

# System Performance Data Sheet

## Project: To'Hajiilee School

This System Performance Sheet records test results from effluent samples taken at key points throughout the wastewater treatment system.

In addition, here are some quick system facts and a legend for the wastewater characteristics. See the flow configuration below.

### Quick Facts

**Building / Facilities:** School  
**Occupants:**  
**Start-up:** July-08  
**Location:** Canonicito, NM  
**Designer / Engineer:** Planetary Engineers  
**Contractor / Installer:** Saigon Construction  
**Service Provider:** Planetary Engineers  
**Regulating Authority:** NM Dept. of Health  
**Design Flows (gpd):** 8,000  
**Grease Tank (gal):** 5,000  
**Septic Tank (gal):** 25,000  
**Recirc. Tank (gal):** 25,000  
**# of Filter Pods:** 4  
**Filter Type:** AX100  
**Disinfection:**  
**System Configuration:** Enhanced Denitrification (Large Rec. Tank)  
**Disposal Treatment System:** Drip  
  
**# of Samples:** 17

Average Loading Rate (gpd/ft<sup>2</sup>): 10.04

Notes:

### Legend

BOD<sub>5</sub>: Biochemical Oxygen Demand (5 day, uninhibited)  
 cBOD<sub>5</sub>: Carbonaceous Biochemical Oxygen Demand (5 day, inhibited)  
 TSS: Total Suspended Solids  
 TKN: Total Kjeldahl-Nitrogen (Organic and Ammonia Nitrogen)  
 NH<sub>3</sub>-n: Ammonia-Nitrogen  
 TON: Total Organic Nitrogen  
 NO<sub>2</sub>-n: Nitrite-Nitrogen  
 NO<sub>3</sub>-n: Nitrate-Nitrogen  
 NO<sub>x</sub>-n: NO<sub>2</sub>-n + NO<sub>3</sub>-n  
 TN: Total Nitrogen = (TKN) + (NO<sub>2</sub>-n) + (NO<sub>3</sub>-n)  
 DO: Dissolved Oxygen  
 pH: Measure of acidity, 7 is neutral. Wastewater w/value <6 or >9 are difficult to treat biologically  
 Cl: Chloride  
 Alk: Alkalinity  
 TP: Total Phosphorus  
 OP: Ortho Phosphorus  
 G&O: Grease and Oil  
 FC: Fecal Coliform  
  
 (>) Numbers shown in italics were actually reported as greater than  
 Numbers shaded were actually reported as less than  
**Bold** Non-Detect. Entered detection limit value

| PT Settings:        |  |
|---------------------|--|
| Pumps               |  |
| Alt                 |  |
| Q <sub>ave</sub> =  |  |
| R <sub>b</sub> :R = |  |
| T <sub>ON</sub> =   |  |
| T <sub>OFF</sub> =  |  |
| T <sub>OFF</sub> =  |  |

| Sample Date    | Test Type | Flow (GPD)  |                 |
|----------------|-----------|-------------|-----------------|
|                |           | Daily       | Monthly Average |
| 9/23/08        |           | 4047        | 3738            |
| 10/25/08       |           | 422         | 5015            |
| 12/10/08       |           | 7091        | 4089            |
| 1/8/09         |           | 6954        | 3693            |
| 2/13/09        |           | 6206        | 5295            |
| 3/12/09        |           | 7494        | 4017            |
| 4/23/09        |           | 2948        | 4378            |
| 5/16/09        |           | 632         | 1951            |
| 6/25/09        |           | 1897        | 657             |
| 8/13/09        |           | 841         | 2264            |
| 10/1/09        |           | 3369        | 3176            |
| 12/17/09       |           | 4967        | 2458            |
| 1/20/10        |           | 4216        | 2659            |
| 2/22/10        |           | 4848        | 3275            |
| 3/24/10        |           | 7375        | 3007            |
| 4/26/10        |           | 756         | 3738            |
| 5/11/10        |           | 4215        | 4939            |
| <b>Average</b> |           | <b>4016</b> | <b>3432</b>     |

