

SAND AND GRAVEL MINING IN OKLAHOMA WATERWAYS GUIDELINES FOR OPERATORS

CLEAN WATER ACT, SECTION 404

Effective Date: May 20, 2010

AUTHORITIES

Section 404 of the Clean Water Act (CWA) requires that discharges of dredged or fill material into “waters of the United States” be authorized by a permit from the U.S. Army Corps of Engineers (Corps) prior to the work. The term “waters of the United States” includes rivers, lakes, streams, intermittent and ephemeral creeks, natural ponds, and adjacent wetlands. The “discharge of dredged material” includes the addition, placement, or redistribution of dredged or excavated materials within waters of the United States. As a general rule, sand and gravel mining activities within rivers and streams should be reviewed by the Corps to determine if authorization under Section 404 CWA is required.

These guidelines apply to all waters except for “navigable waters” subject to the authority of Section 10 of the Rivers and Harbors Act of 1899 (RHA). Section 10 RHA requires prior authorization for any activity in or around navigable water which could impact the navigable capacity or condition of the waterway. Navigable waters in the Tulsa District include the McClellan-Kerr Arkansas River Navigation System and backwater areas influenced by the navigation pools (Arkansas River, Grand River, Sans Bois Creek, Verdigris River, and Bird Creek), portions of the Poteau River, the Canadian River upstream to the Lexington/Purcell area, Eufaula Lake, Lake Texoma, the Red River downstream from the Oklahoma/Arkansas state line, and the Illinois River downstream from the Moody/Ellerville area including Tenkiller Ferry Lake. If your proposed work site is located on any of these waters you are advised to contact the Corps Regulatory Office at the location listed on the last page for additional information on Section 10 authority regarding your sand or gravel operation. While the guidelines contained in this policy are not intended to address activities proposed in navigable waters, operators are advised to implement the Best Management Practices identified herein to reduce impacts to the aquatic ecosystem. Comparable requirements would likely be included or expanded by special conditions of any permit issued pursuant to Section 10 RHA for such operations.

AQUATIC ECOLOGY AND PHYSICAL INTEGRITY OF HEALTHY STREAMS

The objective of the CWA is to restore and maintain the chemical, physical, and biological integrity of the nation’s waters. Healthy streams do not exist independent of the landscape setting. The stream channel is only one component of the suite of elements that support healthy ecologically functional streams. The stream ecosystem includes its headwaters (import region), riparian zone (near-stream corridor), floodplain (lateral zone of influence), hyporheic zone (groundwater to surface water interface below the streambed), and receiving waters (export reach). Water flows and biogeochemical processes in these stream system

components interact under natural conditions to produce and support healthy conditions within the stream channel.

Stream systems function more than to simply transport water from upstream to downstream. Aquatic resource functions that stream systems provide can be identified as improvement of water quality, maintenance of base flow, dampening of flood peaks, storage of flood flow, moderation of hydraulic energy, processing and cycling of nutrients, transport and sorting of sediment, export of organic matter and prey, support of food webs, uptake of contaminants, and habitat for aquatic and terrestrial wildlife. Each one of these functions contributes to the physical, chemical, and biological integrity of adjacent and downstream waters. In addition to water, aquatic life in streams is dependent upon appropriate inputs of other life-supporting constituents. The right kinds of nutrients, in appropriate quantities and concentrations, support primary production in the riparian zone and stream channel. Appropriately sized organic matter such as particulate organic matter and dissolved organic matter is essential as food for microbes and other primary consumers in the stream, which in turn provide food for higher level consumers. Surfaces on the streambed, within the sediments of the stream and on entrapped large woody debris provide locations for microbial activity which support biotic processes in the stream. Large woody debris is also important for stabilizing scour and sediment patterns in the stream which provide and revitalize habitat for fishes and their prey.

When one of these stream system components or functions is disturbed or compromised, the stream system responds. Where normal sediment import from upstream reaches is reduced, the streambed may widen or incise as water that is “hungry” for sediment liberates it from the bed or banks. When riparian vegetation is removed from the stream corridor, the decreased vegetative utilization of nutrients and increased sunning of the stream may contribute to algal blooms and die-offs, a detriment to water quality. The intent of these guidelines is to inform and encourage careful consideration of the effects of stream channel disturbance on the part of sand and gravel operators and lead them to minimize adverse effects on the overall integrity of the aquatic ecosystem. For these ecological reasons, the Corps generally recommends that sand and gravel extraction occur on sites outside of waterway channels to the maximum extent possible to avoid adverse impacts to stream ecosystems.

