



System User Guide

Welcome

Mission provides much more than a piece of hardware. We provide a managed system that integrates national high-speed cellular data networks, centralized data servers, web-based viewing tools and computer telephony to provide you with the benefits of a SCADA system without the hassles or expense.

This System User's manual is intended to aid operators and managers to understand and use the Mission system. It is also designed as a reference during routine operations. This manual will show you how and why you may want to modify settings as well as how to use the various features.

Other manuals are available for hardware installation and specific applications. These include installation manuals, white papers including "Best Practices for Control", and OPC documentation for connections to third party SCADA solutions.

Our training videos and webinars are a great complement to this users' guide. Each week we discuss the newest enhancements and answer your questions during our free one-hour webinar. By subscribing to our newsletter you will get ideas at how others use the Mission system. Of course, our Technical Support team is also available to help you.

We welcome you to the Mission family.

A handwritten signature in blue ink that reads "Forrest Robinson". The signature is fluid and cursive, with a long, sweeping underline.

Forrest Robinson
President, Mission Communications LLC

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About This Document

The Mission website offers several ways for you to obtain your data. Items underlined in [blue](#) generally indicate a hyperlink that will take you to additional data.

Most reports and data are downloadable to spreadsheets denoted by an excel icon.



Other reports will be downloadable to PDF or have a printer-friendly screen. These icons will be shown at the top of the page if applicable to the current view.



When viewing tabular data, a graph icon links to the corresponding graph.



The format Parent Folder/SubFolder/SubArea will be used anytime a folder path is mentioned.

Graphs with a calendar icon allow you to choose a specific date or time for data viewing.



Whenever a new version of a report becomes available, it is posted to the site. If you wish to see the older version an option to do so will be listed by [see older version](#).

Some of the newer reports and mobile website features are only possible because of enhancements to the underlying web browser (Internet Explorer, Firefox, Android OS, etc.). As a general rule, new features are added with the intention of being compatible to at least the two most recent major releases of the various underlying platforms. We will continue to offer the legacy reports as long as they are used. This document will focus on the newer version when multiple versions are offered.

Some reports become available on your web portal as a result of installing and labeling a sensor. For this reason, this document will probably display more reports than your portal currently shows. For example, the Safe Drinking Water Act Report or Chlorine reports will not be presented until an analog sensor is installed and labeled as Chlorine or Cl.

The various RTUs and service plans affect the data and reports. For example, volumetric flow calculations require data points at each pump start and stop data – included with the M800 data plan. To minimize data consumption and costs, the model M110 summarizes this information hourly; therefore, the volumetric calculation is not possible.

A screen grab is a very efficient way to discuss a situation with a co-worker or Mission Technical Support. Window users generally have a print screen function on their keyboard. A utility like Gadwin Print Screen can be added to your system for additional annotation options. Visit [Gadwin Print Screen's](#) website for more details. Macintosh users can perform a print screen via several methods including <Ctrl> <Shift> 4.

Accessing the Mission Website

The Mission homepage, www.123mc.com has several features of note.

The weekly webinar and quarterly newsletter are opt-in offerings. Sign up for these items and you can always unsubscribe later.

The About Us tab, leads to the [Test Page](#). This page tests all of the browser plug-ins that the Mission system requires. To access this, go to the main web site and select *About Us/Test Page*. If they are out-of-date or not installed, they can be downloaded from their manufacturers' sites at no charge. Further information about plug-ins is located in [Appendix E](#).



The next item is the login box, which takes you to your web portal. This is where you can access your units, view reports and more.

Logging into the Website

The primary method of interacting with data transmitted from field devices is through the Mission website at www.123mc.com, or if you are in the field from the mobile site, www.123mc.mobi. You will need a user name and password to view these pages. The user name and password are emailed to you after the [Account Setup Form](#) (Appendix A) is filled out and sent to setup@123mc.com. Log in credentials and welcome messages will be emailed to users following completion of this form.

From the main page, enter your user name and password into the boxes in the upper right-hand corner. The username is not case-sensitive. However, if you enter the combination incorrectly too many times, a message will be displayed that states your computer is locked out. You can use the "forgot user name and password" function or call Mission Technical Support for assistance in logging in. Log-ins are tracked by IP address and blocked if outside of the U.S. or Canada. If you plan to travel abroad and need to access your site, contact Technical Support.

There are four different levels of web site access. Be sure to indicate what privileges are assigned to each user name/password combination on the Account Setup Form. The levels are:

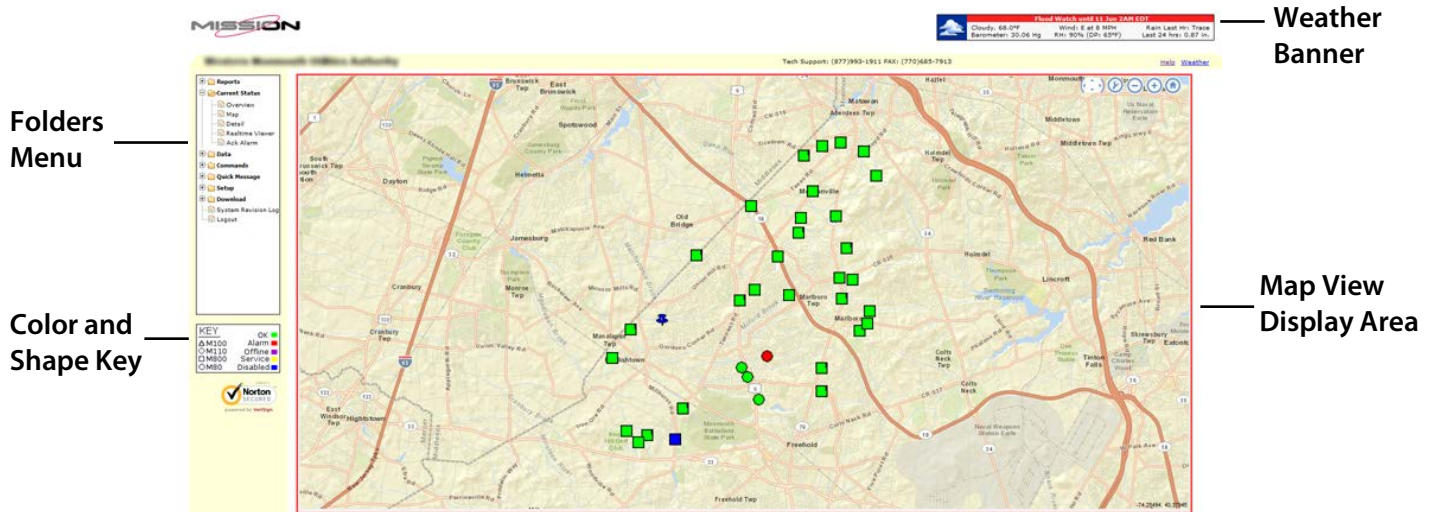
- **View Only:** Data Viewing, No Alarm Acknowledgement, No Editing
- **User Level:** Data Viewing, Acknowledge Alarms, No Editing
- **Administrator:** Data Viewing, Acknowledge Alarms, Edit Settings

- **Super Administrator:** Data Viewing, Acknowledge Alarms, Edit Settings, Edit Site Access and User Level

Initial unit specific settings are entered and placed on the map by Mission Technical Support specialists after receiving an RTU Installation Form for each unit you purchase. Similarly, callout destinations and schedules are setup by Mission by way of the Notification Setup Form.

Main Screen Display

The customer web site has three main areas: the folders menu, the map view display area and the weather banner.



The border of the map changes colors to reflect the status of units based on the color key description below.

The weather banner displays the local weather in your area along with any current weather advisories. If there are any system level notices, like maintenance, they will be listed here.

Color Key Indicators

Red Icons: Units that are red are in alarm. Icons remain red until the issue is resolved, despite the alarm acknowledgement.

Yellow Icons: Yellow units indicate service mode. Service mode is a feature that allows you to perform unit maintenance without initiating alarm sequences on a unit. A user may switch a unit into service mode, using either the electronic key supplied with the RTU or the web portal.

Units in service mode continue to collect data but do not call-out alarms. Service mode will be initiated for one hour if using an electronic key. If you use the web portal to place the unit in service mode, it may be set for any amount of time - even indefinitely.

KEY	
OK	Green square
△ M100	Alarm (Red)
◇ M110	Offline (Purple)
□ M800	Service (Yellow)
○ M80	Disabled (Blue)

Purple Units: Units that are purple are offline and are not sending data. Offline units are rooted in cellular service issues, damaged equipment or powered-down units. Diagnostics can be found later in the manual, specifically in the cellular connectivity graph. Communication alarms are set by default, but can be configured.

Blue Icons: Blue icons indicate units disabled for alarms. This has most likely been done manually. Units with disabled alarms are online and collecting data. Generally we recommend that you disable a specific input rather than an entire unit. This is described in Unit Maintenance section of this document.

Shape Key Indicators

Squares: Square icons represent M800 real time RTUs. These units transmit pump state changes as they occur and analog values every two minutes. Alarm events are sent in real time. A “marching ant” moving around the edge of the square indicates that a pump is running at the site.

Diamonds: Diamond icons represent M110 series units. Like the M800s, alarm events are sent in real time. High, low and average analog values, as well as accumulated pump starts and pump runtimes are sent in hourly.

Circles: Circle icons represent Manhole Monitor in-sewer SSO/CSO alarm sites. Alarm events are sent in real-time, while status information is sent once per day.

Unit-Specific Data – Hover

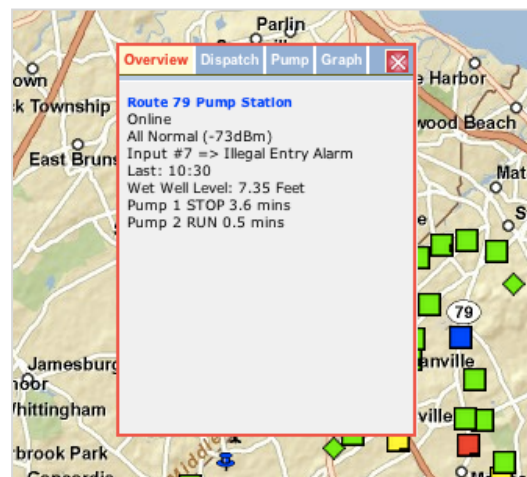
Hover over a site icon on the map to bring up a smaller window with brief details. Like the border around the map, the color of the window border will change with the unit status. The tab options are:

Overview – This shows the status of the unit, last heard from time, wet well level (if applicable to this unit), flow calculations and pump runtimes.

Dispatch – This displays recent alarm history. A detailed record of who was notified and the result is displayed by clicking on the alarm time.

Pumps – This is a small version of the Pump Runtime graph. It displays the pump runtimes (in minutes) and starts for the previous week. A full size version of this graph can be found in the *Data/Pump Info/Runtime Graph* section.

Graphs – This shows a small window of [Supergraph](#).



Unit Specific Data – Click

Click on a site icon to view detailed information specific to that RTU. The icons at the top are Alarms, Dispatch, [Pumps](#), Access, Rain, Supergraph and Unit Maintenance. They allow you to access data quickly. The functions and explanations of these options are described later in this document.



Map Settings and Preferences

The wrench drop down menu in the upper left corner of the map offers several preference options including:

Map Views

- Street (default) – displays roads, cities and landmarks.
- Satellite – displays the actual terrain from a satellite image.
- Topo (Topographical) – displays the elevation of the land; useful for understanding inflow and infiltration.
- Mini – a compressed map view, based on the Flash programming language. Not all devices support Flash.

Resize Icons

- Larger – makes the unit icons on the map bigger for large screens.
- Smaller – makes the unit icons on the map smaller for small screens.

Display

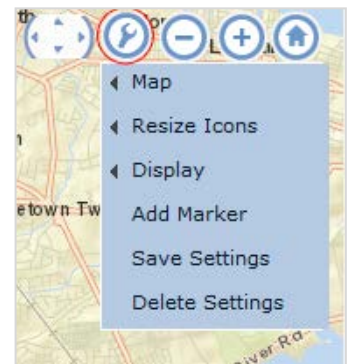
- Devices – a list of all the units in alphabetical order appears to the left of the map. Click on a unit in the list to identify it on the map.
- Markers – a list of all the markers placed on the map appears to the left of the map.
- Radar – adds a radar overlay to the map.
- Weather – adds a weather overlay to the map.
- AT&T Towers – shows all AT&T cellular towers.
- Sprint Towers – shows all Sprint cellular towers.

Add Marker

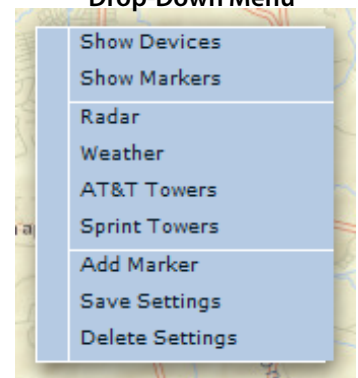
This feature allows you to add markers (pushpins) with descriptions on the map for important locations (e.g. water treatment plant). This is a useful tool if you are thinking of adding an additional unit or want to locate an item of interest.

The plus and minus icons allows you to zoom in and out of the map. You can also use the arrow icon or click and drag anywhere on the map to view surrounding areas.

A right click on the map also presents these map options. The Save Setting option stores your preferences and the Delete Setting option removes preferences.



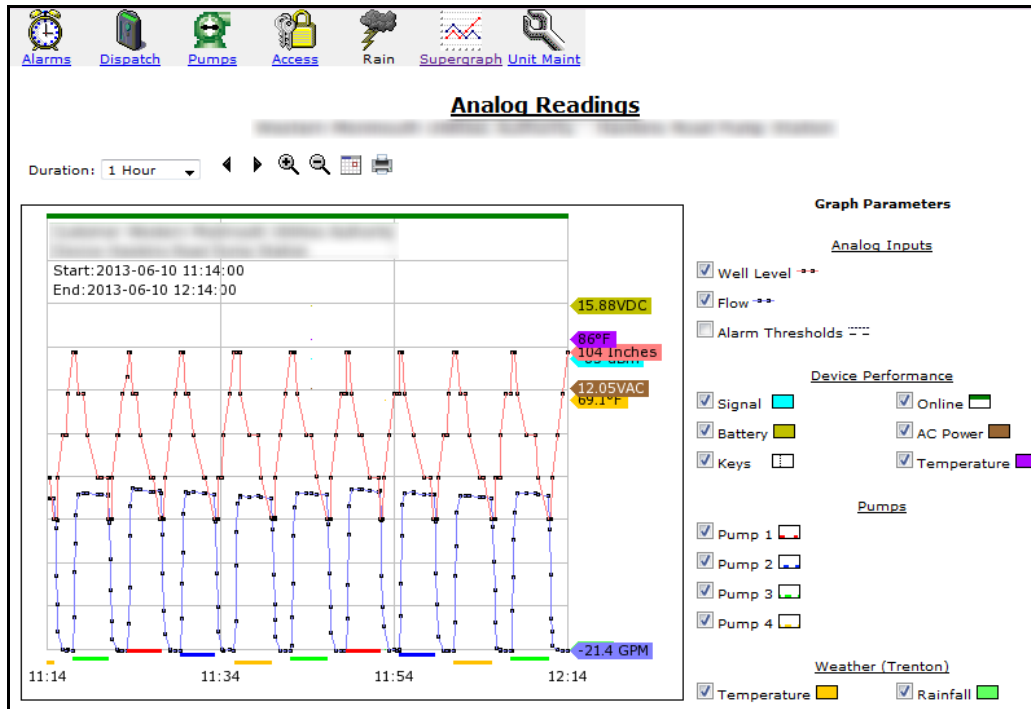
Drop-Down Menu



Right-Click Menu

Supergraph

Supergraph presents the health of the RTU (voltages, signal temperature) as well as items of interest for functions like analog values, pump runs and site visits. This information can be used collectively for diagnostic purposes



Time Frame – Different time intervals can be selected using the duration selection tool and the calendar icon located above the graph. Note that shorter time frames may show disconnected data due to the increments in which the unit reports.

