

# ANNEXURE I

## Groundwater Recharge Estimation as per GEC-2015

The net recharge component of vulnerability assessment was estimated using the GEC-2015 methodology which includes recharge sources such as rainfall, canal seepage, surface water and groundwater irrigation, infiltration from ponds, tanks and water conservation structures. The rainfall recharge of monsoon season is calculated considering the percent deviation between water level fluctuation and infiltration factor methods. Followings are the governing equations of below mentioned sources.

### Rainfall Recharge

#### 1) Groundwater Level Fluctuation method

$$R_{rf} = h * S_y * A - R_C - R_{SWI} - R_{GWI} - R_{TP} - R_{WCS} \quad (16)$$

Where,  $R_{rf}$  = rainfall recharge,  $h$  = seasonal rise in water level,  $A$  = area for computation of recharge,  $S_y$  = specific yield,  $R_c$  = recharge from canal seepage,  $R_{SWI}$  = recharge from surface water irrigation,  $R_{GWI}$  = recharge from ground water irrigation,  $R_{TP}$  = recharge from tanks-ponds,  $R_{WCS}$  = recharge from water conservation structures

#### 2) Rainfall Infiltration Factor method

$$R_{rf} = RFIF * A * (R - a)/1000 \quad (17)$$

Where,  $R_{rf}$  = rainfall recharge in ham,  $A$  = area in hectares,  $RFIF$  = rainfall infiltration factor,  $R$  = rainfall in mm,  $a$  = minimum threshold value above which rainfall induces ground water recharge in mm

#### 3) Percent Deviation

$$PD = \left[ \frac{R_{rf}(\text{normal, wlf}) - R_{rf}(\text{normal, rif})}{R_{rf}(\text{normal, rif})} \right] * 100 \quad (18)$$

Where,  $PD$  = percent deviation,  $R_{rf}(\text{normal, wlf})$  = rainfall recharge for normal monsoon rainfall computed from water level fluctuation method,  $R_{rf}(\text{normal, rif})$  = rainfall recharge for normal monsoon rainfall computed from rainfall infiltration factor method.

For PD greater than or equal to -20%, and less than or equal to +20%,  $R_{rf}$  (normal, wlf) is adopted. For PD less than -20%,  $0.8 * R_{rf}$  (normal, rif) is adopted. For PD greater than +20%,  $1.2 * R_{rf}$  (normal, rif) is adopted.

## **Recharge from other sources**

### **1) Recharge from Canals**

$$R_C = WA * SF * Days \quad (19)$$

Where,  $R_C$  = recharge from canals, WA = wetted area, SF = seepage factor,

Days = number of canal running days

### **2) Recharge from Surface Water Irrigation**

$$R_{SWI} = AD * Days * RFF \quad (20)$$

Where,  $R_{SWI}$  = recharge from surface water irrigation, AD = average discharge,

Days = number of days water is discharged to fields, RFF = return flow factor

### **3) Recharge from Ground Water Irrigation**

$$R_{GWI} = GE_{IRR} * RFF \quad (21)$$

Where,  $R_{GWI}$  = recharge from groundwater irrigation,  $GE_{IRR}$  = groundwater extraction for irrigation, RFF = return flow factor

### **4) Recharge from Tanks and Ponds**

$$R_{TP} = AWSA * N * RF \quad (22)$$

Where,  $R_{TP}$  = recharge from tanks & ponds, AWSA = average water spread area,

N = number of days water is available in the tank/pond, RF = recharge factor

### **5) Recharge from Water Conservation Structures**

$$R_{WCS} = GS * RF \quad (23)$$

Where,  $R_{WCS}$  = recharge from water conservation structures, GS = gross storage,

RF = recharge factor

The tables provided below show calculations for groundwater recharge.

**Table 1: Groundwater recharge (inch) from canals pre and post monsoon seasons**

| Sr. | Canal Name           | Block    | Latitude | Longitude | Pre-Rch | Post-Rch. |
|-----|----------------------|----------|----------|-----------|---------|-----------|
| 1   | Narmada-Main (Start) | Kalol    | 22.5633  | 73.4128   | 2.49    | 2.08      |
| 2   | Narmada-Main (End)   | Kalol    | 22.6396  | 73.4259   | 2.49    | 2.08      |
| 3   | Nehra-Br (Start)     | Kalol    | 22.6176  | 73.4329   | 2.49    | 0.00      |
| 4   | Nehra-Br (End)       | Kalol    | 22.6454  | 73.3892   | 2.49    | 0.00      |
| 5   | Zumkha-Br (Start)    | Kalol    | 22.5840  | 73.4190   | 2.49    | 0.00      |
| 6   | Zumkha-Br (End)      | Kalol    | 22.6220  | 73.3460   | 2.49    | 0.00      |
| 7   | Desar-Br (Start)     | Savli    | 22.7490  | 73.3400   | 2.49    | 0.00      |
| 8   | Desar-Br (End)       | Savli    | 22.7320  | 73.3010   | 2.49    | 0.00      |
| 9   | Sakarda-Br (Part -1) | Savli    | 22.5960  | 73.2460   | 2.49    | 0.00      |
| 10  | Sakarda-Br (Part-2)  | Savli    | 22.5210  | 73.1640   | 2.49    | 0.00      |
| 11  | Ranoli (Start)       | Vadodara | 22.4530  | 73.1870   | 2.49    | 0.00      |
| 12  | Ranoli (End)         | Vadodara | 22.4190  | 73.1450   | 2.49    | 0.00      |
| 13  | Vadodara-Br (Start)  | Vadodara | 22.3480  | 73.2090   | 2.49    | 2.08      |
| 14  | Vadodara-Br (End)    | Vadodara | 22.3320  | 73.0980   | 2.49    | 2.08      |
| 15  | Vadodara-Br (Start)  | Padra    | 22.2800  | 73.0810   | 2.49    | 0.00      |
| 16  | Vadodara-Br (End)    | Padra    | 22.1730  | 72.9410   | 2.49    | 0.00      |
| 17  | Vadodara-Br (Start)  | Jambusar | 22.1570  | 72.8790   | 2.49    | 0.00      |
| 18  | Vadodara-Br (End)    | Jambusar | 22.1580  | 72.6440   | 2.49    | 0.00      |
| 19  | Kundhela-Br (Start)  | Vadodara | 22.1900  | 73.2710   | 2.49    | 0.00      |
| 20  | Kundhela-Br (End)    | Vadodara | 22.1600  | 73.1560   | 2.49    | 0.00      |
| 21  | Jabusar-Br (Start)   | Padra    | 22.6650  | 73.0910   | 2.49    | 0.00      |
| 22  | Jabusar-Br (End)     | Padra    | 22.1010  | 72.8970   | 2.49    | 0.00      |
| 23  | Jabusar-Br (Start)   | Jambusar | 22.0960  | 72.8900   | 2.49    | 0.00      |
| 24  | Jabusar-Br (End)     | Jambusar | 22.0320  | 72.8190   | 2.49    | 0.00      |
| 25  | Miyagam-Br (Start)   | Daboi    | 22.0660  | 73.4410   | 2.49    | 2.08      |
| 26  | Miyagam-Br (End)     | Daboi    | 22.0410  | 73.4160   | 2.49    | 2.08      |
| 27  | Miyagam -Br (Start)  | Sinor    | 22.0320  | 73.4080   | 2.49    | 2.08      |
| 28  | Miyagam -Br (End)    | Sinor    | 22.0150  | 73.2620   | 2.49    | 2.08      |
| 29  | Miyagam -Br (Start)  | Karjan   | 22.0190  | 73.2280   | 2.49    | 0.00      |
| 30  | Miyagam -Br (End)    | Karjan   | 22.0160  | 73.0260   | 2.49    | 0.00      |
| 31  | Miyagam- Br (Start)  | Amod     | 22.0110  | 73.0130   | 2.49    | 0.00      |
| 32  | Miyagam- Br (End)    | Amod     | 22.0100  | 72.9400   | 2.49    | 0.00      |
| 33  | Amleswar-Br (Start)  | Sinor    | 22.0250  | 73.4050   | 2.49    | 0.00      |
| 34  | Amleswar-Br (End)    | Sinor    | 21.9530  | 73.2670   | 2.49    | 0.00      |
| 35  | Amleswar-Br (Start)  | Karjan   | 21.9470  | 73.2580   | 2.49    | 0.00      |
| 36  | Amleswar-Br (End)    | Karjan   | 21.8800  | 73.1380   | 2.49    | 0.00      |
| 37  | Amleswar-Br (Start)  | Bharuch  | 21.8690  | 73.1170   | 2.49    | 0.00      |
| 38  | Amleswar-Br (End)    | Bharuch  | 21.7780  | 73.0660   | 2.49    | 0.00      |
| 39  | Luara-Br (Start)     | Karjan   | 22.0180  | 73.2130   | 2.49    | 0.00      |
| 40  | Luara-Br (End)       | Karjan   | 21.9410  | 73.1390   | 2.49    | 0.00      |

**Table 2: Groundwater recharge (inch) from surface water and groundwater for pre and post monsoon seasons**

| Sr. | Block     | Station     | Latitude | Longitude | SWI-Pre | SWI-Post | GW-Pre | GW-Post |
|-----|-----------|-------------|----------|-----------|---------|----------|--------|---------|
| 1   | Amod      | Amod_1      | 22.0046  | 72.9774   | 0.00    | 0.00     | 0.40   | 0.40    |
| 2   | Amod      | Amod_2      | 21.9836  | 72.9263   | 0.00    | 0.00     | 0.40   | 0.40    |
| 3   | Amod      | Amod_3      | 21.9714  | 73.0131   | 0.00    | 0.00     | 0.40   | 0.40    |
| 4   | Amod      | Amod_4      | 21.9524  | 72.9502   | 0.00    | 0.00     | 0.40   | 0.40    |
| 5   | Bharuch   | Bharuch_1   | 21.8453  | 73.1110   | 0.00    | 0.00     | 0.03   | 0.03    |
| 6   | Bharuch   | Bharuch_2   | 21.8011  | 73.0866   | 0.00    | 0.00     | 0.03   | 0.03    |
| 7   | Bharuch   | Bharuch_3   | 22.1272  | 72.6299   | 0.00    | 0.00     | 0.03   | 0.03    |
| 8   | Jambusar  | Jambusar_1  | 22.1603  | 72.5917   | 0.00    | 0.00     | 0.01   | 0.01    |
| 9   | Jambusar  | Jambusar_2  | 22.1272  | 72.6299   | 0.00    | 0.00     | 0.01   | 0.01    |
| 10  | Jambusar  | Jambusar_3  | 22.1786  | 72.6594   | 0.00    | 0.00     | 0.01   | 0.01    |
| 11  | Jambusar  | Jambusar_4  | 22.1227  | 72.7203   | 0.00    | 0.00     | 0.01   | 0.01    |
| 12  | Jambusar  | Jambusar_5  | 22.1550  | 72.7529   | 0.00    | 0.00     | 0.01   | 0.01    |
| 13  | Jambusar  | Jambusar_6  | 22.0911  | 72.7556   | 0.00    | 0.00     | 0.01   | 0.01    |
| 14  | Jambusar  | Jambusar_7  | 22.0467  | 72.7659   | 0.00    | 0.00     | 0.01   | 0.01    |
| 15  | Jambusar  | Jambusar_8  | 22.0269  | 72.8151   | 0.00    | 0.00     | 0.01   | 0.01    |
| 16  | Jambusar  | Jambusar_9  | 22.0571  | 72.8595   | 0.00    | 0.00     | 0.01   | 0.01    |
| 17  | Jambusar  | Jambusar_10 | 22.1587  | 72.8442   | 0.00    | 0.00     | 0.01   | 0.01    |
| 18  | Jambusar  | Jambusar_11 | 22.1003  | 72.8057   | 0.00    | 0.00     | 0.01   | 0.01    |
| 19  | Ghoghamba | Ghoghamba_1 | 22.5595  | 73.6251   | 3.32    | 1.91     | 1.53   | 1.53    |
| 20  | Ghoghamba | Ghoghamba_2 | 22.6368  | 73.6493   | 3.32    | 1.91     | 1.53   | 1.53    |
| 21  | Halol     | Halol_1     | 22.5613  | 73.5269   | 0.00    | 0.00     | 1.36   | 1.36    |
| 22  | Halol     | Halol_2     | 22.5567  | 73.5618   | 0.00    | 0.00     | 1.36   | 1.36    |
| 23  | Kalol     | Kalol_1     | 22.6085  | 73.4268   | 3.32    | 1.91     | 1.02   | 1.02    |
| 24  | Kalol     | Kalol_2     | 22.5986  | 73.5607   | 3.32    | 1.91     | 1.02   | 1.02    |
| 25  | Kalol     | Kalol_3     | 22.5962  | 73.5167   | 3.32    | 1.91     | 1.02   | 1.02    |
| 26  | Kalol     | Kalol_4     | 22.6429  | 73.4967   | 3.32    | 1.91     | 1.02   | 1.02    |
| 27  | Dabhoi    | Dabhoi_1    | 22.0849  | 73.2323   | 1.55    | 1.31     | 1.08   | 1.08    |
| 28  | Dabhoi    | Dabhoi_2    | 22.0445  | 73.2647   | 1.55    | 1.31     | 1.08   | 1.08    |
| 29  | Dabhoi    | Dabhoi_3    | 22.0945  | 73.2877   | 1.55    | 1.31     | 1.08   | 1.08    |
| 30  | Dabhoi    | Dabhoi_4    | 22.0733  | 73.3389   | 1.55    | 1.31     | 1.08   | 1.08    |
| 31  | Dabhoi    | Dabhoi_5    | 22.0640  | 73.4012   | 1.55    | 1.31     | 1.08   | 1.08    |
| 32  | Karjan    | Karjan_1    | 22.0291  | 73.0248   | 0.52    | 0.44     | 0.18   | 0.38    |
| 33  | Karjan    | Karjan_2    | 22.0018  | 73.0965   | 0.52    | 0.44     | 0.18   | 0.38    |
| 34  | Karjan    | Karjan_3    | 22.0819  | 73.0919   | 0.52    | 0.44     | 0.18   | 0.38    |
| 35  | Karjan    | Karjan_4    | 22.0455  | 73.1724   | 0.52    | 0.44     | 0.18   | 0.38    |
| 36  | Karjan    | Karjan_5    | 21.9854  | 73.2311   | 0.52    | 0.44     | 0.18   | 0.38    |

| Sr. | Block    | Station     | Latitude | Longitude | SWI-Pre | SWI-Post | GWI-Pre | GWI-Post |
|-----|----------|-------------|----------|-----------|---------|----------|---------|----------|
| 37  | Karjan   | Karjan_6    | 21.9988  | 73.1710   | 0.52    | 0.44     | 0.18    | 0.38     |
| 38  | Karjan   | Karjan_7    | 21.9299  | 73.1884   | 0.52    | 0.44     | 0.18    | 0.38     |
| 39  | Karjan   | Karjan_8    | 21.8758  | 73.1914   | 0.52    | 0.44     | 0.18    | 0.38     |
| 40  | Karjan   | Karjan_9    | 21.8984  | 73.1156   | 0.52    | 0.44     | 0.18    | 0.38     |
| 41  | Karjan   | Karjan_10   | 21.9727  | 73.1371   | 0.52    | 0.44     | 0.18    | 0.38     |
| 42  | Padra    | Padra_1     | 22.1997  | 72.9383   | 0.00    | 0.00     | 0.35    | 1.18     |
| 43  | Padra    | Padra_2     | 22.1339  | 72.9172   | 0.00    | 0.00     | 0.35    | 1.18     |
| 44  | Padra    | Padra_3     | 22.1773  | 72.9790   | 0.00    | 0.00     | 0.35    | 1.18     |
| 45  | Padra    | Padra_4     | 22.2138  | 73.0004   | 0.00    | 0.00     | 0.35    | 1.18     |
| 46  | Padra    | Padra_5     | 22.1840  | 73.0639   | 0.00    | 0.00     | 0.35    | 1.18     |
| 47  | Padra    | Padra_6     | 22.2298  | 73.1146   | 0.00    | 0.00     | 0.35    | 1.18     |
| 48  | Padra    | Padra_7     | 22.2281  | 73.0478   | 0.00    | 0.00     | 0.35    | 1.18     |
| 49  | Savli    | Savli_1     | 22.4592  | 73.1417   | 1.55    | 1.31     | 1.99    | 1.43     |
| 50  | Savli    | Savli_2     | 22.5134  | 73.1807   | 1.55    | 1.31     | 1.99    | 1.43     |
| 51  | Savli    | Savli_3     | 22.6039  | 73.3674   | 1.55    | 1.31     | 1.99    | 1.43     |
| 52  | Savli    | Savli_4     | 22.6201  | 73.3345   | 1.55    | 1.31     | 1.99    | 1.43     |
| 53  | Savli    | Savli_5     | 22.6857  | 73.2995   | 1.55    | 1.31     | 1.99    | 1.43     |
| 54  | Savli    | Savli_6     | 22.5910  | 73.2429   | 1.55    | 1.31     | 1.99    | 1.43     |
| 55  | Savli    | Savli_7     | 22.7422  | 73.3241   | 1.55    | 1.31     | 1.99    | 1.43     |
| 56  | Sinor    | Sinor_1     | 22.0076  | 73.2906   | 0.61    | 0.52     | 1.01    | 1.01     |
| 57  | Sinor    | Sinor_2     | 22.0385  | 73.3225   | 0.61    | 0.52     | 1.01    | 1.01     |
| 58  | Sinor    | Sinor_3     | 21.9891  | 73.3306   | 0.61    | 0.52     | 1.01    | 1.01     |
| 59  | Sinor    | Sinor_4     | 22.0111  | 73.3889   | 0.61    | 0.52     | 1.01    | 1.01     |
| 60  | Sinor    | Sinor_5     | 21.9580  | 73.3910   | 0.61    | 0.52     | 1.01    | 1.01     |
| 61  | Sinor    | Sinor_6     | 21.9532  | 73.3070   | 0.61    | 0.52     | 1.01    | 1.01     |
| 62  | Sinor    | Sinor_7     | 21.9684  | 73.2742   | 0.61    | 0.52     | 1.01    | 1.01     |
| 63  | Vadodara | Vadodara_1  | 22.4397  | 73.1195   | 1.55    | 1.31     | 0.83    | 0.83     |
| 64  | Vadodara | Vadodara_2  | 22.4099  | 73.1781   | 1.55    | 1.31     | 0.83    | 0.83     |
| 65  | Vadodara | Vadodara_3  | 22.3785  | 73.1750   | 1.55    | 1.31     | 0.83    | 0.83     |
| 66  | Vadodara | Vadodara_4  | 22.3387  | 73.1076   | 1.55    | 1.31     | 0.83    | 0.83     |
| 67  | Vadodara | Vadodara_5  | 22.2958  | 73.1051   | 1.55    | 1.31     | 0.83    | 0.83     |
| 68  | Vadodara | Vadodara_6  | 22.1248  | 73.1561   | 1.55    | 1.31     | 0.83    | 0.83     |
| 69  | Vadodara | Vadodara_7  | 22.2034  | 73.2013   | 1.55    | 1.31     | 0.83    | 0.83     |
| 70  | Vadodara | Vadodara_8  | 22.2545  | 73.2314   | 1.55    | 1.31     | 0.83    | 0.83     |
| 71  | Vadodara | Vadodara_9  | 22.2447  | 73.1395   | 1.55    | 1.31     | 0.83    | 0.83     |
| 72  | Vadodara | Vadodara_10 | 22.4038  | 73.1440   | 1.55    | 1.31     | 0.83    | 0.83     |

