



MDMS UPDATE

~ METER DATA MANAGEMENT SYSTEM ~



US Army Corps of Engineers®

VOLUME 6, ISSUE 5 ~ JUNE — JULY 2021

FROM THE PROGRAM MANAGER

Welcome to our June - July 2021 issue of the *Meter Data Management System Update (MDMS)*, designed to keep you informed on the growth and latest developments of the Meter Data Management System and the Army Metering Program.

Our first article highlights the success of the Fort Bragg Energy Team in the verification and remediation of water leaks. The Energy Team has been utilizing the MDMS Water Leak Email Notification module since early 2021 and has verified and fixed six leaks thus far yielding almost \$13,000 in cost avoidance. Kudos to Fort Bragg!

In keeping with a renewed/increased interest in water conservation and management, the story on page 3

introduces the new Water EUI report. This report enables Energy Managers to compare water usage across their site, land holding command, entire Army, and climate zone.

Then beginning on page 4, we brief the enhancements recently made to the Meter Status Details Report in order to provide sites with greater insight into the quality of meter data being reported up to MDMS.

As always, our mission is to improve the MDMS experience for end users. Your input is valuable, and we welcome your feedback via the Army Meter Service Desk (AMSD) at: usarmy.coe-huntsville.cehnc.mbx.armymeterhelp@mail.mil



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WATER LEAK VERIFICATION AT FORT BRAGG

The MDMS Water Leak Email Notification module was added in January 2021 and has yielded almost \$13,000 in cost avoidance for the Fort Bragg Energy Team. Following the initial deployment, the MDMS Outreach Team began monitoring the potential leak email notifications across the Army and contacted the corresponding sites recommending research into the identified buildings and meters. Per FEMP, “a consistent baseload pattern points to equipment leaks that should be located and repaired.” One tool that the Outreach Team recommended for viewing the usage and therefore visually seeing the baseload pattern was the Interval Usage Data Quality module.

Fort Bragg was one of the sites contacted about a potential water leak at building 0-0720, which is a warehouse and administrative building. The Fort Bragg Energy Team investigated and found a lawn sprinkler system leak that had water puddles between the building and road. The leak was approximately 210 gallons per hour from 24 October 2020 through 4 February 2021. The Fort Bragg Energy team valved off and reported the leak. The cost for the wasted water during the leak, assuming sewer rate was not applied since it was a sprinkler system, was \$1,418. The cost would have grown to \$4,255 had the leak not been detected for a year. This screenshot of the Interval Usage Data Quality report for building 0-0720 shows the consistent baseload of approximately 50 gallons every fifteen minutes up until the leak was valved off and repaired. (Continued on pg. 2)



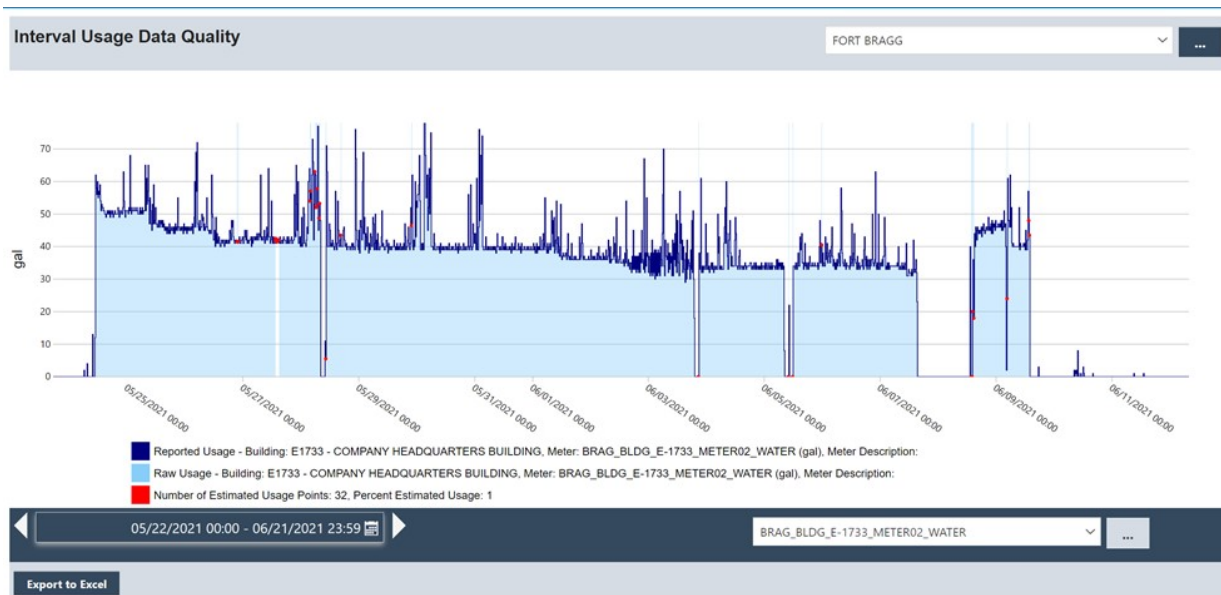
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WATER LEAK VERIFICATION AT FORT BRAGG (CONT. FROM PG. 1)

