GPC PLATFORM FIRE FIGHTING SYSTEM
AMER 6 PLATFORM
Fire Monitor System Reports

for

General Pertolum Company

8, Dr.Moustafa Abu Zahra St. Nasr City
Cairo

Prepared By:

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1/31/2015

General Project Data Report

General Data

Project Title:	GPC PLATFORM FIRE FIGHTING SYSTEM	Project File Name:	Amer 6..fiw
Designed By:	Eng. Mostafa Abd Elrazek	Date:	1/31/2015
Code Reference:		Approving Agency:	
	AMER 6 Platform		
Client Name:	General Pertolum Company	Phone:	+202 4023549
Address:	8, Dr.Moustafa Abu Zahra St. Nasr City	City, State Zip Code:	Cairo
Company Name:	International Security and Safety System	Representative:	Eng. Mostafa Abd Elrazek
Company Address:	49 Abbass El Akkad St., Nasr City, Cairo	City And State:	www.isssystems.com
Phone:	+202 24047424-24017430 www.isssystems.com info@isssystems.com		
Building Name:	AMER 6 Platform	Building Owner:	GPC
Contact at Building:		Phone at Building:	
Address Of Building:		City, State Zip Code:	

Project Data

Description Of Hazard:	Ex. Haz. Gp. 1	Monitor System Type:	Dry
Design Area Of Water Application:	232 m²	Maximum Area Per Monitor:	9 m²
Default Monitor K-Factor:	100.96 Km	Default Pipe Material:	SCHED 40 WET STEEL
Inside Monitor Stream Allowance:	189.27 Lpm	Outside Monitor Stream Allowance:	946.33 Lpm
In Rack Sprinkler Allowance:	0.00 Lpm		

Monitor Specifications

Make:		Model:	
Size:		Temperature Rating:	-17.77 C

Water Supply Test Data

Source Of Information:			
Test Hydrant ID:		Date Of Test:	
Hydrant Elevation:	0 m	Static Pressure:	0.00 kPa
Test Flow Rate:	0.00 Lpm	Test Residual Pressure:	0.00 kPa
Calculated System Flow Rate:	506.42 Lpm	Calculated Inflow Residual Pressure:	671.78 kPa

Calculation Project Data

Calculation Mode:	Demand		
HMD Minimum Residual Pressure:	599.98 kPa	Minimum Desired Flow Density:	12.22 Lpm/m²
Maximum Water Velocity:	6.10 m/s	Maximum Frictional Loss / 100 feet:	151.68 kPa
Number Of Active Nodes:	9		
Number Of Active Pipes:	8	Number Of Inactive Pipes:	0
Number Of Active Monitors:	2	Number Of Inactive Monitors:	0

Fire Monitor Input Data

Node Input Data

Node No.	Node Description Branch Description	Area Group Branch Dia. (cm)	Monitor KFactor (Km) Branch Len. (m)	Pressure Estimate (kPa) Branch Stnd Fittings	Node Elev (m) Branch Non-Stnd Fittings (m)	Fixed Flow (Lpm) Branch Sprk KFactor (Km)
3	No Discharge ----	---- 0.000	N/A 0.0	671.78 ----	0.00 0.0	0.00 0.00
4	No Discharge ----	---- 0.000	N/A 0.0	669.76 ----	0.00 0.0	0.00 0.00
5	No Discharge ----	---- 0.000	N/A 0.0	668.53 ----	0.00 0.0	0.00 0.00
6	No Discharge ----	---- 0.000	N/A 0.0	618.37 ----	4.70 0.0	0.00 0.00
7	No Discharge ----	---- 0.000	N/A 0.0	615.30 ----	4.70 0.0	0.00 0.00
8	No Discharge ----	---- 0.000	N/A 0.0	614.93 ----	4.70 0.0	0.00 0.00
9	No Discharge ----	---- 0.000	N/A 0.0	612.96 ----	4.70 0.0	0.00 0.00
10	Monitor ----	---- 0.000	100.96 0.0	599.98 ----	6.00 0.0	0.00 0.00
11	Monitor ----	---- 0.000	100.96 0.0	660.70 ----	0.00 0.0	0.00 0.00

Fire Monitor Input Data

Pipe Input Data

Beg. Node	End. Node	Pipe Description	Nominal Diameter (mm)	Type Group	Fitting Data	Nominal Length (m)	Fitting Length (m)	Total Length (m)	CFactor (gpm/inch-psi)
3	4	SCHED 40 WET STEEL	76.200	0	2L	0.74	3.05	3.79	120
4	5	SCHED 40 WET STEEL	76.200	0		2.30	0.00	2.30	120
5	6	SCHED 40 WET STEEL	76.200	0	2L	4.70	3.05	7.75	120
6	7	SCHED 40 WET STEEL	76.200	0	T	1.20	4.57	5.77	120
7	8	SCHED 40 WET STEEL	76.200	0	L	0.90	1.52	2.42	120
7	9	SCHED 40 WET STEEL	76.200	0	L	15.10	1.52	16.62	120
9	10	SCHED 40 WET STEEL	76.200	0	G	1.38	0.30	1.68	120
8	11	SCHED 40 WET STEEL	76.200	0	G	1.38	0.30	1.68	120

