

Trakka 4.6 Release Notes

Revision Date: January 18, 2019
PDF File Version: v01

This document summarizes the changes to Trakka in Version 4.6

Click links in the following table for details about product changes:

Section	Summary
Predictive Analytics	Hourly averages of sensor data now available in Trends and results as output of anomaly detection algorithms
Predictive Analytics	Anomaly Detection model outputs now displayed in Trends
Product Branding	Customer/Partner logos displayed in application and on reports
Review Emails	Observation attachments can be included in Review emails
Sample Labels	New Simplified Sample Label
Bug Fixes	Bug fixes for Trends module

Predictive Analytics

Hourly Averages displayed in Results and Trends

Trakka users who are providing high frequency equipment sensor data, can now see hourly averages of this data in Trakka, if they are using the Predictive Analytics feature. Dingo’s machine learning algorithms can now ingest and process the raw data and provide aggregated hourly averages for display on Trends and in the Results tab.

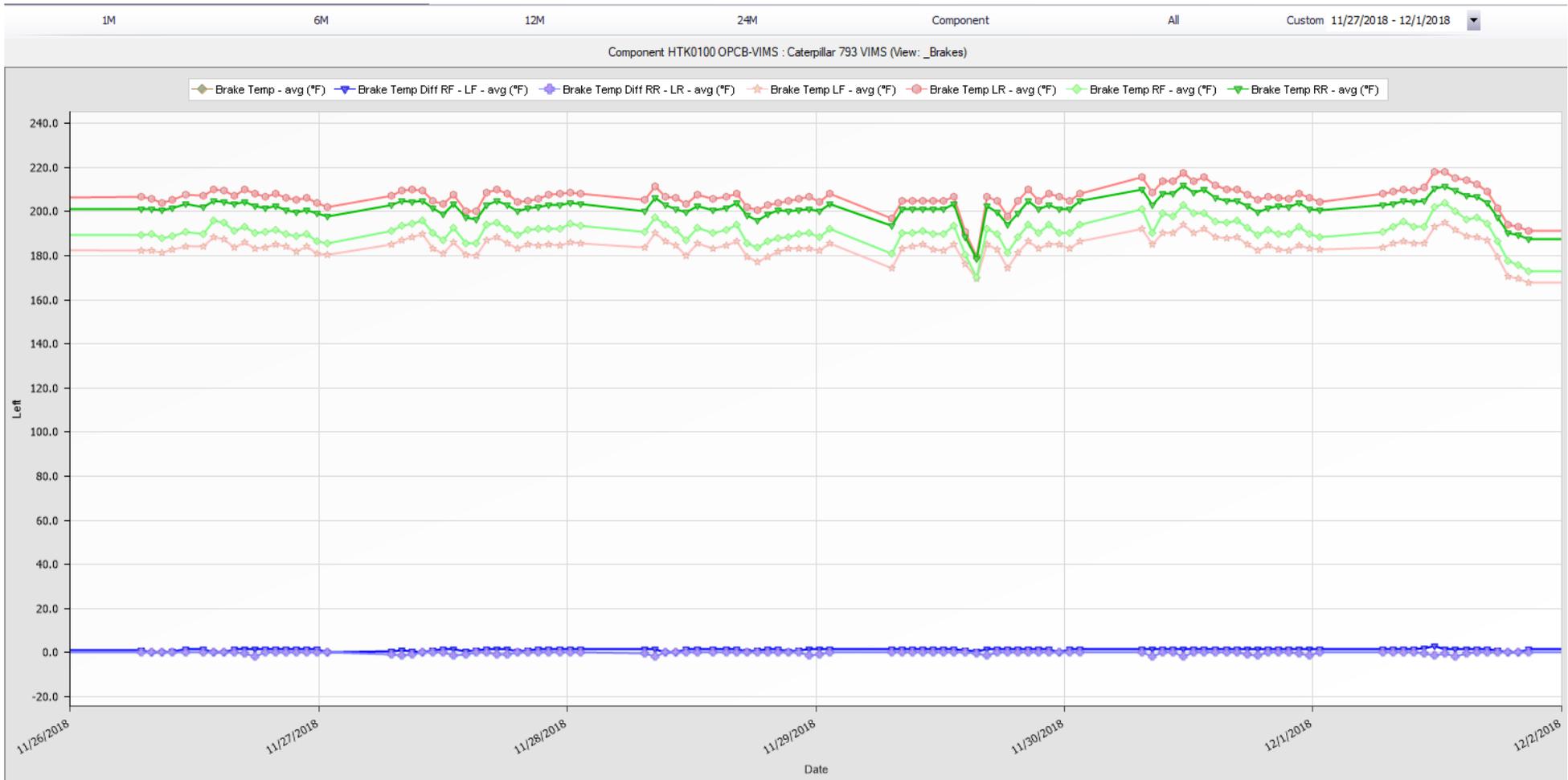
If using the Predictive Analytics features and providing Trakka with high frequency equipment sensor data, the hourly averages are available as follows;

