






- ELEVATED TANK
ON 100' STEEL TOWER
ELEV. OF BASE 12'
CAPACITY 50000 GALS.
- PUMPING STATION
ELEV. OF FLOOR 11'
- RESERVOIRS
CONCRETE
8000 & 115000 GALS.
- PENNS GROVE
RANNEY WATER COLLECTOR
PUMPING STATION
ELEV. OF FLOOR 12'
- CARNEY'S POINT WORKS
RANNEY WATER COLLECTOR
PUMPING STATION
ELEV. OF FLOOR 17'
- LAYTON'S WELLS
ELEV. OF FLOOR 20'
- DU PONT
RANNEY WATER COLLECTOR
PUMPING STATION
ELEV. OF FLOOR 12'




KEY

Fire hydrants shown thus 

Gate valves shown thus 

Fire hose shown thus 

Fire apparatus designated by symbols in list:

-  Pumping engine and hose car
-  Booster tank or tanks on above
-  Hand drench apparatus

PROTECTED FIRE ZONE: Shown in Green and Blue.

For description of fire protection, etc., see other sheets.

Elevations above 11 feet above mean sea level.

Water mains 8 inches in diameter

Water mains 6 inches in diameter

Water mains 4 inches in diameter

Schedule Rating Office of New Jersey
ENGINEERING DEPARTMENT
NEWARK, N. J.

Upper Penns Neck Twp.
Including Carneys Point and Deep Water Point.

Salem County, New Jersey

DECEMBER 15, 1944

December 15, 1944.

UPPER PENNS NECK TOWNSHIP, SALEM COUNTY, NEW JERSEY.

Including Carneys Point and Deep Water Point.

Population—Census of 1940—4,805.

IN GENERAL: Located surrounding the Borough of Penns Grove about 30 miles southwest of Camden. It is a residential and manufacturing community with a village at Carneys Point of about 600 congested frame dwellings owned by the E. I. du Pont de Nemours & Company, and nearby residential developments with a small business area with schools and churches, comprising township center. Practically all inhabitants are employees of the Du Pont Company which operates a powder works and chemical plant at Carneys Point within the township, and other related industries in nearby municipalities. Area of township about 18 square miles. Elevations vary only slightly and average about 11 feet. Main thoroughfares are concrete or macadam in good condition. Some secondary streets are dirt in fair condition. There are no grade crossings nor other unusual features which should interfere with the response or operation of the fire department.

WATER SUPPLY: Carneys Point Village and the Du Pont Plant are supplied with water for domestic, fire protection, and process purposes by company owned supply works and distribution system, while outlying areas are supplied with water for domestic and fire protection purposes by the Penns Grove Water Supply Company. For a description of the Penns Grove Water Supply Company, organization, supply works, distribution system, and appurtenances, see report on Penns Grove with map No. 17. **Du Pont System:** This system is in charge of the Power Division and is maintained by this organization which is large and capable. Records are complete and responsible employees respond to alarms of fire. Domestic and process supply is delivered to fire service reservoirs with fire pumps maintained solely for fire service under increased pressure. **Supply Works:** Consist of 3 wells known as Laytons Wells located on the Pennsville-Auburn Road south of Georgetown Road as shown on map. Two 8-inch wells are 225 feet deep equipped with Worthington deep well pumps rated at 225 g.p.m. each and driven by 15-h.p. motor. The third well is 16 feet in diameter and 28 feet deep with a capacity of 115 g.p.m. and is equipped with a Worthington 300-g.p.m. centrifugal pump driven by a 16-h.p. Allis-Chalmers electric motor. Deep well pumps are housed in small brick structures and the shallow well pump is set under a frame shed below ground level. Power is supplied through an aerial service from the Du Pont power plant. Wells discharge through about 5,000 feet of 8-inch pipe directly to the village distribution system with an elevated tank acting as an equalizer. Fire service reservoirs are supplied from the elevated tank through a 10-inch line equipped with manually operated valves controlling either reservoir. **Fire Pumping Station:** Located near Penn Street opposite Second Street as shown on map. Building is a 1-story brick structure with concrete and slag roof, concrete floor, 2 coal stoves, and electric lights. Elevation of floor about 11 feet. **Equipment:** One American Well Works 1,000-g.p.m. centrifugal pump operating at 125 pounds driven by a 100-h.p. Allis-Chalmers electric motor. One Lecourtenay 700-g.p.m. centrifugal pump operating at 70 pounds driven by a 100-h.p. Lincoln electric motor. Fire pumps take suction from the reservoirs through independent 10-inch gated lines and discharge to the Powder Works or Village distribution systems with the elevated tank shut off. **Fire Pump**

