

## Additional file 1

### a. Calculation method 1:

Calculation of 3-month rolling average

```
calculate_rolling_mean {  
    prev_means = monthly geometric mean from this month and previous two  
    consecutive months  
  
    if (length(prev_recordings) < 3) { # early in the data or after a gap in supply  
        rolling_mean = NA  
    } else {  
        rolling_mean = geometric_mean(prev_means)  
    }  
}
```

### b. Calculation method 2:

```
calculate_rolling_mean{  
    prev_recordings = all SCC results (taken at the same time as a volume recording)  
    from this month and previous two consecutive months  
    if (prev_recordings does not include results from 3 consecutive months) {  
        rolling_mean = NA  
    } else {  
        rolling_mean = geometric_mean(prev_recordings)  
    }  
}
```

Calculation of herd eligibility to supply (applicable to both methods of rolling mean calculation):

```
calculate_supplier_status {  
    prev_means = rolling geometric mean from previous four months # = {rolling mean  
    from current_month -4, -3, -2, -1}  
  
    if (length(prev_means) < 4) { # Any breaks occurring in the monthly rolling means  
        status = "incalculable"  
    }
```

```
} else if (most recent month in prev_means <= 400000) {  
    status = "compliant"  
} else if (any earlier month <= 400000) {  
    status = "warning"  
} else { # All previous means from recent months are too high  
    status = "liable for suspension"  
}  
}
```