The Fort Bragg Energy Team opted into receiving the water leak email notifications and then found two additional leaks. Building 0-0766, which is a vehicle service garage, was leaking 1,700 gallons per day from 5 April 2021 through 16 April 2021. The team found a backflow preventer leak of hot water into the drain. They once again valved off and reported the leak. The cost for the wasted water and natural gas during this leak was \$240. The cost would have been \$5,475 if it had not been detected for a year, which would have been highly likely due to the location of the leak and because there is minimal usage of this service garage. The Interval Usage Data Quality graph for this particular leak is shown below, which shows a consistent baseload of 15-25 gallons every 15 minutes.



The third leak notification was for company headquarters building E-1733. The Fort Bragg Energy Team verified the leak by visual inspection of the meter and noticed it spinning rapidly. They were unable to access that part of building because the tenant had moved out. However, the adjacent tenant stated that the water service company had replaced a section of pipe that fed the building and it had caused the toilets to run in their section of the building. This leak was 160 gallons per hour from 24 May 2021 through 9 June 2021. The team reported the leak, and it was promptly remedied by the plumbing shop. The cost of this leak was \$229 for the wasted water and sewer rate during the leak. The cost would have been \$5,149 if it had not been detected for a year, which is quite possible since the tenant had moved out and the space was currently unoccupied. The Interval Usage Data Quality graph below shows the consistent baseload of 35-50 gallons every 15 minutes. (Continued on pg. 3)



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WATER LEAK VERIFICATION AT FORT BRAGG (CONT. FROM PG. 2)

In addition to the leaks described above, the water leak email notification has alerted Fort Bragg to three subsequent leaks. Each of these leaks have been reported and repaired. The Fort Bragg Energy Team says, “We have gained confidence in the metering and are working on streamlining the leak verification process so we in the energy team do not have to go out to verify but rather report to plumbing shop.”

If you would like to receive email notifications about potential water leaks, go to the Self Service page in MDMS and select the Water Leak Notifications link under the Email Notifications sub-menu. You can opt-in for email notifications of possible leaks. The meters identified in the email notifications passed multiple meter data quality checks in the MDMS algorithm before they could be identified as a potential leak. Once you have opted in and actually receive a notification of a possible leak, you can do further analysis by pulling up that meter/building in the Interval Usage Data Quality module, as was shown in the above Fort Bragg examples. This module is found on the MDMS Energy Management page under the Usage Details sub-menu.

After investigation, if there is a valid reason that the meter/building should be excluded and not flagged as a potential leak, such as a water treatment plant where the water is used continuously, then that meter may be excluded from the email notifications. The Excluded Meters option is also on the Water Leak Notifications page.

NEW MDMS REPORT: WATER EUI

With a renewed focus on the inclusion of water resilience and environmental stewardship in the Energy Act of 2020, MDMS continues to add more auditing and reporting options for this commodity. The newest report, Water EUI, allows users to generate the Energy Use Intensity comparison report for water at the HQDA, Command, Region, Installation, Site or Climate Zone organizational level. The report, as shown below, generates a tabular listing of buildings with water meters within the organization chosen. The list can be sorted ascending to descending or vice versa on many of the column headings. The 12 month consumption is shown in gallons along with the yearly extrapolated EUI in gallons per square feet. The percent of data available for the time period is shown to the right so that users understand how much of the data had to be estimated. Note the inclusion of the RPAUID, square footage, Cat Code and Climate Zone for each building listed in the report.

