

2.5 Costo Económico de O/M del Dragado y Envíos

Tabla 5.4.16 Costo Económico para O/M del Dragado (para Período Navegable Planeado)

Costo Económico : Dragado x 1.0 Tasa de Descuento = 10%

Caso P1

Unidad \$: x1000,000

| Año | Costo de Construcción Inicial | | Anual | Costo Total | Tasa de Descuent | Valor Actual | |
|-------|-------------------------------|---------|---------------|-------------|------------------|--------------|-------------|
| | Instalaciones | Dragado | Dragado Anual | | | | Acumulación |
| 1 | | | | 0 | 1.00000000 | 0 | 0 |
| 2 | | | 48 | 48 | 0.82644628 | 40 | 40 |
| 3 | | | 48 | 48 | 0.75131480 | 36 | 76 |
| 4 | | | 48 | 48 | 0.68301346 | 33 | 109 |
| 5 | | | 48 | 48 | 0.62092132 | 30 | 138 |
| 6 | | | 48 | 48 | 0.56447393 | 27 | 166 |
| 7 | | | 48 | 48 | 0.51315812 | 25 | 190 |
| 8 | | | 48 | 48 | 0.46650738 | 22 | 213 |
| 9 | | | 48 | 48 | 0.42409762 | 20 | 233 |
| 10 | | | 48 | 48 | 0.38554329 | 19 | 252 |
| 11 | | | 48 | 48 | 0.35049390 | 17 | 268 |
| 12 | | | 48 | 48 | 0.31863082 | 15 | 284 |
| 13 | | | 48 | 48 | 0.28966438 | 14 | 298 |
| 14 | | | 48 | 48 | 0.26333125 | 13 | 310 |
| 15 | | | 48 | 48 | 0.23939205 | 12 | 322 |
| 16 | | | 48 | 48 | 0.21762914 | 10 | 332 |
| 17 | | | 48 | 48 | 0.19784467 | 10 | 342 |
| 18 | | | 48 | 48 | 0.17985879 | 9 | 350 |
| 19 | | | 48 | 48 | 0.16350799 | 8 | 358 |
| 20 | | | 48 | 48 | 0.14864363 | 7 | 365 |
| 21 | | | 48 | 48 | 0.13513057 | 6 | 372 |
| 22 | | | 48 | 48 | 0.12284597 | 6 | 378 |
| 23 | | | 48 | 48 | 0.11167816 | 5 | 383 |
| 24 | | | 48 | 48 | 0.10152560 | 5 | 388 |
| 25 | | | 48 | 48 | 0.09229600 | 4 | 392 |
| 26 | | | 48 | 48 | 0.08390545 | 4 | 396 |
| 27 | | | 48 | 48 | 0.07627768 | 4 | 400 |
| 28 | | | 48 | 48 | 0.06934335 | 3 | 403 |
| 29 | | | 48 | 48 | 0.06303941 | 3 | 407 |
| 30 | | | 48 | 48 | 0.05730855 | 3 | 409 |
| Total | 0 | 0 | 1,393 | 1,393 | | | 409 |

Evaluación Económica

Costo Económico : Dragado x 1.0 Tasa de Descuento = 10%

Caso P2

Unidad \$: x1000,000

| Año | Costo de Construcción Inicial | | Anual | Costo Total | Tasa de Descuent | Valor Actual | |
|--------------|-------------------------------|---------|---------------|-------------|------------------|--------------|-------------|
| | Instalaciones | Dragado | Dragado Anual | | | | Acumulación |
| 1 | | | | 0 | 1.00000000 | 0 | 0 |
| 2 | | | 44 | 44 | 0.82644628 | 37 | 37 |
| 3 | | | 44 | 44 | 0.75131480 | 33 | 70 |
| 4 | | | 44 | 44 | 0.68301346 | 30 | 100 |
| 5 | | | 44 | 44 | 0.62092132 | 27 | 127 |
| 6 | | | 44 | 44 | 0.56447393 | 25 | 152 |
| 7 | | | 44 | 44 | 0.51315812 | 23 | 175 |
| 8 | | | 44 | 44 | 0.46650738 | 21 | 196 |
| 9 | | | 44 | 44 | 0.42409762 | 19 | 214 |
| 10 | | | 44 | 44 | 0.38554329 | 17 | 231 |
| 11 | | | 44 | 44 | 0.35049390 | 15 | 247 |
| 12 | | | 44 | 44 | 0.31863082 | 14 | 261 |
| 13 | | | 44 | 44 | 0.28966438 | 13 | 274 |
| 14 | | | 44 | 44 | 0.26333125 | 12 | 285 |
| 15 | | | 44 | 44 | 0.23939205 | 11 | 296 |
| 16 | | | 44 | 44 | 0.21762914 | 10 | 305 |
| 17 | | | 44 | 44 | 0.19784467 | 9 | 314 |
| 18 | | | 44 | 44 | 0.17985879 | 8 | 322 |
| 19 | | | 44 | 44 | 0.16350799 | 7 | 329 |
| 20 | | | 44 | 44 | 0.14864363 | 7 | 336 |
| 21 | | | 44 | 44 | 0.13513057 | 6 | 342 |
| 22 | | | 44 | 44 | 0.12284597 | 5 | 347 |
| 23 | | | 44 | 44 | 0.11167816 | 5 | 352 |
| 24 | | | 44 | 44 | 0.10152560 | 4 | 357 |
| 25 | | | 44 | 44 | 0.09229600 | 4 | 361 |
| 26 | | | 44 | 44 | 0.08390545 | 4 | 365 |
| 27 | | | 44 | 44 | 0.07627768 | 3 | 368 |
| 28 | | | 44 | 44 | 0.06934335 | 3 | 371 |
| 29 | | | 44 | 44 | 0.06303941 | 3 | 374 |
| 30 | | | 44 | 44 | 0.05730855 | 3 | 376 |
| Total | 0 | 0 | 1,281 | 1,281 | | | 376 |

