APPENDIX O

Water Study

DEXTER WILSON ENGINEERING, INC.

WATER • WASTEWATER • RECYCLED WATER

CONSULTING ENGINEERS

WATER STUDY
FOR
THE TRAILS AT
CARMEL MOUNTAIN RANCH PROJECT
IN THE CITY OF SAN DIEGO

October 23, 2020

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WATER STUDY
FOR
THE TRAILS AT
CARMEL MOUNTAIN RANCH PROJECT
IN THE CITY OF SAN DIEGO

October 23, 2020

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Job No. 736-018

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Attention: Jonathan P. Frankel, Project Manager

Subject: Water Study for The Trails at Carmel Mountain Ranch Project in the City of San Diego

Introduction

The Trails at Carmel Mountain Ranch project (The Trails project) is located in the City of San Diego, east of Interstate 15, north of Ted Williams Parkway, and south of Camino Del Norte. The project proposes to redevelop the existing 18-hole Carmel Mountain Ranch Golf Course which was closed in 2018. Public and private streets and drives will provide access throughout the project. Figure 1 provides a location map for the project.

Figure 2 provides a layout of the project. As shown in Figure 2 each golf course hole will be referred to as a "Unit." The project encompasses 164.21 acres and proposes to redevelop the site with a maximum of 1,200 residential dwelling units, a commercial lot, park space, buffer area, and open space. Elevations on the project range from approximately 542 feet to 802 feet. The project's high point is located in Unit 9 and the low point is located in Unit 5.

This water study report will determine the need for public water system improvements to support The Trails project.

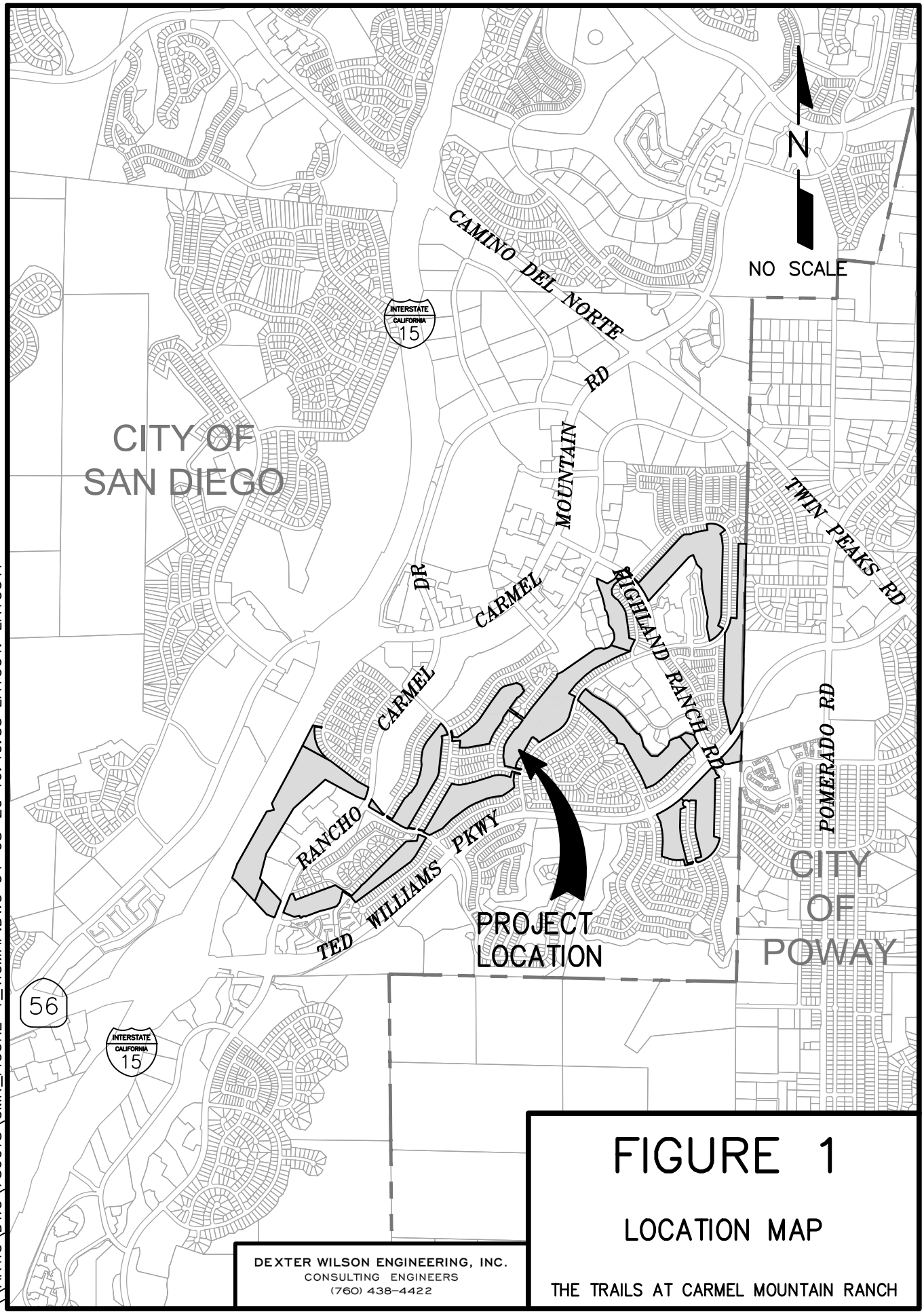

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FIGURE 1

LOCATION MAP

THE TRAILS AT CARMEL MOUNTAIN RANCH

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LEGEND

PROJECT BOUNDARY

CITY OF SAN DIEGO BOUNDARY

CITY OF SAN DIEGO

CITY OF POWAY

INTERSTATE CALIFORNIA 15

INTERSTATE CALIFORNIA 15

56

CARMEL MOUNTAIN RD

TWIN PEAKS RD

HIGHLAND RANCH RD

CARMEL RIDGE RD

RANCHO CARMEL DR

TED WILLIAMS PKWY

POMERADO RD

UNIT 1

UNIT 2

UNIT 3

UNIT 4

UNIT 5

UNIT 6

UNIT 7

UNIT 8

UNIT 9

UNIT 10

UNIT 11

UNIT 12

UNIT 13

UNIT 14

UNIT 15

UNIT 16

UNIT 17

N

0 1000 FEET

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FIGURE 2

PROJECT LAYOUT

THE TRAILS AT CARMEL MOUNTAIN RANCH

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Community Plan

The project proposes a General Plan/Community Plan Amendment, Master Planned Development Permit with Design Guidelines, Rezone and associated permits and entitlements to allow for the redevelopment of the closed Carmel Mountain Ranch Country Club and associated 18-hole golf course into a series of new infill residential neighborhoods to allow for a total of 1,200 multi-family homes, a commercial parcel, and a mix of open space and recreational uses, including approximately 6 miles of trails. The project proposes residential land uses on approximately 52 acres that would range in density from 14.5 to 43.5 dwelling units per acre. Open space uses would be identified for approximately 112 acres of the proposed project site.

The proposed project site has a land use designation of Private Recreation-Golf Course. The proposed amendment would redesignate land to a mix of Low-Medium Density Residential, Medium Density Residential, Community Commercial, Open Space-Parks, and Other Open Space uses.

Rezone

Development of the residential neighborhoods will be implemented through a zone amendment and a Master Planned Development Permit which includes Design Guidelines. Density will be limited by the applicable City-wide zoning. Neighborhoods zoned RM-1-1 and RM-1-3 would include two- and three-story townhomes, with two or three bedrooms. Neighborhoods zoned RM-2-4 through RM-3-7 would include three- and four-story apartments, with studios, one, two and three bedrooms. One parcel will be zoned CC-2-1 for a small commercial development. Three parks will be zoned OP. Some property will retain its AR-1-1 zone.

Project Description

The Trails project will have 17 Units. Units 1, 2, 5, 6, 7, 8, 9, 10, 13, 16, and 17 will consist of a mixture of residential units, a commercial lot, park space, buffer area, and open space. The remaining Units, Units 3, 4, 11, 12, 14, and 15, will solely consist of open space.

The Trails project proposes a maximum of 1,200 residential units. Table 1 presents a land use summary for The Trails project.

TABLE 1
THE TRAILS PROJECT
LAND USE SUMMARY

Unit	Land Use	Gross Acres	Dwelling Units	Dwelling Unit Density, DU/acre
1	Residential Development	5.10	66	12.9
	Open Space/Buffer	2.84	-	-
	Open Space	0.78	-	-
2	Residential Development	4.16	87	20.9
	Open Space/Buffer	2.67	-	-
	Open Space	3.08	-	-
3	Open Space	1.36	-	-
4	Open Space	25.27	-	-
5	Residential Development	2.29	78	34.1
	Buffer	0.47	-	-
6	Residential Development	3.42	128	37.4
	Open Space/Buffer	2.41	-	-
7	Park	3.38	-	-
	Open Space	3.07	-	-
8	Residential Development	6.9	98	14.2
	Open Space/Buffer	3.54	-	-
	Open Space	0.48	-	-
9	Residential Development	11.1	300	27.0
	Open Space/Buffer	3.21	-	-
	Open Space	5.44	-	-
10	Residential Development	10.07	200	19.9
	Open Space/Buffer	5.27	-	-

TABLE 1
THE TRAILS PROJECT
LAND USE SUMMARY

Unit	Land Use	Gross Acres	Dwelling Units	Dwelling Unit Density, DU/acre
11	Open Space	0.9	-	-
12	Open Space	6.07	-	-
13	Park	1.9	-	-
	Open Space	7.36	-	-
14	Open Space	1.86	-	-
15	Open Space	13.6	-	-
16	Residential Development	4.75	123	25.9
	Park	2.58		
	Open Space/Buffer	2.36	-	-
	Open Space	10.25	-	-
17	Residential Development	3.29	120	36.5
	Commercial Development	0.27	-	-
	Open Space/Buffer	2.25	-	-
	Open Space	0.46	-	-
TOTAL		**164.21**	**1,200**	

The Trails Project Water Demands

The water demands and corresponding proposed public water facilities were developed in accordance with Book 2 of the City of San Diego Design Guidelines and Standards. Residential water demand is estimated based on population and a water demand of 150 gallons per day per person. Water demand for commercial areas is estimated using a water demand factor of 5,000 gpd/acre.

In order to estimate irrigation demands for developed areas it is conservatively assumed that 40 percent of the developed area within developable Units (Units 1, 2, 5, 6, 8, 9, 10, 16, and 17) will be permanently irrigated. A water demand factor of 4,000 gpd/acre is used for permanently irrigated areas. Park water demands are also estimated using a water demand factor of 4,000 gpd/acre.

Table 2 presents the projected average potable water demand for the project by Unit.

TABLE 2
THE TRAILS PROJECT
AVERAGE WATER DEMAND

Unit	Description	Dwelling Unit Density, DU/acre	Average Water Demand Factor[1]	Average Water Demand, gpd
1	66 dwelling units	12.9	525 gpd/DU	34,650
	2.0 acres permanently irrigated	-	4,000 gpd/acre	8,000
2	87 Dwelling Units	20.9	480 gpd/DU	41,760
	1.7 acres permanently irrigated	-	4,000 gpd/acre	6,800
3	Open Space	-	0	0
4	Open Space	-	0	0
5	78 Dwelling Units	34.1	450 gpd/DU	35,100
	0.9 acres permanently irrigated	-	4,000 gpd/acre	3,600
6	128 Dwelling Units	37.4	450 gpd/DU	57,600
	1.4 acres permanently irrigated	-	4,000 gpd/acre	5,600
7	3.38 acre park	-	4,000 gpd/acre	13,520
8	98 Dwelling Units	14.2	480 gpd/DU	47,040
	2.8 acres permanently irrigated	-	4,000 gpd/acre	11,200
9	300 Dwelling Units	27.0	480 gpd/DU	144,000
	4.4 acres permanently irrigated	-	4,000 gpd/acre	17,600
10	200 Dwelling Units	19.9	480 gpd/DU	96,000
	4.0 acres permanently irrigated	-	4,000 gpd/acre	16,000
11	Open Space	-	0	0
12	Open Space	-	0	0
13	1.9 acre park	-	4,000 gpd/acre	7,600
14	Open Space	-	0	0
15	Open Space	-	0	0
16	123 Dwelling Units	25.9	480 gpd/DU	59,040
	2.58 acre park	-	4,000 gpd/acre	10,320
	1.9 acres permanently irrigated	-	4,000 gpd/acre	7,600
17	120 Dwelling Units	36.5	450 gpd/DU	54,000
	0.27 commercial acres	-	5,000 gpd/acre	1,350
	1.4 acres permanently irrigated	-	4,000 gpd/acre	5,600
TOTAL				**683,980 gpd (475.0 gpm)**

[1] Based on Table 2-1 and Table 2-2 in Book 2 of the City of San Diego Guidelines.

From the City of San Diego Guidelines and Standards, Figure 2-2, the maximum day demand to average annual demand ratio is 3.0 based on the Inland North peaking curve, resulting in an estimated maximum day demand of 2,051,940 gpd (1,425 gpm).

From the City of San Diego Guidelines and Standards, Figure 2-1, the peak hour demand to average annual demand ratio is 5.7 based on the Inland North peaking curve, resulting in an estimated peak hour demand of 3,898,686 gpd (2,707 gpm). Appendix A of this report presents the backup data for determining these peaking factors.

City of San Diego Water System Design Criteria

Book 2 of the City of San Diego Guidelines and Standards was used to analyze the water system. A summary of the design criteria from Book 2 is presented in Table 3.

TABLE 3
CITY OF SAN DIEGO
WATER SYSTEM DESIGN CRITERIA

Criteria	Design Requirement
Minimum Static Pressure	65 psi
Maximum Static Pressure	120 psi
Maximum Pressure Drop – Reservoir Out of Service	40 psi
Maximum Pressure Drop – Peak Hour & Max Day plus Fire	25 psi
Minimum Pressure – Peak Hour	40 psi
Minimum Pressure – Max Day plus Fire	20 psi
Maximum Pipeline Velocity (Fire Flow)[1]	15 fps
Maximum Pipeline Velocity (Normal Operating Conditions)[2]	5 fps

[1] Section 3.3.1 E
[2] Section 3.10.1

Fire Flow Requirements

Fire flow requirements for The Trails project were determined using the 2016 California Fire Code. The required fire hydrant flow for each Unit is based on the largest anticipated building square footage and type of construction. Largest building square footage and type of construction data for each Unit was provided by the project architect. A summary of the data provided by the project architect is included in Appendix B for reference.

Table 4 presents the largest building, type of construction, and fire hydrant flow requirements based on the 2016 California Fire Code for each Unit. Reduction factors between 50 percent and 75 percent were applied to each fire flow requirement in accordance with Table B105.1(1) and Table B105.2 of the 2016 California Fire Code.

TABLE 4
THE TRAILS PROJECT
FIRE HYDRANT FLOW REQUIREMENTS BY UNIT

Unit	Largest Building Area, Square Feet	Construction Type	Un-sprinklered Fire Flow Req., gpm	Reduced Fire Flow Requirement, gpm[1,2]
1	10,900	VB-R3	2,750	1,375
2	18,000	VB-R2	3,750	938
5	65,000	VA-R2	4,500	1,125
6	54,000	VA-R2	4,250	1,063
8	8,650	VB-R3	2,500	1,250
9	22,820	VA-R2	2,750	688
10	16,290	VA-R2	2,250	563
16	54,000	VA-R2	4,250	1,063
17	58,000	VA-R2	4,250	1,063

[1] Reduction factors applied per Table B105.1(1) and Table B105.2 in the 2016 California Fire Code.
[2] Per Table B105.2, minimum fire flow is 1,000 gpm or 1,500 gpm depending on the type of fire sprinkler system employed.

Table 4 shows that the largest required fire flow calculated for the project is 1,375 gpm; per Table B105.2 a minimum 1,500 gpm fire flow may apply. Therefore, a minimum fire flow requirement of 1,500 gpm was used to analyze the public water system's ability to deliver fire flow to each Unit within The Trails project.

Existing Water System

Figure 3 at the back of this report presents the existing water facilities in the vicinity of the project. There are three pressure zones pertinent to the project: the Rancho Bernardo 793 Pressure Zone, the Carmel Mall 920 Pressure Zone, and the 1130 Golf Course Pressure Zone. As shown in Figure 3, there are existing public water facilities within and directly adjacent to the project.

There is an existing 24-inch 793 Pressure Zone transmission water line in Rancho Carmel Drive. There are existing 16-inch 920 Pressure Zone transmission water lines in Rancho Carmel Drive, Carmel Mountain Road, and Shoal Creek Drive. The 16-inch 793 Pressure Zone water line in Shoal Creek Drive increases to a 20-inch water line south of Ted Williams Parkway. There is an existing 12-inch 1130 Pressure Zone transmission water line that runs north in Shoal Creek Drive, east in Stoney Gate Place, and northeast in Carmel Ridge Road. This 12-inch line reduces to an 8-inch line which traverses Unit 9 to the north and runs east into Breezeway Place.

Other public water facilities in the vicinity of the project include the 920 Zone Reservoir, the Carmel Mall WPS (793 Zone/920 Zone water booster station), the Carmel Mtn Ranch High WPS (920 Zone/1130 Zone water booster station), and two 1020 Zone/920 Zone Pressure Reducing Stations.

The existing 920 Zone Reservoir is located on the south side of the Carmel Mall 920 Pressure Zone along Shoal Creek Drive and has a volume of 3.2 million gallons, a spill elevation of 920.5 feet, and a bottom elevation of 890.5 feet. This reservoir serves as the primary feed for the Carmel Mall 920 Pressure Zone.

The Carmel Mall WPS is located on Rancho Carmel Drive north of Carmel Mountain Road. This water booster station delivers water from the 24-inch 793 Pressure Zone water line in Rancho Carmel Drive to the 920 Pressure Zone via a 16-inch water line in Rancho Carmel Drive.

The Carmel Mtn Ranch High WPS is located on Shoal Creek Drive west of the existing 920 Reservoir. This water booster station delivers water from the 20-inch 920 Pressure Zone

water line in Shoal Creek Drive to the 1130 Pressure Zone via a 12-inch water line in Shoal Creek Drive. This pump station serves as the only feed for the 1130 Pressure Zone.

There are two pressure reducing stations north of the project. One of the stations is located at the northeast intersection of Carmel Mountain Road and Rancho Carmel Drive (Rancho Carmel and Carmel Mtn WRS). The second pressure reducing station is located near the intersection of Paseo Lucido and Calle Saucillo (Pas Lucido and Cal Saucillo WRS). Both pressure reducing stations are fed from the Bernardo Heights 1020 Pressure Zone and supply water to the 920 Pressure Zone.

Overview of Proposed Water Facilities

Figure 4 at the back of this report presents the proposed public water system for The Trails project. Proposed water facilities consist of public water system improvements and private water facilities internal to Units 1, 2, 5, 6, 8, 9, 10, 16, and 17. Each of these Units will consist of a private domestic water system and a private fire protection system. The proposed private systems are briefly discussed later in this report.

Units 5 and 6 will receive domestic water and fire protection service from the 793 Pressure Zone. Based on rough grading plans, elevations within Units 5 and 6 range from 542 feet to 600 feet which results in a maximum static pressure range of 83 psi to 108 psi onsite.

Units 1, 2, 8, 9, 10, 16, and 17 will receive domestic water and fire protection service from the 920 Pressure Zone. The 8-inch 1130 Pressure Zone water main traversing Unit 9 is proposed to remain in service. In order for this pipeline to remain in service, a new water easement will need to be dedicated to the City of San Diego in accordance with the latest City of San Diego standards.

Based on rough grading plans, elevations within Units 1, 2, 8, 9, 10, 16, and 17 range from 630 feet to 802 feet which result in a maximum static pressure range of 51 psi to 125 psi onsite. Maximum static pressures lower than 65 psi occur at elevations greater than 770 feet which are found within Units 1 and 9. Elevations greater than 770 feet are anticipated on the northeast end of Unit 1 and all of Unit 9. Actual service pressures for these Units will be lower than 65 psi due to pressure losses through piping, meters, and backflow preventors.

Therefore, Unit 1 and Unit 9 are anticipated to require a private domestic water booster system as rough grading elevations in these Units range from 740 feet to 802 feet (51 psi to 77 psi static).

When maximum static pressures exceed 80 psi, the California Plumbing Code requires the installation of individual pressure regulators for services on all pads in order to limit building supply pressures to a maximum of 80 psi. Each domestic service within Units 2, 5, 6, 8, 10, 16, and 17 will require individual pressure regulators. Figure 5 presents a pressure zone map of the existing water system.

Water System Computer Models

The University of Kentucky KYPIPE computer program was used to conduct hydraulic models of the proposed water system. This computer program utilizes the Hazen-Williams equation for determining headloss in pipes; the Hazen-Williams "C" value used for all pipes is 120.

Water system hydraulic modeling was performed to evaluate the ability of the public water system to deliver adequate flow and pressure to the proposed project connection points for fire protection service as the fire flow demand will govern the need for offsite improvements. Private water systems internal to each Unit are not included in the models.

A model was created to analyze the 793 Pressure Zone water system and a separate model was created to analyze the 920 Pressure Zone water system.

Average day demand, peak hour demand, and maximum day plus fire flow demand were modeled for existing development and for The Trails project. The fire flow requirement of 1,500 gpm was modeled at a single connection point for each proposed Unit.

All maximum day plus fire flow demand scenarios were modeled under normal operating conditions (all pipes open) as well as under pipe-out-of-service conditions (one pipe closed). The results of each scenario were used to confirm whether City water design criteria are satisfied under various demand conditions.

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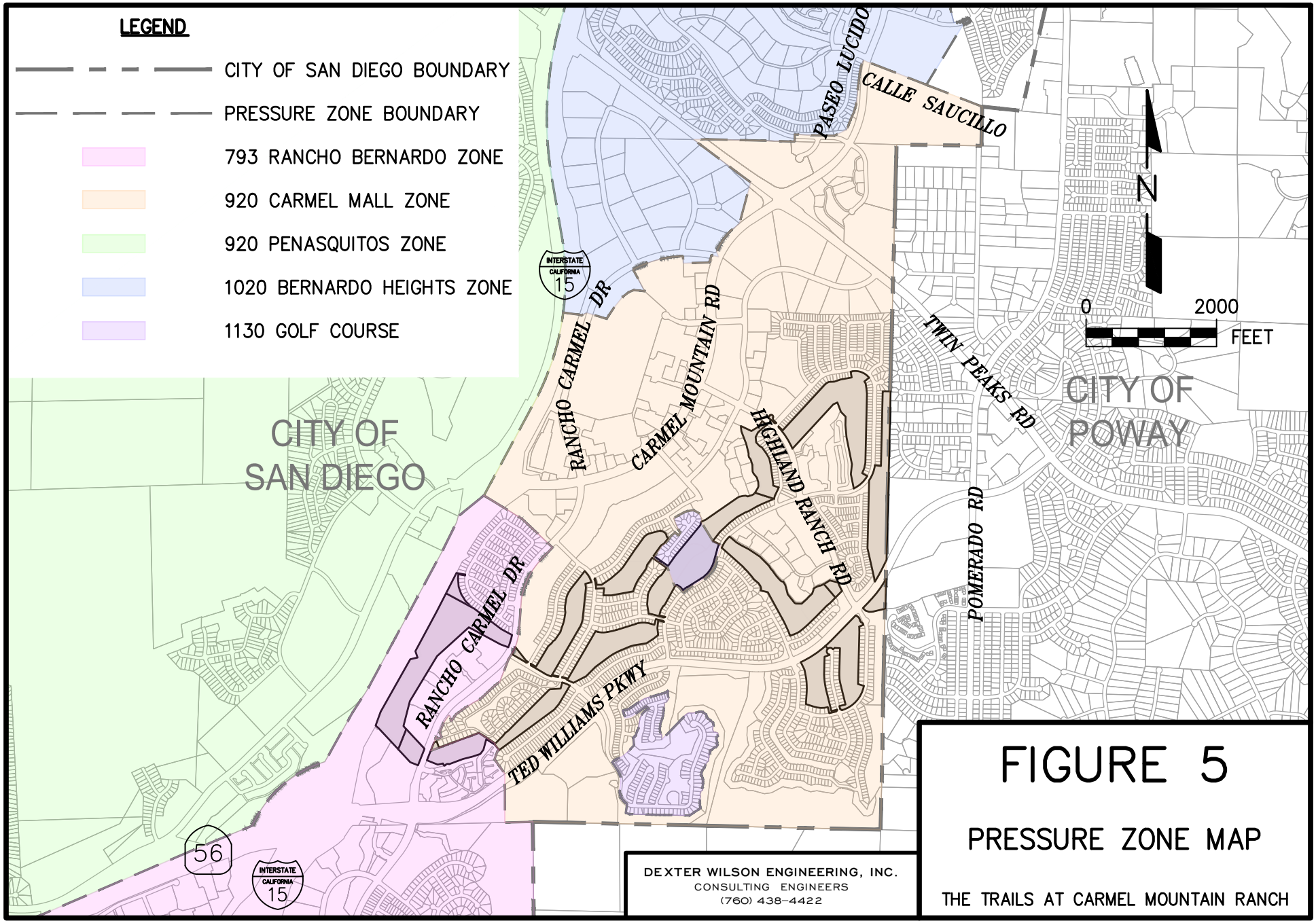

FIGURE 5

PRESSURE ZONE MAP

THE TRAILS AT CARMEL MOUNTAIN RANCH

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Computer Model Analysis and Results – 793 Pressure Zone

In order to develop the computer model for the 793 Pressure Zone fronting Units 5 and 6, a fire flow test was requested from the City of San Diego. The fire flow test data provided by the City, was used to determine the available hydraulic grade line in the vicinity of Units 5 and 6. The Hydrant Flow Test Detail Report identifies a flow and pressure at an existing fire hydrant located on the east side of Rancho Carmel Drive, north of Royal Melbourne Square.

The fire flow test data was input into the computer model as the water supply source (source node) for the system. The computer model uses the hydrant test data to estimate the available hydraulic grade line at the test hydrant under various flow rates. A copy of the fire flow test data provided by the City of San Diego is included in Appendix C for reference.

Detail A on Exhibit A at the back of this report presents a Node and Pipe Diagram of the modeled system for the 793 Pressure Zone. The results of the analysis are presented in Appendix D. Table 5 presents a summary of the fire flow computer model results for Units 5 and 6 under normal operating conditions and under pipe break conditions. Since the connection points for each of these Units will be relatively close, there will be no significant difference in residual pressure at each connection point; thus, one maximum day plus fire flow scenario was modeled for both Units. The pipe break condition assumes Pipe 717 (proposed 12-inch pipe in Rancho Carmel Drive) is out of service.

TABLE 5
793 PRESSURE ZONE
FIRE FLOW COMPUTER MODEL RESULTS SUMMARY

Description	Residual Pressure at Connection Point, psi	Public Water System		
		Maximum Velocity, fps	Maximum Pressure Drop, psi	Minimum Residual Pressure, psi
Normal Condition				
Units 5 & 6 - 1,500 gpm Fire Flow at Connection Point Located at Node 712	75.3	3.3	24.0	73.8
Pipe Break Condition (Pipe 717 Out of Service)				
Units 5 & 6 - 1,500 gpm Fire Flow at Connection Point Located at Node 712	74.4	6.9	24.9	73.8

As is evident in Table 5, a minimum residual pressure of greater than 20 psi is achieved throughout the modeled public water system under normal and pipe break conditions for the maximum day demand plus fire flow scenarios. The maximum velocity in the public water system under any fire flow scenario is 6.9 fps. The maximum pressure drop under any fire flow scenario is 24.9 psi. These results conform to the design criteria presented in Table 3.

Computer Model Water System Analysis and Results – 920 Pressure Zone

As previously mentioned, there are four sources of water for the Carmel Mall 920 Pressure Zone: the 920 Zone Reservoir, the Carmel Mall WPS, the Rancho Carmel and Carmel Mtn WRS, and the Pas Lucido and Cal Saucillo WRS. The model assumes the 920 Pressure Zone is being supplied by gravity and therefore, does not include the Carmel Mall WPS.

The 920 Zone Reservoir was modeled at half-full (HGL = 905.5 feet) to reflect realistic operating conditions. Each PRS was set to supply a hydraulic grade line of 898 feet so that they may function as secondary feeds to the pressure zone.

The 920 Pressure Zone is made up of an extensive grid pattern with considerable looping. Existing demands for the zone were estimated based on dwelling unit counts and land use acreage. This demand was distributed throughout the model to simulate the existing condition. The model was then verified against two fire hydrant flow tests that were requested from the City of San Diego. A copy of the results for each fire hydrant flow test is included in Appendix E for reference.

Exhibit A at the back of this report presents a Node and Pipe Diagram of the modeled system for the 920 Pressure Zone. The results of the analysis are presented in Appendix F. Table 6 presents a summary of the fire flow computer model results for Units 1, 2, 8, 9, 10, 16, and 17 under normal operating conditions and pipe break conditions. The pipe break condition assumes the 920 Zone Reservoir is out of service (pipe break in Shoal Creek Drive).

TABLE 6
920 PRESSURE ZONE
FIRE FLOW COMPUTER MODEL RESULTS SUMMARY

Description	Residual Pressure at Connection Point, psi	Public Water System		
		Maximum Velocity, fps	Maximum Pressure Drop, psi	Minimum Residual Pressure, psi
Normal Condition				
Unit 1 - 1,500 gpm Fire Flow at Connection Point Located at Node 96	77.2	4.3	11.6	39.3
Unit 2 - 1,500 gpm Fire Flow at Connection Point Located at Node 64	117.0	4.5	11.2	39.8
Unit 8 - 1,500 gpm Fire Flow at Connection Point Located at Node 56	112.0	4.6	11.1	39.9
Unit 9 - 1,500 gpm Fire Flow at Connection Point Located at Node 194	46.0	4.2	13.3	39.6
Unit 10 - 1,500 gpm Fire Flow at Connection Point Located at Node 188	50.7	4.2	13.9	39.6
Unit 16 - 1,500 gpm Fire Flow at Connection Point Located at Node 254	103.9	4.1	13.1	39.8
Unit 17 - 1,500 gpm Fire Flow at Connection Point Located at Node 170	84.3	6.9	15.8	39.6
Pipe Break Condition (Pipe 1 Out of Service)				
Unit 1 - 1,500 gpm Fire Flow at Connection Point Located at Node 96	62.5	9.5	26.3	25.0
Unit 2 - 1,500 gpm Fire Flow at Connection Point Located at Node 64	101.3	9.5	26.6	25.1
Unit 8 - 1,500 gpm Fire Flow at Connection Point Located at Node 56	96.0	9.5	26.7	25.1
Unit 9 - 1,500 gpm Fire Flow at Connection Point Located at Node 194	31.8	9.5	27.6	25.3
Unit 10 - 1,500 gpm Fire Flow at Connection Point Located at Node 188	36.8	9.5	27.8	25.4
Unit 16 - 1,500 gpm Fire Flow at Connection Point Located at Node 254	92.7	9.4	24.5	26.9
Unit 17 - 1,500 gpm Fire Flow at Connection Point Located at Node 170	71.4	9.5	28.7	25.9

Table 6 shows that minimum residual pressures greater than 20 psi are achieved throughout the modeled public water system under normal and pipe break conditions for maximum day demand plus fire flow scenarios. The maximum velocity in the existing public water system under a fire flow scenario during a normal condition is 6.9 fps and 9.5 fps during a pipe break condition. The maximum pressure drop during a normal condition is 15.8 psi and 28.7 psi for a pipe break condition. These results conform to the design criteria presented in Table 3.

Public Water System Improvements

One public water system improvement is proposed for The Trails project as shown in Detail A on Figure 4. The project proposes to construct a parallel 12-inch 793 Pressure Zone line in Rancho Carmel Drive. This line would connect to an existing 10-inch line west of the existing 24-inch 793 Pressure Zone transmission line in Rancho Carmel Drive to the north of Provencal Place and to the existing 12-inch line in Provencal Place. This water main is required to provide water system redundancy to Units 5 and 6, and because City of San Diego Standards do not allow direct tapping of transmission water mains for water services. Precise connection locations, valve locations, and alignment details will be determined during final engineering for the project.

Unit 5 and Unit 6 Public Water System Redundancy. Figure 6 presents a conceptual schematic of the proposed parallel 12-inch 793 Pressure Zone line in Rancho Carmel Drive. The 12-inch water main connection north of Unit 5 and Unit 6 will be made to the existing 10-inch water main west of the existing 24-inch 793 Pressure Zone transmission line in Rancho Carmel Drive. The 12-inch water main connection south of Unit 5 and Unit 6 will be made in Provencal Place. This connection will require the replacement of the existing tee connection with a cross pipe fitting.

The proposed alignment and valving shown on Figure 6 will provide redundancy to Unit 5 and Unit 6 as summarized below.

- A pipe break in Provencal Place can be isolated by closing the proposed 12-inch gate valve on the north side of the proposed 12-inch cross pipe fitting in Provencal Place. This would allow Unit 5 and Unit 6 to maintain water service from the north.

- A pipe break in the existing 10-inch water line near the north connection can be isolated by closing the proposed 12-inch gate valve on the south side of the proposed 10-inch tee. This would allow Unit 5 and Unit 6 to maintain water service from the south.

- A pipe break in the proposed public 12-inch 793 Pressure Zone water line can be isolated using the proposed valves along the 12-inch water line. The valves are placed to ensure only one connection is out of service at a time.

- A pipe break in the existing 24-inch 793 Pressure Zone transmission line in Rancho Carmel Drive can be isolated using existing 24-inch butterfly valves (see valves highlighted in yellow on Page 1 of 2 in Appendix H) and existing isolation valves in the distribution system (see valves highlighted in green on Page 2 of 2 in Appendix H). In this scenario Unit 5 and Unit 6 would maintain service from the north.

An adjacent project located on Provencal Place (City of San Diego PTS 648597) proposes to construct the same 12-inch 793 Pressure Zone water main in Rancho Carmel Drive. The proposed 793 Pressure Zone pipeline will be constructed by The Trails project to provide public water system redundancy to Unit 5 and Unit 6 if PTS 648597 is delayed past The Trails project or if PTS 648597 does not get developed.

Carmel Mtn. High Water Pump Station Reconfiguration/Retrofit. Issue Number 58 of the City of San Diego Public Utilities Department section of the Cycle Issues Report dated June 30, 2020 states the following:

> "PUD - Water and Sewer Review Section was informed that there is no irrigation service from the city's water utility for the golf course from Unit 9 which results in less demand on Carmel Mtn. High Water Pump Station (WPS). The Trails at CMR has some pro rata share to contribute in the reconfiguration/retrofit of the WPS."

The Trails project acknowledges the reconfiguration/retrofit of the Carmel Mtn. High WPS. The extent of the upgrades required at the pump station are not known at this time. It is anticipated that a new pump will be required at the pump station. Therefore, the project proposes a fair-share contribution of $100,000 for the reconfiguration/retrofit of the Carmel Mtn. High WPS. This fair-share contribution will be made prior to the issuance of the first building permit for Unit 9.

Proposed Private Water Systems

Figure 4 at the back of this report identifies the proposed private water system points of connection for each Unit. All proposed private onsite domestic and fire protection water service facilities will connect to public City of San Diego water pipelines.

Each private fire protection system connection will include a backflow preventer in accordance with City of San Diego standards. Each private domestic water system will include a domestic meter and backflow in accordance with City of San Diego standards. Preliminary domestic master meter sizing is discussed in the following section.

Preliminary Domestic Water System Master Meter Sizing. Preliminary master meter sizes for The Trails project were determined based on the total number of water fixture units that will be supplied through each meter. Irrigation internal to the project will be supplied by separate irrigation meters to be sized by the landscape designer. Therefore, no allowance for irrigation demand will be included in the meter sizing.

Estimated fixture counts for each Unit within The Trails project were provided by the project architect. Chart A-103.1 in the 2016 California Plumbing Code was used to convert the total Water Fixture Units to the maximum expected demand for the project. Chart A-103.1 provides demands for up to 3,000 Water Fixture Units, thus the demand for any Unit with more than 3,000 Water Fixture Units was extrapolated.

Once the maximum demand for each Unit was established, the required meter size was determined using the City of San Diego meter sizing criteria presented in Appendix G. Table 7 provides a summary of the master water meter sizing for each Unit within The Trails project. Once the development design for each Unit is finalized, master meter sizes will need to be confirmed.

TABLE 7
THE TRAILS PROJECT
DOMESTIC MASTER WATER METER SIZING BY UNIT

Unit	WFU Estimate*	Demand, gpm	Meter Size, in
1	1,947	318	4
2	2,511	378	4
5	1,462	266	3
6	2,405	367	4
8	2,999	430	4
9	6,278.5	780	6
10	4,182.5	557	6
16	2,721.5	401	4
17	2,662	394	4

* Based on October 25, 2019 WFU estimate by Summa Architecture (see Appendix B).

It is the City of San Diego's standard practice to install two smaller sized meters (next size down) in lieu of a single larger meter for redundancy. For example, if a 4-inch meter is required, the City of San Diego will install two 3-inch meters. Each meter will be followed by an equally sized reduced pressure zone backflow preventer.

Maximum Static Pressure. Table 8 presents the maximum static pressure at each meter location for The Trails project.

TABLE 8
THE TRAILS PROJECT
MASTER WATER METER STATIC PRESSURE

Unit	Pressure Zone	Approximate Elevation, ft	Static Pressure, psi
1	920	720	86
2	920	622	129
5	793	556	102
6	793	560	100
8	920	640	121
9	920	787	57
10	920	760	69
16	920	666	110
17	920	690	99

As shown in Table 8, the meters for Unit 2 and Unit 8 have maximum static pressures greater than 120 psi, and the meter for Unit 9 has a maximum static pressure less than 65 psi. Units 2, 8 and, 9 will connect to existing 920 Pressure Zone water lines.

Unit 2 and Unit 8 are connecting to the 920 Pressure Zone in an area where existing water meters currently have maximum static pressures equal to or greater than 120 psi. These pressures occur at elevations less than 643 feet within the 920 Pressure Zone. Existing water meters at the south end of Capewood Lane and Windcrest Lane have elevations less than 643 feet. As previously mentioned, all buildings within Unit 2 and Unit 8 will require individual pressure regulators at each building supply to limit building supply pressures to a maximum of 80 psi. Unit 9 is connecting at a relatively high point in the 920 Pressure Zone system. A private domestic water system is proposed onsite to serve the proposed Unit 9 development.

Private Water System Points of Connection. Private domestic water systems will make one connection to a public water line and private fire protection systems will make two connections to a public water line. Units 1, 5, and 9 will deviate slightly from this layout as described in the following sub-sections.

Unit 1. As previously mentioned, a private domestic water booster station is anticipated to be required to serve Unit 1. The booster system shall be designed to provide adequate flow and pressure for domestic service and fire sprinkler service to buildings within the Unit. The number of buildings that will need to have their domestic water boosted will need to be evaluated once site development plans, building designs, and pad elevations are available. The private fire protection system will not require a booster system because the 920 Pressure Zone can provide adequate fire hydrant flow at greater than 20 psi to this Unit as shown in Table 6.

Unit 5. As shown in Table 8, Unit 5 is expected to require a 3-inch domestic water meter. The City of San Diego's standard practice is to install two 2-inch domestic water meters, each with their own lateral connection. Therefore, two connections are anticipated for the private domestic water system for Unit 5. The private fire protection system for Unit 5 is expected to have a single hydrant which would require a single connection to the public water system.

Unit 9. As previously mentioned, the 8-inch 1130 Pressure Zone water main traversing Unit 9 is proposed to remain in service. In order for this pipeline to remain in service, a new water easement will need to be dedicated to the City of San Diego in accordance with the latest City of San Diego standards. Since the easement will be located within a private lot, the easement will be a minimum of 24 feet wide and paved the full width of the easement.

Domestic water and fire protection service for Unit 9 will be provided by the 920 Pressure Zone. The private domestic water system for Unit 9 will require a private domestic water booster system because rough grading elevations for this Unit range from 784 feet to 802 feet which results in a maximum static pressure range of 51 psi to 58 psi from the 920 Pressure Zone. The booster system shall be designed to provide adequate flow and pressure for domestic service and fire sprinkler service to each building within the Unit. The private fire protection system will not require a booster system because the 920 Pressure Zone can provide adequate fire hydrant flow at greater than 20 psi to this Unit as shown in Table 6.

The onsite private water systems internal to each Unit of The Trails project will be designed in the future as individual Units proceed with their site development plans. Private systems will be designed in accordance with the current City of San Diego standards and plumbing code standards.

Conclusions and Recommendations

The following conclusions and recommendations are summarized based on the public water system analysis prepared for The Trails project.

1. The Trails project will be supplied water from the Rancho Bernardo 793 Pressure Zone and the Carmel Mall 920 Pressure Zone.

2. Maximum static pressures onsite are expected to range from 51 psi to 150 psi. Maximum static pressures lower than 65 psi are located within Units 1 and 9. A private domestic water booster station is required for Unit 1 and Unit 9.

3. When maximum static pressures exceed 80 psi, individual pressure regulators need to be installed for services on all pads in order to comply with the California Plumbing Code which limits building supply pressures to a maximum of 80 psi. All building services within Units 2, 5, 6, 8, 10, 16, and 17 will require individual pressure regulators.

4. Figure 4 at the back of this report presents the proposed public water system improvements and points of connection for the private onsite water systems for The Trails project.

5. The existing 8-inch 1130 Pressure Zone water main traversing Unit 9 is proposed to remain in service. In order for this pipeline to remain in service, a new water easement will need to be dedicated to the City of San Diego in accordance with the latest City of San Diego standards. Since the easement will be located within a private lot, the easement will be a minimum of 24 feet wide and paved the full width of the easement.

6. A new 12-inch 793 Pressure Zone water line will be constructed in Rancho Carmel Drive to serve Unit 5 and Unit 6.

7. The Trails project proposes a fair-share contribution for the reconfiguration/retrofit of the Carmel Mtn. High WPS. This fair-share contribution will be made prior to the issuance of the first building permit for Unit 9.

8. The onsite domestic and fire protection systems for each Unit within The Trails project will be private systems.

9. Preliminary domestic water meter sizes are presented in Table 7. Domestic water meter sizes will need to be confirmed once more information is available for each Unit.

10. The private domestic water service lateral for each Unit will include a single connection to a public water line. The exception is Unit 5 which will require two 2-inch water service laterals. Following each water meter, a reduced pressure backflow preventer of the same size as the water meter will be installed.

11. New piping to be installed as part of the public water system outlined in this report shall conform to AWWA C900 DR18 Class 235 for pipe sizes 16" diameter and smaller.

12. If any water lines to be constructed by this development are metallic, a California Licensed Corrosion Engineer will be required to perform a soil corrosivity study and to design a Corrosion Control System.

13. New public water system improvements shall be designed in accordance with the current City of San Diego Design Guidelines and Standards.

If you have any questions regarding the information or conclusions and recommendations presented in this report, please do not hesitate to call.

Dexter Wilson Engineering, Inc.

Dexter S. Wilson, P.E.

DSW:FF:ah

APPENDIX A

CITY OF SAN DIEGO
PEAKING FACTOR CURVES

FIGURE 2-1
PEAK HOUR DEMAND FACTOR

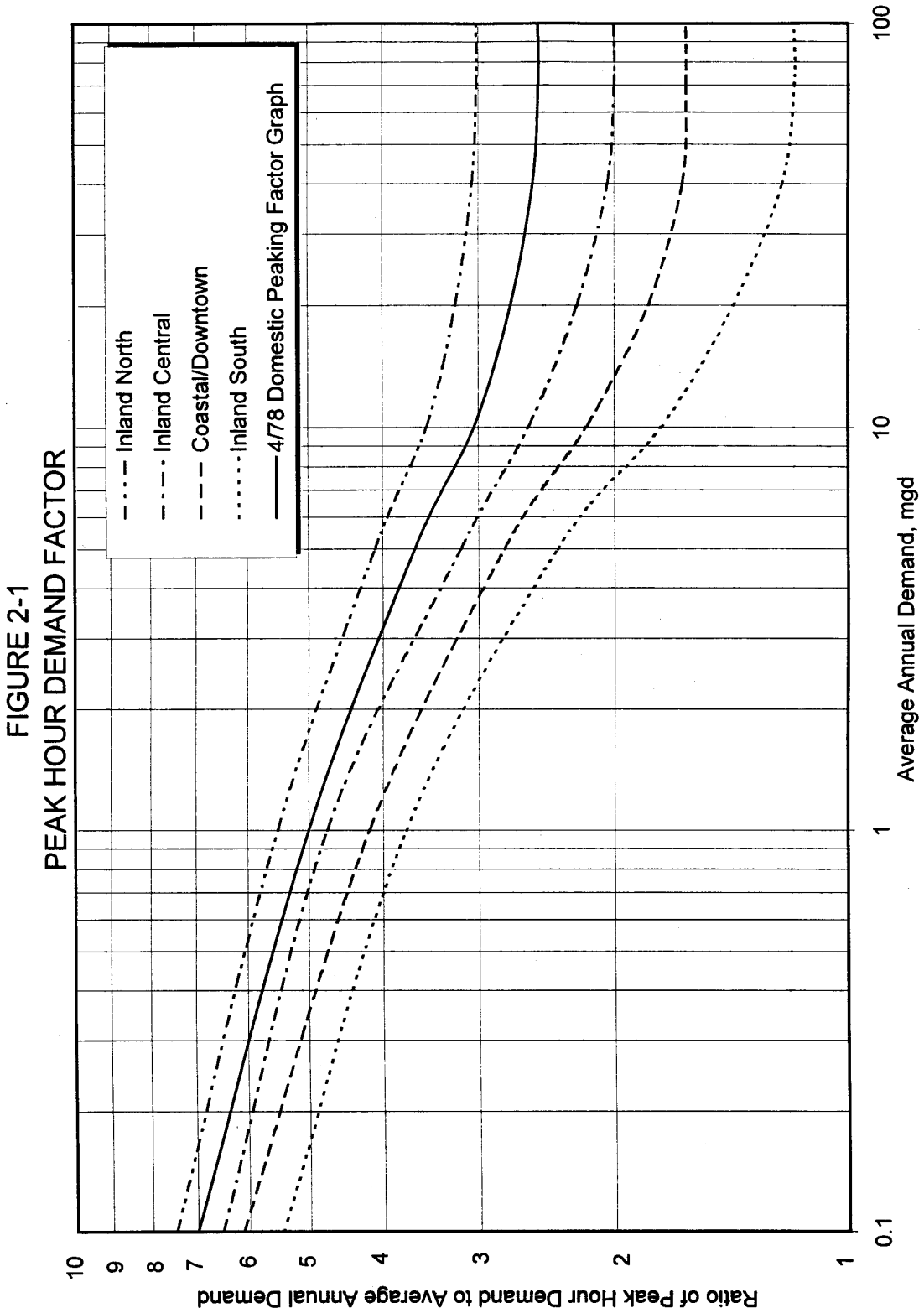
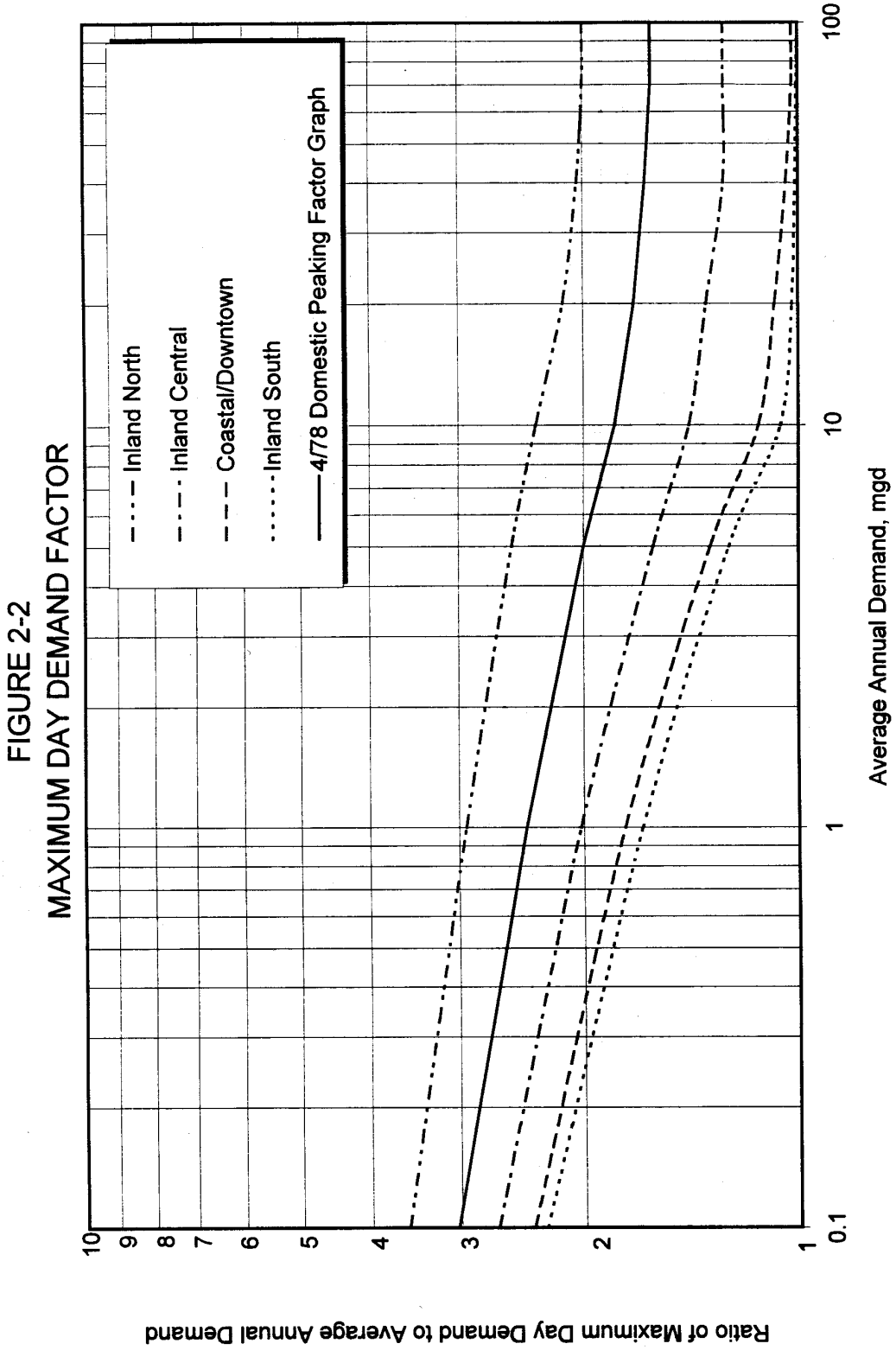


FIGURE 2-2
MAXIMUM DAY DEMAND FACTOR



APPENDIX B

SUMMARY OF DATA
PROVIDED BY
PROJECT ARCHITECT

Unit	Product Type	Construction Type	Fire Sprinklers	Largest Building SF	WFUs
1	TOWNHOMES	VB-R3	NFPA 13D	10,900	1,947
2	BACK-BACK TOWNHOMES	VB-R2	NFPA 13	18,000	2,511
5	AFFORDABLE APARTMENTS	VA-R2	NFPA 13	65,000	1,462
6	AFFORDABLE APARTMENTS	VA-R2	NFPA 13	54,000	2,405
8	END CAP TOWNHOMES	VB-R3	NFPA 13D	8,650	2,999
9/18	APARTMENT - WALKUP	VA-R2	NFPA 13R	22,820	6,278.5
10/11	APARTMENT WALKUP	VA-R2	NFPA 13R	16,290	4,182.5
16	SENIOR APARTMENT	VA-R2	NFPA 13	54,000	2,721.5
17	SENIOR APARTMENT	VA-R2	NFPA 13	58,000	2,662

APPENDIX C

793 PRESSURE ZONE
FIRE FLOW TEST RESULTS

City of San Diego
Development Services
Attention: **Hydrant Flow Request**
1222 First Ave., MS-401
San Diego, CA 92101
(619) 446-5000

Hydrant Flow Request

FORM DS-160
OCTOBER 2016

Fill out the information below completely for all sprinkler system flow requests, including NFPA 13, 13D and 13R systems. E-mail form to: DSDHydrantFlow@sandiego.gov, or mail request to the above address.

Please print or type legibly.

Company Requesting Hydrant Flow:
Dexter Wilson Engineering, Inc.

Telephone No:	Fax No:	E-mail Address:
760-438-4422	760-438-0173	fernando@dwilsoneng.com

Project Number for the Building Permits:
PTS 638083

Location of Hydrants:
Rancho Carmel Drive

Cross Street:	City:	State:	ZIP Code:
North of Royal Melbourne Square	San Diego	CA	92128

FOR CITY USE ONLY

Facility Sequence Number: (FSN): 536145

Static: 91.81 PSI Elevation: 570 FEET

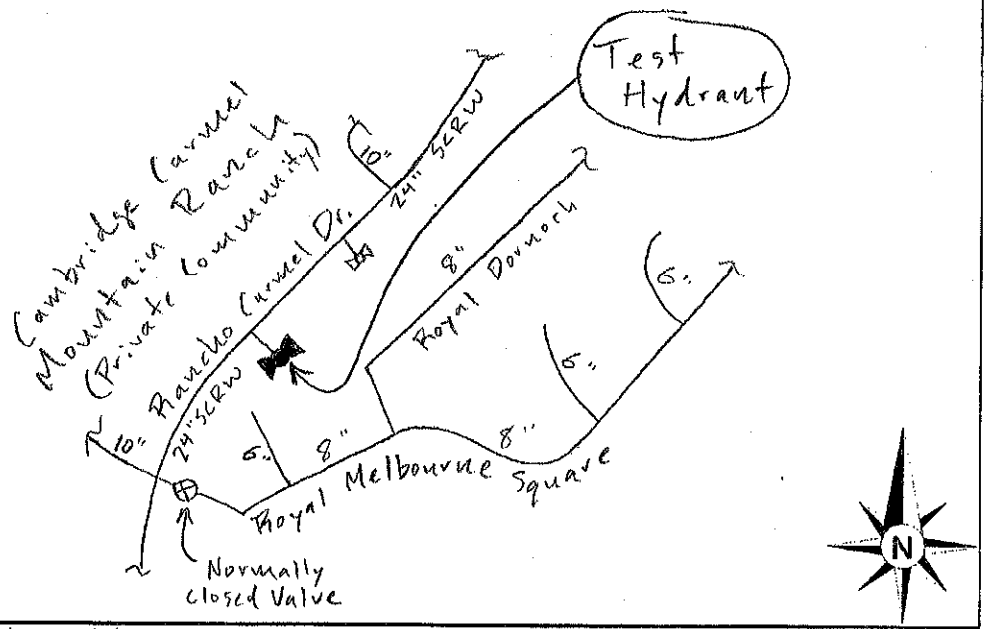
Pitot: — PSI Residual: 80.273 PSI

Date: 10/8/19 Flow: 1389.3543 GPM

Researched in database by: Adrian Silva

The information provided above is based upon a water model. It is the contractor's responsibility to confirm the available static pressure at the system point of connection. If a discrepancy is noticed at that time, notify DSDHydrantFlow@sandiego.gov as soon as possible.

Please draw an accurate map for fire hydrant data



APPENDIX D

793 PRESSURE ZONE
COMPUTER MODELING OUTPUT

NODE AND PIPE DIAGRAM REFERENCE:

Detail A on Exhibit A

CONDITIONS MODELED:

1. Normal – Average Day Demand

2. Normal – Peak Hour Demand

3. Normal – Maximum Day Demand plus 1,500 gpm Fire Flow at Node 712.

4. Pipe Break (Pipe 717) – Maximum Day Demand plus 1,500 gpm Fire Flow at Node 712.

Project: The Trails at CMR **793 Zone Analysis** **Node Data**
Date: 06/09/20
Job Number: 736-018

Scenario: All Pipes Open - Average Day Demand

Node No.	Node El. (ft)	HGL Zone (ft)	Static P (psi)	Model Run P (psi)	Delta P from Static
700	568	793	97.5	92.5	5.0
704	562	793	100.1	95.1	5.0
708	562	793	100.1	95.1	5.0
712	564	793	99.2	94.2	5.0
714	564	793	99.2	94.2	5.0
716	564	793	99.2	94.2	5.0

Scenario: All Pipes Open - Maximum Day Demand

Node No.	Node El. (ft)	HGL Zone (ft)	Static P (psi)	Model Run P (psi)	Delta P from Static
700	568	793	97.5	92.0	5.5
704	562	793	100.1	94.6	5.5
708	562	793	100.1	94.6	5.5
712	564	793	99.2	93.7	5.5
714	564	793	99.2	93.7	5.5
716	564	793	99.2	93.7	5.5

Scenario: All Pipes Open - Peak Hour Demand

Node No.	Node El. (ft)	HGL Zone (ft)	Static P (psi)	Model Run P (psi)	Delta P from Static
700	568	793	97.5	90.9	6.5
704	562	793	100.1	93.5	6.5
708	562	793	100.1	93.5	6.5
712	564	793	99.2	92.7	6.6
714	564	793	99.2	92.7	6.6
716	564	793	99.2	92.7	6.6

Scenario: All Pipes Open - Maximum Day Demand Plus 1500 gpm Fire Flow at Node 712

Node No.	Node El. (ft)	HGL Zone (ft)	Static P (psi)	Model Run P (psi)	Delta P from Static
700	568	793	97.5	73.8	23.7
704	562	793	100.1	76.4	23.7
708	562	793	100.1	76.4	23.7
712	564	793	99.2	75.3	24.0
714	564	793	99.2	75.5	23.7
716	564	793	99.2	75.5	23.7

Scenario: Pipe Break (Pipe 717) - Maximum Day Demand Plus 1500 gpm Fire Flow at Node 712

Node No.	Node El. (ft)	HGL Zone (ft)	Static P (psi)	Model Run P (psi)	Delta P from Static
700	568	793	97.5	73.8	23.7
704	562	793	100.1	76.4	23.7
708	562	793	100.1	76.2	23.9
712	564	793	99.2	74.4	24.9
714	564	793	99.2	75.6	23.7
716	564	793	99.2	75.6	23.7

Project: The Trails at CMR
Date: 06/09/20
Job Number: 736-018

793 Zone Analysis

Pipe Data

Scenario: All Pipes Open - Average Day Demand

Pipe No.	Pipe Size (inches)	Model Run Flow (gpm)	Model Run Velocity (gpm)
701	24	165.8	0.12
705	24	129.8	0.09
709	10	36.03	0.15
713	12	-36.03	0.1
717	12	34.77	0.1
721	12	34.77	0.1
725	24	93.77	0.07

Scenario: All Pipes Open - Maximum Day Demand

Pipe No.	Pipe Size (inches)	Model Run Flow (gpm)	Model Run Velocity (gpm)
701	24	307.4	0.22
705	24	271.4	0.19
709	10	102.46	0.42
713	12	-102.46	0.29
717	12	109.94	0.31
721	12	109.94	0.31
725	24	168.94	0.12

Scenario: All Pipes Open - Peak Hour Demand

Pipe No.	Pipe Size (inches)	Model Run Flow (gpm)	Model Run Velocity (gpm)
701	24	498.56	0.35
705	24	462.56	0.33
709	10	192.79	0.79
713	12	-192.79	0.55
717	12	210.77	0.6
721	12	210.77	0.6
725	24	269.77	0.19

Scenario: All Pipes Open - Maximum Day Demand Plus 1500 gpm Fire Flow at Node 712

Pipe No.	Pipe Size (inches)	Model Run Flow (gpm)	Model Run Velocity (gpm)
701	24	1807.4	1.28
705	24	1771.4	1.26
709	10	812.18	3.32
713	12	-812.18	2.3
717	12	900.22	2.55
721	12	900.22	2.55
725	24	959.22	0.68

Scenario: Pipe Break (Pipe 717) - Maximum Day Demand Plus 1500 gpm Fire Flow at Node 712

Pipe No.	Pipe Size (inches)	Model Run Flow (gpm)	Model Run Velocity (gpm)
701	24	1807.4	1.28
705	24	1771.4	1.26
709	10	1712.4	6.99
713	12	-1712.4	4.86
717-XX	12	-	-
721	12	0	0
725	24	59	0.04

U N I T S S P E C I F I E D

FLOWRATE ..... = gallons/minute
HEAD (HGL) ..... = feet
PRESSURE ..... = psig

P I P E L I N E D A T A

STATUS CODE: XX -CLOSED PIPE CV -CHECK VALVE

PIPE NAME	NODE NAMES #1	#2	LENGTH (ft)	DIAMETER (in)	ROUGHNESS COEFF.	MINOR LOSS COEFF.
701	0	700	565.60	24.00	120.0000	0.00
705	700	704	26.30	24.00	120.0000	0.00
709	704	708	24.50	10.00	120.0000	0.00
713	712	708	289.00	12.00	120.0000	0.00
717	714	712	215.10	12.00	120.0000	0.00
721	716	714	54.60	12.00	120.0000	0.00
725	704	716	477.00	24.00	120.0000	0.00

P U M P/L O S S E L E M E N T D A T A

THERE IS A DEVICE AT NODE 0 DESCRIBED BY THE FOLLOWING DATA: (ID= Source Node)

HEAD (ft)	FLOWRATE (gpm)
211.87	0.00
185.25	1389.35
115.76	2778.71

N O D E D A T A

NODE NAME	NODE TITLE	EXTERNAL DEMAND (gpm)	JUNCTION ELEVATION (ft)	EXTERNAL GRADE (ft)
700		36.00	568.00	
704		0.00	562.00	
708		0.00	562.00	
712		70.80	564.00	
714		0.00	564.00	
716		59.00	564.00	
0		----	570.00	570.00

O U T P U T O P T I O N D A T A

OUTPUT SELECTION: ALL RESULTS ARE INCLUDED IN THE TABULATED OUTPUT
MAXIMUM AND MINIMUM PRESSURES = 3
MAXIMUM AND MINIMUM VELOCITIES = 4

S Y S T E M C O N F I G U R A T I O N

NUMBER OF PIPES .....(P) = 7
NUMBER OF END NODES .....(J) = 6
NUMBER OF PRIMARY LOOPS .....(L) = 1
NUMBER OF SUPPLY NODES .....(F) = 1
NUMBER OF SUPPLY ZONES .....(Z) = 1

==========

Case: 0

RESULTS OBTAINED AFTER 8 TRIALS: ACCURACY = 0.90233E-05

The Trails at Carmel Mountain Ranch
793 Zone - Public Water System Analysis – Normal Condition
Average Day Demand

P I P E L I N E R E S U L T S

STATUS CODE: XX -CLOSED PIPE CV -CHECK VALVE

PIPE NAME	NODE NUMBERS #1	#2	FLOWRATE gpm	HEAD LOSS ft	MINOR LOSS ft	LINE VELO. ft/s	HL+ML/ 1000 ft/f	HL/ 1000 ft/f
701	0	700	165.80	0.00	0.00	0.12	0.00	0.00
705	700	704	129.80	0.00	0.00	0.09	0.00	0.00
709	704	708	36.03	0.00	0.00	0.15	0.02	0.02
713	712	708	-36.03	0.00	0.00	0.10	0.01	0.01
717	714	712	34.77	0.00	0.00	0.10	0.01	0.01
721	716	714	34.77	0.00	0.00	0.10	0.01	0.01
725	704	716	93.77	0.00	0.00	0.07	0.00	0.00

P U M P/L O S S E L E M E N T R E S U L T S

NAME	FLOWRATE gpm	INLET HEAD ft	OUTLET HEAD ft	PUMP HEAD ft
0	165.80	0.00	211.35	211.3

N O D E R E S U L T S

NODE NAME	NODE TITLE	EXTERNAL DEMAND gpm	HYDRAULIC GRADE ft	NODE ELEVATION ft	PRESSURE HEAD ft	NODE PRESSURE psi
700		36.00	781.35	568.00	213.35	92.45
704		0.00	781.35	562.00	219.35	95.05
708		0.00	781.35	562.00	219.35	95.05
712		70.80	781.35	564.00	217.35	94.18
714		0.00	781.35	564.00	217.35	94.18
716		59.00	781.35	564.00	217.35	94.18
0		----	781.35	570.00	211.35	91.58

M A X I M U M A N D M I N I M U M V A L U E S

P R E S S U R E S

JUNCTION NUMBER	MAXIMUM PRESSURES psi	JUNCTION NUMBER	MINIMUM PRESSURES psi
704	95.05	0	91.58
708	95.05	700	92.45
716	94.18	712	94.18

V E L O C I T I E S

PIPE NUMBER	MAXIMUM VELOCITY (ft/s)	PIPE NUMBER	MINIMUM VELOCITY (ft/s)
709	0.15	725	0.07
701	0.12	705	0.09
713	0.10	717	0.10
721	0.10	721	0.10

S U M M A R Y O F I N F L O W S A N D O U T F L O W S

(+) INFLOWS INTO THE SYSTEM FROM SUPPLY NODES
(-) OUTFLOWS FROM THE SYSTEM INTO SUPPLY NODES

NODE NAME	FLOWRATE gpm	NODE TITLE
0	165.80	

NET SYSTEM INFLOW = 165.80
NET SYSTEM OUTFLOW = 0.00
NET SYSTEM DEMAND = 165.80

==========

Case: 1

C H A N G E S F O R N E X T S I M U L A T I O N (Change Number = 1)

JUNCTION DEMANDS CHANGED - PLEASE SEE RESULTS TABLE

RESULTS OBTAINED AFTER 3 TRIALS: ACCURACY = 0.17445E-05

The Trails at Carmel Mountain Ranch
793 Zone - Public Water System Analysis – Normal Condition
Maximum Day Demand

P I P E L I N E R E S U L T S

STATUS CODE: XX -CLOSED PIPE CV -CHECK VALVE

PIPE NAME	NODE NUMBERS #1	#2	FLOWRATE gpm	HEAD LOSS ft	MINOR LOSS ft	LINE VELO. ft/s	HL+ML/ 1000 ft/f	HL/ 1000 ft/f
701	0	700	307.40	0.01	0.00	0.22	0.01	0.01
705	700	704	271.40	0.00	0.00	0.19	0.01	0.01
709	704	708	102.46	0.00	0.00	0.42	0.11	0.11
713	712	708	-102.46	0.01	0.00	0.29	0.04	0.04
717	714	712	109.94	0.01	0.00	0.31	0.05	0.05
721	716	714	109.94	0.00	0.00	0.31	0.05	0.05
725	704	716	168.94	0.00	0.00	0.12	0.00	0.00

P U M P/L O S S E L E M E N T R E S U L T S

NAME	FLOWRATE gpm	INLET HEAD ft	OUTLET HEAD ft	PUMP HEAD ft
0	307.40	0.00	210.24	210.2

N O D E R E S U L T S

NODE NAME	NODE TITLE	EXTERNAL DEMAND gpm	HYDRAULIC GRADE ft	NODE ELEVATION ft	PRESSURE HEAD ft	NODE PRESSURE psi
700		36.00	780.23	568.00	212.23	91.97
704		0.00	780.23	562.00	218.23	94.57
708		0.00	780.23	562.00	218.23	94.57
712		212.40(3.00)	780.22	564.00	216.22	93.69
714		0.00	780.23	564.00	216.23	93.70
716		59.00	780.23	564.00	216.23	93.70
0		----	780.24	570.00	210.24	91.10

M A X I M U M A N D M I N I M U M V A L U E S

P R E S S U R E S

JUNCTION NUMBER	MAXIMUM PRESSURES psi	JUNCTION NUMBER	MINIMUM PRESSURES psi
704	94.57	0	91.10
708	94.57	700	91.97
716	93.70	712	93.69

V E L O C I T I E S

PIPE NUMBER	MAXIMUM VELOCITY (ft/s)	PIPE NUMBER	MINIMUM VELOCITY (ft/s)
709	0.42	725	0.12
717	0.31	705	0.19
721	0.31	701	0.22
713	0.29	713	0.29

S U M M A R Y O F I N F L O W S A N D O U T F L O W S

(+) INFLOWS INTO THE SYSTEM FROM SUPPLY NODES
(-) OUTFLOWS FROM THE SYSTEM INTO SUPPLY NODES

NODE NAME	FLOWRATE gpm	NODE TITLE
0	307.40	

NET SYSTEM INFLOW = 307.40
NET SYSTEM OUTFLOW = 0.00
NET SYSTEM DEMAND = 307.40

==========
Case: 2

C H A N G E S F O R N E X T S I M U L A T I O N (Change Number = 2)

JUNCTION DEMANDS CHANGED - PLEASE SEE RESULTS TABLE

RESULTS OBTAINED AFTER 3 TRIALS: ACCURACY = 0.00000E+00

The Trails at Carmel Mountain Ranch
793 Zone - Public Water System Analysis – Normal Condition
Peak Hour Demand

P I P E L I N E R E S U L T S

STATUS CODE: XX -CLOSED PIPE CV -CHECK VALVE

PIPE NAME	NODE NUMBERS #1	#2	FLOWRATE gpm	HEAD LOSS ft	MINOR LOSS ft	LINE VELO. ft/s	HL+ML/ 1000 ft/f	HL/ 1000 ft/f
701	0	700	498.56	0.02	0.00	0.35	0.03	0.03
705	700	704	462.56	0.00	0.00	0.33	0.02	0.02
709	704	708	192.79	0.01	0.00	0.79	0.34	0.34
713	712	708	-192.79	0.04	0.00	0.55	0.14	0.14
717	714	712	210.77	0.04	0.00	0.60	0.16	0.16
721	716	714	210.77	0.01	0.00	0.60	0.16	0.16
725	704	716	269.77	0.00	0.00	0.19	0.01	0.01

P U M P/L O S S E L E M E N T R E S U L T S

NAME	FLOWRATE gpm	INLET HEAD ft	OUTLET HEAD ft	PUMP HEAD ft
0	498.56	0.00	207.88	207.9

N O D E R E S U L T S

NODE NAME	NODE TITLE	EXTERNAL DEMAND gpm	HYDRAULIC GRADE ft	NODE ELEVATION ft	PRESSURE HEAD ft	NODE PRESSURE psi
700		36.00	777.86	568.00	209.86	90.94
704		0.00	777.86	562.00	215.86	93.54
708		0.00	777.85	562.00	215.85	93.54
712		403.56(5.70)	777.81	564.00	213.81	92.65
714		0.00	777.85	564.00	213.85	92.67
716		59.00	777.86	564.00	213.86	92.67
0		----	777.88	570.00	207.88	90.08

M A X I M U M A N D M I N I M U M V A L U E S

P R E S S U R E S

JUNCTION NUMBER	MAXIMUM PRESSURES psi	JUNCTION NUMBER	MINIMUM PRESSURES psi
704	93.54	0	90.08
708	93.54	700	90.94
716	92.67	712	92.65

V E L O C I T I E S

PIPE NUMBER	MAXIMUM VELOCITY (ft/s)	PIPE NUMBER	MINIMUM VELOCITY (ft/s)
709	0.79	725	0.19
717	0.60	705	0.33
721	0.60	701	0.35
713	0.55	713	0.55

S U M M A R Y O F I N F L O W S A N D O U T F L O W S

(+) INFLOWS INTO THE SYSTEM FROM SUPPLY NODES
(-) OUTFLOWS FROM THE SYSTEM INTO SUPPLY NODES

NODE NAME	FLOWRATE gpm	NODE TITLE
0	498.56	

NET SYSTEM INFLOW = 498.56
NET SYSTEM OUTFLOW = 0.00
NET SYSTEM DEMAND = 498.56

==========

Case: 3

C H A N G E S F O R N E X T S I M U L A T I O N (Change Number = 3)

JUNCTION DEMANDS CHANGED - PLEASE SEE RESULTS TABLE

RESULTS OBTAINED AFTER 3 TRIALS: ACCURACY = 0.00000E+00

The Trails at Carmel Mountain Ranch
793 Zone - Public Water System Analysis – Normal Condition
Maximum Day Demand plus 1500 GPM Fire Flow at Node 712

P I P E L I N E R E S U L T S

STATUS CODE: XX -CLOSED PIPE CV -CHECK VALVE

PIPE NAME	NODE NUMBERS #1	#2	FLOWRATE gpm	HEAD LOSS ft	MINOR LOSS ft	LINE VELO. ft/s	HL+ML/ 1000 ft/f	HL/ 1000 ft/f
701	0	700	1807.40	0.17	0.00	1.28	0.30	0.30
705	700	704	1771.40	0.01	0.00	1.26	0.29	0.29
709	704	708	812.18	0.12	0.00	3.32	4.86	4.86
713	712	708	-812.18	0.58	0.00	2.30	2.00	2.00
717	714	712	900.22	0.52	0.00	2.55	2.42	2.42
721	716	714	900.22	0.13	0.00	2.55	2.42	2.42
725	704	716	959.22	0.04	0.00	0.68	0.09	0.09

P U M P/L O S S E L E M E N T R E S U L T S

NAME	FLOWRATE gpm	INLET HEAD ft	OUTLET HEAD ft	PUMP HEAD ft
0	1807.40	0.00	168.53	168.5

N O D E R E S U L T S

NODE NAME	NODE TITLE	EXTERNAL DEMAND gpm	HYDRAULIC GRADE ft	NODE ELEVATION ft	PRESSURE HEAD ft	NODE PRESSURE psi
700		36.00	738.36	568.00	170.36	73.82
704		0.00	738.36	562.00	176.36	76.42
708		0.00	738.24	562.00	176.24	76.37
712		1712.40(**)	737.66	564.00	173.66	75.25
714		0.00	738.18	564.00	174.18	75.48
716		59.00	738.31	564.00	174.31	75.53
0		----	738.53	570.00	168.53	73.03

M A X I M U M A N D M I N I M U M V A L U E S

P R E S S U R E S

JUNCTION NUMBER	MAXIMUM PRESSURES psi	JUNCTION NUMBER	MINIMUM PRESSURES psi
704	76.42	0	73.03
708	76.37	700	73.82
716	75.53	712	75.25

V E L O C I T I E S

PIPE NUMBER	MAXIMUM VELOCITY (ft/s)	PIPE NUMBER	MINIMUM VELOCITY (ft/s)
709	3.32	725	0.68
717	2.55	705	1.26
721	2.55	701	1.28
713	2.30	713	2.30

S U M M A R Y O F I N F L O W S A N D O U T F L O W S

(+) INFLOWS INTO THE SYSTEM FROM SUPPLY NODES
(-) OUTFLOWS FROM THE SYSTEM INTO SUPPLY NODES

NODE NAME	FLOWRATE gpm	NODE TITLE
0	1807.40	

NET SYSTEM INFLOW = 1807.40
NET SYSTEM OUTFLOW = 0.00
NET SYSTEM DEMAND = 1807.40

==========

Case: 4

C H A N G E S F O R N E X T S I M U L A T I O N (Change Number = 4)

JUNCTION DEMANDS CHANGED - PLEASE SEE RESULTS TABLE

Pipe 717 is CLOSED

RESULTS OBTAINED AFTER 3 TRIALS: ACCURACY = 0.00000E+00

The Trails at Carmel Mountain Ranch
793 Zone - Public Water System Analysis – Pipe Break Condition
Maximum Day Demand plus 1500 GPM Fire Flow at Node 712 (Pipe 717 Closed)

P I P E L I N E R E S U L T S

STATUS CODE: XX -CLOSED PIPE CV -CHECK VALVE

PIPE NAME	NODE NUMBERS #1	#2	FLOWRATE gpm	HEAD LOSS ft	MINOR LOSS ft	LINE VELO. ft/s	HL+ML/ 1000 ft/f	HL/ 1000 ft/f
701	0	700	1807.40	0.17	0.00	1.28	0.30	0.30
705	700	704	1771.40	0.01	0.00	1.26	0.29	0.29
709	704	708	1712.40	0.47	0.00	6.99	19.35	19.35
713	712	708	-1712.40	2.30	0.00	4.86	7.96	7.96
717-XX	714	712						
721	716	714	0.00	0.00	0.00	0.00	0.00	0.00
725	704	716	59.00	0.00	0.00	0.04	0.00	0.00

P U M P/L O S S E L E M E N T R E S U L T S

NAME	FLOWRATE gpm	INLET HEAD ft	OUTLET HEAD ft	PUMP HEAD ft
0	1807.40	0.00	168.53	168.5

N O D E R E S U L T S

NODE NAME	NODE TITLE	EXTERNAL DEMAND gpm	HYDRAULIC GRADE ft	NODE ELEVATION ft	PRESSURE HEAD ft	NODE PRESSURE psi
700		36.00	738.36	568.00	170.36	73.82
704		0.00	738.36	562.00	176.36	76.42
708		0.00	737.88	562.00	175.88	76.22
712		1712.40(**)	735.58	564.00	171.58	74.35
714		0.00	738.36	564.00	174.36	75.55
716		59.00	738.36	564.00	174.36	75.55
0		----	738.53	570.00	168.53	73.03

M A X I M U M A N D M I N I M U M V A L U E S

P R E S S U R E S

JUNCTION NUMBER	MAXIMUM PRESSURES psi	JUNCTION NUMBER	MINIMUM PRESSURES psi
704	76.42	0	73.03
708	76.22	700	73.82
714	75.55	712	74.35

V E L O C I T I E S

PIPE NUMBER	MAXIMUM VELOCITY (ft/s)	PIPE NUMBER	MINIMUM VELOCITY (ft/s)
709	6.99	725	0.04
713	4.86	705	1.26
701	1.28	701	1.28

S U M M A R Y O F I N F L O W S A N D O U T F L O W S

(+) INFLOWS INTO THE SYSTEM FROM SUPPLY NODES
(-) OUTFLOWS FROM THE SYSTEM INTO SUPPLY NODES

NODE NAME	FLOWRATE gpm	NODE TITLE
0	1807.40	

NET SYSTEM INFLOW = 1807.40
NET SYSTEM OUTFLOW = 0.00
NET SYSTEM DEMAND = 1807.40

APPENDIX E

920 PRESSURE ZONE
FIRE FLOW TEST RESULTS

City of San Diego
Development Services
Attention: **Hydrant Flow Request**
1222 First Ave., MS-401
San Diego, CA 92101
(619) 446-5000

Hydrant Flow Request

FORM DS-160
OCTOBER 2016

Fill out the information below completely for all sprinkler system flow requests, including NFPA 13, 13D and 13R systems. E-mail form to: DSDHydrantFlow@sandiego.gov, or mail request to the above address.

