LS # 6

Roth Professional Solutions

LIFT STATION CONDITION ASSESSMENT FORM

Assessment Date: 25 April 2023

Location: 2100 River Forest Ln Municipality: Village of Kronenwetter LS Type: Duplex Submersible

Engineer: Roth Professional Solutions Technical & Equipment Assistance: B&M Technical Services

House Keeping: ☒ Good ☐ N/A ☐ Poor Lighting ☐ Tripping Hazards Present ☐ No Fall Protection ☐ Exposure to Raw Wastewater in Dry Well ☐ Sump Pump Inoperable ☐ Electric Space Heater Inoperable ☐ Potential for Shock or Electrocution ☐ Other

Health and Safety Issues:

Other Observations: 15 HP Barnes Ea / Add-A-Phase Power System (3 Phase Converter System)

Asset Class	Asset Present	Year Installed	Cond. Rank	Perf. Rank	Field Observations/Comments
Site Improvement (SIM)					
* **Access Driveway**	X				
* **Parking**	X				
* **Gate and Fencing**	☐				
* **Site Drainage**	X				
* **Grounding System**	X				
* **Site Lighting**	☐				
* **Site Alarm Horn and Strobe Lighting**	X				

General Site Electrical Observations

Access Driveway Details: ☒ Gravel or aggregate basecourse only ☐ Concrete Pavement ☐ Bituminous Pavement

Parking Details: ☐ None ☒ Gravel ☐ Paved

Fence Details: ☐ Chain Link ☐ Other Fencing Height (ft): Fencing Length (ft):

Gate Type: ☐ Single ☐ Double N/A

Traffic: ☐ Other ☐ Site too Close to Traffic

Grounding System Details : ☒ Present ☐ Grounding Rings ☐ Grounding Rods

If applicable, approximate parking area:

If applicable, approximate site area:

Other Notes:

Panel Labeling Not Current; 3" Influent FM, Turned Down, is Showing Corrosion

Pump 2 Replaced 2018; Pump 1 Original 1999

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Structure and Wetwell (PST)							
* **Building**		☑					Duplex Submersible

Building Structures: ☐ None ☐ Concrete Walls ☐ Concrete Floor ☐ Doors Total Floor Area: Plan Floor Area:

Field Observations: ☐ Good ☐ N/A ☐ Roof Degraded ☐ Doors and Security Failing ☐ Needs Paint ☐ Cracks on the Wall ☐ Cracks on the Floor ☐ Other

* **Odor Control**		☑					

Odor Details: ☐ Vent Pipe ☐ Other ☐ Details

Field Observations: ☐ Operational and in use ☐ On site, but not required ☐ Does not operate, needs repair ☐ Other

* **Crane/Hoist**		☑					Portable / Off Site

Crane Details: Manufacturer: Model: Serial Number:

Field Observations: ☐ Good operating condition ☐ Does not operate, requires repair ☐ Mounting Hardware intact ☐ Other

* **Bar Screen or Com minuter**	N/A	☐					

System Description: ☐ No Bar Screen ☐ Manually Raked Bar Screen ☐ Mechanically Raked Bar Screen ☐ Screen Bypass Provided?

Mechanical Bar Screens: ☐ Manufacturer: Model: Serial Number: Power Requirements (hp):

Odor Details: ☐ N/A ☐ Screens need frequent cleaning ☐ Short repsonse time ☐ Odor fly nuisance ☐ Screens not in use ☐ Other

* **Flow Meter**	N/A	☐					

Type: ☐ N/A Type: Manufacturer: Model: Serial Number:

Flow Meter Field Observations: ☐ Operational ☐ Location ☐ Other

* **Wet Well**		☑					

Walls: ☐ Concrete ☐ Steel ☐ Fiberglass

Slab/Cover: ☐ Reinforced Concrete ☐ Steel ☐ Pumps, motors and electric panel are mounted on cover/slab directly over wet well