**Table 3: Groundwater recharge (inch) from tanks & ponds for pre and post monsoon seasons (Contd.)**

| <b>Sr.</b> | <b>Block</b> | <b>Number Of Tanks/Ponds</b> | <b>Latitude</b> | <b>Longitude</b> | <b>Rch T&amp;P</b> |
|------------|--------------|------------------------------|-----------------|------------------|--------------------|
| 1          | Amod         | P1_Rohad                     | 21.9892         | 72.9058          | 10.09              |
| 2          | Amod         | P2_Ninam                     | 21.9515         | 72.9235          | 10.09              |
| 3          | Amod         | P3_Anor                      | 21.9291         | 72.9274          | 10.09              |
| 4          | Amod         | P4_Ghamnad                   | 21.9450         | 72.9475          | 10.09              |
| 5          | Amod         | P5_Sarbhan                   | 21.9921         | 72.9467          | 10.09              |
| 6          | Amod         | P6_Ajamnagar                 | 22.0033         | 72.9743          | 10.09              |
| 7          | Amod         | P7_Dora                      | 21.9539         | 72.9965          | 10.09              |
| 8          | Amod         | P8_Matar_Lake                | 22.0059         | 72.9927          | 10.09              |
| 9          | Amod         | P9_Telod                     | 21.9810         | 73.0153          | 10.09              |
| 10         | Amod         | P10_Ochhan                   | 21.9896         | 73.0314          | 10.09              |
| 11         | Amod         | P11_Ajamnagar_2              | 22.0185         | 73.0003          | 10.09              |
| 12         | Bharuch      | P1_Uparali                   | 21.8491         | 73.1002          | 20.12              |
| 13         | Bharuch      | P2_Samlod                    | 21.8234         | 73.0987          | 20.12              |
| 14         | Bharuch      | P3_Dabhali                   | 21.8094         | 73.0985          | 20.12              |
| 15         | Bharuch      | P4_Karmali                   | 21.7831         | 73.0875          | 20.12              |
| 16         | Bharuch      | P5_Karjan                    | 21.7661         | 73.0770          | 20.12              |
| 17         | Bharuch      | P6_Karjan_2                  | 21.7639         | 73.0776          | 20.12              |
| 18         | Jambusar     | P1_Khanava                   | 22.1781         | 72.9100          | 10.09              |
| 19         | Jambusar     | P2_Kareli                    | 22.1972         | 72.8637          | 10.09              |
| 20         | Jambusar     | P3_Piludara                  | 22.1686         | 72.8560          | 10.09              |
| 21         | Jambusar     | P4_Vedach                    | 22.1624         | 72.8429          | 10.09              |
| 22         | Jambusar     | P5_Vedach_2                  | 22.1431         | 72.8377          | 10.09              |
| 23         | Jambusar     | P6_Gajera                    | 22.1275         | 72.8572          | 10.09              |
| 24         | Jambusar     | P7_Vahelgam                  | 22.0849         | 72.8933          | 10.09              |
| 25         | Jambusar     | P8_Uchhad                    | 22.0994         | 72.8564          | 10.09              |
| 26         | Jambusar     | P9_Ankhi                     | 22.0705         | 72.8566          | 10.09              |
| 27         | Jambusar     | P10_Vavli                    | 22.0868         | 72.8412          | 10.09              |
| 28         | Jambusar     | P11_Dabha                    | 22.1032         | 72.8225          | 10.09              |
| 29         | Jambusar     | P12_Valipore                 | 22.1483         | 72.7818          | 10.09              |
| 30         | Jambusar     | P13_Sarod                    | 22.1608         | 72.7578          | 10.09              |
| 31         | Jambusar     | P14_Samod_1                  | 22.1514         | 72.7364          | 10.09              |
| 32         | Jambusar     | P15_Samod_2                  | 22.1460         | 72.7372          | 10.09              |
| 33         | Jambusar     | P16_Amanpor                  | 22.1231         | 72.7482          | 10.09              |
| 34         | Jambusar     | P17_Bhodar                   | 22.1034         | 72.7459          | 10.09              |
| 35         | Jambusar     | P18_Limaj                    | 22.0571         | 72.7581          | 10.09              |
| 36         | Jambusar     | P19_Kundhal                  | 22.0157         | 72.8100          | 10.09              |
| 37         | Jambusar     | P20_Kavali                   | 22.1344         | 72.7130          | 10.09              |
| 38         | Jambusar     | P21_Nahar                    | 22.1737         | 72.6898          | 10.09              |
| 39         | Jambusar     | P22_Kavi                     | 22.1990         | 72.6394          | 10.09              |
| 40         | Jambusar     | P23_Runad                    | 22.1573         | 72.6556          | 10.09              |
| 41         | Jambusar     | P24_Runad_2                  | 22.1474         | 72.6484          | 10.09              |
| 42         | Jambusar     | P25_Thanva                   | 22.1297         | 72.6383          | 10.09              |
| 43         | Jambusar     | P26_Kimod                    | 22.1453         | 72.6192          | 10.09              |
| 44         | Jambusar     | P28_Kailari                  | 22.1115         | 72.6152          | 10.09              |
| 45         | Jambusar     | P29_Chhidra                  | 22.1013         | 72.5942          | 10.09              |
| 46         | Jambusar     | P30_Jhandi                   | 22.1099         | 72.5815          | 10.09              |
| 47         | Jambusar     | P31_Sigam                    | 22.1459         | 72.5841          | 10.09              |
| 48         | Jambusar     | P32_Degam                    | 22.1855         | 72.5904          | 10.09              |
| 49         | Jambusar     | P33_Magnad                   | 22.0350         | 72.8374          | 10.09              |
| 50         | Jambusar     | P34_Magnad_2                 | 22.0360         | 72.8425          | 10.09              |

| <b>Sr.</b> | <b>Block</b> | <b>Number Of Tanks/Ponds</b> | <b>Latitude</b> | <b>Longitude</b> | <b>Rch T&amp;P</b> |
|------------|--------------|------------------------------|-----------------|------------------|--------------------|
| 51         | Ghoghamba    | P1_Jagana_Muvada             | 22.5565         | 73.6151          | 20.12              |
| 52         | Ghoghamba    | P2_Bhojpur                   | 22.6364         | 73.6588          | 20.12              |
| 53         | Ghoghamba    | P3_Damanpura                 | 22.6346         | 73.6349          | 20.12              |
| 54         | Ghoghamba    | P4_Dantol                    | 22.6301         | 73.6208          | 20.12              |
| 55         | Halol        | P1_Varsada                   | 22.5647         | 73.5313          | 20.12              |
| 56         | Halol        | P2_Halol_2                   | 22.5634         | 73.5193          | 20.12              |
| 57         | Halol        | P3_Halol_1                   | 22.5614         | 73.5162          | 20.12              |
| 58         | Halol        | P4_Maruva                    | 22.5712         | 73.5137          | 20.12              |
| 59         | Halol        | P5_Navariya                  | 22.5648         | 73.4959          | 20.12              |
| 60         | Halol        | P6_Navariya_2                | 22.5743         | 73.4870          | 20.12              |
| 61         | Kalol        | P1_Jantral                   | 22.6084         | 73.4627          | 20.12              |
| 62         | Kalol        | P2_Derol                     | 22.6288         | 73.4422          | 20.12              |
| 63         | Kalol        | P3_Kanetiya                  | 22.6341         | 73.4322          | 20.12              |
| 64         | Kalol        | P4_Sama_2                    | 22.6305         | 73.4281          | 20.12              |
| 65         | Kalol        | P5_Sama                      | 22.6297         | 73.4213          | 20.12              |
| 66         | Kalol        | P5_Khandoi                   | 22.6404         | 73.4030          | 20.12              |
| 67         | Kalol        | P6_Jantral                   | 22.6356         | 73.3842          | 20.12              |
| 68         | Kalol        | P7_Jantral_2                 | 22.6371         | 73.3778          | 20.12              |
| 69         | Kalol        | P8_Malav                     | 22.6046         | 73.5541          | 20.12              |
| 70         | Kalol        | P9_Rabod                     | 22.6145         | 73.5450          | 20.12              |
| 71         | Dabhoi       | P1_Kunvarpura                | 22.1008         | 73.2360          | 20.12              |
| 72         | Dabhoi       | P2_Sultanpura                | 22.0828         | 73.2737          | 20.12              |
| 73         | Dabhoi       | P3_Vadaj                     | 22.0651         | 73.4267          | 20.12              |
| 74         | Dabhoi       | P4_Kanayad                   | 22.0599         | 73.4093          | 20.12              |
| 75         | Dabhoi       | P5_Kanayada_2                | 22.0799         | 73.4064          | 20.12              |
| 76         | Dabhoi       | P6_Habipura                  | 22.0971         | 73.3243          | 20.12              |
| 77         | Dabhoi       | P7_Habipura_2                | 22.0975         | 73.3283          | 20.12              |
| 78         | Dabhoi       | P8_Karmal                    | 22.0617         | 73.3047          | 20.12              |
| 79         | Karjan       | P1_Fofaliya                  | 22.0799         | 73.1854          | 20.12              |
| 80         | Karjan       | P2_Ganpatpura                | 22.0593         | 73.1900          | 20.12              |
| 81         | Karjan       | P3_Vemardi                   | 22.0509         | 73.1676          | 20.12              |
| 82         | Karjan       | P4_Kandari                   | 22.0753         | 73.1519          | 20.12              |
| 83         | Karjan       | P5_Karjan                    | 22.0502         | 73.1233          | 20.12              |
| 84         | Karjan       | P6_Jalnagar                  | 22.0558         | 73.1112          | 20.12              |
| 85         | Karjan       | P7_Santoshnagar              | 22.0585         | 73.1044          | 20.12              |
| 86         | Karjan       | P8_Mantroj                   | 21.8871         | 73.0975          | 20.12              |
| 87         | Padra        | P1_Raipura                   | 22.2826         | 73.0899          | 20.12              |
| 88         | Padra        | P2_Ganpatpura                | 22.2682         | 73.0754          | 20.12              |
| 89         | Padra        | P3_Tajpura_2                 | 22.2609         | 73.0688          | 20.12              |
| 90         | Padra        | P4_Tajpura                   | 22.2594         | 73.0702          | 20.12              |
| 91         | Padra        | P5_Padra_1                   | 22.2421         | 73.0821          | 20.12              |
| 92         | Padra        | P6_Padra_2                   | 22.2410         | 73.0802          | 20.12              |
| 93         | Padra        | P7_Padra_3                   | 22.2399         | 73.0802          | 20.12              |
| 94         | Padra        | P8_Padra_4                   | 22.2390         | 73.0801          | 20.12              |
| 95         | Padra        | P9_Panchvati                 | 22.2387         | 73.0762          | 20.12              |
| 96         | Padra        | P10_Pataliya_Hanuman         | 22.2461         | 73.0927          | 20.12              |
| 97         | Padra        | P11_Vishwakarma              | 22.2366         | 73.0869          | 20.12              |
| 98         | Padra        | P12_Navghari                 | 22.2357         | 73.0805          | 20.12              |
| 99         | Padra        | P13_Navghari_2               | 22.2353         | 73.0788          | 20.12              |
| 100        | Padra        | P14_Ghayaj                   | 22.2148         | 73.0897          | 20.12              |

| <b>Sr.</b> | <b>Block</b>          | <b>Number Of Tanks/Ponds</b> | <b>Latitude</b> | <b>Longitude</b> | <b>Rch T&amp;P</b> |
|------------|-----------------------|------------------------------|-----------------|------------------|--------------------|
| 101        | Padra                 | P15_Ghayaj                   | 22.2138         | 73.0970          | 20.12              |
| 102        | Padra                 | P16_Patod                    | 22.2203         | 73.1185          | 20.12              |
| 103        | Padra                 | P17_Patod_2                  | 22.2183         | 73.1212          | 20.12              |
| 104        | Padra                 | P18_Chansad                  | 22.2080         | 22.2080          | 20.12              |
| 105        | Padra                 | P19_Chansad_2                | 22.2098         | 73.1330          | 20.12              |
| 106        | Padra                 | P20_Chansad_3                | 22.2113         | 73.1328          | 20.12              |
| 107        | Padra                 | P21_Sarasvani                | 22.1744         | 73.0945          | 20.12              |
| 108        | Padra                 | P22_Amla                     | 22.1763         | 73.0750          | 20.12              |
| 109        | Padra                 | P23_Amla_2                   | 22.1723         | 73.0728          | 20.12              |
| 110        | Padra                 | P24_Amla_3                   | 22.1738         | 73.0721          | 20.12              |
| 111        | Padra                 | P25_Goriyad                  | 22.1950         | 73.0870          | 20.12              |
| 112        | Padra                 | P26_Goriyad_2                | 22.1966         | 73.0906          | 20.12              |
| 113        | Padra                 | P27_Sareja                   | 22.2009         | 73.1026          | 20.12              |
| 114        | Padra                 | P28_Madapur_Pond             | 22.1897         | 73.1123          | 20.12              |
| 115        | Padra                 | P29_Darapura                 | 22.2278         | 73.0991          | 20.12              |
| 116        | Padra                 | P30_Latipura                 | 22.2257         | 73.0587          | 20.12              |
| 117        | Padra                 | P31_Bhoj                     | 22.1992         | 73.0043          | 20.12              |
| 118        | Padra                 | P32_Vaddala                  | 22.1913         | 73.0203          | 20.12              |
| 119        | Savli                 | P1_Savli                     | 22.5630         | 73.2265          | 10.09              |
| 120        | Savli                 | P2_Gothda                    | 22.5383         | 73.2197          | 10.09              |
| 121        | Savli                 | P3_Rasalpur                  | 22.5949         | 73.2322          | 10.09              |
| 122        | Sinor                 | P1_Bithali                   | 21.9412         | 73.4165          | 20.12              |
| 123        | Sinor                 | P2_Puniyad                   | 22.0334         | 73.3588          | 20.12              |
| 124        | Sinor                 | P3_Damnagar                  | 22.0546         | 73.3358          | 20.12              |
| 125        | Sinor                 | P4_Timbarva                  | 22.0182         | 73.2806          | 20.12              |
| 126        | Sinor                 | P5_Utraj                     | 21.9886         | 73.2645          | 20.12              |
| 127        | Vadodara City & Rural | P1_Padmala                   | 22.4158         | 73.1239          | 20.12              |
| 128        | Vadodara City & Rural | P2_Mirsapur                  | 22.4251         | 73.1483          | 20.12              |
| 129        | Vadodara City & Rural | P3_Nandesari                 | 22.4082         | 73.1203          | 20.12              |
| 130        | Vadodara City & Rural | P4_Nandesari_2               | 22.3965         | 73.1125          | 20.12              |
| 131        | Vadodara City & Rural | P5_Dhanora                   | 22.3805         | 73.1048          | 20.12              |
| 132        | Vadodara City & Rural | P6_Karachiya_Pond            | 22.3787         | 73.1306          | 20.12              |
| 133        | Vadodara City & Rural | P7_Jayabanagar_1             | 22.3899         | 73.1426          | 20.12              |
| 134        | Vadodara City & Rural | P8_Jayabanagar_2             | 22.3923         | 73.1476          | 20.12              |
| 135        | Vadodara City & Rural | P9_Vishwa_Mandir_Pond        | 22.3867         | 73.1431          | 20.12              |
| 136        | Vadodara City & Rural | P10_Sisva                    | 22.3961         | 73.1795          | 20.12              |
| 137        | Vadodara City & Rural | P11_Ganpatpura               | 22.3829         | 73.2030          | 20.12              |
| 138        | Vadodara City & Rural | P12_Savali                   | 22.3763         | 73.1899          | 20.12              |
| 139        | Vadodara City & Rural | P13_Dumad                    | 22.3734         | 73.1912          | 20.12              |
| 140        | Vadodara City & Rural | P14_Vemlali                  | 22.3556         | 73.2058          | 20.12              |
| 141        | Vadodara City & Rural | P15_Vemali_2                 | 22.3540         | 73.1963          | 20.12              |
| 142        | Vadodara City & Rural | P16_Kapurai_Pond             | 22.2735         | 73.2413          | 20.12              |
| 143        | Vadodara City & Rural | P17_Ratanpur_2               | 22.2567         | 73.2524          | 20.12              |
| 144        | Vadodara City & Rural | P18_Ratanpur_1               | 22.2552         | 73.2495          | 20.12              |
| 145        | Vadodara City & Rural | P19_Vadadla                  | 22.2477         | 73.2394          | 20.12              |
| 146        | Vadodara City & Rural | P20_Chikhodara               | 22.2371         | 73.2304          | 20.12              |
| 147        | Vadodara City & Rural | P21_Vora_Gandi_Pond          | 22.2260         | 73.2244          | 20.12              |
| 148        | Vadodara City & Rural | P22_Mani_Nagar               | 22.2289         | 73.2058          | 20.12              |
| 149        | Vadodara City & Rural | P23_Sarvoday_2               | 22.2233         | 73.1943          | 20.12              |
| 150        | Vadodara City & Rural | P24_Sarvoday                 | 22.2247         | 73.1933          | 20.12              |

| Sr. | Block                 | Number Of Tanks/Ponds              | Latitude | Longitude | Rch T&P |
|-----|-----------------------|------------------------------------|----------|-----------|---------|
| 151 | Vadodara City & Rural | P25_Maretha                        | 22.2225  | 73.1827   | 20.12   |
| 152 | Vadodara City & Rural | P26_Chhapad_2                      | 22.2359  | 73.1509   | 20.12   |
| 153 | Vadodara City & Rural | P27_Chhapad                        | 22.2350  | 73.1494   | 20.12   |
| 154 | Vadodara City & Rural | P28_Talsat                         | 22.2442  | 73.1674   | 20.12   |
| 155 | Vadodara City & Rural | P29_Ashwamegh_Nagar                | 22.2873  | 73.1444   | 20.12   |
| 156 | Vadodara City & Rural | P30_Ambica_Nagar                   | 22.2715  | 73.1548   | 20.12   |
| 157 | Vadodara City & Rural | P31_Bhaili_Pond                    | 22.2690  | 73.1308   | 20.12   |
| 158 | Vadodara City & Rural | P32_Samiyala                       | 22.2622  | 73.1204   | 20.12   |
| 159 | Vadodara City & Rural | P33_Gokalpur_2                     | 22.2726  | 73.1206   | 20.12   |
| 160 | Vadodara City & Rural | P34_Vasna_Bhayali_Pond             | 22.2840  | 73.1262   | 20.12   |
| 161 | Vadodara City & Rural | P35_Ashwamegh_Nagar_Pond           | 22.2874  | 73.1444   | 20.12   |
| 162 | Vadodara City & Rural | P36_Saiyed_Vasna_Pond              | 22.2996  | 73.1422   | 20.12   |
| 163 | Vadodara City & Rural | P37_Gorwa_Pond                     | 22.3304  | 73.1588   | 20.12   |
| 164 | Vadodara City & Rural | P38_Lakshmipura_Pond               | 22.3288  | 73.1522   | 20.12   |
| 165 | Vadodara City & Rural | P39_Surmandir_Pond                 | 22.3285  | 73.1556   | 20.12   |
| 166 | Vadodara City & Rural | P40_Gotri_Lake                     | 22.3140  | 73.1350   | 20.12   |
| 167 | Vadodara City & Rural | P41_Laxmipura_Pond                 | 22.3283  | 73.1396   | 20.12   |
| 168 | Vadodara City & Rural | P42_Khanpur_Pond                   | 22.3218  | 73.1187   | 20.12   |
| 169 | Vadodara City & Rural | P43_Ankodiya_Pond                  | 22.3408  | 73.1149   | 20.12   |
| 170 | Vadodara City & Rural | P44_Undera_Pond                    | 22.3502  | 73.1342   | 20.12   |
| 171 | Vadodara City & Rural | P45_Gujarat_Refinery_Township_Pond | 22.3548  | 73.1461   | 20.12   |
| 172 | Vadodara City & Rural | P46_Koyali_Pond                    | 22.3595  | 73.1116   | 20.12   |
| 173 | Vadodara City & Rural | P47_Ranoli_Pond_2                  | 22.4008  | 73.1504   | 20.12   |
| 174 | Vadodara City & Rural | P48_Varnama                        | 22.1821  | 73.1833   | 20.12   |
| 175 | Vadodara City & Rural | P49_Untiya                         | 22.1622  | 73.1836   | 20.12   |
| 176 | Vadodara City & Rural | P50_Varsada                        | 22.1636  | 73.1737   | 20.12   |
| 177 | Vadodara City & Rural | P51_Etola                          | 22.1442  | 73.1458   | 20.12   |
| 178 | Vadodara City & Rural | P52_Ankhi                          | 22.1382  | 73.1964   | 20.12   |
| 179 | Vadodara City & Rural | P53_Ankhi_2                        | 22.1372  | 73.2001   | 20.12   |
| 180 | Vadodara City & Rural | P54_Fajalpur                       | 22.1285  | 73.2083   | 20.12   |
| 181 | Vadodara City & Rural | P55_Ramnath                        | 22.1388  | 73.2155   | 20.12   |
| 182 | Vadodara City & Rural | P66_Rasulpur                       | 22.1301  | 22.1301   | 20.12   |
| 183 | Vadodara City & Rural | P57_Samsabad                       | 22.1186  | 73.2433   | 20.12   |
| 184 | Vadodara City & Rural | P58_Siddhnath                      | 22.2952  | 73.2025   | 20.12   |
| 185 | Vadodara City & Rural | P59_Raje_Talav                     | 22.3009  | 73.2171   | 20.12   |
| 186 | Vadodara City & Rural | P60_Sarasiya_Talav                 | 22.3069  | 73.2139   | 20.12   |
| 187 | Vadodara City & Rural | P61_Dhobi_Talav                    | 22.3127  | 73.2193   | 20.12   |
| 188 | Vadodara City & Rural | P62_Khodiyar_Mata_Mandir_Pond      | 22.3209  | 73.2281   | 20.12   |
| 189 | Vadodara City & Rural | P63_Nehruchacha_Pond               | 22.3290  | 73.2444   | 20.12   |
| 190 | Vadodara City & Rural | P64_Bapod_Talav                    | 22.3042  | 73.2378   | 20.12   |
| 191 | Vadodara City & Rural | P65_Mahesh_Nagar_Lake              | 22.2890  | 73.2414   | 20.12   |
| 192 | Vadodara City & Rural | P66_Krishna_Nagar_Lake             | 22.2707  | 73.2307   | 20.12   |
| 193 | Vadodara City & Rural | P67_Danteshwar_Pond                | 22.2762  | 73.2107   | 20.12   |
| 194 | Vadodara City & Rural | P68_Chikhodara_Pond                | 22.2370  | 73.2304   | 20.12   |
| 195 | Vadodara City & Rural | P69_Varanama_2                     | 22.1823  | 73.1786   | 20.12   |
| 196 | Vadodara City & Rural | P70_Untiya_Pond                    | 22.1623  | 73.1836   | 20.12   |
| 197 | Vadodara City & Rural | P71_Manglege_Pond                  | 22.0920  | 73.1718   | 20.12   |
| 198 | Vadodara City & Rural | P72_Kashipura_Lake                 | 22.1122  | 73.1600   | 20.12   |
| 199 | Vadodara City & Rural | P73_Sundarpura                     | 22.1879  | 73.2048   | 20.12   |
| 200 | Vadodara City & Rural | P74_Alamgir_Pond                   | 22.2058  | 73.1946   | 20.12   |

