

FRUITLAND MUTUAL WATER CO.

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FIRE FLOW TESTS

Area surveyed 207 27TH AVENUE S.E.

Engineer: R. SMITH M. ZURFLUH Date: 19 APRIL 01

Specify pumps and tanks operating during high value flow tests: 3, 4 & 5

CLEAR - SUNNY 55°

HVD tests: System consumption rate during tests 1.1 MGD; Time of day 1600

LOCATION	PRESSURES-LBS SQ IN			ORIFICE	DISCHARGE G.P.M.				* DISTRICT
	STATIC	RESID.	PITOT		OBSERVED	REC.	20 LBS	LBS	
FH (45 ft w/o S. Sta)			40	2½	1055		4080		
MERIDIAN MOBILE ESTATES	95	90							
SPACE # 6									

Flow Formulas from Fair and Geyer - "Elements of Water Supply and Waste Water Disposal."

$$Q_1 \text{ (GPM)} = 29.82 c d^2 \sqrt{p}$$

(Using $c = 0.9$ and $d = 2\text{-}1/2"$, $Q = 168.2 \sqrt{p}$)

$$Q_2 \text{ (GPM)} = Q_1 \sqrt{P_2/P_1} = Q_1 \sqrt{(P_s - 20)/(P_s - P_r)} = 168.2 \sqrt{25/5} = 3.87$$

Where-

"Static" pressure-(p_s)-indicates normal pressure in main at time of test.

"Residual" pressure-(p_r)-indicates pressure in main during flow at hydrant(s).

"Pitot" pressure-(p)-indicates measured velocity head of stream at hydrant outlet.

"Observed" discharge-(Q_1)-shows flow computed from noted pressures.

"Discharge-20 psi"-(Q_2)-is computed flow available for pumping engines.

"Recommended" Discharge-(Rec.)- is the flow considered for fire insurance grading purposes.

Column headed "Orifice" shows number and size (inches) of outlets opened.

NOTE: Tests are taken to determine ability of the distribution system to deliver supply for Fire use at designated residual pressures.

All comments and recommendations made by these Departments relate solely to Fire Insurance Rating or grading considerations and other uses by these Departments. No representations or warranties of any kind are intended or made.

- * DISTRICTS
- PB - Principal Business
 - OB - Other Business
 - SC - Shopping Center
 - IND - Industrial
 - RES - Residential
 - INS - Institutional
 - SR - Single Risk