Please print or type legibly.

Company Requesting Hydrant Flow:
Dexter Wilson Engineering, Inc.

Telephone No:	Fax No:	E-mail Address:
760-438-4422	760-438-0173	fernando@dwilsoneng.com

Project Number for the Building Permits:
PTS 638083

Location of Hydrants:
Breezeway Place

Cross Street:	City:	State:	ZIP Code:
Cedarhurst Lane	San Diego	CA	92128

FOR CITY USE ONLY

Facility Sequence Number: (FSN): 536379

Static: 52.65 PSI

Elevation: 800 FEET

Pitot: n/a PSI

Residual: 43.94 PSI

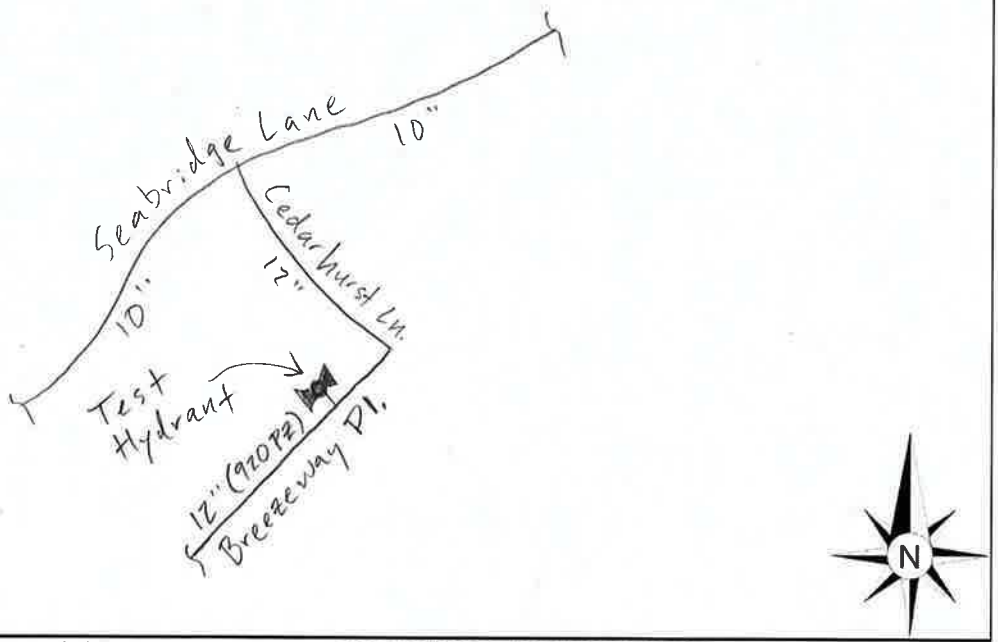
Date: 9/26/19

Flow: 1052.12 GPM

Researched in database by: Miguel Tamayo

The information provided above is based upon a water model. It is the contractor's responsibility to confirm the available static pressure at the system point of connection. If a discrepancy is noticed at that time, notify DSDHydrantFlow@sandiego.gov as soon as possible.

Please draw an accurate map for fire hydrant data



City of San Diego
Development Services
Attention: Hydrant Flow Request
1222 First Ave., MS-401
San Diego, CA 92101
(619) 446-5000

Hydrant Flow Request

FORM DS-160
October 2016

Fill out the information below completely for all sprinkler system flow requests, including NFPA 13, 13D and 13R systems. E-mail form to: DSDHydrantFlow@sandiego.gov, or mail request to the above address.

Please print or type legibly.

Company Requesting Hydrant Flow:
Dexter Wilson Engineering, Inc.

Telephone No:	Fax No:	E-mail Address:
760-438-4422	760-438-0173	fernando@dwilsoneng.com

Project Number for the Building Permits:

Location of Hydrants:
Carmel Ridge Rd

Cross Street:	City:	State:	ZIP Code:
Creswick Ct	San Diego	CA	92128

FOR CITY USE ONLY

Facility Sequence Number: (FSN): 539539

Static: 118.49 PSI

Elevation: 648 FEET

Pitot: — PSI

Residual: 105.0213 PSI

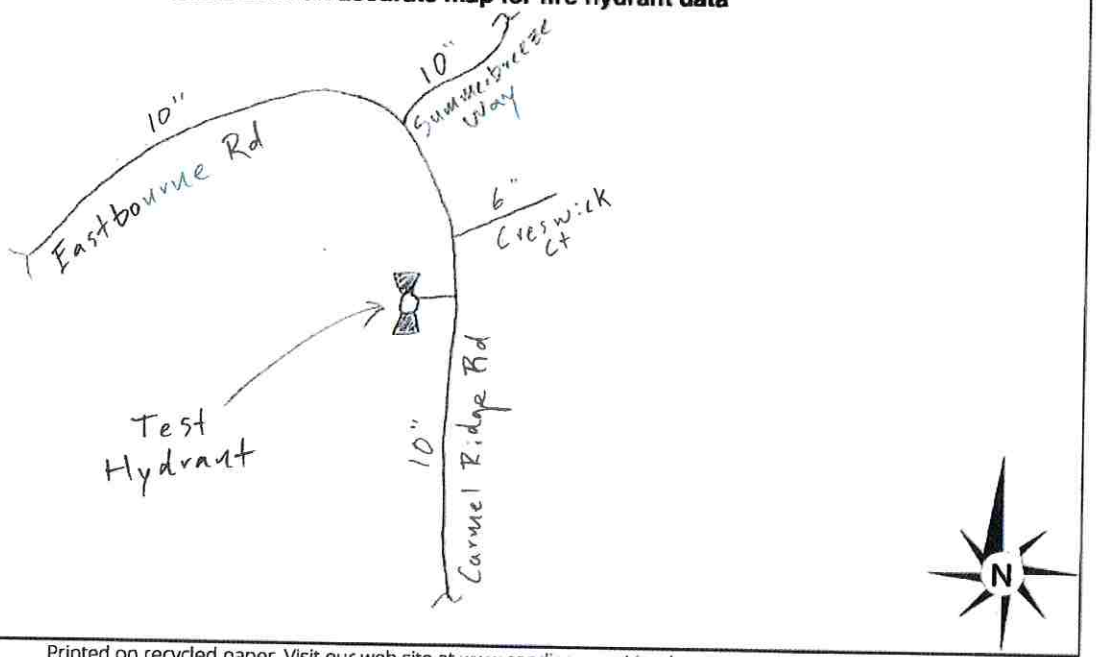
Date: 8/27/19

Flow: 1578.3701 GPM

Researched in database by: Adrian Silva

The information provided above is based upon a water model. It is the contractor's responsibility to confirm the available static pressure at the system point of connection. If a discrepancy is noticed at that time, notify DSDHydrantFlow@sandiego.gov as soon as possible.

Please draw an accurate map for fire hydrant data



APPENDIX F

920 PRESSURE ZONE
COMPUTER MODELING OUTPUT

NODE AND PIPE DIAGRAM REFERENCE:

Exhibit A

CONDITIONS MODELED:

1. Normal – Average Day Demand
2. Normal – Maximum Day Demand
3. Normal – Peak Hour Demand
4. Normal – Maximum Day Demand plus 1,500 gpm Fire Flow at Node 56.
5. Normal – Maximum Day Demand plus 1,500 gpm Fire Flow at Node 64.
6. Normal – Maximum Day Demand plus 1,500 gpm Fire Flow at Node 96.
7. Normal – Maximum Day Demand plus 1,500 gpm Fire Flow at Node 170.
8. Normal – Maximum Day Demand plus 1,500 gpm Fire Flow at Node 188.
9. Normal – Maximum Day Demand plus 1,500 gpm Fire Flow at Node 194.
10. Normal – Maximum Day Demand plus 1,500 gpm Fire Flow at Node 254.

APPENDIX F (CONTINUED)

920 PRESSURE ZONE
COMPUTER MODELING OUTPUT

11. Pipe Break (Pipe 1) – Average Day Demand

12. Pipe Break (Pipe 1) – Maximum Day Demand

13. Pipe Break (Pipe 1) – Peak Hour Demand

14. Pipe Break (Pipe 1) – Maximum Day Demand plus 1,500 gpm Fire Flow at Node 56.

15. Pipe Break (Pipe 1) – Maximum Day Demand plus 1,500 gpm Fire Flow at Node 64.

16. Pipe Break (Pipe 1) – Maximum Day Demand plus 1,500 gpm Fire Flow at Node 96.

17. Pipe Break (Pipe 1) – Maximum Day Demand plus 1,500 gpm Fire Flow at Node 170.

18. Pipe Break (Pipe 1) – Maximum Day Demand plus 1,500 gpm Fire Flow at Node 188.

19. Pipe Break (Pipe 1) – Maximum Day Demand plus 1,500 gpm Fire Flow at Node 192.

20. Pipe Break (Pipe 1) – Maximum Day Demand plus 1,500 gpm Fire Flow at Node 254.

Project: The Trails at CMR **920 Zone Analysis** **Node Data - Normal Cond.**

Date: 06/09/20

Job Number: 736-018

Scenario: All Pipes Open - Average Day Demand

Node No.	Node El. (ft)	HGL Zone (ft)	Static P (psi)	Model Run P (psi)	Delta P from Static
4	798	920	52.9	46.0	6.8
8	760	920	69.3	62.3	7.0
12	740	920	78.0	70.9	7.1
16	730	920	82.3	74.4	7.9
20	724	920	84.9	76.3	8.7
24	700	920	95.3	86.5	8.9
28	705	920	93.2	84.3	8.9
32	657	920	114.0	105.4	8.6
36	650	920	117.0	108.8	8.2
40	665	920	110.5	102.2	8.3
44	640	920	121.3	113.0	8.3
48	612	920	133.4	125.1	8.3
52	645	920	119.2	110.8	8.4
56	637	920	122.6	114.3	8.3
60	630	920	125.6	117.3	8.4
64	625	920	127.8	119.4	8.4
68	606	920	136.0	127.5	8.5
72	590	920	143.0	134.4	8.6
76	640	920	121.3	112.4	9.0
80	665	920	110.5	101.5	9.0
84	684	920	102.3	93.3	9.0
88	699	920	95.8	86.8	9.0
92	712	920	90.1	81.1	9.0
96	715	920	88.8	79.9	9.0
100	718	920	87.5	78.6	8.9
104	698	920	96.2	87.3	8.9
108	725	920	84.5	75.5	9.0
112	725	920	84.5	75.5	9.0
116	743	920	76.7	67.7	9.0
120	779	920	61.1	52.0	9.1
124	800	920	52.0	42.9	9.1
128	800	920	52.0	42.9	9.1
132	784	920	58.9	49.9	9.1
136	745	920	75.8	66.7	9.2
140	721	920	86.2	77.1	9.2
144	695	920	97.5	88.3	9.2
148	641	920	120.9	111.8	9.1
152	675	920	106.2	97.0	9.2
156	705	920	93.2	83.9	9.3
160	700	920	95.3	86.0	9.3
164	683	920	102.7	93.4	9.3
168	675	920	106.2	96.8	9.3
170	689	920	100.1	90.8	9.3
172	668	920	109.2	99.9	9.3
176	652	920	116.1	106.8	9.3
180	679	920	104.4	95.1	9.3
184	766	920	66.7	57.5	9.2
188	771	920	64.6	55.4	9.2
192	789	920	56.8	47.6	9.1
194	783	920	59.4	50.3	9.1
196	764	920	67.6	58.5	9.1
200	740	920	78.0	69.0	9.0
204	723	920	85.4	76.3	9.1
208	694	920	97.9	88.8	9.1
212	679	920	104.4	95.2	9.2
216	655	920	114.8	105.5	9.3
220	630	920	125.6	116.3	9.3
224	620	920	130.0	120.7	9.3
228	620	920	130.0	120.7	9.3
232	643	920	120.0	110.7	9.3
236	653	920	115.7	106.4	9.3
240	651	920	116.6	107.2	9.3
244	634	920	123.9	114.6	9.3
248	624	920	128.2	118.9	9.3
252	648	920	117.9	108.5	9.3

Project: The Trails at CMR **920 Zone Analysis** **Node Data - Normal Cond.**

Date: 06/09/20

Job Number: 736-018

254	650	920	117.0	107.7	9.3
256	644	920	119.6	110.3	9.3
260	650	920	117.0	107.7	9.3
264	680	920	104.0	94.7	9.3
268	694	920	97.9	88.6	9.3
272	696	920	97.1	87.8	9.3
276	726	920	84.1	74.8	9.3
280	750	920	73.7	64.4	9.3
284	731	920	81.9	72.6	9.3
288	729	920	82.8	73.5	9.3
292	739	920	78.4	69.2	9.3
300	640	920	121.3	112.0	9.3
304	627	920	126.9	117.7	9.3
308	627	920	126.9	117.7	9.3
312	583	920	146.0	136.7	9.3
316	570	920	151.6	142.3	9.3
320	608	920	135.2	125.9	9.3

Project: The Trails at CMR **920 Zone Analysis** **Node Data - Normal Cond.**

Date: 06/09/20

Job Number: 736-018

Scenario: All Pipes Open - Maximum Day Demand

Node No.	Node El. (ft)	HGL Zone (ft)	Static P (psi)	Model Run P (psi)	Delta P from Static
4	798	920	52.9	45.9	7.0
8	760	920	69.3	62.1	7.2
12	740	920	78.0	70.7	7.3
16	730	920	82.3	74.0	8.3
20	724	920	84.9	75.7	9.3
24	700	920	95.3	85.8	9.5
28	705	920	93.2	83.6	9.5
32	657	920	114.0	104.8	9.1
36	650	920	117.0	108.4	8.6
40	665	920	110.5	101.7	8.8
44	640	920	121.3	112.5	8.8
48	612	920	133.4	124.6	8.8
52	645	920	119.2	110.3	8.9
56	637	920	122.6	113.8	8.8
60	630	920	125.6	116.8	8.9
64	625	920	127.8	118.9	8.9
68	606	920	136.0	127.0	9.0
72	590	920	143.0	133.9	9.1
76	640	920	121.3	111.8	9.5
80	665	920	110.5	101.0	9.5
84	684	920	102.3	92.8	9.5
88	699	920	95.8	86.2	9.5
92	712	920	90.1	80.6	9.5
96	715	920	88.8	79.3	9.5
100	718	920	87.5	78.0	9.5
104	698	920	96.2	86.7	9.4
108	725	920	84.5	74.9	9.6
112	725	920	84.5	74.8	9.7
116	743	920	76.7	67.1	9.6
120	779	920	61.1	51.5	9.6
124	800	920	52.0	42.4	9.6
128	800	920	52.0	42.4	9.6
132	784	920	58.9	49.3	9.6
136	745	920	75.8	66.2	9.6
140	721	920	86.2	76.6	9.6
144	695	920	97.5	87.9	9.6
148	641	920	120.9	111.3	9.6
152	675	920	106.2	96.5	9.6
156	705	920	93.2	83.5	9.7
160	700	920	95.3	85.6	9.7
164	683	920	102.7	92.8	9.8
168	675	920	106.2	96.3	9.9
170	689	920	100.1	90.1	10.0
172	668	920	109.2	99.2	10.0
176	652	920	116.1	106.1	10.0
180	679	920	104.4	94.4	10.0
184	766	920	66.7	56.8	10.0
188	771	920	64.6	54.6	10.0
192	789	920	56.8	46.8	9.9
194	783	920	59.4	49.5	9.9
196	764	920	67.6	57.8	9.8
200	740	920	78.0	68.3	9.7
204	723	920	85.4	75.6	9.7
208	694	920	97.9	88.1	9.8
212	679	920	104.4	94.5	9.9
216	655	920	114.8	104.9	10.0
220	630	920	125.6	115.7	10.0
224	620	920	130.0	120.0	10.0
228	620	920	130.0	120.0	10.0
232	643	920	120.0	110.0	10.0
236	653	920	115.7	105.7	10.0
240	651	920	116.6	106.6	10.0
244	634	920	123.9	113.9	10.0
248	624	920	128.2	118.3	10.0
252	648	920	117.9	108.0	9.9

Project: The Trails at CMR **920 Zone Analysis** **Node Data - Normal Cond.**

Date: 06/09/20

Job Number: 736-018

254	650	920	117.0	107.1	9.8
256	644	920	119.6	109.7	9.9
260	650	920	117.0	107.1	9.9
264	680	920	104.0	94.3	9.7
268	694	920	97.9	88.3	9.6
272	696	920	97.1	87.4	9.6
276	726	920	84.1	74.4	9.6
280	750	920	73.7	64.2	9.4
284	731	920	81.9	72.5	9.4
288	729	920	82.8	73.3	9.5
292	739	920	78.4	69.1	9.4
300	640	920	121.3	111.4	9.9
304	627	920	126.9	117.0	9.9
308	627	920	126.9	117.0	9.9
312	583	920	146.0	136.1	10.0
316	570	920	151.6	141.7	10.0
320	608	920	135.2	125.2	10.0

Project: The Trails at CMR **920 Zone Analysis** **Node Data - Normal Cond.**

Date: 06/09/20

Job Number: 736-018

Scenario: All Pipes Open - Peak Hour Demand

Node No.	Node El. (ft)	HGL Zone (ft)	Static P (psi)	Model Run P (psi)	Delta P from Static
4	798	920	52.9	45.7	7.2
8	760	920	69.3	61.8	7.5
12	740	920	78.0	70.3	7.7
16	730	920	82.3	73.3	9.1
20	724	920	84.9	74.5	10.4
24	700	920	95.3	84.6	10.7
28	705	920	93.2	82.4	10.8
32	657	920	114.0	103.8	10.2
36	650	920	117.0	107.5	9.5
40	665	920	110.5	100.8	9.7
44	640	920	121.3	111.6	9.7
48	612	920	133.4	123.7	9.7
52	645	920	119.2	109.4	9.8
56	637	920	122.6	112.9	9.7
60	630	920	125.6	115.8	9.8
64	625	920	127.8	117.9	9.9
68	606	920	136.0	126.1	10.0
72	590	920	143.0	132.9	10.1
76	640	920	121.3	110.9	10.5
80	665	920	110.5	100.0	10.5
84	684	920	102.3	91.7	10.5
88	699	920	95.8	85.2	10.5
92	712	920	90.1	79.6	10.5
96	715	920	88.8	78.3	10.5
100	718	920	87.5	77.0	10.5
104	698	920	96.2	85.7	10.5
108	725	920	84.5	73.7	10.7
112	725	920	84.5	73.5	11.0
116	743	920	76.7	66.0	10.6
120	779	920	61.1	50.5	10.6
124	800	920	52.0	41.4	10.6
128	800	920	52.0	41.4	10.6
132	784	920	58.9	48.3	10.6
136	745	920	75.8	65.2	10.6
140	721	920	86.2	75.6	10.6
144	695	920	97.5	86.9	10.6
148	641	920	120.9	110.4	10.5
152	675	920	106.2	95.6	10.6
156	705	920	93.2	82.5	10.6
160	700	920	95.3	84.7	10.6
164	683	920	102.7	91.7	11.0
168	675	920	106.2	95.0	11.1
170	689	920	100.1	88.6	11.5
172	668	920	109.2	97.8	11.4
176	652	920	116.1	104.7	11.4
180	679	920	104.4	92.9	11.5
184	766	920	66.7	55.2	11.5
188	771	920	64.6	53.0	11.5
192	789	920	56.8	45.3	11.5
194	783	920	59.4	47.9	11.4
196	764	920	67.6	56.3	11.3
200	740	920	78.0	66.9	11.1
204	723	920	85.4	74.3	11.1
208	694	920	97.9	86.8	11.1
212	679	920	104.4	93.1	11.3
216	655	920	114.8	103.4	11.4
220	630	920	125.6	114.3	11.4
224	620	920	130.0	118.6	11.4
228	620	920	130.0	118.6	11.4
232	643	920	120.0	108.6	11.4
236	653	920	115.7	104.3	11.4
240	651	920	116.6	105.1	11.4
244	634	920	123.9	112.5	11.4
248	624	920	128.2	116.9	11.4
252	648	920	117.9	106.9	11.0

Project: The Trails at CMR **920 Zone Analysis** **Node Data - Normal Cond.**

Date: 06/09/20

Job Number: 736-018

254	650	920	117.0	106.1	10.9
256	644	920	119.6	108.7	10.9
260	650	920	117.0	105.9	11.1
264	680	920	104.0	93.4	10.6
268	694	920	97.9	87.6	10.3
272	696	920	97.1	86.7	10.4
276	726	920	84.1	73.8	10.3
280	750	920	73.7	64.1	9.5
284	731	920	81.9	72.3	9.6
288	729	920	82.8	72.9	9.8
292	739	920	78.4	69.0	9.5
300	640	920	121.3	110.0	11.3
304	627	920	126.9	115.6	11.3
308	627	920	126.9	115.6	11.4
312	583	920	146.0	134.6	11.4
316	570	920	151.6	140.3	11.4
320	608	920	135.2	123.8	11.4

Project: The Trails at CMR **920 Zone Analysis** **Node Data - Normal Cond.**

Date: 06/09/20

Job Number: 736-018

Scenario: All Pipes Open - Maximum Day Demand Plus 1500 gpm Fire Flow at Node 56

Node No.	Node El. (ft)	HGL Zone (ft)	Static P (psi)	Model Run P (psi)	Delta P from Static
4	798	920	52.9	45.5	7.4
8	760	920	69.3	61.5	7.8
12	740	920	78.0	70.0	8.0
16	730	920	82.3	73.1	9.2
20	724	920	84.9	74.5	10.4
24	700	920	95.3	84.6	10.7
28	705	920	93.2	82.4	10.8
32	657	920	114.0	103.4	10.6
36	650	920	117.0	106.7	10.3
40	665	920	110.5	100.0	10.5
44	640	920	121.3	110.8	10.5
48	612	920	133.4	122.9	10.5
52	645	920	119.2	108.6	10.6
56	637	920	122.6	112.0	10.6
60	630	920	125.6	115.0	10.6
64	625	920	127.8	117.2	10.6
68	606	920	136.0	125.4	10.7
72	590	920	143.0	132.3	10.7
76	640	920	121.3	110.5	10.8
80	665	920	110.5	99.7	10.8
84	684	920	102.3	91.4	10.8
88	699	920	95.8	84.9	10.8
92	712	920	90.1	79.3	10.8
96	715	920	88.8	78.0	10.8
100	718	920	87.5	76.7	10.8
104	698	920	96.2	85.4	10.8
108	725	920	84.5	73.6	10.9
112	725	920	84.5	73.6	10.9
116	743	920	76.7	65.8	10.8
120	779	920	61.1	50.3	10.8
124	800	920	52.0	41.2	10.8
128	800	920	52.0	41.2	10.8
132	784	920	58.9	48.1	10.8
136	745	920	75.8	65.0	10.8
140	721	920	86.2	75.4	10.8
144	695	920	97.5	86.7	10.8
148	641	920	120.9	110.1	10.8
152	675	920	106.2	95.3	10.8
156	705	920	93.2	82.3	10.8
160	700	920	95.3	84.5	10.8
164	683	920	102.7	91.7	10.9
168	675	920	106.2	95.2	11.0
170	689	920	100.1	89.0	11.1
172	668	920	109.2	98.1	11.1
176	652	920	116.1	105.0	11.1
180	679	920	104.4	93.3	11.1
184	766	920	66.7	55.6	11.1
188	771	920	64.6	53.4	11.1
192	789	920	56.8	45.7	11.1
194	783	920	59.4	48.3	11.1
196	764	920	67.6	56.6	11.0
200	740	920	78.0	67.0	11.0
204	723	920	85.4	74.4	11.0
208	694	920	97.9	86.9	11.0
212	679	920	104.4	93.4	11.1
216	655	920	114.8	103.7	11.1
220	630	920	125.6	114.6	11.1
224	620	920	130.0	118.9	11.1
228	620	920	130.0	118.9	11.1
232	643	920	120.0	108.9	11.1
236	653	920	115.7	104.6	11.1
240	651	920	116.6	105.4	11.1
244	634	920	123.9	112.8	11.1
248	624	920	128.2	117.2	11.1
252	648	920	117.9	107.0	10.8

Project: The Trails at CMR **920 Zone Analysis** **Node Data - Normal Cond.**

Date: 06/09/20

Job Number: 736-018

254	650	920	117.0	106.2	10.8
256	644	920	119.6	108.8	10.8
260	650	920	117.0	106.1	10.9
264	680	920	104.0	93.5	10.5
268	694	920	97.9	87.6	10.3
272	696	920	97.1	86.6	10.5
276	726	920	84.1	73.6	10.4
280	750	920	73.7	64.1	9.6
284	731	920	81.9	72.3	9.6
288	729	920	82.8	72.9	9.9
292	739	920	78.4	68.9	9.5
300	640	920	121.3	110.2	11.1
304	627	920	126.9	115.9	11.1
308	627	920	126.9	115.9	11.1
312	583	920	146.0	134.9	11.1
316	570	920	151.6	140.6	11.1
320	608	920	135.2	124.1	11.1

Project: The Trails at CMR **920 Zone Analysis** **Node Data - Normal Cond.**

Date: 06/09/20

Job Number: 736-018

Scenario: All Pipes Open - Maximum Day Demand Plus 1500 gpm Fire Flow at Node 64

Node No.	Node El. (ft)	HGL Zone (ft)	Static P (psi)	Model Run P (psi)	Delta P from Static
4	798	920	52.9	45.5	7.4
8	760	920	69.3	61.6	7.8
12	740	920	78.0	70.1	7.9
16	730	920	82.3	73.1	9.2
20	724	920	84.9	74.5	10.5
24	700	920	95.3	84.5	10.8
28	705	920	93.2	82.3	10.8
32	657	920	114.0	103.4	10.5
36	650	920	117.0	106.8	10.2
40	665	920	110.5	100.1	10.4
44	640	920	121.3	110.8	10.5
48	612	920	133.4	122.9	10.5
52	645	920	119.2	108.6	10.6
56	637	920	122.6	112.2	10.4
60	630	920	125.6	115.0	10.6
64	625	920	127.8	117.0	10.8
68	606	920	136.0	125.2	10.8
72	590	920	143.0	132.1	10.8
76	640	920	121.3	110.4	10.9
80	665	920	110.5	99.6	10.9
84	684	920	102.3	91.3	10.9
88	699	920	95.8	84.8	10.9
92	712	920	90.1	79.2	10.9
96	715	920	88.8	77.9	10.9
100	718	920	87.5	76.6	10.9
104	698	920	96.2	85.3	10.9
108	725	920	84.5	73.6	10.9
112	725	920	84.5	73.5	11.0
116	743	920	76.7	65.8	10.9
120	779	920	61.1	50.2	10.9
124	800	920	52.0	41.1	10.9
128	800	920	52.0	41.1	10.9
132	784	920	58.9	48.0	10.9
136	745	920	75.8	64.9	10.9
140	721	920	86.2	75.3	10.9
144	695	920	97.5	86.6	10.9
148	641	920	120.9	110.0	10.9
152	675	920	106.2	95.2	10.9
156	705	920	93.2	82.2	10.9
160	700	920	95.3	84.4	10.9
164	683	920	102.7	91.7	11.0
168	675	920	106.2	95.1	11.1
170	689	920	100.1	88.9	11.2
172	668	920	109.2	98.0	11.1
176	652	920	116.1	105.0	11.2
180	679	920	104.4	93.2	11.2
184	766	920	66.7	55.5	11.2
188	771	920	64.6	53.4	11.2
192	789	920	56.8	45.6	11.2
194	783	920	59.4	48.2	11.2
196	764	920	67.6	56.5	11.1
200	740	920	78.0	67.0	11.0
204	723	920	85.4	74.3	11.0
208	694	920	97.9	86.9	11.1
212	679	920	104.4	93.3	11.1
216	655	920	114.8	103.7	11.2
220	630	920	125.6	114.5	11.2
224	620	920	130.0	118.8	11.2
228	620	920	130.0	118.8	11.2
232	643	920	120.0	108.8	11.2
236	653	920	115.7	104.5	11.2
240	651	920	116.6	105.4	11.2
244	634	920	123.9	112.7	11.2
248	624	920	128.2	117.1	11.2
252	648	920	117.9	106.9	10.9

Project: The Trails at CMR **920 Zone Analysis** **Node Data - Normal Cond.**

Date: 06/09/20

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254	650	920	117.0	106.1	10.9
256	644	920	119.6	108.7	10.9
260	650	920	117.0	106.0	11.0
264	680	920	104.0	93.4	10.6
268	694	920	97.9	87.5	10.4
272	696	920	97.1	86.5	10.5
276	726	920	84.1	73.6	10.5
280	750	920	73.7	64.1	9.6
284	731	920	81.9	72.3	9.6
288	729	920	82.8	72.9	9.9
292	739	920	78.4	68.9	9.5
300	640	920	121.3	110.2	11.2
304	627	920	126.9	115.8	11.2
308	627	920	126.9	115.8	11.2
312	583	920	146.0	134.8	11.2
316	570	920	151.6	140.5	11.2
320	608	920	135.2	124.0	11.2

Project: The Trails at CMR **920 Zone Analysis** **Node Data - Normal Cond.**

Date: 06/09/20

Job Number: 736-018

Scenario: All Pipes Open - Maximum Day Demand Plus 1500 gpm Fire Flow at Node 96

Node No.	Node El. (ft)	HGL Zone (ft)	Static P (psi)	Model Run P (psi)	Delta P from Static
4	798	920	52.9	45.6	7.3
8	760	920	69.3	61.7	7.7
12	740	920	78.0	70.2	7.8
16	730	920	82.3	73.0	9.3
20	724	920	84.9	74.2	10.7
24	700	920	95.3	84.3	11.1
28	705	920	93.2	82.0	11.1
32	657	920	114.0	103.4	10.5
36	650	920	117.0	107.2	9.8
40	665	920	110.5	100.4	10.0
44	640	920	121.3	111.2	10.1
48	612	920	133.4	123.3	10.1
52	645	920	119.2	109.0	10.2
56	637	920	122.6	112.6	10.0
60	630	920	125.6	115.4	10.2
64	625	920	127.8	117.5	10.3
68	606	920	136.0	125.6	10.5
72	590	920	143.0	132.4	10.6
76	640	920	121.3	110.2	11.1
80	665	920	110.5	99.3	11.2
84	684	920	102.3	91.0	11.3
88	699	920	95.8	84.4	11.4
92	712	920	90.1	78.7	11.5
96	715	920	88.8	77.2	11.6
100	718	920	87.5	76.1	11.4
104	698	920	96.2	84.9	11.2
108	725	920	84.5	73.2	11.3
112	725	920	84.5	73.2	11.3
116	743	920	76.7	65.3	11.3
120	779	920	61.1	49.7	11.4
124	800	920	52.0	40.6	11.4
128	800	920	52.0	40.6	11.4
132	784	920	58.9	47.6	11.3
136	745	920	75.8	64.5	11.3
140	721	920	86.2	75.0	11.3
144	695	920	97.5	86.3	11.2
148	641	920	120.9	109.7	11.2
152	675	920	106.2	95.0	11.2
156	705	920	93.2	82.0	11.2
160	700	920	95.3	84.1	11.2
164	683	920	102.7	91.4	11.3
168	675	920	106.2	94.8	11.4
170	689	920	100.1	88.6	11.5
172	668	920	109.2	97.8	11.4
176	652	920	116.1	104.7	11.5
180	679	920	104.4	92.9	11.5
184	766	920	66.7	55.2	11.5
188	771	920	64.6	53.0	11.5
192	789	920	56.8	45.3	11.5
194	783	920	59.4	47.9	11.5
196	764	920	67.6	56.2	11.4
200	740	920	78.0	66.6	11.4
204	723	920	85.4	74.0	11.4
208	694	920	97.9	86.5	11.4
212	679	920	104.4	93.0	11.4
216	655	920	114.8	103.3	11.5
220	630	920	125.6	114.2	11.5
224	620	920	130.0	118.5	11.5
228	620	920	130.0	118.5	11.5
232	643	920	120.0	108.5	11.5
236	653	920	115.7	104.2	11.5
240	651	920	116.6	105.1	11.5
244	634	920	123.9	112.4	11.5
248	624	920	128.2	116.8	11.5
252	648	920	117.9	106.7	11.2

Project: The Trails at CMR **920 Zone Analysis** **Node Data - Normal Cond.**

Date: 06/09/20

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254	650	920	117.0	105.9	11.1
256	644	920	119.6	108.5	11.1
260	650	920	117.0	105.7	11.3
264	680	920	104.0	93.2	10.8
268	694	920	97.9	87.4	10.6
272	696	920	97.1	86.3	10.8
276	726	920	84.1	73.4	10.7
280	750	920	73.7	64.0	9.6
284	731	920	81.9	72.2	9.7
288	729	920	82.8	72.8	10.0
292	739	920	78.4	68.9	9.5
300	640	920	121.3	109.9	11.5
304	627	920	126.9	115.5	11.5
308	627	920	126.9	115.5	11.5
312	583	920	146.0	134.5	11.5
316	570	920	151.6	140.2	11.5
320	608	920	135.2	123.7	11.5

Project: The Trails at CMR **920 Zone Analysis** **Node Data - Normal Cond.**

Date: 06/09/20

Job Number: 736-018

Scenario: All Pipes Open - Maximum Day Demand Plus 1500 gpm Fire Flow at Node 170

Node No.	Node El. (ft)	HGL Zone (ft)	Static P (psi)	Model Run P (psi)	Delta P from Static
4	798	920	52.9	45.6	7.3
8	760	920	69.3	61.7	7.6
12	740	920	78.0	70.2	7.7
16	730	920	82.3	73.0	9.4
20	724	920	84.9	74.0	10.9
24	700	920	95.3	84.1	11.3
28	705	920	93.2	81.8	11.3
32	657	920	114.0	103.4	10.6
36	650	920	117.0	107.3	9.7
40	665	920	110.5	100.6	9.9
44	640	920	121.3	111.4	9.9
48	612	920	133.4	123.5	9.9
52	645	920	119.2	109.2	10.0
56	637	920	122.6	112.8	9.8
60	630	920	125.6	115.6	10.0
64	625	920	127.8	117.7	10.1
68	606	920	136.0	125.8	10.2
72	590	920	143.0	132.7	10.3
76	640	920	121.3	110.5	10.8
80	665	920	110.5	99.6	10.9
84	684	920	102.3	91.4	10.9
88	699	920	95.8	84.8	10.9
92	712	920	90.1	79.2	10.9
96	715	920	88.8	77.9	10.9
100	718	920	87.5	76.6	10.9
104	698	920	96.2	85.3	10.9
108	725	920	84.5	73.2	11.2
112	725	920	84.5	72.9	11.6
116	743	920	76.7	65.6	11.1
120	779	920	61.1	50.0	11.1
124	800	920	52.0	40.9	11.1
128	800	920	52.0	40.9	11.1
132	784	920	58.9	47.9	11.0
136	745	920	75.8	64.8	11.1
140	721	920	86.2	75.2	11.1
144	695	920	97.5	86.5	11.0
148	641	920	120.9	109.9	10.9
152	675	920	106.2	95.1	11.0
156	705	920	93.2	82.1	11.1
160	700	920	95.3	84.2	11.1
164	683	920	102.7	90.6	12.0
168	675	920	106.2	93.8	12.4
170	689	920	100.1	84.3	15.8
172	668	920	109.2	96.6	12.6
176	652	920	116.1	103.2	12.9
180	679	920	104.4	91.1	13.3
184	766	920	66.7	54.1	12.6
188	771	920	64.6	52.0	12.6
192	789	920	56.8	44.4	12.3
194	783	920	59.4	47.3	12.1
196	764	920	67.6	55.6	12.0
200	740	920	78.0	66.3	11.7
204	723	920	85.4	73.6	11.8
208	694	920	97.9	86.0	11.9
212	679	920	104.4	92.0	12.5
216	655	920	114.8	102.1	12.7
220	630	920	125.6	112.9	12.7
224	620	920	130.0	117.2	12.8
228	620	920	130.0	117.2	12.8
232	643	920	120.0	107.2	12.8
236	653	920	115.7	102.9	12.8
240	651	920	116.6	103.7	12.8
244	634	920	123.9	111.1	12.8
248	624	920	128.2	115.5	12.8
252	648	920	117.9	105.8	12.0

Project: The Trails at CMR **920 Zone Analysis** **Node Data - Normal Cond.**

Date: 06/09/20

Job Number: 736-018

254	650	920	117.0	105.1	11.9
256	644	920	119.6	107.6	11.9
260	650	920	117.0	104.8	12.2
264	680	920	104.0	92.7	11.2
268	694	920	97.9	87.1	10.8
272	696	920	97.1	86.3	10.8
276	726	920	84.1	73.4	10.7
280	750	920	73.7	64.0	9.6
284	731	920	81.9	72.2	9.7
288	729	920	82.8	72.7	10.1
292	739	920	78.4	68.9	9.6
300	640	920	121.3	108.7	12.6
304	627	920	126.9	114.4	12.6
308	627	920	126.9	114.3	12.6
312	583	920	146.0	133.3	12.7
316	570	920	151.6	138.9	12.7
320	608	920	135.2	122.4	12.8

Project: The Trails at CMR **920 Zone Analysis** **Node Data - Normal Cond.**

Date: 06/09/20

Job Number: 736-018

Scenario: All Pipes Open - Maximum Day Demand Plus 1500 gpm Fire Flow at Node 188

Node No.	Node El. (ft)	HGL Zone (ft)	Static P (psi)	Model Run P (psi)	Delta P from Static
4	798	920	52.9	45.6	7.3
8	760	920	69.3	61.7	7.6
12	740	920	78.0	70.2	7.8
16	730	920	82.3	72.7	9.6
20	724	920	84.9	73.7	11.2
24	700	920	95.3	83.7	11.7
28	705	920	93.2	81.4	11.7
32	657	920	114.0	103.1	10.8
36	650	920	117.0	107.3	9.7
40	665	920	110.5	100.6	9.9
44	640	920	121.3	111.3	10.0
48	612	920	133.4	123.5	10.0
52	645	920	119.2	109.1	10.1
56	637	920	122.6	112.7	9.9
60	630	920	125.6	115.6	10.1
64	625	920	127.8	117.7	10.1
68	606	920	136.0	125.8	10.3
72	590	920	143.0	132.6	10.4
76	640	920	121.3	110.4	10.9
80	665	920	110.5	99.5	11.0
84	684	920	102.3	91.3	11.0
88	699	920	95.8	84.8	11.0
92	712	920	90.1	79.1	11.0
96	715	920	88.8	77.8	11.0
100	718	920	87.5	76.5	11.0
104	698	920	96.2	85.2	11.0
108	725	920	84.5	73.0	11.5
112	725	920	84.5	72.5	12.0
116	743	920	76.7	65.4	11.2
120	779	920	61.1	50.0	11.1
124	800	920	52.0	40.9	11.1
128	800	920	52.0	40.9	11.1
132	784	920	58.9	47.8	11.1
136	745	920	75.8	64.8	11.1
140	721	920	86.2	75.2	11.1
144	695	920	97.5	86.4	11.0
148	641	920	120.9	109.9	11.0
152	675	920	106.2	95.1	11.0
156	705	920	93.2	82.1	11.1
160	700	920	95.3	84.2	11.1
164	683	920	102.7	91.0	11.6
168	675	920	106.2	94.3	11.9
170	689	920	100.1	87.4	12.7
172	668	920	109.2	97.1	12.1
176	652	920	116.1	103.7	12.4
180	679	920	104.4	91.7	12.8
184	766	920	66.7	52.9	13.8
188	771	920	64.6	50.7	13.9
192	789	920	56.8	43.4	13.3
194	783	920	59.4	46.5	12.8
196	764	920	67.6	54.8	12.8
200	740	920	78.0	65.8	12.2
204	723	920	85.4	73.2	12.2
208	694	920	97.9	85.7	12.2
212	679	920	104.4	92.1	12.4
216	655	920	114.8	102.4	12.4
220	630	920	125.6	113.2	12.4
224	620	920	130.0	117.5	12.4
228	620	920	130.0	117.5	12.4
232	643	920	120.0	107.6	12.4
236	653	920	115.7	103.2	12.4
240	651	920	116.6	104.1	12.5
244	634	920	123.9	111.5	12.4
248	624	920	128.2	115.9	12.4
252	648	920	117.9	106.2	11.7

Project: The Trails at CMR **920 Zone Analysis** **Node Data - Normal Cond.**

Date: 06/09/20

Job Number: 736-018

254	650	920	117.0	105.4	11.6
256	644	920	119.6	108.0	11.6
260	650	920	117.0	105.2	11.7
264	680	920	104.0	93.0	11.0
268	694	920	97.9	87.3	10.7
272	696	920	97.1	86.3	10.7
276	726	920	84.1	73.4	10.6
280	750	920	73.7	64.0	9.6
284	731	920	81.9	72.2	9.7
288	729	920	82.8	72.7	10.0
292	739	920	78.4	68.9	9.6
300	640	920	121.3	108.9	12.4
304	627	920	126.9	114.6	12.4
308	627	920	126.9	114.6	12.4
312	583	920	146.0	133.6	12.4
316	570	920	151.6	139.2	12.4
320	608	920	135.2	122.8	12.4

Project: The Trails at CMR **920 Zone Analysis** **Node Data - Normal Cond.**

Date: 06/09/20

Job Number: 736-018

Scenario: All Pipes Open - Maximum Day Demand Plus 1500 gpm Fire Flow at Node 194

Node No.	Node El. (ft)	HGL Zone (ft)	Static P (psi)	Model Run P (psi)	Delta P from Static
4	798	920	52.9	45.6	7.3
8	760	920	69.3	61.7	7.7
12	740	920	78.0	70.2	7.8
16	730	920	82.3	72.7	9.7
20	724	920	84.9	73.6	11.4
24	700	920	95.3	83.5	11.8
28	705	920	93.2	81.3	11.9
32	657	920	114.0	103.1	10.9
36	650	920	117.0	107.2	9.8
40	665	920	110.5	100.5	10.0
44	640	920	121.3	111.3	10.0
48	612	920	133.4	123.4	10.0
52	645	920	119.2	109.1	10.1
56	637	920	122.6	112.7	9.9
60	630	920	125.6	115.6	10.1
64	625	920	127.8	117.7	10.2
68	606	920	136.0	125.7	10.3
72	590	920	143.0	132.6	10.4
76	640	920	121.3	110.4	10.9
80	665	920	110.5	99.5	11.0
84	684	920	102.3	91.3	11.0
88	699	920	95.8	84.7	11.0
92	712	920	90.1	79.1	11.0
96	715	920	88.8	77.8	11.0
100	718	920	87.5	76.5	11.0
104	698	920	96.2	85.2	11.0
108	725	920	84.5	72.9	11.6
112	725	920	84.5	72.3	12.1
116	743	920	76.7	65.4	11.3
120	779	920	61.1	50.0	11.1
124	800	920	52.0	40.9	11.1
128	800	920	52.0	40.9	11.1
132	784	920	58.9	47.8	11.1
136	745	920	75.8	64.8	11.1
140	721	920	86.2	75.2	11.1
144	695	920	97.5	86.4	11.0
148	641	920	120.9	109.9	11.0
152	675	920	106.2	95.1	11.0
156	705	920	93.2	82.1	11.1
160	700	920	95.3	84.3	11.1
164	683	920	102.7	91.1	11.6
168	675	920	106.2	94.4	11.7
170	689	920	100.1	87.7	12.4
172	668	920	109.2	97.2	12.0
176	652	920	116.1	103.9	12.3
180	679	920	104.4	92.0	12.4
184	766	920	66.7	53.7	13.0
188	771	920	64.6	51.5	13.1
192	789	920	56.8	43.7	13.1
194	783	920	59.4	46.0	13.3
196	764	920	67.6	54.9	12.7
200	740	920	78.0	65.8	12.2
204	723	920	85.4	73.1	12.3
208	694	920	97.9	85.7	12.3
212	679	920	104.4	92.2	12.3
216	655	920	114.8	102.6	12.3
220	630	920	125.6	113.4	12.3
224	620	920	130.0	117.7	12.3
228	620	920	130.0	117.7	12.3
232	643	920	120.0	107.8	12.3
236	653	920	115.7	103.4	12.3
240	651	920	116.6	104.3	12.3
244	634	920	123.9	111.7	12.2
248	624	920	128.2	116.0	12.2
252	648	920	117.9	106.3	11.6

Project: The Trails at CMR **920 Zone Analysis** **Node Data - Normal Cond.**

Date: 06/09/20

Job Number: 736-018

254	650	920	117.0	105.5	11.5
256	644	920	119.6	108.1	11.5
260	650	920	117.0	105.4	11.6
264	680	920	104.0	93.0	11.0
268	694	920	97.9	87.3	10.6
272	696	920	97.1	86.3	10.7
276	726	920	84.1	73.4	10.6
280	750	920	73.7	64.0	9.6
284	731	920	81.9	72.2	9.7
288	729	920	82.8	72.7	10.0
292	739	920	78.4	68.9	9.5
300	640	920	121.3	109.1	12.3
304	627	920	126.9	114.7	12.3
308	627	920	126.9	114.7	12.3
312	583	920	146.0	133.7	12.3
316	570	920	151.6	139.4	12.3
320	608	920	135.2	122.9	12.3

Project: The Trails at CMR **920 Zone Analysis** **Node Data - Normal Cond.**

Date: 06/09/20

Job Number: 736-018

Scenario: All Pipes Open - Maximum Day Demand Plus 1500 gpm Fire Flow at Node 254

Node No.	Node El. (ft)	HGL Zone (ft)	Static P (psi)	Model Run P (psi)	Delta P from Static
4	798	920	52.9	45.6	7.2
8	760	920	69.3	61.8	7.6
12	740	920	78.0	70.3	7.7
16	730	920	82.3	73.1	9.2
20	724	920	84.9	74.3	10.6
24	700	920	95.3	84.4	10.9
28	705	920	93.2	82.2	11.0
32	657	920	114.0	103.6	10.3
36	650	920	117.0	107.4	9.5
40	665	920	110.5	100.8	9.7
44	640	920	121.3	111.5	9.8
48	612	920	133.4	123.6	9.8
52	645	920	119.2	109.3	9.9
56	637	920	122.6	112.9	9.7
60	630	920	125.6	115.8	9.9
64	625	920	127.8	117.9	10.0
68	606	920	136.0	125.9	10.1
72	590	920	143.0	132.8	10.2
76	640	920	121.3	110.6	10.7
80	665	920	110.5	99.7	10.8
84	684	920	102.3	91.5	10.8
88	699	920	95.8	85.0	10.8
92	712	920	90.1	79.3	10.8
96	715	920	88.8	78.0	10.8
100	718	920	87.5	76.8	10.8
104	698	920	96.2	85.5	10.7
108	725	920	84.5	73.5	11.0
112	725	920	84.5	73.3	11.2
116	743	920	76.7	65.8	10.9
120	779	920	61.1	50.2	10.9
124	800	920	52.0	41.1	10.9
128	800	920	52.0	41.1	10.9
132	784	920	58.9	48.0	10.9
136	745	920	75.8	64.9	10.9
140	721	920	86.2	75.3	11.0
144	695	920	97.5	86.6	10.9
148	641	920	120.9	110.0	10.8
152	675	920	106.2	95.2	10.9
156	705	920	93.2	82.1	11.0
160	700	920	95.3	84.3	11.1
164	683	920	102.7	90.8	11.9
168	675	920	106.2	94.0	12.2
170	689	920	100.1	87.9	12.2
172	668	920	109.2	96.9	12.3
176	652	920	116.1	103.8	12.3
180	679	920	104.4	92.2	12.2
184	766	920	66.7	54.8	11.9
188	771	920	64.6	52.7	11.9
192	789	920	56.8	45.0	11.7
194	783	920	59.4	47.8	11.6
196	764	920	67.6	56.0	11.6
200	740	920	78.0	66.7	11.3
204	723	920	85.4	74.0	11.4
208	694	920	97.9	86.4	11.5
212	679	920	104.4	92.4	12.0
216	655	920	114.8	102.6	12.2
220	630	920	125.6	113.4	12.2
224	620	920	130.0	117.7	12.3
228	620	920	130.0	117.7	12.3
232	643	920	120.0	107.7	12.3
236	653	920	115.7	103.4	12.3
240	651	920	116.6	104.3	12.3
244	634	920	123.9	111.5	12.4
248	624	920	128.2	115.8	12.4
252	648	920	117.9	104.8	13.1

Project: The Trails at CMR **920 Zone Analysis** **Node Data - Normal Cond.**

Date: 06/09/20

Job Number: 736-018

254	650	920	117.0	103.9	13.1
256	644	920	119.6	106.8	12.8
260	650	920	117.0	104.4	12.6
264	680	920	104.0	92.2	11.8
268	694	920	97.9	87.0	11.0
272	696	920	97.1	86.2	10.9
276	726	920	84.1	73.3	10.7
280	750	920	73.7	64.0	9.6
284	731	920	81.9	72.1	9.8
288	729	920	82.8	72.6	10.2
292	739	920	78.4	68.8	9.6
300	640	920	121.3	109.2	12.1
304	627	920	126.9	114.8	12.1
308	627	920	126.9	114.8	12.1
312	583	920	146.0	133.8	12.2
316	570	920	151.6	139.4	12.2
320	608	920	135.2	122.9	12.3

Project: The Trails at CMR **920 Zone Analysis** **Pipe Data - Normal Cond.**

Date: 06/09/20

Job Number: 736-018

Scenario: All Pipes Open - Average Day Demand

Pipe No.	Pipe Size (inches)	Model Run Flow (gpm)	Model Run Velocity (gpm)
1	20	2250.75	2.3
5	20	2203.99	2.25
9	20	1890.08	1.93
13	16	1890.08	3.02
17	8	290.95	1.86
21	8	279.96	1.79
25	8	273.31	1.74
29	12	273.31	0.78
33	8	195.99	1.25
37	8	204.39	1.3
41	12	219.88	0.62
45	12	202.03	0.57
49	8	59.12	0.38
53	8	32.1	0.2
57	12	-142.92	0.41
61	12	-175.01	0.5
65	16	1465.8	2.34
69	16	1414.3	2.26
73	16	981.7	1.57
77	16	948	1.51
81	16	760.56	1.21
85	8	142.43	0.91
89	16	760.56	1.21
93	12	156.89	0.45
97	12	-62.04	0.18
101	12	72.76	0.21
105	12	-110.68	0.31
109	12	-237.45	0.67
113	12	-267.05	0.76
117	8	63.22	0.4
121	12	-341.75	0.97
125	12	602.79	1.71
129	12	261.04	0.74
133	12	215.24	0.61
137	12	460.34	1.31
141	8	45.79	0.29
145	8	103.41	0.66
149	12	97.81	0.28
153	12	97.81	0.28
157	12	97.81	0.28
161	10	-115.78	0.47
165	10	-202.12	0.83
169	12	-155.43	0.44
173	10	137.45	0.56
177	12	226.7	0.64
181	12	20.12	0.06
185	10	135.42	0.55
189	12	-93.51	0.27
193	16	441.77	0.7
197	16	576.31	0.92
201	16	535.28	0.85
205	12	-48.12	0.14
209	12	59.2	0.17
213	12	-9.87	0.03
217	10	116.26	0.47
221	10	116.26	0.47

225	10	32.98	0.13
227	8	15.26	0.1
229	8	57.56	0.37
233	10	46.05	0.19
237	10	-11.05	0.05
241	10	-57.48	0.23
245	10	39.15	0.16
249	10	-107.69	0.44
253	10	-176.59	0.72
257	12	-246.45	0.7
261	12	-324.25	0.92
265	12	-216.23	0.61
267	12	-328.43	0.93
269	10	113.62	0.46
273	10	136.3	0.56
277	12	337.22	0.96
281	12	200.91	0.57
285	12	188.94	0.54
289	8	114.32	0.73
293	10	114.32	0.47
295	10	87.69	0.36
297	10	79.5	0.32
301	10	79.5	0.32
305	10	44.15	0.18
309	10	35.35	0.14
313	8	19.51	0.12
317	8	9.4	0.06
321	8	3.96	0.03
325	8	-13.45	0.09
329	8	-9.49	0.06
333	8	-3.79	0.02
337	10	28.35	0.12
339	10	45.71	0.19
341	10	-23.93	0.1
345	10	-31	0.13
347	10	69.65	0.28
349	8	-35.14	0.22
353	12	104.79	0.3
357	12	87.68	0.25
361	12	-17.11	0.05
365	12	-7.24	0.02
369	12	-55.36	0.16
373	12	-55.36	0.16
377	12	34.31	0.1
381	12	-89.67	0.25
385	10	53.37	0.22
387	10	26.63	0.11
389	8	26.63	0.17
391	8	26.63	0.17
393	8	26.63	0.17
395	8	21.33	0.14
397	10	21.33	0.09
801	12	0	0
805	12	0	0
901	12	-143.04	0.41
905	12	-143.04	0.41

Project: The Trails at CMR **920 Zone Analysis** **Pipe Data - Normal Cond.**

Date: 06/09/20

Job Number: 736-018

Scenario: All Pipes Open - Maximum Day Demand

Pipe No.	Pipe Size (inches)	Model Run Flow (gpm)	Model Run Velocity (gpm)
1	20	2526.3	2.58
5	20	2479.54	2.53
9	20	2129.27	2.17
13	16	2129.27	3.4
17	8	327.31	2.09
21	8	316.32	2.02
25	8	309.67	1.98
29	12	309.67	0.88
33	8	222.06	1.42
37	8	230.46	1.47
41	12	240.42	0.68
45	12	222.57	0.63
49	8	63.49	0.41
53	8	36.47	0.23
57	12	-159.08	0.45
61	12	-195.55	0.55
65	16	1658.4	2.65
69	16	1503.9	2.4
73	16	1052.2	1.68
77	16	951.1	1.52
81	16	761.08	1.21
85	8	145.02	0.93
89	16	761.08	1.21
93	12	224.99	0.64
97	12	29.79	0.08
101	12	167.17	0.47
105	12	11.02	0.03
109	12	-109.06	0.31
113	12	-197.86	0.56
117	8	95	0.61
121	12	-304.34	0.86
125	12	642.41	1.82
129	12	338.08	0.96
133	12	386.91	1.1
137	12	522.77	1.48
141	8	-48.84	0.31
145	8	40.56	0.26
149	12	34.96	0.1
153	12	34.96	0.1
157	12	34.96	0.1
161	10	-109.08	0.45
165	10	-132.57	0.54
169	12	-85.88	0.24
173	10	110.17	0.45
177	12	170.45	0.48
181	12	-20.47	0.06
185	10	111.69	0.46
189	12	-29.2	0.08
193	16	374.18	0.6
197	16	508.72	0.81
201	16	403.38	0.64
205	12	-228.75	0.65
209	12	10.47	0.03
213	12	175.51	0.5
217	10	294.12	1.2
221	10	294.12	1.2

225	10	-57.25	0.23
227	8	-74.59	0.48
229	8	52.31	0.33
233	10	224.28	0.92
237	10	52.98	0.22
241	10	1.22	0.01
245	10	28.38	0.12
249	10	25.83	0.11
253	10	-37.83	0.15
257	12	-107.69	0.31
261	12	-341.09	0.97
265	12	-179.81	0.51
267	12	-516.41	1.46
269	10	166.88	0.68
273	10	189.56	0.77
277	12	383.33	1.09
281	12	193.77	0.55
285	12	181.8	0.52
289	8	107.18	0.68
293	10	107.18	0.44
295	10	80.53	0.33
297	10	72.34	0.3
301	10	72.34	0.3
305	10	33.6	0.14
309	10	38.74	0.16
313	8	12.32	0.08
317	8	-4.7	0.03
321	8	-2.95	0.02
325	8	7.88	0.05
329	8	4.93	0.03
333	8	-32.31	0.21
337	10	115.57	0.47
339	10	132.93	0.54
341	10	-55.02	0.22
345	10	-121.23	0.5
347	10	187.96	0.77
349	8	-94.27	0.6
353	12	282.23	0.8
357	12	323.61	0.92
361	12	41.38	0.12
365	12	-134.13	0.38
369	12	-362.88	1.03
373	12	6.48	0.02
377	12	184.26	0.52
381	12	-177.79	0.5
385	10	139.35	0.57
387	10	26.65	0.11
389	8	26.65	0.17
391	8	26.65	0.17
393	8	26.65	0.17
395	8	10.75	0.07
397	10	10.75	0.04
801	12	-369.35	1.05
805	12	-369.35	1.05
901	12	-317.12	0.9
905	12	-317.12	0.9

Project: The Trails at CMR **920 Zone Analysis** **Pipe Data - Normal Cond.**

Date: 06/09/20

Job Number: 736-018

Scenario: All Pipes Open - Peak Hour Demand

Pipe No.	Pipe Size (inches)	Model Run Flow (gpm)	Model Run Velocity (gpm)
1	20	2977.06	3.04
5	20	2930.3	2.99
9	20	2517.5	2.57
13	16	2517.5	4.02
17	8	389.84	2.49
21	8	378.85	2.42
25	8	372.2	2.38
29	12	372.2	1.06
33	8	270.77	1.73
37	8	279.17	1.78
41	12	274.73	0.78
45	12	256.88	0.73
49	8	70.76	0.45
53	8	43.74	0.28
57	12	-186.11	0.53
61	12	-229.86	0.65
65	16	1963.6	3.13
69	16	1670.05	2.66
73	16	1181.32	1.88
77	16	989.23	1.58
81	16	789.94	1.26
85	8	154.28	0.98
89	16	789.94	1.26
93	12	305.3	0.87
97	12	134.68	0.38
101	12	281.33	0.8
105	12	157.15	0.45
109	12	51.57	0.15
113	12	-117.15	0.33
117	8	114.1	0.73
121	12	-242.73	0.69
125	12	713.76	2.02
129	12	471.04	1.34
133	12	652.31	1.85
137	12	634.01	1.8
141	8	-181.27	1.16
145	8	-72.77	0.46
149	12	-78.37	0.22
153	12	-78.37	0.22
157	12	-78.37	0.22
161	10	-94.59	0.39
165	10	-4.74	0.02
169	12	41.95	0.12
173	10	78.19	0.32
177	12	94.79	0.27
181	12	-104.62	0.3
185	10	87.11	0.36
189	12	79.53	0.23
193	16	322.72	0.51
197	16	457.26	0.73
201	16	243.2	0.39
205	12	-471.23	1.34
209	12	-71.82	0.2
213	12	371.42	1.05
217	10	496.67	2.03
221	10	496.67	2.03

225	10	-158.08	0.65
227	8	-161.14	1.03
229	8	79.97	0.51
233	10	441.1	1.8
237	10	115.63	0.47
241	10	87.98	0.36
245	10	-8.27	0.03
249	10	211.87	0.87
253	10	120.57	0.49
257	12	50.71	0.14
261	12	-392.75	1.11
265	12	-146.36	0.42
267	12	-785.9	2.23
269	10	251.99	1.03
273	10	274.67	1.12
277	12	490.48	1.39
281	12	215.81	0.61
285	12	203.84	0.58
289	8	129.22	0.82
293	10	129.22	0.53
295	10	96.11	0.39
297	10	87.92	0.36
301	10	87.92	0.36
305	10	45.03	0.18
309	10	42.9	0.18
313	8	8.63	0.06
317	8	-18.66	0.12
321	8	-13.22	0.08
325	8	33.1	0.21
329	8	19.88	0.13
333	8	-61.22	0.39
337	10	231.24	0.94
339	10	248.6	1.02
341	10	-84	0.34
345	10	-222.06	0.91
347	10	332.61	1.36
349	8	-166.12	1.06
353	12	498.73	1.41
357	12	607.35	1.72
361	12	108.62	0.31
365	12	-262.8	0.75
369	12	-734.03	2.08
373	12	143.59	0.41
377	12	373.69	1.06
381	12	-230.1	0.65
385	10	233.66	0.95
387	10	33.11	0.14
389	8	33.11	0.21
391	8	33.11	0.21
393	8	33.11	0.21
395	8	2.9	0.02
397	10	2.9	0.01
801	12	-877.63	2.49
805	12	-877.63	2.49
901	12	-463.75	1.32
905	12	-463.75	1.32

Project: The Trails at CMR **920 Zone Analysis** **Pipe Data - Normal Cond.**

Date: 06/09/20

Job Number: 736-018

Scenario: All Pipes Open - Maximum Day Demand Plus 1500 gpm Fire Flow at Node 56

Pipe No.	Pipe Size (inches)	Model Run Flow (gpm)	Model Run Velocity (gpm)
1	20	3308.8	3.38
5	20	3262.04	3.33
9	20	2866.39	2.93
13	16	2866.39	4.57
17	8	372.69	2.38
21	8	361.7	2.31
25	8	355.05	2.27
29	12	355.05	1.01
33	8	159.22	1.02
37	8	167.62	1.07
41	12	271.79	0.77
45	12	253.94	0.72
49	8	70.14	0.45
53	8	43.12	0.28
57	12	-183.8	0.52
61	12	-226.92	0.64
65	16	2426.98	3.87
69	16	772.48	1.23
73	16	632.05	1.01
77	16	530.95	0.85
81	16	406.65	0.65
85	8	79.29	0.51
89	16	406.65	0.65
93	12	159.12	0.45
97	12	44.78	0.13
101	12	116.44	0.33
105	12	45.03	0.13
109	12	-1.93	0.01
113	12	-90.73	0.26
117	8	49.22	0.31
121	12	-151.42	0.43
125	12	362.51	1.03
129	12	211.09	0.6
133	12	285.54	0.81
137	12	505.31	1.43
141	8	-74.45	0.48
145	8	-30.83	0.2
149	12	-36.43	0.1
153	12	-36.43	0.1
157	12	-36.43	0.1
161	10	-35.97	0.15
165	10	11.95	0.05
169	12	58.64	0.17
173	10	25.42	0.1
177	12	-54.57	0.15
181	12	-24.71	0.07
185	10	30.82	0.13
189	12	55.9	0.16
193	16	85.63	0.14
197	16	220.17	0.35
201	16	29.73	0.05
205	12	-542.95	1.54
209	12	69.92	0.2
213	12	432.54	1.23
217	10	266.68	1.09
221	10	266.68	1.09

225	10	-140.05	0.57
227	8	-94.4	0.6
229	8	32.5	0.21
233	10	259.83	1.06
237	10	88.53	0.36
241	10	44.52	0.18
245	10	37.32	0.15
249	10	95.73	0.39
253	10	51.89	0.21
257	12	-17.97	0.05
261	12	-251.37	0.71
265	12	-117.42	0.33
267	12	-454.02	1.29
269	10	139.55	0.57
273	10	162.23	0.66
277	12	326.88	0.93
281	12	164.66	0.47
285	12	152.69	0.43
289	8	78.07	0.5
293	10	78.07	0.32
295	10	58.4	0.24
297	10	50.21	0.21
301	10	50.21	0.21
305	10	18.11	0.07
309	10	32.11	0.13
313	8	-1.3	0.01
317	8	-15.1	0.1
321	8	0.26	0
325	8	14.44	0.09
329	8	14.7	0.09
333	8	-52.48	0.33
337	10	179.05	0.73
339	10	196.41	0.8
341	10	-88.77	0.36
345	10	-204.03	0.83
347	10	285.17	1.16
349	8	-143.33	0.91
353	12	428.5	1.22
357	12	614.9	1.74
361	12	186.39	0.53
365	12	-246.15	0.7
369	12	-789.1	2.24
373	12	140.97	0.4
377	12	377.5	1.07
381	12	-236.53	0.67
385	10	237.39	0.97
387	10	19.67	0.08
389	8	19.67	0.13
391	8	19.67	0.13
393	8	19.67	0.13
395	8	3.77	0.02
397	10	3.77	0.02
801	12	-930.06	2.64
805	12	-930.06	2.64
901	12	-473.93	1.34
905	12	-473.93	1.34

Project: The Trails at CMR **920 Zone Analysis** **Pipe Data - Normal Cond.**

Date: 06/09/20

Job Number: 736-018

Scenario: All Pipes Open - Maximum Day Demand Plus 1500 gpm Fire Flow at Node 64

Pipe No.	Pipe Size (inches)	Model Run Flow (gpm)	Model Run Velocity (gpm)
1	20	3265.53	3.33
5	20	3218.77	3.29
9	20	2817.31	2.88
13	16	2817.31	4.5
17	8	378.5	2.42
21	8	367.51	2.35
25	8	360.86	2.3
29	12	360.86	1.02
33	8	187.14	1.19
37	8	195.54	1.25
41	12	330.03	0.94
45	12	312.18	0.89
49	8	82.43	0.53
53	8	55.41	0.35
57	12	-229.75	0.65
61	12	-285.16	0.81
65	16	2291.74	3.66
69	16	2137.24	3.41
73	16	2008.72	3.21
77	16	407.62	0.65
81	16	303.98	0.49
85	8	58.63	0.37
89	16	303.98	0.49
93	12	107.71	0.31
97	12	0.47	0
101	12	51.47	0.15
105	12	-17.22	0.05
109	12	-60.03	0.17
113	12	-148.83	0.42
117	8	45.3	0.29
121	12	-205.61	0.58
125	12	408.85	1.16
129	12	203.23	0.58
133	12	256.78	0.73
137	12	539.04	1.53
141	8	-53.54	0.34
145	8	-13.85	0.09
149	12	-19.45	0.06
153	12	-19.45	0.06
157	12	-19.45	0.06
161	10	-31.82	0.13
165	10	-0.89	0
169	12	45.8	0.13
173	10	22.71	0.09
177	12	-64	0.18
181	12	-5.15	0.01
185	10	23.73	0.1
189	12	43.44	0.12
193	16	34.36	0.05
197	16	168.9	0.27
201	16	-9.08	0.01
205	12	-563.78	1.6
209	12	87.9	0.25
213	12	448.14	1.27
217	10	254.86	1.04
221	10	254.86	1.04

225	10	-145.27	0.59
227	8	-92.29	0.59
229	8	34.61	0.22
233	10	255.35	1.04
237	10	84.05	0.34
241	10	46.2	0.19
245	10	36.07	0.15
249	10	94.18	0.38
253	10	48.23	0.2
257	12	-21.63	0.06
261	12	-255.03	0.72
265	12	-120	0.34
267	12	-456.6	1.3
269	10	140.63	0.57
273	10	163.31	0.67
277	12	329.28	0.93
281	12	165.97	0.47
285	12	154	0.44
289	8	79.38	0.51
293	10	79.38	0.32
295	10	59.4	0.24
297	10	51.21	0.21
301	10	51.21	0.21
305	10	18.81	0.08
309	10	32.4	0.13
313	8	-0.68	0
317	8	-15.07	0.1
321	8	-0.31	0
325	8	14.99	0.1
329	8	14.67	0.09
333	8	-52.42	0.33
337	10	180.66	0.74
339	10	198.02	0.81
341	10	-91.65	0.37
345	10	-209.25	0.85
347	10	289.67	1.18
349	8	-145.68	0.93
353	12	435.35	1.23
357	12	631.82	1.79
361	12	196.47	0.56
365	12	-251.67	0.71
369	12	-815.44	2.31
373	12	147.3	0.42
377	12	388.36	1.1
381	12	-241.05	0.68
385	10	243.46	0.99
387	10	19.99	0.08
389	8	19.99	0.13
391	8	19.99	0.13
393	8	19.99	0.13
395	8	4.09	0.03
397	10	4.09	0.02
801	12	-962.74	2.73
805	12	-962.74	2.73
901	12	-484.53	1.37
905	12	-484.53	1.37

Project: The Trails at CMR **920 Zone Analysis** **Pipe Data - Normal Cond.**

Date: 06/09/20

Job Number: 736-018

Scenario: All Pipes Open - Maximum Day Demand Plus 1500 gpm Fire Flow at Node 96

Pipe No.	Pipe Size (inches)	Model Run Flow (gpm)	Model Run Velocity (gpm)
1	20	3135.76	3.2
5	20	3089	3.15
9	20	2662.99	2.72
13	16	2662.99	4.25
17	8	403.04	2.57
21	8	392.05	2.5
25	8	385.4	2.46
29	12	385.4	1.09
33	8	270.26	1.72
37	8	278.66	1.78
41	12	300.61	0.85
45	12	282.76	0.8
49	8	76.23	0.49
53	8	49.21	0.31
57	12	-206.53	0.59
61	12	-255.74	0.73
65	16	2083.73	3.32
69	16	1929.23	3.08
73	16	1292.52	2.06
77	16	1191.42	1.9
81	16	947.72	1.51
85	8	198.69	1.27
89	16	947.72	1.51
93	12	524.89	1.49
97	12	448.62	1.27
101	12	639.68	1.81
105	12	697.35	1.98
109	12	828.06	2.35
113	12	-760.74	2.16
117	8	-99.59	0.64
121	12	-672.63	1.91
125	12	887.62	2.52
129	12	214.99	0.61
133	12	114.59	0.33
137	12	646.7	1.83
141	8	100.4	0.64
145	8	-4.79	0.03
149	12	-10.39	0.03
153	12	-10.39	0.03
157	12	-10.39	0.03
161	10	141.7	0.58
165	10	163.58	0.67
169	12	210.27	0.6
173	10	-103.66	0.42
177	12	-159.23	0.45
181	12	-200.76	0.57
185	10	-7.24	0.03
189	12	270.02	0.77
193	16	260.92	0.42
197	16	395.46	0.63
201	16	-9.1	0.01
205	12	-614.67	1.74
209	12	37.04	0.11
213	12	493.91	1.4
217	10	256.28	1.05
221	10	256.28	1.05

