

Appendix D

Surface Water Quality and Partial Flow Data
for the Glade Run Watershed
June 1982 - April 1984

Source: Department of Environmental Resources

TABLE

DER Flow Measurements in Gallons Per Minute
From February 1983 to April 1984
on Big Piney Creek and Hillen Run

| Station | 1983 | | | | | | | | | | | | 1984 | | | | | | | |
|---------|------|------|------|------|------|------|-----|------|-----|------|-----|------|------|------|------|------|------|-----|-----|-----|
| | FEB | MAR | APR | MAY | JUN | JUL | AUG | NOV | DEC | FEB | MAR | APR | | | | | | | | |
| BP-83 | 1034 | 902 | 1522 | 986 | NM | 2241 | 172 | 33 | 82 | 2111 | 365 | 1140 | 1661 | 3143 | 1534 | | | | | |
| BP-84 | 159 | 136 | 175 | 68 | NM | 162 | 61 | 59 | 20 | 20 | 27 | 14 | 14 | 6 | 15 | 13 | 269 | 309 | 524 | 143 |
| BP-85 | 532 | 458 | 870 | 514 | NM | 1055 | 450 | 160 | 102 | 48 | 50 | 1140 | 442 | 726 | 837 | 1850 | 614 | | | |
| HR-89 | 407 | 312 | 541 | 340 | 1130 | 595 | 261 | 238 | 63 | 9 | 44 | 947 | 372 | 521 | 787 | 1423 | 1045 | | | |
| HR-90 | 266 | 200 | 286 | 263 | 934 | 698 | 101 | 133 | 68 | 16 | 16 | 484 | 247 | 276 | 280 | 789 | 817 | | | |
| HR-91 | 1707 | 1048 | 1803 | 1466 | NM | 1236 | NM | 2269 | 375 | 21 | 155 | 2123 | 668 | 1719 | 1979 | 4052 | 4000 | | | |

NOTE: Flow was too low to be measured at the above six sites during September and October, 1983; no flow data are available for January, 1984 due to ice cover.

