President's Message

Being the president of the NH-WPCA is certainly a pleasure, but also a challenge, for me. I see a wealth of untapped skill and talent in our membership that should be utilized.

An infiltration of personnel from varied fields of interest — plumbers, electricians, mechanics, lab. techs., teachers, engineers, salesmen, etc. — have meandered into wastewater treatment. The Association [aeration basin] collects this group, mixing and blending it, neutralizing the acidic personalities [operator forums], infusing a breath of fresh air [tradefair, clambake], removing the problems [Certification Committee, Safety Committee], causing oxidation to occur and subsequent assimilation and coagulation of ideas [Education Committee, Franklin Training Center] and finally, hopefully, producing a clarified effluent [isn’t that what it is all about?]. I hope I have presented the picture in familiar terms.

There is certainly a place for you to help this year. Join one of the committees, submit a letter to the "Collector," GET INVOLVED!!! You are welcome. My number is 783-9830.

I am looking forward to another successful year for the Association, as are all the officers and directors.

Thank you,

Tom White, President 1985

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Coming Soon
New Hampshire Water Pollution Control Association
MEETING
Friday
June 14, 1985
10:00 am to 4:00 pm [clambake at 1:00 pm]
ANNUAL OUTING AND CLAMBAKE
at Simpson’s Pavilion
Back River Road [Piscataqua Road]
Dover, New Hampshire
[Rain or Shine — food is prepaid]
Trials & Tribulations of a Part-Time Operator

By Thomas Hastings — Operator

The treatment facility at West Swanzey consists of a 2.8 MG aerated primary lagoon and two aerated secondary lagoons containing 1.3 MG each. The design capacity is 0.16 MGD [average flow]. The treatment plant went on line in June 1981 as a result of the community’s decision to operate their own treatment facility. The collection system has 4 miles of pipe and contains one ejector type pump station.

In October, 1981, shortly after being hired, I soon learned that it is most advantageous for an operator to be on-site during the latter part of the construction phase. My position at the Grade II West Swanzey plant is part-time and involves a maximum of 20 hours per week. As the sole employee at West Swanzey, I am the chief cook and bottle washer.

Fortunately, during my first ten weeks James Beckwith of Dufresne-Henry, the design engineer, assisted me on a part-time basis. Jim covered the general points of wastewater treatment and how they related to my facility. He discussed laboratory testing, equipment maintenance, and the theory of an aerated lagoon wastewater treatment system. All of the information we covered was new to me except for some maintenance of which I was familiar with at the Keene Wastewater Treatment Plant.

I soon learned that experience is the best teacher. By performing the laboratory analysis over and over, I became confident with the testing procedures. After completing ten weeks of training, Jim left me to solo as operator and mechanic of the facility and pump station. It was frightening, yet very exciting; I would not only gain first-hand experience, but I would have the prestige of doing a service to the area’s clean waters.

As time went by, I learned that the most effective way of solving wastewater treatment problems is to ask people in the field. The New Hampshire Water Supply and Pollution Control Commission also played an important role in my education and training.

My first year at West Swanzey went fairly well. The pump station required some attention; however, the installation company was able to correct the problems. The comminutor comb and teeth required several readjustments, and each time it took approximately three hours to realign them. I was grateful for the assistance of Scott Self, the maintenance foreman at the local woolen mill, a self-taught wizard with machinery. Over the next two years, I realized the two cardinal rules of operating a new treatment plant — patience and organization; with these two elemental practices, nothing is impossible.

As my knowledge of operations increased, I began to recognize problems and how to approach them. I encountered operational problems because of the large difference in the average design flow of 160,000 GPD and the actual flow of only 20,000 GPD. Accurate measurement of the effluent flow was not possible because the flow controls at the effluent outfall were not designed to measure such a low flow. Other problems developed — the comminutor frequently plugged with rags and the detention time increased in the lagoon series, causing algal blooms.

Additionally, problems were encountered in the primary lagoon as a result of partially plugged air lines on the bottom of the lagoon. After many phone calls and visits by the manufacturing representatives, I was very fortunate to meet Don Pottle, a wastewater operations consultant for the State of New Hampshire. Don spent several Saturdays assisting me in my attempts to purge the blockages in the air lines. Don also informed me of the problems caused by over-aeration and the high energy costs associated with it.