Fire Monitor Output Data

Overall Node Groupings Output Data

Pipe Segment Beg. Node	Pipe Segment End. Node	Pipe Type Group	Pipe Flow Rate (Lpm)	Monitor Flow At Beg. Node (Lpm)	Fixed Flow Out (+) (Lpm)	Fixed Flow In (-) (Lpm)	Beg. Node Residual Pressure (kPa)	Imbalance Flow At Beg. Node (Lpm)
3	4	0	506.42	0.00	0.00	-506.415788911224	671.78	
4	3	0	-506.42	0.00	0.00	0.00	669.76	0.00009
4	5	0	506.42					
5	4	0	-506.42	0.00	0.00	0.00	668.53	-0.06138
5	6	0	506.35					
6	5	0	-506.35	0.00	0.00	0.00	618.37	-0.03052
6	7	0	506.32					
7	6	0	-506.32	0.00	0.00	0.00	615.30	-0.00438
7	8	0	259.23					
7	9	0	247.09					
8	7	0	-259.23	0.00	0.00	0.00	614.93	0.00830
8	11	0	259.24					
9	7	0	-247.09	0.00	0.00	0.00	612.96	2.47067
9	10	0	249.56					
10	9	0	-249.56	247.18	0.00	0.00	599.98	-2.38303
11	8	0	-259.24	259.39	0.00	0.00	660.70	0.14870

Fire Monitor Output Data

Overall Pipe Output Data

Beg. End. Node	Nodal KFactor (Km)	Elevation (m)	Monitor/Fix Discharge (Lpm)	Residual Pressure (kPa)	Nom. Dia. Inside Dia. C-Value	q (Lpm) Q (Lpm) Velocity (m/s)	F. L./m (kPa/m) Fittings Type-Grp	Pipe-Len. Fit-Len. Tot-Len. (m)	PF-(kPa) PE-(kPa) PT-(kPa)
3	0.00	0.00	0.00	671.76	76.20	0.00	0.53249	0.74	2.017
4	0.00	0.00	0.00	669.76	77.978	506.40	2L	3.05	0.000
	SCHED 40 WET STEEL				120	1.77	0	3.79	2.017
4	0.00	0.00	0.00	669.76	76.20	0.00	0.53249	2.30	1.225
5	0.00	0.00	0.00	668.52	77.978	506.40	-----	0.00	0.000
	SCHED 40 WET STEEL				120	1.77	0	2.30	1.225
5	0.00	0.00	0.00	668.52	76.20	0.00	0.53237	4.70	4.125
6	0.00	4.70	0.00	618.39	77.978	506.36	2L	3.05	46.035
	SCHED 40 WET STEEL				120	1.77	0	7.75	50.160
6	0.00	4.70	0.00	618.39	76.20	0.00	0.53231	1.20	3.073
7	0.00	4.70	0.00	615.29	77.978	506.33	T	4.57	0.000
	SCHED 40 WET STEEL				120	1.77	0	5.77	3.073
7	0.00	4.70	0.00	615.29	76.20	0.00	0.15426	0.90	0.374
8	0.00	4.70	0.00	614.94	77.978	259.22	L	1.52	0.000
	SCHED 40 WET STEEL				120	0.91	0	2.42	0.374
7	0.00	4.70	0.00	615.29	76.20	0.00	0.14116	15.10	2.347
9	0.00	4.70	0.00	612.94	77.978	247.11	L	1.52	0.000
	SCHED 40 WET STEEL				120	0.86	0	16.62	2.347
8	0.00	4.70	0.00	614.94	76.20	259.39	0.15427	1.38	0.260
11	100.96	0.00	259.37	660.72	77.978	259.22	G	0.30	-46.035
	SCHED 40 WET STEEL				120	0.91	0	1.69	-45.775
9	0.00	4.70	0.00	612.94	76.20	247.18	0.14378	1.38	0.242
10	100.96	6.00	247.18	599.98	77.978	249.57	G	0.30	12.733
	SCHED 40 WET STEEL				120	0.87	0	1.69	12.975

Fire Monitor Output Data

Overall Monitor Output Data

Flowing Monitor Node No.	Area Group Code	Monitor KFactor (Km)	Node Elevation (m)	Residual Pressure (kPa)	Flowing Area (m²)	Flowing Density (Lpm/m²)	Monitor Discharge (Lpm)
10		100.96	6.00	599.98	9.29	26.607	247.18
Sub Totals For Non-Group					9.29	26.607	247.18
11		100.96	0.00	660.70	9.29	27.921	259.39
Sub Totals For Non-Group					9.29	27.921	259.39
Totals For All Groups					18.58	27.264	506.56

