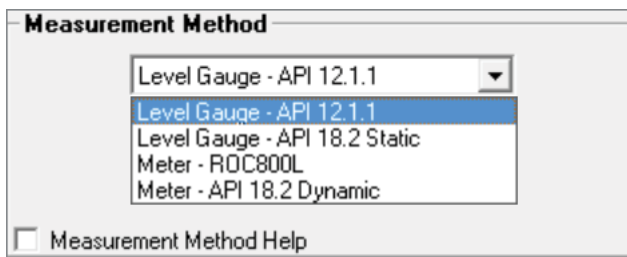# What's New in PM Tank Manager?
Version 4.09.00

## Support for the new API MPMS 18.2 tank hauling standard

The loadout measurement method now includes options for API 18.2 Static measurement (automated tank level), and API 18.2 Dynamic (pulse meter input).

- Manual or live entry for input signals (temperature, pressure, density, density temperature, density pressure, and BS&W)
- Configurable flow weighted averages or automatically stamped down values at predefined times (for live instruments)
- Driver/operator-selected configurable turndowns
- Free water clearance calculations on interfaced oil tanks
- Entry for beginning haul merchantability
- Support for 18.2 documented haul routine

Support for 32 or 40 tanks

Additional builds of the program are provided for the ROC800, which support 32 or 40 tanks.
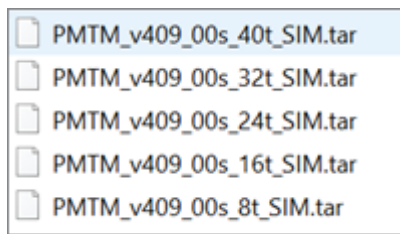

Method to reject partial loads (turndown)

Incomplete hauls — due to equipment failure, non-merchantable oil, etc. — can now be rejected ("turned down"). When the haul is rejected, an appropriate reason must be selected and is then recorded with the haul log record.

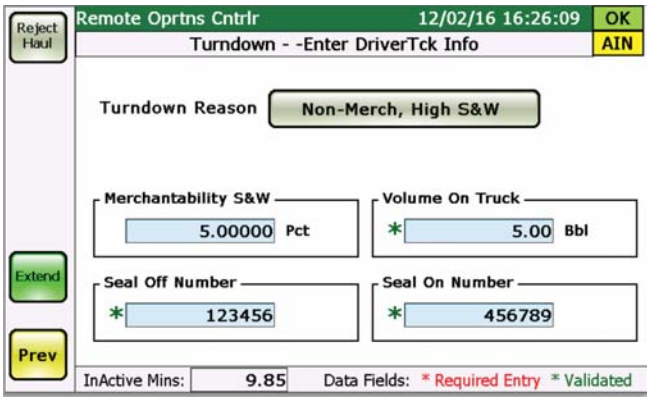ROCLINK 800 loadout operation screen showing turndown options:
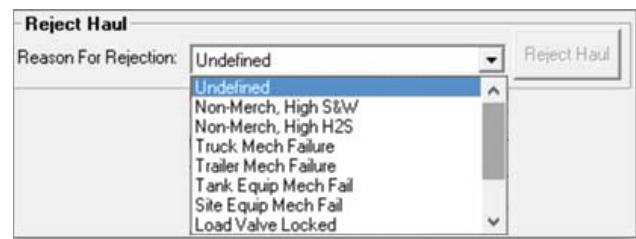
Once the turndown reason is selected, the haul can be rejected:

EMERSON™
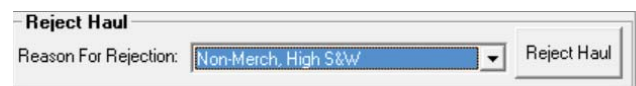
The turndown reason menu is also included in latest version of PM Local Display Manager:

Once the turndown reason is selected (required), the screen is ready to turn down the load:

The turndown and turndown reason are recorded along with the rejected haul in the haul log:

ROCLINK 800 turndown configuration display (enumerated lists)

User-configurable sets of enumerated lists are now provided for customized turndown reasons and associated text. These enumerated lists can also define other haul attributes such as custom purchaser names, destinations, and disposition types. Any combination of turndown reject reasons, purchaser, destination, and/or disposition entries can be entered up to 60 times.

