

MOVIMIENTOS DE EMBALSE
PARA TRES MODULOS CONSECUTIVOS
ESTADO APURE
ENERO 1972

1. OBJETO

Como un complemento del "Proyecto de Control de Aguas y Recuperación de Tierras en el Estado Apure", que adelanta actualmente la Dirección General de Recursos Hidráulicos, se requiere el conocimiento del balance hídrico para tres módulos consecutivos, que es el objetivo de este informe y el cual ha sido elaborado por el Ing. Alfredo Flores Espina.

2. INFORMACION DISPONIBLE

- a) Estudio Hidrológico Preliminar para el Módulo Experimental, Estado Apure. Ing. Alfredo Flores e Hdr^o Haydée de Avellan (Enero 1971)
- b) Movimientos de Embalse, Módulo Experimental Apure.
Ing. Alfredo Flores Espina (Mayo 1971)

3. METODOLOGIA

Se ha partido de la ecuación:

$$VF = VI + A - D \pm POG + ALIVIO \quad (3.1)$$

| | | | |
|--------|---|--|-------------------------------|
| VF | = | Volúmen Final | (millones de m ³) |
| VI | = | Volúmen Inicial | (millones de m ³) |
| A | = | Aportes | (millones de m ³) |
| D | = | Demandas | (millones de m ³) |
| POG | = | Pérdidas o Ganancias | (millones de m ³) |
| ALIVIO | = | Alivio proveniente del Módulo anterior | (millones de m ³) |

La forma de evaluar: VF, VI, A, D y POG, ya fue explicado en la Información Disponible "b" (aparte 3). El Alivio se refiere a los excesos de aguas provenientes del módulo consecutivo anterior (excepto para el primer módulo cuyo valor es cero) y que van contribuir como aportes, para el balance. Para este caso en particular y basándonos en la características físicas y de funcionamiento de los módulos, la ecuación ha sido transformada a:

$$VF = VI + LAM * ASECA + (LL - EVA) * AHUMEDA + ALIVIO \quad (3.2)$$

| | | | |
|---------|---|--|-------------------------------|
| VF | = | Volúmen Final | (millones de m ³) |
| Vi | = | Volúmen Inicial | (millones de m ³) |
| LAM | = | Lámina Escurrida | (mts.) |
| ASECA | = | Area Seca | (m ²) |
| AHUMEDA | = | Area Humeda | (m ²) |
| LL | = | Lluvia | (mm) |
| EVA | = | Evaporación | (mm) |
| ALIVIO | = | Alivio proveniente del Módulo anterior | (millones de m ³) |

Para la evaporación se consideró un coeficiente de 0,80.

4. RESULTADOS

Para los movimientos de embalses se ha hecho las siguientes consideraciones:

- 4.1 Lluvia de Bruzual - Embalse lleno
- 4.2 Lluvia de Bruzual - Embalse seco
- 4.3 Lluvia de San Fernando - Embalse lleno
- 4.4 Lluvia de San Fernando - Embalse seco

En los Anexos 1, 2, 3 y 4 se presentan los resultados totales, provenientes de la computadora. A continuación se da un resumen de los resultados:

MODULO - 1

| | | CONSIDERACION | | | |
|-------------------------|-----------------------|---------------|-------|-------|-------|
| | | 1 | 2 | 3 | 4 |
| Volúmen Máximo | ($10^6 \times m^3$) | 29.6 | 29.6 | 33.3 | 33.3 |
| Volúmen Mínimo | ($10^6 \times m^3$) | 5.1 | 3.6 | 5.6 | 3.6 |
| Volúmen Máximo Aliviado | ($10^6 \times m^3$) | 9.0 | 9.0 | 12.7 | 12.7 |
| Cota Máxima | (mts.) | 77.15 | 77.15 | 77.20 | 77.20 |
| Cota Mínima | (mts.) | 76.10 | 75.52 | 76.14 | 75.52 |

MODULO - 2

| | | CONSIDERACION | | | |
|-------------------------|-----------------------|---------------|-------|-------|-------|
| | | 1 | 2 | 3 | 4 |
| Volúmen Máximo | ($10^6 \times m^3$) | 35.3 | 35.3 | 36.8 | 35.3 |
| Volúmen Mínimo | ($10^6 \times m^3$) | 13.8 | 6.0 | 12.0 | 5.3 |
| Volúmen Máximo Aliviado | ($10^6 \times m^3$) | 14.7 | 14.7 | 16.2 | 14.7 |
| Cota Máxima | (mts.) | 77.24 | 77.24 | 77.25 | 77.24 |
| Cota Mínima | (mts.) | 76.61 | 75.87 | 76.51 | 75.76 |

MODULO - 3

| | | CONSIDERACION | | | |
|-------------------------|-------------------------------------|---------------|-------|-------|-------|
| | | 1 | 2 | 3 | 4 |
| Volúmen Máximo | (10 ⁶ x m ³) | 38.0 | 38.0 | 39.9 | 39.9 |
| Volúmen Mínimo | (10 ⁶ x m ³) | 19.8 | 8.4 | 17.0 | 6.9 |
| Volúmen Máximo Aliviado | (10 ⁶ x m ³) | 17.5 | 17.5 | 19.4 | 19.4 |
| Cota Máxima | (mts.) | 77.29 | 77.29 | 77.32 | 77.32 |
| Cota Mínima | (mts.) | 76.97 | 76.04 | 76.81 | 76.00 |

4. RECOMENDACIONES

En vista de la calidad y tiempo de registro de la información básica disponible, se debe considerar los resultados de este informe de carácter preliminar.

A N E X O S

ANEXO N° 1

LLUVIA DE BRUZUAL - EMBALSE LLENO

MOVIMIENTOS DE EMBALSE

MODULO EXPERIMENTAL APURE

EMBALSE _ 1

ANO : 1965

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPO_ RACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|--------------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | | | | | | | | | | |
| FEB | | | | | | | | | | |
| MAR | | | | | | | | | | |
| ABR | | | | | | | | | | |
| MAY | | | | | | | | | | |
| JUN | | | | | | | | | | |
| JUL | 94 | 230 | 121 | 2576.0 | 1275.0 | 20.6 | 25.2 | 22.9 | 4.6 | 77.08 |
| AGO | 140 | 260 | 120 | 2576.0 | 1275.0 | 20.6 | 26.6 | 23.6 | 6.0 | 77.10 |
| SEP | 170 | 100 | 129 | 2576.0 | 1275.0 | 20.6 | 22.7 | 21.6 | 2.1 | 77.03 |
| OCT | 172 | 37 | 162 | 2576.0 | 1275.0 | 20.6 | 20.4 | 20.5 | 0.0 | 76.99 |
| NOV | 190 | 35 | 148 | 2558.0 | 1293.0 | 20.4 | 20.7 | 20.5 | 0.1 | 77.00 |
| DIC | 93 | 1 | 196 | 2576.0 | 1275.0 | 20.6 | 17.8 | 19.2 | 0.0 | 76.92 |

ANO : 1966

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPO_ RACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|--------------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 0 | 220 | 2318.1 | 1532.4 | 17.8 | 13.7 | 15.8 | 0.0 | 76.72 |
| FEB | 0 | 0 | 250 | 1937.4 | 1913.6 | 13.7 | 9.9 | 11.8 | 0.0 | 76.49 |
| MAR | 0 | 19 | 261 | 1575.8 | 2275.2 | 9.9 | 6.9 | 8.4 | 0.0 | 76.29 |
| ABR | 2 | 42 | 223 | 1296.7 | 2554.3 | 6.9 | 5.1 | 6.0 | 0.0 | 76.15 |
| MAY | 12 | 115 | 161 | 1136.5 | 2714.5 | 5.1 | 5.3 | 5.2 | 0.0 | 76.10 |
| JUN | 36 | 150 | 123 | 1152.2 | 2698.8 | 5.3 | 6.9 | 6.1 | 0.0 | 76.15 |
| JUL | 240 | 450 | 93 | 1298.4 | 2552.6 | 6.9 | 17.9 | 12.4 | 0.0 | 76.52 |
| AGO | 270 | 190 | 121 | 2325.1 | 1525.9 | 17.9 | 24.2 | 21.0 | 3.6 | 77.01 |
| SEP | 300 | 172 | 123 | 2576.0 | 1275.0 | 20.6 | 26.3 | 23.4 | 5.7 | 77.09 |
| OCT | 295 | 140 | 155 | 2576.0 | 1275.0 | 20.6 | 24.7 | 22.7 | 4.2 | 77.07 |
| NOV | 295 | 130 | 141 | 2576.0 | 1275.0 | 20.6 | 24.8 | 22.7 | 4.2 | 77.07 |
| DIC | 190 | 33 | 170 | 2576.0 | 1275.0 | 20.6 | 20.3 | 20.5 | 0.0 | 76.99 |

MOVIMIENTOS DE EMBALSE
 MÓDULO EXPERIMENTAL APURE

EMBALSE _ 1

AÑO : 1967

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 2 | 201 | 2554.5 | 1296.5 | 20.3 | 16.3 | 18.3 | 0.0 | 76.87 |
| FEB | 0 | 0 | 220 | 2175.9 | 1675.1 | 16.3 | 12.5 | 14.4 | 0.0 | 76.64 |
| MAR | 0 | 0 | 260 | 1818.6 | 2032.4 | 12.5 | 8.7 | 10.6 | 0.0 | 76.42 |
| ABR | 18 | 74 | 175 | 1465.6 | 2385.4 | 8.7 | 8.1 | 8.4 | 0.0 | 76.29 |
| MAY | 37 | 100 | 163 | 1415.4 | 2435.6 | 8.1 | 8.6 | 8.4 | 0.0 | 76.29 |
| JUN | 185 | 370 | 105 | 1459.4 | 2391.6 | 8.6 | 17.2 | 12.9 | 0.0 | 76.55 |
| JUL | 340 | 330 | 120 | 2261.7 | 1589.3 | 17.2 | 27.9 | 22.5 | 7.3 | 77.07 |
| AGO | 420 | 240 | 123 | 2576.0 | 1275.0 | 20.6 | 29.6 | 25.1 | 9.0 | 77.15 |
| SEP | 420 | 140 | 123 | 2576.0 | 1275.0 | 20.6 | 27.0 | 23.8 | 6.4 | 77.11 |
| OCT | 360 | 89 | 148 | 2576.0 | 1275.0 | 20.6 | 24.4 | 22.5 | 3.8 | 77.06 |
| NOV | 310 | 7 | 162 | 2576.0 | 1275.0 | 20.6 | 21.4 | 21.0 | 0.8 | 77.01 |
| DIC | 200 | 10 | 175 | 2576.0 | 1275.0 | 20.6 | 19.8 | 20.2 | 0.0 | 76.98 |

AÑO : 1968

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 0 | 198 | 2501.4 | 1349.6 | 19.8 | 15.8 | 17.8 | 0.0 | 76.84 |
| FEB | 0 | 0 | 216 | 2131.7 | 1719.3 | 15.8 | 12.1 | 14.0 | 0.0 | 76.61 |
| MAR | 0 | 19 | 264 | 1788.0 | 2063.0 | 12.1 | 8.7 | 10.4 | 0.0 | 76.41 |
| ABR | 32 | 61 | 164 | 1467.3 | 2383.7 | 8.7 | 8.4 | 8.6 | 0.0 | 76.30 |
| MAY | 45 | 98 | 130 | 1442.4 | 2408.6 | 8.4 | 9.4 | 8.9 | 0.0 | 76.32 |
| JUN | 34 | 189 | 115 | 1535.5 | 2315.5 | 9.4 | 11.7 | 10.6 | 0.0 | 76.42 |
| JUL | 86 | 239 | 106 | 1747.9 | 2103.1 | 11.7 | 16.2 | 13.9 | 0.0 | 76.61 |
| AGO | 184 | 165 | 121 | 2168.2 | 1682.3 | 16.2 | 20.8 | 18.5 | 0.2 | 76.88 |
| SEP | 200 | 123 | 129 | 2576.0 | 1275.0 | 20.6 | 23.6 | 22.1 | 3.1 | 77.05 |
| OCT | 197 | 26 | 169 | 2576.0 | 1275.0 | 20.6 | 20.3 | 20.4 | 0.0 | 76.99 |
| NOV | 80 | 23 | 158 | 2547.9 | 1303.1 | 20.3 | 18.7 | 19.5 | 0.0 | 76.94 |
| DIC | 10 | 0 | 202 | 2399.3 | 1451.7 | 18.7 | 14.9 | 16.8 | 0.0 | 76.78 |

MOVIMIENTOS DE EMBALSE
 MODULO EXPERIMENTAL APURE
 EMBALSE _ 1

AÑO : 1969

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPO_ RACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|--------------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 1 | 202 | 2051.1 | 1799.9 | 14.9 | 11.7 | 13.3 | 0.0 | 76.58 |
| FEB | 0 | 7 | 236 | 1743.7 | 2107.3 | 11.7 | 8.5 | 10.1 | 0.0 | 76.39 |
| MAR | 0 | 26 | 263 | 1447.9 | 2403.1 | 8.5 | 5.8 | 7.1 | 0.0 | 76.22 |
| ABR | 2 | 93 | 179 | 1198.8 | 2652.2 | 5.8 | 5.1 | 5.5 | 0.0 | 76.12 |
| MAY | 12 | 187 | 141 | 1136.4 | 2714.6 | 5.1 | 6.3 | 5.7 | 0.0 | 76.13 |
| JUN | 27 | 261 | 105 | 1245.5 | 2605.5 | 6.3 | 9.2 | 7.8 | 0.0 | 76.25 |
| JUL | 105 | 379 | 113 | 1516.8 | 2334.2 | 9.2 | 16.0 | 12.6 | 0.0 | 76.54 |
| AGO | 132 | 313 | 120 | 2154.0 | 1697.0 | 16.0 | 23.0 | 19.5 | 2.4 | 76.94 |
| SEP | 117 | 169 | 142 | 2576.0 | 1275.0 | 20.6 | 23.5 | 22.0 | 2.9 | 77.05 |
| OCT | 46 | 169 | 133 | 2576.0 | 1275.0 | 20.6 | 22.8 | 21.7 | 2.2 | 77.04 |
| NOV | 22 | 23 | 144 | 2576.0 | 1275.0 | 20.6 | 18.5 | 19.5 | 0.0 | 76.94 |
| DIC | 20 | 34 | 157 | 2380.5 | 1470.5 | 18.5 | 16.6 | 17.5 | 0.0 | 76.82 |

AÑO : 1970

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPO_ RACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|--------------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 1 | 188 | 2204.5 | 1646.5 | 16.6 | 13.3 | 14.9 | 0.0 | 76.67 |
| FEB | 0 | 31 | 209 | 1897.2 | 1953.8 | 13.3 | 10.7 | 12.0 | 0.0 | 76.50 |
| MAR | 0 | 0 | 267 | 1656.1 | 2194.9 | 10.7 | 7.2 | 8.9 | 0.0 | 76.32 |
| ABR | 0 | 17 | 228 | 1326.0 | 2525.0 | 7.2 | 5.0 | 6.1 | 0.0 | 76.15 |
| MAY | 0 | 146 | 149 | 1121.3 | 2729.7 | 5.0 | 5.3 | 5.1 | 0.0 | 76.10 |
| JUN | 6 | 250 | 121 | 1149.4 | 2701.6 | 5.3 | 7.2 | 6.2 | 0.0 | 76.16 |
| JUL | 48 | 300 | 111 | 1329.9 | 2522.2 | 7.2 | 11.2 | 9.2 | 0.0 | 76.34 |
| AGO | 121 | 250 | 108 | 1703.7 | 2147.3 | 11.2 | 16.6 | 13.9 | 0.0 | 76.61 |
| SEP | 200 | 270 | 109 | 2206.2 | 1644.8 | 16.6 | 23.9 | 20.3 | 3.4 | 76.98 |
| OCT | 109 | 150 | 140 | 2576.0 | 1275.0 | 20.6 | 22.9 | 21.8 | 2.4 | 77.04 |

