OhioEPA

DIVISION OF PUBLIC WATER SUPPLY

EVALUATION REPORT

EPA Region 5 Records Ctr.
379707

STATION Wauseon MWS
LOCATION Rte 108 South & CR C
LETTER TO Mr John Sanderson, Svc Dir.
ADDRESS 230 Clinton St, Wauseon 43567
PHONE: OFFICE 419-335-8376
PLANT 419-335-2971 (7738)
COPY TO Mayor, Mr Richard Volk cc Don Stotzer, HD, Fulton Co. H. Comm.
COPY TO John Sanderson, Supt cc CO

PWS I.D. 2600111
COUNTY Fulton
PLANT DESIGN CAPACITY 3.0 MGD
PLANT CLASSIFICATION III
EVALUATED BY J. E King DATE 3-14-85

MR WALLACE MEYER PRES & MEMBERS OF COUNCIL

A. STAFF

1. Superintendent John Sanderson - III
2. Distr. Chief Phillip Lillich - III
3. Chief Operator Dane Bowers - III
4. Operators: DeArle Tanner
5. Rick Schantz
6.
7.
8. Tech. Supervisor (No)/Yes

B. MSIS

a. Population Served 6170
b. No. of Service Connections 2050 ✓
c. No. of Meters 2050 ✓
d. No. of Satellites (1) LYONS
e. Average Production .645 MGD
f. Max. Day 1.369 MGD Date June 84
g. Hour/Day Plant in Operation 10

C. CONTINGENCY PLAN

a. Plan Available [✓] Yes [ ] No
b. Available at Plant [✓] Yes [ ] No
c. Annual Update [✓] Yes [ ] No
d. Generally Acceptable [✓] Yes [ ] No
e. Comments

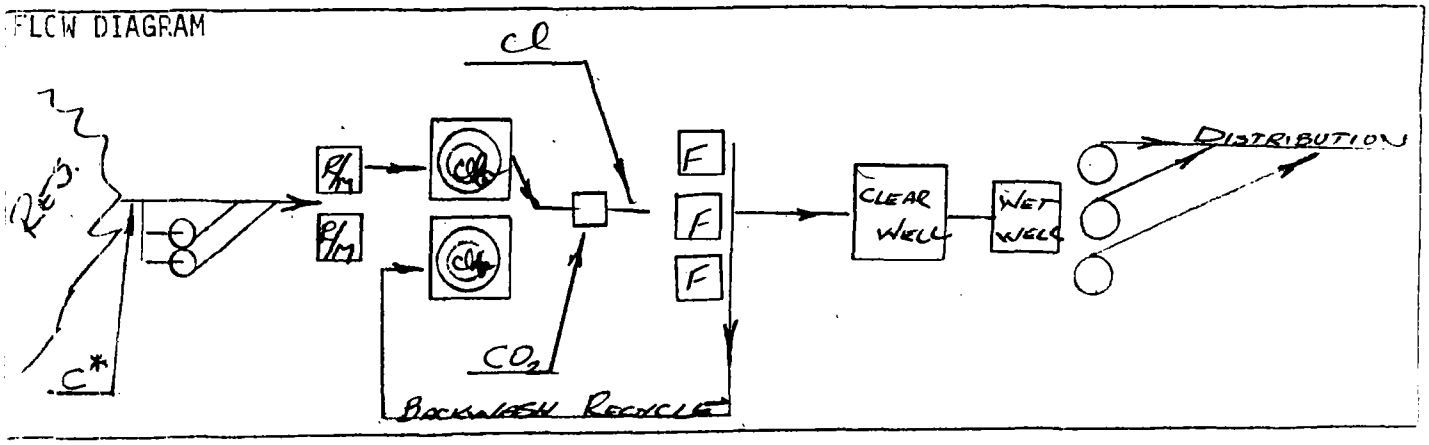
D. BACKFLOW PREVENTION

a. Ordinance in Effect [ ] Yes [✓] No
b. Inspection Program [ ] Yes [✓] No
c. Comments

E. MISCELLANEOUS

a. Plant Maintenance Record [✓] S [ ] U
b. Min. System Pressure [✓] S [ ] U
c. Housekeeping [✓] S [ ] U
d. Improvements
e. Comments