| Septic Tank Effluent (SP1) |      |             |      |             |                    |     |                    |                    |                    |             |            |         |      |            |            |      |      |           |
|----------------------------|------|-------------|------|-------------|--------------------|-----|--------------------|--------------------|--------------------|-------------|------------|---------|------|------------|------------|------|------|-----------|
| BOD <sub>5</sub>           | COD  | TSS         | TURB | TKN         | NH <sub>3</sub> -N | TON | NO <sub>2</sub> -N | NO <sub>3</sub> -N | NO <sub>x</sub> -N | TN          | pH         | Temp    | G&O  | Cl         | Alk        | TP   | OP   | FC        |
| mg/L                       | mg/L | mg/L        | NTU  | mg/L        | mg/L               |     | mg/L               | mg/L               | mg/L               | mg/L        |            | celsius | mg/L | mg/L       | mg/L       | mg/L | mg/L | mpn/100ml |
| 190                        |      | 60          |      | 53          |                    |     |                    |                    |                    | 53          | 7.27       |         |      |            | 650        |      |      |           |
|                            |      |             |      | 58          |                    |     |                    |                    |                    | 58          |            |         |      |            | 690        |      |      |           |
|                            |      |             |      | 90          |                    |     |                    |                    | <b>0.50</b>        | 90.5        |            |         |      | 150        | 540        |      |      |           |
| 227                        |      | 17          |      | 52          |                    |     | <b>0.1</b>         | <b>0.1</b>         |                    | 52.2        | 7.19       |         |      |            | 540        |      |      |           |
|                            |      |             |      | 77          |                    |     | <b>0.1</b>         | <b>0.1</b>         |                    | 77.2        | 7.37       |         |      |            | 480        |      |      |           |
| 314                        |      |             |      | 62          |                    |     | <b>0.1</b>         | <b>0.1</b>         |                    | 62.1        | 7.45       |         |      |            | 510        |      |      |           |
|                            |      |             |      | 92          |                    |     | <b>0.50</b>        | <b>0.50</b>        |                    | 93.0        | 7.30       |         |      |            | 690        |      |      |           |
|                            |      |             |      | 95          |                    |     |                    | <b>0.1</b>         |                    | 95.1        | 7.47       |         |      |            | 800        |      |      |           |
| 186                        |      | 30          |      | 83          |                    |     | <b>0.50</b>        | <b>0.50</b>        |                    | 84.0        | 7.69       |         |      |            | 770        |      |      |           |
|                            |      |             |      | 89          |                    |     |                    | <b>0.10</b>        |                    | 89.1        | 6.87       |         |      |            | 550        |      |      |           |
| 668                        |      | 140         |      | 97          |                    |     | <b>0.50</b>        | <b>0.50</b>        |                    | 98          | 7.47       |         |      |            | 820        |      |      |           |
|                            |      |             |      | 90          |                    |     |                    |                    |                    | 90          | 7.54       |         |      |            | 720        |      |      |           |
| 435                        |      | 50          |      | 97          |                    |     | <b>0.50</b>        | <b>0.50</b>        |                    | 98          | 7.44       |         |      |            | 690        |      |      |           |
|                            |      |             |      | 88          |                    |     |                    | <b>0.10</b>        |                    | 88.1        | 7.31       |         |      |            | 650        |      |      |           |
|                            |      |             |      | 66          |                    |     |                    | <b>0.10</b>        |                    | 66.1        | 7.34       |         |      |            | 580        |      |      |           |
| 1250                       |      |             |      | 96          |                    |     |                    | <b>0.1</b>         |                    | 96.1        | 7.03       |         |      |            | 630        |      |      |           |
|                            |      |             |      | 100         |                    |     | <b>0.5</b>         | <b>0.5</b>         |                    | 101         | 7.19       |         |      |            | 700        |      |      |           |
| <b>467</b>                 |      | <b>59.4</b> |      | <b>81.5</b> |                    |     | <b>0.4</b>         | <b>0.3</b>         |                    | <b>81.9</b> | <b>7.3</b> |         |      | <b>150</b> | <b>648</b> |      |      |           |