Evaluación Económica

Costo Económico : Dragado x 1.0 Tasa de Descuento = 10%

Caso P3

Unidad \$: x1000,000

| Año | Costo de Construcción Inicial | | Anual | Costo Total | Tasa de Descuent | Valor Actual | |
|--------------|-------------------------------|---------|---------------|-------------|------------------|--------------|-------------|
| | Instalaciones | Dragado | Dragado Anual | | | | Acumulación |
| 1 | | | | 0 | 1.00000000 | 0 | 0 |
| 2 | | | 41 | 41 | 0.82644628 | 34 | 34 |
| 3 | | | 41 | 41 | 0.75131480 | 31 | 64 |
| 4 | | | 41 | 41 | 0.68301346 | 28 | 92 |
| 5 | | | 41 | 41 | 0.62092132 | 25 | 117 |
| 6 | | | 41 | 41 | 0.56447393 | 23 | 140 |
| 7 | | | 41 | 41 | 0.51315812 | 21 | 161 |
| 8 | | | 41 | 41 | 0.46650738 | 19 | 180 |
| 9 | | | 41 | 41 | 0.42409762 | 17 | 197 |
| 10 | | | 41 | 41 | 0.38554329 | 16 | 213 |
| 11 | | | 41 | 41 | 0.35049390 | 14 | 227 |
| 12 | | | 41 | 41 | 0.31863082 | 13 | 240 |
| 13 | | | 41 | 41 | 0.28966438 | 12 | 252 |
| 14 | | | 41 | 41 | 0.26333125 | 11 | 263 |
| 15 | | | 41 | 41 | 0.23939205 | 10 | 273 |
| 16 | | | 41 | 41 | 0.21762914 | 9 | 281 |
| 17 | | | 41 | 41 | 0.19784467 | 8 | 289 |
| 18 | | | 41 | 41 | 0.17985879 | 7 | 297 |
| 19 | | | 41 | 41 | 0.16350799 | 7 | 303 |
| 20 | | | 41 | 41 | 0.14864363 | 6 | 309 |
| 21 | | | 41 | 41 | 0.13513057 | 5 | 315 |
| 22 | | | 41 | 41 | 0.12284597 | 5 | 320 |
| 23 | | | 41 | 41 | 0.11167816 | 5 | 325 |
| 24 | | | 41 | 41 | 0.10152560 | 4 | 329 |
| 25 | | | 41 | 41 | 0.09229600 | 4 | 332 |
| 26 | | | 41 | 41 | 0.08390545 | 3 | 336 |
| 27 | | | 41 | 41 | 0.07627768 | 3 | 339 |
| 28 | | | 41 | 41 | 0.06934335 | 3 | 342 |
| 29 | | | 41 | 41 | 0.06303941 | 3 | 344 |
| 30 | | | 41 | 41 | 0.05730855 | 2 | 347 |
| Total | 0 | 0 | 1,180 | 1,180 | | | 347 |

Evaluación Económica

Costo Económico : Dragado x 1.0 Tasa de Descuento = 10%

Caso A1

Unidad \$: x1000,000

| Año | Costo de Construcción Inicial | | Anual | Costo Total | Tasa de Descuent | Valor Actual | |
|--------------|-------------------------------|---------|---------------|-------------|------------------|--------------|-------------|
| | Instalaciones | Dragado | Dragado Anual | | | | Acumulación |
| 1 | | | | 0 | 1.00000000 | 0 | 0 |
| 2 | | | 44 | 44 | 0.82644628 | 37 | 37 |
| 3 | | | 44 | 44 | 0.75131480 | 33 | 70 |
| 4 | | | 44 | 44 | 0.68301346 | 30 | 100 |
| 5 | | | 44 | 44 | 0.62092132 | 27 | 127 |
| 6 | | | 44 | 44 | 0.56447393 | 25 | 152 |
| 7 | | | 44 | 44 | 0.51315812 | 23 | 175 |
| 8 | | | 44 | 44 | 0.46650738 | 21 | 196 |
| 9 | | | 44 | 44 | 0.42409762 | 19 | 214 |
| 10 | | | 44 | 44 | 0.38554329 | 17 | 231 |
| 11 | | | 44 | 44 | 0.35049390 | 15 | 247 |
| 12 | | | 44 | 44 | 0.31863082 | 14 | 261 |
| 13 | | | 44 | 44 | 0.28966438 | 13 | 274 |
| 14 | | | 44 | 44 | 0.26333125 | 12 | 285 |
| 15 | | | 44 | 44 | 0.23939205 | 11 | 296 |
| 16 | | | 44 | 44 | 0.21762914 | 10 | 305 |
| 17 | | | 44 | 44 | 0.19784467 | 9 | 314 |
| 18 | | | 44 | 44 | 0.17985879 | 8 | 322 |
| 19 | | | 44 | 44 | 0.16350799 | 7 | 329 |
| 20 | | | 44 | 44 | 0.14864363 | 7 | 336 |
| 21 | | | 44 | 44 | 0.13513057 | 6 | 342 |
| 22 | | | 44 | 44 | 0.12284597 | 5 | 347 |
| 23 | | | 44 | 44 | 0.11167816 | 5 | 352 |
| 24 | | | 44 | 44 | 0.10152560 | 4 | 357 |
| 25 | | | 44 | 44 | 0.09229600 | 4 | 361 |
| 26 | | | 44 | 44 | 0.08390545 | 4 | 365 |
| 27 | | | 44 | 44 | 0.07627768 | 3 | 368 |
| 28 | | | 44 | 44 | 0.06934335 | 3 | 371 |
| 29 | | | 44 | 44 | 0.06303941 | 3 | 374 |
| 30 | | | 44 | 44 | 0.05730855 | 3 | 376 |
| Total | 0 | 0 | 1,281 | 1,281 | | | 376 |

Evaluación Económica

Costo Económico : Dragado x 1.0 Tasa de Descuento = 10%

Caso A2

Unidad \$: x1000,000

| Año | Costo de Construcción Inicial | | Anual | Costo Total | Tasa de Descuento | Valor Actual | |
|-------|-------------------------------|---------|---------------|-------------|-------------------|--------------|-------------|
| | Instalaciones | Dragado | Dragado Anual | | | | Acumulación |
| 1 | | | | 0 | 1.00000000 | 0 | 0 |
| 2 | | | 48 | 48 | 0.82644628 | 40 | 40 |
| 3 | | | 48 | 48 | 0.75131480 | 36 | 76 |
| 4 | | | 48 | 48 | 0.68301346 | 33 | 109 |
| 5 | | | 48 | 48 | 0.62092132 | 30 | 138 |
| 6 | | | 48 | 48 | 0.56447393 | 27 | 166 |
| 7 | | | 48 | 48 | 0.51315812 | 25 | 190 |
| 8 | | | 48 | 48 | 0.46650738 | 22 | 213 |
| 9 | | | 48 | 48 | 0.42409762 | 20 | 233 |
| 10 | | | 48 | 48 | 0.38554329 | 19 | 252 |
| 11 | | | 48 | 48 | 0.35049390 | 17 | 268 |
| 12 | | | 48 | 48 | 0.31863082 | 15 | 284 |
| 13 | | | 48 | 48 | 0.28966438 | 14 | 298 |
| 14 | | | 48 | 48 | 0.26333125 | 13 | 310 |
| 15 | | | 48 | 48 | 0.23939205 | 12 | 322 |
| 16 | | | 48 | 48 | 0.21762914 | 10 | 332 |
| 17 | | | 48 | 48 | 0.19784467 | 10 | 342 |
| 18 | | | 48 | 48 | 0.17985879 | 9 | 350 |
| 19 | | | 48 | 48 | 0.16350799 | 8 | 358 |
| 20 | | | 48 | 48 | 0.14864363 | 7 | 365 |
| 21 | | | 48 | 48 | 0.13513057 | 6 | 372 |
| 22 | | | 48 | 48 | 0.12284597 | 6 | 378 |
| 23 | | | 48 | 48 | 0.11167816 | 5 | 383 |
| 24 | | | 48 | 48 | 0.10152560 | 5 | 388 |
| 25 | | | 48 | 48 | 0.09229600 | 4 | 392 |
| 26 | | | 48 | 48 | 0.08390545 | 4 | 396 |
| 27 | | | 48 | 48 | 0.07627768 | 4 | 400 |
| 28 | | | 48 | 48 | 0.06934335 | 3 | 403 |
| 29 | | | 48 | 48 | 0.06303941 | 3 | 407 |
| 30 | | | 48 | 48 | 0.05730855 | 3 | 409 |
| Total | 0 | 0 | 1,393 | 1,393 | | | 409 |