Water EUI

HQDA

Date Range: July 2020 - June 2021

25 records per page

Command	Region	Installation	Site	Building	RPAUID	Square Footage	Cat Code	12 Months Consumption (gal)	12 Month Extrapolated EUI (gal/sf)	% of Data Available	Climate
AMC	406TH AFSB	ANNISTON ARMY DEPOT	ANNISTON ARMY DEPOT	0402B - COMPRESSED AIR SUPPORT BLDG	236744	330	PLT/UTIL B (89120)	3275285.828	9952.375	99.726	3A
AMC	406TH AFSB	ANNISTON ARMY DEPOT	ANNISTON ARMY DEPOT	141 - EA, CAFETERIA, CREDIT UNION	237394	13,563	CAFETERIA (74012)	31095.082	2.44	93.973	3A
AMC	406TH AFSB	ANNISTON ARMY DEPOT	ANNISTON ARMY DEPOT	150 - EA, BRIDGE REPAIR FACILITY	1137325	12,561	VEH MINT FA (21441)	78624.776	6.642	94.247	3A
AMC	406TH AFSB	ANNISTON ARMY DEPOT	ANNISTON ARMY DEPOT	1505 - WA, MEETING CENTER, DESOTO AREA	1004802	1,741	CMTY/CONF (74034)	1158779.309	725.187	91.781	3A
AMC	406TH AFSB	ANNISTON ARMY DEPOT	ANNISTON ARMY DEPOT	153 - EA, STP SEWAGE TREATMENT	237405	668	SEW/WST WT (89131)	32862.297	52.047	94.521	3A
AMC	406TH AFSB	ANNISTON ARMY DEPOT	ANNISTON ARMY DEPOT	162 - EA, IWTR, CONTROL, LAB, WHSE, MAINT, GENERATOR	1088107	10,894	ENG/HOUSIN (21910)	913655.169	83.868	100	3A
AMC	406TH AFSB	ANNISTON ARMY DEPOT	ANNISTON ARMY DEPOT	19 - W, A, DPW BOILER PLANT	234302	1,856	HEAT PLT B (89121)	10774.284	5.805	100	3A
AMC	406TH AFSB	ANNISTON ARMY DEPOT	ANNISTON ARMY DEPOT	202 - WA, AMMO ADMIN OFFICES	237629	7,062	ADMIN GEN (61050)	424727.557	70.813	84.932	3A
AMC	406TH AFSB	ANNISTON ARMY DEPOT	ANNISTON ARMY DEPOT	220 - WA, ADMIN: DRCA, NARFE, CAC WILLIAMS-COMFORT BUILDING	234362	7,831	ADMIN GEN (61050)	32207.554	4.364	94.247	3A

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ENHANCED METER STATUS DETAILS REPORT

The Meter Status Details report has been enhanced with two additional columns for quality metrics: 30-Day Data Quality and 60-Day Data Quality. These additions provide Energy Managers with a clearer picture of the meter’s status beyond the last reading received. A meter being online does not necessarily mean it is providing quality data to support energy management efforts.

The report also includes a color-coded legend for the corresponding totals based on the Pass/Fail metrics. In the screenshot of the report shown below, the Pass/Fail totals for the 30-Day Data Quality are shown on the bottom left, with the totals for the 60-Day Data Quality shown in the bottom middle. Note that the previously existing legend for the Last Reported metrics is now shown on the bottom right of the report.

Site	Building	Meter	Description	Commodity	Most Recent	Reporting Interval	% Last 30 Days Reporting Consistency	% Last 60 Days Reporting Consistency	Last Reading	30-Day Data Quality	60-Day Data Quality
FORT RILEY	7832 - ROBINSON GYM	RILEY_BLDG_07832_WM_1		Potable Water	6/7/2021 4:00:00 PM	15	0.0	0.0	227710	Fail	Fail
FORT RILEY	9374 - @ DMPC	RILEY_BLDG_09374_EM_1		Electricity	8/7/2021 9:30:00 PM	15	67.3	83.6	977.1569824219	Fail	Fail
FORT RILEY	8330 - NOT AVAILABLE	RILEY_BLDG_08330_EM_1		Electricity	8/13/2021 3:00:00 PM	15	49.3	38.4	2885951	Fail	Fail
FORT RILEY	8388 - DEPLY BATTLE SIMULATOR CENTER	RILEY_BLDG_08388_EM_1		Electricity	8/13/2021 3:15:00 PM	15	47.8	43.0	5083567.5	Fail	Fail
FORT RILEY	6940 - EYSTER POOL	RILEY_BLDG_06940_EM_1		Electricity	8/13/2021 3:30:00 PM	15	17.3	8.6	2177189.25	Fail	Fail
FORT RILEY	744 - BASE OPERATIONS FACILITY	RILEY_BLDG_00744_EM_1		Electricity	8/17/2021 12:00:00 AM	15	97.8	99.3	2318023	Pass	Pass
FORT RILEY	744 - BASE OPERATIONS FACILITY	RILEY_BLDG_00744_GM_1		Gas	8/17/2021 12:00:00 AM	15	97.8	99.3	145892	Pass	Pass
FORT RILEY	744 - BASE OPERATIONS FACILITY	RILEY_BLDG_00744_WM_1		Potable Water	8/17/2021 12:00:00 AM	15	97.8	99.3	1793140	Pass	Pass

