



SHEET NUMBER  
**2**  
OF 5 SHEETS  
JOB NUMBER  
SA1440

# WRF-TREATMENT PROCESS SCHEMATIC

WILD WINGS DEVELOPMENT  
YOLO COUNTY, CALIFORNIA

DATE SUBMITTED: JUNE 2001  
PREPARED FOR: WILD WINGS

# NOLTE

**B E Y O N D E N G I N E E R I N G**  
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**TABLE 4**  
**WILD WINGS WATER RECYCLING FACILITY**  
**DESIGN CRITERIA**

Parameter	Value
<b>Influent Pump Station</b>	
Type	Submersible
Effective volume	700 gallons
Pump type	Submersible grinder, single speed
Total number of pumps	3 (2 duty and 1 standby)
Pump motor horsepower, each	7.5 hp
Pump TDH	45 ft
<b>Aeration Tanks</b>	
Total number of aeration tanks	2
Daily average BOD <sub>5</sub> loading	250 lb/d
Daily average SS loading	250 lb/d
Daily average TKN loading	35 lb/d
F/M ratio	0.7 to 0.14 lb BOD <sub>5</sub> / lb MLVSS-d
Volumetric loading	10 to 21 lb BOD <sub>5</sub> / 1000ft <sup>3</sup> -d
Hydraulic detention time,	21 to 43 hours
MLSS concentration	3250+ mg/L
Aeration volume, minimum each	50000 gallons
Number of aeration air blowers	2
Aeration air supply	500+ scfm
<b>Secondary Clarifiers</b>	
Total number of clarifiers	2
Surface area, each	160 ft <sup>2</sup>
Side-water-depth	14 ft
Surface overflow rate	300 to 1000 gpd/ft <sup>2</sup>
Solids loading	9 to 20 lb/ft <sup>2</sup> -d

**TABLE 4 (CONTINUED)**  
**WILD WINGS WATER RECYCLING FACILITY**  
**DESIGN CRITERIA**

Parameter	Value
<b>Tertiary Filters</b>	
Total number of filters	2
Type of filter	Dual media
Anthracite depth	24 inches
Anthracite effective size	1.00-1.20 mm
Anthracite uniformity coefficient	1.3-1.4
Sand depth	24 inches
Sand effective size	0.55-0.60 mm
Sand uniformity coefficient	1.15-1.2
Filtration area, minimum each filter	36 ft <sup>2</sup>
Maximum filtration rate	5 gpm/ft <sup>2</sup>
Minimum backwash rate	20 gpm/ft <sup>2</sup>
Effluent turbidity	2 NTU (see Table 5)
Alum dose	20-60 mg/L
High molecular weight cationic polymer dose	1-10 mg/L
In-line static mixer, average energy (G value)	1500 s <sup>-1</sup>
In-line static mixer, average detention time	1 s
<b>Chlorine Contact Tanks</b>	
Total number of tanks	2
Volume of each tank	6350 gal
Contact time at peak dry weather flow	90 minutes
Ratio of peak dry weather flow to average flow	2.00
Minimum chlorine residual at end of basin	10 mg/L
Chlorine type	Sodium Hypochlorite

**TABLE 5**  
**ANTICIPATED FILTER INFLUENT AND EFFLUENT TURBIDITY**  
**WILD WINGS WATER RECYCLING FACILITY**

Item	Value
Settled secondary effluent turbidity (influent)	4-10 NTU
Disinfected tertiary recycled water turbidity (effluent)	24 hour average < 2 NTU 95% of value < 5 NTU No values > 10 NTU