| <b>Sr.</b> | <b>Block</b>          | <b>Number Of Tanks/Ponds</b>   | <b>Latitude</b> | <b>Longitude</b> | <b>Rch T&amp;P</b> |
|------------|-----------------------|--------------------------------|-----------------|------------------|--------------------|
| 201        | Vadodara City & Rural | P75_Maretha                    | 22.2225         | 73.1827          | 20.12              |
| 202        | Vadodara City & Rural | P76_Gokulpura                  | 22.2733         | 73.1143          | 20.12              |
| 203        | Vadodara City & Rural | P77_Gokalpur_2                 | 22.2726         | 73.1207          | 20.12              |
| 204        | Vadodara City & Rural | P78_Lakshmi_Narayan_Nagar      | 22.3433         | 73.1519          | 20.12              |
| 205        | Vadodara City & Rural | P79_Petrofills_Township        | 22.3449         | 73.1522          | 20.12              |
| 206        | Vadodara City & Rural | P80_Bajva_Pond                 | 22.3699         | 73.1400          | 20.12              |
| 207        | Vadodara City & Rural | P81_Sokhda_Pond                | 22.4218         | 73.1703          | 20.12              |
| 208        | Vadodara City & Rural | P82_Sokhda_2                   | 22.4227         | 73.1650          | 20.12              |
| 209        | Vadodara City & Rural | P83_Sankarda                   | 22.4284         | 73.1257          | 20.12              |
| 210        | Vadodara City & Rural | P84_Khodiya_Mata               | 22.3210         | 73.2280          | 20.12              |
| 211        | Vadodara City & Rural | P85_Krishnanagar               | 22.2706         | 73.2306          | 20.12              |
| 212        | Vadodara City & Rural | P86_Suvarna_Nagar_Pond         | 22.2769         | 73.1888          | 20.12              |
| 213        | Vadodara City & Rural | P87_Sawti_Pond                 | 22.2781         | 73.1861          | 20.12              |
| 214        | Vadodara City & Rural | P88_Lakshmi_Narayan_Nagar_Pond | 22.2817         | 73.1869          | 20.12              |
| 215        | Vadodara City & Rural | P89_Kamlanagar                 | 22.3201         | 73.2480          | 20.12              |
| 216        | Vadodara City & Rural | P90_Harini_Talav               | 22.3385         | 73.2197          | 20.12              |
| 217        | Vadodara City & Rural | P91_Rajeshwar                  | 22.3443         | 73.2193          | 20.12              |
| 218        | Vadodara City & Rural | P92_Dena_Village               | 22.3639         | 73.2175          | 20.12              |
| 219        | Vadodara City & Rural | P93_Sursi_Pond                 | 22.3744         | 73.1479          | 20.12              |
| 220        | Vadodara City & Rural | P94_Gsfc                       | 22.3735         | 73.1588          | 20.12              |
| 221        | Vadodara City & Rural | P95_Vishwa_Mandir              | 22.3869         | 73.1431          | 20.12              |
| 222        | Vadodara City & Rural | P96_Maninagar_2                | 22.2348         | 73.2054          | 20.12              |
| 223        | Vadodara City & Rural | P97_Kelanpur                   | 22.2398         | 73.2680          | 20.12              |

**Table 4: Groundwater recharge (inch) from water conservation structures - pre and post monsoon seasons**

| Sr. | Block     | Village     | Block wise WCS | Latitude | Longitude | Pre-Rch | Post-Rch |
|-----|-----------|-------------|----------------|----------|-----------|---------|----------|
| 1   | Amod      | Dora        | Wcs_A1         | 21.9536  | 73.0142   | 7.09    | 21.26    |
| 2   | Amod      | Sonama      | Wcs_A2         | 21.9767  | 72.9000   | 7.87    | 23.62    |
| 3   | Amod      | Rohad       | Wcs_A3         | 21.9827  | 72.9150   | 7.09    | 21.26    |
| 4   | Jambusar  | Mahapura    | Wcs_J4         | 22.0217  | 72.8257   | 9.45    | 28.35    |
| 5   | Jambusar  | Abhol       | Wcs_J5         | 22.1186  | 72.8902   | 7.09    | 21.26    |
| 6   | Jambusar  | Vedach      | Wcs_J6         | 22.1463  | 72.8095   | 23.62   | 21.26    |
| 7   | Jambusar  | Piludara    | Wcs_J7         | 22.1703  | 72.8233   | 20.19   | 28.35    |
| 8   | Jambusar  | Kora        | Wcs_J8         | 22.1141  | 72.6959   | 17.12   | 21.26    |
| 9   | Ghoghamba | Lalpari     | Wcs_G9         | 22.5669  | 73.5899   | 16.52   | 28.35    |
| 10  | Halol     | Valinath    | Wcs_H10        | 22.5460  | 73.5846   | 16.52   | 28.35    |
| 11  | Kalol     | Ratanpura   | Wcs_K11        | 22.5814  | 73.4122   | 17.12   | 21.26    |
| 12  | Kalol     | Madhvas     | Wcs_K12        | 22.5823  | 73.4378   | 23.62   | 21.26    |
| 13  | Kalol     | Madhvas     | Wcs_K13        | 22.5750  | 73.4262   | 20.19   | 28.35    |
| 14  | Kalol     | Madhvas     | Wcs_K14        | 22.5728  | 73.4336   | 17.12   | 21.26    |
| 15  | Kalol     | Madhvas     | Wcs_K15        | 22.5752  | 73.4297   | 17.12   | 21.26    |
| 16  | Kalol     | Madhvas     | Wcs_K16        | 22.5684  | 73.4414   | 23.62   | 21.26    |
| 17  | Kalol     | Muvala      | Wcs_K17        | 22.5642  | 73.4588   | 20.19   | 28.35    |
| 18  | Kalol     | Kandach     | Wcs_K18        | 22.6180  | 73.5009   | 23.62   | 21.26    |
| 19  | Kalol     | Alali       | Wcs_K19        | 22.6276  | 73.5256   | 20.19   | 28.35    |
| 20  | Kalol     | Alali       | Wcs_K20        | 22.6297  | 73.5421   | 17.85   | 23.62    |
| 21  | Karjan    | Manglej     | Wcs_K21        | 22.0942  | 73.1738   | 17.12   | 21.26    |
| 22  | Karjan    | Oz          | Wcs_K22        | 21.8591  | 73.1572   | 17.32   | 25.98    |
| 23  | Karjan    | Kahona      | Wcs_K23        | 21.9171  | 73.2214   | 17.85   | 23.62    |
| 24  | Karjan    | Harsunda    | Wcs_K24        | 22.1089  | 73.1011   | 17.12   | 21.26    |
| 25  | Savli     | Dipapura    | Wcs_S25        | 22.6410  | 73.3336   | 17.85   | 23.62    |
| 26  | Savli     | Parthampura | Wcs_S26        | 22.6174  | 73.2694   | 23.62   | 21.26    |
| 27  | Savli     | Sandasal    | Wcs_S27        | 22.6321  | 73.3530   | 16.52   | 28.35    |
| 28  | Savli     | Mevli       | Wcs_S28        | 22.6028  | 22.6028   | 17.12   | 21.26    |
| 29  | Savli     | Naharpura   | Wcs_S29        | 22.5974  | 73.3423   | 23.62   | 21.26    |
| 30  | Savli     | Shihora     | Wcs_S30        | 22.6524  | 73.3012   | 17.85   | 23.62    |
| 31  | Savli     | Shihora     | Wcs_S31        | 22.6395  | 73.2849   | 17.32   | 25.98    |
| 32  | Savli     | Nahara      | Wcs_S32        | 22.6422  | 73.3075   | 30.28   | 28.35    |
| 33  | Savli     | Anjesar     | Wcs_S33        | 22.4802  | 73.1602   | 20.19   | 28.35    |
| 34  | Vadodara  | Talsat      | Wcs_V34        | 22.2408  | 73.1672   | 17.12   | 21.26    |
| 35  | Vadodara  | Nandesari   | Wcs_V35        | 22.4115  | 73.1067   | 17.32   | 25.98    |
| 36  | Vadodara  | Sakarda     | Wcs_V36        | 22.4256  | 73.1242   | 16.52   | 28.35    |
| 37  | Vadodara  | Angadha     | Wcs_V37        | 22.2941  | 73.1808   | 17.85   | 23.62    |

**Table 5: Groundwater Recharge from Water Table Fluctuation Method**

| Sr. | Block     | Village (Borewell) | May_15 | Oct_15 | Δh   | Sy   | Area Ha  | ΔS= Δh x Sy x A Ha-m | R <sub>C</sub> Ha-m | R <sub>SWI</sub> Ha-m | R <sub>GWI</sub> Ha-m | R <sub>TP</sub> Ha-m | R <sub>WCS</sub> Ha-m | R <sub>RF</sub> = ΔS-SUM (X4:AI4) |
|-----|-----------|--------------------|--------|--------|------|------|----------|----------------------|---------------------|-----------------------|-----------------------|----------------------|-----------------------|-----------------------------------|
| 1   | Amod      | Amod               | 10.94  | 9.65   | 1.29 | 0.06 | 14355.78 | 1109.41              | 0.00                | 0.00                  | 127.90                | 2.45                 | 0.65                  | 978.41                            |
| 2   | Bharuch   | Sankhavad          | 3.73   | 2.70   | 1.03 | 0.06 | 6448.97  | 398.55               | 0.00                | 0.00                  | 39.06                 | 0.48                 | 0.00                  | 359.00                            |
| 3   | Jambusar  | Sigam              | 5.44   | 5.35   | 0.09 | 0.06 | 50418.09 | 272.26               | 0.00                | 0.00                  | 10.07                 | 7.30                 | 1.36                  | 253.53                            |
| 4   | Ghoghamba | Bhukhi             | 3.64   | 3.10   | 0.54 | 0.06 | 4827.39  | 156.41               | 0.00                | 6.92                  | 13.15                 | 1.33                 | 0.41                  | 134.60                            |
| 5   | Halol     | Baliyadev          | 5.80   | 3.85   | 1.95 | 0.06 | 3626.84  | 424.34               | 0.00                | 0.00                  | 24.60                 | 2.99                 | 0.41                  | 396.34                            |
| 6   | Kalol     | Kalol              | 3.41   | 2.20   | 1.21 | 0.06 | 17628.60 | 1279.84              | 3.95                | 90.14                 | 128.26                | 2.04                 | 2.43                  | 1053.01                           |
| 7   | Dabhoi    | Dharampuri         | 10.80  | 7.70   | 3.10 | 0.06 | 18101.69 | 3366.91              | 1.95                | 119.28                | 405.36                | 0.92                 | 0.00                  | 2839.41                           |
| 8   | Karjan    | Sayar              | 31.38  | 27.86  | 3.52 | 0.06 | 46862.56 | 9897.37              | 0.00                | 88.53                 | 379.41                | 1.30                 | 1.04                  | 9427.09                           |
| 9   | Padra     | Bhoj               | 31.37  | 26.20  | 5.17 | 0.06 | 34666.71 | 10753.61             | 0.00                | 0.00                  | 848.45                | 4.80                 | 0.00                  | 9900.37                           |
| 10  | Savli     | Savli              | 6.69   | 5.70   | 0.99 | 0.06 | 33331.90 | 1979.91              | 0.00                | 49.56                 | 918.18                | 2.22                 | 2.38                  | 1007.57                           |
| 11  | Sinor     | Surasmal           | 28.48  | 23.57  | 4.91 | 0.06 | 27518.82 | 8107.04              | 1.95                | 38.15                 | 575.04                | 0.34                 | 0.00                  | 7491.57                           |
| 12  | Vadodara  | Bapod              | 6.96   | 3.60   | 3.36 | 0.06 | 44964.07 | 9064.76              | 2.69                | 294.36                | 522.74                | 19.38                | 1.23                  | 8224.36                           |

**Table 6: Groundwater Recharge from Rainfall Infiltration Factor Method**

| Sr. | Block     | Area (Ha) | R <sub>fi</sub> (%) | R(Mm) | Nr (Normal Rainfall) | A(Mm)= 10% Nr | R <sub>ri</sub> =R <sub>fi</sub> *A*(R-A)/1000 (Ha-M) |
|-----|-----------|-----------|---------------------|-------|----------------------|---------------|---|
| 1   | Amod      | 14355.78  | 0.22                | 347   | 572                  | 57.17         | 915.37  |
| 2   | Bharuch   | 6448.97   | 0.22                | 257   | 412                  | 41.20         | 306.17  |
| 3   | Jambusar  | 50418.09  | 0.22                | 149   | 1292                 | 129.20        | 219.62  |
| 4   | Ghoghamba | 4827.39   | 0.22                | 203   | 867                  | 86.70         | 123.51  |
| 5   | Halol     | 3626.84   | 0.22                | 502   | 867                  | 86.70         | 331.37  |
| 6   | Kalol     | 17628.60  | 0.22                | 320   | 677                  | 67.70         | 978.49  |
| 7   | Dabhoi    | 18101.69  | 0.22                | 755   | 1014                 | 101.35        | 2603.06   |
| 8   | Karjan    | 46862.56  | 0.22                | 822   | 572                  | 57.20         | 7884.91   |
| 9   | Padra     | 34666.71  | 0.22                | 1117  | 855                  | 85.50         | 7866.92   |
| 10  | Savli     | 33331.90  | 0.22                | 301   | 855                  | 85.50         | 1580.27   |
| 11  | Sinor     | 27518.82  | 0.22                | 1045  | 715                  | 71.50         | 5893.71   |
| 12  | Vadodara  | 44964.07  | 0.22                | 876   | 1336                 | 133.60        | 7343.89   |

**Table 7: Groundwater recharge (inch) from rainfall**

| Sr. | Station     | Latitude | Longitude | Rain-Rch | Sr. | Station     | Latitude | Longitude | Rain-Rch |
|-----|-------------|----------|-----------|----------|-----|-------------|----------|-----------|----------|
| 1   | Amod_1      | 22.0046  | 72.9774   | 2.68     | 37  | Karjan_6    | 21.9988  | 73.1710   | 7.92     |
| 2   | Amod_2      | 21.9836  | 72.9263   | 2.68     | 38  | Karjan_7    | 21.9299  | 73.1884   | 7.92     |
| 3   | Amod_3      | 21.9714  | 73.0131   | 2.68     | 39  | Karjan_8    | 21.8758  | 73.1914   | 7.92     |
| 4   | Amod_4      | 21.9524  | 72.9502   | 2.68     | 40  | Karjan_9    | 21.8984  | 73.1156   | 7.92     |
| 5   | Bharuch_1   | 21.8453  | 73.1110   | 2.19     | 41  | Karjan_10   | 21.9727  | 73.1371   | 7.92     |
| 6   | Bharuch_2   | 21.8011  | 73.0866   | 2.19     | 42  | Padra_1     | 22.1997  | 72.9383   | 10.72    |
| 7   | Bharuch_3   | 22.1272  | 72.6299   | 2.19     | 43  | Padra_2     | 22.1339  | 72.9172   | 10.72    |
| 8   | Jambusar_1  | 22.1603  | 72.5917   | 0.20     | 44  | Padra_3     | 22.1773  | 72.9790   | 10.72    |
| 9   | Jambusar_2  | 22.1272  | 72.6299   | 0.20     | 45  | Padra_4     | 22.2138  | 73.0004   | 10.72    |
| 10  | Jambusar_3  | 22.1786  | 72.6594   | 0.20     | 46  | Padra_5     | 22.1840  | 73.0639   | 10.72    |
| 11  | Jambusar_4  | 22.1227  | 72.7203   | 0.20     | 47  | Padra_6     | 22.2298  | 73.1146   | 10.72    |
| 12  | Jambusar_5  | 22.1550  | 72.7529   | 0.20     | 48  | Padra_7     | 22.2281  | 73.0478   | 10.72    |
| 13  | Jambusar_6  | 22.0911  | 72.7556   | 0.20     | 49  | Savli_1     | 22.4592  | 73.1417   | 1.49     |
| 14  | Jambusar_7  | 22.0467  | 72.7659   | 0.20     | 50  | Savli_2     | 22.5134  | 73.1807   | 1.49     |
| 15  | Jambusar_8  | 22.0269  | 72.8151   | 0.20     | 51  | Savli_3     | 22.6039  | 73.3674   | 1.49     |
| 16  | Jambusar_9  | 22.0571  | 72.8595   | 0.20     | 52  | Savli_4     | 22.6201  | 73.3345   | 1.49     |
| 17  | Jambusar_10 | 22.1587  | 72.8442   | 0.20     | 53  | Savli_5     | 22.6857  | 73.2995   | 1.49     |
| 18  | Jambusar_11 | 22.1003  | 72.8057   | 0.20     | 54  | Savli_6     | 22.5910  | 73.2429   | 1.49     |
| 19  | Ghoghamba_1 | 22.5595  | 73.6251   | 1.10     | 55  | Savli_7     | 22.7422  | 73.3241   | 1.49     |
| 20  | Ghoghamba_2 | 22.6368  | 73.6493   | 1.10     | 56  | Sinor_1     | 22.0076  | 73.2906   | 10.12    |
| 21  | Halol_1     | 22.5613  | 73.5269   | 4.30     | 57  | Sinor_2     | 22.0385  | 73.3225   | 10.12    |
| 22  | Halol_2     | 22.5567  | 73.5618   | 4.30     | 58  | Sinor_3     | 21.9891  | 73.3306   | 10.12    |
| 23  | Kalol_1     | 22.6085  | 73.4268   | 2.35     | 59  | Sinor_4     | 22.0111  | 73.3889   | 10.12    |
| 24  | Kalol_2     | 22.5986  | 73.5607   | 2.35     | 60  | Sinor_5     | 21.9580  | 73.3910   | 10.12    |
| 25  | Kalol_3     | 22.5962  | 73.5167   | 2.35     | 61  | Sinor_6     | 21.9532  | 73.3070   | 10.12    |
| 26  | Kalol_4     | 22.6429  | 73.4967   | 2.35     | 62  | Sinor_7     | 21.9684  | 73.2742   | 10.12    |
| 27  | Dabhoi_1    | 22.0849  | 73.2323   | 6.18     | 63  | Vadodara_1  | 22.4397  | 73.1195   | 7.20     |
| 28  | Dabhoi_2    | 22.0445  | 73.2647   | 6.18     | 64  | Vadodara_2  | 22.4099  | 73.1781   | 7.20     |
| 29  | Dabhoi_3    | 22.0945  | 73.2877   | 6.18     | 65  | Vadodara_3  | 22.3785  | 73.1750   | 7.20     |
| 30  | Dabhoi_4    | 22.0733  | 73.3389   | 6.18     | 66  | Vadodara_4  | 22.3387  | 73.1076   | 7.20     |
| 31  | Dabhoi_5    | 22.0640  | 73.4012   | 6.18     | 67  | Vadodara_5  | 22.2958  | 73.1051   | 7.20     |
| 32  | Karjan_1    | 22.0291  | 73.0248   | 7.92     | 68  | Vadodara_6  | 22.1248  | 73.1561   | 7.20     |
| 33  | Karjan_2    | 22.0018  | 73.0965   | 7.92     | 69  | Vadodara_7  | 22.2034  | 73.2013   | 7.20     |
| 34  | Karjan_3    | 22.0819  | 73.0919   | 7.92     | 70  | Vadodara_8  | 22.2545  | 73.2314   | 7.20     |
| 35  | Karjan_4    | 22.0455  | 73.1724   | 7.92     | 71  | Vadodara_9  | 22.2447  | 73.1395   | 7.20     |
| 36  | Karjan_5    | 21.9854  | 73.2311   | 7.92     | 72  | Vadodara_10 | 22.4038  | 73.1440   | 7.20     |

