

PERMIT APPLICATION FOR WATER SUPPLY SYSTEMS
 (CONSTRUCTION - ALTERATION - ADDITION OR IMPROVEMENT) AS DESCRIBED HEREIN
 Required under the Authority of 1976 PA 399, as amended

This application becomes an Act 399 Permit only when signed and issued by authorized Michigan Department of Natural Resources and Environment (DNRE) Staff. See instructions below for completion of this application.

<p>1. Municipality or Organization, Address and WSSN that will own or control the water facilities to be constructed. This permit is to be issued to: Karegnondi Water Authority c/o Genesee County Drain Commissioner's Office-Division of Water and Waste Services G-4610 Beecher Rd. Flint, MI 48532 WSSN: 03563</p>	<p align="center">Permit Stamp Area (DNRE use only)</p> <p align="center">MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY</p> <p>PERMIT NO. W 142044 JUL 16 '14</p> <p align="center">EXAMINED AND APPROVED FOR COMPLIANCE WITH ACT 399, P.A. 1976</p>	
<p>2. Owner's Contact Person (provide name for questions):</p> <p>Contact: John F. O'Brien, PE Title: Deputy CEO KWA Phone: 810-732-7870</p>		
<p>3. Project Name (Provide phase number if project is segmented):</p> <p>KWA Water Supply System-Contract S-4002 Lake Huron Pump Station to Bricker Road</p>	<p>4. Project Location (City, Village, Township): Greenwood Twp., Grant Twp., Burtchville Twp., Fremont Twp., and Worth Twp.</p>	<p>5. County (location of project): St. Clair County Sanilac County</p>

ISSUED UNDER THE AUTHORITY OF THE DIRECTOR OF THE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENT

cc: Kraft Engineering

Issued by: *Paul J. Gotham*
 Reviewed by: *Paul J. Gotham*

If this box is marked see attached special conditions.

Instructions: Complete items 1 through 5 above and 6 through 21 on the following pages of this application. Print or type all information except for signatures. Mail completed application, plans and specifications, and any attachments to the DNRE District Office having jurisdiction in the area of the proposed construction.

Please Note:

- This **PERMIT** only authorizes the construction, alteration, addition or improvement of the water system described herein and is issued solely under the authority of 1976 PA 399, as amended.
- The issuance of this **PERMIT** does not authorize violation of any federal, state or local laws or regulations, nor does it obviate the necessity of obtaining such permits, including any other DNRE permits, or approvals from other units of government as may be required by law.
- This **PERMIT** expires two (2) years after the date of issuance in accordance with R 325.11306, 1976 PA 399, administrative rules, unless construction has been initiated prior to expiration.
- Noncompliance with the conditions of this permit and the requirements of the Act constitutes a violation of the Act.
- Applicant must give notice to public utilities in accordance with 1974 PA 53, (MISS DIG), being Section 460.701 to 460.718 of the Michigan Compiled Laws, and comply with each of the requirements of that Act.
- All earth changing activities must be conducted in accordance with the requirements of the Soil Erosion and Sedimentation Control Act, Part 91, 1994 PA 451, as amended.
- All construction activity impacting wetlands must be conducted in accordance with the Wetland Protection Act, Part 303, 1994 PA 451, as amended.
- Intentionally providing false information in this application constitutes fraud which is punishable by fine and/or imprisonment.
- Where applicable for water withdrawals, the issuance of this permit indicates compliance with the requirements of Part 327 of Act 451, Great Lakes Preservation Act.

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Permit Application for Water Systems (Continued)

6. **Facilities Description** – In the space below provide a detailed description of the proposed project. Applications without adequate facilities descriptions will be returned. SEE EXAMPLES BELOW. Use additional sheets if needed.

This project will include installation of approximately 62,500 lineal feet of pressure class 250 psi 66 inch spiral welded steel pipe (raw water main) in Fisher Rd. from the Lake Huron Pump Station (approximately 1000 ft. west of M-25) to the intersection of Fisher and Bricker Roads.

Project will also include the installation of the gate valves, air release valves, standard hydrants, blow-off hydrants, access manholes, and other related appurtanances.