Graph Parameters – Check any of the graph data parameters to add or remove it from the graph. The Settings and Preferences section below explains how default options can be changed.

Graph Data – The graph data area has the time span across the x-axis. The height of the graph displays the analog values from the unit over time. These are scaled and labeled based on the unit (*Setup/Unit Maint/Analog Inputs* section). Raw values will be displayed if they are not scaled or labeled. The online status of a unit is displayed along the top as a thick green line. Breaks in the line indicate when the unit was offline. While a unit is offline, the graph will display the last known state or data value until the unit returns online. Note: short time frames (1-2 hours) may show a point or partial trend lines due to the frequency in which the unit reports that particular data. Digital inputs that are setup as “Runtimes” (*Setup/Unit Maintenance/Notification Settings*) are displayed as colored bars at the bottom of the graph.

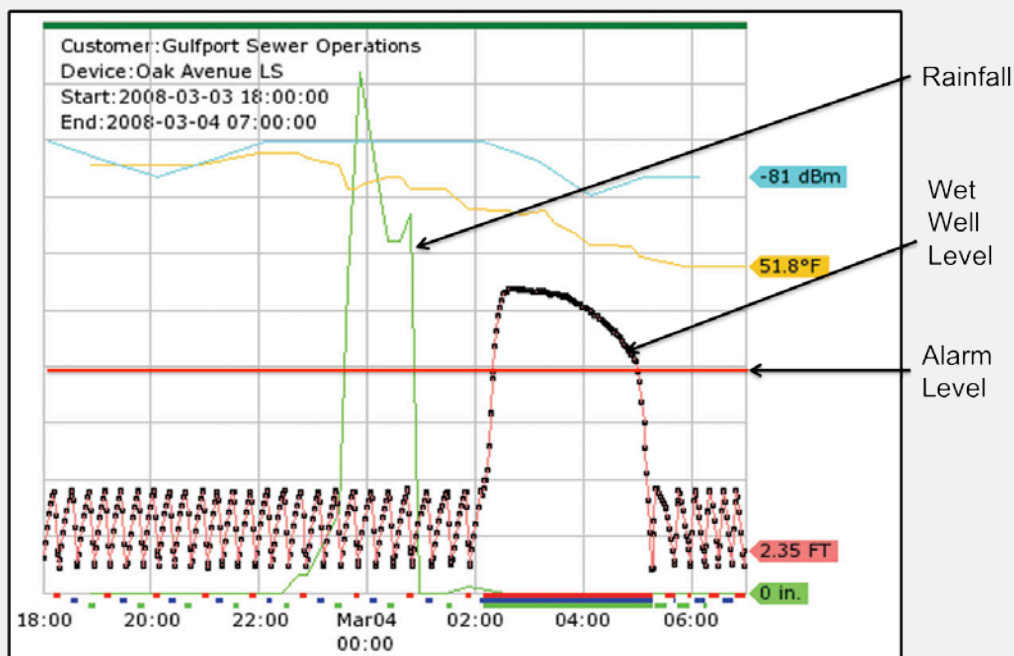
Print – The printer icon above the graph allows you to print Supergraph and convert the graph to a PDF (if Adobe Acrobat is installed on your computer).

The data that shows on Supergraph is based on your unit capabilities. For example, analog data will not be displayed on Supergraph if you are not using the analog inputs. Rain values are presented from the local weather stations rain report regardless of any rain gauges that are present.

Settings and Preferences

The default view of Supergraph can be modified at the user and RTU level. Go to *Setup/Preferences* to change the default to *On* or *Off*. Go to *Unit Maintenance/Analog Inputs* to show specific channels by default, display the check boxes or hide them entirely for a RTU.

Using Supergraph for Diagnostics



This Supergraph shows an interesting example from a large rain event. You can see the rainfall in green growing more severe and the reaction of the wet well level in red with black dots. The reaction shows the site receiving more water than can be pumped (all three pumps running as indicated by the solid red, green and blue bars across the bottom). The wet well level surpasses its high alarm threshold and goes into the alarm sequence. Details of the alarm sequence are viewable in the alarm and dispatch history.

Reports

A report is an analysis of data received from the RTU. The raw data used as the basis of a report is available under the *Data* folder.

Mission recently began updating reports to be interactive and automatically scale based on the size of your display (from a small smartphone to a 42"+ monitor). Most of the new style reports share common interface methods. Reports have a drop down pick list of your units. To the right of that are date range windows. Once a date range is chosen there are several ways to zoom into the data including the scroll bar and the time zoom options. The timeline automatically adjusts from days to hours when appropriate. To move or pan through the time click and drag in the grid or use the scroll bars. Click on the data selector boxes to show or hide the data series. Hover your cursor over the data to view the actual numeric value.

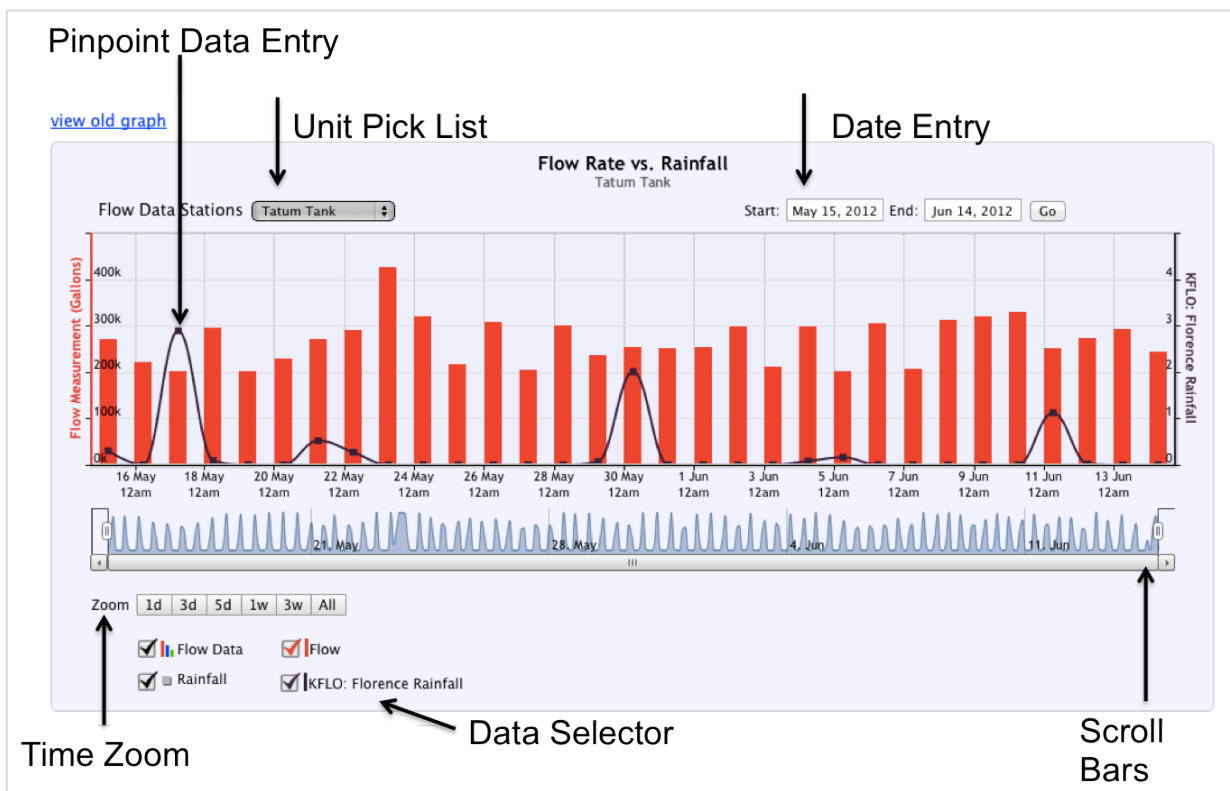













Figure 1: Interactive Graph with Common Interface Methods

Alert History

This is a list of the most recent alerts sent for all units on your web portal. Alerts include excessive pump starts, excessive pump run times, pump runtime variance and pump service. Alerts are different than alarms in that they are not urgent situations. The data is something to be aware of and address in a timely manner. Alerts help you reduce equipment wear and tear or notify you of something that is not operating properly. You may choose when and how alerts are delivered under Setup/Alerts. Urgent or critical events are designated as alarms and will call out at all times – day or night. Refer to the [Alarms and Alerts newsletter article](#) for more information.

Alert History			
Date	Report Name	Devices	Destinations
30 Jul 06:31	Runtime Variance	Brunswick Drive Pump Station Georgetown Pump Station Manalapan Estates Pump Station Marlboro Maples Millponds Pump Station Samaritan Center	 Alerts@Brunswick-Manalapan-NJ.us  Alerts@Georgetown-Manalapan-NJ.us  (732) 986-9818
30 Jul 06:14	Management Report		 Alerts@Brunswick-Manalapan-NJ.us  Alerts@Georgetown-Manalapan-NJ.us
29 Jul 06:31	Runtime Variance	Brunswick Drive Pump Station Manalapan Estates Pump Station Marlboro Maples	 Alerts@Brunswick-Manalapan-NJ.us  Alerts@Georgetown-Manalapan-NJ.us  (732) 986-9818
28 Jul 06:31	Runtime Variance	Coltsbrook Pump Station Crine Road Pump Station Elizabeth Hills Pump Station Manalapan Estates Pump Station	 Alerts@Brunswick-Manalapan-NJ.us  Alerts@Georgetown-Manalapan-NJ.us  (732) 986-9818

Management Report

The report gives you an overview of the overall RTU and system performance including online/connectivity data, a summary of alarms by type and response time, and a site access summary.

The management report is emailed every Monday morning to those who are designated to receive it. You can select the time this report is emailed or faxed to you each week under the Setup/Reports menu item. The most recent report can be viewed under *Reports/Management*.

MISSION		Mission Communications Weekly Report					
		26 Aug 2012 - 1 Sep 2012					
Total Units Assigned to Customer:17							
Cingular 800 Units:17							
Active Units:9							
Disabled Units:8							
Units in Communications Fault:8							
There are devices with inputs disabled indefinitely. Mission does not recommend this practice. The complete list of sites and inputs is available on the website under Reports .							
Alarm Callouts		This Week	Last Week	Prior Week			
Total Event		152	21	12			
Input or Unit Disabled		1	0	0			
Input Swinger Mode		1	0	0			
In Service Mode		15	5	0			
No Conditionals		6	8	12			
Total Notification Attempts		129	8	0			
Total Acknowledged		129 (100%)	8 (100%)	0 (0%)			
User Ack Events		129	8	0			
Digital Events		78	0	0			
Analog Events		21	6	0			
AC Power Events		14	0	0			
Communication Events		10	2	0			
Response Times		This Week	Last Week	Prior Week			
Average Time (minutes)		2	1	0			
Exceeding 1 Hour		0	0	0			
Unacknowledged		0	0	0			
RTU Transmissions		This Week	Last Week	Prior Week			
Total Successful		56296	59588	61697			
First Attempt		56296 (100.0%)	59588 (100.0%)	61697 (100.0%)			
Three or Fewer Attempts		0 (0.0%)	0 (0.0%)	0 (0.0%)			
Failed Attempts		-	-	-			
Realtime Connection		This Week	Last Week	Prior Week			
		99.5%	99.9%	100.0%			
		99.7%	99.4%	100.0%			
		14.9%	-	-			
		96.0%	99.5%	100.0%			
		95.6%	99.5%	100.0%			
		96.7%	99.4%	100.0%			
		99.9%	99.8%	99.9%			
		99.8%	99.9%	100.0%			
		99.9%	99.9%	99.9%			
Summary RTU Status (Failed or Missed Tests)							
Location	Daily	RSSI	Battery	Wiring	Temp		
		- None -					
Site Accesses							
Name	Sun 26 Aug	Mon 27 Aug	Tue 28 Aug	Wed 29 Aug	Thu 30 Aug	Fri 31 Aug	Sat 1 Sep
	0	2	4	0	2	0	6
	0	0	0	0	0	2	0
	0	8	0	0	0	0	0
	10	1	0	0	8	2	0
	0	0	0	0	0	1	0

Runtime Daily

The Daily Runtime Summary report displays the daily overview of pump activity. It is useful in identifying pumps that have abnormal runtimes or starts, along with general pump performance information. It includes the following information for each pump at each site:

- pump runtimes shown in minutes
- the number of gallons pumped
- pump starts
- the average pump runtime per pump start

Daily Runtime Summary				
< 18 Jun				20 Jun >
Site Name	- Runtime -		Starts	Average (minutes/start)
	Minutes	Gallons		
Battleground 1 Pump Station				
Pump 1	221.0	33,150	77	2.9
Pump 2	199.3	27,897	78	2.6
Brunswick Drive Pump Station				
Pump 1	303.9	54,699	217	1.4
Pump 2	305.0	54,906	218	1.4
Coltsbrook Pump Station				
Pump 1	202.3	5,461	142	1.4
Pump 2	102.1	3,164	73	1.4

Pump Data Downloads

Report Type: Daily Runtime Summary Report ▼

Devices: Daily Runtime Summary Report
Pump Run Time Report
Monthly Report
Current Year Runtime Summary Report (2013)

Start Date:

Format: Spreadsheet CSV

You can navigate to different days with the date links at the top of the report. The total gallons pumped per day will be displayed at the bottom of the page. The daily runtime information is also available to download in spreadsheet format under the *Data/Pump Info/Download* section. This is useful if you would like to compare the data with other days.

The flow calculation is based on the gallon rating for the pump that is entered under Setup / Unit Maint / Pump Info.

Runtime Monthly

The Monthly Runtime Summary report displays the monthly overview of pump activity. Similar to the Daily Runtime Summary report, the Monthly Runtime report is useful for identifying anomalies with pump runtimes and pump starts.

The report displays monthly runtimes in gallons and minutes. It also shows the pump starts and the average minutes the pump ran per pump start. The duty cycle indicates the percentage of time the pump ran for the month.