MOVIMIENTOS DE EMBALSE
 MODULO EXPERIMENTAL APURE

EMBALSE _ 2

AÑO : 1965

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | | | | | | | | | | |
| FEB | | | | | | | | | | |
| MAR | | | | | | | | | | |
| ABR | | | | | | | | | | |
| MAY | | | | | | | | | | |
| JUN | | | | | | | | | | |
| JUL | 94 | 230 | 121 | 2576.0 | 1275.0 | 20.6 | 27.6 | 24.1 | 7.0 | 77.12 |
| AGO | 140 | 260 | 120 | 2576.0 | 1275.0 | 20.6 | 28.9 | 24.8 | 8.4 | 77.14 |
| SEP | 170 | 100 | 129 | 2576.0 | 1275.0 | 20.6 | 25.0 | 22.8 | 4.5 | 77.07 |
| OCT | 172 | 37 | 162 | 2576.0 | 1275.0 | 20.6 | 22.7 | 21.7 | 2.2 | 77.04 |
| NOV | 190 | 35 | 148 | 2576.0 | 1275.0 | 20.6 | 23.2 | 21.9 | 2.6 | 77.04 |
| DIC | 98 | 1 | 196 | 2576.0 | 1275.0 | 20.5 | 20.2 | 20.4 | 0.0 | 76.99 |

AÑO : 1966

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 0 | 220 | 2539.1 | 1311.9 | 20.2 | 18.1 | 19.1 | 0.0 | 76.92 |
| FEB | 0 | 0 | 250 | 2343.1 | 1507.9 | 18.1 | 15.8 | 16.9 | 0.0 | 76.79 |
| MAR | 0 | 19 | 261 | 2126.9 | 1724.1 | 15.8 | 14.1 | 14.9 | 0.0 | 76.67 |
| ABR | 2 | 42 | 225 | 1971.2 | 1879.8 | 14.1 | 13.8 | 13.9 | 0.0 | 76.61 |
| MAY | 12 | 115 | 161 | 1944.9 | 1906.1 | 13.8 | 16.1 | 15.0 | 0.0 | 76.67 |
| JUN | 36 | 150 | 123 | 2162.2 | 1688.8 | 16.1 | 20.2 | 18.2 | 0.0 | 76.86 |
| JUL | 240 | 450 | 93 | 2544.0 | 1307.0 | 20.2 | 35.3 | 27.8 | 14.7 | 77.24 |
| AGO | 270 | 190 | 121 | 2576.0 | 1275.0 | 20.6 | 28.8 | 24.7 | 8.2 | 77.13 |
| SEP | 300 | 172 | 123 | 2576.0 | 1275.0 | 20.6 | 28.7 | 24.6 | 8.1 | 77.13 |
| OCT | 295 | 140 | 155 | 2576.0 | 1275.0 | 20.5 | 27.1 | 23.8 | 6.5 | 77.11 |
| NOV | 295 | 130 | 141 | 2576.0 | 1275.0 | 20.6 | 27.1 | 23.9 | 6.6 | 77.11 |
| DIC | 190 | 33 | 170 | 2576.0 | 1275.0 | 20.6 | 22.7 | 21.6 | 2.1 | 77.04 |

MOVIMIENTOS DE EMBALSE
 MODULO EXPERIMENTAL APURE
 EMBALSE _ 2

AÑO : 1967

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 2 | 201 | 2576.0 | 1275.0 | 20.6 | 18.8 | 19.7 | 0.0 | 76.95 |
| FEB | 0 | 0 | 220 | 2415.3 | 1435.7 | 18.8 | 17.0 | 17.9 | 0.0 | 76.84 |
| MAR | 0 | 0 | 260 | 2239.7 | 1611.3 | 17.0 | 14.7 | 15.8 | 0.0 | 76.72 |
| ABR | 18 | 74 | 175 | 2026.0 | 1825.0 | 14.7 | 16.0 | 15.4 | 0.0 | 76.70 |
| MAY | 37 | 100 | 163 | 2152.9 | 1698.1 | 16.0 | 18.4 | 17.2 | 0.0 | 76.80 |
| JUN | 185 | 370 | 105 | 2371.5 | 1479.5 | 18.4 | 30.3 | 24.3 | 9.7 | 77.12 |
| JUL | 340 | 330 | 120 | 2576.0 | 1275.0 | 20.6 | 33.3 | 26.9 | 12.7 | 77.21 |
| AGO | 420 | 240 | 123 | 2576.0 | 1275.0 | 20.6 | 31.9 | 26.3 | 11.4 | 77.19 |
| SEP | 420 | 140 | 123 | 2576.0 | 1275.0 | 20.6 | 29.4 | 25.0 | 8.8 | 77.14 |
| OCT | 360 | 89 | 148 | 2576.0 | 1275.0 | 20.6 | 26.8 | 23.7 | 6.2 | 77.10 |
| NOV | 310 | 7 | 162 | 2576.0 | 1275.0 | 20.6 | 23.7 | 22.2 | 3.2 | 77.05 |
| DIC | 200 | 10 | 175 | 2576.0 | 1275.0 | 20.6 | 22.1 | 21.4 | 1.6 | 77.03 |

AÑO : 1968

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 0 | 198 | 2576.0 | 1275.0 | 20.6 | 18.9 | 19.7 | 0.0 | 76.95 |
| FEB | 0 | 0 | 216 | 2416.3 | 1434.7 | 18.9 | 17.1 | 18.0 | 0.0 | 76.85 |
| MAR | 0 | 17 | 264 | 2247.7 | 1603.3 | 17.1 | 15.1 | 16.1 | 0.0 | 76.74 |
| ABR | 32 | 61 | 164 | 2065.6 | 1785.4 | 15.1 | 16.6 | 15.8 | 0.0 | 76.72 |
| MAY | 45 | 93 | 130 | 2204.6 | 1646.4 | 16.6 | 19.6 | 18.1 | 0.0 | 76.85 |
| JUN | 34 | 189 | 115 | 2432.4 | 1368.6 | 19.6 | 24.8 | 22.2 | 4.2 | 77.05 |
| JUL | 85 | 239 | 106 | 2576.0 | 1275.0 | 20.6 | 28.0 | 24.3 | 7.4 | 77.12 |
| AGO | 184 | 165 | 121 | 2576.0 | 1275.0 | 20.6 | 27.0 | 23.8 | 6.5 | 77.11 |
| SEP | 200 | 123 | 124 | 2576.0 | 1275.0 | 20.6 | 26.0 | 23.3 | 5.4 | 77.09 |
| OCT | 197 | 26 | 169 | 2576.0 | 1275.0 | 20.6 | 22.6 | 21.6 | 2.1 | 77.03 |
| NOV | 80 | 23 | 158 | 2576.0 | 1275.0 | 20.6 | 21.3 | 20.9 | 0.7 | 77.01 |
| DIC | 10 | 0 | 202 | 2576.0 | 1275.0 | 20.6 | 18.9 | 19.7 | 0.0 | 76.95 |

MOVIMIENTOS DE EMBALSE
 MÓDULO EXPERIMENTAL APURE
 EMBALSE _ 2

ANO : 1969

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPO_ RACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|--------------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 1 | 202 | 2420.5 | 1430.5 | 18.9 | 17.4 | 18.1 | 0.0 | 76.86 |
| FEB | 0 | 7 | 236 | 2278.8 | 1572.2 | 17.4 | 15.6 | 16.5 | 0.0 | 76.76 |
| MAR | 0 | 26 | 263 | 2113.2 | 1737.8 | 15.6 | 14.1 | 14.8 | 0.0 | 76.67 |
| ABR | 2 | 83 | 179 | 1970.6 | 1880.4 | 14.1 | 15.3 | 14.7 | 0.0 | 76.66 |
| MAY | 12 | 187 | 141 | 2084.5 | 1766.5 | 15.3 | 19.4 | 17.4 | 0.0 | 76.81 |
| JUN | 27 | 261 | 105 | 2469.6 | 1381.4 | 19.4 | 26.5 | 23.0 | 6.0 | 77.08 |
| JUL | 105 | 379 | 113 | 2576.0 | 1275.0 | 20.6 | 31.7 | 26.1 | 11.1 | 77.18 |
| AGO | 132 | 313 | 120 | 2576.0 | 1275.0 | 20.6 | 30.2 | 25.4 | 9.6 | 77.16 |
| SEP | 117 | 169 | 142 | 2576.0 | 1275.0 | 20.6 | 25.9 | 23.2 | 5.3 | 77.09 |
| OCT | 46 | 169 | 133 | 2576.0 | 1275.0 | 20.6 | 25.1 | 22.9 | 4.6 | 77.08 |
| NOV | 22 | 23 | 144 | 2576.0 | 1275.0 | 20.6 | 20.8 | 20.7 | 0.3 | 77.00 |
| DIC | 20 | 34 | 157 | 2576.0 | 1275.0 | 20.6 | 20.8 | 20.7 | 0.3 | 77.00 |

ANO : 1970

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPO_ RACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|--------------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 1 | 188 | 2576.0 | 1275.0 | 20.6 | 19.1 | 19.8 | 0.0 | 76.96 |
| FEB | 0 | 31 | 209 | 2437.9 | 1413.1 | 19.1 | 18.1 | 18.6 | 0.0 | 76.89 |
| MAR | 0 | 0 | 257 | 2349.1 | 1501.9 | 18.1 | 15.5 | 16.8 | 0.0 | 76.78 |
| ABR | 0 | 17 | 228 | 2101.9 | 1749.1 | 15.5 | 14.4 | 14.9 | 0.0 | 76.67 |
| MAY | 0 | 146 | 149 | 1998.5 | 1852.5 | 14.4 | 17.3 | 15.8 | 0.0 | 76.72 |
| JUN | 6 | 250 | 121 | 2269.5 | 1581.5 | 17.3 | 23.2 | 20.3 | 2.7 | 76.98 |
| JUL | 48 | 300 | 111 | 2576.0 | 1275.0 | 20.6 | 29.0 | 24.8 | 8.4 | 77.14 |
| AGO | 121 | 250 | 108 | 2576.0 | 1275.0 | 20.6 | 28.7 | 24.6 | 8.1 | 77.13 |
| SEP | 200 | 270 | 109 | 2576.0 | 1275.0 | 20.6 | 30.2 | 25.4 | 9.6 | 77.16 |
| OCT | 109 | 150 | 140 | 2576.0 | 1275.0 | 20.6 | 25.3 | 22.9 | 4.7 | 77.08 |

MOVIMIENTOS DE EMBALSE
 MODULO EXPERIMENTAL APURE

EMBALSE _ 3

ANO : 1965

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | | | | | | | | | | |
| FEB | | | | | | | | | | |
| MAR | | | | | | | | | | |
| ABR | | | | | | | | | | |
| MAY | | | | | | | | | | |
| JUN | | | | | | | | | | |
| JUL | 94 | 230 | 121 | 2576.0 | 1275.0 | 20.6 | 29.9 | 25.3 | 9.4 | 77.15 |
| AGO | 140 | 260 | 120 | 2576.0 | 1275.0 | 20.6 | 31.3 | 25.9 | 10.7 | 77.8 |
| SEP | 170 | 100 | 129 | 2576.0 | 1275.0 | 20.6 | 27.4 | 24.0 | 6.8 | 77.1 |
| OCT | 172 | 37 | 162 | 2576.0 | 1275.0 | 20.6 | 25.1 | 22.8 | 4.5 | 77.07 |
| NOV | 190 | 35 | 148 | 2576.0 | 1275.0 | 20.6 | 25.6 | 23.1 | 5.0 | 77.08 |
| DIC | 98 | 1 | 196 | 2576.0 | 1275.0 | 20.6 | 22.5 | 21.6 | 2.0 | 77.03 |

ANO : 1966

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 0 | 220 | 2576.0 | 1275.0 | 20.6 | 20.8 | 20.7 | 0.2 | 77.00 |
| FEB | 0 | 0 | 250 | 2576.0 | 1275.0 | 20.6 | 20.2 | 20.4 | 0.0 | 76.99 |
| MAR | 0 | 19 | 261 | 2537.3 | 1313.7 | 20.2 | 20.1 | 20.1 | 0.0 | 76.97 |
| ABR | 2 | 42 | 223 | 2530.0 | 1321.0 | 20.1 | 21.4 | 20.7 | 0.8 | 77.01 |
| MAY | 12 | 115 | 161 | 2576.0 | 1275.0 | 20.6 | 25.1 | 22.8 | 4.5 | 77.07 |
| JUN | 36 | 150 | 123 | 2576.0 | 1275.0 | 20.6 | 27.1 | 23.8 | 6.5 | 77.11 |
| JUL | 240 | 450 | 93 | 2576.0 | 1275.0 | 20.6 | 38.0 | 29.3 | 17.5 | 77.29 |
| AGO | 270 | 190 | 121 | 2576.0 | 1275.0 | 20.6 | 31.2 | 25.9 | 10.6 | 77.17 |
| SEP | 300 | 172 | 123 | 2576.0 | 1275.0 | 20.6 | 31.0 | 25.8 | 10.5 | 77.17 |
| OCT | 295 | 140 | 155 | 2576.0 | 1275.0 | 20.6 | 29.5 | 25.0 | 8.9 | 77.15 |
| NOV | 295 | 130 | 141 | 2576.0 | 1275.0 | 20.6 | 29.5 | 25.0 | 8.9 | 77.15 |
| DIC | 190 | 33 | 170 | 2576.0 | 1275.0 | 20.6 | 25.1 | 22.8 | 4.5 | 77.07 |

MOVIMIENTOS DE EMBALSE
 MODULO EXPERIMENTAL APURE

EMBALSE _ 3

ANO : 1967

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 2 | 201 | 2576.0 | 1275.0 | 20.6 | 21.2 | 20.9 | 0.6 | 77.01 |
| FEB | 0 | 0 | 220 | 2576.0 | 1275.0 | 20.6 | 20.8 | 20.7 | 0.2 | 77.00 |
| MAR | 0 | 0 | 260 | 2576.0 | 1275.0 | 20.6 | 19.9 | 20.3 | 0.0 | 76.98 |
| ABR | 18 | 74 | 175 | 2518.1 | 1332.9 | 19.9 | 23.3 | 21.6 | 2.7 | 77.03 |
| MAY | 37 | 100 | 163 | 2576.0 | 1275.0 | 20.6 | 25.0 | 22.8 | 4.4 | 77.07 |
| JUN | 185 | 370 | 105 | 2576.0 | 1275.0 | 20.6 | 35.0 | 27.8 | 14.5 | 77.24 |
| JUL | 340 | 330 | 120 | 2576.0 | 1275.0 | 20.6 | 35.7 | 28.1 | 15.1 | 77.25 |
| AGO | 420 | 240 | 123 | 2576.0 | 1275.0 | 20.6 | 34.3 | 27.4 | 13.7 | 77.23 |
| SEP | 420 | 140 | 123 | 2576.0 | 1275.0 | 20.6 | 31.7 | 26.2 | 11.2 | 77.18 |
| OCT | 360 | 89 | 148 | 2576.0 | 1275.0 | 20.6 | 29.1 | 24.9 | 8.6 | 77.14 |
| NOV | 310 | 7 | 162 | 2576.0 | 1275.0 | 20.6 | 26.1 | 23.3 | 5.5 | 77.09 |
| DIC | 200 | 10 | 175 | 2576.0 | 1275.0 | 20.6 | 24.5 | 22.5 | 3.9 | 77.06 |

ANO : 1968

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 0 | 198 | 2576.0 | 1275.0 | 20.6 | 21.2 | 20.9 | 0.7 | 77.01 |
| FEB | 0 | 0 | 216 | 2576.0 | 1275.0 | 20.6 | 20.9 | 20.7 | 0.3 | 77.00 |
| MAR | 0 | 19 | 264 | 2576.0 | 1275.0 | 20.6 | 20.4 | 20.5 | 0.0 | 76.99 |
| ABR | 32 | 51 | 164 | 2555.0 | 1295.0 | 20.4 | 23.7 | 22.0 | 3.1 | 77.05 |
| MAY | 45 | 98 | 130 | 2576.0 | 1275.0 | 20.6 | 25.7 | 23.1 | 5.2 | 77.08 |
| JUN | 34 | 189 | 115 | 2576.0 | 1275.0 | 20.6 | 28.2 | 24.4 | 7.7 | 77.13 |
| JUL | 36 | 239 | 106 | 2576.0 | 1275.0 | 20.6 | 30.4 | 25.5 | 9.8 | 77.16 |
| AGO | 184 | 165 | 121 | 2576.0 | 1275.0 | 20.6 | 29.4 | 25.0 | 8.8 | 77.15 |
| SEP | 200 | 123 | 129 | 2576.0 | 1275.0 | 20.6 | 28.4 | 24.5 | 7.8 | 77.13 |
| OCT | 197 | 26 | 169 | 2576.0 | 1275.0 | 20.6 | 25.0 | 22.8 | 4.4 | 77.07 |
| NOV | 80 | 23 | 158 | 2576.0 | 1275.0 | 20.6 | 23.7 | 22.1 | 3.1 | 77.05 |
| DIC | 10 | 0 | 202 | 2576.0 | 1275.0 | 20.6 | 21.3 | 20.9 | 0.7 | 77.01 |