Suction Reservoirs: These consist of wood covered concrete tanks located at pumping station as shown on map. They have respective capacities of 60,000 and 115,000 gallons. **Distribution System:** In one service for domestic service with fire pumps provided for fire service. System consists primarily of incompletely gridironed 6-inch mains with 2 normally closed 6-inch emergency connections to the Penns Grove system. See map and description above. **Domestic Service Elevated Tank:** Located near Penn Street opposite Second Street as shown on map. It is steel, 19 feet in diameter by 17 feet 6 inches high on a 100-foot steel tower with a capacity of 50,000 gallons, with hemispherical bottom. Elevation of base about 13 feet. Elevation of overflow about 130 feet. **Consumption:** Average domestic consumption is approximately 350,000 gallons per day. **Pipe:** All cast iron, tar coated, bell and spigot joint, laid with 4-foot to 6-foot cover. Total length, exclusive of the 8-inch supply main, 30,500 feet; 17.4% 8-inch, 59.4% 6-inch, and 23.2% 4-inch. No trouble reported from frozen mains or electrolysis. **Gate Valves:** There are 41 on the system of Wood make set in valve boxes or manholes with covers at grade. Direction of operation is uniform. Inspections are limited to occasional operation of valves. **Hydrants:** There are 77 on the system of Wood make of standard type with two 2½-inch outlets and 4-inch ungated branches. Hose outlets are 2⅞ inches outside diameter with 8 threads per inch. Hydrants are inspected weekly by the fire department during the winter months, and are completely serviced once during the summer. **Pressures:** No recording or pressure gauge on the village system. Readings taken at 4 well distributed hydrants show a normal tank pressure of 49 pounds. Pressures are increased to 70 or 100 pounds for fire service. **Fire Flow Tests:** Probable supply available for fire protection purposes, under tank pressure, was measured by means of Pitot tube. The quantities listed below could be increased with fire pumps operating by about 35% at 70 pounds and 75% with a pump pressure of 100 pounds. Location of hydrant, discharge in gallons per minute, pressure before flow, and pressure during flow were as follows:

- First Ave. and Twelfth St., 420—48—18.
- Laurel St. and "G" Ave., 290—50—45.
- Garnet St. and Spring Ave., 390—50—16.
- "H" St. N. of Walker Ave., 330—49—24.

Penns Grove Water Supply Company System — Distribution System: This distribution system consists of connections to the Penns Grove supply mains north and east of Penns Grove and an extension of the Penns Grove system consisting of an 8-inch artery extending through Carneys Point to the south. See map. **Consumption:** The average and maximum daily consumption during 1943 in the entire Penns Grove territory served by this company was 0.56 and 1.017 million gallons. The average daily pumpage during July, 1944 was 0.76 million gallons. At time of inspection there were 2,155 company owned services in the territory served, of which 50% are metered. In addition, water is supplied at wholesale to the Delaware Ordnance Depot and adjoining housing project. **Pipe:** All pipe is cast iron, tar coated, bell and spigot joint laid with a 3-foot minimum cover. Total length in Upper Penns Neck Township including the 12-inch supply main, 35,000 feet; 5.7% 12-inch, 62.3% 8-inch, and 32.0% 6-inch. No trouble reported from frozen mains

UPPER PENNS NECK TOWNSHIP, SALEM COUNTY, NEW JERSEY.

Including Carneys Point and Deep Water Point.

Continued.

or electrolysis. **Gate Valves:** There are 21 in Upper Penns Neck Township of Wood, Mueller, and Ludlow makes set with iron boxes at grade. Direction of operation is uniform. **Hydrants:** There are 37 on the system in Upper Penns Neck Township of Wood, Mueller, and Ludlow makes of standard type with two 2½-inch outlets, one 4½-inch outlet, and 4-inch and 6-inch gated branches. Hose outlets have National Standard threads and steamer outlets have 7 threads per inch and 5⅞ inches outside diameter. Hydrants are inspected twice annually and were in good condition at time of inspection. **Pressures:** No recording gauge on system, but a direct reading gauge at Ranney Well Station east of Penns Grove Center at about elevation 20 shows 45 pounds with tank full. A reading taken at one hydrant at time of inspection showed 35 pounds with tank about ½ full. **Fire Flow Tests:** Probable supply available for fire protection purposes was measured on September 1st, 1944, with tank about one-third full, by means of Pitot tube. Location of hydrant, discharge in gallons per minute, pressure before flow, and pressure during flow were as follows:

Manor Ave. E. of Arbor Lane, 170—35—3.

Note: This hydrant delivered 200 g.p.m. with a normal static pressure of 45 pounds.

