WALKER DAIRY – DATABASE NOTES

Table 1 Database Notes

Data Collection	Data Logger: Data Collection Interval: Collection Method:	One (1) Obvius AcquiSuite A8812 and one (1) Red Lion data logger 1-minute Automated Frontier Energy Python script; catcher.py
Site Information	DER Unit (make & model): Nameplate Capacity: Heat Recovery Medium: Heat Recovery Uses: Excess Heat:	Guascor SFGLD 240 300 kW Hot Water Digester heating and space heating Rejected to atmosphere using dump radiator
DER Electricity Generated (WG)	Engineering Units: Energy Measurement (net/gross): Measurement Type:	kWh Gross Accumulated energy from Intelisys NT engine controller
Biogas to Generator (FGE)	Engineering Units: Measurement type:	cf Accumulated cf from Sage gas meter
Biogas to Flare (FGF)	Engineering Units: Measurement type:	cf Accumulated cf from Sage gas meter
H2S to Scrubber (H2S_IN)	Engineering Units: Measurement type:	ppm INCA gas analyzer; 60-minute samples
H2S to Generator (H2S_OUT)	Engineering Units: Measurement type:	ppm INCA gas analyzer; 60-minute samples
Methane Content (CH4)	Engineering Units: Measurement type:	% CH_4 INCA gas analyzer; 60-minute samples

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Table 2 Event Timeline

Date	Event
November 9th, 2017	Start receiving data from Red Lion data logger. Utilized scrubber data points include methane in biogas, hydrogen sulfide in gas entering scrubber, and hydrogen sulfide in gas leaving scrubber. These additional points have been added to website.
November 17, 2017 to January 4, 2018	Communications issues prevented H2S_IN, H2S_OUT, and CH4 data from being collected from Red Lion data logger while gas to engine and engine power data collection continued from Obvius data logger.
January 4, 2019	Red Lion had been experiencing issues, including corrupted data, requiring it to be replaced. Communications restored on this day as well. No back data available due to replacement of existing Red Lion datalogger.
January 15, 2019	H2S sensor had failed and was replaced on 1/15/2019. H2S_IN data from 1/4/2019 to 1/15/2019 not valid.
April 6, 2019 to September 3, 2019	Raw data files missing from Carbon Catcher system (H2S_IN, H2S_OUT, CH4).

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Range Checks

Table 3 Range Checks

Data Point	Units	Database Lower Range	Database Upper Range	Notes
DER Electricity Generated	kWh/hour	0	400	
Biogas to Generator	cfh	0	8,000	
Biogas to Flare	cfh	0	8,000	
H2S to Scrubber	ppm	0	5,000	
H2S to Generator	ppm	0	5,000	
Methane Content	%	0	100	
Ambient Temperature	°F	-20	130	NOAA Airport Code - KGFL

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Relational Checks

Table 4 Relational Checks

Evaluated Point(s)	Criteria	Result