COMPLIANCE

For the removal of sand, gravel, or other streambed materials from waterways to be conducted in a manner which generally: 1) does not require authorization under Section 404 of the CWA, and 2) reduces aquatic ecosystem impacts, the operator must comply with one of the two following sets of guidelines. The Corps reserves the right to assess compliance with these guidelines on a case-specific basis and to determine if authorization under Section 404 of the CWA is required. You are advised to consult with the Corps regarding the applicability of these guidelines and Section 404 of the CWA to specific activities not fully addressed by these guidelines.

On-the-spot inspections will be conducted to insure that operators without CWA Section

404 permits are working within these guidelines. Failure to comply with these guidelines may constitute a violation of Section 404 of the CWA and may subject the mine operator, land owner, and other responsible parties to administrative or legal action. Copies of appropriate local and state permits and determinations must be kept on file by the operator and available for viewing.

LIMITING IMPACTS TO ADJACENT WETLANDS AND RIPARIAN ZONES

- A1. Processing facilities and stockpile areas must not be located within wetlands. Because wetlands provide vital hydrologic and ecologic functions for water quality and fish and wildlife habitat, they are designated as special aquatic sites and are afforded special protections under the Section 404 permit program. Impacts to wetlands must be avoided in pursuing work under these guidelines. Heavy mechanized landclearing of wooded wetlands is prohibited without a permit under Section 404 CWA.
- A2. To the extent possible, clearing and removal of vegetation and timber from the riparian zone should be avoided in preparing the mining site and access routes. The first 50 feet of the riparian zone, measured from top of stream bank landward, should not be disturbed by mining related activities, in order to protect the buffering functions riparian zones provide to the stream.
- A3. On Scenic Rivers and their tributaries, 1) an undisturbed vegetated buffer 100-feet in width landward from the top of the riverbank shall be maintained, and 2) the mining must be operated in such a manner as to allow no new discharges to the Scenic River. Oklahoma Scenic Rivers are listed below.

GUIDELINES FOR SUCTION DREDGE OPERATIONS

- S1. Use a suction dredge to convey the dredged sand or gravel to an upland dewatering, stockpile, and processing area. Processing facilities and stockpiles areas must not be located within wetlands. To the extent possible, clearing and removal of riparian timber shall be avoided in preparing the mining site. Landclearing of any wetlands is prohibited without a Section 404 permit.
- S2. No dewatering piles or stockpiles shall be positioned within the banks of the channel below the Ordinary High Water Mark (OHWM).
- S3. Dredging shall not be conducted in a manner or to such depths that induces channel shifts in the river or streambed, or aggravates erosion along the banks.
- S4. The operator must store unused equipment, fuels, and materials above the top of bank and outside of the waterway channel.

GUIDELINES FOR EXCAVATION BY OTHER METHODS AND EQUIPMENT

- E1. Excavate with bucket-loader equipment (e.g., front-end loader, backhoe, tracked excavator) outside of and above the wetted perimeter of the river or stream (The “wetted perimeter” constitutes the water’s edge on day of operation, defined below). To the extent possible, the operator must implement a “one-step removal” process. This process normally involves excavating or dredging the material with a bucket-type loader such as a backhoe or tracked excavator. The excavated material is then placed directly into an enclosed truck bed and hauled to an approved upland processing or storage site.
- E2. Maintain a buffer of undisturbed sand or gravel riverward from the edge of the excavation work zone to the wetted perimeter of the river or stream. This buffer shall be proportional to the size of the waterway and generally not less than 25-feet wide for ongoing operations. For occasional non-continuous removal from small streams, the width of this buffer may be reduced to 10-feet wide. To the extent the buffer is vegetated, disturbance to the vegetation shall be minimized. Keeping this buffer undisturbed from the operation includes keeping excavation and hauling equipment from tracking on this buffer zone.
- E3. Crossing the flow or wetted portion of the waterway channel with equipment should be avoided. If crossing of the waterway is necessary for access, minimize the number of crossing sites and minimize the frequency of crossing use. Crossings should be in straight sections of the waterway and perpendicular to the flow. Access roads and ramps into the waterway channel should remain 50 feet outside of the riparian zone until descending into the channel. Construct the access road in a manner so that it does not collect and concentrate runoff and act as a sediment funnel to the waterway. Incorporate cross-drains and turnouts into the road design to get water off of the road and disperse the flow before reaching the crossing site.
- E4. The operator shall place no dewatering piles or stockpiles within the banks of the waterway below the OHWM. The only sand or gravel piles allowed within the banks of the waterway are small short-term working piles. Short-term working piles are defined as active push-piles or loading-piles in the work area existing for no longer than 24 hours, and shall be no larger than can be reasonably removed in an eight-hour work day using equipment available on-site. All other working piles and stockpiles (piles standing in place longer than 24 hours) must be situated above the OHWM and outside of the banks of the waterway.
- E5. The work area(s) below the OHWM shall be restored to natural grade and appearance at the end of each work week. Push piles and loading piles remaining at the end of the week shall be redistributed across the work area, to leave no obstruction to or disruption of flows in case the river or stream rises. Restoration of natural contours shall be accomplished with the focus of minimizing the opportunity for disturbed materials or pollutants to be washed downstream.
- E6. The operator shall be attentive to seasonal flow conditions and minimize removal

operations during the lowest flow periods when disturbances to water quality would be most detrimental to aquatic life. The operator should also be aware of local spawning seasons and conditions and minimize operations within the waterway channel during those times.