Evaluación Económica

Costo Económico : Dragado x 1.0 Tasa de Descuento = 10%

Caso A3

Unidad \$: x1000,000

| Año | Costo de Construcción Inicial | | Anual | Costo Total | Tasa de Descuent | Valor Actual | |
|-------|-------------------------------|---------|---------------|-------------|------------------|--------------|-------------|
| | Instalaciones | Dragado | Dragado Anual | | | | Acumulación |
| 1 | | | | 0 | 1.00000000 | 0 | 0 |
| 2 | | | 137 | 137 | 0.82644628 | 114 | 114 |
| 3 | | | 137 | 137 | 0.75131480 | 103 | 217 |
| 4 | | | 137 | 137 | 0.68301346 | 94 | 311 |
| 5 | | | 137 | 137 | 0.62092132 | 85 | 396 |
| 6 | | | 137 | 137 | 0.56447393 | 78 | 474 |
| 7 | | | 137 | 137 | 0.51315812 | 71 | 544 |
| 8 | | | 137 | 137 | 0.46650738 | 64 | 609 |
| 9 | | | 137 | 137 | 0.42409762 | 58 | 667 |
| 10 | | | 137 | 137 | 0.38554329 | 53 | 720 |
| 11 | | | 137 | 137 | 0.35049390 | 48 | 768 |
| 12 | | | 137 | 137 | 0.31863082 | 44 | 812 |
| 13 | | | 137 | 137 | 0.28966438 | 40 | 852 |
| 14 | | | 137 | 137 | 0.26333125 | 36 | 888 |
| 15 | | | 137 | 137 | 0.23939205 | 33 | 921 |
| 16 | | | 137 | 137 | 0.21762914 | 30 | 951 |
| 17 | | | 137 | 137 | 0.19784467 | 27 | 978 |
| 18 | | | 137 | 137 | 0.17985879 | 25 | 1,003 |
| 19 | | | 137 | 137 | 0.16350799 | 22 | 1,025 |
| 20 | | | 137 | 137 | 0.14864363 | 20 | 1,046 |
| 21 | | | 137 | 137 | 0.13513057 | 19 | 1,064 |
| 22 | | | 137 | 137 | 0.12284597 | 17 | 1,081 |
| 23 | | | 137 | 137 | 0.11167816 | 15 | 1,096 |
| 24 | | | 137 | 137 | 0.10152560 | 14 | 1,110 |
| 25 | | | 137 | 137 | 0.09229600 | 13 | 1,123 |
| 26 | | | 137 | 137 | 0.08390545 | 12 | 1,135 |
| 27 | | | 137 | 137 | 0.07627768 | 10 | 1,145 |
| 28 | | | 137 | 137 | 0.06934335 | 10 | 1,155 |
| 29 | | | 137 | 137 | 0.06303941 | 9 | 1,163 |
| 30 | | | 137 | 137 | 0.05730855 | 8 | 1,171 |
| Total | 0 | 0 | 3,987 | 3,987 | | | 1,171 |

Evaluación Económica

Costo Económico : Dragado x 1.0 Tasa de Descuento = 10%

Caso B1

Unidad \$: x1000,000

| Año | Costo de Construcción Inicial | | Anual | Costo Total | Tasa de Descuento | Valor Actual | |
|-------|-------------------------------|---------|---------------|-------------|-------------------|--------------|-------------|
| | Instalaciones | Dragado | Dragado Anual | | | | Acumulación |
| 1 | | | | 0 | 1.00000000 | 0 | 0 |
| 2 | | | 45 | 45 | 0.82644628 | 37 | 37 |
| 3 | | | 45 | 45 | 0.75131480 | 34 | 72 |
| 4 | | | 45 | 45 | 0.68301346 | 31 | 103 |
| 5 | | | 45 | 45 | 0.62092132 | 28 | 131 |
| 6 | | | 45 | 45 | 0.56447393 | 26 | 156 |
| 7 | | | 45 | 45 | 0.51315812 | 23 | 180 |
| 8 | | | 45 | 45 | 0.46650738 | 21 | 201 |
| 9 | | | 45 | 45 | 0.42409762 | 19 | 220 |
| 10 | | | 45 | 45 | 0.38554329 | 17 | 237 |
| 11 | | | 45 | 45 | 0.35049390 | 16 | 253 |
| 12 | | | 45 | 45 | 0.31863082 | 14 | 268 |
| 13 | | | 45 | 45 | 0.28966438 | 13 | 281 |
| 14 | | | 45 | 45 | 0.26333125 | 12 | 293 |
| 15 | | | 45 | 45 | 0.23939205 | 11 | 304 |
| 16 | | | 45 | 45 | 0.21762914 | 10 | 314 |
| 17 | | | 45 | 45 | 0.19784467 | 9 | 323 |
| 18 | | | 45 | 45 | 0.17985879 | 8 | 331 |
| 19 | | | 45 | 45 | 0.16350799 | 7 | 338 |
| 20 | | | 45 | 45 | 0.14864363 | 7 | 345 |
| 21 | | | 45 | 45 | 0.13513057 | 6 | 351 |
| 22 | | | 45 | 45 | 0.12284597 | 6 | 357 |
| 23 | | | 45 | 45 | 0.11167816 | 5 | 362 |
| 24 | | | 45 | 45 | 0.10152560 | 5 | 366 |
| 25 | | | 45 | 45 | 0.09229600 | 4 | 370 |
| 26 | | | 45 | 45 | 0.08390545 | 4 | 374 |
| 27 | | | 45 | 45 | 0.07627768 | 3 | 378 |
| 28 | | | 45 | 45 | 0.06934335 | 3 | 381 |
| 29 | | | 45 | 45 | 0.06303941 | 3 | 384 |
| 30 | | | 45 | 45 | 0.05730855 | 3 | 386 |
| Total | 0 | 0 | 1,315 | 1,315 | | | 386 |

