New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233-3500

Thomas C. Jorling
Commissioner

August 13, 1990

MEMORANDUM

TO: Regional Water Engineers, Bureau Directors, Section Chiefs

SUBJECT: Division of Water Technical and Operational Guidance Series (3.2.2) ENGINEER'S REPORTS: APPLICATIONS FOR WATER SUPPLY AND LONG ISLAND WELL PERMITS (Originator: Phil Barbato, P.E.)

I. Purpose

The purpose of this memorandum is to establish the minimum information which will be required in engineer's reports submitted by applicants for Water Supply (well) and Long Island Well permits, and to set forth an acceptable format for organizing the information in these reports.

II. Discussion

Long Island's groundwater is a limited resource which must be carefully managed. Decisions concerning use of the resource must consider prevention of saltwater intrusion, prevention of contaminant migration between and within aquifer(s), protection of surface water resources, and continued availability of groundwater for future use.

Authority for regulating withdrawals is based in Article 15, Title 15 of the Environmental Conservation Law, and administered through 6NYCRR Part 601 (Water Supply Applications) and Part 602 (Long Island Wells). NYSDEC is responsible for the quantity and quality aspects of groundwater (in the environment), while NYSDOH is responsible for quantity and quality aspects of water from the well casing, through the treatment and distribution system, to the consumer's tap. Withdrawal applications for public supply wells are reviewed jointly by both departments for public necessity, alternate sources, proper and safe construction, sanitary control, watershed protection, and adequacy of supply.

Authority for requiring an engineer's report for Long Island well applications is based specifically in 6NYCRR Part 602.3(d) (3), and for water supply well applications in 6NYCRR Part 601.5(f).

The regulated community on Long Island often requests guidance as to the information and organization of engineer's reports required by NYSDEC. This guidance is intended to clarify engineer's report requirements and avoid submission of reports in which significant issues are overlooked.

NYSDEC review of water supply well and Long Island well applications is performed in a more efficient and timely way when accompanying engineer's reports are complete on first submittal, and organized properly. The regulated community desires timely response from the department, and seeks any guidance which the agency can provide which would facilitate this timely response.

III. **Guidance**

The attached outline sets forth the minimum information which will be required for engineer's reports submitted by applicants for water supply well and Long Island well permits. This guidance will be used by department personnel as a checklist in assuring that engineer's reports are complete.

Content: The information (issues) to be included in the engineer's report are taken from 6NYCRR, Part 601.5(f), 601.5(h), 601.5(i), 601.5(j) and 601.5(k). Preparation of the engineer's report in accordance with this guidance, however, does not relieve applicant of any provisions of 6NYCRR Parts 601 and 602.

Organization: The suggested organization (format) of the engineer's report shall be similar to that of an environmental impact statement; adapted to water resources issues. This organizational structure, which, after describing the project, moves smoothly through the important issues of establishing need, addressing impacts, evaluating alternatives, and developing mitigation, is a proven one, familiar to both the regulated community and the consulting community.

Salvatore Pagano, P.E.
Director
Division of Water

Attach.
cc: Dr. Banks; Mr. Campbell; Ms. Chrimes; Mr. Breuning; Regional Engineers for Environmental Quality

Engineer's Reports: Applications for Water Supply and Long Island Well Permits

A. Description of Proposed Action

1. Water supply system description
   a. generalized water supply system map; show existing facility locations and neighboring systems
   b. detailed water supply system map; proposed well location, all system facilities, and other features referred to in the engineer's report
   c. water supply system history
   d. population served; per capita use
   e. past pumpage/demand trends/population trends/industrial use trends
   f. projected demand (include basis of projection)
   g. existing facilities (production, storage, treatment, distribution, interconnections with other water supply systems
   h. projected service life of existing facilities
   i. existing water quality in water supply system wells
   j. largest water users in system (top ten)

2. Project description
   a. well size, depth, screened interval, capacity, location, appurtenances
   b. proposed treatment, distribution, storage
   c. integration with existing system facilities
   d. existing facilities to be modified
   e. existing facilities to be removed from service
   f. provisions for protection of the water supply and watershed from contamination
   g. 200 ft. radius map; method of control of surface contaminant sources within 200 feet of well.
   h. project schedule/cost
   i. preliminary plans and specifications for proposed well and plant

3. Establishment of need
   a. new facility to expand capacity
      i. population increase
      ii. seasonal peak demand
      iii. fire flows (including criteria established by the Insurance Services Office of New York)
      iv. other

   b. new facility to replace lost capacity
      i. quality problems (provide substantiating data)
      ii. equipment failure
      iii. other

   c. new facility to serve area not previously served

      i. projected demand

ii. basis of calculating projected demand

d. acquisition of existing water supply system (or facility) by new owner.

B. Environmental/Hydrogeologic Setting

1. Proposed screened interval; aquifer identification & characteristics
2. Interconnection with other water-bearing formations
3. Interconnection with surface water bodies
4. Proximity to known or suspected contamination sources (1 mile radius)
5. Proximity to known or suspected contaminated groundwater (1 mile radius)
6. Proximity to public water supply wells, private wells, agricultural wells, industrial wells (1 mile radius)
7. Proximity to salt water interface (if applicable)
8. Results of aquifer pump testing, potentiometric monitoring, etc. (if available)
9. Results of aquifer quality testing; chemical & bacteriological
10. Projected water quality and yield; basis for projections
11. Drillers logs for on-site or nearby wells.

C. Environmental/Hydrogeologic Impacts

1. Cone of depression
2. Zone of capture (contributing area)
3. Impact on water bearing formations identified in "B" above.
4. Impact on surface water bodies identified in "B" above.
5. Induced migration of contaminants from known or suspected contamination sources identified in "B" above.
6. Induced migration of contaminated groundwater from known or suspected sources identified in "B" above.
7. Impact on public water supply wells, private wells, agricultural wells, and industrial wells identified in "B" above.
8. Impact on salt water interface (if applicable)
9. Other impacts

D. Unavoidable Negative Environmental/Hydrogeologic Impacts (Explain why any negative impacts identified in "C" above cannot be avoided).

E. Alternatives to Proposed Action

1. Water conservation program for water supply system
   a. pricing/rate structure
   b. regulate/use restrictions
   c. educate/public information
   d. metering
   e. leak detection/repair

f. pressure reduction

2. Water importation
3. Increase storage
4. Water treatment
   a. well head treatment
   b. blending
   c. aquifer restoration
5. Alternative locations
6. Shallower screened interval

F. Mitigating measures proposed to minimize environmental impacts

1. Monitoring plan proposal
   a. monitor well locations
   b. analytes, sampling frequency, reporting requirements
   c. potentiometric monitoring
   d. action levels

2. Balance of pumping (control hydraulic gradients between production zones)
3. Water conservation program (see E.1, above)
4. Other

G. Growth Inducing Aspects (if applicable)

1. industrial expansion
2. residential areas expansion
3. enhanced fire protection
4. other

H. List of Related Studies, Reports, Data, etc.

1. water supply system master plan
2. regional master plan
3. local health department
4. USGS
5. other