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**DIRECT TESTIMONY
OF
WILLIAM J. MCGLINN, P.E.
ON BEHALF OF THE
PORTSMOUTH WATER AND FIRE DISTRICT**

**In re: Application for Rate Relief
City of Newport Utilities Department, Water Division
Docket No. 3818**

1 **Q. Please state your name and business address.**

2
3 A. My name is William J. McGlinn. My business address is 1944 East Main Road, Portsmouth,
4 Rhode Island.

5
6 **Q. By whom are you employed and in what capacity?**

7
8 A. I am employed by the Portsmouth Water and Fire District (PWFD). My position is General
9 Manager and Chief Engineer.

10
11 **Prior Experience**

12 **Q. Please describe your professional qualifications and experience.**

13
14 A. I have been employed by PWFD as its General Manager and Chief Engineer for over
15 eighteen years. My responsibilities include managing the PWFD's staff and day to day
16 operations, performing engineering analysis and design, coordinating the activities of
17 professional consultants, advising the elected Administrative Board ("Board") and
18 implementing the policy decisions of the Board.

19
20 I also served as an engineering consultant to PWFD from May of 1982 to October of 1988.
21 During that time I advised the Administrative Board and the Maintenance Manager on the
22 hydraulic operation and expansion of the water system.

23
24 Prior to being hired by PWFD, I was employed for eleven years by Maguire Group Inc., an
25 engineering consulting firm located in Providence, Rhode Island. I was responsible for
26 project engineering and management in the Environmental Engineering Division. At the
27 time of my departure, I held the title of Senior Principal Engineer. My assignments during
28 that tenure included the design and construction management of municipal and private water
29 systems. In addition, I was responsible for water system hydraulic computer modeling and
30 analysis, as well as water system troubleshooting and testing. While at Maguire, I was also
31 involved in sanitary engineering and resource recovery engineering.

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I am a graduate of the University of Rhode Island with a bachelor's degree in Civil and Environmental Engineering. I have been engaged in water supply engineering and civil engineering for over thirty years.

Q. Do you have any professional registrations or certifications?

A. Yes. I am a registered professional engineer in the State of Rhode Island. I am also certified by the State of Rhode Island as a Class 4 Drinking Water Distribution Operator and a Class 2 Drinking Water Treatment Operator.

Q. Mr. McGlinn, do you have any professional affiliations?

A. Yes. I am a member of the Rhode Island Water Works Association (RIWWA). I served on RIWWA's Executive Committee from 1990 to 1998 and as its President from December 1993 to December 1995. I am presently the Chairman of the RIWWA Water for People Committee and serve on the Legislative Committee.

I am also a member of the New England Water Works Association, the American Water Works Association, the National Society of Professional Engineers, and the American Society of Civil Engineers.

Q. Have you previously presented testimony as an expert witness?

A. Yes. I have testified before the Rhode Island Superior Court and the Portsmouth and Tiverton Zoning Board's of Review on behalf of PWFD, and in the Rhode Island Superior Court on behalf of the Narragansett Bay Water Quality Management District Commission. I have also appeared as an expert witness before the Rhode Island Public Utilities Commission on behalf of PWFD. These appearances included expert testimony on water supply engineering, sanitary engineering and general civil engineering.

1 **Q. Can you please describe your role in this proceeding?**

2
3 A. My role in this proceeding is to coordinate PWFD's review of and intervention in the
4 Newport Water Department (NWD) rate filing and to respond to any data requests submitted
5 by the interested parties.

6
7 I will also provide testimony on the status of the water quality issues that PWFD raised in the
8 last docket.

9
10 **Q. Please describe PWFD's legal status and purpose.**

11
12 A. PWFD is a quasi-municipal, governmental agency created by an act of the Rhode Island
13 General Assembly. The purpose of PWFD is to provide drinking water and water for fire
14 protection throughout its legislated service area - approximately ninety percent of Portsmouth
15 on Aquidneck Island. PWFD is governed by a seven-member Administrative Board, which
16 is elected by the registered voters within PWFD's legislated service area.