Pump Control System: ☐ Floats ☐ Bubbler System ☐ Ultrasonic 2 Float High/Low w/ Transducer

Measurement (PPM): 0-5 PSI MPC 0-5 PSI

Wet Well Field Observations: ☐ Good ☐ PN/A ☐ Hatch Damaged or Difficult to Open ☐ Wet Structure Spalling or Cracked ☐ Evidence of Concrete Corrosion ☐ Wet Well Needs Cleaning - Solids/Grease ☐ Other

Hatch Field Observations: ☐ Good ☐ Fair: Minor Corrosion to Hatches, Hinges, or Latches ☐ Poor:Corroded or Broken Hatches, Hinges, or Latches ☐ Other

Wet Well Ladder Observations: ☐ Good ☐ Fair: Surface Corrosion; Steps Intact and Solid; Minor Anchor Bolt Corrosion ☐ Poor: Corroded or Broken Steps; Corroded or Broken Wall Anchors ☐ Other

Wet Well Wall Observations: ☐ Good ☐ Fair: Concrete Sealant Peeled or Cracked; Concrete Soft at Surface ☐ Poor: Exposed/Missing Aggregate; Exposed/Missing Re-bar ☐ Other

Slab/Cover Observations: ☐ Good ☐ Fair: Concrete or Aluminum Grate Slightly Corroded But Safe ☐ Poor: Concrete Aggregate Missing/Exposed; Grate Corroded or Warped; Debris Over Platform ☐ Other

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Influent Pipe Observations: ■ Good ☐ Fair: Slight Corrosion; Pipe Intact ☐ Poor: Severe Pipe Corrosion ■ Other 3" Influent DI Low Pressure FM							
Alarm Float Observations: ☐ Good ☐ Fair: Some Grease But Operating Properly ☐ Poor: Covered in Grease or Broken ☐ Other							
Pump Vent Line Observations: ☐ Good ☐ Fair: Slight Corrosion But Operates Properly; Needs Sealant Around Opening ☐ Poor: Any One Vent Does Not Operate; Corroded or Broken Off at Wall ☐ Other							
* **Dry Well**		☑					Valve Vault Drain Clogged
Location Type: ☐ None ☐ Underground pump vault with access tube and ladder ■ Located below grade inside building Lighting: ☐ Yes ■ No Cathodic Protection ■ Not Required ☐ None ☐ Yes							
Access Tube and Ladder Field Observations: ☐ N/A ■ Good ☐ Fair: Surface Corrosion; Steps Intact and Solid; Minor Anchor Bolt Corrosion ☐ Poor: Corroded or Broken Steps; Corroded or Broken Wall Anchors ☐ Other							
Underground Vault Observations: ☐ N/A ☐ Good ■ Fair: Surface Corrosion ☐ Poor: Corrosion ■ Other Piping							
Building Floor Slabs: ☐ N/A ☐ Good ☐ Fair: Concrete Sealant Peeled or Cracked; Concrete Soft at Surface ☐ Poor: Exposed/Missing Aggregate; Exposed/Missing Re-bar ■ Other Standing Water; No Drainage							
Staircases/Stairwells: ☐ N/A ■ Good ☐ Fair: Concrete Cracked; Concrete Soft at Surface ☐ Poor: Exposed/Missing Aggregate; Exposed/Missing Re-bar ☐ Other							
Building Walls: ☐ N/A ☐ Good ☐ Fair: Concrete Sealant Peeled or Cracked; Concrete Soft at Surface ☐ Poor: Exposed/Missing Aggregate; Exposed/Missing Re-bar ☐ Other							
Sump Pump: ☐ No ☐ Yes Type Model: Power (hp): TDH: Serial: Field Observations: ☐ Not Operational ☐ Poor Floor Drainage ☐ Other							
* **Cathodic Protection**	N/A	☐					
Field Observations: ☐ Disconnected ☐ Other							
HVAC (HVA)							
* **Dry Well HVAC**	N/A	☐					
Asset Size: Field Observations: ☐ Good ☐ N/A ☐ Old ☐ Ventilation Inoperable ☐ Makes Noise ☐ Fans Vibrate ☐ Ventilation Duct Work Corroded ☐ Belts Loose or Torn ☐ Louvers ☐ Roof Vents ☐ Other							
* **Wet Well HVAC**	N/A	☐					
Asset Size: Field Observations: ☐ Good ☐ N/A ☐ Old ☐ Ventilation Inoperable ☐ Makes Noise ☐ Fans Vibrate ☐ Belts Loose or Torn ☐ Ventilation Duct Work Corroded ☐ Louvers ☐ Roof Vents ☐ Other							
Electrical Systems (ELE)							
* **Control Panel**		☑					Max 30 HP
Asset Size (Volts) 240/10In, 208/30 Out ■ Single phase ☐ Three Phase Add-A-Phase Converter Manufacturer: Model: Serial Number: Power Supply Manufacturer: Model: Type: ADDA PHASE UNIT RONK							