Monthly Runtime Summary					
< Jul 2012	August 2012				Sep 2012 >
Site Name	- Runtime - Minutes	- Gallons	Starts	Average Minutes/Start	Duty Cycle(%)
Pump 1	4,225.0	1,787,175	397	10.64	9.5 %
Pump 2	4,140.0	1,751,220	399	10.38	9.3 %
Pump 1	5,830.0	1,749,000	997	5.85	13.1 %
Pump 2	5,838.0	1,751,400	996	5.86	13.1 %
Pump 1	3,555.0	774,990	1,134	3.13	8.0 %
Pump 2	3,612.0	787,416	1,126	3.21	8.1 %
Pump 1	1,970.0	-	219	9.00	4.4 %
Pump 2	1,962.0	-	224	8.76	4.4 %
Pump 1	2,745.0	5,489,933	571	4.8	6.1 %
Pump 2	2,763.0	5,525,933	961	2.9	6.2 %
Pump 3	2,300.3	4,600,533	530	4.3	5.2 %

Runtime Variance

The Runtime Variance report calculates the monthly average (mean) pump runtime and the standard deviation during that same period. The deviation shows how much variation exists from the average ([mean](#), or expected value). A low standard deviation indicates that the data points tend to be very close to the mean, whereas high deviations indicate that the data points are spread out over a large range of values. The last three columns report the runtimes for the most recent day for each site. If the runtime number falls within an error band of the mean plus or minus twice the standard deviation, it is colored in green. If the runtime number is outside, it is colored red. More information on standard deviation can be found on the [Standard Deviation Wiki webpage](#).

Runtime Variance							
Last 30 Days							
Site Name	Mean/Dev Pump 1	Mean/Dev Pump 2	Mean/Dev Pump 3	Last Report	Current Pump 1	Current Pump 2	Current Pump 3
	158/260.4	154/256.3	-	6 Sep	180.0	176.0	-
	264/411.2	182/344.6	239/336.8	6 Sep	950.1	0.0	0.0
	200/165.5	194/157.8	-	6 Sep	140.3	134.6	-
	2/1.1	2/1.2	0/0.0	6 Sep	2.5	2.3	0.0
	77/71.0	100/66.7	-	6 Sep	52.0	82.0	-
	67/32.8	47/18.7	0/0.0	6 Sep	84.9	57.4	0.0
	272/263.0	209/162.5	-	6 Sep	243.7	210.2	-
	207/286.3	204/278.1	-	6 Sep	216.0	218.0	-
	117/84.7	118/81.6	-	6 Sep	110.0	106.0	-
	66/119.7	65/119.9	-	6 Sep	44.0	43.0	-
	90/28.2	91/22.8	76/26.2	30 Aug	175.2	163.2	170.6
	81/197.5	57/142.6	0/0.0	6 Sep	42.0	34.0	0.0
	64/127.6	61/122.4	-	6 Sep	26.0	25.0	-
	234/266.4	325/294.0	-	6 Sep	240.9	379.0	-
	111/327.8	111/326.4	-	6 Sep	15.0	12.0	-
	28/27.8	28/27.0	30/32.6	6 Sep	49.3	45.1	43.3
	311/265.8	311/349.0	-	6 Sep	475.3	314.4	-
	142/236.2	107/196.9	-	6 Sep	184.0	76.0	-
	33/15.4	34/17.9	0/0.0	6 Sep	33.0	35.9	0.0
	214/313.1	192/315.0	-	6 Sep	205.0	132.0	-
	58/196.6	62/206.4	-	6 Sep	18.0	18.0	-
	245/108.1	232/114.1	-	6 Sep	242.0	208.0	-
	98/52.1	104/51.8	-	6 Sep	110.0	107.0	-
	115/175.5	107/152.4	-	6 Sep	121.0	121.0	-
	20/15.2	19/6.0	-	6 Sep	16.0	14.0	-
	104/131.3	109/137.7	0/0.0	6 Sep	80.7	85.9	0.0
	122/364.5	122/363.9	-	6 Sep	3.0	1.0	-
	360/302.9	326/312.0	-	6 Sep	346.0	300.0	-
	227/312.7	217/325.2	-	6 Sep	322.9	0.0	-
	45/56.4	55/60.0	-	6 Sep	41.0	53.0	-
	265/346.5	0/0.0	-	6 Sep	197.0	0.0	-
	180/173.5	185/174.5	-	6 Sep	136.0	133.0	-
	40/122.8	22/69.2	-	6 Sep	10.0	9.0	-

The bar chart icon presents day-by-day runtimes with the 30-day running mean value. Both average low and average high runtimes are compared. This chart is useful to observe weekly runtime patterns or when the deviations were the greatest.



Variance reports and charts can indicate problems like a malfunctioning pump alternator, a stuck check valve or even a pump left in “Manual On/Off” mode.

A one-time event like a weekend festival is an example of an expected pump runtime variance, while unexpected variances should be investigated. Inflow and infiltration from a rain event can also cause variance in pump runtimes. However, these events are easier to identify on the Rainfall v. Runtime Report (*Data/Rainfall/ v. Runtime*).

The system will automatically alert you the day after an abnormal runtime occurred. Pump runtime alerts are based on the settings in the *Setup/Unit Maintenance/pump Runtime Alert Thresholds* section.

Pump Service

The purpose of the Pump Service Report is to help you maintain scheduled maintenance on your stations. By inputting the last serviced date into *Setup/Unit Maint/ Pump Info* as well as the hours until the next service should be performed, an alert will be sent when service is required.

Pump Service Report				
5 September 2012				
Site Name	Last Service Date	Last Service Hour Meter	Hours Since Last Service	Estimated Total Hours
Pump 1	5 Jun 2010	275.0	834.8	1109.8
Pump 2	5 Jun 2010	202.0	803.0	1005.0

Check-in

Models 800, 110 and the Manhole Monitor send in routine information every two minutes, one hour and one day respectively. Routine data includes signal strength, voltage levels and analog information. The last heard time on units that are on-line should reflect these check-in times.

The padlock indicates a radio that is connected through a VPN (Virtual Private Network). Refer to the Managed SCADA brochure for more information on security.

Unit Check In Report		
Model	Site Name	Last Heard
C110	🔒 Manalapan Plaza	26 Jun 15:18
C110	🔒 Nolan Road PS	26 Jun 15:16
C800	🔒 Battleground 1 Pump Station	26 Jun 15:18
C800	🔒 Brunswick Drive Pump Station	26 Jun 15:18
C800	🔒 Coltsbrook Pump Station	26 Jun 15:18
C800	Conover Hills Station	26 Jun 15:18
C800	Crine Road Pump Station	26 Jun 15:18
C800	Daum Road Pump Station	26 Jun 15:18
C800	🔒 Eagles Nest Pump Station	26 Jun 15:18
C800	🔒 Elizabeth Hills Pump Station	26 Jun 15:17

By clicking the hyperlink of the Last Heard time for a unit, a connection history report opens. This report gives an overview of cellular connection performance over the month. The percentage entry is the daily on-line value for this unit. Red denotes connectivity less than 95%; yellow days are 95-98% connected and green is greater than 98%. The number shown below the percent indicates the number of reconnections for that day. Connections should be 99% or greater with few or an occasional reconnection. Zero reconnections means that the connection stayed up between days.

A device will re-connect if power (including battery) is interrupted, the antenna is compromised or service is down at the cellular tower or anywhere on the network. The Mission RTU will automatically and continuously try to reconnect and periodically re-boot if the connection is lost.

A unit will not connect if the hardware is damaged, there is no power to the unit or there is no active rate plan associated with the radio or SIM card. Contact Mission Technical Support in these situations.

Connection History Percent Connected / Reconnects						
Brunswick Drive Pump Station March 2012						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1 100.00% 0	2 100.00% 0	3 100.00% 0
4 100.00% 0	5 100.00% 0	6 99.67% 5	7 99.93% 2	8 100.00% 0	9 100.00% 0	10 100.00% 0
11 100.00% 0	12 100.00% 0	13 100.00% 0	14 100.00% 0	15 100.00% 0	16 100.00% 0	17 100.00% 0
18 100.00% 0	19 99.68% 2	20 100.00% 0	21 100.00% 0	22 100.00% 0	23 99.92% 1	24 100.00% 0
25 100.00% 0	26 91.35% 11	27 100.00% 0	28 100.00% 0	29 99.95% 1	30 100.00% 0	31 100.00% 0

Carriers generally perform tower maintenance between midnight and 5AM. During this maintenance window the carriers may disable all or parts of the cell sites. Generally this maintenance goes unnoticed since the RTU can utilize multiple cell towers from a single location. In this case, if a cell site undergoes maintenance service, an RTU will simply “rescan” and find another cell site to continue transmitting data. This is much the same way a mobile cell phone is “handed off” from cell site to cell site during its movement through an area.

In some cases, Mission Technical Support must open a trouble ticket with the carrier. The Mission Technical Support department is automatically notified of a large-scale outage and may have already initiated a trouble ticket with the carrier before you notice the issue. For a customer with more than four units, a large-scale outage is defined when more than 50% units go off-line.

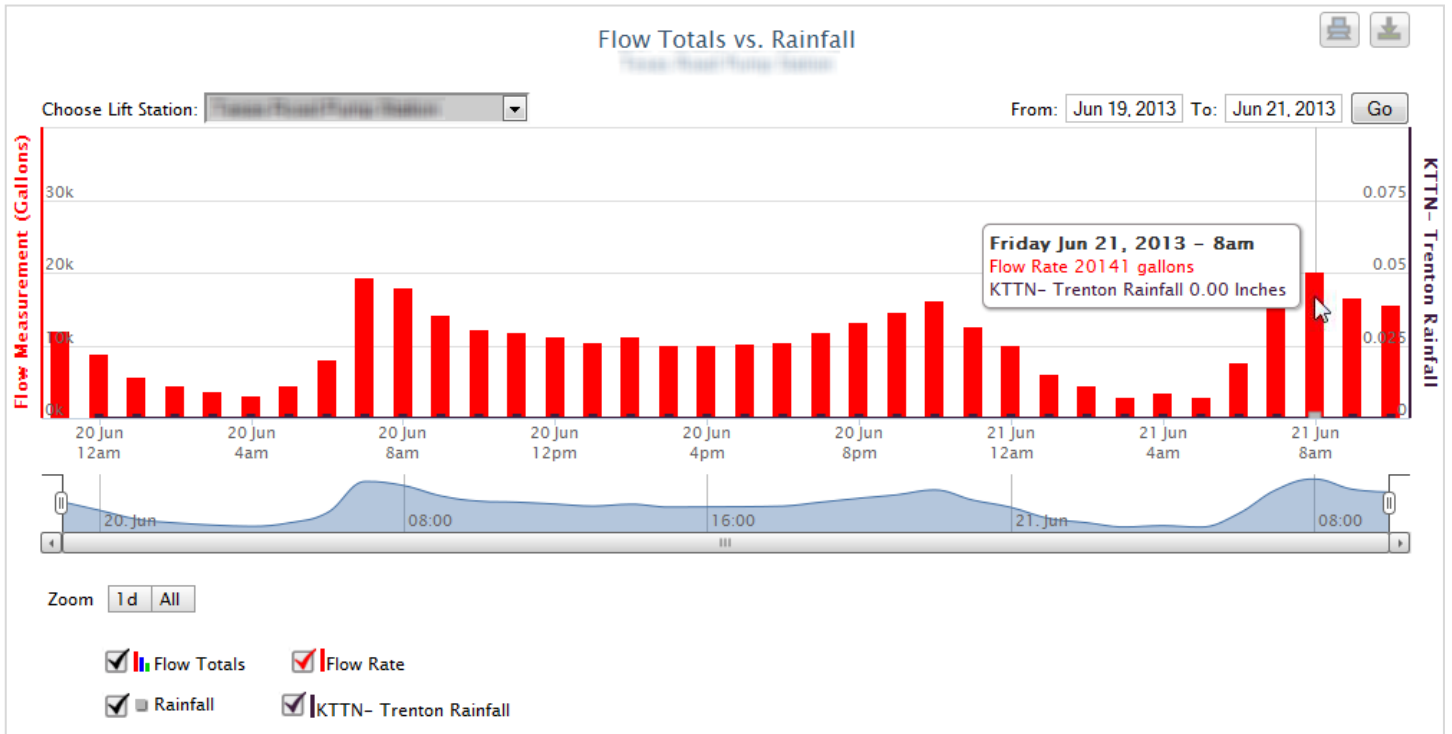
By default, a communications failure alarm will be called out after a unit has been off-line for 30 minutes continuously, though this can be adjusted under *Setup/Unit Maintenance*. An off-line unit will show in purple on the main map page. No data or alarms are sent while a unit is off-line.

If the RTU is part of a control system, such as in digital-intertie or Tank and Well, it may have to operate in manual mode until the connection is restored. The document “Best Practices for Control Applications” suggests many ways to create a fail-safe system and increase reliability when a unit is off-line.

Persistent communication problems at a location may require optimizing the antenna or changing carriers. Regardless of the cause, contact Mission Technical Support for help resolving connectivity problems.

Flow

The Flow report displays a graph showing flow measurement and rainfall. You will find this report useful when conducting inflow and infiltration studies, in conjunction with the volumetric flow calculations. The graph has many viewing options. Refer to [page 13](#) to learn about the graph's interface and usability features. Units of measurement are selected in the *Setup/Preferences/Masurement Units* section.



Note: The Flow report will not appear in the folder menu if flow information is not available (e.g. a flow measurement device is not connected to a pulse or analog input). Refer to the setup section of this document to learn how to setup an analog input for flow.

Logins

This report displays web portal login information, which includes:

- the date and time of the logins
- users who have logged in
- the duration of the visit
- the IP address of the computer from which the user accessed the site
- the location of the computer that was used to login

The hyperlink of the user name shows all of the logins for that person. (*WAP/.mobi*) is displayed next to the user name when the user accesses the mobile web portal. Refer to the *Mobile Web Portal* section to learn more about the web portal optimized for smartphones and tablets.

