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FOR FURTHER INFORMATION CONTACT:

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SUPPLEMENTARY INFORMATION:

I. Background

Section 1424(e) of the Safe Drinking Water Act, 42 U.S.C., section 300h-3(e), states:

If the Administrator determines, on his own initiative or petition, that an area has an aquifer which is the sole or principal drinking water source for the area and which, if contaminated, would create a significant hazard to public health, he shall publish notice of that determination in the Federal Register. After the publication of any such notice, no commitment for federal financial assistance (through a grant, contract, loan guarantee, or otherwise) may be entered into for any project which the Administrator determines may contaminate such aquifer through a recharge zone so as to create a significant hazard to public health, but a commitment for federal financial assistance may, if authorized under another provision of law, be entered into to plan or design the project to assure that it will not so contaminate the aquifer.

On December 17, 1993, the EPA received a petition from the Barnes Aquifer Protection Advisory Committee and the Town of Easthampton, Massachusetts, requesting the designation of the Broad Brook Basin of the Barnes Aquifer as a sole source aquifer Section 1424(e) of the SDWA. The Sole Source Aquifer designation process consists of four phases, as outlined in the Sole Source Aquifer Designation Petitioner Guidance: Phase I—Petition Preparation, Phase II—Initial Petition Review/Determination of Completeness, Phase III—Detailed Review/Technical Verification, and Phase IV—Designation Determination. The Water Management Division has determined that the Barnes Aquifer Protection Advisory Committee's and the Town of Easthampton's petition fully satisfies the first three phases of the designation process.

II. Basis for Determination

Among the factors considered by the Regional Administrator as part of the detailed review and technical verification process for designating an area under Section 1424(e) were:

1. The Broad Brook Basin of the Barnes Aquifer is a high-yielding stratified drift aquifer which the service area population relies on for more than 50% of its drinking water needs.

2. There exists no viable economical alternative drinking water source or combination of sources to supply the designated service area.

3. The EPA has found that the Barnes Aquifer Protection Advisory Committee and the Town of Easthampton have appropriately delineated the boundaries of the aquifer recharge area, project designation area and project review area.

4. While the quality of the Broad Brook Basin of the Barnes Aquifer's ground water is considered to be good, it is highly vulnerable to contamination due to its geological characteristics and possible land-use activities. The designated area is a stratified drift aquifer consisting of shallow sand and gravel deposits. The shallow nature of the aquifer allows contaminants to be rapidly introduced into the ground water with minimal assimilation. It is this high vulnerability to contamination, especially in the southern portion of the Basin, coupled with the aquifer's value as the principal source of drinking water for the residents served, that could pose a significant public health hazard.

III. Description of the Broad Brook Basin of the Barnes Aquifer Designated Area and Project Area

The Broad Brook Basin of the Barnes Aquifer is located in Hampshire and Hampden Counties, Massachusetts, approximately 100 miles west of Boston. Part of the Connecticut River watershed, the Broad Brook Basin is approximately nine square miles in area, and encompasses portions of the Towns of Easthampton, Southampton (Hampshire County), and the City of Holyoke (Hampden County).

Broad Brook begins its headwaters south of Mount Tom and flows south for approximately three miles, then north about four miles from Rock Valley to Nashawannuck Pond in Easthampton. The topography of the aquifer ranges from level ground at 150 feet above mean sea level to the summit of Mount Tom at 1,200 feet above mean sea level. Volcanic and sedimentary rocks of Triassic age underlie the basin. These formations are overlain with unconsolidated deposits of sand, gravel, silt and clay laid down by glacial ice, meltwater streams and proglacial lakes during and following the advance and retreat of the Wisconsinan (Laurentide) Ice Sheet, approximately 22,000 to 14,000 years ago. Ground water in these deposits flows predominantly south to north, and is partially confined by clay deposits in the northern portion of the area.

The aquifer includes a mixture of open space, forests and wetlands, and

supports agriculture, recreation, and an increasing number of residential and commercial uses. The Easthampton Water Department operates three municipal wells that draw ground water from the Broad Brook Basin and serve approximately 15,600 people in Easthampton and bordering areas of Northampton and Southampton. The aquifer provides 64% of drinking water in the service area, making it eligible for designation as a Sole Source Aquifer. Use of alternative supplies of water outside the aquifer was found to be economically infeasible.

The quality of ground water in the Broad Brook Basin is generally excellent, but both the highly permeable nature of the aquifer material and the shallow depths to the water table reduce the capacity for pollution attention, making the aquifer vulnerable to contamination. Ground water contamination by Trichloroethylene (TCE) has forced the Town of Easthampton to take a well off-line and investigate treatment options, and has forced the City of Holyoke to close a well permanently. Local government has acted to protect the water quality of the Barnes Aquifer through formation of a multi-town Barnes Aquifer Protection Advisory Committee and adoption of an Aquifer Protection District in Easthampton. The residents of Easthampton are considering amendment of the Aquifer Protection District to comply with more recent State Drinking Water Regulations. The petitioners think that a Sole Source Aquifer Designation would augment their ground water protection efforts by providing a forum for public education and by increasing awareness about the importance and vulnerability of the aquifer which overlies the municipal boundaries of three communities.

IV. Information Utilized in Determination

The information utilized in this determination includes: the petition submitted to the EPA—New England Water Management Division by the Barnes Aquifer Protection Advisory Committee and the Town of Easthampton, letters of support received during the public comment period, and public comments received during the public hearing. This information is available to the public and may be inspected at the address listed above.

V. Project Review

The EPA—New England office is working with the federal agencies most likely to provide financial assistance to projects in the project review area. Interagency procedures and Memoranda