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Field Observations: ■ Good ☐ Panel Corroded ☐ Old / Outdated / Obsolete ☐ Contacts Loose ☐ Cables Fatigued Checked
☐ Dust Inside Panel ☐ Exposed Wires ☐ Shop Drawings Available ☐ UL Listed ☐ Uncovered Holes
☐ Surge Protection ■ Grounded ☐ Wiring Labelled ☐ Panel Labelled ☐ Other

* **Lighting Panel**		☐					

Asset Size (Volts)
Manufacturer: Model: Serial Number:

Field Observations: ☐ Good ☐ Panel Corroded ☐ Old / Outdated / Obsolete ☐ Contacts Loose ☐ Cables Fatigued Checked
☐ Dust Inside Panel ☐ Exposed Wires ☐ Switch Gear Worn ☐ Bus and.or lugs corroded ☐ Spare Spaces Available
☐ Breakers Labelled ☐ Panel Grounded ☐ Panel Labelled ☐ Other

* **Main Switch**		✔					

Asset Size (Volts) 208 3 Phase
Manufacturer: Hoffman Model: 96 Serial Number:

Field Observations: ☐ Good ☐ Panel Corroded ☐ Old / Outdated / Obsolete ☐ Contacts Loose ☐ Cables Fatigued Checked
☐ Dust Inside Panel ☐ Exposed Wires ☐ Switch Gear Worn ☐ Lugs Corroded ☐ Panel Grounded
☐ Panel Labelled ■ Other Phase Converter Inefficient

* **Transfer Switch**		✔					Manual

Asset Size (Volts 30 HP
Manufacturer: SMEDE Breaker Model: Serial Number:

Field Observations: ■ Good ☐ Panel Corroded ☐ Old / Outdated / Obsolete ☐ Contacts Loose ☐ Cables Fatigued Checked
☐ Dust Inside Panel ☐ Exposed Wires ☐ Switch Gear Worn ☐ Lugs Corroded ☐ Panel Grounded
☐ Panel Labelled ☐ Other

* **Motor Control Center**	N/A	☐					

Asset Size (Volts)
Manufacturer: Model: Serial Number:

Field Observations: ☐ Good ☐ Panel Corroded ☐ Old / Outdated / Obsolete ☐ Contacts Loose ☐ Cables Fatigued Checked
☐ Dust Inside Panel ☐ Exposed Wires ☐ Switch Gear Worn ☐ Lugs Corroded ☐ Panel Labelled
☐ Other

* **Junction Box**		✔					

Asset Size (Volts) 208 3 Phase
Manufacturer: Hoffman Model: 96 Serial Number:

Field Observations: ■ Good ☐ Panel Corroded ☐ Old / Outdated / Obsolete ☐ Contacts Loose ☐ Cables Fatigued Checked
☐ Dust Inside Panel ☐ Exposed Wires ☐ Switch Gear Worn ☐ Lugs Corroded ☐ Panel Grounded
☐ Panel Labelled ■ Other Phase Converter Inefficient

