endangered species nor will adversely modify designated critical habitat.
2. Except for the removal of the bald eagle in 2007, no changes have been made to the USFWS list of threatened and endangered species and critical habitat designation in the area of the discharge since prior issuance of the permit.
3. The EPA has received no additional information since November 15, 2006, which would lead to the revision of its determination.
4. EPA determines that Items 1, 2, and 3 result in no change to the environmental baseline established by the previous permit. Therefore, the EPA concludes that the reissuance of this permit will have “no effect” on listed threatened and endangered species nor will adversely modify designated critical habitat.

XI. HISTORICAL and ARCHEOLOGICAL PRESERVATION CONSIDERATIONS

The reissuance of this permit should have no impacts on historical properties since no construction activities are proposed during its reissuance.

XII. PERMIT REOPENER

The permit may be reopened and modified during the life of the permit if relevant portions of the State WQS are revised or remanded. In addition, the permit may be reopened and modified during the life of the permit if relevant procedures implementing the State Water Quality Standards are either revised or promulgated. Should the State adopt a new WQS, and/or develop or amend a TMDL, this permit may be reopened to establish effluent limitations for the parameter(s) to be consistent with that approved State standard and/or water quality management

plan, in accordance with 40 CFR 122.44(d). Modification of the permit is subject to the provisions of 40 CFR 124.5.

XIII. VARIANCE REQUESTS

No variance requests have been received.

XIV. CERTIFICATION

EPA will certify the permit after consultation with the Tribe. A draft permit and draft public notice will be sent to the State of Oklahoma, District Engineer, Corps of Engineers; to the Regional Director of the U.S. Fish and Wildlife Service; and, to the National Marine Fisheries Service prior to the publication of that notice.

XV. FINAL DETERMINATION

The public notice describes the procedures for the formulation of final determinations.

XVI. ADMINISTRATIVE RECORD

The following information was used to develop the draft permit:

A. APPLICATION(S)

EPA Application Form 2A received January 13, 2012.

Supplemental application information received February 11 and 12, 2013.

B. 40 CFR CITATIONS

Citations to 40 CFR as of February 27, 2013.

Sections 122, 124, 125, 133, 136

C. STATE WATER QUALITY REFERENCES

Oklahoma's Surface Water Quality Standards, 785:45-5 OAC, as amended through February 20, 2013.

Implementation of Oklahoma's Water Quality Standards, 785:46 OAC, as amended through February 20, 2013.

Final Bacteria and Turbidity Total Maximum Daily Loads for the Upper Deep Fork Area, Oklahoma (OK520700), September 2011.

State of Oklahoma 303(d) List of Impaired Waters, 2010.

D. NATIONAL WATER QUALITY REFERENCES

Quality Criteria for Water (The Gold Book), May 1986.