225	10	-162.71	0.66
227	8	-99.32	0.63
229	8	27.58	0.18
233	10	267.17	1.09
237	10	95.87	0.39
241	10	55.29	0.23
245	10	39.96	0.16
249	10	111.2	0.45
253	10	72.28	0.3
257	12	2.42	0.01
261	12	-230.98	0.66
265	12	-102.88	0.29
267	12	-439.48	1.25
269	10	133.7	0.55
273	10	156.38	0.64
277	12	311.87	0.88
281	12	155.5	0.44
285	12	143.53	0.41
289	8	68.91	0.44
293	10	68.91	0.28
295	10	51.52	0.21
297	10	43.33	0.18
301	10	43.33	0.18
305	10	13.4	0.05
309	10	29.93	0.12
313	8	-5.75	0.04
317	8	-18.42	0.12
321	8	1.41	0.01
325	8	16.5	0.11
329	8	17.9	0.11
333	8	-59	0.38
337	10	196.33	0.8
339	10	213.69	0.87
341	10	-98.03	0.4
345	10	-226.69	0.93
347	10	311.72	1.27
349	8	-156.73	1
353	12	468.45	1.33
357	12	685.95	1.95
361	12	217.5	0.62
365	12	-276.41	0.78
369	12	-891.08	2.53
373	12	168.21	0.48
377	12	423.19	1.2
381	12	-254.98	0.72
385	10	262.77	1.07
387	10	17.39	0.07
389	8	17.39	0.11
391	8	17.39	0.11
393	8	17.39	0.11
395	8	1.49	0.01
397	10	1.49	0.01
801	12	-1059.29	3
805	12	-1059.29	3
901	12	-517.74	1.47
905	12	-517.74	1.47

Project: The Trails at CMR **920 Zone Analysis** **Pipe Data - Normal Cond.**

Date: 06/09/20

Job Number: 736-018

Scenario: All Pipes Open - Maximum Day Demand Plus 1500 gpm Fire Flow at Node 170

Pipe No.	Pipe Size (inches)	Model Run Flow (gpm)	Model Run Velocity (gpm)
1	20	3071.77	3.14
5	20	3025.01	3.09
9	20	2582.57	2.64
13	16	2582.57	4.12
17	8	419.48	2.68
21	8	408.49	2.61
25	8	401.84	2.56
29	12	401.84	1.14
33	8	312.59	2
37	8	320.99	2.05
41	12	285.4	0.81
45	12	267.55	0.76
49	8	73.02	0.47
53	8	46	0.29
57	12	-194.53	0.55
61	12	-240.53	0.68
65	16	1976.19	3.15
69	16	1821.69	2.91
73	16	1239.42	1.98
77	16	1138.32	1.82
81	16	915.68	1.46
85	8	177.63	1.13
89	16	915.68	1.46
93	12	332.28	0.94
97	12	132.98	0.38
101	12	302.98	0.86
105	12	146.24	0.41
109	12	0.79	0
113	12	-88.01	0.25
117	8	144.83	0.92
121	12	-244.32	0.69
125	12	817.96	2.32
129	12	573.64	1.63
133	12	793.22	2.25
137	12	705.47	2
141	8	-219.58	1.4
145	8	-80.35	0.51
149	12	-85.95	0.24
153	12	-85.95	0.24
157	12	-85.95	0.24
161	10	-134.46	0.55
165	10	-37.03	0.15
169	12	9.66	0.03
173	10	110.75	0.45
177	12	193.85	0.55
181	12	-138.82	0.39
185	10	115.79	0.47
189	12	85.05	0.24
193	16	421.49	0.67
197	16	556.03	0.89
201	16	336.44	0.54
205	12	-525.54	1.49
209	12	-219.37	0.62
213	12	423.78	1.2
217	10	795.63	3.25
221	10	795.63	3.25

225	10	-257.5	1.05
227	8	-552.31	3.53
229	8	1074.59	6.86
233	10	448.32	1.83
237	10	277.02	1.13
241	10	192	0.78
245	10	-125.98	0.51
249	10	594.99	2.43
253	10	-490.93	2.01
257	12	-560.79	1.59
261	12	-794.19	2.25
265	12	-486.83	1.38
267	12	-823.43	2.34
269	10	312.96	1.28
273	10	335.64	1.37
277	12	665.32	1.89
281	12	329.68	0.94
285	12	317.71	0.9
289	8	243.09	1.55
293	10	243.09	0.99
295	10	185.07	0.76
297	10	176.88	0.72
301	10	176.88	0.72
305	10	135.05	0.55
309	10	41.83	0.17
313	8	46.78	0.3
317	8	-5.93	0.04
321	8	-38.64	0.25
325	8	60.79	0.39
329	8	22.15	0.14
333	8	-50.76	0.32
337	10	324.8	1.33
339	10	342.16	1.4
341	10	-119.06	0.49
345	10	-321.48	1.31
347	10	461.22	1.88
349	8	-230.49	1.47
353	12	691.71	1.96
357	12	752.65	2.13
361	12	60.94	0.17
365	12	-362.84	1.03
369	12	-888.37	2.52
373	12	205.58	0.58
377	12	468.17	1.33
381	12	-262.6	0.74
385	10	284.47	1.16
387	10	58.02	0.24
389	8	58.02	0.37
391	8	58.02	0.37
393	8	58.02	0.37
395	8	42.12	0.27
397	10	42.12	0.17
801	12	-1093.95	3.1
805	12	-1093.95	3.1
901	12	-547.08	1.55
905	12	-547.08	1.55

Project: The Trails at CMR **920 Zone Analysis** **Pipe Data - Normal Cond.**

Date: 06/09/20

Job Number: 736-018

Scenario: All Pipes Open - Maximum Day Demand Plus 1500 gpm Fire Flow at Node 188

Pipe No.	Pipe Size (inches)	Model Run Flow (gpm)	Model Run Velocity (gpm)
1	20	3119.9	3.19
5	20	3073.14	3.14
9	20	2609.37	2.66
13	16	2609.37	4.16
17	8	440.81	2.81
21	8	429.82	2.74
25	8	423.17	2.7
29	12	423.17	1.2
33	8	344.46	2.2
37	8	352.86	2.25
41	12	284.77	0.81
45	12	266.92	0.76
49	8	72.89	0.47
53	8	45.87	0.29
57	12	-194.03	0.55
61	12	-239.9	0.68
65	16	1971.74	3.15
69	16	1817.24	2.9
73	16	1218.59	1.94
77	16	1117.49	1.78
81	16	895.72	1.43
85	8	176.76	1.13
89	16	895.72	1.43
93	12	372.79	1.06
97	12	197.47	0.56
101	12	366.6	1.04
105	12	242.44	0.69
109	12	131.31	0.37
113	12	42.51	0.12
117	8	166.55	1.06
121	12	-135.52	0.38
125	12	833.72	2.36
129	12	698.2	1.98
133	12	1001.89	2.84
137	12	758.67	2.15
141	8	-303.69	1.94
145	8	-142.74	0.91
149	12	-148.34	0.42
153	12	-148.34	0.42
157	12	-148.34	0.42
161	10	-100.13	0.41
165	10	59.69	0.24
169	12	106.38	0.3
173	10	78.17	0.32
177	12	88.27	0.25
181	12	-162.53	0.46
185	10	91.81	0.37
189	12	132.75	0.38
193	16	361.02	0.58
197	16	495.56	0.79
201	16	228.28	0.36
205	12	-547.56	1.55
209	12	-133.23	0.38
213	12	434.54	1.23
217	10	614.67	2.51
221	10	614.67	2.51

225	10	-186.63	0.76
227	8	-259.17	1.65
229	8	-132.27	0.84
233	10	489.63	2
237	10	318.33	1.3
241	10	143.23	0.59
245	10	-32.98	0.13
249	10	494.54	2.02
253	10	615.47	2.51
257	12	545.61	1.55
261	12	-1187.79	3.37
265	12	-734.31	2.08
267	12	-1070.91	3.04
269	10	459.08	1.88
273	10	481.76	1.97
277	12	679.72	1.93
281	12	197.96	0.56
285	12	185.99	0.53
289	8	111.37	0.71
293	10	111.37	0.45
295	10	83.85	0.34
297	10	75.66	0.31
301	10	75.66	0.31
305	10	52.28	0.21
309	10	23.38	0.1
313	8	-2.16	0.01
317	8	-33	0.21
321	8	-16.77	0.11
325	8	50.57	0.32
329	8	33.8	0.22
333	8	-89.48	0.57
337	10	314.75	1.29
339	10	332.11	1.36
341	10	-76.02	0.31
345	10	-250.61	1.02
347	10	408.13	1.67
349	8	-202.67	1.29
353	12	610.79	1.73
357	12	721.75	2.05
361	12	110.96	0.31
365	12	-323.58	0.92
369	12	-871.14	2.47
373	12	190.75	0.54
377	12	447.8	1.27
381	12	-257.06	0.73
385	10	273.95	1.12
387	10	27.52	0.11
389	8	27.52	0.18
391	8	27.52	0.18
393	8	27.52	0.18
395	8	11.62	0.07
397	10	11.62	0.05
801	12	-1061.89	3.01
805	12	-1061.89	3.01
901	12	-531	1.51
905	12	-531	1.51

Project: The Trails at CMR **920 Zone Analysis** **Pipe Data - Normal Cond.**

Date: 06/09/20

Job Number: 736-018

Scenario: All Pipes Open - Maximum Day Demand Plus 1500 gpm Fire Flow at Node 194

Pipe No.	Pipe Size (inches)	Model Run Flow (gpm)	Model Run Velocity (gpm)
1	20	3133.83	3.2
5	20	3087.07	3.15
9	20	2616.82	2.67
13	16	2616.82	4.18
17	8	447.29	2.85
21	8	436.3	2.78
25	8	429.65	2.74
29	12	429.65	1.22
33	8	354.02	2.26
37	8	362.42	2.31
41	12	284.51	0.81
45	12	266.66	0.76
49	8	72.83	0.46
53	8	45.81	0.29
57	12	-193.83	0.55
61	12	-239.64	0.68
65	16	1969.9	3.14
69	16	1815.4	2.9
73	16	1211.67	1.93
77	16	1110.57	1.77
81	16	889.17	1.42
85	8	176.39	1.13
89	16	889.17	1.42
93	12	383.38	1.09
97	12	215.51	0.61
101	12	384.27	1.09
105	12	272.17	0.77
109	12	169.7	0.48
113	12	80.9	0.23
117	8	173.37	1.11
121	12	-103.96	0.29
125	12	838.53	2.38
129	12	734.57	2.08
133	12	1059.62	3.01
137	12	774.71	2.2
141	8	-325.05	2.07
145	8	-157.28	1
149	12	-162.88	0.46
153	12	-162.88	0.46
157	12	-162.88	0.46
161	10	-91.49	0.37
165	10	82.87	0.34
169	12	129.56	0.37
173	10	66.11	0.27
177	12	54.67	0.16
181	12	-164.18	0.47
185	10	84.36	0.34
189	12	141.84	0.4
193	16	343.88	0.55
197	16	478.42	0.76
201	16	202.04	0.32
205	12	-553.78	1.57
209	12	-113.22	0.32
213	12	439.66	1.25
217	10	566.18	2.31
221	10	566.18	2.31

225	10	-177.94	0.73
227	8	-227.31	1.45
229	8	-100.41	0.64
233	10	464.32	1.9
237	10	293.02	1.2
241	10	120.87	0.49
245	10	48.62	0.2
249	10	365.26	1.49
253	10	454.33	1.86
257	12	384.47	1.09
261	12	151.07	0.43
265	12	523.88	1.49
267	12	-1312.72	3.72
269	10	378.41	1.55
273	10	401.09	1.64
277	12	511.67	1.45
281	12	110.58	0.31
285	12	98.61	0.28
289	8	23.99	0.15
293	10	23.99	0.1
295	10	16.39	0.07
297	10	8.2	0.03
301	10	8.2	0.03
305	10	-18.25	0.07
309	10	26.44	0.11
313	8	-19.02	0.12
317	8	-36.73	0.23
321	8	-3.63	0.02
325	8	39.48	0.25
329	8	35.85	0.23
333	8	-95.26	0.61
337	10	298.16	1.22
339	10	315.52	1.29
341	10	-75.64	0.31
345	10	-241.92	0.99
347	10	391.17	1.6
349	8	-194.35	1.24
353	12	585.52	1.66
357	12	712.03	2.02
361	12	126.52	0.36
365	12	-313.14	0.89
369	12	-866.92	2.46
373	12	185.9	0.53
377	12	441.36	1.25
381	12	-255.46	0.72
385	10	270.67	1.11
387	10	7.6	0.03
389	8	7.6	0.05
391	8	7.6	0.05
393	8	7.6	0.05
395	8	-8.3	0.05
397	10	-8.3	0.03
801	12	-1052.83	2.99
805	12	-1052.83	2.99
901	12	-526.13	1.49
905	12	-526.13	1.49

Project: The Trails at CMR **920 Zone Analysis** **Pipe Data - Normal Cond.**

Date: 06/09/20

Job Number: 736-018

Scenario: All Pipes Open - Maximum Day Demand Plus 1500 gpm Fire Flow at Node 254

Pipe No.	Pipe Size (inches)	Model Run Flow (gpm)	Model Run Velocity (gpm)
1	20	3009.88	3.07
5	20	2963.12	3.03
9	20	2538.04	2.59
13	16	2538.04	4.05
17	8	402.12	2.57
21	8	391.13	2.5
25	8	384.48	2.45
29	12	384.48	1.09
33	8	289.36	1.85
37	8	297.76	1.9
41	12	282.76	0.8
45	12	264.91	0.75
49	8	72.46	0.46
53	8	45.44	0.29
57	12	-192.45	0.55
61	12	-237.89	0.67
65	16	1957.52	3.12
69	16	1803.02	2.88
73	16	1239.84	1.98
77	16	1138.74	1.82
81	16	917.58	1.46
85	8	176.15	1.12
89	16	917.58	1.46
93	12	298.59	0.85
97	12	85.35	0.24
101	12	253.87	0.72
105	12	80.81	0.23
109	12	-74.12	0.21
113	12	-162.92	0.46
117	8	131.78	0.84
121	12	-306.18	0.87
125	12	796.24	2.26
129	12	490.05	1.39
133	12	639.11	1.81
137	12	664.88	1.89
141	8	-149.05	0.95
145	8	-22.87	0.15
149	12	-28.47	0.08
153	12	-28.47	0.08
157	12	-28.47	0.08
161	10	-143.94	0.59
165	10	-103.99	0.42
169	12	-57.3	0.16
173	10	127.07	0.52
177	12	237.48	0.67
181	12	-99.17	0.28
185	10	129.73	0.53
189	12	31.46	0.09
193	16	457.08	0.73
197	16	591.62	0.94
201	16	425.62	0.68
205	12	-445.31	1.26
209	12	-228.33	0.65
213	12	312.26	0.89
217	10	736.7	3.01
221	10	736.7	3.01

225	10	368.93	1.51
227	8	-57.09	0.36
229	8	69.81	0.45
233	10	258.17	1.05
237	10	86.87	0.35
241	10	-255.01	1.04
245	10	61.63	0.25
249	10	-229.78	0.94
253	10	-310.92	1.27
257	12	-380.78	1.08
261	12	-614.18	1.74
265	12	-368.67	1.05
267	12	-705.27	2
269	10	251.11	1.03
273	10	273.79	1.12
277	12	588.78	1.67
281	12	314.99	0.89
285	12	303.02	0.86
289	8	228.4	1.46
293	10	228.4	0.93
295	10	173.63	0.71
297	10	165.44	0.68
301	10	165.44	0.68
305	10	104.5	0.43
309	10	60.94	0.25
313	8	62.64	0.4
317	8	72.54	0.46
321	8	23.97	0.15
325	8	-96.27	0.61
329	8	-72.3	0.46
333	8	122.16	0.78
337	10	-295.13	1.21
339	10	-277.77	1.13
341	10	559.18	2.28
345	10	304.95	1.25
347	10	663.05	2.71
349	8	-282.3	1.8
353	12	945.34	2.68
357	12	805.42	2.28
361	12	-139.93	0.4
365	12	-452.19	1.28
369	12	-897.5	2.55
373	12	233.05	0.66
377	12	503.31	1.43
381	12	-270.26	0.77
385	10	302.1	1.23
387	10	54.76	0.22
389	8	54.76	0.35
391	8	54.76	0.35
393	8	54.76	0.35
395	8	38.86	0.25
397	10	38.86	0.16
801	12	-1130.55	3.21
805	12	-1130.55	3.21
901	12	-572.35	1.62
905	12	-572.35	1.62

Project: The Trails at CMR **920 Zone Analysis** **Node Data - Pipe Break Cond.**

Date: 06/09/20

Job Number: 736-018

Scenario: Pipe Break (Pipe 1) - Average Day Demand

Node No.	Node El. (ft)	HGL Zone (ft)	Static P (psi)	Model Run P (psi)	Delta P from Static
4	798	920	52.9	39.1	13.8
8	760	920	69.3	55.5	13.8
12	740	920	78.0	64.2	13.8
16	730	920	82.3	68.5	13.8
20	724	920	84.9	71.1	13.8
24	700	920	95.3	81.5	13.8
28	705	920	93.2	79.3	13.8
32	657	920	114.0	100.2	13.8
36	650	920	117.0	103.2	13.8
40	665	920	110.5	96.7	13.8
44	640	920	121.3	107.5	13.8
48	612	920	133.4	119.7	13.8
52	645	920	119.2	105.4	13.8
56	637	920	122.6	108.8	13.8
60	630	920	125.6	111.9	13.8
64	625	920	127.8	114.0	13.8
68	606	920	136.0	122.3	13.8
72	590	920	143.0	129.2	13.8
76	640	920	121.3	107.6	13.8
80	665	920	110.5	96.7	13.8
84	684	920	102.3	88.5	13.8
88	699	920	95.8	82.0	13.8
92	712	920	90.1	76.4	13.8
96	715	920	88.8	75.0	13.8
100	718	920	87.5	73.7	13.8
104	698	920	96.2	82.4	13.8
108	725	920	84.5	70.7	13.8
112	725	920	84.5	70.7	13.8
116	743	920	76.7	62.9	13.8
120	779	920	61.1	47.3	13.8
124	800	920	52.0	38.2	13.8
128	800	920	52.0	38.2	13.8
132	784	920	58.9	45.2	13.7
136	745	920	75.8	62.1	13.7
140	721	920	86.2	72.6	13.7
144	695	920	97.5	83.8	13.7
148	641	920	120.9	107.2	13.7
152	675	920	106.2	92.5	13.7
156	705	920	93.2	79.6	13.5
160	700	920	95.3	81.9	13.4
164	683	920	102.7	89.2	13.5
168	675	920	106.2	92.7	13.5
170	689	920	100.1	86.4	13.7
172	668	920	109.2	95.7	13.5
176	652	920	116.1	102.5	13.6
180	679	920	104.4	90.7	13.7
184	766	920	66.7	52.9	13.8
188	771	920	64.6	50.7	13.8
192	789	920	56.8	42.9	13.8
194	783	920	59.4	45.5	13.8
196	764	920	67.6	53.8	13.8
200	740	920	78.0	64.2	13.8
204	723	920	85.4	71.5	13.8
208	694	920	97.9	84.1	13.8
212	679	920	104.4	90.7	13.7
216	655	920	114.8	101.1	13.7
220	630	920	125.6	111.9	13.7
224	620	920	130.0	116.3	13.7
228	620	920	130.0	116.3	13.7
232	643	920	120.0	106.3	13.7
236	653	920	115.7	102.0	13.7
240	651	920	116.6	102.9	13.7
244	634	920	123.9	110.3	13.7
248	624	920	128.2	114.6	13.6
252	648	920	117.9	104.8	13.1

Project: The Trails at CMR **920 Zone Analysis** **Node Data - Pipe Break Cond.**

Date: 06/09/20

Job Number: 736-018

254	650	920	117.0	104.0	13.0
256	644	920	119.6	106.6	13.0
260	650	920	117.0	103.7	13.2
264	680	920	104.0	91.6	12.4
268	694	920	97.9	86.0	11.9
272	696	920	97.1	84.6	12.4
276	726	920	84.1	71.7	12.3
280	750	920	73.7	63.8	9.9
284	731	920	81.9	71.8	10.1
288	729	920	82.8	72.0	10.7
292	739	920	78.4	68.6	9.8
300	640	920	121.3	107.6	13.7
304	627	920	126.9	113.2	13.7
308	627	920	126.9	113.2	13.7
312	583	920	146.0	132.3	13.7
316	570	920	151.6	137.9	13.7
320	608	920	135.2	121.5	13.7

Project: The Trails at CMR **920 Zone Analysis** **Node Data - Pipe Break Cond.**

Date: 06/09/20

Job Number: 736-018

Scenario: Pipe Break (Pipe 1) - Maximum Day Demand

Node No.	Node El. (ft)	HGL Zone (ft)	Static P (psi)	Model Run P (psi)	Delta P from Static
4	798	920	52.9	35.6	17.2
8	760	920	69.3	52.1	17.2
12	740	920	78.0	60.8	17.2
16	730	920	82.3	65.1	17.3
20	724	920	84.9	67.7	17.3
24	700	920	95.3	78.1	17.3
28	705	920	93.2	75.9	17.3
32	657	920	114.0	96.7	17.3
36	650	920	117.0	99.8	17.2
40	665	920	110.5	93.3	17.2
44	640	920	121.3	104.1	17.2
48	612	920	133.4	116.2	17.2
52	645	920	119.2	101.9	17.2
56	637	920	122.6	105.4	17.2
60	630	920	125.6	108.4	17.2
64	625	920	127.8	110.6	17.2
68	606	920	136.0	118.9	17.2
72	590	920	143.0	125.8	17.2
76	640	920	121.3	104.2	17.1
80	665	920	110.5	93.4	17.1
84	684	920	102.3	85.2	17.1
88	699	920	95.8	78.7	17.1
92	712	920	90.1	73.0	17.1
96	715	920	88.8	71.7	17.2
100	718	920	87.5	70.4	17.2
104	698	920	96.2	79.0	17.2
108	725	920	84.5	67.3	17.2
112	725	920	84.5	67.2	17.3
116	743	920	76.7	59.5	17.2
120	779	920	61.1	44.0	17.1
124	800	920	52.0	34.9	17.1
128	800	920	52.0	34.9	17.1
132	784	920	58.9	41.9	17.0
136	745	920	75.8	58.9	16.9
140	721	920	86.2	69.4	16.8
144	695	920	97.5	80.6	16.8
148	641	920	120.9	103.9	17.0
152	675	920	106.2	89.4	16.8
156	705	920	93.2	76.7	16.5
160	700	920	95.3	78.9	16.4
164	683	920	102.7	86.2	16.5
168	675	920	106.2	89.6	16.6
170	689	920	100.1	83.1	17.0
172	668	920	109.2	92.4	16.8
176	652	920	116.1	99.2	16.9
180	679	920	104.4	87.4	17.0
184	766	920	66.7	49.4	17.3
188	771	920	64.6	47.2	17.3
192	789	920	56.8	39.4	17.3
194	783	920	59.4	42.0	17.3
196	764	920	67.6	50.3	17.3
200	740	920	78.0	60.7	17.3
204	723	920	85.4	68.1	17.3
208	694	920	97.9	80.7	17.3
212	679	920	104.4	87.3	17.1
216	655	920	114.8	97.8	17.1
220	630	920	125.6	108.6	17.0
224	620	920	130.0	113.0	17.0
228	620	920	130.0	113.0	17.0
232	643	920	120.0	103.0	17.0
236	653	920	115.7	98.7	17.0
240	651	920	116.6	99.6	17.0
244	634	920	123.9	107.0	16.9
248	624	920	128.2	111.4	16.9
252	648	920	117.9	102.1	15.8

Project: The Trails at CMR **920 Zone Analysis** **Node Data - Pipe Break Cond.**

Date: 06/09/20

Job Number: 736-018

254	650	920	117.0	101.3	15.6
256	644	920	119.6	103.9	15.7
260	650	920	117.0	100.9	16.1
264	680	920	104.0	89.4	14.6
268	694	920	97.9	84.1	13.8
272	696	920	97.1	82.4	14.7
276	726	920	84.1	69.6	14.5
280	750	920	73.7	63.4	10.3
284	731	920	81.9	71.3	10.6
288	729	920	82.8	71.0	11.8
292	739	920	78.4	68.2	10.2
300	640	920	121.3	104.2	17.1
304	627	920	126.9	109.9	17.1
308	627	920	126.9	109.9	17.1
312	583	920	146.0	129.0	17.1
316	570	920	151.6	134.6	17.1
320	608	920	135.2	118.1	17.0

Project: The Trails at CMR **920 Zone Analysis** **Node Data - Pipe Break Cond.**

Date: 06/09/20

Job Number: 736-018

Scenario: Pipe Break (Pipe 1) - Peak Hour Demand

Node No.	Node El. (ft)	HGL Zone (ft)	Static P (psi)	Model Run P (psi)	Delta P from Static
4	798	920	52.9	29.6	23.2
8	760	920	69.3	46.1	23.2
12	740	920	78.0	54.7	23.2
16	730	920	82.3	59.0	23.3
20	724	920	84.9	61.5	23.4
24	700	920	95.3	71.9	23.4
28	705	920	93.2	69.8	23.4
32	657	920	114.0	90.6	23.3
36	650	920	117.0	93.8	23.2
40	665	920	110.5	87.3	23.2
44	640	920	121.3	98.1	23.2
48	612	920	133.4	110.2	23.2
52	645	920	119.2	95.9	23.2
56	637	920	122.6	99.4	23.2
60	630	920	125.6	102.4	23.2
64	625	920	127.8	104.6	23.2
68	606	920	136.0	112.9	23.1
72	590	920	143.0	119.9	23.1
76	640	920	121.3	98.5	22.9
80	665	920	110.5	87.6	22.9
84	684	920	102.3	79.3	22.9
88	699	920	95.8	72.8	22.9
92	712	920	90.1	67.2	23.0
96	715	920	88.8	65.8	23.1
100	718	920	87.5	64.4	23.1
104	698	920	96.2	73.0	23.2
108	725	920	84.5	61.2	23.3
112	725	920	84.5	61.1	23.4
116	743	920	76.7	53.6	23.1
120	779	920	61.1	38.2	22.9
124	800	920	52.0	29.2	22.8
128	800	920	52.0	29.2	22.8
132	784	920	58.9	36.1	22.8
136	745	920	75.8	53.4	22.5
140	721	920	86.2	63.9	22.4
144	695	920	97.5	75.1	22.4
148	641	920	120.9	98.2	22.6
152	675	920	106.2	83.9	22.3
156	705	920	93.2	71.5	21.6
160	700	920	95.3	73.8	21.6
164	683	920	102.7	80.8	21.9
168	675	920	106.2	84.2	22.0
170	689	920	100.1	77.1	23.0
172	668	920	109.2	86.8	22.4
176	652	920	116.1	93.4	22.7
180	679	920	104.4	81.4	23.0
184	766	920	66.7	43.1	23.6
188	771	920	64.6	40.9	23.6
192	789	920	56.8	33.1	23.6
194	783	920	59.4	35.7	23.6
196	764	920	67.6	44.1	23.5
200	740	920	78.0	54.6	23.4
204	723	920	85.4	61.9	23.4
208	694	920	97.9	74.5	23.4
212	679	920	104.4	81.3	23.1
216	655	920	114.8	91.9	22.9
220	630	920	125.6	102.7	22.9
224	620	920	130.0	107.1	22.9
228	620	920	130.0	107.1	22.9
232	643	920	120.0	97.2	22.8
236	653	920	115.7	92.9	22.8
240	651	920	116.6	93.7	22.8
244	634	920	123.9	101.2	22.7
248	624	920	128.2	105.6	22.6
252	648	920	117.9	97.3	20.6

Project: The Trails at CMR **920 Zone Analysis** **Node Data - Pipe Break Cond.**

Date: 06/09/20

Job Number: 736-018

254	650	920	117.0	96.7	20.3
256	644	920	119.6	99.2	20.4
260	650	920	117.0	95.8	21.2
264	680	920	104.0	85.6	18.4
268	694	920	97.9	80.8	17.2
272	696	920	97.1	78.5	18.5
276	726	920	84.1	65.9	18.2
280	750	920	73.7	62.7	11.0
284	731	920	81.9	70.3	11.6
288	729	920	82.8	69.2	13.5
292	739	920	78.4	67.5	10.9
300	640	920	121.3	98.3	23.0
304	627	920	126.9	103.9	23.0
308	627	920	126.9	103.9	23.0
312	583	920	146.0	123.0	23.0
316	570	920	151.6	128.7	23.0
320	608	920	135.2	112.3	22.9

Project: The Trails at CMR **920 Zone Analysis** **Node Data - Pipe Break Cond.**

Date: 06/09/20

Job Number: 736-018

Scenario: Pipe Break (Pipe 1) - Maximum Day Demand Plus 1500 gpm Fire Flow at Node 56

Node No.	Node El. (ft)	HGL Zone (ft)	Static P (psi)	Model Run P (psi)	Delta P from Static
4	798	920	52.9	26.2	26.7
8	760	920	69.3	42.7	26.7
12	740	920	78.0	51.3	26.6
16	730	920	82.3	55.9	26.5
20	724	920	84.9	58.6	26.3
24	700	920	95.3	69.1	26.2
28	705	920	93.2	66.9	26.2
32	657	920	114.0	87.5	26.4
36	650	920	117.0	90.3	26.7
40	665	920	110.5	83.9	26.6
44	640	920	121.3	94.7	26.6
48	612	920	133.4	106.8	26.6
52	645	920	119.2	92.6	26.6
56	637	920	122.6	96.0	26.7
60	630	920	125.6	99.1	26.6
64	625	920	127.8	101.3	26.5
68	606	920	136.0	109.7	26.4
72	590	920	143.0	116.7	26.3
76	640	920	121.3	95.6	25.8
80	665	920	110.5	84.7	25.8
84	684	920	102.3	76.5	25.8
88	699	920	95.8	70.0	25.8
92	712	920	90.1	64.3	25.8
96	715	920	88.8	62.9	25.9
100	718	920	87.5	61.5	26.0
104	698	920	96.2	70.1	26.1
108	725	920	84.5	58.4	26.1
112	725	920	84.5	58.3	26.2
116	743	920	76.7	50.7	26.0
120	779	920	61.1	35.4	25.7
124	800	920	52.0	26.4	25.6
128	800	920	52.0	26.4	25.6
132	784	920	58.9	33.4	25.5
136	745	920	75.8	50.7	25.1
140	721	920	86.2	61.3	25.0
144	695	920	97.5	72.5	25.0
148	641	920	120.9	95.5	25.4
152	675	920	106.2	81.3	24.9
156	705	920	93.2	69.2	23.9
160	700	920	95.3	71.6	23.8
164	683	920	102.7	78.8	23.9
168	675	920	106.2	82.2	24.0
170	689	920	100.1	75.1	25.0
172	668	920	109.2	84.9	24.3
176	652	920	116.1	91.3	24.8
180	679	920	104.4	79.4	25.0
184	766	920	66.7	40.7	26.0
188	771	920	64.6	38.5	26.1
192	789	920	56.8	30.6	26.1
194	783	920	59.4	33.2	26.2
196	764	920	67.6	41.5	26.1
200	740	920	78.0	51.8	26.1
204	723	920	85.4	59.2	26.1
208	694	920	97.9	71.8	26.1
212	679	920	104.4	79.0	25.4
216	655	920	114.8	89.7	25.1
220	630	920	125.6	100.6	25.0
224	620	920	130.0	105.0	25.0
228	620	920	130.0	105.0	25.0
232	643	920	120.0	95.1	24.9
236	653	920	115.7	90.8	24.9
240	651	920	116.6	91.6	24.9
244	634	920	123.9	99.2	24.8
248	624	920	128.2	103.6	24.6
252	648	920	117.9	95.5	22.4

Project: The Trails at CMR **920 Zone Analysis** **Node Data - Pipe Break Cond.**

Date: 06/09/20

Job Number: 736-018

254	650	920	117.0	94.9	22.1
256	644	920	119.6	97.5	22.1
260	650	920	117.0	94.0	23.0
264	680	920	104.0	84.1	19.9
268	694	920	97.9	79.4	18.5
272	696	920	97.1	76.9	20.2
276	726	920	84.1	64.3	19.8
280	750	920	73.7	62.4	11.3
284	731	920	81.9	69.9	11.9
288	729	920	82.8	68.5	14.3
292	739	920	78.4	67.3	11.2
300	640	920	121.3	96.0	25.3
304	627	920	126.9	101.7	25.3
308	627	920	126.9	101.7	25.2
312	583	920	146.0	120.9	25.1
316	570	920	151.6	126.5	25.1
320	608	920	135.2	110.1	25.0

Project: The Trails at CMR **920 Zone Analysis** **Node Data - Pipe Break Cond.**

Date: 06/09/20

Job Number: 736-018

Scenario: Pipe Break (Pipe 1) - Maximum Day Demand Plus 1500 gpm Fire Flow at Node 64

Node No.	Node El. (ft)	HGL Zone (ft)	Static P (psi)	Model Run P (psi)	Delta P from Static
4	798	920	52.9	26.3	26.6
8	760	920	69.3	42.8	26.6
12	740	920	78.0	51.4	26.6
16	730	920	82.3	55.9	26.4
20	724	920	84.9	58.7	26.2
24	700	920	95.3	69.1	26.2
28	705	920	93.2	67.0	26.2
32	657	920	114.0	87.6	26.4
36	650	920	117.0	90.4	26.6
40	665	920	110.5	83.9	26.6
44	640	920	121.3	94.8	26.6
48	612	920	133.4	106.9	26.6
52	645	920	119.2	92.6	26.6
56	637	920	122.6	96.1	26.6
60	630	920	125.6	99.1	26.5
64	625	920	127.8	101.3	26.6
68	606	920	136.0	109.6	26.4
72	590	920	143.0	116.7	26.3
76	640	920	121.3	95.5	25.8
80	665	920	110.5	84.7	25.8
84	684	920	102.3	76.5	25.8
88	699	920	95.8	69.9	25.8
92	712	920	90.1	64.3	25.8
96	715	920	88.8	62.9	25.9
100	718	920	87.5	61.5	26.0
104	698	920	96.2	70.1	26.1
108	725	920	84.5	58.4	26.1
112	725	920	84.5	58.3	26.1
116	743	920	76.7	50.7	26.0
120	779	920	61.1	35.5	25.6
124	800	920	52.0	26.4	25.6
128	800	920	52.0	26.4	25.6
132	784	920	58.9	33.4	25.5
136	745	920	75.8	50.7	25.1
140	721	920	86.2	61.3	25.0
144	695	920	97.5	72.5	25.0
148	641	920	120.9	95.5	25.4
152	675	920	106.2	81.3	24.9
156	705	920	93.2	69.2	23.9
160	700	920	95.3	71.6	23.8
164	683	920	102.7	78.8	23.9
168	675	920	106.2	82.2	24.0
170	689	920	100.1	75.1	25.0
172	668	920	109.2	84.9	24.3
176	652	920	116.1	91.4	24.8
180	679	920	104.4	79.4	25.0
184	766	920	66.7	40.7	26.0
188	771	920	64.6	38.5	26.1
192	789	920	56.8	30.7	26.1
194	783	920	59.4	33.2	26.2
196	764	920	67.6	41.5	26.1
200	740	920	78.0	51.9	26.1
204	723	920	85.4	59.3	26.1
208	694	920	97.9	71.9	26.1
212	679	920	104.4	79.0	25.4
216	655	920	114.8	89.7	25.1
220	630	920	125.6	100.6	25.0
224	620	920	130.0	105.0	25.0
228	620	920	130.0	105.0	25.0
232	643	920	120.0	95.1	24.9
236	653	920	115.7	90.8	24.9
240	651	920	116.6	91.7	24.9
244	634	920	123.9	99.2	24.7
248	624	920	128.2	103.6	24.6
252	648	920	117.9	95.5	22.4

Project: The Trails at CMR **920 Zone Analysis** **Node Data - Pipe Break Cond.**

Date: 06/09/20

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254	650	920	117.0	94.9	22.1
256	644	920	119.6	97.5	22.1
260	650	920	117.0	94.0	23.0
264	680	920	104.0	84.1	19.9
268	694	920	97.9	79.5	18.5
272	696	920	97.1	76.9	20.2
276	726	920	84.1	64.3	19.8
280	750	920	73.7	62.4	11.3
284	731	920	81.9	69.9	11.9
288	729	920	82.8	68.5	14.3
292	739	920	78.4	67.3	11.2
300	640	920	121.3	96.1	25.3
304	627	920	126.9	101.7	25.3
308	627	920	126.9	101.7	25.2
312	583	920	146.0	120.9	25.1
316	570	920	151.6	126.5	25.1
320	608	920	135.2	110.2	25.0

Project: The Trails at CMR **920 Zone Analysis** **Node Data - Pipe Break Cond.**

Date: 06/09/20

Job Number: 736-018

Scenario: Pipe Break (Pipe 1) - Maximum Day Demand Plus 1500 gpm Fire Flow at Node 96

Node No.	Node El. (ft)	HGL Zone (ft)	Static P (psi)	Model Run P (psi)	Delta P from Static
4	798	920	52.9	26.8	26.1
8	760	920	69.3	43.2	26.1
12	740	920	78.0	51.9	26.1
16	730	920	82.3	56.2	26.1
20	724	920	84.9	58.8	26.1
24	700	920	95.3	69.2	26.1
28	705	920	93.2	67.1	26.1
32	657	920	114.0	87.9	26.1
36	650	920	117.0	90.9	26.1
40	665	920	110.5	84.4	26.1
44	640	920	121.3	95.2	26.1
48	612	920	133.4	107.4	26.1
52	645	920	119.2	93.1	26.1
56	637	920	122.6	96.5	26.1
60	630	920	125.6	99.6	26.1
64	625	920	127.8	101.8	26.1
68	606	920	136.0	110.1	26.0
72	590	920	143.0	117.0	26.0
76	640	920	121.3	95.6	25.7
80	665	920	110.5	84.7	25.8
84	684	920	102.3	76.4	25.9
88	699	920	95.8	69.8	25.9
92	712	920	90.1	64.1	26.1
96	715	920	88.8	62.5	26.3
100	718	920	87.5	61.3	26.2
104	698	920	96.2	70.0	26.1
108	725	920	84.5	58.4	26.1
112	725	920	84.5	58.4	26.1
116	743	920	76.7	50.6	26.1
120	779	920	61.1	35.4	25.7
124	800	920	52.0	26.3	25.7
128	800	920	52.0	26.3	25.7
132	784	920	58.9	33.3	25.7
136	745	920	75.8	50.7	25.1
140	721	920	86.2	61.2	25.0
144	695	920	97.5	72.5	25.0
148	641	920	120.9	95.5	25.4
152	675	920	106.2	81.3	24.9
156	705	920	93.2	69.2	23.9
160	700	920	95.3	71.5	23.8
164	683	920	102.7	78.8	23.9
168	675	920	106.2	82.2	24.0
170	689	920	100.1	75.2	24.9
172	668	920	109.2	84.9	24.3
176	652	920	116.1	91.4	24.7
180	679	920	104.4	79.4	25.0
184	766	920	66.7	40.8	26.0
188	771	920	64.6	38.5	26.0
192	789	920	56.8	30.7	26.1
194	783	920	59.4	33.3	26.1
196	764	920	67.6	41.5	26.1
200	740	920	78.0	51.9	26.1
204	723	920	85.4	59.3	26.1
208	694	920	97.9	71.9	26.0
212	679	920	104.4	79.1	25.4
216	655	920	114.8	89.7	25.1
220	630	920	125.6	100.6	25.0
224	620	920	130.0	105.0	25.0
228	620	920	130.0	105.0	25.0
232	643	920	120.0	95.2	24.9
236	653	920	115.7	90.8	24.9
240	651	920	116.6	91.7	24.9
244	634	920	123.9	99.2	24.7
248	624	920	128.2	103.7	24.6
252	648	920	117.9	95.5	22.3

Project: The Trails at CMR **920 Zone Analysis** **Node Data - Pipe Break Cond.**

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254	650	920	117.0	94.9	22.0
256	644	920	119.6	97.5	22.1
260	650	920	117.0	94.0	23.0
264	680	920	104.0	84.1	19.9
268	694	920	97.9	79.5	18.5
272	696	920	97.1	76.9	20.2
276	726	920	84.1	64.3	19.8
280	750	920	73.7	62.4	11.3
284	731	920	81.9	69.9	11.9
288	729	920	82.8	68.5	14.3
292	739	920	78.4	67.3	11.2
300	640	920	121.3	96.1	25.2
304	627	920	126.9	101.7	25.2
308	627	920	126.9	101.8	25.2
312	583	920	146.0	120.9	25.1
316	570	920	151.6	126.6	25.1
320	608	920	135.2	110.2	25.0

Project: The Trails at CMR **920 Zone Analysis** **Node Data - Pipe Break Cond.**

Date: 06/09/20

Job Number: 736-018

Scenario: Pipe Break (Pipe 1) - Maximum Day Demand Plus 1500 gpm Fire Flow at Node 170

Node No.	Node El. (ft)	HGL Zone (ft)	Static P (psi)	Model Run P (psi)	Delta P from Static
4	798	920	52.9	27.6	25.3
8	760	920	69.3	44.1	25.3
12	740	920	78.0	52.7	25.3
16	730	920	82.3	56.9	25.5
20	724	920	84.9	59.3	25.6
24	700	920	95.3	69.7	25.7
28	705	920	93.2	67.5	25.7
32	657	920	114.0	88.5	25.5
36	650	920	117.0	91.7	25.2
40	665	920	110.5	85.3	25.2
44	640	920	121.3	96.1	25.2
48	612	920	133.4	108.2	25.2
52	645	920	119.2	93.9	25.2
56	637	920	122.6	97.4	25.2
60	630	920	125.6	100.4	25.2
64	625	920	127.8	102.6	25.2
68	606	920	136.0	110.9	25.1
72	590	920	143.0	117.9	25.1
76	640	920	121.3	96.4	24.9
80	665	920	110.5	85.6	24.9
84	684	920	102.3	77.3	24.9
88	699	920	95.8	70.8	24.9
92	712	920	90.1	65.1	25.0
96	715	920	88.8	63.8	25.1
100	718	920	87.5	62.4	25.2
104	698	920	96.2	71.0	25.2
108	725	920	84.5	59.1	25.4
112	725	920	84.5	58.8	25.7
116	743	920	76.7	51.5	25.2
120	779	920	61.1	36.2	24.9
124	800	920	52.0	27.1	24.9
128	800	920	52.0	27.2	24.8
132	784	920	58.9	34.1	24.8
136	745	920	75.8	51.3	24.5
140	721	920	86.2	61.8	24.4
144	695	920	97.5	73.1	24.4
148	641	920	120.9	96.2	24.7
152	675	920	106.2	81.9	24.3
156	705	920	93.2	69.5	23.6
160	700	920	95.3	71.7	23.6
164	683	920	102.7	78.4	24.3
168	675	920	106.2	81.6	24.6
170	689	920	100.1	71.4	28.7
172	668	920	109.2	84.2	25.0
176	652	920	116.1	90.5	25.7
180	679	920	104.4	78.0	26.4
184	766	920	66.7	40.5	26.2
188	771	920	64.6	38.3	26.2
192	789	920	56.8	30.7	26.1
194	783	920	59.4	33.4	26.0
196	764	920	67.6	41.7	25.9
200	740	920	78.0	52.3	25.7
204	723	920	85.4	59.6	25.7
208	694	920	97.9	72.2	25.7
212	679	920	104.4	78.7	25.7
216	655	920	114.8	89.1	25.7
220	630	920	125.6	100.0	25.7
224	620	920	130.0	104.3	25.7
228	620	920	130.0	104.3	25.7
232	643	920	120.0	94.4	25.6
236	653	920	115.7	90.0	25.6
240	651	920	116.6	90.9	25.7
244	634	920	123.9	98.4	25.5
248	624	920	128.2	102.8	25.4
252	648	920	117.9	95.0	22.9

Project: The Trails at CMR **920 Zone Analysis** **Node Data - Pipe Break Cond.**

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254	650	920	117.0	94.5	22.5
256	644	920	119.6	97.0	22.6
260	650	920	117.0	93.5	23.5
264	680	920	104.0	83.8	20.2
268	694	920	97.9	79.3	18.6
272	696	920	97.1	77.0	20.1
276	726	920	84.1	64.4	19.6
280	750	920	73.7	62.4	11.3
284	731	920	81.9	69.9	12.0
288	729	920	82.8	68.5	14.3
292	739	920	78.4	67.3	11.2
300	640	920	121.3	95.6	25.7
304	627	920	126.9	101.3	25.7
308	627	920	126.9	101.3	25.7
312	583	920	146.0	120.3	25.7
316	570	920	151.6	126.0	25.7
320	608	920	135.2	109.5	25.7

Project: The Trails at CMR **920 Zone Analysis** **Node Data - Pipe Break Cond.**

Date: 06/09/20

Job Number: 736-018

Scenario: Pipe Break (Pipe 1) - Maximum Day Demand Plus 1500 gpm Fire Flow at Node 188

Node No.	Node El. (ft)	HGL Zone (ft)	Static P (psi)	Model Run P (psi)	Delta P from Static
4	798	920	52.9	27.1	25.8
8	760	920	69.3	43.5	25.8
12	740	920	78.0	52.2	25.8
16	730	920	82.3	56.2	26.1
20	724	920	84.9	58.6	26.3
24	700	920	95.3	68.9	26.4
28	705	920	93.2	66.8	26.4
32	657	920	114.0	87.8	26.1
36	650	920	117.0	91.2	25.8
40	665	920	110.5	84.7	25.8
44	640	920	121.3	95.6	25.8
48	612	920	133.4	107.7	25.8
52	645	920	119.2	93.4	25.8
56	637	920	122.6	96.8	25.8
60	630	920	125.6	99.9	25.8
64	625	920	127.8	102.1	25.7
68	606	920	136.0	110.4	25.7
72	590	920	143.0	117.4	25.6
76	640	920	121.3	96.0	25.3
80	665	920	110.5	85.2	25.3
84	684	920	102.3	76.9	25.4
88	699	920	95.8	70.4	25.4
92	712	920	90.1	64.7	25.4
96	715	920	88.8	63.3	25.5
100	718	920	87.5	61.9	25.7
104	698	920	96.2	70.4	25.8
108	725	920	84.5	58.4	26.1
112	725	920	84.5	58.0	26.5
116	743	920	76.7	51.0	25.7
120	779	920	61.1	35.8	25.3
124	800	920	52.0	26.7	25.3
128	800	920	52.0	26.7	25.3
132	784	920	58.9	33.7	25.2
136	745	920	75.8	51.0	24.8
140	721	920	86.2	61.5	24.7
144	695	920	97.5	72.8	24.7
148	641	920	120.9	95.9	25.0
152	675	920	106.2	81.6	24.6
156	705	920	93.2	69.4	23.8
160	700	920	95.3	71.6	23.7
164	683	920	102.7	78.6	24.1
168	675	920	106.2	82.0	24.2
170	689	920	100.1	74.4	25.7
172	668	920	109.2	84.5	24.6
176	652	920	116.1	90.8	25.4
180	679	920	104.4	78.6	25.8
184	766	920	66.7	39.1	27.6
188	771	920	64.6	36.8	27.8
192	789	920	56.8	29.4	27.4
194	783	920	59.4	32.3	27.1
196	764	920	67.6	40.6	27.0
200	740	920	78.0	51.5	26.5
204	723	920	85.4	58.9	26.5
208	694	920	97.9	71.5	26.4
212	679	920	104.4	78.5	25.9
216	655	920	114.8	89.2	25.6
220	630	920	125.6	100.1	25.6
224	620	920	130.0	104.4	25.6
228	620	920	130.0	104.4	25.6
232	643	920	120.0	94.6	25.4
236	653	920	115.7	90.2	25.4
240	651	920	116.6	91.1	25.5
244	634	920	123.9	98.6	25.3
248	624	920	128.2	103.1	25.2
252	648	920	117.9	95.2	22.6

Project: The Trails at CMR **920 Zone Analysis** **Node Data - Pipe Break Cond.**

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254	650	920	117.0	94.7	22.3
256	644	920	119.6	97.2	22.4
260	650	920	117.0	93.8	23.2
264	680	920	104.0	83.9	20.0
268	694	920	97.9	79.4	18.5
272	696	920	97.1	76.9	20.1
276	726	920	84.1	64.4	19.7
280	750	920	73.7	62.4	11.3
284	731	920	81.9	69.9	12.0
288	729	920	82.8	68.5	14.3
292	739	920	78.4	67.3	11.2
300	640	920	121.3	95.6	25.8
304	627	920	126.9	101.2	25.8
308	627	920	126.9	101.2	25.7
312	583	920	146.0	120.4	25.7
316	570	920	151.6	126.0	25.6
320	608	920	135.2	109.6	25.6

Project: The Trails at CMR **920 Zone Analysis** **Node Data - Pipe Break Cond.**

Date: 06/09/20

Job Number: 736-018

Scenario: Pipe Break (Pipe 1) - Maximum Day Demand Plus 1500 gpm Fire Flow at Node 194

Node No.	Node El. (ft)	HGL Zone (ft)	Static P (psi)	Model Run P (psi)	Delta P from Static
4	798	920	52.9	26.9	26.0
8	760	920	69.3	43.4	26.0
12	740	920	78.0	52.0	26.0
16	730	920	82.3	56.0	26.3
20	724	920	84.9	58.4	26.5
24	700	920	95.3	68.7	26.6
28	705	920	93.2	66.5	26.6
32	657	920	114.0	87.7	26.3
36	650	920	117.0	91.1	25.9
40	665	920	110.5	84.6	25.9
44	640	920	121.3	95.4	25.9
48	612	920	133.4	107.5	25.9
52	645	920	119.2	93.2	25.9
56	637	920	122.6	96.7	25.9
60	630	920	125.6	99.7	25.9
64	625	920	127.8	101.9	25.9
68	606	920	136.0	110.2	25.8
72	590	920	143.0	117.2	25.8
76	640	920	121.3	95.9	25.4
80	665	920	110.5	85.0	25.5
84	684	920	102.3	76.8	25.5
88	699	920	95.8	70.2	25.5
92	712	920	90.1	64.6	25.6
96	715	920	88.8	63.1	25.7
100	718	920	87.5	61.7	25.8
104	698	920	96.2	70.3	25.9
108	725	920	84.5	58.2	26.2
112	725	920	84.5	57.8	26.7
116	743	920	76.7	50.8	25.9
120	779	920	61.1	35.6	25.5
124	800	920	52.0	26.6	25.4
128	800	920	52.0	26.6	25.4
132	784	920	58.9	33.6	25.3
136	745	920	75.8	50.9	24.9
140	721	920	86.2	61.5	24.8
144	695	920	97.5	72.7	24.8
148	641	920	120.9	95.8	25.1
152	675	920	106.2	81.5	24.7
156	705	920	93.2	69.3	23.8
160	700	920	95.3	71.6	23.7
164	683	920	102.7	78.7	24.0
168	675	920	106.2	82.0	24.1
170	689	920	100.1	74.7	25.4
172	668	920	109.2	84.6	24.5
176	652	920	116.1	90.9	25.2
180	679	920	104.4	78.9	25.5
184	766	920	66.7	39.8	27.0
188	771	920	64.6	37.5	27.1
192	789	920	56.8	29.6	27.1
194	783	920	59.4	31.8	27.6
196	764	920	67.6	40.7	26.9
200	740	920	78.0	51.3	26.7
204	723	920	85.4	58.7	26.7
208	694	920	97.9	71.3	26.6
212	679	920	104.4	78.6	25.9
216	655	920	114.8	89.3	25.6
220	630	920	125.6	100.2	25.5
224	620	920	130.0	104.5	25.4
228	620	920	130.0	104.5	25.4
232	643	920	120.0	94.7	25.3
236	653	920	115.7	90.4	25.3
240	651	920	116.6	91.2	25.3
244	634	920	123.9	98.8	25.1
248	624	920	128.2	103.2	25.0
252	648	920	117.9	95.3	22.5

Project: The Trails at CMR **920 Zone Analysis** **Node Data - Pipe Break Cond.**

Date: 06/09/20

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254	650	920	117.0	94.8	22.2
256	644	920	119.6	97.3	22.3
260	650	920	117.0	93.8	23.2
264	680	920	104.0	84.0	20.0
268	694	920	97.9	79.4	18.5
272	696	920	97.1	76.9	20.1
276	726	920	84.1	64.3	19.7
280	750	920	73.7	62.4	11.3
284	731	920	81.9	69.9	11.9
288	729	920	82.8	68.5	14.3
292	739	920	78.4	67.3	11.2
300	640	920	121.3	95.6	25.7
304	627	920	126.9	101.2	25.7
308	627	920	126.9	101.3	25.7
312	583	920	146.0	120.4	25.6
316	570	920	151.6	126.1	25.5
320	608	920	135.2	109.7	25.5

Project: The Trails at CMR **920 Zone Analysis** **Node Data - Pipe Break Cond.**

Date: 06/09/20

Job Number: 736-018

Scenario: Pipe Break (Pipe 1) - Maximum Day Demand Plus 1500 gpm Fire Flow at Node 254

Node No.	Node El. (ft)	HGL Zone (ft)	Static P (psi)	Model Run P (psi)	Delta P from Static
4	798	920	52.9	28.8	24.1
8	760	920	69.3	45.2	24.1
12	740	920	78.0	53.9	24.1
16	730	920	82.3	58.1	24.2
20	724	920	84.9	60.7	24.3
24	700	920	95.3	71.0	24.3
28	705	920	93.2	68.9	24.3
32	657	920	114.0	89.8	24.2
36	650	920	117.0	92.9	24.1
40	665	920	110.5	86.4	24.1
44	640	920	121.3	97.3	24.1
48	612	920	133.4	109.4	24.1
52	645	920	119.2	95.1	24.1
56	637	920	122.6	98.6	24.1
60	630	920	125.6	101.6	24.1
64	625	920	127.8	103.8	24.0
68	606	920	136.0	112.0	24.0
72	590	920	143.0	119.0	24.0
76	640	920	121.3	97.5	23.8
80	665	920	110.5	86.7	23.8
84	684	920	102.3	78.4	23.9
88	699	920	95.8	71.9	23.9
92	712	920	90.1	66.2	23.9
96	715	920	88.8	64.9	24.0
100	718	920	87.5	63.5	24.0
104	698	920	96.2	72.1	24.1
108	725	920	84.5	60.3	24.2
112	725	920	84.5	60.2	24.3
116	743	920	76.7	52.7	24.0
120	779	920	61.1	37.3	23.8
124	800	920	52.0	28.2	23.8
128	800	920	52.0	28.2	23.8
132	784	920	58.9	35.2	23.8
136	745	920	75.8	52.3	23.5
140	721	920	86.2	62.8	23.5
144	695	920	97.5	74.0	23.5
148	641	920	120.9	97.2	23.7
152	675	920	106.2	82.8	23.4
156	705	920	93.2	70.3	22.9
160	700	920	95.3	72.4	22.9
164	683	920	102.7	79.0	23.7
168	675	920	106.2	82.2	24.0
170	689	920	100.1	75.7	24.4
172	668	920	109.2	85.0	24.2
176	652	920	116.1	91.7	24.4
180	679	920	104.4	80.0	24.4
184	766	920	66.7	42.3	24.5
188	771	920	64.6	40.1	24.5
192	789	920	56.8	32.3	24.4
194	783	920	59.4	34.9	24.4
196	764	920	67.6	43.2	24.4
200	740	920	78.0	53.7	24.3
204	723	920	85.4	61.0	24.3
208	694	920	97.9	73.6	24.4
212	679	920	104.4	80.0	24.4
216	655	920	114.8	90.4	24.4
220	630	920	125.6	101.3	24.4
224	620	920	130.0	105.6	24.4
228	620	920	130.0	105.6	24.4
232	643	920	120.0	95.6	24.4
236	653	920	115.7	91.3	24.4
240	651	920	116.6	92.2	24.4
244	634	920	123.9	99.5	24.4
248	624	920	128.2	103.9	24.4
252	648	920	117.9	93.5	24.3

Project: The Trails at CMR **920 Zone Analysis** **Node Data - Pipe Break Cond.**

Date: 06/09/20

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254	650	920	117.0	92.7	24.3
256	644	920	119.6	95.5	24.1
260	650	920	117.0	92.9	24.0
264	680	920	104.0	82.9	21.1
268	694	920	97.9	78.9	19.0
272	696	920	97.1	77.2	19.8
276	726	920	84.1	64.7	19.3
280	750	920	73.7	62.4	11.3
284	731	920	81.9	69.9	12.0
288	729	920	82.8	68.3	14.5
292	739	920	78.4	67.2	11.2
300	640	920	121.3	96.9	24.4
304	627	920	126.9	102.6	24.4
308	627	920	126.9	102.6	24.4
312	583	920	146.0	121.6	24.4
316	570	920	151.6	127.3	24.4
320	608	920	135.2	110.8	24.4

Project: The Trails at CMR **920 Zone Analysis** **Pipe Data - Pipe Break Cond.**

Date: 06/09/20

Job Number: 736-018

Scenario: Pipe Break (Pipe 1) - Average Day Demand

Pipe No.	Pipe Size (inches)	Model Run Flow (gpm)	Model Run Velocity (gpm)
1-XX	20		
5	20	-46.76	0.05
9	20	-80.5	0.08
13	16	-80.5	0.13
17	8	10.78	0.07
21	8	-0.21	0
25	8	-6.86	0.04
29	12	-6.86	0.02
33	8	8.93	0.06
37	8	17.33	0.11
41	12	8.23	0.02
45	12	-9.62	0.03
49	8	16.51	0.11
53	8	-10.51	0.07
57	12	26.13	0.07
61	12	36.64	0.1
65	16	-106.07	0.17
69	16	-157.57	0.25
73	16	-137.78	0.22
77	16	-171.48	0.27
81	16	-185.67	0.3
85	8	-30.82	0.2
89	16	-185.67	0.3
93	12	74.05	0.21
97	12	86.85	0.25
101	12	48.4	0.14
105	12	101.79	0.29
109	12	157.74	0.45
113	12	128.14	0.36
117	8	-4.05	0.03
121	12	120.71	0.34
125	12	-61.26	0.17
129	12	59.46	0.17
133	12	118.98	0.34
137	12	-6.89	0.02
141	8	-59.53	0.38
145	8	-69.18	0.44
149	12	-74.78	0.21
153	12	-74.78	0.21
157	12	-74.78	0.21
161	10	66.94	0.27
165	10	153.2	0.63
169	12	199.89	0.57
173	10	-99.38	0.41
177	12	-329.39	0.93
181	12	-15.93	0.05
185	10	-96.31	0.39
189	12	174.27	0.49
193	16	-421.63	0.67
197	16	-287.09	0.46
201	16	-595.9	0.95
205	12	-975.68	2.77
209	12	262.82	0.75
213	12	764.43	2.17
217	10	130.85	0.53
221	10	130.85	0.53

225	10	-264.94	1.08
227	8	-113.56	0.72
229	8	-71.26	0.45
233	10	229.73	0.94
237	10	172.63	0.71
241	10	81.29	0.33
245	10	113.75	0.46
249	10	140.17	0.57
253	10	200.09	0.82
257	12	130.23	0.37
261	12	52.43	0.15
265	12	43.97	0.12
267	12	-68.23	0.19
269	10	-2.86	0.01
273	10	19.82	0.08
277	12	33.92	0.1
281	12	14.11	0.04
285	12	2.14	0.01
289	8	-72.48	0.46
293	10	-72.48	0.3
295	10	-56.53	0.23
297	10	-64.72	0.26
301	10	-64.72	0.26
305	10	-82.77	0.34
309	10	18.05	0.07
313	8	-40.37	0.26
317	8	-47.41	0.3
321	8	7.04	0.04
325	8	38.88	0.25
329	8	45.91	0.29
333	8	-116	0.74
337	10	279.33	1.14
339	10	296.69	1.21
341	10	-138.23	0.56
345	10	-328.92	1.34
347	10	434.92	1.78
349	8	-218.76	1.4
353	12	653.69	1.85
357	12	1019.99	2.89
361	12	366.3	1.04
365	12	-398.12	1.13
369	12	-1373.8	3.9
373	12	286.09	0.81
377	12	635.81	1.8
381	12	-349.72	0.99
385	10	384.18	1.57
387	10	-15.96	0.07
389	8	-15.96	0.1
391	8	-15.96	0.1
393	8	-15.96	0.1
395	8	-21.26	0.14
397	10	-21.26	0.09
801	12	-1659.89	4.71
805	12	-1659.89	4.71
901	12	-733.9	2.08
905	12	-733.9	2.08

Project: The Trails at CMR **920 Zone Analysis** **Pipe Data - Pipe Break Cond.**

Date: 06/09/20

Job Number: 736-018

Scenario: Pipe Break (Pipe 1) - Maximum Day Demand

Pipe No.	Pipe Size (inches)	Model Run Flow (gpm)	Model Run Velocity (gpm)
1-XX	20		
5	20	-46.76	0.05
9	20	-113.63	0.12
13	16	-113.63	0.18
17	8	43.91	0.28
21	8	32.92	0.21
25	8	26.27	0.17
29	12	26.27	0.07
33	8	43.31	0.28
37	8	51.71	0.33
41	12	-10.71	0.03
45	12	-28.56	0.08
49	8	13.38	0.09
53	8	-13.64	0.09
57	12	41.94	0.12
61	12	55.58	0.16
65	16	-154.63	0.25
69	16	-309.13	0.49
73	16	-277.94	0.44
77	16	-379.04	0.6
81	16	-363.44	0.58
85	8	-60.61	0.39
89	16	-363.44	0.58
93	12	123.38	0.35
97	12	196.38	0.56
101	12	128.14	0.36
105	12	245.57	0.7
109	12	348.57	0.99
113	12	259.77	0.74
117	8	7.13	0.05
121	12	241.16	0.68
125	12	-91.6	0.26
129	12	149.56	0.42
133	12	279.8	0.79
137	12	60.62	0.17
141	8	-130.25	0.83
145	8	-128.72	0.82
149	12	-134.32	0.38
153	12	-134.32	0.38
157	12	-134.32	0.38
161	10	113.99	0.47
165	10	259.79	1.06
169	12	306.48	0.87
173	10	-163.42	0.67
177	12	-460.77	1.31
181	12	-55.18	0.16
185	10	-156.51	0.64
189	12	273.72	0.78
193	16	-648.72	1.04
197	16	-514.18	0.82
201	16	-922.44	1.47
205	12	-1298.94	3.68
209	12	266.1	0.75
213	12	1030.53	2.92
217	10	262.29	1.07
221	10	262.29	1.07

225	10	-380.32	1.55
227	8	-184.86	1.18
229	8	-57.96	0.37
233	10	405.25	1.66
237	10	233.95	0.96
241	10	156.69	0.64
245	10	130.72	0.53
249	10	259.91	1.06
253	10	306.53	1.25
257	12	236.67	0.67
261	12	3.27	0.01
265	12	73.14	0.21
267	12	-263.46	0.75
269	10	75.47	0.31
273	10	98.15	0.4
277	12	67.02	0.19
281	12	-31.13	0.09
285	12	-43.1	0.12
289	8	-117.72	0.75
293	10	-117.72	0.48
295	10	-94.2	0.38
297	10	-102.39	0.42
301	10	-102.39	0.42
305	10	-119.88	0.49
309	10	17.49	0.07
313	8	-59.09	0.38
317	8	-67.04	0.43
321	8	6.12	0.04
325	8	59.02	0.38
329	8	65.14	0.42
333	8	-154.86	0.99
337	10	393.59	1.61
339	10	410.95	1.68
341	10	-177.13	0.72
345	10	-444.3	1.81
347	10	588.08	2.4
349	8	-295.24	1.88
353	12	883.32	2.51
357	12	1367.92	3.88
361	12	484.6	1.37
365	12	-545.94	1.55
369	12	-1844.87	5.23
373	12	405.34	1.15
377	12	856.48	2.43
381	12	-451.14	1.28
385	10	511.44	2.09
387	10	-23.52	0.1
389	8	-23.52	0.15
391	8	-23.52	0.15
393	8	-23.52	0.15
395	8	-39.42	0.25
397	10	-39.42	0.16
801	12	-2250.22	6.38
805	12	-2250.22	6.38
901	12	-962.57	2.73
905	12	-962.57	2.73

Project: The Trails at CMR **920 Zone Analysis** **Pipe Data - Pipe Break Cond.**

Date: 06/09/20

Job Number: 736-018

Scenario: Pipe Break (Pipe 1) - Peak Hour Demand

Pipe No.	Pipe Size (inches)	Model Run Flow (gpm)	Model Run Velocity (gpm)
1-XX	20		
5	20	-46.76	0.05
9	20	-151.07	0.15
13	16	-151.07	0.24
17	8	81.35	0.52
21	8	70.36	0.45
25	8	63.71	0.41
29	12	63.71	0.18
33	8	87.24	0.56
37	8	95.64	0.61
41	12	-32.49	0.09
45	12	-50.34	0.14
49	8	9.18	0.06
53	8	-17.84	0.11
57	12	59.53	0.17
61	12	77.36	0.22
65	16	-214.22	0.34
69	16	-507.77	0.81
73	16	-463.27	0.74
77	16	-655.36	1.05
81	16	-600.13	0.96
85	8	-100.24	0.64
89	16	-600.13	0.96
93	12	187.71	0.53
97	12	341.17	0.97
101	12	233.29	0.66
105	12	436.61	1.24
109	12	602.58	1.71
113	12	433.86	1.23
117	8	21.67	0.14
121	12	400.71	1.14
125	12	-126.69	0.36
129	12	274.02	0.78
133	12	499.54	1.42
137	12	141.99	0.4
141	8	-225.52	1.44
145	8	-209.45	1.34
149	12	-215.05	0.61
153	12	-215.05	0.61
157	12	-215.05	0.61
161	10	176.96	0.72
165	10	403.49	1.65
169	12	450.18	1.28
173	10	-249.3	1.02
177	12	-641.86	1.82
181	12	-103.68	0.29
185	10	-236.97	0.97
189	12	402.67	1.14
193	16	-949.74	1.52
197	16	-815.2	1.3
201	16	-1352.42	2.16
205	12	-1734.78	4.92
209	12	260.24	0.74
213	12	1387.21	3.93
217	10	443.74	1.81
221	10	443.74	1.81

225	10	-536.66	2.19
227	8	-283.15	1.81
229	8	-42.04	0.27
233	10	644.75	2.63
237	10	319.28	1.3
241	10	258.16	1.05
245	10	148.51	0.61
249	10	428.92	1.75
253	10	459.63	1.88
257	12	389.77	1.11
261	12	-53.69	0.15
265	12	111.05	0.31
267	12	-528.49	1.5
269	10	170.34	0.7
273	10	193.02	0.79
277	12	103.09	0.29
281	12	-89.93	0.26
285	12	-101.9	0.29
289	8	-176.52	1.13
293	10	-176.52	0.72
295	10	-143.5	0.59
297	10	-151.69	0.62
301	10	-151.69	0.62
305	10	-167.95	0.69
309	10	16.27	0.07
313	8	-84.13	0.54
317	8	-95.02	0.61
321	8	3.19	0.02
325	8	89.3	0.57
329	8	92.49	0.59
333	8	-210.18	1.34
337	10	550.38	2.25
339	10	567.74	2.32
341	10	-229.21	0.94
345	10	-600.64	2.45
347	10	796.95	3.26
349	8	-399.5	2.55
353	12	1196.45	3.39
357	12	1838.97	5.22
361	12	642.52	1.82
365	12	-744.69	2.11
369	12	-2479.47	7.03
373	12	562.31	1.6
377	12	1154.4	3.27
381	12	-592.09	1.68
385	10	684.57	2.8
387	10	-33.02	0.13
389	8	-33.02	0.21
391	8	-33.02	0.21
393	8	-33.02	0.21
395	8	-63.23	0.4
397	10	-63.23	0.26
801	12	-3041.79	8.63
805	12	-3041.79	8.63
901	12	-1276.65	3.62
905	12	-1276.65	3.62

Scenario: Pipe Break (Pipe 1) - Maximum Day Demand Plus 1500 gpm Fire Flow at Node 56

Pipe No.	Pipe Size (inches)	Model Run Flow (gpm)	Model Run Velocity (gpm)
1-XX	20		
5	20	-46.76	0.05
9	20	52.3	0.05
13	16	52.3	0.08
17	8	-122.02	0.78
21	8	-133.01	0.85
25	8	-139.66	0.89
29	12	-139.66	0.4
33	8	-157.23	1
37	8	-148.83	0.95
41	12	-103.93	0.29
45	12	-121.78	0.35
49	8	-6.33	0.04
53	8	-33.35	0.21
57	12	115.45	0.33
61	12	148.8	0.42
65	16	305.07	0.49
69	16	-1349.43	2.15
73	16	-950.65	1.52
77	16	-1051.75	1.68
81	16	-929.72	1.48
85	8	-167.03	1.07
89	16	-929.72	1.48
93	12	98.2	0.28
97	12	314.81	0.89
101	12	140.14	0.4
105	12	403.95	1.15
109	12	616.67	1.75
113	12	527.87	1.5
117	8	-31.48	0.2
121	12	547.87	1.55
125	12	-552.41	1.57
129	12	-4.54	0.01
133	12	205.02	0.58
137	12	-305.86	0.87
141	8	-209.56	1.34
145	8	-246.64	1.57
149	12	-252.24	0.72
153	12	-252.24	0.72
157	12	-252.24	0.72
161	10	223.71	0.91
165	10	487.43	1.99
169	12	534.12	1.52
173	10	-309.8	1.27
177	12	-792.22	2.25
181	12	-97.76	0.28
185	10	-300.12	1.23
189	12	459.89	1.3
193	16	-1189.83	1.9
197	16	-1055.29	1.68
201	16	-1649.73	2.63
205	12	-1913.21	5.43
209	12	379.12	1.08
213	12	1520.85	4.31
217	10	308.14	1.26
221	10	308.14	1.26

225	10	-582.78	2.38
227	8	-282.33	1.8
229	8	-155.43	0.99
233	10	556.09	2.27
237	10	384.79	1.57
241	10	265.45	1.08
245	10	195.68	0.8
249	10	454.55	1.86
253	10	598.64	2.45
257	12	528.78	1.5
261	12	295.38	0.84
265	12	223.27	0.63
267	12	-113.33	0.32
269	10	-66.51	0.27
273	10	-43.83	0.18
277	12	-224.1	0.64
281	12	-180.28	0.51
285	12	-192.25	0.55
289	8	-266.87	1.7
293	10	-266.87	1.09
295	10	-208.97	0.85
297	10	-217.16	0.89
301	10	-217.16	0.89
305	10	-221.5	0.9
309	10	4.35	0.02
313	8	-106.62	0.68
317	8	-109.77	0.7
321	8	10.93	0.07
325	8	95.68	0.61
329	8	106.61	0.68
333	8	-239.06	1.53
337	10	586.55	2.4
339	10	603.91	2.47
341	10	-247.75	1.01
345	10	-646.76	2.64
347	10	851.66	3.48
349	8	-427.07	2.73
353	12	1278.73	3.63
357	12	1999.06	5.67
361	12	720.33	2.04
365	12	-800.52	2.27
369	12	-2713.73	7.7
373	12	612.4	1.74
377	12	1255.09	3.56
381	12	-642.69	1.82
385	10	743.97	3.04
387	10	-57.9	0.24
389	8	-57.9	0.37
391	8	-57.9	0.37
393	8	-57.9	0.37
395	8	-73.8	0.47
397	10	-73.8	0.3
801	12	-3326.13	9.43
805	12	-3326.13	9.43
901	12	-1386.66	3.93
905	12	-1386.66	3.93

Project: The Trails at CMR **920 Zone Analysis** **Pipe Data - Pipe Break Cond.**

Date: 06/09/20

Job Number: 736-018

Scenario: Pipe Break (Pipe 1) - Maximum Day Demand Plus 1500 gpm Fire Flow at Node 64

Pipe No.	Pipe Size (inches)	Model Run Flow (gpm)	Model Run Velocity (gpm)
1-XX	20		
5	20	-46.76	0.05
9	20	40.75	0.04
13	16	40.75	0.07
17	8	-110.47	0.71
21	8	-121.46	0.78
25	8	-128.11	0.82
29	12	-128.11	0.36
33	8	-143.48	0.92
37	8	-135.08	0.86
41	12	25.53	0.07
45	12	7.68	0.02
49	8	18.55	0.12
53	8	-8.47	0.05
57	12	10.87	0.03
61	12	19.34	0.05
65	16	150.3	0.24
69	16	-4.2	0.01
73	16	524.77	0.84
77	16	-1076.33	1.72
81	16	-949.94	1.52
85	8	-171.39	1.09
89	16	-949.94	1.52
93	12	81.95	0.23
97	12	299.52	0.85
101	12	120.49	0.34
105	12	384.66	1.09
109	12	598.38	1.7
113	12	509.58	1.45
117	8	-33.76	0.22
121	12	531.85	1.51
125	12	-553.14	1.57
129	12	-21.29	0.06
133	12	183.25	0.52
137	12	-280.55	0.8
141	8	-204.53	1.31
145	8	-243.89	1.56
149	12	-249.49	0.71
153	12	-249.49	0.71
157	12	-249.49	0.71
161	10	224.7	0.92
165	10	485.67	1.98
169	12	532.36	1.51
173	10	-310.16	1.27
177	12	-793.35	2.25
181	12	-95.24	0.27
185	10	-301.08	1.23
189	12	458.34	1.3
193	16	-1193.8	1.9
197	16	-1059.26	1.69
201	16	-1652.14	2.64
205	12	-1913.62	5.43
209	12	381.13	1.08
213	12	1520.95	4.31
217	10	305.11	1.25
221	10	305.11	1.25

225	10	-582.9	2.38
227	8	-281.28	1.8
229	8	-154.38	0.99
233	10	554.23	2.26
237	10	382.93	1.56
241	10	265.27	1.08
245	10	195.01	0.8
249	10	453.19	1.85
253	10	596.23	2.44
257	12	526.37	1.49
261	12	292.97	0.83
265	12	221.77	0.63
267	12	-114.83	0.33
269	10	-65.6	0.27
273	10	-42.92	0.18
277	12	-222.07	0.63
281	12	-179.15	0.51
285	12	-191.12	0.54
289	8	-265.74	1.7
293	10	-265.74	1.09
295	10	-208.1	0.85
297	10	-216.29	0.88
301	10	-216.29	0.88
305	10	-220.71	0.9
309	10	4.43	0.02
313	8	-106.29	0.68
317	8	-109.53	0.7
321	8	10.82	0.07
325	8	95.56	0.61
329	8	106.38	0.68
333	8	-238.6	1.52
337	10	585.91	2.39
339	10	603.27	2.46
341	10	-248.03	1.01
345	10	-646.88	2.64
347	10	851.3	3.48
349	8	-426.92	2.72
353	12	1278.22	3.63
357	12	1998.92	5.67
361	12	720.7	2.04
365	12	-800.26	2.27
369	12	-2713.87	7.7
373	12	612.31	1.74
377	12	1254.99	3.56
381	12	-642.68	1.82
385	10	743.93	3.04
387	10	-57.64	0.24
389	8	-57.64	0.37
391	8	-57.64	0.37
393	8	-57.64	0.37
395	8	-73.54	0.47
397	10	-73.54	0.3
801	12	-3326.18	9.44
805	12	-3326.18	9.44
901	12	-1386.61	3.93
905	12	-1386.61	3.93

