



Village of
Yellow Springs

Water and Wastewater Treatment 2020

WATER RECLAMATION 2020 PERMIT DATA

2020 EFF	High	Low	Average	INF Average
Temp	23.94	9.19	15.84	
D.O.	12.6 mg/L	6.05 mg/L	9.58 mg/L	
pH	8.96	6.53	-	
TSS	10 mg/L	BDL	1.83 mg/L	181.65 mg/L
NH3	5.1 mg/L	BDL	0.1375 mg/L	
CBOD	12 mg/L	BDL	3.77 mg/L	191.62 mg/L
E. Coli	24200	BDL	523.64	
Phos	1.66 mg/L	0.03 mg/L	0.73 mg/L	
Flow	3.13 mgd	0.196 mgd	0.486 mgd	

WATER TREATMENT PLANT 2020 LAB & FLOW DATA AVERAGES

- 2020 Average flow rate of 0.394 MGD
- pH: 7.82
- Total Alkalinity: 290 mg/l
- Phenol Alkalinity: 0
- Total Hardness: 229 mg/l
- Iron: 0.08 mg/l or BDL
- Manganese: 0.02 mg/l or BDL
- Total RAW Water Pumped: 145.436 MG
- Total Treated Water Pumped: 143.660 MG
- Sodium Hypochlorite: 7,161 gallons or 19.2 gallons per day
- Sodium Hydroxide: 41,710 gallons or 114.3 gallons per day
- Free Chlorine: 0.9875 mg/l
- Stability(LSI): 0.22

2020 TREATMENT CHALLENGES

WRF

- Meeting NPDES permit requirements and completing maintenance of facility safely throughout COVID-19 Pandemic.
- Covid-19 Challenges:
 - Operating Short Staffed and maintaining a health staff.
 - Interruption in supply chains making it difficult to find daily use safety items such as disposable gloves.
- Losing sludge disposal method unexpectedly.

WTP

- Meeting Daily, Monthly and Yearly sample requirements safely throughout COVID-19 Pandemic.
- Covid-19 Challenges:
 - Operating Short Staffed and maintaining a health staff.
 - Completing weekly bacteria samples around town safely.
 - Preparing for chemical delivery delays or shortages.
- Losing the production of Well No. 2

2020 ACCOMPLISHMENTS

- **Kevin Martin** : Received OEPA Wastewater Treatment 1 License and completed a 4 day backflow certification through OTCO.
- **Sean Roose** : Passed both his Water and Wastewater Treatment class 2 certification exams. He will be officially OEPA Licensed with Class 2 certifications in Water and Wastewater Treatment in February 2021.
- **Ginnifer Amey**: Passed her Water Treatment Class 1 certification exam. She will have her experience time completed in early 2021.

WATER RECLAMATION FACILITY

INSTALLED VACTOR DUMPING STATION



- Now have the ability to clean and maintenance sewers on regular basis and be able to dispose of contents.