As a result of my experience and conversations with people in the wastewater field, I realized the degree to which I could become involved in the actual treatment processes. In addition to the basic laboratory testing on the influent and effluent, I realized I could develop valuable data on the lagoon stages to assist in process control and efficiency.

In conclusion, I wish to stress the importance of establishing a list of phone numbers of professional friends in the wastewater field in order to establish a good line of communication in the event any problems should arise. Additionally, an operator would benefit from a set of “as-built” construction plans in addition to being present during construction.

by Thomas Hastings, Operator
West Swanzey, N.H.
THANKS

The spring training program has been very successful again this year with the following courses offered:
April 3 — Safety
April 10 — Laboratory Troubleshooting
April 17 — Industrial Pretreatment
April 24 — Instrumentation
May 1, 29 — Basic Laboratory - BOD
May 2 — Electrical Maintenance
May 15 — Chlorination
May 22, 23 — Collection Systems
June 5 — Plant Contest

Many thanks are offered to our operators and company representatives who conducted or assisted with the fall operator training courses.

Safety Committee:
Mike Butler, Monadnock Paper Mills
Tom White, Concord WWTP
John Dolbeare, Nashua WWTP
Chris Hipkiss, Pittsfield WWTP
Bob Kilham, Derry WWTP
Mark Gauthier, NHWSPCC

Laboratory Troubleshooting:
Rick Seymour, Nashua WWTP
Jon Bushold, Concord WWTP

Industrial Pretreatment:
Bernie Sacks, EPA-Region I
Dan Allen, NHWSPCC
Eric Teittinen, Metcalf & Eddy
Roger Desmouteaux, Merrimack WWTP

Instrumentation:
Gary Kunz, Fischer Porter Co.

Basic Laboratory:
Rick Seymour, Nashua WWTP

Electrical Maintenance:
Tom Allen, Laisier Control Systems
Ken Bernier, Concord WWTP

Chlorination:
Herve Mead, Jones Chemical Inc.

Collection Systems:
Jim Courchane, DPW, Winchester, MA
Charles Brown, T.V. Ferret Inc.

Plant Contest: Operators statewide

TRADEFAIR A SUCCESS

We have outdone ourselves again! The 1985 Tradefair topped all previous years in number of exhibitors and overall attendance. Sixty-seven displays filled the State Ballroom during the morning session devoted exclusively to our exhibitors. From early responses to our exhibitor’s questionnaire, the Tradefair was considered highly successful, thanks to another large and responsive membership turnout. In order for those of us in the environmental protection field to keep up with the ever-changing state of the art, it is important that opportunities like the Tradefair are available to discuss common problems and solutions.

Following the attitude adjustment period, a roast beef buffet was served in the adjoining Pierce Ballroom to 240 members and guests. Outgoing President Greg Mack’s last official duty was to conduct the business meeting. Robert Cruess, New Hampshire Director to the New England Water Pollution Control Association, presented NEWPCA’s annual Operations Achievement Award to Walt Norris, Supt. of Concord’s Wastewater Treatment Division. Bill Hagadorn, operator of the Sullivan County Home Treatment Plant, was presented our Association’s 1985 Certificate of Achievement for the improvements in effluent quality and overall operation of his plant.

The highlight of the meeting was a synchronized slide show entitled “The Merrimack,” introduced by Nate Tufts, President of the Merrimack River Watershed Council. This excellent public relations tool is available through the Council for showing before interested groups.

The following slate of officers were elected for the coming year.