EXAMPLES – EXAMPLES – EXAMPLES – EXAMPLES – EXAMPLES – EXAMPLES

Water Mains	500 feet of 8-inch water main in First Street from Main Street north to State Street. OR 250 feet of 12-inch water main in Clark Road from an existing 8-inch main in Third Avenue north to a hydrant.
Booster Stations	A booster station located at the southwest corner of Third Avenue and Main Street, and equipped with two, 15 Hp pumps each rated 150 gpm @ 200 feet TDH. Station includes backup power and all other equipment as required for proper operation.
Elevated Storage Tank	A 300,000 gallon elevated storage tank located in City Park. The proposed tank shall be spherical, all welded construction and supported on a single pedestal. The tank shall be 150 feet in height, 40 feet in diameter with a normal operating range of 130 – 145 feet. The interior coating system shall be ANSI/NSF Standard 61 approved or equivalent. The tank will be equipped with a cathodic protection system, and includes a tank level control system with telemetry.
Chemical Feed	A positive displacement chemical feed pump, rated at 24 gpd @ 110 psi to apply a chlorine solution for Well No. 1. Chlorine is 12.5% NaOCL, ANSI/NSF Standard 60 approved and will be applied at a rate of 1.0 mg/l of actual chlorine.
Water Supply Well	Well No. 3, a 200 foot deep well with 170 feet of 8-inch casing and 30 feet of 8-inch, 10 slot screen. The well will be equipped with a 20 Hp submersible pump and motor rated 200 gpm @ 225 feet TDH, set at 160 feet below land surface.
Treatment Facilities	A 5 million gpd water treatment plant located at the north end of Second Avenue. The facility will include 6 low service pumps, 2 rapid mix basins, 4 flocculation/sedimentation basins, 8 dual media filters, 3 million gallon water storage reservoir and 6 high service pumps. Also included are chemical feed pumps and related appurtanances for the addition of alum, fluoride, phosphate and chlorine.

MICHIGAN DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENT

Permit Application for Water Systems (Continued)

General Project Information – Complete all boxes below.	
<p>7. Design engineer's name, engineering firm, address, phone number, and email address:</p> <p>Kraft Engineering and Surveying, Inc. Michael R. Pifer, PE 409 W. Seventh Street, Flint, MI 48503 Phone: (810) 234-2694 Fax: (810) 234-2696</p>	<p>8. Indicate who will provide project construction inspection:</p> <p><input checked="" type="checkbox"/> Organization listed in Box 1. <input type="checkbox"/> Engineering firm listed in Box 7. <input type="checkbox"/> Other - name, address, and phone number listed below.</p>
<p>9. Is a basis of design attached? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>If no, briefly explain why a basis of design is not needed.</p>	
<p>10. Are sealed and signed engineering plans attached? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>If no, briefly explain why engineering plans are not needed.</p>	
<p>11. Are sealed and signed construction specifications attached? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>If specifications are not attached, they need to be on file at DNRE.</p>	
<p>12. Were Recommended Standards for Water Works, Suggested Practice for Water Works, AWWA guidelines, and the requirements of Act 399 and its administrative rules followed? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>If no, explain which deviations were made and why.</p>	
<p>13. Are all coatings, chemical additives and construction materials ANSI/NSF or other adequate 3rd party approved? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>If no, describe what coatings, additives or materials did not meet the applicable standard and why.</p>	
<p>14. Are all water system facilities being installed in the public right-of-way or a dedicated utility easement? (For projects not located in the public right-of-way, utility easements must be shown on the plans.) <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>If no, explain how access will be obtained.</p>	
<p>15. Is the project construction activity within a wetland (as defined by Section 324.30301(d)) of Part 303, 1994 PA 451? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>If yes, a wetland permit must be obtained.</p>	
<p>16. Is the project construction activity within a 100-year floodplain (as defined by R 323.1311(e)) of Part 31, 1994 PA 451, administrative rules? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>If yes, a flood plain permit must be obtained.</p>	
<p>17. Is the project construction activity within 500 feet of a lake, reservoir, or stream? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>If yes, a Soil and Erosion Control Permit must be obtained or indicate if the owner listed in box 2 of this application is an Authorized Public Agency (Section 10 of Part 91, 1994 PA 451) <input checked="" type="checkbox"/> Owner is APA.</p>	

Permit Application for Water Systems (Continued)

18. Will the proposed construction activity be part of a project involving the disturbance of five (5) or more acres of land?
 YES NO
 If yes, is this activity regulated by the National Pollutant Discharge Elimination System storm water regulations?
 YES: NPDES Authorization to discharge storm water from construction activities must be obtained.
 NO: Describe why activity is not regulated:
 Please call 517-241-8993 with questions regarding the applicability of the storm water regulations.