F. FLOW DIAGRAM



G. a. WATER ANALYSIS

Water Analysis Status	Frequency Required	Frequency or Date Completed	Laboratory Name	Approved Y or N	Comments
Bact.	7/mo	7+/mo	Wauseon	yes	
Nitrates	monthly	monthly	"	"	
Turbidity	daily	daily	"	"	
Fluoride	daily	daily	"	"	
pH	daily	daily	"	"	
Alkalinity (Phen)	daily	daily	"	"	
Alkalinity Total	daily	daily	"	"	
Alkalinity (STAB)	weekly	weekly	"	"	
Hardness	daily	daily	"	"	
Phosphates	monthly	monthly	"	"	
Chlorides	—	—	—	—	
Iron	—	—	—	—	
Manganese	—	—	—	—	
Copper	—	—	—	—	
Free Cl2 RES	4 hrly	4 Hrs	Wauseon	yes	RUNNING SYSTEM
Total Cl2 RES	4 hrly	4 Hrs	"	"	CHLORINE DAILY
Inorganic	yearly	12-4-84	Jones + Henry	"	
Pesticide	1/3 yrs	4-12-82	ODH	"	
Radiological	1/4 yr	12-4-84	ODH		
TTHM	—	—	—	—	

b. Chlorine Res. at Plant Tap: Free 1.2 - 1.6 mg/l Total 1.3 - 2.2 mg/l
c. Chlorine Res. in System: Free 1.0 - 1.5 mg/l Total 1.1 - 1.9 mg/l
d. Stability: _____

e. Water Quality Problems: _____

H. CHEMICALS USED

Chemical	Manufacturer or Product Name	Normal Amt. Used lb. or gal./day	% Purity	Normal Feed Rate mg/l	Comments
Alum	General Alum	150		1.6 gr/gal	
Lime	Detroit Lime	600		7.0 g/gal	
Soda Ash					
KMnO4		25%			
Fluoride	Hydrosol Fluorosilicic	5		0.7	
CO2					
Phosphates	tri poly phos.	7		1.0	
Carbon	ICI America	5.5		0.7	
Pre Cl2				4 TOTAL	PLANNING TO DISCONTINUE PRECHLORINATION
Post Cl2	Bonded Jo	33.5			
Interp					
NaOH - 50%	Gen. Alum	100 - 0		0 - 0.9	3x / Yr
CuSO4	Tenn. Chem.	400# per app			

1. TREATMENT PROCESSES Lime Soda

2. RECORDS

3. SOURCE GROUND (S, U, NA)
a. [ ] Upper Well Installation
b. [ ] Pit Development
c. [ ] Casing-Cap
d. Static Level-Drawdown
e. Comments on Wells

f. Well Field ___ No. of Wells
Acres
g. Flood Plain [ ]Yes [ ] No
h. [ ] Security
i. [ ] Abandonment Procedures
j. Comments on Well Field

350 MG RES CAP 800 BIG RES 50 SMALL "

4. SOURCE-SURFACE (S, U, NA) BIG DITCH
a. Source Name STICKY DITCH
b. [U] Adequate Low Flow Big Ditch, Little Turkey-foot
c. Days of Storage 439
d. [S] Intake Structure OFF STREAM
e. [S] Raw Water Contamination
f. [S] Industrial or Agricultural Upstream Discharge
g. Aquatic Weeds No
h. Algae SOME
i. Copper Sulfate YES
j. [S] Raw Water Pumps

5. AERATION

6. REACTION BASIN

7. CHEMICAL ADDITION EQUIPMENT
ALUM - LIQUID - PUMPS
NaOH " "
LIME - WT - SLAKERS - WST-OK - WST CLASS W/ORPHAN

TREATMENT (cont.)

