

Missouri Department of dnr.mo.gov

NATURAL RESOURCES

Michael L. Parson, Governor

Carol S. Comer, Director

OCT 22 2019

Mr. Scott Walk
Health & Safety Manager
Northwest Missouri State University
800 University
Maryville, MO 64468

RE: New Source Review Permit - Project Number: 2019-07-006

Dear Mr. Walk:

Enclosed with this letter is your permit to construct. Please study it carefully and refer to Appendix A for a list of common abbreviations and acronyms used in the permit. Also, note the special conditions on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions, your new source review permit application and with your amended operating permit is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

This permit may include requirements with which you may not be familiar. If you would like the department to meet with you to discuss how to understand and satisfy the requirements contained in this permit, an appointment referred to as a Compliance Assistance Visit (CAV) can be set up with you. To request a CAV, please contact your local regional office or fill out an online request. The regional office contact information can be found at the following website: <http://dnr.mo.gov/regions/>. The online CAV request can be found at <http://dnr.mo.gov/cav/compliance.htm>.

If you were adversely affected by this permit decision, you may be entitled to pursue an appeal before the administrative hearing commission pursuant to Sections 621.250 and 643.075.6 RSMo. To appeal, you must file a petition with the administrative hearing commission within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the administrative hearing commission, whose contact information is: Administrative Hearing Commission, United States Post Office Building, 131 West High Street, Third Floor, P.O. Box 1557, Jefferson City, Missouri 65102, phone: 573-751-2422, fax: 573-751-5018, website: www.oa.mo.gov/ahc.



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Mr. Scott Walk
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If you have any questions regarding this permit, please do not hesitate to contact Russell Osborne, at the Department of Natural Resources' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM



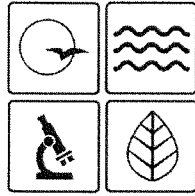
Susan Heckenkamp
New Source Review Unit Chief

SH:roj

Enclosures

c: Kansas City Regional Office
PAMS File: 2019-07-006

Permit Number: **102019-010**



MISSOURI
DEPARTMENT OF
NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: 102019-010

Project Number: 2019-07-006
Installation Number: 147-0005

Parent Company: Northwest Missouri State University

Parent Company Address: 800 University Drive, Maryville, MO 64468

Installation Name: Northwest Missouri State University

Installation Address: 800 University Drive, Maryville, MO 64468

Location Information: Nodaway County, S18, T64N, R35W

Application for Authority to Construct was made for:

The replacement of dual fuel fired burner on boiler #3 (EP-03), rated at 26 MMBtu per hour, with a new natural gas fired burner rated at 30.5 MMBtu per hour. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

-
- Standard Conditions (on reverse) are applicable to this permit.
- Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

Director or Designee
Department of Natural Resources

OCT 22 2019

Effective Date

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Enforcement and Compliance Section of the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Enforcement and Compliance Section of the Department's Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available within 30 days of actual startup. Also, you must notify the Department's regional office responsible for the area within which you are located within 15 days after the actual start up of this (these) air contaminant source(s).

A copy of the permit application and this permit and permit review shall be kept at the installation address and shall be made available to Department's personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit using the contact information below.

Contact Information:

Missouri Department of Natural Resources
Air Pollution Control Program
P.O. Box 176
Jefferson City, MO 65102-0176
(573) 751-4817

The regional office information can be found at the following website:
<http://dnr.mo.gov/regions/>

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (5) REVIEW

Project Number: 2019-07-006
Installation ID Number: 147-0005
Permit Number: 102019-010

Installation Address:

Northwest Missouri State University
800 University Drive
Maryville, MO 64468

Parent Company:

Northwest Missouri State University
800 University Drive
Maryville, MO 64468

Nodaway County, S18, T64N, R35W

REVIEW SUMMARY

- Northwest Missouri State University has applied for authority to replace an existing dual fuel fired burner on boiler #3 (EP-03), rated at 26 MMBtu per hour, with a new natural gas fired burner rated at 30.5 MMBtu per hour.
- HAP emissions are expected from the combustion of natural gas. The PTE of the HAPs being emitted are expected to be below their respective SMAL.
- 40 CFR 60 Subpart Dc, "Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units" applies to Boiler #3 as the replacement and increase in maximum fuel throughput of the new burner constitutes as a modification under this subpart.
- 40 CFR 63 Subpart DDDDD "National Emission Standards for Industrial, Commercial, and Institutional Boilers and Process Heaters" does not apply to boiler #3 as Northwest Missouri State University is not a major source for hazardous air pollutants.
- 40 CFR 63 Subpart JJJJJJ, "National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources" does not apply to Boiler #3 (EP-03) as it meets the definition of gas-fired boiler found within Subpart JJJJJJ.
- No air pollution control equipment is being used in association with the new equipment.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all criteria pollutants are below de minimis levels.
- This installation is located in Nodaway County, an attainment/unclassifiable area for all criteria pollutants.

- This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 250 tons per year and fugitive emissions are not counted toward major source applicability.
- Ambient air quality modeling was not performed since potential emissions of the application are below de minimis levels.
- An application to modify your Part 70 Operating Permit is required for this installation within one year of equipment startup.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Northwest Missouri State University (NMSU) is an educational institution for higher learning. The installation operates a power plant consisting of three natural gas boilers, a paper pellet/animal waste boiler, and a wood chip/animal waste boiler. Additional equipment includes wood chip, pellet, and ash storage piles, waste paper grinding, pelletizer and mixer for animal waste with paper/wood chips, fuel storage tanks, a parts cleaner, small heaters and boilers, crucible furnaces, aluminum and bronze casting, two natural gas-fired kilns, a wood-fired kiln, and ceramic glazing. The installation is a major source under construction and operating permits: NMSU was issued a Part 70 operating permit (OP2018-070) in August of 2018.

The following New Source Review permits have been issued to Northwest Missouri State University from the Air Pollution Control Program.

Table 1: Permit History

Project Number	Permit Number	Description
N/A	0679-001	Installation of an incinerator
N/A	0881-001	Addition of a new boiler to replace existing four (4) boilers
N/A	0792-038	Retrofitting of existing gas/oil fired boiler #4 to burn pelletized
2000-02-083	N/A	Temporary permit for test burning pig manure pellets in Boiler No. 4
2000-07-081	N/A	Temporary Permit for test burning of animal waste pellets in Boiler No. 5
2000-08-002	102000-029	Addition of a hammermill, a mixer, and a pelletizer to the existing equipment
2000-12-051	N/A	Extension of temporary permit, which was issued for test burning of animal waste pellets in Boiler No. 5
2000-2-050	022001-010	Extension of temporary permit, which was issued for test burning of animal waste pellets in Boiler No. 4
2001-06-020	082001-012	Extension of temporary permits, which were issued for test burning of animal waste pellets in Boiler No. 4 and Boiler No. 5
2002-08-151	122002-008	Combustion of animal waste pellets as alternative fuel in Boiler No. 4 and Boiler No. 5
2003-05-050	092003-008	Installation of an ash storage pile, pellet storage pile, and associated haul road
2014-01-014	042014-004	Burner replacement on Boiler # 2

N/A – not applicable

PROJECT DESCRIPTION

Northwest Missouri State University is replacing an existing dual fuel (natural gas and fuel oil) fired burner, rated at 26 MMBtu per hour, with a natural gas fired burner rated at 30.5 MMBtu on Boiler #3. Natural gas will be the fuel used for the burner. The new burner being installed is not capable of combusting fuel oil. The increase in burner size for Boiler #3 does not debottleneck any processes at this installation, therefore, only emissions from the combustion of natural gas were considered.

EMISSIONS/CONTROLS EVALUATION

The emission factors used in this analysis were obtained from the EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Section 1.4 *Natural Gas Combustion* (July 1998).

The following table provides an emissions summary for this project. Existing potential emissions were taken from Northwest Missouri State University's recently issued operating permit OP2018-07. Existing actual emissions were taken from the installation's 2018 EIQ. Potential emissions of the application represent the potential of the modified equipment, assuming continuous operation (8760 hours per year).