Evaluación Económica

Costo Económico : Dragado x 1.0 Tasa de Descuento = 10%

Caso B2

Unidad \$: x1000,000

| Año | Costo de Construcción Inicial | | Anual | Costo Total | Tasa de Descuent | Valor Actual | |
|-------|-------------------------------|---------|---------------|-------------|------------------|--------------|-------------|
| | Instalaciones | Dragado | Dragado Anual | | | | Acumulación |
| 1 | | | | 0 | 1.00000000 | 0 | 0 |
| 2 | | | 49 | 49 | 0.82644628 | 41 | 41 |
| 3 | | | 49 | 49 | 0.75131480 | 37 | 78 |
| 4 | | | 49 | 49 | 0.68301346 | 34 | 111 |
| 5 | | | 49 | 49 | 0.62092132 | 31 | 142 |
| 6 | | | 49 | 49 | 0.56447393 | 28 | 170 |
| 7 | | | 49 | 49 | 0.51315812 | 25 | 195 |
| 8 | | | 49 | 49 | 0.46650738 | 23 | 218 |
| 9 | | | 49 | 49 | 0.42409762 | 21 | 239 |
| 10 | | | 49 | 49 | 0.38554329 | 19 | 258 |
| 11 | | | 49 | 49 | 0.35049390 | 17 | 275 |
| 12 | | | 49 | 49 | 0.31863082 | 16 | 291 |
| 13 | | | 49 | 49 | 0.28966438 | 14 | 305 |
| 14 | | | 49 | 49 | 0.26333125 | 13 | 318 |
| 15 | | | 49 | 49 | 0.23939205 | 12 | 330 |
| 16 | | | 49 | 49 | 0.21762914 | 11 | 340 |
| 17 | | | 49 | 49 | 0.19784467 | 10 | 350 |
| 18 | | | 49 | 49 | 0.17985879 | 9 | 359 |
| 19 | | | 49 | 49 | 0.16350799 | 8 | 367 |
| 20 | | | 49 | 49 | 0.14864363 | 7 | 374 |
| 21 | | | 49 | 49 | 0.13513057 | 7 | 381 |
| 22 | | | 49 | 49 | 0.12284597 | 6 | 387 |
| 23 | | | 49 | 49 | 0.11167816 | 5 | 393 |
| 24 | | | 49 | 49 | 0.10152560 | 5 | 398 |
| 25 | | | 49 | 49 | 0.09229600 | 5 | 402 |
| 26 | | | 49 | 49 | 0.08390545 | 4 | 406 |
| 27 | | | 49 | 49 | 0.07627768 | 4 | 410 |
| 28 | | | 49 | 49 | 0.06934335 | 3 | 413 |
| 29 | | | 49 | 49 | 0.06303941 | 3 | 416 |
| 30 | | | 49 | 49 | 0.05730855 | 3 | 419 |
| Total | 0 | 0 | 1,428 | 1,428 | | | 419 |

Evaluación Económica

Costo Económico : Dragado x 1.0 Tasa de Descuento = 10%

Caso B3

Unidad \$: x1000,000

| Año | Costo de Construcción Inicial | | Anual | Costo Total | Tasa de Descuent | Valor Actual | |
|-------|-------------------------------|---------|---------------|-------------|------------------|--------------|-------------|
| | Instalaciones | Dragado | Dragado Anual | | | | Acumulación |
| 1 | | | | 0 | 1.00000000 | 0 | 0 |
| 2 | | | 45 | 45 | 0.82644628 | 37 | 37 |
| 3 | | | 45 | 45 | 0.75131480 | 34 | 72 |
| 4 | | | 45 | 45 | 0.68301346 | 31 | 103 |
| 5 | | | 45 | 45 | 0.62092132 | 28 | 131 |
| 6 | | | 45 | 45 | 0.56447393 | 26 | 156 |
| 7 | | | 45 | 45 | 0.51315812 | 23 | 180 |
| 8 | | | 45 | 45 | 0.46650738 | 21 | 201 |
| 9 | | | 45 | 45 | 0.42409762 | 19 | 220 |
| 10 | | | 45 | 45 | 0.38554329 | 17 | 237 |
| 11 | | | 45 | 45 | 0.35049390 | 16 | 253 |
| 12 | | | 45 | 45 | 0.31863082 | 14 | 268 |
| 13 | | | 45 | 45 | 0.28966438 | 13 | 281 |
| 14 | | | 45 | 45 | 0.26333125 | 12 | 293 |
| 15 | | | 45 | 45 | 0.23939205 | 11 | 304 |
| 16 | | | 45 | 45 | 0.21762914 | 10 | 314 |
| 17 | | | 45 | 45 | 0.19784467 | 9 | 323 |
| 18 | | | 45 | 45 | 0.17985879 | 8 | 331 |
| 19 | | | 45 | 45 | 0.16350799 | 7 | 338 |
| 20 | | | 45 | 45 | 0.14864363 | 7 | 345 |
| 21 | | | 45 | 45 | 0.13513057 | 6 | 351 |
| 22 | | | 45 | 45 | 0.12284597 | 6 | 357 |
| 23 | | | 45 | 45 | 0.11167816 | 5 | 362 |
| 24 | | | 45 | 45 | 0.10152560 | 5 | 366 |
| 25 | | | 45 | 45 | 0.09229600 | 4 | 370 |
| 26 | | | 45 | 45 | 0.08390545 | 4 | 374 |
| 27 | | | 45 | 45 | 0.07627768 | 3 | 378 |
| 28 | | | 45 | 45 | 0.06934335 | 3 | 381 |
| 29 | | | 45 | 45 | 0.06303941 | 3 | 384 |
| 30 | | | 45 | 45 | 0.05730855 | 3 | 386 |
| Total | 0 | 0 | 1,315 | 1,315 | | | 386 |

Evaluación Económica

Costo Económico : Dragado x 1.0 Tasa de Descuento = 10%

Caso B4

Unidad \$: x1000,000

| Año | Costo de Construcción Inicial | | Anual | Costo Total | Tasa de Descuento | Valor Actual | |
|--------------|-------------------------------|---------|---------------|-------------|-------------------|--------------|-------------|
| | Instalaciones | Dragado | Dragado Anual | | | | Acumulación |
| 1 | | | | 0 | 1.00000000 | 0 | 0 |
| 2 | | | 27 | 27 | 0.82644628 | 22 | 22 |
| 3 | | | 27 | 27 | 0.75131480 | 20 | 43 |
| 4 | | | 27 | 27 | 0.68301346 | 19 | 61 |
| 5 | | | 27 | 27 | 0.62092132 | 17 | 78 |
| 6 | | | 27 | 27 | 0.56447393 | 15 | 94 |
| 7 | | | 27 | 27 | 0.51315812 | 14 | 108 |
| 8 | | | 27 | 27 | 0.46650738 | 13 | 120 |
| 9 | | | 27 | 27 | 0.42409762 | 12 | 132 |
| 10 | | | 27 | 27 | 0.38554329 | 10 | 142 |
| 11 | | | 27 | 27 | 0.35049390 | 10 | 152 |
| 12 | | | 27 | 27 | 0.31863082 | 9 | 160 |
| 13 | | | 27 | 27 | 0.28966438 | 8 | 168 |
| 14 | | | 27 | 27 | 0.26333125 | 7 | 176 |
| 15 | | | 27 | 27 | 0.23939205 | 7 | 182 |
| 16 | | | 27 | 27 | 0.21762914 | 6 | 188 |
| 17 | | | 27 | 27 | 0.19784467 | 5 | 193 |
| 18 | | | 27 | 27 | 0.17985879 | 5 | 198 |
| 19 | | | 27 | 27 | 0.16350799 | 4 | 203 |
| 20 | | | 27 | 27 | 0.14864363 | 4 | 207 |
| 21 | | | 27 | 27 | 0.13513057 | 4 | 210 |
| 22 | | | 27 | 27 | 0.12284597 | 3 | 214 |
| 23 | | | 27 | 27 | 0.11167816 | 3 | 217 |
| 24 | | | 27 | 27 | 0.10152560 | 3 | 219 |
| 25 | | | 27 | 27 | 0.09229600 | 3 | 222 |
| 26 | | | 27 | 27 | 0.08390545 | 2 | 224 |
| 27 | | | 27 | 27 | 0.07627768 | 2 | 226 |
| 28 | | | 27 | 27 | 0.06934335 | 2 | 228 |
| 29 | | | 27 | 27 | 0.06303941 | 2 | 230 |
| 30 | | | 27 | 27 | 0.05730855 | 2 | 231 |
| Total | 0 | 0 | 788 | 788 | | | 231 |