* **Miscellaneous Panel 1**	N/A	☐					

Asset Size
Manufacturer: Model: Serial Number:

Field Observations: ☐ Good ☐ Panel Corroded ☐ Old / Outdated / Obsolete ☐ Contacts Loose ☐ Cables Fatigued Checked
☐ Dust Inside Panel ☐ Exposed Wires ☐ Switch Gear Worn ☐ Lugs Corroded ☐ Panel Grounded
☐ Panel Labelled ☐ Other

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Generator (GEN)							
* **Emergency Generator**		☐					
* **Emer. Gen. Connector**		☑					Portable Off-Site
Asset Size: 30 HP Manufacturer: SMEDE Breaker Model: Serial: Generator Type:							
Field Observations: ☒ Good ☐ N/A ☐ Contacts Loose ☐ Cables Fatigued Checked ☐ Engine Fluids Low ☐ Poor Housekeeping ☐ Poor Accessibility ☒ Panel Grounded ☐ Panel Labelled ☐ Diesel Containment ☐ Other							
Instrumentation (INS)							
* **Auto Dialer**		☑					
Manufacturer: Sensaphone Model: 96 Phone Number:							
Alarms: ☒ High Level ☒ Low Level ☐ Generator Running ☒ Power Fail ☐ Other							
* **Float Controls**	back up	☐	2 float				
* **Bubbler Controls**	primary	☐					0-5 PSI
Manufacturer: Mercoid Model:							
* **Ultrasonic Controls**		☐					
Field Observations: ☒ Good ☐ N/A ☐ Bubbler Compressor Failing ☐ Air Lines Clogged / Full of Moisture ☐ Drain Condensate Traps in Air System ☐ Floats Tangled ☐ Controls Obsolete ☐ Other							
SCADA (SCA)							
Field Observations: ☐ Good ☐ N/A ☐ Obsolete ☐ Other							
Variable Frequency Drive							
* **Control Panel - VFD**	N/A	☐					
* **Harmonic Filter**	N/A	☐					
* **Output Filter**	N/A	☐					
Asset Size: Manufacturer: Model: Observed RPM:							
Field Observations: ☐ Good ☐ N/A ☐ Makes Noise ☐ Obsolete ☐ Panel Corroded / Dusty / Leaky ☐ Other							
Motors (MTR)							
* **Motor 1**	N/A	☐					
Asset Size (HP) Manufacturer: Model: Serial Number:							
Field Observations: ☐ Good ☐ N/A ☐ Makes Noise ☐ Vibrates ☐ Shaft Bearing Noise ☐ Opposite End Bearing Noise ☐ Overheating ☐ Needs Lubrication ☐ Over Lubricated ☐ Mount Failing ☐ Leaking ☐ Emergency Stop Button in Dry Well Inoperable ☐ Other							
* **Motor 2**	N/A	☐					
Asset Size (HP): Manufacturer: Model: Serial Number:							
Field Observations: ☐ Good ☐ N/A ☐ Makes Noise ☐ Vibrates ☐ Shaft Bearing Noise ☐ Opposite End Bearing Noise ☐ Overheating ☐ Needs Lubrication ☐ Over Lubricated ☐ Mount Failing ☐ Leaking ☐ Emergency Stop Button in Dry Well Inoperable ☐ Other							