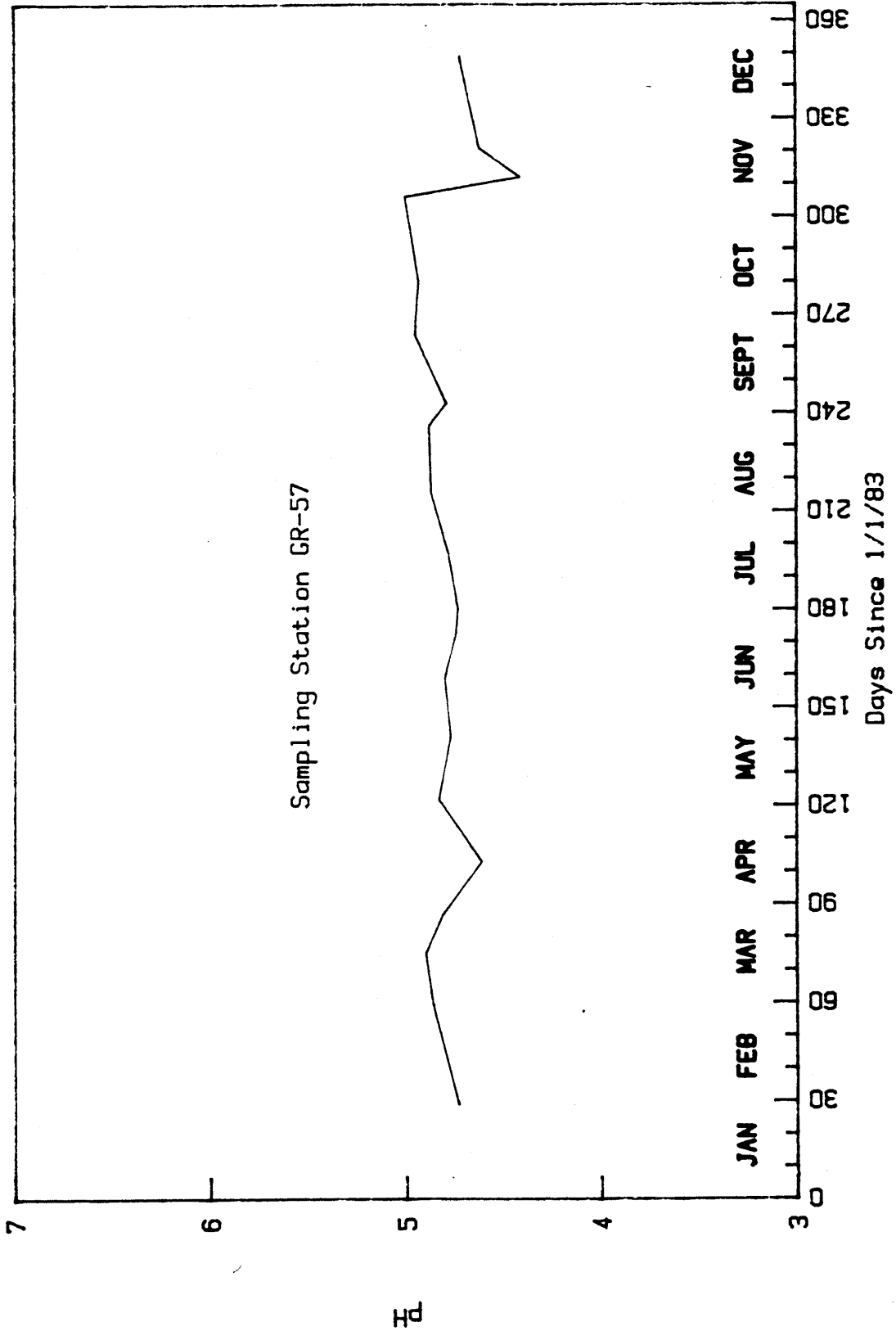
NM = Not Measured

GLADE RUN HEADWATERS
Cross T-788

Sampling Station GR-57

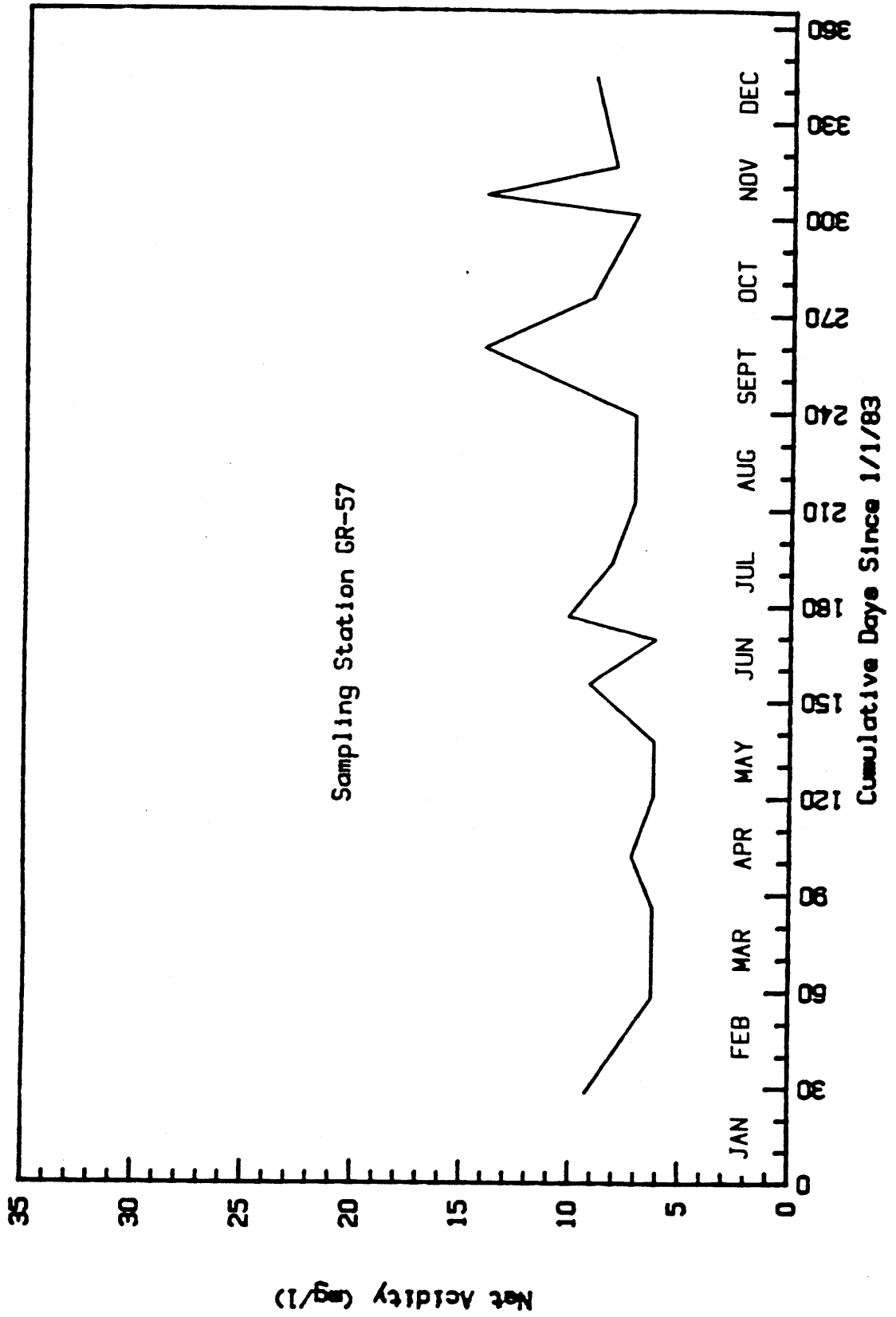
| Sampling Date | pH | Acidity mg/l | Alkalinity mg/l | Sulfates mg/l | Iron, mg/l | |
|---------------|--------------|-----------------|--------------------|------------------|------------|---------|
| | | | | | Total | Ferrous |
| 6/11/82 | 4.92 | 8 | 4 | 28 | 0.2 | 0.2 |
| 7/22/82 | 4.80 | 6 | 1 | 21 | 0.3 | 0 |
| 10/5/82 | 4.88 | 6 | 2 | 19 | 0.5 | 0.2 |
| 10/23/82 | 4.86 | 4 | 1 | 21 | 0 | 0 |
| 11/20/82 | 4.80 | 7 | 1 | 58 | 0.2 | 0 |
| 1/29/83 | 4.73 | 10 | 1 | 23 | 0.1 | 0 |
| 2/28-3/1/83 | 4.86 | 7 | 1 | 19 | 0.1 | 0 |
| 3/16-18/83 | 4.90 | 8 | 2 | 23 | 0.1 | 0 |
| 3/28-29/83 | 4.81 | 7 | 1 | 24 | 0.1 | 0 |
| 4/13-14/83 | 4.61 | 8 | 1 | 23 | 0.2 | 0 |
| 5/2-3/83 | 4.83 | 7 | 1 | 26 | 0.2 | 0 |
