

**Table C1. NH/ME source species database  
for analyzing Palmer River water sample ribotypes.**

| Species         | Ribotypes | Species                   | Ribotypes |
|-----------------|-----------|---------------------------|-----------|
| <b>Pets</b>     |           | <b>Livestock/chickens</b> |           |
| Cat             | 11        | Alpaca                    | 3         |
| Dog             | 28        | Buffalo                   | 9         |
| <b>Humans</b>   |           | Chicken                   | 3         |
| Human           | 65        | Cow                       | 72        |
| Septage         | 16        | Goat                      | 4         |
| Wastewater      | 120       | Horse                     | 28        |
| <b>Wildlife</b> |           | Pig                       | 16        |
| Coyote          | 29        | Sheep                     | 2         |
| Deer            | 92        | <b>Birds</b>              |           |
| Mouse           | 2         | Cormorant                 | 12        |
| Muskrat         | 12        | Duck                      | 15        |
| Otter           | 14        | Goose                     | 39        |
| Rabbit          | 27        | Pigeon                    | 5         |
| Raccoon         | 83        | Robin                     | 4         |
| Red Fox         | 27        | Seagull                   | 29        |
| Skunk           | 5         | Sparrow                   | 3         |
|                 |           | Starling                  | 3         |
| TOTAL           |           | 785                       |           |
| Species         |           | 30                        |           |

**Table C2. Yield of identifiable ribotype patterns from Palmer River area riverwater sample and source species *E. coli* isolates.**  
**River area riverwater sample and source species *E. coli* isolates.**

**River isolates**

| Date              | <i>E. coli</i> | Total     | Usable    | Ribotype    | Different |
|-------------------|----------------|-----------|-----------|-------------|-----------|
| Site              | cfu/100 ml     | isolates  | ribotypes | success     | ribotypes |
| <b>11/2/2002</b>  |                |           |           |             |           |
| CR03              | 3900           | 10        | 10        | 100%        | 9         |
| FB02              | 80000          | 10        | 10        | 100%        | 9         |
|                   | Total:         | 20        | 20        | 100%        | 18        |
|                   |                |           |           |             |           |
| <b>11/11/2002</b> |                |           |           |             |           |
| FB02              | 230000         | 10        | 10        | 100%        | 7         |
| BL01              | 580            | 10        | 10        | 100%        | 4         |
| PM25              | 150            | 10        | 10        | 100%        | 9         |
| TC01              | 13             | 10        | 10        | 100%        | 9         |
| RR06              | 23             | 10        | 10        | 100%        | 10        |
|                   | Total:         | 50        | 50        | 100%        | 39        |
| <b>Overall</b>    |                | <b>70</b> | <b>70</b> | <b>100%</b> | <b>57</b> |

**Palmer River source species isolates**

| Date              | Total     | Usable    | Ribotype    | Different |
|-------------------|-----------|-----------|-------------|-----------|
| Site              | isolates  | ribotypes | success     | ribotypes |
| <b>11/18/2002</b> |           |           |             |           |
| <b>Cows</b>       |           |           |             |           |
| TC01              | 6         | 6         | 100%        | 5         |
| PM25              | 10        | 10        | 100%        | 8         |
| <b>Pigs</b>       | 16        | 16        | 100%        | 6         |
| <b>Humans</b>     | 16        | 16        | 100%        | 14        |
| <b>Overall</b>    | <b>52</b> | <b>48</b> | <b>100%</b> | <b>33</b> |

**Table C3. Yield of identifiable source species from Palmer River (PR) *E. coli* isolates.**

| Date<br>(Weather)   | Total    | PR source species database      |      |                                            | Regional source species (multiple) database |                |      |     |       | Overall |        |
|---------------------|----------|---------------------------------|------|--------------------------------------------|---------------------------------------------|----------------|------|-----|-------|---------|--------|
|                     |          | Palmer Rvr. isolates identified |      | # of isolates<br>not ID'd by<br>local D.B. | # of<br>isolatesID'd<br>by Regional<br>D.B  | Source species |      |     |       |         |        |
|                     |          | Total                           | %    |                                            |                                             | cow            | deer | dog | horse |         | rabbit |
| Site                | isolates | ≥90%                            | ≥90% |                                            |                                             |                |      |     |       |         | % ID   |
| 11/2/2002<br>(Dry)  |          |                                 |      |                                            |                                             |                |      |     |       |         |        |
| CR03                | 10       | 4                               | 40%  | 6                                          | 1                                           | 1              |      |     |       |         | 50%    |
| FB02                | 10       | 3                               | 30%  | 7                                          | 2                                           |                |      |     | 2     |         | 50%    |
| total               | 20       | 7                               | 35%  | 13                                         | 3                                           | 1              | 0    | 0   | 2     | 0       | 50%    |
|                     |          |                                 |      |                                            |                                             |                |      |     |       |         |        |
| 11/11/2002<br>(Wet) |          |                                 |      |                                            |                                             |                |      |     |       |         |        |
| FB02                | 10       | 7                               | 70%  | 3                                          | 1                                           |                |      |     | 1     |         | 80%    |
| BL01                | 10       | 5                               | 50%  | 5                                          | 0                                           |                |      |     |       |         | 50%    |
| PM25                | 10       | 3                               | 30%  | 7                                          | 3                                           |                | 1    | 1   |       | 1       | 60%    |
| TC01                | 10       | 5                               | 50%  | 5                                          | 0                                           |                |      |     |       |         | 50%    |
| RR06                | 10       | 5                               | 50%  | 5                                          | 1                                           |                |      | 1   |       |         | 60%    |
| total               | 50       | 25                              | 50%  | 25                                         | 5                                           | 0              | 1    | 2   | 1     | 1       | 60%    |
|                     |          |                                 |      |                                            |                                             |                |      |     |       |         |        |
| Overall             | 70       | 32                              | 46%  | 38                                         | 8                                           | 1              | 1    | 2   | 3     | 1       | 57%    |