<u>Login Report</u>				
All Users				
Date	User	Duration (hh:mm)	IP Address	Location
21 Jun 2013 14:50	[User Name]	00:00	192.168.1.1	Atlanta, GA
21 Jun 2013 11:19	[User Name]	02:27	192.168.1.1	Atlanta, GA
21 Jun 2013 10:34	[User Name]	04:16	192.168.1.1	Atlanta, GA
21 Jun 2013 09:52	[User Name]	01:20	192.168.1.1	Atlanta, GA
21 Jun 2013 07:40	[User Name]	00:34	192.168.1.1	Atlanta, GA
20 Jun 2013 23:41	[User Name]		192.168.1.1	Atlanta, GA
20 Jun 2013 17:19	[User Name]	00:18	192.168.1.1	Atlanta, GA
20 Jun 2013 15:58	[User Name]	01:07	192.168.1.1	Atlanta, GA
20 Jun 2013 15:14	[User Name]	00:22	192.168.1.1	Atlanta, GA
20 Jun 2013 14:20	[User Name]	00:39	192.168.1.1	Atlanta, GA
20 Jun 2013 10:57	[User Name]	01:20	192.168.1.1	Atlanta, GA
20 Jun 2013 09:59	[User Name]	03:51	192.168.1.1	Atlanta, GA
20 Jun 2013 08:50	[User Name]	06:38	192.168.1.1	Atlanta, GA
20 Jun 2013 07:21	[User Name]	00:49	192.168.1.1	Atlanta, GA
20 Jun 2013 07:02	[User Name]	01:23	192.168.1.1	Atlanta, GA
19 Jun 2013 18:47	[User Name]	00:04	192.168.1.1	Atlanta, GA
19 Jun 2013 18:36	[User Name]	00:00	192.168.1.1	Atlanta, GA
19 Jun 2013 14:12	[User Name]	00:46	192.168.1.1	Atlanta, GA
19 Jun 2013 13:44	[User Name]	01:21	192.168.1.1	Atlanta, GA
19 Jun 2013 12:27	[User Name]	03:37	192.168.1.1	Atlanta, GA
19 Jun 2013 11:38	[User Name]	00:37	192.168.1.1	Atlanta, GA
19 Jun 2013 10:13	[User Name]		192.168.1.1	Atlanta, GA
19 Jun 2013 09:30	[User Name]	03:13	192.168.1.1	Atlanta, GA
19 Jun 2013 07:29	[User Name]	01:56	192.168.1.1	Atlanta, GA

Disabled Inputs

The Disabled Input Report itemizes the inputs that are disabled for alarm call-outs (*Setup/Unit Maint*). The information in this report includes the site name, the input number, the input description and when the disabled input will expire. A disabled input continues to collect data, but will not call out for alarms. Check this report on a regular basis to verify that the correct inputs are enabled or disabled.

Disabled Input Report			
Site Name	Input #	Input Description	Disabled Until
16th and Walston LS	Digital 3	Pump 3 Running	Indefinitely
	Digital 5	Pump 1 Failure	Indefinitely
	Digital 6	Pump 2 Failure	Indefinitely
	Digital 7	3 Phase Fault	Indefinitely
	Digital 8	Input 8 Off Normal	Indefinitely
	Analog 1	Analog 1 Low Restore (##1)	Indefinitely
	Analog 2	Analog 2 Low Restore (##1)	Indefinitely
	18th Avenue LS	Digital 4	Input 4
Digital 6		Pump 2 Failure	Indefinitely
Digital 7		3 Phase Fault	Indefinitely
Digital 8		Input 8 Off Normal	Indefinitely
Analog 2		Analog 2 Low Restore (##1)	Indefinitely

Chlorine

The Well Chlorine Report analyzes the daily high and low chlorine readings along with the pump run times. It is presented in the *Reports* folder as a result of an analog input being labeled as *Chlorine* or *CL* (*Setup/Unit Maintenance/Analog Inputs*). View chlorine values for different days by clicking on the calendar icon. Users of this report may also find the Safe Drinking Water Act (SDWA) Report to be of interest.

Well Chlorine Report				
Report Date: 25 Jun 2012				
Central Well 1 (CH1:Chlorine Level)				
Pump 1				
Start	Stop	Duration	Extremes	Time
24 Jun 20:46	25 Jun 00:28	3 hrs 41 mins.	Low: 1.10 PPM High: 1.20 PPM	24 Jun 22:12 24 Jun 20:58
25 Jun 04:30	25 Jun 08:03	3 hrs 32 mins.	Low: 1.05 PPM High: 1.15 PPM	25 Jun 04:31 25 Jun 04:49
25 Jun 08:46	25 Jun 11:44	2 hrs 58 mins.	Low: 1.04 PPM High: 1.09 PPM	25 Jun 08:46 25 Jun 10:57
25 Jun 13:10	26 Jun 00:30	11 hrs 20 mins.	Low: 1.04 PPM High: 1.19 PPM	25 Jun 13:12 26 Jun 00:06
Pump 2				
Start	Stop	Duration	Extremes	Time
24 Jun 20:47	25 Jun 00:29	3 hrs 41 mins.	Low: 1.10 PPM High: 1.20 PPM	24 Jun 22:12 24 Jun 20:58
25 Jun 04:31	25 Jun 08:03	3 hrs 32 mins.	Low: 1.05 PPM High: 1.15 PPM	25 Jun 04:31 25 Jun 04:49
25 Jun 08:47	25 Jun 11:45	2 hrs 58 mins.	Low: 1.04 PPM High: 1.09 PPM	25 Jun 08:48 25 Jun 10:57
25 Jun 13:11	26 Jun 00:31	11 hrs 20 mins.	Low: 1.04 PPM High: 1.19 PPM	25 Jun 13:12 26 Jun 00:06

SSO/CSO Events

The SSO/CSO (Sanitary Sewer Overflow and Combined Sewer Overflow) Events report is available for the Manhole Monitor in-sewer level alarm units. The report displays all high level and surcharge alarms for each unit. The duration of the alarm and the alarm result of each alarm is also displayed.

SSO/CSO Events			
Bay Lane Manhole			
< March 2013	April 2013		May 2013 >
Start Date	End Date	Duration	Alarm Result
--- High Level Alarm ---			
03 Apr 09:40	03 Apr 09:52	12 mins 10 secs.	✔ Office Phone
Total : 12 mins 10 secs.			
--- Unused ---			
03 Apr 09:40	03 Apr 09:47	7 mins 1 sec.	✔ Office Phone
Total : 7 mins 1 sec.			

SDWA CL Report

The Safe Drinking Water Act (SDWA) report was made for small water systems required to file reports with the EPA or state DEP offices. This report generates a spreadsheet of chlorine values every fifteen minutes when the chlorine residual is below the permissible value. If there are no low chlorine residual events, the low value for the day is reported. In order to receive this report you will need to provide Mission Technical Support with the minimum permissible value. The SDWA report will only be presented if a chlorine instrument is in place. Refer to the [Safe Drinking Water Act Report newsletter article](#) for more information.

Current Status

The Current Status folder contains pages that reflect the overall status of all units. This folder contains the following options:

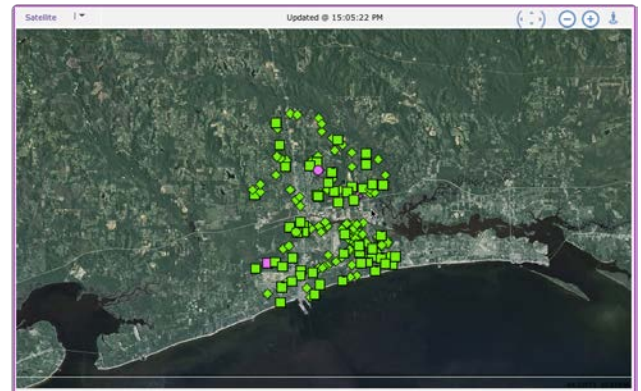
Overview

The Overview page shows an alphabetical list of all units with a circular icon depicting the unit status. Refer to the [color key indicators section](#) of this document for a description of each color. The overview folder has the same feature as the map, allowing you to mouse over an icon to obtain a brief overview of unit details. Clicking on the unit link will take you to the detail window.

System Overview					
Site Name	Status	Site Name	Status	Site Name	Status
Actingwood 1 Tank Station		Amesbury Road Tank Station		Northwest County Station	
Actingwood 2 Tank Station		Beaumont Road Tank Station		Northwest Tank Station	
Amesbury 1 Tank Station		Beaumont Tank Station		Northwest Tank Station	
Amesbury 2 Tank Station		Beaumont Tank Station		Northwest Tank Station	
Amesbury 3 Tank Station		Beaumont Tank Station		Northwest Tank Station	
Amesbury 4 Tank Station		Beaumont Tank Station		Northwest Tank Station	
Amesbury 5 Tank Station		Beaumont Tank Station		Northwest Tank Station	
Amesbury 6 Tank Station		Beaumont Tank Station		Northwest Tank Station	
Amesbury 7 Tank Station		Beaumont Tank Station		Northwest Tank Station	
Amesbury 8 Tank Station		Beaumont Tank Station		Northwest Tank Station	
Amesbury 9 Tank Station		Beaumont Tank Station		Northwest Tank Station	
Amesbury 10 Tank Station		Beaumont Tank Station		Northwest Tank Station	
Amesbury 11 Tank Station		Beaumont Tank Station		Northwest Tank Station	
Amesbury 12 Tank Station		Beaumont Tank Station		Northwest Tank Station	
Amesbury 13 Tank Station		Beaumont Tank Station		Northwest Tank Station	
Amesbury 14 Tank Station		Beaumont Tank Station		Northwest Tank Station	
Amesbury 15 Tank Station		Beaumont Tank Station		Northwest Tank Station	
Amesbury 16 Tank Station		Beaumont Tank Station		Northwest Tank Station	
Amesbury 17 Tank Station		Beaumont Tank Station		Northwest Tank Station	
Amesbury 18 Tank Station		Beaumont Tank Station		Northwest Tank Station	
Amesbury 19 Tank Station		Beaumont Tank Station		Northwest Tank Station	
Amesbury 20 Tank Station		Beaumont Tank Station		Northwest Tank Station	

Map

This displays the main map screen. This is the default opening screen. More information on the map can be found in the [Main Screen Display](#) section of this document.



Detail

The detail folder displays the overall system status in a text format. This page displays the most recent alarm notifications in progress, all units with alarms, device that are offline, recent alarm dispatch history and recent electronic key use system wide.

Tank and Well

The Tank and Well optional control feature (for M800 models only) maintains the amount of water in a storage tank by constantly monitoring water levels and sending out commands to control pumps when required. The RTU at the tank reports water levels to the Mission servers where the level is compared to the stored set points. Relays on the same RTU or a different RTU are commanded to close or open.

One analog input (on the RTU at the tank) can directly control up to three output relays. Through digital intertie additional relays can be accommodated

You can view current and historic tank level and pump run status through the web portal. Administrators can:

- Enable and disable alteration

21: Marlboro Tank Analog 2 ----> McQueen Well #1 Relay 1

Status Panel	Control Panel
	McQueen Well 1 <input type="radio"/> Off <input type="radio"/> On <input checked="" type="radio"/> Auto
	McQueen Well 2 <input type="radio"/> Off <input type="radio"/> On <input checked="" type="radio"/> Auto
	McQueen Well 3 <input type="radio"/> Off <input type="radio"/> On <input checked="" type="radio"/> Auto
	Alternator: <input checked="" type="radio"/> Enabled <input type="radio"/> Disabled
	Lead Off: <input type="text" value="165.00"/> Feet
	Lead On: <input type="text" value="157.50"/> Feet
	Lag Off: <input type="text" value="165.00"/> Feet
	Lag On: <input type="text" value="157.50"/> Feet
	Lag 2 Off: <input type="text" value="165.00"/> Feet
	Lag 2 On: <input type="text" value="156.50"/> Feet
	Delay Time: <input type="text" value="0"/> secs
<input type="button" value="Refresh"/> <input type="button" value="Chart View"/> <input type="button" value="Setup"/> <input type="button" value="Update"/>	
Operation Log	
20 Jul 13:43:01 McQueen Well #1: Relay 1 On acknowledged.	
20 Jul 13:43:01 McQueen Well #3: Relay 1 On acknowledged.	
20 Jul 13:42:52 McQueen Well #1: Send Relay 1 On command.	
20 Jul 13:42:52 Marlboro Tank: Turning Lag Pump on.	
20 Jul 13:42:52 Marlboro Tank: Level=157.36 Feet	
20 Jul 13:42:52 McQueen Well #3: Send Relay 1 On command.	
20 Jul 13:42:52 Marlboro Tank: Turning Lead Pump on.	
20 Jul 13:42:52 Marlboro Tank: Level=157.36 Feet	
20 Jul 10:55:12 McQueen Well #2: Relay 1 Off acknowledged.	
20 Jul 10:55:12 Alternator: Swapped pumps.	
20 Jul 10:55:12 McQueen Well #3: Relay 1 Off acknowledged.	

- Manually run or lock out individual wells
- Set well control points
- Set high and low alarm points

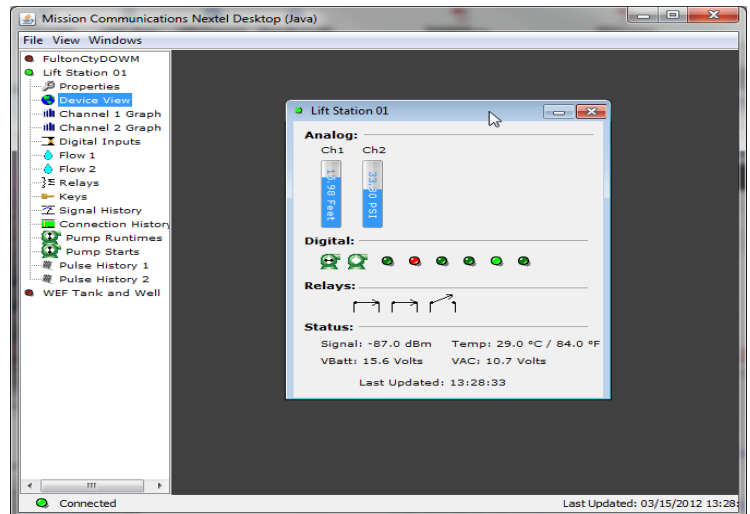
Real Time Viewer

Clicking this link will start the program Real Time Viewer (RTV). RTV has many traditional SCADA system software features (spinning pumps, moving graphs). RTV only displays information for M800 series units, and is used by most customers as a “control room.”

RTV is not a web page. It is a program that can be left running 24/7. Once RTV launches a prompt asking for security credentials will open. A list of all M800 real time units will then be shown on the left hand side.

Click on a unit to see screen options. If you wish to open a window, simply click on the name. You may then arrange screens in any configuration and save your preference from File Menu.

RTV requires your local firewall to allow certain network traffic. [Appendix D](#) has information that will be used by your Network Administrator to configure your firewall.



Ack Alarm

The Acknowledge Alarm report offers an overview of the alarm status that is similar to the Detail report. It also allows you to acknowledge the alarms via the web. Note that different user levels may not be able to acknowledge alarms.

Data

The Data folder is the general area to access all system data. Click on the links below to learn more.

