

Examination of Alternatives for the Osage Oil and Gas Environmental Impact Statement

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The Programmatic Environmental Assessment for Leasing Activities (PEA) (November 2014) is the basis for the three Alternatives being considered for the, under development, Osage Oil and Gas Environmental Impact Statement. The PEA document anticipates that lessees will agree to so-called “best practices” and other measures which the BIA does not have the authority to require and for which the BIA has not provided any justification.

25 CFR §226.2(c)

“Each oil and/or gas lease and activities and installations associated therewith subject to these regulations shall be assessed and evaluated for environmental impact **prior to its approval** by the Superintendent”. (Emphasis added)

PEA:

“The Lessee also agrees to follow all best management practices (BMPs) and monitoring mitigations listed in this document.”

Examples of measures that the PEA would require lessees to agree to as a condition of receiving a permit to drill are:

- Carpooling to the work site.
- Posting speed limits on lease roads
- Keep a watering truck on site on water access roads as necessary
- Use directional drilling (to reduce the number of drill sites)
- Use telemetry to remotely monitor and control production
- Use vapor recovery on storage tanks (even though a typical Osage storage tank has emissions considerably less than the threshold for application of New Source Performance Standards)
- Use directed inspection and maintenance methods
- Install electrical lines underground

These amount to imposing regulations, for which the BIA lacks responsibility and authority. Many of the requirements are related to air quality for which the EPA has delegated responsibility to the Oklahoma Department of Environmental Quality (ODEQ). Were ODEQ to require vapor recovery on storage tanks and/or directed maintenance it would be in response to excessively high ground level ozone because of photochemical smog. A condition which does not exist. (If did exist it would occur first in the summertime downwind in Chautauqua or Cowley County, Kansas; the nearest ozone monitoring station is in Wichita.)

In other cases, the PEA requirements address aesthetic issues (underground electrical lines) which are perhaps well intended but Osage County’s aesthetics are not something which the Mineral Estate and the oil and gas business can resolve. If the Minerals Council had such authority there would be no wind farms.

Any alternative involving the PEA belongs in the category of an Action Alternative.

Other Action Alternative Proposals:

Some of the features of the suggested alternatives would result in surface being set aside where oil and gas activities would be limited if not prohibited. Federal law gives the Mineral Estate priorities which, to varying degrees, conflict with surface owners and their constituencies. A more efficient way for the Minerals Council to consider these alternatives is for the BIA to suggest that the Minerals Council forgo future leasing in special interest and/or environmental sensitive areas. The Minerals Council could then avoid entering into leases in these areas if it chose to do so.

The BIA suggests measures to comply with Section 303(d) of the Clean Water Act as an Action Alternative.

“Under section 303(d) of the Clean Water Act, states, territories, and authorized tribes are required to develop lists of impaired waters. These are waters that are too polluted or otherwise degraded to meet the water quality standards set by states, territories, or authorized tribes. The law requires that these jurisdictions establish priority rankings for waters on the lists and develop TMDLs for these waters. A Total Maximum Daily Load, or TMDL, is a calculation of the maximum amount of a pollutant that a waterbody can receive and still safely meet water quality standards.”

US EPA (<http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/index.cfm>), accessed 3/4/2015

The BIA’s suggestion that oil and gas activities be managed to prevent exceedance of total maximum daily loads in impaired waters implies that they believe oil and gas activities are largely responsible for their impairment. Water quality data does not support this assumption.

There are 657 streams or stream segments in Oklahoma which have been listed by the Oklahoma Water Resources Board (OWRB) as 303(d) waters. Osage County has fifteen. (Our count is fifteen, the BIA’s count is five.)