17
18 **Q. Please describe the PWFD water system.**

19
20 A. PWFD has its own transmission and distribution system, separate and apart from NWD. This
21 system was built and funded by PWFD ratepayers and taxpayers. PWFD has over one
22 hundred twenty-five (125) miles of pipe, four (4) water storage tanks, two (2) pump stations,
23 five hundred forty-eight (548) fire hydrants, over six thousand three-hundred (6,300) service
24 connections, and a three thousand (3,000) square foot administration and maintenance
25 building. PWFD provides water service to a population of approximately sixteen thousand
26 three-hundred fifty (16,350).

27
28 In addition to the General Manager and Chief Engineer, PWFD has an Office Manager with a
29 staff of one (1) Senior Clerk and one (1) Clerk I and a Maintenance Manager with a staff of
30 four (4) Senior Maintenance Mechanics and one (1) Engineering Technician.

31

1 **Q. Does the PWFD pay anything to the Town of Portsmouth for administrative support or**
2 **services?**

3
4 A. No it does not. The staff of the PWFD provides all services such as purchasing, accounting,
5 treasury, administrative and legal.

6

7 **Q. What are PWFD's water supply needs?**

8

9 A. PWFD does not own any water supplies, but relies on the wholesale purchase of water to
10 supply its system. PWFD buys all of its water from NWD and will continue to rely on NWD
11 for all of its water for the foreseeable future.

12

13 PWFD purchased an average of four hundred forty-eight million (448,000,000) gallons of
14 water per year from NWD during the last five (5) years. PWFD estimates that it will
15 purchase approximately four hundred fifty-five million (455,000,000) gallons of water, or
16 1.25 million gallons per day (MGD), from NWD during NWD FY-08.

17

18 **Q. Can you explain the current contractual arrangements with NWD?**

19

20 A. Yes. The contract between PWFD and NWD expired on December 31, 1995.
21 Negotiations that stretch back as far as 1992 for a new, long-term contract have been
22 unsuccessful. With the exception of water rates, which have been established by the
23 Commission since 2000, PWFD continues to purchase water as it had previously purchased
24 water under the terms of the expired contract.

25

26 **Q. Please explain how PWFD obtains water from NWD.**

27

28 A. All of the water that PWFD purchases from NWD is drawn from the end of NWD's 4.0
29 million gallon underground, treated water reservoir (4.0-MG reservoir) located at the Lawton
30 Valley Water Treatment Plant (LV-WTP). PWFD draws this water through its own pump
31 station and 16-inch suction main.

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In summary, PWFD is drawing water directly from the LV-WTP through the 4.0-MG reservoir, using its own infrastructure.

Q. Do any other NWD customers that receive water from the LV-WTP obtain water from the end of the 4.0 MG underground reservoir?

A. No. All other customers, which includes the Navy, Newport retail in Portsmouth and Middletown and, from time to time, Newport retail, receive water from the 2.0 Million gallon standpipe at the LV-WTP. This 2.0 MG gallon standpipe is supplied by the NWD Lawton Valley Pump Station located on the LV-WTP site, which draws water directly from the plant and from the entrance point or beginning of the 4.0-MG reservoir.

Q. In Docket No. 3675, you testified that there were problems with the NWD water quality. Has there been any progress made since the last docket?

A. Yes. Progress has been made on the pH variability issue and, based on recommendation from the expert panel, additional pH changes are planned by NWD. PWFD appreciates how the Commission examined this issue during the last rate filing and PWFD credits the Commission’s approval of the settlement language regarding the pH problem as the primary reason progress has been experienced.

TTHMs and water age, however, are still a serious concern.

Q. Please explain the progress on the pH issue.

A. In Docket No. 3675, I testified that the Island Wide Study (approved in Docket No. 3578) by Maguire Group recommended that the pH variability issue at the LV-WTP should be rectified immediately and be in place for at least one year prior to the implementation of chloramines. I also, testified that PWFD was experiencing high lead levels in the summer of

1 2005 and would likely exceed the Safe Drinking Water Act Action Level for lead. In fact,
2 PWFD did exceed the lead Action Level for 2005, for the second time in four years.