1. In the Results tab, the hourly Observations are stored as a non-reviewable Observation (Observation type = Automated Onboard). This means they appear, just like a normal observation, but don’t pass through the normal Review process nor land in the Unreviewed Inbox. These observations pass straight through to history, so they can be viewed, as required, in the Results tab. To see this data, choose the Automated Onboard observation type in the filter (as per below). This will only be available if you are using the Predictive Analytics feature.

The screenshot shows the Trakka Results tab interface. The 'Filter by:' dropdown is set to 'Automated Onboard'. A red box highlights this filter with the text 'Automated Onboard observation type'. Another red box highlights a row of data with the text 'Hourly observations'. The table displays various sensor metrics across six time intervals.

Observation Type	12/19/2018 12:01:00 AM	12/19/2018 1:01:00 AM	12/19/2018 2:01:00 AM	12/19/2018 3:01:00 AM	12/19/2018 4:01:00 AM	12/19/2018 5:01:00 AM
Automated Onboard	Automated Onboard	Automated Onboard	Automated Onboard	Automated Onboard	Automated Onboard	Automated Onboard
Warning	Warning	Warning	Warning	Warning	Warning	Warning
Ambient Air Temp (Coolest) - avg (°F)	35.0576	36.3776	39.4448	41.3744	41.5328	40.892
Brake Temp Diff RF - LF - avg (°F)	0	0	0	0	0	0.936
Brake Temp Diff RR - LR - avg (°F)	0	0	0	-0.936	0	-1.8
Brake Temp LF - avg (°F)	181.472	181.328	179.6	181.472	184.136	187.808
Brake Temp LR - avg (°F)	204.008	204.728	203	204.872	207.536	211.208
Brake Temp RF - avg (°F)	186.008	186.728	185	187.808	191.336	195.008
Brake Temp RR - avg (°F)	198.608	200.264	198.464	199.472	203.072	206.672
TKPH F Tires	0	0	0	0	0	0
TKPH R Tires	0	0	0	0	0	0
Onboard Data - Engine						
Aftercooler Temp R - max (°F)	123.152	125.456	122.936	123.8	130.352	130.784
Air Filter Restriction - max (psi)	0.44	0.44	0.44	0.3984	0.4016	0.3984
Engine Boost Press	24.2228	24.1392	23.9636	23.8572	23.8992	23.9272
Engine Coolant Temp (Running) - avg (°F)	180.464	178.664	178.736	180.536	181.4	179.528
Engine Oil Filter Pressure *P - max (psi)	3.19	3.19	3.19	3.19	3.1172	3.05
Engine Oil Pressure (High & Cool-74) -	70.0884	70.128	70.2728	70.2672	69.8204	69.3972
Engine Oil Pressure (Low & Cool-74) -	54.3688	55.4648	54.2504	52.7672	53.1636	54.2416
Exhaust Temp Diff R-L - avg (°F)	10.8	9.864	9	8.064	7.2	7.2
Exhaust Temp L - max (°F)	1169.96	1171.112	1173.56	1183.136	1190.552	1195.064
Exhaust Temp R - max (°F)	1160.888	1160.312	1170.248	1182.992	1183.208	1185.8
Onboard Data - Suspension						
Cycle Pitch FELA - avg	454.88	429.56	387.84	440.04	734.04	1080.92
Cycle Rack FELA - avg	1163.08	1129.04	983.8	1132.6	1682.24	1593.36
Susp Cyl RF-LF (Empty) - avg (psi)	-66.6132	-66.3752	-65.9562	-66.8568	-60.842	-47.9288
Susp Cyl RF-LF (Loaded) - avg (psi)	-84.4232	-105.3616	-117.3116	-78.0936	6.36	111.808
Susp Cyl RR-LR (Empty) - avg (psi)	-6.0228	-7.2964	-9.164	-10.8428	-9.0356	-3.8156
Susp Cyl RR-LR (Loaded) - avg (psi)	-531.4508	-547.08	-614.6956	-500.054	-242.3128	138.4336
Susp Cylinder LF - avg (psi)	892.69	878.1824	837.584	786.7692	821.7168	818.1196
Susp Cylinder LR - avg (psi)	1742.9692	1745.8148	1809.472	1794.726	1638.9644	1424.5384
Susp Cylinder RF - avg (psi)	798.1892	772.6808	720.1324	708.5356	828.0096	930.0056
Susp Cylinder RR - avg (psi)	1544.1152	1548.2032	1544.3752	1533.584	1548.2032	1553.0056