Project: The Trails at CMR **920 Zone Analysis** **Pipe Data - Pipe Break Cond.**

Date: 06/09/20

Job Number: 736-018

Scenario: Pipe Break (Pipe 1) - Maximum Day Demand Plus 1500 gpm Fire Flow at Node 96

Pipe No.	Pipe Size (inches)	Model Run Flow (gpm)	Model Run Velocity (gpm)
1-XX	20		
5	20	-46.76	0.05
9	20	-89.82	0.09
13	16	-89.82	0.14
17	8	20.1	0.13
21	8	9.11	0.06
25	8	2.46	0.02
29	12	2.46	0.01
33	8	17.1	0.11
37	8	25.5	0.16
41	12	-3.67	0.01
45	12	-21.52	0.06
49	8	14.62	0.09
53	8	-12.4	0.08
57	12	36.14	0.1
61	12	48.54	0.14
65	16	-111.64	0.18
69	16	-266.14	0.42
73	16	-528.33	0.84
77	16	-629.43	1
81	16	-601.96	0.96
85	8	-72.47	0.46
89	16	-601.96	0.96
93	12	388.74	1.1
97	12	604.75	1.72
101	12	524.65	1.49
105	12	808.23	2.29
109	12	1067.5	3.03
113	12	-521.3	1.48
117	8	-130.92	0.84
121	12	-401.86	1.14
125	12	208.81	0.59
129	12	-193.05	0.55
133	12	-97.25	0.28
137	12	10.6	0.03
141	8	-95.8	0.61
145	8	-232.32	1.48
149	12	-237.92	0.67
153	12	-237.92	0.67
157	12	-237.92	0.67
161	10	270.27	1.1
165	10	519.67	2.12
169	12	566.36	1.61
173	10	-329.57	1.35
177	12	-802.42	2.28
181	12	-139.56	0.4
185	10	-299.52	1.22
189	12	501.1	1.42
193	16	-1152.61	1.84
197	16	-1018.07	1.62
201	16	-1653.72	2.64
205	12	-1914.38	5.43
209	12	381.94	1.08
213	12	1521.6	4.32
217	10	295.87	1.21
221	10	295.87	1.21

225	10	-583.35	2.38
227	8	-278.11	1.78
229	8	-151.21	0.97
233	10	548.61	2.24
237	10	377.31	1.54
241	10	264.78	1.08
245	10	192.98	0.79
249	10	449.11	1.83
253	10	588.98	2.41
257	12	519.12	1.47
261	12	285.72	0.81
265	12	217.3	0.62
267	12	-119.3	0.34
269	10	-62.82	0.26
273	10	-40.14	0.16
277	12	-215.89	0.61
281	12	-175.75	0.5
285	12	-187.72	0.53
289	8	-262.34	1.67
293	10	-262.34	1.07
295	10	-205.48	0.84
297	10	-213.67	0.87
301	10	-213.67	0.87
305	10	-218.33	0.89
309	10	4.67	0.02
313	8	-105.26	0.67
317	8	-108.83	0.69
321	8	10.5	0.07
325	8	95.21	0.61
329	8	105.72	0.67
333	8	-237.23	1.51
337	10	584.05	2.39
339	10	601.41	2.46
341	10	-248.91	1.02
345	10	-647.33	2.64
347	10	850.32	3.47
349	8	-426.49	2.72
353	12	1276.81	3.62
357	12	1998.55	5.67
361	12	721.74	2.05
365	12	-799.87	2.27
369	12	-2714.24	7.7
373	12	612.07	1.74
377	12	1254.74	3.56
381	12	-642.67	1.82
385	10	743.81	3.04
387	10	-56.86	0.23
389	8	-56.86	0.36
391	8	-56.86	0.36
393	8	-56.86	0.36
395	8	-72.76	0.46
397	10	-72.76	0.3
801	12	-3326.31	9.44
805	12	-3326.31	9.44
901	12	-1386.48	3.93
905	12	-1386.48	3.93

Project: The Trails at CMR **920 Zone Analysis** **Pipe Data - Pipe Break Cond.**

Date: 06/09/20

Job Number: 736-018

Scenario: Pipe Break (Pipe 1) - Maximum Day Demand Plus 1500 gpm Fire Flow at Node 170

Pipe No.	Pipe Size (inches)	Model Run Flow (gpm)	Model Run Velocity (gpm)
1-XX	20		
5	20	-46.76	0.05
9	20	-198.19	0.2
13	16	-198.19	0.32
17	8	128.47	0.82
21	8	117.48	0.75
25	8	110.83	0.71
29	12	110.83	0.31
33	8	143.23	0.91
37	8	151.63	0.97
41	12	-34.84	0.1
45	12	-52.69	0.15
49	8	8.7	0.06
53	8	-18.32	0.12
57	12	61.39	0.17
61	12	79.71	0.23
65	16	-314.98	0.5
69	16	-469.48	0.75
73	16	-549.82	0.88
77	16	-650.92	1.04
81	16	-596.54	0.95
85	8	-99.39	0.63
89	16	-596.54	0.95
93	12	190.08	0.54
97	12	342.03	0.97
101	12	235.01	0.67
105	12	436.41	1.24
109	12	594.03	1.69
113	12	505.23	1.43
117	8	66.98	0.43
121	12	426.77	1.21
125	12	-4.2	0.01
129	12	422.57	1.2
133	12	706.32	2
137	12	245.1	0.7
141	8	-283.75	1.81
145	8	-222.36	1.42
149	12	-227.96	0.65
153	12	-227.96	0.65
157	12	-227.96	0.65
161	10	168.62	0.69
165	10	408.06	1.67
169	12	454.75	1.29
173	10	-247.38	1.01
177	12	-628.29	1.78
181	12	-119.91	0.34
185	10	-235.46	0.96
189	12	417.39	1.18
193	16	-948.53	1.51
197	16	-813.99	1.3
201	16	-1365.92	2.18
205	12	-1867.99	5.3
209	12	140.53	0.4
213	12	1501.82	4.26
217	10	691.64	2.83
221	10	691.64	2.83

225	10	-606.2	2.48
227	8	-608.94	3.89
229	8	1017.96	6.5
233	10	636.4	2.6
237	10	465.1	1.9
241	10	336.42	1.37
245	10	5.69	0.02
249	10	795.83	3.25
253	10	-233.47	0.95
257	12	-303.33	0.86
261	12	-536.73	1.52
265	12	-299.83	0.85
267	12	-636.43	1.81
269	10	242.5	0.99
273	10	265.18	1.08
277	12	305.05	0.87
281	12	39.87	0.11
285	12	27.9	0.08
289	8	-46.72	0.3
293	10	-46.72	0.19
295	10	-40.16	0.16
297	10	-48.35	0.2
301	10	-48.35	0.2
305	10	-52.47	0.21
309	10	4.11	0.02
313	8	-55.51	0.35
317	8	-93.66	0.6
321	8	-24.08	0.15
325	8	116.64	0.74
329	8	92.56	0.59
333	8	-208.9	1.33
337	10	627.36	2.56
339	10	644.72	2.63
341	10	-250.09	1.02
345	10	-670.18	2.74
347	10	894.81	3.66
349	8	-448.16	2.86
353	12	1342.97	3.81
357	12	2016.13	5.72
361	12	673.16	1.91
365	12	-828.67	2.35
369	12	-2696.66	7.65
373	12	623.55	1.77
377	12	1266.81	3.59
381	12	-643.26	1.82
385	10	749.32	3.06
387	10	-6.56	0.03
389	8	-6.56	0.04
391	8	-6.56	0.04
393	8	-6.56	0.04
395	8	-22.46	0.14
397	10	-22.46	0.09
801	12	-3320.21	9.42
805	12	-3320.21	9.42
901	12	-1392.57	3.95
905	12	-1392.57	3.95

Project: The Trails at CMR **920 Zone Analysis** **Pipe Data - Pipe Break Cond.**

Date: 06/09/20

Job Number: 736-018

Scenario: Pipe Break (Pipe 1) - Maximum Day Demand Plus 1500 gpm Fire Flow at Node 188

Pipe No.	Pipe Size (inches)	Model Run Flow (gpm)	Model Run Velocity (gpm)
1-XX	20		
5	20	-46.76	0.05
9	20	-229.65	0.23
13	16	-229.65	0.37
17	8	159.93	1.02
21	8	148.94	0.95
25	8	142.29	0.91
29	12	142.29	0.4
33	8	180.72	1.15
37	8	189.12	1.21
41	12	-43.62	0.12
45	12	-61.47	0.17
49	8	6.88	0.04
53	8	-20.14	0.13
57	12	68.36	0.19
61	12	88.49	0.25
65	16	-375.15	0.6
69	16	-529.65	0.85
73	16	-658.4	1.05
77	16	-759.5	1.21
81	16	-689.3	1.1
85	8	-115.21	0.74
89	16	-689.3	1.1
93	12	211.57	0.6
97	12	394.99	1.12
101	12	272.15	0.77
105	12	507.35	1.44
109	12	686.51	1.95
113	12	597.71	1.7
117	8	89.5	0.57
121	12	496.73	1.41
125	12	35.42	0.1
129	12	532.15	1.51
133	12	876.54	2.49
137	12	314.05	0.89
141	8	-344.39	2.2
145	8	-260.49	1.66
149	12	-266.09	0.75
153	12	-266.09	0.75
157	12	-266.09	0.75
161	10	190.15	0.78
165	10	467.71	1.91
169	12	514.4	1.46
173	10	-281.19	1.15
177	12	-716.16	2.03
181	12	-125.49	0.36
185	10	-266.93	1.09
189	12	454.44	1.29
193	16	-1062.77	1.7
197	16	-928.23	1.48
201	16	-1517.22	2.42
205	12	-1889.66	5.36
209	12	270.16	0.77
213	12	1511.82	4.29
217	10	484.13	1.98
221	10	484.13	1.98

225	10	-578.86	2.36
227	8	-352.76	2.25
229	8	-225.86	1.44
233	10	657.73	2.69
237	10	486.43	1.99
241	10	300.41	1.23
245	10	168.82	0.69
249	10	618.02	2.52
253	10	832.54	3.4
257	12	762.68	2.16
261	12	-970.72	2.75
265	12	-577.02	1.64
267	12	-913.62	2.59
269	10	399.3	1.63
273	10	421.98	1.72
277	12	267.03	0.76
281	12	-154.95	0.44
285	12	-166.92	0.47
289	8	-241.54	1.54
293	10	-241.54	0.99
295	10	-189.45	0.77
297	10	-197.64	0.81
301	10	-197.64	0.81
305	10	-202.34	0.83
309	10	4.7	0.02
313	8	-100.46	0.64
317	8	-110.43	0.7
321	8	4.1	0.03
325	8	103.38	0.66
329	8	107.48	0.69
333	8	-240.59	1.54
337	10	623.05	2.54
339	10	640.41	2.62
341	10	-233.68	0.95
345	10	-642.84	2.63
347	10	874.09	3.57
349	8	-437.22	2.79
353	12	1311.31	3.72
357	12	2007.82	5.7
361	12	696.51	1.98
365	12	-815.31	2.31
369	12	-2704.97	7.67
373	12	618.13	1.75
377	12	1261.11	3.58
381	12	-642.98	1.82
385	10	746.72	3.05
387	10	-52.09	0.21
389	8	-52.09	0.33
391	8	-52.09	0.33
393	8	-52.09	0.33
395	8	-67.99	0.43
397	10	-67.99	0.28
801	12	-3323.1	9.43
805	12	-3323.1	9.43
901	12	-1389.69	3.94
905	12	-1389.69	3.94

Project: The Trails at CMR **920 Zone Analysis** **Pipe Data - Pipe Break Cond.**

Date: 06/09/20

Job Number: 736-018

Scenario: Pipe Break (Pipe 1) - Maximum Day Demand Plus 1500 gpm Fire Flow at Node 194

Pipe No.	Pipe Size (inches)	Model Run Flow (gpm)	Model Run Velocity (gpm)
1-XX	20		
5	20	-46.76	0.05
9	20	-237.74	0.24
13	16	-237.74	0.38
17	8	168.02	1.07
21	8	157.03	1
25	8	150.38	0.96
29	12	150.38	0.43
33	8	190.37	1.21
37	8	198.77	1.27
41	12	-45.87	0.13
45	12	-63.72	0.18
49	8	6.41	0.04
53	8	-20.61	0.13
57	12	70.13	0.2
61	12	90.74	0.26
65	16	-390.63	0.62
69	16	-545.13	0.87
73	16	-685.86	1.09
77	16	-786.96	1.26
81	16	-712.78	1.14
85	8	-119.19	0.76
89	16	-712.78	1.14
93	12	217.2	0.62
97	12	408.67	1.16
101	12	281.85	0.8
105	12	525.72	1.49
109	12	710.38	2.02
113	12	621.58	1.76
117	8	95.2	0.61
121	12	514.9	1.46
125	12	45.15	0.13
129	12	560.05	1.59
133	12	919.98	2.61
137	12	331.79	0.94
141	8	-359.93	2.3
145	8	-270.33	1.73
149	12	-275.93	0.78
153	12	-275.93	0.78
157	12	-275.93	0.78
161	10	195.64	0.8
165	10	483.05	1.97
169	12	529.74	1.5
173	10	-289.86	1.18
177	12	-739.16	2.1
181	12	-126.51	0.36
185	10	-274.99	1.12
189	12	463.52	1.31
193	16	-1091.89	1.74
197	16	-957.35	1.53
201	16	-1555.4	2.48
205	12	-1896.45	5.38
209	12	301.55	0.86
213	12	1514.87	4.3
217	10	432.79	1.77
221	10	432.79	1.77

225	10	-578.92	2.36
227	8	-328.85	2.1
229	8	-201.95	1.29
233	10	630.36	2.57
237	10	459.06	1.88
241	10	282.21	1.15
245	10	200.08	0.82
249	10	541.18	2.21
253	10	731.79	2.99
257	12	661.93	1.88
261	12	428.53	1.22
265	12	694.65	1.97
267	12	-1141.95	3.24
269	10	271.72	1.11
273	10	294.4	1.2
277	12	99.88	0.28
281	12	-194.51	0.55
285	12	-206.48	0.59
289	8	-281.1	1.79
293	10	-281.1	1.15
295	10	-219.94	0.9
297	10	-228.13	0.93
301	10	-228.13	0.93
305	10	-230.98	0.94
309	10	2.85	0.01
313	8	-111.38	0.71
317	8	-114.74	0.73
321	8	10.71	0.07
325	8	100.76	0.64
329	8	111.47	0.71
333	8	-248.89	1.59
337	10	613.14	2.5
339	10	630.5	2.58
341	10	-236.86	0.97
345	10	-642.9	2.63
347	10	867.36	3.54
349	8	-434.11	2.77
353	12	1301.47	3.69
357	12	2005.21	5.69
361	12	703.74	2
365	12	-811.13	2.3
369	12	-2707.58	7.68
373	12	616.42	1.75
377	12	1259.31	3.57
381	12	-642.89	1.82
385	10	745.9	3.05
387	10	-61.16	0.25
389	8	-61.16	0.39
391	8	-61.16	0.39
393	8	-61.16	0.39
395	8	-77.06	0.49
397	10	-77.06	0.31
801	12	-3324	9.43
805	12	-3324	9.43
901	12	-1388.79	3.94
905	12	-1388.79	3.94

Project: The Trails at CMR **920 Zone Analysis** **Pipe Data - Pipe Break Cond.**

Date: 06/09/20

Job Number: 736-018

Scenario: Pipe Break (Pipe 1) - Maximum Day Demand Plus 1500 gpm Fire Flow at Node 254

Pipe No.	Pipe Size (inches)	Model Run Flow (gpm)	Model Run Velocity (gpm)
1-XX	20		
5	20	-46.76	0.05
9	20	-161.33	0.16
13	16	-161.33	0.26
17	8	91.61	0.58
21	8	80.62	0.51
25	8	73.97	0.47
29	12	73.97	0.21
33	8	99.4	0.63
37	8	107.8	0.69
41	12	-24.45	0.07
45	12	-42.3	0.12
49	8	10.79	0.07
53	8	-16.23	0.1
57	12	53.09	0.15
61	12	69.32	0.2
65	16	-244.68	0.39
69	16	-399.18	0.64
73	16	-425.1	0.68
77	16	-526.2	0.84
81	16	-489.86	0.78
85	8	-81.35	0.52
89	16	-489.86	0.78
93	12	163.23	0.46
97	12	279.07	0.79
101	12	190.1	0.54
105	12	352.88	1
109	12	485.71	1.38
113	12	396.91	1.13
117	8	40.58	0.26
121	12	344.85	0.98
125	12	-48.23	0.14
129	12	296.62	0.84
133	12	510.6	1.45
137	12	164.41	0.47
141	8	-213.98	1.37
145	8	-179	1.14
149	12	-184.6	0.52
153	12	-184.6	0.52
157	12	-184.6	0.52
161	10	143.82	0.59
165	10	339.9	1.39
169	12	386.59	1.1
173	10	-208.77	0.85
177	12	-537.56	1.52
181	12	-103.86	0.29
185	10	-199.36	0.81
189	12	365.23	1.04
193	16	-815	1.3
197	16	-680.46	1.09
201	16	-1180.23	1.88
205	12	-1756.19	4.98
209	12	66.65	0.19
213	12	1388.45	3.94
217	10	742.87	3.03
221	10	742.87	3.03

225	10	111.78	0.46
227	8	-170.06	1.09
229	8	-43.16	0.28
233	10	408.53	1.67
237	10	237.23	0.97
241	10	-63.39	0.26
245	10	72.85	0.3
249	10	100.99	0.41
253	10	132.81	0.54
257	12	62.95	0.18
261	12	-170.45	0.48
265	12	-59.3	0.17
267	12	-395.9	1.12
269	10	116.75	0.48
273	10	139.43	0.57
277	12	269.16	0.76
281	12	129.73	0.37
285	12	117.76	0.33
289	8	43.14	0.28
293	10	43.14	0.18
295	10	31.89	0.13
297	10	23.7	0.1
301	10	23.7	0.1
305	10	-10.69	0.04
309	10	34.39	0.14
313	8	-7.43	0.05
317	8	-15.08	0.1
321	8	6.42	0.04
325	8	7.69	0.05
329	8	14.11	0.09
333	8	-51.87	0.33
337	10	70.52	0.29
339	10	87.88	0.36
341	10	520.66	2.13
345	10	47.8	0.2
347	10	1067.22	4.36
349	8	-500.93	3.2
353	12	1568.15	4.45
357	12	2068.04	5.87
361	12	499.89	1.42
365	12	-888.56	2.52
369	12	-2644.75	7.5
373	12	657.22	1.86
377	12	1302.39	3.69
381	12	-645.17	1.83
385	10	765.65	3.13
387	10	11.25	0.05
389	8	11.25	0.07
391	8	11.25	0.07
393	8	11.25	0.07
395	8	-4.65	0.03
397	10	-4.65	0.02
801	12	-3301.97	9.37
805	12	-3301.97	9.37
901	12	-1410.82	4
905	12	-1410.82	4

U N I T S S P E C I F I E D

FLOWRATE ..... = gallons/minute
HEAD (HGL) ..... = feet
PRESSURE ..... = psig

R E G U L A T I N G V A L V E D A T A

VALVE LABEL	VALVE TYPE	VALVE SETTING (ft or gpm)
804	PRV-1	898.31
904	PRV-1	898.69

P I P E L I N E D A T A

STATUS CODE: XX -CLOSED PIPE CV -CHECK VALVE

PIPE NAME	NODE NAMES #1	#2	LENGTH (ft)	DIAMETER (in)	ROUGHNESS COEFF.	MINOR LOSS COEFF.
1	0	4	1165.80	20.00	120.0000	0.00
5	4	8	411.40	20.00	120.0000	0.00
9	8	12	240.00	20.00	120.0000	0.00
13	12	36	1053.50	16.00	120.0000	0.00
17	8	16	968.60	8.00	120.0000	0.00
21	16	20	858.60	8.00	120.0000	0.00
25	20	24	232.60	8.00	120.0000	0.00
29	24	28	302.50	12.00	120.0000	0.00
33	32	28	735.00	8.00	120.0000	0.00
37	36	32	803.80	8.00	120.0000	0.00
41	36	40	1545.80	12.00	120.0000	0.00
45	40	44	485.50	12.00	120.0000	0.00
49	44	48	310.20	8.00	120.0000	0.00
53	48	52	1580.60	8.00	120.0000	0.00
57	52	44	1152.10	12.00	120.0000	0.00
61	60	52	343.70	12.00	120.0000	0.00
65	36	56	176.20	16.00	120.0000	0.00
69	56	60	161.30	16.00	120.0000	0.00
73	60	64	145.50	16.00	120.0000	0.00
77	64	68	385.20	16.00	120.0000	0.00
81	68	72	325.90	16.00	120.0000	0.00
85	68	84	1788.60	8.00	120.0000	0.00
89	72	76	1957.60	16.00	120.0000	0.00
93	76	80	334.00	12.00	120.0000	0.00
97	80	84	157.10	12.00	120.0000	0.00
101	84	88	156.80	12.00	120.0000	0.00
105	88	92	151.60	12.00	120.0000	0.00
109	92	96	162.20	12.00	120.0000	0.00
113	96	100	239.10	12.00	120.0000	0.00
117	100	116	695.90	8.00	120.0000	0.00
121	100	104	295.50	12.00	120.0000	0.00
125	60	104	1009.90	12.00	120.0000	0.00
129	104	108	773.70	12.00	120.0000	0.00
133	108	112	388.60	12.00	120.0000	0.00

137	28	112	341.70	12.00	120.0000	0.00
141	108	116	263.90	8.00	120.0000	0.00
145	116	120	530.90	8.00	120.0000	0.00
149	120	124	567.20	12.00	120.0000	0.00
153	124	128	79.20	12.00	120.0000	0.00
157	128	132	355.00	12.00	120.0000	0.00
161	132	92	1535.90	10.00	120.0000	0.00
165	136	132	560.00	10.00	120.0000	0.00
169	140	136	302.90	12.00	120.0000	0.00
173	88	140	2376.50	10.00	120.0000	0.00
177	140	160	1440.00	12.00	120.0000	0.00
181	140	144	352.40	12.00	120.0000	0.00
185	80	144	2452.30	10.00	120.0000	0.00
189	152	144	319.50	12.00	120.0000	0.00
193	148	152	1250.00	16.00	120.0000	0.00
197	76	148	1057.40	16.00	120.0000	0.00
201	152	156	1184.70	16.00	120.0000	0.00
205	156	276	983.80	12.00	120.0000	0.00
209	160	156	707.20	12.00	120.0000	0.00
213	272	160	1298.00	12.00	120.0000	0.00
217	160	164	450.60	10.00	120.0000	0.00
221	164	168	175.90	10.00	120.0000	0.00
225	168	260	858.60	10.00	120.0000	0.00
227	170	168	1114.70	8.00	120.0000	0.00
229	180	170	238.90	8.00	120.0000	0.00
233	168	172	315.10	10.00	120.0000	0.00
237	172	176	877.10	10.00	120.0000	0.00
241	248	176	569.30	10.00	120.0000	0.00
245	176	240	892.90	10.00	120.0000	0.00
249	176	180	363.00	10.00	120.0000	0.00
253	180	184	813.20	10.00	120.0000	0.00
257	184	188	171.10	12.00	120.0000	0.00
261	188	192	291.30	12.00	120.0000	0.00
265	192	194	714.00	12.00	120.0000	0.00
267	194	112	568.60	12.00	120.0000	0.00
269	196	192	775.70	10.00	120.0000	0.00
273	200	196	756.80	10.00	120.0000	0.00
277	112	200	260.00	12.00	120.0000	0.00
281	200	204	380.60	12.00	120.0000	0.00
285	204	208	832.00	12.00	120.0000	0.00
289	208	212	832.60	8.00	120.0000	0.00
293	212	300	490.40	10.00	120.0000	0.00
295	300	216	903.70	10.00	120.0000	0.00
297	216	220	406.50	10.00	120.0000	0.00
301	220	224	130.40	10.00	120.0000	0.00
305	224	240	592.90	10.00	120.0000	0.00
309	224	228	99.90	10.00	120.0000	0.00
313	228	232	906.50	8.00	120.0000	0.00
317	232	244	912.00	8.00	120.0000	0.00
321	236	232	313.40	8.00	120.0000	0.00
325	236	240	166.70	8.00	120.0000	0.00
329	244	236	958.10	8.00	120.0000	0.00
333	244	248	195.70	8.00	120.0000	0.00
337	252	248	1974.20	10.00	120.0000	0.00
339	254	252	245.50	10.00	120.0000	0.00
341	256	254	302.00	10.00	120.0000	0.00
345	260	256	640.50	10.00	120.0000	0.00
347	264	254	929.20	10.00	120.0000	0.00
349	256	264	1162.60	8.00	120.0000	0.00
353	268	264	718.60	12.00	120.0000	0.00
357	288	268	919.00	12.00	120.0000	0.00

361	268	272	2448.90	12.00	120.0000	0.00
365	272	276	501.90	12.00	120.0000	0.00
369	276	280	1047.10	12.00	120.0000	0.00
373	280	284	1306.70	12.00	120.0000	0.00
377	284	288	1187.60	12.00	120.0000	0.00
381	284	292	1406.20	12.00	120.0000	0.00
385	292	288	1728.60	10.00	120.0000	0.00
387	300	304	509.90	10.00	120.0000	0.00
389	304	308	517.80	8.00	120.0000	0.00
391	308	312	2169.30	8.00	120.0000	0.00
393	312	316	479.70	8.00	120.0000	0.00
395	316	320	1103.00	8.00	120.0000	0.00
397	320	228	587.60	10.00	120.0000	0.00
801	I-804	800	262.30	12.00	120.0000	0.00
805	280	O-804	159.90	12.00	120.0000	0.00
901	I-904	900	380.40	12.00	120.0000	0.00
905	292	O-904	828.80	12.00	120.0000	0.00

N O D E D A T A

NODE NAME	NODE TITLE	EXTERNAL DEMAND (gpm)	JUNCTION ELEVATION (ft)	EXTERNAL GRADE (ft)
4		46.76	798.00	
8		22.96	760.00	
12		0.00	740.00	
16		10.99	730.00	
20		6.65	724.00	
24		0.00	700.00	
28		8.96	705.00	
32		8.40	657.00	
36		0.00	650.00	
40		17.85	665.00	
44		0.00	640.00	
48		27.02	612.00	
52		0.00	645.00	
56		51.50	637.00	
60		4.83	630.00	
64		33.70	625.00	
68		45.01	606.00	
72		0.00	590.00	
76		27.37	640.00	
80		83.51	665.00	
84		7.63	684.00	
88		45.99	699.00	
92		10.99	712.00	
96		29.60	715.00	
100		11.48	718.00	
104		0.00	698.00	
108		0.00	725.00	
112		9.94	725.00	
116		5.60	743.00	
120		5.60	779.00	
124		0.00	800.00	
128		0.00	800.00	
132		11.48	784.00	
136		46.69	745.00	

140	46.06	721.00	
144	62.02	695.00	
148	134.54	641.00	
152	0.00	675.00	
156	642.60	705.00	
160	41.37	700.00	
164	0.00	683.00	
168	52.50	675.00	
170	42.30	689.00	
172	57.10	668.00	
176	0.00	652.00	
180	11.34	679.00	
184	69.86	766.00	
188	77.80	771.00	
192	5.60	789.00	
194	112.20	783.00	
196	22.68	764.00	
200	0.00	740.00	
204	11.97	723.00	
208	74.62	694.00	
212	0.00	679.00	
216	8.19	655.00	
220	0.00	630.00	
224	0.00	620.00	
228	37.17	620.00	
232	14.07	643.00	
236	0.00	653.00	
240	69.86	651.00	
244	22.68	634.00	
248	82.04	624.00	
252	17.36	648.00	
254	0.00	650.00	
256	28.07	644.00	
260	63.98	650.00	
264	0.00	680.00	
268	0.00	694.00	
272	0.00	696.00	
276	0.00	726.00	
280	0.00	750.00	
284	0.00	731.00	
288	0.00	729.00	
292	0.00	739.00	
300	0.00	640.00	
304	0.00	627.00	
308	0.00	627.00	
312	0.00	583.00	
316	5.30	570.00	
320	0.00	608.00	
800	----	0.00	1020.00
O-804	----	746.00	898.31
900	----	0.00	1020.00
I-904	0.00	751.00	
0	----	0.00	905.50
I-804	0.00	746.00	
O-904	----	751.00	898.69

O U T P U T O P T I O N D A T A

OUTPUT SELECTION: ALL RESULTS ARE INCLUDED IN THE TABULATED OUTPUT
MAXIMUM AND MINIMUM PRESSURES = 5
MAXIMUM AND MINIMUM VELOCITIES = 5

S Y S T E M C O N F I G U R A T I O N

NUMBER OF PIPES .....(P) = 112
NUMBER OF END NODES .....(J) = 84
NUMBER OF PRIMARY LOOPS .....(L) = 26
NUMBER OF SUPPLY NODES .....(F) = 3
NUMBER OF SUPPLY ZONES .....(Z) = 1

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Case: 0

RESULTS OBTAINED AFTER 15 TRIALS: ACCURACY = 0.86896E-04

The Trails at Carmel Mountain Ranch
920 Zone – Public Water System Analysis – Normal Condition
Average Day Demand

P I P E L I N E R E S U L T S

STATUS CODE: XX -CLOSED PIPE CV -CHECK VALVE

PIPE NAME	NODE NUMBERS #1	#2	FLOWRATE gpm	HEAD LOSS ft	MINOR LOSS ft	LINE VELO. ft/s	HL+ML/ 1000 ft/f	HL/ 1000 ft/f
1	0	4	2250.75	1.28	0.00	2.30	1.10	1.10
5	4	8	2203.99	0.43	0.00	2.25	1.06	1.06
9	8	12	1890.08	0.19	0.00	1.93	0.79	0.79
13	12	36	1890.08	2.48	0.00	3.02	2.36	2.36
17	8	16	290.95	2.09	0.00	1.86	2.15	2.15
21	16	20	279.96	1.72	0.00	1.79	2.00	2.00
25	20	24	273.31	0.45	0.00	1.74	1.92	1.92
29	24	28	273.31	0.08	0.00	0.78	0.27	0.27
33	32	28	195.99	0.76	0.00	1.25	1.04	1.04
37	36	32	204.39	0.90	0.00	1.30	1.12	1.12
41	36	40	219.88	0.28	0.00	0.62	0.18	0.18
45	40	44	202.03	0.07	0.00	0.57	0.15	0.15
49	44	48	59.12	0.03	0.00	0.38	0.11	0.11
53	48	52	32.10	0.06	0.00	0.20	0.04	0.04
57	52	44	-142.92	0.09	0.00	0.41	0.08	0.08
61	60	52	-175.01	0.04	0.00	0.50	0.12	0.12
65	36	56	1465.80	0.26	0.00	2.34	1.47	1.47
69	56	60	1414.30	0.22	0.00	2.26	1.38	1.38
73	60	64	981.70	0.10	0.00	1.57	0.70	0.70
77	64	68	948.00	0.25	0.00	1.51	0.66	0.66
81	68	72	760.56	0.14	0.00	1.21	0.44	0.44
85	68	84	142.43	1.03	0.00	0.91	0.57	0.57
89	72	76	760.56	0.85	0.00	1.21	0.44	0.44
93	76	80	156.89	0.03	0.00	0.45	0.10	0.10
97	80	84	-62.04	0.00	0.00	0.18	0.02	0.02
101	84	88	72.76	0.00	0.00	0.21	0.02	0.02

105	88	92	-110.68	0.01	0.00	0.31	0.05	0.05
109	92	96	-237.45	0.03	0.00	0.67	0.21	0.21
113	96	100	-267.05	0.06	0.00	0.76	0.26	0.26
117	100	116	63.22	0.09	0.00	0.40	0.13	0.13
121	100	104	-341.75	0.12	0.00	0.97	0.40	0.40
125	60	104	602.79	1.16	0.00	1.71	1.15	1.15
129	104	108	261.04	0.19	0.00	0.74	0.24	0.24
133	108	112	215.24	0.07	0.00	0.61	0.17	0.17
137	28	112	460.34	0.24	0.00	1.31	0.70	0.70
141	108	116	45.79	0.02	0.00	0.29	0.07	0.07
145	116	120	103.41	0.17	0.00	0.66	0.32	0.32
149	120	124	97.81	0.02	0.00	0.28	0.04	0.04
153	124	128	97.81	0.00	0.00	0.28	0.04	0.04
157	128	132	97.81	0.01	0.00	0.28	0.04	0.04
161	132	92	-115.78	0.20	0.00	0.47	0.13	0.13
165	136	132	-202.12	0.21	0.00	0.83	0.37	0.37
169	140	136	-155.43	0.03	0.00	0.44	0.09	0.09
173	88	140	137.45	0.43	0.00	0.56	0.18	0.18
177	140	160	226.70	0.27	0.00	0.64	0.19	0.19
181	140	144	20.12	0.00	0.00	0.06	0.00	0.00
185	80	144	135.42	0.43	0.00	0.55	0.18	0.18
189	152	144	-93.51	0.01	0.00	0.27	0.04	0.04
193	148	152	441.77	0.20	0.00	0.70	0.16	0.16
197	76	148	576.31	0.28	0.00	0.92	0.26	0.26
201	152	156	535.28	0.27	0.00	0.85	0.23	0.23
205	156	276	-48.12	0.01	0.00	0.14	0.01	0.01
209	160	156	59.20	0.01	0.00	0.17	0.02	0.02
213	272	160	-9.87	0.00	0.00	0.03	0.00	0.00
217	160	164	116.26	0.06	0.00	0.47	0.13	0.13
221	164	168	116.26	0.02	0.00	0.47	0.13	0.13
225	168	260	32.98	0.01	0.00	0.13	0.01	0.01
227	170	168	15.26	0.01	0.00	0.10	0.01	0.01
229	180	170	57.56	0.03	0.00	0.37	0.11	0.11
233	168	172	46.05	0.01	0.00	0.19	0.02	0.02
237	172	176	-11.05	0.00	0.00	0.05	0.00	0.00
241	248	176	-57.48	0.02	0.00	0.23	0.04	0.04
245	176	240	39.15	0.02	0.00	0.16	0.02	0.02
249	176	180	-107.69	0.04	0.00	0.44	0.12	0.12
253	180	184	-176.59	0.23	0.00	0.72	0.29	0.29
257	184	188	-246.45	0.04	0.00	0.70	0.22	0.22
261	188	192	-324.25	0.11	0.00	0.92	0.37	0.37
265	192	194	-216.23	0.12	0.00	0.61	0.17	0.17
267	194	112	-328.43	0.21	0.00	0.93	0.37	0.37
269	196	192	113.62	0.10	0.00	0.46	0.13	0.13
273	200	196	136.30	0.13	0.00	0.56	0.18	0.18
277	112	200	337.22	0.10	0.00	0.96	0.39	0.39
281	200	204	200.91	0.06	0.00	0.57	0.15	0.15
285	204	208	188.94	0.11	0.00	0.54	0.13	0.13
289	208	212	114.32	0.32	0.00	0.73	0.38	0.38
293	212	300	114.32	0.06	0.00	0.47	0.13	0.13
295	300	216	87.69	0.07	0.00	0.36	0.08	0.08
297	216	220	79.50	0.03	0.00	0.32	0.07	0.07
301	220	224	79.50	0.01	0.00	0.32	0.07	0.07
305	224	240	44.15	0.01	0.00	0.18	0.02	0.02
309	224	228	35.35	0.00	0.00	0.14	0.01	0.01
313	228	232	19.51	0.01	0.00	0.12	0.01	0.01
317	232	244	9.40	0.00	0.00	0.06	0.00	0.00
321	236	232	3.96	0.00	0.00	0.03	0.00	0.00
325	236	240	-13.45	0.00	0.00	0.09	0.01	0.01
329	244	236	-9.49	0.00	0.00	0.06	0.00	0.00
333	244	248	-3.79	0.00	0.00	0.02	0.00	0.00

337	252	248	28.35	0.02	0.00	0.12	0.01	0.01
339	254	252	45.71	0.01	0.00	0.19	0.02	0.02
341	256	254	-23.93	0.00	0.00	0.10	0.01	0.01
345	260	256	-31.00	0.01	0.00	0.13	0.01	0.01
347	264	254	69.65	0.05	0.00	0.28	0.05	0.05
349	256	264	-35.14	0.05	0.00	0.22	0.04	0.04
353	268	264	104.79	0.03	0.00	0.30	0.05	0.05
357	288	268	87.68	0.03	0.00	0.25	0.03	0.03
361	268	272	-17.11	0.00	0.00	0.05	0.00	0.00
365	272	276	-7.24	0.00	0.00	0.02	0.00	0.00
369	276	280	-55.36	0.01	0.00	0.16	0.01	0.01
373	280	284	-55.36	0.02	0.00	0.16	0.01	0.01
377	284	288	34.31	0.01	0.00	0.10	0.01	0.01
381	284	292	-89.67	0.05	0.00	0.25	0.03	0.03
385	292	288	53.37	0.05	0.00	0.22	0.03	0.03
387	300	304	26.63	0.00	0.00	0.11	0.01	0.01
389	304	308	26.63	0.01	0.00	0.17	0.03	0.03
391	308	312	26.63	0.06	0.00	0.17	0.03	0.03
393	312	316	26.63	0.01	0.00	0.17	0.03	0.03
395	316	320	21.33	0.02	0.00	0.14	0.02	0.02
397	320	228	21.33	0.00	0.00	0.09	0.01	0.01
801	I-804	800	0.00	0.00	0.00	0.00	0.00	0.00
805	280	O-804	0.00	0.00	0.00	0.00	0.00	0.00
901	I-904	900	-143.04	0.03	0.00	0.41	0.08	0.08
905	292	O-904	-143.04	0.07	0.00	0.41	0.08	0.08

N O D E R E S U L T S

NODE NAME	NODE TITLE	EXTERNAL DEMAND gpm	HYDRAULIC GRADE ft	NODE ELEVATION ft	PRESSURE HEAD ft	NODE PRESSURE psi
4		46.76	904.22	798.00	106.22	46.03
8		22.96	903.79	760.00	143.79	62.31
12		0.00	903.59	740.00	163.59	70.89
16		10.99	901.70	730.00	171.70	74.40
20		6.65	899.98	724.00	175.98	76.26
24		0.00	899.53	700.00	199.53	86.46
28		8.96	899.45	705.00	194.45	84.26
32		8.40	900.21	657.00	243.21	105.39
36		0.00	901.11	650.00	251.11	108.82
40		17.85	900.84	665.00	235.84	102.20
44		0.00	900.76	640.00	260.76	113.00
48		27.02	900.73	612.00	288.73	125.12
52		0.00	900.67	645.00	255.67	110.79
56		51.50	900.85	637.00	263.85	114.34
60		4.83	900.63	630.00	270.63	117.27
64		33.70	900.53	625.00	275.53	119.40
68		45.01	900.28	606.00	294.28	127.52
72		0.00	900.13	590.00	310.13	134.39
76		27.37	899.28	640.00	259.28	112.35
80		83.51	899.25	665.00	234.25	101.51
84		7.63	899.25	684.00	215.25	93.28
88		45.99	899.25	699.00	200.25	86.77
92		10.99	899.26	712.00	187.26	81.14
96		29.60	899.29	715.00	184.29	79.86
100		11.48	899.35	718.00	181.35	78.58
104		0.00	899.47	698.00	201.47	87.30
108		0.00	899.28	725.00	174.28	75.52
112		9.94	899.21	725.00	174.21	75.49

116	5.60	899.26	743.00	156.26	67.71
120	5.60	899.09	779.00	120.09	52.04
124	0.00	899.07	800.00	99.07	42.93
128	0.00	899.07	800.00	99.07	42.93
132	11.48	899.05	784.00	115.05	49.86
136	46.69	898.85	745.00	153.85	66.67
140	46.06	898.82	721.00	177.82	77.05
144	62.02	898.82	695.00	203.82	88.32
148	134.54	899.00	641.00	258.00	111.80
152	0.00	898.81	675.00	223.81	96.98
156	642.60	898.54	705.00	193.54	83.87
160	41.37	898.55	700.00	198.55	86.04
164	0.00	898.49	683.00	215.49	93.38
168	52.50	898.46	675.00	223.46	96.83
170	42.30	898.47	689.00	209.47	90.77
172	57.10	898.46	668.00	230.46	99.86
176	0.00	898.46	652.00	246.46	106.80
180	11.34	898.50	679.00	219.50	95.12
184	69.86	898.73	766.00	132.73	57.52
188	77.80	898.77	771.00	127.77	55.37
192	5.60	898.88	789.00	109.88	47.61
194	112.20	899.00	783.00	116.00	50.27
196	22.68	898.98	764.00	134.98	58.49
200	0.00	899.11	740.00	159.11	68.95
204	11.97	899.05	723.00	176.05	76.29
208	74.62	898.94	694.00	204.94	88.81
212	0.00	898.62	679.00	219.62	95.17
216	8.19	898.49	655.00	243.49	105.51
220	0.00	898.46	630.00	268.46	116.33
224	0.00	898.45	620.00	278.45	120.66
228	37.17	898.45	620.00	278.45	120.66
232	14.07	898.44	643.00	255.44	110.69
236	0.00	898.44	653.00	245.44	106.36
240	69.86	898.44	651.00	247.44	107.22
244	22.68	898.44	634.00	264.44	114.59
248	82.04	898.44	624.00	274.44	118.92
252	17.36	898.46	648.00	250.46	108.53
254	0.00	898.46	650.00	248.46	107.67
256	28.07	898.46	644.00	254.46	110.27
260	63.98	898.45	650.00	248.45	107.66
264	0.00	898.51	680.00	218.51	94.69
268	0.00	898.54	694.00	204.54	88.63
272	0.00	898.55	696.00	202.55	87.77
276	0.00	898.55	726.00	172.55	74.77
280	0.00	898.56	750.00	148.56	64.38
284	0.00	898.58	731.00	167.58	72.62
288	0.00	898.57	729.00	169.57	73.48
292	0.00	898.63	739.00	159.63	69.17
300	0.00	898.56	640.00	258.56	112.04
304	0.00	898.56	627.00	271.56	117.67
308	0.00	898.54	627.00	271.54	117.67
312	0.00	898.49	583.00	315.49	136.71
316	5.30	898.47	570.00	328.47	142.34
320	0.00	898.46	608.00	290.46	125.86
800	----	1020.00			
O-804	----	898.56	746.00	152.56	66.11
900	----	1020.00			
I-904	0.00	1019.97	751.00	268.97	116.55
0	----	905.50			
I-804	0.00	1020.00	746.00	274.00	118.73
O-904	----	898.69	751.00	147.69	64.00

M A X I M U M A N D M I N I M U M V A L U E S

P R E S S U R E S

JUNCTION NUMBER	MAXIMUM PRESSURES psi	JUNCTION NUMBER	MINIMUM PRESSURES psi
316	142.34	128	42.93
312	136.71	124	42.93
72	134.39	4	46.03
68	127.52	192	47.61
320	125.86	132	49.86

V E L O C I T I E S

PIPE NUMBER	MAXIMUM VELOCITY (ft/s)	PIPE NUMBER	MINIMUM VELOCITY (ft/s)
13	3.02	365	0.02
65	2.34	333	0.02
1	2.30	321	0.03
69	2.26	213	0.03
5	2.25	237	0.05

R E G U L A T I N G V A L V E R E P O R T

VALVE LABEL	VALVE TYPE	VALVE SETTING psi or gpm	VALVE STATUS	UPSTREAM PRESSURE psi	DOWNSTREAM PRESSURE psi	THROUGH FLOW gpm
804	PRV-1	66.00	CLOSED	118.73	66.11	0.00
904	PRV-1	64.00	ACTIVATED	116.55	64.00	143.04

S U M M A R Y O F I N F L O W S A N D O U T F L O W S

(+) INFLOWS INTO THE SYSTEM FROM SUPPLY NODES
(-) OUTFLOWS FROM THE SYSTEM INTO SUPPLY NODES

NODE NAME	FLOWRATE gpm	NODE TITLE
800	0.00	
900	143.04	
0	2250.75	

NET SYSTEM INFLOW = 2393.79
NET SYSTEM OUTFLOW = 0.00
NET SYSTEM DEMAND = 2393.79

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Case: 1

C H A N G E S F O R N E X T S I M U L A T I O N (Change Number = 1)

JUNCTION DEMANDS CHANGED - PLEASE SEE RESULTS TABLE

RESULTS OBTAINED AFTER 12 TRIALS: ACCURACY = 0.37109E-05

The Trails at Carmel Mountain Ranch
920 Zone - Public Water System Analysis – Normal Condition
Maximum Day Demand

P I P E L I N E R E S U L T S

STATUS CODE: XX -CLOSED PIPE CV -CHECK VALVE

PIPE NAME	NODE NUMBERS #1	#2	FLOWRATE gpm	HEAD LOSS ft	MINOR LOSS ft	LINE VELO. ft/s	HL+ML/ 1000 ft/f	HL/ 1000 ft/f
1	0	4	2526.30	1.59	0.00	2.58	1.36	1.36
5	4	8	2479.54	0.54	0.00	2.53	1.31	1.31
9	8	12	2129.27	0.24	0.00	2.17	0.99	0.99
13	12	36	2129.27	3.09	0.00	3.40	2.94	2.94
17	8	16	327.31	2.59	0.00	2.09	2.68	2.68
21	16	20	316.32	2.16	0.00	2.02	2.51	2.51
25	20	24	309.67	0.56	0.00	1.98	2.42	2.42
29	24	28	309.67	0.10	0.00	0.88	0.34	0.34
33	32	28	222.06	0.96	0.00	1.42	1.31	1.31
37	36	32	230.46	1.12	0.00	1.47	1.40	1.40
41	36	40	240.42	0.32	0.00	0.68	0.21	0.21
45	40	44	222.57	0.09	0.00	0.63	0.18	0.18
49	44	48	63.49	0.04	0.00	0.41	0.13	0.13
53	48	52	36.47	0.07	0.00	0.23	0.05	0.05
57	52	44	-159.08	0.11	0.00	0.45	0.10	0.10
61	60	52	-195.55	0.05	0.00	0.55	0.14	0.14
65	36	56	1658.40	0.33	0.00	2.65	1.85	1.85
69	56	60	1503.90	0.25	0.00	2.40	1.54	1.54
73	60	64	1052.20	0.12	0.00	1.68	0.80	0.80
77	64	68	951.10	0.25	0.00	1.52	0.66	0.66
81	68	72	761.08	0.14	0.00	1.21	0.44	0.44
85	68	84	145.02	1.06	0.00	0.93	0.59	0.59
89	72	76	761.08	0.86	0.00	1.21	0.44	0.44
93	76	80	224.99	0.06	0.00	0.64	0.19	0.19
97	80	84	29.79	0.00	0.00	0.08	0.00	0.00
101	84	88	167.17	0.02	0.00	0.47	0.11	0.11
105	88	92	11.02	0.00	0.00	0.03	0.00	0.00
109	92	96	-109.06	0.01	0.00	0.31	0.05	0.05
113	96	100	-197.86	0.03	0.00	0.56	0.15	0.15
117	100	116	95.00	0.19	0.00	0.61	0.27	0.27
121	100	104	-304.34	0.10	0.00	0.86	0.32	0.32
125	60	104	642.41	1.31	0.00	1.82	1.30	1.30
129	104	108	338.08	0.31	0.00	0.96	0.39	0.39
133	108	112	386.91	0.20	0.00	1.10	0.51	0.51
137	28	112	522.77	0.30	0.00	1.48	0.88	0.88
141	108	116	-48.84	0.02	0.00	0.31	0.08	0.08
145	116	120	40.56	0.03	0.00	0.26	0.06	0.06
149	120	124	34.96	0.00	0.00	0.10	0.01	0.01
153	124	128	34.96	0.00	0.00	0.10	0.01	0.01
157	128	132	34.96	0.00	0.00	0.10	0.01	0.01
161	132	92	-109.08	0.18	0.00	0.45	0.12	0.12

165	136	132	-132.57	0.09	0.00	0.54	0.17	0.17
169	140	136	-85.88	0.01	0.00	0.24	0.03	0.03
173	88	140	110.17	0.29	0.00	0.45	0.12	0.12
177	140	160	170.45	0.16	0.00	0.48	0.11	0.11
181	140	144	-20.47	0.00	0.00	0.06	0.00	0.00
185	80	144	111.69	0.30	0.00	0.46	0.12	0.12
189	152	144	-29.20	0.00	0.00	0.08	0.00	0.00
193	148	152	374.18	0.15	0.00	0.60	0.12	0.12
197	76	148	508.72	0.22	0.00	0.81	0.21	0.21
201	152	156	403.38	0.16	0.00	0.64	0.13	0.13
205	156	276	-228.75	0.19	0.00	0.65	0.19	0.19
209	160	156	10.47	0.00	0.00	0.03	0.00	0.00
213	272	160	175.51	0.15	0.00	0.50	0.12	0.12
217	160	164	294.12	0.33	0.00	1.20	0.74	0.74
221	164	168	294.12	0.13	0.00	1.20	0.74	0.74
225	168	260	-57.25	0.03	0.00	0.23	0.04	0.04
227	170	168	-74.59	0.19	0.00	0.48	0.17	0.17
229	180	170	52.31	0.02	0.00	0.33	0.09	0.09
233	168	172	224.28	0.14	0.00	0.92	0.45	0.45
237	172	176	52.98	0.03	0.00	0.22	0.03	0.03
241	248	176	1.22	0.00	0.00	0.01	0.00	0.00
245	176	240	28.38	0.01	0.00	0.12	0.01	0.01
249	176	180	25.83	0.00	0.00	0.11	0.01	0.01
253	180	184	-37.83	0.01	0.00	0.15	0.02	0.02
257	184	188	-107.69	0.01	0.00	0.31	0.05	0.05
261	188	192	-341.09	0.12	0.00	0.97	0.40	0.40
265	192	194	-179.81	0.09	0.00	0.51	0.12	0.12
267	194	112	-516.41	0.49	0.00	1.46	0.86	0.86
269	196	192	166.88	0.20	0.00	0.68	0.26	0.26
273	200	196	189.56	0.25	0.00	0.77	0.33	0.33
277	112	200	383.33	0.13	0.00	1.09	0.50	0.50
281	200	204	193.77	0.05	0.00	0.55	0.14	0.14
285	204	208	181.80	0.10	0.00	0.52	0.13	0.13
289	208	212	107.18	0.28	0.00	0.68	0.34	0.34
293	212	300	107.18	0.06	0.00	0.44	0.11	0.11
295	300	216	80.53	0.06	0.00	0.33	0.07	0.07
297	216	220	72.34	0.02	0.00	0.30	0.06	0.06
301	220	224	72.34	0.01	0.00	0.30	0.06	0.06
305	224	240	33.60	0.01	0.00	0.14	0.01	0.01
309	224	228	38.74	0.00	0.00	0.16	0.02	0.02
313	228	232	12.32	0.01	0.00	0.08	0.01	0.01
317	232	244	-4.70	0.00	0.00	0.03	0.00	0.00
321	236	232	-2.95	0.00	0.00	0.02	0.00	0.00
325	236	240	7.88	0.00	0.00	0.05	0.00	0.00
329	244	236	4.93	0.00	0.00	0.03	0.00	0.00
333	244	248	-32.31	0.01	0.00	0.21	0.04	0.04
337	252	248	115.57	0.26	0.00	0.47	0.13	0.13
339	254	252	132.93	0.04	0.00	0.54	0.17	0.17
341	256	254	-55.02	0.01	0.00	0.22	0.03	0.03
345	260	256	-121.23	0.09	0.00	0.50	0.14	0.14
347	264	254	187.96	0.30	0.00	0.77	0.32	0.32
349	256	264	-94.27	0.31	0.00	0.60	0.27	0.27
353	268	264	282.23	0.20	0.00	0.80	0.28	0.28
357	288	268	323.61	0.33	0.00	0.92	0.36	0.36
361	268	272	41.38	0.02	0.00	0.12	0.01	0.01
365	272	276	-134.13	0.04	0.00	0.38	0.07	0.07
369	276	280	-362.88	0.47	0.00	1.03	0.45	0.45
373	280	284	6.48	0.00	0.00	0.02	0.00	0.00
377	284	288	184.26	0.15	0.00	0.52	0.13	0.13
381	284	292	-177.79	0.17	0.00	0.50	0.12	0.12
385	292	288	139.35	0.32	0.00	0.57	0.19	0.19

387	300	304	26.65	0.00	0.00	0.11	0.01	0.01
389	304	308	26.65	0.01	0.00	0.17	0.03	0.03
391	308	312	26.65	0.06	0.00	0.17	0.03	0.03
393	312	316	26.65	0.01	0.00	0.17	0.03	0.03
395	316	320	10.75	0.01	0.00	0.07	0.00	0.00
397	320	228	10.75	0.00	0.00	0.04	0.00	0.00
801	I-804	800	-369.35	0.12	0.00	1.05	0.46	0.46
805	280	O-804	-369.35	0.07	0.00	1.05	0.46	0.46
901	I-904	900	-317.12	0.13	0.00	0.90	0.35	0.35
905	292	O-904	-317.12	0.29	0.00	0.90	0.35	0.35

N O D E R E S U L T S

NODE NAME	NODE TITLE	EXTERNAL DEMAND gpm	HYDRAULIC GRADE ft	NODE ELEVATION ft	PRESSURE HEAD ft	NODE PRESSURE psi
4		46.76	903.91	798.00	105.91	45.90
8		22.96	903.37	760.00	143.37	62.13
12		0.00	903.14	740.00	163.14	70.69
16		10.99	900.78	730.00	170.78	74.00
20		6.65	898.62	724.00	174.62	75.67
24		0.00	898.06	700.00	198.06	85.83
28		8.96	897.96	705.00	192.96	83.62
32		8.40	898.92	657.00	241.92	104.83
36		0.00	900.04	650.00	250.04	108.35
40		17.85	899.72	665.00	234.72	101.71
44		0.00	899.63	640.00	259.63	112.51
48		27.02	899.59	612.00	287.59	124.62
52		0.00	899.52	645.00	254.52	110.29
56		154.50(3.00)	899.72	637.00	262.72	113.84
60		4.83	899.47	630.00	269.47	116.77
64		101.10(3.00)	899.35	625.00	274.35	118.89
68		45.01	899.10	606.00	293.10	127.01
72		0.00	898.95	590.00	308.95	133.88
76		27.37	898.10	640.00	258.10	111.84
80		83.51	898.04	665.00	233.04	100.98
84		7.63	898.04	684.00	214.04	92.75
88		45.99	898.02	699.00	199.02	86.24
92		10.99	898.02	712.00	186.02	80.61
96		88.80(3.00)	898.03	715.00	183.03	79.31
100		11.48	898.06	718.00	180.06	78.03
104		0.00	898.16	698.00	200.16	86.74
108		0.00	897.85	725.00	172.85	74.90
112		9.94	897.66	725.00	172.66	74.82
116		5.60	897.87	743.00	154.87	67.11
120		5.60	897.84	779.00	118.84	51.50
124		0.00	897.84	800.00	97.84	42.40
128		0.00	897.84	800.00	97.84	42.40
132		11.48	897.84	784.00	113.84	49.33
136		46.69	897.74	745.00	152.74	66.19
140		46.06	897.73	721.00	176.73	76.58
144		62.02	897.73	695.00	202.73	87.85
148		134.54	897.88	641.00	256.88	111.31
152		0.00	897.73	675.00	222.73	96.52
156		642.60	897.57	705.00	192.57	83.45
160		41.37	897.57	700.00	197.57	85.62
164		0.00	897.24	683.00	214.24	92.84
168		52.50	897.11	675.00	222.11	96.25

170	126.90(3.00)	896.92	689.00	207.92	90.10
172	171.30(3.00)	896.97	668.00	228.97	99.22
176	0.00	896.94	652.00	244.94	106.14
180	11.34	896.94	679.00	217.94	94.44
184	69.86	896.95	766.00	130.95	56.75
188	233.40(3.00)	896.96	771.00	125.96	54.58
192	5.60	897.08	789.00	108.08	46.83
194	336.60(3.00)	897.16	783.00	114.16	49.47
196	22.68	897.28	764.00	133.28	57.75
200	0.00	897.53	740.00	157.53	68.26
204	11.97	897.47	723.00	174.47	75.61
208	74.62	897.37	694.00	203.37	88.13
212	0.00	897.09	679.00	218.09	94.50
216	8.19	896.97	655.00	241.97	104.85
220	0.00	896.95	630.00	266.95	115.68
224	0.00	896.94	620.00	276.94	120.01
228	37.17	896.94	620.00	276.94	120.01
232	14.07	896.93	643.00	253.93	110.04
236	0.00	896.93	653.00	243.93	105.70
240	69.86	896.93	651.00	245.93	106.57
244	22.68	896.93	634.00	262.93	113.94
248	82.04	896.94	624.00	272.94	118.27
252	17.36	897.20	648.00	249.20	107.99
254	0.00	897.24	650.00	247.24	107.14
256	28.07	897.23	644.00	253.23	109.73
260	63.98	897.14	650.00	247.14	107.09
264	0.00	897.54	680.00	217.54	94.27
268	0.00	897.75	694.00	203.75	88.29
272	0.00	897.73	696.00	201.73	87.41
276	0.00	897.76	726.00	171.76	74.43
280	0.00	898.23	750.00	148.23	64.23
284	0.00	898.23	731.00	167.23	72.47
288	0.00	898.08	729.00	169.08	73.27
292	0.00	898.40	739.00	159.40	69.07
300	0.00	897.03	640.00	257.03	111.38
304	0.00	897.03	627.00	270.03	117.01
308	0.00	897.01	627.00	270.01	117.01
312	0.00	896.96	583.00	313.96	136.05
316	15.90(3.00)	896.95	570.00	326.95	141.68
320	0.00	896.94	608.00	288.94	125.21
800	----	1020.00			
O-804	----	898.31	746.00	152.31	66.00
900	----	1020.00			
I-904	0.00	1019.87	751.00	268.87	116.51
0	----	905.50			
I-804	0.00	1019.88	746.00	273.88	118.68
O-904	----	898.69	751.00	147.69	64.00

M A X I M U M A N D M I N I M U M V A L U E S

P R E S S U R E S

JUNCTION NUMBER	MAXIMUM PRESSURES psi	JUNCTION NUMBER	MINIMUM PRESSURES psi
316	141.68	128	42.40
312	136.05	124	42.40
72	133.88	4	45.90
68	127.01	192	46.83
320	125.21	132	49.33

V E L O C I T I E S

PIPE NUMBER	MAXIMUM VELOCITY (ft/s)	PIPE NUMBER	MINIMUM VELOCITY (ft/s)
13	3.40	241	0.01
65	2.65	373	0.02
1	2.58	321	0.02
5	2.53	209	0.03
69	2.40	317	0.03

R E G U L A T I N G V A L V E R E P O R T

VALVE LABEL	VALVE TYPE	VALVE SETTING psi or gpm	VALVE STATUS	UPSTREAM PRESSURE psi	DOWNSTREAM PRESSURE psi	THROUGH FLOW gpm
804	PRV-1	66.00	ACTIVATED	118.68	66.00	369.35
904	PRV-1	64.00	ACTIVATED	116.51	64.00	317.12

S U M M A R Y O F I N F L O W S A N D O U T F L O W S

(+) INFLOWS INTO THE SYSTEM FROM SUPPLY NODES
(-) OUTFLOWS FROM THE SYSTEM INTO SUPPLY NODES

NODE NAME	FLOWRATE gpm	NODE TITLE
800	369.35	
900	317.12	
0	2526.30	

NET SYSTEM INFLOW = 3212.77
NET SYSTEM OUTFLOW = 0.00
NET SYSTEM DEMAND = 3212.79

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Case: 2

C H A N G E S F O R N E X T S I M U L A T I O N (Change Number = 2)

JUNCTION DEMANDS CHANGED - PLEASE SEE RESULTS TABLE

RESULTS OBTAINED AFTER 12 TRIALS: ACCURACY = 0.28827E-04

The Trails at Carmel Mountain Ranch
920 Zone - Public Water System Analysis – Normal Condition
Peak Hour Demand

P I P E L I N E R E S U L T S

STATUS CODE: XX -CLOSED PIPE CV -CHECK VALVE

PIPE NAME	NODE NUMBERS #1	#2	FLOWRATE gpm	HEAD LOSS ft	MINOR LOSS ft	LINE VELO. ft/s	HL+ML/ 1000 ft/f	HL/ 1000 ft/f
1	0	4	2977.06	2.15	0.00	3.04	1.84	1.84
5	4	8	2930.30	0.74	0.00	2.99	1.79	1.79
9	8	12	2517.50	0.32	0.00	2.57	1.35	1.35
13	12	36	2517.50	4.22	0.00	4.02	4.01	4.01
17	8	16	389.84	3.59	0.00	2.49	3.70	3.70
21	16	20	378.85	3.01	0.00	2.42	3.51	3.51
25	20	24	372.20	0.79	0.00	2.38	3.40	3.40
29	24	28	372.20	0.14	0.00	1.06	0.47	0.47
33	32	28	270.77	1.39	0.00	1.73	1.88	1.88
37	36	32	279.17	1.60	0.00	1.78	1.99	1.99
41	36	40	274.73	0.42	0.00	0.78	0.27	0.27
45	40	44	256.88	0.12	0.00	0.73	0.24	0.24
49	44	48	70.76	0.05	0.00	0.45	0.16	0.16
53	48	52	43.74	0.10	0.00	0.28	0.06	0.06
57	52	44	-186.11	0.15	0.00	0.53	0.13	0.13
61	60	52	-229.86	0.07	0.00	0.65	0.19	0.19
65	36	56	1963.60	0.45	0.00	3.13	2.53	2.53
69	56	60	1670.05	0.30	0.00	2.66	1.87	1.87
73	60	64	1181.32	0.14	0.00	1.88	0.99	0.99
77	64	68	989.23	0.27	0.00	1.58	0.71	0.71
81	68	72	789.94	0.15	0.00	1.26	0.47	0.47
85	68	84	154.28	1.19	0.00	0.98	0.67	0.67
89	72	76	789.94	0.92	0.00	1.26	0.47	0.47
93	76	80	305.30	0.11	0.00	0.87	0.33	0.33
97	80	84	134.68	0.01	0.00	0.38	0.07	0.07
101	84	88	281.33	0.04	0.00	0.80	0.28	0.28
105	88	92	157.15	0.01	0.00	0.45	0.10	0.10
109	92	96	51.57	0.00	0.00	0.15	0.01	0.01
113	96	100	-117.15	0.01	0.00	0.33	0.06	0.06
117	100	116	114.10	0.26	0.00	0.73	0.38	0.38
121	100	104	-242.73	0.06	0.00	0.69	0.21	0.21
125	60	104	713.76	1.59	0.00	2.02	1.58	1.58
129	104	108	471.04	0.56	0.00	1.34	0.73	0.73
133	108	112	652.31	0.52	0.00	1.85	1.33	1.33
137	28	112	634.01	0.43	0.00	1.80	1.26	1.26
141	108	116	-181.27	0.24	0.00	1.16	0.90	0.90
145	116	120	-72.77	0.09	0.00	0.46	0.17	0.17
149	120	124	-78.37	0.01	0.00	0.22	0.03	0.03
153	124	128	-78.37	0.00	0.00	0.22	0.03	0.03
157	128	132	-78.37	0.01	0.00	0.22	0.03	0.03
161	132	92	-94.59	0.14	0.00	0.39	0.09	0.09

165	136	132	-4.74	0.00	0.00	0.02	0.00	0.00
169	140	136	41.95	0.00	0.00	0.12	0.01	0.01
173	88	140	78.19	0.15	0.00	0.32	0.06	0.06
177	140	160	94.79	0.05	0.00	0.27	0.04	0.04
181	140	144	-104.62	0.02	0.00	0.30	0.04	0.04
185	80	144	87.11	0.19	0.00	0.36	0.08	0.08
189	152	144	79.53	0.01	0.00	0.23	0.03	0.03
193	148	152	322.72	0.11	0.00	0.51	0.09	0.09
197	76	148	457.26	0.18	0.00	0.73	0.17	0.17
201	152	156	243.20	0.06	0.00	0.39	0.05	0.05
205	156	276	-471.23	0.72	0.00	1.34	0.73	0.73
209	160	156	-71.82	0.02	0.00	0.20	0.02	0.02
213	272	160	371.42	0.61	0.00	1.05	0.47	0.47
217	160	164	496.67	0.88	0.00	2.03	1.96	1.96
221	164	168	496.67	0.34	0.00	2.03	1.96	1.96
225	168	260	-158.08	0.20	0.00	0.65	0.23	0.23
227	170	168	-161.14	0.80	0.00	1.03	0.72	0.72
229	180	170	79.97	0.05	0.00	0.51	0.20	0.20
233	168	172	441.10	0.49	0.00	1.80	1.57	1.57
237	172	176	115.63	0.12	0.00	0.47	0.13	0.13
241	248	176	87.98	0.05	0.00	0.36	0.08	0.08
245	176	240	-8.27	0.00	0.00	0.03	0.00	0.00
249	176	180	211.87	0.15	0.00	0.87	0.40	0.40
253	180	184	120.57	0.12	0.00	0.49	0.14	0.14
257	184	188	50.71	0.00	0.00	0.14	0.01	0.01
261	188	192	-392.75	0.15	0.00	1.11	0.52	0.52
265	192	194	-146.36	0.06	0.00	0.42	0.08	0.08
267	194	112	-785.90	1.07	0.00	2.23	1.88	1.88
269	196	192	251.99	0.43	0.00	1.03	0.56	0.56
273	200	196	274.67	0.49	0.00	1.12	0.65	0.65
277	112	200	490.48	0.20	0.00	1.39	0.79	0.79
281	200	204	215.81	0.07	0.00	0.61	0.17	0.17
285	204	208	203.84	0.13	0.00	0.58	0.15	0.15
289	208	212	129.22	0.40	0.00	0.82	0.48	0.48
293	212	300	129.22	0.08	0.00	0.53	0.16	0.16
295	300	216	96.11	0.08	0.00	0.39	0.09	0.09
297	216	220	87.92	0.03	0.00	0.36	0.08	0.08
301	220	224	87.92	0.01	0.00	0.36	0.08	0.08
305	224	240	45.03	0.01	0.00	0.18	0.02	0.02
309	224	228	42.90	0.00	0.00	0.18	0.02	0.02
313	228	232	8.63	0.00	0.00	0.06	0.00	0.00
317	232	244	-18.66	0.01	0.00	0.12	0.01	0.01
321	236	232	-13.22	0.00	0.00	0.08	0.01	0.01
325	236	240	33.10	0.01	0.00	0.21	0.04	0.04
329	244	236	19.88	0.01	0.00	0.13	0.01	0.01
333	244	248	-61.22	0.02	0.00	0.39	0.12	0.12
337	252	248	231.24	0.94	0.00	0.94	0.47	0.47
339	254	252	248.60	0.13	0.00	1.02	0.54	0.54
341	256	254	-84.00	0.02	0.00	0.34	0.07	0.07
345	260	256	-222.06	0.28	0.00	0.91	0.44	0.44
347	264	254	332.61	0.86	0.00	1.36	0.93	0.93
349	256	264	-166.12	0.89	0.00	1.06	0.76	0.76
353	268	264	498.73	0.58	0.00	1.41	0.81	0.81
357	288	268	607.35	1.07	0.00	1.72	1.17	1.17
361	268	272	108.62	0.12	0.00	0.31	0.05	0.05
365	272	276	-262.80	0.12	0.00	0.75	0.25	0.25
369	276	280	-734.03	1.74	0.00	2.08	1.66	1.66
373	280	284	143.59	0.11	0.00	0.41	0.08	0.08
377	284	288	373.69	0.56	0.00	1.06	0.48	0.48
381	284	292	-230.10	0.27	0.00	0.65	0.19	0.19
385	292	288	233.66	0.84	0.00	0.95	0.48	0.48

387	300	304	33.11	0.01	0.00	0.14	0.01	0.01
389	304	308	33.11	0.02	0.00	0.21	0.04	0.04
391	308	312	33.11	0.08	0.00	0.21	0.04	0.04
393	312	316	33.11	0.02	0.00	0.21	0.04	0.04
395	316	320	2.90	0.00	0.00	0.02	0.00	0.00
397	320	228	2.90	0.00	0.00	0.01	0.00	0.00
801	I-804	800	-877.63	0.61	0.00	2.49	2.31	2.31
805	280	O-804	-877.63	0.37	0.00	2.49	2.31	2.31
901	I-904	900	-463.75	0.27	0.00	1.32	0.71	0.71
905	292	O-904	-463.75	0.59	0.00	1.32	0.71	0.71

N O D E R E S U L T S

NODE NAME	NODE TITLE	EXTERNAL DEMAND gpm	HYDRAULIC GRADE ft	NODE ELEVATION ft	PRESSURE HEAD ft	NODE PRESSURE psi
4		46.76	903.35	798.00	105.35	45.65
8		22.96	902.61	760.00	142.61	61.80
12		0.00	902.29	740.00	162.29	70.33
16		10.99	899.03	730.00	169.03	73.25
20		6.65	896.02	724.00	172.02	74.54
24		0.00	895.22	700.00	195.22	84.60
28		8.96	895.08	705.00	190.08	82.37
32		8.40	896.47	657.00	239.47	103.77
36		0.00	898.07	650.00	248.07	107.50
40		17.85	897.66	665.00	232.66	100.82
44		0.00	897.54	640.00	257.54	111.60
48		27.02	897.49	612.00	285.49	123.71
52		0.00	897.39	645.00	252.39	109.37
56		293.55(5.70)	897.63	637.00	260.63	112.94
60		4.83	897.32	630.00	267.32	115.84
64		192.09(5.70)	897.18	625.00	272.18	117.94
68		45.01	896.91	606.00	290.91	126.06
72		0.00	896.75	590.00	306.75	132.93
76		27.37	895.84	640.00	255.84	110.86
80		83.51	895.73	665.00	230.73	99.98
84		7.63	895.72	684.00	211.72	91.74
88		45.99	895.67	699.00	196.67	85.22
92		10.99	895.66	712.00	183.66	79.59
96		168.72(5.70)	895.66	715.00	180.66	78.28
100		11.48	895.67	718.00	177.67	76.99
104		0.00	895.73	698.00	197.73	85.68
108		0.00	895.17	725.00	170.17	73.74
112		9.94	894.65	725.00	169.65	73.52
116		5.60	895.40	743.00	152.40	66.04
120		5.60	895.49	779.00	116.49	50.48
124		0.00	895.51	800.00	95.51	41.39
128		0.00	895.51	800.00	95.51	41.39
132		11.48	895.52	784.00	111.52	48.32
136		46.69	895.52	745.00	150.52	65.22
140		46.06	895.52	721.00	174.52	75.63
144		62.02	895.54	695.00	200.54	86.90
148		134.54	895.66	641.00	254.66	110.35
152		0.00	895.55	675.00	220.55	95.57
156		642.60	895.48	705.00	190.48	82.54
160		41.37	895.47	700.00	195.47	84.70
164		0.00	894.59	683.00	211.59	91.69
168		52.50	894.24	675.00	219.24	95.01

170	241.11(5.70)	893.44	689.00	204.44	88.59
172	325.47(5.70)	893.75	668.00	225.75	97.82
176	0.00	893.63	652.00	241.63	104.71
180	11.34	893.49	679.00	214.49	92.94
184	69.86	893.37	766.00	127.37	55.19
188	443.46(5.70)	893.37	771.00	122.37	53.03
192	5.60	893.52	789.00	104.52	45.29
194	639.54(5.70)	893.58	783.00	110.58	47.92
196	22.68	893.95	764.00	129.95	56.31
200	0.00	894.45	740.00	154.45	66.93
204	11.97	894.38	723.00	171.38	74.26
208	74.62	894.25	694.00	200.25	86.78
212	0.00	893.85	679.00	214.85	93.10
216	8.19	893.69	655.00	238.69	103.43
220	0.00	893.66	630.00	263.66	114.25
224	0.00	893.65	620.00	273.65	118.58
228	37.17	893.64	620.00	273.64	118.58
232	14.07	893.64	643.00	250.64	108.61
236	0.00	893.64	653.00	240.64	104.28
240	69.86	893.63	651.00	242.63	105.14
244	22.68	893.65	634.00	259.65	112.52
248	82.04	893.68	624.00	269.68	116.86
252	17.36	894.61	648.00	246.61	106.87
254	0.00	894.75	650.00	244.75	106.06
256	28.07	894.73	644.00	250.73	108.65
260	63.98	894.44	650.00	244.44	105.93
264	0.00	895.61	680.00	215.61	93.43
268	0.00	896.20	694.00	202.20	87.62
272	0.00	896.08	696.00	200.08	86.70
276	0.00	896.20	726.00	170.20	73.75
280	0.00	897.94	750.00	147.94	64.11
284	0.00	897.83	731.00	166.83	72.29
288	0.00	897.27	729.00	168.27	72.92
292	0.00	898.10	739.00	159.10	68.95
300	0.00	893.77	640.00	253.77	109.97
304	0.00	893.77	627.00	266.77	115.60
308	0.00	893.75	627.00	266.75	115.59
312	0.00	893.66	583.00	310.66	134.62
316	30.21(5.70)	893.65	570.00	323.65	140.25
320	0.00	893.64	608.00	285.64	123.78
800	----	1020.00			
O-804	----	898.31	746.00	152.31	66.00
900	----	1020.00			
I-904	0.00	1019.73	751.00	268.73	116.45
0	----	905.50			
I-804	0.00	1019.39	746.00	273.39	118.47
O-904	----	898.69	751.00	147.69	64.00