| AdvanTex Filtrate (SP2) |      |             |      |            |                    |     |                    |                    |                    |             |            |         |      |      |            |      |      |           |                        |                            |                   |
|-------------------------|------|-------------|------|------------|--------------------|-----|--------------------|--------------------|--------------------|-------------|------------|---------|------|------|------------|------|------|-----------|------------------------|----------------------------|-------------------|
| BOD <sub>5</sub>        | COD  | TSS         | TURB | TKN        | NH <sub>3</sub> -N | TON | NO <sub>2</sub> -N | NO <sub>3</sub> -N | NO <sub>x</sub> -N | TN          | pH         | Temp    | G&O  | Cl   | Alk        | TP   | OP   | FC        | HLR                    | OLR                        | R <sub>b</sub> :R |
| mg/L                    | mg/L | mg/L        | NTU  | mg/L       | mg/L               |     | mg/L               | mg/L               | mg/L               | mg/L        |            | celsius | mg/L | mg/L | mg/L       | mg/L | mg/L | mpn/100ml | (gpd/ft <sup>2</sup> ) | (lbs/ft <sup>2</sup> /day) | actual            |
| 8                       |      | 10          |      | 9.9        |                    |     |                    |                    |                    | 8.1         | 18.0       | 7.57    |      |      | 220        |      |      |           | 10.7                   | 0.02                       |                   |
|                         |      |             |      | 3.6        |                    |     |                    |                    |                    | 8.2         | 11.8       |         |      |      | 180        |      |      |           | 14.3                   |                            |                   |
|                         |      |             |      | 5.5        |                    |     |                    |                    | 6.0                |             | 11.5       |         |      |      | 210        |      |      |           | 11.7                   |                            |                   |
| 10                      |      | 10          |      | 4.2        |                    |     | 1.1                | 12                 |                    | 17.3        | 7.68       |         |      | 160  | 180        |      |      |           | 10.6                   | 0.02                       |                   |
|                         |      |             |      | 6.2        |                    |     | 0.97               | 11                 |                    | 18.2        | 7.62       |         |      |      | 210        |      |      |           | 15.1                   |                            |                   |
| 12                      |      |             |      | 7.1        |                    |     | 0.5                | 9.7                |                    | 17.3        | 7.76       |         |      |      | 240        |      |      |           | 11.5                   | 0.03                       |                   |
|                         |      |             |      | 4.6        |                    |     | <b>0.5</b>         | 8.7                |                    | 13.8        | 7.76       |         |      |      | 220        |      |      |           | 12.5                   |                            |                   |
|                         |      |             |      | 7.6        |                    |     |                    | 9.7                |                    | 17.3        | 8.06       |         |      |      | 280        |      |      |           | 5.6                    |                            |                   |
| 15                      |      | 10          |      | 5.0        |                    |     | 2.2                | 22                 |                    | 29.2        | 7.97       |         |      |      | 240        |      |      |           | 1.9                    | 0.00                       |                   |
|                         |      |             |      | 7.0        |                    |     | 1.8                | 13                 |                    | 21.8        | 7.97       |         |      |      | 280        |      |      |           | 6.5                    |                            |                   |
| 23                      |      | 10          |      | 2.5        |                    |     | 2.9                | 17                 |                    | 22.4        | 7.81       |         |      |      | 210        |      |      |           | 9.1                    | 0.05                       |                   |
|                         |      |             |      | 2.0        |                    |     | 0.61               | 11                 |                    | 13.6        | 7.78       |         |      |      | 230        |      |      |           | 7.0                    |                            |                   |
| 10                      |      | 10          |      | 3.1        |                    |     |                    | 12                 |                    | 15.1        | 7.87       |         |      |      | 240        |      |      |           | 7.6                    | 0.03                       |                   |
|                         |      |             |      | 3.4        |                    |     |                    | 14                 |                    | 17.4        | 7.55       |         |      |      | 200        |      |      |           | 9.4                    |                            |                   |
|                         |      |             |      | 17         |                    |     |                    | 15                 |                    | 32.0        | 7.75       |         |      |      | 260        |      |      |           | 8.6                    |                            |                   |
| 45                      |      |             |      | 3.4        |                    |     |                    | 11                 |                    | 14.4        | 7.66       |         |      |      | 190        |      |      |           | 10.7                   | 0.11                       |                   |
|                         |      |             |      | 5.9        |                    |     |                    | 13                 |                    | 18.9        | 7.62       |         |      |      | 200        |      |      |           | 14.1                   |                            |                   |
| <b>17.5</b>             |      | <b>10.0</b> |      | <b>5.8</b> |                    |     | <b>1.3</b>         |                    | <b>8.2</b>         | <b>18.2</b> | <b>7.8</b> |         |      |      | <b>223</b> |      |      |           | <b>9.8</b>             | <b>0.037</b>               |                   |