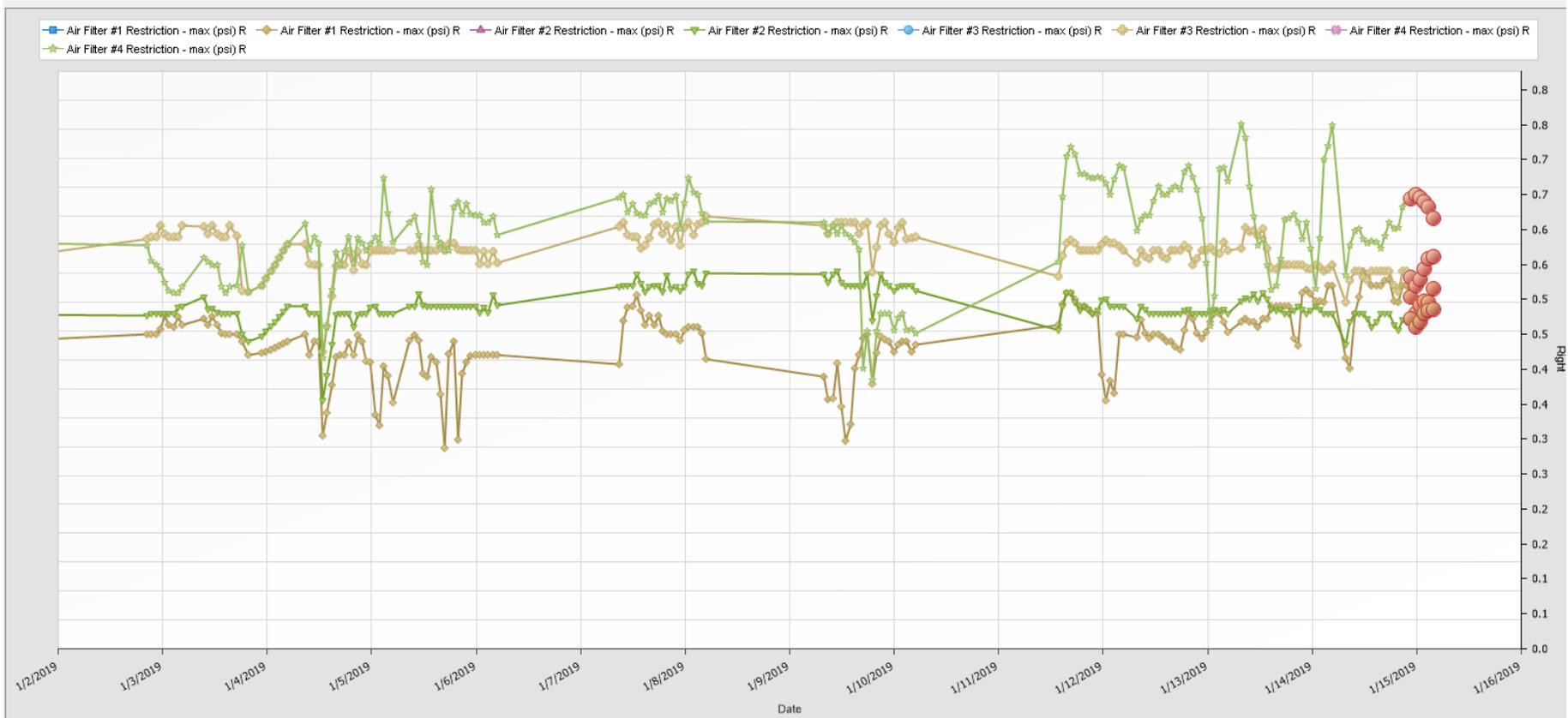
- In the Trends tab, these Observations/Indicators can be displayed, the same as any other Indicator in Trakka. To add these values to a Trend, simply go to Configure Views from the Trends tab and add these Indicators to the Trend view.