M A X I M U M A N D M I N I M U M V A L U E S

P R E S S U R E S

JUNCTION NUMBER	MAXIMUM PRESSURES psi	JUNCTION NUMBER	MINIMUM PRESSURES psi
316	140.25	124	41.39
312	134.62	128	41.39
72	132.93	192	45.29
68	126.06	4	45.65
320	123.78	194	47.92

V E L O C I T I E S

PIPE NUMBER	MAXIMUM VELOCITY (ft/s)	PIPE NUMBER	MINIMUM VELOCITY (ft/s)
13	4.02	397	0.01
65	3.13	395	0.02
1	3.04	165	0.02
5	2.99	245	0.03
69	2.66	313	0.06

R E G U L A T I N G V A L V E R E P O R T

VALVE LABEL	VALVE TYPE	VALVE SETTING psi or gpm	VALVE STATUS	UPSTREAM PRESSURE psi	DOWNSTREAM PRESSURE psi	THROUGH FLOW gpm
804	PRV-1	66.00	ACTIVATED	118.47	66.00	877.63
904	PRV-1	64.00	ACTIVATED	116.45	64.00	463.75

S U M M A R Y O F I N F L O W S A N D O U T F L O W S

(+) INFLOWS INTO THE SYSTEM FROM SUPPLY NODES
(-) OUTFLOWS FROM THE SYSTEM INTO SUPPLY NODES

NODE NAME	FLOWRATE gpm	NODE TITLE
800	877.63	
900	463.75	
0	2977.06	

NET SYSTEM INFLOW = 4318.43
NET SYSTEM OUTFLOW = 0.00
NET SYSTEM DEMAND = 4318.44

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Case: 3

C H A N G E S F O R N E X T S I M U L A T I O N (Change Number = 3)

JUNCTION DEMANDS CHANGED - PLEASE SEE RESULTS TABLE

RESULTS OBTAINED AFTER 11 TRIALS: ACCURACY = 0.76630E-04

The Trails at Carmel Mountain Ranch
920 Zone - Public Water System Analysis – Normal Condition
Maximum Day Demand plus 1500 GPM Fire Flow at Node 56

P I P E L I N E R E S U L T S

STATUS CODE: XX -CLOSED PIPE CV -CHECK VALVE

PIPE NAME	NODE NUMBERS #1	#2	FLOWRATE gpm	HEAD LOSS ft	MINOR LOSS ft	LINE VELO. ft/s	HL+ML/ 1000 ft/f	HL/ 1000 ft/f
1	0	4	3308.80	2.61	0.00	3.38	2.24	2.24
5	4	8	3262.04	0.90	0.00	3.33	2.18	2.18
9	8	12	2866.39	0.41	0.00	2.93	1.72	1.72
13	12	36	2866.39	5.37	0.00	4.57	5.09	5.09
17	8	16	372.69	3.30	0.00	2.38	3.41	3.41
21	16	20	361.70	2.77	0.00	2.31	3.22	3.22
25	20	24	355.05	0.72	0.00	2.27	3.11	3.11
29	24	28	355.05	0.13	0.00	1.01	0.43	0.43
33	32	28	159.22	0.52	0.00	1.02	0.70	0.70
37	36	32	167.62	0.62	0.00	1.07	0.78	0.78
41	36	40	271.79	0.41	0.00	0.77	0.26	0.26
45	40	44	253.94	0.11	0.00	0.72	0.23	0.23
49	44	48	70.14	0.05	0.00	0.45	0.15	0.15
53	48	52	43.12	0.10	0.00	0.28	0.06	0.06
57	52	44	-183.80	0.15	0.00	0.52	0.13	0.13
61	60	52	-226.92	0.06	0.00	0.64	0.19	0.19
65	36	56	2426.98	0.66	0.00	3.87	3.74	3.74
69	56	60	772.48	0.07	0.00	1.23	0.45	0.45
73	60	64	632.05	0.05	0.00	1.01	0.31	0.31
77	64	68	530.95	0.09	0.00	0.85	0.22	0.22
81	68	72	406.65	0.04	0.00	0.65	0.14	0.14
85	68	84	79.29	0.35	0.00	0.51	0.19	0.19
89	72	76	406.65	0.27	0.00	0.65	0.14	0.14
93	76	80	159.12	0.03	0.00	0.45	0.10	0.10
97	80	84	44.78	0.00	0.00	0.13	0.01	0.01
101	84	88	116.44	0.01	0.00	0.33	0.05	0.05
105	88	92	45.03	0.00	0.00	0.13	0.01	0.01
109	92	96	-1.93	0.00	0.00	0.01	0.00	0.00
113	96	100	-90.73	0.01	0.00	0.26	0.03	0.03
117	100	116	49.22	0.06	0.00	0.31	0.08	0.08
121	100	104	-151.42	0.03	0.00	0.43	0.09	0.09
125	60	104	362.51	0.45	0.00	1.03	0.45	0.45
129	104	108	211.09	0.13	0.00	0.60	0.16	0.16
133	108	112	285.54	0.11	0.00	0.81	0.29	0.29
137	28	112	505.31	0.28	0.00	1.43	0.83	0.83
141	108	116	-74.45	0.05	0.00	0.48	0.17	0.17
145	116	120	-30.83	0.02	0.00	0.20	0.03	0.03
149	120	124	-36.43	0.00	0.00	0.10	0.01	0.01
153	124	128	-36.43	0.00	0.00	0.10	0.01	0.01
157	128	132	-36.43	0.00	0.00	0.10	0.01	0.01
161	132	92	-35.97	0.02	0.00	0.15	0.02	0.02

165	136	132	11.95	0.00	0.00	0.05	0.00	0.00
169	140	136	58.64	0.00	0.00	0.17	0.02	0.02
173	88	140	25.42	0.02	0.00	0.10	0.01	0.01
177	140	160	-54.57	0.02	0.00	0.15	0.01	0.01
181	140	144	-24.71	0.00	0.00	0.07	0.00	0.00
185	80	144	30.82	0.03	0.00	0.13	0.01	0.01
189	152	144	55.90	0.00	0.00	0.16	0.01	0.01
193	148	152	85.63	0.01	0.00	0.14	0.01	0.01
197	76	148	220.17	0.05	0.00	0.35	0.04	0.04
201	152	156	29.73	0.00	0.00	0.05	0.00	0.00
205	156	276	-542.95	0.93	0.00	1.54	0.95	0.95
209	160	156	69.92	0.02	0.00	0.20	0.02	0.02
213	272	160	432.54	0.81	0.00	1.23	0.62	0.62
217	160	164	266.68	0.28	0.00	1.09	0.62	0.62
221	164	168	266.68	0.11	0.00	1.09	0.62	0.62
225	168	260	-140.05	0.16	0.00	0.57	0.19	0.19
227	170	168	-94.40	0.30	0.00	0.60	0.27	0.27
229	180	170	32.50	0.01	0.00	0.21	0.04	0.04
233	168	172	259.83	0.19	0.00	1.06	0.59	0.59
237	172	176	88.53	0.07	0.00	0.36	0.08	0.08
241	248	176	44.52	0.01	0.00	0.18	0.02	0.02
245	176	240	37.32	0.01	0.00	0.15	0.02	0.02
249	176	180	95.73	0.03	0.00	0.39	0.09	0.09
253	180	184	51.89	0.02	0.00	0.21	0.03	0.03
257	184	188	-17.97	0.00	0.00	0.05	0.00	0.00
261	188	192	-251.37	0.07	0.00	0.71	0.23	0.23
265	192	194	-117.42	0.04	0.00	0.33	0.06	0.06
267	194	112	-454.02	0.39	0.00	1.29	0.68	0.68
269	196	192	139.55	0.14	0.00	0.57	0.19	0.19
273	200	196	162.23	0.19	0.00	0.66	0.25	0.25
277	112	200	326.88	0.10	0.00	0.93	0.37	0.37
281	200	204	164.66	0.04	0.00	0.47	0.10	0.10
285	204	208	152.69	0.08	0.00	0.43	0.09	0.09
289	208	212	78.07	0.16	0.00	0.50	0.19	0.19
293	212	300	78.07	0.03	0.00	0.32	0.06	0.06
295	300	216	58.40	0.03	0.00	0.24	0.04	0.04
297	216	220	50.21	0.01	0.00	0.21	0.03	0.03
301	220	224	50.21	0.00	0.00	0.21	0.03	0.03
305	224	240	18.11	0.00	0.00	0.07	0.00	0.00
309	224	228	32.11	0.00	0.00	0.13	0.01	0.01
313	228	232	-1.30	0.00	0.00	0.01	0.00	0.00
317	232	244	-15.10	0.01	0.00	0.10	0.01	0.01
321	236	232	0.26	0.00	0.00	0.00	0.00	0.00
325	236	240	14.44	0.00	0.00	0.09	0.01	0.01
329	244	236	14.70	0.01	0.00	0.09	0.01	0.01
333	244	248	-52.48	0.02	0.00	0.33	0.09	0.09
337	252	248	179.05	0.58	0.00	0.73	0.30	0.30
339	254	252	196.41	0.09	0.00	0.80	0.35	0.35
341	256	254	-88.77	0.02	0.00	0.36	0.08	0.08
345	260	256	-204.03	0.24	0.00	0.83	0.38	0.38
347	264	254	285.17	0.65	0.00	1.16	0.70	0.70
349	256	264	-143.33	0.67	0.00	0.91	0.58	0.58
353	268	264	428.50	0.44	0.00	1.22	0.61	0.61
357	288	268	614.90	1.10	0.00	1.74	1.20	1.20
361	268	272	186.39	0.32	0.00	0.53	0.13	0.13
365	272	276	-246.15	0.11	0.00	0.70	0.22	0.22
369	276	280	-789.10	1.99	0.00	2.24	1.90	1.90
373	280	284	140.97	0.10	0.00	0.40	0.08	0.08
377	284	288	377.50	0.57	0.00	1.07	0.48	0.48
381	284	292	-236.53	0.29	0.00	0.67	0.20	0.20
385	292	288	237.39	0.86	0.00	0.97	0.50	0.50

387	300	304	19.67	0.00	0.00	0.08	0.00	0.00
389	304	308	19.67	0.01	0.00	0.13	0.01	0.01
391	308	312	19.67	0.03	0.00	0.13	0.01	0.01
393	312	316	19.67	0.01	0.00	0.13	0.01	0.01
395	316	320	3.77	0.00	0.00	0.02	0.00	0.00
397	320	228	3.77	0.00	0.00	0.02	0.00	0.00
801	I-804	800	-930.06	0.67	0.00	2.64	2.57	2.57
805	280	O-804	-930.06	0.41	0.00	2.64	2.57	2.57
901	I-904	900	-473.93	0.28	0.00	1.34	0.74	0.74
905	292	O-904	-473.93	0.61	0.00	1.34	0.74	0.74

N O D E R E S U L T S

NODE NAME	NODE TITLE	EXTERNAL DEMAND gpm	HYDRAULIC GRADE ft	NODE ELEVATION ft	PRESSURE HEAD ft	NODE PRESSURE psi
4		46.76	902.89	798.00	104.89	45.45
8		22.96	901.99	760.00	141.99	61.53
12		0.00	901.58	740.00	161.58	70.02
16		10.99	898.69	730.00	168.69	73.10
20		6.65	895.92	724.00	171.92	74.50
24		0.00	895.20	700.00	195.20	84.59
28		8.96	895.07	705.00	190.07	82.36
32		8.40	895.59	657.00	238.59	103.39
36		0.00	896.21	650.00	246.21	106.69
40		17.85	895.80	665.00	230.80	100.01
44		0.00	895.69	640.00	255.69	110.80
48		27.02	895.64	612.00	283.64	122.91
52		0.00	895.54	645.00	250.54	108.57
56		1654.50(**)	895.55	637.00	258.55	112.04
60		4.83	895.48	630.00	265.48	115.04
64		101.10(3.00)	895.43	625.00	270.43	117.19
68		45.01	895.35	606.00	289.35	125.38
72		0.00	895.30	590.00	305.30	132.30
76		27.37	895.03	640.00	255.03	110.51
80		83.51	895.00	665.00	230.00	99.67
84		7.63	895.00	684.00	211.00	91.43
88		45.99	894.99	699.00	195.99	84.93
92		10.99	894.99	712.00	182.99	79.30
96		88.80(3.00)	894.99	715.00	179.99	78.00
100		11.48	895.00	718.00	177.00	76.70
104		0.00	895.02	698.00	197.02	85.38
108		0.00	894.90	725.00	169.90	73.62
112		9.94	894.78	725.00	169.78	73.57
116		5.60	894.94	743.00	151.94	65.84
120		5.60	894.96	779.00	115.96	50.25
124		0.00	894.96	800.00	94.96	41.15
128		0.00	894.96	800.00	94.96	41.15
132		11.48	894.97	784.00	110.97	48.09
136		46.69	894.97	745.00	149.97	64.99
140		46.06	894.97	721.00	173.97	75.39
144		62.02	894.97	695.00	199.97	86.66
148		134.54	894.99	641.00	253.99	110.06
152		0.00	894.98	675.00	219.98	95.32
156		642.60	894.98	705.00	189.98	82.32
160		41.37	894.99	700.00	194.99	84.50
164		0.00	894.71	683.00	211.71	91.74
168		52.50	894.60	675.00	219.60	95.16

170	126.90(3.00)	894.31	689.00	205.31	88.97
172	171.30(3.00)	894.42	668.00	226.42	98.11
176	0.00	894.35	652.00	242.35	105.02
180	11.34	894.32	679.00	215.32	93.30
184	69.86	894.29	766.00	128.29	55.59
188	233.40(3.00)	894.29	771.00	123.29	53.43
192	5.60	894.36	789.00	105.36	45.65
194	336.60(3.00)	894.40	783.00	111.40	48.27
196	22.68	894.50	764.00	130.50	56.55
200	0.00	894.69	740.00	154.69	67.03
204	11.97	894.65	723.00	171.65	74.38
208	74.62	894.57	694.00	200.57	86.92
212	0.00	894.42	679.00	215.42	93.35
216	8.19	894.35	655.00	239.35	103.72
220	0.00	894.34	630.00	264.34	114.55
224	0.00	894.34	620.00	274.34	118.88
228	37.17	894.34	620.00	274.34	118.88
232	14.07	894.34	643.00	251.34	108.91
236	0.00	894.34	653.00	241.34	104.58
240	69.86	894.33	651.00	243.33	105.44
244	22.68	894.34	634.00	260.34	112.82
248	82.04	894.36	624.00	270.36	117.16
252	17.36	894.94	648.00	246.94	107.01
254	0.00	895.03	650.00	245.03	106.18
256	28.07	895.01	644.00	251.01	108.77
260	63.98	894.77	650.00	244.77	106.07
264	0.00	895.68	680.00	215.68	93.46
268	0.00	896.12	694.00	202.12	87.59
272	0.00	895.80	696.00	199.80	86.58
276	0.00	895.91	726.00	169.91	73.63
280	0.00	897.90	750.00	147.90	64.09
284	0.00	897.79	731.00	166.79	72.28
288	0.00	897.22	729.00	168.22	72.90
292	0.00	898.08	739.00	159.08	68.94
300	0.00	894.39	640.00	254.39	110.23
304	0.00	894.38	627.00	267.38	115.87
308	0.00	894.38	627.00	267.38	115.86
312	0.00	894.34	583.00	311.34	134.92
316	15.90(3.00)	894.34	570.00	324.34	140.55
320	0.00	894.34	608.00	286.34	124.08
800	----	1020.00			
O-804	----	898.31	746.00	152.31	66.00
900	----	1020.00			
I-904	0.00	1019.72	751.00	268.72	116.45
0	----	905.50			
I-804	0.00	1019.33	746.00	273.33	118.44
O-904	----	898.69	751.00	147.69	64.00

M A X I M U M A N D M I N I M U M V A L U E S

P R E S S U R E S

JUNCTION NUMBER	MAXIMUM PRESSURES psi	JUNCTION NUMBER	MINIMUM PRESSURES psi
316	140.55	124	41.15
312	134.92	128	41.15
72	132.30	4	45.45
68	125.38	192	45.65
320	124.08	132	48.09

V E L O C I T I E S

PIPE NUMBER	MAXIMUM VELOCITY (ft/s)	PIPE NUMBER	MINIMUM VELOCITY (ft/s)
13	4.57	321	0.00
65	3.87	109	0.01
1	3.38	313	0.01
5	3.33	397	0.02
9	2.93	395	0.02

R E G U L A T I N G V A L V E R E P O R T

VALVE LABEL	VALVE TYPE	VALVE SETTING psi or gpm	VALVE STATUS	UPSTREAM PRESSURE psi	DOWNSTREAM PRESSURE psi	THROUGH FLOW gpm
804	PRV-1	66.00	ACTIVATED	118.44	66.00	930.06
904	PRV-1	64.00	ACTIVATED	116.45	64.00	473.93

S U M M A R Y O F I N F L O W S A N D O U T F L O W S

(+) INFLOWS INTO THE SYSTEM FROM SUPPLY NODES
(-) OUTFLOWS FROM THE SYSTEM INTO SUPPLY NODES

NODE NAME	FLOWRATE gpm	NODE TITLE
800	930.06	
900	473.93	
0	3308.80	

NET SYSTEM INFLOW = 4712.79
NET SYSTEM OUTFLOW = 0.00
NET SYSTEM DEMAND = 4712.79

==========
Case: 4

C H A N G E S F O R N E X T S I M U L A T I O N (Change Number = 4)

JUNCTION DEMANDS CHANGED - PLEASE SEE RESULTS TABLE

RESULTS OBTAINED AFTER 11 TRIALS: ACCURACY = 0.45848E-04

The Trails at Carmel Mountain Ranch
920 Zone - Public Water System Analysis – Normal Condition
Maximum Day Demand plus 1500 GPM Fire Flow at Node 64

P I P E L I N E R E S U L T S

STATUS CODE: XX -CLOSED PIPE CV -CHECK VALVE

PIPE NAME	NODE NUMBERS #1	#2	FLOWRATE gpm	HEAD LOSS ft	MINOR LOSS ft	LINE VELO. ft/s	HL+ML/ 1000 ft/f	HL/ 1000 ft/f
1	0	4	3265.53	2.55	0.00	3.33	2.19	2.19
5	4	8	3218.77	0.88	0.00	3.29	2.13	2.13
9	8	12	2817.31	0.40	0.00	2.88	1.66	1.66
13	12	36	2817.31	5.20	0.00	4.50	4.93	4.93
17	8	16	378.50	3.39	0.00	2.42	3.50	3.50
21	16	20	367.51	2.85	0.00	2.35	3.32	3.32
25	20	24	360.86	0.75	0.00	2.30	3.21	3.21
29	24	28	360.86	0.13	0.00	1.02	0.45	0.45
33	32	28	187.14	0.70	0.00	1.19	0.95	0.95
37	36	32	195.54	0.83	0.00	1.25	1.03	1.03
41	36	40	330.03	0.58	0.00	0.94	0.38	0.38
45	40	44	312.18	0.17	0.00	0.89	0.34	0.34
49	44	48	82.43	0.06	0.00	0.53	0.21	0.21
53	48	52	55.41	0.16	0.00	0.35	0.10	0.10
57	52	44	-229.75	0.22	0.00	0.65	0.19	0.19
61	60	52	-285.16	0.10	0.00	0.81	0.29	0.29
65	36	56	2291.74	0.59	0.00	3.66	3.37	3.37
69	56	60	2137.24	0.48	0.00	3.41	2.96	2.96
73	60	64	2008.72	0.38	0.00	3.21	2.64	2.64
77	64	68	407.62	0.05	0.00	0.65	0.14	0.14
81	68	72	303.98	0.03	0.00	0.49	0.08	0.08
85	68	84	58.63	0.20	0.00	0.37	0.11	0.11
89	72	76	303.98	0.16	0.00	0.49	0.08	0.08
93	76	80	107.71	0.02	0.00	0.31	0.05	0.05
97	80	84	0.47	0.00	0.00	0.00	0.00	0.00
101	84	88	51.47	0.00	0.00	0.15	0.01	0.01
105	88	92	-17.22	0.00	0.00	0.05	0.00	0.00
109	92	96	-60.03	0.00	0.00	0.17	0.02	0.02
113	96	100	-148.83	0.02	0.00	0.42	0.09	0.09
117	100	116	45.30	0.05	0.00	0.29	0.07	0.07
121	100	104	-205.61	0.05	0.00	0.58	0.16	0.16
125	60	104	408.85	0.57	0.00	1.16	0.56	0.56
129	104	108	203.23	0.12	0.00	0.58	0.15	0.15
133	108	112	256.78	0.09	0.00	0.73	0.24	0.24
137	28	112	539.04	0.32	0.00	1.53	0.94	0.94
141	108	116	-53.54	0.02	0.00	0.34	0.09	0.09
145	116	120	-13.85	0.00	0.00	0.09	0.01	0.01
149	120	124	-19.45	0.00	0.00	0.06	0.00	0.00
153	124	128	-19.45	0.00	0.00	0.06	0.00	0.00
157	128	132	-19.45	0.00	0.00	0.06	0.00	0.00
161	132	92	-31.82	0.02	0.00	0.13	0.01	0.01

165	136	132	-0.89	0.00	0.00	0.00	0.00	0.00
169	140	136	45.80	0.00	0.00	0.13	0.01	0.01
173	88	140	22.71	0.02	0.00	0.09	0.01	0.01
177	140	160	-64.00	0.03	0.00	0.18	0.02	0.02
181	140	144	-5.15	0.00	0.00	0.01	0.00	0.00
185	80	144	23.73	0.02	0.00	0.10	0.01	0.01
189	152	144	43.44	0.00	0.00	0.12	0.01	0.01
193	148	152	34.36	0.00	0.00	0.05	0.00	0.00
197	76	148	168.90	0.03	0.00	0.27	0.03	0.03
201	152	156	-9.08	0.00	0.00	0.01	0.00	0.00
205	156	276	-563.78	1.00	0.00	1.60	1.02	1.02
209	160	156	87.90	0.02	0.00	0.25	0.03	0.03
213	272	160	448.14	0.86	0.00	1.27	0.67	0.67
217	160	164	254.86	0.26	0.00	1.04	0.57	0.57
221	164	168	254.86	0.10	0.00	1.04	0.57	0.57
225	168	260	-145.27	0.17	0.00	0.59	0.20	0.20
227	170	168	-92.29	0.29	0.00	0.59	0.26	0.26
229	180	170	34.61	0.01	0.00	0.22	0.04	0.04
233	168	172	255.35	0.18	0.00	1.04	0.57	0.57
237	172	176	84.05	0.06	0.00	0.34	0.07	0.07
241	248	176	46.20	0.01	0.00	0.19	0.02	0.02
245	176	240	36.07	0.01	0.00	0.15	0.02	0.02
249	176	180	94.18	0.03	0.00	0.38	0.09	0.09
253	180	184	48.23	0.02	0.00	0.20	0.03	0.03
257	184	188	-21.63	0.00	0.00	0.06	0.00	0.00
261	188	192	-255.03	0.07	0.00	0.72	0.23	0.23
265	192	194	-120.00	0.04	0.00	0.34	0.06	0.06
267	194	112	-456.60	0.39	0.00	1.30	0.69	0.69
269	196	192	140.63	0.15	0.00	0.57	0.19	0.19
273	200	196	163.31	0.19	0.00	0.67	0.25	0.25
277	112	200	329.28	0.10	0.00	0.93	0.38	0.38
281	200	204	165.97	0.04	0.00	0.47	0.11	0.11
285	204	208	154.00	0.08	0.00	0.44	0.09	0.09
289	208	212	79.38	0.16	0.00	0.51	0.19	0.19
293	212	300	79.38	0.03	0.00	0.32	0.07	0.07
295	300	216	59.40	0.03	0.00	0.24	0.04	0.04
297	216	220	51.21	0.01	0.00	0.21	0.03	0.03
301	220	224	51.21	0.00	0.00	0.21	0.03	0.03
305	224	240	18.81	0.00	0.00	0.08	0.00	0.00
309	224	228	32.40	0.00	0.00	0.13	0.01	0.01
313	228	232	-0.68	0.00	0.00	0.00	0.00	0.00
317	232	244	-15.07	0.01	0.00	0.10	0.01	0.01
321	236	232	-0.31	0.00	0.00	0.00	0.00	0.00
325	236	240	14.99	0.00	0.00	0.10	0.01	0.01
329	244	236	14.67	0.01	0.00	0.09	0.01	0.01
333	244	248	-52.42	0.02	0.00	0.33	0.09	0.09
337	252	248	180.66	0.59	0.00	0.74	0.30	0.30
339	254	252	198.02	0.09	0.00	0.81	0.36	0.36
341	256	254	-91.65	0.03	0.00	0.37	0.09	0.09
345	260	256	-209.25	0.25	0.00	0.85	0.39	0.39
347	264	254	289.67	0.67	0.00	1.18	0.72	0.72
349	256	264	-145.68	0.70	0.00	0.93	0.60	0.60
353	268	264	435.35	0.45	0.00	1.23	0.63	0.63
357	288	268	631.82	1.15	0.00	1.79	1.26	1.26
361	268	272	196.47	0.35	0.00	0.56	0.14	0.14
365	272	276	-251.67	0.11	0.00	0.71	0.23	0.23
369	276	280	-815.44	2.11	0.00	2.31	2.02	2.02
373	280	284	147.30	0.11	0.00	0.42	0.08	0.08
377	284	288	388.36	0.61	0.00	1.10	0.51	0.51
381	284	292	-241.05	0.30	0.00	0.68	0.21	0.21
385	292	288	243.46	0.90	0.00	0.99	0.52	0.52

387	300	304	19.99	0.00	0.00	0.08	0.01	0.01
389	304	308	19.99	0.01	0.00	0.13	0.02	0.02
391	308	312	19.99	0.03	0.00	0.13	0.02	0.02
393	312	316	19.99	0.01	0.00	0.13	0.02	0.02
395	316	320	4.09	0.00	0.00	0.03	0.00	0.00
397	320	228	4.09	0.00	0.00	0.02	0.00	0.00
801	I-804	800	-962.74	0.72	0.00	2.73	2.74	2.74
805	280	O-804	-962.74	0.44	0.00	2.73	2.74	2.74
901	I-904	900	-484.53	0.29	0.00	1.37	0.77	0.77
905	292	O-904	-484.53	0.64	0.00	1.37	0.77	0.77

N O D E R E S U L T S

NODE NAME	NODE TITLE	EXTERNAL DEMAND gpm	HYDRAULIC GRADE ft	NODE ELEVATION ft	PRESSURE HEAD ft	NODE PRESSURE psi
4		46.76	902.95	798.00	104.95	45.48
8		22.96	902.07	760.00	142.07	61.57
12		0.00	901.67	740.00	161.67	70.06
16		10.99	898.68	730.00	168.68	73.09
20		6.65	895.83	724.00	171.83	74.46
24		0.00	895.08	700.00	195.08	84.54
28		8.96	894.95	705.00	189.95	82.31
32		8.40	895.65	657.00	238.65	103.41
36		0.00	896.48	650.00	246.48	106.81
40		17.85	895.89	665.00	230.89	100.05
44		0.00	895.73	640.00	255.73	110.82
48		27.02	895.66	612.00	283.66	122.92
52		0.00	895.51	645.00	250.51	108.55
56		154.50(3.00)	895.88	637.00	258.88	112.18
60		4.83	895.41	630.00	265.41	115.01
64		1601.10(**)	895.02	625.00	270.02	117.01
68		45.01	894.97	606.00	288.97	125.22
72		0.00	894.94	590.00	304.94	132.14
76		27.37	894.79	640.00	254.79	110.41
80		83.51	894.77	665.00	229.77	99.57
84		7.63	894.77	684.00	210.77	91.33
88		45.99	894.77	699.00	195.77	84.83
92		10.99	894.77	712.00	182.77	79.20
96		88.80(3.00)	894.77	715.00	179.77	77.90
100		11.48	894.79	718.00	176.79	76.61
104		0.00	894.84	698.00	196.84	85.30
108		0.00	894.72	725.00	169.72	73.55
112		9.94	894.63	725.00	169.63	73.51
116		5.60	894.75	743.00	151.75	65.76
120		5.60	894.75	779.00	115.75	50.16
124		0.00	894.75	800.00	94.75	41.06
128		0.00	894.75	800.00	94.75	41.06
132		11.48	894.75	784.00	110.75	47.99
136		46.69	894.75	745.00	149.75	64.89
140		46.06	894.75	721.00	173.75	75.29
144		62.02	894.75	695.00	199.75	86.56
148		134.54	894.76	641.00	253.76	109.96
152		0.00	894.76	675.00	219.76	95.23
156		642.60	894.76	705.00	189.76	82.23
160		41.37	894.78	700.00	194.78	84.40
164		0.00	894.52	683.00	211.52	91.66
168		52.50	894.42	675.00	219.42	95.08

170	126.90(3.00)	894.14	689.00	205.14	88.89
172	171.30(3.00)	894.24	668.00	226.24	98.04
176	0.00	894.18	652.00	242.18	104.95
180	11.34	894.15	679.00	215.15	93.23
184	69.86	894.13	766.00	128.13	55.52
188	233.40(3.00)	894.13	771.00	123.13	53.36
192	5.60	894.20	789.00	105.20	45.58
194	336.60(3.00)	894.24	783.00	111.24	48.20
196	22.68	894.34	764.00	130.34	56.48
200	0.00	894.53	740.00	154.53	66.96
204	11.97	894.49	723.00	171.49	74.31
208	74.62	894.41	694.00	200.41	86.85
212	0.00	894.25	679.00	215.25	93.28
216	8.19	894.19	655.00	239.19	103.65
220	0.00	894.17	630.00	264.17	114.48
224	0.00	894.17	620.00	274.17	118.81
228	37.17	894.17	620.00	274.17	118.81
232	14.07	894.17	643.00	251.17	108.84
236	0.00	894.17	653.00	241.17	104.51
240	69.86	894.17	651.00	243.17	105.37
244	22.68	894.18	634.00	260.18	112.74
248	82.04	894.19	624.00	270.19	117.08
252	17.36	894.79	648.00	246.79	106.94
254	0.00	894.88	650.00	244.88	106.11
256	28.07	894.85	644.00	250.85	108.70
260	63.98	894.60	650.00	244.60	105.99
264	0.00	895.54	680.00	215.54	93.40
268	0.00	896.00	694.00	202.00	87.53
272	0.00	895.64	696.00	199.64	86.51
276	0.00	895.76	726.00	169.76	73.56
280	0.00	897.87	750.00	147.87	64.08
284	0.00	897.76	731.00	166.76	72.26
288	0.00	897.15	729.00	168.15	72.87
292	0.00	898.06	739.00	159.06	68.92
300	0.00	894.22	640.00	254.22	110.16
304	0.00	894.22	627.00	267.22	115.79
308	0.00	894.21	627.00	267.21	115.79
312	0.00	894.18	583.00	311.18	134.84
316	15.90(3.00)	894.17	570.00	324.17	140.47
320	0.00	894.17	608.00	286.17	124.01
800	----	1020.00			
O-804	----	898.31	746.00	152.31	66.00
900	----	1020.00			
I-904	0.00	1019.71	751.00	268.71	116.44
0	----	905.50			
I-804	0.00	1019.28	746.00	273.28	118.42
O-904	----	898.69	751.00	147.69	64.00

M A X I M U M A N D M I N I M U M V A L U E S

P R E S S U R E S

JUNCTION NUMBER	MAXIMUM PRESSURES psi	JUNCTION NUMBER	MINIMUM PRESSURES psi
316	140.47	124	41.06
312	134.84	128	41.06
72	132.14	4	45.48
68	125.22	192	45.58
320	124.01	132	47.99

V E L O C I T I E S

PIPE NUMBER	MAXIMUM VELOCITY (ft/s)	PIPE NUMBER	MINIMUM VELOCITY (ft/s)
13	4.50	97	0.00
65	3.66	321	0.00
69	3.41	165	0.00
1	3.33	313	0.00
5	3.29	201	0.01

R E G U L A T I N G V A L V E R E P O R T

VALVE LABEL	VALVE TYPE	VALVE SETTING psi or gpm	VALVE STATUS	UPSTREAM PRESSURE psi	DOWNSTREAM PRESSURE psi	THROUGH FLOW gpm
804	PRV-1	66.00	ACTIVATED	118.42	66.00	962.74
904	PRV-1	64.00	ACTIVATED	116.44	64.00	484.53

S U M M A R Y O F I N F L O W S A N D O U T F L O W S

(+) INFLOWS INTO THE SYSTEM FROM SUPPLY NODES
(-) OUTFLOWS FROM THE SYSTEM INTO SUPPLY NODES

NODE NAME	FLOWRATE gpm	NODE TITLE
800	962.74	
900	484.53	
0	3265.53	

NET SYSTEM INFLOW = 4712.80
NET SYSTEM OUTFLOW = 0.00
NET SYSTEM DEMAND = 4712.79

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Case: 5

C H A N G E S F O R N E X T S I M U L A T I O N (Change Number = 5)

JUNCTION DEMANDS CHANGED - PLEASE SEE RESULTS TABLE

RESULTS OBTAINED AFTER 12 TRIALS: ACCURACY = 0.35425E-05

The Trails at Carmel Mountain Ranch
920 Zone - Public Water System Analysis – Normal Condition
Maximum Day Demand plus 1500 GPM Fire Flow at Node 96

P I P E L I N E R E S U L T S

STATUS CODE: XX -CLOSED PIPE CV -CHECK VALVE

PIPE NAME	NODE NUMBERS #1	#2	FLOWRATE gpm	HEAD LOSS ft	MINOR LOSS ft	LINE VELO. ft/s	HL+ML/ 1000 ft/f	HL/ 1000 ft/f
1	0	4	3135.76	2.37	0.00	3.20	2.03	2.03
5	4	8	3089.00	0.81	0.00	3.15	1.97	1.97
9	8	12	2662.99	0.36	0.00	2.72	1.50	1.50
13	12	36	2662.99	4.68	0.00	4.25	4.44	4.44
17	8	16	403.04	3.81	0.00	2.57	3.94	3.94
21	16	20	392.05	3.21	0.00	2.50	3.74	3.74
25	20	24	385.40	0.84	0.00	2.46	3.62	3.62
29	24	28	385.40	0.15	0.00	1.09	0.50	0.50
33	32	28	270.26	1.38	0.00	1.72	1.88	1.88
37	36	32	278.66	1.60	0.00	1.78	1.99	1.99
41	36	40	300.61	0.49	0.00	0.85	0.32	0.32
45	40	44	282.76	0.14	0.00	0.80	0.28	0.28
49	44	48	76.23	0.06	0.00	0.49	0.18	0.18
53	48	52	49.21	0.13	0.00	0.31	0.08	0.08
57	52	44	-206.53	0.18	0.00	0.59	0.16	0.16
61	60	52	-255.74	0.08	0.00	0.73	0.24	0.24
65	36	56	2083.73	0.50	0.00	3.32	2.82	2.82
69	56	60	1929.23	0.39	0.00	3.08	2.45	2.45
73	60	64	1292.52	0.17	0.00	2.06	1.17	1.17
77	64	68	1191.42	0.39	0.00	1.90	1.00	1.00
81	68	72	947.72	0.21	0.00	1.51	0.66	0.66
85	68	84	198.69	1.90	0.00	1.27	1.06	1.06
89	72	76	947.72	1.28	0.00	1.51	0.66	0.66
93	76	80	524.89	0.30	0.00	1.49	0.89	0.89
97	80	84	448.62	0.10	0.00	1.27	0.67	0.67
101	84	88	639.68	0.20	0.00	1.81	1.29	1.29
105	88	92	697.35	0.23	0.00	1.98	1.51	1.51
109	92	96	828.06	0.34	0.00	2.35	2.07	2.07
113	96	100	-760.74	0.42	0.00	2.16	1.77	1.77
117	100	116	-99.59	0.21	0.00	0.64	0.30	0.30
121	100	104	-672.63	0.42	0.00	1.91	1.41	1.41
125	60	104	887.62	2.38	0.00	2.52	2.36	2.36
129	104	108	214.99	0.13	0.00	0.61	0.17	0.17
133	108	112	114.59	0.02	0.00	0.33	0.05	0.05
137	28	112	646.70	0.45	0.00	1.83	1.31	1.31
141	108	116	100.40	0.08	0.00	0.64	0.30	0.30
145	116	120	-4.79	0.00	0.00	0.03	0.00	0.00
149	120	124	-10.39	0.00	0.00	0.03	0.00	0.00
153	124	128	-10.39	0.00	0.00	0.03	0.00	0.00
157	128	132	-10.39	0.00	0.00	0.03	0.00	0.00
161	132	92	141.70	0.29	0.00	0.58	0.19	0.19

165	136	132	163.58	0.14	0.00	0.67	0.25	0.25
169	140	136	210.27	0.05	0.00	0.60	0.16	0.16
173	88	140	-103.66	0.26	0.00	0.42	0.11	0.11
177	140	160	-159.23	0.14	0.00	0.45	0.10	0.10
181	140	144	-200.76	0.05	0.00	0.57	0.15	0.15
185	80	144	-7.24	0.00	0.00	0.03	0.00	0.00
189	152	144	270.02	0.08	0.00	0.77	0.26	0.26
193	148	152	260.92	0.08	0.00	0.42	0.06	0.06
197	76	148	395.46	0.14	0.00	0.63	0.13	0.13
201	152	156	-9.10	0.00	0.00	0.01	0.00	0.00
205	156	276	-614.67	1.17	0.00	1.74	1.19	1.19
209	160	156	37.04	0.00	0.00	0.11	0.01	0.01
213	272	160	493.91	1.03	0.00	1.40	0.80	0.80
217	160	164	256.28	0.26	0.00	1.05	0.57	0.57
221	164	168	256.28	0.10	0.00	1.05	0.57	0.57
225	168	260	-162.71	0.21	0.00	0.66	0.25	0.25
227	170	168	-99.32	0.33	0.00	0.63	0.29	0.29
229	180	170	27.58	0.01	0.00	0.18	0.03	0.03
233	168	172	267.17	0.20	0.00	1.09	0.62	0.62
237	172	176	95.87	0.08	0.00	0.39	0.09	0.09
241	248	176	55.29	0.02	0.00	0.23	0.03	0.03
245	176	240	39.96	0.02	0.00	0.16	0.02	0.02
249	176	180	111.20	0.04	0.00	0.45	0.12	0.12
253	180	184	72.28	0.04	0.00	0.30	0.06	0.06
257	184	188	2.42	0.00	0.00	0.01	0.00	0.00
261	188	192	-230.98	0.06	0.00	0.66	0.19	0.19
265	192	194	-102.88	0.03	0.00	0.29	0.04	0.04
267	194	112	-439.48	0.36	0.00	1.25	0.64	0.64
269	196	192	133.70	0.13	0.00	0.55	0.17	0.17
273	200	196	156.38	0.17	0.00	0.64	0.23	0.23
277	112	200	311.87	0.09	0.00	0.88	0.34	0.34
281	200	204	155.50	0.04	0.00	0.44	0.09	0.09
285	204	208	143.53	0.07	0.00	0.41	0.08	0.08
289	208	212	68.91	0.12	0.00	0.44	0.15	0.15
293	212	300	68.91	0.02	0.00	0.28	0.05	0.05
295	300	216	51.52	0.03	0.00	0.21	0.03	0.03
297	216	220	43.33	0.01	0.00	0.18	0.02	0.02
301	220	224	43.33	0.00	0.00	0.18	0.02	0.02
305	224	240	13.40	0.00	0.00	0.05	0.00	0.00
309	224	228	29.93	0.00	0.00	0.12	0.01	0.01
313	228	232	-5.75	0.00	0.00	0.04	0.00	0.00
317	232	244	-18.42	0.01	0.00	0.12	0.01	0.01
321	236	232	1.41	0.00	0.00	0.01	0.00	0.00
325	236	240	16.50	0.00	0.00	0.11	0.01	0.01
329	244	236	17.90	0.01	0.00	0.11	0.01	0.01
333	244	248	-59.00	0.02	0.00	0.38	0.11	0.11
337	252	248	196.33	0.69	0.00	0.80	0.35	0.35
339	254	252	213.69	0.10	0.00	0.87	0.41	0.41
341	256	254	-98.03	0.03	0.00	0.40	0.10	0.10
345	260	256	-226.69	0.29	0.00	0.93	0.46	0.46
347	264	254	311.72	0.77	0.00	1.27	0.83	0.83
349	256	264	-156.73	0.80	0.00	1.00	0.68	0.68
353	268	264	468.45	0.52	0.00	1.33	0.72	0.72
357	288	268	685.95	1.34	0.00	1.95	1.46	1.46
361	268	272	217.50	0.43	0.00	0.62	0.17	0.17
365	272	276	-276.41	0.14	0.00	0.78	0.27	0.27
369	276	280	-891.08	2.49	0.00	2.53	2.38	2.38
373	280	284	168.21	0.14	0.00	0.48	0.11	0.11
377	284	288	423.19	0.71	0.00	1.20	0.60	0.60
381	284	292	-254.98	0.33	0.00	0.72	0.23	0.23
385	292	288	262.77	1.04	0.00	1.07	0.60	0.60

387	300	304	17.39	0.00	0.00	0.07	0.00	0.00
389	304	308	17.39	0.01	0.00	0.11	0.01	0.01
391	308	312	17.39	0.03	0.00	0.11	0.01	0.01
393	312	316	17.39	0.01	0.00	0.11	0.01	0.01
395	316	320	1.49	0.00	0.00	0.01	0.00	0.00
397	320	228	1.49	0.00	0.00	0.01	0.00	0.00
801	I-804	800	-1059.29	0.86	0.00	3.00	3.27	3.27
805	280	O-804	-1059.29	0.52	0.00	3.00	3.27	3.27
901	I-904	900	-517.74	0.33	0.00	1.47	0.87	0.87
905	292	O-904	-517.74	0.72	0.00	1.47	0.87	0.87

N O D E R E S U L T S

NODE NAME	NODE TITLE	EXTERNAL DEMAND gpm	HYDRAULIC GRADE ft	NODE ELEVATION ft	PRESSURE HEAD ft	NODE PRESSURE psi
4		46.76	903.13	798.00	105.13	45.56
8		22.96	902.32	760.00	142.32	61.67
12		0.00	901.96	740.00	161.96	70.18
16		10.99	898.51	730.00	168.51	73.02
20		6.65	895.30	724.00	171.30	74.23
24		0.00	894.45	700.00	194.45	84.26
28		8.96	894.30	705.00	189.30	82.03
32		8.40	895.68	657.00	238.68	103.43
36		0.00	897.28	650.00	247.28	107.15
40		17.85	896.79	665.00	231.79	100.44
44		0.00	896.65	640.00	256.65	111.22
48		27.02	896.60	612.00	284.60	123.32
52		0.00	896.47	645.00	251.47	108.97
56		154.50(3.00)	896.78	637.00	259.78	112.57
60		4.83	896.39	630.00	266.39	115.43
64		101.10(3.00)	896.22	625.00	271.22	117.53
68		45.01	895.83	606.00	289.83	125.59
72		0.00	895.62	590.00	305.62	132.43
76		27.37	894.33	640.00	254.33	110.21
80		83.51	894.04	665.00	229.04	99.25
84		7.63	893.93	684.00	209.93	90.97
88		45.99	893.73	699.00	194.73	84.38
92		10.99	893.50	712.00	181.50	78.65
96		1588.80(**)	893.17	715.00	178.17	77.21
100		11.48	893.59	718.00	175.59	76.09
104		0.00	894.01	698.00	196.01	84.94
108		0.00	893.87	725.00	168.87	73.18
112		9.94	893.85	725.00	168.85	73.17
116		5.60	893.80	743.00	150.80	65.34
120		5.60	893.80	779.00	114.80	49.74
124		0.00	893.80	800.00	93.80	40.64
128		0.00	893.80	800.00	93.80	40.64
132		11.48	893.80	784.00	109.80	47.58
136		46.69	893.94	745.00	148.94	64.54
140		46.06	893.99	721.00	172.99	74.96
144		62.02	894.04	695.00	199.04	86.25
148		134.54	894.20	641.00	253.20	109.72
152		0.00	894.12	675.00	219.12	94.95
156		642.60	894.12	705.00	189.12	81.95
160		41.37	894.13	700.00	194.13	84.12
164		0.00	893.87	683.00	210.87	91.38
168		52.50	893.77	675.00	218.77	94.80

170	126.90(3.00)	893.44	689.00	204.44	88.59
172	171.30(3.00)	893.57	668.00	225.57	97.75
176	0.00	893.49	652.00	241.49	104.65
180	11.34	893.45	679.00	214.45	92.93
184	69.86	893.40	766.00	127.40	55.21
188	233.40(3.00)	893.40	771.00	122.40	53.04
192	5.60	893.46	789.00	104.46	45.27
194	336.60(3.00)	893.49	783.00	110.49	47.88
196	22.68	893.59	764.00	129.59	56.16
200	0.00	893.77	740.00	153.77	66.63
204	11.97	893.73	723.00	170.73	73.98
208	74.62	893.66	694.00	199.66	86.52
212	0.00	893.54	679.00	214.54	92.97
216	8.19	893.49	655.00	238.49	103.34
220	0.00	893.48	630.00	263.48	114.17
224	0.00	893.48	620.00	273.48	118.51
228	37.17	893.47	620.00	273.47	118.51
232	14.07	893.48	643.00	250.48	108.54
236	0.00	893.48	653.00	240.48	104.21
240	69.86	893.47	651.00	242.47	105.07
244	22.68	893.49	634.00	259.49	112.44
248	82.04	893.51	624.00	269.51	116.79
252	17.36	894.20	648.00	246.20	106.69
254	0.00	894.30	650.00	244.30	105.86
256	28.07	894.27	644.00	250.27	108.45
260	63.98	893.98	650.00	243.98	105.72
264	0.00	895.07	680.00	215.07	93.20
268	0.00	895.59	694.00	201.59	87.35
272	0.00	895.16	696.00	199.16	86.30
276	0.00	895.30	726.00	169.30	73.36
280	0.00	897.78	750.00	147.78	64.04
284	0.00	897.64	731.00	166.64	72.21
288	0.00	896.93	729.00	167.93	72.77
292	0.00	897.97	739.00	158.97	68.89
300	0.00	893.51	640.00	253.51	109.86
304	0.00	893.51	627.00	266.51	115.49
308	0.00	893.51	627.00	266.51	115.49
312	0.00	893.48	583.00	310.48	134.54
316	15.90(3.00)	893.47	570.00	323.47	140.17
320	0.00	893.47	608.00	285.47	123.71
800	----	1020.00			
O-804	----	898.31	746.00	152.31	66.00
900	----	1020.00			
I-904	0.00	1019.67	751.00	268.67	116.42
0	----	905.50			
I-804	0.00	1019.14	746.00	273.14	118.36
O-904	----	898.69	751.00	147.69	64.00

M A X I M U M A N D M I N I M U M V A L U E S

P R E S S U R E S

JUNCTION NUMBER	MAXIMUM PRESSURES psi	JUNCTION NUMBER	MINIMUM PRESSURES psi
316	140.17	124	40.64
312	134.54	128	40.64
72	132.43	192	45.27
68	125.59	4	45.56
320	123.71	132	47.58

V E L O C I T I E S

PIPE NUMBER	MAXIMUM VELOCITY (ft/s)	PIPE NUMBER	MINIMUM VELOCITY (ft/s)
13	4.25	397	0.01
65	3.32	257	0.01
1	3.20	321	0.01
5	3.15	395	0.01
69	3.08	201	0.01

R E G U L A T I N G V A L V E R E P O R T

VALVE LABEL	VALVE TYPE	VALVE SETTING psi or gpm	VALVE STATUS	UPSTREAM PRESSURE psi	DOWNSTREAM PRESSURE psi	THROUGH FLOW gpm
804	PRV-1	66.00	ACTIVATED	118.36	66.00	1059.29
904	PRV-1	64.00	ACTIVATED	116.42	64.00	517.74

S U M M A R Y O F I N F L O W S A N D O U T F L O W S

(+) INFLOWS INTO THE SYSTEM FROM SUPPLY NODES
(-) OUTFLOWS FROM THE SYSTEM INTO SUPPLY NODES

NODE NAME	FLOWRATE gpm	NODE TITLE
800	1059.29	
900	517.74	
0	3135.76	

NET SYSTEM INFLOW = 4712.79
NET SYSTEM OUTFLOW = 0.00
NET SYSTEM DEMAND = 4712.79

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Case: 6

C H A N G E S F O R N E X T S I M U L A T I O N (Change Number = 6)

JUNCTION DEMANDS CHANGED - PLEASE SEE RESULTS TABLE

RESULTS OBTAINED AFTER 12 TRIALS: ACCURACY = 0.36035E-04

The Trails at Carmel Mountain Ranch
920 Zone - Public Water System Analysis – Normal Condition
Maximum Day Demand plus 1500 GPM Fire Flow at Node 170

P I P E L I N E R E S U L T S

STATUS CODE: XX -CLOSED PIPE CV -CHECK VALVE

PIPE NAME	NODE NUMBERS #1	#2	FLOWRATE gpm	HEAD LOSS ft	MINOR LOSS ft	LINE VELO. ft/s	HL+ML/ 1000 ft/f	HL/ 1000 ft/f
1	0	4	3071.77	2.28	0.00	3.14	1.95	1.95
5	4	8	3025.01	0.78	0.00	3.09	1.90	1.90
9	8	12	2582.57	0.34	0.00	2.64	1.42	1.42
13	12	36	2582.57	4.42	0.00	4.12	4.20	4.20
17	8	16	419.48	4.11	0.00	2.68	4.24	4.24
21	16	20	408.49	3.47	0.00	2.61	4.04	4.04
25	20	24	401.84	0.91	0.00	2.56	3.92	3.92
29	24	28	401.84	0.16	0.00	1.14	0.54	0.54
33	32	28	312.59	1.81	0.00	2.00	2.46	2.46
37	36	32	320.99	2.08	0.00	2.05	2.58	2.58
41	36	40	285.40	0.45	0.00	0.81	0.29	0.29
45	40	44	267.55	0.12	0.00	0.76	0.26	0.26
49	44	48	73.02	0.05	0.00	0.47	0.17	0.17
53	48	52	46.00	0.11	0.00	0.29	0.07	0.07
57	52	44	-194.53	0.16	0.00	0.55	0.14	0.14
61	60	52	-240.53	0.07	0.00	0.68	0.21	0.21
65	36	56	1976.19	0.45	0.00	3.15	2.56	2.56
69	56	60	1821.69	0.35	0.00	2.91	2.20	2.20
73	60	64	1239.42	0.16	0.00	1.98	1.08	1.08
77	64	68	1138.32	0.35	0.00	1.82	0.92	0.92
81	68	72	915.68	0.20	0.00	1.46	0.62	0.62
85	68	84	177.63	1.54	0.00	1.13	0.86	0.86
89	72	76	915.68	1.20	0.00	1.46	0.62	0.62
93	76	80	332.28	0.13	0.00	0.94	0.38	0.38
97	80	84	132.98	0.01	0.00	0.38	0.07	0.07
101	84	88	302.98	0.05	0.00	0.86	0.32	0.32
105	88	92	146.24	0.01	0.00	0.41	0.08	0.08
109	92	96	0.79	0.00	0.00	0.00	0.00	0.00
113	96	100	-88.01	0.01	0.00	0.25	0.03	0.03
117	100	116	144.83	0.41	0.00	0.92	0.59	0.59
121	100	104	-244.32	0.06	0.00	0.69	0.22	0.22
125	60	104	817.96	2.05	0.00	2.32	2.03	2.03
129	104	108	573.64	0.81	0.00	1.63	1.05	1.05
133	108	112	793.22	0.74	0.00	2.25	1.92	1.92
137	28	112	705.47	0.53	0.00	2.00	1.54	1.54
141	108	116	-219.58	0.34	0.00	1.40	1.28	1.28
145	116	120	-80.35	0.11	0.00	0.51	0.20	0.20
149	120	124	-85.95	0.02	0.00	0.24	0.03	0.03
153	124	128	-85.95	0.00	0.00	0.24	0.03	0.03
157	128	132	-85.95	0.01	0.00	0.24	0.03	0.03
161	132	92	-134.46	0.27	0.00	0.55	0.17	0.17

165	136	132	-37.03	0.01	0.00	0.15	0.02	0.02
169	140	136	9.66	0.00	0.00	0.03	0.00	0.00
173	88	140	110.75	0.29	0.00	0.45	0.12	0.12
177	140	160	193.85	0.20	0.00	0.55	0.14	0.14
181	140	144	-138.82	0.03	0.00	0.39	0.08	0.08
185	80	144	115.79	0.32	0.00	0.47	0.13	0.13
189	152	144	85.05	0.01	0.00	0.24	0.03	0.03
193	148	152	421.49	0.18	0.00	0.67	0.15	0.15
197	76	148	556.03	0.26	0.00	0.89	0.24	0.24
201	152	156	336.44	0.11	0.00	0.54	0.10	0.10
205	156	276	-525.54	0.88	0.00	1.49	0.89	0.89
209	160	156	-219.37	0.13	0.00	0.62	0.18	0.18
213	272	160	423.78	0.78	0.00	1.20	0.60	0.60
217	160	164	795.63	2.11	0.00	3.25	4.68	4.68
221	164	168	795.63	0.82	0.00	3.25	4.68	4.68
225	168	260	-257.50	0.50	0.00	1.05	0.58	0.58
227	170	168	-552.31	7.87	0.00	3.53	7.06	7.06
229	180	170	1074.59	5.78	0.00	6.86	24.21	24.21
233	168	172	448.32	0.51	0.00	1.83	1.62	1.62
237	172	176	277.02	0.58	0.00	1.13	0.66	0.66
241	248	176	192.00	0.19	0.00	0.78	0.34	0.34
245	176	240	-125.98	0.14	0.00	0.51	0.15	0.15
249	176	180	594.99	0.99	0.00	2.43	2.73	2.73
253	180	184	-490.93	1.56	0.00	2.01	1.91	1.91
257	184	188	-560.79	0.17	0.00	1.59	1.01	1.01
261	188	192	-794.19	0.56	0.00	2.25	1.92	1.92
265	192	194	-486.83	0.55	0.00	1.38	0.78	0.78
267	194	112	-823.43	1.17	0.00	2.34	2.05	2.05
269	196	192	312.96	0.64	0.00	1.28	0.83	0.83
273	200	196	335.64	0.72	0.00	1.37	0.95	0.95
277	112	200	665.32	0.36	0.00	1.89	1.38	1.38
281	200	204	329.68	0.14	0.00	0.94	0.38	0.38
285	204	208	317.71	0.29	0.00	0.90	0.35	0.35
289	208	212	243.09	1.29	0.00	1.55	1.54	1.54
293	212	300	243.09	0.26	0.00	0.99	0.52	0.52
295	300	216	185.07	0.28	0.00	0.76	0.31	0.31
297	216	220	176.88	0.12	0.00	0.72	0.29	0.29
301	220	224	176.88	0.04	0.00	0.72	0.29	0.29
305	224	240	135.05	0.10	0.00	0.55	0.18	0.18
309	224	228	41.83	0.00	0.00	0.17	0.02	0.02
313	228	232	46.78	0.07	0.00	0.30	0.07	0.07
317	232	244	-5.93	0.00	0.00	0.04	0.00	0.00
321	236	232	-38.64	0.02	0.00	0.25	0.05	0.05
325	236	240	60.79	0.02	0.00	0.39	0.12	0.12
329	244	236	22.15	0.02	0.00	0.14	0.02	0.02
333	244	248	-50.76	0.02	0.00	0.32	0.08	0.08
337	252	248	324.80	1.76	0.00	1.33	0.89	0.89
339	254	252	342.16	0.24	0.00	1.40	0.98	0.98
341	256	254	-119.06	0.04	0.00	0.49	0.14	0.14
345	260	256	-321.48	0.56	0.00	1.31	0.87	0.87
347	264	254	461.22	1.58	0.00	1.88	1.70	1.70
349	256	264	-230.49	1.63	0.00	1.47	1.40	1.40
353	268	264	691.71	1.07	0.00	1.96	1.49	1.49
357	288	268	752.65	1.60	0.00	2.13	1.74	1.74
361	268	272	60.94	0.04	0.00	0.17	0.02	0.02
365	272	276	-362.84	0.23	0.00	1.03	0.45	0.45
369	276	280	-888.37	2.47	0.00	2.52	2.36	2.36
373	280	284	205.58	0.21	0.00	0.58	0.16	0.16
377	284	288	468.17	0.86	0.00	1.33	0.72	0.72
381	284	292	-262.60	0.35	0.00	0.74	0.25	0.25
385	292	288	284.47	1.20	0.00	1.16	0.70	0.70

387	300	304	58.02	0.02	0.00	0.24	0.04	0.04
389	304	308	58.02	0.06	0.00	0.37	0.11	0.11
391	308	312	58.02	0.24	0.00	0.37	0.11	0.11
393	312	316	58.02	0.05	0.00	0.37	0.11	0.11
395	316	320	42.12	0.07	0.00	0.27	0.06	0.06
397	320	228	42.12	0.01	0.00	0.17	0.02	0.02
801	I-804	800	-1093.95	0.91	0.00	3.10	3.47	3.47
805	280	O-804	-1093.95	0.56	0.00	3.10	3.47	3.47
901	I-904	900	-547.08	0.37	0.00	1.55	0.96	0.96
905	292	O-904	-547.08	0.80	0.00	1.55	0.96	0.96

N O D E R E S U L T S

NODE NAME	NODE TITLE	EXTERNAL DEMAND gpm	HYDRAULIC GRADE ft	NODE ELEVATION ft	PRESSURE HEAD ft	NODE PRESSURE psi
4		46.76	903.22	798.00	105.22	45.60
8		22.96	902.44	760.00	142.44	61.72
12		0.00	902.10	740.00	162.10	70.24
16		10.99	898.34	730.00	168.34	72.95
20		6.65	894.87	724.00	170.87	74.04
24		0.00	893.96	700.00	193.96	84.05
28		8.96	893.79	705.00	188.79	81.81
32		8.40	895.60	657.00	238.60	103.39
36		0.00	897.68	650.00	247.68	107.33
40		17.85	897.23	665.00	232.23	100.63
44		0.00	897.11	640.00	257.11	111.41
48		27.02	897.06	612.00	285.06	123.52
52		0.00	896.94	645.00	251.94	109.18
56		154.50(3.00)	897.23	637.00	260.23	112.77
60		4.83	896.87	630.00	266.87	115.64
64		101.10(3.00)	896.72	625.00	271.72	117.74
68		45.01	896.36	606.00	290.36	125.82
72		0.00	896.16	590.00	306.16	132.67
76		27.37	894.96	640.00	254.96	110.48
80		83.51	894.83	665.00	229.83	99.59
84		7.63	894.82	684.00	210.82	91.35
88		45.99	894.77	699.00	195.77	84.83
92		10.99	894.75	712.00	182.75	79.19
96		88.80(3.00)	894.75	715.00	179.75	77.89
100		11.48	894.76	718.00	176.76	76.60
104		0.00	894.83	698.00	196.83	85.29
108		0.00	894.01	725.00	169.01	73.24
112		9.94	893.27	725.00	168.27	72.92
116		5.60	894.35	743.00	151.35	65.58
120		5.60	894.45	779.00	115.45	50.03
124		0.00	894.47	800.00	94.47	40.94
128		0.00	894.48	800.00	94.48	40.94
132		11.48	894.49	784.00	110.49	47.88
136		46.69	894.48	745.00	149.48	64.77
140		46.06	894.48	721.00	173.48	75.17
144		62.02	894.50	695.00	199.50	86.45
148		134.54	894.70	641.00	253.70	109.94
152		0.00	894.51	675.00	219.51	95.12
156		642.60	894.40	705.00	189.40	82.07
160		41.37	894.27	700.00	194.27	84.19
164		0.00	892.17	683.00	209.17	90.64
168		52.50	891.34	675.00	216.34	93.75

170	1626.90(**)	883.48	689.00	194.48	84.27
172	171.30(3.00)	890.83	668.00	222.83	96.56
176	0.00	890.25	652.00	238.25	103.24
180	11.34	889.26	679.00	210.26	91.11
184	69.86	890.82	766.00	124.82	54.09
188	233.40(3.00)	890.99	771.00	119.99	51.99
192	5.60	891.55	789.00	102.55	44.44
194	336.60(3.00)	892.10	783.00	109.10	47.28
196	22.68	892.19	764.00	128.19	55.55
200	0.00	892.91	740.00	152.91	66.26
204	11.97	892.76	723.00	169.76	73.56
208	74.62	892.47	694.00	198.47	86.00
212	0.00	891.19	679.00	212.19	91.95
216	8.19	890.65	655.00	235.65	102.11
220	0.00	890.53	630.00	260.53	112.90
224	0.00	890.49	620.00	270.49	117.21
228	37.17	890.49	620.00	270.49	117.21
232	14.07	890.42	643.00	247.42	107.22
236	0.00	890.41	653.00	237.41	102.88
240	69.86	890.39	651.00	239.39	103.74
244	22.68	890.43	634.00	256.43	111.12
248	82.04	890.44	624.00	266.44	115.46
252	17.36	892.20	648.00	244.20	105.82
254	0.00	892.44	650.00	242.44	105.06
256	28.07	892.40	644.00	248.40	107.64
260	63.98	891.84	650.00	241.84	104.80
264	0.00	894.03	680.00	214.03	92.74
268	0.00	895.09	694.00	201.09	87.14
272	0.00	895.05	696.00	199.05	86.26
276	0.00	895.28	726.00	169.28	73.35
280	0.00	897.75	750.00	147.75	64.03
284	0.00	897.55	731.00	166.55	72.17
288	0.00	896.69	729.00	167.69	72.67
292	0.00	897.89	739.00	158.89	68.85
300	0.00	890.93	640.00	250.93	108.74
304	0.00	890.91	627.00	263.91	114.36
308	0.00	890.86	627.00	263.86	114.34
312	0.00	890.62	583.00	307.62	133.30
316	15.90(3.00)	890.57	570.00	320.57	138.91
320	0.00	890.50	608.00	282.50	122.42
800	----	1020.00			
O-804	----	898.31	746.00	152.31	66.00
900	----	1020.00			
I-904	0.00	1019.63	751.00	268.63	116.41
0	----	905.50			
I-804	0.00	1019.09	746.00	273.09	118.34
O-904	----	898.69	751.00	147.69	64.00

M A X I M U M A N D M I N I M U M V A L U E S

P R E S S U R E S

JUNCTION NUMBER	MAXIMUM PRESSURES psi	JUNCTION NUMBER	MINIMUM PRESSURES psi
316	138.91	124	40.94
312	133.30	128	40.94
72	132.67	192	44.44
68	125.82	4	45.60
48	123.52	194	47.28

V E L O C I T I E S

PIPE NUMBER	MAXIMUM VELOCITY (ft/s)	PIPE NUMBER	MINIMUM VELOCITY (ft/s)
229	6.86	109	0.00
13	4.12	169	0.03
227	3.53	317	0.04
217	3.25	329	0.14
221	3.25	165	0.15

R E G U L A T I N G V A L V E R E P O R T

VALVE LABEL	VALVE TYPE	VALVE SETTING psi or gpm	VALVE STATUS	UPSTREAM PRESSURE psi	DOWNSTREAM PRESSURE psi	THROUGH FLOW gpm
804	PRV-1	66.00	ACTIVATED	118.34	66.00	1093.95
904	PRV-1	64.00	ACTIVATED	116.41	64.00	547.08

S U M M A R Y O F I N F L O W S A N D O U T F L O W S

(+) INFLOWS INTO THE SYSTEM FROM SUPPLY NODES
(-) OUTFLOWS FROM THE SYSTEM INTO SUPPLY NODES

NODE NAME	FLOWRATE gpm	NODE TITLE
800	1093.95	
900	547.08	
0	3071.77	

NET SYSTEM INFLOW = 4712.80
NET SYSTEM OUTFLOW = 0.00
NET SYSTEM DEMAND = 4712.79

Case: 7

C H A N G E S F O R N E X T S I M U L A T I O N (Change Number = 7)

JUNCTION DEMANDS CHANGED - PLEASE SEE RESULTS TABLE

RESULTS OBTAINED AFTER 12 TRIALS: ACCURACY = 0.76161E-05

The Trails at Carmel Mountain Ranch
920 Zone - Public Water System Analysis – Normal Condition
Maximum Day Demand plus 1500 GPM Fire Flow at Node 188

P I P E L I N E R E S U L T S

STATUS CODE: XX -CLOSED PIPE CV -CHECK VALVE

PIPE NAME	NODE NUMBERS #1	#2	FLOWRATE gpm	HEAD LOSS ft	MINOR LOSS ft	LINE VELO. ft/s	HL+ML/ 1000 ft/f	HL/ 1000 ft/f
1	0	4	3119.90	2.34	0.00	3.19	2.01	2.01
5	4	8	3073.14	0.80	0.00	3.14	1.95	1.95
9	8	12	2609.37	0.35	0.00	2.66	1.44	1.44
13	12	36	2609.37	4.51	0.00	4.16	4.28	4.28
17	8	16	440.81	4.50	0.00	2.81	4.65	4.65
21	16	20	429.82	3.81	0.00	2.74	4.44	4.44
25	20	24	423.17	1.00	0.00	2.70	4.31	4.31
29	24	28	423.17	0.18	0.00	1.20	0.60	0.60
33	32	28	344.46	2.16	0.00	2.20	2.94	2.94
37	36	32	352.86	2.47	0.00	2.25	3.08	3.08
41	36	40	284.77	0.44	0.00	0.81	0.29	0.29
45	40	44	266.92	0.12	0.00	0.76	0.25	0.25
49	44	48	72.89	0.05	0.00	0.47	0.17	0.17
53	48	52	45.87	0.11	0.00	0.29	0.07	0.07
57	52	44	-194.03	0.16	0.00	0.55	0.14	0.14
61	60	52	-239.90	0.07	0.00	0.68	0.21	0.21
65	36	56	1971.74	0.45	0.00	3.15	2.55	2.55
69	56	60	1817.24	0.35	0.00	2.90	2.19	2.19
73	60	64	1218.59	0.15	0.00	1.94	1.04	1.04
77	64	68	1117.49	0.34	0.00	1.78	0.89	0.89
81	68	72	895.72	0.19	0.00	1.43	0.59	0.59
85	68	84	176.76	1.53	0.00	1.13	0.86	0.86
89	72	76	895.72	1.16	0.00	1.43	0.59	0.59
93	76	80	372.79	0.16	0.00	1.06	0.47	0.47
97	80	84	197.47	0.02	0.00	0.56	0.15	0.15
101	84	88	366.60	0.07	0.00	1.04	0.46	0.46
105	88	92	242.44	0.03	0.00	0.69	0.21	0.21
109	92	96	131.31	0.01	0.00	0.37	0.07	0.07
113	96	100	42.51	0.00	0.00	0.12	0.01	0.01
117	100	116	166.55	0.53	0.00	1.06	0.77	0.77
121	100	104	-135.52	0.02	0.00	0.38	0.07	0.07
125	60	104	833.72	2.12	0.00	2.36	2.10	2.10
129	104	108	698.20	1.17	0.00	1.98	1.51	1.51
133	108	112	1001.89	1.15	0.00	2.84	2.95	2.95
137	28	112	758.67	0.60	0.00	2.15	1.76	1.76
141	108	116	-303.69	0.62	0.00	1.94	2.33	2.33
145	116	120	-142.74	0.31	0.00	0.91	0.58	0.58
149	120	124	-148.34	0.05	0.00	0.42	0.09	0.09
153	124	128	-148.34	0.01	0.00	0.42	0.09	0.09
157	128	132	-148.34	0.03	0.00	0.42	0.09	0.09
161	132	92	-100.13	0.15	0.00	0.41	0.10	0.10

165	136	132	59.69	0.02	0.00	0.24	0.04	0.04
169	140	136	106.38	0.01	0.00	0.30	0.05	0.05
173	88	140	78.17	0.15	0.00	0.32	0.06	0.06
177	140	160	88.27	0.05	0.00	0.25	0.03	0.03
181	140	144	-162.53	0.04	0.00	0.46	0.10	0.10
185	80	144	91.81	0.21	0.00	0.37	0.09	0.09
189	152	144	132.75	0.02	0.00	0.38	0.07	0.07
193	148	152	361.02	0.14	0.00	0.58	0.11	0.11
197	76	148	495.56	0.21	0.00	0.79	0.20	0.20
201	152	156	228.28	0.06	0.00	0.36	0.05	0.05
205	156	276	-547.56	0.95	0.00	1.55	0.96	0.96
209	160	156	-133.23	0.05	0.00	0.38	0.07	0.07
213	272	160	434.54	0.82	0.00	1.23	0.63	0.63
217	160	164	614.67	1.31	0.00	2.51	2.90	2.90
221	164	168	614.67	0.51	0.00	2.51	2.90	2.90
225	168	260	-186.63	0.27	0.00	0.76	0.32	0.32
227	170	168	-259.17	1.94	0.00	1.65	1.74	1.74
229	180	170	-132.27	0.12	0.00	0.84	0.50	0.50
233	168	172	489.63	0.60	0.00	2.00	1.90	1.90
237	172	176	318.33	0.75	0.00	1.30	0.86	0.86
241	248	176	143.23	0.11	0.00	0.59	0.20	0.20
245	176	240	-32.98	0.01	0.00	0.13	0.01	0.01
249	176	180	494.54	0.70	0.00	2.02	1.94	1.94
253	180	184	615.47	2.37	0.00	2.51	2.91	2.91
257	184	188	545.61	0.16	0.00	1.55	0.96	0.96
261	188	192	-1187.79	1.18	0.00	3.37	4.05	4.05
265	192	194	-734.31	1.19	0.00	2.08	1.66	1.66
267	194	112	-1070.91	1.90	0.00	3.04	3.34	3.34
269	196	192	459.08	1.31	0.00	1.88	1.69	1.69
273	200	196	481.76	1.40	0.00	1.97	1.85	1.85
277	112	200	679.72	0.37	0.00	1.93	1.44	1.44
281	200	204	197.96	0.06	0.00	0.56	0.15	0.15
285	204	208	185.99	0.11	0.00	0.53	0.13	0.13
289	208	212	111.37	0.30	0.00	0.71	0.36	0.36
293	212	300	111.37	0.06	0.00	0.45	0.12	0.12
295	300	216	83.85	0.07	0.00	0.34	0.07	0.07
297	216	220	75.66	0.02	0.00	0.31	0.06	0.06
301	220	224	75.66	0.01	0.00	0.31	0.06	0.06
305	224	240	52.28	0.02	0.00	0.21	0.03	0.03
309	224	228	23.38	0.00	0.00	0.10	0.01	0.01
313	228	232	-2.16	0.00	0.00	0.01	0.00	0.00
317	232	244	-33.00	0.03	0.00	0.21	0.04	0.04
321	236	232	-16.77	0.00	0.00	0.11	0.01	0.01
325	236	240	50.57	0.01	0.00	0.32	0.08	0.08
329	244	236	33.80	0.04	0.00	0.22	0.04	0.04
333	244	248	-89.48	0.05	0.00	0.57	0.24	0.24
337	252	248	314.75	1.66	0.00	1.29	0.84	0.84
339	254	252	332.11	0.23	0.00	1.36	0.93	0.93
341	256	254	-76.02	0.02	0.00	0.31	0.06	0.06
345	260	256	-250.61	0.35	0.00	1.02	0.55	0.55
347	264	254	408.13	1.26	0.00	1.67	1.36	1.36
349	256	264	-202.67	1.28	0.00	1.29	1.10	1.10
353	268	264	610.79	0.85	0.00	1.73	1.18	1.18
357	288	268	721.75	1.48	0.00	2.05	1.61	1.61
361	268	272	110.96	0.12	0.00	0.31	0.05	0.05
365	272	276	-323.58	0.18	0.00	0.92	0.36	0.36
369	276	280	-871.14	2.39	0.00	2.47	2.28	2.28
373	280	284	190.75	0.18	0.00	0.54	0.14	0.14
377	284	288	447.80	0.79	0.00	1.27	0.66	0.66
381	284	292	-257.06	0.33	0.00	0.73	0.24	0.24
385	292	288	273.95	1.12	0.00	1.12	0.65	0.65

387	300	304	27.52	0.00	0.00	0.11	0.01	0.01
389	304	308	27.52	0.01	0.00	0.18	0.03	0.03
391	308	312	27.52	0.06	0.00	0.18	0.03	0.03
393	312	316	27.52	0.01	0.00	0.18	0.03	0.03
395	316	320	11.62	0.01	0.00	0.07	0.01	0.01
397	320	228	11.62	0.00	0.00	0.05	0.00	0.00
801	I-804	800	-1061.89	0.86	0.00	3.01	3.29	3.29
805	280	O-804	-1061.89	0.53	0.00	3.01	3.29	3.29
901	I-904	900	-531.00	0.35	0.00	1.51	0.91	0.91
905	292	O-904	-531.00	0.75	0.00	1.51	0.91	0.91

N O D E R E S U L T S

NODE NAME	NODE TITLE	EXTERNAL DEMAND gpm	HYDRAULIC GRADE ft	NODE ELEVATION ft	PRESSURE HEAD ft	NODE PRESSURE psi
4		46.76	903.16	798.00	105.16	45.57
8		22.96	902.35	760.00	142.35	61.69
12		0.00	902.01	740.00	162.01	70.20
16		10.99	897.85	730.00	167.85	72.74
20		6.65	894.04	724.00	170.04	73.69
24		0.00	893.04	700.00	193.04	83.65
28		8.96	892.86	705.00	187.86	81.41
32		8.40	895.02	657.00	238.02	103.14
36		0.00	897.50	650.00	247.50	107.25
40		17.85	897.05	665.00	232.05	100.56
44		0.00	896.93	640.00	256.93	111.34
48		27.02	896.88	612.00	284.88	123.45
52		0.00	896.77	645.00	251.77	109.10
56		154.50(3.00)	897.05	637.00	260.05	112.69
60		4.83	896.69	630.00	266.69	115.57
64		101.10(3.00)	896.54	625.00	271.54	117.67
68		45.01	896.20	606.00	290.20	125.75
72		0.00	896.01	590.00	306.01	132.60
76		27.37	894.85	640.00	254.85	110.44
80		83.51	894.69	665.00	229.69	99.53
84		7.63	894.67	684.00	210.67	91.29
88		45.99	894.60	699.00	195.60	84.76
92		10.99	894.57	712.00	182.57	79.11
96		88.80(3.00)	894.55	715.00	179.55	77.81
100		11.48	894.55	718.00	176.55	76.51
104		0.00	894.57	698.00	196.57	85.18
108		0.00	893.40	725.00	168.40	72.97
112		9.94	892.26	725.00	167.26	72.48
116		5.60	894.02	743.00	151.02	65.44
120		5.60	894.32	779.00	115.32	49.97
124		0.00	894.37	800.00	94.37	40.89
128		0.00	894.38	800.00	94.38	40.90
132		11.48	894.41	784.00	110.41	47.84
136		46.69	894.43	745.00	149.43	64.75
140		46.06	894.45	721.00	173.45	75.16
144		62.02	894.48	695.00	199.48	86.44
148		134.54	894.64	641.00	253.64	109.91
152		0.00	894.50	675.00	219.50	95.12
156		642.60	894.45	705.00	189.45	82.09
160		41.37	894.40	700.00	194.40	84.24
164		0.00	893.09	683.00	210.09	91.04
168		52.50	892.58	675.00	217.58	94.28