8. RAPID MIX Walker process d...

9. FLOCCULATION Walker Process -

10. UPFLOW CLARIFIER Walker Process
2 units
300,000 gal each

11. SETTLING BASINS
a. Sludge removal N/A

12. RECARBONATION Nat'l gas
20' x 55' x 9' D

13. FILTERS-RAPID SAND (S, U, NA) - 3
a. Flow Rate 1.9 gpm/ft^2
b. Length of Run 80-100+ hrs
c. Backwash Rate 15 gpm/ft^2
d. Length of Backwash 10-15 min.
e. [S] Rate of Flow Controller
f. [S] Loss of Head Gauge
g. [S] Surface Sweeps
h. [S] Valve Controls

i. [S] Bed Condition
j. [S] Media Loss
k. [S] Media Growth
l. [S] Mud Accumulation
m. [S] Media Expansion During Wash
1 ft
n. [S] Leakage NIL
o. Comments

13a. PRESSURE FILTERS (S, U, NA)
a. [ ] Sampling Taps
b. [ ] Backwash Frequency
c. Comments

13b. SLOW SAND FILTERS
a. Calculated Actual Filter Loading Rate Inches/hr
b. Frequency of Cleaning

14. SODIUM ION EXCHANGE (S, U, NA)
a. [ ] Regeneration Fequency
b. [ ] Blending
c. Comments

15. CHLORINATION (S, U, NA)
a. Feed Points [X] Pre. [X] Intev. [X] Post
b. Type Used 150# cylinders
c. [S] Tank Security
c. [S] Isolation
e. [S] Emergency Breathing Equipment
f. [U] Leak Repair Kit [illegible]
g. [S] Training
h. Comments

15.1 CHLORINE DIOXIDE
a. Purpose
b. Feed Point
c. Feed Rate mg/l
d. Comments

16. FLUORIDATION (S, U, NA)
a. [S] Scales
b. [S] Anti-Syphon Device
c. [S] Backflow Preventor
d. [S] Feed Point
e. [S] Buffer Zone
f. [S] Venting
g. [S] Training
h. [S] Safety
i. [S] Chemical Storage

17. Phosphate
a. Free Chlorine Residual [ ] Yes [ ] No
b. Feed Rate 1.0 mg/l
c. Comments CHLORINE IN MAKEUP WATER

18. CLEARWELL
.795 MG

19. BOOSTER AND HIGH SERVICE PUMPS
1-900 gpm
1-1200 gpm
1-2100 gpm

20. AUXILIARY POWER [X] Yes [ ] No
1200 gpm

21. DISTRIBUTION SYSTEM
a. Dead End Mains yes - 1 or 2
b. Disinfection-Breaks no
c. Disinfection-New Lines yes
d. Condition of Lines 70% encrusted egg shell
e. Pressure Range 50-54
f. Unaccounted for water % 10-12
g. Adequate Valving good

22. SYSTEM STORAGE
a. Tank Maintenance routine - use paint and cathodic
b. Overflow ground level -
.750 + .300 = 1.05 MG
c. >100 % Daily Use in Storage

23. METERS
a. ~~Dead Meters~~ 0 %
b. Replacement/Repair Program

24. WASTE DISPOSAL
Sludge lagoons - Ag use

25. RECOMMENDATIONS AND REQUIREMENTS
a. Requirements
b. Recommendations

$\frac{50 \times 6.34}{41.7 \times 10^{-5} \times 454} = \frac{.18931}{.05}$

4 mg

OhioEPA

DIVISION OF PUBLIC WATER SUPPLY

INVENTORY REPORT

Station Wauseon Water Plant
Location St 108 Fico Rd C
Owner's Name City of Wauseon
Owner's Address 230 Clinton St Wauseon
Phone: Plant [419]-[335]-[2971]
Office [419]-[335]-[8376]

PWS ID No. 2600111
County Fulton
Plant Design Capacity 3 MGD
Plant Classification Class III
Inventory By _____ Date _____

1.0 TREATMENT PROCESSES (✓)

a. [ ] Purification
b. [✓] Lime/Soda Softening
c. [ ] Ion Exchange
d. [ ] Iron and Mng
e. [ ] Aeration
f. [✓] Coagulation
g. [✓] Sedimentation
h. [✓] Filtration
i. [✓] Absorption
j. [✓] Stabilization
k. [✓] Fluoridation
l. [✓] Disinfection
m. Other _____

1.1 CHEMICALS USED OR AVAILABLE (✓)

a. [✓] Alum
b. [ ] Iron Salts
c. [ ] Sodium Aluminate
d. [✓] Lime
e. [ ] Soda Ash
f. [✓] Caustic Soda
g. [ ] Carbon Dioxide
h. [ ] Salt
i. Other _____
j. [ ] $KMnO_4$
k. [ ] Polymers
l. [✓] Phosphates
m. [✓] Fluoride
n. [✓] Activated Carbon
o. [✓] Chlorine
p. [ ] Chlorine Dioxide