President — Tom White [Penacook]
V. Pres. — Bruce Kudrick [Hooksett]
Treasurer — Walt Norris [Concord]
Secretary — Robert Livingston [WSPCC]

Directors
Art Hoffman
John Dolbeare
Mike Butler

Certification Committee
Paul Wallace
Ricardo Cantu
TRAINING

University of Lowell
Continuing Education — Evening School
Industrial Technology Department
Water/Wastewater Option

The following courses are scheduled at the University of Lowell in the water and wastewater option:

**Fall 1985**
- Introduction to Hydraulics
- Water Biology
- Water Chemistry I
- Wastewater Treatment Plant Operations I
- Wastewater Treatment Plant Lab I
- Water/Wastewater Plant Management I
- Water Supply & Treatment Op. I
- Waterworks Operations Lab I
- Industrial Waste Treatment
- Hazardous Waste Management
- Operation & Maintenance of Water Collection Sys. I

**Spring 1986**
- Wastewater Treatment Plant Oper. II
- Wastewater Treatment Lab II
- Water Chemistry II
- Water Supply & Treatment Oper. II
- Water Biology
- Water/Wastewater Management II
- Water Distribution Systems
- O & M of Wastewater Collection Systems

For further information, contact: Donald Purcell at (617) 492-5000

**NERWI**

The NERWI mobile training facility will once more be available starting next fall. If you are interested in getting to visit your facility for a three day stint, contact Charlene Powell in So. Portland at (207) 799-7303 or the WSPCC operations division. There is an associated cost of $10 per day per pupil.

**Odor Control Symposium**
July 23-24, 1985

Held at: Sheraton Inn
Main Mall Road
S. Portland, ME

Presented by: The New England Regional Wastewater Institute

For more information contact:
Charlene Powell, Coordinator
NERWI
2 Fort Road • South Portland, ME 04106 • (207)-767-2539

**NEWPCA Operations Papers**

The NEWPCA Plant Operations Committee annually gives two $100 cash awards with appropriate wall plaques for operators' papers on topics designated each year by the Committee.

This year's topics are:

1. **Do it Yourself** — Innovative maintenance ideas, development of a procedure, inventing a tool or gadget for a particular job, or let your imagination run.

2. **Plant Personnel Incentives** — The most important resource in any plant is its people. What programs do you use to motivate and reward them? How do you recognize the importance of their contributions to plant performance?

Entries should be mailed to Lorraine Sander at the Nashua WWTF before November 1, 1985.

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**1984 TREASURER'S REPORT**

New Hampshire Water Pollution Control Association

<table>
<thead>
<tr>
<th>Summary</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total 1984 Income</td>
<td>$14,152.79</td>
</tr>
<tr>
<td>Total 1984 Expenses</td>
<td>10,478.64</td>
</tr>
<tr>
<td>Total 1984 Profit</td>
<td>$ 3,674.15</td>
</tr>
<tr>
<td>Balance Remaining from 1983</td>
<td>4,295.86</td>
</tr>
<tr>
<td>Total Balance for year ending 12/31/84</td>
<td>$ 7,970.01</td>
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**Breakdown of 1984 Income**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dues [305 members]</td>
<td>$ 2,290.50</td>
</tr>
<tr>
<td>Meetings (ticket sales)</td>
<td>9,972.00</td>
</tr>
<tr>
<td>Sponsors</td>
<td>780.00</td>
</tr>
<tr>
<td>Training Center Funds</td>
<td>165.00</td>
</tr>
<tr>
<td>Tee Shirt &amp; Hat sales</td>
<td>79.00</td>
</tr>
<tr>
<td>Coffees &amp; Mug sales</td>
<td>42.00</td>
</tr>
<tr>
<td>Redeposit of cash for meetings</td>
<td>500.00</td>
</tr>
<tr>
<td>Interest</td>
<td>324.29</td>
</tr>
<tr>
<td><strong>Total 1984 Income</strong></td>
<td>$14,152.79</td>
</tr>
</tbody>
</table>