170	126.90(3.00)	890.64	689.00	201.64	87.38
172	171.30(3.00)	891.98	668.00	223.98	97.06
176	0.00	891.23	652.00	239.23	103.67
180	11.34	890.52	679.00	211.52	91.66
184	69.86	888.16	766.00	122.16	52.94
188	1733.40(**)	887.99	771.00	116.99	50.70
192	5.60	889.17	789.00	100.17	43.41
194	336.60(3.00)	890.36	783.00	107.36	46.52
196	22.68	890.48	764.00	126.48	54.81
200	0.00	891.88	740.00	151.88	65.82
204	11.97	891.83	723.00	168.83	73.16
208	74.62	891.72	694.00	197.72	85.68
212	0.00	891.42	679.00	212.42	92.05
216	8.19	891.29	655.00	236.29	102.39
220	0.00	891.27	630.00	261.27	113.21
224	0.00	891.26	620.00	271.26	117.54
228	37.17	891.26	620.00	271.26	117.54
232	14.07	891.26	643.00	248.26	107.58
236	0.00	891.25	653.00	238.25	103.24
240	69.86	891.24	651.00	240.24	104.10
244	22.68	891.29	634.00	257.29	111.49
248	82.04	891.34	624.00	267.34	115.85
252	17.36	893.00	648.00	245.00	106.17
254	0.00	893.23	650.00	243.23	105.40
256	28.07	893.21	644.00	249.21	107.99
260	63.98	892.85	650.00	242.85	105.24
264	0.00	894.49	680.00	214.49	92.95
268	0.00	895.34	694.00	201.34	87.25
272	0.00	895.21	696.00	199.21	86.33
276	0.00	895.40	726.00	169.40	73.41
280	0.00	897.78	750.00	147.78	64.04
284	0.00	897.60	731.00	166.60	72.19
288	0.00	896.81	729.00	167.81	72.72
292	0.00	897.94	739.00	158.94	68.87
300	0.00	891.36	640.00	251.36	108.92
304	0.00	891.35	627.00	264.35	114.55
308	0.00	891.34	627.00	264.34	114.55
312	0.00	891.28	583.00	308.28	133.59
316	15.90(3.00)	891.26	570.00	321.26	139.21
320	0.00	891.26	608.00	283.26	122.75
800	----	1020.00			
O-804	----	898.31	746.00	152.31	66.00
900	----	1020.00			
I-904	0.00	1019.65	751.00	268.65	116.42
0	----	905.50			
I-804	0.00	1019.14	746.00	273.14	118.36
O-904	----	898.69	751.00	147.69	64.00

M A X I M U M A N D M I N I M U M V A L U E S

P R E S S U R E S

JUNCTION NUMBER	MAXIMUM PRESSURES psi	JUNCTION NUMBER	MINIMUM PRESSURES psi
316	139.21	124	40.89
312	133.59	128	40.90
72	132.60	192	43.41
68	125.75	4	45.57
48	123.45	194	46.52

V E L O C I T I E S

PIPE NUMBER	MAXIMUM VELOCITY (ft/s)	PIPE NUMBER	MINIMUM VELOCITY (ft/s)
13	4.16	313	0.01
261	3.37	397	0.05
1	3.19	395	0.07
65	3.15	309	0.10
5	3.14	321	0.11

R E G U L A T I N G V A L V E R E P O R T

VALVE LABEL	VALVE TYPE	VALVE SETTING psi or gpm	VALVE STATUS	UPSTREAM PRESSURE psi	DOWNSTREAM PRESSURE psi	THROUGH FLOW gpm
804	PRV-1	66.00	ACTIVATED	118.36	66.00	1061.89
904	PRV-1	64.00	ACTIVATED	116.42	64.00	531.00

S U M M A R Y O F I N F L O W S A N D O U T F L O W S

(+) INFLOWS INTO THE SYSTEM FROM SUPPLY NODES
(-) OUTFLOWS FROM THE SYSTEM INTO SUPPLY NODES

NODE NAME	FLOWRATE gpm	NODE TITLE
800	1061.89	
900	531.00	
0	3119.90	

NET SYSTEM INFLOW = 4712.79
NET SYSTEM OUTFLOW = 0.00
NET SYSTEM DEMAND = 4712.79

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Case: 8

C H A N G E S F O R N E X T S I M U L A T I O N (Change Number = 8)

JUNCTION DEMANDS CHANGED - PLEASE SEE RESULTS TABLE

RESULTS OBTAINED AFTER 11 TRIALS: ACCURACY = 0.24164E-04

The Trails at Carmel Mountain Ranch
920 Zone - Public Water System Analysis – Normal Condition
Maximum Day Demand plus 1500 GPM Fire Flow at Node 194

P I P E L I N E R E S U L T S

STATUS CODE: XX -CLOSED PIPE CV -CHECK VALVE

PIPE NAME	NODE NUMBERS #1	#2	FLOWRATE gpm	HEAD LOSS ft	MINOR LOSS ft	LINE VELO. ft/s	HL+ML/ 1000 ft/f	HL/ 1000 ft/f
1	0	4	3133.83	2.36	0.00	3.20	2.03	2.03
5	4	8	3087.07	0.81	0.00	3.15	1.97	1.97
9	8	12	2616.82	0.35	0.00	2.67	1.45	1.45
13	12	36	2616.82	4.53	0.00	4.18	4.30	4.30
17	8	16	447.29	4.62	0.00	2.85	4.77	4.77
21	16	20	436.30	3.92	0.00	2.78	4.56	4.56
25	20	24	429.65	1.03	0.00	2.74	4.43	4.43
29	24	28	429.65	0.19	0.00	1.22	0.62	0.62
33	32	28	354.02	2.28	0.00	2.26	3.10	3.10
37	36	32	362.42	2.60	0.00	2.31	3.23	3.23
41	36	40	284.51	0.44	0.00	0.81	0.29	0.29
45	40	44	266.66	0.12	0.00	0.76	0.25	0.25
49	44	48	72.83	0.05	0.00	0.46	0.17	0.17
53	48	52	45.81	0.11	0.00	0.29	0.07	0.07
57	52	44	-193.83	0.16	0.00	0.55	0.14	0.14
61	60	52	-239.64	0.07	0.00	0.68	0.21	0.21
65	36	56	1969.90	0.45	0.00	3.14	2.54	2.54
69	56	60	1815.40	0.35	0.00	2.90	2.19	2.19
73	60	64	1211.67	0.15	0.00	1.93	1.03	1.03
77	64	68	1110.57	0.34	0.00	1.77	0.88	0.88
81	68	72	889.17	0.19	0.00	1.42	0.58	0.58
85	68	84	176.39	1.52	0.00	1.13	0.85	0.85
89	72	76	889.17	1.14	0.00	1.42	0.58	0.58
93	76	80	383.38	0.17	0.00	1.09	0.50	0.50
97	80	84	215.51	0.03	0.00	0.61	0.17	0.17
101	84	88	384.27	0.08	0.00	1.09	0.50	0.50
105	88	92	272.17	0.04	0.00	0.77	0.26	0.26
109	92	96	169.70	0.02	0.00	0.48	0.11	0.11
113	96	100	80.90	0.01	0.00	0.23	0.03	0.03
117	100	116	173.37	0.57	0.00	1.11	0.83	0.83
121	100	104	-103.96	0.01	0.00	0.29	0.04	0.04
125	60	104	838.53	2.14	0.00	2.38	2.12	2.12
129	104	108	734.57	1.29	0.00	2.08	1.66	1.66
133	108	112	1059.62	1.27	0.00	3.01	3.27	3.27
137	28	112	774.71	0.63	0.00	2.20	1.83	1.83
141	108	116	-325.05	0.70	0.00	2.07	2.64	2.64
145	116	120	-157.28	0.37	0.00	1.00	0.69	0.69
149	120	124	-162.88	0.06	0.00	0.46	0.10	0.10
153	124	128	-162.88	0.01	0.00	0.46	0.10	0.10
157	128	132	-162.88	0.04	0.00	0.46	0.10	0.10
161	132	92	-91.49	0.13	0.00	0.37	0.09	0.09

165	136	132	82.87	0.04	0.00	0.34	0.07	0.07
169	140	136	129.56	0.02	0.00	0.37	0.07	0.07
173	88	140	66.11	0.11	0.00	0.27	0.05	0.05
177	140	160	54.67	0.02	0.00	0.16	0.01	0.01
181	140	144	-164.18	0.04	0.00	0.47	0.10	0.10
185	80	144	84.36	0.18	0.00	0.34	0.07	0.07
189	152	144	141.84	0.03	0.00	0.40	0.08	0.08
193	148	152	343.88	0.13	0.00	0.55	0.10	0.10
197	76	148	478.42	0.20	0.00	0.76	0.18	0.18
201	152	156	202.04	0.04	0.00	0.32	0.04	0.04
205	156	276	-553.78	0.97	0.00	1.57	0.98	0.98
209	160	156	-113.22	0.04	0.00	0.32	0.05	0.05
213	272	160	439.66	0.83	0.00	1.25	0.64	0.64
217	160	164	566.18	1.12	0.00	2.31	2.49	2.49
221	164	168	566.18	0.44	0.00	2.31	2.49	2.49
225	168	260	-177.94	0.25	0.00	0.73	0.29	0.29
227	170	168	-227.31	1.52	0.00	1.45	1.36	1.36
229	180	170	-100.41	0.07	0.00	0.64	0.30	0.30
233	168	172	464.32	0.54	0.00	1.90	1.73	1.73
237	172	176	293.02	0.65	0.00	1.20	0.74	0.74
241	248	176	120.87	0.08	0.00	0.49	0.14	0.14
245	176	240	48.62	0.02	0.00	0.20	0.03	0.03
249	176	180	365.26	0.40	0.00	1.49	1.11	1.11
253	180	184	454.33	1.35	0.00	1.86	1.66	1.66
257	184	188	384.47	0.09	0.00	1.09	0.50	0.50
261	188	192	151.07	0.03	0.00	0.43	0.09	0.09
265	192	194	523.88	0.63	0.00	1.49	0.89	0.89
267	194	112	-1312.72	2.77	0.00	3.72	4.87	4.87
269	196	192	378.41	0.92	0.00	1.55	1.18	1.18
273	200	196	401.09	1.00	0.00	1.64	1.32	1.32
277	112	200	511.67	0.22	0.00	1.45	0.85	0.85
281	200	204	110.58	0.02	0.00	0.31	0.05	0.05
285	204	208	98.61	0.03	0.00	0.28	0.04	0.04
289	208	212	23.99	0.02	0.00	0.15	0.02	0.02
293	212	300	23.99	0.00	0.00	0.10	0.01	0.01
295	300	216	16.39	0.00	0.00	0.07	0.00	0.00
297	216	220	8.20	0.00	0.00	0.03	0.00	0.00
301	220	224	8.20	0.00	0.00	0.03	0.00	0.00
305	224	240	-18.25	0.00	0.00	0.07	0.00	0.00
309	224	228	26.44	0.00	0.00	0.11	0.01	0.01
313	228	232	-19.02	0.01	0.00	0.12	0.01	0.01
317	232	244	-36.73	0.04	0.00	0.23	0.05	0.05
321	236	232	-3.63	0.00	0.00	0.02	0.00	0.00
325	236	240	39.48	0.01	0.00	0.25	0.05	0.05
329	244	236	35.85	0.04	0.00	0.23	0.04	0.04
333	244	248	-95.26	0.05	0.00	0.61	0.27	0.27
337	252	248	298.16	1.50	0.00	1.22	0.76	0.76
339	254	252	315.52	0.21	0.00	1.29	0.84	0.84
341	256	254	-75.64	0.02	0.00	0.31	0.06	0.06
345	260	256	-241.92	0.33	0.00	0.99	0.52	0.52
347	264	254	391.17	1.17	0.00	1.60	1.26	1.26
349	256	264	-194.35	1.19	0.00	1.24	1.02	1.02
353	268	264	585.52	0.78	0.00	1.66	1.09	1.09
357	288	268	712.03	1.44	0.00	2.02	1.57	1.57
361	268	272	126.52	0.16	0.00	0.36	0.06	0.06
365	272	276	-313.14	0.17	0.00	0.89	0.34	0.34
369	276	280	-866.92	2.36	0.00	2.46	2.26	2.26
373	280	284	185.90	0.17	0.00	0.53	0.13	0.13
377	284	288	441.36	0.77	0.00	1.25	0.65	0.65
381	284	292	-255.46	0.33	0.00	0.72	0.23	0.23
385	292	288	270.67	1.10	0.00	1.11	0.64	0.64

387	300	304	7.60	0.00	0.00	0.03	0.00	0.00
389	304	308	7.60	0.00	0.00	0.05	0.00	0.00
391	308	312	7.60	0.01	0.00	0.05	0.00	0.00
393	312	316	7.60	0.00	0.00	0.05	0.00	0.00
395	316	320	-8.30	0.00	0.00	0.05	0.00	0.00
397	320	228	-8.30	0.00	0.00	0.03	0.00	0.00
801	I-804	800	-1052.83	0.85	0.00	2.99	3.24	3.24
805	280	O-804	-1052.83	0.52	0.00	2.99	3.24	3.24
901	I-904	900	-526.13	0.34	0.00	1.49	0.90	0.90
905	292	O-904	-526.13	0.74	0.00	1.49	0.90	0.90

N O D E R E S U L T S

NODE NAME	NODE TITLE	EXTERNAL DEMAND gpm	HYDRAULIC GRADE ft	NODE ELEVATION ft	PRESSURE HEAD ft	NODE PRESSURE psi
4		46.76	903.14	798.00	105.14	45.56
8		22.96	902.33	760.00	142.33	61.67
12		0.00	901.98	740.00	161.98	70.19
16		10.99	897.70	730.00	167.70	72.67
20		6.65	893.79	724.00	169.79	73.57
24		0.00	892.76	700.00	192.76	83.53
28		8.96	892.57	705.00	187.57	81.28
32		8.40	894.84	657.00	237.84	103.07
36		0.00	897.44	650.00	247.44	107.23
40		17.85	897.00	665.00	232.00	100.53
44		0.00	896.88	640.00	256.88	111.31
48		27.02	896.83	612.00	284.83	123.42
52		0.00	896.72	645.00	251.72	109.08
56		154.50(3.00)	897.00	637.00	260.00	112.67
60		4.83	896.64	630.00	266.64	115.55
64		101.10(3.00)	896.49	625.00	271.49	117.65
68		45.01	896.15	606.00	290.15	125.73
72		0.00	895.96	590.00	305.96	132.58
76		27.37	894.82	640.00	254.82	110.42
80		83.51	894.66	665.00	229.66	99.52
84		7.63	894.63	684.00	210.63	91.27
88		45.99	894.55	699.00	195.55	84.74
92		10.99	894.51	712.00	182.51	79.09
96		88.80(3.00)	894.49	715.00	179.49	77.78
100		11.48	894.49	718.00	176.49	76.48
104		0.00	894.50	698.00	196.50	85.15
108		0.00	893.21	725.00	168.21	72.89
112		9.94	891.94	725.00	166.94	72.34
116		5.60	893.91	743.00	150.91	65.40
120		5.60	894.28	779.00	115.28	49.95
124		0.00	894.34	800.00	94.34	40.88
128		0.00	894.34	800.00	94.34	40.88
132		11.48	894.38	784.00	110.38	47.83
136		46.69	894.42	745.00	149.42	64.75
140		46.06	894.44	721.00	173.44	75.16
144		62.02	894.48	695.00	199.48	86.44
148		134.54	894.63	641.00	253.63	109.91
152		0.00	894.50	675.00	219.50	95.12
156		642.60	894.46	705.00	189.46	82.10
160		41.37	894.42	700.00	194.42	84.25
164		0.00	893.30	683.00	210.30	91.13
168		52.50	892.86	675.00	217.86	94.41

170	126.90(3.00)	891.34	689.00	202.34	87.68
172	171.30(3.00)	892.32	668.00	224.32	97.20
176	0.00	891.67	652.00	239.67	103.86
180	11.34	891.27	679.00	212.27	91.98
184	69.86	889.92	766.00	123.92	53.70
188	233.40(3.00)	889.83	771.00	118.83	51.49
192	5.60	889.81	789.00	100.81	43.68
194	1836.60(**)	889.17	783.00	106.17	46.01
196	22.68	890.73	764.00	126.73	54.91
200	0.00	891.72	740.00	151.72	65.75
204	11.97	891.70	723.00	168.70	73.10
208	74.62	891.67	694.00	197.67	85.66
212	0.00	891.65	679.00	212.65	92.15
216	8.19	891.64	655.00	236.64	102.55
220	0.00	891.64	630.00	261.64	113.38
224	0.00	891.64	620.00	271.64	117.71
228	37.17	891.64	620.00	271.64	117.71
232	14.07	891.66	643.00	248.66	107.75
236	0.00	891.66	653.00	238.66	103.42
240	69.86	891.65	651.00	240.65	104.28
244	22.68	891.70	634.00	257.70	111.67
248	82.04	891.75	624.00	267.75	116.03
252	17.36	893.25	648.00	245.25	106.28
254	0.00	893.46	650.00	243.46	105.50
256	28.07	893.44	644.00	249.44	108.09
260	63.98	893.11	650.00	243.11	105.35
264	0.00	894.63	680.00	214.63	93.00
268	0.00	895.41	694.00	201.41	87.28
272	0.00	895.25	696.00	199.25	86.34
276	0.00	895.43	726.00	169.43	73.42
280	0.00	897.79	750.00	147.79	64.04
284	0.00	897.62	731.00	166.62	72.20
288	0.00	896.85	729.00	167.85	72.74
292	0.00	897.95	739.00	158.95	68.88
300	0.00	891.65	640.00	251.65	109.05
304	0.00	891.65	627.00	264.65	114.68
308	0.00	891.65	627.00	264.65	114.68
312	0.00	891.64	583.00	308.64	133.74
316	15.90(3.00)	891.64	570.00	321.64	139.38
320	0.00	891.64	608.00	283.64	122.91
800	----	1020.00			
O-804	----	898.31	746.00	152.31	66.00
900	----	1020.00			
I-904	0.00	1019.66	751.00	268.66	116.42
0	----	905.50			
I-804	0.00	1019.15	746.00	273.15	118.37
O-904	----	898.69	751.00	147.69	64.00

M A X I M U M A N D M I N I M U M V A L U E S

P R E S S U R E S

JUNCTION NUMBER	MAXIMUM PRESSURES psi	JUNCTION NUMBER	MINIMUM PRESSURES psi
316	139.38	124	40.88
312	133.74	128	40.88
72	132.58	192	43.68
68	125.73	4	45.56
48	123.42	194	46.01

V E L O C I T I E S

PIPE NUMBER	MAXIMUM VELOCITY (ft/s)	PIPE NUMBER	MINIMUM VELOCITY (ft/s)
13	4.18	321	0.02
267	3.72	387	0.03
1	3.20	297	0.03
5	3.15	301	0.03
65	3.14	397	0.03

R E G U L A T I N G V A L V E R E P O R T

VALVE LABEL	VALVE TYPE	VALVE SETTING psi or gpm	VALVE STATUS	UPSTREAM PRESSURE psi	DOWNSTREAM PRESSURE psi	THROUGH FLOW gpm
804	PRV-1	66.00	ACTIVATED	118.37	66.00	1052.83
904	PRV-1	64.00	ACTIVATED	116.42	64.00	526.13

S U M M A R Y O F I N F L O W S A N D O U T F L O W S

(+) INFLOWS INTO THE SYSTEM FROM SUPPLY NODES
(-) OUTFLOWS FROM THE SYSTEM INTO SUPPLY NODES

NODE NAME	FLOWRATE gpm	NODE TITLE
800	1052.83	
900	526.13	
0	3133.83	

NET SYSTEM INFLOW = 4712.79
NET SYSTEM OUTFLOW = 0.00
NET SYSTEM DEMAND = 4712.79

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Case: 9

C H A N G E S F O R N E X T S I M U L A T I O N (Change Number = 9)

JUNCTION DEMANDS CHANGED - PLEASE SEE RESULTS TABLE

RESULTS OBTAINED AFTER 11 TRIALS: ACCURACY = 0.33829E-04

The Trails at Carmel Mountain Ranch
920 Zone - Public Water System Analysis – Normal Condition
Maximum Day Demand plus 1500 GPM Fire Flow at Node 254

P I P E L I N E R E S U L T S

STATUS CODE: XX -CLOSED PIPE CV -CHECK VALVE

PIPE NAME	NODE NUMBERS #1	#2	FLOWRATE gpm	HEAD LOSS ft	MINOR LOSS ft	LINE VELO. ft/s	HL+ML/ 1000 ft/f	HL/ 1000 ft/f
1	0	4	3009.88	2.19	0.00	3.07	1.88	1.88
5	4	8	2963.12	0.75	0.00	3.03	1.83	1.83
9	8	12	2538.04	0.33	0.00	2.59	1.37	1.37
13	12	36	2538.04	4.28	0.00	4.05	4.07	4.07
17	8	16	402.12	3.80	0.00	2.57	3.92	3.92
21	16	20	391.13	3.20	0.00	2.50	3.72	3.72
25	20	24	384.48	0.84	0.00	2.45	3.61	3.61
29	24	28	384.48	0.15	0.00	1.09	0.50	0.50
33	32	28	289.36	1.57	0.00	1.85	2.13	2.13
37	36	32	297.76	1.81	0.00	1.90	2.25	2.25
41	36	40	282.76	0.44	0.00	0.80	0.28	0.28
45	40	44	264.91	0.12	0.00	0.75	0.25	0.25
49	44	48	72.46	0.05	0.00	0.46	0.16	0.16
53	48	52	45.44	0.11	0.00	0.29	0.07	0.07
57	52	44	-192.45	0.16	0.00	0.55	0.14	0.14
61	60	52	-237.89	0.07	0.00	0.67	0.21	0.21
65	36	56	1957.52	0.44	0.00	3.12	2.51	2.51
69	56	60	1803.02	0.35	0.00	2.88	2.16	2.16
73	60	64	1239.84	0.16	0.00	1.98	1.08	1.08
77	64	68	1138.74	0.36	0.00	1.82	0.92	0.92
81	68	72	917.58	0.20	0.00	1.46	0.62	0.62
85	68	84	176.15	1.52	0.00	1.12	0.85	0.85
89	72	76	917.58	1.21	0.00	1.46	0.62	0.62
93	76	80	298.59	0.10	0.00	0.85	0.31	0.31
97	80	84	85.35	0.00	0.00	0.24	0.03	0.03
101	84	88	253.87	0.04	0.00	0.72	0.23	0.23
105	88	92	80.81	0.00	0.00	0.23	0.03	0.03
109	92	96	-74.12	0.00	0.00	0.21	0.02	0.02
113	96	100	-162.92	0.02	0.00	0.46	0.10	0.10
117	100	116	131.78	0.35	0.00	0.84	0.50	0.50
121	100	104	-306.18	0.10	0.00	0.87	0.33	0.33
125	60	104	796.24	1.95	0.00	2.26	1.93	1.93
129	104	108	490.05	0.61	0.00	1.39	0.78	0.78
133	108	112	639.11	0.50	0.00	1.81	1.28	1.28
137	28	112	664.88	0.47	0.00	1.89	1.38	1.38
141	108	116	-149.05	0.16	0.00	0.95	0.62	0.62
145	116	120	-22.87	0.01	0.00	0.15	0.02	0.02
149	120	124	-28.47	0.00	0.00	0.08	0.00	0.00
153	124	128	-28.47	0.00	0.00	0.08	0.00	0.00
157	128	132	-28.47	0.00	0.00	0.08	0.00	0.00
161	132	92	-143.94	0.30	0.00	0.59	0.20	0.20

165	136	132	-103.99	0.06	0.00	0.42	0.11	0.11
169	140	136	-57.30	0.00	0.00	0.16	0.01	0.01
173	88	140	127.07	0.37	0.00	0.52	0.16	0.16
177	140	160	237.48	0.30	0.00	0.67	0.21	0.21
181	140	144	-99.17	0.01	0.00	0.28	0.04	0.04
185	80	144	129.73	0.40	0.00	0.53	0.16	0.16
189	152	144	31.46	0.00	0.00	0.09	0.00	0.00
193	148	152	457.08	0.21	0.00	0.73	0.17	0.17
197	76	148	591.62	0.29	0.00	0.94	0.27	0.27
201	152	156	425.62	0.18	0.00	0.68	0.15	0.15
205	156	276	-445.31	0.65	0.00	1.26	0.66	0.66
209	160	156	-228.33	0.13	0.00	0.65	0.19	0.19
213	272	160	312.26	0.44	0.00	0.89	0.34	0.34
217	160	164	736.70	1.83	0.00	3.01	4.06	4.06
221	164	168	736.70	0.71	0.00	3.01	4.06	4.06
225	168	260	368.93	0.97	0.00	1.51	1.13	1.13
227	170	168	-57.09	0.12	0.00	0.36	0.11	0.11
229	180	170	69.81	0.04	0.00	0.45	0.15	0.15
233	168	172	258.17	0.18	0.00	1.05	0.58	0.58
237	172	176	86.87	0.07	0.00	0.35	0.08	0.08
241	248	176	-255.01	0.32	0.00	1.04	0.57	0.57
245	176	240	61.63	0.04	0.00	0.25	0.04	0.04
249	176	180	-229.78	0.17	0.00	0.94	0.47	0.47
253	180	184	-310.92	0.67	0.00	1.27	0.82	0.82
257	184	188	-380.78	0.08	0.00	1.08	0.49	0.49
261	188	192	-614.18	0.35	0.00	1.74	1.19	1.19
265	192	194	-368.67	0.33	0.00	1.05	0.46	0.46
267	194	112	-705.27	0.88	0.00	2.00	1.54	1.54
269	196	192	251.11	0.43	0.00	1.03	0.55	0.55
273	200	196	273.79	0.49	0.00	1.12	0.65	0.65
277	112	200	588.78	0.29	0.00	1.67	1.10	1.10
281	200	204	314.99	0.13	0.00	0.89	0.35	0.35
285	204	208	303.02	0.27	0.00	0.86	0.32	0.32
289	208	212	228.40	1.14	0.00	1.46	1.38	1.38
293	212	300	228.40	0.23	0.00	0.93	0.46	0.46
295	300	216	173.63	0.25	0.00	0.71	0.28	0.28
297	216	220	165.44	0.10	0.00	0.68	0.26	0.26
301	220	224	165.44	0.03	0.00	0.68	0.26	0.26
305	224	240	104.50	0.06	0.00	0.43	0.11	0.11
309	224	228	60.94	0.00	0.00	0.25	0.04	0.04
313	228	232	62.64	0.11	0.00	0.40	0.13	0.13
317	232	244	72.54	0.15	0.00	0.46	0.16	0.16
321	236	232	23.97	0.01	0.00	0.15	0.02	0.02
325	236	240	-96.27	0.05	0.00	0.61	0.28	0.28
329	244	236	-72.30	0.16	0.00	0.46	0.16	0.16
333	244	248	122.16	0.08	0.00	0.78	0.43	0.43
337	252	248	-295.13	1.47	0.00	1.21	0.75	0.75
339	254	252	-277.77	0.16	0.00	1.13	0.67	0.67
341	256	254	559.18	0.74	0.00	2.28	2.44	2.44
345	260	256	304.95	0.51	0.00	1.25	0.79	0.79
347	264	254	663.05	3.10	0.00	2.71	3.34	3.34
349	256	264	-282.30	2.37	0.00	1.80	2.04	2.04
353	268	264	945.34	1.90	0.00	2.68	2.65	2.65
357	288	268	805.42	1.81	0.00	2.28	1.97	1.97
361	268	272	-139.93	0.19	0.00	0.40	0.08	0.08
365	272	276	-452.19	0.34	0.00	1.28	0.68	0.68
369	276	280	-897.50	2.52	0.00	2.55	2.41	2.41
373	280	284	233.05	0.26	0.00	0.66	0.20	0.20
377	284	288	503.31	0.98	0.00	1.43	0.82	0.82
381	284	292	-270.26	0.37	0.00	0.77	0.26	0.26
385	292	288	302.10	1.35	0.00	1.23	0.78	0.78

387	300	304	54.76	0.02	0.00	0.22	0.03	0.03
389	304	308	54.76	0.05	0.00	0.35	0.10	0.10
391	308	312	54.76	0.21	0.00	0.35	0.10	0.10
393	312	316	54.76	0.05	0.00	0.35	0.10	0.10
395	316	320	38.86	0.06	0.00	0.25	0.05	0.05
397	320	228	38.86	0.01	0.00	0.16	0.02	0.02
801	I-804	800	-1130.55	0.97	0.00	3.21	3.69	3.69
805	280	O-804	-1130.55	0.59	0.00	3.21	3.69	3.69
901	I-904	900	-572.35	0.40	0.00	1.62	1.05	1.05
905	292	O-904	-572.35	0.87	0.00	1.62	1.05	1.05

N O D E R E S U L T S

NODE NAME	NODE TITLE	EXTERNAL DEMAND gpm	HYDRAULIC GRADE ft	NODE ELEVATION ft	PRESSURE HEAD ft	NODE PRESSURE psi
4		46.76	903.31	798.00	105.31	45.63
8		22.96	902.56	760.00	142.56	61.77
12		0.00	902.23	740.00	162.23	70.30
16		10.99	898.76	730.00	168.76	73.13
20		6.65	895.56	724.00	171.56	74.34
24		0.00	894.72	700.00	194.72	84.38
28		8.96	894.57	705.00	189.57	82.15
32		8.40	896.14	657.00	239.14	103.63
36		0.00	897.94	650.00	247.94	107.44
40		17.85	897.50	665.00	232.50	100.75
44		0.00	897.38	640.00	257.38	111.53
48		27.02	897.33	612.00	285.33	123.64
52		0.00	897.22	645.00	252.22	109.30
56		154.50(3.00)	897.50	637.00	260.50	112.88
60		4.83	897.15	630.00	267.15	115.77
64		101.10(3.00)	896.99	625.00	271.99	117.86
68		45.01	896.64	606.00	290.64	125.94
72		0.00	896.44	590.00	306.44	132.79
76		27.37	895.23	640.00	255.23	110.60
80		83.51	895.12	665.00	230.12	99.72
84		7.63	895.12	684.00	211.12	91.48
88		45.99	895.08	699.00	196.08	84.97
92		10.99	895.08	712.00	183.08	79.33
96		88.80(3.00)	895.08	715.00	180.08	78.04
100		11.48	895.11	718.00	177.11	76.75
104		0.00	895.20	698.00	197.20	85.46
108		0.00	894.60	725.00	169.60	73.49
112		9.94	894.10	725.00	169.10	73.28
116		5.60	894.76	743.00	151.76	65.76
120		5.60	894.77	779.00	115.77	50.17
124		0.00	894.77	800.00	94.77	41.07
128		0.00	894.77	800.00	94.77	41.07
132		11.48	894.78	784.00	110.78	48.00
136		46.69	894.71	745.00	149.71	64.88
140		46.06	894.71	721.00	173.71	75.27
144		62.02	894.72	695.00	199.72	86.55
148		134.54	894.94	641.00	253.94	110.04
152		0.00	894.73	675.00	219.73	95.21
156		642.60	894.55	705.00	189.55	82.14
160		41.37	894.42	700.00	194.42	84.25
164		0.00	892.59	683.00	209.59	90.82
168		52.50	891.87	675.00	216.87	93.98

170	126.90(3.00)	891.75	689.00	202.75	87.86
172	171.30(3.00)	891.69	668.00	223.69	96.93
176	0.00	891.62	652.00	239.62	103.84
180	11.34	891.79	679.00	212.79	92.21
184	69.86	892.46	766.00	126.46	54.80
188	233.40(3.00)	892.54	771.00	121.54	52.67
192	5.60	892.89	789.00	103.89	45.02
194	336.60(3.00)	893.22	783.00	110.22	47.76
196	22.68	893.32	764.00	129.32	56.04
200	0.00	893.81	740.00	153.81	66.65
204	11.97	893.68	723.00	170.68	73.96
208	74.62	893.41	694.00	199.41	86.41
212	0.00	892.27	679.00	213.27	92.42
216	8.19	891.79	655.00	236.79	102.61
220	0.00	891.68	630.00	261.68	113.40
224	0.00	891.65	620.00	271.65	117.71
228	37.17	891.65	620.00	271.65	117.71
232	14.07	891.53	643.00	248.53	107.70
236	0.00	891.54	653.00	238.54	103.37
240	69.86	891.58	651.00	240.58	104.25
244	22.68	891.38	634.00	257.38	111.53
248	82.04	891.30	624.00	267.30	115.83
252	17.36	889.83	648.00	241.83	104.79
254	1500.00	889.66	650.00	239.66	103.85
256	28.07	890.40	644.00	246.40	106.77
260	63.98	890.90	650.00	240.90	104.39
264	0.00	892.76	680.00	212.76	92.20
268	0.00	894.67	694.00	200.67	86.96
272	0.00	894.86	696.00	198.86	86.17
276	0.00	895.20	726.00	169.20	73.32
280	0.00	897.72	750.00	147.72	64.01
284	0.00	897.46	731.00	166.46	72.13
288	0.00	896.48	729.00	167.48	72.57
292	0.00	897.83	739.00	158.83	68.82
300	0.00	892.04	640.00	252.04	109.22
304	0.00	892.02	627.00	265.02	114.84
308	0.00	891.97	627.00	264.97	114.82
312	0.00	891.76	583.00	308.76	133.80
316	15.90(3.00)	891.71	570.00	321.71	139.41
320	0.00	891.66	608.00	283.66	122.92
800	----	1020.00			
O-804	----	898.31	746.00	152.31	66.00
900	----	1020.00			
I-904	0.00	1019.60	751.00	268.60	116.39
0	----	905.50			
I-804	0.00	1019.03	746.00	273.03	118.31
O-904	----	898.69	751.00	147.69	64.00

M A X I M U M A N D M I N I M U M V A L U E S

P R E S S U R E S

JUNCTION NUMBER	MAXIMUM PRESSURES psi	JUNCTION NUMBER	MINIMUM PRESSURES psi
316	139.41	124	41.07
312	133.80	128	41.07
72	132.79	192	45.02
68	125.94	4	45.63
48	123.64	194	47.76

V E L O C I T I E S

PIPE NUMBER	MAXIMUM VELOCITY (ft/s)	PIPE NUMBER	MINIMUM VELOCITY (ft/s)
13	4.05	149	0.08
801	3.21	153	0.08
805	3.21	157	0.08
65	3.12	189	0.09
1	3.07	145	0.15

R E G U L A T I N G V A L V E R E P O R T

VALVE LABEL	VALVE TYPE	VALVE SETTING psi or gpm	VALVE STATUS	UPSTREAM PRESSURE psi	DOWNSTREAM PRESSURE psi	THROUGH FLOW gpm
804	PRV-1	66.00	ACTIVATED	118.31	66.00	1130.55
904	PRV-1	64.00	ACTIVATED	116.39	64.00	572.35

S U M M A R Y O F I N F L O W S A N D O U T F L O W S

(+) INFLOWS INTO THE SYSTEM FROM SUPPLY NODES
(-) OUTFLOWS FROM THE SYSTEM INTO SUPPLY NODES

NODE NAME	FLOWRATE gpm	NODE TITLE
800	1130.55	
900	572.35	
0	3009.88	

NET SYSTEM INFLOW = 4712.78
NET SYSTEM OUTFLOW = 0.00
NET SYSTEM DEMAND = 4712.79

PIPE BREAK CONDITION
(PIPE 1 CLOSED)

U N I T S S P E C I F I E D

FLOWRATE ..... = gallons/minute
HEAD (HGL) ..... = feet
PRESSURE ..... = psig

R E G U L A T I N G V A L V E D A T A

VALVE LABEL	VALVE TYPE	VALVE SETTING (ft or gpm)
804	PRV-1	898.31
904	PRV-1	898.69

P I P E L I N E D A T A

STATUS CODE: XX -CLOSED PIPE CV -CHECK VALVE

PIPE NAME	NODE NAMES #1	#2	LENGTH (ft)	DIAMETER (in)	ROUGHNESS COEFF.	MINOR LOSS COEFF.
1-XX	0	4	1165.80	20.00	120.0000	0.00
5	4	8	411.40	20.00	120.0000	0.00
9	8	12	240.00	20.00	120.0000	0.00
13	12	36	1053.50	16.00	120.0000	0.00
17	8	16	968.60	8.00	120.0000	0.00
21	16	20	858.60	8.00	120.0000	0.00
25	20	24	232.60	8.00	120.0000	0.00
29	24	28	302.50	12.00	120.0000	0.00
33	32	28	735.00	8.00	120.0000	0.00
37	36	32	803.80	8.00	120.0000	0.00
41	36	40	1545.80	12.00	120.0000	0.00
45	40	44	485.50	12.00	120.0000	0.00
49	44	48	310.20	8.00	120.0000	0.00
53	48	52	1580.60	8.00	120.0000	0.00
57	52	44	1152.10	12.00	120.0000	0.00
61	60	52	343.70	12.00	120.0000	0.00
65	36	56	176.20	16.00	120.0000	0.00
69	56	60	161.30	16.00	120.0000	0.00
73	60	64	145.50	16.00	120.0000	0.00
77	64	68	385.20	16.00	120.0000	0.00
81	68	72	325.90	16.00	120.0000	0.00
85	68	84	1788.60	8.00	120.0000	0.00
89	72	76	1957.60	16.00	120.0000	0.00
93	76	80	334.00	12.00	120.0000	0.00
97	80	84	157.10	12.00	120.0000	0.00
101	84	88	156.80	12.00	120.0000	0.00
105	88	92	151.60	12.00	120.0000	0.00
109	92	96	162.20	12.00	120.0000	0.00
113	96	100	239.10	12.00	120.0000	0.00
117	100	116	695.90	8.00	120.0000	0.00
121	100	104	295.50	12.00	120.0000	0.00
125	60	104	1009.90	12.00	120.0000	0.00
129	104	108	773.70	12.00	120.0000	0.00
133	108	112	388.60	12.00	120.0000	0.00

137	28	112	341.70	12.00	120.0000	0.00
141	108	116	263.90	8.00	120.0000	0.00
145	116	120	530.90	8.00	120.0000	0.00
149	120	124	567.20	12.00	120.0000	0.00
153	124	128	79.20	12.00	120.0000	0.00
157	128	132	355.00	12.00	120.0000	0.00
161	132	92	1535.90	10.00	120.0000	0.00
165	136	132	560.00	10.00	120.0000	0.00
169	140	136	302.90	12.00	120.0000	0.00
173	88	140	2376.50	10.00	120.0000	0.00
177	140	160	1440.00	12.00	120.0000	0.00
181	140	144	352.40	12.00	120.0000	0.00
185	80	144	2452.30	10.00	120.0000	0.00
189	152	144	319.50	12.00	120.0000	0.00
193	148	152	1250.00	16.00	120.0000	0.00
197	76	148	1057.40	16.00	120.0000	0.00
201	152	156	1184.70	16.00	120.0000	0.00
205	156	276	983.80	12.00	120.0000	0.00
209	160	156	707.20	12.00	120.0000	0.00
213	272	160	1298.00	12.00	120.0000	0.00
217	160	164	450.60	10.00	120.0000	0.00
221	164	168	175.90	10.00	120.0000	0.00
225	168	260	858.60	10.00	120.0000	0.00
227	170	168	1114.70	8.00	120.0000	0.00
229	180	170	238.90	8.00	120.0000	0.00
233	168	172	315.10	10.00	120.0000	0.00
237	172	176	877.10	10.00	120.0000	0.00
241	248	176	569.30	10.00	120.0000	0.00
245	176	240	892.90	10.00	120.0000	0.00
249	176	180	363.00	10.00	120.0000	0.00
253	180	184	813.20	10.00	120.0000	0.00
257	184	188	171.10	12.00	120.0000	0.00
261	188	192	291.30	12.00	120.0000	0.00
265	192	194	714.00	12.00	120.0000	0.00
267	194	112	568.60	12.00	120.0000	0.00
269	196	192	775.70	10.00	120.0000	0.00
273	200	196	756.80	10.00	120.0000	0.00
277	112	200	260.00	12.00	120.0000	0.00
281	200	204	380.60	12.00	120.0000	0.00
285	204	208	832.00	12.00	120.0000	0.00
289	208	212	832.60	8.00	120.0000	0.00
293	212	300	490.40	10.00	120.0000	0.00
295	300	216	903.70	10.00	120.0000	0.00
297	216	220	406.50	10.00	120.0000	0.00
301	220	224	130.40	10.00	120.0000	0.00
305	224	240	592.90	10.00	120.0000	0.00
309	224	228	99.90	10.00	120.0000	0.00
313	228	232	906.50	8.00	120.0000	0.00
317	232	244	912.00	8.00	120.0000	0.00
321	236	232	313.40	8.00	120.0000	0.00
325	236	240	166.70	8.00	120.0000	0.00
329	244	236	958.10	8.00	120.0000	0.00
333	244	248	195.70	8.00	120.0000	0.00
337	252	248	1974.20	10.00	120.0000	0.00
339	254	252	245.50	10.00	120.0000	0.00
341	256	254	302.00	10.00	120.0000	0.00
345	260	256	640.50	10.00	120.0000	0.00
347	264	254	929.20	10.00	120.0000	0.00
349	256	264	1162.60	8.00	120.0000	0.00
353	268	264	718.60	12.00	120.0000	0.00
357	288	268	919.00	12.00	120.0000	0.00

361	268	272	2448.90	12.00	120.0000	0.00
365	272	276	501.90	12.00	120.0000	0.00
369	276	280	1047.10	12.00	120.0000	0.00
373	280	284	1306.70	12.00	120.0000	0.00
377	284	288	1187.60	12.00	120.0000	0.00
381	284	292	1406.20	12.00	120.0000	0.00
385	292	288	1728.60	10.00	120.0000	0.00
387	300	304	509.90	10.00	120.0000	0.00
389	304	308	517.80	8.00	120.0000	0.00
391	308	312	2169.30	8.00	120.0000	0.00
393	312	316	479.70	8.00	120.0000	0.00
395	316	320	1103.00	8.00	120.0000	0.00
397	320	228	587.60	10.00	120.0000	0.00
801	I-804	800	262.30	12.00	120.0000	0.00
805	280	O-804	159.90	12.00	120.0000	0.00
901	I-904	900	380.40	12.00	120.0000	0.00
905	292	O-904	828.80	12.00	120.0000	0.00

N O D E D A T A

NODE NAME	NODE TITLE	EXTERNAL DEMAND (gpm)	JUNCTION ELEVATION (ft)	EXTERNAL GRADE (ft)
4		46.76	798.00	
8		22.96	760.00	
12		0.00	740.00	
16		10.99	730.00	
20		6.65	724.00	
24		0.00	700.00	
28		8.96	705.00	
32		8.40	657.00	
36		0.00	650.00	
40		17.85	665.00	
44		0.00	640.00	
48		27.02	612.00	
52		0.00	645.00	
56		51.50	637.00	
60		4.83	630.00	
64		33.70	625.00	
68		45.01	606.00	
72		0.00	590.00	
76		27.37	640.00	
80		83.51	665.00	
84		7.63	684.00	
88		45.99	699.00	
92		10.99	712.00	
96		29.60	715.00	
100		11.48	718.00	
104		0.00	698.00	
108		0.00	725.00	
112		9.94	725.00	
116		5.60	743.00	
120		5.60	779.00	
124		0.00	800.00	
128		0.00	800.00	
132		11.48	784.00	
136		46.69	745.00	

140	46.06	721.00	
144	62.02	695.00	
148	134.54	641.00	
152	0.00	675.00	
156	642.60	705.00	
160	41.37	700.00	
164	0.00	683.00	
168	52.50	675.00	
170	42.30	689.00	
172	57.10	668.00	
176	0.00	652.00	
180	11.34	679.00	
184	69.86	766.00	
188	77.80	771.00	
192	5.60	789.00	
194	112.20	783.00	
196	22.68	764.00	
200	0.00	740.00	
204	11.97	723.00	
208	74.62	694.00	
212	0.00	679.00	
216	8.19	655.00	
220	0.00	630.00	
224	0.00	620.00	
228	37.17	620.00	
232	14.07	643.00	
236	0.00	653.00	
240	69.86	651.00	
244	22.68	634.00	
248	82.04	624.00	
252	17.36	648.00	
254	0.00	650.00	
256	28.07	644.00	
260	63.98	650.00	
264	0.00	680.00	
268	0.00	694.00	
272	0.00	696.00	
276	0.00	726.00	
280	0.00	750.00	
284	0.00	731.00	
288	0.00	729.00	
292	0.00	739.00	
300	0.00	640.00	
304	0.00	627.00	
308	0.00	627.00	
312	0.00	583.00	
316	5.30	570.00	
320	0.00	608.00	
800	----	0.00	1020.00
O-804	----	746.00	898.31
900	----	0.00	1020.00
I-904	0.00	751.00	
0	----	0.00	905.50
I-804	0.00	746.00	
O-904	----	751.00	898.69

O U T P U T O P T I O N D A T A

OUTPUT SELECTION: ALL RESULTS ARE INCLUDED IN THE TABULATED OUTPUT
MAXIMUM AND MINIMUM PRESSURES = 5
MAXIMUM AND MINIMUM VELOCITIES = 5

S Y S T E M C O N F I G U R A T I O N

NUMBER OF PIPES .....(P) = 112
NUMBER OF END NODES .....(J) = 84
NUMBER OF PRIMARY LOOPS .....(L) = 26
NUMBER OF SUPPLY NODES .....(F) = 3
NUMBER OF SUPPLY ZONES .....(Z) = 1

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Case: 0

RESULTS OBTAINED AFTER 13 TRIALS: ACCURACY = 0.21880E-06

The Trails at Carmel Mountain Ranch
920 Zone - Public Water System Analysis – Pipe Break Condition
Average Day Demand (Pipe 1 Closed)

P I P E L I N E R E S U L T S

STATUS CODE: XX -CLOSED PIPE CV -CHECK VALVE

PIPE NAME	NODE NUMBERS #1	#2	FLOWRATE gpm	HEAD LOSS ft	MINOR LOSS ft	LINE VELO. ft/s	HL+ML/ 1000 ft/f	HL/ 1000 ft/f
1-XX	0	4						
5	4	8	-46.76	0.00	0.00	0.05	0.00	0.00
9	8	12	-80.50	0.00	0.00	0.08	0.00	0.00
13	12	36	-80.50	0.01	0.00	0.13	0.01	0.01
17	8	16	10.78	0.00	0.00	0.07	0.00	0.00
21	16	20	-0.21	0.00	0.00	0.00	0.00	0.00
25	20	24	-6.86	0.00	0.00	0.04	0.00	0.00
29	24	28	-6.86	0.00	0.00	0.02	0.00	0.00
33	32	28	8.93	0.00	0.00	0.06	0.00	0.00
37	36	32	17.33	0.01	0.00	0.11	0.01	0.01
41	36	40	8.23	0.00	0.00	0.02	0.00	0.00
45	40	44	-9.62	0.00	0.00	0.03	0.00	0.00
49	44	48	16.51	0.00	0.00	0.11	0.01	0.01
53	48	52	-10.51	0.01	0.00	0.07	0.00	0.00
57	52	44	26.13	0.00	0.00	0.07	0.00	0.00
61	60	52	36.64	0.00	0.00	0.10	0.01	0.01
65	36	56	-106.07	0.00	0.00	0.17	0.01	0.01
69	56	60	-157.57	0.00	0.00	0.25	0.02	0.02
73	60	64	-137.78	0.00	0.00	0.22	0.02	0.02
77	64	68	-171.48	0.01	0.00	0.27	0.03	0.03
81	68	72	-185.67	0.01	0.00	0.30	0.03	0.03
85	68	84	-30.82	0.06	0.00	0.20	0.03	0.03
89	72	76	-185.67	0.06	0.00	0.30	0.03	0.03
93	76	80	74.05	0.01	0.00	0.21	0.02	0.02
97	80	84	86.85	0.01	0.00	0.25	0.03	0.03
101	84	88	48.40	0.00	0.00	0.14	0.01	0.01

105	88	92	101.79	0.01	0.00	0.29	0.04	0.04
109	92	96	157.74	0.02	0.00	0.45	0.10	0.10
113	96	100	128.14	0.02	0.00	0.36	0.07	0.07
117	100	116	-4.05	0.00	0.00	0.03	0.00	0.00
121	100	104	120.71	0.02	0.00	0.34	0.06	0.06
125	60	104	-61.26	0.02	0.00	0.17	0.02	0.02
129	104	108	59.46	0.01	0.00	0.17	0.02	0.02
133	108	112	118.98	0.02	0.00	0.34	0.06	0.06
137	28	112	-6.89	0.00	0.00	0.02	0.00	0.00
141	108	116	-59.53	0.03	0.00	0.38	0.11	0.11
145	116	120	-69.18	0.08	0.00	0.44	0.15	0.15
149	120	124	-74.78	0.01	0.00	0.21	0.02	0.02
153	124	128	-74.78	0.00	0.00	0.21	0.02	0.02
157	128	132	-74.78	0.01	0.00	0.21	0.02	0.02
161	132	92	66.94	0.07	0.00	0.27	0.05	0.05
165	136	132	153.20	0.12	0.00	0.63	0.22	0.22
169	140	136	199.89	0.05	0.00	0.57	0.15	0.15
173	88	140	-99.38	0.24	0.00	0.41	0.10	0.10
177	140	160	-329.39	0.54	0.00	0.93	0.38	0.38
181	140	144	-15.93	0.00	0.00	0.05	0.00	0.00
185	80	144	-96.31	0.23	0.00	0.39	0.09	0.09
189	152	144	174.27	0.04	0.00	0.49	0.12	0.12
193	148	152	-421.63	0.18	0.00	0.67	0.15	0.15
197	76	148	-287.09	0.08	0.00	0.46	0.07	0.07
201	152	156	-595.90	0.33	0.00	0.95	0.28	0.28
205	156	276	-975.68	2.76	0.00	2.77	2.81	2.81
209	160	156	262.82	0.18	0.00	0.75	0.25	0.25
213	272	160	764.43	2.32	0.00	2.17	1.79	1.79
217	160	164	130.85	0.07	0.00	0.53	0.17	0.17
221	164	168	130.85	0.03	0.00	0.53	0.17	0.17
225	168	260	-264.94	0.52	0.00	1.08	0.61	0.61
227	170	168	-113.56	0.42	0.00	0.72	0.38	0.38
229	180	170	-71.26	0.04	0.00	0.45	0.16	0.16
233	168	172	229.73	0.15	0.00	0.94	0.47	0.47
237	172	176	172.63	0.24	0.00	0.71	0.28	0.28
241	248	176	81.29	0.04	0.00	0.33	0.07	0.07
245	176	240	113.75	0.11	0.00	0.46	0.13	0.13
249	176	180	140.17	0.07	0.00	0.57	0.19	0.19
253	180	184	200.09	0.30	0.00	0.82	0.36	0.36
257	184	188	130.23	0.01	0.00	0.37	0.07	0.07
261	188	192	52.43	0.00	0.00	0.15	0.01	0.01
265	192	194	43.97	0.01	0.00	0.12	0.01	0.01
267	194	112	-68.23	0.01	0.00	0.19	0.02	0.02
269	196	192	-2.86	0.00	0.00	0.01	0.00	0.00
273	200	196	19.82	0.00	0.00	0.08	0.01	0.01
277	112	200	33.92	0.00	0.00	0.10	0.01	0.01
281	200	204	14.11	0.00	0.00	0.04	0.00	0.00
285	204	208	2.14	0.00	0.00	0.01	0.00	0.00
289	208	212	-72.48	0.14	0.00	0.46	0.16	0.16
293	212	300	-72.48	0.03	0.00	0.30	0.06	0.06
295	300	216	-56.53	0.03	0.00	0.23	0.03	0.03
297	216	220	-64.72	0.02	0.00	0.26	0.04	0.04
301	220	224	-64.72	0.01	0.00	0.26	0.04	0.04
305	224	240	-82.77	0.04	0.00	0.34	0.07	0.07
309	224	228	18.05	0.00	0.00	0.07	0.00	0.00
313	228	232	-40.37	0.05	0.00	0.26	0.06	0.06
317	232	244	-47.41	0.07	0.00	0.30	0.07	0.07
321	236	232	7.04	0.00	0.00	0.04	0.00	0.00
325	236	240	38.88	0.01	0.00	0.25	0.05	0.05
329	244	236	45.91	0.07	0.00	0.29	0.07	0.07
333	244	248	-116.00	0.08	0.00	0.74	0.39	0.39

337	252	248	279.33	1.33	0.00	1.14	0.67	0.67
339	254	252	296.69	0.18	0.00	1.21	0.75	0.75
341	256	254	-138.23	0.06	0.00	0.56	0.18	0.18
345	260	256	-328.92	0.58	0.00	1.34	0.91	0.91
347	264	254	434.92	1.42	0.00	1.78	1.53	1.53
349	256	264	-218.76	1.48	0.00	1.40	1.27	1.27
353	268	264	653.69	0.96	0.00	1.85	1.34	1.34
357	288	268	1019.99	2.80	0.00	2.89	3.05	3.05
361	268	272	366.30	1.12	0.00	1.04	0.46	0.46
365	272	276	-398.12	0.27	0.00	1.13	0.53	0.53
369	276	280	-1373.80	5.55	0.00	3.90	5.30	5.30
373	280	284	286.09	0.38	0.00	0.81	0.29	0.29
377	284	288	635.81	1.51	0.00	1.80	1.27	1.27
381	284	292	-349.72	0.59	0.00	0.99	0.42	0.42
385	292	288	384.18	2.10	0.00	1.57	1.22	1.22
387	300	304	-15.96	0.00	0.00	0.07	0.00	0.00
389	304	308	-15.96	0.01	0.00	0.10	0.01	0.01
391	308	312	-15.96	0.02	0.00	0.10	0.01	0.01
393	312	316	-15.96	0.00	0.00	0.10	0.01	0.01
395	316	320	-21.26	0.02	0.00	0.14	0.02	0.02
397	320	228	-21.26	0.00	0.00	0.09	0.01	0.01
801	I-804	800	-1659.89	1.97	0.00	4.71	7.52	7.52
805	280	O-804	-1659.89	1.20	0.00	4.71	7.52	7.52
901	I-904	900	-733.90	0.63	0.00	2.08	1.66	1.66
905	292	O-904	-733.90	1.37	0.00	2.08	1.66	1.66

N O D E R E S U L T S

NODE NAME	NODE TITLE	EXTERNAL DEMAND gpm	HYDRAULIC GRADE ft	NODE ELEVATION ft	PRESSURE HEAD ft	NODE PRESSURE psi
4		46.76	888.11	798.00	90.11	39.05
8		22.96	888.11	760.00	128.11	55.51
12		0.00	888.11	740.00	148.11	64.18
16		10.99	888.10	730.00	158.10	68.51
20		6.65	888.10	724.00	164.10	71.11
24		0.00	888.10	700.00	188.10	81.51
28		8.96	888.10	705.00	183.10	79.34
32		8.40	888.11	657.00	231.11	100.15
36		0.00	888.12	650.00	238.12	103.18
40		17.85	888.11	665.00	223.11	96.68
44		0.00	888.12	640.00	248.12	107.52
48		27.02	888.11	612.00	276.11	119.65
52		0.00	888.12	645.00	243.12	105.35
56		51.50	888.12	637.00	251.12	108.82
60		4.83	888.12	630.00	258.12	111.85
64		33.70	888.12	625.00	263.12	114.02
68		45.01	888.13	606.00	282.13	122.26
72		0.00	888.15	590.00	298.15	129.20
76		27.37	888.21	640.00	248.21	107.56
80		83.51	888.20	665.00	223.20	96.72
84		7.63	888.19	684.00	204.19	88.48
88		45.99	888.19	699.00	189.19	81.98
92		10.99	888.19	712.00	176.19	76.35
96		29.60	888.17	715.00	173.17	75.04
100		11.48	888.16	718.00	170.16	73.73
104		0.00	888.14	698.00	190.14	82.39
108		0.00	888.13	725.00	163.13	70.69
112		9.94	888.10	725.00	163.10	70.68

116	5.60	888.16	743.00	145.16	62.90
120	5.60	888.24	779.00	109.24	47.34
124	0.00	888.25	800.00	88.25	38.24
128	0.00	888.25	800.00	88.25	38.24
132	11.48	888.26	784.00	104.26	45.18
136	46.69	888.38	745.00	143.38	62.13
140	46.06	888.43	721.00	167.43	72.55
144	62.02	888.43	695.00	193.43	83.82
148	134.54	888.28	641.00	247.28	107.16
152	0.00	888.47	675.00	213.47	92.50
156	642.60	888.80	705.00	183.80	79.64
160	41.37	888.97	700.00	188.97	81.89
164	0.00	888.90	683.00	205.90	89.22
168	52.50	888.87	675.00	213.87	92.68
170	42.30	888.45	689.00	199.45	86.43
172	57.10	888.72	668.00	220.72	95.65
176	0.00	888.48	652.00	236.48	102.47
180	11.34	888.41	679.00	209.41	90.74
184	69.86	888.11	766.00	122.11	52.92
188	77.80	888.10	771.00	117.10	50.74
192	5.60	888.10	789.00	99.10	42.94
194	112.20	888.09	783.00	105.09	45.54
196	22.68	888.10	764.00	124.10	53.78
200	0.00	888.10	740.00	148.10	64.18
204	11.97	888.10	723.00	165.10	71.54
208	74.62	888.10	694.00	194.10	84.11
212	0.00	888.24	679.00	209.24	90.67
216	8.19	888.30	655.00	233.30	101.10
220	0.00	888.32	630.00	258.32	111.94
224	0.00	888.32	620.00	268.32	116.27
228	37.17	888.32	620.00	268.32	116.27
232	14.07	888.37	643.00	245.37	106.33
236	0.00	888.37	653.00	235.37	101.99
240	69.86	888.36	651.00	237.36	102.86
244	22.68	888.44	634.00	254.44	110.26
248	82.04	888.52	624.00	264.52	114.62
252	17.36	889.85	648.00	241.85	104.80
254	0.00	890.03	650.00	240.03	104.01
256	28.07	889.98	644.00	245.98	106.59
260	63.98	889.39	650.00	239.39	103.74
264	0.00	891.45	680.00	211.45	91.63
268	0.00	892.41	694.00	198.41	85.98
272	0.00	891.29	696.00	195.29	84.63
276	0.00	891.56	726.00	165.56	71.74
280	0.00	897.11	750.00	147.11	63.75
284	0.00	896.73	731.00	165.73	71.82
288	0.00	895.22	729.00	166.22	72.03
292	0.00	897.32	739.00	158.32	68.60
300	0.00	888.27	640.00	248.27	107.58
304	0.00	888.27	627.00	261.27	113.22
308	0.00	888.27	627.00	261.27	113.22
312	0.00	888.29	583.00	305.29	132.29
316	5.30	888.30	570.00	318.30	137.93
320	0.00	888.32	608.00	280.32	121.47
800	----	1020.00			
O-804	----	898.31	746.00	152.31	66.00
900	----	1020.00			
I-904	0.00	1019.37	751.00	268.37	116.29
0	----	905.50			
I-804	0.00	1018.03	746.00	272.03	117.88
O-904	----	898.69	751.00	147.69	64.00

M A X I M U M A N D M I N I M U M V A L U E S

P R E S S U R E S

JUNCTION NUMBER	MAXIMUM PRESSURES psi	JUNCTION NUMBER	MINIMUM PRESSURES psi
316	137.93	124	38.24
312	132.29	128	38.24
72	129.20	4	39.05
68	122.26	192	42.94
320	121.47	132	45.18

V E L O C I T I E S

PIPE NUMBER	MAXIMUM VELOCITY (ft/s)	PIPE NUMBER	MINIMUM VELOCITY (ft/s)
801	4.71	21	0.00
805	4.71	285	0.01
369	3.90	269	0.01
357	2.89	29	0.02
205	2.77	137	0.02

R E G U L A T I N G V A L V E R E P O R T

VALVE LABEL	VALVE TYPE	VALVE SETTING psi or gpm	VALVE STATUS	UPSTREAM PRESSURE psi	DOWNSTREAM PRESSURE psi	THROUGH FLOW gpm
804	PRV-1	66.00	ACTIVATED	117.88	66.00	1659.89
904	PRV-1	64.00	ACTIVATED	116.29	64.00	733.90

S U M M A R Y O F I N F L O W S A N D O U T F L O W S

(+) INFLOWS INTO THE SYSTEM FROM SUPPLY NODES
(-) OUTFLOWS FROM THE SYSTEM INTO SUPPLY NODES

NODE NAME	FLOWRATE gpm	NODE TITLE
800	1659.89	
900	733.90	
0	0.00	

NET SYSTEM INFLOW = 2393.79
NET SYSTEM OUTFLOW = 0.00
NET SYSTEM DEMAND = 2393.79

==========
Case: 1

C H A N G E S F O R N E X T S I M U L A T I O N (Change Number = 1)

JUNCTION DEMANDS CHANGED - PLEASE SEE RESULTS TABLE

RESULTS OBTAINED AFTER 8 TRIALS: ACCURACY = 0.52036E-06

The Trails at Carmel Mountain Ranch
920 Zone - Public Water System Analysis – Pipe Break Condition
Maximum Day Demand (Pipe 1 Closed)

P I P E L I N E R E S U L T S

STATUS CODE: XX -CLOSED PIPE CV -CHECK VALVE

PIPE NAME	NODE NUMBERS #1	#2	FLOWRATE gpm	HEAD LOSS ft	MINOR LOSS ft	LINE VELO. ft/s	HL+ML/ 1000 ft/f	HL/ 1000 ft/f
1-XX	0	4						
5	4	8	-46.76	0.00	0.00	0.05	0.00	0.00
9	8	12	-113.63	0.00	0.00	0.12	0.00	0.00
13	12	36	-113.63	0.01	0.00	0.18	0.01	0.01
17	8	16	43.91	0.06	0.00	0.28	0.06	0.06
21	16	20	32.92	0.03	0.00	0.21	0.04	0.04
25	20	24	26.27	0.01	0.00	0.17	0.03	0.03
29	24	28	26.27	0.00	0.00	0.07	0.00	0.00
33	32	28	43.31	0.05	0.00	0.28	0.06	0.06
37	36	32	51.71	0.07	0.00	0.33	0.09	0.09
41	36	40	-10.71	0.00	0.00	0.03	0.00	0.00
45	40	44	-28.56	0.00	0.00	0.08	0.00	0.00
49	44	48	13.38	0.00	0.00	0.09	0.01	0.01
53	48	52	-13.64	0.01	0.00	0.09	0.01	0.01
57	52	44	41.94	0.01	0.00	0.12	0.01	0.01
61	60	52	55.58	0.00	0.00	0.16	0.01	0.01
65	36	56	-154.63	0.00	0.00	0.25	0.02	0.02
69	56	60	-309.13	0.01	0.00	0.49	0.08	0.08
73	60	64	-277.94	0.01	0.00	0.44	0.07	0.07
77	64	68	-379.04	0.05	0.00	0.60	0.12	0.12
81	68	72	-363.44	0.04	0.00	0.58	0.11	0.11
85	68	84	-60.61	0.21	0.00	0.39	0.12	0.12
89	72	76	-363.44	0.22	0.00	0.58	0.11	0.11
93	76	80	123.38	0.02	0.00	0.35	0.06	0.06
97	80	84	196.38	0.02	0.00	0.56	0.14	0.14
101	84	88	128.14	0.01	0.00	0.36	0.07	0.07
105	88	92	245.57	0.03	0.00	0.70	0.22	0.22
109	92	96	348.57	0.07	0.00	0.99	0.42	0.42
113	96	100	259.77	0.06	0.00	0.74	0.24	0.24
117	100	116	7.13	0.00	0.00	0.05	0.00	0.00
121	100	104	241.16	0.06	0.00	0.68	0.21	0.21
125	60	104	-91.60	0.04	0.00	0.26	0.04	0.04
129	104	108	149.56	0.07	0.00	0.42	0.09	0.09
133	108	112	279.80	0.11	0.00	0.79	0.28	0.28
137	28	112	60.62	0.01	0.00	0.17	0.02	0.02
141	108	116	-130.25	0.13	0.00	0.83	0.49	0.49
145	116	120	-128.72	0.25	0.00	0.82	0.48	0.48
149	120	124	-134.32	0.04	0.00	0.38	0.07	0.07
153	124	128	-134.32	0.01	0.00	0.38	0.07	0.07
157	128	132	-134.32	0.03	0.00	0.38	0.07	0.07
161	132	92	113.99	0.20	0.00	0.47	0.13	0.13

165	136	132	259.79	0.33	0.00	1.06	0.59	0.59
169	140	136	306.48	0.10	0.00	0.87	0.33	0.33
173	88	140	-163.42	0.59	0.00	0.67	0.25	0.25
177	140	160	-460.77	1.01	0.00	1.31	0.70	0.70
181	140	144	-55.18	0.00	0.00	0.16	0.01	0.01
185	80	144	-156.51	0.56	0.00	0.64	0.23	0.23
189	152	144	273.72	0.09	0.00	0.78	0.27	0.27
193	148	152	-648.72	0.41	0.00	1.04	0.33	0.33
197	76	148	-514.18	0.22	0.00	0.82	0.21	0.21
201	152	156	-922.44	0.74	0.00	1.47	0.62	0.62
205	156	276	-1298.94	4.70	0.00	3.68	4.77	4.77
209	160	156	266.10	0.18	0.00	0.75	0.25	0.25
213	272	160	1030.53	4.04	0.00	2.92	3.11	3.11
217	160	164	262.29	0.27	0.00	1.07	0.60	0.60
221	164	168	262.29	0.11	0.00	1.07	0.60	0.60
225	168	260	-380.32	1.02	0.00	1.55	1.19	1.19
227	170	168	-184.86	1.04	0.00	1.18	0.93	0.93
229	180	170	-57.96	0.03	0.00	0.37	0.11	0.11
233	168	172	405.25	0.42	0.00	1.66	1.34	1.34
237	172	176	233.95	0.43	0.00	0.96	0.48	0.48
241	248	176	156.69	0.13	0.00	0.64	0.23	0.23
245	176	240	130.72	0.15	0.00	0.53	0.17	0.17
249	176	180	259.91	0.21	0.00	1.06	0.59	0.59
253	180	184	306.53	0.65	0.00	1.25	0.80	0.80
257	184	188	236.67	0.03	0.00	0.67	0.20	0.20
261	188	192	3.27	0.00	0.00	0.01	0.00	0.00
265	192	194	73.14	0.02	0.00	0.21	0.02	0.02
267	194	112	-263.46	0.14	0.00	0.75	0.25	0.25
269	196	192	75.47	0.05	0.00	0.31	0.06	0.06
273	200	196	98.15	0.07	0.00	0.40	0.10	0.10
277	112	200	67.02	0.01	0.00	0.19	0.02	0.02
281	200	204	-31.13	0.00	0.00	0.09	0.00	0.00
285	204	208	-43.10	0.01	0.00	0.12	0.01	0.01
289	208	212	-117.72	0.34	0.00	0.75	0.40	0.40
293	212	300	-117.72	0.07	0.00	0.48	0.14	0.14
295	300	216	-94.20	0.08	0.00	0.38	0.09	0.09
297	216	220	-102.39	0.04	0.00	0.42	0.10	0.10
301	220	224	-102.39	0.01	0.00	0.42	0.10	0.10
305	224	240	-119.88	0.08	0.00	0.49	0.14	0.14
309	224	228	17.49	0.00	0.00	0.07	0.00	0.00
313	228	232	-59.09	0.10	0.00	0.38	0.11	0.11
317	232	244	-67.04	0.13	0.00	0.43	0.14	0.14
321	236	232	6.12	0.00	0.00	0.04	0.00	0.00
325	236	240	59.02	0.02	0.00	0.38	0.11	0.11
329	244	236	65.14	0.13	0.00	0.42	0.13	0.13
333	244	248	-154.86	0.13	0.00	0.99	0.67	0.67
337	252	248	393.59	2.51	0.00	1.61	1.27	1.27
339	254	252	410.95	0.34	0.00	1.68	1.38	1.38
341	256	254	-177.13	0.09	0.00	0.72	0.29	0.29
345	260	256	-444.30	1.02	0.00	1.81	1.59	1.59
347	264	254	588.08	2.48	0.00	2.40	2.67	2.67
349	256	264	-295.24	2.57	0.00	1.88	2.21	2.21
353	268	264	883.32	1.68	0.00	2.51	2.34	2.34
357	288	268	1367.92	4.83	0.00	3.88	5.25	5.25
361	268	272	484.60	1.88	0.00	1.37	0.77	0.77
365	272	276	-545.94	0.48	0.00	1.55	0.96	0.96
369	276	280	-1844.87	9.57	0.00	5.23	9.14	9.14
373	280	284	405.34	0.72	0.00	1.15	0.55	0.55
377	284	288	856.48	2.62	0.00	2.43	2.21	2.21
381	284	292	-451.14	0.95	0.00	1.28	0.67	0.67
385	292	288	511.44	3.57	0.00	2.09	2.06	2.06

387	300	304	-23.52	0.00	0.00	0.10	0.01	0.01
389	304	308	-23.52	0.01	0.00	0.15	0.02	0.02
391	308	312	-23.52	0.04	0.00	0.15	0.02	0.02
393	312	316	-23.52	0.01	0.00	0.15	0.02	0.02
395	316	320	-39.42	0.06	0.00	0.25	0.05	0.05
397	320	228	-39.42	0.01	0.00	0.16	0.02	0.02
801	I-804	800	-2250.22	3.46	0.00	6.38	13.21	13.21
805	280	O-804	-2250.22	2.11	0.00	6.38	13.21	13.21
901	I-904	900	-962.57	1.04	0.00	2.73	2.74	2.74
905	292	O-904	-962.57	2.27	0.00	2.73	2.74	2.74

N O D E R E S U L T S

NODE NAME	NODE TITLE	EXTERNAL DEMAND gpm	HYDRAULIC GRADE ft	NODE ELEVATION ft	PRESSURE HEAD ft	NODE PRESSURE psi
4		46.76	880.21	798.00	82.21	35.63
8		22.96	880.21	760.00	120.21	52.09
12		0.00	880.22	740.00	140.22	60.76
16		10.99	880.15	730.00	150.15	65.07
20		6.65	880.12	724.00	156.12	67.65
24		0.00	880.11	700.00	180.11	78.05
28		8.96	880.11	705.00	175.11	75.88
32		8.40	880.16	657.00	223.16	96.70
36		0.00	880.23	650.00	230.23	99.77
40		17.85	880.23	665.00	215.23	93.27
44		0.00	880.23	640.00	240.23	104.10
48		27.02	880.23	612.00	268.23	116.23
52		0.00	880.24	645.00	235.24	101.94
56		154.50(3.00)	880.23	637.00	243.23	105.40
60		4.83	880.25	630.00	250.25	108.44
64		101.10(3.00)	880.26	625.00	255.26	110.61
68		45.01	880.30	606.00	274.30	118.86
72		0.00	880.34	590.00	290.34	125.81
76		27.37	880.56	640.00	240.56	104.24
80		83.51	880.54	665.00	215.54	93.40
84		7.63	880.51	684.00	196.51	85.16
88		45.99	880.50	699.00	181.50	78.65
92		10.99	880.47	712.00	168.47	73.00
96		88.80(3.00)	880.40	715.00	165.40	71.67
100		11.48	880.34	718.00	162.34	70.35
104		0.00	880.28	698.00	182.28	78.99
108		0.00	880.21	725.00	155.21	67.26
112		9.94	880.11	725.00	155.11	67.21
116		5.60	880.34	743.00	137.34	59.52
120		5.60	880.60	779.00	101.60	44.02
124		0.00	880.64	800.00	80.64	34.94
128		0.00	880.64	800.00	80.64	34.94
132		11.48	880.67	784.00	96.67	41.89
136		46.69	881.00	745.00	136.00	58.93
140		46.06	881.10	721.00	160.10	69.38
144		62.02	881.10	695.00	186.10	80.64
148		134.54	880.78	641.00	239.78	103.90
152		0.00	881.19	675.00	206.19	89.35
156		642.60	881.93	705.00	176.93	76.67
160		41.37	882.10	700.00	182.10	78.91
164		0.00	881.83	683.00	198.83	86.16
168		52.50	881.73	675.00	206.73	89.58