2.0 RECORDS

a. Original Construction Date of Plant 1978
b. Dates of Plant Expansion _____
c. Records on File (✓)
[✓] Plant Drawings
[✓] Valve Location File
[✓] Plant Maintenance Record
[✓] Daily Operational Log
[✓] State Reporting Forms
[ ] Contingency Plan
d. [ ] Water Purchased From _____
e. Master Material Satellites
1. _____ 4. _____
2. _____ 5. _____
3. _____ 6. _____
f. Direct Service Satellites
1. Lyons 4. _____
2. _____ 5. _____
3. _____ 6. _____

3.0 SOURCE - GROUND _____ %

a. Well Field
b. [ ] Flood Plain (✓)
c. _____ Controlled Isolation Distances (ft)
d. _____ Uncontrolled Isolation Distances (ft
e. _____ No. of Abandoned Wells

3.1 WELL NO.								
Type	Dug (Dg) / Drilled (Dr)							
Pump	Turb (T) / Dist (D) / Sub (S)							
Status	In Use (In) / Standby (S) / Abandoned (A)							
Static Level (ft)								
Drawdown (ft)								
Pitless Adaptor (✓)								
Pit (✓)								
Housing (✓)								
Well Diameter (in)								
Well Depth (ft)								
Casing Depth (ft)								
Pump Capacity (GPM)								
Meter (✓)								
Raw Water Tap (✓)								

Comments _____

4.0 SOURCE - SURFACE 100 %

a. Source Names
1. Stucky Ditch
2. Big Ditch
b. [ ] Off Stream Reservoir (✓)
c. 350 Capacity (MG)
d. 365 Days Storage
e. 7 No. Pumps Supplying Reservoir
f. Capacity/Pump 17,500 gpm

4.1 INTAKE STRUCTURE (Stream) (Lake) (Reservoir)

a. 30 Distance Offshore (ft)
b. 20 Diameter Raw Water Main (In.)
c. 750 Length Raw Water Main (ft)
d. [✓] Crib (✓)
e. [ ] Wetwell (✓)
f. [ ] Multiport (✓)
g. [✓] Pumped to Plant (✓)
h. [✓] Gravity to Plant (✓)
i. Other( )
j. Comments when res. gets Down to approx 10' we got to Turn on Raw water Pumps

4.2 RAW WATER PUMPS

a. Pump Number								2
b. Design Capacity (GPM)	2	1	0	0		6	8	
c. Meter (✓)								✓

5.0 AERATION (✓)

a. [ ] Coke Tray
b. [ ] Splash (Fountain)
c. Media
d. [ ] Forced Draft
e. [ ] Natural Draft

6.0 REACTION BASIN AFTER AERATION

a. No. Basins
b. Det. Time (Min. at Design Flow)
c. X X Size Per Basin
d. [ ] Sludge Removal (✓)

7.0 CHEMICAL FEED EQUIPMENT

List Equipment Type & Max. Feed Rate

a. Lime ~~Detroit Lime~~ - W&T Slaker 1000 lbs/Day
b. Alum W&T solution meter Pump 500 gal/Day
c. Soda Ash
d. Caustic Tandem Diaphragm meter Pump W&T 1000 gal/Day
e. Potassium Permanganate
f. Carbon W&T metering pump 500 gal/Day
g. Phosphate metering pump 100 gal/Day
h. Fluoride W&T metering pump 500 gal/day
i. Chlorine W&T V Notch 500#/Day
j. Other
k. Other

8.0 RAPID MIX

a. 2 No. Basins
b. 5'4" X 5'4" X 12' Size Per Basin
c. Sec. Detention Time at Design Flow
d. No. Mixers
e. Comments

9.0 FLOCCULATION (✓)

a. No. Basins
b. X Size Per Basin
c. Min. Detention Time at Design Flow
d. [ ] Vert. Impeller
e. [ ] Horiz. Paddles
f. [ ] Baffles
g. [ ] Walking Beam
h. [ ] Vert. Paddles

10.0 UPFLOW CLARIFIER

a. 2 No. of Units
b. 110 Diameter (Ft.)
c. 4 Hrs. Detention Time at Design Flow
d. Manufacturer/Type Walker Process
e. Depth (ft)