3
4 Data from NWD shows that during 2004 and 2005, the pH output at LV-WTP was very
5 unstable and below the design target level. After this pH issue was raised in the last docket,
6 NWD has managed to maintain a relatively stable pH output and meet their stated design
7 target level for the LV-WTP.

8
9 **Q. Has the stable and higher pH made a difference in the lead levels in PWFD?**

10
11 A. Yes, it appears that it has. Since NWD began controlling the pH to ensure operation at the
12 plant design level, PWFD's lead levels have not been an issue. In June of 2005, the PWFD
13 system exceeded the EPA Lead Action Level of 0.015 mg/L when it experienced a 90th
14 percentile lead level of 0.024 mg/L. In addition, for this sample set, 15 of 61 samples
15 exceeded the action level. We believe that this high lead level was directly related to the
16 unstable and low pH in 2004 and 2005, and recent changes in Newport's handling of the pH
17 level appear to bear that out. Correspondingly, in both June and December of 2006, the
18 PWFD system met the EPA Lead Action Level of 0.015 mg/L when it experienced a lead
19 level of 0.006 mg/L in both months. For these two sample sets, 2 of 61 and 1 of 60 samples
20 exceeded the action level in June 2006 and December 2006, respectively. We believe that
21 the stable and higher pH level beginning approximately in November of 2005 and through
22 December 2006 contributed to the significantly reduced lead level in the PWFD system.
23 Once again, I would like to thank the Commission for their support in helping to address this
24 lead problem. Additional lead testing in PWFD's system is scheduled for June of 2007.
25 Those results will be provided to the Commission as soon as they are available.

26
27 **Q. What are the future pH plans?**

28
29 A. Based on a recommendation from the expert panel, NWD is planning to switch from lime to
30 sodium hydroxide for corrosion control to further stabilize the pH and meet its design target
31 level. Based on the latest schedule information from NWD, the sodium hydroxide system

1 will be in place approximately ten to sixteen months prior to the switch to chloramines.
2 Assuming that this schedule holds, this time lag prior to a conversion to chloramines would
3 be consistent with the recommendation of the Maguire report.
4

5 **Q. You testified that TTHMs and water age are still a major concern. Please explain.**

6
7 A. Please refer to my testimony in the last two dockets, where I testified in detail about the
8 TTHM problems for Aquidneck Island's water suppliers. Today, PWFD, the Navy and
9 NWD are all still experiencing high TTHMs. In fact, in the fourth quarter of 2006, NWD
10 joined PWFD and the Navy in having exceeded the maximum contaminant level of 80 ppb
11 for the running annual average for TTHMs.
12

13 In any event, NWD is scheduled to begin pipe loop testing in June of 2007 for a period of up
14 to one year in an effort to evaluate the potential for a conversion to chloramines and other
15 treatment options to control the production of TTHMs and minimize corrosion. Although the
16 TTHM levels continue to be high and of major concern to PWFD, it appears that the complex
17 testing program necessary to determine the proper treatment changes has been established.
18

19 **Q. Why is water age still a concern?**

20
21 A. I testified in the prior docket that the Island Wide Study by Maguire indicated that PWFD is
22 receiving water that is older than the water received by NWD and the Navy. This is due to
23 the long detention time as the water travels through the 4.0-MG reservoir (PWFD is the only
24 one of the three suppliers drawing water from the end of this reservoir.) When free chlorine
25 is the disinfectant, the formation of TTHMs is a function of chlorine contact time. Hence,
26 increased water age creates a greater potential for the formation of increased TTHMs. When
27 chloramines are used as a disinfectant to reduce TTHM formation, increased water age
28 increases the potential for nitrification in the water distribution system. In short, water age
29 needs to be addressed whether or not NWD converts to chloramines.
30

31 As part of the settlement agreement in the prior docket, NWD was required to complete:

1 “...an analysis of the water age issue in order to identify and evaluate the possible
2 options and feasibility of providing Portsmouth with water of the same age as that
3 provided to Newport and the Navy. Newport agrees to use its best efforts to work with
4 CDM to complete the additional analysis by May 1, 2006.”

