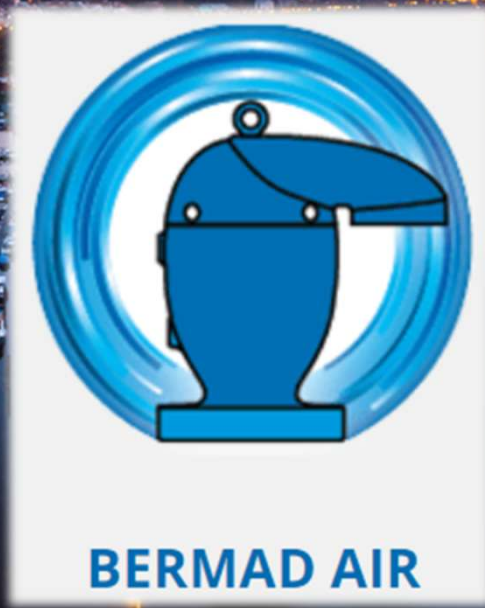




# BERMAD

## BERMAD AIR

### BERMAD AIR VALVES SELECTION PROGRAM



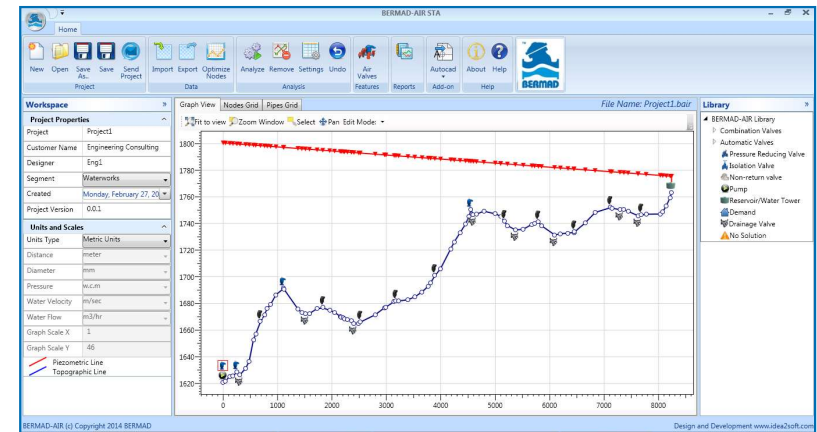
Update March 2024





# BERMAD AIR – THE PROGRAM

BERMAD AIR software is a state of the art, water system design tool helping the designer in selecting the best valves for optimized air control in water pipelines and irrigation networks while reducing costs.

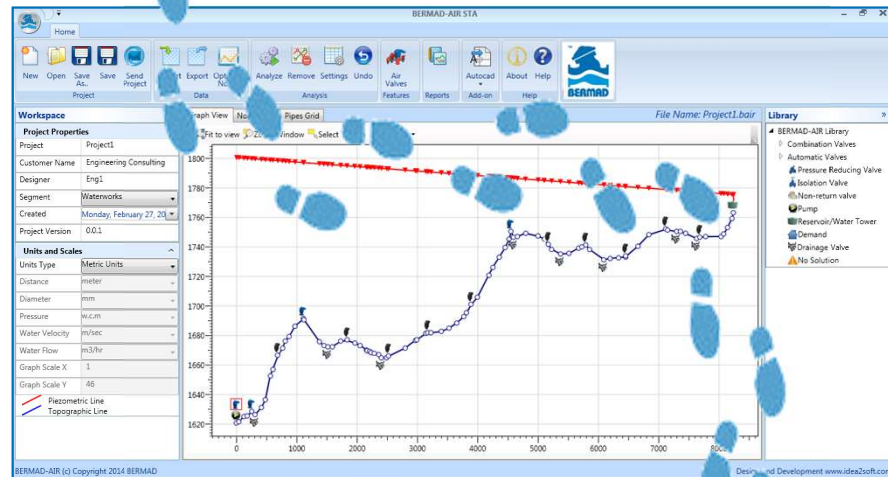
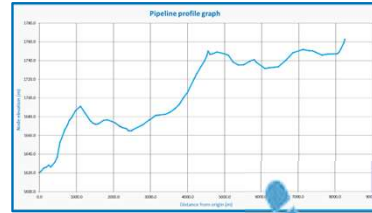


The software is an engineering tool, including algorithms based on common sizing methods such as AWWA-M51. It enables every designer to reach an educated decision regarding the selection of air valves, while examining various “what if” scenarios.