FIRE DEPARTMENT: The Borough of Penns Grove furnishes fire department response to Upper Penns Neck Township under a formal contract and responds to the entire township except that alarms in the Carneys Point Village of the Du Pont Company, and in adjacent developments are answered by the Carneys Point Fire Department. For information on the personnel and equipment of the Penns Grove Fire Department, see report on Penns Grove with Map No. 17. **Carneys Point Fire Department:** This is a part paid and call organization composed of company employees, including a full paid chief and 3 paid men working 8-hour shifts with 2 men on from 8 A. M. to midnight on weekdays, and one man on all shifts on Sundays. The chief works the 8 A. M. to 4 P. M. shift with 1 paid man on week days. In addition there are 16 call men recruited from regular company employees of whom a minimum of 6 to 12 members are available at all times. One or two off-shift paid men respond on sounding of alarm or on receipt of telephone call. **Company:** Located on "D" Street south of Walker Avenue as shown on map. Building is a 1-story frame structure with asbestos shingled wood roof, wood and concrete apparatus floor, steam heat, electric lights, headquarters fire alarm equipment, and telephone. **Equipment:** One 1939 Seagrave 600-g.p.m. triple combination pumping engine carrying one 100-gallon booster tank, 150 feet of booster hose, 1,600 feet of 2½-inch hose, 1,000 feet of 1½-inch hose, one 12-foot and one 35-foot extension ladder, and good minor equipment. In addition 3 hose reels each carrying 300 feet of 2½-inch hose and standard equipment are well distributed throughout the village as shown on map, and one O.C.D. trailer pumping engine with standard equipment, and one 2-tank chemical trailer are kept in garage at rear of fire station. **Hose:** All 2½-inch hose is C.R.L. with threaded couplings 2½ inches outside diameter and 8 threads per inch. In addition to that carried on the apparatus there is 1,050 feet of 2½-inch and 150 feet of 1½-inch hose in reserve rolled in racks in garage at rear of fire station. A mechanical hose

dryer is provided at the Chambers plant nearby. About 70% of the total supply of hose is more than 5 years old and about 40% is more than 7 years old. All hose is tested annually at 150 pounds pressure. **Operations:** The department is under the general supervision of the fire chief at the Chambers plant and is in direct charge of the village fire chief who has full control of apparatus and paid men and of call men at fires and drills. Paid men act as drivers and operators. Motor is started daily. **Drills and Training:** Drills consisting of pump operation, hose and ladder work, and use of appliances are held twice monthly under the direction of the chief officer. **Fire Methods:** Booster lines and hand extinguishers are used on incipient fires supported by either direct or engine streams. Two gas masks are provided, one deluge set is available at the Chambers plant, one siamese is carried on the apparatus, but salvage covers and flood lighting equipment are not provided. **Response to Alarms:** The company responds to all village alarms and to adjoining residential developments. The Borough of Penns Grove Department also responds to township alarms and additional aid may be secured from the volunteer department at Lower Penns Neck Township. **Building Inspection:** The Du Pont fire chief inspects all buildings in the village annually and exercises constant supervision over general conditions. **Records and Reports:** Fire department records maintained by the chief officer are fairly complete and annual reports are made to the main office in Wilmington. **Fire Alarm System:** Consists of one aerial circuit in the village proper of No. 12 hard drawn copper weatherproof wire carried on poles with high and low tension wires. The circuit carries 10 Gamewell non-interfering non-succession type boxes mounted on light poles, an 8-inch gong on the pumping station and a 10-inch gong and a punch register in the fire house. Headquarters equipment consists of a small operating board and 12 storage battery cells charged by motor generator set. The system is maintained by plant electrician and box tests are conducted daily. Telephone alarms are transmitted to fire headquarters and sounded on a siren from a key transmitter in apparatus room. Other township alarms are transmitted through the Penns Grove Exchange to the police headquarters in Penns Grove where constant desk watch is maintained.

POLICE DEPARTMENT: The township department consists of a chief and 2 patrolmen with radio car operating in conjunction with the Penns Grove Department. The village fire chief also serves as police chief for the Du Pont property and in addition there are two company paid patrolmen.

BUILDING LAWS: Building regulations are limited to a township ordinance requiring the approval of plans for building operations by the township committee. Fire resistive roofs are required on Du Pont owned buildings.

EXPLOSIVES AND FLAMMABLES: No township regulations, but Du Pont Company plant regulations are good and are well enforced on their property. The state laws adequately cover the storage and shipment of explosives and flammables and the construction of motion picture booths. They also restrict the discharge of fireworks to responsible bonded parties.