

James A. Merciel, Jr.
Rebuttal Testimony
WR-2000-281

	Pumped to system actual		Total production actual	
7/20/91	24,628,000	2.8%	25,328,000	gpd total production including plant use water

use 23 mgd

Filters	5.6 gpm/sqft	4. gpm/sqft initial approval		
	Of each of the 6 filters, each twin (1/2 filter) dimensions are		15	25 feet
				375 sq ft
		times	12	4500 sq ft total

Filters, 6 twin filters,	4500 sq feet
at 30 mgd	4.63 gpm/sqft
1 out of service	3750 sq feet
	5.56 gpm/sqft

Filters, 6 twin filters,	4500 sq feet
at 23 mgd	3.55 gpm/sqft
1 out of service	3750 sq feet
	4.26 gpm/sqft

Schedule KKB-3.1

St. Joseph Plant
Recommended Excess Capacity Disallowance

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Wellfield

7 vertical wells 2650 gpm capacity of each vertical well
3 horiz pumps 4650 gpm capacity of each horizontal well pump

Run 6 wells
 2 horizontals
Produces 25200 gpm 36.3 mgd

Run 4 wells
 2 horizontals
Produces 19900 gpm 28.7 mgd

Run 4 wells
 1 horizontals
Produces 15250 gpm 22.0 mgd

Run 5 wells
 0 horizontals
Produces 13250 gpm 19.1 mgd

TWO VERTICAL WELLS MAY BE DISALLOWED FOR EXCESS CAPACITY

Vertical wells, total \$ 675,000 7 wells
(rounded up to account for \$ 96,429 each
electrical, controls, pipe, etc.

2 wells \$ 192,857

Estimated cost - well pumps \$ 800,000

7 300 \$ 22,222 cost per 100 hp
3 500

600 hp disallowance \$ 133,333

Distributive Pumps

1 200hp	5560 gpm	8.0
2 300hp	9730 gpm	14.0
3 200hp	5560 gpm	8.0
4 300hp	9730 gpm	14.0

observed flows

calculated flows:	3 and 4	22.0	21.2 mgd 3 and 4
	1, 2 and 3	30.0	28.6 mgd with 1,2,3
	1 and 3	16.0	
	2 and 4	28.0	

ONE 200 HP MAY BE DISALLOWED IF THE REMAINING 200 HP WERE REPLACED WITH A 300 HP

Using the same cost as well pumps,

100 hp disallowance

\$ 22,222

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Clearwell

30 mgd	23 mgd
611000 CT	468433 CT
341600 wash	250000 wash
48000 plant	48000 plant
900000 eq	690000 eq

1,900,600 gallons

1,456,433 gallons

say two
instead of two

750,000 units
1,000,000 units
500,000 gallon disallowance

At a cost of \$ 1.00 per gallon \$ 500,000

Clarifiers

1 gpm/sqft		
90 minutes detention		
105 feet diamter	22 feet water depth	
3.5 feet dia center column		
8649 settling area each	1,423,343 gallon volume each	
30 MGD		
3 in service	0.80 gpm per sqft	205 minutes detention
2 in service	1.20 gpm per sqft	137 minutes detention
23 MGD		
2 in service	0.92 gpm per sqft	178 minutes detention
1 in service	1.85 gpm per sqft	89 minutes detention

ONE CLARIFIER COULD BE DISALLOWED FOR EXCESS CAPACITY

At a cost of \$ 1.00 per gallon \$ 1,423,343

TOTAL RECOMMENDED EXCESS CAPACITY DISALLOWANCE \$ 2,271,756