

## ATTACHMENT 4

### Table 1 – Presidio Recycled Water Treatment Plant Design Criteria

| Item   | Units               | Phase 1           | Phase 2    |
|--|---------------------|-------------------|------------|
| <b>1. RAW WATER</b>  |                     |                   |            |
| <b>A. Plant Flow Rate</b>  |                     |                   |            |
| Average Day – Summer   | GPD                 | 200,000           | 500,000    |
| Average Day – Winter   | GPD                 | 0 – 30,000        | 0 – 30,000 |
| Peaking Factor   | –                   | 1.5               | 1.2        |
| Peak 8-Hour Flow Rate  | GPD                 | 300,000           | 600,000    |
| <b>B. Water Quality Parameters</b>   |                     |                   |            |
| <b>BOD<sub>5</sub></b>   |                     |                   |            |
| Influent   | mg/L                | 220               | 260        |
| Effluent   | mg/L                | 10                | 10         |
| <b>TSS</b>   |                     |                   |            |
| Influent   | mg/L                | 490               | 490        |
| Effluent   | mg/L                | 10                | 10         |
| <b>Nitrogen</b>  |                     |                   |            |
| Influent   | mg/L                | 70                | 70         |
| Effluent   | mg/L                | <10               | <10        |
| <b>Phosphorus</b>  |                     |                   |            |
| Influent   | mg/L                | 9                 | 9          |
| Effluent   | mg/L                | < 10 <sup>1</sup> | <10        |
| <b>2. ROTARY FINE SCREEN</b>   |                     |                   |            |
| Number   | number              | 1                 | 2          |
| Maximum Flow Rate (Total)  | gpd                 | 300,000           | 600,000    |
| Opening Size <sup>2</sup>  | mm                  | 2                 | 2          |
| <b>3. ANOXIC-AEROBIC TANKS</b>   |                     |                   |            |
| Tanks <sup>2</sup>   | number              | 2                 | 3          |
| Compartments per Tanks <sup>2</sup>  | number              | 2                 | 2          |
| Total Volume <sup>2</sup>  | gallons             | 143,000           | 214,500    |
| Hydraulic Retention Time @ 200,000<br>gpd Phase 1/500,000 gpd Phase 2 <sup>2</sup> | hours               | 17.9              | 10.7       |
| Sludge Retention Time (SRT) <sup>2</sup>   | days                | 38                | 23         |
| Design MLSS <sup>2</sup>   | mg/l                | 10,000            | 10,000     |
| <b>4. ULTRAFILTER MEMBRANES</b>  |                     |                   |            |
| Pore Size <sup>2</sup>   | micron              | 0.1 to 0.4        | 0.1 to 0.4 |
| Flux Rate (max) <sup>2</sup>   | gfd                 | 20                | 20         |
| <b>6. UV DISINFECTION</b>  |                     |                   |            |
| UV Transmittance   | %                   | 65                | 65         |
| Design Dose  | mJ/cm <sup>2</sup>  | 80                | 80         |
| Number of Trains   | number <sup>2</sup> | 2                 | 4          |
| Number of Reactors per Train   | number <sup>2</sup> | 2                 | 2          |
| Operation  | –                   | Parallel          | Parallel   |
| Flow per Reactor at Design Flow  | MGD                 | 0.3               | 0.6        |
| Redundancy   | percent             | 100               | 100        |
| <b>7. SODIUM HYPOCHLORITE STORAGE AND FEED SYSTEMS</b>                             |                     |                   |            |
| Typical Dosage – Avg./Max. <sup>3</sup>  | Mg/L                | 3.5/5             | 3.5/5      |
| Maximum Dosage – Avg./Max. <sup>3</sup>  | Mg/L                | 5/20              | 5/20       |
| Typical Use – Avg./Max.  | ppd                 | 7.8/18.7          | 19.5/37.3  |
| Feed Pump  | number              | 2                 | 3          |
| Capacity (each)  | gallons/hour        | 0.03 – 1.3        | 0.2 – 1.3  |
| Storage  | gallons             | 350               | 700        |
| Supply at Avg. Dose/ Avg. Flow <sup>4</sup>  | days                | 42                | 34         |
| Supply at Avg. Dose/ Max. Flow <sup>4</sup>  | days                | 21                | 17         |

<sup>1</sup> Expected values with normal biotreatment.

<sup>2</sup> Criteria determined by MBR manufacturer, range given represents range of manufacturer valves.

<sup>3</sup> Typical dosage for disinfection residual will be standard, maximum dosage will only be periodically used for odor suppression, filamentous organism suppression, and bioslime prevention. Backup pump(s) will be used to provide the maximum dosage.

<sup>4</sup> Assumes 95 percent of tank volume is usable.