- E7. The operator shall minimize the removal of large woody material naturally deposited within the waterway channel and bed. This material provides habitat diversity for aquatic species and riparian dependent species and functions to maintain normal sediment transport processes.
- E8. The operator must store unused equipment, fuels, and materials above the OHWM and outside of the river or stream channel. To the extent possible, storage locations should be at least 100 feet from the waterway for effective protection of water quality.
- E9. The operator shall anticipate river or stream rises based on storms within the watershed, and shall: 1) immediately haul or redistribute remaining short-term working piles and 2) restore natural grade and appearance to the work area(s). All equipment shall be removed from the river or stream prior to the advancement of water levels.
- E10. Excavation shall not be conducted in a manner or to such depths that induces channel shifts or scour holes in the river or streambed, or aggravates erosion along the banks.
- E11. There will be no washing of sand or gravel in the river or stream. Washing of mined materials must occur outside of the waterway and a basin must be constructed to collect the wash outflow to prevent contribution of sediment and contaminants to downstream waters. Authorization may be required from ODEQ for construction of a basin and the returned process waste water.

ADDITIONAL AUTHORIZATIONS, PERMITS, AND CLEARANCES

- ◆ CWA Section 402 Permits: Activities associated with sand or gravel mining may require a CWA Section 402 permit from the Oklahoma Department of Environmental Quality if there is a discharge to waters of the United States from a point source (such as return water from equipment or material washing or classification processes) or if there is construction activity such as clearing, grading, or excavation in any areas (not limited to “waters of the United States”). The Oklahoma Department of Environmental Quality may be contacted by writing to the Water Quality Division, Industrial Permitting, 707 North Robinson, P.O. Box 1677, Oklahoma City, Oklahoma, 73101-1677, or by telephone to 405-702-8100.
- ◆ Flood Plain Development Permits: The operator may be required to obtain a Flood Plain development permit from the local governing municipality or a written determination from such that a Flood Plain development permit is not required. To find out who the Flood Plain Administrator is for your area, contact the Oklahoma Water Resources Board

at 405-530-8800, or consult the internet at:
<http://www.owrb.ok.gov/hazard/fp/floodplain.php>

- ◆ State Mining Permit: The operator must obtain a permit or waiver of permit from Oklahoma Department of Mines, Minerals Division, 2915 N. Classen Blvd, Suite 213, Oklahoma City, Oklahoma, 73106-5406, or telephone 405-427-3859, or consult the internet at: http://www.ok.gov/mines/Minerals_Program/Non-Coal_Mining_Permit_Application_Forms_&_Guidelines/index.html

- ◆ Federally-Listed Threatened, Endangered and Candidate Species: If proposing to operate on the following listed rivers, or on large tributaries to these rivers within one mile of its confluence with the main stem river, your activity may impact threatened or endangered species or their habitat, or species designated as candidates for Federal listing. You are advised to contact the U.S. Fish and Wildlife Service, Oklahoma Ecological Services Office, 9014 E. 21st Street, Tulsa, Oklahoma, 74129, or telephone 918-581-7458, regarding working in these areas to ensure your operations will not violate the Endangered Species Act. The specific rivers are:
 - a. Arkansas River
 - b. Canadian River
 - c. Cimarron River
 - d. Cimarron River tributaries Cottonwood Creek, Horse Creek, and Crooked Creek near Gate in Beaver County, and Traders Creek south of Edith in Woodward County
 - e. Fort Gibson Lake tributaries Snake Creek, Spring Creek, Clear Creek, Fourteenmile Creek (left bank tributaries (east side) to Fort Gibson Lake in Mayes and Cherokee Counties)
 - f. Glover River
 - g. Grand (Neosho) River
 - h. Grand (Neosho) River tributary Fly Creek
 - i. Grand Lake tributaries Lost Creek, Council Hollow, and unnamed tributary near Turkey Ford School in Ottawa County
 - j. Illinois River
 - k. Kiamichi River
 - l. Little River (southeast Oklahoma tributary to the Red River)
 - m. Locust Creek (Big Cabin Creek tributary in Craig County).
 - n. Mountain Fork River
 - o. Red River
 - p. Salt Fork of the Arkansas River
 - q. Spavinaw Creek unnamed tributary, left bank (south side) 3 miles west of Spavinaw Dam
 - r. Spring River
 - s. Spring River tributaries in Ottawa County - Fivemile Creek, Warren Branch, and Flint Branch
 - t. Verdigris River