**Breakdown of 1984 Expenses**

<table>
<thead>
<tr>
<th></th>
<th>$ 7,562.46</th>
</tr>
</thead>
<tbody>
<tr>
<td>Halls, meals, coffee, beverages, etc.</td>
<td>204.00</td>
</tr>
<tr>
<td>Tee shirts &amp; hats</td>
<td>126.00</td>
</tr>
<tr>
<td>Coffee mugs</td>
<td>500.00</td>
</tr>
<tr>
<td>Cash for meetings</td>
<td>1,398.90</td>
</tr>
<tr>
<td>Printing</td>
<td>169.08</td>
</tr>
<tr>
<td>Awards</td>
<td>300.00</td>
</tr>
<tr>
<td>Postage</td>
<td>59.95</td>
</tr>
<tr>
<td>Presidents WPCF Meeting</td>
<td>75.00</td>
</tr>
<tr>
<td>Safety Literature</td>
<td>8.90</td>
</tr>
<tr>
<td>Banking expenses</td>
<td>9.50</td>
</tr>
<tr>
<td>Bounced check</td>
<td>64.85</td>
</tr>
<tr>
<td>Interest withheld by IRS</td>
<td></td>
</tr>
<tr>
<td><strong>Total 1984 Expenses</strong></td>
<td>$10,478.64</td>
</tr>
<tr>
<td>Profit - Year Ending Dec. 31, 1984</td>
<td>$ 3,674.15</td>
</tr>
</tbody>
</table>

Note #1: Dues — 2 members over-paid their dues by $0.50 and $2.50 respectively which accounts for the overage in dues for 305 members.

Note #2: Cash for meetings — This money is drawn from the account to make change for selling luncheon tickets. This money is redeposited to the account and credited as income.
Under the Streets

We first got involved in the collection system about six years ago. Up until that time, the TV inspection truck and the Jet truck were used for emergency work only. When a three year old sewer was found to need replacement due to an acid discharge, the Dover treatment plant staff was given the cleaning and inspection equipment.

We then started looking for problem areas throughout the city; areas that needed cleaning monthly or more often, lines that we knew were at a bad grade or had root problems, or high infiltration rates. We started replacing these lines and keeping close tabs on cost. The average contractor's cost was $35/ft., our cost ranged from $15/ft. to $25/ft.

We also had plans for seventeen areas that were omitted during sewer separation in the mid-70's. Trying to use these maps for-as-builds proved impossible. As with most towns and cities in New Hampshire, Dover is plagued with hundreds of years of underground work that was never mapped. Some of our best sources are the older members of the collection system crew. They have a lot of information stored in nature's computer that was never put on paper. Since that first day in the swamp of Berry Brook, we have installed or replaced about 2000 feet of sewer line per year. We use all precast manholes and PVC pipe. We hope this will cut down on root intrusion and infiltration.

Last year, the City Engineering Department set up a sewer evaluation program on our computer. This enabled us to locate, number, describe and log all manholes. We can log slopes, size and type of pipe and all service connections. When an area is complete, the computer will give us the design flow, existing flow, future capacity, and any areas that are at capacity. We can then correct a problem area and look for the next potential problem. We have requested additional staffing to complete the system analysis. If approved, we hope to have it completed within two years. To complicate the problem, we have requests for 1500 units of housing to be built within the next couple of years. It took over a year to compile and enter the data into the computer for the small area that is now complete.

For those of you not involved in collection systems, this may give you a little insight into problems that we encounter. When first asked to get involved in the collection system, I did it with reservations. I now feel that every plant should be involved to some degree. We found that the sewer crew could have cared less about infiltration and general maintenance because it did not really affect them. When you sit at the receiving end of the pipe, you know what happens.

The City of Dover has a current population of 25,000. About 80% of the city is sewered, using seventy miles of pipe, eleven pumping stations, and a twenty-five year old primary treatment plant. In the past few years, we have cut our peak flow rates during heavy rain from 30 mgd to about 12 mgd. Slowly, we are getting the flow down so that no by-pass will occur during these peak times. The plant is designed to handle a peak flow of 7.9 mgd. This decrease of I & I not only helps plant operation, but also gives valuable space in the collection system for future development.

In future editions of the "Collector," we will try to explain some of the problems we have run into on specific jobs, how we have corrected them, and some tricks we have learned to help make the job easier.