# BERMAD AIR - IN 10 STEPS

1. Login
2. Workspace details
3. Import Excel File
4. Pump & Reservoir
5. Settings
6. Analysis
7. Special Scenarios
8. Air Valves
9. Reports
10. Support





# BERMAD AIR - IN 10 STEPS

## 1. Login

### BERMAD AIR LOGIN

Access to this location is restricted to authorized users only.  
Please type your username and password.


USERNAME

PASSWORD

LANGUAGE  ▼

Remember Me

Forget password? [Here](#)





# BERMAD AIR - IN 10 STEPS

## 2. Workspace details

Project properties

Units selection

The screenshot displays the BERMAD-AIR STA software interface. The main workspace is a graph view with a grid. The left sidebar contains the 'Project Properties' and 'Units and Scales' panels, both highlighted with blue boxes. The 'Project Properties' panel includes fields for Project Name, Customer Name, Designer Name, Segment (set to 'Waterworks'), Created date (Sunday, February 26, 201), and Project Version (0.0.1). The 'Units and Scales' panel includes dropdowns for Units Type (Metric Units), Distance (meter), Diameter (mm), Pressure (w.c.m), Water Velocity (m/sec), Water Flow (m<sup>3</sup>/hr), Graph Scale X (1), and Graph Scale Y (1). The right sidebar shows the 'Library' with various components like Combination Valves, Automatic Valves, Pressure Reducing Valve, Isolation Valve, Non-return valve, Pump, Reservoir/Water Tower, Demand, Drainage Valve, and No Solution. The bottom status bar indicates 'BERMAD-AIR (c) Copyright 2014 BERMAD' and 'Design and Development www.idea2soft.com'.





# BERMAD AIR - IN 10 STEPS

## 3. Import Excel File

Ensure correct format

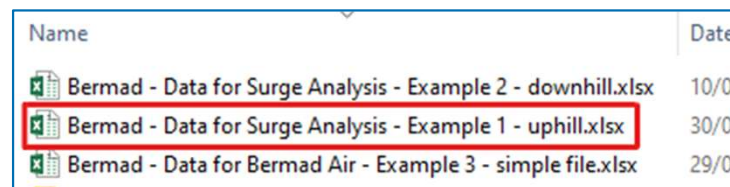
Note: Format cell as "Number"

<b>MUST HAVE</b>			<b>Optional</b>					
Node number	Distance from origin	Node elevation	Pipeline internal diameter	Pipeline wall thickness	Pipeline material	Roughness (HW coefficient)	Class / Rating	Any demand?
-	meter	meter	mm	mm	-	-	-	m3/h
1 (first node)	0.0	1620.5						
2	42.9	1621.8						
3	121.9	1625.2						
4	179.1	1625.7						

Click "Import"



Select file to import  
(must be closed)





# BERMAD AIR - IN 10 STEPS

## 3. Import Excel File (cont.)

Select data location

Three options:

Drop down lists

In the file

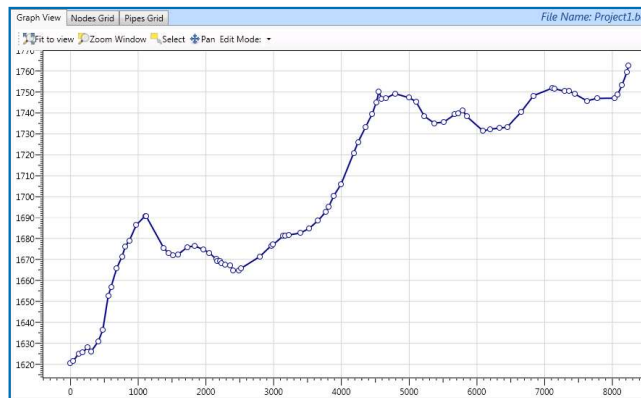
Default



# BERMAD AIR - IN 10 STEPS

## 3. Import Excel File (cont.)

Check data integrity



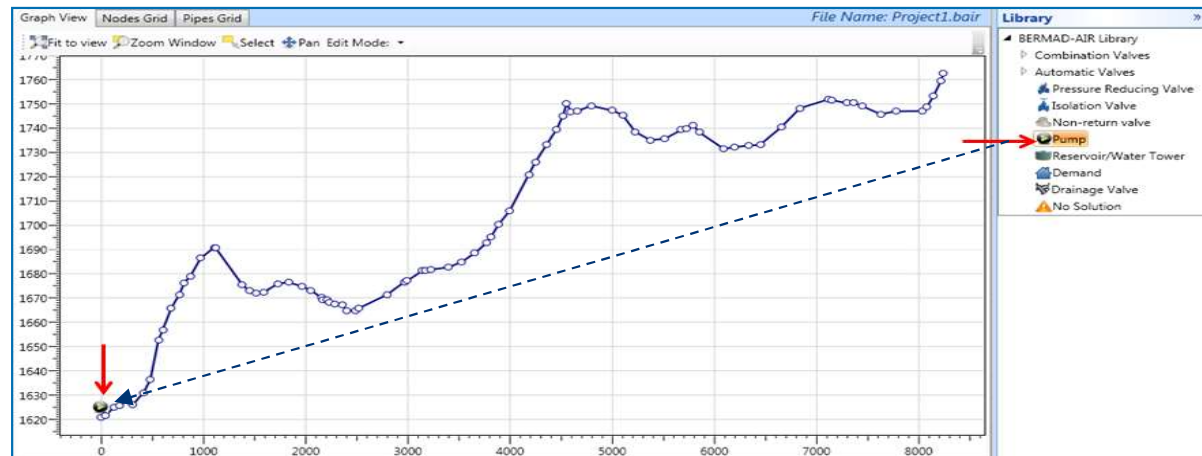
Section Name	Pipe Material	Length [m]	Pipe Diameter [mm]	Friction Coef	Collapse Pressure [w.c.m]	Flow Rate [m3/hr]
1-2	Iron	42.9	355	140	-4	0
2-3	Iron	79	355	140	-4	0
3-4	Iron	57.2	355	140	-4	0
4-5	Iron	73.1	355	140	-4	0
5-6	Iron	56.4	355	140	-4	0
6-7	Iron	103.5	355	140	-4	0
7-8	Iron	65.9	355	140	-4	0
8-9	Iron	79	355	140	-4	0
9-10	Iron	42.7	355	140	-4	0
10-11	Iron	83.9	355	140	-4	0
11-12	Iron	76.8	355	140	-4	0
12-13	Iron	49.6	355	140	-4	0
13-14	Iron	60.5	355	140	-4	0
14-15	Iron	100.5	355	140	-4	0
15-16	Iron	135.1	355	140	-4	0



