DEPARTMENT OF ENERGY

FINDING OF NO SIGNIFICANT IMPACT FOR THE WINNETT SCHOOL DISTRICT BOILER REPLACEMENT PROJECT

AGENCY: Department of Energy

ACTION: Finding of No Significant Impact

SUMMARY: The Department of Energy (Department) has prepared an Environmental Assessment (Assessment), DOE/EA-0923, to identify and evaluate the potential environmental impacts of a proposed action to replace the Winnett School District (School) complex's existing oil-fired heating system, located in Winnett, Montana, with a new coal-fired heating system, using funds provided from a grant under the Institutional Conservation Program. The proposed action would be a more efficient system, and would not have significant impacts on human health and the environment.

Requests for copies of the Assessment should be addressed to:

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FOR FURTHER INFORMATION CONTACT: For further information on the proposed project, contact Marian Downs at the above address. For further information on the Department's general NEPA procedures, contact:

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SUPPLEMENTARY INFORMATION: The school complex lies within the city of Winnett in central Montana. The property occupies just over 0.8 hectares (2.1 acres); the total area of the complex is just over 2,925 square meters (31,502 square feet). The estimated remaining useful life of the complex is 40 years.

Under the present school heating system, the elementary school building is heated by an oil-fired, hot-water boiler; this boiler is approximately 20 years old and is at the half-way point of its useful life. The high school and its adjoining shop are heated with steam supplied by another oil-fired boiler; this boiler is roughly 40 years old and nearing the end of its useful life. Both boilers have relatively low combustion efficiencies which would be improved by the coal-fired system. The existing boilers were fueled by oil stored in an on-site underground storage tank which leaked fuel oil into the soil. The contaminated soil and storage tank were removed and replaced by a temporary above-ground storage tank to supply the boilers.

PROPOSED ACTION: The proposed action would involve the cost-shared purchase and installation of a coal-fired heating system. The proposed coal-fired system would be a completely self-contained, closed-loop system. The proposed action would involve the following activities.

- Purchase and install a 1.5 million Btu/hr-input, low-steam, coal-fired boiler, heat exchanger, and piping necessary to connect the new boiler

to steam lines in the school complex.

- o Purchase and erect a 204-square meter (2,200-square foot) prefabricated metal maintenance shed to house the new boiler system and the school maintenance equipment. This shed would be constructed on the school complex's existing gravel parking lot.
- o Purchase a covered bin for coal storage.
- o Purchase a covered, wheeled bin for temporary storage of coal ash pending its pick-up for disposal.
- o Encapsulate and seal the present oil-fired boiler and associated equipment under asbestos abatement measures codified at Administrative Rules of Montana 16.42.321.

The school would obtain sub-bituminous coal from a mine located near Roundup, Montana, about 72 kilometers (45 miles) south of Winnett. Coal is advantageous because it is available nearby, provides a high Btu value at low cost, and can be stored in greater quantities than oil. The main disadvantage of a coal-fired system would be an increase in air emissions and the generation of bottom ash waste requiring disposal.

The new boiler system would be installed in a 204-square meter (2,200-square foot) metal shed to be erected on unused portions of the school complex's existing gravel parking lot. Upon completion of the shed and installation of the proposed new boiler system, the area around the building would revert to its original use as a parking lot.

ENVIRONMENTAL IMPACTS: The proposed action would occur in an existing, previously developed area and would not affect wetlands, floodplains,

threatened or endangered species or their habitats, or historical or archeological resources. Significant construction activities would not be required and there are no anticipated socioeconomic effects. Also, it is not anticipated that there will be any environmental impacts on those Indian reservations located in the State.

A review was conducted by the Montana Department of Natural Resources and Conservation cooperatively with the Air Quality Bureau of the Montana Department of Health and Environmental Sciences under the Montana Air Quality Program, as approved by the Environmental Protection Agency. The review compared emissions of the existing oil-fired system with those of the proposed coal-fired system. The present system emits 18 pounds of particulate matter, 510 pounds of sulfur dioxide, 7 pounds of sulfur trioxide, 45 pounds of carbon monoxide, 100 pounds of nitrogen oxide, 3.05 pounds of non-methane hydrocarbons, and 1.94 pounds of methane hydrocarbons annually. The proposed system would emit 1012 pounds of particulate matter, a range of 886-2214 pounds of gaseous sulfur, a range of 987-2467 pounds of sulfur oxides, 379 pounds of carbon monoxide, 474 pounds of nitrogen oxide, 4.43 pounds of non-methane hydrocarbons and 1.90 pounds of methane hydrocarbons. This review indicated that air emissions from the proposed action would be greater than those currently released by the oil-fired system. However, the proposed action's projected emissions would be far below present ambient air quality standards. The proposed coal-fired boiler's closed-loop system would prevent additional air quality impacts. The proposed project would release less than 180 tons/yr of carbon dioxide, which would be insignificant in terms of the overall combustion of fossil fuels and emissions of carbon dioxide by all fossil-fueled devices. While the proposed action would be a new source of air