Written by: Art Hoffman
Billy Boulanger  Dover WWTP

CERTIFICATION
QUESTIONS AND ANSWERS

Grade I

Which of the following parameters need not be monitored during operation of an internal combustion engine?

a) water temperature
b) air temperature
c) oil temperature
d) oil pressure
e) cylinder bank vacuum readings

Grade II

What is the desired carbon:nitrogen:phosphorus [C:N:P] ratio?

a] 10:5:1
c] 20:10:1
b] 100:5:1
d] 50:10:1

Grade III

Which laboratory test best shows the performance or degree of sludge stabilization achieved in an aerobic digester?

a) BOD
c) suspended solids
d) COD
e) DO

Grade IV

Leadership occurs as a result of:

a) supervisory authority and position.
b) being born with certain traits.
c) the supervisor's ability to achieve employee willingness to follow.
d) the number of years on the job.

ANSWERS TO MARCH 1985, (#7)

Grade I — A; Grade II — B;
Grade III — B; Grade IV — C

"I'm not spawning in this junk!"
Many of us in the State of New Hampshire are familiar with Don Pottle, a dedicated individual who has contributed immensely to the education of those of us in the wastewater field. Don is currently an associate professor of industrial technology at the University of Lowell and is also employed as a part-time wastewater consultant for the State of New Hampshire.

Don has been working for the University since 1983 as an instructor of wastewater treatment, mechanics and microprocesses. He is employed with the state, under an EPA grant-Outreach Operator Training, which involves troubleshooting wastewater treatment plants throughout New Hampshire and operating operator training programs. Those of us who have attended the Franklin Training Center Programs have benefited from the variety of thorough and informative sessions.

Don received his B.S. degree in Civil Engineering and M.S. degree in Sanitary Engineering from Northeastern University. His previous experience in the wastewater field includes two years as a Civil Engineer for Camp, Dresser & McKee, conducting water and wastewater projects throughout New England. Don also worked for the Massachusetts Department of Public Health in subsurface disposal, air pollution studies for the Boston area, and training programs for wastewater personnel.

Don’s heritage is traced to a small fishing village in Carbonbear, Newfoundland. He and his family relocated to the Boston area when Don was 11 years old.

Don’s never-ending source of energy is released during his weekly squash games and occasional tennis matches. Relaxation comes into play during his stays at the Pottles’ small beach home on Cape Cod. If Don has his “druthers,” he would spend unlimited amounts of time on the beach with a good wastewater book.
SAFETY CORNER

Establishing a Physical Examination for Wastewater Employees

An important condition of employment in many wastewater treatment facilities which, in my opinion, has not been addressed properly is physical examinations for their employees. It is the responsibility of the employer of individuals working in the wastewater field to offer a physical examination representative of conditions which employees must work under. If a physical examination has not been established, then one should be initiated.

Establishing a comprehensive physical examination which is pertinent to the wastewater field should entail a number of items. Major areas of concern are: evaluation of specific physical hazards pertaining to the facility and site; compiling an inventory of chemicals and compounds used in the field; identifying possible industrial waste discharges to the plant; determining local areas within the facility that could be categorized as environmentally hazardous areas. Once the above items are inventoried or identified, a medical consultant should be hired to review the above items and to develop a physical examination reflective of the conditions of the plant.

Selection of the proper medical consultant is probably the most important parameter in the development of the health program. The individual must be schooled in a number of areas: occupational health and safety; specific toxicology associated with chemicals in the wastewater field; exposure limits to certain environmental conditions; specific diagnostic aids pertinent to conditions found; laboratory analysis associated with physical examinations; etc. Help in obtaining a qualified medical consultant may be obtained from local medical physicians, OSHA and the appropriate state agency.

If it is not feasible to hire a medical consultant due to monetary constraints, there are a number of private and governmental agencies that possibly can provide assistance. Agencies such as NASSCO (National Association for Sewer Service Companies), WPCF (Water Pollution Control Federation) and EPA (Research Center, University of Cincinnati) should be able to answer a number of questions or indicate someone who can. Another possibility is contacting local treatment plants and obtaining names of other facilities that have comprehensive physical examinations. This physical examination should be used as a reference, not as a comprehensive examination for another plant, because conditions at each plant are different.