MOVIMIENTOS DE EMBALSE
 MODULO EXPERIMENTAL APURE
 EMBALSE _ 3

AÑO : 1969

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 1 | 202 | 2576.0 | 1275.0 | 20.6 | 21.2 | 20.9 | 0.6 | 77.01 |
| FEB | 0 | 7 | 236 | 2576.0 | 1275.0 | 20.6 | 20.6 | 20.6 | 0.1 | 77.00 |
| MAR | 0 | 26 | 263 | 2576.0 | 1275.0 | 20.6 | 20.6 | 20.6 | 0.0 | 77.00 |
| ABR | 2 | 83 | 179 | 2574.8 | 1276.2 | 20.6 | 23.8 | 22.2 | 3.2 | 77.05 |
| MAY | 12 | 187 | 141 | 2576.0 | 1275.0 | 20.6 | 27.4 | 24.0 | 6.8 | 77.11 |
| JUN | 27 | 261 | 105 | 2576.0 | 1275.0 | 20.6 | 30.2 | 25.4 | 9.6 | 77.16 |
| JUL | 105 | 379 | 113 | 2576.0 | 1275.0 | 20.6 | 34.1 | 27.3 | 13.5 | 77.22 |
| AGO | 132 | 313 | 120 | 2576.0 | 1275.0 | 20.6 | 32.6 | 26.6 | 12.0 | 77.20 |
| SEP | 117 | 169 | 142 | 2576.0 | 1275.0 | 20.6 | 28.2 | 24.4 | 7.7 | 77.13 |
| OCT | 46 | 169 | 133 | 2576.0 | 1275.0 | 20.6 | 27.5 | 24.0 | 6.9 | 77.11 |
| NOV | 22 | 23 | 144 | 2576.0 | 1275.0 | 20.6 | 23.2 | 21.9 | 2.6 | 77.04 |
| DIC | 20 | 34 | 157 | 2576.0 | 1275.0 | 20.6 | 23.2 | 21.9 | 2.6 | 77.04 |

AÑO : 1970

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 1 | 188 | 2576.0 | 1275.0 | 20.6 | 21.5 | 21.0 | 0.9 | 77.01 |
| FEB | 0 | 31 | 209 | 2576.0 | 1275.0 | 20.6 | 21.8 | 21.2 | 1.2 | 77.02 |
| MAR | 0 | 0 | 267 | 2576.0 | 1275.0 | 20.6 | 19.8 | 20.2 | 0.0 | 76.98 |
| ABR | 0 | 17 | 228 | 2504.6 | 1346.4 | 19.8 | 20.4 | 20.1 | 0.0 | 76.97 |
| MAY | 0 | 146 | 149 | 2560.1 | 1290.9 | 20.4 | 25.8 | 23.1 | 5.3 | 77.08 |
| JUN | 6 | 250 | 121 | 2576.0 | 1275.0 | 20.6 | 29.3 | 25.0 | 9.8 | 77.14 |
| JUL | 48 | 300 | 111 | 2576.0 | 1275.0 | 20.6 | 31.4 | 26.0 | 10.8 | 77.18 |
| AGO | 121 | 250 | 108 | 2576.0 | 1275.0 | 20.6 | 31.1 | 25.8 | 10.5 | 77.17 |
| SEP | 200 | 270 | 109 | 2576.0 | 1275.0 | 20.6 | 32.6 | 26.6 | 12.0 | 77.20 |
| OCT | 109 | 150 | 140 | 2576.0 | 1275.0 | 20.6 | 27.7 | 24.1 | 7.1 | 77.12 |

ANEXO N° 2

LLUVIA DE BRUZUAL - EMBALSE SECO

MOVIMIENTOS DE EMBALSE

MODULO EXPERIMENTAL APURE

EMBALSE - 1

ANO : 1965

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | | | | | | | | | | |
| FEB | | | | | | | | | | |
| MAR | | | | | | | | | | |
| ABR | | | | | | | | | | |
| MAY | | | | | | | | | | |
| JUN | | | | | | | | | | |
| JUL | 94 | 230 | 121 | 0.0 | 3851.0 | 0.0 | 3.6 | 1.8 | 0.0 | 75.52 |
| AGO | 140 | 260 | 120 | 994.4 | 2856.6 | 3.6 | 9.2 | 6.4 | 0.0 | 76.17 |
| SEP | 170 | 100 | 129 | 1519.7 | 2331.3 | 9.2 | 13.2 | 11.2 | 0.0 | 76.45 |
| OCT | 172 | 37 | 162 | 1985.0 | 1966.0 | 13.2 | 14.8 | 14.0 | 0.0 | 76.62 |
| NOV | 190 | 35 | 148 | 2037.6 | 1813.4 | 14.8 | 16.5 | 15.7 | 0.0 | 76.71 |
| DIC | 98 | 1 | 196 | 2200.6 | 1650.4 | 16.5 | 14.7 | 15.6 | 0.0 | 76.71 |

ANO : 1966

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 0 | 220 | 2031.6 | 1819.4 | 14.7 | 11.2 | 12.9 | 0.0 | 76.55 |
| FEB | 0 | 0 | 250 | 1697.9 | 2153.1 | 11.2 | 7.8 | 9.5 | 0.0 | 76.35 |
| MAR | 0 | 19 | 261 | 1381.1 | 2469.9 | 7.8 | 5.1 | 6.5 | 0.0 | 76.18 |
| ABR | 2 | 42 | 223 | 1136.5 | 2714.5 | 5.1 | 3.6 | 4.4 | 0.0 | 76.06 |
| MAY | 12 | 115 | 161 | 996.9 | 2854.1 | 3.6 | 3.9 | 3.7 | 0.0 | 76.02 |
| JUN | 36 | 150 | 123 | 1016.0 | 2835.0 | 3.9 | 5.4 | 4.6 | 0.0 | 76.07 |
| JUL | 240 | 450 | 93 | 1160.2 | 2690.8 | 5.4 | 16.2 | 10.8 | 0.0 | 76.43 |
| AGO | 270 | 190 | 121 | 2169.4 | 1681.6 | 16.2 | 22.8 | 19.5 | 2.2 | 76.94 |
| SEP | 300 | 172 | 123 | 2576.0 | 1275.0 | 20.6 | 26.3 | 23.4 | 5.7 | 77.09 |
| OCT | 295 | 140 | 155 | 2576.0 | 1275.0 | 20.6 | 24.7 | 22.7 | 4.2 | 77.07 |
| NOV | 295 | 130 | 141 | 2576.0 | 1275.0 | 20.6 | 24.8 | 22.7 | 4.2 | 77.07 |
| DIC | 190 | 33 | 170 | 2576.0 | 1275.0 | 20.6 | 20.3 | 20.5 | 0.0 | 76.99 |

MOVIMIENTOS DE EMBALSE
 MODULO EXPERIMENTAL APURE

EMBALSE _ 1

ANO : 1967

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPO_ RACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|--------------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 2 | 201 | 2554.5 | 1296.5 | 20.3 | 16.3 | 18.3 | 0.0 | 76.87 |
| FEB | 0 | 0 | 220 | 2175.9 | 1675.1 | 16.3 | 12.5 | 14.4 | 0.0 | 76.64 |
| MAR | 0 | 0 | 260 | 1818.6 | 2032.4 | 12.5 | 8.7 | 10.6 | 0.0 | 76.42 |
| ABR | 18 | 74 | 175 | 1465.6 | 2385.4 | 9.7 | 8.1 | 8.4 | 0.0 | 76.29 |
| MAY | 37 | 170 | 163 | 1415.4 | 2435.6 | 8.1 | 8.6 | 8.4 | 0.0 | 76.29 |
| JUN | 185 | 370 | 165 | 1459.4 | 2391.6 | 8.6 | 17.2 | 12.9 | 0.0 | 76.55 |
| JUL | 340 | 330 | 120 | 2261.7 | 1589.3 | 17.2 | 27.9 | 22.5 | 7.3 | 77.07 |
| AGO | 420 | 240 | 123 | 2576.0 | 1275.0 | 20.6 | 29.6 | 25.1 | 9.0 | 77.15 |
| SEP | 420 | 140 | 123 | 2576.0 | 1275.0 | 20.6 | 27.0 | 23.8 | 6.4 | 77.11 |
| OCT | 360 | 89 | 148 | 2576.0 | 1275.0 | 20.6 | 24.4 | 22.5 | 3.8 | 77.06 |
| NOV | 310 | 7 | 162 | 2576.0 | 1275.0 | 20.6 | 21.4 | 21.0 | 0.8 | 77.01 |
| DIC | 200 | 10 | 175 | 2576.0 | 1275.0 | 20.6 | 19.8 | 20.2 | 0.0 | 76.98 |

ANO : 1968

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPO_ RACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|--------------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 0 | 198 | 2501.4 | 1349.6 | 19.8 | 15.8 | 17.8 | 0.0 | 76.84 |
| FEB | 0 | 0 | 216 | 2131.7 | 1719.3 | 15.3 | 12.1 | 14.0 | 0.0 | 76.61 |
| MAR | 0 | 19 | 264 | 1788.0 | 2063.0 | 12.1 | 8.7 | 10.4 | 0.0 | 76.41 |
| ABR | 32 | 61 | 164 | 1467.3 | 2383.7 | 8.7 | 9.4 | 8.6 | 0.0 | 76.30 |
| MAY | 45 | 98 | 130 | 1442.4 | 2408.6 | 8.4 | 9.4 | 8.9 | 0.0 | 76.32 |
| JUN | 34 | 189 | 115 | 1535.5 | 2315.5 | 9.4 | 11.7 | 10.6 | 0.0 | 76.42 |
| JUL | 86 | 239 | 106 | 1747.9 | 2103.1 | 11.7 | 16.2 | 13.9 | 0.0 | 76.61 |
| AGO | 184 | 165 | 121 | 2168.2 | 1682.8 | 16.2 | 20.8 | 18.5 | 0.2 | 76.88 |
| SEP | 200 | 123 | 129 | 2576.0 | 1275.0 | 20.6 | 23.6 | 22.1 | 3.1 | 77.05 |
| OCT | 197 | 26 | 169 | 2576.0 | 1275.0 | 20.6 | 20.3 | 20.4 | 0.0 | 76.99 |
| NOV | 80 | 23 | 158 | 2547.9 | 1303.1 | 20.3 | 18.7 | 19.5 | 0.0 | 76.94 |
| DIC | 10 | 0 | 202 | 2399.3 | 1451.7 | 13.7 | 14.9 | 16.8 | 0.0 | 76.78 |

MOVIMIENTOS DE EMBALSE

MODULO EXPERIMENTAL APURE

EMBALSE - 1

AÑO : 1969

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 1 | 202 | 2051.1 | 1799.9 | 14.9 | 11.7 | 13.3 | 0.0 | 76.58 |
| FEB | 0 | 7 | 236 | 1743.7 | 2107.3 | 11.7 | 8.5 | 10.1 | 0.0 | 76.39 |
| MAR | 0 | 26 | 263 | 1447.9 | 2403.1 | 8.5 | 5.8 | 7.1 | 0.0 | 76.22 |
| ABR | 2 | 83 | 179 | 1198.3 | 2652.2 | 5.3 | 5.1 | 5.5 | 0.0 | 76.12 |
| MAY | 12 | 187 | 141 | 1136.4 | 2714.6 | 5.1 | 6.3 | 5.7 | 0.0 | 76.13 |
| JUN | 27 | 261 | 105 | 1245.5 | 2605.5 | 6.3 | 9.2 | 7.8 | 0.0 | 76.25 |
| JUL | 105 | 379 | 113 | 1516.8 | 2334.2 | 9.2 | 16.0 | 12.6 | 0.0 | 76.54 |
| AGO | 132 | 313 | 120 | 2154.0 | 1697.0 | 16.0 | 23.0 | 19.5 | 2.4 | 76.94 |
| SEP | 117 | 169 | 142 | 2576.0 | 1275.0 | 20.6 | 23.5 | 22.0 | 2.9 | 77.05 |
| OCT | 46 | 169 | 133 | 2576.0 | 1275.0 | 20.6 | 22.9 | 21.7 | 2.7 | 77.04 |
| NOV | 22 | 23 | 144 | 2576.0 | 1275.0 | 20.6 | 18.5 | 19.5 | 0.0 | 76.94 |
| DIC | 20 | 34 | 157 | 2380.5 | 1470.5 | 18.5 | 16.6 | 17.5 | 0.0 | 76.82 |

AÑO : 1970

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 1 | 188 | 2204.5 | 1646.5 | 16.6 | 13.3 | 14.9 | 0.0 | 76.67 |
| FEB | 0 | 31 | 209 | 1897.2 | 1953.3 | 13.3 | 10.7 | 12.0 | 0.0 | 76.50 |
| MAR | 0 | 0 | 207 | 1656.1 | 2194.9 | 10.7 | 7.2 | 8.9 | 0.0 | 76.32 |
| ABR | 0 | 17 | 228 | 1326.0 | 2525.0 | 7.2 | 5.0 | 6.1 | 0.0 | 76.15 |
| MAY | 0 | 146 | 149 | 1121.3 | 2729.7 | 5.0 | 5.3 | 5.1 | 0.0 | 76.10 |
| JUN | 6 | 250 | 121 | 1149.4 | 2701.6 | 5.3 | 7.2 | 6.2 | 0.0 | 76.16 |
| JUL | 48 | 300 | 111 | 1328.8 | 2522.2 | 7.2 | 11.2 | 9.2 | 0.0 | 76.34 |
| AGO | 121 | 250 | 108 | 1703.7 | 2147.3 | 11.2 | 16.6 | 13.9 | 0.0 | 76.61 |
| SEP | 200 | 270 | 109 | 2206.2 | 1644.8 | 16.6 | 23.9 | 20.3 | 3.4 | 76.98 |
| OCT | 109 | 150 | 140 | 2576.0 | 1275.0 | 20.6 | 22.9 | 21.8 | 2.4 | 77.04 |

MOVIMIENTOS DE EMBALSE
 MODULO EXPERIMENTAL APURE
 EMBALSE _ 2

AÑO : 1965

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | | | | | | | | | | |
| FEB | | | | | | | | | | |
| MAR | | | | | | | | | | |
| ABR | | | | | | | | | | |
| MAY | | | | | | | | | | |
| JUN | | | | | | | | | | |
| JUL | 94 | 230 | 121 | 0.0 | 3851.0 | 0.0 | 6.0 | 3.0 | 0.0 | 75.87 |
| AGO | 140 | 260 | 120 | 1215.4 | 2635.6 | 6.0 | 14.0 | 10.0 | 0.0 | 76.38 |
| SEP | 170 | 100 | 129 | 1966.7 | 1884.3 | 14.0 | 19.5 | 16.8 | 0.0 | 76.78 |
| OCT | 172 | 37 | 162 | 2480.7 | 1370.3 | 19.5 | 22.0 | 20.8 | 1.4 | 77.01 |
| NOV | 190 | 35 | 148 | 2576.0 | 1275.0 | 20.5 | 23.2 | 21.9 | 2.6 | 77.04 |
| DIC | 98 | 1 | 196 | 2576.0 | 1275.0 | 20.6 | 20.2 | 20.4 | 0.0 | 76.99 |