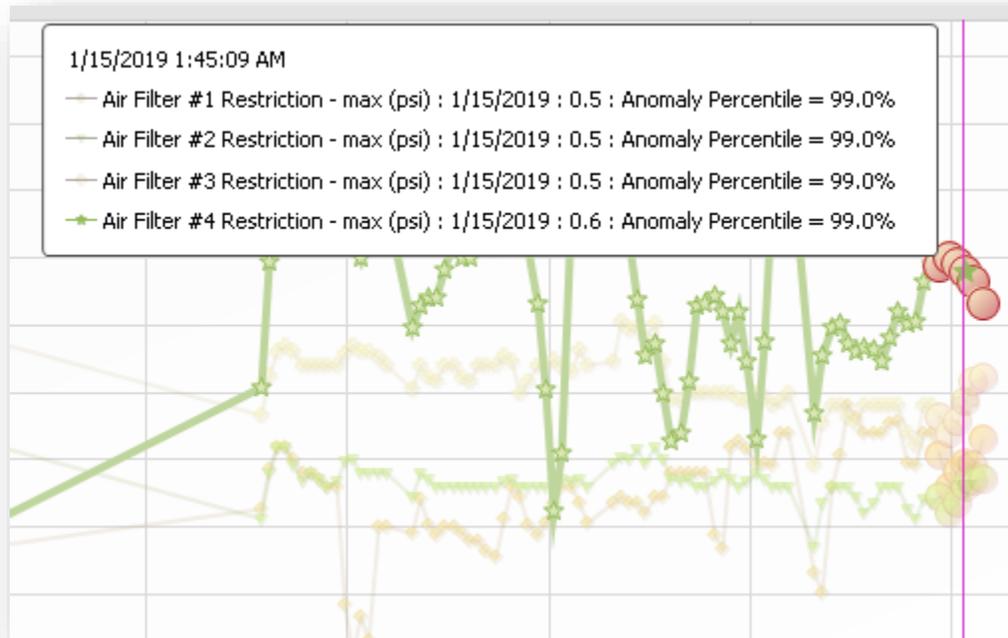
Anomaly Detection outputs displayed in Trends

Dingo has spent the last 12 months developing and refining Machine Learning models to detect anomalies in condition monitoring data. These models highlight anomalous behavior in the data and the outputs of these models are now embedded in the Trends of Trakka. Customers providing high frequency equipment data, who have access to the Predictive Analytics features, can now see these anomalies highlighted in the Trends.