5 Unfortunately, the draft water age report was not submitted to PWFD until April 30, 2007,
6 one year after the “best efforts” completion date and a week before PWFD’s prefiled direct
7 testimony was due.

8
9 PWFD has conducted a preliminary review of the water age analysis. There are some
10 interesting findings and PWFD has a number of concerns and questions regarding the report
11 and the possible solutions to the water age issue. PWFD has also recently retained an
12 engineering firm to review and provide a critique of the report. As a next step a meeting has
13 been scheduled by NWD for May 15, 2007 to discuss the draft report.

14
15 Of major concern is NWD’s response to PWFD 3-14, attached as Exhibit A. NWD states,
16 “After meeting with all parties to review the report, Newport Water will review options and
17 incorporate any proposed improvements in its next rate filing. Information was not available
18 for inclusion in Docket #3818.” This study was included in the settlement agreement in the
19 last docket to ensure that water age issues would be corrected prior to the conversion to
20 chloramines. Clearly, NWD did not have information available for this filing because of its
21 failure to live up to the intent of the settlement agreement. Its submission of a draft report
22 one year late guaranteed that it would not have the information needed for its filing in
23 January of 2007. PWFD’s position is that the approval and capital funding for any
24 construction that may be required to address any agreed upon solution to the water age issue
25 should be provided for in this Docket. Otherwise, Newport’s conversion to chloramines will
26 have occurred before the “next rate filing” and long before completion of any subsequent
27 construction required to address the water age issue. The water age must be addressed prior
28 to the conversion to chloramines.

29
30 PWFD will have to wait for surrebuttal testimony to address any other issues that arise
31 following its thorough review of the report and its meeting with NWD and its engineer.

1 **Q. Does this conclude your testimony?**

2

3 A. As discussed the water age study will be further addressed, as necessary, in surrebuttal
4 testimony. Otherwise, this does conclude my testimony.

EXHIBIT A

CITY OF NEWPORT – UTILITIES DIVISION -WATER DEPARTMENT
Docket No. 3818
Response to
Portsmouth Water and Fire District's Data Requests
Set 3

PWFD 3-14: In the Settlement Agreement approved by the Commission in Docket #3675 Newport agreed to perform an analysis of the water age issue in order to identify and evaluate the possible options and feasibility of providing Portsmouth with water of the same age as that provided to Newport and the Navy, Newport agreed to use its best efforts to complete the analysis by May 1, 2006. Per Progress Report No. 8, the analysis is now scheduled to be completed on May 1, 2007.

- a. Please explain the reason for the one year or more delay in completing this analysis.
- b. Please provide a summary of preliminary findings and recommendations of the water age analysis.
- c. What provisions have been made to ensure that funding is available to implement the recommendations of the water age study.

Response:

- a. Newport Water notified PWFD through its attorneys that we were delayed in starting the analysis. The amendment to CDM's contract to perform the water age analysis was approved by the City Council at its July 26, 2006 meeting. The schedule in the amendment was for completion within six (6) months of contract execution which was August 1, 2006. A copy of the contract amendment was forwarded on September 21, 2006, as requested, to PWFD and NSN. Progress Report No. 5 included an updated schedule indicating the report would be completed in December, 2006 and a meeting for all parties to discuss the report scheduled in January, 2007. Progress Report No. 8 included a report on the schedule deviation for the water age analysis in addition to the updated schedule with the May 1, 2007 completion date.
- b. The draft report for the Water Age Analysis was distributed to Portsmouth and the Navy on April 30, 2007 for review and comment.
- c. After meeting with all parties to review the report, Newport Water will review options and incorporate any proposed improvements in its next rate filing. Information was not available for inclusion in Docket #3818.

Prepared by: J. Forgue