AÑO : 1966

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 0 | 220 | 2539.1 | 1311.9 | 20.2 | 18.1 | 19.1 | 0.0 | 76.92 |
| FEB | 0 | 0 | 250 | 2343.1 | 1507.9 | 18.1 | 15.8 | 16.9 | 0.0 | 76.79 |
| MAR | 0 | 19 | 251 | 2126.9 | 1724.1 | 15.8 | 14.1 | 14.9 | 0.0 | 76.67 |
| ABR | 2 | 42 | 223 | 1971.2 | 1879.8 | 14.1 | 13.8 | 13.9 | 0.0 | 76.61 |
| MAY | 12 | 115 | 161 | 1944.9 | 1906.1 | 13.8 | 16.1 | 15.0 | 0.0 | 76.67 |
| JUN | 36 | 150 | 123 | 2162.2 | 1688.8 | 16.1 | 20.2 | 18.2 | 0.0 | 76.86 |
| JUL | 240 | 450 | 93 | 2544.0 | 1307.0 | 20.2 | 35.3 | 27.8 | 14.7 | 77.24 |
| AGO | 270 | 190 | 121 | 2576.0 | 1275.0 | 20.6 | 28.8 | 24.7 | 8.2 | 77.13 |
| SEP | 300 | 172 | 123 | 2576.0 | 1275.0 | 20.6 | 28.7 | 24.6 | 8.1 | 77.13 |
| OCT | 295 | 140 | 155 | 2576.0 | 1275.0 | 20.6 | 27.1 | 23.8 | 6.5 | 77.11 |
| NOV | 295 | 130 | 141 | 2576.0 | 1275.0 | 20.6 | 27.1 | 23.9 | 6.6 | 77.11 |
| DIC | 190 | 35 | 170 | 2576.0 | 1275.0 | 20.6 | 22.7 | 21.6 | 2.1 | 77.04 |

MOVIMIENTOS DE EMBALSE
 MODULO EXPERIMENTAL APURE
 EMBALSE _ 2

ANC : 1967

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 2 | 201 | 2576.0 | 1275.0 | 20.6 | 18.8 | 19.7 | 0.0 | 76.95 |
| FEB | 0 | 0 | 220 | 2415.3 | 1435.7 | 18.9 | 17.0 | 17.9 | 0.0 | 76.84 |
| MAR | 0 | 0 | 260 | 2239.7 | 1611.3 | 17.0 | 14.7 | 15.8 | 0.0 | 76.72 |
| ABR | 18 | 74 | 175 | 2026.0 | 1825.0 | 14.7 | 16.0 | 15.4 | 0.0 | 76.70 |
| MAY | 37 | 100 | 163 | 2152.9 | 1693.1 | 16.0 | 18.4 | 17.2 | 0.0 | 76.80 |
| JUN | 185 | 370 | 105 | 2371.5 | 1479.5 | 18.4 | 30.3 | 24.3 | 9.7 | 77.12 |
| JUL | 340 | 330 | 120 | 2576.0 | 1275.0 | 20.6 | 33.3 | 26.9 | 12.7 | 77.21 |
| AGO | 420 | 240 | 123 | 2576.0 | 1275.0 | 20.6 | 31.9 | 26.3 | 11.4 | 77.19 |
| SEP | 420 | 140 | 123 | 2576.0 | 1275.0 | 20.6 | 29.4 | 25.0 | 8.8 | 77.14 |
| OCT | 360 | 89 | 148 | 2576.0 | 1275.0 | 20.6 | 26.8 | 23.7 | 6.2 | 77.10 |
| NOV | 310 | 7 | 162 | 2576.0 | 1275.0 | 20.6 | 23.7 | 22.2 | 3.2 | 77.05 |
| DIC | 200 | 10 | 175 | 2576.0 | 1275.0 | 20.6 | 22.1 | 21.4 | 1.6 | 77.03 |

ANC : 1968

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 0 | 198 | 2576.0 | 1275.0 | 20.6 | 18.9 | 19.7 | 0.0 | 76.95 |
| FEB | 0 | 0 | 216 | 2416.3 | 1434.7 | 18.9 | 17.1 | 18.0 | 0.0 | 76.85 |
| MAR | 0 | 19 | 264 | 2247.7 | 1603.3 | 17.1 | 15.1 | 16.1 | 0.0 | 76.74 |
| ABR | 32 | 61 | 164 | 2065.6 | 1785.4 | 15.1 | 16.6 | 15.8 | 0.0 | 76.72 |
| MAY | 45 | 98 | 130 | 2204.6 | 1646.4 | 16.6 | 19.6 | 18.1 | 0.0 | 76.85 |
| JUN | 34 | 189 | 115 | 2482.4 | 1368.6 | 19.6 | 24.8 | 22.2 | 4.2 | 77.05 |
| JUL | 86 | 239 | 106 | 2576.0 | 1275.0 | 20.6 | 28.0 | 24.3 | 7.4 | 77.12 |
| AGO | 184 | 165 | 121 | 2576.0 | 1275.0 | 20.6 | 27.0 | 23.8 | 6.5 | 77.11 |
| SEP | 200 | 123 | 129 | 2576.0 | 1275.0 | 20.6 | 26.0 | 23.3 | 5.4 | 77.09 |
| OCT | 197 | 26 | 169 | 2576.0 | 1275.0 | 20.6 | 22.6 | 21.6 | 2.1 | 77.03 |
| NOV | 90 | 23 | 158 | 2576.0 | 1275.0 | 20.6 | 21.3 | 20.9 | 0.7 | 77.01 |
| DIC | 10 | 0 | 202 | 2576.0 | 1275.0 | 20.6 | 18.9 | 19.7 | 0.0 | 76.95 |

MOVIMIENTOS DE EMBALSE
 MODULO EXPERIMENTAL APURE
 EMBALSE - 2

AÑO : 1969

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 1 | 202 | 2420.5 | 1430.5 | 18.9 | 17.4 | 18.1 | 0.0 | 76.86 |
| FEB | 0 | 7 | 236 | 2278.8 | 1572.2 | 17.4 | 15.6 | 16.5 | 0.0 | 76.76 |
| MAR | 0 | 26 | 263 | 2113.2 | 1737.8 | 15.6 | 14.1 | 14.8 | 0.0 | 76.67 |
| ABR | 2 | 83 | 179 | 1970.6 | 1880.4 | 14.1 | 15.3 | 14.7 | 0.0 | 76.66 |
| MAY | 12 | 187 | 141 | 2084.5 | 1766.5 | 15.3 | 19.4 | 17.4 | 0.0 | 76.81 |
| JUN | 27 | 261 | 105 | 2469.6 | 1381.4 | 19.4 | 26.5 | 23.0 | 6.0 | 77.08 |
| JUL | 105 | 379 | 113 | 2576.0 | 1275.0 | 20.6 | 31.7 | 26.1 | 11.1 | 77.18 |
| AGO | 132 | 313 | 120 | 2576.0 | 1275.0 | 20.6 | 30.2 | 25.4 | 9.6 | 77.16 |
| SEP | 117 | 169 | 142 | 2576.0 | 1275.0 | 20.6 | 25.9 | 23.2 | 5.3 | 77.09 |
| OCT | 46 | 169 | 133 | 2576.0 | 1275.0 | 20.6 | 25.1 | 22.9 | 4.6 | 77.08 |
| NOV | 22 | 23 | 144 | 2576.0 | 1275.0 | 20.6 | 20.8 | 20.7 | 0.3 | 77.00 |
| DIC | 20 | 34 | 157 | 2576.0 | 1275.0 | 20.6 | 20.8 | 20.7 | 0.3 | 77.00 |

AÑO : 1970

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 1 | 188 | 2576.0 | 1275.0 | 20.6 | 19.1 | 19.8 | 0.0 | 76.96 |
| FEB | 0 | 31 | 209 | 2437.9 | 1413.1 | 19.1 | 18.1 | 18.6 | 0.0 | 76.89 |
| MAR | 0 | 0 | 267 | 2349.1 | 1501.9 | 18.1 | 15.5 | 16.8 | 0.0 | 76.78 |
| ABR | 0 | 17 | 228 | 2101.9 | 1749.1 | 15.5 | 14.4 | 14.9 | 0.0 | 76.67 |
| MAY | 0 | 146 | 149 | 1998.5 | 1852.5 | 14.4 | 17.3 | 15.8 | 0.0 | 76.72 |
| JUN | 6 | 250 | 121 | 2269.5 | 1581.5 | 17.3 | 23.2 | 20.3 | 2.7 | 76.98 |
| JUL | 48 | 300 | 111 | 2576.0 | 1275.0 | 20.6 | 29.0 | 24.8 | 8.4 | 77.14 |
| AGO | 121 | 250 | 108 | 2576.0 | 1275.0 | 20.6 | 28.7 | 24.6 | 8.1 | 77.13 |
| SEP | 200 | 270 | 109 | 2576.0 | 1275.0 | 20.6 | 30.2 | 25.4 | 9.6 | 77.16 |
| OCT | 109 | 150 | 140 | 2576.0 | 1275.0 | 20.6 | 25.3 | 22.9 | 4.7 | 77.08 |

MOVIMIENTOS DE EMBALSE
 MODULO EXPERIMENTAL APURE
 EMBALSE _ 3

AÑO : 1965

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPO_ RACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|--------------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | | | | | | | | | | |
| FEB | | | | | | | | | | |
| MAR | | | | | | | | | | |
| ABR | | | | | | | | | | |
| MAY | | | | | | | | | | |
| JUN | | | | | | | | | | |
| JUL | 94 | 230 | 121 | 0.0 | 3851.0 | 0.0 | 8.4 | 4.2 | 0.0 | 76.04 |
| AGO | 140 | 260 | 120 | 1436.4 | 2414.6 | 8.4 | 18.8 | 13.6 | 0.0 | 76.59 |
| SEP | 170 | 100 | 129 | 2413.7 | 1437.3 | 18.8 | 25.9 | 22.4 | 5.4 | 77.06 |
| OCT | 172 | 37 | 162 | 2576.0 | 1275.0 | 20.6 | 25.1 | 22.8 | 4.5 | 77.07 |
| NOV | 190 | 35 | 148 | 2576.0 | 1275.0 | 20.6 | 25.6 | 23.1 | 5.0 | 77.08 |
| DIC | 98 | 1 | 196 | 2576.0 | 1275.0 | 20.6 | 22.5 | 21.6 | 2.0 | 77.03 |

AÑO : 1966

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPO_ RACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|--------------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 0 | 220 | 2576.0 | 1275.0 | 20.6 | 20.8 | 20.7 | 0.2 | 77.00 |
| FEB | 0 | 0 | 250 | 2576.0 | 1275.0 | 20.6 | 20.2 | 20.4 | 0.0 | 76.99 |
| MAR | 0 | 19 | 261 | 2537.3 | 1313.7 | 20.2 | 20.1 | 20.1 | 0.0 | 76.97 |
| ABR | 2 | 42 | 223 | 2530.0 | 1321.0 | 20.1 | 21.4 | 20.7 | 0.8 | 77.01 |
| MAY | 12 | 115 | 161 | 2576.0 | 1275.0 | 20.6 | 25.1 | 22.8 | 4.5 | 77.07 |
| JUN | 36 | 150 | 123 | 2576.0 | 1275.0 | 20.6 | 27.1 | 23.8 | 6.5 | 77.11 |
| JUL | 240 | 450 | 93 | 2576.0 | 1275.0 | 20.6 | 38.0 | 29.3 | 17.5 | 77.29 |
| AGO | 270 | 190 | 121 | 2576.0 | 1275.0 | 20.6 | 31.2 | 25.9 | 10.6 | 77.17 |
| SEP | 300 | 172 | 123 | 2576.0 | 1275.0 | 20.6 | 31.0 | 25.8 | 10.5 | 77.17 |
| OCT | 295 | 140 | 155 | 2576.0 | 1275.0 | 20.6 | 29.5 | 25.0 | 8.9 | 77.15 |
| NOV | 295 | 130 | 141 | 2576.0 | 1275.0 | 20.6 | 29.5 | 25.0 | 8.9 | 77.15 |
| DIC | 190 | 33 | 170 | 2576.0 | 1275.0 | 20.6 | 25.1 | 22.8 | 4.5 | 77.07 |

MOVIMIENTOS DE EMBALSE
 MÓDULO EXPERIMENTAL APURE
 EMBALSE _ 3

AÑO : 1967

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 2 | 201 | 2576.0 | 1275.0 | 20.6 | 21.2 | 20.9 | 0.6 | 77.01 |
| FEB | 0 | 0 | 220 | 2576.0 | 1275.0 | 20.6 | 20.8 | 20.7 | 0.2 | 77.00 |
| MAR | 0 | 0 | 260 | 2576.0 | 1275.0 | 20.6 | 19.9 | 20.3 | 0.0 | 76.98 |
| ABR | 18 | 74 | 175 | 2518.1 | 1332.9 | 19.9 | 23.3 | 21.6 | 2.7 | 77.03 |
| MAY | 37 | 100 | 163 | 2576.0 | 1275.0 | 20.6 | 25.0 | 22.8 | 4.4 | 77.07 |
| JUN | 185 | 370 | 105 | 2576.0 | 1275.0 | 20.6 | 35.0 | 27.8 | 14.5 | 77.24 |
| JUL | 340 | 330 | 120 | 2576.0 | 1275.0 | 20.6 | 35.7 | 28.1 | 15.1 | 77.25 |
| AGO | 420 | 240 | 123 | 2576.0 | 1275.0 | 20.6 | 34.3 | 27.4 | 13.7 | 77.23 |
| SEP | 420 | 140 | 123 | 2576.0 | 1275.0 | 20.6 | 31.7 | 26.2 | 11.2 | 77.18 |
| OCT | 360 | 89 | 148 | 2576.0 | 1275.0 | 20.6 | 29.1 | 24.9 | 8.6 | 77.14 |
| NOV | 310 | 7 | 162 | 2576.0 | 1275.0 | 20.6 | 26.1 | 23.3 | 5.5 | 77.09 |
| DIC | 200 | 10 | 175 | 2576.0 | 1275.0 | 20.6 | 24.5 | 22.5 | 3.9 | 77.06 |

AÑO : 1968

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 0 | 198 | 2576.0 | 1275.0 | 20.6 | 21.2 | 20.9 | 0.7 | 77.01 |
| FEB | 0 | 0 | 216 | 2576.0 | 1275.0 | 20.6 | 20.9 | 20.7 | 0.3 | 77.00 |
| MAR | 0 | 19 | 264 | 2576.0 | 1275.0 | 20.6 | 20.4 | 20.5 | 0.0 | 76.99 |
| ABR | 32 | 61 | 164 | 2556.0 | 1295.0 | 20.4 | 23.7 | 22.0 | 3.1 | 77.05 |
| MAY | 45 | 98 | 130 | 2576.0 | 1275.0 | 20.6 | 25.7 | 23.1 | 5.2 | 77.08 |
| JUN | 34 | 189 | 115 | 2576.0 | 1275.0 | 20.6 | 28.2 | 24.4 | 7.7 | 77.13 |
| JUL | 86 | 239 | 106 | 2576.0 | 1275.0 | 20.6 | 30.4 | 25.5 | 9.8 | 77.16 |
| AGO | 184 | 165 | 121 | 2576.0 | 1275.0 | 20.6 | 29.4 | 25.0 | 8.8 | 77.15 |
| SEP | 200 | 123 | 129 | 2576.0 | 1275.0 | 20.6 | 28.4 | 24.5 | 7.8 | 77.13 |
| OCT | 197 | 26 | 169 | 2576.0 | 1275.0 | 20.6 | 25.0 | 22.8 | 4.4 | 77.07 |
| NOV | 80 | 23 | 158 | 2576.0 | 1275.0 | 20.6 | 23.7 | 22.1 | 3.1 | 77.05 |
| DIC | 10 | 0 | 202 | 2576.0 | 1275.0 | 20.6 | 21.3 | 20.9 | 0.7 | 77.01 |

MOVIMIENTOS DE EMBALSE

MODULO EXPERIMENTAL APURE

EMBALSE _ 3

AÑO : 1969

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 1 | 202 | 2576.0 | 1275.0 | 20.6 | 21.2 | 20.9 | 0.6 | 77.01 |
| FFB | 0 | 7 | 236 | 2576.0 | 1275.0 | 20.6 | 20.6 | 20.6 | 0.1 | 77.00 |
| MAR | 0 | 26 | 263 | 2576.0 | 1275.0 | 20.6 | 20.6 | 20.6 | 0.0 | 77.00 |
| ABR | 2 | 83 | 179 | 2574.8 | 1276.2 | 20.6 | 23.8 | 22.2 | 3.2 | 77.05 |
| MAY | 12 | 187 | 141 | 2576.0 | 1275.0 | 20.6 | 27.4 | 24.0 | 6.8 | 77.11 |
| JUN | 27 | 261 | 105 | 2576.0 | 1275.0 | 20.6 | 30.2 | 25.4 | 9.6 | 77.16 |
| JUL | 105 | 379 | 113 | 2576.0 | 1275.0 | 20.6 | 34.1 | 27.3 | 13.5 | 77.22 |
| AGO | 132 | 313 | 120 | 2576.0 | 1275.0 | 20.6 | 32.6 | 26.6 | 12.0 | 77.20 |
| SEP | 117 | 164 | 142 | 2576.0 | 1275.0 | 20.6 | -28.2 | 24.4 | 7.7 | 77.13 |
| OCT | 46 | 169 | 133 | 2576.0 | 1275.0 | 20.6 | 27.5 | 24.0 | 6.9 | 77.11 |
| NOV | 22 | 23 | 144 | 2576.0 | 1275.0 | 20.6 | 23.2 | 21.9 | 2.6 | 77.04 |
| DIC | 20 | 34 | 157 | 2576.0 | 1275.0 | 20.6 | 23.2 | 21.9 | 2.6 | 77.04 |