Evaluación Económica

Costo Económico : Dragado x 1.0 Tasa de Descuento = 10%

Caso C1

Unidad \$: x1000,000

| Año | Costo de Construcción Inicial | | Anual | Costo Total | Tasa de Descuent | Valor Actual | |
|-------|-------------------------------|---------|---------------|-------------|------------------|--------------|-------------|
| | Instalaciones | Dragado | Dragado Anual | | | | Acumulación |
| 1 | | | | 0 | 1.00000000 | 0 | 0 |
| 2 | | | 94 | 94 | 0.82644628 | 77 | 77 |
| 3 | | | 94 | 94 | 0.75131480 | 70 | 148 |
| 4 | | | 94 | 94 | 0.68301346 | 64 | 212 |
| 5 | | | 94 | 94 | 0.62092132 | 58 | 270 |
| 6 | | | 94 | 94 | 0.56447393 | 53 | 323 |
| 7 | | | 94 | 94 | 0.51315812 | 48 | 371 |
| 8 | | | 94 | 94 | 0.46650738 | 44 | 415 |
| 9 | | | 94 | 94 | 0.42409762 | 40 | 455 |
| 10 | | | 94 | 94 | 0.38554329 | 36 | 491 |
| 11 | | | 94 | 94 | 0.35049390 | 33 | 524 |
| 12 | | | 94 | 94 | 0.31863082 | 30 | 554 |
| 13 | | | 94 | 94 | 0.28966438 | 27 | 581 |
| 14 | | | 94 | 94 | 0.26333125 | 25 | 605 |
| 15 | | | 94 | 94 | 0.23939205 | 22 | 628 |
| 16 | | | 94 | 94 | 0.21762914 | 20 | 648 |
| 17 | | | 94 | 94 | 0.19784467 | 19 | 667 |
| 18 | | | 94 | 94 | 0.17985879 | 17 | 684 |
| 19 | | | 94 | 94 | 0.16350799 | 15 | 699 |
| 20 | | | 94 | 94 | 0.14864363 | 14 | 713 |
| 21 | | | 94 | 94 | 0.13513057 | 13 | 726 |
| 22 | | | 94 | 94 | 0.12284597 | 12 | 737 |
| 23 | | | 94 | 94 | 0.11167816 | 10 | 748 |
| 24 | | | 94 | 94 | 0.10152560 | 10 | 757 |
| 25 | | | 94 | 94 | 0.09229600 | 9 | 766 |
| 26 | | | 94 | 94 | 0.08390545 | 8 | 774 |
| 27 | | | 94 | 94 | 0.07627768 | 7 | 781 |
| 28 | | | 94 | 94 | 0.06934335 | 7 | 787 |
| 29 | | | 94 | 94 | 0.06303941 | 6 | 793 |
| 30 | | | 94 | 94 | 0.05730855 | 5 | 798 |
| Total | 0 | 0 | 2,718 | 2,718 | | | 798 |

Evaluación Económica

Costo Económico : Dragado x 1.0 Tasa de Descuento = 10%

Caso C2

Unidad \$: x1000,000

| Año | Costo de Construcción Inicial | | Anual | Costo Total | Tasa de Descuent | Valor Actual | |
|-------|-------------------------------|---------|---------------|-------------|------------------|--------------|-------------|
| | Instalaciones | Dragado | Dragado Anual | | | | Acumulación |
| 1 | | | | 0 | 1.00000000 | 0 | 0 |
| 2 | | | 44 | 44 | 0.82644628 | 37 | 37 |
| 3 | | | 44 | 44 | 0.75131480 | 33 | 70 |
| 4 | | | 44 | 44 | 0.68301346 | 30 | 100 |
| 5 | | | 44 | 44 | 0.62092132 | 27 | 127 |
| 6 | | | 44 | 44 | 0.56447393 | 25 | 152 |
| 7 | | | 44 | 44 | 0.51315812 | 23 | 175 |
| 8 | | | 44 | 44 | 0.46650738 | 21 | 196 |
| 9 | | | 44 | 44 | 0.42409762 | 19 | 214 |
| 10 | | | 44 | 44 | 0.38554329 | 17 | 231 |
| 11 | | | 44 | 44 | 0.35049390 | 15 | 247 |
| 12 | | | 44 | 44 | 0.31863082 | 14 | 261 |
| 13 | | | 44 | 44 | 0.28966438 | 13 | 274 |
| 14 | | | 44 | 44 | 0.26333125 | 12 | 285 |
| 15 | | | 44 | 44 | 0.23939205 | 11 | 296 |
| 16 | | | 44 | 44 | 0.21762914 | 10 | 305 |
| 17 | | | 44 | 44 | 0.19784467 | 9 | 314 |
| 18 | | | 44 | 44 | 0.17985879 | 8 | 322 |
| 19 | | | 44 | 44 | 0.16350799 | 7 | 329 |
| 20 | | | 44 | 44 | 0.14864363 | 7 | 336 |
| 21 | | | 44 | 44 | 0.13513057 | 6 | 342 |
| 22 | | | 44 | 44 | 0.12284597 | 5 | 347 |
| 23 | | | 44 | 44 | 0.11167816 | 5 | 352 |
| 24 | | | 44 | 44 | 0.10152560 | 4 | 357 |
| 25 | | | 44 | 44 | 0.09229600 | 4 | 361 |
| 26 | | | 44 | 44 | 0.08390545 | 4 | 365 |
| 27 | | | 44 | 44 | 0.07627768 | 3 | 368 |
| 28 | | | 44 | 44 | 0.06934335 | 3 | 371 |
| 29 | | | 44 | 44 | 0.06303941 | 3 | 374 |
| 30 | | | 44 | 44 | 0.05730855 | 3 | 376 |
| Total | 0 | 0 | 1,281 | 1,281 | | | 376 |

Evaluación Económica

Costo Económico : Dragado x 1.0 Tasa de Descuento = 10%

Caso C3

Unidad \$: x1000,000

| Año | Costo de Construcción Inicial | | Anual | Costo Total | Tasa de Descuento | Valor Actual | |
|--------------|-------------------------------|----------|---------------|--------------|-------------------|--------------|-------------|
| | Instalaciones | Dragado | Dragado Anual | | | | Acumulación |
| 1 | | | | 0 | 1.00000000 | 0 | 0 |
| 2 | | | 79 | 79 | 0.82644628 | 66 | 66 |
| 3 | | | 79 | 79 | 0.75131480 | 60 | 125 |
| 4 | | | 79 | 79 | 0.68301346 | 54 | 179 |
| 5 | | | 79 | 79 | 0.62092132 | 49 | 228 |
| 6 | | | 79 | 79 | 0.56447393 | 45 | 273 |
| 7 | | | 79 | 79 | 0.51315812 | 41 | 314 |
| 8 | | | 79 | 79 | 0.46650738 | 37 | 351 |
| 9 | | | 79 | 79 | 0.42409762 | 34 | 385 |
| 10 | | | 79 | 79 | 0.38554329 | 31 | 415 |
| 11 | | | 79 | 79 | 0.35049390 | 28 | 443 |
| 12 | | | 79 | 79 | 0.31863082 | 25 | 468 |
| 13 | | | 79 | 79 | 0.28966438 | 23 | 491 |
| 14 | | | 79 | 79 | 0.26333125 | 21 | 512 |
| 15 | | | 79 | 79 | 0.23939205 | 19 | 531 |
| 16 | | | 79 | 79 | 0.21762914 | 17 | 548 |
| 17 | | | 79 | 79 | 0.19784467 | 16 | 564 |
| 18 | | | 79 | 79 | 0.17985879 | 14 | 578 |
| 19 | | | 79 | 79 | 0.16350799 | 13 | 591 |
| 20 | | | 79 | 79 | 0.14864363 | 12 | 603 |
| 21 | | | 79 | 79 | 0.13513057 | 11 | 614 |
| 22 | | | 79 | 79 | 0.12284597 | 10 | 623 |
| 23 | | | 79 | 79 | 0.11167816 | 9 | 632 |
| 24 | | | 79 | 79 | 0.10152560 | 8 | 640 |
| 25 | | | 79 | 79 | 0.09229600 | 7 | 648 |
| 26 | | | 79 | 79 | 0.08390545 | 7 | 654 |
| 27 | | | 79 | 79 | 0.07627768 | 6 | 660 |
| 28 | | | 79 | 79 | 0.06934335 | 5 | 666 |
| 29 | | | 79 | 79 | 0.06303941 | 5 | 671 |
| 30 | | | 79 | 79 | 0.05730855 | 5 | 675 |
| Total | 0 | 0 | 2,300 | 2,300 | | | 675 |