- ◆ Scenic Rivers and Outstanding Resource Waters: The Oklahoma Water Quality Standards designate all tributaries within the watersheds of Scenic Rivers as “Outstanding Resource Waters” meriting special protection. You are advised that proposing to operate in any tributary stream that drains to a Scenic River may require compliance with other laws or policy. If proposing to operate in a Scenic River or tributary, you are advised to contact the Oklahoma Scenic Rivers Commission (OSRC) to determine the applicability of state law to your proposed operation. The OSRC can be contacted by writing Post Office Box 292, Tahlequah, Oklahoma 74465-0292, or telephone 918-456-3251. The three Scenic Rivers under the authority of the OSRC are:
- a. Baron (Barren) Fork River - from the present alignment of U.S. Highway 59 downstream to the confluence with the Illinois River (Cherokee County)
 - b. Flint Creek - all portions (Delaware County)
 - c. Illinois River - from state line downstream to the confluence with the Baron (Barren) Fork River (Adair, Delaware, and Cherokee Counties)

Additional rivers in Oklahoma identified as Scenic Rivers and as Outstanding Resource Waters in the Oklahoma Water Quality Standards are:

- d. Baron (Barren) Fork – Upstream of U.S. Highway 59 (Adair County)
- e. Lee Creek - Above 420' msl elevation (Adair and Sequoyah Counties)
- f. Little Lee Creek - (Adair and Sequoyah Counties).
- g. Upper Mountain Fork River – Upstream from 600’ msl elevation (above Broken Bow Reservoir in McCurtain County)
- h. Panther Creek (right bank tributary (west side) upper Broken Bow Reservoir)

DEFINITIONS

Dredged material - The term “dredged material” is any material that is excavated or dredged from “waters of the United States”.

Discharge of dredged material - The term “discharge of dredged material” means any addition of dredged material into “waters of the United States”. The term includes, but is not limited to, the addition of dredged material to a specified discharge site located in “waters of the United States”, and any addition (including redeposit other than incidental fallback) of dredged material (including excavated material) into “waters of the United States” which is incidental to any activity, including mechanized landclearing, ditching, channelization, or other excavation. The term “discharge of dredged material” is specifically defined in regulation at 33 CFR 323.2(d).

Ordinary High Water Mark - The term “Ordinary High Water Mark” (OHWM) is defined as that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas, and may be substantially higher elevation than “normal” water level. For assistance in determining the

OHWB for your site, please contact the Corps District Office, Regulatory Office at the telephone number or address listed below.

Riparian Zone – The term “riparian zone” refers to the land lying adjacent to a waterbody (i.e., river, creek, lake, pond, or wetland). In this landscape position, riparian zones function as a land-water interface, buffering the inputs from adjacent uplands and the dynamic seasonal energies of the waterway. The general term riparian zone includes all types of ground cover, without regard to the nature and quality of the vegetation growing there. In some instances, these riparian zones might be described by alternative terms such as bottomland hardwood forest, buffer strips, vegetated buffers, and filter strips. For more information on management of riparian zones in Oklahoma, please refer the Riparian Area Management Handbook, published by Oklahoma State University and the Oklahoma Conservation Commission (1998), http://www.okstate.edu/OSU_Ag/e-952.pdf.

Waters of the United States - The term “waters of the United States” is defined with specificity at 33 CFR 328.3(a) and generally includes all waters which are or could be used for interstate or foreign commerce, the territorial seas, and all other interstate and intrastate waters including lakes, rivers, streams, intermittent streams, mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, natural ponds, all impoundments of streams, tributaries to waters listed above, and wetlands adjacent to any such waters, where the use, degradation, or destruction of which could affect interstate or foreign commerce.

Wetlands - Wetlands are those areas that are inundated or saturated by 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. Wetlands generally include swamps, marshes, bogs, and similar areas. Adjacent wetlands are bordering, contiguous, or neighboring to other waters. Wetlands separated from other waters of the United States by man-made dikes or barriers, natural river berms, beach dunes and the like are “adjacent wetlands”.

Wetted Perimeter - The wetted perimeter means the observable boundary defining each side of the riverbed or streambed wetted by the stream flows on a particular day. By definition, this line is subject to daily or even hourly variation based on the level of flows in a river or stream.

For more information, contact:

Regulatory Office
U.S. Army Corps of Engineers, Tulsa District
1645 S. 101st East Avenue
Tulsa, OK 74128-4609

Telephone: 918-669-7400
Facsimile: 918-669-4306