emissions, the amounts generated would not require review under Montana air quality permit requirements which implement the Federal and Montana Clean Air Acts (ARM 16.8.1101 - 16.8.1118). Emissions from the proposed action, in combination with other sources, would neither cause nor contribute to violations of Montana Ambient Air Quality Standards. During construction, there would be emissions of small quantities of fugitive dust or occasional smoke. All emissions are expected to be small in quantity and limited in duration.

Water for the heating system is and would continue to be obtained from a public well owned and operated by the City of Winnett. The proposed action utilizes a closed-loop boiler system, where unused condensate is recycled through the system, resulting in no effluent discharge.

The proposed action would generate no hazardous wastes. All construction debris from the proposed action would be disposed of in accordance with Montana solid waste disposal regulations which implement federal requirements codified at 40 CFR 261.4(b)(4). Coal ash from the proposed system, along with other solid wastes generated in Winnett, would be disposed of in a landfill located in Lewiston, 87 kilometers (54 miles) west of Winnett. The school proposes to contract with the city of Winnett for management of this ash. In addition to landfill disposal, utilization of this ash (e.g., use as a recycled item for road construction as a cement component) is under consideration.

Land use impacts of the proposed action would be minimal due to the present uses of the site and the limited localized area of disturbance. Construction

would require an estimated work force of three to four workers to be employed for roughly two months. These jobs would have a small, short-term benefit to the area, but no significant changes in local economic, housing, or infrastructure conditions are expected.

Although increased sound levels would be generated during the construction activities associated with the proposed action, the net increase in noise attributable to construction would be imperceptible. No negative impacts to occupational health and safety are expected to result from the proposed action, and the traffic increase would be minor compared with current traffic at the complex.

Upon completion of construction, the final appearance of the maintenance shed would be consistent with existing school buildings and the character of the neighborhood surrounding the school. The proposed action would not affect existing recreational areas. Operation would result in the creation of no new permanent jobs. The most significant benefits would be reduced energy costs to the school and an increased demand for local coal.

ALTERNATIVES CONSIDERED: The alternatives to the proposed action evaluated in the Assessment were: 1) No Action; 2) Purchase of a New Oil-Fired Boiler; 3) Natural Gas as an Alternative Fuel; 4) Propane Gas as an Alternative Fuel; 5) Conversion to Electric Heat; and 6) Conversion to Heating from Solar, Wind, and Geothermal.

The No-Action Alternative would result in the grant application being denied. The potential benefits derived from this system would not be realized under

the Institutional Conservation Programs, while the school would ultimately need to replace the existing system before it fails. As a result, much greater cost could eventually be incurred by the school. The alternative to purchase a new oil-fired burner was eliminated from consideration for several reasons, the largest being that coal provides a high Btu value at a lower cost. Using natural gas as an alternative fuel was eliminated because no public utilities or private firms exist for supplying natural gas to the Winnett area. Using propane gas as an alternative fuel was eliminated due to liability and reliability issues, as well as being less cost-effective than coal. Conversion to electric heat was rejected because of the expense of replacing the entire system and the costs of operating this heating source. Conversion to heating from solar, wind, and geothermal was examined and eliminated due to limitations in the applications of all three technologies.

DETERMINATION: Based on the analysis in the Environmental Assessment, the Department has determined that the proposed installation of a new coal-fired system at the Winnett School District complex does not constitute a major Federal action significantly affecting the quality of the human environment within the meaning of the NEPA. Therefore the preparation of an Environmental Impact Statement is not required and the Department is issuing this Finding of No Significant Impact.

Issued at Washington, D.C., this 3rd day of June, 1994.

Tara O'Toole, M.D., M.P.H.
Assistant Secretary
Environment, Safety, and Health