Osage County 303(d) impaired waters (listed by watershed) are:

Bird Watershed

Birch Lake

Probable Source	Probable Source Group	Cause(s) of Impairment
Source Unknown	Unknown	Color; Dissolved Oxygen; Turbidity

Bluestem Lake

Probable Source	Probable Source Group	Cause(s) of Impairment
Source Unknown	Unknown	Color; Turbidity

Flat Rock Creek (from headwaters to County line)

Probable Source	Probable Source Group	Cause(s) of Impairment
Grazing In Riparian Or Shoreline Zones	Agriculture	Benthic Macroinvertebrates Bioassessments

Highway/Road/Bridge Runoff (Non Construction Related)	Urban-Related Runoff/Stormwater	Benthic Macroinvertebrates Bioassessments
Impacts From Land Application Of Wastes	Land Application/Waste Sites/Tanks	Benthic Macroinvertebrates Bioassessments
Non-Irrigated Crop Production	Agriculture	Benthic Macroinvertebrates Bioassessments
On-Site Treatment Systems (Septic Systems And Similar Decentralized Systems)	Municipal Discharges/Sewage	Benthic Macroinvertebrates Bioassessments
Petroleum/Natural Gas Activities	Resource Extraction	Benthic Macroinvertebrates Bioassessments
Rangeland Grazing	Agriculture	Benthic Macroinvertebrates Bioassessments
Residential Districts	Urban-Related Runoff/Stormwater	Benthic Macroinvertebrates Bioassessments
Source Unknown	Unknown	Benthic Macroinvertebrates Bioassessments
Wildlife Other Than Waterfowl	Natural/Wildlife	Benthic Macroinvertebrates Bioassessments

Hominy Creek (from one mile downstream of Skiatook Lake to County Line)

Probable Source	Probable Source Group	Cause(s) of Impairment
Grazing In Riparian Or Shoreline Zones	Agriculture	Enterococcus Bacteria
Impacts From Land Application Of Wastes	Land Application/Waste Sites/Tanks	Enterococcus Bacteria
Municipal Point Source Discharges	Municipal Discharges/Sewage	Enterococcus Bacteria
On-Site Treatment Systems (Septic Systems And Similar Decentralized Systems)	Municipal Discharges/Sewage	Enterococcus Bacteria
Rangeland Grazing	Agriculture	Enterococcus Bacteria
Residential Districts	Urban-Related Runoff/Stormwater	Enterococcus Bacteria
Source Unknown	Unknown	Enterococcus Bacteria
Wastes From Pets	Urban-Related Runoff/Stormwater	Enterococcus Bacteria
Wildlife Other Than Waterfowl	Natural/Wildlife	Enterococcus Bacteria

Hominy Creek (from headwaters to Skiatook Lake)

Probable Source	Probable Source Group	Cause(s) of Impairment
Grazing In Riparian Or Shoreline Zones	Agriculture	Enterococcus Bacteria; Escherichia Coli (E. Coli)
Highway/Road/Bridge Runoff (Non Construction Related)	Urban-Related Runoff/Stormwater	Chloride; Total Dissolved Solids (TDS)

Municipal Point Source Discharges	Municipal Discharges/Sewage	Enterococcus Bacteria; Escherichia Coli (E. Coli)
On-Site Treatment Systems (Septic Systems And Similar Decentralized Systems)	Municipal Discharges/Sewage	Enterococcus Bacteria; Escherichia Coli (E. Coli)
Other Spill Related Impacts	Spills/Dumping	Chloride; Total Dissolved Solids (TDS)
Petroleum/Natural Gas Activities	Resource Extraction	Chloride; Total Dissolved Solids (TDS)
Rangeland Grazing	Agriculture	Enterococcus Bacteria; Escherichia Coli (E. Coli)
Residential Districts	Urban-Related Runoff/Stormwater	Enterococcus Bacteria; Escherichia Coli (E. Coli)
Source Unknown	Unknown	Chloride; Enterococcus Bacteria; Escherichia Coli (E. Coli); Total Dissolved Solids (TDS)
Wastes From Pets	Urban-Related Runoff/Stormwater	Enterococcus Bacteria; Escherichia Coli (E. Coli)
Wildlife Other Than Waterfowl	Natural/Wildlife	Enterococcus Bacteria; Escherichia Coli (E. Coli)

Hominy Lake (note: Hominy lake is not on Hominy Creek, and is not Hominy Municipal Lake.)