Table 2: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2018 EIQ)	Potential Emissions of Application	New Installation Conditioned Potential
PM	25.0	61.27	1.75	0.25	N/D
PM ₁₀	15.0	61.27	1.75	1.00	N/D
PM _{2.5}	10.0	7.75	1.54	1.00	N/D
SO _x	40.0	744.59	0.33	0.08	N/D
NO _x	40.0	198.51	17.42	13.10	N/D
VOC	40.0	23.7	1.22	0.72	N/D
CO	100.0	135.98	41.23	11.00	N/D
HAPs	10.0 Individual HAP / 25.0 combined HAPs	11.78 (total)	1.30 (total)	0.25	N/D

N/D = Not Determined

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all criteria pollutants are below de minimis levels.

APPLICABLE REQUIREMENTS

Northwest Missouri State University shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved. For a complete list of applicable requirements for your installation, please consult your operating permit.

GENERAL REQUIREMENTS

- *Operating Permits*, 10 CSR 10-6.065
- *Start-Up, Shutdown, and Malfunction Conditions*, 10 CSR 10-6.050
- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
 - Per 10 CSR 10-6.110(4)(B)2.B(II) and (4)(B)2.C(II) a full EIQ is required for the first full calendar year the equipment (or modifications) approved by this permit are in operation.
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220
- *Restriction of Emission of Odors*, 10 CSR 10-6.165

SPECIFIC REQUIREMENTS

- *Restriction of Emission of Particulate Matter From Industrial Processes*, 10 CSR 10-6.400 does not apply to Boiler #3 as it burns fuel for indirect heating.
- *New Source Performance Regulations*, 10 CSR 10-6.070
 - Standards of Performance for Small Industrial- Commercial-Institutional Steam Generating Units, 40 CFR 60 Subpart Dc applies to Boiler #3 as the replacement and increase in maximum fuel throughput of the new burner constitutes as a modification under this subpart.

- *Control of Sulfur Dioxide Emissions*, 10 CSR 10-6.261
- *Restriction of Particulate Matter Emissions From Fuel Burning Equipment Used for Indirect Heating*, 10 CSR 10-6.405 applies to Boiler #3 and is in compliance as this emission unit only will burn natural gas.

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, it is recommended that this permit be granted with special conditions.

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated June 21, 2019, received July 2, 2019, designating Northwest Missouri State University as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.

APPENDIX A

Abbreviations and Acronyms

%percent	Mgal1,000 gallons
°Fdegrees Fahrenheit	MWmegawatt
acfmactual cubic feet per minute	MHDRmaximum hourly design rate
BACTBest Available Control Technology	MMBtuMillion British thermal units
BMPsBest Management Practices	MMCFmillion cubic feet
BtuBritish thermal unit	MSDSMaterial Safety Data Sheet
CAMCompliance Assurance Monitoring	NAAQSNational Ambient Air Quality Standards
CASChemical Abstracts Service	NESHAPs National Emissions Standards for Hazardous Air Pollutants
CEMSContinuous Emission Monitor System	NO_xnitrogen oxides
CFRCode of Federal Regulations	NSPSNew Source Performance Standards
COcarbon monoxide	NSRNew Source Review
CO₂carbon dioxide	PMparticulate matter
CO_{2e}carbon dioxide equivalent	PM_{2.5}particulate matter less than 2.5 microns in aerodynamic diameter
COMSContinuous Opacity Monitoring System	PM₁₀particulate matter less than 10 microns in aerodynamic diameter
CSRCode of State Regulations	ppmparts per million
dscfdry standard cubic feet	PSDPrevention of Significant Deterioration
EIQEmission Inventory Questionnaire	PTEpotential to emit
EPEmission Point	RACTReasonable Available Control Technology
EPAEnvironmental Protection Agency	RALRisk Assessment Level
EUEmission Unit	SCCSource Classification Code
fpsfeet per second	scfmstandard cubic feet per minute
ftfeet	SDSSafety Data Sheet
GACTGenerally Available Control Technology	SICStandard Industrial Classification
GHGGreenhouse Gas	SIPState Implementation Plan
gpmgallons per minute	SMALScreening Model Action Levels
grgrains	SO_xsulfur oxides
GWPGlobal Warming Potential	SO₂sulfur dioxide
HAPHazardous Air Pollutant	SSMStartup, Shutdown & Malfunction
hrhour	tphtons per hour
hphorsepower	tpytons per year
lbpound	VMTvehicle miles traveled
lbs/hrpounds per hour	VOCVolatile Organic Compound
MACTMaximum Achievable Control Technology	
µg/m³micrograms per cubic meter	
m/smeters per second	