Evaluación Económica

Costo Económico : Dragado x 1.0 Tasa de Descuento = 10%

Caso C4

Unidad \$: x1000,000

| Año | Costo de Construcción Inicial | | Anual | Costo Total | Tasa de Descuento | Valor Actual | |
|-------|-------------------------------|---------|---------------|-------------|-------------------|--------------|-------------|
| | Instalaciones | Dragado | Dragado Anual | | | | Acumulación |
| 1 | | | | 0 | 1.00000000 | 0 | 0 |
| 2 | | | 84 | 84 | 0.82644628 | 70 | 70 |
| 3 | | | 84 | 84 | 0.75131480 | 63 | 133 |
| 4 | | | 84 | 84 | 0.68301346 | 58 | 191 |
| 5 | | | 84 | 84 | 0.62092132 | 52 | 243 |
| 6 | | | 84 | 84 | 0.56447393 | 48 | 291 |
| 7 | | | 84 | 84 | 0.51315812 | 43 | 334 |
| 8 | | | 84 | 84 | 0.46650738 | 39 | 373 |
| 9 | | | 84 | 84 | 0.42409762 | 36 | 409 |
| 10 | | | 84 | 84 | 0.38554329 | 33 | 441 |
| 11 | | | 84 | 84 | 0.35049390 | 30 | 471 |
| 12 | | | 84 | 84 | 0.31863082 | 27 | 498 |
| 13 | | | 84 | 84 | 0.28966438 | 24 | 522 |
| 14 | | | 84 | 84 | 0.26333125 | 22 | 544 |
| 15 | | | 84 | 84 | 0.23939205 | 20 | 565 |
| 16 | | | 84 | 84 | 0.21762914 | 18 | 583 |
| 17 | | | 84 | 84 | 0.19784467 | 17 | 600 |
| 18 | | | 84 | 84 | 0.17985879 | 15 | 615 |
| 19 | | | 84 | 84 | 0.16350799 | 14 | 629 |
| 20 | | | 84 | 84 | 0.14864363 | 13 | 641 |
| 21 | | | 84 | 84 | 0.13513057 | 11 | 652 |
| 22 | | | 84 | 84 | 0.12284597 | 10 | 663 |
| 23 | | | 84 | 84 | 0.11167816 | 9 | 672 |
| 24 | | | 84 | 84 | 0.10152560 | 9 | 681 |
| 25 | | | 84 | 84 | 0.09229600 | 8 | 689 |
| 26 | | | 84 | 84 | 0.08390545 | 7 | 696 |
| 27 | | | 84 | 84 | 0.07627768 | 6 | 702 |
| 28 | | | 84 | 84 | 0.06934335 | 6 | 708 |
| 29 | | | 84 | 84 | 0.06303941 | 5 | 713 |
| 30 | | | 84 | 84 | 0.05730855 | 5 | 718 |
| Total | 0 | 0 | 2,445 | 2,445 | | | 718 |

Evaluación Económica

Costo Económico : Dragado x 1.0 Tasa de Descuento = 10%

Caso C5

Unidad \$: x1000,000

| Año | Costo de Construcción Inicial | | Anual | Costo Total | Tasa de Descuento | Valor Actual | |
|-------|-------------------------------|---------|---------------|-------------|-------------------|--------------|-------------|
| | Instalaciones | Dragado | Dragado Anual | | | | Acumulación |
| 1 | | | | 0 | 1.00000000 | 0 | 0 |
| 2 | | | 93 | 93 | 0.82644628 | 77 | 77 |
| 3 | | | 93 | 93 | 0.75131480 | 70 | 146 |
| 4 | | | 93 | 93 | 0.68301346 | 63 | 210 |
| 5 | | | 93 | 93 | 0.62092132 | 58 | 267 |
| 6 | | | 93 | 93 | 0.56447393 | 52 | 320 |
| 7 | | | 93 | 93 | 0.51315812 | 48 | 368 |
| 8 | | | 93 | 93 | 0.46650738 | 43 | 411 |
| 9 | | | 93 | 93 | 0.42409762 | 39 | 450 |
| 10 | | | 93 | 93 | 0.38554329 | 36 | 486 |
| 11 | | | 93 | 93 | 0.35049390 | 33 | 519 |
| 12 | | | 93 | 93 | 0.31863082 | 30 | 548 |
| 13 | | | 93 | 93 | 0.28966438 | 27 | 575 |
| 14 | | | 93 | 93 | 0.26333125 | 24 | 599 |
| 15 | | | 93 | 93 | 0.23939205 | 22 | 622 |
| 16 | | | 93 | 93 | 0.21762914 | 20 | 642 |
| 17 | | | 93 | 93 | 0.19784467 | 18 | 660 |
| 18 | | | 93 | 93 | 0.17985879 | 17 | 677 |
| 19 | | | 93 | 93 | 0.16350799 | 15 | 692 |
| 20 | | | 93 | 93 | 0.14864363 | 14 | 706 |
| 21 | | | 93 | 93 | 0.13513057 | 13 | 718 |
| 22 | | | 93 | 93 | 0.12284597 | 11 | 730 |
| 23 | | | 93 | 93 | 0.11167816 | 10 | 740 |
| 24 | | | 93 | 93 | 0.10152560 | 9 | 750 |
| 25 | | | 93 | 93 | 0.09229600 | 9 | 758 |
| 26 | | | 93 | 93 | 0.08390545 | 8 | 766 |
| 27 | | | 93 | 93 | 0.07627768 | 7 | 773 |
| 28 | | | 93 | 93 | 0.06934335 | 6 | 779 |
| 29 | | | 93 | 93 | 0.06303941 | 6 | 785 |
| 30 | | | 93 | 93 | 0.05730855 | 5 | 791 |
| Total | 0 | 0 | 2,692 | 2,692 | | | 791 |