AÑO : 1970

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 1 | 188 | 2576.0 | 1275.0 | 20.6 | 21.5 | 21.0 | 0.9 | 77.01 |
| FEB | 0 | 31 | 209 | 2576.0 | 1275.0 | 20.6 | 21.8 | 21.2 | 1.2 | 77.02 |
| MAR | 0 | 0 | 267 | 2576.0 | 1275.0 | 20.6 | 19.8 | 20.2 | 0.0 | 76.98 |
| ABR | 0 | 17 | 223 | 2504.6 | 1346.4 | 19.8 | 20.4 | 20.1 | 0.0 | 76.97 |
| MAY | 0 | 146 | 149 | 2560.1 | 1290.9 | 20.4 | 25.8 | 23.1 | 5.3 | 77.08 |
| JUN | 6 | 250 | 121 | 2576.0 | 1275.0 | 20.6 | 29.3 | 25.0 | 8.8 | 77.14 |
| JUL | 48 | 300 | 111 | 2576.0 | 1275.0 | 20.6 | 31.4 | 26.0 | 10.8 | 77.18 |
| AGO | 121 | 250 | 108 | 2576.0 | 1275.0 | 20.6 | 31.1 | 25.8 | 10.5 | 77.17 |
| SEP | 200 | 270 | 109 | 2576.0 | 1275.0 | 20.6 | 32.6 | 26.6 | 12.0 | 77.20 |
| OCT | 109 | 150 | 140 | 2576.0 | 1275.0 | 20.6 | 27.7 | 24.1 | 7.1 | 77.12 |

ANEXO N° 3

LLUVIA DE SAN FERNANDO - EMBALSE LLENO

MOVIMIENTOS DE EMBALSE
 MODULO EXPERIMENTAL APURE
 EMBALSE - 1

AÑO : 1965

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENC | | | | | | | | | | |
| FEB | | | | | | | | | | |
| MAR | | | | | | | | | | |
| ABR | | | | | | | | | | |
| MAY | | | | | | | | | | |
| JUN | | | | | | | | | | |
| JUL | 94 | 291 | 121 | 2576.0 | 1275.0 | 20.6 | 26.8 | 23.7 | 6.2 | 77.10 |
| AGO | 140 | 350 | 120 | 2576.0 | 1275.0 | 20.6 | 28.9 | 24.7 | 8.3 | 77.14 |
| SEP | 170 | 150 | 129 | 2576.0 | 1275.0 | 20.6 | 23.9 | 22.3 | 3.4 | 77.06 |
| OCT | 172 | 64 | 162 | 2576.0 | 1275.0 | 20.6 | 21.1 | 20.8 | 0.5 | 77.01 |
| NOV | 190 | 61 | 148 | 2576.0 | 1275.0 | 20.6 | 21.5 | 21.0 | 0.9 | 77.02 |
| DIC | 98 | 9 | 196 | 2576.0 | 1275.0 | 20.6 | 18.0 | 19.3 | 0.0 | 76.93 |

AÑO : 1966

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 0 | 220 | 2337.3 | 1513.7 | 18.0 | 13.9 | 16.0 | 0.0 | 76.73 |
| FEB | 0 | 0 | 250 | 1953.5 | 1897.5 | 13.9 | 10.0 | 11.9 | 0.0 | 76.50 |
| MAR | 0 | 35 | 261 | 1580.9 | 2262.1 | 10.0 | 7.2 | 8.6 | 0.0 | 76.30 |
| ABR | 2 | 72 | 223 | 1331.2 | 2519.8 | 7.2 | 5.9 | 6.5 | 0.0 | 76.18 |
| MAY | 12 | 172 | 161 | 1203.8 | 2647.2 | 5.9 | 6.7 | 6.3 | 0.0 | 76.17 |
| JUN | 36 | 212 | 123 | 1281.9 | 2569.1 | 6.7 | 9.1 | 7.9 | 0.0 | 76.26 |
| JUL | 240 | 580 | 93 | 1504.1 | 2346.9 | 9.1 | 22.3 | 15.7 | 1.8 | 76.72 |
| AGO | 270 | 245 | 121 | 2576.0 | 1275.0 | 20.6 | 27.8 | 24.2 | 7.3 | 77.12 |
| SEP | 300 | 230 | 123 | 2576.0 | 1275.0 | 20.6 | 27.8 | 24.2 | 7.2 | 77.12 |
| OCT | 295 | 200 | 155 | 2576.0 | 1275.0 | 20.6 | 26.3 | 23.4 | 5.7 | 77.09 |
| NOV | 295 | 180 | 141 | 2576.0 | 1275.0 | 20.6 | 26.1 | 23.3 | 5.5 | 77.09 |
| DIC | 190 | 6 | 170 | 2576.0 | 1275.0 | 20.6 | 19.6 | 20.1 | 0.0 | 76.97 |

MOVIMIENTOS DE EMBALSE

MODULO EXPERIMENTAL APURE

EMBALSE - 1

ANO : 1967

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 5 | 201 | 2489.6 | 1361.4 | 19.6 | 15.8 | 17.7 | 0.0 | 76.83 |
| FEB | 0 | 0 | 220 | 2127.6 | 1723.4 | 15.8 | 12.0 | 13.9 | 0.0 | 76.61 |
| MAR | 0 | 0 | 260 | 1778.2 | 2072.8 | 12.0 | 8.3 | 10.2 | 0.0 | 76.39 |
| ABR | 18 | 119 | 175 | 1433.1 | 2417.9 | 8.3 | 8.5 | 8.4 | 0.0 | 76.29 |
| MAY | 37 | 154 | 163 | 1445.6 | 2405.4 | 8.5 | 9.7 | 9.1 | 0.0 | 76.33 |
| JUN | 185 | 485 | 105 | 1560.5 | 2290.5 | 9.7 | 20.2 | 14.9 | 0.0 | 76.67 |
| JUL | 340 | 435 | 120 | 2539.8 | 1311.2 | 20.2 | 33.3 | 26.7 | 12.7 | 77.20 |
| AGO | 420 | 305 | 123 | 2576.0 | 1275.0 | 20.6 | 31.3 | 25.9 | 10.7 | 77.18 |
| SEP | 420 | 203 | 123 | 2576.0 | 1275.0 | 20.6 | 28.6 | 24.6 | 8.0 | 77.13 |
| OCT | 360 | 139 | 148 | 2576.0 | 1275.0 | 20.6 | 25.7 | 23.1 | 5.1 | 77.08 |
| NOV | 310 | 160 | 162 | 2576.0 | 1275.0 | 20.6 | 25.3 | 22.9 | 4.7 | 77.05 |
| DIC | 200 | 9 | 175 | 2576.0 | 1275.0 | 20.6 | 19.7 | 20.2 | 0.0 | 76.98 |

ANO : 1968

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 3 | 198 | 2499.0 | 1352.0 | 19.7 | 15.9 | 17.8 | 0.0 | 76.84 |
| FEB | 0 | 0 | 216 | 2136.7 | 1714.3 | 15.9 | 12.2 | 14.0 | 0.0 | 76.62 |
| MAR | 0 | 50 | 264 | 1792.2 | 2058.8 | 12.2 | 9.3 | 10.7 | 0.0 | 76.42 |
| ABR | 32 | 129 | 164 | 1522.6 | 2328.4 | 9.3 | 10.0 | 9.6 | 0.0 | 76.36 |
| MAY | 45 | 215 | 130 | 1589.0 | 2262.0 | 10.0 | 12.8 | 11.4 | 0.0 | 76.46 |
| JUN | 34 | 250 | 115 | 1848.5 | 2002.5 | 12.8 | 16.4 | 14.6 | 0.0 | 76.65 |
| JUL | 86 | 450 | 106 | 2184.6 | 1666.4 | 16.4 | 25.8 | 21.1 | 5.2 | 77.02 |
| AGO | 184 | 315 | 121 | 2576.0 | 1275.0 | 20.6 | 28.5 | 24.6 | 8.0 | 77.13 |
| SEP | 200 | 209 | 129 | 2576.0 | 1275.0 | 20.6 | 25.8 | 23.2 | 5.3 | 77.09 |
| OCT | 197 | 44 | 169 | 2576.0 | 1275.0 | 20.6 | 20.7 | 20.7 | 0.2 | 77.00 |
| NOV | 80 | 87 | 158 | 2576.0 | 1275.0 | 20.6 | 20.6 | 20.6 | 0.0 | 77.00 |
| DIC | 10 | 0 | 202 | 2576.0 | 1275.0 | 20.6 | 16.5 | 18.6 | 0.0 | 76.88 |

MOVIMIENTOS DE EMBALSE
 MODULO EXPERIMENTAL APURE

EMBALSE _ 1

ANC : 1969

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPO_ RACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|--------------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 0 | 202 | 2199.4 | 1651.6 | 16.5 | 13.0 | 14.8 | 0.0 | 76.66 |
| FEB | 0 | 30 | 236 | 1867.8 | 1983.2 | 13.0 | 10.0 | 11.5 | 0.0 | 76.47 |
| MAR | 0 | 11 | 263 | 1591.0 | 2260.0 | 10.0 | 6.8 | 8.4 | 0.0 | 76.29 |
| ABR | 2 | 87 | 179 | 1295.0 | 2556.0 | 6.8 | 6.2 | 6.5 | 0.0 | 76.18 |
| MAY | 12 | 255 | 141 | 1231.9 | 2619.1 | 6.2 | 8.2 | 7.2 | 0.0 | 76.22 |
| JUN | 27 | 143 | 105 | 1425.8 | 2425.2 | 8.2 | 9.7 | 9.0 | 0.0 | 76.32 |
| JUL | 105 | 199 | 113 | 1565.4 | 2285.6 | 9.7 | 13.8 | 11.8 | 0.0 | 76.49 |
| AGO | 132 | 102 | 120 | 1947.9 | 1903.1 | 13.8 | 16.5 | 15.2 | 0.0 | 76.68 |
| SEP | 117 | 94 | 142 | 2193.3 | 1657.7 | 16.5 | 18.0 | 17.2 | 0.0 | 76.80 |
| OCT | 46 | 165 | 133 | 2334.1 | 1516.9 | 18.0 | 20.0 | 19.0 | 0.0 | 76.91 |
| NOV | 22 | 90 | 144 | 2526.9 | 1324.1 | 20.0 | 19.7 | 19.9 | 0.0 | 76.96 |
| DIC | 20 | 8 | 157 | 2494.6 | 1356.4 | 19.7 | 17.0 | 18.4 | 0.0 | 76.87 |

ANC : 1970

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPO_ RACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|--------------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 3 | 188 | 2246.2 | 1504.8 | 17.0 | 13.7 | 15.4 | 0.0 | 76.70 |
| FEB | 0 | 42 | 209 | 1937.3 | 1913.7 | 13.7 | 11.3 | 12.5 | 0.0 | 76.53 |
| MAR | 0 | 3 | 267 | 1710.9 | 2140.1 | 11.3 | 7.7 | 9.5 | 0.0 | 76.35 |
| ABR | 0 | 27 | 228 | 1374.7 | 2476.3 | 7.7 | 5.6 | 6.6 | 0.0 | 76.19 |
| MAY | 0 | 169 | 149 | 1175.4 | 2675.6 | 5.6 | 6.1 | 5.9 | 0.0 | 76.14 |
| JUN | 6 | 279 | 121 | 1230.0 | 2621.0 | 6.1 | 8.5 | 7.3 | 0.0 | 76.23 |
| JUL | 48 | 339 | 111 | 1453.8 | 2397.2 | 8.5 | 13.3 | 10.9 | 0.0 | 76.44 |
| AGO | 121 | 325 | 108 | 1900.6 | 1950.4 | 13.3 | 20.2 | 16.8 | 0.0 | 76.78 |
| SEP | 200 | 345 | 109 | 2543.9 | 1307.1 | 20.2 | 29.4 | 24.8 | 8.8 | 77.14 |
| OCT | 109 | 122 | 140 | 2576.0 | 1275.0 | 20.5 | 22.2 | 21.4 | 1.6 | 77.03 |

MOVIMIENTOS DE EMBALSE
 MODULO EXPERIMENTAL APURE

EMBALSE _ 2

ANO : 1965

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | | | | | | | | | | |
| FEB | | | | | | | | | | |
| MAR | | | | | | | | | | |
| ABR | | | | | | | | | | |
| MAY | | | | | | | | | | |
| JUN | | | | | | | | | | |
| JUL | 94 | 291 | 121 | 2576.0 | 1275.0 | 20.6 | 28.4 | 24.5 | 7.8 | 77.13 |
| AGO | 140 | 350 | 120 | 2576.0 | 1275.0 | 20.6 | 30.5 | 25.6 | 10.1 | 77.16 |
| SEP | 170 | 150 | 129 | 2576.0 | 1275.0 | 20.6 | 25.6 | 23.1 | 5.3 | 77.08 |
| OCT | 172 | 64 | 162 | 2576.0 | 1275.0 | 20.6 | 22.7 | 21.6 | 2.2 | 77.04 |
| NOV | 190 | 61 | 148 | 2576.0 | 1275.0 | 20.6 | 23.2 | 21.9 | 2.6 | 77.04 |
| DIC | 98 | 9 | 196 | 2576.0 | 1275.0 | 20.6 | 19.7 | 20.1 | 0.0 | 76.97 |

ANO : 1966

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 0 | 220 | 2491.0 | 1360.0 | 19.7 | 16.9 | 18.3 | 0.0 | 76.87 |
| FEB | 0 | 0 | 250 | 2235.6 | 1615.4 | 16.9 | 14.1 | 15.5 | 0.0 | 76.70 |
| MAR | 0 | 35 | 261 | 1972.1 | 1878.9 | 14.1 | 12.3 | 13.2 | 0.0 | 76.57 |
| ABR | 2 | 72 | 223 | 1806.0 | 2045.0 | 12.3 | 12.1 | 12.2 | 0.0 | 76.51 |
| MAY | 12 | 172 | 161 | 1744.3 | 2066.7 | 12.1 | 14.8 | 13.4 | 0.0 | 76.58 |
| JUN | 36 | 212 | 123 | 2033.0 | 1818.0 | 14.8 | 19.4 | 17.1 | 0.0 | 76.79 |
| JUL | 240 | 580 | 93 | 2463.3 | 1387.7 | 19.4 | 36.8 | 28.1 | 16.2 | 77.25 |
| AGO | 270 | 245 | 121 | 2576.0 | 1275.0 | 20.6 | 29.5 | 25.0 | 8.9 | 77.15 |
| SEP | 300 | 230 | 123 | 2576.0 | 1275.0 | 20.6 | 29.4 | 25.0 | 8.9 | 77.15 |
| OCT | 295 | 200 | 155 | 2576.0 | 1275.0 | 20.6 | 27.9 | 24.3 | 7.4 | 77.12 |
| NOV | 295 | 180 | 141 | 2576.0 | 1275.0 | 20.6 | 27.7 | 24.1 | 7.1 | 77.12 |
| DIC | 190 | 6 | 170 | 2576.0 | 1275.0 | 20.6 | 21.3 | 20.9 | 0.7 | 77.01 |