Probable Source	Probable Source Group	Cause(s) of Impairment
Source Unknown	Unknown	Dissolved Oxygen

Pawhuska Lake

Probable Source	Probable Source Group	Cause(s) of Impairment
Source Unknown	Unknown	Sulfates

Waxhoma Lake

Probable Source	Probable Source Group	Cause(s) of Impairment
Source Unknown	Unknown	Color

Caney Watershed

Buck Creek

Probable Source	Probable Source Group	Cause(s) of Impairment
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Grazing In Riparian Or Shoreline Zones	Agriculture	Dissolved Oxygen; Enterococcus Bacteria; Escherichia Coli (E. Coli)
Impacts From Land Application Of Wastes	Land Application/Waste Sites/Tanks	Dissolved Oxygen
Non-Irrigated Crop Production	Agriculture	Dissolved Oxygen
On-Site Treatment Systems (Septic Systems And Similar Decentralized Systems)	Municipal Discharges/Sewage	Dissolved Oxygen; Enterococcus Bacteria; Escherichia Coli (E. Coli)
Rangeland Grazing	Agriculture	Dissolved Oxygen; Enterococcus Bacteria; Escherichia Coli (E. Coli)
Residential Districts	Urban-Related Runoff/Stormwater	Dissolved Oxygen; Enterococcus Bacteria; Escherichia Coli (E. Coli)
Source Unknown	Unknown	Dissolved Oxygen; Enterococcus Bacteria; Escherichia Coli (E. Coli)
Wastes From Pets	Urban-Related Runoff/Stormwater	Dissolved Oxygen; Enterococcus Bacteria; Escherichia Coli (E. Coli)
Wildlife Other Than Waterfowl	Natural/Wildlife	Dissolved Oxygen; Enterococcus Bacteria; Escherichia Coli (E. Coli)

Hula Lake

Probable Source	Probable Source Group	Cause(s) of Impairment
Source Unknown	Unknown	Color; Turbidity

Mission Creek

Probable Source	Probable Source Group	Cause(s) of Impairment
Grazing In Riparian Or Shoreline Zones	Agriculture	Dissolved Oxygen; Enterococcus Bacteria; Escherichia Coli (E. Coli)
Impacts From Land Application Of Wastes	Land Application/Waste Sites/Tanks	Escherichia Coli (E. Coli)
Non-Irrigated Crop Production	Agriculture	Dissolved Oxygen
On-Site Treatment Systems (Septic Systems And Similar)	Municipal Discharges/Sewage	Dissolved Oxygen; Enterococcus Bacteria; Escherichia Coli (E. Coli)

Decentralized Systems)		
Rangeland Grazing	Agriculture	Dissolved Oxygen; Enterococcus Bacteria; Escherichia Coli (E. Coli)
Residential Districts	Urban-Related Runoff/Stormwater	Dissolved Oxygen; Enterococcus Bacteria; Escherichia Coli (E. Coli)
Source Unknown	Unknown	Dissolved Oxygen; Enterococcus Bacteria; Escherichia Coli (E. Coli)
Wastes From Pets	Urban-Related Runoff/Stormwater	Dissolved Oxygen; Enterococcus Bacteria; Escherichia Coli (E. Coli)
Wildlife Other Than Waterfowl	Natural/Wildlife	Dissolved Oxygen; Enterococcus Bacteria; Escherichia Coli (E. Coli)

Sand Creek

Probable Source	Probable Source Group	Cause(s) of Impairment
Grazing In Riparian Or Shoreline Zones	Agriculture	Enterococcus Bacteria; Escherichia Coli (E. Coli)
Landfills	Land Application/Waste Sites/Tanks	Enterococcus Bacteria; Escherichia Coli (E. Coli)
On-Site Treatment Systems (Septic Systems And Similar Decentralized Systems)	Municipal Discharges/Sewage	Enterococcus Bacteria; Escherichia Coli (E. Coli)
Rangeland Grazing	Agriculture	Enterococcus Bacteria; Escherichia Coli (E. Coli)
Residential Districts	Urban-Related Runoff/Stormwater	Enterococcus Bacteria; Escherichia Coli (E. Coli)
Source Unknown	Unknown	Enterococcus Bacteria; Escherichia Coli (E. Coli)
Wastes From Pets	Urban-Related Runoff/Stormwater	Enterococcus Bacteria; Escherichia Coli (E. Coli)
Wildlife Other Than Waterfowl	Natural/Wildlife	Enterococcus Bacteria; Escherichia Coli (E. Coli)