[Rainfall](#)

[Pump Info](#)

[Site Access](#)

Flow Data

[Analog Data](#)

[Digital Data](#)

[Cellular Test](#)

[Solar Info](#)

[Voltage Reports](#)

[Alarms](#)

[Alerts](#)

[Delayed Alarms](#)

[Dispatch History](#)

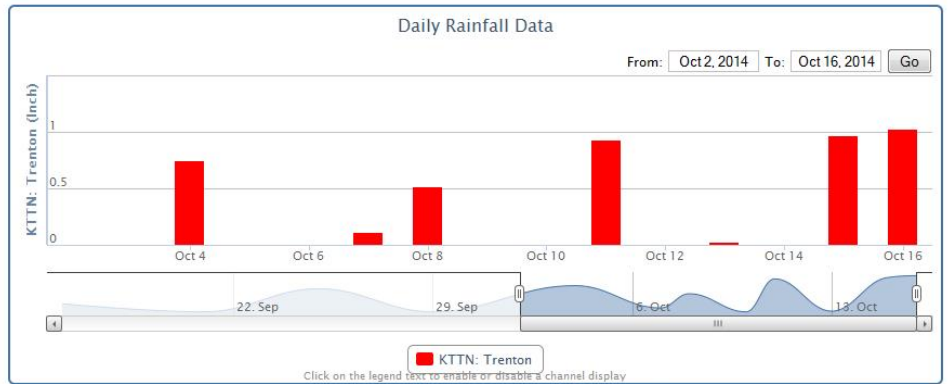
[Volumetric Calc](#)

Rainfall

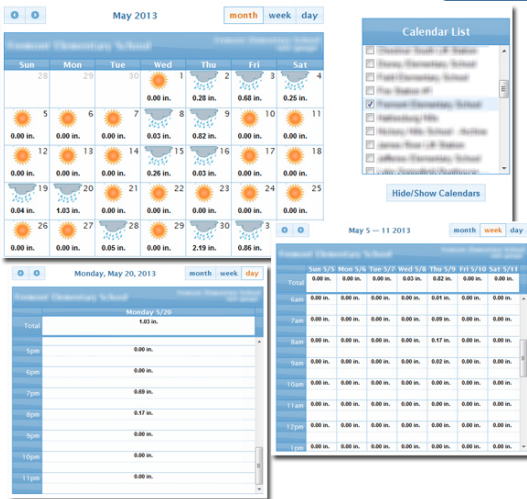
The rainfall folder offers several ways to view rainfall data. Data is generated by local NOAA weather stations or units equipped with pulse option boards and rain tipping buckets. To change the NOAA weather station, go to *Setup / Preferences / Weather Banner*. All other local weather stations will be listed in the drop-down menu.

Table: Displays last 15 rainfall reports from local NOAA station or all units with rain tipping buckets. View the data in a graph by clicking on the graph button or download the data by clicking on the Excel button.

Graph: Displays a one month graph of daily rainfall totals. Click on a column to see the hourly graph for that particular day. If you have units with rain tipping buckets, use the device drop down to view rainfall graphs for other RTUs.



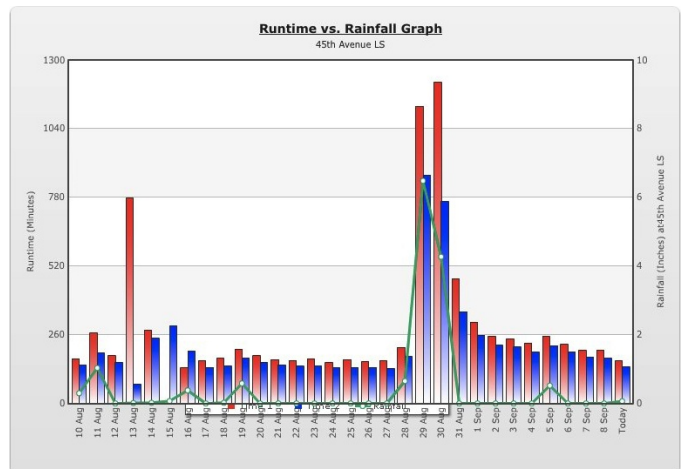
(Click on day graph column to get hourly graph for that date)



Calendar: Displays daily rainfall data in monthly, weekly or hourly calendar views. Each unit with a rain tipping bucket will display in a separate calendar. Choose a device from the calendar list. Rainfall data is displayed in inches.

Download: Select the site, start and end date, frequency, time format and file format of the rainfall data that you would like to download. The total rainfall will be displayed at the bottom of the spreadsheet.

Rainfall vs. Runtime: The Runtime vs. Rainfall report shows rainfall and runtime data for each day in a table. Click the graph button to view the data in a graph. The rainfall data source is either the local NOAA station or a rain tipping bucket that is associated with the RTU. This data might be useful to identify sources of inflow and infiltration.

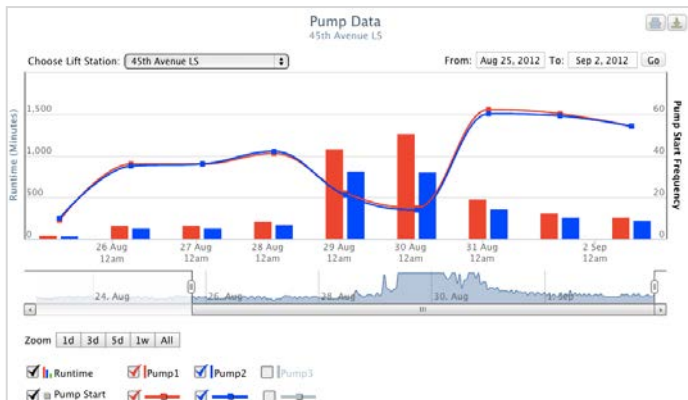


Pump Info

Runtime Table: The Daily Runtime Summary shows the pump runtime (in minutes) and gallons pumped per day for each pump at each station. The report also provides the total minutes and gallons per day for the station. Each unit is displayed in alphabetical order by station name. Use the drop-down menu at the top of the page to navigate to a particular station.

Daily Runtime Summary							
Minutes and Gallons							
		Jump to: Battleground 1 Pump Station <input type="button" value="Go"/>					
Devices	Time	Pump 1		Pump 2		Total	
Battleground 1 Pump Station <input type="button" value="Excel"/>		Minutes	Gallons	Minutes	Gallons	Minutes	Gallons
	17 Oct	59.2	8885	56.6	7926	115.9	16811
	16 Oct	184.2	27635	160.4	22456	344.6	50091
	15 Oct	165.1	24770	156.8	21954	322.0	46724
	14 Oct	175.5	26328	171.2	23961	346.7	50289
	13 Oct	188.2	28223	189.1	26467	377.2	54690
	12 Oct	225.4	33815	214.7	30060	440.2	63875
	11 Oct	252.0	37798	235.7	32998	487.7	70796
	10 Oct	246.7	37010	208.9	29246	455.6	66256

- This page displays data from the past week. Click on a site name link to view the last 90 days of data for that site.
- Download station pump data for the past 90 days by clicking on the Excel button next to the site name.
- Change the pump runtime units from minutes to hours using the *Setup / Preferences / Pump Runtime Scale* drop down menu.
- To display hourly and daily flow calculations, enter the GPM rating for each pump on the unit setup page (*Setup / Unit Maint / Edit Unit (wrench) / Pump Capacities*).
- To display simultaneous pump runtimes for two-pump lift stations, remove all wires from digital input 3 on the RTU and call Mission technical support for backend setup. This is available for M110 RTUs only.



Runtime Graphs: This interactive graph shows pump runtimes and pump starts for each station. View pump data for other stations with the device drop-down menu. Refer to *Reports* on page 14 for more information on the interactive graph.

Starts: The Pump Starts report details the number of starts per pump, per day. This report is useful to identify a faulty alternator or clogged pump when one pump has more starts in comparison to its companion pump.

Pump Starts			
Device	Time	Pump 1	Pump 2
Battleground 1 Pump Station	17 Oct 00:00-12:10	35	34
	16 Oct 00:00-23:59	91	90
	15 Oct 00:00-23:59	88	88
	14 Oct 00:00-23:59	89	90
	13 Oct 00:00-23:59	87	87
	12 Oct 00:00-23:59	84	84
	11 Oct 00:00-23:59	78	78
	10 Oct 00:00-23:59	79	78

Pump Alarm: The Pump Start Alarm and Alerts report displays alarms and alerts that were generated for pumps that exceeded the maximum number of starts in an hour. The report displays a list of all customer units sending daily/weekly pump start reports for the past week. The default maximum is nine starts per hour (alert/alarm on the tenth pump start). This can be changed in the *Setup / Unit Maint / Edit Device (wrench) / Pump Start Thresholds*.

Capacity Estimator: The capacity estimator is intended to be the initial step in an engineering investigation. By manipulating the inputs on the capacity estimator, engineers can see the estimations of capacity versus design capacity. This tool is useful when additional developments are added which will affect your pump station. Add GPM ratings to the pumps under *Setup / Unit Maint / Edit Device (wrench) / Pump Capacities*.

Download: Download pump reports for reach unit. The reports include: the Daily Runtime Summary Report, the Pump Run Time Report, the Monthly Report and the Current Year Runtime Summary Report. You can choose the start date, end date, format and resolution of the download.

Site Access

The Site Access folder provides two ways to view the history of electronic key use – by site and by user. Site access information allows you to track maintenance visits and site inspections.

By Site: Displays a list of all units and the last ten electronic key uses. Click on the site name link to display a list of the last 100 key use records for the site.

By User: Displays a list of all electronic keys assigned to your account and the name associated with the key. Under each key, the last ten site visits are listed along with what site was accessed. It also shows the dates and times of each site visit. Click on the user name link to display a longer history of key uses by user.

Site Access			
Site Name	Date	User	Key (Hex)
Battleground 1 Pump Station			
	19 Jun 12:50:06	Don Hartmann	0000
	19 Jun 12:33:44	Don Hartmann	0000
	18 Jun 10:12:21	Robert Reed	0000
	18 Jun 09:20:04	Don Hartmann	0000
	18 Jun 08:42:56	Don Hartmann	0000
	17 Jun 11:07:35	Don Hartmann	0000
	17 Jun 10:51:02	Don Hartmann	0000
	14 Jun 10:53:57	Jeff Hugg	0000
	14 Jun 10:30:52	Jeff Hugg	0000
	13 Jun 09:46:28	Steve Warner	0000
Brunswick Drive Pump Station			
	20 Jun 09:42:54	Jeff Hugg	0000
	20 Jun 09:13:44	Jeff Hugg	0000
	19 Jun 12:27:27	John Hancock	0000
	19 Jun 11:21:56	Jeff Hugg	0000
	18 Jun 13:14:11	George White	0000
	18 Jun 13:07:20	George White	0000
	17 Jun 09:18:38	Jeff Hugg	0000
	14 Jun 12:32:32	Jeff Hugg	0000
	14 Jun 12:15:29	Don Hartmann	0000
	13 Jun 12:36:04	Steve Warner	0000

We recommend editing the name of the electronic key and assigning it to the person responsible for it. This allows for easier monitoring of site access.

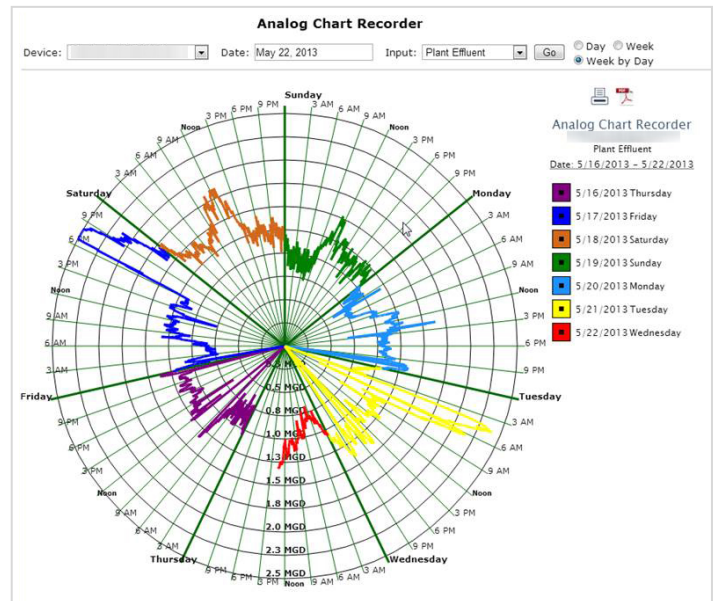
Analog Data

This page displays a list of all the units that transmit analog data, along with the last five analog values.

Analog data comes from sensors connected to the on-board analog inputs. Each analog value has a date and time associated with it. Click on the station name to see the full list of analog values. The analog data can also be viewed in a graph or a polar chart format. The icons next to the analog input names will direct you to the bar graph and polar chart views. Download analog data by clicking on the down arrow button next to the station name.

Analog Data		
Crine Road Pump Station	Level FT	Flow GPM
20 Jun 15:29:01	2.11	5
20 Jun 15:28:56	2.06	-4
20 Jun 15:28:51	2.02	250
20 Jun 15:28:25	2.33	439
20 Jun 15:27:31	3.21	451
Daum Road Pump Station	Level FT	Flow GPM
20 Jun 15:28:07	2.76	-54
20 Jun 15:26:05	2.58	-52
20 Jun 15:24:05	2.37	-49
20 Jun 15:22:04	2.17	-56
20 Jun 15:20:03	1.95	-54
20 Jun 15:29:12	32.9	3.79
20 Jun 15:28:38	39.0	4.51
20 Jun 15:28:31	39.3	4.54
20 Jun 15:28:01	36.6	4.24

Polar Chart (Circle Graph): The circle graph displays the analog values in a chart recorder view. The data is scaled and labeled according to how it was setup under *Unit Maintenance*. View the data for one day, a week (each day overlaid on top of each other) or week by day (each day is displayed side-by-side). Select and deselect days by clicking on the colored squares next to each day. Print or download the graph in PDF format via the buttons next to the circle graph.



Digital Data

This report displays the time of the digital report transmission, the state of the digital inputs (open or closed), the state of the 3 relay outputs (C=de-energized (off), O=energized (on)) and the AC state for each RTU. This information is delivered for each digital transmission. Click on the station name link for a full report of digital data on that station. Download station data using the down arrow next to each station name. Select the date range and format, then select Download.





Digital Reports												
[Station Name] [Station] [Down Arrow]												
Time	Input								Relay			
	1	2	3	4	5	6	7	8	1	2	3	
08 Jul 13:48:33	O	C	O	O	O	O	O	O	O	O	O	O
08 Jul 13:40:12	O	O	O	O	O	O	O	O	O	O	O	O
08 Jul 13:35:38	C	O	O	O	O	O	O	O	O	O	O	O
08 Jul 13:35:18	C	O	O	O	O	O	O	O	O	O	O	O
08 Jul 13:33:44	C	O	O	O	O	O	O	O	O	O	O	O
08 Jul 13:28:23	O	O	O	O	O	O	O	O	O	O	O	O
08 Jul 13:25:00	O	O	O	O	O	O	O	O	O	O	O	O
[Station Name] [Station] [Down Arrow]												
Time	Input								Relay			
	1	2	3	4	5	6	7	8	1	2	3	
06 Jul 08:46:41	O	O	C	O	O	O	O	O	O	O	O	O
06 Jul 08:43:02	O	O	C	C	C	O	O	O	O	O	O	O
28 Jun 11:19:11	O	O	C	O	O	O	O	O	O	O	O	O
11 May 07:08:31	O	O	C	O	O	O	O	O	O	O	O	O
17 Jan 13:26:33	O	O	C	O	O	O	O	O	O	O	O	O
11 Jan 09:17:00	O	O	C	O	O	O	O	O	O	O	O	O
11 Jan 09:16:59	O	O	C	O	O	O	O	O	O	O	O	O

The field unit will send a digital transmission each time a digital input changes state. Inputs highlighted red indicates the input is in a “wiring fault” condition. Inputs highlighted gray have changed state from the last digital transmission. A transmission highlighted in red typically occurs because there is no end-of-line resistor present.