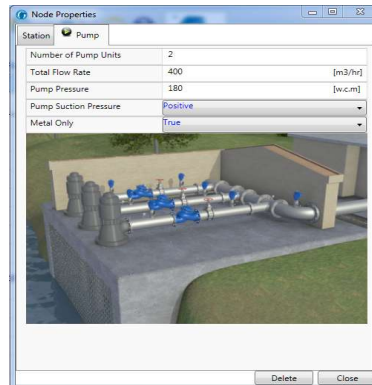
# BERMAD AIR - IN 10 STEPS

## 4. Pump & Reservoir

Drag & drop pump icon



**Pumping station data**  
(No. of pumps, flow, pressure, etc.)

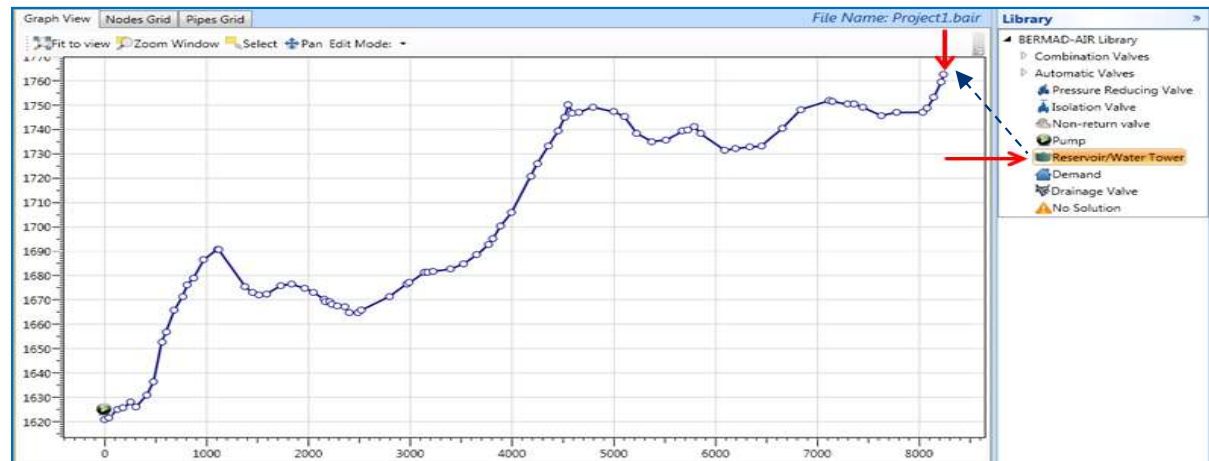




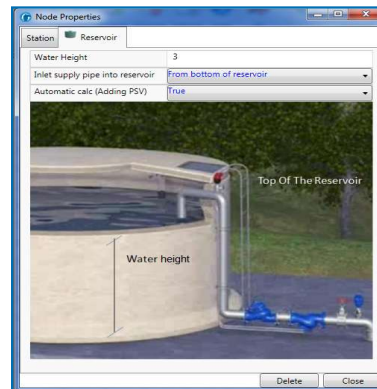
# BERMAD AIR - IN 10 STEPS

## 4. Pump & Reservoir (cont.)

Drag & drop reservoir icon



**Reservoir data**  
(water level, connection, etc.)

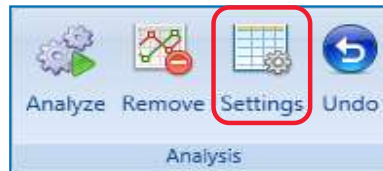




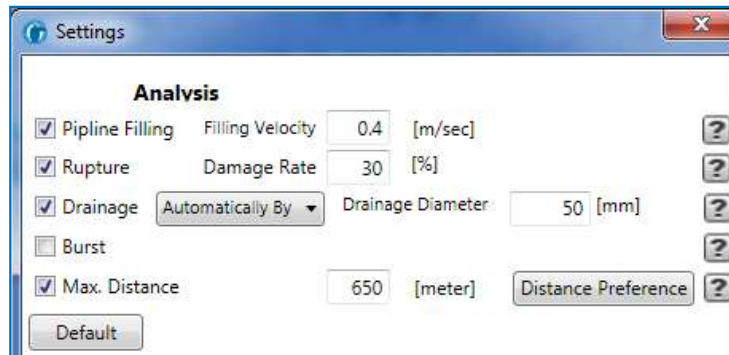
# BERMAD AIR - IN 10 STEPS

## 5. Settings

Click "Setting"  
(If need to change)



Analysis parameters  
(Change, default or ignore)



Select Air Valves options  
(Change, default or ignore)