MOVIMIENTOS DE EMBALSE

MODULO EXPERIMENTAL APURE

EMBALSE _ 2

ANO : 1967

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 5 | 201 | 2576.0 | 1275.0 | 20.6 | 18.2 | 19.4 | 0.0 | 76.93 |
| FEB | 0 | 0 | 220 | 2355.2 | 1495.8 | 18.2 | 15.7 | 17.0 | 0.0 | 76.79 |
| MAR | 0 | 0 | 260 | 2122.1 | 1728.9 | 15.7 | 12.9 | 14.3 | 0.0 | 76.64 |
| ABR | 13 | 117 | 175 | 1864.0 | 1987.0 | 12.9 | 14.6 | 13.7 | 0.0 | 76.60 |
| MAY | 37 | 154 | 163 | 2014.5 | 1836.5 | 14.6 | 17.4 | 16.0 | 0.0 | 76.73 |
| JUN | 185 | 485 | 105 | 2276.0 | 1575.0 | 17.4 | 31.0 | 24.2 | 10.5 | 77.12 |
| JUL | 340 | 435 | 120 | 2576.0 | 1275.0 | 20.6 | 35.3 | 27.9 | 14.7 | 77.24 |
| AGO | 420 | 306 | 123 | 2576.0 | 1275.0 | 20.6 | 32.9 | 26.7 | 12.4 | 77.20 |
| SEP | 420 | 203 | 123 | 2576.0 | 1275.0 | 20.6 | 30.3 | 25.4 | 9.7 | 77.16 |
| OCT | 360 | 139 | 148 | 2576.0 | 1275.0 | 20.6 | 27.3 | 24.0 | 6.8 | 77.11 |
| NOV | 310 | 160 | 162 | 2576.0 | 1275.0 | 20.6 | 27.0 | 23.8 | 6.4 | 77.10 |
| DIC | 200 | 9 | 175 | 2576.0 | 1275.0 | 20.6 | 21.4 | 21.0 | 0.8 | 77.01 |

ANO : 1968

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 3 | 198 | 2576.0 | 1275.0 | 20.6 | 18.2 | 19.4 | 0.0 | 76.93 |
| FEB | 0 | 0 | 216 | 2356.2 | 1494.8 | 18.2 | 15.8 | 17.0 | 0.0 | 76.79 |
| MAR | 0 | 50 | 264 | 2130.0 | 1721.0 | 15.8 | 14.0 | 14.9 | 0.0 | 76.67 |
| ABR | 32 | 129 | 164 | 1963.3 | 1887.7 | 14.0 | 16.2 | 15.1 | 0.0 | 76.68 |
| MAY | 45 | 215 | 130 | 2169.4 | 1681.6 | 16.2 | 21.0 | 18.6 | 0.5 | 76.89 |
| JUN | 34 | 250 | 115 | 2576.0 | 1275.0 | 20.6 | 26.7 | 23.6 | 6.2 | 77.10 |
| JUL | 86 | 450 | 106 | 2576.0 | 1275.0 | 20.6 | 32.7 | 26.6 | 12.2 | 77.20 |
| AGO | 184 | 315 | 121 | 2576.0 | 1275.0 | 20.6 | 30.2 | 25.4 | 9.6 | 77.16 |
| SEP | 200 | 209 | 129 | 2576.0 | 1275.0 | 20.6 | 27.5 | 24.0 | 6.9 | 77.11 |
| OCT | 197 | 44 | 169 | 2576.0 | 1275.0 | 20.6 | 22.4 | 21.5 | 1.8 | 77.03 |
| NOV | 80 | 87 | 158 | 2576.0 | 1275.0 | 20.6 | 22.2 | 21.4 | 1.7 | 77.03 |
| DIC | 10 | 0 | 202 | 2576.0 | 1275.0 | 20.6 | 18.2 | 19.4 | 0.0 | 76.93 |

MOVIMIENTOS DE EMBALSE

MÓDULO EXPERIMENTAL APURE

EMBALSE _ 2

AÑO : 1969

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 0 | 202 | 2353.2 | 1497.8 | 18.2 | 16.0 | 17.1 | 0.0 | 76.80 |
| FEB | 0 | 30 | 236 | 2152.0 | 1699.0 | 16.0 | 14.3 | 15.1 | 0.0 | 76.68 |
| MAR | 0 | 11 | 263 | 1986.9 | 1864.1 | 14.3 | 11.9 | 13.1 | 0.0 | 76.56 |
| ABR | 2 | 87 | 179 | 1770.9 | 2080.1 | 11.9 | 12.6 | 12.3 | 0.0 | 76.52 |
| MAY | 12 | 256 | 141 | 1835.6 | 2015.4 | 12.6 | 17.2 | 14.9 | 0.0 | 76.67 |
| JUN | 27 | 143 | 105 | 2257.2 | 1593.8 | 17.2 | 20.6 | 18.9 | 0.0 | 76.90 |
| JUL | 105 | 199 | 113 | 2575.3 | 1275.7 | 20.6 | 26.3 | 23.5 | 5.8 | 77.09 |
| AGO | 132 | 102 | 120 | 2576.0 | 1275.0 | 20.6 | 24.1 | 22.3 | 3.5 | 77.06 |
| SEP | 117 | 94 | 142 | 2576.0 | 1275.0 | 20.6 | 23.2 | 21.9 | 2.6 | 77.04 |
| OCT | 46 | 165 | 133 | 2576.0 | 1275.0 | 20.6 | 24.3 | 22.4 | 3.7 | 77.06 |
| NOV | 22 | 90 | 144 | 2576.0 | 1275.0 | 20.6 | 21.8 | 21.2 | 1.3 | 77.02 |
| DIC | 20 | 8 | 157 | 2576.0 | 1275.0 | 20.6 | 19.4 | 20.0 | 0.0 | 76.97 |

AÑO : 1970

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 3 | 188 | 2470.8 | 1380.2 | 19.4 | 17.4 | 18.4 | 0.0 | 76.88 |
| FEB | 0 | 42 | 209 | 2284.7 | 1566.3 | 17.4 | 16.2 | 16.8 | 0.0 | 76.78 |
| MAR | 0 | 3 | 267 | 2171.5 | 1679.5 | 16.2 | 13.3 | 14.8 | 0.0 | 76.66 |
| ABR | 0 | 27 | 228 | 1898.5 | 1952.5 | 13.3 | 12.0 | 12.7 | 0.0 | 76.54 |
| MAY | 0 | 169 | 149 | 1776.9 | 2074.1 | 12.0 | 14.5 | 13.3 | 0.0 | 76.57 |
| JUN | 6 | 279 | 121 | 2013.2 | 1837.8 | 14.5 | 20.0 | 17.3 | 0.0 | 76.81 |
| JUL | 48 | 339 | 111 | 2519.5 | 1331.5 | 20.0 | 28.6 | 24.3 | 8.9 | 77.12 |
| AGO | 121 | 325 | 108 | 2576.0 | 1275.0 | 20.6 | 29.9 | 25.2 | 9.3 | 77.15 |
| SEP | 200 | 345 | 109 | 2576.0 | 1275.0 | 20.6 | 31.4 | 26.0 | 10.9 | 77.18 |
| OCT | 109 | 122 | 140 | 2576.0 | 1275.0 | 20.6 | 23.9 | 22.2 | 3.3 | 77.05 |

MOVIMIENTOS DE EMBALSE
 MODULO EXPERIMENTAL APURE

EMBALSE - 3

ANO : 1965

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | | | | | | | | | | |
| FEB | | | | | | | | | | |
| MAR | | | | | | | | | | |
| ABR | | | | | | | | | | |
| MAY | | | | | | | | | | |
| JUN | | | | | | | | | | |
| JUL | 94 | 291 | 121 | 2576.0 | 1275.0 | 20.6 | 30.1 | 25.3 | 9.5 | 77.16 |
| AGO | 140 | 350 | 120 | 2576.0 | 1275.0 | 20.6 | 32.2 | 26.4 | 11.7 | 77.19 |
| SEP | 170 | 150 | 129 | 2576.0 | 1275.0 | 20.6 | 27.2 | 23.9 | 6.1 | 77.11 |
| OCT | 172 | 64 | 162 | 2576.0 | 1275.0 | 20.6 | 24.4 | 22.5 | 3.8 | 77.06 |
| NOV | 190 | 61 | 148 | 2576.0 | 1275.0 | 20.6 | 24.8 | 22.7 | 4.2 | 77.07 |
| DIC | 98 | 9 | 196 | 2576.0 | 1275.0 | 20.6 | 21.3 | 20.9 | 0.7 | 77.01 |

ANO : 1966

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 0 | 220 | 2576.0 | 1275.0 | 20.6 | 19.3 | 20.0 | 0.0 | 76.96 |
| FEB | 0 | 0 | 250 | 2460.4 | 1390.6 | 19.3 | 17.7 | 18.5 | 0.0 | 76.88 |
| MAR | 0 | 35 | 261 | 2308.6 | 1542.4 | 17.7 | 17.0 | 17.3 | 0.0 | 76.81 |
| ABR | 2 | 72 | 223 | 2241.7 | 1609.3 | 17.0 | 17.9 | 17.5 | 0.0 | 76.82 |
| MAY | 12 | 172 | 161 | 2329.5 | 1521.5 | 17.9 | 22.4 | 20.2 | 1.8 | 76.98 |
| JUN | 36 | 212 | 123 | 2576.0 | 1275.0 | 20.6 | 27.3 | 23.9 | 6.7 | 77.11 |
| JUL | 240 | 580 | 93 | 2576.0 | 1275.0 | 20.6 | 39.9 | 30.3 | 19.4 | 77.32 |
| AGO | 270 | 245 | 121 | 2576.0 | 1275.0 | 20.6 | 31.1 | 25.8 | 10.6 | 77.17 |
| SEP | 300 | 230 | 123 | 2576.0 | 1275.0 | 20.6 | 31.1 | 25.8 | 10.5 | 77.17 |
| OCT | 245 | 200 | 155 | 2576.0 | 1275.0 | 20.6 | 29.6 | 25.1 | 9.0 | 77.15 |
| NOV | 275 | 180 | 141 | 2576.0 | 1275.0 | 20.6 | 29.4 | 25.0 | 8.8 | 77.14 |
| DIC | 190 | 6 | 170 | 2576.0 | 1275.0 | 20.6 | 22.9 | 21.8 | 2.4 | 77.04 |

MOVIMIENTOS DE EMBALSE

MODULO EXPERIMENTAL APURE

EMBALSE - 3

ANO : 1967

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPD_ RACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|--------------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 5 | 201 | 2576.0 | 1275.0 | 20.6 | 19.9 | 20.2 | 0.0 | 76.98 |
| FEB | 0 | 0 | 270 | 2508.9 | 1342.1 | 19.9 | 18.7 | 19.3 | 0.0 | 76.93 |
| MAR | 0 | 0 | 260 | 2404.3 | 1446.7 | 18.7 | 17.0 | 17.9 | 0.0 | 76.84 |
| ABR | 18 | 119 | 175 | 2245.1 | 1605.9 | 17.0 | 20.1 | 18.6 | 0.0 | 76.88 |
| MAY | 37 | 154 | 163 | 2535.5 | 1315.5 | 20.1 | 24.5 | 22.3 | 3.9 | 77.05 |
| JUN | 185 | 485 | 105 | 2576.0 | 1275.0 | 20.6 | 36.6 | 28.6 | 16.0 | 77.26 |
| JUL | 340 | 435 | 120 | 2576.0 | 1275.0 | 20.6 | 36.9 | 28.8 | 16.4 | 77.27 |
| AGO | 420 | 306 | 123 | 2576.0 | 1275.0 | 20.6 | 34.6 | 27.6 | 14.0 | 77.23 |
| SEP | 420 | 203 | 123 | 2576.0 | 1275.0 | 20.6 | 31.9 | 26.2 | 11.3 | 77.19 |
| OCT | 360 | 134 | 148 | 2576.0 | 1275.0 | 20.6 | 29.0 | 24.8 | 8.4 | 77.14 |
| NOV | 310 | 160 | 162 | 2576.0 | 1275.0 | 20.6 | 28.6 | 24.6 | 8.0 | 77.13 |
| DIC | 200 | 9 | 175 | 2576.0 | 1275.0 | 20.6 | 23.0 | 21.8 | 2.5 | 77.04 |

ANO : 1968

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPD_ RACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|--------------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 3 | 198 | 2576.0 | 1275.0 | 20.6 | 19.9 | 20.2 | 0.0 | 76.98 |
| FEB | 0 | 0 | 216 | 2509.9 | 1341.1 | 19.9 | 18.8 | 19.3 | 0.0 | 76.93 |
| MAR | 0 | 50 | 264 | 2412.6 | 1438.4 | 18.8 | 18.2 | 18.5 | 0.0 | 76.88 |
| ABR | 32 | 129 | 164 | 2357.1 | 1493.9 | 18.2 | 21.9 | 20.1 | 1.4 | 76.97 |
| MAY | 45 | 215 | 130 | 2576.0 | 1275.0 | 20.6 | 27.3 | 23.9 | 6.7 | 77.11 |
| JUN | 34 | 250 | 115 | 2576.0 | 1275.0 | 20.6 | 28.4 | 24.5 | 7.8 | 77.13 |
| JUL | 86 | 450 | 106 | 2576.0 | 1275.0 | 20.6 | 34.4 | 27.5 | 13.8 | 77.23 |
| AGO | 184 | 315 | 121 | 2576.0 | 1275.0 | 20.6 | 31.8 | 26.2 | 11.3 | 77.19 |
| SEP | 200 | 209 | 129 | 2576.0 | 1275.0 | 20.6 | 29.1 | 24.9 | 8.6 | 77.14 |
| OCT | 197 | 44 | 169 | 2576.0 | 1275.0 | 20.6 | 24.0 | 22.3 | 3.5 | 77.06 |
| NOV | 80 | 87 | 158 | 2576.0 | 1275.0 | 20.6 | 23.9 | 22.2 | 3.3 | 77.05 |
| DIC | 10 | 0 | 202 | 2576.0 | 1275.0 | 20.6 | 19.8 | 20.2 | 0.0 | 76.98 |

MOVIMIENTOS DE EMBALSE
 MÓDULO EXPERIMENTAL APURE
 EMBALSE _ 3

AÑO : 1969

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 0 | 202 | 2506.9 | 1344.1 | 19.8 | 19.1 | 19.5 | 0.0 | 76.93 |
| FEB | 0 | 30 | 236 | 2436.3 | 1414.7 | 19.1 | 18.5 | 18.8 | 0.0 | 76.90 |
| MAR | 0 | 11 | 263 | 2382.7 | 1468.3 | 18.5 | 17.0 | 17.8 | 0.0 | 76.84 |
| ABR | 2 | 37 | 179 | 2246.8 | 1604.2 | 17.0 | 19.1 | 18.1 | 0.0 | 76.85 |
| MAY | 12 | 256 | 141 | 2439.4 | 1411.6 | 19.1 | 26.1 | 22.6 | 5.5 | 77.07 |
| JUN | 27 | 143 | 105 | 2576.0 | 1275.0 | 20.6 | 25.7 | 23.1 | 5.2 | 77.08 |
| JUL | 105 | 199 | 113 | 2576.0 | 1275.0 | 20.6 | 28.0 | 24.3 | 7.4 | 77.12 |
| AGO | 132 | 102 | 120 | 2576.0 | 1275.0 | 20.6 | 25.7 | 23.1 | 5.1 | 77.08 |
| SEP | 117 | 94 | 142 | 2576.0 | 1275.0 | 20.6 | 24.9 | 22.7 | 4.3 | 77.07 |
| OCT | 46 | 165 | 133 | 2576.0 | 1275.0 | 20.6 | 26.0 | 23.3 | 5.4 | 77.09 |
| NOV | 22 | 90 | 144 | 2576.0 | 1275.0 | 20.6 | 23.5 | 22.0 | 2.9 | 77.05 |
| DIC | 20 | 8 | 157 | 2576.0 | 1275.0 | 20.6 | 21.1 | 20.8 | 0.5 | 77.01 |