Fire Monitor Output Summary

Hydraulically Most Demanding Monitor Node

HMD Monitor Node Number: HMD	10	
Actual Residual Pressure: HMD	599.98	kPa
Actual LPM / Monitor Nozzle:	247.18	Lpm

Monitor Summary

Monitor System Type:	Dry	
Specified Area Of Application:	232.26	m²
Adjusted Area Of Application:	301.94	ft²
Minimum Desired Density:	12.224	Lpm/m²
Application Average Density:	2.181	Lpm/m²
Application Adjusted Density (not required by NFPA 13):	1.678	gpm/ft²
Application Average Area Per Monitor:	116.13	m²
Adjusted Area Per Monitor (not required by NFPA 13):	1625.02	ft²
Monitor Flow:	506.56	Lpm
Average Monitor Flow:	253.28	Lpm

Flow Velocity And Imbalance Summary

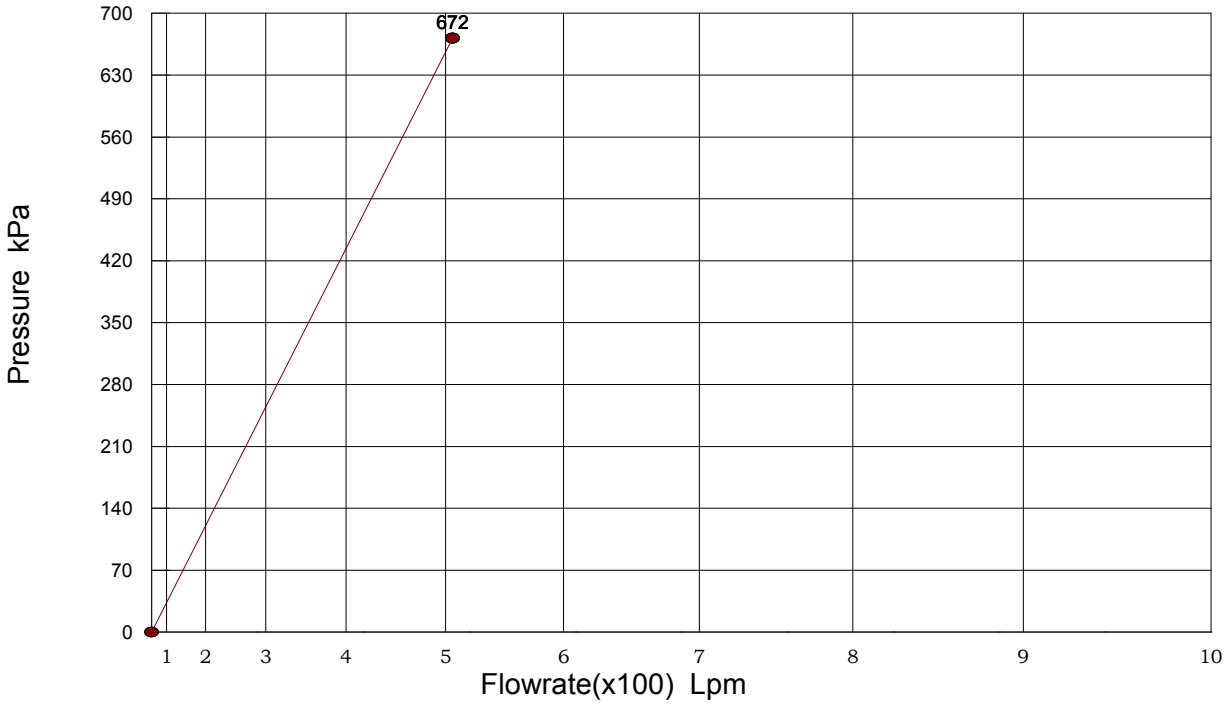
Maximum Flow Velocity (In Pipe 4 - 5)	1.77	m/sec
Maximum Velocity Pressure (In Pipe 4 - 5)	1.56	kPa
Allowable Maximum Nodal Pressure Imbalance:	0.0069	kPa
Actual Maximum Nodal Pressure Imbalance:	0.0049	kPa
Actual Average Nodal Pressure Imbalance:	0.0028	kPa
Actual Maximum Nodal Flow Imbalance:	2.4707	Lpm
Actual Average Nodal Flow Imbalance:	0.5675	Lpm

Overall Network Summary

Number Of Unique Pipe Sections:	8	
Number Of Flowing Monitors:	2	
Pipe System Water Volume:	132.11	L
Monitor Flow:	506.56	Lpm
Fixed Flow:	0.00	Lpm
Minimum Required Residual Pressure At System Inflow Node:	671.78	kPa
Demand Flow At System Inflow Node:	506.42	Lpm

Fire Monitor Output Data

Hydraulic Supply/Demand Graph



Demand Curve Data

Calculated Residual Pressure: 671.78 kPa
Calculated Flow Rate: 506.42 Lpm