**Table 8: Block wise total groundwater recharge for post monsoon season**

| Sr. | Block     | Final Rainfall Recharge    |                   |                 |              |                 | Recharge From Other Sources |                  |                  |                 |                  |                 |              |                 |       | Total Post Monsoon Recharge (Inch) |
|-----|-----------|----------------------------|-------------------|-----------------|--------------|-----------------|-----------------------------|------------------|------------------|-----------------|------------------|-----------------|--------------|-----------------|-------|------------------------------------|
|     |           | {(Rwtf-Rrif)/Rrif}*100 PD% | Recharge From PD% | Recharge (Ha-m) | Recharge (m) | Recharge (inch) | R <sub>c</sub>              | R <sub>swi</sub> | R <sub>gwi</sub> | R <sub>ip</sub> | R <sub>wcs</sub> | Recharge (Ha-m) | Recharge (m) | Recharge (inch) |       |                                    |
| 1   | Amod      | 6.89                       | Wtf               | 978.41          | 0.07         | 2.68            | 0                           | 0.00             | 127.90           | 2.45            | 0.65             | 131.00          | 0.0091       | 0.36            | 3.04  |                                    |
| 2   | Bharuch   | 17.26                      | Wtf               | 359.00          | 0.06         | 2.19            | 0                           | 0.00             | 39.06            | 0.48            | 0.00             | 39.54           | 0.0061       | 0.24            | 2.43  |                                    |
| 3   | Jambusar  | 15.44                      | Wtf               | 253.53          | 0.01         | 0.20            | 0                           | 0.00             | 10.07            | 7.30            | 1.36             | 18.73           | 0.0004       | 0.01            | 0.21  |                                    |
| 4   | Ghoghamba | 8.97                       | Wtf               | 134.60          | 0.03         | 1.10            | 0                           | 6.92             | 13.15            | 1.33            | 0.41             | 21.81           | 0.0045       | 0.18            | 1.28  |                                    |
| 5   | Halol     | 19.61                      | Wtf               | 396.34          | 0.11         | 4.30            | 0                           | 0.00             | 24.60            | 2.99            | 0.41             | 28.00           | 0.0077       | 0.30            | 4.61  |                                    |
| 6   | Kalol     | 7.62                       | Wtf               | 1053.01         | 0.06         | 2.35            | 3.95                        | 90.14            | 128.26           | 2.04            | 2.43             | 226.82          | 0.0129       | 0.51            | 2.86  |                                    |
| 7   | Dabhoi    | 9.08                       | Wtf               | 2839.41         | 0.16         | 6.18            | 1.95                        | 119.28           | 405.36           | 0.92            | 0.00             | 527.51          | 0.0291       | 1.15            | 7.32  |                                    |
| 8   | Karjan    | 19.56                      | Wtf               | 9427.09         | 0.20         | 7.92            | 0                           | 88.53            | 379.41           | 1.30            | 1.04             | 470.28          | 0.0100       | 0.40            | 8.31  |                                    |
| 9   | Padra     | 25.85                      | Rif*1.2           | 9440.30         | 0.27         | 10.72           | 0                           | 0.00             | 848.45           | 4.80            | 0.00             | 853.24          | 0.0246       | 0.97            | 11.69 |                                    |
| 10  | Savli     | -36.24                     | Rif*0.8           | 1264.21         | 0.04         | 1.49            | 0                           | 49.56            | 918.18           | 2.22            | 2.38             | 972.34          | 0.0292       | 1.15            | 2.64  |                                    |
| 11  | Sinor     | 27.11                      | Rif*1.2           | 7072.45         | 0.26         | 10.12           | 1.95                        | 38.15            | 575.04           | 0.34            | 0.00             | 615.47          | 0.0224       | 0.88            | 11.00 |                                    |
| 12  | Vadodara  | 11.99                      | Wtf               | 8224.36         | 0.18         | 7.20            | 2.69                        | 294.36           | 522.74           | 19.38           | 1.23             | 840.40          | 0.0187       | 0.74            | 7.94  |                                    |

## ANNEXURE II

Following are some of the comparisons between different remedial strategies for the Nitrate removal in the groundwater. This below tables are filled by the decision maker as per their knowledge. (IC = Initial Cost, OMC = Operation and Maintenance Cost, RT = Reduction Time, RR = Removal Rate, GWT = Ground Water Table, AM = Aquifer Material, LSC = Location Specific Characteristics, CL = Contaminant Level, PHYTO = Phyto Remediation, PAT = Pump And Treat, PAF = Pump and Fertilizer, PBR = Permeable Reactive Barrier, CHEM = Chemical Reaction)

**Table 9: Criteria comparison matrix**

| IC  |                              |                              |   |   |                                       |                                       |                                       |                            |
|-----|------------------------------|------------------------------|---|---|---------------------------------------|---------------------------------------|---------------------------------------|----------------------------|
| OMC | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| RT  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| RR  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| GWT | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input checked="" type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| AM  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input checked="" type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| LSC | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| CL  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| OMC |                              |                              |   |   |                                       |                                       |                                       |                            |
| RT  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| RR  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input checked="" type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| GWT | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input checked="" type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| AM  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input checked="" type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| LSC | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| CL  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| RT  |                              |                              |   |   |                                       |                                       |                                       |                            |
| RR  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| GWT | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| AM  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| LSC | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| CL  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| RR  |                              |                              |   |   |                                       |                                       |                                       |                            |
| GWT | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| AM  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| LSC | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| CL  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| GWT |                              |                              |   |   |                                       |                                       |                                       |                            |
| AM  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| LSC | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| CL  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| AM  |                              |                              |   |   |                                       |                                       |                                       |                            |
| LSC | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| CL  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| LSC |                              |                              |   |   |                                       |                                       |                                       |                            |
| CL  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input checked="" type="checkbox"/> 1/2 | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |

**Table 10: Remedial alternatives comparison matrix for Initial Cost**

| IC   | PHYTO                        |   |   |   |                                       |                                       |                                       |                            |
|------|------------------------------|---|---|---|---------------------------------------|---------------------------------------|---------------------------------------|----------------------------|
| PAT  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input checked="" type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| PAF  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| PRB  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input checked="" type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| CHEM | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
|      | PAT                          |   |   |   |                                       |                                       |                                       |                            |
| PAF  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| PRB  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| CHEM | <input type="checkbox"/> 1/5 | <input checked="" type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
|      | PAF                          |   |   |   |                                       |                                       |                                       |                            |
| PRB  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| CHEM | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
|      | PRB                          |   |   |   |                                       |                                       |                                       |                            |
| CHEM | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |

**Table 11: Remedial alternatives comparison matrix for Operation and Maintenance Cost**

| OMC  | PHYTO                        |   |   |   |                                       |                            |                            |                            |
|------|------------------------------|---|---|---|---------------------------------------|----------------------------|----------------------------|----------------------------|
| PAT  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| PAF  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| PRB  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| CHEM | <input type="checkbox"/> 1/5 | <input checked="" type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
|      | PAT                          |   |   |   |                                       |                            |                            |                            |
| PAF  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| PRB  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| CHEM | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
|      | PAF                          |   |   |   |                                       |                            |                            |                            |
| PRB  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| CHEM | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
|      | PRB                          |   |   |   |                                       |                            |                            |                            |
| CHEM | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

**Table 12: Remedial alternatives comparison matrix for Reduction Time**

| RT   | PHYTO                        |   |   |   |                                       |                                       |                                       |                            |
|------|------------------------------|---|---|---|---------------------------------------|---------------------------------------|---------------------------------------|----------------------------|
| PAT  | <input type="checkbox"/> 1/5 | <input checked="" type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| PAF  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| PRB  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| CHEM | <input type="checkbox"/> 1/5 | <input checked="" type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
|      | PAT                          |   |   |   |                                       |                                       |                                       |                            |
| PAF  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input checked="" type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| PRB  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| CHEM | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
|      | PAF                          |   |   |   |                                       |                                       |                                       |                            |
| PRB  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| CHEM | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
|      | PRB                          |   |   |   |                                       |                                       |                                       |                            |
| CHEM | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |

**Table 13: Remedial alternatives comparison matrix for Removal Rate**

| RR   | PHYTO                                   |   |   |                              |                                       |                            |                                       |                            |
|------|---|---|---|------------------------------|---------------------------------------|----------------------------|---------------------------------------|----------------------------|
| PAT  | <input checked="" type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| PAF  | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| PRB  | <input type="checkbox"/> 1/5            | <input checked="" type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| CHEM | <input type="checkbox"/> 1/5            | <input checked="" type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
|      | PAT                                     |   |   |                              |                                       |                            |                                       |                            |
| PAF  | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input checked="" type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| PRB  | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2 | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| CHEM | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2 | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |

|             |                              |                              |   |   |                            |                            |                            |                            |
|-------------|------------------------------|------------------------------|---|---|----------------------------|----------------------------|----------------------------|----------------------------|
|             | <b>PAF</b>                   |                              |   |   |                            |                            |                            |                            |
| <b>PRB</b>  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| <b>CHEM</b> | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
|             | <b>PRB</b>                   |                              |   |   |                            |                            |                            |                            |
| <b>CHEM</b> | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

**Table 14: Remedial alternatives comparison matrix for Ground Water Table**

|                      |                              |                              |                              |   |                                       |                                       |                                       |                                       |
|----------------------|------------------------------|------------------------------|------------------------------|---|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| <b>GWT (5-20 ft)</b> | <b>PHYTO</b>                 |                              |                              |   |                                       |                                       |                                       |                                       |
| <b>PAT</b>           | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input checked="" type="checkbox"/> 5 |
| <b>PAF</b>           | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5            |
| <b>PRB</b>           | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5            |
| <b>CHEM</b>          | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input checked="" type="checkbox"/> 4 | <input type="checkbox"/> 5            |
|                      | <b>PAT</b>                   |                              |                              |   |                                       |                                       |                                       |                                       |
| <b>PAF</b>           | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3 | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5            |
| <b>PRB</b>           | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3 | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5            |
| <b>CHEM</b>          | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5            |
|                      | <b>PAF</b>                   |                              |                              |   |                                       |                                       |                                       |                                       |
| <b>PRB</b>           | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input checked="" type="checkbox"/> 4 | <input type="checkbox"/> 5            |
| <b>CHEM</b>          | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5            |
|                      | <b>PRB</b>                   |                              |                              |   |                                       |                                       |                                       |                                       |
| <b>CHEM</b>          | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5            |

|                       |                              |   |   |   |                            |                                       |                            |                            |
|-----------------------|------------------------------|---|---|---|----------------------------|---------------------------------------|----------------------------|----------------------------|
| <b>GWT (20-35 ft)</b> | <b>PHYTO</b>                 |   |   |   |                            |                                       |                            |                            |
| <b>PAT</b>            | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| <b>PAF</b>            | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| <b>PRB</b>            | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| <b>CHEM</b>           | <input type="checkbox"/> 1/5 | <input checked="" type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
|                       | <b>PAT</b>                   |   |   |   |                            |                                       |                            |                            |
| <b>PAF</b>            | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2 | <input checked="" type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| <b>PRB</b>            | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| <b>CHEM</b>           | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
|                       | <b>PAF</b>                   |   |   |   |                            |                                       |                            |                            |
| <b>PRB</b>            | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| <b>CHEM</b>           | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
|                       | <b>PRB</b>                   |   |   |   |                            |                                       |                            |                            |
| <b>CHEM</b>           | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

|                       |                              |   |   |   |                                       |                                       |                            |                            |
|-----------------------|------------------------------|---|---|---|---------------------------------------|---------------------------------------|----------------------------|----------------------------|
| <b>GWT (35-50 ft)</b> | <b>PHYTO</b>                 |   |   |   |                                       |                                       |                            |                            |
| <b>PAT</b>            | <input type="checkbox"/> 1/5 | <input checked="" type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| <b>PAF</b>            | <input type="checkbox"/> 1/5 | <input checked="" type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| <b>PRB</b>            | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| <b>CHEM</b>           | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
|                       | <b>PAT</b>                   |   |   |   |                                       |                                       |                            |                            |
| <b>PAF</b>            | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| <b>PRB</b>            | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| <b>CHEM</b>           | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
|                       | <b>PAF</b>                   |   |   |   |                                       |                                       |                            |                            |
| <b>PRB</b>            | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| <b>CHEM</b>           | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
|                       | <b>PRB</b>                   |   |   |   |                                       |                                       |                            |                            |
| <b>CHEM</b>           | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

|                        |   |   |   |                              |                            |                            |                            |                            |
|------------------------|---|---|---|------------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| <b>GWT (&gt;50 ft)</b> | <b>PHYTO</b>                            |   |   |                              |                            |                            |                            |                            |
| <b>PAT</b>             | <input checked="" type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| <b>PAF</b>             | <input type="checkbox"/> 1/5            | <input checked="" type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| <b>PRB</b>             | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

|      |   |                              |   |   |                                       |                                       |                                       |                            |
|------|---|------------------------------|---|---|---------------------------------------|---------------------------------------|---------------------------------------|----------------------------|
| CHEM | <input checked="" type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
|      | <b>PAT</b>                              |                              |   |   |                                       |                                       |                                       |                            |
| PAF  | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input checked="" type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| PRB  | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| CHEM | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
|      | <b>PAF</b>                              |                              |   |   |                                       |                                       |                                       |                            |
| PRB  | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| CHEM | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4 | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
|      | <b>PRB</b>                              |                              |   |   |                                       |                                       |                                       |                            |
| CHEM | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |

**Table 15: Remedial alternatives comparison matrix for Aquifer Material**

|           |                              |                              |                              |   |                                       |                                       |                                       |                            |
|-----------|------------------------------|------------------------------|------------------------------|---|---------------------------------------|---------------------------------------|---------------------------------------|----------------------------|
| AM (Clay) | <b>PHYTO</b>                 |                              |                              |   |                                       |                                       |                                       |                            |
| PAT       | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input checked="" type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| PAF       | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| PRB       | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| CHEM      | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
|           | <b>PAT</b>                   |                              |                              |   |                                       |                                       |                                       |                            |
| PAF       | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3 | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| PRB       | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3 | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| CHEM      | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
|           | <b>PAF</b>                   |                              |                              |   |                                       |                                       |                                       |                            |
| PRB       | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| CHEM      | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
|           | <b>PRB</b>                   |                              |                              |   |                                       |                                       |                                       |                            |
| CHEM      | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |

|           |                              |   |   |   |                                       |                                       |                                       |                            |
|-----------|------------------------------|---|---|---|---------------------------------------|---------------------------------------|---------------------------------------|----------------------------|
| AM (Sand) | <b>PHYTO</b>                 |   |   |   |                                       |                                       |                                       |                            |
| PAT       | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| PAF       | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| PRB       | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| CHEM      | <input type="checkbox"/> 1/5 | <input checked="" type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
|           | <b>PAT</b>                   |   |   |   |                                       |                                       |                                       |                            |
| PAF       | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input checked="" type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| PRB       | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| CHEM      | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
|           | <b>PAF</b>                   |   |   |   |                                       |                                       |                                       |                            |
| PRB       | <input type="checkbox"/> 1/5 | <input checked="" type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| CHEM      | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
|           | <b>PRB</b>                   |   |   |   |                                       |                                       |                                       |                            |
| CHEM      | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |

|             |                              |   |   |   |                            |                                       |                            |                            |
|-------------|------------------------------|---|---|---|----------------------------|---------------------------------------|----------------------------|----------------------------|
| AM (Gravel) | <b>PHYTO</b>                 |   |   |   |                            |                                       |                            |                            |
| PAT         | <input type="checkbox"/> 1/5 | <input checked="" type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| PAF         | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| PRB         | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| CHEM        | <input type="checkbox"/> 1/5 | <input checked="" type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
|             | <b>PAT</b>                   |   |   |   |                            |                                       |                            |                            |
| PAF         | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2 | <input checked="" type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| PRB         | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| CHEM        | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
|             | <b>PAF</b>                   |   |   |   |                            |                                       |                            |                            |
| PRB         | <input type="checkbox"/> 1/5 | <input checked="" type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| CHEM        | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
|             | <b>PRB</b>                   |   |   |   |                            |                                       |                            |                            |
| CHEM        | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

| AM (Peat) | PHYTO                                   |                              |                              |   |                            |                                       |                            |                            |
|-----------|---|------------------------------|------------------------------|---|----------------------------|---------------------------------------|----------------------------|----------------------------|
| PAT       | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3 | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| PAF       | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3 | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| PRB       | <input checked="" type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| CHEM      | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3 | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
|           | PAT                                     |                              |                              |   |                            |                                       |                            |                            |
| PAF       | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3 | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| PRB       | <input checked="" type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| CHEM      | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3 | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
|           | PAF                                     |                              |                              |   |                            |                                       |                            |                            |
| PRB       | <input checked="" type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| CHEM      | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3 | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
|           | PRB                                     |                              |                              |   |                            |                                       |                            |                            |
| CHEM      | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2 | <input checked="" type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

**Table 16: Remedial alternatives comparison matrix for Location Specific Characteristic LSC (Urban highly population area, improper sewerage)**

| LSC  | PHYTO                                   |   |   |   |                                       |                                       |                            |                            |
|------|---|---|---|---|---------------------------------------|---------------------------------------|----------------------------|----------------------------|
| PAT  | <input type="checkbox"/> 1/5            | <input checked="" type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| PAF  | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| PRB  | <input checked="" type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| CHEM | <input checked="" type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
|      | PAT                                     |   |   |   |                                       |                                       |                            |                            |
| PAF  | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| PRB  | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| CHEM | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
|      | PAF                                     |   |   |   |                                       |                                       |                            |                            |
| PRB  | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| CHEM | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
|      | PRB                                     |   |   |   |                                       |                                       |                            |                            |
| CHEM | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

**LSC (Rural area, agricultural activities, improper sewerage)**

| LSC  | PHYTO                        |                              |   |   |                                       |                                       |                                       |                            |
|------|------------------------------|------------------------------|---|---|---------------------------------------|---------------------------------------|---------------------------------------|----------------------------|
| PAT  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| PAF  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| PRB  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| CHEM | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
|      | PAT                          |                              |   |   |                                       |                                       |                                       |                            |
| PAF  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| PRB  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| CHEM | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
|      | PAF                          |                              |   |   |                                       |                                       |                                       |                            |
| PRB  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| CHEM | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input checked="" type="checkbox"/> 4 | <input type="checkbox"/> 5 |
|      | PRB                          |                              |   |   |                                       |                                       |                                       |                            |
| CHEM | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |

**LSC (Rural area, agricultural activities)**

| LSC  | PHYTO                        |                              |                              |   |                            |                                       |                                       |                            |
|------|------------------------------|------------------------------|------------------------------|---|----------------------------|---------------------------------------|---------------------------------------|----------------------------|
| PAT  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2 | <input checked="" type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| PAF  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3 | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| PRB  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2 | <input checked="" type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| CHEM | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input checked="" type="checkbox"/> 4 | <input type="checkbox"/> 5 |
|      | PAT                          |                              |                              |   |                            |                                       |                                       |                            |
| PAF  | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3 | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |

|            |                              |                              |                              |   |                                       |                                       |                            |                            |
|------------|------------------------------|------------------------------|------------------------------|---|---------------------------------------|---------------------------------------|----------------------------|----------------------------|
| PRB        | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3 | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| CHEM       | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| <b>PAF</b> |                              |                              |                              |   |                                       |                                       |                            |                            |
| PRB        | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| CHEM       | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| <b>PRB</b> |                              |                              |                              |   |                                       |                                       |                            |                            |
| CHEM       | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

**LSC (Industrial effluents, agricultural activities)**

|            |   |   |   |   |                                       |                            |                                       |                            |
|------------|---|---|---|---|---------------------------------------|----------------------------|---------------------------------------|----------------------------|
| LSC        | <b>PHYTO</b>                            |   |   |   |                                       |                            |                                       |                            |
| PAT        | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| PAF        | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| PRB        | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| CHEM       | <input checked="" type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| <b>PAT</b> |   |   |   |   |                                       |                            |                                       |                            |
| PAF        | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input checked="" type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| PRB        | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| CHEM       | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| <b>PAF</b> |   |   |   |   |                                       |                            |                                       |                            |
| PRB        | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| CHEM       | <input type="checkbox"/> 1/5            | <input checked="" type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| <b>PRB</b> |   |   |   |   |                                       |                            |                                       |                            |
| CHEM       | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |

**Table 17: Remedial alternatives comparison matrix for Contaminant Level**

|                 |                              |   |   |   |                                       |                                       |                                       |                            |
|-----------------|------------------------------|---|---|---|---------------------------------------|---------------------------------------|---------------------------------------|----------------------------|
| CL (45-70 mg/l) | <b>PHYTO</b>                 |   |   |   |                                       |                                       |                                       |                            |
| PAT             | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input checked="" type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| PAF             | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| PRB             | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 3 | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| CHEM            | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| <b>PAT</b>      |                              |   |   |   |                                       |                                       |                                       |                            |
| PAF             | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| PRB             | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| CHEM            | <input type="checkbox"/> 1/5 | <input checked="" type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| <b>PAF</b>      |                              |   |   |   |                                       |                                       |                                       |                            |
| PRB             | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| CHEM            | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |
| <b>PRB</b>      |                              |   |   |   |                                       |                                       |                                       |                            |
| CHEM            | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3            | <input type="checkbox"/> 4            | <input type="checkbox"/> 5 |

|                  |                              |   |   |   |                                       |                            |                            |                            |
|------------------|------------------------------|---|---|---|---------------------------------------|----------------------------|----------------------------|----------------------------|
| CL (70-110 mg/l) | <b>PHYTO</b>                 |   |   |   |                                       |                            |                            |                            |
| PAT              | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| PAF              | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| PRB              | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| CHEM             | <input type="checkbox"/> 1/5 | <input checked="" type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| <b>PAT</b>       |                              |   |   |   |                                       |                            |                            |                            |
| PAF              | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| PRB              | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| CHEM             | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| <b>PAF</b>       |                              |   |   |   |                                       |                            |                            |                            |
| PRB              | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| CHEM             | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| <b>PRB</b>       |                              |   |   |   |                                       |                            |                            |                            |
| CHEM             | <input type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

| CL(110-150 mg/l) | PHYTO                                   |   |   |   |                                       |                            |                            |                            |
|------------------|---|---|---|---|---------------------------------------|----------------------------|----------------------------|----------------------------|
| PAT              | <input type="checkbox"/> 1/5            | <input checked="" type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| PAF              | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| PRB              | <input type="checkbox"/> 1/5            | <input checked="" type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| CHEM             | <input checked="" type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
|                  | <b>PAT</b>                              |   |   |   |                                       |                            |                            |                            |
| PAF              | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2            | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| PRB              | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| CHEM             | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input checked="" type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
|                  | <b>PAF</b>                              |   |   |   |                                       |                            |                            |                            |
| PRB              | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| CHEM             | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
|                  | <b>PRB</b>                              |   |   |   |                                       |                            |                            |                            |
| CHEM             | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2            | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

| CL (>150 mg/l) | PHYTO                                   |   |   |                              |                                       |                            |                            |                            |
|----------------|---|---|---|------------------------------|---------------------------------------|----------------------------|----------------------------|----------------------------|
| PAT            | <input checked="" type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| PAF            | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| PRB            | <input type="checkbox"/> 1/5            | <input checked="" type="checkbox"/> 1/4 | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| CHEM           | <input checked="" type="checkbox"/> 1/5 | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
|                | <b>PAT</b>                              |   |   |                              |                                       |                            |                            |                            |
| PAF            | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2 | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| PRB            | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2 | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| CHEM           | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4            | <input type="checkbox"/> 1/3            | <input type="checkbox"/> 1/2 | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
|                | <b>PAF</b>                              |   |   |                              |                                       |                            |                            |                            |
| PRB            | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| CHEM           | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
|                | <b>PRB</b>                              |   |   |                              |                                       |                            |                            |                            |
| CHEM           | <input type="checkbox"/> 1/5            | <input type="checkbox"/> 1/4            | <input checked="" type="checkbox"/> 1/3 | <input type="checkbox"/> 1/2 | <input type="checkbox"/> 2            | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