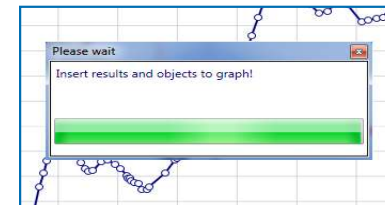
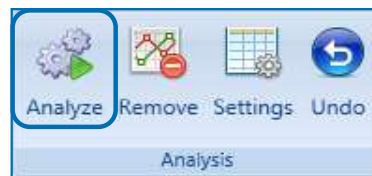
Waterworks				
Select	Model	Material	Diameter	Preferred connection
<input checked="" type="checkbox"/>	C30	Plastic		BP_BSP_Male_Thre
<input type="checkbox"/>	C70 Mushroom	Ductile Iron	<input type="checkbox"/> 3/4"	
<input checked="" type="checkbox"/>	C70 Down	Ductile Iron	<input checked="" type="checkbox"/> 1" <input checked="" type="checkbox"/> 2"	16_ISO-16
<input type="checkbox"/>	C30-C	Ductile Iron		
<input checked="" type="checkbox"/>	A30	Plastic		BP_BSP_Male_Thre



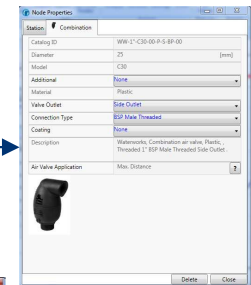
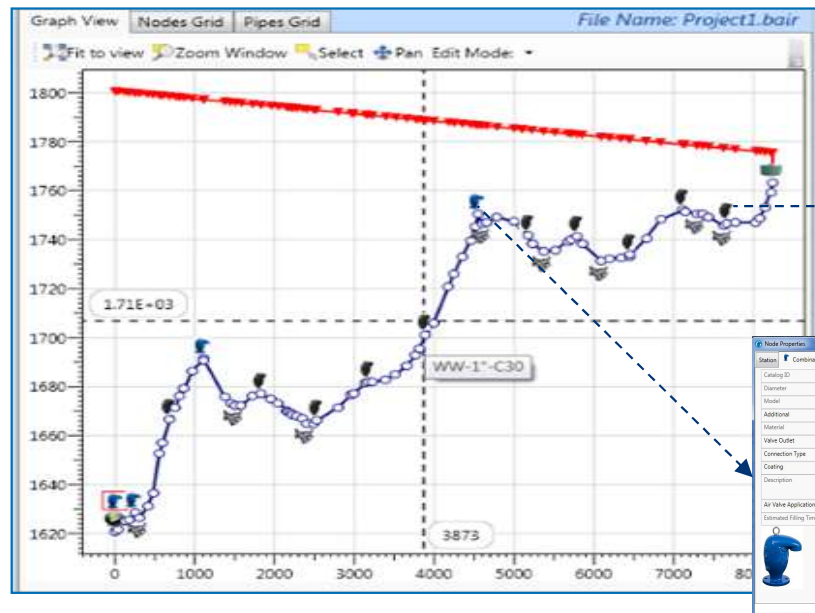
# BERMAD AIR - IN 10 STEPS

## 6. Analysis

Click "Analyze"



Check Results  
(Locations, selection reason, flow, etc.)