'Purchaser', 'Disposition' and 'Destination' fields to the truck hauling interface and haul log

The enumerated lists can define custom text strings for various attributes associated with a haul. These custom text strings — rather than a numeric code — can also be used for attribute selection by the loadout operator during opening edits. These are then recorded and stored in the haul log for each haul.

ROCLINK 800 loadout operation screen, showing new fields for purchaser, disposition, and destination:

PM Local Display Manager opening edits screen showing new fields for purchaser, disposition, and destination:


Assignable loadouts to login credentials

Each of the 60 credentials can be independently assigned to individual loadout terminals. A driver is only allowed to start a haul from loadout terminals where the corresponding credentials are authorized.

Manual BS&W option for the divert valve in case of BS&W instrument failure

The LACT divert valve control has a new option for manual entry of the sediment and water percentage, should the live instrument fail. In addition, the elapsed time for the various divert valve control timers is now shown on the ROCLINK 800 display.
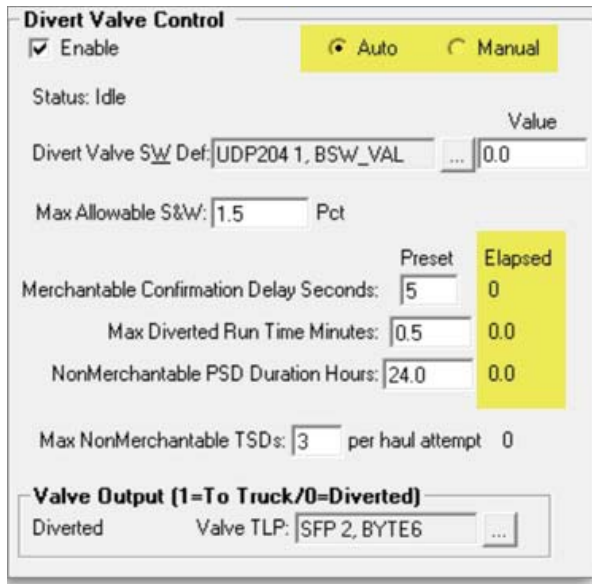

Auto/manual BS&W input incorporated into PM Local Display Manager, allowing local operator to override a failed or bad BS&W signal controlling the divert valve:
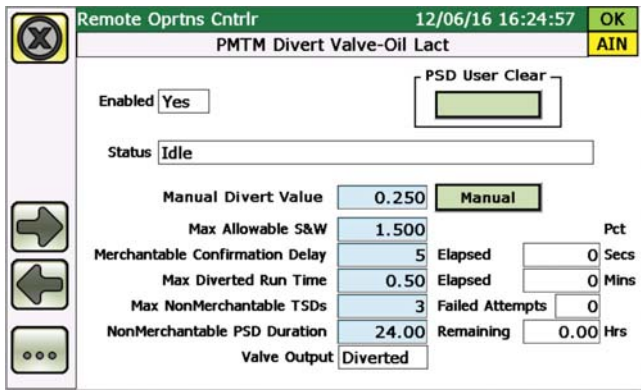

Resettable flow weighted pressure average function similar to existing temperature average

The average loadout pressure is now recorded and shown in the interface with the average temperature. The averages are flow weighted — samples are not taken when loadout is not in progress.

ROCLINK 800 loadout screens:
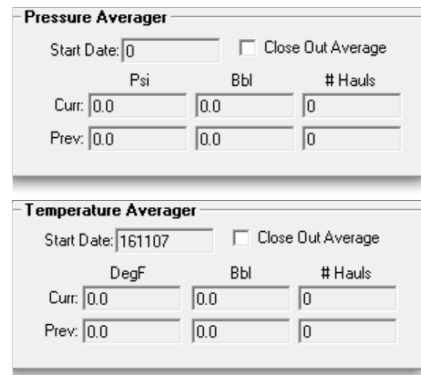
Also included in new version of PM Local Display Manager:
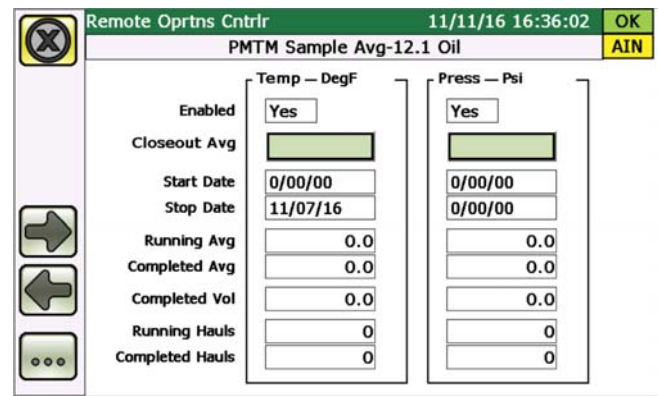
Both averaging functions include:
■ Start and stop date of the monthly average
■ Accumulated indicated volume for monthly average period
■ Number of running hauls and completed hauls during this period