## ANNEXURE III

Table for Location and type of Industries and Sewage Treatment Plants (STP)

| SR | Industry Name                              | Lat      | Long     | Product Manufactured   | Type Of Industries                            |
|----|--|----------|----------|--|---|
| 1  | 20 Micron Ltd., Vadodara                   | 22.30774 | 73.1617  | Minerals & Speciality Chemicals Manufacturer                               | Petro-Chemicals-Minerals-Construction         |
| 2  | Abb Ltd, Vadodara                          | 22.30716 | 73.18122 | Electrical Equipment Manufacturing   | Mech. Elec. Products                          |
| 3  | Alstom Projects India Ltd., Vadodara       | 22.30715 | 73.18121 | Construction Company   | Petro-Chemicals-Minerals-Construction         |
| 4  | Amoli Organics P. Ltd., Vadodara           | 22.30332 | 73.20023 | Pharmaceutical Industry  | Agricultural Products-Pharmaceutical Industry |
| 5  | Apollo Tyres Ltd., Vadodara                | 22.30716 | 73.18122 | Tyre   | Paper-Rubber-Plastic-Glass                    |
| 6  | Asta India Ltd., Vadodara                  | 22.43065 | 73.22414 | Winding Wire   | Mech. Elec. Products                          |
| 7  | Ashwin Vanaspati Industries Ltd., Vadodara | 22.31062 | 73.17399 | Refined Oils (Maize Oil And Coconut Oil)                                   | Agricultural Products-Pharmaceutical Industry |
| 8  | Benzo Petro International Ltd., Vadodara   | 22.3071  | 73.1812  | Chemical Products (Aromatics, Intermediates, Solvents And Polymers)        | Petro-Chemicals-Minerals-Construction         |
| 9  | Baroda Vessels P. Ltd., Vadodara           | 22.26638 | 73.19746 | Pharmaceutical Medicines   | Mech. Elec. Products                          |
| 10 | Biotor Industries Ltd., Vadodara           | 22.3071  | 73.1814  | Pharmaceutical Products  | Agricultural Products-Pharmaceutical Industry |
| 11 | Bombardier India Ltd., Vadodara            | 22.37004 | 73.19516 | Textiles   | Textile                                       |
| 12 | Cadila Health Care Ltd., Vadodara          | 22.30786 | 73.1817  | Pharmaceutical Products  | Agricultural Products-Pharmaceutical Industry |
| 13 | Cosmos Films Ltd., Vadodara                | 22.31526 | 73.14271 | Packaging Films  | Paper-Rubber-Plastic-Glass                    |
| 14 | Crompton Greaves Ltd., Vadodara            | 22.30747 | 73.18187 | Power Transmission And Distribution, Industrial Automation                 | Mech. Elec. Products                          |
| 15 | Emco Ltd., Vadodara                        | 22.30715 | 73.18124 | Power Transformers, Distribution Transformers, Switchgear                  | Mech. Elec. Products                          |
| 16 | Gas Authority Of India, Vadodara           | 22.30717 | 73.18122 | Liquefied Petroleum Gas (Lpg), Propane, Butane, Natural Gas Liquids (Ngls) | Petro-Chemicals-Minerals-Construction         |
| 17 | Gsfc Ltd., Vadodara                        | 22.30715 | 73.18122 | Fertilizers, Chemicals, Petrochemicals, Plastics, And Textiles.            | Petro-Chemicals-Minerals-Construction         |
| 18 | Gujarat Adani Enegy Ltd., Vadodara         | 22.30717 | 73.18124 | Gas Distribution Network   | Petro-Chemicals-Minerals-Construction         |
| 19 | Kaps, Vadodara                             | 22.34977 | 73.22164 | Plastics   | Paper-Rubber-Plastic-Glass                    |

| SR | Industry Name                                  | Lat      | Long     | Product Manufactured   | Type Of Industries                            |
|----|--|----------|----------|--|---|
| 20 | Inox Air Products Lab., Vadodara               | 22.31788 | 73.16582 | Industrial Gases, Oxygen, Nitrogen, Argon, Helium And Carbon Dioxide                       | Petro-Chemicals-Minerals-Construction         |
| 21 | Jct Electronics Ltd., Vadodara                 | 22.30312 | 73.16583 | Televisions, Audio Systems   | Mech. Elec. Products                          |
| 22 | Indian Oil Corporation Ltd., Vadodara          | 22.30717 | 73.18129 | Gasoline, Diesel, Kerosene, Lpg, Naphtha   | Petro-Chemicals-Minerals-Construction         |
| 23 | Jyoti Ltd., Vadodara                           | 22.30712 | 73.18123 | Pumps, Valves, Hydro Turbines  | Mech. Elec. Products                          |
| 24 | Kemrock Industries & Export Ltd., Vadodara     | 22.30799 | 73.16334 | Fiberglass Reinforced Plastic (Frp), Carbon Fiber Composites,                              | Paper-Rubber-Plastic-Glass                    |
| 25 | Larsen & Toubro Ltd., Vadodara                 | 22.30715 | 73.18123 | Reactors, Heat Exchangers, Pressure Vessels, Oil And Gas                                   | Petro-Chemicals-Minerals-Construction         |
| 26 | Kiri Dyes & Chemicals, Vadodara                | 22.3072  | 73.18122 | Dyes, Pigments, Paper, Leather, Plastics   | Textile                                       |
| 27 | Gujarat Industries & Power Co. Ltd.            | 22.24567 | 73.18249 | Papers   | Paper-Rubber-Plastic-Glass                    |
| 28 | Panoli Intermediates (India), Vadodara         | 22.31148 | 73.15445 | Pharmaceuticals, Agrochemicals   | Agricultural Products-Pharmaceutical Industry |
| 29 | Petro Net Lng Ltd., Vadodara                   | 22.30715 | 73.18124 | Lng (Liquified Natural Gas) Distribution   | Petro-Chemicals-Minerals-Construction         |
| 30 | Reliance Industries, Vadodara                  | 22.41053 | 73.18126 | Polyethylene, Polypropylene, Pvc   | Petro-Chemicals-Minerals-Construction         |
| 31 | Sabic Innovative Plastics India Ltd., Vadodara | 22.47065 | 73.13177 | Plastic  | Paper-Rubber-Plastic-Glass                    |
| 32 | Shankar Packaging Ltd., Vadodara               | 22.26832 | 73.19101 | Packaging Bags   | Paper-Rubber-Plastic-Glass                    |
| 33 | Dinesh Mills Ltd., Vadodara                    | 22.30403 | 73.17749 | Fabrics  | Textile                                       |
| 34 | Sterling Gilatine Ltd., Vadodara               | 22.27349 | 73.14761 | Gelatin, Pharmaceutical-Grade Gelatin  | Paper-Rubber-Plastic-Glass                    |
| 35 | Solaris Bio Chemicals, Vadodara                | 22.30712 | 73.18129 | Biochemicals, Intermediates For The Pharmaceutical, Nutraceutical, Agrochemical Industries | Agricultural Products-Pharmaceutical Industry |
| 36 | Suzlon Energy, Vadodara                        | 22.32181 | 73.16708 | Wind Turbine Generators  | Mech. Elec. Products                          |
| 37 | Transpek Industry Ltd., Vadodara               | 22.31251 | 73.1642  | Sodium Hydro-sulphite, Potassium Permanganate, Hydrogen Peroxide, Zinc Dust                | Agricultural Products-Pharmaceutical Industry |
| 38 | Voltemp Transformer Ltd., Vadodara             | 22.30714 | 73.18123 | Transformers   | Mech. Elec. Products                          |
| 39 | Thermax Ltd., Vadodara                         | 22.57645 | 73.22712 | Textiles   | Textile                                       |
| 40 | Benzo Petro International Ltd., Vadodara       | 22.30717 | 73.18124 | Chemicals (Surfactants, Emulsifiers, Esters, Alkyl Phenols)                                | Petro-Chemicals-Minerals-Construction         |
| 41 | Diamond Cables Ltd., Vadodara                  | 22.33046 | 73.15968 | Electrical Cables And Wires  | Paper-Rubber-Plastic-Glass                    |

| SR | Industry Name  | Lat      | Long     | Product Manufactured                                  | Type Of Industries                            |
|----|--|----------|----------|---|---|
| 42 | E. I. Dupont India Ltd., Vadodara                          | 22.30152 | 73.15266 | Chemicals, Polymers, Engineering Plastics             | Paper-Rubber-Plastic-Glass                    |
| 43 | Fag Bearing Ltd., Vadodara                                 | 22.30719 | 73.18123 | Roller Bearings                                       | Mech. Elec. Products                          |
| 44 | Gpt Pipe Industries P. Ltd., Vadodara                      | 22.30717 | 73.18124 | Pipes   | Mech. Elec. Products                          |
| 45 | Deepak Nitrate Ltd., Vadodara                              | 22.41223 | 73.09207 | Chemicals And Intermediates                           | Petro-Chemicals-Minerals-Construction         |
| 46 | Bharuch Textile Mills.                                     | 21.78602 | 73.08257 | Cotton Yarn, Synthetic Yarn, Blended Yarn And Fabrics | Textile                                       |
| 47 | Faisal Fabrics Ltd., Estate, Bharuch.                      | 21.98259 | 72.98986 | Fabrics   | Textile                                       |
| 48 | Gujarat Narmada Velley Fertilize, Vadadla, Bharuch.        | 21.71748 | 73.02802 | Fertilizer (Urea, Ammonium And Ammonium Sulphate)     | Agricultural Products-Pharmaceutical Industry |
| 49 | Mipco Seamless Ring Guj. Ltd., Bharuch.                    | 21.87145 | 73.14324 | Rubber  | Paper-Rubber-Plastic-Glass                    |
| 50 | Jhaveri Polymers Ltd., Gidc, Palej.                        | 21.97768 | 73.1573  | Fabrics   | Textile                                       |
| 51 | Gujarat Power Gen. Energy Corpn. Ltd., Paghuthan, Bharuch. | 22.1816  | 72.9112  | Electricity   | Mech. Elec. Products                          |
| 52 | Phillips Carbon Black Limited., Palej.                     | 21.9686  | 73.38872 | Carbon Black  | Paper-Rubber-Plastic-Glass                    |
| 53 | Shree Marmada Alluminium Ltd. Bholav.                      | 21.72955 | 73.01372 | Aluminium Product                                     | Petro-Chemicals-Minerals-Construction         |
| 54 | Sonic Watches Ltd., 8, Vadadla, Bharuch.                   | 21.87454 | 73.20278 | Watches   | Paper-Rubber-Plastic-Glass                    |
| 55 | The Antizichan Bearings Corpn., 1-B, Gidc, Bharuch.        | 21.72397 | 73.0136  | Bearings  | Mech. Elec. Products                          |
| 56 | Videocon Narmada Ltd., Bharuch.                            | 21.70514 | 72.99588 | Electronic Appliances And Devices                     | Mech. Elec. Products                          |
| 57 | Welspun Gujarat Sta. Rohrem Ltd., Vadodara, Vagara.        | 22.30717 | 73.18123 | Steel Pipes And Tubes                                 | Paper-Rubber-Plastic-Glass                    |
| 58 | Banco Products (India) Ltd., Ankhi, Jambusar.              | 22.12645 | 72.7815  | Clothing  | Textile                                       |
| 59 | Jajodia Industries Limited, Baroda-Jambusar Road,          | 22.161   | 72.844   | Agricultural Products                                 | Agricultural Products-Pharmaceutical Industry |
| 60 | Scott Glass India Pvt.Ltd., Vill Ankhi, Ta. Jambusar.      | 22.17245 | 72.64251 | Fabrics And Glass                                     | Paper-Rubber-Plastic-Glass                    |
| 61 | Sevena Ceramics Ltd., Plot No. 1207, Gajera, Jambusar.     | 22.21328 | 72.97586 | Ceramic Tiles   | Petro-Chemicals-Minerals-Construction         |
| 62 | Super Salts Ltd., Magnad.                                  | 22.1624  | 72.9958  | Agricultural Products                                 | Agricultural Products-Pharmaceutical Industry |
| 63 | Ajanta Paper & General Product, Plt No. 778, Jhagadia.     | 21.72486 | 73.00131 | Paper   | Paper-Rubber-Plastic-Glass                    |

| SR | Industry Name   | Lat      | Long     | Product Manufactured    | Type Of Industries                            |
|----|---|----------|----------|-------------------------|---|
| 64 | Globbiz International Private Limited, 301, Halol, Panchmahals        | 22.56456 | 73.63944 | Minerals                | Petro-Chemicals-Minerals-Construction         |
| 65 | Yunikon Industries Private Limited, PanchMahals                       | 22.57742 | 73.5299  | Construction Company    | Petro-Chemicals-Minerals-Construction         |
| 66 | Parmar Stone Cruser LLP, Godhara, Panchmahal Godhra Panch Mahals      | 22.80935 | 73.38487 | Crushed Stone, Gravel   | Petro-Chemicals-Minerals-Construction         |
| 67 | Infinite Foam Private Limited, Gidc Halol Halol Panch Mahals          | 22.64038 | 73.63602 | Chemicals               | Petro-Chemicals-Minerals-Construction         |
| 68 | Acnova Pharmaceuticals Private Limited, Maswad Gidc Halol, Panchmahal | 22.55317 | 73.57588 | Pharmaceutical Products | Agricultural Products-Pharmaceutical Industry |
| 69 | Degna Bio Plantic Private Limited, Kalol, Panchmahals                 | 22.63897 | 73.50019 | Chemicals               | Petro-Chemicals-Minerals-Construction         |
| 70 | Krushipath Producer Company Limited, Kalol, Panchmahals               | 22.6043  | 73.44925 | Chemicals               | Petro-Chemicals-Minerals-Construction         |
| 71 | Rgabwala Steel Private Limited, Alindra Kalol Panch Mahals            | 22.61703 | 73.35728 | Steel                   | Petro-Chemicals-Minerals-Construction         |
| 72 | Stp_1_Tarsali   | 22.25913 | 73.21999 | Water Treatment Plant   | Petro-Chemicals-Minerals-Construction         |
| 73 | Stp_2_Gajarwadi   | 22.28686 | 73.22058 | Water Treatment Plant   | Petro-Chemicals-Minerals-Construction         |
| 74 | Monark Textile  | 22.26372 | 73.25114 | Textiles                | Textile                                       |
| 75 | Stp_3_Chhani  | 22.35595 | 73.17857 | Water Treatment Plant   | Petro-Chemicals-Minerals-Construction         |
| 76 | Stp_4_Vuda, Vemali  | 22.35392 | 73.20783 | Water Treatment Plant   | Petro-Chemicals-Minerals-Construction         |
| 77 | Safe Enviro Private Limited Magnad                                    | 22.05635 | 72.90016 | Textiles                | Textile                                       |
| 78 | Kangam Works  | 22.17595 | 72.68946 | Agricultural Products   | Agricultural Products-Pharmaceutical Industry |
| 79 | Vishwa Pvt. Ltd   | 22.06196 | 72.87557 | Textile                 | Textile                                       |
| 80 | Mahadev Textiles P. Ltd.  | 22.54218 | 73.63485 | Textiles                | Textile                                       |
| 81 | Shreyas Industries  | 22.17611 | 72.68944 | Agricultural Products   | Agricultural Products-Pharmaceutical Industry |
| 82 | Lisega India Pvt. Ltd.  | 22.56632 | 73.58569 | Electrical Equations    | Mech. Elec. Products                          |
| 83 | Premdhara India Llp   | 22.59986 | 73.52381 | Paper                   | Paper-Rubber-Plastic-Glass                    |
| 84 | Gujarat Fluoro Chemicals Ltd.   | 22.55099 | 73.65398 | Agricultural Product    | Agricultural Products-Pharmaceutical Industry |

| SR  | Industry Name              | Lat      | Long     | Product Manufactured  | Type Of Industries                                |
|-----|----------------------------|----------|----------|-----------------------|---|
| 85  | Vaishnavi Bmc              | 22.1508  | 72.6405  | Agricultural Products | Agricultural Products-<br>Pharmaceutical Industry |
| 86  | Jsa Brick Works            | 22.54304 | 73.60122 | Bricks                | Paper-Rubber-Plastic-Glass                        |
| 87  | Cargo Papers P. Limited    | 22.58431 | 73.6296  | Paper                 | Paper-Rubber-Plastic-Glass                        |
| 88  | Yeap Private Limited       | 22.57149 | 73.63852 | Rubber                | Paper-Rubber-Plastic-Glass                        |
| 89  | Krishna Kalol (Pms)        | 22.61126 | 73.46244 | Automobile Parts      | Mech. Elec. Products                              |
| 90  | Kalol Gide                 | 22.64209 | 73.45792 | Paper And Plastics    | Paper-Rubber-Plastic-Glass                        |
| 91  | Radici India Pvt. Ltd.     | 22.5649  | 73.4758  | Textiles              | Textile   |
| 92  | Rajpal Agriculture         | 22.63435 | 73.25239 | Agricultural          | Agricultural Products-<br>Pharmaceutical Industry |
| 93  | Patels Textiles            | 22.6357  | 73.3383  | Textiles              | Textile   |
| 94  | Ks Agrotech Pvt. Ltd       | 22.5518  | 73.1772  | Agricultural          | Agricultural Products-<br>Pharmaceutical Industry |
| 95  | Maruti Tyres P. Ltd        | 22.1356  | 72.9821  | Tyre                  | Paper-Rubber-Plastic-Glass                        |
| 96  | Mamta Automobile Parts     | 22.22141 | 73.00511 | Automobile Parts      | Mech. Elec. Products                              |
| 97  | Prayug Agro Pvt. Ltd.      | 22.54137 | 73.60063 | Agricultural          | Agricultural Products-<br>Pharmaceutical Industry |
| 98  | Shree Agro P. Ltd          | 22.5382  | 73.6818  | Agricultural          | Agricultural Products-<br>Pharmaceutical Industry |
| 99  | Yogi Agro Center           | 22.5607  | 73.5686  | Agricultural          | Agricultural Products-<br>Pharmaceutical Industry |
| 100 | Krishna Plastics           | 22.6133  | 73.6159  | Plastics              | Paper-Rubber-Plastic-Glass                        |
| 101 | Siddhi Agro Chemicals      | 22.6093  | 73.4721  | Agricultural          | Agricultural Products-<br>Pharmaceutical Industry |
| 102 | Graphene Composites Ltd    | 22.5542  | 73.2405  | agricultural          | Agricultural Products-<br>Pharmaceutical Industry |
| 103 | Sibansee Agritech Pvt Ltd. | 22.5816  | 73.6349  | agricultural          | Agricultural Products-<br>Pharmaceutical Industry |
| 104 | Shapire Synthetic P. Ltd   | 22.5474  | 73.5614  | Textiles              | Textile   |
| 105 | Ami Pvt. Ltd               | 22.2078  | 72.9053  | Plastics              | Paper-Rubber-Plastic-Glass                        |
| 106 | Narayanji E Cloth P. Ltd   | 22.1237  | 72.607   | Textiles              | Textile   |
| 107 | Pilot Industries           | 21.8671  | 73.1007  | Textiles              | Textile   |
| 108 | L&T Mahsr-C4               | 22.0118  | 73.0383  | Construction Company  | Petro-Chemicals-Minerals-<br>Construction         |

| <b>SR</b> | <b>Industry Name</b>       | <b>Lat</b> | <b>Long</b> | <b>Product Manufactured</b> | <b>Type Of Industries</b>                         |
|-----------|----------------------------|------------|-------------|-----------------------------|---|
| 109       | Walrus Seer Textile Mills  | 22.0404    | 72.9967     | Textiles                    | Textile   |
| 110       | Hettich India Pvt Ltd      | 22.3831    | 73.1044     | Automobile Parts            | Mech. Elec. Products                              |
| 111       | M R Agro                   | 21.77499   | 73.101      | Agricultural                | Agricultural Products-<br>Pharmaceutical Industry |
| 112       | Saral Agro Pvt Ltd         | 22.6098    | 73.4064     | Agricultural                | Agricultural Products-<br>Pharmaceutical Industry |
| 113       | Sai Ash Polymers           | 22.1944    | 73.0867     | Plastic                     | Paper-Rubber-Plastic-Glass                        |
| 114       | Daimond Textile P. Ltd     | 22.08299   | 72.72946    | Textiles                    | Textile   |
| 115       | Sangita Rubber And Plastic | 22.1587    | 72.6767     | Plastic                     | Paper-Rubber-Plastic-Glass                        |
| 116       | Jantran Head Works Gwssb   | 22.1083    | 72.6638     | Automobile Parts            | Mech. Elec. Products                              |
| 117       | Premdhara Agro India Llp   | 22.6111    | 73.5557     | Agricultural Product        | Agricultural Products-<br>Pharmaceutical Industry |
| 118       | Earthmin Minerals          | 22.6525    | 73.453      | Chemicals Products          | Petro-Chemicals-Minerals-<br>Construction         |