11.0 SETTLING BASINS (✓)

a. No. Basins
b. X X Size
c. [ ] Weir
d. [ ] Covered
e. [ ] Influent Baffled
f. Hrs. Detention Time at Design Flow
g. [ ] Series
h. [ ] Parallel
i. [ ] Safety Rail
j. [ ] Tube Settlers

11.1 SLUDGE REMOVAL (✓)

a. [ ] Mechanical Collectors
b. [ ] Telescoping Valve
c. [✓] Manual/Automatic (M or A)

12.0 RECARBONATION (✓)

a. 1 No. of Basins
b. 20 X 55 X 9 Reaction Basin Size
c. 35 Min. Det. Time at Design Flow
d. [ ] Coke - Oil l. [ ] Dry Ice
e. [✓] Natural Gas m. [ ] Liquid CO_2
f. [ ] Other
g. Make/Maft.
h. [ ] Conventional Burner
i. [✓] Underwater Burner
j. [✓] Diffuser
k. Comments

13.0 FILTERS RAPID SAND (✓)

a. [ ] Conventional h. [ ] Multi-Media
b. [✓] Anthrafilt Cap
c. [ ] Mangnese Greensand
SPECIFICATIONS
d. 3 No. Filters
e. 357.5 Sq. Ft. Per Filter
f. 1.9 GPM/Ft.^{2} Rate of Filtration at Design Flow
g. TYpe of Underdrain
Leopold Filters Ceramic Blocks

13. EQUIPMENT (✓)

a [✓] Rate of Flow Controls
b [✓] Loss of Head Gauges
c. [✓] Surface Sweeps

13.2 BACKWASH (✓)

a. [ ] System f. [ ] Elevated Storage
b. [✓] Clearwell
c. Pumps 6000 GPM (Rated)
d. [ ] Air Wash
e. 17 Gpm/Ft.^{2} Design Backwash Rate

13.3 PRESSURE FILTERS (✓)

a. No. of Units
b. Size Per Unit sq.ft.
a. [ ] Conventional Media
b. [ ] Mn Greensand
c. [ ] Anthrafilt
d. [ ] Vertical
e. [ ] Horizontal
f. ____ GPM/Ft.^{2} Filtration Rate at Design Flow
g. ____ GPM Backwash Rate at Design Flow
h. ____ Chemical Used for Oxidation
i. Source of Backwash Water

13.4 SLOW SAND

a. ____ No. Filters
b. ____ GPD/Ft.^{2} Rate of Filtration at Design Rate
c. ____ In. of Sand Depth-Design
d. ____ Size per Filter (ft^2)

14.0 SODIUM ION EXCHANGE

a. ____ No. Units
b. [ ] Upflow (✓)
c. Make/Mfg.
d. Media Mfg.
e. ____ Cu. Ft. Media/Unit
f. ____ Grns. Exchange/Cu. Ft.
g. ____ GPM/Ft.^{2} Flow Rate at Design Flow
h. ____ % Water Bypassed
i. ____ Lbs. Salt/1000 Grns: Hardness Removed
j. ____ Hrs. Regeneration Frequency at Design Flow
k. ____ Backwash Time-Design (Min)
l. ____ Brine Contact Time-Design (Min)
m. ____ Rinse Time-Design (Min)
n. [ ] Automatic/Manual Regeneration (M or
o. [ ] Meters (✓)
p. ____ Dry Storage Tank Size (Gal/Tons)
q. [ ] Downflow (✓)

15.0 CHLORINATION (✓)

a. 150# Cylinder Size
b. [ ] Evaporation
c. [✓] Scales
d. [✓] Test Equipment
e. [ ] Dual Feed Facilities
f. Feed Rate 20 Lb/24 hrs. at Design Flow
g. Feed Point(s) [✓] Pre [✓] Inter [✓] Post

15.1 HYPOCHLORINATION

a. Chemical Used
b. Day Tank Size Gallons
c. ____ Max. Meter Pump Capacity (GPD)
d. [ ] Test Equipment (✓)
e. Feed Point(s)