Showing 1 to 100 of 182 entries

First Previous 1 2 Next Last

■ 115 30-Day Data Quality Pass	■ 114 60-Day Data Quality Pass	■ 154 Last Reported <= 36 hours
■ 67 30-Day Data Quality Fail	■ 68 60-Day Data Quality Fail	■ 3 Last Reported > 36 hours and <= 1 week
■ 0 30-Day Data Quality N/A	■ 0 60-Day Data Quality N/A	■ 25 Last Reported > 1 week or Never Reported

Total Meters: 182

In order for the meter to pass the data quality, the following two criteria must be met:

- No more than 35% estimated usage of the interval calculations fail the data quality algorithm, which considers repeated readings, missing readings, negative usage, excessive spikes, 0 meter readings, etc. We also refer to this as the smoothed rate.
- The sum of the interval usage divided by the difference of the end-to-end readings are within tolerance.

This is just an indicator of quality and further investigation should be done to assess the quality of the meter data. With that in mind, another enhancement to this report makes the meter name a hyperlink, which when selected pulls up the corresponding Interval Usage Data Quality report for that meter for the last 30 days in a new browser tab. In the results below, you can see this particular meter failed the data quality check because it was offline for approximately two weeks, with the number of estimated usage points at 1,122 thus giving it a 44% estimate usage. (Continued on pg. 5)

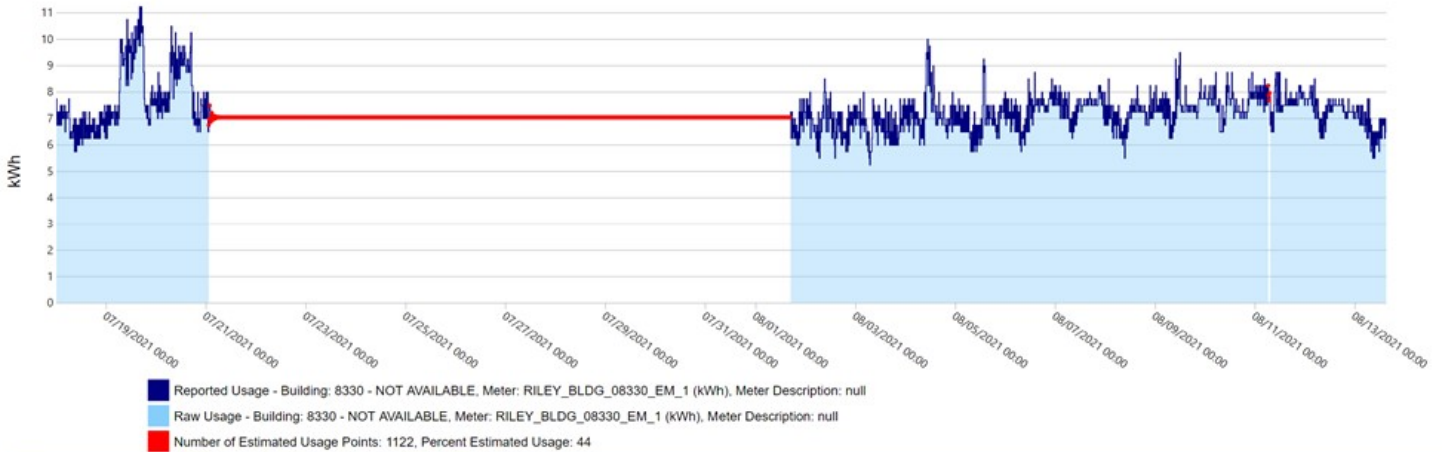


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ENHANCED METER STATUS DETAILS REPORT (CONT. FROM PG. 4)

Interval Usage Data Quality

FORT RILEY



07/18/2021 00:00 - 08/17/2021 23:59

RILEY_BLDG_08330_EM_1

Export to Excel

We hope the addition of these fields in the Meter Status Details report will give users greater insight into the quality of meter data being reported up to MDMS. We encourage you to attend the MDMS Training Webinar, "Addressing Meter Data Loss," to further understand how to investigate and assess the quality of meter data reporting to MDMS. After attending that session if you require further assistance in analyzing the meter data at your site or installation, please reach out to the AMSD at usarmy.coe-huntsville.cehnc.mbx.armymeterhelp@mail.mil or via the Support > Help/Feedback Request option in MDMS to request a one-on-one session with the MDMS Outreach Team.