## ANNEXURE IV

Table for Study Area Villages and Population

| Sr. No. | Name                  | Area  | Lat      | Long     | Population (Person) |
|---------|-----------------------|-------|----------|----------|---------------------|
| 1       | Mandala, Vadodara     | Rural | 22.08043 | 73.32658 | 126                 |
| 2       | Parikha, Vadodara     | Rural | 22.08243 | 73.29331 | 126                 |
| 3       | Dangikuva, Vadodara   | Rural | 22.12262 | 73.26712 | 144                 |
| 4       | Baripura, Vadodara    | Rural | 22.102   | 73.33879 | 128                 |
| 5       | Vakhatpura, Vadodara  | Rural | 22.10825 | 73.31938 | 155                 |
| 6       | Habipura, Vadodara    | Rural | 22.09507 | 73.35017 | 134                 |
| 7       | Chhatral, Vadodara    | Rural | 22.1048  | 73.28946 | 204                 |
| 8       | Khanpur, Vadodara     | Rural | 22.11638 | 73.27592 | 251                 |
| 9       | Kayavarohan, Vadodara | Rural | 22.07364 | 73.25018 | 177                 |
| 10      | Menpura, Vadodara     | Rural | 22.10627 | 73.23151 | 178                 |
| 11      | Puniyad, Vadodara     | Rural | 22.09884 | 73.21355 | 153                 |
| 12      | Kunvarpura, Vadodara  | Rural | 22.10094 | 73.26987 | 175                 |
| 13      | Kothara, Vadodara     | Rural | 22.10024 | 73.30569 | 127                 |
| 14      | Sathod, Vadodara      | Rural | 22.08075 | 73.37287 | 147                 |
| 15      | Manpur, Vadodara      | Rural | 22.05003 | 73.44793 | 157                 |
| 16      | Vadaj, Vadodara       | Rural | 22.06748 | 73.4308  | 118                 |
| 17      | Sultanpura, Vadodara  | Rural | 22.08165 | 73.27605 | 131                 |
| 18      | Kanayada, Vadodara    | Rural | 22.07376 | 73.40499 | 250                 |
| 19      | Fofaliya, Vadodara    | Rural | 22.07976 | 73.20811 | 179                 |
| 20      | Pisai, Vadodara       | Rural | 22.06409 | 73.35437 | 150                 |
| 21      | Chanwada, Vadodara    | Rural | 22.05751 | 73.45934 | 235                 |
| 22      | Shirola, Vadodara     | Rural | 22.05668 | 73.38298 | 154                 |
| 23      | Ten Talav, Vadodara   | Rural | 22.04876 | 73.41964 | 144                 |
| 24      | Karmal, Vadodara      | Rural | 22.05917 | 73.30191 | 126                 |
| 25      | Ordi, Vadodara        | Rural | 22.05141 | 73.4572  | 186                 |
| 26      | Lingsthali, Vadodara  | Rural | 22.04184 | 73.2558  | 177                 |
| 27      | Rajpura, Vadodara     | Rural | 22.03423 | 73.44995 | 137                 |
| 28      | Gumanpura, Vadodara   | Rural | 22.02554 | 73.46188 | 128                 |
| 29      | Bananj, Vadodara      | Rural | 22.02602 | 73.23339 | 157                 |
| 30      | Sanor, Vadodara       | Rural | 22.01911 | 73.44707 | 129                 |
| 31      | Mandva, Vadodara      | Rural | 22.00131 | 73.4337  | 150                 |
| 32      | Gamdi, Vadodara       | Rural | 21.99849 | 73.46832 | 30                  |
| 33      | Fulwadi, Vadodara     | Rural | 22.00549 | 73.45255 | 130                 |
| 34      | Chandod, Vadodara     | Rural | 21.99074 | 73.4579  | 614                 |
| 35      | Karnali, Vadodara     | Rural | 21.98422 | 73.46732 | 43                  |
| 36      | Bhimpura, Vadodara    | Rural | 21.98685 | 73.43916 | 399                 |
| 37      | Nanderiya, Vadodara   | Rural | 21.97992 | 73.42584 | 58                  |
| 38      | Kandari, Vadodara     | Rural | 22.07352 | 73.15442 | 246                 |
| 39      | Kurai, Vadodara       | Rural | 22.07548 | 73.09609 | 196                 |

| Sr. No. | Name                     | Area  | Lat      | Long     | Population (Person) |
|---------|--------------------------|-------|----------|----------|---------------------|
| 40      | Handod, Vadodara         | Rural | 22.07046 | 73.05748 | 163                 |
| 41      | Dhanora, Vadodara        | Rural | 22.08081 | 73.18546 | 184                 |
| 42      | Khandha, Vadodara        | Rural | 22.07102 | 73.07698 | 157                 |
| 43      | Gandhara, Vadodara       | Rural | 22.0534  | 73.21529 | 178                 |
| 44      | Surwada, Vadodara        | Rural | 22.09982 | 73.06419 | 268                 |
| 45      | Bamangam, Vadodara       | Rural | 22.10382 | 73.19239 | 187                 |
| 46      | Pingalwada, Vadodara     | Rural | 22.10521 | 73.09898 | 271                 |
| 47      | Harsunda, Vadodara       | Rural | 22.10725 | 73.12241 | 171                 |
| 48      | Manpur, Vadodara         | Rural | 22.09676 | 73.0769  | 270                 |
| 49      | Anastu, Vadodara         | Rural | 22.08874 | 73.11412 | 265                 |
| 50      | Manglej, Vadodara        | Rural | 22.09346 | 73.17347 | 167                 |
| 51      | Kherda, Vadodara         | Rural | 22.09273 | 73.13427 | 171                 |
| 52      | Kanabha, Vadodara        | Rural | 22.06023 | 73.04075 | 167                 |
| 53      | Ganpatpura, Vadodara     | Rural | 22.05798 | 73.1961  | 252                 |
| 54      | Vemardi, Vadodara        | Rural | 22.05416 | 73.17157 | 158                 |
| 55      | Kambola, Vadodara        | Rural | 22.03893 | 73.05238 | 123                 |
| 56      | Karamadi, Vadodara       | Rural | 22.05173 | 73.09238 | 1193                |
| 57      | Bodaka, Vadodara         | Rural | 22.05045 | 73.04301 | 184                 |
| 58      | Juni Jitharadi, Vadodara | Rural | 22.03964 | 73.14564 | 124                 |
| 59      | Miyagam, Vadodara        | Rural | 22.02784 | 73.08925 | 227                 |
| 60      | Navi Jithardi, Vadodara  | Rural | 22.03626 | 73.15712 | 167                 |
| 61      | Sanpa, Vadodara          | Rural | 22.03059 | 73.01303 | 143                 |
| 62      | Dhavat, Vadodara         | Rural | 22.0326  | 73.18314 | 161                 |
| 63      | Kurali, Vadodara         | Rural | 22.02447 | 73.21261 | 143                 |
| 64      | Bharthana, Vadodara      | Rural | 22.01212 | 73.1368  | 140                 |
| 65      | Mangrol, Vadodara        | Rural | 22.0127  | 73.04279 | 174                 |
| 66      | Vadava, Vadodara         | Rural | 22.01572 | 73.11533 | 74                  |
| 67      | Bharthali, Vadodara      | Rural | 22.01276 | 73.15637 | 153                 |
| 68      | Vemar, Vadodara          | Rural | 22.00256 | 73.23603 | 131                 |
| 69      | Samri, Vadodara          | Rural | 21.9342  | 73.19814 | 255                 |
| 70      | Sarupur Timbi, Vadodara  | Rural | 21.92805 | 73.15091 | 171                 |
| 71      | Saniyad, Vadodara        | Rural | 21.92275 | 73.17248 | 157                 |
| 72      | Kasampur, Vadodara       | Rural | 22.01194 | 73.1942  | 363                 |
| 73      | Sandarna, Vadodara       | Rural | 22.0089  | 73.17394 | 145                 |
| 74      | Kothav, Vadodara         | Rural | 22.00067 | 73.21568 | 227                 |
| 75      | Dhamanja, Vadodara       | Rural | 21.99601 | 73.08105 | 125                 |
| 76      | Nishaliya, Vadodara      | Rural | 21.99505 | 73.20401 | 205                 |
| 77      | Choranda, Vadodara       | Rural | 21.98912 | 73.17763 | 260                 |
| 78      | Lakodara, Vadodara       | Rural | 21.9987  | 73.10878 | 224                 |
| 79      | Osalam, Vadodara         | Rural | 21.9876  | 73.14257 | 220                 |
| 80      | Dethan, Vadodara         | Rural | 21.98204 | 73.10416 | 223                 |
| 81      | Methi, Vadodara          | Rural | 21.97288 | 73.22215 | 120                 |
| 82      | Valan, Vadodara          | Rural | 21.97676 | 73.06999 | 243                 |

| Sr. No. | Name                    | Area  | Lat      | Long     | Population (Person) |
|---------|-------------------------|-------|----------|----------|---------------------|
| 83      | Chhanchhva, Vadodara    | Rural | 21.9714  | 73.19756 | 120                 |
| 84      | Atali, Vadodara         | Rural | 21.96482 | 73.14567 | 137                 |
| 85      | Bachar, Vadodara        | Rural | 21.96318 | 73.17063 | 171                 |
| 86      | Kiya, Vadodara          | Rural | 21.96029 | 73.13183 | 137                 |
| 87      | Ranapur, Vadodara       | Rural | 21.94928 | 73.2539  | 95                  |
| 88      | Kala, Vadodara          | Rural | 21.94874 | 73.1796  | 395                 |
| 89      | Simli, Vadodara         | Rural | 21.95337 | 73.2208  | 224                 |
| 90      | Kanthariya, Vadodara    | Rural | 21.94914 | 73.19974 | 114                 |
| 91      | Kothiya, Vadodara       | Rural | 21.943   | 73.23915 | 213                 |
| 92      | Urad, Vadodara          | Rural | 21.94259 | 73.15742 | 162                 |
| 93      | Latipur Timbi, Vadodara | Rural | 21.9454  | 73.18473 | 105                 |
| 94      | Koliyad, Vadodara       | Rural | 21.92797 | 73.1321  | 305                 |
| 95      | Divi, Vadodara          | Rural | 21.92353 | 73.11689 | 298                 |
| 96      | Deroli, Vadodara        | Rural | 21.93461 | 73.22244 | 181                 |
| 97      | Samra, Vadodara         | Rural | 21.91846 | 73.1979  | 138                 |
| 98      | Fatepur, Vadodara       | Rural | 21.92017 | 73.21585 | 139                 |
| 99      | Sansrod, Vadodara       | Rural | 21.91041 | 73.1089  | 467                 |
| 100     | Sanapura, Vadodara      | Rural | 21.90851 | 73.14629 | 159                 |
| 101     | Sherpura, Vadodara      | Rural | 21.90417 | 73.1869  | 110                 |
| 102     | Saring, Vadodara        | Rural | 21.89479 | 73.12486 | 136                 |
| 103     | Haldarva, Vadodara      | Rural | 21.8891  | 73.08794 | 170                 |
| 104     | Kahona, Vadodara        | Rural | 21.90401 | 73.2095  | 119                 |
| 105     | Karan, Vadodara         | Rural | 21.89896 | 73.16995 | 102                 |
| 106     | Mantroj, Vadodara       | Rural | 21.88676 | 73.10247 | 175                 |
| 107     | Pachhiyapura, Vadodara  | Rural | 21.89421 | 73.15562 | 327                 |
| 108     | Ropa, Vadodara          | Rural | 21.89017 | 73.20473 | 215                 |
| 109     | Hirjipura, Vadodara     | Rural | 21.89615 | 73.21422 | 105                 |
| 110     | Rarod, Vadodara         | Rural | 21.8734  | 73.19589 | 148                 |
| 111     | Oz, Vadodara            | Rural | 21.87546 | 73.18011 | 206                 |
| 112     | Bakapur, Vadodara       | Rural | 21.8904  | 73.21738 | 154                 |
| 113     | Delvada, Vadodara       | Rural | 21.87958 | 73.14728 | 78                  |
| 114     | Lilod, Vadodara         | Rural | 21.8835  | 73.22444 | 154                 |
| 115     | Malod, Vadodara         | Rural | 21.87601 | 73.21841 | 312                 |
| 116     | Arjanpura, Vadodara     | Rural | 21.86769 | 73.16457 | 97                  |
| 117     | Somaj, Vadodara         | Rural | 21.86898 | 73.1483  | 119                 |
| 118     | Sayar, Vadodara         | Rural | 21.86075 | 73.22539 | 194                 |
| 119     | Sagdol, Vadodara        | Rural | 21.86337 | 73.21498 | 228                 |
| 120     | Pura, Vadodara          | Rural | 21.85068 | 73.18338 | 148                 |
| 121     | Alampura, Vadodara      | Rural | 21.85272 | 73.20802 | 248                 |
| 122     | Moti Koral, Vadodara    | Rural | 21.84789 | 73.20413 | 413                 |
| 123     | Karjan (M), Vadodara    | Urban | 22.05092 | 73.12511 | 404                 |
| 124     | Jaspur, Vadodara        | Rural | 22.27949 | 73.0766  | 376                 |
| 125     | Dabka, Vadodara         | Rural | 22.22537 | 72.95602 | 305                 |

| Sr. No. | Name                  | Area  | Lat      | Long     | Population (Person) |
|---------|-----------------------|-------|----------|----------|---------------------|
| 126     | Umaraya, Vadodara     | Rural | 22.25742 | 73.0406  | 552                 |
| 127     | Tajpura, Vadodara     | Rural | 22.26639 | 73.06869 | 339                 |
| 128     | Luna, Vadodara        | Rural | 22.2607  | 73.05228 | 621                 |
| 129     | Tithor, Vadodara      | Rural | 22.21576 | 72.88259 | 174                 |
| 130     | Sangma, Vadodara      | Rural | 22.26404 | 73.08852 | 1509                |
| 131     | Ekalbara, Vadodara    | Rural | 22.24839 | 73.0218  | 596                 |
| 132     | Mujpur, Vadodara      | Rural | 22.23521 | 72.99238 | 905                 |
| 133     | Dabhasa, Vadodara     | Rural | 22.23812 | 73.0388  | 530                 |
| 134     | Sokhdakhurd, Vadodara | Rural | 22.24462 | 73.1136  | 1007                |
| 135     | Pavda, Vadodara       | Rural | 22.23333 | 72.94318 | 316                 |
| 136     | Mahuvad, Vadodara     | Rural | 22.23511 | 73.01318 | 663                 |
| 137     | Darapura, Vadodara    | Rural | 22.22752 | 73.10495 | 413                 |
| 138     | Patod, Vadodara       | Rural | 22.2259  | 73.12054 | 387                 |
| 139     | Narsipura, Vadodara   | Rural | 22.22622 | 72.97505 | 862                 |
| 140     | Chokari, Vadodara     | Rural | 22.21875 | 72.9296  | 430                 |
| 141     | Karkhadi, Vadodara    | Rural | 22.20776 | 72.90948 | 198                 |
| 142     | Dhobikuwa, Vadodara   | Rural | 22.22541 | 73.00215 | 56                  |
| 143     | Latipura, Vadodara    | Rural | 22.22188 | 73.05837 | 506                 |
| 144     | Vadu, Vadodara        | Rural | 22.21002 | 72.98685 | 772                 |
| 145     | Chansad, Vadodara     | Rural | 22.21301 | 73.1351  | 118                 |
| 146     | Ghayaj, Vadodara      | Rural | 22.21696 | 73.08442 | 286                 |
| 147     | Ranu, Vadodara        | Rural | 22.2108  | 73.03062 | 499                 |
| 148     | Somjipura, Vadodara   | Rural | 22.21391 | 72.96743 | 752                 |
| 149     | Bhoj, Vadodara        | Rural | 22.19271 | 73.0072  | 452                 |
| 150     | Majatan, Vadodara     | Rural | 22.20119 | 72.94458 | 511                 |
| 151     | Sejakuva, Vadodara    | Rural | 22.19971 | 73.06844 | 444                 |
| 152     | Pipli, Vadodara       | Rural | 22.20094 | 73.05257 | 370                 |
| 153     | Sareja, Vadodara      | Rural | 22.20313 | 73.11368 | 13                  |
| 154     | Goriyad, Vadodara     | Rural | 22.19734 | 73.09094 | 236                 |
| 155     | Sandha, Vadodara      | Rural | 22.1956  | 72.95258 | 653                 |
| 156     | Vishrampura, Vadodara | Rural | 22.19365 | 72.96776 | 871                 |
| 157     | Dudhwada, Vadodara    | Rural | 22.18948 | 72.8904  | 3524                |
| 158     | Madapur, Vadodara     | Rural | 22.18845 | 73.11103 | 230                 |
| 159     | Karnakuva, Vadodara   | Rural | 22.18799 | 72.9812  | 425                 |
| 160     | Vadadla, Vadodara     | Rural | 22.18668 | 73.02824 | 296                 |
| 161     | Sadhi, Vadodara       | Rural | 22.17762 | 73.05168 | 205                 |
| 162     | Chitral, Vadodara     | Rural | 22.18005 | 72.94338 | 277                 |
| 163     | Amla, Vadodara        | Rural | 22.17564 | 73.07306 | 155                 |
| 164     | Saras Vani, Vadodara  | Rural | 22.17834 | 73.09346 | 169                 |
| 165     | Lola, Vadodara        | Rural | 22.17788 | 72.96189 | 656                 |
| 166     | Shihor, Vadodara      | Rural | 22.18029 | 73.1107  | 182                 |
| 167     | Muval, Vadodara       | Rural | 22.1681  | 72.97578 | 440                 |
| 168     | Anti, Vadodara        | Rural | 22.16854 | 73.03318 | 509                 |

| Sr. No. | Name                     | Area  | Lat      | Long     | Population (Person) |
|---------|--------------------------|-------|----------|----------|---------------------|
| 169     | Rajupura, Vadodara       | Rural | 22.16888 | 73.01219 | 345                 |
| 170     | Sampla, Vadodara         | Rural | 22.08578 | 72.90578 | 208                 |
| 171     | Jalalpur, Vadodara       | Rural | 22.16183 | 72.99466 | 348                 |
| 172     | Gavasad, Vadodara        | Rural | 22.1581  | 72.94636 | 315                 |
| 173     | Ambada, Vadodara         | Rural | 22.14977 | 73.01395 | 107                 |
| 174     | Brahmanvasi, Vadodara    | Rural | 22.1527  | 72.87971 | 393                 |
| 175     | Gametha, Vadodara        | Rural | 22.15775 | 72.92393 | 811                 |
| 176     | Masar, Vadodara          | Rural | 22.14042 | 72.89819 | 219                 |
| 177     | Virpur, Vadodara         | Rural | 22.13131 | 73.10709 | 72                  |
| 178     | Kalyankui, Vadodara      | Rural | 22.14533 | 73.00043 | 122                 |
| 179     | Mobha, Vadodara          | Rural | 22.14697 | 72.96906 | 276                 |
| 180     | Sadra, Vadodara          | Rural | 22.14005 | 72.98868 | 234                 |
| 181     | Medhad, Vadodara         | Rural | 22.12737 | 73.10397 | 72                  |
| 182     | Kural, Vadodara          | Rural | 22.13721 | 72.92678 | 285                 |
| 183     | Pindapa, Vadodara        | Rural | 22.13769 | 72.94469 | 246                 |
| 184     | Gayapura, Vadodara       | Rural | 22.13147 | 73.01324 | 128                 |
| 185     | Kanda, Vadodara          | Rural | 22.13294 | 73.00591 | 147                 |
| 186     | Abhol, Vadodara          | Rural | 22.11695 | 72.90955 | 251                 |
| 187     | Sadad, Vadodara          | Rural | 22.10771 | 73.0666  | 210                 |
| 188     | Kothwada, Vadodara       | Rural | 22.10493 | 73.07725 | 271                 |
| 189     | Kanzat, Vadodara         | Rural | 22.10618 | 72.89085 | 1010                |
| 190     | Danoli, Vadodara         | Rural | 22.06716 | 72.91701 | 277                 |
| 191     | Nedra, Vadodara          | Rural | 22.05199 | 72.92162 | 177                 |
| 192     | Padra, Vadodara          | Urban | 22.24536 | 73.07936 | 2167                |
| 193     | Jambu Goral, Vadodara    | Rural | 22.77187 | 73.34563 | 282                 |
| 194     | Varsada, Vadodara        | Rural | 22.74844 | 73.32512 | 288                 |
| 195     | Veipur, Vadodara         | Rural | 22.7533  | 73.3425  | 123                 |
| 196     | Desar, Vadodara          | Rural | 22.72325 | 73.30724 | 280                 |
| 197     | Manekla, Vadodara        | Rural | 22.70242 | 73.28875 | 139                 |
| 198     | Nani Varnoli, Vadodara   | Rural | 22.69373 | 73.29271 | 313                 |
| 199     | Chhalier, Vadodara       | Rural | 22.69041 | 73.3022  | 525                 |
| 200     | Ankaliya, Vadodara       | Rural | 22.61549 | 73.37707 | 135                 |
| 201     | Mevli, Vadodara          | Rural | 22.61412 | 73.33082 | 498                 |
| 202     | Dhantej, Vadodara        | Rural | 22.59838 | 73.35944 | 7230                |
| 203     | Namisara, Vadodara       | Rural | 22.51356 | 73.18914 | 177                 |
| 204     | Rajpur, Vadodara         | Rural | 22.68274 | 73.29514 | 310                 |
| 205     | Pratappura, Vadodara     | Rural | 22.67215 | 73.30025 | 392                 |
| 206     | Vaghanu Muvadu, Vadodara | Rural | 22.65375 | 73.32696 | 215                 |
| 207     | Gorsan, Vadodara         | Rural | 22.65816 | 73.31851 | 202                 |
| 208     | Shihora, Vadodara        | Rural | 22.65661 | 73.29566 | 406                 |
| 209     | Limdi, Vadodara          | Rural | 22.64722 | 73.3793  | 336                 |
| 210     | Nhara, Vadodara          | Rural | 22.64454 | 73.3092  | 409                 |
| 211     | Andrakhia, Panchmahal    | Rural | 22.64342 | 73.3922  | 203                 |