**Table C4. Ribotyping identification of source species and during wet and dry weather conditions at all sites.**

***Individual Site Results***

|                |    | % of Isolates identified |      |        |                | Total | Unidentified* |
|----------------|----|--------------------------|------|--------|----------------|-------|---------------|
| Total isolates |    | Cows                     | Pigs | Humans | Other species† |       |               |
| CR03 (dry)     | 10 | 20%                      | 30%  | 0%     | 0%             | 50%   | 50%           |
| FB02 (dry)     | 10 | 10%                      | 20%  | 0%     | 20%            | 50%   | 50%           |
| FB02 (wet)     | 10 | 40%                      | 20%  | 10%    | 10%            | 80%   | 20%           |
| BL01 (wet)     | 10 | 10%                      | 40%  | 0%     | 0%             | 50%   | 50%           |
| PM25 (wet)     | 10 | 0%                       | 30%  | 0%     | 30%            | 60%   | 40%           |
| TC01 (wet)     | 10 | 30%                      | 20%  | 0%     | 0%             | 50%   | 50%           |
| RR06 (wet)     | 10 | 20%                      | 20%  | 10%    | 10%            | 50%   | 50%           |

***Total for All Sites***

|                |           | % of Isolates identified |            |           |                | Total      | Unidentified* |
|----------------|-----------|--------------------------|------------|-----------|----------------|------------|---------------|
| Total isolates |           | Cows                     | Pigs       | Humans    | Other species† |            |               |
| Dry            | 20        | 10%                      | 25%        | 0%        | 15%            | 50%        | 50%           |
| Wet            | 50        | 20%                      | 26%        | 4%        | 10%            | 60%        | 40%           |
| <b>Overall</b> | <b>70</b> | <b>17%</b>               | <b>26%</b> | <b>3%</b> | <b>11%</b>     | <b>57%</b> | <b>43%</b>    |

†Other species include dogs, deer, horses and rabbits.

\*Unassigned using the 90% and 95% similarity indices described herein.

Note: All the isolates identified as originating from cows, pigs, or humans were matched to the local source species database with the exception of one cow-identified isolate (matched to the UNH regional database).

**Table C5. Ribotype numbers for *E. coli* strains isolated from Palmer River and identified as being from local cow feces.**

| Date<br>(Weather)<br>Site | # of identified<br>isolates from<br>Palmer R. cows | Cow source ribotype # |   |   |      |      |       |        |     |   |       |   |   |
|---------------------------|----------------------------------------------------|-----------------------|---|---|------|------|-------|--------|-----|---|-------|---|---|
|                           |                                                    | TC01-#                |   |   |      |      |       | PM25-# |     |   |       |   |   |
|                           |                                                    | 3                     | 5 | 8 | 2&4* | 5&8* | Total | %      | 3   | 5 | Total | % |   |
| 11/2/2002<br>(Dry)        |                                                    |                       |   |   |      |      |       |        |     |   |       |   |   |
| CR03                      | 1                                                  | 1                     |   |   |      |      |       | 1      | 100 |   |       | 0 | 0 |
| FB02                      | 1                                                  | 1                     |   |   |      |      |       | 1      | 100 |   |       | 0 | 0 |
| total                     | 2                                                  | 0                     | 1 | 1 | 0    | 0    | 2     | 100    | 0   | 0 | 0     | 0 |   |
| 11/11/2002<br>(Wet)       |                                                    |                       |   |   |      |      |       |        |     |   |       |   |   |
| FB02                      | 4                                                  | 3                     | 1 |   |      |      | 4     | 100    |     |   | 0     | 0 |   |
| BL01                      | 1                                                  | 1                     |   |   |      |      |       | 1      | 100 |   |       | 0 | 0 |
| PM25                      | 0                                                  |                       |   |   |      |      |       | 0      | -   |   |       | 0 | - |
| TC01                      | 3                                                  | 2                     |   |   |      |      |       | 3      | 100 |   |       | 0 | 0 |
| RR06                      | 2                                                  | 1                     |   |   |      |      |       | 2      | 100 |   |       | 0 | 0 |
| total                     | 10                                                 | 3                     | 2 | 2 | 1    | 2    | 10    | 100    | 0   |   | 0     | 0 |   |
| Overall                   | 12                                                 | 3                     | 3 | 3 | 1    | 2    | 12    | 100    | 0   | 0 | 0     | 0 |   |

\*Ribotype patterns for TC01-2&4 are the same; TC01-5&8 were similar at 87.5%.

**Table C6. Bacteria Concentrations in Water Samples Collected from the Palmer River Watershed used for DNA Ribotyping, November 2002.**

| <b>Site Number</b> | <b>Weather Conditions</b> | <b>Collection date</b> | <b>Fecal Coliform per 100ml</b> | <b>E.Coli per 100ml</b> |
|--------------------|---------------------------|------------------------|---------------------------------|-------------------------|
| FB02               | Dry                       | 11/1/2002              | 86,000                          | 80,000                  |
| FB02               | Wet                       | 11/11/2002             | 230,000                         | 230,000                 |
| CR03               | Dry                       | 11/1/2002              | 4,700                           | 3,900                   |
| BL01               | Wet                       | 11/11/2002             | 580                             | 580                     |
| TC01               | Wet                       | 11/11/2002             | 13                              | 13                      |
| RR06               | Wet                       | 11/11/2002             | 23                              | 23                      |
| PM25               | Wet                       | 11/11/2002             | 150                             | 150                     |