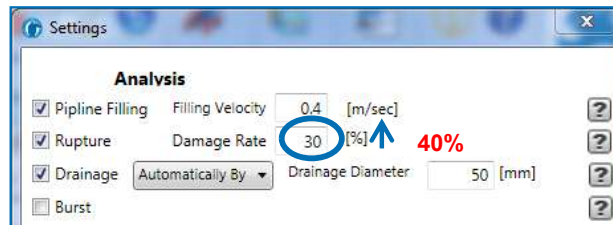




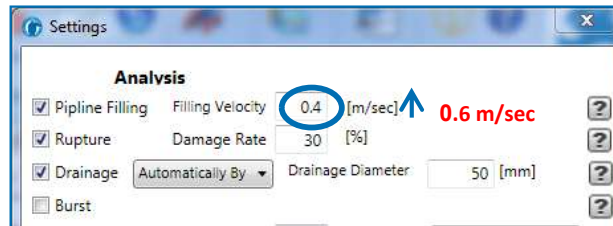
# BERMAD AIR - IN 10 STEPS

## 7. Special scenarios

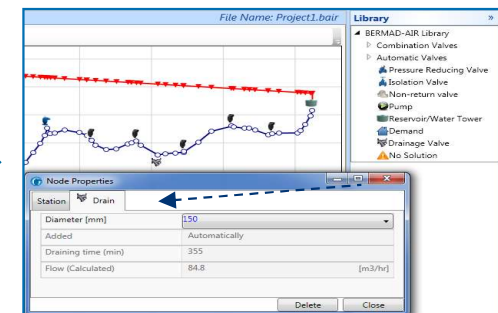
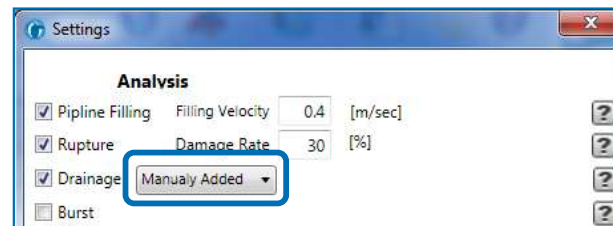
Pipe age affects damage



Real filling affects velocity



Manually added drainage

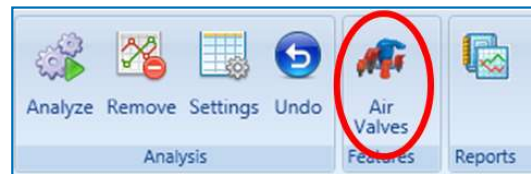




# BERMAD AIR - IN 10 STEPS

## 8. Air Valves

Click “Air Valves”



Adjust AV configuration  
(Connection, Coating, Cover, etc.)

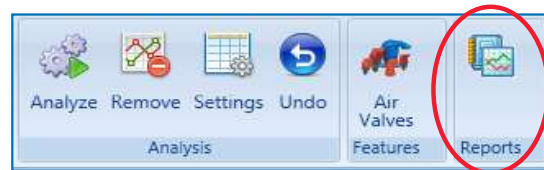
Catalog ID	Name	Quantity	Material	Diameter	Connection Type	Coating	Valve Outlet	Additional
WW-2"-C70-SP-C-D-25-EV	Combination	2	Ductile_Iron	50	ISO-25	Epoxy Blue Ultravi	Down Outlet	Surge Protection
WW-2"-C70-00-C-D-25-EV	Combination	1	Ductile_Iron	50	ISO-25	Epoxy Blue Ultravi	Down Outlet	None
WW-1"-C30-00-P-S-BP-00	Combination	7	Plastic	25	BSP Male Threade	None	Side Outlet	None
WW-3"-C70-00-C-D-16-EV	Combination	2	Ductile_Iron	80	ISO-16	Epoxy Blue Ultravi	Down Outlet	None
WW-2"-C30-00-P-D-FF-00	Combination	3	Plastic	50	ISO-16	None	Down Outlet	None



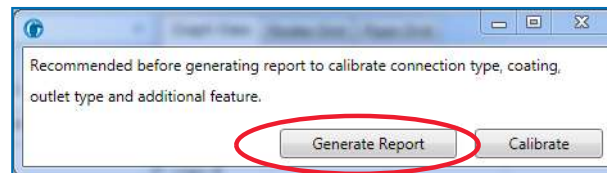
# BERMAD AIR - IN 10 STEPS

## 9. Reports

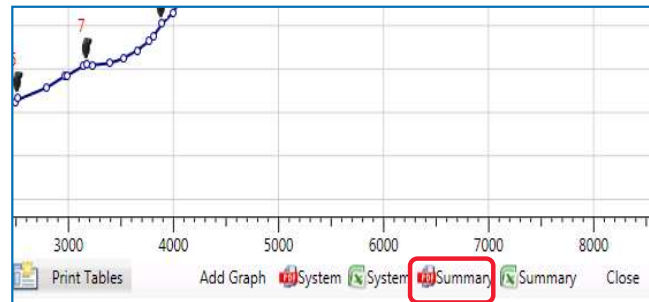
Click "Reports"