Refer to the key at the bottom of the page.

Cellular Test

The Cellular Test page displays a list of all units and the last ten reported cellular transmissions. This is a quality of service report primarily containing signal strength (RSSI) of the cellular network received by the field unit. The strength is measured in dBm, with -100 dBm or lower being very bad and -75 dBm or higher being very good. Generally RTUs perform well with signal strength above -95 dBm. Clicking on the blue unit name displays a more extensive signal strength history. Data can also be viewed in a calendar or graph format using the buttons next to each station name.

Cellular Test			
Location	Time	Signal (dBm)	Temperature (degF)
Battleground 1 Pump Station			
	26 Mar 09:36:40	-75	93
	26 Mar 08:36:47	-75	93
	26 Mar 07:36:41	-73	93
	26 Mar 06:36:42	-75	93
	26 Mar 05:36:46	-77	91
	26 Mar 04:36:43	-75	91
	26 Mar 03:36:45	-75	91
	26 Mar 02:36:41	-73	93
	26 Mar 01:36:52	-77	93
	26 Mar 00:36:46	-73	93
Battleground 2 Station			
	26 Mar 10:00:21	-95	77
	26 Mar 09:00:19	-93	77
	26 Mar 08:00:20	-95	79
	26 Mar 07:00:23	-97	79
	26 Mar 06:00:23	-85	77
	26 Mar 05:00:21	-85	79
	26 Mar 04:00:20	-85	79
	26 Mar 03:00:22	-85	77
	26 Mar 02:02:29	-85	77
	26 Mar 01:01:01	-95	77

Solar Info

The Solar Info page displays a list of all M110 units in low power solar mode. M110 units in solar mode send a daily message indicating how many minutes during the day the solar cell produced a charging voltage and the current battery voltage. Charging minutes should be above 200 for the day and battery voltages should remain above 12 VDC.

Solar Readings			
Device	Time	Battery Voltage	Charging Minutes
Bingham Elementary School			
	22 Jul 23:57	12.38	830
	21 Jul 23:59	12.23	830
	20 Jul 23:57	12.36	830
	19 Jul 23:57	12.36	840
	18 Jul 23:57	12.36	830
	17 Jul 23:57	12.38	830
	16 Jul 23:57	12.38	830
Cherokee Middle School			
	23 Jul 11:36	12.58	810
	22 Jul 11:34	12.75	810
	21 Jul 11:34	12.68	820
	20 Jul 11:34	12.64	830
	19 Jul 11:34	12.77	810
	18 Jul 11:34	12.71	820
	17 Jul 11:34	12.75	830

Voltage Reports

The voltage report displays the battery voltage and AC voltage for every unit. This information is also available on Supergraph. If the battery voltage goes above 15 VDC, go to the site to do a battery test. These should be done every 6 months to verify that the battery is good.

<u>Voltage Reports</u>			
Device	Time	Battery Voltage	AC Voltage
<u>Battleground 1 Pump Station</u>			
	26 Mar 10:36	16.45	11.79
	26 Mar 09:36	16.31	11.78
	26 Mar 08:36	16.07	12.03
	26 Mar 07:36	16.02	12.10
	26 Mar 06:36	16.09	11.83
	26 Mar 05:36	15.88	12.01
<u>Battleground 2 Station</u>			
	26 Mar 11:00	13.77	12.52
	26 Mar 10:00	13.77	12.48
	26 Mar 09:00	13.77	12.26
	26 Mar 08:00	13.77	12.33
	26 Mar 07:00	13.77	12.47
	26 Mar 06:00	13.77	12.50
<u>Brunswick Drive Pump Station</u>			
	26 Mar 11:11	16.27	12.29
	26 Mar 10:11	15.90	12.07
	26 Mar 09:12	16.11	11.93
	26 Mar 08:11	16.27	12.03
	26 Mar 07:12	16.62	12.03
	26 Mar 06:12	15.94	12.08

Alarms

The page displays a list of alarms for all units with the date and time of the alarm, unit name, alarm description (off normal and return to normal) and the result of the alarm notification, typically the name of the person who acknowledged the alarm.

Alarm events are color coded based on their status:

- Green: acknowledged
- Red: alarms that have not been acknowledged
- White (no highlight): alarms that were not “called out” due to alarm delay or swinger mode
- Blue: acknowledged at the site via an electronic key

Alarm History				Full List
				Top 30 <input type="checkbox"/>
Date	Site Name	Event	Result (Minutes)	
09 Jul 14:10	SW Treatment Plant	Excessive Daily Rain 0.55 Inches	Never Acknowledged	
09 Jul 12:42	Millwood Maintenance Bldg	Excessive Daily Rain 0.82 Inches	Never Acknowledged	
07 Jul 15:41	Bingham Elementary School	Excessive Daily Rain 0.5 Inches	Web: Carrie Lamb(416.6)	
07 Jul 14:43	Pittman Elementary School	Excessive Daily Rain 0.67 Inches	Web: Carrie Lamb(475.8)	
03 Jul 17:19	Fire Station #1	Excessive Daily Rain 0.5 Inches	Web: Carrie Lamb(6,079.8)	
03 Jul 16:07	Sunshine Elementary Schoo	Excessive Daily Rain 0.56 Inches	Web: Carrie Lamb(6,152.0)	
02 Jul 01:32	AT&T Communications	Excessive Daily Rain 0.51 Inches	Web: Carrie Lamb(8,467.3)	
02 Jul 00:52	Valley Water Mill Equestr	Excessive Daily Rain 0.69 Inches	Web: Carrie Lamb(8,507.6)	
02 Jul 00:43	Le Compte Lift Station	Excessive Daily Rain 0.5 Inches	Web: Carrie Lamb(8,517.2)	
02 Jul 00:34	Fire Station #1	Excessive Daily Rain 0.51 Inches	Never Acknowledged	

False alarm reduction features suppress alarm call-outs (notifications). If an alarm was suppressed from notification, the false alarm filter that suppressed it will be listed in the alarms result section. To change these settings, go to *Setup / Unit Maint / Edit Unit (wrench)*.

- **Unit Disabled:** Unit is disabled from all alarm notifications.
- **Input Disabled:** A specific input has been disabled from reporting alarms.
- **Service Mode:** The alarm was not called out because the unit was put in service mode by an electronic key.
- **Swinger Mode:** Alarms will not repeat themselves until thirty minutes past the original callout. The Mission system suppresses repeat alarms to avoid nuisance alarms.
- **AC Failure Override:** Alarm was not called out due to a simultaneous AC failure at the location. Many times alarm relays at the site are normal “energized”. When there is an AC failure these relays “drop” (change state) due to the AC failure. Therefore the “alarm” is false. The Mission system detects this and suppresses the alarm message and only reports the sites AC failure.
- **No Schedules:** The alarm was not dispatched because no one was on-duty in the notification schedule at the time of the alarm. Alarm recipients may be listed in the associated notification schedule but if no one is on-duty no one will be called.

Click on the alarm time stamp link to see the details of that alarm including a recording of all voice alarm attempts. You can filter the alarms by clicking on *Full List* in the top right corner of the Alarm History page. This filter allows you to view a single unit’s alarm history, a specific input or specific type of alarm result. Checking the item box includes the item in the list, white un-checking excludes the item.

Alerts

See [Alert History](#) page 15.

Delayed Alarms

The Delayed Alarm Log lists alarm events that have occurred but the call-out has been delayed. This is one of the many features Mission offers to cut down on nuisance alarms. The delay time is configured under *Setup / Unit Maint / Edit Unit (wrench)*.

Delayed Alarm Log					
Arrival Time	Device Name	Input	State	Delay Until	Result
21 Oct 05:32:54	Lloyd Road Pump Station	Digital 4	Alarm	21 Oct 05:35:54	Cancelled
21 Oct 05:27:54	Lloyd Road Pump Station	Digital 4	Alarm	21 Oct 05:30:54	Triggered

Dispatch History

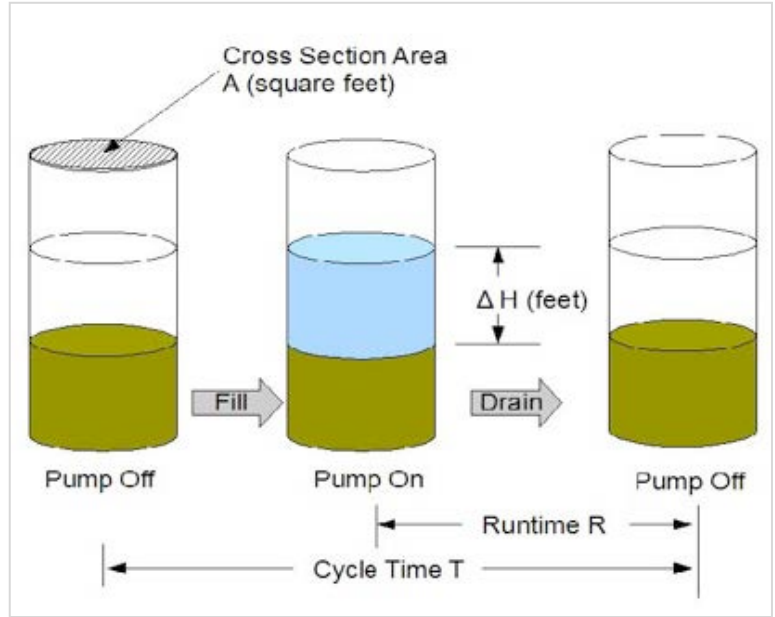
The Dispatch History shows a list of all of your units. Click on a blue unit name to display a list of alarms and notifications result from the past two weeks. View alarm results for each month by selecting the month and year from the drop down menus at the bottom of the page.

The list includes the site name, the alarm event, the alarm result, and the acknowledgement time. Digital records of all phone line based alarm notifications are available in Dispatch History.

Volumetric Calculations

This menu item displays a list of M800 units set up to perform volumetric flow calculations. These can be performed based on data from a level sensor or from a fixed float. View the volumetric flow data in a duty cycle, a report or download it in a spreadsheet.

Duty Cycle: Click on the duty cycle table button. Each row of the displayed table contains the start time of the pump cycle, pump in use, duration of pump down, start level, stop level, estimated gallons pumped, estimated pump GPM and the estimated station inflow prior to the pump cycle.



The Daily Volumetric Flow Summary is more than a flow report; it shows the vital statistics of a pump station. The report summarizes a pump station with great graphical detail. The report is very useful when conducting Inflow and Infiltration studies, and also indicates some illegal connections. The volumetric flow report presents volumetric daily flows without the need for analog or pulse flow meters. Tech Support must activate this report prior to web presentation.

Volumetric flow calculations require the start level, end level, start time, end time, and wet well cross sectional area of the pump station. As each pump undergoes the two stages, fill and drain, the number of gallons pumped are easily calculated.

This report is only available for M800 RTUs. To setup volumetric flow calculations, visit the *Setup / Unit Maint / Edit Unit (wrench) / Volumetric Flow Calculation*.

Daily Volumetric Flow Summary						
August 2012 45th Avenue LS						
Date	Pump 1 Runtime (Minutes)	Pump 2 Runtime (Minutes)	Pump 1 Gallons	Pump 2 Gallons	Total Time	Total Flow
01 Aug 2012	184.7	151.8	141940	125871	336.5	267810
02 Aug 2012	175.7	147.8	168916	140238	323.5	309154
03 Aug 2012	170.6	141.4	144070	134322	312.1	278392
04 Aug 2012	214.2	181.9	186300	181638	396.2	367938
05 Aug 2012	184.8	151.8	173072	158605	336.6	331677
06 Aug 2012	180.9	154.4	157759	140626	335.4	298386
07 Aug 2012	169.6	143.1	151441	144642	312.7	296083
08 Aug 2012	160.6	133.7	133781	132039	294.3	265819
09 Aug 2012	196.1	166.4	133819	128352	362.5	262171
10 Aug 2012	171.0	143.9	119919	113271	314.9	233189
11 Aug 2012	265.6	191.3	164214	138741	456.9	302955
12 Aug 2012	183.2	154.0	146134	137142	337.3	283276
13 Aug 2012	383.5	57.8	152992	51468	441.3	204461
14 Aug 2012	670.5	246.6	125798	493596	917.1	619393
15 Aug 2012	0.2	292.7	914	310654	292.9	311568
16 Aug 2012	134.0	199.4	113184	170616	333.5	283800
17 Aug 2012	156.9	137.2	130810	124791	294.1	255601
18 Aug 2012	171.6	141.4	133571	124939	313.0	258510
19 Aug 2012	206.1	172.5	135642	125763	378.6	261405
20 Aug 2012	181.5	155.4	153547	147559	336.9	301106
21 Aug 2012	162.5	141.9	136272	131970	304.4	268242
22 Aug 2012	163.3	140.5	164780	137849	303.8	302629
23 Aug 2012	168.6	141.6	153980	148903	310.2	302884
24 Aug 2012	155.2	134.1	144734	142475	289.3	287209
25 Aug 2012	166.9	136.8	158268	147558	303.7	305826
26 Aug 2012	158.0	136.8	151815	150018	294.8	301833
27 Aug 2012	160.5	132.8	139511	131964	293.3	271476
28 Aug 2012	214.3	176.8	153126	144256	391.1	297382
29 Aug 2012	218.9	113.1	194822	87124	332.0	281946
30 Aug 2012	1762.3	142.9	251980	47256	1905.2	299236
31 Aug 2012	475.1	347.1	321735	223900	822.1	545635
7967.0	5009.1	4738846	4718147	12976.2	9456992	

Commands

Actions

The Commands folder currently contains an item called Actions. This displays a menu page where the customer chooses a unit from the drop down menu and then chooses a command action to issue to the field unit.

Send Channel Info: This will request the voltage, signal strength, and temperature readings from the RTU. Channel Info is automatically reported hourly but an instantaneous reading is useful when testing or troubleshooting an RTU, particularly when working with the radio, antenna or battery.

Send Analog Readings and Send Digital Status: These commands request the current respective data points.

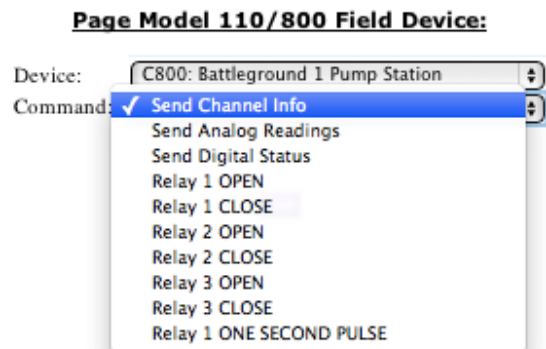
Relay Open and Relay Close: These commands can be issued to open or close a relay. However, if relays are under automatic control by way of the Tank and Well option, or Digital Intertie, any commands will be over-riden by those systems. In those situations, use the Tank and Well interface, to open or close those relays. A useful compliment to the relays command is Positive Feedback. If an input is wired to sense devices run, an alarm can be dispatched if a device was called to run but did not run within a set period of time. Mission Tech support can set this function up for you. After a command is issued the page will refresh and indicate the status of the request.