Mandatory entry for secondary calculation data

An option has been added that requires the operator to manually enter secondary calculation data, such as temperature and density readings. When the mandatory option is selected, the operator cannot close out the haul until the fluid characteristics for a secondary recalculation are entered.

Customizable description field for tanks, wells, and load outs

As per the updated BLM Onshore orders, a 20-character user-editable facility measurement point (FMP) field was added for each of the tanks, well allocations, and load outs. This allows for a unique identifying text string to be assigned to each object, which is more than the standard 10-character tag.

More details and information stored in the Haul Log for each haul

Additional information is now stored with every record in the haul log. The data recorded for each record increased from 162 values, to 184 values.

Rejected Haul:

Accepted and completed Haul:

The new items recorded in each haul log entry include the following:

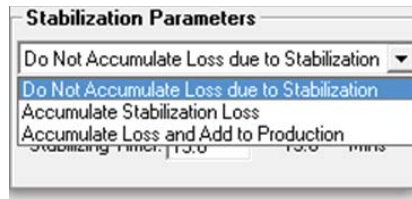|	
163	Fluid Props in Auto
164	Fluid Props API 18.2 Avgd
165	Std Volume Calculation Type
166	PMTM Version Number
167	Destination Code
168	Turndown Code
169	Reserved U8 1
170	Temperature 3/4 way
171	Init/TD Merch S&W
172	Water Btm Clearance
173	FMP# or Tank Description
174	Purchaser
175	Disposition Type
176	Destination
177	Turndown Reason
178	Hauler Company Name
179	Tank Volume Capacity
180	Open Obs Dens User EU
181	Close Obs Dens User EU
182	Reserved Float 1
183	Reserved Float 2
184	Reserved Float 3

Optional validity check logic added for each liquid meter in the allocation wells

The validity check on the flowrate has been expanded to the max valid rate or a user-defined logic statement, when performing allocation back to associated wells with dedicated liquid production meters. As an example, this could be used to read the drive gain from a Coriolis meter, and reject the flow as invalid if it gets too high.
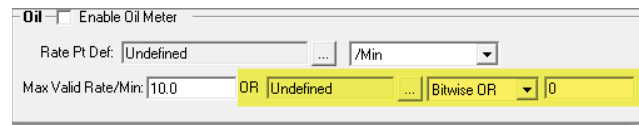
Oil stabilization loss calculation

Drops in levels not large enough to trigger an auto haul are measured and tracked as stabilization loss. This is an option to enable and accumulate the volume separately, or enable and accumulate the volume then add to production volumes.

Load line elevation parameter and free water clearance calculation

During hauling operation, the interfaced water level can be used to calculate a free water clearance from the load line.

The free water clearance can be used in PM Surface Controls to drop the permissive for the Tank Manager loading terminal:

Operator messaging for haul status, entry errors, etc.

Messages have been added to the loading screen to alert the operator of progress through the haul or of any errors which must be resolved to progress through the haul.

The following is the list of possible messages:

1 = No Haul Object is Configured
2 = Loadout is Already in Use
3 = Company Not in Data Base
4 = Driver PIN Not in Data Base
5 = Valid Company Name Required
6 = Valid Driver PIN Required
7 = Ticket# Was Already Used
8 = Ticket# Is Required
9 = Truck# Required
10 = Haul Object Entered Is Invalid
11 = SealOff & SealOn# Cannot Match
12 = Value Entered is Out-Of-Range
13 = Outlet Valve is Not Open
14 = Permissive is Dropped
15 = Haul Preset Volume is Required
16 = Seal Off Number is Required
17 = Opening Level Gauge Required
18 = Purchaser is Required
19 = Disposition Type is Required
20 = Destination is Required
21 = Flow Must First Be Stopped
22 = Outlet Valve is Not Closed
23 = Delay Time is at Maximum
24 = 1/4-Way Temperature Required
25 = 1/2-Way Temperature Required
26 = 3/4-Way Temperature Required
27 = Opening Temperature Required
28 = Closing Temperature Required
29 = 1/2-Way Obs Density Required
30 = Opening Obs Density Required
31 = Closing Obs Density Required
32 = 1/2-Way Density Temperature Required
33 = Opening Density Temperature Required