Click "Generate Reports"



Select report type  
(PDF or Excel, system or summary)



BERMAD Air Software  
Summary Report

Project Name: Project1  
Date: 20/7/2017

Page 1 of 3  
1.1.2

File Name	Project1.bur	Distance Units	meter	Drainage	Automatically By Diam
Customer Name	Engineering Consulting	Elevation Units	meter	Max Release Air Valves	650 (mm)
Designer Name	DWJ	Pressure Units	m.c.m	Brand Catalogue Rate	0.761
Application	Waterworks	Pressure (Calculated)	100.0	Release Pressure Rate	30 (N)
Depth / Scale	1:60	Pressure (Input Data)	100.0	Pressure Filling	1m
	Head Free	Head Free	400 (m/m)	Filling Velocity	0.4 (m/sec)

Line No.	Node Name	Distance From Origin	Node Elevation	Node Pressure	Qty	Icon	Catalog ID	Remarks
1	1	0.0	1,620.0	100.0	1	U	Gate	
2	5	202.2	1,620.2	71.0	1	F	WW-2-C70-00-C-02-EV	High Point
3	10	368.8	1,620.4	73.2	1	F	drainageValve	Diain 50, Flow: 151
4	11	461.6	1,660.0	122.0	1	F	WW-2-C30-00-R-SAP-00	Max. Distance
5	16	1,100.0	1,661.0	106.2	1	F	WW-2-C70-00-C-19-EV	High Point
6	20	1,210.4	1,672.1	123.8	1	F	drainageValve	Diain 50, Flow: 31.6
7	23	1,480.7	1,675.0	114.4	1	F	WW-2-C30-00-R-P27-00	High Point
8	23	2,402.4	1,666.9	126.1	1	F	drainageValve	Diain 50, Flow: 173.4
9	34	3,200.0	1,665.9	127.0	1	F	WW-1-C30-00-R-SAP-00	Max. Distance
10	39	3,175.8	1,661.0	100.3	1	F	WW-1-C30-00-R-SAP-00	Max. Distance
11	48	3,600.0	1,700.0	101.1	1	F	WW-1-C30-00-R-SAP-00	Max. Distance
12	53	4,264.4	1,700.1	99.8	1	F	WW-2-C70-00-C-19-EV	High Point
13	54	4,268.8	1,746.7	99.8	1	F	drainageValve	Diain 50, Flow: 34.3
14	54	5,175.0	1,747.4	40.0	1	F	WW-1-C30-00-R-SAP-00	Max. Distance

BERMAD Air always publishes engineering solutions but only under flow conditions. Every generated method should be used for its steady state flow conditions each at water surge.



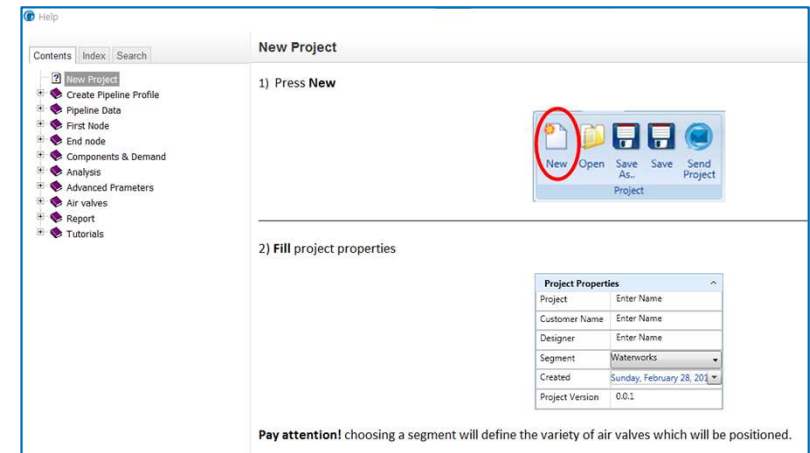
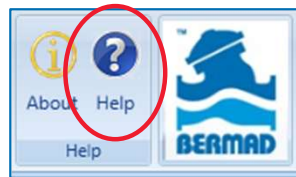


# BERMAD AIR - IN 10 STEPS

## 10. Support

Click “Help”

This will open a help menu



Click “Send Project”

This will send a copy of the project to BERMAD’s Application Engineering department.