Evaluación Económica

Costo Económico : Dragado x 1.0 Tasa de Descuento = 10%

Caso D1

Unidad \$: x1000,000

| Año | Costo de Construcción Inicial | | Anual | Costo Total | Tasa de Descuento | Valor Actual | |
|-------|-------------------------------|---------|---------------|-------------|-------------------|--------------|-------------|
| | Instalaciones | Dragado | Dragado Anual | | | | Acumulación |
| 1 | | | | 0 | 1.00000000 | 0 | 0 |
| 2 | | | 50 | 50 | 0.82644628 | 42 | 42 |
| 3 | | | 50 | 50 | 0.75131480 | 38 | 79 |
| 4 | | | 50 | 50 | 0.68301346 | 34 | 114 |
| 5 | | | 50 | 50 | 0.62092132 | 31 | 145 |
| 6 | | | 50 | 50 | 0.56447393 | 28 | 174 |
| 7 | | | 50 | 50 | 0.51315812 | 26 | 199 |
| 8 | | | 50 | 50 | 0.46650738 | 24 | 223 |
| 9 | | | 50 | 50 | 0.42409762 | 21 | 244 |
| 10 | | | 50 | 50 | 0.38554329 | 19 | 264 |
| 11 | | | 50 | 50 | 0.35049390 | 18 | 281 |
| 12 | | | 50 | 50 | 0.31863082 | 16 | 297 |
| 13 | | | 50 | 50 | 0.28966438 | 15 | 312 |
| 14 | | | 50 | 50 | 0.26333125 | 13 | 325 |
| 15 | | | 50 | 50 | 0.23939205 | 12 | 337 |
| 16 | | | 50 | 50 | 0.21762914 | 11 | 348 |
| 17 | | | 50 | 50 | 0.19784467 | 10 | 358 |
| 18 | | | 50 | 50 | 0.17985879 | 9 | 367 |
| 19 | | | 50 | 50 | 0.16350799 | 8 | 376 |
| 20 | | | 50 | 50 | 0.14864363 | 7 | 383 |
| 21 | | | 50 | 50 | 0.13513057 | 7 | 390 |
| 22 | | | 50 | 50 | 0.12284597 | 6 | 396 |
| 23 | | | 50 | 50 | 0.11167816 | 6 | 402 |
| 24 | | | 50 | 50 | 0.10152560 | 5 | 407 |
| 25 | | | 50 | 50 | 0.09229600 | 5 | 412 |
| 26 | | | 50 | 50 | 0.08390545 | 4 | 416 |
| 27 | | | 50 | 50 | 0.07627768 | 4 | 420 |
| 28 | | | 50 | 50 | 0.06934335 | 3 | 423 |
| 29 | | | 50 | 50 | 0.06303941 | 3 | 426 |
| 30 | | | 50 | 50 | 0.05730855 | 3 | 429 |
| Total | 0 | 0 | 1,461 | 1,461 | | | 429 |

Evaluación Económica

Costo Económico : Dragado x 1.0 Tasa de Descuento = 10%

Caso D2

Unidad \$: x1000,000

| Año | Costo de Construcción Inicial | | Anual | Costo Total | Tasa de Descuento | Valor Actual | |
|--------------|-------------------------------|---------|---------------|-------------|-------------------|--------------|-------------|
| | Instalaciones | Dragado | Dragado Anual | | | | Acumulación |
| 1 | | | | 0 | 1.00000000 | 0 | 0 |
| 2 | | | 80 | 80 | 0.82644628 | 67 | 67 |
| 3 | | | 80 | 80 | 0.75131480 | 60 | 127 |
| 4 | | | 80 | 80 | 0.68301346 | 55 | 182 |
| 5 | | | 80 | 80 | 0.62092132 | 50 | 232 |
| 6 | | | 80 | 80 | 0.56447393 | 45 | 277 |
| 7 | | | 80 | 80 | 0.51315812 | 41 | 319 |
| 8 | | | 80 | 80 | 0.46650738 | 38 | 356 |
| 9 | | | 80 | 80 | 0.42409762 | 34 | 390 |
| 10 | | | 80 | 80 | 0.38554329 | 31 | 421 |
| 11 | | | 80 | 80 | 0.35049390 | 28 | 450 |
| 12 | | | 80 | 80 | 0.31863082 | 26 | 475 |
| 13 | | | 80 | 80 | 0.28966438 | 23 | 498 |
| 14 | | | 80 | 80 | 0.26333125 | 21 | 520 |
| 15 | | | 80 | 80 | 0.23939205 | 19 | 539 |
| 16 | | | 80 | 80 | 0.21762914 | 18 | 556 |
| 17 | | | 80 | 80 | 0.19784467 | 16 | 572 |
| 18 | | | 80 | 80 | 0.17985879 | 14 | 587 |
| 19 | | | 80 | 80 | 0.16350799 | 13 | 600 |
| 20 | | | 80 | 80 | 0.14864363 | 12 | 612 |
| 21 | | | 80 | 80 | 0.13513057 | 11 | 623 |
| 22 | | | 80 | 80 | 0.12284597 | 10 | 633 |
| 23 | | | 80 | 80 | 0.11167816 | 9 | 642 |
| 24 | | | 80 | 80 | 0.10152560 | 8 | 650 |
| 25 | | | 80 | 80 | 0.09229600 | 7 | 657 |
| 26 | | | 80 | 80 | 0.08390545 | 7 | 664 |
| 27 | | | 80 | 80 | 0.07627768 | 6 | 670 |
| 28 | | | 80 | 80 | 0.06934335 | 6 | 676 |
| 29 | | | 80 | 80 | 0.06303941 | 5 | 681 |
| 30 | | | 80 | 80 | 0.05730855 | 5 | 685 |
| Total | 0 | 0 | 2,334 | 2,334 | | | 685 |

Evaluación Económica

Costo Económico : Dragado x 1.0 Tasa de Descuento = 10%

Caso D3

Unidad \$: x1000,000

| Año | Costo de Construcción Inicial | | Anual | Costo Total | Tasa de Descuento | Valor Actual | |
|--------------|-------------------------------|---------|---------------|-------------|-------------------|--------------|-------------|
| | Instalaciones | Dragado | Dragado Anual | | | | Acumulación |
| 1 | | | | 0 | 1.00000000 | 0 | 0 |
| 2 | | | 55 | 55 | 0.82644628 | 46 | 46 |
| 3 | | | 55 | 55 | 0.75131480 | 41 | 87 |
| 4 | | | 55 | 55 | 0.68301346 | 38 | 125 |
| 5 | | | 55 | 55 | 0.62092132 | 34 | 159 |
| 6 | | | 55 | 55 | 0.56447393 | 31 | 190 |
| 7 | | | 55 | 55 | 0.51315812 | 28 | 218 |
| 8 | | | 55 | 55 | 0.46650738 | 26 | 244 |
| 9 | | | 55 | 55 | 0.42409762 | 23 | 268 |
| 10 | | | 55 | 55 | 0.38554329 | 21 | 289 |
| 11 | | | 55 | 55 | 0.35049390 | 19 | 308 |
| 12 | | | 55 | 55 | 0.31863082 | 18 | 326 |
| 13 | | | 55 | 55 | 0.28966438 | 16 | 342 |
| 14 | | | 55 | 55 | 0.26333125 | 15 | 356 |
| 15 | | | 55 | 55 | 0.23939205 | 13 | 369 |
| 16 | | | 55 | 55 | 0.21762914 | 12 | 382 |
| 17 | | | 55 | 55 | 0.19784467 | 11 | 392 |
| 18 | | | 55 | 55 | 0.17985879 | 10 | 402 |
| 19 | | | 55 | 55 | 0.16350799 | 9 | 411 |
| 20 | | | 55 | 55 | 0.14864363 | 8 | 420 |
| 21 | | | 55 | 55 | 0.13513057 | 7 | 427 |
| 22 | | | 55 | 55 | 0.12284597 | 7 | 434 |
| 23 | | | 55 | 55 | 0.11167816 | 6 | 440 |
| 24 | | | 55 | 55 | 0.10152560 | 6 | 446 |
| 25 | | | 55 | 55 | 0.09229600 | 5 | 451 |
| 26 | | | 55 | 55 | 0.08390545 | 5 | 455 |
| 27 | | | 55 | 55 | 0.07627768 | 4 | 459 |
| 28 | | | 55 | 55 | 0.06934335 | 4 | 463 |
| 29 | | | 55 | 55 | 0.06303941 | 3 | 467 |
| 30 | | | 55 | 55 | 0.05730855 | 3 | 470 |
| Total | 0 | 0 | 1,600 | 1,600 | | | 470 |