Polecat-Snake Watershed

Arkansas River (Keystone Dam to Tulsa)

Probable Source	Probable Source Group	Cause(s) of Impairment
Grazing In Riparian Or Shoreline Zones	Agriculture	Turbidity
Highway/Road/Bridge Runoff (Non Construction Related)	Urban-Related Runoff/Stormwater	Oil and Grease
Industrial Point Source Discharge	Industrial	Oil and Grease

Municipal Point Source Discharges	Municipal Discharges/Sewage	Turbidity
Petroleum/Natural Gas Activities	Resource Extraction	Oil and Grease
Rangeland Grazing	Agriculture	Turbidity
Source Unknown	Unknown	Oil and Grease; Turbidity

Bigheart Creek (formally Blackboy Creek) from OK97 to Arkansas River

Probable Source	Probable Source Group	Cause(s) of Impairment
Grazing In Riparian Or Shoreline Zones	Agriculture	Escherichia Coli (E. Coli); Fish Bioassessments
Highway/Road/Bridge Runoff (Non Construction Related)	Urban-Related Runoff/Stormwater	Fish Bioassessments
Impacts From Land Application Of Wastes	Land Application/Waste Sites/Tanks	Fish Bioassessments
Non-Irrigated Crop Production	Agriculture	Fish Bioassessments
On-Site Treatment Systems (Septic Systems And Similar Decentralized Systems)	Municipal Discharges/Sewage	Escherichia Coli (E. Coli); Fish Bioassessments
Petroleum/Natural Gas Activities	Resource Extraction	Fish Bioassessments
Rangeland Grazing	Agriculture	Escherichia Coli (E. Coli); Fish Bioassessments
Residential Districts	Urban-Related Runoff/Stormwater	Escherichia Coli (E. Coli); Fish Bioassessments
Source Unknown	Unknown	Escherichia Coli (E. Coli); Fish Bioassessments
Wastes From Pets	Urban-Related Runoff/Stormwater	Escherichia Coli (E. Coli)
Wildlife Other Than Waterfowl	Natural/Wildlife	Escherichia Coli (E. Coli); Fish Bioassessments

Shell Lake

Probable Source	Probable Source Group	Cause(s) of Impairment
Source Unknown	Unknown	Dissolved Oxygen

Source of impairment information: US EPA, Watershed Assessment, Tracking & Environmental Results, http://ofmpub.epa.gov/waters10/attains_state.control?p_state=OK, accessed 3/4/2015

Most stream segments have not been assessed, we expect that many which have not been assessed will be found to be impaired. A quick inspection of those where causes of impairment and probable sources have been identified reveals that oil and gas activities are but one of several sources to be addressed. New limits on the location of oil and gas drilling will not measurably improve surface water quality, if at all. A BIA imposed protective measure would be of little value when the

impairment has other causes. Compliance with the Clean Water Act is best left to the US EPA, OWRB, and ODEQ.

The BIA's suggestion that a reduction in Endangered Species Act incidental take permits (American Burying Beetle) could result from consultation with the US Fish and Wildlife Service would be most constructive and need not wait on the completion of this process.

In summary:

- The BIA should immediately begin processing and issuing drilling permits
- The No Action Alternative cannot include the Programmatic Environmental Assessment for Leasing Activities (PEA) (November 2014)
- The PEA includes requirements that exceed the authority of the BIA
- The BIA can and should rely on the US EPA, the OWRB, ODEQ, the US Fish and Wildlife Service, etc. to do their job
- Proposed Alternatives would reduce the Osage Mineral Estate without an understanding of the extent or benefits.