VACTOR DUMPING STATION

Before



After



REMODELED ADMINISTRATION BUILDING

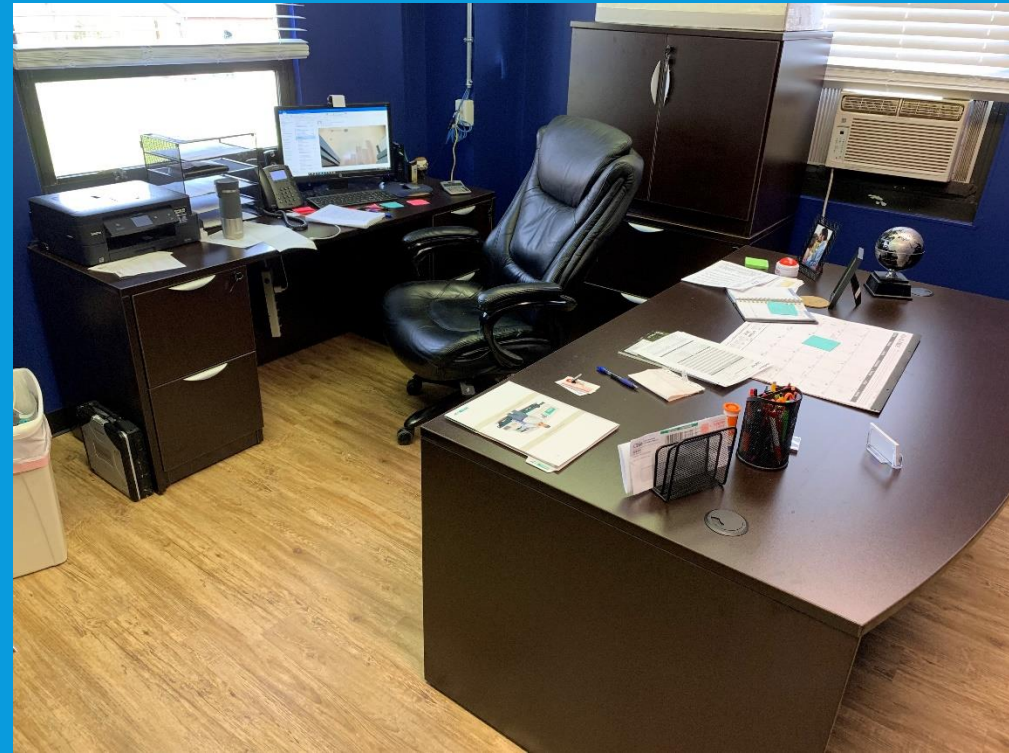


- Installed New Flooring
- Painted Superintendent's office
- Painted Operator's office/Lab
- Installed new Office furniture in Superintendent and Operator/Lab office.

ADMINISTRATION BUILDING



SUPERINTENDENT'S OFFICE



OPERATOR'S OFFICE



OPERATOR'S OFFICE

Before



After



RENTED AND INSTALLED SLUDGE PRESS



- We now have the capability to press and remove our biosolids.
- We can complete this with current staff and not rely on contractors.
- We will be completing a 1 year "test run" to see if this will work well for us.

SLUDGE PRESS



SOLVED INTERMITTENT COMMUNICATION FAULTS



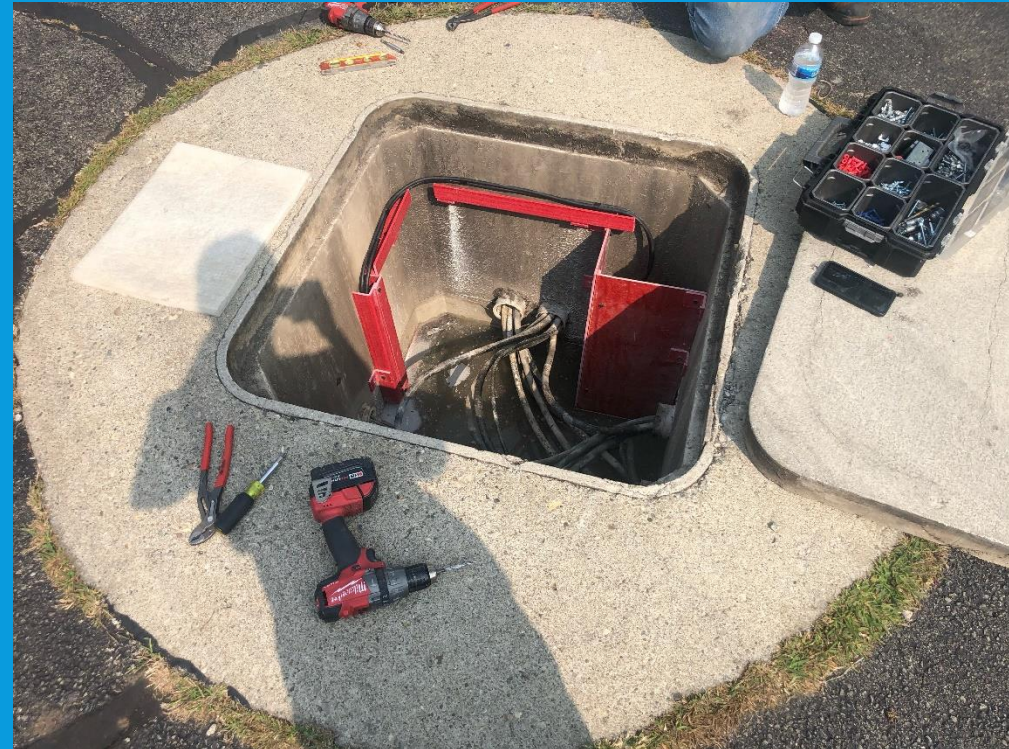
- Replaced Cat 5 cable with new Cat 6 Ethernet cable.
- The old Cat 5 cable was not rated to be exposed to outside elements like it was.
- The new Cat 6 cable is highly insulated and better suited for our operation system.