Anomalies appear as red markers on the trendline as per below. They indicate that the value for that indicator was considered anomalous by the machine learning algorithms processing the data. The value was unexpected given the recent history of results for that indicator



By using the crosshair feature on the Trends, it is possible to see more information about the anomaly. The crosshair dialog box, shows information about the Indicator, date/time of the measurement, the value of the measurement and the Anomaly Percentile. The Anomaly Percentile indicates the Percentile rank of the anomaly score for that indicator value. Contact Dingo for a more detailed explanation of the anomaly scores and percentiles



In coming releases of Trakka, these anomaly scores, anomaly percentiles and other outputs of the machine learning algorithms will be made available in other areas of Trakka to help with data analysis and spot emerging issues.

Product Branding

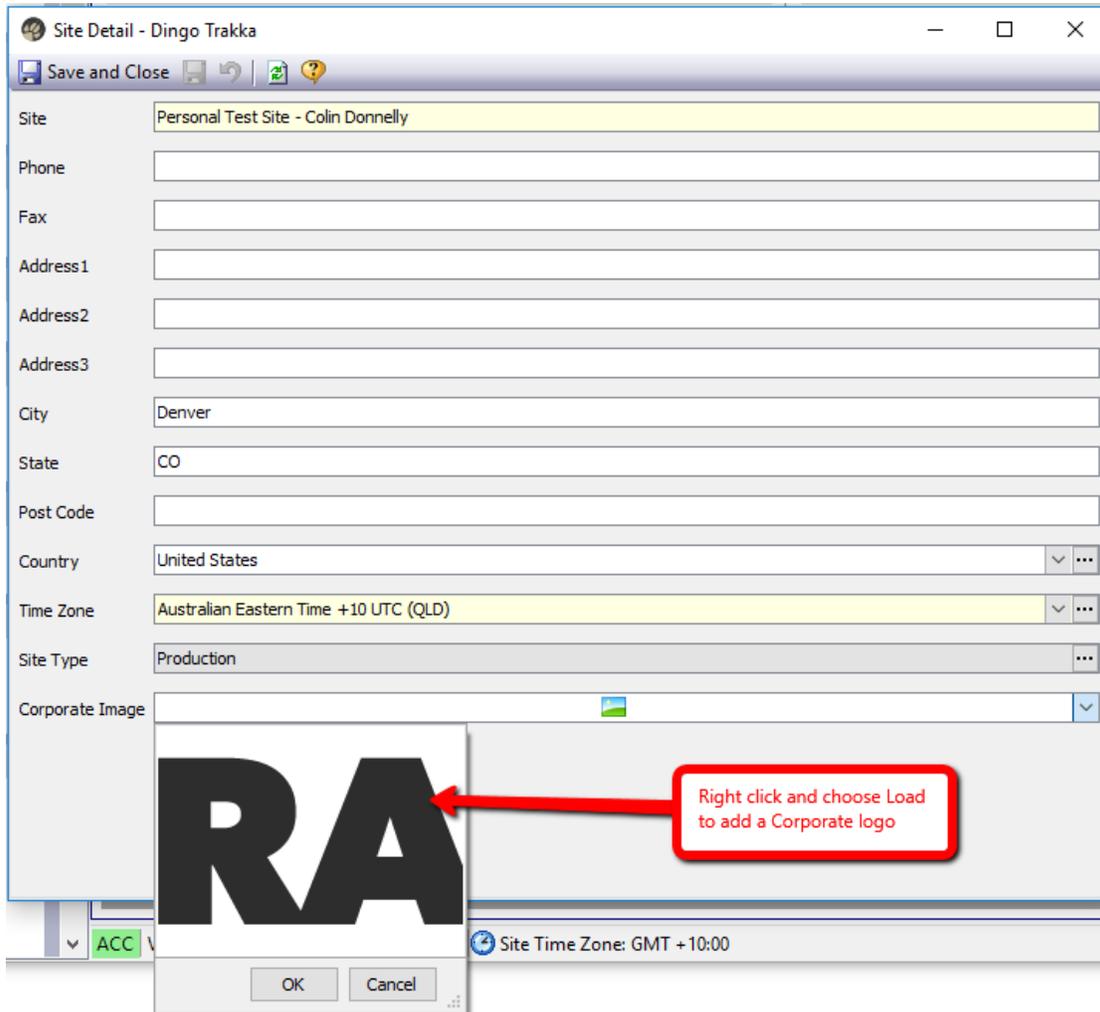
Customer/Partner Logos on Trakka screens