Relay One Second Pulse: This command is generally used to reset a PLC or something that needs to be rebooted.

Digital Intertie

Digital Intertie (M800s only) is a control option where the state of a digital input on the source RTU can control the relay of a remote RTU(s). One source can control multiple destination RTU relays, but each relay can have only one source.

Mission Tech support must initiate digital intertie controls the first time. Once configured, changes can be made under *Current Status / Interconnect*. Four options will be listed: Automatic, Disabled, Force On, and Force Off. Relays that are commanded by intertie cannot be paged under the commands folder.



Quick Message

Pagers

The Quick Message folder contains a list of pagers that have been set up for notifications. In addition, Tech Support and Sales pagers are listed.

Mission Sales

You can submit questions or requests to Mission sales here. We endeavor to address questions and requests the same day that they are issued. Please put your return contact information in the email and the level of urgency of your request.

Create Ticket

When you submit a ticket a list of your units is automatically populated so you may select one or more of the units that have problems to be addressed. Files can be attached to the ticket. Providing more information to technical support will help to quickly address the issue. Tickets are assigned to a technical support staff member. You will be able to see who is assisting you as soon as the ticket is opened. You may also choose to route the ticket to the Mission sales team. A staff member will then contact you through the ticket or phone to address the issue.

View Tickets

You may view all of your past and present tickets here. This allows you to track the progress of open tickets, or see the solution on past ticket.

The screenshot shows a web-based form for creating a ticket. It is divided into three main sections:

- Contact Information:** Includes a dropdown for 'Submit Ticket To' (set to 'Technical Support'), a dropdown for 'Severity' (set to 'Medium'), and text input fields for 'Contact Name', 'Contact Phone', and 'Contact Email'. A 'Device' dropdown is also present, with a list of options: 'Nolan Road PS [689MIS9567]', 'Manalapan Plaza [689MIS9993]', 'Brunswick Drive Pump Station [689MIS8537]', and 'Battleground 1 Pump Station [689MIS9292]'.
- Description of Problem:** Contains a 'Ticket Title' text input field and a larger 'Ticket Note' text area.
- Support Information:** Features an 'Attach a file' section with a 'Browse...' button.

At the bottom right of the form, there are 'Save' and 'Cancel' buttons.

Setup

The Set Up folder is where you customize your RTU, alarm callout schedule and report preferences.

Electronic Keys

Electronic keys are used to put a RTU into service mode so that alarm call outs will be suppressed during service. By assigning an operator name to a key, the Site Access report will be more useful.

List Keys: Edit keys here. This page displays a list of all current electronic keys assigned to your account. Electronic keys may be deleted or privileges can be changed from this page.

Add Key: Add keys here. This page displays a key set up page. The key number is the last four letters or digits of the keys serial number, found on the silver face of the key.

Any electronic key will work on any unit. However, no functions will be performed until privileges are assigned to the key. Electronic keys have three levels of privileges:

Event Acking (Acknowledging): Allows the key holder to acknowledge a current alarm. All current alarm notifications for this unit will be stopped and acknowledged.

Service Mode Toggle: A key with Service Mode Toggle privileges will put a unit in or take a unit out of service mode.

Alarms are still transmitted by the field units during service mode but are simply not called out. This allows operators to manipulate the site without causing alarm notifications and documents field personnel testing alarm inputs.

Logging Only: If you don't select either of the two options above, the key will only log site visits.

Unit Maintenance / Edit Device Parameters

Unit specific changes including the naming and scaling of inputs, the call out status (enable/disable, delay) and alert and alarm thresholds are configured by way of the *Unit Maint* page. RTU location on the map can also be changed using this page.

Serial Number: Assigned by Mission. This cannot be changed.

Device Type: Shows RTU model and cellular carrier.

Device Name and Location: Enter a descriptive unit name and the unit's location here. Generally Mission technical support staff will add this information (including the latitude/ longitude) when the RTU Installation Form is submitted. Once the unit is on the map you can graphically move it by way of the MAP button (from the previous page) or edit the latitude/ longitude entry. You can use Google Earth or Google Maps to get the latitude and longitude for the station's location.

Call Out Status: This feature enables or disables a unit from sending alarm messages. Click on the Edit button to display the disable options. Click the down arrow to choose a predetermined disable time (from 30 minutes to indefinitely). At the end of the disable time the unit will automatically return to active (enabled to report alarms) status. The disabled unit time will be displayed to the right of Unit Status once a selection is made. By disabling a unit for a predetermined time rather than indefinitely you won't have to remember to re-enable it.

30 Minute Swinger: Swinger mode is a nuisance alarm reduction filter. When "Active" this filter will suppress repeat call-outs for multiple alarm events within 30 minutes of one another. Inactive with Auto Enable means that alarm call-outs will be suppressed anytime 10 alarm events within a 5 minute period or 20 events in an hour occur.

Service Mode Relay: This is used for a visual indication that a unit is in service mode. You can wire the key reader and a light to a relay so the light will come on when the unit is in service mode. Select the relay that is being used in the drop down menu.

Notification Settings: Digital Inputs types can vary. Changes to the input type must be made by Mission technical support. Here are the various options:

- **R – Runtime:** The system calculates the runtime (generally pumps, blowers, generators). M110 units can have a maximum of 3 runtime inputs and the M800 units have a maximum of 8 runtime inputs. Click the R to activate or disable pump state reports.
- **A – Alarm** (Example: floats and phase fault switches).
- **S – Status:** Input state shows on map page pop-up and other reports but does not cause any alarm call outs.
- **D – Disabled:** Data is transmitted, but alarm call outs are disabled. Inputs can be disabled indefinitely or for a specific time period.

Each digital, AC failure, analog input and communication has four alarm suppression features that may be applied to the specific input.

- **Status:** Disable/enable an input from calling out alarms. When possible enable or disable a specific input rather than the entire unit from reporting alarms as described above (Call Out Status).
- **Alarm Delay:** This feature applies a notification delay period to the input. If the input returns to normal before the alarm delay time is met, no alarm will be called out although the event will be recorded on the web portal.
- **AC Override:** This feature suppresses an alarm if it occurs at the same time as an AC power failure. For example, if AC power is lost, the Mission unit will call out an AC failure alarm after the built in 5 minute delays. By enabling AC Override for a phase fault sensor, you won't be told that the phase fault sensor is in alarm.
- **Alarm Recall:** This feature acts as a reminder that an input is still in alarm. If this feature is enabled and an alarm is either acknowledged or the call out schedule is completed and the input is still in alarm, the alarm will be called out a second time after the alarm recall time.

Analog Inputs: Click edit to name the input, select the input type (4-20 mA, 0-5 VDC), and enter the minimum and maximum sensor range as specified on the sensor. For example, a 0-50 psi pressure transducer could be entered as Min=0 and Max= 50, units= PSI. A 0 to 50' level sensor installed on a tank where the low point is 1000 feet above sea level can be entered as 0, 50 or 1000, 1050 for the min and max respectively.

Analog Inputs					
Channel	Name	Mode	Range	Supergraph	
1	Wet Well Level	4-20 mA	1 - 14.86 Feet	On	Edit
2	Channel 2	0-5 Volt	0 - 1023	Off	Edit

Analog Input Alarm Thresholds				
Channel	Name	Low	High	
1	Wet Well Level	1.11 / 1.21	4.01 / 4.11	Edit
2	Channel 2	None / None	None / None	Edit

Analog Input Alarm Thresholds: Low and high analog alarm thresholds can be set to call out an alarm when a value is either below or above the desired levels. Restore points are required to avoid repeat call outs when the value is bouncing around the set point. For example, a high level alarm at 60 feet and restore at 55 feet results in a high level alarm when the value exceeds 60 feet. The alarm restore call-out will be dispatched when the level drops below 55 feet.

Pump Capacities: By assigning a flow rating to each pump being monitored, flow reports will be calculated. This flow estimate is simply the product of the rating and run time. You will see the value displayed in parenthesis next to the daily runtime as listed in pump runtime history pages (See *Data / Runtime / Tables*). Other more accurate methods of flow calculations include the volumetric flow calculation method (M800s) or actual flow meters (analog or pulse).

Pump Runtime Alert Thresholds: The system will dispatch an email alert whenever the actual runtime for a pump is greater than the daily threshold. If the previous 24-hours of runtimes for a specific pump are “statistically abnormal” it will issue an Alert (*Setup / Alerts*). Some pump stations do not alternate pumps sequentially on a cycle-by-cycle basis. The automatic analysis formulas do not account for this and therefore need to be overwritten or turned off. This section allows the customer to override analysis formulas. By entering any non-zero number the formulas will be overridden. Instead the system will issue “Run Time Variance” alerts if the pump runs more or less than the entered value, as measured over a day.

Pump Start Thresholds: Specify the maximum number of daily pump starts for alerts and alarms.

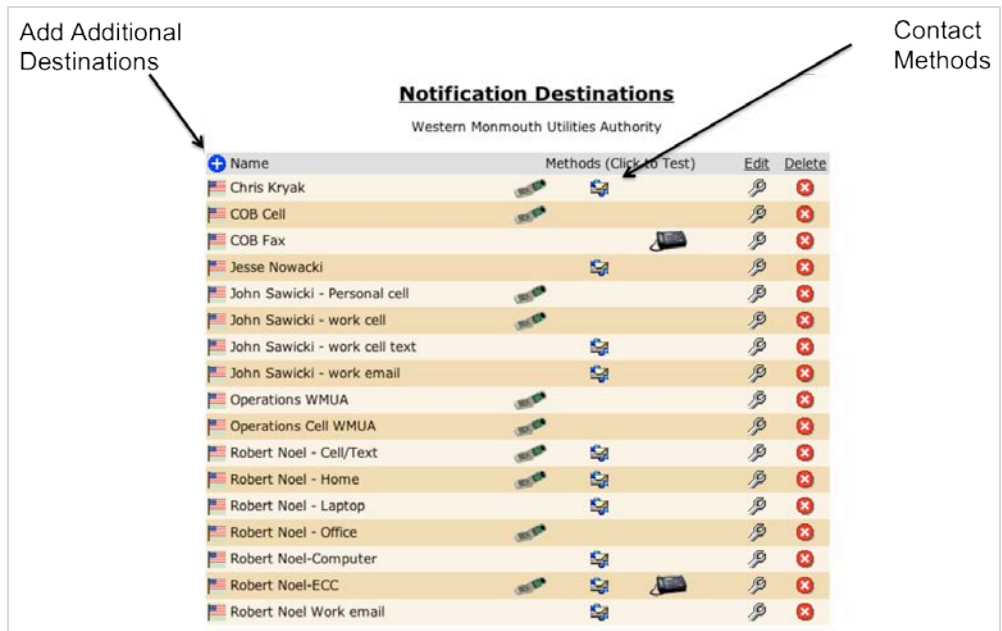
Relays: Enter the name, normal state of the relay and whether or not it should display on the map pop up.

Pulse Board Inputs: Rain tipping buckets and some flow meters utilize pulse output. The optional pulse counting board accepts these signals. This board accumulates the “pulsing” inputs, totalizes or integrates the values and displays these pulses (rainfall or flow). Use this section to scale the value and indicate the units (inches, gallons etc.).

Volumetric Flow Calculation: see [page 47](#).

Destinations (Phonebook)

A destination is how personnel receive alarms. Add or edit all alarm recipients and their contact information on this page. More than one method of contact can be entered for a recipient.



Recipients can receive alarms via the following methods:

- **Email Address:** This can be a standard email address or the email address for a pager. Most alphanumeric pagers can be emailed an alarm page. This is the preferred way to send/issue an alarm to a pager. This is also the entry for text messages.

HTML: Sends a standard email via computer and email software programs; should not be sent to a pager.

Plain Text: Sends a standard email without graphics.

Alpha Pager: Alarm message specifically designed for 2 – 4 line alpha pagers. It contains the unit name, nature of alarm, address of unit and instructions to the recipient on how to call and acknowledge the alarm.

Short Alpha: Sends a condensed alarm message to an alphanumeric pager. This is used typically for alpha pagers that only display one line of text at a time. These pagers may not accept the amount of text sent in an Alpha Pager format message.

Text Message: Enter the SMS email address for the destination. Hover over “SMS Destination Format” for carrier addresses.

- **Fax Number:** Use for fax messages.
- **Voice Phone Number:** Use for standard voice phone. You can only enter one phone number per Destination. If more are needed add another Destination for the person.
- **Pager Phone Number:** If a numeric pager is to be used enter the pager number here. The system will actually dial the pager number, wait for a certain delay (described below) and play the

“touch tones” representing the numeric alarm message. This alarm message will be the toll free alarm response computer phone number (877-991-1911) followed by a 5-digit alarm code.

- **Pager Format Type:** If a numeric pager is to be used enter the “message delay” here. Numeric paging companies use many types of “Welcome” messages that play when you call a numeric pager number. These entries help ensure the system successfully delivers a numeric page to the recipient.
- **Voice Pager Phone Number:** Enter the number of the voice pager.
- **Voice Pager Blind Dial Delay:** This is the time span after you dial a voice pager number until the pager system instructs you to leave a voice message. Test your voice pager several times prior to making this choice.

Schedules

Groups, Teams and Cycles are the basis that determines the schedule by which alarms are called out. Groups are used to assign certain types of alarms to specific people. For example, electricians might want to know about wiring faults, while hydraulic staff may want to know when pumps start and stop. There are four built-in/default groups.

Alarm Groups

- Alarms – digital and analog input alarms.
- Communication Group – communication failure and communication restore notifications.
- Pump Starts Group – notification of excessive pump starts
- Digital Fault Group – a wire fault. This relates to the end-of-line resistors described in the installation manual.

Notification Report Group			
New Group			
Add to Group	Group Name		
Team #1 <input type="button" value="Place OnDuty"/>			
Cycle #1			
<input type="checkbox"/> On Duty	Robert Noel - Cell/Text		by E-Mail
<input checked="" type="checkbox"/> On Duty	John Sawicki - work cell text		by E-Mail
<input checked="" type="checkbox"/> On Duty	Robert Noel-ECC	Team 1	by E-Mail
Cycle #2			
<input type="checkbox"/> On Duty	Robert Noel - Cell/Text		by E-Mail
<input checked="" type="checkbox"/> On Duty	John Sawicki - work cell text		by E-Mail
<input checked="" type="checkbox"/> On Duty	Robert Noel-ECC		by E-Mail
Cycle #3			
<input checked="" type="checkbox"/> On Duty	John Sawicki - work cell		by Voice
<input type="checkbox"/> On Duty	Robert Noel - Cell/Text		by Voice
<input type="checkbox"/> On Duty	Robert Noel - Cell/Text		by E-Mail
<input checked="" type="checkbox"/> On Duty	Robert Noel-ECC	Team 1	by Voice
Cycle #4			
<input checked="" type="checkbox"/> On Duty	COB Fax		by Fax
<input checked="" type="checkbox"/> On Duty	Operations Cell WMUA		by Voice
<input type="checkbox"/> On Duty	COB Cell		by Voice
Cycle #5			
<input type="checkbox"/> On Duty	Robert Noel - Home		by Voice
<input checked="" type="checkbox"/> On Duty	John Sawicki - Personal cell	Team 1	by Voice

Additional groups can be added for a variety of reasons. For example, a generator over temp input can be assigned to a group called Generator, where the staff members of this group are experts with generators. Groups can be set up to be active only during certain times during the day, or different days of the week. In this manner, customers can have automatically shifting alarm callout lists (groups) throughout the day or week.