Evaluación Económica

Costo Económico : Dragado x 1.0 Tasa de Descuento = 10%

Caso D4

Unidad \$: x1000,000

| Año | Costo de Construcción Inicial | | Anual | Costo Total | Tasa de Descuento | Valor Actual | |
|--------------|-------------------------------|----------|---------------|--------------|-------------------|--------------|-------------|
| | Instalaciones | Dragado | Dragado Anual | | | | Acumulación |
| 1 | | | | 0 | 1.00000000 | 0 | 0 |
| 2 | | | 64 | 64 | 0.82644628 | 53 | 53 |
| 3 | | | 64 | 64 | 0.75131480 | 48 | 100 |
| 4 | | | 64 | 64 | 0.68301346 | 44 | 144 |
| 5 | | | 64 | 64 | 0.62092132 | 40 | 184 |
| 6 | | | 64 | 64 | 0.56447393 | 36 | 219 |
| 7 | | | 64 | 64 | 0.51315812 | 33 | 252 |
| 8 | | | 64 | 64 | 0.46650738 | 30 | 282 |
| 9 | | | 64 | 64 | 0.42409762 | 27 | 309 |
| 10 | | | 64 | 64 | 0.38554329 | 25 | 333 |
| 11 | | | 64 | 64 | 0.35049390 | 22 | 356 |
| 12 | | | 64 | 64 | 0.31863082 | 20 | 376 |
| 13 | | | 64 | 64 | 0.28966438 | 18 | 395 |
| 14 | | | 64 | 64 | 0.26333125 | 17 | 411 |
| 15 | | | 64 | 64 | 0.23939205 | 15 | 427 |
| 16 | | | 64 | 64 | 0.21762914 | 14 | 440 |
| 17 | | | 64 | 64 | 0.19784467 | 13 | 453 |
| 18 | | | 64 | 64 | 0.17985879 | 11 | 464 |
| 19 | | | 64 | 64 | 0.16350799 | 10 | 475 |
| 20 | | | 64 | 64 | 0.14864363 | 9 | 484 |
| 21 | | | 64 | 64 | 0.13513057 | 9 | 493 |
| 22 | | | 64 | 64 | 0.12284597 | 8 | 501 |
| 23 | | | 64 | 64 | 0.11167816 | 7 | 508 |
| 24 | | | 64 | 64 | 0.10152560 | 6 | 514 |
| 25 | | | 64 | 64 | 0.09229600 | 6 | 520 |
| 26 | | | 64 | 64 | 0.08390545 | 5 | 526 |
| 27 | | | 64 | 64 | 0.07627768 | 5 | 530 |
| 28 | | | 64 | 64 | 0.06934335 | 4 | 535 |
| 29 | | | 64 | 64 | 0.06303941 | 4 | 539 |
| 30 | | | 64 | 64 | 0.05730855 | 4 | 543 |
| Total | 0 | 0 | 1,847 | 1,847 | | | 543 |

Tabla 5.4.17 Costo Económico para el Costo de Envío

Case P1 Discount Rate=10%

Unit \$: x1000

| Year | Forecast | Cost | Discount Rate | Present Value | |
|-------|----------|---------|---------------|---------------|--------------|
| | 1,000ton | | | | Accumulation |
| 1 | 9,320 | 20,841 | 1.00000000 | 20,841 | 20,841 |
| 2 | 9,320 | 20,841 | 0.82644628 | 17,224 | 38,065 |
| 3 | 7,420 | 16,592 | 0.75131480 | 12,466 | 50,531 |
| 4 | 6,783 | 15,168 | 0.68301346 | 10,360 | 60,891 |
| 5 | 5,436 | 12,156 | 0.62092132 | 7,548 | 68,438 |
| 6 | 4,718 | 10,550 | 0.56447393 | 5,955 | 74,394 |
| 7 | 4,000 | 8,945 | 0.51315812 | 4,590 | 78,984 |
| 8 | 4,000 | 8,945 | 0.46650738 | 4,173 | 83,157 |
| 9 | 4,000 | 8,945 | 0.42409762 | 3,793 | 86,950 |
| 10 | 4,000 | 8,945 | 0.38554329 | 3,449 | 90,398 |
| 11 | 4,000 | 8,945 | 0.35049390 | 3,135 | 93,533 |
| 12 | 4,000 | 8,945 | 0.31863082 | 2,850 | 96,383 |
| 13 | 4,000 | 8,945 | 0.28966438 | 2,591 | 98,974 |
| 14 | 4,000 | 8,945 | 0.26333125 | 2,355 | 101,330 |
| 15 | 4,000 | 8,945 | 0.23939205 | 2,141 | 103,471 |
| 16 | 4,000 | 8,945 | 0.21762914 | 1,947 | 105,418 |
| 17 | 4,000 | 8,945 | 0.19784467 | 1,770 | 107,187 |
| 18 | 4,000 | 8,945 | 0.17985879 | 1,609 | 108,796 |
| 19 | 4,000 | 8,945 | 0.16350799 | 1,463 | 110,259 |
| 20 | 4,000 | 8,945 | 0.14864363 | 1,330 | 111,588 |
| 21 | 4,000 | 8,945 | 0.13513057 | 1,209 | 112,797 |
| 22 | 4,000 | 8,945 | 0.12284597 | 1,099 | 113,896 |
| 23 | 4,000 | 8,945 | 0.11167816 | 999 | 114,895 |
| 24 | 4,000 | 8,945 | 0.10152560 | 908 | 115,803 |
| 25 | 4,000 | 8,945 | 0.09229600 | 826 | 116,628 |
| 26 | 4,000 | 8,945 | 0.08390545 | 751 | 117,379 |
| 27 | 4,000 | 8,945 | 0.07627768 | 682 | 118,061 |
| 28 | 4,000 | 8,945 | 0.06934335 | 620 | 118,681 |
| 29 | 4,000 | 8,945 | 0.06303941 | 564 | 119,245 |
| 30 | 4,000 | 8,945 | 0.05730855 | 513 | 119,758 |
| Total | | 310,819 | | | 119,758 |