| Sr. No. | Name                            | Area  | Lat      | Long     | Population (Person) |
|---------|---------------------------------|-------|----------|----------|---------------------|
| 212     | Gutardi, Vadodara               | Rural | 22.64307 | 73.3338  | 307                 |
| 213     | Sandhasal, Vadodara             | Rural | 22.64037 | 73.35192 | 393                 |
| 214     | Vav, Vadodara                   | Rural | 22.63902 | 73.36377 | 210                 |
| 215     | Ajabpura, Vadodara              | Rural | 22.63773 | 73.27901 | 198                 |
| 216     | Amarapura, Vadodara             | Rural | 22.62727 | 73.26472 | 192                 |
| 217     | Zumkha, Vadodara                | Rural | 22.62863 | 73.3214  | 228                 |
| 218     | Dipapura, Vadodara              | Rural | 22.62616 | 73.3457  | 150                 |
| 219     | Vitoj, Vadodara                 | Rural | 22.61182 | 73.3112  | 468                 |
| 220     | Kalupura, Vadodara              | Rural | 22.61806 | 73.25693 | 23                  |
| 221     | Narpura, Vadodara               | Rural | 22.61436 | 73.34805 | 303                 |
| 222     | Samantpura, Vadodara            | Rural | 22.61239 | 73.28905 | 19                  |
| 223     | Rasawadi, Vadodara              | Rural | 22.60555 | 73.24955 | 238                 |
| 224     | Gangadiyapura, Vadodara         | Rural | 22.60659 | 73.28228 | 77                  |
| 225     | Dungrapura, Vadodara            | Rural | 22.59841 | 73.32598 | 86                  |
| 226     | Rasulpur, Vadodara              | Rural | 22.59568 | 73.23505 | 317                 |
| 227     | Vasanpura, Vadodara             | Rural | 22.59129 | 73.3243  | 49                  |
| 228     | Muval, Vadodara                 | Rural | 22.59064 | 73.24785 | 88                  |
| 229     | Tulsipura, Vadodara             | Rural | 22.58031 | 73.36996 | 80                  |
| 230     | Savli, Vadodara                 | Rural | 22.5695  | 73.22308 | 895                 |
| 231     | Kamalpura, Vadodara             | Rural | 22.58222 | 73.34659 | 250                 |
| 232     | Wankaner, Vadodara              | Rural | 22.54114 | 73.18308 | 493                 |
| 233     | Javla, Vadodara                 | Rural | 22.55226 | 73.23313 | 5342                |
| 234     | Gothada, Vadodara               | Rural | 22.54023 | 73.211   | 345                 |
| 235     | Ranchhodpura, Vadodara          | Rural | 22.53275 | 73.18311 | 349                 |
| 236     | Bautha, Vadodara                | Rural | 22.51861 | 73.20804 | 296                 |
| 237     | Bhadarva, Vadodara              | Rural | 22.51178 | 73.14536 | 412                 |
| 238     | Ranipura, Vadodara              | Rural | 22.50879 | 73.17409 | 183                 |
| 239     | Raniya, Vadodara                | Rural | 22.49624 | 73.13869 | 405                 |
| 240     | Tundav, Vadodara                | Rural | 22.48305 | 73.18367 | 81                  |
| 241     | Mahapura, Vadodara              | Rural | 22.49548 | 73.16019 | 359                 |
| 242     | Anjesar, Vadodara               | Rural | 22.48149 | 73.17275 | 354                 |
| 243     | Poicha (Raniya), Vadodara       | Rural | 22.47574 | 73.12511 | 370                 |
| 244     | Moksi, Vadodara                 | Rural | 22.47059 | 73.14709 | 383                 |
| 245     | Manjusar, Vadodara              | Rural | 22.43604 | 73.18361 | 318                 |
| 246     | Kunpad, Vadodara                | Rural | 22.45468 | 73.17448 | 606                 |
| 247     | Nani Varnoli (Vanto), Vadodara  | Rural | 22.70778 | 73.28895 | 139                 |
| 248     | Kalyan Muvadu, Vadodara         | Rural | 22.67759 | 73.30717 | 226                 |
| 249     | Gulabpura (Shihora), Vadodara   | Rural | 22.63459 | 73.29379 | 240                 |
| 250     | Gokalpura Ganeshpura, Vadodara  | Rural | 22.61987 | 73.29101 | 64                  |
| 251     | Parthampura (Shihora), Vadodara | Rural | 22.61653 | 73.27064 | 478                 |
| 252     | Dungripura (Shihora), Vadodara  | Rural | 22.60767 | 73.26247 | 189                 |
| 253     | Bahidhara Alias, Vadodara       | Rural | 22.51161 | 73.16104 | 301                 |
| 254     | Sandha, Vadodara                | Rural | 22.05112 | 73.33374 | 150                 |

| Sr. No. | Name                     | Area  | Lat      | Long     | Population (Person) |
|---------|--------------------------|-------|----------|----------|---------------------|
| 255     | Damnagar, Vadodara       | Rural | 22.04887 | 73.35383 | 145                 |
| 256     | Garadi, Vadodara         | Rural | 22.04621 | 73.31239 | 194                 |
| 257     | Nana Habipura, Vadodara  | Rural | 22.04598 | 73.28875 | 265                 |
| 258     | Achisara, Vadodara       | Rural | 22.03157 | 73.31898 | 143                 |
| 259     | Puniyad, Vadodara        | Rural | 22.03491 | 73.36135 | 153                 |
| 260     | Anandi, Vadodara         | Rural | 22.02777 | 73.38003 | 139                 |
| 261     | Vaniyad, Vadodara        | Rural | 22.02668 | 73.40006 | 138                 |
| 262     | Bhekhada, Vadodara       | Rural | 22.03453 | 73.34    | 150                 |
| 263     | Timbarva, Vadodara       | Rural | 22.02525 | 73.27815 | 93                  |
| 264     | Nana Karala, Vadodara    | Rural | 22.02007 | 73.41972 | 159                 |
| 265     | Chhanbhoi, Vadodara      | Rural | 22.0179  | 73.34251 | 154                 |
| 266     | Avakhal, Vadodara        | Rural | 22.00235 | 73.32343 | 178                 |
| 267     | Malpur, Vadodara         | Rural | 22.0051  | 73.3535  | 213                 |
| 268     | Tarva, Vadodara          | Rural | 22.00722 | 73.26904 | 183                 |
| 269     | Segva, Vadodara          | Rural | 22.00598 | 73.37556 | 201                 |
| 270     | Satisana, Vadodara       | Rural | 22.0026  | 73.40611 | 153                 |
| 271     | Sadhli, Vadodara         | Rural | 21.9903  | 73.29591 | 388                 |
| 272     | Tinglod, Vadodara        | Rural | 21.98789 | 73.25329 | 219                 |
| 273     | Mota Karala, Vadodara    | Rural | 21.98635 | 73.39321 | 192                 |
| 274     | Simli, Vadodara          | Rural | 21.9855  | 73.36366 | 144                 |
| 275     | Utraj, Vadodara          | Rural | 21.9849  | 73.27126 | 417                 |
| 276     | Tersa, Vadodara          | Rural | 21.98008 | 73.32679 | 192                 |
| 277     | Manjrol, Vadodara        | Rural | 21.9626  | 73.31381 | 152                 |
| 278     | Kukas, Vadodara          | Rural | 21.96765 | 73.33948 | 187                 |
| 279     | Bavaliya, Vadodara       | Rural | 21.97036 | 73.24273 | 143                 |
| 280     | Bithali, Vadodara        | Rural | 21.96818 | 73.40424 | 98                  |
| 281     | Mota Fofaliya, Vadodara  | Rural | 21.96171 | 73.37152 | 183                 |
| 282     | Diver, Vadodara          | Rural | 21.95276 | 73.27145 | 133                 |
| 283     | Mindhol, Vadodara        | Rural | 21.95668 | 73.29089 | 144                 |
| 284     | Dariapura, Vadodara      | Rural | 21.96053 | 73.42289 | 100                 |
| 285     | Moletha, Vadodara        | Rural | 21.94703 | 73.41241 | 90                  |
| 286     | Kanjetha, Vadodara       | Rural | 21.94989 | 73.36368 | 130                 |
| 287     | Zanzad, Vadodara         | Rural | 21.93835 | 73.39431 | 159                 |
| 288     | Ambali, Vadodara         | Rural | 21.94093 | 73.38113 | 151                 |
| 289     | Damapura, Vadodara       | Rural | 21.95082 | 73.32995 | 187                 |
| 290     | Surasamal, Vadodara      | Rural | 21.93998 | 73.30034 | 163                 |
| 291     | Barkal, Vadodara         | Rural | 21.93352 | 73.40991 | 90                  |
| 292     | Ankodiya, Vadodara       | Rural | 22.33443 | 73.12262 | 5221                |
| 293     | Dodka, Vadodara          | Rural | 22.45381 | 73.12129 | 353                 |
| 294     | Vasna-Kotariya, Vadodara | Rural | 22.44758 | 73.15475 | 642                 |
| 295     | Rayaka, Vadodara         | Rural | 22.43755 | 73.11449 | 198                 |
| 296     | Sankarda, Vadodara       | Rural | 22.43304 | 73.12737 | 875                 |
| 297     | Sokhda, Vadodara         | Rural | 22.42316 | 73.16137 | 881                 |

| Sr. No. | Name                             | Area  | Lat      | Long     | Population (Person) |
|---------|----------------------------------|-------|----------|----------|---------------------|
| 298     | Asoj, Vadodara                   | Rural | 22.41212 | 73.19038 | 370                 |
| 299     | Padmala, Vadodara                | Rural | 22.41453 | 73.13085 | 734                 |
| 300     | Virod, Vadodara                  | Rural | 22.39453 | 73.1994  | 334                 |
| 301     | Sisva, Vadodara                  | Rural | 22.39809 | 73.18118 | 754                 |
| 302     | Ajod, Vadodara                   | Rural | 22.40172 | 73.15821 | 434                 |
| 303     | Dumad, Vadodara                  | Rural | 22.37512 | 73.19413 | 391                 |
| 304     | Dasharath, Vadodara              | Rural | 22.38554 | 73.15872 | 1404                |
| 305     | Dhanora, Vadodara                | Rural | 22.37649 | 73.10394 | 1276                |
| 306     | Koyli, Vadodara                  | Rural | 22.35818 | 73.11283 | 1057                |
| 307     | Gorva, Vadodara                  | Rural | 22.33743 | 73.15237 | 8046                |
| 308     | Khanpur, Vadodara                | Rural | 22.31902 | 73.1172  | 5367                |
| 309     | Sherkhi, Vadodara                | Rural | 22.33398 | 73.10139 | 590                 |
| 310     | Vemali, Vadodara                 | Rural | 22.35435 | 73.20765 | 1924                |
| 311     | Sevasi, Vadodara                 | Rural | 22.30567 | 73.12109 | 2390                |
| 312     | Talsat, Vadodara                 | Rural | 22.23803 | 73.17126 | 5725                |
| 313     | Chapad, Vadodara                 | Rural | 22.23124 | 73.1574  | 294                 |
| 314     | Ampad, Vadodara                  | Rural | 22.29929 | 73.09268 | 468                 |
| 315     | Mahapura, Vadodara               | Rural | 22.30282 | 73.10332 | 628                 |
| 316     | Alamgir, Vadodara                | Rural | 22.21307 | 73.2001  | 425                 |
| 317     | Mujar Gamdi, Vadodara            | Rural | 22.20806 | 73.20825 | 572                 |
| 318     | Samaspura, Vadodara              | Rural | 22.34413 | 73.20387 | 3207                |
| 319     | Koyli, Vadodara                  | Rural | 22.25099 | 73.16504 | 330                 |
| 320     | Nandesari (Ct), Vadodara         | Urban | 22.41569 | 73.10942 | 909                 |
| 321     | Nandesari Ina (Ina), Vadodara    | Urban | 22.40436 | 73.10769 | 852                 |
| 322     | Hinglot, Vadodara                | Rural | 22.28836 | 73.08621 | 388                 |
| 323     | Bhayli, Vadodara                 | Rural | 22.28289 | 73.12247 | 782                 |
| 324     | Raypura, Vadodara                | Rural | 22.27883 | 73.0926  | 899                 |
| 325     | Gokalpura, Vadodara              | Rural | 22.26536 | 73.11362 | 199                 |
| 326     | Ratanpur, Vadodara               | Rural | 22.26007 | 73.25254 | 314                 |
| 327     | Bil, Vadodara                    | Rural | 22.24809 | 73.1422  | 726                 |
| 328     | Samiyala, Vadodara               | Rural | 22.25606 | 73.12517 | 1053                |
| 329     | Vadadla, Vadodara                | Rural | 22.25351 | 73.24606 | 472                 |
| 330     | Chikhodara, Vadodara             | Rural | 22.23696 | 73.2315  | 275                 |
| 331     | Vora Gamdi, Vadodara             | Rural | 22.21588 | 73.21606 | 87                  |
| 332     | Maretha, Vadodara                | Rural | 22.22387 | 73.18214 | 3446                |
| 333     | Varnama, Vadodara                | Rural | 22.17853 | 73.18989 | 185                 |
| 334     | Sundarpura, Vadodara             | Rural | 22.19327 | 73.20715 | 144                 |
| 335     | Gsfc Complex Ina (Ina), Vadodara | Urban | 22.37369 | 73.15277 | 1184                |
| 336     | Bajwa (Ct), Vadodara             | Urban | 22.36564 | 73.14147 | 1488                |
| 337     | Karali, Vadodara                 | Rural | 22.16851 | 73.15841 | 188                 |
| 338     | Vadsala, Vadodara                | Rural | 22.15628 | 73.17457 | 430                 |
| 339     | Itola, Vadodara                  | Rural | 22.14644 | 73.14526 | 159                 |
| 340     | Untiya (Kajapur), Vadodara       | Rural | 22.15362 | 73.18981 | 140                 |

| Sr. No. | Name                          | Area  | Lat      | Long     | Population (Person) |
|---------|-------------------------------|-------|----------|----------|---------------------|
| 341     | Dolatpura, Vadodara           | Rural | 22.13666 | 73.21348 | 389                 |
| 342     | Por, Vadodara                 | Rural | 22.13553 | 73.18751 | 1351                |
| 343     | Ankhi, Vadodara               | Rural | 22.12702 | 73.20421 | 235                 |
| 344     | Raman Gamdi, Vadodara         | Rural | 22.1297  | 73.17376 | 127                 |
| 345     | Rasulpur, Vadodara            | Rural | 22.13717 | 73.23135 | 104                 |
| 346     | Runvad, Vadodara              | Rural | 22.12436 | 73.23993 | 222                 |
| 347     | Ramnath, Vadodara             | Rural | 22.13424 | 73.2233  | 380                 |
| 348     | Gosindra, Vadodara            | Rural | 22.12647 | 73.12692 | 122                 |
| 349     | Samsabad, Vadodara            | Rural | 22.11652 | 73.26443 | 247                 |
| 350     | Fajalpur (Ankhi), Vadodara    | Rural | 22.1233  | 73.22061 | 130                 |
| 351     | Kashipura, Vadodara           | Rural | 22.11796 | 73.16476 | 230                 |
| 352     | Untiya (Medhad), Vadodara     | Rural | 22.11882 | 73.10921 | 112                 |
| 353     | Sarar, Vadodara               | Rural | 22.10559 | 73.15005 | 178                 |
| 354     | Fajalpur (Sankarda), Vadodara | Rural | 22.42564 | 73.10686 | 376                 |
| 355     | Ranoli (Ct), Vadodara         | Urban | 22.39734 | 73.13107 | 1664                |
| 356     | Ina (Ina), Vadodara           | Urban | 22.38391 | 73.11412 | 234                 |
| 357     | Karachiya (Ct), Vadodara      | Urban | 22.37973 | 73.13148 | 1272                |
| 358     | Jawaharnagar (Ct), Vadodara   | Urban | 22.35785 | 73.13223 | 1356                |
| 359     | Vadodara, Vadodara            | Urban | 22.29017 | 73.19025 | 16794               |
| 360     | Tarsali (Ct), Vadodara        | Urban | 22.24857 | 73.23052 | 453                 |
| 361     | Untiya, Vadodara              | Rural | 22.24023 | 72.92055 | 45                  |
| 362     | Chhani, Vadodara              | Urban | 22.3599  | 73.17609 | 1969                |
| 363     | Karodiya, Vadodara            | Urban | 22.34917 | 73.16094 | 9908                |
| 364     | Harni, Vadodara               | Urban | 22.33708 | 73.21845 | 7764                |
| 365     | Undera, Vadodara              | Urban | 22.34362 | 73.13647 | 3675                |
| 366     | Kapurai, Vadodara             | Urban | 22.26835 | 73.24543 | 5990                |
| 367     | Sherpura, Panchmahal          | Rural | 22.64362 | 73.63882 | 373                 |
| 368     | Guneshiya, Panchmahal         | Rural | 22.6439  | 73.65994 | 359                 |
| 369     | Kothayadi, Panchmahal         | Rural | 22.64454 | 73.64809 | 333                 |
| 370     | Bhojpura, Panchmahal          | Rural | 22.63881 | 73.66982 | 423                 |
| 371     | Damanpura, Panchmahal         | Rural | 22.63716 | 73.65149 | 360                 |
| 372     | Dantol, Panchmahal            | Rural | 22.63282 | 73.63429 | 319                 |
| 373     | Goya Sundal, Panchmahal       | Rural | 22.63531 | 73.6791  | 248                 |
| 374     | Kanpur, Panchmahal            | Rural | 22.6097  | 73.65131 | 249                 |
| 375     | Kantaveda, Panchmahal         | Rural | 22.63204 | 73.67107 | 414                 |
| 376     | Bhilod, Panchmahal            | Rural | 22.62576 | 73.61906 | 435                 |
| 377     | Gajipura (Kanpur), Panchmahal | Rural | 22.60778 | 73.64215 | 249                 |
| 378     | Navagam, Panchmahal           | Rural | 22.58564 | 73.63449 | 401                 |
| 379     | Paroli, Panchmahal            | Rural | 22.57433 | 73.61213 | 272                 |
| 380     | Vel Kotar, Panchmahal         | Rural | 22.57269 | 73.62441 | 273                 |
| 381     | Jitpura, Panchmahal           | Rural | 22.5377  | 73.59195 | 499                 |
| 382     | Kanbipalli, Panchmahal        | Rural | 22.569   | 73.64358 | 450                 |
| 383     | Lalpari, Panchmahal           | Rural | 22.56455 | 73.58523 | 433                 |