ETHERNET CABLE BOX

Before



After



INSTALLED CAMERA SYSTEM



- Reddy Electric completed camera security system

NPDES RENEWAL

Final Effluent Limits for Outfall IPC00013001

Parameter	Units	Concentration		Loading (kg/day) ^a		Basis ^c
		30 Day Average	Daily Maximum	30 Day Average	Daily Maximum	
Water Temperature	°C	----- Monitor -----				M, EP
Flow Rate	MGD	----- Monitor -----				M, EP
pH	SU	6.5 - 9.0		--	--	EP, WQS
Dissolved Oxygen	mg/L	-----not less than 6.0-----				EP, WQS
Total Suspended Solids	mg/L	30	45 ^b	432	647 ^b	PD
Oil & Grease	mg/L	--	10	--	--	EP, WQS
Ammonia						
Summer	mg/L	0.70	1.1 ^b	1.59	2.5 ^b	EP, WLA
Winter	mg/L	1.9	2.9 ^b	4.32	6.59 ^b	EP, WLA
Nitrogen Kjeldahl, Total	mg/L	----- Monitor -----				M, EP
Nitrate Plus Nitrite, Total	mg/L	----- Monitor -----				M, EP
Phosphorus, Total (P)						
Summer	mg/L	1.0	1.5 ^b	2.28	3.41 ^b	EP, TMDL
Winter	mg/L	----- Monitor -----				M, EP
Phosphorus, Total (P)	kg/yr	--	--	1.1 ^c	--	EP, TMDL
Nickel, Total Recoverable	µg/L	----- Monitor -----				M, EP
Silver, Total Recoverable	ug/l	----- Monitor -----				M, EP
Zinc, Total Recoverable	µg/L	----- Monitor -----				M, EP
Cadmium, Total Recoverable	µg/L	----- Monitor -----				M, EP
Lead, Total Recoverable	µg/L	----- Monitor -----				M, EP
Chromium, Total Recoverable	µg/L	----- Monitor -----				M, EP
Copper, Total Recoverable	µg/L	----- Monitor -----				M, EP
Hexavalent Chromium (Dissolved)	µg/L	----- Monitor -----				M, EP
Mercury	ng/L	----- Monitor -----				M, EP
<i>E. coli</i>	#/100 mL	126	284 ^b	--	--	WQS
Chlorine, Total Residual	mg/L	--	0.023	--	--	WQS, EP
Mercury, Total (Low-Level)	ng/l	----- Monitor -----				M, EP
Residue, Total Filterable	mg/	----- Monitor -----				M
Carbonaceous Biochemical Oxygen Demand (5 day)	mg/L	10	15 ^b	22.8	34.1 ^b	EP, BADCT, PD

^a Effluent loadings based on average design discharge flow of 0.6 MGD.

- Completed a renewal of our National Pollution Discharge Elimination System(NPDES) Permit.
- The new permit has lower Weekly and Monthly E coli limit.

LIFT STATION

INSTALLED 60HP PUMP



- The new submersible pump replaced an old failing 50HP
- The new pump does not use seal water and will help with high flow events.

60HP PUMP INSTALL

Before



After



WATER TREATMENT PLANT

CLEANED WELLS NO.2 & NO. 5



- During the cleaning of Well No. 2 we noticed the well casing has very large holes and needed immediate attention to prevent it from caving in.
- Well No. 5 was extremely dirty but cleaned up and is in good condition.
- We have begun to reline Well No.2 with a 10" pipe. Making it able to use until future plans are made to re-drill the well.

WELL NO. 2



- During the cleaning of Well No. 2 we noticed the well casing has very large holes and needed immediate attention to prevent it from caving in.