170	126.90(3.00)	880.69	689.00	191.69	83.07
172	171.30(3.00)	881.31	668.00	213.31	92.43
176	0.00	880.88	652.00	228.88	99.18
180	11.34	880.67	679.00	201.67	87.39
184	69.86	880.02	766.00	114.02	49.41
188	233.40(3.00)	879.98	771.00	108.98	47.23
192	5.60	879.98	789.00	90.98	39.43
194	336.60(3.00)	879.97	783.00	96.97	42.02
196	22.68	880.03	764.00	116.03	50.28
200	0.00	880.10	740.00	140.10	60.71
204	11.97	880.10	723.00	157.10	68.08
208	74.62	880.11	694.00	186.11	80.65
212	0.00	880.45	679.00	201.45	87.29
216	8.19	880.59	655.00	225.59	97.76
220	0.00	880.64	630.00	250.64	108.61
224	0.00	880.65	620.00	260.65	112.95
228	37.17	880.65	620.00	260.65	112.95
232	14.07	880.75	643.00	237.75	103.03
236	0.00	880.75	653.00	227.75	98.69
240	69.86	880.73	651.00	229.73	99.55
244	22.68	880.88	634.00	246.88	106.98
248	82.04	881.01	624.00	257.01	111.37
252	17.36	883.52	648.00	235.52	102.06
254	0.00	883.86	650.00	233.86	101.34
256	28.07	883.77	644.00	239.77	103.90
260	63.98	882.75	650.00	232.75	100.86
264	0.00	886.34	680.00	206.34	89.42
268	0.00	888.02	694.00	194.02	84.08
272	0.00	886.14	696.00	190.14	82.39
276	0.00	886.62	726.00	160.62	69.60
280	0.00	896.20	750.00	146.20	63.35
284	0.00	895.47	731.00	164.47	71.27
288	0.00	892.85	729.00	163.85	71.00
292	0.00	896.42	739.00	157.42	68.22
300	0.00	880.51	640.00	240.51	104.22
304	0.00	880.52	627.00	253.52	109.86
308	0.00	880.53	627.00	253.53	109.86
312	0.00	880.57	583.00	297.57	128.95
316	15.90(3.00)	880.58	570.00	310.58	134.59
320	0.00	880.64	608.00	272.64	118.14
800	----	1020.00			
O-804	----	898.31	746.00	152.31	66.00
900	----	1020.00			
I-904	0.00	1018.96	751.00	267.96	116.11
0	----	905.50			
I-804	0.00	1016.54	746.00	270.54	117.23
O-904	----	898.69	751.00	147.69	64.00

M A X I M U M A N D M I N I M U M V A L U E S

P R E S S U R E S

JUNCTION NUMBER	MAXIMUM PRESSURES psi	JUNCTION NUMBER	MINIMUM PRESSURES psi
316	134.59	124	34.94
312	128.95	128	34.94
72	125.81	4	35.63
68	118.86	192	39.43
320	118.14	132	41.89

V E L O C I T I E S

PIPE NUMBER	MAXIMUM VELOCITY (ft/s)	PIPE NUMBER	MINIMUM VELOCITY (ft/s)
801	6.38	261	0.01
805	6.38	41	0.03
369	5.23	321	0.04
357	3.88	117	0.05
205	3.68	5	0.05

R E G U L A T I N G V A L V E R E P O R T

VALVE LABEL	VALVE TYPE	VALVE SETTING psi or gpm	VALVE STATUS	UPSTREAM PRESSURE psi	DOWNSTREAM PRESSURE psi	THROUGH FLOW gpm
804	PRV-1	66.00	ACTIVATED	117.23	66.00	2250.22
904	PRV-1	64.00	ACTIVATED	116.11	64.00	962.57

S U M M A R Y O F I N F L O W S A N D O U T F L O W S

(+) INFLOWS INTO THE SYSTEM FROM SUPPLY NODES
(-) OUTFLOWS FROM THE SYSTEM INTO SUPPLY NODES

NODE NAME	FLOWRATE gpm	NODE TITLE
800	2250.22	
900	962.57	
0	0.00	

NET SYSTEM INFLOW = 3212.79
NET SYSTEM OUTFLOW = 0.00
NET SYSTEM DEMAND = 3212.79

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Case: 2

C H A N G E S F O R N E X T S I M U L A T I O N (Change Number = 2)

JUNCTION DEMANDS CHANGED - PLEASE SEE RESULTS TABLE

RESULTS OBTAINED AFTER 8 TRIALS: ACCURACY = 0.49170E-06

The Trails at Carmel Mountain Ranch
920 Zone - Public Water System Analysis – Pipe Break Condition
Peak Hour Demand (Pipe 1 Closed)

P I P E L I N E R E S U L T S

STATUS CODE: XX -CLOSED PIPE CV -CHECK VALVE

PIPE NAME	NODE NUMBERS #1	#2	FLOWRATE gpm	HEAD LOSS ft	MINOR LOSS ft	LINE VELO. ft/s	HL+ML/ 1000 ft/f	HL/ 1000 ft/f
1-XX	0	4						
5	4	8	-46.76	0.00	0.00	0.05	0.00	0.00
9	8	12	-151.07	0.00	0.00	0.15	0.01	0.01
13	12	36	-151.07	0.02	0.00	0.24	0.02	0.02
17	8	16	81.35	0.20	0.00	0.52	0.20	0.20
21	16	20	70.36	0.13	0.00	0.45	0.16	0.16
25	20	24	63.71	0.03	0.00	0.41	0.13	0.13
29	24	28	63.71	0.01	0.00	0.18	0.02	0.02
33	32	28	87.24	0.17	0.00	0.56	0.23	0.23
37	36	32	95.64	0.22	0.00	0.61	0.27	0.27
41	36	40	-32.49	0.01	0.00	0.09	0.01	0.01
45	40	44	-50.34	0.01	0.00	0.14	0.01	0.01
49	44	48	9.18	0.00	0.00	0.06	0.00	0.00
53	48	52	-17.84	0.02	0.00	0.11	0.01	0.01
57	52	44	59.53	0.02	0.00	0.17	0.02	0.02
61	60	52	77.36	0.01	0.00	0.22	0.03	0.03
65	36	56	-214.22	0.01	0.00	0.34	0.04	0.04
69	56	60	-507.77	0.03	0.00	0.81	0.21	0.21
73	60	64	-463.27	0.03	0.00	0.74	0.17	0.17
77	64	68	-655.36	0.13	0.00	1.05	0.33	0.33
81	68	72	-600.13	0.09	0.00	0.96	0.28	0.28
85	68	84	-100.24	0.54	0.00	0.64	0.30	0.30
89	72	76	-600.13	0.55	0.00	0.96	0.28	0.28
93	76	80	187.71	0.04	0.00	0.53	0.13	0.13
97	80	84	341.17	0.06	0.00	0.97	0.40	0.40
101	84	88	233.29	0.03	0.00	0.66	0.20	0.20
105	88	92	436.61	0.10	0.00	1.24	0.63	0.63
109	92	96	602.58	0.19	0.00	1.71	1.15	1.15
113	96	100	433.86	0.15	0.00	1.23	0.63	0.63
117	100	116	21.67	0.01	0.00	0.14	0.02	0.02
121	100	104	400.71	0.16	0.00	1.14	0.54	0.54
125	60	104	-126.69	0.06	0.00	0.36	0.06	0.06
129	104	108	274.02	0.21	0.00	0.78	0.27	0.27
133	108	112	499.54	0.32	0.00	1.42	0.81	0.81
137	28	112	141.99	0.03	0.00	0.40	0.08	0.08
141	108	116	-225.52	0.35	0.00	1.44	1.34	1.34
145	116	120	-209.45	0.62	0.00	1.34	1.17	1.17
149	120	124	-215.05	0.10	0.00	0.61	0.17	0.17
153	124	128	-215.05	0.01	0.00	0.61	0.17	0.17
157	128	132	-215.05	0.06	0.00	0.61	0.17	0.17
161	132	92	176.96	0.44	0.00	0.72	0.29	0.29

165	136	132	403.49	0.75	0.00	1.65	1.33	1.33
169	140	136	450.18	0.20	0.00	1.28	0.67	0.67
173	88	140	-249.30	1.30	0.00	1.02	0.55	0.55
177	140	160	-641.86	1.86	0.00	1.82	1.29	1.29
181	140	144	-103.68	0.02	0.00	0.29	0.04	0.04
185	80	144	-236.97	1.22	0.00	0.97	0.50	0.50
189	152	144	402.67	0.17	0.00	1.14	0.55	0.55
193	148	152	-949.74	0.82	0.00	1.52	0.66	0.66
197	76	148	-815.20	0.52	0.00	1.30	0.50	0.50
201	152	156	-1352.42	1.50	0.00	2.16	1.27	1.27
205	156	276	-1734.78	8.03	0.00	4.92	8.16	8.16
209	160	156	260.24	0.17	0.00	0.74	0.24	0.24
213	272	160	1387.21	7.00	0.00	3.93	5.39	5.39
217	160	164	443.74	0.72	0.00	1.81	1.59	1.59
221	164	168	443.74	0.28	0.00	1.81	1.59	1.59
225	168	260	-536.66	1.94	0.00	2.19	2.26	2.26
227	170	168	-283.15	2.28	0.00	1.81	2.05	2.05
229	180	170	-42.04	0.01	0.00	0.27	0.06	0.06
233	168	172	644.75	1.00	0.00	2.63	3.17	3.17
237	172	176	319.28	0.76	0.00	1.30	0.86	0.86
241	248	176	258.16	0.33	0.00	1.05	0.58	0.58
245	176	240	148.51	0.19	0.00	0.61	0.21	0.21
249	176	180	428.92	0.54	0.00	1.75	1.49	1.49
253	180	184	459.63	1.38	0.00	1.88	1.69	1.69
257	184	188	389.77	0.09	0.00	1.11	0.51	0.51
261	188	192	-53.69	0.00	0.00	0.15	0.01	0.01
265	192	194	111.05	0.04	0.00	0.31	0.05	0.05
267	194	112	-528.49	0.51	0.00	1.50	0.90	0.90
269	196	192	170.34	0.21	0.00	0.70	0.27	0.27
273	200	196	193.02	0.26	0.00	0.79	0.34	0.34
277	112	200	103.09	0.01	0.00	0.29	0.04	0.04
281	200	204	-89.93	0.01	0.00	0.26	0.03	0.03
285	204	208	-101.90	0.04	0.00	0.29	0.04	0.04
289	208	212	-176.52	0.71	0.00	1.13	0.85	0.85
293	212	300	-176.52	0.14	0.00	0.72	0.29	0.29
295	300	216	-143.50	0.18	0.00	0.59	0.20	0.20
297	216	220	-151.69	0.09	0.00	0.62	0.22	0.22
301	220	224	-151.69	0.03	0.00	0.62	0.22	0.22
305	224	240	-167.95	0.16	0.00	0.69	0.26	0.26
309	224	228	16.27	0.00	0.00	0.07	0.00	0.00
313	228	232	-84.13	0.20	0.00	0.54	0.22	0.22
317	232	244	-95.02	0.25	0.00	0.61	0.27	0.27
321	236	232	3.19	0.00	0.00	0.02	0.00	0.00
325	236	240	89.30	0.04	0.00	0.57	0.24	0.24
329	244	236	92.49	0.25	0.00	0.59	0.26	0.26
333	244	248	-210.18	0.23	0.00	1.34	1.18	1.18
337	252	248	550.38	4.67	0.00	2.25	2.36	2.36
339	254	252	567.74	0.61	0.00	2.32	2.51	2.51
341	256	254	-229.21	0.14	0.00	0.94	0.47	0.47
345	260	256	-600.64	1.78	0.00	2.45	2.78	2.78
347	264	254	796.95	4.36	0.00	3.26	4.69	4.69
349	256	264	-399.50	4.50	0.00	2.55	3.87	3.87
353	268	264	1196.45	2.95	0.00	3.39	4.10	4.10
357	288	268	1838.97	8.35	0.00	5.22	9.09	9.09
361	268	272	642.52	3.17	0.00	1.82	1.30	1.30
365	272	276	-744.69	0.86	0.00	2.11	1.70	1.70
369	276	280	-2479.47	16.55	0.00	7.03	15.81	15.81
373	280	284	562.31	1.32	0.00	1.60	1.01	1.01
377	284	288	1154.40	4.56	0.00	3.27	3.84	3.84
381	284	292	-592.09	1.57	0.00	1.68	1.11	1.11
385	292	288	684.57	6.12	0.00	2.80	3.54	3.54

387	300	304	-33.02	0.01	0.00	0.13	0.01	0.01
389	304	308	-33.02	0.02	0.00	0.21	0.04	0.04
391	308	312	-33.02	0.08	0.00	0.21	0.04	0.04
393	312	316	-33.02	0.02	0.00	0.21	0.04	0.04
395	316	320	-63.23	0.14	0.00	0.40	0.13	0.13
397	320	228	-63.23	0.03	0.00	0.26	0.04	0.04
801	I-804	800	-3041.79	6.05	0.00	8.63	23.08	23.08
805	280	O-804	-3041.79	3.69	0.00	8.63	23.08	23.08
901	I-904	900	-1276.65	1.76	0.00	3.62	4.62	4.62
905	292	O-904	-1276.65	3.83	0.00	3.62	4.62	4.62

N O D E R E S U L T S

NODE NAME	NODE TITLE	EXTERNAL DEMAND gpm	HYDRAULIC GRADE ft	NODE ELEVATION ft	PRESSURE HEAD ft	NODE PRESSURE psi
4		46.76	866.33	798.00	68.33	29.61
8		22.96	866.33	760.00	106.33	46.08
12		0.00	866.33	740.00	126.33	54.74
16		10.99	866.13	730.00	136.13	58.99
20		6.65	866.00	724.00	142.00	61.53
24		0.00	865.97	700.00	165.97	71.92
28		8.96	865.96	705.00	160.96	69.75
32		8.40	866.13	657.00	209.13	90.62
36		0.00	866.35	650.00	216.35	93.75
40		17.85	866.36	665.00	201.36	87.26
44		0.00	866.37	640.00	226.37	98.09
48		27.02	866.37	612.00	254.37	110.23
52		0.00	866.39	645.00	221.39	95.93
56		293.55(5.70)	866.36	637.00	229.36	99.39
60		4.83	866.39	630.00	236.39	102.44
64		192.09(5.70)	866.42	625.00	241.42	104.62
68		45.01	866.55	606.00	260.55	112.90
72		0.00	866.64	590.00	276.64	119.88
76		27.37	867.19	640.00	227.19	98.45
80		83.51	867.15	665.00	202.15	87.60
84		7.63	867.08	684.00	183.08	79.34
88		45.99	867.05	699.00	168.05	72.82
92		10.99	866.96	712.00	154.96	67.15
96		168.72(5.70)	866.77	715.00	151.77	65.77
100		11.48	866.62	718.00	148.62	64.40
104		0.00	866.46	698.00	168.46	73.00
108		0.00	866.25	725.00	141.25	61.21
112		9.94	865.94	725.00	140.94	61.07
116		5.60	866.61	743.00	123.61	53.56
120		5.60	867.23	779.00	88.23	38.23
124		0.00	867.33	800.00	67.33	29.17
128		0.00	867.34	800.00	67.34	29.18
132		11.48	867.40	784.00	83.40	36.14
136		46.69	868.14	745.00	123.14	53.36
140		46.06	868.35	721.00	147.35	63.85
144		62.02	868.36	695.00	173.36	75.12
148		134.54	867.71	641.00	226.71	98.24
152		0.00	868.54	675.00	193.54	83.87
156		642.60	870.04	705.00	165.04	71.52
160		41.37	870.21	700.00	170.21	73.76
164		0.00	869.50	683.00	186.50	80.81
168		52.50	869.22	675.00	194.22	84.16

170	241.11(5.70)	866.93	689.00	177.93	77.10
172	325.47(5.70)	868.22	668.00	200.22	86.76
176	0.00	867.46	652.00	215.46	93.37
180	11.34	866.92	679.00	187.92	81.43
184	69.86	865.54	766.00	99.54	43.14
188	443.46(5.70)	865.45	771.00	94.45	40.93
192	5.60	865.46	789.00	76.46	33.13
194	639.54(5.70)	865.42	783.00	82.42	35.72
196	22.68	865.67	764.00	101.67	44.06
200	0.00	865.92	740.00	125.92	54.57
204	11.97	865.94	723.00	142.94	61.94
208	74.62	865.97	694.00	171.97	74.52
212	0.00	866.68	679.00	187.68	81.33
216	8.19	867.00	655.00	212.00	91.87
220	0.00	867.09	630.00	237.09	102.74
224	0.00	867.12	620.00	247.12	107.08
228	37.17	867.12	620.00	247.12	107.08
232	14.07	867.31	643.00	224.31	97.20
236	0.00	867.31	653.00	214.31	92.87
240	69.86	867.27	651.00	216.27	93.72
244	22.68	867.56	634.00	233.56	101.21
248	82.04	867.79	624.00	243.79	105.64
252	17.36	872.46	648.00	224.46	97.27
254	0.00	873.08	650.00	223.08	96.67
256	28.07	872.94	644.00	228.94	99.21
260	63.98	871.15	650.00	221.15	95.83
264	0.00	877.44	680.00	197.44	85.56
268	0.00	880.38	694.00	186.38	80.77
272	0.00	877.21	696.00	181.21	78.52
276	0.00	878.06	726.00	152.06	65.89
280	0.00	894.62	750.00	144.62	62.67
284	0.00	893.29	731.00	162.29	70.33
288	0.00	888.74	729.00	159.74	69.22
292	0.00	894.86	739.00	155.86	67.54
300	0.00	866.82	640.00	226.82	98.29
304	0.00	866.83	627.00	239.83	103.93
308	0.00	866.85	627.00	239.85	103.94
312	0.00	866.93	583.00	283.93	123.04
316	30.21(5.70)	866.95	570.00	296.95	128.68
320	0.00	867.09	608.00	259.09	112.27
800	----	1020.00			
O-804	----	898.31	746.00	152.31	66.00
900	----	1020.00			
I-904	0.00	1018.24	751.00	267.24	115.80
0	----	905.50			
I-804	0.00	1013.95	746.00	267.95	116.11
O-904	----	898.69	751.00	147.69	64.00

M A X I M U M A N D M I N I M U M V A L U E S

P R E S S U R E S

JUNCTION NUMBER	MAXIMUM PRESSURES psi	JUNCTION NUMBER	MINIMUM PRESSURES psi
316	128.68	124	29.17
312	123.04	128	29.18
72	119.88	4	29.61
I-804	116.11	192	33.13
I-904	115.80	194	35.72

V E L O C I T I E S

PIPE NUMBER	MAXIMUM VELOCITY (ft/s)	PIPE NUMBER	MINIMUM VELOCITY (ft/s)
801	8.63	321	0.02
805	8.63	5	0.05
369	7.03	49	0.06
357	5.22	309	0.07
205	4.92	41	0.09

R E G U L A T I N G V A L V E R E P O R T

VALVE LABEL	VALVE TYPE	VALVE SETTING psi or gpm	VALVE STATUS	UPSTREAM PRESSURE psi	DOWNSTREAM PRESSURE psi	THROUGH FLOW gpm
804	PRV-1	66.00	ACTIVATED	116.11	66.00	3041.79
904	PRV-1	64.00	ACTIVATED	115.80	64.00	1276.65

S U M M A R Y O F I N F L O W S A N D O U T F L O W S

(+) INFLOWS INTO THE SYSTEM FROM SUPPLY NODES
(-) OUTFLOWS FROM THE SYSTEM INTO SUPPLY NODES

NODE NAME	FLOWRATE gpm	NODE TITLE
800	3041.79	
900	1276.65	
0	0.00	

NET SYSTEM INFLOW = 4318.44
NET SYSTEM OUTFLOW = 0.00
NET SYSTEM DEMAND = 4318.44

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Case: 3

C H A N G E S F O R N E X T S I M U L A T I O N (Change Number = 3)

JUNCTION DEMANDS CHANGED - PLEASE SEE RESULTS TABLE

RESULTS OBTAINED AFTER 9 TRIALS: ACCURACY = 0.68300E-06

The Trails at Carmel Mountain Ranch
920 Zone - Public Water System Analysis – Pipe Break Condition
Maximum Day Demand plus 1500 GPM Fire Flow at Node 56 (Pipe 1 Closed)

P I P E L I N E R E S U L T S

STATUS CODE: XX -CLOSED PIPE CV -CHECK VALVE

PIPE NAME	NODE NUMBERS #1	#2	FLOWRATE gpm	HEAD LOSS ft	MINOR LOSS ft	LINE VELO. ft/s	HL+ML/ 1000 ft/f	HL/ 1000 ft/f
1-XX	0	4						
5	4	8	-46.76	0.00	0.00	0.05	0.00	0.00
9	8	12	52.30	0.00	0.00	0.05	0.00	0.00
13	12	36	52.30	0.00	0.00	0.08	0.00	0.00
17	8	16	-122.02	0.42	0.00	0.78	0.43	0.43
21	16	20	-133.01	0.43	0.00	0.85	0.51	0.51
25	20	24	-139.66	0.13	0.00	0.89	0.55	0.55
29	24	28	-139.66	0.02	0.00	0.40	0.08	0.08
33	32	28	-157.23	0.51	0.00	1.00	0.69	0.69
37	36	32	-148.83	0.50	0.00	0.95	0.62	0.62
41	36	40	-103.93	0.07	0.00	0.29	0.04	0.04
45	40	44	-121.78	0.03	0.00	0.35	0.06	0.06
49	44	48	-6.33	0.00	0.00	0.04	0.00	0.00
53	48	52	-33.35	0.06	0.00	0.21	0.04	0.04
57	52	44	115.45	0.06	0.00	0.33	0.05	0.05
61	60	52	148.80	0.03	0.00	0.42	0.09	0.09
65	36	56	305.07	0.01	0.00	0.49	0.08	0.08
69	56	60	-1349.43	0.20	0.00	2.15	1.26	1.26
73	60	64	-950.65	0.10	0.00	1.52	0.66	0.66
77	64	68	-1051.75	0.31	0.00	1.68	0.80	0.80
81	68	72	-929.72	0.21	0.00	1.48	0.63	0.63
85	68	84	-167.03	1.38	0.00	1.07	0.77	0.77
89	72	76	-929.72	1.24	0.00	1.48	0.63	0.63
93	76	80	98.20	0.01	0.00	0.28	0.04	0.04
97	80	84	314.81	0.05	0.00	0.89	0.35	0.35
101	84	88	140.14	0.01	0.00	0.40	0.08	0.08
105	88	92	403.95	0.08	0.00	1.15	0.55	0.55
109	92	96	616.67	0.19	0.00	1.75	1.20	1.20
113	96	100	527.87	0.22	0.00	1.50	0.90	0.90
117	100	116	-31.48	0.02	0.00	0.20	0.04	0.04
121	100	104	547.87	0.29	0.00	1.55	0.97	0.97
125	60	104	-552.41	0.99	0.00	1.57	0.98	0.98
129	104	108	-4.54	0.00	0.00	0.01	0.00	0.00
133	108	112	205.02	0.06	0.00	0.58	0.16	0.16
137	28	112	-305.86	0.11	0.00	0.87	0.33	0.33
141	108	116	-209.56	0.31	0.00	1.34	1.17	1.17
145	116	120	-246.64	0.84	0.00	1.57	1.59	1.59
149	120	124	-252.24	0.13	0.00	0.72	0.23	0.23
153	124	128	-252.24	0.02	0.00	0.72	0.23	0.23
157	128	132	-252.24	0.08	0.00	0.72	0.23	0.23
161	132	92	223.71	0.69	0.00	0.91	0.45	0.45

165	136	132	487.43	1.06	0.00	1.99	1.89	1.89
169	140	136	534.12	0.28	0.00	1.52	0.92	0.92
173	88	140	-309.80	1.94	0.00	1.27	0.82	0.82
177	140	160	-792.22	2.75	0.00	2.25	1.91	1.91
181	140	144	-97.76	0.01	0.00	0.28	0.04	0.04
185	80	144	-300.12	1.89	0.00	1.23	0.77	0.77
189	152	144	459.89	0.22	0.00	1.30	0.70	0.70
193	148	152	-1189.83	1.25	0.00	1.90	1.00	1.00
197	76	148	-1055.29	0.85	0.00	1.68	0.80	0.80
201	152	156	-1649.73	2.17	0.00	2.63	1.83	1.83
205	156	276	-1913.21	9.62	0.00	5.43	9.78	9.78
209	160	156	379.12	0.35	0.00	1.08	0.49	0.49
213	272	160	1520.85	8.30	0.00	4.31	6.39	6.39
217	160	164	308.14	0.36	0.00	1.26	0.81	0.81
221	164	168	308.14	0.14	0.00	1.26	0.81	0.81
225	168	260	-582.78	2.26	0.00	2.38	2.63	2.63
227	170	168	-282.33	2.27	0.00	1.80	2.04	2.04
229	180	170	-155.43	0.16	0.00	0.99	0.67	0.67
233	168	172	556.09	0.76	0.00	2.27	2.41	2.41
237	172	176	384.79	1.07	0.00	1.57	1.22	1.22
241	248	176	265.45	0.35	0.00	1.08	0.61	0.61
245	176	240	195.68	0.31	0.00	0.80	0.35	0.35
249	176	180	454.55	0.60	0.00	1.86	1.66	1.66
253	180	184	598.64	2.25	0.00	2.45	2.76	2.76
257	184	188	528.78	0.15	0.00	1.50	0.90	0.90
261	188	192	295.38	0.09	0.00	0.84	0.31	0.31
265	192	194	223.27	0.13	0.00	0.63	0.18	0.18
267	194	112	-113.33	0.03	0.00	0.32	0.05	0.05
269	196	192	-66.51	0.04	0.00	0.27	0.05	0.05
273	200	196	-43.83	0.02	0.00	0.18	0.02	0.02
277	112	200	-224.10	0.05	0.00	0.64	0.18	0.18
281	200	204	-180.28	0.05	0.00	0.51	0.12	0.12
285	204	208	-192.25	0.12	0.00	0.55	0.14	0.14
289	208	212	-266.87	1.53	0.00	1.70	1.83	1.83
293	212	300	-266.87	0.30	0.00	1.09	0.62	0.62
295	300	216	-208.97	0.36	0.00	0.85	0.39	0.39
297	216	220	-217.16	0.17	0.00	0.89	0.42	0.42
301	220	224	-217.16	0.06	0.00	0.89	0.42	0.42
305	224	240	-221.50	0.26	0.00	0.90	0.44	0.44
309	224	228	4.35	0.00	0.00	0.02	0.00	0.00
313	228	232	-106.62	0.30	0.00	0.68	0.34	0.34
317	232	244	-109.77	0.32	0.00	0.70	0.35	0.35
321	236	232	10.93	0.00	0.00	0.07	0.00	0.00
325	236	240	95.68	0.05	0.00	0.61	0.27	0.27
329	244	236	106.61	0.32	0.00	0.68	0.34	0.34
333	244	248	-239.06	0.29	0.00	1.53	1.50	1.50
337	252	248	586.55	5.25	0.00	2.40	2.66	2.66
339	254	252	603.91	0.69	0.00	2.47	2.81	2.81
341	256	254	-247.75	0.16	0.00	1.01	0.54	0.54
345	260	256	-646.76	2.04	0.00	2.64	3.19	3.19
347	264	254	851.66	4.93	0.00	3.48	5.31	5.31
349	256	264	-427.07	5.10	0.00	2.73	4.38	4.38
353	268	264	1278.73	3.33	0.00	3.63	4.64	4.64
357	288	268	1999.06	9.75	0.00	5.67	10.61	10.61
361	268	272	720.33	3.92	0.00	2.04	1.60	1.60
365	272	276	-800.52	0.98	0.00	2.27	1.95	1.95
369	276	280	-2713.73	19.56	0.00	7.70	18.68	18.68
373	280	284	612.40	1.55	0.00	1.74	1.19	1.19
377	284	288	1255.09	5.32	0.00	3.56	4.48	4.48
381	284	292	-642.69	1.82	0.00	1.82	1.30	1.30
385	292	288	743.97	7.14	0.00	3.04	4.13	4.13

387	300	304	-57.90	0.02	0.00	0.24	0.04	0.04
389	304	308	-57.90	0.06	0.00	0.37	0.11	0.11
391	308	312	-57.90	0.23	0.00	0.37	0.11	0.11
393	312	316	-57.90	0.05	0.00	0.37	0.11	0.11
395	316	320	-73.80	0.19	0.00	0.47	0.17	0.17
397	320	228	-73.80	0.03	0.00	0.30	0.06	0.06
801	I-804	800	-3326.13	7.14	0.00	9.43	27.24	27.24
805	280	O-804	-3326.13	4.35	0.00	9.43	27.24	27.24
901	I-904	900	-1386.66	2.05	0.00	3.93	5.39	5.39
905	292	O-904	-1386.66	4.47	0.00	3.93	5.39	5.39

N O D E R E S U L T S

NODE NAME	NODE TITLE	EXTERNAL DEMAND gpm	HYDRAULIC GRADE ft	NODE ELEVATION ft	PRESSURE HEAD ft	NODE PRESSURE psi
4		46.76	858.47	798.00	60.47	26.20
8		22.96	858.47	760.00	98.47	42.67
12		0.00	858.47	740.00	118.47	51.34
16		10.99	858.89	730.00	128.89	55.85
20		6.65	859.32	724.00	135.32	58.64
24		0.00	859.45	700.00	159.45	69.09
28		8.96	859.47	705.00	154.47	66.94
32		8.40	858.96	657.00	201.96	87.52
36		0.00	858.46	650.00	208.46	90.33
40		17.85	858.53	665.00	193.53	83.86
44		0.00	858.56	640.00	218.56	94.71
48		27.02	858.56	612.00	246.56	106.84
52		0.00	858.62	645.00	213.62	92.57
56		1654.50(**)	858.45	637.00	221.45	95.96
60		4.83	858.65	630.00	228.65	99.08
64		101.10(3.00)	858.75	625.00	233.75	101.29
68		45.01	859.06	606.00	253.06	109.66
72		0.00	859.26	590.00	269.26	116.68
76		27.37	860.50	640.00	220.50	95.55
80		83.51	860.49	665.00	195.49	84.71
84		7.63	860.43	684.00	176.43	76.45
88		45.99	860.42	699.00	161.42	69.95
92		10.99	860.34	712.00	148.34	64.28
96		88.80(3.00)	860.14	715.00	145.14	62.90
100		11.48	859.93	718.00	141.93	61.50
104		0.00	859.64	698.00	161.64	70.05
108		0.00	859.64	725.00	134.64	58.35
112		9.94	859.58	725.00	134.58	58.32
116		5.60	859.95	743.00	116.95	50.68
120		5.60	860.79	779.00	81.79	35.44
124		0.00	860.92	800.00	60.92	26.40
128		0.00	860.94	800.00	60.94	26.41
132		11.48	861.02	784.00	77.02	33.38
136		46.69	862.08	745.00	117.08	50.74
140		46.06	862.36	721.00	141.36	61.26
144		62.02	862.37	695.00	167.37	72.53
148		134.54	861.35	641.00	220.35	95.48
152		0.00	862.60	675.00	187.60	81.29
156		642.60	864.77	705.00	159.77	69.23
160		41.37	865.11	700.00	165.11	71.55
164		0.00	864.75	683.00	181.75	78.76
168		52.50	864.61	675.00	189.61	82.16

170	126.90(3.00)	862.34	689.00	173.34	75.11
172	171.30(3.00)	863.85	668.00	195.85	84.87
176	0.00	862.78	652.00	210.78	91.34
180	11.34	862.18	679.00	183.18	79.38
184	69.86	859.93	766.00	93.93	40.70
188	233.40(3.00)	859.77	771.00	88.77	38.47
192	5.60	859.68	789.00	70.68	30.63
194	336.60(3.00)	859.55	783.00	76.55	33.17
196	22.68	859.65	764.00	95.65	41.45
200	0.00	859.63	740.00	119.63	51.84
204	11.97	859.68	723.00	136.68	59.23
208	74.62	859.79	694.00	165.79	71.84
212	0.00	861.32	679.00	182.32	79.01
216	8.19	861.98	655.00	206.98	89.69
220	0.00	862.15	630.00	232.15	100.60
224	0.00	862.21	620.00	242.21	104.96
228	37.17	862.21	620.00	242.21	104.96
232	14.07	862.51	643.00	219.51	95.12
236	0.00	862.51	653.00	209.51	90.79
240	69.86	862.47	651.00	211.47	91.64
244	22.68	862.83	634.00	228.83	99.16
248	82.04	863.13	624.00	239.13	103.62
252	17.36	868.38	648.00	220.38	95.50
254	0.00	869.07	650.00	219.07	94.93
256	28.07	868.91	644.00	224.91	97.46
260	63.98	866.86	650.00	216.86	93.97
264	0.00	874.00	680.00	194.00	84.07
268	0.00	877.33	694.00	183.33	79.44
272	0.00	873.41	696.00	177.41	76.88
276	0.00	874.39	726.00	148.39	64.30
280	0.00	893.95	750.00	143.95	62.38
284	0.00	892.40	731.00	161.40	69.94
288	0.00	887.08	729.00	158.08	68.50
292	0.00	894.23	739.00	155.23	67.26
300	0.00	861.62	640.00	221.62	96.04
304	0.00	861.64	627.00	234.64	101.68
308	0.00	861.70	627.00	234.70	101.70
312	0.00	861.93	583.00	278.93	120.87
316	15.90(3.00)	861.99	570.00	291.99	126.53
320	0.00	862.17	608.00	254.17	110.14
800	----	1020.00			
O-804	----	898.31	746.00	152.31	66.00
900	----	1020.00			
I-904	0.00	1017.95	751.00	266.95	115.68
0	----	905.50			
I-804	0.00	1012.86	746.00	266.86	115.64
O-904	----	898.69	751.00	147.69	64.00

M A X I M U M A N D M I N I M U M V A L U E S

P R E S S U R E S

JUNCTION NUMBER	MAXIMUM PRESSURES psi	JUNCTION NUMBER	MINIMUM PRESSURES psi
316	126.53	4	26.20
312	120.87	124	26.40
72	116.68	128	26.41
I-904	115.68	192	30.63
I-804	115.64	194	33.17

V E L O C I T I E S

PIPE NUMBER	MAXIMUM VELOCITY (ft/s)	PIPE NUMBER	MINIMUM VELOCITY (ft/s)
801	9.43	129	0.01
805	9.43	309	0.02
369	7.70	49	0.04
357	5.67	5	0.05
205	5.43	9	0.05

R E G U L A T I N G V A L V E R E P O R T

VALVE LABEL	VALVE TYPE	VALVE SETTING psi or gpm	VALVE STATUS	UPSTREAM PRESSURE psi	DOWNSTREAM PRESSURE psi	THROUGH FLOW gpm
804	PRV-1	66.00	ACTIVATED	115.64	66.00	3326.13
904	PRV-1	64.00	ACTIVATED	115.68	64.00	1386.66

S U M M A R Y O F I N F L O W S A N D O U T F L O W S

(+) INFLOWS INTO THE SYSTEM FROM SUPPLY NODES
(-) OUTFLOWS FROM THE SYSTEM INTO SUPPLY NODES

NODE NAME	FLOWRATE gpm	NODE TITLE
800	3326.13	
900	1386.66	
0	0.00	

NET SYSTEM INFLOW = 4712.79
NET SYSTEM OUTFLOW = 0.00
NET SYSTEM DEMAND = 4712.79

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Case: 4

C H A N G E S F O R N E X T S I M U L A T I O N (Change Number = 4)

JUNCTION DEMANDS CHANGED - PLEASE SEE RESULTS TABLE

RESULTS OBTAINED AFTER 8 TRIALS: ACCURACY = 0.83023E-06

The Trails at Carmel Mountain Ranch
920 Zone - Public Water System Analysis – Pipe Break Condition
Maximum Day Demand plus 1500 GPM Fire Flow at Node 64 (Pipe 1 Closed)

P I P E L I N E R E S U L T S

STATUS CODE: XX -CLOSED PIPE CV -CHECK VALVE

PIPE NAME	NODE NUMBERS #1	#2	FLOWRATE gpm	HEAD LOSS ft	MINOR LOSS ft	LINE VELO. ft/s	HL+ML/ 1000 ft/f	HL/ 1000 ft/f
1-XX	0	4						
5	4	8	-46.76	0.00	0.00	0.05	0.00	0.00
9	8	12	40.75	0.00	0.00	0.04	0.00	0.00
13	12	36	40.75	0.00	0.00	0.07	0.00	0.00
17	8	16	-110.47	0.35	0.00	0.71	0.36	0.36
21	16	20	-121.46	0.37	0.00	0.78	0.43	0.43
25	20	24	-128.11	0.11	0.00	0.82	0.47	0.47
29	24	28	-128.11	0.02	0.00	0.36	0.07	0.07
33	32	28	-143.48	0.43	0.00	0.92	0.58	0.58
37	36	32	-135.08	0.42	0.00	0.86	0.52	0.52
41	36	40	25.53	0.01	0.00	0.07	0.00	0.00
45	40	44	7.68	0.00	0.00	0.02	0.00	0.00
49	44	48	18.55	0.00	0.00	0.12	0.01	0.01
53	48	52	-8.47	0.00	0.00	0.05	0.00	0.00
57	52	44	10.87	0.00	0.00	0.03	0.00	0.00
61	60	52	19.34	0.00	0.00	0.05	0.00	0.00
65	36	56	150.30	0.00	0.00	0.24	0.02	0.02
69	56	60	-4.20	0.00	0.00	0.01	0.00	0.00
73	60	64	524.77	0.03	0.00	0.84	0.22	0.22
77	64	68	-1076.33	0.32	0.00	1.72	0.83	0.83
81	68	72	-949.94	0.21	0.00	1.52	0.66	0.66
85	68	84	-171.39	1.45	0.00	1.09	0.81	0.81
89	72	76	-949.94	1.29	0.00	1.52	0.66	0.66
93	76	80	81.95	0.01	0.00	0.23	0.03	0.03
97	80	84	299.52	0.05	0.00	0.85	0.32	0.32
101	84	88	120.49	0.01	0.00	0.34	0.06	0.06
105	88	92	384.66	0.08	0.00	1.09	0.50	0.50
109	92	96	598.38	0.18	0.00	1.70	1.14	1.14
113	96	100	509.58	0.20	0.00	1.45	0.84	0.84
117	100	116	-33.76	0.03	0.00	0.22	0.04	0.04
121	100	104	531.85	0.27	0.00	1.51	0.91	0.91
125	60	104	-553.14	0.99	0.00	1.57	0.98	0.98
129	104	108	-21.29	0.00	0.00	0.06	0.00	0.00
133	108	112	183.25	0.05	0.00	0.52	0.13	0.13
137	28	112	-280.55	0.10	0.00	0.80	0.28	0.28
141	108	116	-204.53	0.30	0.00	1.31	1.12	1.12
145	116	120	-243.89	0.82	0.00	1.56	1.55	1.55
149	120	124	-249.49	0.13	0.00	0.71	0.22	0.22
153	124	128	-249.49	0.02	0.00	0.71	0.22	0.22
157	128	132	-249.49	0.08	0.00	0.71	0.22	0.22
161	132	92	224.70	0.69	0.00	0.92	0.45	0.45

165	136	132	485.67	1.05	0.00	1.98	1.88	1.88
169	140	136	532.36	0.28	0.00	1.51	0.92	0.92
173	88	140	-310.16	1.94	0.00	1.27	0.82	0.82
177	140	160	-793.35	2.76	0.00	2.25	1.92	1.92
181	140	144	-95.24	0.01	0.00	0.27	0.04	0.04
185	80	144	-301.08	1.90	0.00	1.23	0.77	0.77
189	152	144	458.34	0.22	0.00	1.30	0.69	0.69
193	148	152	-1193.80	1.26	0.00	1.90	1.01	1.01
197	76	148	-1059.26	0.85	0.00	1.69	0.81	0.81
201	152	156	-1652.14	2.18	0.00	2.64	1.84	1.84
205	156	276	-1913.62	9.63	0.00	5.43	9.78	9.78
209	160	156	381.13	0.35	0.00	1.08	0.49	0.49
213	272	160	1520.95	8.30	0.00	4.31	6.39	6.39
217	160	164	305.11	0.36	0.00	1.25	0.79	0.79
221	164	168	305.11	0.14	0.00	1.25	0.79	0.79
225	168	260	-582.90	2.26	0.00	2.38	2.63	2.63
227	170	168	-281.28	2.25	0.00	1.80	2.02	2.02
229	180	170	-154.38	0.16	0.00	0.99	0.67	0.67
233	168	172	554.23	0.75	0.00	2.26	2.40	2.40
237	172	176	382.93	1.06	0.00	1.56	1.21	1.21
241	248	176	265.27	0.35	0.00	1.08	0.61	0.61
245	176	240	195.01	0.31	0.00	0.80	0.35	0.35
249	176	180	453.19	0.60	0.00	1.85	1.65	1.65
253	180	184	596.23	2.23	0.00	2.44	2.74	2.74
257	184	188	526.37	0.15	0.00	1.49	0.90	0.90
261	188	192	292.97	0.09	0.00	0.83	0.30	0.30
265	192	194	221.77	0.13	0.00	0.63	0.18	0.18
267	194	112	-114.83	0.03	0.00	0.33	0.05	0.05
269	196	192	-65.60	0.04	0.00	0.27	0.05	0.05
273	200	196	-42.92	0.02	0.00	0.18	0.02	0.02
277	112	200	-222.07	0.05	0.00	0.63	0.18	0.18
281	200	204	-179.15	0.05	0.00	0.51	0.12	0.12
285	204	208	-191.12	0.11	0.00	0.54	0.14	0.14
289	208	212	-265.74	1.52	0.00	1.70	1.82	1.82
293	212	300	-265.74	0.30	0.00	1.09	0.61	0.61
295	300	216	-208.10	0.35	0.00	0.85	0.39	0.39
297	216	220	-216.29	0.17	0.00	0.88	0.42	0.42
301	220	224	-216.29	0.05	0.00	0.88	0.42	0.42
305	224	240	-220.71	0.26	0.00	0.90	0.44	0.44
309	224	228	4.43	0.00	0.00	0.02	0.00	0.00
313	228	232	-106.29	0.30	0.00	0.68	0.33	0.33
317	232	244	-109.53	0.32	0.00	0.70	0.35	0.35
321	236	232	10.82	0.00	0.00	0.07	0.00	0.00
325	236	240	95.56	0.05	0.00	0.61	0.27	0.27
329	244	236	106.38	0.32	0.00	0.68	0.33	0.33
333	244	248	-238.60	0.29	0.00	1.52	1.49	1.49
337	252	248	585.91	5.24	0.00	2.39	2.66	2.66
339	254	252	603.27	0.69	0.00	2.46	2.80	2.80
341	256	254	-248.03	0.16	0.00	1.01	0.54	0.54
345	260	256	-646.88	2.04	0.00	2.64	3.19	3.19
347	264	254	851.30	4.93	0.00	3.48	5.30	5.30
349	256	264	-426.92	5.09	0.00	2.72	4.38	4.38
353	268	264	1278.22	3.33	0.00	3.63	4.63	4.63
357	288	268	1998.92	9.75	0.00	5.67	10.61	10.61
361	268	272	720.70	3.93	0.00	2.04	1.60	1.60
365	272	276	-800.26	0.98	0.00	2.27	1.95	1.95
369	276	280	-2713.87	19.57	0.00	7.70	18.69	18.69
373	280	284	612.31	1.55	0.00	1.74	1.19	1.19
377	284	288	1254.99	5.32	0.00	3.56	4.48	4.48
381	284	292	-642.68	1.82	0.00	1.82	1.30	1.30
385	292	288	743.93	7.14	0.00	3.04	4.13	4.13

387	300	304	-57.64	0.02	0.00	0.24	0.04	0.04
389	304	308	-57.64	0.06	0.00	0.37	0.11	0.11
391	308	312	-57.64	0.23	0.00	0.37	0.11	0.11
393	312	316	-57.64	0.05	0.00	0.37	0.11	0.11
395	316	320	-73.54	0.19	0.00	0.47	0.17	0.17
397	320	228	-73.54	0.03	0.00	0.30	0.06	0.06
801	I-804	800	-3326.18	7.14	0.00	9.44	27.24	27.24
805	280	O-804	-3326.18	4.36	0.00	9.44	27.24	27.24
901	I-904	900	-1386.61	2.05	0.00	3.93	5.39	5.39
905	292	O-904	-1386.61	4.47	0.00	3.93	5.39	5.39

N O D E R E S U L T S

NODE NAME	NODE TITLE	EXTERNAL DEMAND gpm	HYDRAULIC GRADE ft	NODE ELEVATION ft	PRESSURE HEAD ft	NODE PRESSURE psi
4		46.76	858.69	798.00	60.69	26.30
8		22.96	858.69	760.00	98.69	42.77
12		0.00	858.69	740.00	118.69	51.43
16		10.99	859.04	730.00	129.04	55.92
20		6.65	859.40	724.00	135.40	58.68
24		0.00	859.51	700.00	159.51	69.12
28		8.96	859.53	705.00	154.53	66.96
32		8.40	859.11	657.00	202.11	87.58
36		0.00	858.69	650.00	208.69	90.43
40		17.85	858.68	665.00	193.68	83.93
44		0.00	858.68	640.00	218.68	94.76
48		27.02	858.68	612.00	246.68	106.89
52		0.00	858.68	645.00	213.68	92.60
56		154.50(3.00)	858.68	637.00	221.68	96.06
60		4.83	858.68	630.00	228.68	99.10
64		1601.10(**)	858.65	625.00	233.65	101.25
68		45.01	858.97	606.00	252.97	109.62
72		0.00	859.19	590.00	269.19	116.65
76		27.37	860.48	640.00	220.48	95.54
80		83.51	860.47	665.00	195.47	84.70
84		7.63	860.42	684.00	176.42	76.45
88		45.99	860.41	699.00	161.41	69.94
92		10.99	860.33	712.00	148.33	64.28
96		88.80(3.00)	860.15	715.00	145.15	62.90
100		11.48	859.95	718.00	141.95	61.51
104		0.00	859.68	698.00	161.68	70.06
108		0.00	859.68	725.00	134.68	58.36
112		9.94	859.63	725.00	134.63	58.34
116		5.60	859.97	743.00	116.97	50.69
120		5.60	860.80	779.00	81.80	35.45
124		0.00	860.93	800.00	60.93	26.40
128		0.00	860.94	800.00	60.94	26.41
132		11.48	861.02	784.00	77.02	33.38
136		46.69	862.07	745.00	117.07	50.73
140		46.06	862.35	721.00	141.35	61.25
144		62.02	862.36	695.00	167.36	72.52
148		134.54	861.33	641.00	220.33	95.48
152		0.00	862.59	675.00	187.59	81.29
156		642.60	864.76	705.00	159.76	69.23
160		41.37	865.11	700.00	165.11	71.55
164		0.00	864.75	683.00	181.75	78.76
168		52.50	864.61	675.00	189.61	82.17

170	126.90(3.00)	862.36	689.00	173.36	75.12
172	171.30(3.00)	863.86	668.00	195.86	84.87
176	0.00	862.80	652.00	210.80	91.35
180	11.34	862.20	679.00	183.20	79.39
184	69.86	859.97	766.00	93.97	40.72
188	233.40(3.00)	859.82	771.00	88.82	38.49
192	5.60	859.73	789.00	70.73	30.65
194	336.60(3.00)	859.60	783.00	76.60	33.19
196	22.68	859.69	764.00	95.69	41.47
200	0.00	859.68	740.00	119.68	51.86
204	11.97	859.72	723.00	136.72	59.25
208	74.62	859.84	694.00	165.84	71.86
212	0.00	861.35	679.00	182.35	79.02
216	8.19	862.01	655.00	207.01	89.70
220	0.00	862.18	630.00	232.18	100.61
224	0.00	862.23	620.00	242.23	104.97
228	37.17	862.23	620.00	242.23	104.97
232	14.07	862.53	643.00	219.53	95.13
236	0.00	862.53	653.00	209.53	90.80
240	69.86	862.49	651.00	211.49	91.65
244	22.68	862.85	634.00	228.85	99.17
248	82.04	863.15	624.00	239.15	103.63
252	17.36	868.39	648.00	220.39	95.50
254	0.00	869.08	650.00	219.08	94.93
256	28.07	868.91	644.00	224.91	97.46
260	63.98	866.87	650.00	216.87	93.98
264	0.00	874.01	680.00	194.01	84.07
268	0.00	877.34	694.00	183.34	79.45
272	0.00	873.41	696.00	177.41	76.88
276	0.00	874.39	726.00	148.39	64.30
280	0.00	893.95	750.00	143.95	62.38
284	0.00	892.40	731.00	161.40	69.94
288	0.00	887.08	729.00	158.08	68.50
292	0.00	894.23	739.00	155.23	67.26
300	0.00	861.65	640.00	221.65	96.05
304	0.00	861.67	627.00	234.67	101.69
308	0.00	861.73	627.00	234.73	101.72
312	0.00	861.96	583.00	278.96	120.88
316	15.90(3.00)	862.01	570.00	292.01	126.54
320	0.00	862.20	608.00	254.20	110.15
800	----	1020.00			
O-804	----	898.31	746.00	152.31	66.00
900	----	1020.00			
I-904	0.00	1017.95	751.00	266.95	115.68
0	----	905.50			
I-804	0.00	1012.86	746.00	266.86	115.64
O-904	----	898.69	751.00	147.69	64.00

M A X I M U M A N D M I N I M U M V A L U E S

P R E S S U R E S

JUNCTION NUMBER	MAXIMUM PRESSURES psi	JUNCTION NUMBER	MINIMUM PRESSURES psi
316	126.54	4	26.30
312	120.88	124	26.40
72	116.65	128	26.41
I-904	115.68	192	30.65
I-804	115.64	194	33.19

V E L O C I T I E S

PIPE NUMBER	MAXIMUM VELOCITY (ft/s)	PIPE NUMBER	MINIMUM VELOCITY (ft/s)
801	9.44	69	0.01
805	9.44	309	0.02
369	7.70	45	0.02
357	5.67	57	0.03
205	5.43	9	0.04

R E G U L A T I N G V A L V E R E P O R T

VALVE LABEL	VALVE TYPE	VALVE SETTING psi or gpm	VALVE STATUS	UPSTREAM PRESSURE psi	DOWNSTREAM PRESSURE psi	THROUGH FLOW gpm
804	PRV-1	66.00	ACTIVATED	115.64	66.00	3326.18
904	PRV-1	64.00	ACTIVATED	115.68	64.00	1386.61

S U M M A R Y O F I N F L O W S A N D O U T F L O W S

(+) INFLOWS INTO THE SYSTEM FROM SUPPLY NODES
(-) OUTFLOWS FROM THE SYSTEM INTO SUPPLY NODES

NODE NAME	FLOWRATE gpm	NODE TITLE
800	3326.18	
900	1386.61	
0	0.00	

NET SYSTEM INFLOW = 4712.79
NET SYSTEM OUTFLOW = 0.00
NET SYSTEM DEMAND = 4712.79

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Case: 5

C H A N G E S F O R N E X T S I M U L A T I O N (Change Number = 5)

JUNCTION DEMANDS CHANGED - PLEASE SEE RESULTS TABLE

RESULTS OBTAINED AFTER 11 TRIALS: ACCURACY = 0.60692E-06

The Trails at Carmel Mountain Ranch
920 Zone - Public Water System Analysis – Pipe Break Condition
Maximum Day Demand plus 1500 GPM Fire Flow at Node 96 (Pipe 1 Closed)

P I P E L I N E R E S U L T S

STATUS CODE: XX -CLOSED PIPE CV -CHECK VALVE

PIPE NAME	NODE NUMBERS #1	#2	FLOWRATE gpm	HEAD LOSS ft	MINOR LOSS ft	LINE VELO. ft/s	HL+ML/ 1000 ft/f	HL/ 1000 ft/f
1-XX	0	4						
5	4	8	-46.76	0.00	0.00	0.05	0.00	0.00
9	8	12	-89.82	0.00	0.00	0.09	0.00	0.00
13	12	36	-89.82	0.01	0.00	0.14	0.01	0.01
17	8	16	20.10	0.01	0.00	0.13	0.02	0.02
21	16	20	9.11	0.00	0.00	0.06	0.00	0.00
25	20	24	2.46	0.00	0.00	0.02	0.00	0.00
29	24	28	2.46	0.00	0.00	0.01	0.00	0.00
33	32	28	17.10	0.01	0.00	0.11	0.01	0.01
37	36	32	25.50	0.02	0.00	0.16	0.02	0.02
41	36	40	-3.67	0.00	0.00	0.01	0.00	0.00
45	40	44	-21.52	0.00	0.00	0.06	0.00	0.00
49	44	48	14.62	0.00	0.00	0.09	0.01	0.01
53	48	52	-12.40	0.01	0.00	0.08	0.01	0.01
57	52	44	36.14	0.01	0.00	0.10	0.01	0.01
61	60	52	48.54	0.00	0.00	0.14	0.01	0.01
65	36	56	-111.64	0.00	0.00	0.18	0.01	0.01
69	56	60	-266.14	0.01	0.00	0.42	0.06	0.06
73	60	64	-528.33	0.03	0.00	0.84	0.22	0.22
77	64	68	-629.43	0.12	0.00	1.00	0.31	0.31
81	68	72	-601.96	0.09	0.00	0.96	0.28	0.28
85	68	84	-72.47	0.29	0.00	0.46	0.16	0.16
89	72	76	-601.96	0.55	0.00	0.96	0.28	0.28
93	76	80	388.74	0.17	0.00	1.10	0.51	0.51
97	80	84	604.75	0.18	0.00	1.72	1.16	1.16
101	84	88	524.65	0.14	0.00	1.49	0.89	0.89
105	88	92	808.23	0.30	0.00	2.29	1.98	1.98
109	92	96	1067.50	0.54	0.00	3.03	3.32	3.32
113	96	100	-521.30	0.21	0.00	1.48	0.88	0.88
117	100	116	-130.92	0.34	0.00	0.84	0.49	0.49
121	100	104	-401.86	0.16	0.00	1.14	0.54	0.54
125	60	104	208.81	0.16	0.00	0.59	0.16	0.16
129	104	108	-193.05	0.11	0.00	0.55	0.14	0.14
133	108	112	-97.25	0.02	0.00	0.28	0.04	0.04
137	28	112	10.60	0.00	0.00	0.03	0.00	0.00
141	108	116	-95.80	0.07	0.00	0.61	0.28	0.28
145	116	120	-232.32	0.75	0.00	1.48	1.42	1.42
149	120	124	-237.92	0.12	0.00	0.67	0.21	0.21
153	124	128	-237.92	0.02	0.00	0.67	0.21	0.21
157	128	132	-237.92	0.07	0.00	0.67	0.21	0.21
161	132	92	270.27	0.97	0.00	1.10	0.63	0.63

165	136	132	519.67	1.19	0.00	2.12	2.13	2.13
169	140	136	566.36	0.31	0.00	1.61	1.03	1.03
173	88	140	-329.57	2.17	0.00	1.35	0.91	0.91
177	140	160	-802.42	2.82	0.00	2.28	1.96	1.96
181	140	144	-139.56	0.03	0.00	0.40	0.08	0.08
185	80	144	-299.52	1.88	0.00	1.22	0.77	0.77
189	152	144	501.10	0.26	0.00	1.42	0.82	0.82
193	148	152	-1152.61	1.18	0.00	1.84	0.94	0.94
197	76	148	-1018.07	0.79	0.00	1.62	0.75	0.75
201	152	156	-1653.72	2.18	0.00	2.64	1.84	1.84
205	156	276	-1914.38	9.63	0.00	5.43	9.79	9.79
209	160	156	381.94	0.35	0.00	1.08	0.49	0.49
213	272	160	1521.60	8.31	0.00	4.32	6.40	6.40
217	160	164	295.87	0.34	0.00	1.21	0.75	0.75
221	164	168	295.87	0.13	0.00	1.21	0.75	0.75
225	168	260	-583.35	2.26	0.00	2.38	2.63	2.63
227	170	168	-278.11	2.21	0.00	1.78	1.98	1.98
229	180	170	-151.21	0.15	0.00	0.97	0.64	0.64
233	168	172	548.61	0.74	0.00	2.24	2.35	2.35
237	172	176	377.31	1.03	0.00	1.54	1.18	1.18
241	248	176	264.78	0.35	0.00	1.08	0.61	0.61
245	176	240	192.98	0.30	0.00	0.79	0.34	0.34
249	176	180	449.11	0.59	0.00	1.83	1.62	1.62
253	180	184	588.98	2.18	0.00	2.41	2.68	2.68
257	184	188	519.12	0.15	0.00	1.47	0.87	0.87
261	188	192	285.72	0.08	0.00	0.81	0.29	0.29
265	192	194	217.30	0.12	0.00	0.62	0.17	0.17
267	194	112	-119.30	0.03	0.00	0.34	0.06	0.06
269	196	192	-62.82	0.03	0.00	0.26	0.04	0.04
273	200	196	-40.14	0.01	0.00	0.16	0.02	0.02
277	112	200	-215.89	0.04	0.00	0.61	0.17	0.17
281	200	204	-175.75	0.04	0.00	0.50	0.12	0.12
285	204	208	-187.72	0.11	0.00	0.53	0.13	0.13
289	208	212	-262.34	1.48	0.00	1.67	1.78	1.78
293	212	300	-262.34	0.29	0.00	1.07	0.60	0.60
295	300	216	-205.48	0.34	0.00	0.84	0.38	0.38
297	216	220	-213.67	0.17	0.00	0.87	0.41	0.41
301	220	224	-213.67	0.05	0.00	0.87	0.41	0.41
305	224	240	-218.33	0.25	0.00	0.89	0.43	0.43
309	224	228	4.67	0.00	0.00	0.02	0.00	0.00
313	228	232	-105.26	0.30	0.00	0.67	0.33	0.33
317	232	244	-108.83	0.32	0.00	0.69	0.35	0.35
321	236	232	10.50	0.00	0.00	0.07	0.00	0.00
325	236	240	95.21	0.05	0.00	0.61	0.27	0.27
329	244	236	105.72	0.32	0.00	0.67	0.33	0.33
333	244	248	-237.23	0.29	0.00	1.51	1.48	1.48
337	252	248	584.05	5.21	0.00	2.39	2.64	2.64
339	254	252	601.41	0.68	0.00	2.46	2.79	2.79
341	256	254	-248.91	0.16	0.00	1.02	0.54	0.54
345	260	256	-647.33	2.05	0.00	2.64	3.19	3.19
347	264	254	850.32	4.92	0.00	3.47	5.29	5.29
349	256	264	-426.49	5.08	0.00	2.72	4.37	4.37
353	268	264	1276.81	3.32	0.00	3.62	4.62	4.62
357	288	268	1998.55	9.74	0.00	5.67	10.60	10.60
361	268	272	721.74	3.94	0.00	2.05	1.61	1.61
365	272	276	-799.87	0.98	0.00	2.27	1.94	1.94
369	276	280	-2714.24	19.57	0.00	7.70	18.69	18.69
373	280	284	612.07	1.55	0.00	1.74	1.18	1.18
377	284	288	1254.74	5.32	0.00	3.56	4.48	4.48
381	284	292	-642.67	1.82	0.00	1.82	1.30	1.30
385	292	288	743.81	7.14	0.00	3.04	4.13	4.13

387	300	304	-56.86	0.02	0.00	0.23	0.04	0.04
389	304	308	-56.86	0.05	0.00	0.36	0.10	0.10
391	308	312	-56.86	0.23	0.00	0.36	0.10	0.10
393	312	316	-56.86	0.05	0.00	0.36	0.10	0.10
395	316	320	-72.76	0.18	0.00	0.46	0.17	0.17
397	320	228	-72.76	0.03	0.00	0.30	0.06	0.06
801	I-804	800	-3326.31	7.14	0.00	9.44	27.24	27.24
805	280	O-804	-3326.31	4.36	0.00	9.44	27.24	27.24
901	I-904	900	-1386.48	2.05	0.00	3.93	5.39	5.39
905	292	O-904	-1386.48	4.46	0.00	3.93	5.39	5.39

N O D E R E S U L T S

NODE NAME	NODE TITLE	EXTERNAL DEMAND gpm	HYDRAULIC GRADE ft	NODE ELEVATION ft	PRESSURE HEAD ft	NODE PRESSURE psi
4		46.76	859.78	798.00	61.78	26.77
8		22.96	859.78	760.00	99.78	43.24
12		0.00	859.78	740.00	119.78	51.91
16		10.99	859.77	730.00	129.77	56.23
20		6.65	859.76	724.00	135.76	58.83
24		0.00	859.76	700.00	159.76	69.23
28		8.96	859.76	705.00	154.76	67.06
32		8.40	859.77	657.00	202.77	87.87
36		0.00	859.79	650.00	209.79	90.91
40		17.85	859.79	665.00	194.79	84.41
44		0.00	859.79	640.00	219.79	95.24
48		27.02	859.79	612.00	247.79	107.38
52		0.00	859.80	645.00	214.80	93.08
56		154.50(3.00)	859.79	637.00	222.79	96.54
60		4.83	859.80	630.00	229.80	99.58
64		101.10(3.00)	859.84	625.00	234.84	101.76
68		45.01	859.95	606.00	253.95	110.05
72		0.00	860.05	590.00	270.05	117.02
76		27.37	860.60	640.00	220.60	95.59
80		83.51	860.43	665.00	195.43	84.69
84		7.63	860.25	684.00	176.25	76.37
88		45.99	860.11	699.00	161.11	69.81
92		10.99	859.81	712.00	147.81	64.05
96		1588.80(**)	859.27	715.00	144.27	62.52
100		11.48	859.48	718.00	141.48	61.31
104		0.00	859.64	698.00	161.64	70.04
108		0.00	859.75	725.00	134.75	58.39
112		9.94	859.76	725.00	134.76	58.40
116		5.60	859.82	743.00	116.82	50.62
120		5.60	860.57	779.00	81.57	35.35
124		0.00	860.69	800.00	60.69	26.30
128		0.00	860.71	800.00	60.71	26.31
132		11.48	860.78	784.00	76.78	33.27
136		46.69	861.97	745.00	116.97	50.69
140		46.06	862.28	721.00	141.28	61.22
144		62.02	862.31	695.00	167.31	72.50
148		134.54	861.39	641.00	220.39	95.50
152		0.00	862.57	675.00	187.57	81.28
156		642.60	864.75	705.00	159.75	69.22
160		41.37	865.10	700.00	165.10	71.54
164		0.00	864.76	683.00	181.76	78.76
168		52.50	864.63	675.00	189.63	82.17

170	126.90(3.00)	862.42	689.00	173.42	75.15
172	171.30(3.00)	863.89	668.00	195.89	84.89
176	0.00	862.86	652.00	210.86	91.37
180	11.34	862.27	679.00	183.27	79.42
184	69.86	860.09	766.00	94.09	40.77
188	233.40(3.00)	859.94	771.00	88.94	38.54
192	5.60	859.85	789.00	70.85	30.70
194	336.60(3.00)	859.73	783.00	76.73	33.25
196	22.68	859.82	764.00	95.82	41.52
200	0.00	859.81	740.00	119.81	51.92
204	11.97	859.85	723.00	136.85	59.30
208	74.62	859.96	694.00	165.96	71.92
212	0.00	861.44	679.00	182.44	79.06
216	8.19	862.08	655.00	207.08	89.74
220	0.00	862.25	630.00	232.25	100.64
224	0.00	862.30	620.00	242.30	105.00
228	37.17	862.30	620.00	242.30	105.00
232	14.07	862.60	643.00	219.60	95.16
236	0.00	862.60	653.00	209.60	90.83
240	69.86	862.55	651.00	211.55	91.67
244	22.68	862.92	634.00	228.92	99.20
248	82.04	863.21	624.00	239.21	103.66
252	17.36	868.42	648.00	220.42	95.51
254	0.00	869.10	650.00	219.10	94.94
256	28.07	868.94	644.00	224.94	97.47
260	63.98	866.89	650.00	216.89	93.99
264	0.00	874.02	680.00	194.02	84.08
268	0.00	877.34	694.00	183.34	79.45
272	0.00	873.41	696.00	177.41	76.88
276	0.00	874.38	726.00	148.38	64.30
280	0.00	893.95	750.00	143.95	62.38
284	0.00	892.40	731.00	161.40	69.94
288	0.00	887.09	729.00	158.09	68.50
292	0.00	894.23	739.00	155.23	67.27
300	0.00	861.74	640.00	221.74	96.09
304	0.00	861.75	627.00	234.75	101.73
308	0.00	861.81	627.00	234.81	101.75
312	0.00	862.04	583.00	279.04	120.92
316	15.90(3.00)	862.09	570.00	292.09	126.57
320	0.00	862.27	608.00	254.27	110.18
800	----	1020.00			
O-804	----	898.31	746.00	152.31	66.00
900	----	1020.00			
I-904	0.00	1017.95	751.00	266.95	115.68
0	----	905.50			
I-804	0.00	1012.86	746.00	266.86	115.64
O-904	----	898.69	751.00	147.69	64.00

M A X I M U M A N D M I N I M U M V A L U E S

P R E S S U R E S

JUNCTION NUMBER	MAXIMUM PRESSURES psi	JUNCTION NUMBER	MINIMUM PRESSURES psi
316	126.57	124	26.30
312	120.92	128	26.31
72	117.02	4	26.77
I-904	115.68	192	30.70
I-804	115.64	194	33.25

V E L O C I T I E S

PIPE NUMBER	MAXIMUM VELOCITY (ft/s)	PIPE NUMBER	MINIMUM VELOCITY (ft/s)
801	9.44	29	0.01
805	9.44	41	0.01
369	7.70	25	0.02
357	5.67	309	0.02
205	5.43	137	0.03

R E G U L A T I N G V A L V E R E P O R T

VALVE LABEL	VALVE TYPE	VALVE SETTING psi or gpm	VALVE STATUS	UPSTREAM PRESSURE psi	DOWNSTREAM PRESSURE psi	THROUGH FLOW gpm
804	PRV-1	66.00	ACTIVATED	115.64	66.00	3326.31
904	PRV-1	64.00	ACTIVATED	115.68	64.00	1386.48

S U M M A R Y O F I N F L O W S A N D O U T F L O W S

(+) INFLOWS INTO THE SYSTEM FROM SUPPLY NODES
(-) OUTFLOWS FROM THE SYSTEM INTO SUPPLY NODES

NODE NAME	FLOWRATE gpm	NODE TITLE
800	3326.31	
900	1386.48	
0	0.00	

NET SYSTEM INFLOW = 4712.79
NET SYSTEM OUTFLOW = 0.00
NET SYSTEM DEMAND = 4712.79

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Case: 6

C H A N G E S F O R N E X T S I M U L A T I O N (Change Number = 6)

JUNCTION DEMANDS CHANGED - PLEASE SEE RESULTS TABLE

RESULTS OBTAINED AFTER 9 TRIALS: ACCURACY = 0.44250E-06

The Trails at Carmel Mountain Ranch
920 Zone - Public Water System Analysis – Pipe Break Condition
Maximum Day Demand plus 1500 GPM Fire Flow at Node 170 (Pipe 1 Closed)

P I P E L I N E R E S U L T S

STATUS CODE: XX -CLOSED PIPE CV -CHECK VALVE

PIPE NAME	NODE NUMBERS #1	#2	FLOWRATE gpm	HEAD LOSS ft	MINOR LOSS ft	LINE VELO. ft/s	HL+ML/ 1000 ft/f	HL/ 1000 ft/f
1-XX	0	4						
5	4	8	-46.76	0.00	0.00	0.05	0.00	0.00
9	8	12	-198.19	0.00	0.00	0.20	0.01	0.01
13	12	36	-198.19	0.04	0.00	0.32	0.04	0.04
17	8	16	128.47	0.46	0.00	0.82	0.47	0.47
21	16	20	117.48	0.34	0.00	0.75	0.40	0.40
25	20	24	110.83	0.08	0.00	0.71	0.36	0.36
29	24	28	110.83	0.02	0.00	0.31	0.05	0.05
33	32	28	143.23	0.43	0.00	0.91	0.58	0.58
37	36	32	151.63	0.52	0.00	0.97	0.64	0.64
41	36	40	-34.84	0.01	0.00	0.10	0.01	0.01
45	40	44	-52.69	0.01	0.00	0.15	0.01	0.01
49	44	48	8.70	0.00	0.00	0.06	0.00	0.00
53	48	52	-18.32	0.02	0.00	0.12	0.01	0.01
57	52	44	61.39	0.02	0.00	0.17	0.02	0.02
61	60	52	79.71	0.01	0.00	0.23	0.03	0.03
65	36	56	-314.98	0.02	0.00	0.50	0.09	0.09
69	56	60	-469.48	0.03	0.00	0.75	0.18	0.18
73	60	64	-549.82	0.03	0.00	0.88	0.24	0.24
77	64	68	-650.92	0.13	0.00	1.04	0.33	0.33
81	68	72	-596.54	0.09	0.00	0.95	0.28	0.28
85	68	84	-99.39	0.53	0.00	0.63	0.29	0.29
89	72	76	-596.54	0.54	0.00	0.95	0.28	0.28
93	76	80	190.08	0.05	0.00	0.54	0.14	0.14
97	80	84	342.03	0.06	0.00	0.97	0.40	0.40
101	84	88	235.01	0.03	0.00	0.67	0.20	0.20
105	88	92	436.41	0.10	0.00	1.24	0.63	0.63
109	92	96	594.03	0.18	0.00	1.69	1.12	1.12
113	96	100	505.23	0.20	0.00	1.43	0.83	0.83
117	100	116	66.98	0.10	0.00	0.43	0.14	0.14
121	100	104	426.77	0.18	0.00	1.21	0.61	0.61
125	60	104	-4.20	0.00	0.00	0.01	0.00	0.00
129	104	108	422.57	0.46	0.00	1.20	0.60	0.60
133	108	112	706.32	0.60	0.00	2.00	1.54	1.54
137	28	112	245.10	0.07	0.00	0.70	0.22	0.22
141	108	116	-283.75	0.54	0.00	1.81	2.06	2.06
145	116	120	-222.36	0.69	0.00	1.42	1.31	1.31
149	120	124	-227.96	0.11	0.00	0.65	0.19	0.19
153	124	128	-227.96	0.02	0.00	0.65	0.19	0.19
157	128	132	-227.96	0.07	0.00	0.65	0.19	0.19
161	132	92	168.62	0.41	0.00	0.69	0.26	0.26

165	136	132	408.06	0.76	0.00	1.67	1.36	1.36
169	140	136	454.75	0.21	0.00	1.29	0.68	0.68
173	88	140	-247.38	1.28	0.00	1.01	0.54	0.54
177	140	160	-628.29	1.79	0.00	1.78	1.24	1.24
181	140	144	-119.91	0.02	0.00	0.34	0.06	0.06
185	80	144	-235.46	1.20	0.00	0.96	0.49	0.49
189	152	144	417.39	0.19	0.00	1.18	0.58	0.58
193	148	152	-948.53	0.82	0.00	1.51	0.66	0.66
197	76	148	-813.99	0.52	0.00	1.30	0.49	0.49
201	152	156	-1365.92	1.53	0.00	2.18	1.29	1.29
205	156	276	-1867.99	9.20	0.00	5.30	9.36	9.36
209	160	156	140.53	0.05	0.00	0.40	0.08	0.08
213	272	160	1501.82	8.11	0.00	4.26	6.25	6.25
217	160	164	691.64	1.63	0.00	2.83	3.61	3.61
221	164	168	691.64	0.64	0.00	2.83	3.61	3.61
225	168	260	-606.20	2.43	0.00	2.48	2.83	2.83
227	170	168	-608.94	9.42	0.00	3.89	8.45	8.45
229	180	170	1017.96	5.23	0.00	6.50	21.90	21.90
233	168	172	636.40	0.98	0.00	2.60	3.09	3.09
237	172	176	465.10	1.52	0.00	1.90	1.73	1.73
241	248	176	336.42	0.54	0.00	1.37	0.95	0.95
245	176	240	5.69	0.00	0.00	0.02	0.00	0.00
249	176	180	795.83	1.70	0.00	3.25	4.68	4.68
253	180	184	-233.47	0.39	0.00	0.95	0.48	0.48
257	184	188	-303.33	0.06	0.00	0.86	0.32	0.32
261	188	192	-536.73	0.27	0.00	1.52	0.93	0.93
265	192	194	-299.83	0.23	0.00	0.85	0.32	0.32
267	194	112	-636.43	0.72	0.00	1.81	1.27	1.27
269	196	192	242.50	0.40	0.00	0.99	0.52	0.52
273	200	196	265.18	0.46	0.00	1.08	0.61	0.61
277	112	200	305.05	0.08	0.00	0.87	0.33	0.33
281	200	204	39.87	0.00	0.00	0.11	0.01	0.01
285	204	208	27.90	0.00	0.00	0.08	0.00	0.00
289	208	212	-46.72	0.06	0.00	0.30	0.07	0.07
293	212	300	-46.72	0.01	0.00	0.19	0.02	0.02
295	300	216	-40.16	0.02	0.00	0.16	0.02	0.02
297	216	220	-48.35	0.01	0.00	0.20	0.03	0.03
301	220	224	-48.35	0.00	0.00	0.20	0.03	0.03
305	224	240	-52.47	0.02	0.00	0.21	0.03	0.03
309	224	228	4.11	0.00	0.00	0.02	0.00	0.00
313	228	232	-55.51	0.09	0.00	0.35	0.10	0.10
317	232	244	-93.66	0.24	0.00	0.60	0.26	0.26
321	236	232	-24.08	0.01	0.00	0.15	0.02	0.02
325	236	240	116.64	0.07	0.00	0.74	0.40	0.40
329	244	236	92.56	0.25	0.00	0.59	0.26	0.26
333	244	248	-208.90	0.23	0.00	1.33	1.17	1.17
337	252	248	627.36	5.95	0.00	2.56	3.01	3.01
339	254	252	644.72	0.78	0.00	2.63	3.17	3.17
341	256	254	-250.09	0.17	0.00	1.02	0.55	0.55
345	260	256	-670.18	2.18	0.00	2.74	3.41	3.41
347	264	254	894.81	5.41	0.00	3.66	5.82	5.82
349	256	264	-448.16	5.57	0.00	2.86	4.79	4.79
353	268	264	1342.97	3.65	0.00	3.81	5.08	5.08
357	288	268	2016.13	9.90	0.00	5.72	10.78	10.78
361	268	272	673.16	3.46	0.00	1.91	1.41	1.41
365	272	276	-828.67	1.04	0.00	2.35	2.08	2.08
369	276	280	-2696.66	19.34	0.00	7.65	18.47	18.47
373	280	284	623.55	1.60	0.00	1.77	1.23	1.23
377	284	288	1266.81	5.41	0.00	3.59	4.56	4.56
381	284	292	-643.26	1.83	0.00	1.82	1.30	1.30
385	292	288	749.32	7.24	0.00	3.06	4.19	4.19