AÑO : 1970

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 3 | 183 | 2576.0 | 1275.0 | 20.6 | 20.1 | 20.3 | 0.0 | 76.99 |
| FEB | 0 | 42 | 209 | 2529.1 | 1321.9 | 20.1 | 20.2 | 20.1 | 0.0 | 76.97 |
| MAR | 0 | 3 | 257 | 2541.1 | 1309.9 | 20.2 | 18.1 | 19.2 | 0.0 | 76.92 |
| ABR | 0 | 27 | 228 | 2349.2 | 1501.8 | 18.1 | 17.8 | 18.0 | 0.0 | 76.85 |
| MAY | 0 | 169 | 149 | 2315.9 | 1535.1 | 17.8 | 22.2 | 20.0 | 1.7 | 76.97 |
| JUN | 6 | 279 | 121 | 2576.0 | 1275.0 | 20.6 | 28.6 | 24.6 | 8.1 | 77.13 |
| JUL | 48 | 339 | 111 | 2576.0 | 1275.0 | 20.6 | 30.9 | 25.7 | 10.4 | 77.17 |
| AGO | 121 | 325 | 108 | 2576.0 | 1275.0 | 20.6 | 31.6 | 26.1 | 11.0 | 77.18 |
| SEP | 200 | 345 | 109 | 2576.0 | 1275.0 | 20.6 | 33.1 | 26.8 | 12.5 | 77.21 |
| OCT | 109 | 122 | 140 | 2576.0 | 1275.0 | 20.6 | 25.5 | 23.0 | 4.9 | 77.08 |

ANEXO N° 4

LLUVIA DE SAN FERNANDO - EMBALSE SECO

MOVIMIENTOS DE EMBALSE

MODULO EXPERIMENTAL APURE

EMBALSE - 1

AÑO : 1965

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | | | | | | | | | | |
| FEB | | | | | | | | | | |
| MAR | | | | | | | | | | |
| ABR | | | | | | | | | | |
| MAY | | | | | | | | | | |
| JUN | | | | | | | | | | |
| JUL | 94 | 291 | 121 | 0.0 | 3851.0 | 0.0 | 3.6 | 1.8 | 0.0 | 75.52 |
| AGO | 140 | 350 | 120 | 994.4 | 2856.6 | 3.6 | 10.1 | 6.9 | 0.0 | 76.20 |
| SEP | 170 | 150 | 129 | 1603.2 | 2247.8 | 10.1 | 14.7 | 12.4 | 0.0 | 76.52 |
| OCT | 172 | 64 | 162 | 2029.8 | 1821.2 | 14.7 | 16.5 | 15.6 | 0.0 | 76.71 |
| NOV | 190 | 61 | 148 | 2197.8 | 1653.2 | 16.5 | 18.4 | 17.5 | 0.0 | 76.82 |
| DIC | 98 | 9 | 196 | 2373.2 | 1477.8 | 18.4 | 16.3 | 17.4 | 0.0 | 76.81 |

AÑO : 1966

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 0 | 220 | 2181.0 | 1670.0 | 16.3 | 12.5 | 14.4 | 0.0 | 76.64 |
| FEB | 0 | 0 | 250 | 1822.9 | 2028.1 | 12.5 | 8.9 | 10.7 | 0.0 | 76.42 |
| MAR | 0 | 35 | 261 | 1482.7 | 2368.3 | 8.9 | 6.3 | 7.6 | 0.0 | 76.24 |
| ABR | 2 | 72 | 223 | 1242.2 | 2608.8 | 6.3 | 5.0 | 5.6 | 0.0 | 76.13 |
| MAY | 12 | 172 | 161 | 1123.8 | 2727.2 | 5.0 | 5.8 | 5.4 | 0.0 | 76.11 |
| JUN | 36 | 212 | 123 | 1199.6 | 2651.4 | 5.8 | 8.1 | 7.0 | 0.0 | 76.21 |
| JUL | 240 | 580 | 93 | 1415.8 | 2435.2 | 8.1 | 21.1 | 14.6 | 0.6 | 76.65 |
| AGO | 270 | 245 | 121 | 2576.0 | 1275.0 | 20.6 | 27.8 | 24.2 | 7.3 | 77.12 |
| SEP | 300 | 230 | 123 | 2576.0 | 1275.0 | 20.6 | 27.8 | 24.2 | 7.2 | 77.12 |
| OCT | 295 | 200 | 155 | 2576.0 | 1275.0 | 20.6 | 26.3 | 23.4 | 5.7 | 77.09 |
| NOV | 295 | 180 | 141 | 2576.0 | 1275.0 | 20.6 | 26.1 | 23.3 | 5.5 | 77.09 |
| DIC | 190 | 6 | 170 | 2576.0 | 1275.0 | 20.6 | 19.6 | 20.1 | 0.0 | 76.97 |

MOVIMIENTOS DE EMBALSE
 MODULO EXPERIMENTAL APURE

EMBALSE _ 1

AÑO : 1967

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPD_ RACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|--------------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 5 | 201 | 2489.6 | 1361.4 | 19.6 | 15.8 | 17.7 | 0.0 | 76.83 |
| FEB | 0 | 0 | 220 | 2127.6 | 1723.4 | 15.8 | 12.0 | 13.9 | 0.0 | 76.61 |
| MAR | 0 | 0 | 260 | 1778.2 | 2072.8 | 12.0 | 3.3 | 10.2 | 0.0 | 76.39 |
| ABR | 18 | 119 | 175 | 1433.1 | 2417.9 | 8.3 | 8.5 | 8.4 | 0.0 | 76.29 |
| MAY | 37 | 154 | 163 | 1445.6 | 2405.4 | 8.5 | 9.7 | 9.1 | 0.0 | 76.33 |
| JUN | 185 | 485 | 105 | 1560.5 | 2290.5 | 9.7 | 20.2 | 14.9 | 0.0 | 76.67 |
| JUL | 340 | 435 | 120 | 2539.8 | 1311.2 | 20.2 | 33.3 | 26.7 | 12.7 | 77.20 |
| AGO | 420 | 306 | 123 | 2576.0 | 1275.0 | 20.6 | 31.3 | 25.9 | 10.7 | 77.18 |
| SEP | 420 | 203 | 123 | 2576.0 | 1275.0 | 20.6 | 28.6 | 24.6 | 8.0 | 77.13 |
| OCT | 360 | 139 | 148 | 2576.0 | 1275.0 | 20.6 | 25.7 | 23.1 | 5.1 | 77.08 |
| NOV | 310 | 160 | 162 | 2576.0 | 1275.0 | 20.6 | 25.3 | 22.9 | 4.7 | 77.08 |
| DIC | 200 | 9 | 175 | 2576.0 | 1275.0 | 20.6 | 19.7 | 20.2 | 0.0 | 76.98 |

AÑO : 1968

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPD_ RACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|--------------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 3 | 198 | 2499.0 | 1352.0 | 19.7 | 15.9 | 17.8 | 0.0 | 76.84 |
| FEB | 0 | 0 | 216 | 2136.7 | 1714.3 | 15.9 | 12.2 | 14.0 | 0.0 | 76.62 |
| MAR | 0 | 50 | 264 | 1792.2 | 2058.8 | 12.2 | 9.3 | 10.7 | 0.0 | 76.42 |
| ABR | 32 | 129 | 164 | 1522.6 | 2329.4 | 9.3 | 10.0 | 9.6 | 0.0 | 76.36 |
| MAY | 45 | 215 | 130 | 1589.0 | 2262.0 | 10.0 | 12.8 | 11.4 | 0.0 | 76.46 |
| JUN | 34 | 250 | 115 | 1948.5 | 2002.5 | 12.8 | 16.4 | 14.6 | 0.0 | 76.65 |
| JUL | 86 | 450 | 106 | 2184.6 | 1666.4 | 16.4 | 25.8 | 21.1 | 5.2 | 77.02 |
| AGO | 184 | 315 | 121 | 2576.0 | 1275.0 | 20.6 | 28.5 | 24.6 | 8.0 | 77.13 |
| SEP | 200 | 209 | 129 | 2576.0 | 1275.0 | 20.6 | 25.8 | 23.2 | 5.3 | 77.09 |
| OCT | 197 | 44 | 169 | 2576.0 | 1275.0 | 20.6 | 20.7 | 20.7 | 0.2 | 77.00 |
| NOV | 80 | 87 | 158 | 2576.0 | 1275.0 | 20.6 | 20.6 | 20.6 | 0.0 | 77.00 |
| DIC | 10 | 0 | 202 | 2576.0 | 1275.0 | 20.6 | 16.5 | 18.6 | 0.0 | 76.88 |

MOVIMIENTOS DE EMBALSE
 MODULO EXPERIMENTAL APURE

EMBALSE _ 1

ANO : 1969

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPO_ RACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|--------------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 0 | 202 | 2199.4 | 1651.6 | 16.5 | 13.0 | 14.8 | 0.0 | 76.66 |
| FEB | 0 | 30 | 236 | 1867.8 | 1983.2 | 13.0 | 10.0 | 11.5 | 0.0 | 76.47 |
| MAR | 0 | 11 | 263 | 1591.0 | 2260.0 | 10.0 | 6.8 | 8.4 | 0.0 | 76.29 |
| ABR | 2 | 87 | 179 | 1295.0 | 2556.0 | 6.8 | 6.2 | 6.5 | 0.0 | 76.18 |
| MAY | 12 | 256 | 141 | 1231.9 | 2619.1 | 6.2 | 8.2 | 7.2 | 0.0 | 76.22 |
| JUN | 27 | 143 | 105 | 1425.8 | 2425.2 | 8.2 | 9.7 | 9.0 | 0.0 | 76.32 |
| JUL | 105 | 199 | 113 | 1565.4 | 2285.6 | 9.7 | 13.8 | 11.8 | 0.0 | 76.49 |
| AGO | 132 | 102 | 120 | 1947.9 | 1903.1 | 13.8 | 16.5 | 15.2 | 0.0 | 76.68 |
| SEP | 117 | 94 | 142 | 2193.3 | 1657.7 | 16.5 | 18.0 | 17.2 | 0.0 | 76.80 |
| OCT | 46 | 165 | 133 | 2334.1 | 1516.9 | 18.0 | 20.0 | 19.0 | 0.0 | 76.91 |
| NOV | 22 | 90 | 144 | 2526.9 | 1324.1 | 20.0 | 19.7 | 19.9 | 0.0 | 76.96 |
| DIC | 20 | 8 | 157 | 2494.6 | 1356.4 | 19.7 | 17.0 | 18.4 | 0.0 | 76.87 |

ANO : 1970

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPO_ RACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|--------------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 3 | 188 | 2246.2 | 1604.8 | 17.0 | 13.7 | 15.4 | 0.0 | 76.70 |
| FEB | 0 | 42 | 209 | 1937.3 | 1913.7 | 13.7 | 11.3 | 12.5 | 0.0 | 76.53 |
| MAR | 0 | 3 | 267 | 1710.9 | 2140.1 | 11.3 | 7.7 | 9.5 | 0.0 | 76.35 |
| ABR | 0 | 27 | 228 | 1374.7 | 2476.3 | 7.7 | 5.6 | 6.6 | 0.0 | 76.19 |
| MAY | 0 | 169 | 149 | 1175.4 | 2675.6 | 5.6 | 6.1 | 5.9 | 0.0 | 76.14 |
| JUN | 6 | 279 | 121 | 1230.0 | 2621.0 | 6.1 | 8.5 | 7.3 | 0.0 | 76.23 |
| JUL | 48 | 339 | 111 | 1453.8 | 2397.2 | 8.5 | 13.3 | 10.9 | 0.0 | 76.44 |
| AGO | 121 | 325 | 108 | 1900.6 | 1950.4 | 13.3 | 20.2 | 16.8 | 0.0 | 76.78 |
| SEP | 200 | 345 | 109 | 2543.9 | 1307.1 | 20.2 | 29.4 | 24.8 | 8.8 | 77.14 |
| OCT | 109 | 122 | 140 | 2576.0 | 1275.0 | 20.6 | 22.2 | 21.4 | 1.6 | 77.03 |

MOVIMIENTOS DE EMBALSE
 MODULO EXPERIMENTAL APURE
 EMBALSE _ 2

AÑO : 1965

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPO_ RACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|--------------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | | | | | | | | | | |
| FEB | | | | | | | | | | |
| MAR | | | | | | | | | | |
| ABR | | | | | | | | | | |
| MAY | | | | | | | | | | |
| JUN | | | | | | | | | | |
| JUL | 94 | 291 | 121 | 0.0 | 3851.0 | 0.0 | 5.3 | 2.6 | 0.0 | 75.76 |
| AGO | 140 | 350 | 120 | 1148.1 | 2702.9 | 5.3 | 13.6 | 9.4 | 0.0 | 76.35 |
| SEP | 170 | 150 | 129 | 1927.0 | 1924.0 | 13.6 | 19.4 | 16.5 | 0.0 | 76.76 |
| OCT | 172 | 64 | 162 | 2470.1 | 1380.9 | 19.4 | 21.8 | 20.6 | 1.3 | 77.00 |
| NOV | 190 | 61 | 148 | 2576.0 | 1275.0 | 20.6 | 23.2 | 21.9 | 2.6 | 77.04 |
| DIC | 98 | 9 | 196 | 2576.0 | 1275.0 | 20.6 | 19.7 | 20.1 | 0.0 | 76.97 |

AÑO : 1966

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPO_ RACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|--------------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 0 | 220 | 2491.0 | 1360.0 | 19.7 | 16.9 | 18.3 | 0.0 | 76.87 |
| FEB | 0 | 0 | 250 | 2235.6 | 1615.4 | 16.9 | 14.1 | 15.5 | 0.0 | 76.70 |
| MAR | 0 | 35 | 261 | 1972.1 | 1878.9 | 14.1 | 12.3 | 13.2 | 0.0 | 76.57 |
| ABR | 2 | 72 | 223 | 1806.0 | 2045.0 | 12.3 | 12.1 | 12.2 | 0.0 | 76.51 |
| MAY | 12 | 172 | 161 | 1784.3 | 2066.7 | 12.1 | 14.8 | 13.4 | 0.0 | 76.58 |
| JUN | 36 | 212 | 123 | 2033.0 | 1818.0 | 14.8 | 19.4 | 17.1 | 0.0 | 76.79 |
| JUL | 240 | 580 | 93 | 2463.3 | 1397.7 | 19.4 | 36.8 | 28.1 | 16.2 | 77.25 |
| AGO | 270 | 245 | 121 | 2576.0 | 1275.0 | 20.6 | 29.5 | 25.0 | 8.9 | 77.15 |
| SEP | 300 | 230 | 123 | 2576.0 | 1275.0 | 20.6 | 29.4 | 25.0 | 8.9 | 77.15 |
| OCT | 295 | 200 | 155 | 2576.0 | 1275.0 | 20.6 | 27.9 | 24.3 | 7.4 | 77.12 |
| NOV | 295 | 180 | 141 | 2576.0 | 1275.0 | 20.6 | 27.7 | 24.1 | 7.1 | 77.12 |
| DIC | 190 | 6 | 170 | 2576.0 | 1275.0 | 20.6 | 21.3 | 20.9 | 0.7 | 77.01 |

MOVIMIENTOS DE EMBALSE
 MODULO EXPERIMENTAL APURE
 EMBALSE - 2

AÑO : 1967

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPD_ RACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|--------------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 5 | 201 | 2576.0 | 1275.0 | 20.6 | 18.2 | 19.4 | 0.0 | 76.93 |
| FEB | 0 | 0 | 220 | 2355.2 | 1495.8 | 19.2 | 15.7 | 17.0 | 0.0 | 76.79 |
| MAR | 0 | 0 | 260 | 2122.1 | 1728.9 | 15.7 | 12.9 | 14.3 | 0.0 | 76.64 |
| ABR | 18 | 119 | 175 | 1864.0 | 1987.0 | 12.9 | 14.6 | 13.7 | 0.0 | 76.60 |
| MAY | 37 | 154 | 163 | 2014.5 | 1836.5 | 14.6 | 17.4 | 16.0 | 0.0 | 76.73 |
| JUN | 185 | 485 | 105 | 2276.0 | 1575.0 | 17.4 | 31.0 | 24.2 | 10.5 | 77.12 |
| JUL | 340 | 435 | 120 | 2576.0 | 1275.0 | 20.6 | 35.3 | 27.9 | 14.7 | 77.24 |
| AGO | 420 | 306 | 123 | 2576.0 | 1275.0 | 20.6 | 32.9 | 26.7 | 12.4 | 77.20 |
| SEP | 420 | 203 | 123 | 2576.0 | 1275.0 | 20.6 | 30.3 | 25.4 | 9.7 | 77.16 |
| OCT | 360 | 139 | 143 | 2576.0 | 1275.0 | 20.6 | 27.3 | 24.0 | 6.8 | 77.11 |
| NOV | 310 | 160 | 162 | 2576.0 | 1275.0 | 20.6 | 27.0 | 23.8 | 6.4 | 77.10 |
| DIC | 200 | 9 | 175 | 2576.0 | 1275.0 | 20.6 | 21.4 | 21.0 | 0.8 | 77.01 |