| Sr. No. | Name                             | Area  | Lat      | Long     | Population (Person) |
|---------|----------------------------------|-------|----------|----------|---------------------|
| 384     | Kumbhar Palli, Panchmahal        | Rural | 22.56757 | 73.63673 | 505                 |
| 385     | Farod, Panchmahal                | Rural | 22.5569  | 73.60063 | 543                 |
| 386     | Jagana Muvada, Panchmahal        | Rural | 22.56169 | 73.61993 | 299                 |
| 387     | Goth, Panchmahal                 | Rural | 22.55053 | 73.65425 | 53                  |
| 388     | Ghoghamba, Panchmahal            | Rural | 22.5554  | 73.63772 | 946                 |
| 389     | Rajgad, Panchmahal               | Rural | 22.54941 | 73.66435 | 1002                |
| 390     | Valinath, Panchmahal             | Rural | 22.55002 | 73.58505 | 645                 |
| 391     | Kharkhadi, Panchmahal            | Rural | 22.54737 | 73.60796 | 335                 |
| 392     | Bhanpura, Panchmahal             | Rural | 22.5462  | 73.63011 | 5640                |
| 393     | Savapura, Panchmahal             | Rural | 22.54525 | 73.66431 | 1002                |
| 394     | Padhora, Panchmahal              | Rural | 22.54362 | 73.65623 | 973                 |
| 395     | Dhaneshwar, Panchmahal           | Rural | 22.54346 | 73.64565 | 709                 |
| 396     | Nathkuva, Panchmahal             | Rural | 22.53803 | 73.58502 | 571                 |
| 397     | Rayan Muvada, Panchmahal         | Rural | 22.53951 | 73.62691 | 4620                |
| 398     | Ranjitnagar, Panchmahal          | Rural | 22.53452 | 73.58734 | 571                 |
| 399     | Gothada, Vadodara                | Rural | 22.78921 | 73.35635 | 277                 |
| 400     | Maruva, Panchmahal               | Rural | 22.57038 | 73.51189 | 5486                |
| 401     | Navaria, Panchmahal              | Rural | 22.56832 | 73.48466 | 5684                |
| 402     | Varsada (Govindpuri), Panchmahal | Rural | 22.56112 | 73.53962 | 310                 |
| 403     | Muvala, Panchmahal               | Rural | 22.56482 | 73.43732 | 47                  |
| 404     | Arad, Panchmahal                 | Rural | 22.55204 | 73.56916 | 300                 |
| 405     | Sathrota, Panchmahal             | Rural | 22.56227 | 73.46403 | 216                 |
| 406     | Maghasar, Panchmahal             | Rural | 22.56133 | 73.45667 | 66                  |
| 407     | Maswad, Panchmahal               | Rural | 22.55711 | 73.50728 | 239                 |
| 408     | Paruna, Panchmahal               | Rural | 22.64472 | 73.60855 | 928                 |
| 409     | Bedhiya, Panchmahal              | Rural | 22.63575 | 73.53783 | 442                 |
| 410     | Sureli, Panchmahal               | Rural | 22.63522 | 73.57435 | 413                 |
| 411     | Pingali, Panchmahal              | Rural | 22.64183 | 73.44711 | 4050                |
| 412     | Khadki, Panchmahal               | Rural | 22.63901 | 73.51836 | 478                 |
| 413     | Nesda, Panchmahal                | Rural | 22.64547 | 73.49448 | 5269                |
| 414     | Fansi, Panchmahal                | Rural | 22.64642 | 73.62154 | 6358                |
| 415     | Khandoli, Panchmahal             | Rural | 22.63659 | 73.41118 | 236                 |
| 416     | Adadra, Panchmahal               | Rural | 22.63153 | 73.61332 | 747                 |
| 417     | Jeli, Panchmahal                 | Rural | 22.63879 | 73.46741 | 319                 |
| 418     | Bhukhi, Panchmahal               | Rural | 22.63241 | 73.60263 | 453                 |
| 419     | Baletiya, Panchmahal             | Rural | 22.63841 | 73.44749 | 5600                |
| 420     | Jantral, Panchmahal              | Rural | 22.63388 | 73.38272 | 364                 |
| 421     | Delol, Panchmahal                | Rural | 22.62394 | 73.50432 | 461                 |
| 422     | Vyasda, Panchmahal               | Rural | 22.62471 | 73.57884 | 522                 |
| 423     | Alali, Panchmahal                | Rural | 22.62808 | 73.54927 | 393                 |
| 424     | Kanetiya, Panchmahal             | Rural | 22.63464 | 73.43357 | 540                 |
| 425     | Khandeval, Panchmahal            | Rural | 22.63295 | 73.48371 | 546                 |

| Sr. No. | Name                          | Area  | Lat      | Long     | Population (Person) |
|---------|-------------------------------|-------|----------|----------|---------------------|
| 426     | Derol, Panchmahal             | Rural | 22.6226  | 73.44595 | 602                 |
| 427     | Shamaldevi, Panchmahal        | Rural | 22.62383 | 73.47048 | 1424                |
| 428     | Sama, Panchmahal              | Rural | 22.62358 | 73.41746 | 330                 |
| 429     | Zardaka, Panchmahal           | Rural | 22.61986 | 73.39464 | 344                 |
| 430     | Derol, Panchmahal             | Rural | 22.62148 | 73.45885 | 3117                |
| 431     | Utarediya, Panchmahal         | Rural | 22.61773 | 73.54337 | 3529                |
| 432     | Devpura, Panchmahal           | Rural | 22.61528 | 73.56013 | 5264                |
| 433     | Kandach (Inami ), Panchmahal  | Rural | 22.61043 | 73.51672 | 3310                |
| 434     | Rabod, Panchmahal             | Rural | 22.6079  | 73.54652 | 450                 |
| 435     | Bhadroli (Bujarg), Panchmahal | Rural | 22.60856 | 73.4107  | 3500                |
| 436     | Eral, Panchmahal              | Rural | 22.60804 | 73.59898 | 441                 |
| 437     | Malav, Panchmahal             | Rural | 22.59978 | 73.56764 | 337                 |
| 438     | Boru, Panchmahal              | Rural | 22.60166 | 73.4277  | 5270                |
| 439     | Alva, Panchmahal              | Rural | 22.5906  | 73.53002 | 3152                |
| 440     | Ratanpura, Panchmahal         | Rural | 22.58831 | 73.39619 | 308                 |
| 441     | Katol, Panchmahal             | Rural | 22.59775 | 73.44091 | 359                 |
| 442     | Ghoda, Panchmahal             | Rural | 22.60457 | 73.48482 | 958                 |
| 443     | Jetpur, Panchmahal            | Rural | 22.59296 | 73.48473 | 206                 |
| 444     | Palasa, Panchmahal            | Rural | 22.58987 | 73.38667 | 563                 |
| 445     | Bakrol, Panchmahal            | Rural | 22.57924 | 73.4126  | 349                 |
| 446     | Medapur, Panchmahal           | Rural | 22.58368 | 73.49709 | 6350                |
| 447     | Saliyav, Panchmahal           | Rural | 22.58418 | 73.5647  | 44                  |
| 448     | Varvada, Panchmahal           | Rural | 22.57358 | 73.56777 | 406                 |
| 449     | Barola, Panchmahal            | Rural | 22.58309 | 73.43453 | 387                 |
| 450     | Alindra, Panchmahal           | Rural | 22.58216 | 73.45899 | 353                 |
| 451     | Madhvas, Panchmahal           | Rural | 22.57143 | 73.44758 | 173                 |
| 452     | Nevariya, Panchmahal          | Rural | 22.57334 | 73.38883 | 63                  |
| 453     | Kalol (M+Og), Panchmahal      | Urban | 22.60357 | 73.46485 | 455                 |
| 454     | Kalol Ina (Ina), Panchmahal   | Urban | 22.6084  | 73.45707 | 1035                |
| 455     | Pali, Bharuch                 | Rural | 22.79143 | 73.35157 | 277                 |
| 456     | Vasna, Bharuch                | Rural | 22.03104 | 72.97908 | 139                 |
| 457     | Manjola, Bharuch              | Rural | 22.02509 | 72.96363 | 161                 |
| 458     | Dadapor, Bharuch              | Rural | 22.04464 | 72.91125 | 147                 |
| 459     | Matar, Bharuch                | Rural | 22.00973 | 72.99224 | 202                 |
| 460     | Chaklad, Bharuch              | Rural | 22.00382 | 72.92683 | 148                 |
| 461     | Vedcha, Bharuch               | Rural | 22.01475 | 72.94879 | 32                  |
| 462     | Pursa, Bharuch                | Rural | 22.01156 | 72.82169 | 52                  |
| 463     | Ajamnagar, Bharuch            | Rural | 22.00655 | 72.97314 | 54                  |
| 464     | Adwala, Bharuch               | Rural | 22.0035  | 72.91164 | 140                 |
| 465     | Sarbhan, Bharuch              | Rural | 21.99031 | 72.94683 | 190                 |
| 466     | Karena, Bharuch               | Rural | 21.99678 | 73.05982 | 106                 |
| 467     | Amod, Bharuch                 | Rural | 21.99554 | 72.89362 | 153                 |
| 468     | Ochhan, Bharuch               | Rural | 21.99182 | 73.03395 | 179                 |

| Sr. No. | Name                            | Area  | Lat      | Long     | Population (Person) |
|---------|---------------------------------|-------|----------|----------|---------------------|
| 469     | Sunthodra, Bharuch              | Rural | 21.99503 | 73.00623 | 161                 |
| 470     | Rohad, Bharuch                  | Rural | 21.99163 | 72.90652 | 115                 |
| 471     | Telod, Bharuch                  | Rural | 21.98343 | 73.01327 | 173                 |
| 472     | Danda, Bharuch                  | Rural | 21.9761  | 72.98196 | 206                 |
| 473     | Bhimpura, Bharuch               | Rural | 21.98797 | 72.89359 | 112                 |
| 474     | Shrikothi, Bharuch              | Rural | 21.97764 | 72.91675 | 177                 |
| 475     | Ikhar, Bharuch                  | Rural | 21.97102 | 73.03469 | 263                 |
| 476     | Sonama, Bharuch                 | Rural | 21.97487 | 72.90372 | 116                 |
| 477     | Dora, Bharuch                   | Rural | 21.95634 | 72.99435 | 120                 |
| 478     | Ninam, Bharuch                  | Rural | 21.95992 | 72.93729 | 75                  |
| 479     | Tegva, Bharuch                  | Rural | 21.95602 | 72.91328 | 78                  |
| 480     | Ghamnad, Bharuch                | Rural | 21.94506 | 72.95432 | 55                  |
| 481     | Anor, Bharuch                   | Rural | 21.93677 | 72.92946 | 198                 |
| 482     | Asnera, Bharuch                 | Rural | 21.93932 | 72.91087 | 192                 |
| 483     | Ranada, Bharuch                 | Rural | 21.91969 | 72.92785 | 157                 |
| 484     | Tanchha, Bharuch                | Rural | 21.92362 | 72.91203 | 144                 |
| 485     | Kurchan, Bharuch                | Rural | 21.92732 | 72.94539 | 232                 |
| 486     | Malkinpura Alias Timbi, Bharuch | Rural | 21.97402 | 72.96495 | 66                  |
| 487     | Amarpor Alias Simartha, Bharuch | Rural | 21.93659 | 72.96302 | 229                 |
| 488     | Segva, Vadodara                 | Rural | 21.87226 | 73.09548 | 203                 |
| 489     | Shahpura, Bharuch               | Rural | 21.86718 | 73.11668 | 143                 |
| 490     | Nand, Bharuch                   | Rural | 21.86114 | 73.12965 | 226                 |
| 491     | Bharthana, Bharuch              | Rural | 21.84943 | 73.10712 | 153                 |
| 492     | Uparali, Bharuch                | Rural | 21.84123 | 73.09403 | 141                 |
| 493     | Jhanor, Bharuch                 | Rural | 21.82319 | 73.12339 | 339                 |
| 494     | Samlod, Bharuch                 | Rural | 21.82063 | 73.09621 | 224                 |
| 495     | Bambusar, Bharuch               | Rural | 21.80978 | 73.07887 | 224                 |
| 496     | Nabipur, Bharuch                | Rural | 21.79197 | 73.06773 | 261                 |
| 497     | Dabhali, Bharuch                | Rural | 21.80405 | 73.10479 | 281                 |
| 498     | Kavitha, Bharuch                | Rural | 21.79148 | 73.08101 | 228                 |
| 499     | Sindhot, Bharuch                | Rural | 21.79084 | 73.11597 | 255                 |
| 500     | Angareshwar, Bharuch            | Rural | 21.79435 | 73.12997 | 319                 |
| 501     | Karmali, Bharuch                | Rural | 21.78634 | 73.09734 | 202                 |
| 502     | Umara, Bharuch                  | Rural | 21.77942 | 73.0649  | 246                 |
| 503     | Nikora, Bharuch                 | Rural | 21.78416 | 73.13136 | 350                 |
| 504     | Osara, Bharuch                  | Rural | 21.76917 | 73.06878 | 248                 |
| 505     | Karjan, Bharuch                 | Rural | 21.76744 | 73.08208 | 248                 |
| 506     | Luwara, Bharuch                 | Rural | 21.76658 | 73.06091 | 325                 |
| 507     | Tavara, Bharuch                 | Rural | 21.75694 | 73.07291 | 333                 |
| 508     | Haldarwa, Bharuch               | Rural | 21.76049 | 73.06464 | 325                 |
| 509     | Kareli, Bharuch                 | Rural | 22.19383 | 72.86407 | 3274                |
| 510     | Mahamadpor Kamboi, Bharuch      | Rural | 22.20766 | 72.64027 | 164                 |
| 511     | Degam, Bharuch                  | Rural | 22.17917 | 72.58892 | 273                 |

| Sr. No. | Name                     | Area  | Lat      | Long     | Population (Person) |
|---------|--------------------------|-------|----------|----------|---------------------|
| 512     | Kavi, Bharuch            | Rural | 22.1898  | 72.64222 | 376                 |
| 513     | Nahar, Bharuch           | Rural | 22.1796  | 72.69229 | 124                 |
| 514     | Piludara, Bharuch        | Rural | 22.1678  | 72.87061 | 452                 |
| 515     | Gulal, Bharuch           | Rural | 22.17836 | 72.61302 | 276                 |
| 516     | Kahanava, Bharuch        | Rural | 22.1747  | 72.91304 | 817                 |
| 517     | Sarod, Bharuch           | Rural | 22.16576 | 72.74349 | 368                 |
| 518     | Vedach, Bharuch          | Rural | 22.1561  | 72.84176 | 602                 |
| 519     | Kangam, Bharuch          | Rural | 22.16833 | 72.66479 | 332                 |
| 520     | Sigam, Bharuch           | Rural | 22.15806 | 72.59506 | 271                 |
| 521     | Kavli, Bharuch           | Rural | 22.1432  | 72.72055 | 155                 |
| 522     | Uber, Bharuch            | Rural | 22.13794 | 72.81712 | 153                 |
| 523     | Samoj, Bharuch           | Rural | 22.14789 | 72.73934 | 186                 |
| 524     | Kimoi, Bharuch           | Rural | 22.15131 | 72.62343 | 179                 |
| 525     | Runad, Bharuch           | Rural | 22.14763 | 72.65219 | 151                 |
| 526     | Gajera, Bharuch          | Rural | 22.13073 | 72.86378 | 378                 |
| 527     | Nondhana, Bharuch        | Rural | 22.13901 | 72.78234 | 240                 |
| 528     | Amanpor Mota, Bharuch    | Rural | 22.13279 | 72.76131 | 114                 |
| 529     | Aurangpor Timbi, Bharuch | Rural | 22.13754 | 72.66619 | 164                 |
| 530     | Chandpor Marva, Bharuch  | Rural | 22.13402 | 72.58347 | 269                 |
| 531     | Salehpor Sangdi, Bharuch | Rural | 22.13536 | 72.61835 | 80                  |
| 532     | Amanpor Nana, Bharuch    | Rural | 22.12797 | 72.74659 | 180                 |
| 533     | Kora, Bharuch            | Rural | 22.11603 | 72.70344 | 90                  |
| 534     | Vadadala, Bharuch        | Rural | 22.1256  | 72.66012 | 137                 |
| 535     | Thanava, Bharuch         | Rural | 22.13198 | 72.64375 | 178                 |
| 536     | Zamdi, Bharuch           | Rural | 22.1174  | 72.58997 | 47                  |
| 537     | Tundaj, Bharuch          | Rural | 22.11864 | 72.72442 | 121                 |
| 538     | Nobar, Bharuch           | Rural | 22.11534 | 72.7796  | 150                 |
| 539     | Kaliari, Bharuch         | Rural | 22.12176 | 72.61916 | 122                 |
| 540     | Chhidra, Bharuch         | Rural | 22.10871 | 72.60258 | 119                 |
| 541     | Jantran, Bharuch         | Rural | 22.11377 | 72.64269 | 111                 |
| 542     | Dabha, Bharuch           | Rural | 22.1081  | 72.82567 | 236                 |
| 543     | Vavli, Bharuch           | Rural | 22.09811 | 72.84939 | 237                 |
| 544     | Bhodar, Bharuch          | Rural | 22.1086  | 72.75091 | 140                 |
| 545     | Uchchhad, Bharuch        | Rural | 22.10278 | 72.87028 | 383                 |
| 546     | Shambha, Bharuch         | Rural | 22.10936 | 72.66259 | 138                 |
| 547     | Valipore, Bharuch        | Rural | 22.1527  | 72.78354 | 57                  |
| 548     | Muradpor Neja, Bharuch   | Rural | 22.14729 | 72.56971 | 210                 |
| 549     | Dahri, Bharuch           | Rural | 22.10504 | 72.62379 | 119                 |
| 550     | Umra, Bharuch            | Rural | 22.0968  | 72.79132 | 122                 |
| 551     | Nadiad, Bharuch          | Rural | 22.04734 | 72.73885 | 67                  |
| 552     | Karmad, Bharuch          | Rural | 22.08268 | 72.75888 | 115                 |
| 553     | Rampore, Bharuch         | Rural | 22.09215 | 72.74448 | 135                 |
| 554     | Vahelam, Bharuch         | Rural | 22.08336 | 72.89348 | 227                 |

| <b>Sr. No.</b> | <b>Name</b>                  | <b>Area</b> | <b>Lat</b> | <b>Long</b> | <b>Population (Person)</b> |
|----------------|------------------------------|-------------|------------|-------------|----------------------------|
| 555            | Bhankhetar, Bharuch          | Rural       | 22.08167   | 72.81377    | 56                         |
| 556            | Anakhi, Bharuch              | Rural       | 22.07231   | 72.85744    | 144                        |
| 557            | Kava, Bharuch                | Rural       | 22.06338   | 72.74249    | 77                         |
| 558            | Koteswar, Bharuch            | Rural       | 22.08056   | 72.77914    | 145                        |
| 559            | Jafarpara, Bharuch           | Rural       | 22.07003   | 72.88034    | 104                        |
| 560            | Bojadra, Bharuch             | Rural       | 22.05644   | 72.89851    | 94                         |
| 561            | Limaj, Bharuch               | Rural       | 22.057     | 72.76357    | 256                        |
| 562            | Magnad, Bharuch              | Rural       | 22.04198   | 72.8478     | 163                        |
| 563            | Kalak, Bharuch               | Rural       | 22.03412   | 72.76444    | 151                        |
| 564            | Mahapara, Bharuch            | Rural       | 22.03216   | 72.82262    | 111                        |
| 565            | Vanseta, Bharuch             | Rural       | 22.03469   | 72.74144    | 67                         |
| 566            | Kundhal, Bharuch             | Rural       | 22.02015   | 72.80377    | 51                         |
| 567            | Khanpor Deh, Bharuch         | Rural       | 22.01431   | 72.79086    | 85                         |
| 568            | Hamadpor Kanthariya, Bharuch | Rural       | 22.17116   | 72.64071    | 366                        |
| 569            | Jambusar (M), Bharuch        | Urban       | 22.05433   | 72.80165    | 1188                       |
| 570            | Panetha, Vadodara            | Rural       | 21.92941   | 73.26929    | 124                        |
| 571            | Tothidara, Vadodara          | Rural       | 21.84682   | 73.17017    | 86                         |
| 572            | Wadiya, Bharuch              | Urban       | 22.04305   | 72.88102    | 123                        |

## ANNEXURE-V

### ANN Code for weight optimization

#### ANN Input for Depth (Pre-Monsoon):

```
import pandas as pd
import numpy as np
from sklearn.model_selection import train_test_split
from sklearn.metrics import confusion_matrix
from sklearn.metrics import accuracy_score
from sklearn.metrics import classification_report
from sklearn.neural_network import MLPRegressor
from sklearn.multioutput import MultiOutputRegressor
from sklearn.linear_model import Ridge
from statistics import mean

#Extract dataset from Excel to python
f = pd.ExcelFile('/content/gdrive/My Drive/ANN/Pre/Depth.xlsx')
data = f.parse('Sheet1')
d = np.array(data)

#define a matrix
X = np.array(d[0:13514,1:8],dtype = 'float64')
y = np.array(d[0:13514,8],dtype = 'float64')

X_train, X_test, y_train, y_test = train_test_split(
    X, y, test_size=0.33, random_state=None)

net = MLPRegressor(hidden_layer_sizes = (5,3),max_iter = 1000,
activation='relu',solver='adam',tol=0.01)
net.fit(X_train,y_train)
w = net.coefs_
z = net.intercepts_
predict = net.predict(X_test)
print('test output is: \n',predict)
#for i in range (len(predict)):
# print(predict(i))
list_avg = mean(predict)
print (list_avg)
print(round(list_avg,0))
```

#### ANN Output for Depth (Pre-Monsoon):

```
test output is:
[3.43802144 3.35958689 4.19517914 ... 3.44284027 3.74434515 4.78484439]
3.823561860000293
```