In conclusion, if your treatment facility does not have a comprehensive physical examination, take the necessary steps to develop one. Your health and safety is worth the time and effort to develop a health program.

by William J. Pauk, P.E.
Supt/Eng of the Haverhill, Mass., WWTP

SAFETY AWARD

The WPCF George W. Burke Jr. Facility Safety Award is presented through the NEWPCA to a selected municipal or industrial wastewater treatment facility in recognition of a documented safety program and safety record. An award plaque is presented to the selected facility at the annual NEWPCA meeting in January.

If you think your plant has an outstanding safety program and would like to enter, please contact Mark Gauthier at NH-WSPCC for more information.

SAFETY CORNER

Our Safety Committee has a new member — Richard Roy, from the Penacook plant. The Committee manned a booth at the tradefair and recently sponsored a course at the Franklin Training Center. By the way, get your Safety Committee T-shirts with the new logo on it — "I Used To Be Dangerous." Have a safe year.

Please help us schedule the fall safety course. Any comments or suggestions can be sent to Tom White of the Penacook plant, or call 753-9830.

Seasonal Chlorination in New Hampshire

What is the status of seasonal chlorination in NH? Good question. As we went to press, Seasonal Chlorination was still under study by a legislative committee.

For the past four winters, fifty-one NH wastewater treatment plants have been allowed to cease chlorinating their effluent waters for the period Nov. 1 thru March 31. This was done on an experimental basis, with the blessing of the EPA through the Permits and Surveillance Division of NH-WSPCC. After four successful seasons, NH-WSPCC decided to try to make the necessary changes in the laws to make seasonal chlorination a permanent practice.

The first attempt met with resounding defeat by the Resources Recreation and Development Committee, probably because that committee did not understand what the NH-WSPCC was asking for. You see, in order to make seasonal chlorination a permanent practice, NH-WSPCC had to have the authority to relax standards for wastewater treatment plants during that time period.

On April 24, an amendment was added to a Bill going before the legislature from NH-WSPCC to allow an additional year’s experimentation, with a report back to the General Court by September of 1986. This time, representatives from several cities and towns, as well as our operator’s association, were on hand. The committee has since asked for additional information from NH-WSPCC. As of the time of this printing, they have not made a decision. We will keep you informed.
New Look to the Collector

With this issue the Public Relations Committee is presenting a more polished look to our quarterly newsletter. As announced at the Tradefair, the winner of the new logo contest was Mark Gauthier. (Mark donated the prize money to the Association's Safety Committee for purchase of safety training films.) The Board of Directors selected the logo, shown on the top left-hand corner, from the 14 entries by number with no knowledge of the artists' names.

We will be standardizing stock and print colors, punching holes for filing ease, and improving picture quality in future issues.

Janet Pillion, from the Nashua Wastewater Treatment Facility, has been appointed to the P.R. Committee, and has contributed to this issue's new appearance.

NEWPCA Meeting in New Hampshire

The mountain resort of The Balsams in Dixville Notch, New Hampshire, will host the summer NEWPCA meeting, June 3-5, 1985. The "Notch" area is known as the Switzerland of America, and offers complete recreational facilities for post-meeting activities. The Operators' Forum on Tuesday afternoon is being chaired by Wayne Kimball, with presentations by Walt Norris, Mark Gauthier, Greg Mack and Lorraine Sander. Hope to see many members of NHWPCA at the meeting!

Familiar Faces in New Places

Larry Hart, formerly an operator at Hooksett, is now working as an operator in Milford.

Gregory Nason, a graduate of Berlin Vocational Tech, is a new operator at Hooksett.

Martin Laferte has left Newington to take charge of Rochester Water and Wastewater Departments.

HAVE YOU HEARD

The Town of Hooksett has hired R.H. White Corp. to purchase and install a 1-meter newly designed Ashbrooke belt press. They are expecting an August delivery, and plan to be in operation by September 1st.

Also, the Town of Hooksett has approved a 2.5 million dollar sewer extension project. This summer, 3200 feet of 8 to 12 inch sewer line will be constructed. The complete cost of this project will be funded solely by the Town.

NHWPCA DUES

REMINDER: There are still 89 members from the 1984-85 NHWPCA membership list who still have not paid their dues for 1985-86. Please send your dues by May 31, 1986 in order to remain on the membership list. Thank you.