Customers and Partners can now load a corporate logo into Trakka, for display on the main menu bar and in all Trakka reports. This new capability allows both Customers and Partners to ‘brand’ the Trakka product with their logo

If a Corporate logo is added in Tools > Site Details and it will be displayed in the Menu bar as per below (where Trakka logo is)



To load a logo, go to Tools > Site Details and access the Corporate Image field. From the dropdown, right click inside the image field and choose Load. The logo will be automatically scaled to fit within the logo region.



Customer/Partner Logos on Trakka Reports

Customers and Partners can also display their corporate logo on Trakka reports. Once a Corporate Image is added into Site Details, it will display on the reports as per below;



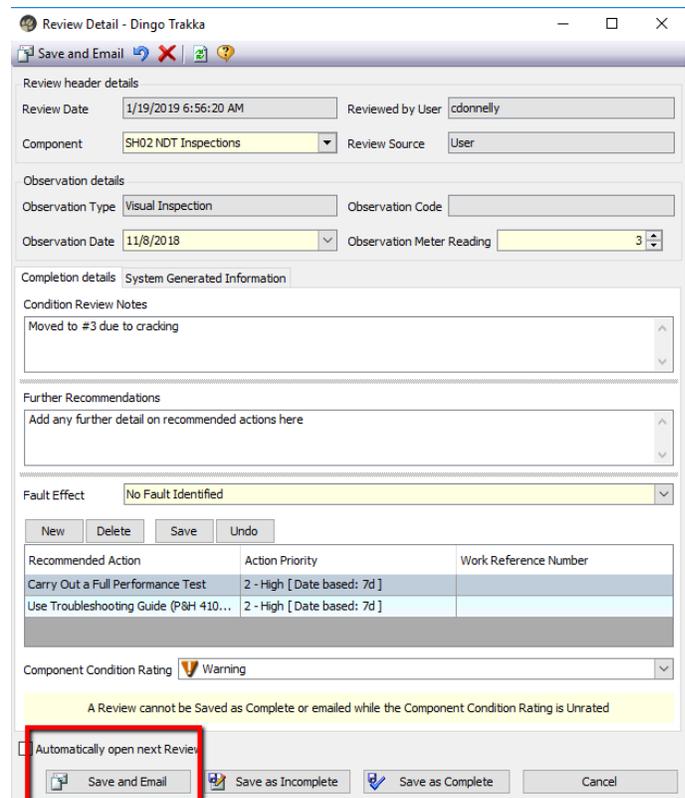
Review Emails

Observation Attachments can now be included in Review emails

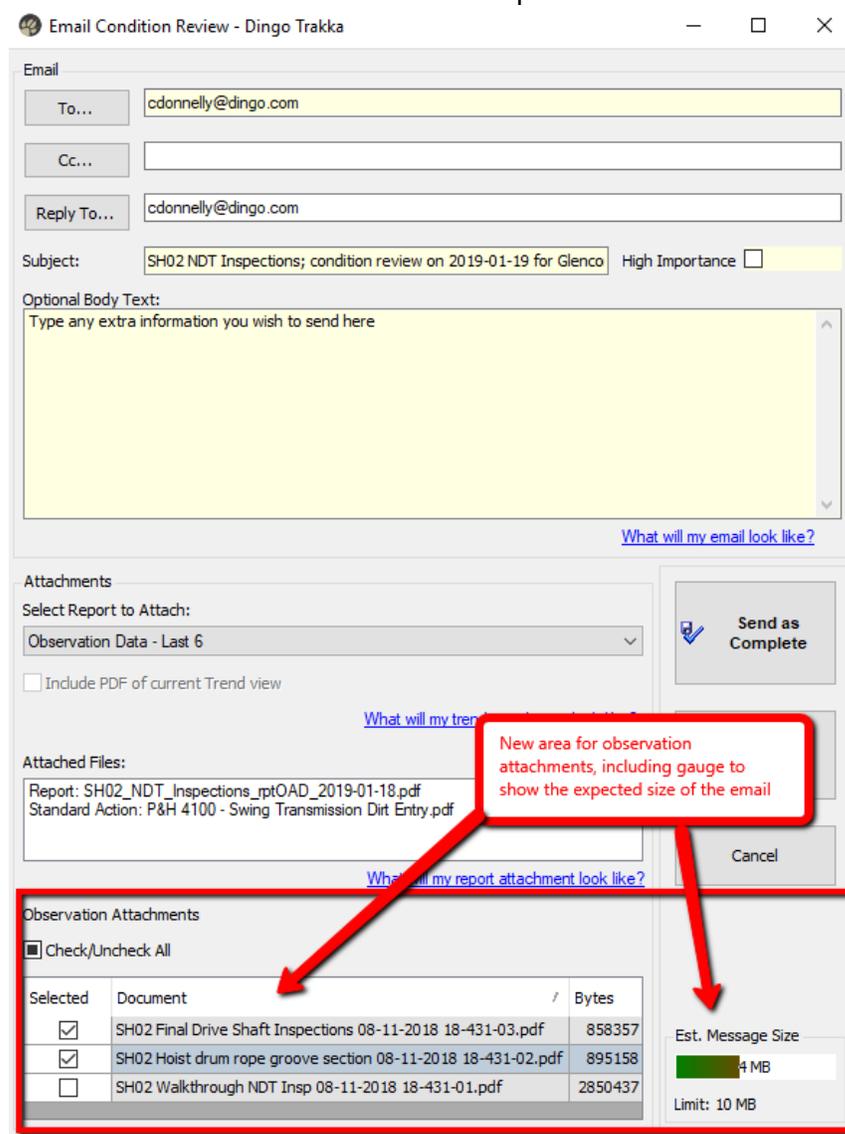
It is now possible to include Observation attachments when sending Review emails from Trakka. Site preferences are available to set local email server size limits, allowing data analysts to include reference documents on the review emails, providing planners, engineers and technicians with valuable information to complete their tasks

To include Observation attachments on a Review email, follow the steps below;

1. Open the Email condition Review detail form as usual. This is normally accessed from the "Save and Email" button on the Review detail form



2. Under the new Observation attachments section, is a list of all attachments for the current observation being reviewed. Using the checkbox, select or unselect which Observation attachments you want to include in the email.
3. In the bottom right corner of the form, is a gauge estimating the size of the composed email, compared to the maximum email size limit (see later for description on how this is determined)
4. Be sure to keep the total size of the email, under the Limit shown, otherwise it is possible the email will not reach the intended recipients.