15.2 ____ CHLORINE-Contact Time (Min.) at Design Flow

15.3 CHLORINE SAFETY (✓)

a. [✓] Approved Breathing Apparatus
b. [ ] Emergency Repair Kit
c. [✓] Proper Handling Facilities
d. [✓] Personal Protection Equipment
e. [✓] Separate Chlorine Room
f. [✓] Venting
g. [✓] Cylinder Security

15.4 CHLORINE DIOXIDE

a. Manufacturer of Generator _____

b. Sodium Chlorite Solution:
Solution Strength _____%
Feeder Mfg _____
Capacity _____ Gal./Day

c. Hydrochloric Acid:
Solution Strength _____% Acid
Feeder Mfg _____
Capacity _____ Gal./Day

d. Flow Meter _____
e. Injection Point(s) _____

16.0 FLUORIDATION (✓)

a. Type of Fluoride Hydrofluosilicic Acid
b. [✓] Scales
c. [ ] Water Meter
d. 55 Day Tank Capacity (Gal.)
e. [ ] Water Softener
f. [ ] Anti-Siphon Device
g. [ ] Backflow Preventor
h. [ ] Saturator
i. ____ Pressure at Injection Points (psi)
j. ____ Rated Feeder Max. Pressure (psi)
k. Injection Point After second clarifier
l. Sampling Point Plant Tap

16.1 FLUORIDE SAFETY (✓)

a. ✓ Personal Protective Equipment
b. ✓ Shower-Eyewash
c. ✓ Venting
d. ____ Separate Feed Room

17.0 PHOSPHATES

a. Point of Application After second clarifier
b. ____ Feed Rate at Design Flow (mg/l)
c. Phosphate Used for (✓):

[✓] $CaCO_3$ [ ] Manganese
[ ] Iron [✓] Corrosion

18.0 CLEARWELL (✓)

a. No. of Clearwells 1
b. Capacity .85 MG
c. 408 Detention Time at Design Flow (Min)
d. [ ] Ground Level
e. [✓] Below Ground
f. [ ] Below Water Table
g. Clearwell Location(s) Water Plant
h. [✓] Overflow(s) Provided
i. [✓] Overflow(s) & Vent(s) Screened
j. Material of Construction Cement
k. [ ] Filter Effluent Pumped to Clearwell
l. Size of Pumps _____
m. [✓] Filter Effluent Gravity Flow to Clearwell
n. [✓] Interconnection of Clearwells

19.0 HIGH SERVICE PUMPS

Pump No.									3
Capacity (GPM)						4	2	0	0
Operator (M/A)									A
Hydrostatic Control (✓)									
Telemetering (✓)									

20.0 BOOSTER STATION

Station Name	Cl_2 (✓)	Pump Capacity (GPM) 1	2	3	4

21.0 AUXILIARY POWER (✓)

a. [ ] Two Separate Power Sources
b. [ ] Separate Electrical Substations
c. [ ] Gas Generator
d. [✓] Diesel Generator
e. [✓] Diesel/Gas Direct Pump
f. ____% Operation With Auxiliary Power
g. Facilities Operated With Emergency Power
h. Comments 100% high Service Pumping

22.0 DISTRIBUTION SYSTEM

a. <1 % Plastic
b. 5 % Ductile Iron
c. ___ Miles of Mains
d. 16" Max. Main Size
e. 89 % Cast Iron
f. 5 % Asbestos-Cement
g. [✓] Adequate (✓) Valving

23.0 SYSTEM STORAGE ( )

a. 2 Total Number of Units
b. 1.0 Total Storage (MG) Cap

Location	(MG)	Elevated	Stand-Pipe	Ground Storage

24.0 METERS (✓)

a. 100 % of System Metered
b. [✓] Plant Raw Water Meter
c. [✓] Plant Finished Water Meter
d. Comments _____

25.0 WASTE DISPOSAL

Volume of Waste Per Day at Design Flow

a. ___ Coagulation
b. ___ Lime
c. 2500# Lime-Soda
m. ___ Iron/Manganese
n. ___ Brine
o. ___ Filter Backwash

Disposal Facilities(✓)

d. [✓] Lagoon
e. [ ] Sand Filter
f. [ ] Sludge Press
g. [ ] Wastewater Treatment Plant
h. [ ] Controlled Release
i. [ ] Stream Name _____
j. [ ] Landfill
k. [✓] Land Applied
l. Comments _____