387	300	304	-6.56	0.00	0.00	0.03	0.00	0.00
389	304	308	-6.56	0.00	0.00	0.04	0.00	0.00
391	308	312	-6.56	0.00	0.00	0.04	0.00	0.00
393	312	316	-6.56	0.00	0.00	0.04	0.00	0.00
395	316	320	-22.46	0.02	0.00	0.14	0.02	0.02
397	320	228	-22.46	0.00	0.00	0.09	0.01	0.01
801	I-804	800	-3320.21	7.12	0.00	9.42	27.15	27.15
805	280	O-804	-3320.21	4.34	0.00	9.42	27.15	27.15
901	I-904	900	-1392.57	2.07	0.00	3.95	5.43	5.43
905	292	O-904	-1392.57	4.50	0.00	3.95	5.43	5.43

N O D E R E S U L T S

NODE NAME	NODE TITLE	EXTERNAL DEMAND gpm	HYDRAULIC GRADE ft	NODE ELEVATION ft	PRESSURE HEAD ft	NODE PRESSURE psi
4		46.76	861.67	798.00	63.67	27.59
8		22.96	861.67	760.00	101.67	44.06
12		0.00	861.67	740.00	121.67	52.73
16		10.99	861.21	730.00	131.21	56.86
20		6.65	860.87	724.00	136.87	59.31
24		0.00	860.78	700.00	160.78	69.67
28		8.96	860.77	705.00	155.77	67.50
32		8.40	861.19	657.00	204.19	88.48
36		0.00	861.71	650.00	211.71	91.74
40		17.85	861.72	665.00	196.72	85.25
44		0.00	861.73	640.00	221.73	96.08
48		27.02	861.73	612.00	249.73	108.21
52		0.00	861.75	645.00	216.75	93.92
56		154.50(3.00)	861.73	637.00	224.73	97.38
60		4.83	861.76	630.00	231.76	100.43
64		101.10(3.00)	861.79	625.00	236.79	102.61
68		45.01	861.92	606.00	255.92	110.90
72		0.00	862.01	590.00	272.01	117.87
76		27.37	862.55	640.00	222.55	96.44
80		83.51	862.51	665.00	197.51	85.59
84		7.63	862.44	684.00	178.44	77.33
88		45.99	862.41	699.00	163.41	70.81
92		10.99	862.32	712.00	150.32	65.14
96		88.80(3.00)	862.13	715.00	147.13	63.76
100		11.48	861.94	718.00	143.94	62.37
104		0.00	861.76	698.00	163.76	70.96
108		0.00	861.29	725.00	136.29	59.06
112		9.94	860.69	725.00	135.69	58.80
116		5.60	861.84	743.00	118.84	51.50
120		5.60	862.53	779.00	83.53	36.20
124		0.00	862.64	800.00	62.64	27.14
128		0.00	862.65	800.00	62.65	27.15
132		11.48	862.72	784.00	78.72	34.11
136		46.69	863.48	745.00	118.48	51.34
140		46.06	863.69	721.00	142.69	61.83
144		62.02	863.71	695.00	168.71	73.11
148		134.54	863.08	641.00	222.08	96.23
152		0.00	863.90	675.00	188.90	81.86
156		642.60	865.43	705.00	160.43	69.52
160		41.37	865.48	700.00	165.48	71.71
164		0.00	863.85	683.00	180.85	78.37
168		52.50	863.22	675.00	188.22	81.56

170	1626.90(**)	853.79	689.00	164.79	71.41
172	171.30(3.00)	862.24	668.00	194.24	84.17
176	0.00	860.72	652.00	208.72	90.45
180	11.34	859.03	679.00	180.03	78.01
184	69.86	859.42	766.00	93.42	40.48
188	233.40(3.00)	859.47	771.00	88.47	38.34
192	5.60	859.74	789.00	70.74	30.66
194	336.60(3.00)	859.97	783.00	76.97	33.35
196	22.68	860.15	764.00	96.15	41.66
200	0.00	860.61	740.00	120.61	52.26
204	11.97	860.61	723.00	137.61	59.63
208	74.62	860.60	694.00	166.60	72.19
212	0.00	860.66	679.00	181.66	78.72
216	8.19	860.69	655.00	205.69	89.13
220	0.00	860.70	630.00	230.70	99.97
224	0.00	860.71	620.00	240.71	104.31
228	37.17	860.71	620.00	240.71	104.31
232	14.07	860.80	643.00	217.80	94.38
236	0.00	860.79	653.00	207.79	90.04
240	69.86	860.72	651.00	209.72	90.88
244	22.68	861.04	634.00	227.04	98.38
248	82.04	861.27	624.00	237.27	102.82
252	17.36	867.22	648.00	219.22	94.99
254	0.00	867.99	650.00	217.99	94.46
256	28.07	867.83	644.00	223.83	96.99
260	63.98	865.65	650.00	215.65	93.45
264	0.00	873.40	680.00	193.40	83.81
268	0.00	877.05	694.00	183.05	79.32
272	0.00	873.59	696.00	177.59	76.95
276	0.00	874.63	726.00	148.63	64.41
280	0.00	893.97	750.00	143.97	62.39
284	0.00	892.36	731.00	161.36	69.92
288	0.00	886.95	729.00	157.95	68.45
292	0.00	894.19	739.00	155.19	67.25
300	0.00	860.68	640.00	220.68	95.63
304	0.00	860.68	627.00	233.68	101.26
308	0.00	860.68	627.00	233.68	101.26
312	0.00	860.68	583.00	277.68	120.33
316	15.90(3.00)	860.68	570.00	290.68	125.96
320	0.00	860.70	608.00	252.70	109.50
800	----	1020.00			
O-804	----	898.31	746.00	152.31	66.00
900	----	1020.00			
I-904	0.00	1017.93	751.00	266.93	115.67
0	----	905.50			
I-804	0.00	1012.88	746.00	266.88	115.65
O-904	----	898.69	751.00	147.69	64.00

M A X I M U M A N D M I N I M U M V A L U E S

P R E S S U R E S

JUNCTION NUMBER	MAXIMUM PRESSURES psi	JUNCTION NUMBER	MINIMUM PRESSURES psi
316	125.96	124	27.14
312	120.33	128	27.15
72	117.87	4	27.59
I-904	115.67	192	30.66
I-804	115.65	194	33.35

V E L O C I T I E S

PIPE NUMBER	MAXIMUM VELOCITY (ft/s)	PIPE NUMBER	MINIMUM VELOCITY (ft/s)
801	9.42	125	0.01
805	9.42	309	0.02
369	7.65	245	0.02
229	6.50	387	0.03
357	5.72	389	0.04

R E G U L A T I N G V A L V E R E P O R T

VALVE LABEL	VALVE TYPE	VALVE SETTING psi or gpm	VALVE STATUS	UPSTREAM PRESSURE psi	DOWNSTREAM PRESSURE psi	THROUGH FLOW gpm
804	PRV-1	66.00	ACTIVATED	115.65	66.00	3320.21
904	PRV-1	64.00	ACTIVATED	115.67	64.00	1392.57

S U M M A R Y O F I N F L O W S A N D O U T F L O W S

(+) INFLOWS INTO THE SYSTEM FROM SUPPLY NODES
(-) OUTFLOWS FROM THE SYSTEM INTO SUPPLY NODES

NODE NAME	FLOWRATE gpm	NODE TITLE
800	3320.21	
900	1392.57	
0	0.00	

NET SYSTEM INFLOW = 4712.79
NET SYSTEM OUTFLOW = 0.00
NET SYSTEM DEMAND = 4712.79

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Case: 7

C H A N G E S F O R N E X T S I M U L A T I O N (Change Number = 7)

JUNCTION DEMANDS CHANGED - PLEASE SEE RESULTS TABLE

RESULTS OBTAINED AFTER 8 TRIALS: ACCURACY = 0.10518E-05

The Trails at Carmel Mountain Ranch
920 Zone - Public Water System Analysis – Pipe Break Condition
Maximum Day Demand plus 1500 GPM Fire Flow at Node 188 (Pipe 1 Closed)

P I P E L I N E R E S U L T S

STATUS CODE: XX -CLOSED PIPE CV -CHECK VALVE

PIPE NAME	NODE NUMBERS #1	#2	FLOWRATE gpm	HEAD LOSS ft	MINOR LOSS ft	LINE VELO. ft/s	HL+ML/ 1000 ft/f	HL/ 1000 ft/f
1-XX	0	4						
5	4	8	-46.76	0.00	0.00	0.05	0.00	0.00
9	8	12	-229.65	0.00	0.00	0.23	0.02	0.02
13	12	36	-229.65	0.05	0.00	0.37	0.05	0.05
17	8	16	159.93	0.69	0.00	1.02	0.71	0.71
21	16	20	148.94	0.53	0.00	0.95	0.62	0.62
25	20	24	142.29	0.13	0.00	0.91	0.57	0.57
29	24	28	142.29	0.02	0.00	0.40	0.08	0.08
33	32	28	180.72	0.66	0.00	1.15	0.89	0.89
37	36	32	189.12	0.78	0.00	1.21	0.97	0.97
41	36	40	-43.62	0.01	0.00	0.12	0.01	0.01
45	40	44	-61.47	0.01	0.00	0.17	0.02	0.02
49	44	48	6.88	0.00	0.00	0.04	0.00	0.00
53	48	52	-20.14	0.02	0.00	0.13	0.02	0.02
57	52	44	68.36	0.02	0.00	0.19	0.02	0.02
61	60	52	88.49	0.01	0.00	0.25	0.03	0.03
65	36	56	-375.15	0.02	0.00	0.60	0.12	0.12
69	56	60	-529.65	0.04	0.00	0.85	0.22	0.22
73	60	64	-658.40	0.05	0.00	1.05	0.33	0.33
77	64	68	-759.50	0.17	0.00	1.21	0.44	0.44
81	68	72	-689.30	0.12	0.00	1.10	0.36	0.36
85	68	84	-115.21	0.69	0.00	0.74	0.39	0.39
89	72	76	-689.30	0.71	0.00	1.10	0.36	0.36
93	76	80	211.57	0.06	0.00	0.60	0.17	0.17
97	80	84	394.99	0.08	0.00	1.12	0.53	0.53
101	84	88	272.15	0.04	0.00	0.77	0.26	0.26
105	88	92	507.35	0.13	0.00	1.44	0.84	0.84
109	92	96	686.51	0.24	0.00	1.95	1.47	1.47
113	96	100	597.71	0.27	0.00	1.70	1.13	1.13
117	100	116	89.50	0.17	0.00	0.57	0.24	0.24
121	100	104	496.73	0.24	0.00	1.41	0.80	0.80
125	60	104	35.42	0.01	0.00	0.10	0.01	0.01
129	104	108	532.15	0.71	0.00	1.51	0.91	0.91
133	108	112	876.54	0.90	0.00	2.49	2.30	2.30
137	28	112	314.05	0.12	0.00	0.89	0.34	0.34
141	108	116	-344.39	0.78	0.00	2.20	2.94	2.94
145	116	120	-260.49	0.93	0.00	1.66	1.75	1.75
149	120	124	-266.09	0.14	0.00	0.75	0.25	0.25
153	124	128	-266.09	0.02	0.00	0.75	0.25	0.25
157	128	132	-266.09	0.09	0.00	0.75	0.25	0.25
161	132	92	190.15	0.51	0.00	0.78	0.33	0.33

165	136	132	467.71	0.98	0.00	1.91	1.75	1.75
169	140	136	514.40	0.26	0.00	1.46	0.86	0.86
173	88	140	-281.19	1.62	0.00	1.15	0.68	0.68
177	140	160	-716.16	2.28	0.00	2.03	1.58	1.58
181	140	144	-125.49	0.02	0.00	0.36	0.06	0.06
185	80	144	-266.93	1.52	0.00	1.09	0.62	0.62
189	152	144	454.44	0.22	0.00	1.29	0.68	0.68
193	148	152	-1062.77	1.01	0.00	1.70	0.81	0.81
197	76	148	-928.23	0.67	0.00	1.48	0.63	0.63
201	152	156	-1517.22	1.86	0.00	2.42	1.57	1.57
205	156	276	-1889.66	9.40	0.00	5.36	9.56	9.56
209	160	156	270.16	0.18	0.00	0.77	0.26	0.26
213	272	160	1511.82	8.21	0.00	4.29	6.32	6.32
217	160	164	484.13	0.84	0.00	1.98	1.86	1.86
221	164	168	484.13	0.33	0.00	1.98	1.86	1.86
225	168	260	-578.86	2.23	0.00	2.36	2.60	2.60
227	170	168	-352.76	3.43	0.00	2.25	3.08	3.08
229	180	170	-225.86	0.32	0.00	1.44	1.35	1.35
233	168	172	657.73	1.04	0.00	2.69	3.29	3.29
237	172	176	486.43	1.65	0.00	1.99	1.88	1.88
241	248	176	300.41	0.44	0.00	1.23	0.77	0.77
245	176	240	168.82	0.24	0.00	0.69	0.27	0.27
249	176	180	618.02	1.06	0.00	2.52	2.93	2.93
253	180	184	832.54	4.14	0.00	3.40	5.09	5.09
257	184	188	762.68	0.30	0.00	2.16	1.78	1.78
261	188	192	-970.72	0.81	0.00	2.75	2.78	2.78
265	192	194	-577.02	0.76	0.00	1.64	1.06	1.06
267	194	112	-913.62	1.41	0.00	2.59	2.49	2.49
269	196	192	399.30	1.01	0.00	1.63	1.31	1.31
273	200	196	421.98	1.09	0.00	1.72	1.45	1.45
277	112	200	267.03	0.07	0.00	0.76	0.25	0.25
281	200	204	-154.95	0.04	0.00	0.44	0.09	0.09
285	204	208	-166.92	0.09	0.00	0.47	0.11	0.11
289	208	212	-241.54	1.27	0.00	1.54	1.53	1.53
293	212	300	-241.54	0.25	0.00	0.99	0.51	0.51
295	300	216	-189.45	0.30	0.00	0.77	0.33	0.33
297	216	220	-197.64	0.14	0.00	0.81	0.35	0.35
301	220	224	-197.64	0.05	0.00	0.81	0.35	0.35
305	224	240	-202.34	0.22	0.00	0.83	0.37	0.37
309	224	228	4.70	0.00	0.00	0.02	0.00	0.00
313	228	232	-100.46	0.27	0.00	0.64	0.30	0.30
317	232	244	-110.43	0.33	0.00	0.70	0.36	0.36
321	236	232	4.10	0.00	0.00	0.03	0.00	0.00
325	236	240	103.38	0.05	0.00	0.66	0.32	0.32
329	244	236	107.48	0.33	0.00	0.69	0.34	0.34
333	244	248	-240.59	0.30	0.00	1.54	1.51	1.51
337	252	248	623.05	5.87	0.00	2.54	2.98	2.98
339	254	252	640.41	0.77	0.00	2.62	3.13	3.13
341	256	254	-233.68	0.15	0.00	0.95	0.48	0.48
345	260	256	-642.84	2.02	0.00	2.63	3.15	3.15
347	264	254	874.09	5.18	0.00	3.57	5.57	5.57
349	256	264	-437.22	5.32	0.00	2.79	4.58	4.58
353	268	264	1311.31	3.49	0.00	3.72	4.86	4.86
357	288	268	2007.82	9.83	0.00	5.70	10.69	10.69
361	268	272	696.51	3.69	0.00	1.98	1.51	1.51
365	272	276	-815.31	1.01	0.00	2.31	2.02	2.02
369	276	280	-2704.97	19.45	0.00	7.67	18.57	18.57
373	280	284	618.13	1.58	0.00	1.75	1.21	1.21
377	284	288	1261.11	5.37	0.00	3.58	4.52	4.52
381	284	292	-642.98	1.83	0.00	1.82	1.30	1.30
385	292	288	746.72	7.19	0.00	3.05	4.16	4.16

387	300	304	-52.09	0.02	0.00	0.21	0.03	0.03
389	304	308	-52.09	0.05	0.00	0.33	0.09	0.09
391	308	312	-52.09	0.19	0.00	0.33	0.09	0.09
393	312	316	-52.09	0.04	0.00	0.33	0.09	0.09
395	316	320	-67.99	0.16	0.00	0.43	0.15	0.15
397	320	228	-67.99	0.03	0.00	0.28	0.05	0.05
801	I-804	800	-3323.10	7.13	0.00	9.43	27.19	27.19
805	280	O-804	-3323.10	4.35	0.00	9.43	27.19	27.19
901	I-904	900	-1389.69	2.06	0.00	3.94	5.41	5.41
905	292	O-904	-1389.69	4.48	0.00	3.94	5.41	5.41

N O D E R E S U L T S

NODE NAME	NODE TITLE	EXTERNAL DEMAND gpm	HYDRAULIC GRADE ft	NODE ELEVATION ft	PRESSURE HEAD ft	NODE PRESSURE psi
4		46.76	860.41	798.00	62.41	27.05
8		22.96	860.41	760.00	100.41	43.51
12		0.00	860.42	740.00	120.42	52.18
16		10.99	859.72	730.00	129.72	56.21
20		6.65	859.19	724.00	135.19	58.58
24		0.00	859.06	700.00	159.06	68.92
28		8.96	859.03	705.00	154.03	66.75
32		8.40	859.69	657.00	202.69	87.83
36		0.00	860.47	650.00	210.47	91.20
40		17.85	860.48	665.00	195.48	84.71
44		0.00	860.49	640.00	220.49	95.55
48		27.02	860.49	612.00	248.49	107.68
52		0.00	860.51	645.00	215.51	93.39
56		154.50(3.00)	860.49	637.00	223.49	96.84
60		4.83	860.52	630.00	230.52	99.89
64		101.10(3.00)	860.57	625.00	235.57	102.08
68		45.01	860.74	606.00	254.74	110.39
72		0.00	860.86	590.00	270.86	117.37
76		27.37	861.57	640.00	221.57	96.01
80		83.51	861.52	665.00	196.52	85.16
84		7.63	861.43	684.00	177.43	76.89
88		45.99	861.39	699.00	162.39	70.37
92		10.99	861.26	712.00	149.26	64.68
96		88.80(3.00)	861.03	715.00	146.03	63.28
100		11.48	860.76	718.00	142.76	61.86
104		0.00	860.52	698.00	162.52	70.42
108		0.00	859.81	725.00	134.81	58.42
112		9.94	858.91	725.00	133.91	58.03
116		5.60	860.59	743.00	117.59	50.95
120		5.60	861.52	779.00	82.52	35.76
124		0.00	861.66	800.00	61.66	26.72
128		0.00	861.68	800.00	61.68	26.73
132		11.48	861.77	784.00	77.77	33.70
136		46.69	862.75	745.00	117.75	51.03
140		46.06	863.01	721.00	142.01	61.54
144		62.02	863.03	695.00	168.03	72.81
148		134.54	862.24	641.00	221.24	95.87
152		0.00	863.25	675.00	188.25	81.58
156		642.60	865.11	705.00	160.11	69.38
160		41.37	865.29	700.00	165.29	71.63
164		0.00	864.45	683.00	181.45	78.63
168		52.50	864.13	675.00	189.13	81.95

170	126.90(3.00)	860.70	689.00	171.70	74.40
172	171.30(3.00)	863.09	668.00	195.09	84.54
176	0.00	861.44	652.00	209.44	90.76
180	11.34	860.37	679.00	181.37	78.60
184	69.86	856.24	766.00	90.24	39.10
188	1733.40(**)	855.93	771.00	84.93	36.80
192	5.60	856.74	789.00	67.74	29.35
194	336.60(3.00)	857.50	783.00	74.50	32.28
196	22.68	857.75	764.00	93.75	40.63
200	0.00	858.85	740.00	118.85	51.50
204	11.97	858.88	723.00	135.88	58.88
208	74.62	858.97	694.00	164.97	71.49
212	0.00	860.24	679.00	181.24	78.54
216	8.19	860.79	655.00	205.79	89.18
220	0.00	860.94	630.00	230.94	100.07
224	0.00	860.98	620.00	240.98	104.43
228	37.17	860.98	620.00	240.98	104.43
232	14.07	861.25	643.00	218.25	94.58
236	0.00	861.25	653.00	208.25	90.24
240	69.86	861.20	651.00	210.20	91.09
244	22.68	861.58	634.00	227.58	98.62
248	82.04	861.88	624.00	237.88	103.08
252	17.36	867.75	648.00	219.75	95.23
254	0.00	868.52	650.00	218.52	94.69
256	28.07	868.37	644.00	224.37	97.23
260	63.98	866.35	650.00	216.35	93.75
264	0.00	873.70	680.00	193.70	83.94
268	0.00	877.19	694.00	183.19	79.38
272	0.00	873.50	696.00	177.50	76.92
276	0.00	874.51	726.00	148.51	64.36
280	0.00	893.96	750.00	143.96	62.38
284	0.00	892.38	731.00	161.38	69.93
288	0.00	887.02	729.00	158.02	68.47
292	0.00	894.21	739.00	155.21	67.26
300	0.00	860.50	640.00	220.50	95.55
304	0.00	860.51	627.00	233.51	101.19
308	0.00	860.56	627.00	233.56	101.21
312	0.00	860.75	583.00	277.75	120.36
316	15.90(3.00)	860.79	570.00	290.79	126.01
320	0.00	860.95	608.00	252.95	109.61
800	----	1020.00			
O-804	----	898.31	746.00	152.31	66.00
900	----	1020.00			
I-904	0.00	1017.94	751.00	266.94	115.67
0	----	905.50			
I-804	0.00	1012.87	746.00	266.87	115.64
O-904	----	898.69	751.00	147.69	64.00

M A X I M U M A N D M I N I M U M V A L U E S

P R E S S U R E S

JUNCTION NUMBER	MAXIMUM PRESSURES psi	JUNCTION NUMBER	MINIMUM PRESSURES psi
316	126.01	124	26.72
312	120.36	128	26.73
72	117.37	4	27.05
I-904	115.67	192	29.35
I-804	115.64	194	32.28

V E L O C I T I E S

PIPE NUMBER	MAXIMUM VELOCITY (ft/s)	PIPE NUMBER	MINIMUM VELOCITY (ft/s)
801	9.43	309	0.02
805	9.43	321	0.03
369	7.67	49	0.04
357	5.70	5	0.05
205	5.36	125	0.10

R E G U L A T I N G V A L V E R E P O R T

VALVE LABEL	VALVE TYPE	VALVE SETTING psi or gpm	VALVE STATUS	UPSTREAM PRESSURE psi	DOWNSTREAM PRESSURE psi	THROUGH FLOW gpm
804	PRV-1	66.00	ACTIVATED	115.64	66.00	3323.10
904	PRV-1	64.00	ACTIVATED	115.67	64.00	1389.69

S U M M A R Y O F I N F L O W S A N D O U T F L O W S

(+) INFLOWS INTO THE SYSTEM FROM SUPPLY NODES
(-) OUTFLOWS FROM THE SYSTEM INTO SUPPLY NODES

NODE NAME	FLOWRATE gpm	NODE TITLE
800	3323.10	
900	1389.69	
0	0.00	

NET SYSTEM INFLOW = 4712.79
NET SYSTEM OUTFLOW = 0.00
NET SYSTEM DEMAND = 4712.79

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Case: 8

C H A N G E S F O R N E X T S I M U L A T I O N (Change Number = 8)

JUNCTION DEMANDS CHANGED - PLEASE SEE RESULTS TABLE

RESULTS OBTAINED AFTER 8 TRIALS: ACCURACY = 0.64116E-06

The Trails at Carmel Mountain Ranch
920 Zone - Public Water System Analysis – Pipe Break Condition
Maximum Day Demand plus 1500 GPM Fire Flow at Node 194 (Pipe 1 Closed)

P I P E L I N E R E S U L T S

STATUS CODE: XX -CLOSED PIPE CV -CHECK VALVE

PIPE NAME	NODE NUMBERS #1	#2	FLOWRATE gpm	HEAD LOSS ft	MINOR LOSS ft	LINE VELO. ft/s	HL+ML/ 1000 ft/f	HL/ 1000 ft/f
1-XX	0	4						
5	4	8	-46.76	0.00	0.00	0.05	0.00	0.00
9	8	12	-237.74	0.00	0.00	0.24	0.02	0.02
13	12	36	-237.74	0.05	0.00	0.38	0.05	0.05
17	8	16	168.02	0.75	0.00	1.07	0.78	0.78
21	16	20	157.03	0.59	0.00	1.00	0.69	0.69
25	20	24	150.38	0.15	0.00	0.96	0.63	0.63
29	24	28	150.38	0.03	0.00	0.43	0.09	0.09
33	32	28	190.37	0.72	0.00	1.21	0.98	0.98
37	36	32	198.77	0.85	0.00	1.27	1.06	1.06
41	36	40	-45.87	0.02	0.00	0.13	0.01	0.01
45	40	44	-63.72	0.01	0.00	0.18	0.02	0.02
49	44	48	6.41	0.00	0.00	0.04	0.00	0.00
53	48	52	-20.61	0.03	0.00	0.13	0.02	0.02
57	52	44	70.13	0.02	0.00	0.20	0.02	0.02
61	60	52	90.74	0.01	0.00	0.26	0.03	0.03
65	36	56	-390.63	0.02	0.00	0.62	0.13	0.13
69	56	60	-545.13	0.04	0.00	0.87	0.24	0.24
73	60	64	-685.86	0.05	0.00	1.09	0.36	0.36
77	64	68	-786.96	0.18	0.00	1.26	0.46	0.46
81	68	72	-712.78	0.13	0.00	1.14	0.39	0.39
85	68	84	-119.19	0.74	0.00	0.76	0.41	0.41
89	72	76	-712.78	0.76	0.00	1.14	0.39	0.39
93	76	80	217.20	0.06	0.00	0.62	0.17	0.17
97	80	84	408.67	0.09	0.00	1.16	0.56	0.56
101	84	88	281.85	0.04	0.00	0.80	0.28	0.28
105	88	92	525.72	0.14	0.00	1.49	0.89	0.89
109	92	96	710.38	0.25	0.00	2.02	1.56	1.56
113	96	100	621.58	0.29	0.00	1.76	1.22	1.22
117	100	116	95.20	0.19	0.00	0.61	0.27	0.27
121	100	104	514.90	0.25	0.00	1.46	0.86	0.86
125	60	104	45.15	0.01	0.00	0.13	0.01	0.01
129	104	108	560.05	0.78	0.00	1.59	1.01	1.01
133	108	112	919.98	0.98	0.00	2.61	2.52	2.52
137	28	112	331.79	0.13	0.00	0.94	0.38	0.38
141	108	116	-359.93	0.84	0.00	2.30	3.19	3.19
145	116	120	-270.33	1.00	0.00	1.73	1.88	1.88
149	120	124	-275.93	0.15	0.00	0.78	0.27	0.27
153	124	128	-275.93	0.02	0.00	0.78	0.27	0.27
157	128	132	-275.93	0.10	0.00	0.78	0.27	0.27
161	132	92	195.64	0.53	0.00	0.80	0.35	0.35

165	136	132	483.05	1.04	0.00	1.97	1.86	1.86
169	140	136	529.74	0.27	0.00	1.50	0.91	0.91
173	88	140	-289.86	1.71	0.00	1.18	0.72	0.72
177	140	160	-739.16	2.42	0.00	2.10	1.68	1.68
181	140	144	-126.51	0.02	0.00	0.36	0.06	0.06
185	80	144	-274.99	1.60	0.00	1.12	0.65	0.65
189	152	144	463.52	0.23	0.00	1.31	0.71	0.71
193	148	152	-1091.89	1.07	0.00	1.74	0.85	0.85
197	76	148	-957.35	0.71	0.00	1.53	0.67	0.67
201	152	156	-1555.40	1.95	0.00	2.48	1.64	1.64
205	156	276	-1896.45	9.47	0.00	5.38	9.62	9.62
209	160	156	301.55	0.23	0.00	0.86	0.32	0.32
213	272	160	1514.87	8.24	0.00	4.30	6.35	6.35
217	160	164	432.79	0.68	0.00	1.77	1.52	1.52
221	164	168	432.79	0.27	0.00	1.77	1.52	1.52
225	168	260	-578.92	2.23	0.00	2.36	2.60	2.60
227	170	168	-328.85	3.01	0.00	2.10	2.70	2.70
229	180	170	-201.95	0.26	0.00	1.29	1.09	1.09
233	168	172	630.36	0.96	0.00	2.57	3.04	3.04
237	172	176	459.06	1.48	0.00	1.88	1.69	1.69
241	248	176	282.21	0.39	0.00	1.15	0.69	0.69
245	176	240	200.08	0.32	0.00	0.82	0.36	0.36
249	176	180	541.18	0.83	0.00	2.21	2.29	2.29
253	180	184	731.79	3.26	0.00	2.99	4.01	4.01
257	184	188	661.93	0.23	0.00	1.88	1.37	1.37
261	188	192	428.53	0.18	0.00	1.22	0.61	0.61
265	192	194	694.65	1.07	0.00	1.97	1.50	1.50
267	194	112	-1141.95	2.14	0.00	3.24	3.76	3.76
269	196	192	271.72	0.50	0.00	1.11	0.64	0.64
273	200	196	294.40	0.56	0.00	1.20	0.74	0.74
277	112	200	99.88	0.01	0.00	0.28	0.04	0.04
281	200	204	-194.51	0.05	0.00	0.55	0.14	0.14
285	204	208	-206.48	0.13	0.00	0.59	0.16	0.16
289	208	212	-281.10	1.68	0.00	1.79	2.02	2.02
293	212	300	-281.10	0.33	0.00	1.15	0.68	0.68
295	300	216	-219.94	0.39	0.00	0.90	0.43	0.43
297	216	220	-228.13	0.19	0.00	0.93	0.46	0.46
301	220	224	-228.13	0.06	0.00	0.93	0.46	0.46
305	224	240	-230.98	0.28	0.00	0.94	0.47	0.47
309	224	228	2.85	0.00	0.00	0.01	0.00	0.00
313	228	232	-111.38	0.33	0.00	0.71	0.36	0.36
317	232	244	-114.74	0.35	0.00	0.73	0.38	0.38
321	236	232	10.71	0.00	0.00	0.07	0.00	0.00
325	236	240	100.76	0.05	0.00	0.64	0.30	0.30
329	244	236	111.47	0.35	0.00	0.71	0.36	0.36
333	244	248	-248.89	0.32	0.00	1.59	1.61	1.61
337	252	248	613.14	5.70	0.00	2.50	2.89	2.89
339	254	252	630.50	0.75	0.00	2.58	3.04	3.04
341	256	254	-236.86	0.15	0.00	0.97	0.50	0.50
345	260	256	-642.90	2.02	0.00	2.63	3.15	3.15
347	264	254	867.36	5.10	0.00	3.54	5.49	5.49
349	256	264	-434.11	5.25	0.00	2.77	4.52	4.52
353	268	264	1301.47	3.44	0.00	3.69	4.79	4.79
357	288	268	2005.21	9.80	0.00	5.69	10.67	10.67
361	268	272	703.74	3.76	0.00	2.00	1.53	1.53
365	272	276	-811.13	1.00	0.00	2.30	2.00	2.00
369	276	280	-2707.58	19.48	0.00	7.68	18.61	18.61
373	280	284	616.42	1.57	0.00	1.75	1.20	1.20
377	284	288	1259.31	5.35	0.00	3.57	4.51	4.51
381	284	292	-642.89	1.82	0.00	1.82	1.30	1.30
385	292	288	745.90	7.18	0.00	3.05	4.15	4.15

387	300	304	-61.16	0.02	0.00	0.25	0.04	0.04
389	304	308	-61.16	0.06	0.00	0.39	0.12	0.12
391	308	312	-61.16	0.26	0.00	0.39	0.12	0.12
393	312	316	-61.16	0.06	0.00	0.39	0.12	0.12
395	316	320	-77.06	0.20	0.00	0.49	0.18	0.18
397	320	228	-77.06	0.04	0.00	0.31	0.06	0.06
801	I-804	800	-3324.00	7.14	0.00	9.43	27.20	27.20
805	280	O-804	-3324.00	4.35	0.00	9.43	27.20	27.20
901	I-904	900	-1388.79	2.06	0.00	3.94	5.40	5.40
905	292	O-904	-1388.79	4.48	0.00	3.94	5.40	5.40

N O D E R E S U L T S

NODE NAME	NODE TITLE	EXTERNAL DEMAND gpm	HYDRAULIC GRADE ft	NODE ELEVATION ft	PRESSURE HEAD ft	NODE PRESSURE psi
4		46.76	860.06	798.00	62.06	26.89
8		22.96	860.06	760.00	100.06	43.36
12		0.00	860.06	740.00	120.06	52.03
16		10.99	859.30	730.00	129.30	56.03
20		6.65	858.71	724.00	134.71	58.38
24		0.00	858.57	700.00	158.57	68.71
28		8.96	858.54	705.00	153.54	66.53
32		8.40	859.26	657.00	202.26	87.65
36		0.00	860.12	650.00	210.12	91.05
40		17.85	860.13	665.00	195.13	84.56
44		0.00	860.14	640.00	220.14	95.39
48		27.02	860.14	612.00	248.14	107.53
52		0.00	860.17	645.00	215.17	93.24
56		154.50(3.00)	860.14	637.00	223.14	96.69
60		4.83	860.18	630.00	230.18	99.74
64		101.10(3.00)	860.23	625.00	235.23	101.93
68		45.01	860.41	606.00	254.41	110.24
72		0.00	860.53	590.00	270.53	117.23
76		27.37	861.29	640.00	221.29	95.89
80		83.51	861.23	665.00	196.23	85.03
84		7.63	861.15	684.00	177.15	76.76
88		45.99	861.10	699.00	162.10	70.24
92		10.99	860.97	712.00	148.97	64.55
96		88.80(3.00)	860.71	715.00	145.71	63.14
100		11.48	860.42	718.00	142.42	61.72
104		0.00	860.17	698.00	162.17	70.27
108		0.00	859.39	725.00	134.39	58.24
112		9.94	858.41	725.00	133.41	57.81
116		5.60	860.23	743.00	117.23	50.80
120		5.60	861.23	779.00	82.23	35.63
124		0.00	861.38	800.00	61.38	26.60
128		0.00	861.40	800.00	61.40	26.61
132		11.48	861.50	784.00	77.50	33.58
136		46.69	862.54	745.00	117.54	50.93
140		46.06	862.82	721.00	141.82	61.45
144		62.02	862.84	695.00	167.84	72.73
148		134.54	862.00	641.00	221.00	95.77
152		0.00	863.06	675.00	188.06	81.49
156		642.60	865.01	705.00	160.01	69.34
160		41.37	865.24	700.00	165.24	71.60
164		0.00	864.55	683.00	181.55	78.67
168		52.50	864.29	675.00	189.29	82.02

170	126.90(3.00)	861.28	689.00	172.28	74.65
172	171.30(3.00)	863.33	668.00	195.33	84.64
176	0.00	861.85	652.00	209.85	90.93
180	11.34	861.01	679.00	182.01	78.87
184	69.86	857.75	766.00	91.75	39.76
188	233.40(3.00)	857.52	771.00	86.52	37.49
192	5.60	857.34	789.00	68.34	29.61
194	1836.60(**)	856.27	783.00	73.27	31.75
196	22.68	857.84	764.00	93.84	40.66
200	0.00	858.40	740.00	118.40	51.31
204	11.97	858.45	723.00	135.45	58.70
208	74.62	858.59	694.00	164.59	71.32
212	0.00	860.27	679.00	181.27	78.55
216	8.19	860.99	655.00	205.99	89.26
220	0.00	861.18	630.00	231.18	100.18
224	0.00	861.24	620.00	241.24	104.54
228	37.17	861.24	620.00	241.24	104.54
232	14.07	861.57	643.00	218.57	94.71
236	0.00	861.57	653.00	208.57	90.38
240	69.86	861.52	651.00	210.52	91.23
244	22.68	861.92	634.00	227.92	98.77
248	82.04	862.24	624.00	238.24	103.24
252	17.36	867.94	648.00	219.94	95.31
254	0.00	868.69	650.00	218.69	94.76
256	28.07	868.54	644.00	224.54	97.30
260	63.98	866.52	650.00	216.52	93.82
264	0.00	873.79	680.00	193.79	83.97
268	0.00	877.23	694.00	183.23	79.40
272	0.00	873.47	696.00	177.47	76.91
276	0.00	874.48	726.00	148.48	64.34
280	0.00	893.96	750.00	143.96	62.38
284	0.00	892.39	731.00	161.39	69.94
288	0.00	887.04	729.00	158.04	68.48
292	0.00	894.21	739.00	155.21	67.26
300	0.00	860.60	640.00	220.60	95.59
304	0.00	860.62	627.00	233.62	101.24
308	0.00	860.68	627.00	233.68	101.26
312	0.00	860.94	583.00	277.94	120.44
316	15.90(3.00)	861.00	570.00	291.00	126.10
320	0.00	861.20	608.00	253.20	109.72
800	----	1020.00			
O-804	----	898.31	746.00	152.31	66.00
900	----	1020.00			
I-904	0.00	1017.94	751.00	266.94	115.68
0	----	905.50			
I-804	0.00	1012.86	746.00	266.86	115.64
O-904	----	898.69	751.00	147.69	64.00

M A X I M U M A N D M I N I M U M V A L U E S

P R E S S U R E S

JUNCTION NUMBER	MAXIMUM PRESSURES psi	JUNCTION NUMBER	MINIMUM PRESSURES psi
316	126.10	124	26.60
312	120.44	128	26.61
72	117.23	4	26.89
I-904	115.68	192	29.61
I-804	115.64	194	31.75

V E L O C I T I E S

PIPE NUMBER	MAXIMUM VELOCITY (ft/s)	PIPE NUMBER	MINIMUM VELOCITY (ft/s)
801	9.43	309	0.01
805	9.43	49	0.04
369	7.68	5	0.05
357	5.69	321	0.07
205	5.38	125	0.13

R E G U L A T I N G V A L V E R E P O R T

VALVE LABEL	VALVE TYPE	VALVE SETTING psi or gpm	VALVE STATUS	UPSTREAM PRESSURE psi	DOWNSTREAM PRESSURE psi	THROUGH FLOW gpm
804	PRV-1	66.00	ACTIVATED	115.64	66.00	3324.00
904	PRV-1	64.00	ACTIVATED	115.68	64.00	1388.79

S U M M A R Y O F I N F L O W S A N D O U T F L O W S

(+) INFLOWS INTO THE SYSTEM FROM SUPPLY NODES
(-) OUTFLOWS FROM THE SYSTEM INTO SUPPLY NODES

NODE NAME	FLOWRATE gpm	NODE TITLE
800	3324.00	
900	1388.79	
0	0.00	

NET SYSTEM INFLOW = 4712.79
NET SYSTEM OUTFLOW = 0.00
NET SYSTEM DEMAND = 4712.79

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Case: 9

C H A N G E S F O R N E X T S I M U L A T I O N (Change Number = 9)

JUNCTION DEMANDS CHANGED - PLEASE SEE RESULTS TABLE

RESULTS OBTAINED AFTER 9 TRIALS: ACCURACY = 0.14818E-05

The Trails at Carmel Mountain Ranch
920 Zone - Public Water System Analysis – Pipe Break Condition
Maximum Day Demand plus 1500 GPM Fire Flow at Node 254 (Pipe 1 Closed)

P I P E L I N E R E S U L T S

STATUS CODE: XX -CLOSED PIPE CV -CHECK VALVE

PIPE NAME	NODE NUMBERS #1	#2	FLOWRATE gpm	HEAD LOSS ft	MINOR LOSS ft	LINE VELO. ft/s	HL+ML/ 1000 ft/f	HL/ 1000 ft/f
1-XX	0	4						
5	4	8	-46.76	0.00	0.00	0.05	0.00	0.00
9	8	12	-161.33	0.00	0.00	0.16	0.01	0.01
13	12	36	-161.33	0.03	0.00	0.26	0.02	0.02
17	8	16	91.61	0.25	0.00	0.58	0.25	0.25
21	16	20	80.62	0.17	0.00	0.51	0.20	0.20
25	20	24	73.97	0.04	0.00	0.47	0.17	0.17
29	24	28	73.97	0.01	0.00	0.21	0.02	0.02
33	32	28	99.40	0.22	0.00	0.63	0.29	0.29
37	36	32	107.80	0.28	0.00	0.69	0.34	0.34
41	36	40	-24.45	0.00	0.00	0.07	0.00	0.00
45	40	44	-42.30	0.00	0.00	0.12	0.01	0.01
49	44	48	10.79	0.00	0.00	0.07	0.00	0.00
53	48	52	-16.23	0.02	0.00	0.10	0.01	0.01
57	52	44	53.09	0.01	0.00	0.15	0.01	0.01
61	60	52	69.32	0.01	0.00	0.20	0.02	0.02
65	36	56	-244.68	0.01	0.00	0.39	0.05	0.05
69	56	60	-399.18	0.02	0.00	0.64	0.13	0.13
73	60	64	-425.10	0.02	0.00	0.68	0.15	0.15
77	64	68	-526.20	0.08	0.00	0.84	0.22	0.22
81	68	72	-489.86	0.06	0.00	0.78	0.19	0.19
85	68	84	-81.35	0.36	0.00	0.52	0.20	0.20
89	72	76	-489.86	0.38	0.00	0.78	0.19	0.19
93	76	80	163.23	0.03	0.00	0.46	0.10	0.10
97	80	84	279.07	0.04	0.00	0.79	0.28	0.28
101	84	88	190.10	0.02	0.00	0.54	0.14	0.14
105	88	92	352.88	0.06	0.00	1.00	0.43	0.43
109	92	96	485.71	0.13	0.00	1.38	0.77	0.77
113	96	100	396.91	0.13	0.00	1.13	0.53	0.53
117	100	116	40.58	0.04	0.00	0.26	0.06	0.06
121	100	104	344.85	0.12	0.00	0.98	0.41	0.41
125	60	104	-48.23	0.01	0.00	0.14	0.01	0.01
129	104	108	296.62	0.24	0.00	0.84	0.31	0.31
133	108	112	510.60	0.33	0.00	1.45	0.85	0.85
137	28	112	164.41	0.04	0.00	0.47	0.10	0.10
141	108	116	-213.98	0.32	0.00	1.37	1.22	1.22
145	116	120	-179.00	0.46	0.00	1.14	0.88	0.88
149	120	124	-184.60	0.07	0.00	0.52	0.13	0.13
153	124	128	-184.60	0.01	0.00	0.52	0.13	0.13
157	128	132	-184.60	0.05	0.00	0.52	0.13	0.13
161	132	92	143.82	0.30	0.00	0.59	0.20	0.20

165	136	132	339.90	0.54	0.00	1.39	0.97	0.97
169	140	136	386.59	0.15	0.00	1.10	0.51	0.51
173	88	140	-208.77	0.93	0.00	0.85	0.39	0.39
177	140	160	-537.56	1.34	0.00	1.52	0.93	0.93
181	140	144	-103.86	0.02	0.00	0.29	0.04	0.04
185	80	144	-199.36	0.88	0.00	0.81	0.36	0.36
189	152	144	365.23	0.15	0.00	1.04	0.46	0.46
193	148	152	-815.00	0.62	0.00	1.30	0.50	0.50
197	76	148	-680.46	0.38	0.00	1.09	0.36	0.36
201	152	156	-1180.23	1.17	0.00	1.88	0.98	0.98
205	156	276	-1756.19	8.21	0.00	4.98	8.35	8.35
209	160	156	66.65	0.01	0.00	0.19	0.02	0.02
213	272	160	1388.45	7.01	0.00	3.94	5.40	5.40
217	160	164	742.87	1.86	0.00	3.03	4.12	4.12
221	164	168	742.87	0.72	0.00	3.03	4.12	4.12
225	168	260	111.78	0.11	0.00	0.46	0.12	0.12
227	170	168	-170.06	0.89	0.00	1.09	0.80	0.80
229	180	170	-43.16	0.02	0.00	0.28	0.06	0.06
233	168	172	408.53	0.43	0.00	1.67	1.36	1.36
237	172	176	237.23	0.44	0.00	0.97	0.50	0.50
241	248	176	-63.39	0.02	0.00	0.26	0.04	0.04
245	176	240	72.85	0.05	0.00	0.30	0.06	0.06
249	176	180	100.99	0.04	0.00	0.41	0.10	0.10
253	180	184	132.81	0.14	0.00	0.54	0.17	0.17
257	184	188	62.95	0.00	0.00	0.18	0.02	0.02
261	188	192	-170.45	0.03	0.00	0.48	0.11	0.11
265	192	194	-59.30	0.01	0.00	0.17	0.02	0.02
267	194	112	-395.90	0.30	0.00	1.12	0.53	0.53
269	196	192	116.75	0.10	0.00	0.48	0.13	0.13
273	200	196	139.43	0.14	0.00	0.57	0.19	0.19
277	112	200	269.16	0.07	0.00	0.76	0.26	0.26
281	200	204	129.73	0.03	0.00	0.37	0.07	0.07
285	204	208	117.76	0.05	0.00	0.33	0.06	0.06
289	208	212	43.14	0.05	0.00	0.28	0.06	0.06
293	212	300	43.14	0.01	0.00	0.18	0.02	0.02
295	300	216	31.89	0.01	0.00	0.13	0.01	0.01
297	216	220	23.70	0.00	0.00	0.10	0.01	0.01
301	220	224	23.70	0.00	0.00	0.10	0.01	0.01
305	224	240	-10.69	0.00	0.00	0.04	0.00	0.00
309	224	228	34.39	0.00	0.00	0.14	0.01	0.01
313	228	232	-7.43	0.00	0.00	0.05	0.00	0.00
317	232	244	-15.08	0.01	0.00	0.10	0.01	0.01
321	236	232	6.42	0.00	0.00	0.04	0.00	0.00
325	236	240	7.69	0.00	0.00	0.05	0.00	0.00
329	244	236	14.11	0.01	0.00	0.09	0.01	0.01
333	244	248	-51.87	0.02	0.00	0.33	0.09	0.09
337	252	248	70.52	0.10	0.00	0.29	0.05	0.05
339	254	252	87.88	0.02	0.00	0.36	0.08	0.08
341	256	254	520.66	0.64	0.00	2.13	2.13	2.13
345	260	256	47.80	0.02	0.00	0.20	0.03	0.03
347	264	254	1067.22	7.49	0.00	4.36	8.06	8.06
349	256	264	-500.93	6.85	0.00	3.20	5.89	5.89
353	268	264	1568.15	4.86	0.00	4.45	6.77	6.77
357	288	268	2068.04	10.38	0.00	5.87	11.30	11.30
361	268	272	499.89	1.99	0.00	1.42	0.81	0.81
365	272	276	-888.56	1.19	0.00	2.52	2.36	2.36
369	276	280	-2644.75	18.65	0.00	7.50	17.81	17.81
373	280	284	657.22	1.77	0.00	1.86	1.35	1.35
377	284	288	1302.39	5.70	0.00	3.69	4.80	4.80
381	284	292	-645.17	1.84	0.00	1.83	1.31	1.31
385	292	288	765.65	7.53	0.00	3.13	4.36	4.36

387	300	304	11.25	0.00	0.00	0.05	0.00	0.00
389	304	308	11.25	0.00	0.00	0.07	0.01	0.01
391	308	312	11.25	0.01	0.00	0.07	0.01	0.01
393	312	316	11.25	0.00	0.00	0.07	0.01	0.01
395	316	320	-4.65	0.00	0.00	0.03	0.00	0.00
397	320	228	-4.65	0.00	0.00	0.02	0.00	0.00
801	I-804	800	-3301.97	7.05	0.00	9.37	26.87	26.87
805	280	O-804	-3301.97	4.30	0.00	9.37	26.87	26.87
901	I-904	900	-1410.82	2.12	0.00	4.00	5.56	5.56
905	292	O-904	-1410.82	4.61	0.00	4.00	5.56	5.56

N O D E R E S U L T S

NODE NAME	NODE TITLE	EXTERNAL DEMAND gpm	HYDRAULIC GRADE ft	NODE ELEVATION ft	PRESSURE HEAD ft	NODE PRESSURE psi
4		46.76	864.38	798.00	66.38	28.76
8		22.96	864.38	760.00	104.38	45.23
12		0.00	864.38	740.00	124.38	53.90
16		10.99	864.13	730.00	134.13	58.12
20		6.65	863.96	724.00	139.96	60.65
24		0.00	863.92	700.00	163.92	71.03
28		8.96	863.92	705.00	158.92	68.86
32		8.40	864.13	657.00	207.13	89.76
36		0.00	864.41	650.00	214.41	92.91
40		17.85	864.41	665.00	199.41	86.41
44		0.00	864.42	640.00	224.42	97.25
48		27.02	864.41	612.00	252.41	109.38
52		0.00	864.43	645.00	219.43	95.09
56		154.50(3.00)	864.42	637.00	227.42	98.55
60		4.83	864.44	630.00	234.44	101.59
64		101.10(3.00)	864.46	625.00	239.46	103.77
68		45.01	864.54	606.00	258.54	112.04
72		0.00	864.61	590.00	274.61	119.00
76		27.37	864.99	640.00	224.99	97.49
80		83.51	864.95	665.00	199.95	86.65
84		7.63	864.91	684.00	180.91	78.39
88		45.99	864.89	699.00	165.89	71.88
92		10.99	864.82	712.00	152.82	66.22
96		88.80(3.00)	864.70	715.00	149.70	64.87
100		11.48	864.57	718.00	146.57	63.51
104		0.00	864.45	698.00	166.45	72.13
108		0.00	864.21	725.00	139.21	60.32
112		9.94	863.88	725.00	138.88	60.18
116		5.60	864.53	743.00	121.53	52.66
120		5.60	865.00	779.00	86.00	37.26
124		0.00	865.07	800.00	65.07	28.20
128		0.00	865.08	800.00	65.08	28.20
132		11.48	865.12	784.00	81.12	35.15
136		46.69	865.67	745.00	120.67	52.29
140		46.06	865.82	721.00	144.82	62.76
144		62.02	865.84	695.00	170.84	74.03
148		134.54	865.36	641.00	224.36	97.22
152		0.00	865.98	675.00	190.98	82.76
156		642.60	867.15	705.00	162.15	70.26
160		41.37	867.16	700.00	167.16	72.44
164		0.00	865.30	683.00	182.30	79.00
168		52.50	864.58	675.00	189.58	82.15

170	126.90(3.00)	863.69	689.00	174.69	75.70
172	171.30(3.00)	864.15	668.00	196.15	85.00
176	0.00	863.71	652.00	211.71	91.74
180	11.34	863.68	679.00	184.68	80.03
184	69.86	863.54	766.00	97.54	42.27
188	233.40(3.00)	863.54	771.00	92.54	40.10
192	5.60	863.57	789.00	74.57	32.31
194	336.60(3.00)	863.58	783.00	80.58	34.92
196	22.68	863.67	764.00	99.67	43.19
200	0.00	863.81	740.00	123.81	53.65
204	11.97	863.79	723.00	140.79	61.01
208	74.62	863.74	694.00	169.74	73.55
212	0.00	863.69	679.00	184.69	80.03
216	8.19	863.67	655.00	208.67	90.42
220	0.00	863.66	630.00	233.66	101.25
224	0.00	863.66	620.00	243.66	105.59
228	37.17	863.66	620.00	243.66	105.59
232	14.07	863.66	643.00	220.66	95.62
236	0.00	863.66	653.00	210.66	91.29
240	69.86	863.66	651.00	212.66	92.15
244	22.68	863.67	634.00	229.67	99.52
248	82.04	863.69	624.00	239.69	103.87
252	17.36	863.79	648.00	215.79	93.51
254	1500.00	863.81	650.00	213.81	92.65
256	28.07	864.46	644.00	220.46	95.53
260	63.98	864.47	650.00	214.47	92.94
264	0.00	871.30	680.00	191.30	82.90
268	0.00	876.17	694.00	182.17	78.94
272	0.00	874.17	696.00	178.17	77.21
276	0.00	875.36	726.00	149.36	64.72
280	0.00	894.01	750.00	144.01	62.40
284	0.00	892.24	731.00	161.24	69.87
288	0.00	886.55	729.00	157.55	68.27
292	0.00	894.08	739.00	155.08	67.20
300	0.00	863.68	640.00	223.68	96.93
304	0.00	863.68	627.00	236.68	102.56
308	0.00	863.67	627.00	236.67	102.56
312	0.00	863.66	583.00	280.66	121.62
316	15.90(3.00)	863.66	570.00	293.66	127.25
320	0.00	863.66	608.00	255.66	110.79
800	----	1020.00			
O-804	----	898.31	746.00	152.31	66.00
900	----	1020.00			
I-904	0.00	1017.88	751.00	266.88	115.65
0	----	905.50			
I-804	0.00	1012.95	746.00	266.95	115.68
O-904	----	898.69	751.00	147.69	64.00

M A X I M U M A N D M I N I M U M V A L U E S

P R E S S U R E S

JUNCTION NUMBER	MAXIMUM PRESSURES psi	JUNCTION NUMBER	MINIMUM PRESSURES psi
316	127.25	124	28.20
312	121.62	128	28.20
72	119.00	4	28.76
I-804	115.68	192	32.31
I-904	115.65	194	34.92

V E L O C I T I E S

PIPE NUMBER	MAXIMUM VELOCITY (ft/s)	PIPE NUMBER	MINIMUM VELOCITY (ft/s)
801	9.37	397	0.02
805	9.37	395	0.03
369	7.50	321	0.04
357	5.87	305	0.04
205	4.98	387	0.05

R E G U L A T I N G V A L V E R E P O R T

VALVE LABEL	VALVE TYPE	VALVE SETTING psi or gpm	VALVE STATUS	UPSTREAM PRESSURE psi	DOWNSTREAM PRESSURE psi	THROUGH FLOW gpm
804	PRV-1	66.00	ACTIVATED	115.68	66.00	3301.97
904	PRV-1	64.00	ACTIVATED	115.65	64.00	1410.82

S U M M A R Y O F I N F L O W S A N D O U T F L O W S

(+) INFLOWS INTO THE SYSTEM FROM SUPPLY NODES
(-) OUTFLOWS FROM THE SYSTEM INTO SUPPLY NODES

NODE NAME	FLOWRATE gpm	NODE TITLE
800	3301.97	
900	1410.82	
0	0.00	

NET SYSTEM INFLOW = 4712.79
NET SYSTEM OUTFLOW = 0.00
NET SYSTEM DEMAND = 4712.79

APPENDIX G

CITY OF SAN DIEGO
ALLOWABLE WATER METER CAPACITIES

2015 AWWA Standards for Water Meter Capacities

Meter Size	City of San Diego 1973 AWWA Table		2015 AWWA Standards	
	Max Capacity per AWWA (gpm)	City Uses 80% of Max Capacity (gpm)	Max Capacity per AWWA (gpm)	City Uses 80% of Max Capacity (gpm)
Displacement Type Meters - AWWA C700-15				
5/8 x 3/4	20	16	20	16
3/4	30	24	30	24
1	50	40	50	40
1-1/2	100	80	100	80
2	160	128	160	128
Compound Type Meters - AWWA C702-15				
3	320	250	350	280
4	500	400	600	480
6	1,000	800	1,350	1,080
8	1,600	1,280	1,600	1,280
Turbine Type Meters - AWWA C701-15 Class II				
3	350	280	435	348
4	600	480	750	600
6	1,250	1,000	1,600	1,280
8			2,800	2,240
10			4,200	3,360
12			5,300	4,240
16			7,800	6,240
20			12,000	9,600

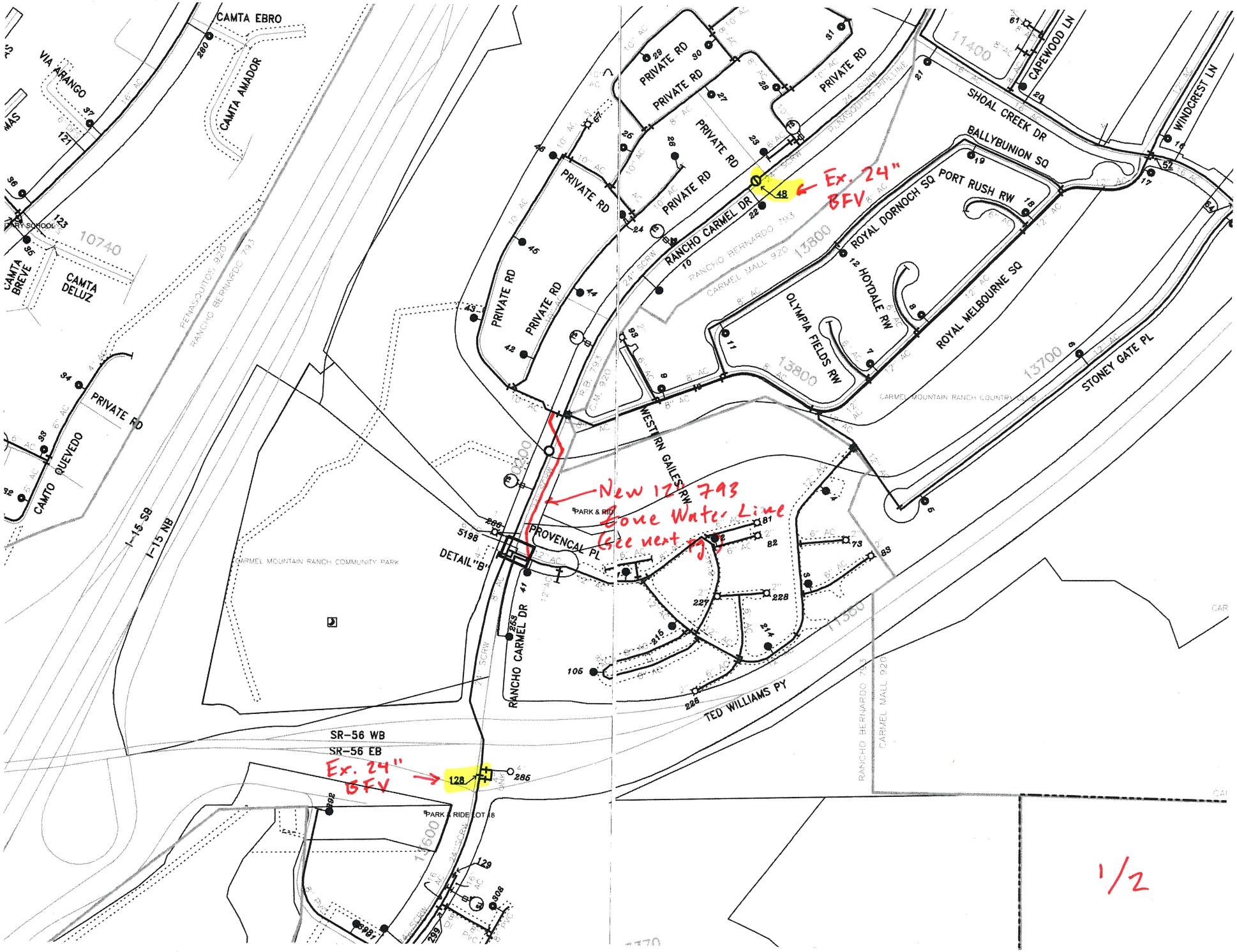
August 23, 2016

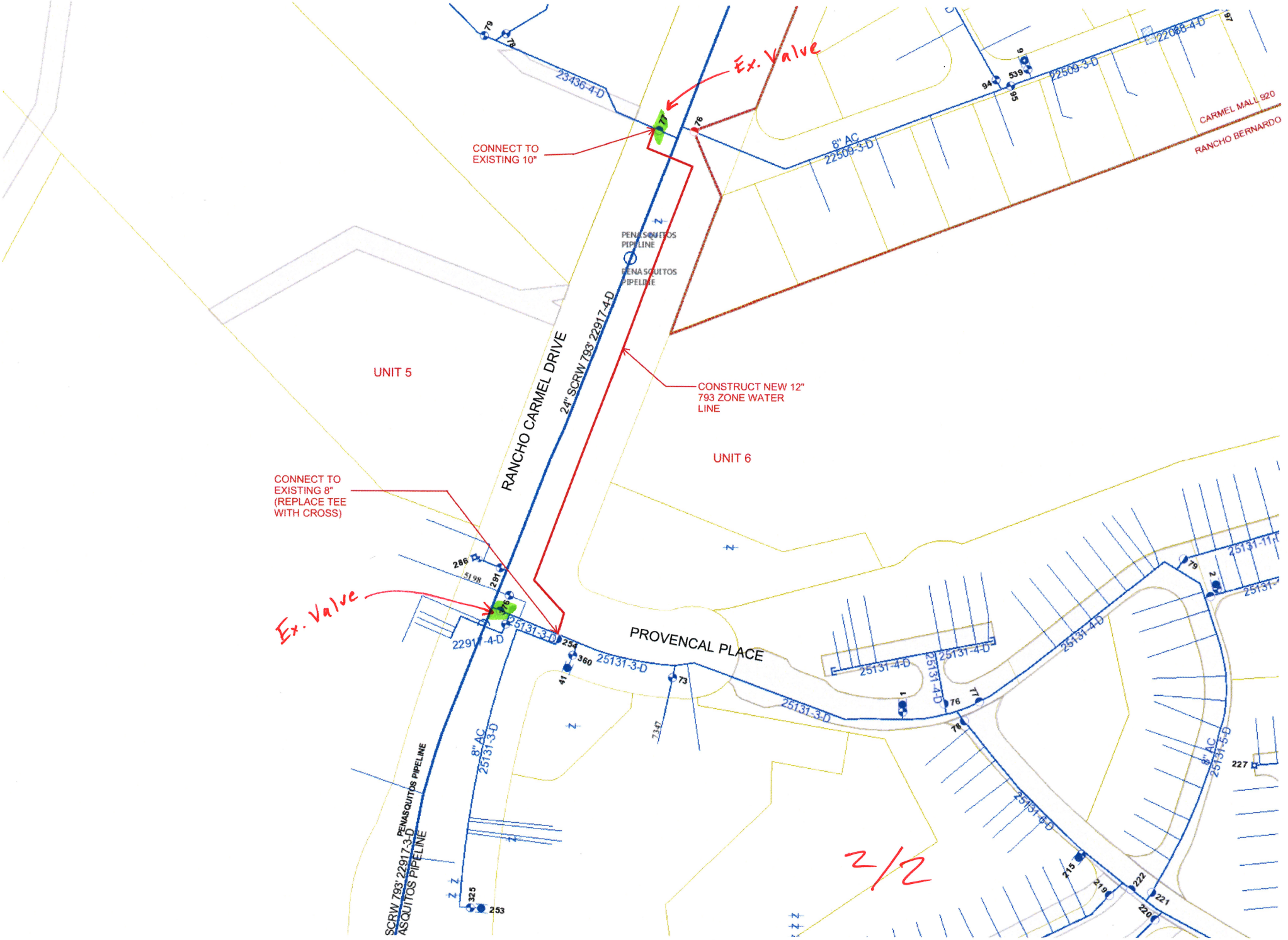
Notes:

1. Most large water meters are Compound Type Meters.
2. Installation of a Turbine meter requires approval from the Water Systems Technician Supervisor.

APPENDIX H

UNIT 5 AND UNIT 6
793 PRESSURE ZONE REDUNDANCY


CAMTA EBRO
VIA ARANGO
CAMTA AMADOR
CAMTA BREVE
CAMTA DELUZ
CAMTO QUEVEDO
PRIVATE RD
PRIVATE RD
PRIVATE RD
PRIVATE RD
PRIVATE RD
PRIVATE RD
RANCHO CARMEL DR
SHOAL CREEK DR
BALLYBUNION SQ
PORT RUSH RW
ROYAL DORNOCH SQ
HOYDALE RW
OLYMPIA FIELDS RW
ROYAL MELBOURNE SQ
STONEY GATE PL
WINDCREST LN
CAPEWOOD LN
WESTERN GAILES RW
PROVENCAL PL
RANCHO CARMEL DR
TED WILLIAMS PY
I-15 SB
I-15 NB
SR-56 WB
SR-56 EB
CARMEL MOUNTAIN RANCH COMMUNITY PARK
PARK & RIDE
PARK & RIDE LOT 18
DETAIL "B"
10740
13800
13700
13600
11400
11500
Ex. 24" BFV
Ex. 24" BFV
New 12" 793 Zone Water Line (See next pg)
1/2


Ex. Valve
CONNECT TO EXISTING 10"
23436-4-D
22509-3-D
22088-4-D
8" AC
22509-3-D
CARMEL MALL 920
RANCHO BERNARDO
PENASQUITOS PIPELINE
PENASQUITOS PIPELINE
UNIT 5
RANCHO CARMEL DRIVE
24" SCRW 793' 22917-4-D
CONSTRUCT NEW 12" 793 ZONE WATER LINE
UNIT 6
CONNECT TO EXISTING 8" (REPLACE TEE WITH CROSS)
Ex. Valve
22917-4-D
25131-3-D
PROVENCAL PLACE
25131-4-D
25131-11-D
25131-5-D
8" AC
25131-3-D
SCRW 793' 22917-3-D
PENASQUITOS PIPELINE
2/2

\\ARTIC\DWG\736018\CMR_WTR_FIGURE-3_24X36_EXWTR.DWG 07-24-20 09:04:46 LAYOUT: LAYOUT

LEGEND

- CITY OF SAN DIEGO BOUNDARY
- PRESSURE ZONE BOUNDARY
- EXISTING 793 ZONE WATER LINE
- EXISTING 920 ZONE WATER LINE
- EXISTING 1020 ZONE WATER LINE
- EXISTING 1130 ZONE WATER LINE
- EXISTING CITY OF SAN DIEGO WATER LINE

PAS LUCIDO AND CAL SAUCILLO WRS (1020/920)

RANCHO CARMEL AND CARMEL MTN WRS (1020/920)

N/O CARMEL MTN INDUST PS WRS (1020/739)

CARMEL INDUSTRIAL WPS (793/1020)

CARMEL MALL WPS (793/920)

CARMEL MTN RANCH HIGH WPS (920/1130)

SABRE SPRINGS AND EVENING CREEK N WRS (793/712)

EXISTING WATER EASEMENTS

EXISTING GUE

EXISTING WATER EASEMENT

EXISTING WATER EASEMENT

CARMEL MTN RANCH 920 ZONE RESERVOIR

BERNARDO HEIGHTS 1020

PENASQUITOS 920

CARMEL MALL 920

GOLF COURSE 1130

GOLF COURSE 1130

RANCHO BERNARDO 793

CITY OF SAN DIEGO

CITY OF POWAY

UNIT 1 · UNIT 2 · UNIT 5 · UNIT 6 · UNIT 8 · UNIT 9 · UNIT 10 · UNIT 11 · UNIT 16 · UNIT 17

OS · OS/PARK

CAMINO DEL NORTE · PASEO LUCIDO · CALLE SAUCILLO · RANCHO CARMEL DR · CARMEL MOUNTAIN RD · TWIN PEAKS RD · CARMEL RIDGE RD · RANCH RD · HIGHLAND · CEDARHURST LANE · BREEZEWAY PL · CAPEWOOD LANE · WINDCREST LANE · PLACE · GATE · SHOAL CREEK DR · STONEY PKWY · TED WILLIAMS · ROYAL MELBOURNE SQUARE · PROVENCAL PL · CHESTNUT HIL LN · LINDAMERE LN · ESPRIT AVE

INTERSTATE CALIFORNIA 15

N

0 400 FEET

DEXTER WILSON ENGINEERING, INC.
CONSULTING ENGINEERS
2234 FARADAY AVENUE
CARLSBAD, CA 92008
(760) 438-4422

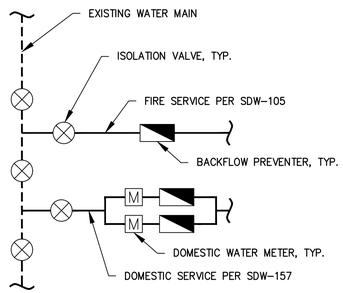
FIGURE 3

EXISTING WATER SYSTEM

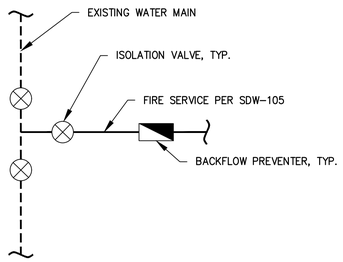
THE TRAILS AT CARMEL MOUNTAIN RANCH

LEGEND

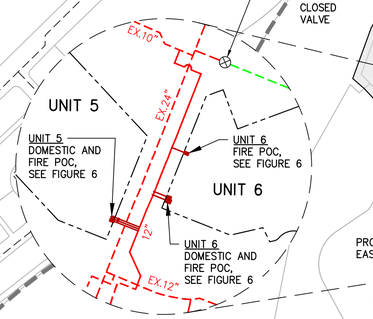
- CITY OF SAN DIEGO BOUNDARY
- PRESSURE ZONE BOUNDARY
- EXISTING 793 ZONE WATER LINE
- EXISTING 920 ZONE WATER LINE
- EXISTING 1020 ZONE WATER LINE
- EXISTING 1130 ZONE WATER LINE
- EXISTING CITY OF SAN DIEGO WATER LINE
- PROPOSED 793 ZONE WATER LINE
- PROPOSED 920 ZONE WATER LINE



DETAIL A
TYPICAL DOMESTIC AND FIRE SERVICE CONNECTION DETAIL



DETAIL B
TYPICAL FIRE SERVICE CONNECTION DETAIL



DETAIL C
NO SCALE

CARMEL MALL WPS (793/920)

PENASQUITOS 920

RANCHO CARMEL DR

CARMEL MOUNTAIN RD

UNIT 16 FIRE POC, SEE DETAIL B

PROPOSED WATER EASEMENT

UNIT 16 DOMESTIC AND FIRE POC, SEE DETAIL A

UNIT 17 FIRE POC, SEE DETAIL B

UNIT 17 DOMESTIC AND FIRE POC, SEE DETAIL A

HIGHLAND RIDGE RD

RANCH RD

NEW WATER EASEMENT TO BE DEDICATED TO CITY OF SD IN ACCORDANCE WITH CURRENT CITY OF SD STANDARDS

UNIT 1 FIRE POC (920 ZONE), SEE DETAIL B

CEDARHURST LANE

BREEZEWAY PL

EXISTING WATER EASEMENTS

GOLF COURSE 1130

UNIT 9

UNIT 10/11 DOMESTIC AND FIRE POC, SEE DETAIL A

UNIT 2 FIRE POC, SEE DETAIL B

UNIT 1 DOMESTIC AND FIRE POC, SEE DETAIL A

CAPEWOOD LANE

WINDCREST LANE

UNIT 8 FIRE POC, SEE DETAIL B

EXISTING 8" 1130 ZONE PUBLIC WATER LINE TO REMAIN

EXISTING GUE

UNIT 9/18 FIRE POC (920 ZONE), SEE DETAIL B

UNIT 9/18 DOMESTIC & FIRE POC (920 ZONE), SEE DETAIL A

UNIT 10

EXISTING WATER EASEMENT

UNIT 10/11 FIRE POC, SEE DETAIL B

CHESTNUT HILL LN

UNIT 11

OS

CITY OF POWAY

N

0 300 FEET

UNIT 2

UNIT 8

UNIT 2 DOMESTIC AND FIRE POC, SEE DETAIL A

UNIT 8 DOMESTIC AND FIRE POC, SEE DETAIL A

GATE PLACE

SHOAL CREEK DR

STONEY PATH

ROYAL MELBOURNE SQUARE

OS/PARK

CARMEL MALL 920

ESPRIT AVE

LINDAMERE LN

UNIT 5

UNIT 6

PARK

PROVENCAL PL

TED WILLIAMS

RANCHO BERNARDO 793

GOLF COURSE 1130

920/1130 PUMP STATION

DEXTER WILSON ENGINEERING, INC.
CONSULTING ENGINEERS
2234 FARADAY AVENUE
CARLSBAD, CA 92008
(760) 438-4422

FIGURE 4

PROPOSED WATER SYSTEM

THE TRAILS AT CARMEL MOUNTAIN RANCH

\\ARTIC\DWG\736018\CMR_WTR_FIGURE-4_24X36_PROWTR.DWG 10-22-20 17:01:05 LAYOUT: LANDSCAPE

EXHIBIT A

WATER SYSTEM
NODE AND PIPE DIAGRAM

LEGEND

- CITY OF SAN DIEGO BOUNDARY
- PRESSURE ZONE BOUNDARY
- EXISTING 793 ZONE WATER LINE
- EXISTING 920 ZONE WATER LINE
- EXISTING 1020 ZONE WATER LINE
- EXISTING 1130 ZONE WATER LINE
- EXISTING CITY OF SAN DIEGO WATER LINE
- PROPOSED 793 ZONE WATER LINE
- PROPOSED 920 ZONE WATER LINE
- (0) COMPUTER MODEL NODE
- [1] COMPUTER MODEL PIPE

CITY OF SAN DIEGO

PENASQUITOS 920

BERNARDO HEIGHTS 1020

RANCHO BERNARDO 793

CARMEL MALL 920

GOLF COURSE 1130

CITY OF POWAY

OS

OS/PARK

UNIT 1

UNIT 2

UNIT 5

UNIT 6

UNIT 8

UNIT 9

UNIT 10

UNIT 11

UNIT 16

UNIT 17

CAMINO DEL NORTE

PASEO LUCIDO

CALLE SAUCILLO

RANCHO CARMEL DR

CARMEL MOUNTAIN RD

CEDARHURST LANE

BREEZEWAY PLACE

ROYAL MELBOURNE SQUARE

STONEY GATE PKWY

TED WILLIAMS PROVENCAL PL

SHOAL CREEK DR

CARMEL RIDGE RD

RANCH RD

CHESTNUT HIL LN

LINDAMERE LN

ESPRIT AVE

TWIN PEAKS RD

INTERSTATE CALIFORNIA 15

PAS LUCIDO AND CAL SAUCILLO WRS (1020/920)

RANCHO CARMEL AND CARMEL MTN WRS (1020/920)

N/O CARMEL MTN INDUST PS WRS (1020/739)

CARMEL INDUSTRIAL WPS (793/1020)

CARMEL MALL WPS (793/920)

SABRE SPRINGS AND EVENING CREEK N WRS (793/712)

CARMEL MTN RANCH 920 ZONE RESERVOIR

EX. FIRE HYDRANT

NORMALLY CLOSED VALVE

DETAIL B
NO SCALE

DETAIL A
NO SCALE

0 400 FEET

N

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EXHIBIT A
WATER SYSTEM NODE AND PIPE DIAGRAM
THE TRAILS AT CARMEL MOUNTAIN RANCH