34 = Closing Density Temperature Required
35 = 1/2-Way Density Pressure Required
36 = Opening Density Pressure Required
37 = Closing Density Pressure Required
38 = 1/4-Way Pressure Required
39 = 3/4-Way Pressure Required
40 = Opening Pressure Required
41 = Closing Pressure Required
42 = 1/4-Way S&W Required
43 = 3/4-Way S&W Required
44 = Opening S&W Required
45 = Closing S&W Required
46 = First Extra S&W is Required
47 = Second Extra S&W is Required
48 = Third Extra S&W is Required
49 = Seal-On Number is Required
50 = Closing Level Gauge Required
51 = Driver Loaded Volume Required
52 = Driver Secondary Temperature Required
53 = Driver Secondary Obs Dens Required
54 = Driver Secondary S&W Required
55 = Unmanned Haul in Progress
56 = Invalid Meter Spec for ROC800L
57 = Invalid Meter Specification
58 = Invalid Tank Num Specification
59 = Invalid Tank Selection for LDO
60 = Assoc Tank Currently in Haul
61 = 1/4-Way Estimated Vol Xferred
62 = 1/2-Way Estimated Vol Xferred
63 = 3/4-Way Estimated Vol Xferred
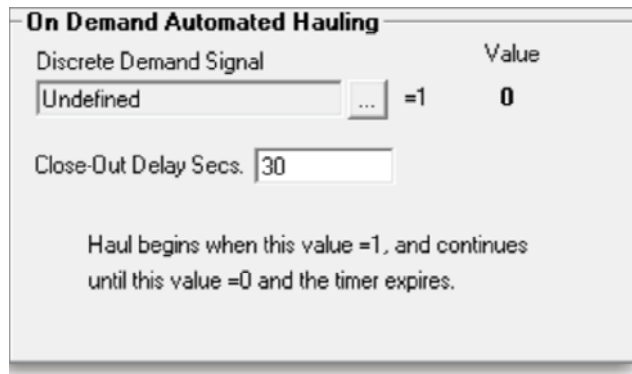64 = Full Estimated Volume Xferred

Support for manual reset of load out temporary shutdowns

If a temporary shutdown (TSD) stops the haul, and the manual reset option is enabled, the operator will have to manually press a reset button to clear the TSD and continue a haul. The reset button is automatically available on PM Local Display Manager.
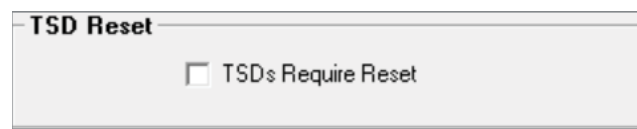
Auto haul feature for load outs

This feature allows Tank Manager to calculate hauls without logging into the HMI, essentially providing a "one button haul" configuration. Works for either metered or level measured hauls.
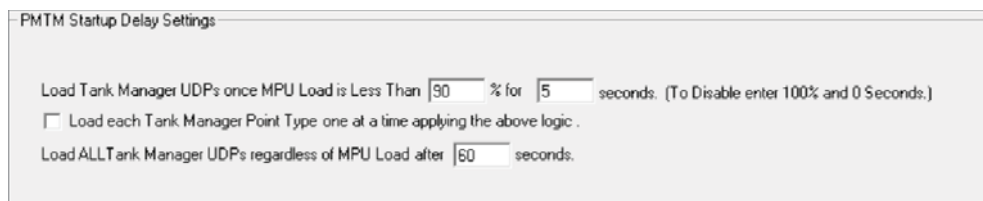
User program startup delay, MPU loading enhancement during startup

When Tank Manager is given the start command from the operating system after a reboot, cold start or similar, it will check the MPU load to validate if it is less than the MPU load set point for the required amount of time before loading and initializing all of its user defined points (UDPs) and starting the application.

Each point type can be loaded one at a time applying the above logic if desired by checking the box, but if all UDPs are not loaded by the max wait time, it will immediately load all remaining UDPs.

This is in an effort to reduce MPU load spikes during restarts.

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