# BERMAD AIR – THE PROGRAM

## Report example

**BERMAD Waterworks** Surge Report

---

**BERMAD AIR - Report**

**Details:**

File Name:	Pathwin Town Water Supply Project.bair	Distance Units:	meter
Customer Name:	Han Sein Thant	Elevation Units:	Yes
Designer Name:	MB	Pressure Units:	w.c.m
Created:	10/01/2021	Max Space Air Valves	1000 [meter]
Application:	Waterworks	Burst Damage Rate	0 [%]
Pressure (Calculated):	60.0	Rupture Damage Rate	33 [%]
Pressure (Input Data):	60	Pipeline Filling	Yes
Head Flow:	866 [m3/hr]	Filling Velocity	0.3 [m/sec]

**System Layout:**

**BERMAD Waterworks** Surge Report

---

**Air Valves Positioning:**

Position No.	Distance From Origin	Node Elevation	Node Pressure	Qty	Catalog ID	Remarks
	0	3.2	60	1	Pump Station	
1				3	WW-2".C30-SP-C-S-16-EV-WD	
2	310	6.3	55.3	1	WW-2".C30-00-P-S-8P-WD	High Point
3	1340	5	51.1	1	WW-2".C30-00-P-S-8P-WD	High Point
4	2220	6.6	44.8	1	WW-2".C30-00-P-S-8P-WD	High Point
5	2460	5.5	44.6	1	WW-2".C30-00-P-S-8P-WD	High Point
6	2910	4.9	42.8	1	WW-2".C30-00-P-S-8P-WD	High Point
7	3030	4.9	42.2	1	WW-2".C30-00-P-S-8P-WD	High Point
8	3700	2.6	40.9	1	WW-3".C70-00-C-D-16-EV	Max. Distance
9	4340	4.3	35.8	1	WW-2".C30-00-P-S-8P-WD	High Point
10	5070	2.1	34.2	1	WW-3".C70-00-C-D-16-EV	Max. Distance
11	5800	6.7	25.7	1	WW-2".C70-00-C-D-16-EV	High Point
12	6350	7.6	21.8	1	WW-2".C30-00-P-S-8P-WD	High Point
13	7050	3.7	22	1	WW-3".C70-00-C-D-16-EV	Max. Distance
14	7750	5.6	16.4	1	WW-2".C30-00-P-S-8P-WD	High Point
	8145	6.1	13.8	1	Reservoir	

**Air Valves - Total:**

Catalog ID	Qty.	Description	Remarks
WW-2".C30-SP-C-S-16-EV-WD	3	Water Works, Combination Valve, Ductile Iron [ with 1], Threaded 2" (DN50) [ 2] Side Outlet Epoxy Blue Ultraviolet Protection.	Pumping Station
WW-2".C30-00-P-S-8P-WD	9	Water Works, Combination Valve, Nylon [ with 1], Threaded 2" (DN50) [ 2] Side Outlet.	High Point
WW-3".C70-00-C-D-16-EV	3	Water Works, Combination Valve, Ductile Iron [ with 1], Flanged 3" (DN80) [ 2] Down Outlet Epoxy Blue Ultraviolet Protection.	Max. Distance
WW-2".C70-00-C-D-16-EV	1	Water Works, Combination Valve, Ductile Iron [ with 1], Threaded 2" (DN50) [ 2] Down Outlet Epoxy Blue Ultraviolet Protection.	High Point





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# THANK YOU!

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**BERMAD** Water Control Solutions

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