19. Is the project in or adjacent to a site of suspected or known soil or groundwater contamination?
 YES NO
 If yes, attach a copy of a plan acceptable to the DNRE for handling contaminated soils and/or groundwater disturbed during construction. Contact the local DNRE district office for listings of Michigan sites of environmental contamination.

20. IF YOU ARE A CUSTOMER/WHOLESALE/BULK PURCHASER, COMPLETE THE FOLLOWING

1) Name and WSSN of source water supply system (seller) 03563 KWA Water Supply System

2) Does the water service contract require water producer/seller to review and approve customer/wholesale/bulk purchaser water system construction plans?
 YES NO

If yes to #2, the producer/seller approval letter must be attached when submitted to DNRE.

21. **Owner's Certification** The owner of the proposed facilities or the owner's authorized representative shall complete the owner's certification. It is anticipated that the owner will either be a governmental agency (city, village, township, county, etc.) or a private owner (individual, company, association, etc.) of a Type I public water supply.

OWNER'S CERTIFICATION

I, John F. O'Brien (name), acting as the Deputy CEO (title/position) for KWA (entity owning proposed facilities) certify that this project has been reviewed and approved as detailed by the Plans and Specifications submitted under this application, and is in compliance with the requirements of 1976 PA 399, as amended, and its administrative rules.

[Signature] 6/11/14 810-732-7870
 Signature* Date Phone

*Original signature only, no photocopies will be accepted.

Permit Application for Water Systems (Continued)

PROJECT BASIS OF DESIGN – FOR WATER MAIN PROJECTS

PROJECT NAME: _____

For this PROJECT the following information must be provided per Act 399 unless waived by the Department. For projects other than water main installation, or if additional space is needed, attach separate sheet(s) with detailed Basis of Design calculations.

- A. A general map of the initial and ultimate service areas
 Included on engineering plans Attached separately
- B. Number of service connections served by this permit application _____
- C. Total number of service connections ultimately served by entire project _____
- D. Residential Equivalent Units (REUs) served by this permit application _____
- E. Total Residential Equivalent Units (REUs) ultimately served by entire project _____
- F. Water flow rates for proposed project based on REUs listed in "D" and "E" above
 - 1. Initial design average day flow (mgd) _____
 - 2. Initial design maximum day flow (mgd) _____
 - 3. Total design average day flow (mgd) _____
 - 4. Total design maximum day flow (mgd) _____
 - 5. Required fire flows: ⁽¹⁾ _____ gpm for _____ hours
- G. Actual flows and pressures of existing system at the connection point(s) ⁽²⁾
 - _____ gpm at _____ psi
 - _____ gpm at _____ psi
 - _____ gpm at _____ psi
 - _____ gpm at _____ psi
- H. Estimated minimum flows and pressures within the proposed water main system ⁽³⁾ _____ gpm at _____ psi

(1) Every water system must decide what levels of fire fighting flows they wish to provide. Fire flow should be appropriate for the area (residential, commercial, industrial) being served by the project. Typical fire flow rates can be obtained from the water supply, local fire dept., ISO or AWWA. The water system must then be designed to be able to provide the required fire flows while maintaining at least 20 psi in all portions of the distribution system.

(2) Flows and pressures at the connection points must be given to determine if the existing water main(s) are able to deliver water to the new service area. These numbers can be obtained from a properly modeled and calibrated distribution system hydraulic analysis or hydrant flow tests performed in the field. If more than one connection is proposed, list as needed.

(3) List what the estimated minimum flows can be expected in the proposed water mains based on estimated water demands, head losses, elevation changes and other factors that may affect flows, such as dead end mains.