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Hor/Vert Centrifugal Pumps							
* **Pump 1**	N/A	☐					
Manufacturer:		Model:		Serial Number:			
Discharge Size (in)		Suction Diameter (in)		Pump Size (GPM)		TDH	
Priming Pump ☐	Manufacturer:		Model:		Serial No.:		Size (hp):
Pressure Gauge ☐	Manufacturer:		Pressure Range:		PressureReading:		
Field Observations: ☐ Good ☐ N/A ☐ Seals Leaking ☐ Vibrating ☐ Shaft Deflection ☐ Cavitating ☐ Belts Loose ☐ Bearing Noise ☐ Mount Failing ☐ Evidence of Pipe Strain ☐ Other							
* **Pump 2**	N/A	☐					
Discharge Size (in)		Suction Diameter (in)		Pump Size (GPM)		TDH	
Priming Pump ☐	Manufacturer:		Model:		Serial No.:		Size (hp):
Pressure Gauge ☐	Manufacturer:		Pressure Range:		PressureReading:		
Field Observations: ☐ Good ☐ N/A ☐ Seals Leaking ☐ Vibrating ☐ Shaft Deflection ☐ Cavitating ☐ Belts Loose ☐ Bearing Noise ☐ Mount Failing ☐ Evidence of Pipe Strain ☐ Other							
Submersible Pumps (SUB)							
* **Pump 1**		☑					
Manufacturer: Barnes		Model: 48.3 FIA		Serial:			
Discharge Size (in) 4"		Suction Diameter (in)		Pump Size (GPM) 155		TDH 15 HP	
Field Observations: ■ Good ☐ N/A ☐ Rail System Corroded ☐ Does Not Seat Well ☐ Cables Corroded or Failing ☐ Other							
* **Pump 2**		☑					
Manufacturer: Barnes		Model:		Serial:			
Discharge Size (in) 4"		Suction Diameter (in)		Pump Size (GPM) 155		TDH 15 HP	
Field Observations: ■ Good ☐ N/A ☐ Rail System Corroded ☐ Does Not Seat Well ☐ Cables Corroded or Failing ☐ Other							
Check Valves							
* **Pump 1**		☑					
Size (in): 4"	Manufacturer:		Model:		Serial No:		
Field Observations: ☐ Good ☐ N/A ☐ Valve Operator Stuck ☐ Valve Seat Leaking ☐ Flanges Leaking ☐ Check Valve Not Seating ☐ Check Valve Not Operating ☐ Evidence of Pipe Strain ☐ Other							
* **Pump 2**		☑					
Size (in): 4"	Manufacturer:		Model:		Serial No:		
Field Observations: ☐ Good ☐ N/A ☐ Valve Operator Stuck ☐ Valve Seat Leaking ☐ Flanges Leaking ☐ Other ☐ Check Valve Not Seating ☐ Check Valve Not Operating ☐ Evidence of Pipe Strain							

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Piping and Valves Suction Isolation Valves							
* **Pump 1**	N/A	☐					
Size (in):	Manufacturer:		Model:		Serial No:		
Field Observations:	☐ Good ☐ N/A ☐ Valve Operator Stuck ☐ Valve Seat Leaking ☐ Flanges Leaking ☐ Check Valve Not Seating ☐ Check Valve Not Operating ☐ Evidence of Pipe Strain ☐ Other						
* **Pump 2**	N/A	☐					
Size (in):	Manufacturer:		Model:		Serial No:		
Field Observations:	☐ Good ☐ N/A ☐ Valve Operator Stuck ☐ Valve Seat Leaking ☐ Flanges Leaking ☐ Check Valve Not Seating ☐ Check Valve Not Operating ☐ Evidence of Pipe Strain ☐ Other						
Discharge Isolation Valves							
* **Pump 1**		☑					
Size (in): 4"	Manufacturer:		Model:		Serial No:		
Field Observations:	☐ Good ☐ N/A ☐ Valve Operator Stuck ☐ Valve Seat Leaking ☐ Flanges Leaking ☐ Check Valve Not Seating ☐ Check Valve Not Operating ☐ Evidence of Pipe Strain ■ Other Valve Vault Piping Corrosion						
* **Pump 2**	N/A	☐					
Size (in):	Manufacturer:		Model:		Serial No:		
Field Observations:	☐ Good ☐ N/A ☐ Valve Operator Stuck ☐ Valve Seat Leaking ☐ Flanges Leaking ☐ Check Valve Not Seating ☐ Check Valve Not Operating ☐ Evidence of Pipe Strain ☐ Other						