By default, units in alarm notify the *Alarms* callout group. Within the alarm group there can be many cycles. Cycles include recipients that will be notified at the same time when an input goes into alarm. The first cycle will be the first to receive the alarm notification. If no one in that cycle acknowledges the alarm, the notification system will send alarm callouts to the next cycle in the list.

The cycle timeout or delay between each cycle can be set between 1 minute and 2 hours. This gives an operator in the first cycle time to acknowledge the alarm before the system notifies the destinations in the next cycle. You should allow for 2 minutes per phone-based destination. For one

way notification methods (fax, pager, email, e-pager and numeric pager) you should allow for enough time for the recipient(s) to receive the notification and respond (call Mission's toll free number, enter the event code, listen to the alarm message and acknowledge it). This is typically takes 15 minutes. Recipients may still acknowledge alarms after the cycle time has expired. If no one acknowledges an alarm after all cycles have been processed the system will stop alarm notifications unless the Alarm Recall feature has been setup.

Only technical support may re-assign a unit or input to another group. Call technical support to set up special alarm and time scheduled groups. Once groups are set up the customer can change many parameters of the callout list. Customers may change/add/delete the destinations within a cycle or group, place destinations on duty or off duty, change Teams and changes cycle times (durations).

Teams

Customers may put alarm recipients (destinations) on Teams. A team is a group of destinations that can be put On Duty or Off Duty in bulk. It is a method for changing On Duty call out schedules with a single click. This allows customers to quickly change entire On Duty rosters at the start of a week. Unless otherwise specified all destinations default to Team 1.

New Group

This allows a customer to set up a new alarm call-out group. The *Create New Group Item* page will be displayed. Name the new group and assign some current recipients (Service User) to the new group. The new group will appear in Schedules where more users may be added.

On Duty Check Box

Clicking this box will put destinations on duty or off duty. On duty destination will receive alarm callouts while off duty destinations will not receive alarm callouts.

Save Changes Button

Any time a change is made, click the Save Changes button to place changes into effect.

Team On Duty Button

If the Group's destinations have multiple teams assigned then all the team numbers will be in the Team drop down box. To change teams, select the team number and click the *Place OnDuty* button. The appropriate On Duty check boxes will then be checked and Off Duty will be un-checked.

Reports

The Reports page allows you to set up email and fax recipients for scheduled reports. The Weekly Management Report is an overview of the overall RTU and system performance including online/connectivity data, a summary of alarms by type and response time, and a site access summary. The Daily Runtime Report includes the runtimes for each station for the previous day. The Monthly Runtime Spreadsheet includes the runtimes for the previous month. The data for each station is organized on separate tabs. It includes a summary page as well. To add report recipients, click the blue plus sign, enter the recipient's email address or fax number, select the preferred delivery time and click Save.

Mission Periodic Reports

Weekly Management Report			
ialapan.nj.us			
Type:	Email Address:	Preferred Time:	
HTML Email ▾	<input type="text"/>	9 AM ▾	<input type="button" value="Save"/>
Daily Runtime Report			
ialapan.nj.us			
Monthly Runtime Spreadsheets			
ialapan.nj.us			

Page took 0.02 secs
to generate.

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Alerts

This section allows users to edit alert destinations. Alerts are issued via one-way, non-acknowledged methods such as paging, email and fax. Alerts are less critical events, such as a low battery voltage or excessive pump runtimes.

Alerts are sent out for low battery readings, units that have gone offline and for units that have pump runtime variances. They can be sent via email or fax.

Heads Up! Destinations

A “Heads Up” alert is a message that is sent to a pager (via email) or a cell phone (via email) to let you know that you should go check your fax and/or email for an alert. The Heads Up message does not describe the type of alert issued, only that one has been issued. To add a new Heads Up recipient, go to *Setup / Alerts / Heads Up*.

Manage Logins

Manage Logins allows you to either add or delete personnel access to your web portal. This page is vital to your site security. If an employee is no longer active in site maintenance, be sure to remove them from the login list. You may also edit a user level in this page. This is only visible to Super Admin users.

Preferences

The Preferences set up page allows customers to adjust some general system parameters.

Microsoft Agent (Merlin): Enables or disables the Merlin feature.

Weather Banner: Allows you to select the source NOAA station for rainfall and weather data.

Measurement Units: Choose Standard or Metric.

Language: English, French, Spanish, Chinese, German and Portuguese are available languages for the web portal.

Pump Runtime Scale: Choose minutes or Hours.

Supergraph Device Parameters Display: Default on or off.

Changes made to preferences only apply to your login. Make sure the click the Save button after making preference changes.

Voice SCADA

If you want to access your data through telephone, you may set up Voice SCADA. Once you enter a phone number into the Voice SCADA set up area, you may call and the system will recognize your number and the associated account. It will ask you for a password that you choose when entering your phone number. A list of three options is given:

Alarms: Details alarms and allows you to acknowledge active alarms.

Status: Say a unit name and a detailed status will be reported.

Communication: Allows certain operations such as opening or closing a relay.

Mission Voice SCADA Login Setup
Please call (770) 685-7942 to test.

Phone: ?

Password: ?

Download

Documents

The Documents page allows you to download manuals, setup forms, product drawings and help guides. Refer to this page if you are need of a document.

The Mobile Web Portal

When you open the Mission mobi site, www.123mc.mobi, you will see a login screen. Use your credentials to log in to the mobile web portal. Upon login you will see a screen with icons. From this main page you will be able to see nearly all of the information that can be accessed through the Mission main page. Note that some users will not have all of the icons available to them because of their user status.

While navigating through the icons, click on the home button on either the top or bottom of the screen to return to the home page.

To prevent large data usage the mobile web portal does not continually update, but updates every thirty seconds. However, you may force it to update by refreshing the page.

Maps

The first of the icons depicts an exact (scaled) replica of the map shown on the Mission site. This view shows all units with the same key from the main page. You may navigate this map by tapping an icon of a unit to get the information overview. This same information was previously found by holding your cursor over the unit icon. You may zoom in and out of the map using the minus and plus signs at the top right of the screen, as well as navigate the view by using the arrows at the top of the page.

Overview

The Overview page shows a list of the units and an icon depicting their status. You may then tap a unit name to see brief status information.

Alarms

The mobile alarm icon will show as red and blinking if there is an active alarm. The icon will remain blinking until the condition that caused the alarm has been resolved, in other words the alarm will remain red and blinking even though the alarm may have been acknowledged. Once you click on the alarm a list of recent alarms, the station, type of alarm, acknowledgement method, and time until acknowledged are shown. If an alarm has not been acknowledged an alarm clock with stop written on the face will be shown under acknowledgement time. You may tap here to acknowledge the alarm.

Data

Access Runtime Data, Dallas Key Data and Runtime vs. Rainfall Data on this page.

Status

Station Status gives an overview of a unit, such as its temperature, signal, battery strength, etc. Use the filter search bar at the top of the screen to quickly find a unit. Tap on a unit to see its information. Here, you may also command your station to refresh certain data by pressing the Page button.



Reports

Many of the reports that are available on the Mission site are also accessible from the mobile site. They have the same format and offer the same information. You can access the Device Temperature Chart, the Runtime Variance Chart, the Pump Runtime Chart, the Flow Data Chart, the Analog Channels Chart and the Dallas Keys Log Report.

Commands

The commands option is modeled after the same page on the Mission homepage. When you click on the mobile icon you are taken to screen with a drop down menu with your units. Simply choose the station and the appropriate commands for this unit will appear. You may then issue the command and the page will refresh indicating the command has been sent and the result of the command. It may take a few moments for this information to load, different unit types have different response times. If your unit(s) has an Analog Output Option Board, you will see the control bar below the relay menu.

Settings/Unit Maintenance

The unit maintenance page shows a list of all your RTU units. You can tap onto a station and a list of the unit's settings will appear. Here you can access specific unit data such as the unit location, alarms and alerts, digital and analog inputs, pump information, relays, rainfall at the site, and volumetric flow calculation. Tap on an item to view and edit information. For example clicking on the name and location the device serial number, name, and location will be shown along with an Edit button next to the device name and location. By clicking onto the Alarm Notification option you may edit the Call Out status as well as the inputs on this unit. If you were installing a unit in the field, the unit maintenance option on the mobile site would be where you would want to label digital and analog inputs, or any other information that will be useful later.

Appendix A – RTV Troubleshooting Guide

There are three reasons RTV may not work, including:

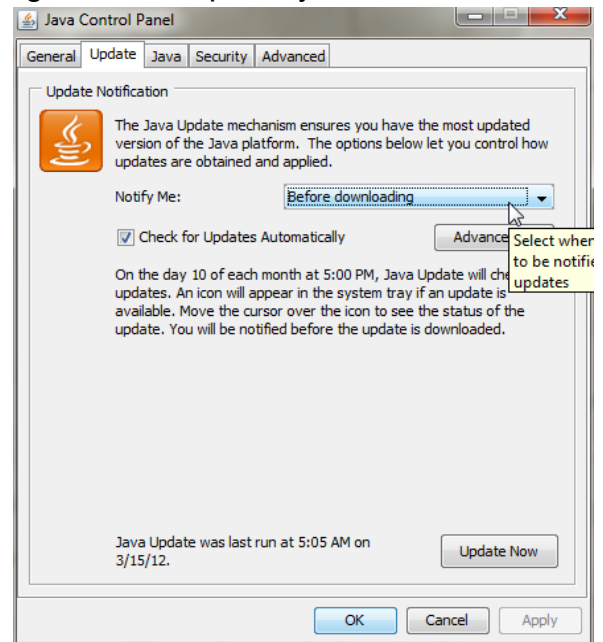
1. The computer may have restrictions against allowing new applications to run.
2. The Java program may be out of date or not on your computer.
3. Your Internet connection may have firewall restrictions (see the Firewall Issues section).

To insure that a current version of the Java Application is installed on the computer, go to the [Mission Test Page](#). The Java Info window should show version 1.6 or greater. To update your version from Windows, go to the Start menu and search for Java. Double click it and click Update.

If Java has never been installed, [click here](#) to download the free software.

Macintosh users can get the Java update from “Software Update” under the Apple menu. Since Java v1.3, Windows users have been able to install multiple versions of the JRE on their machine, which can lead to functionality conflicts. Use “Add/Remove programs” from the Windows Control Panel to determine if multiple Java versions are installed. Consult your IT department for assistance.

The RTV application requires a Sun Microsystems Inc. version of Java. Microsoft and IBM versions are not supported.



User is prompted to download a .jnlp file

Messages to the effect of “jnlp file type not recognized” are a result of Java Web Start not working correctly. Make sure a current version of Java is installed.

Cannot install Java

The most common cause for this is a lack of permissions to install programs on the computer. Someone with Administrator rights to the computer will be required to run this the first time. Consult your IT administrator.

User cannot login

Insure that CAPS LOCK is not enabled. The username and password may be correct, but capitalization counts.

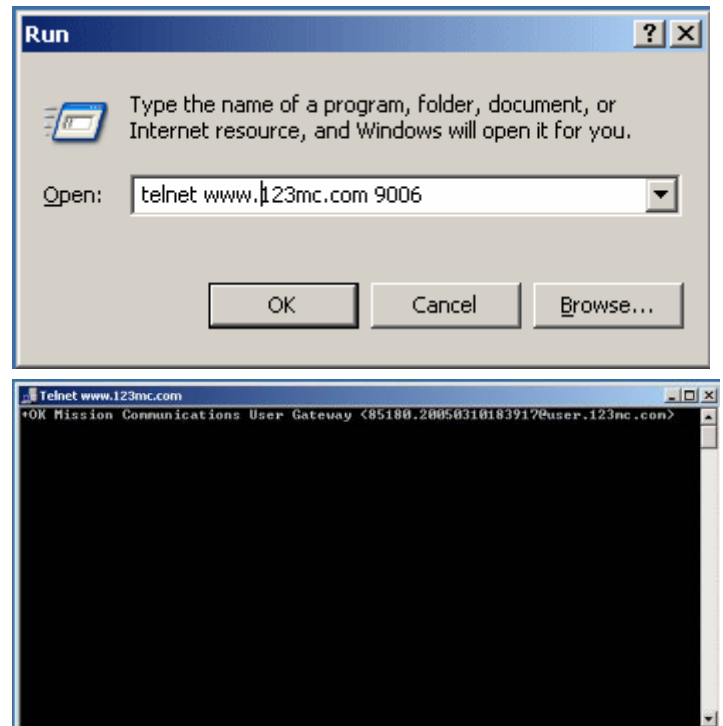
Firewall Issues

A firewall may be preventing the required socket connection. Port 9006 must be open for outgoing and not blocked for incoming. You can test this port if you have access to the Telnet program. Newer versions of Windows do not have this installed by default. Consult your IT administrator for more information.

You should receive a window that looks something like the following, indicating that the socket connection can be established.

Start / Run / telnet www.123mc.com 9006

If the connection “hangs” or an empty window is displayed with no greeting (“+OK Mission Communications”), then it is most likely due to a firewall issue and your IT department must address the issue.



Additional Tips

Create a Desktop Icon for RTV

Creating a Desktop icon to launch RTV allows you to avoid going to the web portal to launch the application. However, the alias may point to a specific version of RTV that is subsequently updated, therefore it may not be recognized when updates are available. The desktop alias should be updated if problems occur.

Multiple Log-Ins

RTV allows multiple log-ins and multiple saved views on the same computer. Care should be taken to not overwrite settings that are used by co-workers. These two items are the basis for showing RTV over multiple monitors.

Appendix B – Browser Plugin

Merlin allows PC users logged into the website to keep track of ongoing events in real time while you do other things on your computer. The animated wizard character Merlin will pop up and communicate short messages like alarms, devices in service mode, and other system status notices.



You can easily disable him in the *Setup/Preferences* section. The Merlin agent is supported through Windows XP. To download Merlin, go to [About Us/Links/Microsoft Agent](#). Scroll down and select the Download Microsoft Agent Core Components. Follow the installation instructions. Do the same to select a character. From the drop down menu select Merlin. You do not need to download a language component. Select and download the Lernout & Hauspie American English text-to-speech engine if you would like to hear the alarms out your computer's speakers. Note that because Merlin is a Microsoft creation, he only operates with the Microsoft Explorer browser – he will not work in Netscape, Firefox, Opera, etc.