AÑO : 1968

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPD_ RACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|--------------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 3 | 198 | 2576.0 | 1275.0 | 20.6 | 18.2 | 19.4 | 0.0 | 76.93 |
| FEB | 0 | 0 | 216 | 2356.2 | 1494.8 | 19.2 | 15.8 | 17.0 | 0.0 | 76.79 |
| MAR | 0 | 50 | 274 | 2120.0 | 1721.0 | 15.8 | 14.0 | 14.9 | 0.0 | 76.67 |
| ABR | 32 | 129 | 154 | 1963.3 | 1887.7 | 14.0 | 16.2 | 15.1 | 0.0 | 76.68 |
| MAY | 45 | 215 | 130 | 2169.4 | 1681.6 | 16.2 | 21.0 | 18.6 | 0.5 | 76.89 |
| JUN | 34 | 250 | 115 | 2576.0 | 1275.0 | 20.6 | 26.7 | 23.6 | 6.2 | 77.10 |
| JUL | 86 | 450 | 106 | 2576.0 | 1275.0 | 20.6 | 32.7 | 26.6 | 12.2 | 77.20 |
| AGO | 184 | 315 | 121 | 2576.0 | 1275.0 | 20.6 | 30.2 | 25.4 | 9.6 | 77.16 |
| SEP | 200 | 209 | 129 | 2576.0 | 1275.0 | 20.6 | 27.5 | 24.0 | 6.9 | 77.11 |
| OCT | 197 | 44 | 169 | 2576.0 | 1275.0 | 20.6 | 22.4 | 21.5 | 1.8 | 77.03 |
| NOV | 80 | 87 | 158 | 2576.0 | 1275.0 | 20.6 | 22.2 | 21.4 | 1.7 | 77.03 |
| DIC | 10 | 0 | 202 | 2576.0 | 1275.0 | 20.6 | 18.2 | 19.4 | 0.0 | 76.93 |

MOVIMIENTOS DE EMBALSE
 MODULO EXPERIMENTAL APURE

EMBALSE - 2

ANO : 1969

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 0 | 202 | 2353.2 | 1497.8 | 18.2 | 16.0 | 17.1 | 0.0 | 76.80 |
| FEB | 0 | 30 | 236 | 2152.0 | 1699.0 | 16.0 | 14.3 | 15.1 | 0.0 | 76.68 |
| MAR | 0 | 11 | 263 | 1986.9 | 1864.1 | 14.3 | 11.9 | 13.1 | 0.0 | 76.56 |
| ABR | 2 | 87 | 179 | 1770.9 | 2080.1 | 11.9 | 12.6 | 12.3 | 0.0 | 76.52 |
| MAY | 12 | 256 | 141 | 1835.6 | 2015.4 | 12.6 | 17.2 | 14.9 | 0.0 | 76.57 |
| JUN | 27 | 143 | 105 | 2257.2 | 1593.8 | 17.2 | 20.6 | 18.9 | 0.0 | 76.90 |
| JUL | 105 | 199 | 113 | 2575.3 | 1275.7 | 20.6 | 26.3 | 23.5 | 5.8 | 77.09 |
| AGO | 132 | 162 | 120 | 2576.0 | 1275.0 | 20.6 | 24.1 | 22.3 | 3.6 | 77.06 |
| SEP | 117 | 94 | 142 | 2576.0 | 1275.0 | 20.6 | 23.2 | 21.9 | 2.6 | 77.04 |
| OCT | 46 | 165 | 133 | 2576.0 | 1275.0 | 20.6 | 24.3 | 22.4 | 3.7 | 77.06 |
| NOV | 22 | 90 | 144 | 2576.0 | 1275.0 | 20.6 | 21.8 | 21.2 | 1.3 | 77.02 |
| DIC | 20 | 8 | 157 | 2576.0 | 1275.0 | 20.6 | 19.4 | 20.0 | 0.0 | 76.97 |

ANO : 1970

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 3 | 188 | 2470.8 | 1380.2 | 19.4 | 17.4 | 18.4 | 0.0 | 76.88 |
| FEB | 0 | 42 | 209 | 2284.7 | 1566.3 | 17.4 | 16.2 | 16.8 | 0.0 | 76.78 |
| MAR | 0 | 3 | 267 | 2171.5 | 1679.5 | 16.2 | 13.3 | 14.8 | 0.0 | 76.56 |
| ABR | 0 | 27 | 228 | 1898.5 | 1952.5 | 13.3 | 12.0 | 12.7 | 0.0 | 76.54 |
| MAY | 0 | 169 | 149 | 1776.9 | 2074.1 | 12.0 | 14.5 | 13.3 | 0.0 | 76.57 |
| JUN | 6 | 279 | 121 | 2013.2 | 1837.3 | 14.5 | 20.0 | 17.3 | 0.0 | 76.81 |
| JUL | 48 | 339 | 111 | 2519.5 | 1331.5 | 20.0 | 28.6 | 24.3 | 8.0 | 77.12 |
| AGO | 121 | 325 | 108 | 2576.0 | 1275.0 | 20.6 | 29.9 | 25.2 | 9.3 | 77.15 |
| SEP | 200 | 345 | 109 | 2576.0 | 1275.0 | 20.6 | 31.4 | 26.0 | 10.8 | 77.18 |
| OCT | 109 | 122 | 140 | 2576.0 | 1275.0 | 20.6 | 23.9 | 22.2 | 3.3 | 77.05 |

MOVIMIENTOS DE EMBALSE

MODULO EXPERIMENTAL APURE

EMBALSE - 3

ANO : 1965

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | | | | | | | | | | |
| FEB | | | | | | | | | | |
| MAR | | | | | | | | | | |
| ABR | | | | | | | | | | |
| MAY | | | | | | | | | | |
| JUN | | | | | | | | | | |
| JUL | 94 | 291 | 121 | 0.0 | 3851.0 | 0.0 | 6.9 | 3.5 | 0.0 | 76.00 |
| AGO | 140 | 350 | 120 | 1301.8 | 2549.2 | 6.9 | 17.1 | 12.0 | 0.0 | 76.50 |
| SEP | 170 | 150 | 129 | 2250.8 | 1600.2 | 17.1 | 24.2 | 20.6 | 3.6 | 77.00 |
| OCT | 172 | 64 | 162 | 2576.0 | 1275.0 | 20.6 | 24.4 | 22.5 | 3.8 | 77.06 |
| NOV | 190 | 61 | 148 | 2576.0 | 1275.0 | 20.6 | 24.8 | 22.7 | 4.2 | 77.07 |
| DIC | 98 | 9 | 196 | 2576.0 | 1275.0 | 20.6 | 21.3 | 20.9 | 0.7 | 77.01 |

ANO : 1966

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 0 | 220 | 2576.0 | 1275.0 | 20.6 | 19.3 | 20.0 | 0.0 | 76.96 |
| FEB | 0 | 0 | 250 | 2460.4 | 1390.6 | 19.3 | 17.7 | 18.5 | 0.0 | 76.88 |
| MAR | 0 | 35 | 261 | 2308.6 | 1542.4 | 17.7 | 17.0 | 17.3 | 0.0 | 76.81 |
| ABR | 2 | 72 | 223 | 2241.7 | 1509.3 | 17.0 | 17.9 | 17.5 | 0.0 | 76.82 |
| MAY | 12 | 172 | 161 | 2329.5 | 1521.5 | 17.9 | 22.4 | 20.2 | 1.8 | 76.98 |
| JUN | 36 | 212 | 123 | 2576.0 | 1275.0 | 20.6 | 27.3 | 23.9 | 6.7 | 77.11 |
| JUL | 240 | 580 | 93 | 2576.0 | 1275.0 | 20.6 | 39.9 | 30.3 | 19.4 | 77.32 |
| AGO | 270 | 245 | 121 | 2576.0 | 1275.0 | 20.6 | 31.1 | 25.8 | 10.6 | 77.17 |
| SEP | 300 | 230 | 123 | 2576.0 | 1275.0 | 20.6 | 31.1 | 25.8 | 10.5 | 77.17 |
| OCT | 295 | 200 | 155 | 2576.0 | 1275.0 | 20.6 | 29.6 | 25.1 | 9.0 | 77.15 |
| NOV | 295 | 180 | 141 | 2576.0 | 1275.0 | 20.6 | 29.4 | 25.0 | 8.8 | 77.14 |
| DIC | 190 | 6 | 170 | 2576.0 | 1275.0 | 20.6 | 22.9 | 21.8 | 2.4 | 77.04 |

MOVIMIENTOS DE EMBALSE

MODULO EXPERIMENTAL APURE

EMBALSE _ 3

ANO : 1967

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPO_ RACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|--------------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 5 | 201 | 2576.0 | 1275.0 | 20.6 | 19.9 | 20.2 | 0.0 | 76.98 |
| FEB | 0 | 0 | 220 | 2508.9 | 1342.1 | 19.9 | 18.7 | 19.3 | 0.0 | 76.93 |
| MAR | 0 | 0 | 260 | 2404.3 | 1446.7 | 18.7 | 17.0 | 17.9 | 0.0 | 76.84 |
| ABR | 18 | 119 | 175 | 2245.1 | 1605.9 | 17.0 | 20.1 | 18.6 | 0.0 | 76.89 |
| MAY | 37 | 154 | 163 | 2535.5 | 1315.5 | 20.1 | 24.5 | 22.3 | 3.9 | 77.06 |
| JUN | 185 | 485 | 105 | 2576.0 | 1275.0 | 20.6 | 36.6 | 28.6 | 16.0 | 77.26 |
| JUL | 340 | 435 | 120 | 2576.0 | 1275.0 | 20.6 | 36.9 | 28.8 | 16.4 | 77.27 |
| AGO | 420 | 306 | 123 | 2576.0 | 1275.0 | 20.6 | 34.6 | 27.6 | 14.0 | 77.23 |
| SEP | 420 | 203 | 123 | 2576.0 | 1275.0 | 20.6 | 31.9 | 25.2 | 11.3 | 77.19 |
| OCT | 360 | 139 | 148 | 2576.0 | 1275.0 | 20.6 | 29.0 | 24.8 | 8.4 | 77.14 |
| NOV | 310 | 160 | 162 | 2576.0 | 1275.0 | 20.6 | 28.6 | 24.6 | 8.0 | 77.13 |
| DIC | 200 | 9 | 175 | 2576.0 | 1275.0 | 20.6 | 23.0 | 21.8 | 2.5 | 77.04 |

ANO : 1968

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPO_ RACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|--------------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 3 | 198 | 2576.0 | 1275.0 | 20.6 | 19.9 | 20.2 | 0.0 | 76.98 |
| FEB | 0 | 0 | 216 | 2509.9 | 1341.1 | 19.9 | 18.8 | 19.3 | 0.0 | 76.93 |
| MAR | 0 | 50 | 264 | 2412.6 | 1438.4 | 18.8 | 18.2 | 18.5 | 0.0 | 76.88 |
| ABR | 32 | 129 | 164 | 2357.1 | 1493.9 | 18.2 | 21.9 | 20.1 | 1.4 | 76.97 |
| MAY | 45 | 215 | 130 | 2576.0 | 1275.0 | 20.6 | 27.3 | 23.9 | 6.7 | 77.11 |
| JUN | 34 | 250 | 115 | 2576.0 | 1275.0 | 20.6 | 28.4 | 24.5 | 7.9 | 77.13 |
| JUL | 86 | 450 | 106 | 2576.0 | 1275.0 | 20.6 | 34.4 | 27.5 | 13.8 | 77.23 |
| AGO | 184 | 315 | 121 | 2576.0 | 1275.0 | 20.6 | 31.8 | 26.2 | 11.3 | 77.19 |
| SEP | 200 | 209 | 129 | 2576.0 | 1275.0 | 20.6 | 29.1 | 24.9 | 8.6 | 77.14 |
| OCT | 197 | 44 | 169 | 2576.0 | 1275.0 | 20.6 | 24.0 | 22.3 | 3.5 | 77.06 |
| NOV | 80 | 87 | 158 | 2576.0 | 1275.0 | 20.6 | 23.9 | 22.2 | 3.3 | 77.05 |
| DIC | 10 | 0 | 202 | 2576.0 | 1275.0 | 20.6 | 19.8 | 20.2 | 0.0 | 76.98 |

MOVIMIENTOS DE EMBALSE

MÓDULO EXPERIMENTAL APURE

EMBALSE _ 3

AÑO : 1969

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 0 | 202 | 2506.9 | 1344.1 | 19.8 | 19.1 | 19.5 | 0.0 | 76.93 |
| FEB | 0 | 30 | 236 | 2436.3 | 1414.7 | 19.1 | 18.5 | 18.8 | 0.0 | 76.90 |
| MAR | 0 | 11 | 263 | 2382.7 | 1468.3 | 18.5 | 17.0 | 17.8 | 0.0 | 76.84 |
| ABR | 7 | 87 | 179 | 2246.8 | 1604.2 | 17.0 | 19.1 | 18.1 | 0.0 | 76.85 |
| MAY | 12 | 256 | 141 | 2439.4 | 1411.6 | 19.1 | 26.1 | 22.6 | 5.5 | 77.07 |
| JUN | 27 | 145 | 105 | 2576.0 | 1275.0 | 20.6 | 25.7 | 23.1 | 5.2 | 77.08 |
| JUL | 105 | 199 | 113 | 2576.0 | 1275.0 | 20.6 | 28.0 | 24.3 | 7.4 | 77.12 |
| AGO | 132 | 102 | 120 | 2576.0 | 1275.0 | 20.6 | 25.7 | 23.1 | 5.5 | 77.08 |
| SEP | 117 | 94 | 142 | 2576.0 | 1275.0 | 20.6 | 24.9 | 22.7 | 4.5 | 77.07 |
| OCT | 46 | 165 | 133 | 2576.0 | 1275.0 | 20.6 | 26.0 | 23.3 | 5.4 | 77.09 |
| NOV | 22 | 90 | 144 | 2576.0 | 1275.0 | 20.6 | 23.5 | 22.0 | 2.9 | 77.05 |
| DIC | 20 | 8 | 157 | 2576.0 | 1275.0 | 20.6 | 21.1 | 20.8 | 0.5 | 77.01 |

AÑO : 1970

| MES | LAMINA ESCURRIDA (MM) | LLUVIA (MM) | EVAPORACION (MM) | AREA HUMEDA (HA) | AREA SECA (HA) | VOLUMEN INICIAL (MILL.M3) | VOLUMEN FINAL (MILL.M3) | VOLUMEN MEDIO (MILL.M3) | VOLUMEN ALIVIO (MILL.M3) | COTA (M.) |
|-----|-----------------------------|----------------|---------------------|------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------|
| ENE | 0 | 3 | 188 | 2576.0 | 1275.0 | 20.6 | 20.1 | 20.3 | 0.0 | 76.99 |
| FEB | 0 | 42 | 209 | 2529.1 | 1321.9 | 20.1 | 20.2 | 20.1 | 0.0 | 76.97 |
| MAR | 0 | 3 | 267 | 2541.1 | 1309.9 | 20.2 | 18.1 | 19.2 | 0.0 | 76.92 |
| ABR | 0 | 27 | 228 | 2349.2 | 1501.8 | 18.1 | 17.8 | 18.0 | 0.0 | 76.85 |
| MAY | 0 | 169 | 149 | 2315.9 | 1535.1 | 17.8 | 22.2 | 20.0 | 1.7 | 76.97 |
| JUN | 6 | 279 | 121 | 2576.0 | 1275.0 | 20.6 | 28.6 | 24.6 | 8.1 | 77.13 |
| JUL | 48 | 339 | 111 | 2576.0 | 1275.0 | 20.6 | 30.9 | 25.7 | 10.4 | 77.17 |
| AGO | 121 | 325 | 108 | 2576.0 | 1275.0 | 20.6 | 31.6 | 26.1 | 11.0 | 77.18 |
| SEP | 200 | 345 | 109 | 2576.0 | 1275.0 | 20.6 | 33.1 | 26.8 | 12.5 | 77.21 |
| OCT | 109 | 122 | 140 | 2576.0 | 1275.0 | 20.6 | 25.5 | 23.0 | 4.9 | 77.08 |