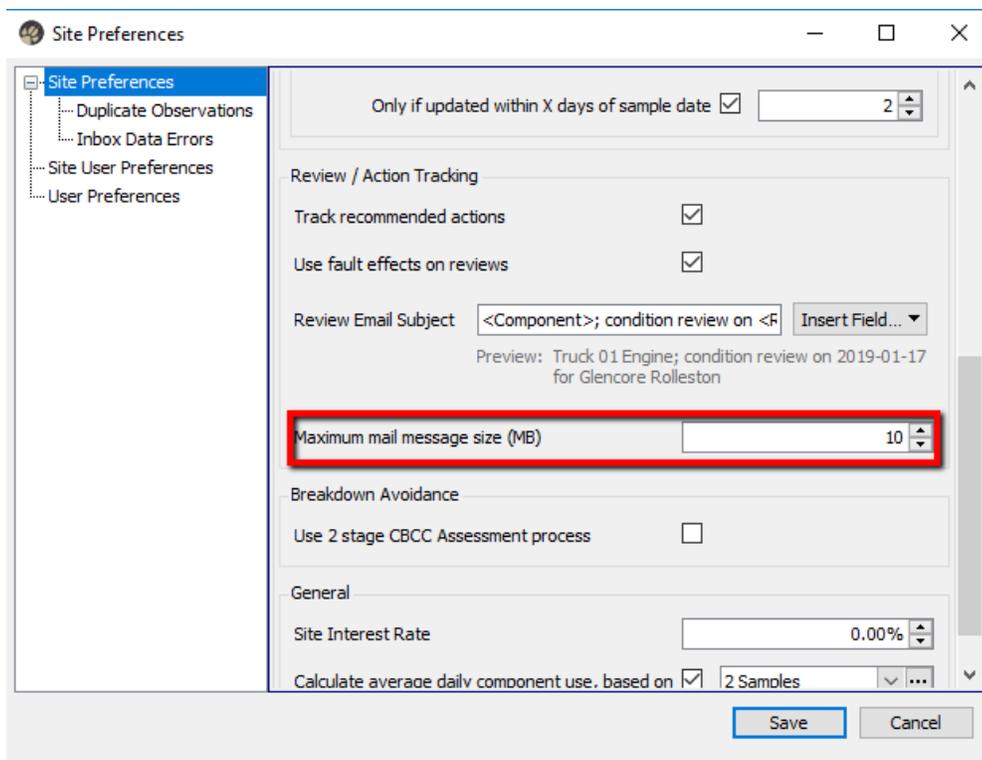
5. The message size is calculated using the following logic, as the final size is not determined until the email is sent from the Trakka server.
 - a. Total sum of the sizes of all Observation attachments. The size of each document is displayed in bytes
 - b. Add the size of any documents attached to standard actions. These are displayed in the Attached files section.
 - c. If a Report is attached, 600KB is added to the size of the email
 - d. If a Trend PDF is selected, 400KB is added to the size of the email
 - e. 100KB is added for the message body and email headers.

- 6. If the email exceeds this limit, a warning message is displayed, before Trakka attempts to send the email.



Setting the email server limit

By default the email message size limit for each customer is set at 10MB. This value can be changed in Tools > Preferences as per below. Be sure to check with your IT staff before changing this limit, to prevent emails being too large for your server.



Sample Labels

New Simplified Label

Trakka now has a new simpler sample label form. It can be found in the list of sample label formats as “Short Form Dymo 30323 Shipping Label. This label was created in conjunction with several customers to provide the minimum information needed by the lab and ensuring long asset/component IDs could be shown in full

This label prints on the same DYMO labels, as some of the existing labels

This_is_a_really_long_Asset_Name_that_wont_fit_on_most_sample_labels Engine Left 	
Personal Test Site - Colin Donnelly -	Sample date 1/18/2019
Lube Drained: Y (Y/N)	Meter 123456789
Lubricant: Generic Natural Gas Engine O...	
Notes:	
 13333384 	

Bug Fixes

Trends Module

Several bug fixes have been made to the Trends module of Trakka, to address the following known issues;

1. Added padding to the right side of the chart, to stop recent event lines, documents and inspections from not appearing
2. Modified the background calculations to provide more responsiveness when switching between X-axis scaling options