Lawnhurst Farms – Database Notes

Table 1 Database Notes

Data Collection	Data Logger: Data Collection Interval: Collection Method:	Envitec Digester Control System 1 – Minute, 5 – Minute, 15 – Minute, Daily *Data points necessary for Data Int Nightly FTP upload to CDH servers
Site Information	Cogeneration Units: Nameplate Capacity: Heat Recovery Medium: Heat Recovery Uses: Excess Heat:	Jenbacher J312GSC81 Engine / Stamford CG634J2 480VAC Generator 541 kW Hot Water Digester, milking parlor water, and engine building heating Rejected to atmosphere by dump radiator
DG/CHP Generator Electrical Output	Engineering Units: Energy Measurement (net/gross): Measurement Type:	kWh Gross Power Measurement – From Shark 200 Power Meter Accumulated kWh
DG/CHP Generator Electrical Output Demand	Engineering Units: Measurement Type:	kW Calculated : accumulated kWh/int * # intervals
DG/CHP Generator Fuel Input	Engineering Units: Measurement type:	Daily Avg. CFH Rotary gas meter with pulse output
DG/CHP Useful Heat Recovery	Engineering Units: Heat Measurement Type:	- -
DG/CHP Unused Heat Recovery	Engineering Units: Heat Measurement Type:	- -
DG/CHP Status/Runtime	Engineering Units: Measurement Type:	- -

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Facility Purchased Energy	Engineering Units: Measurement Type:	- -
Facility Purchased Demand	Engineering Units: Measurement Type:	- -
Other Facility Gas Use (Flare Gas)	Engineering Units: Measurement Type:	CF Calculated

Table 2 Event Timeline

Date	Event
April 15, 2014	Envitec control system begins providing automated data.
October 7, 2014	CDH on site to verify meter readings.
August 17, 2017	Shark 200 power meter communications failure. Power data from this date forward from GE DIA.NE XT3 engine controller.

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Range Checks

Table 3. Range Checks

Data Point	Units	Hourly Data Calculation Method	Database Lower Range	Database Upper Range	Notes
DG/CHP Generator Output (WG_d)	kWh/int	Sum	0	10	*Pulse output*
DG/CHP Generator Output Demand (WG_KW_d)	kW	Max	0	575	*WG_KW_d = WG_d * # Intervals*
DG/CHP Generator Gas Use (FG_d)	cf/int	Sum	0	250	FG_d = 0 if WG_KW_d ≤ 10
Total Facility Purchased Energy (WT_d)	kWh/int	-	-	-	
Total Facility Purchased Demand (WT_KW_d)	kW	-	-	-	
Other Facility Gas Use (FT_d)	cf/int	Sum	0	250	FT_d = FG_d if WG_KW_d ≤ 10
Useful Heat Recovery (QHR_d)	MBtu/int	-	-	-	
Unused Heat Recovery (QD_d)	MBtu/int	-	-	-	
Status/Runtime of DG/CHP Generator (SG_d)	hr	-	-	-	
Ambient Temperature (TAO)	°F	Avg	-20	130	*WUG Airport Code - ROC*

Notes:

1. This table contains values from *lawnhurst.csv*

Site Name – Database Notes

Relational Checks

Table 4. Relational Checks

Evaluated Point	Criteria	Result
WG_KW_d	FG_d > 40 and WG_KW_d < 100	DQ flag WG_KW_d = 2
WG_d	FG_d > 70 and WG_d < 2.5	DQ flag WG_d = 2
FG_d	FG_d < 40 and WG_KW_d >100	DQ flag FG_d = 2

Notes:

1. This table contains values from *relational_checks.pro*