WELL NO. 5

Before Cleaning



After Cleaning

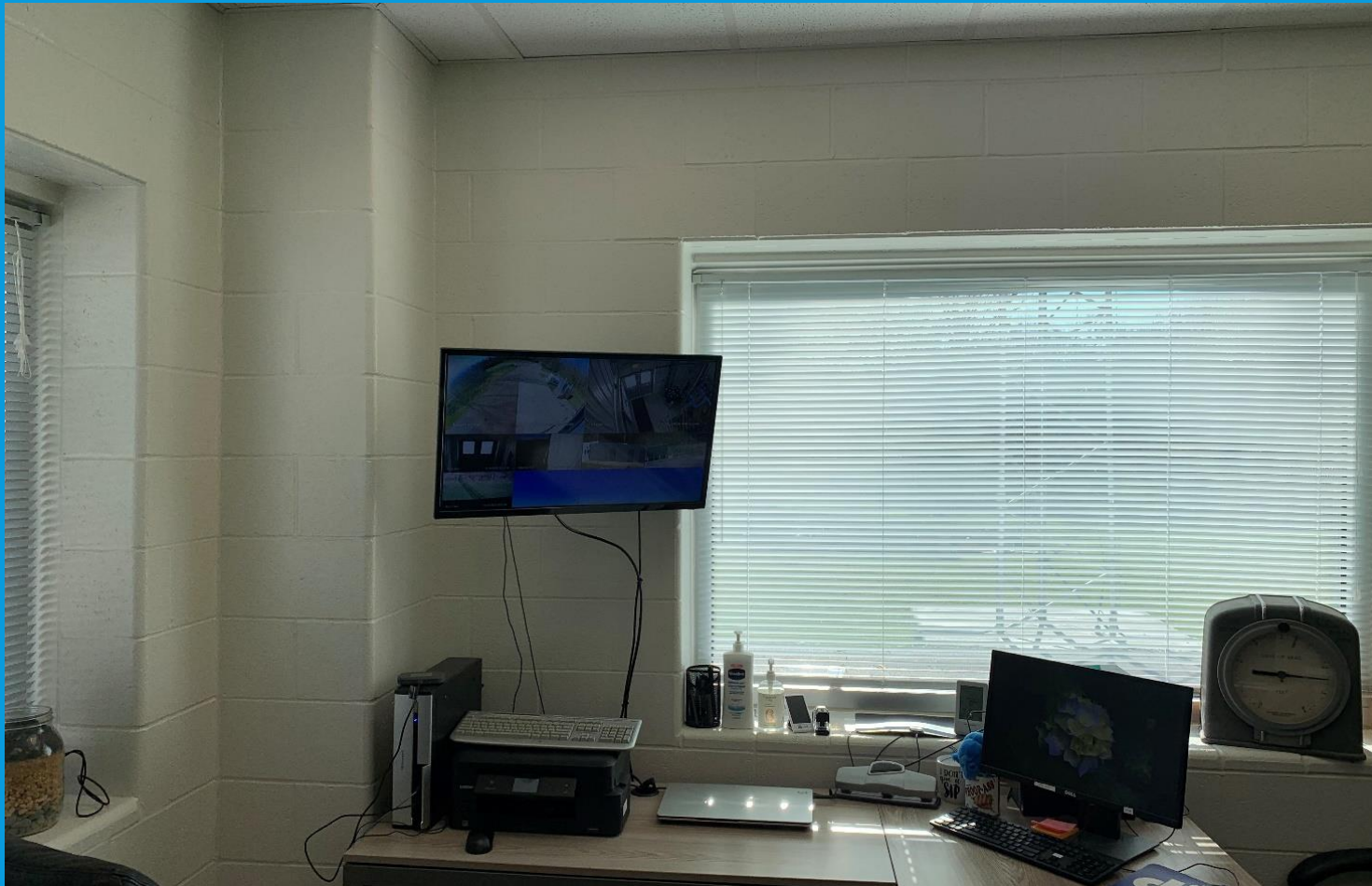


WELL No.2 RE-LINNING



- Installation of 10" screen

INSTALLED NEW CAMERA AND SECURITY SYSTEM



- Reddy Electric installed 5 cameras on the outside of the plant, 3 inside motion detectors, magnetic door lock with card reader and security system through Sterling.

INSTALLED NEW CAMERA AND SECURITY SYSTEM



FIXED BACKWASH DRAINAGE ISSUES



- The backwash was draining into the woods and flooding the Well Field.
- Cleared out a gully for backwash to flow to stream.

FIXED BACKWASH DRAINAGE ISSUES

Before



After