| 5/19/83 | 4.77 | 7 | 1 | 20 | 0.1 | 0 |
| 6/6-7/83 | 4.80 | 10 | 1 | 21 | 0.1 | 0 |
| 6/20-21/83 | 4.74 | 7 | 1 | 20 | 0.2 | 0 |
| 6/27/83 | 4.73 | 11 | 1 | 29 | 0.4 | 0.4 |
| 7/14/83 | 4.78 | 9 | 1 | 21 | 0.5 | 0.2 |
| 8/2/83 | 4.79 | 8 | 1 | 16 | 0.2 | 0 |
| 8/22-23/83 | 4.87 | 8 | 1 | 20 | 0.3 | 0 |
| 8/29-30/83 | 4.88 | 8 | 1 | 20 | 0.3 | 0.2 |
| 9/19/83 | 4.95 | 15 | 1 | 31 | 0.4 | 0.2 |
| 10/5-6/83 | 4.93 | 10 | 1 | 24 | 0.9 | 0.2 |
| 10/31/83 | 5.00 | 9 | 2 | 29 | 0.2 | 0 |
| 11/6/83 | 4.41 | 14 | 0 | 40 | 0.3 | 0.1 |
| 11/15/83 | 4.62 | 9 | 1 | 23 | 0.1 | 0 |
| 12/13-14/83 | 4.72 | 10 | 1 | 40 | 0.1 | 0 |
| 1/11/84 | 4.77 | 9 | 1 | 17 | 0 | 0 |
| 1/19-20/84 | INACCESSIBLE | | | | | |
| 2/8/84 | 4.81 | 9 | 1 | 20 | 0 | 0 |
| 2/16/84 | 4.72 | 10 | 2 | 20 | 0.1 | 0 |
| 3/6/84 | 4.73 | 11 | 1 | 20 | 0 | 0 |
| 4/3/84 | 4.75 | 8 | 1 | 18 | 0.1 | 0 |

Mashudda Strip Mine Project

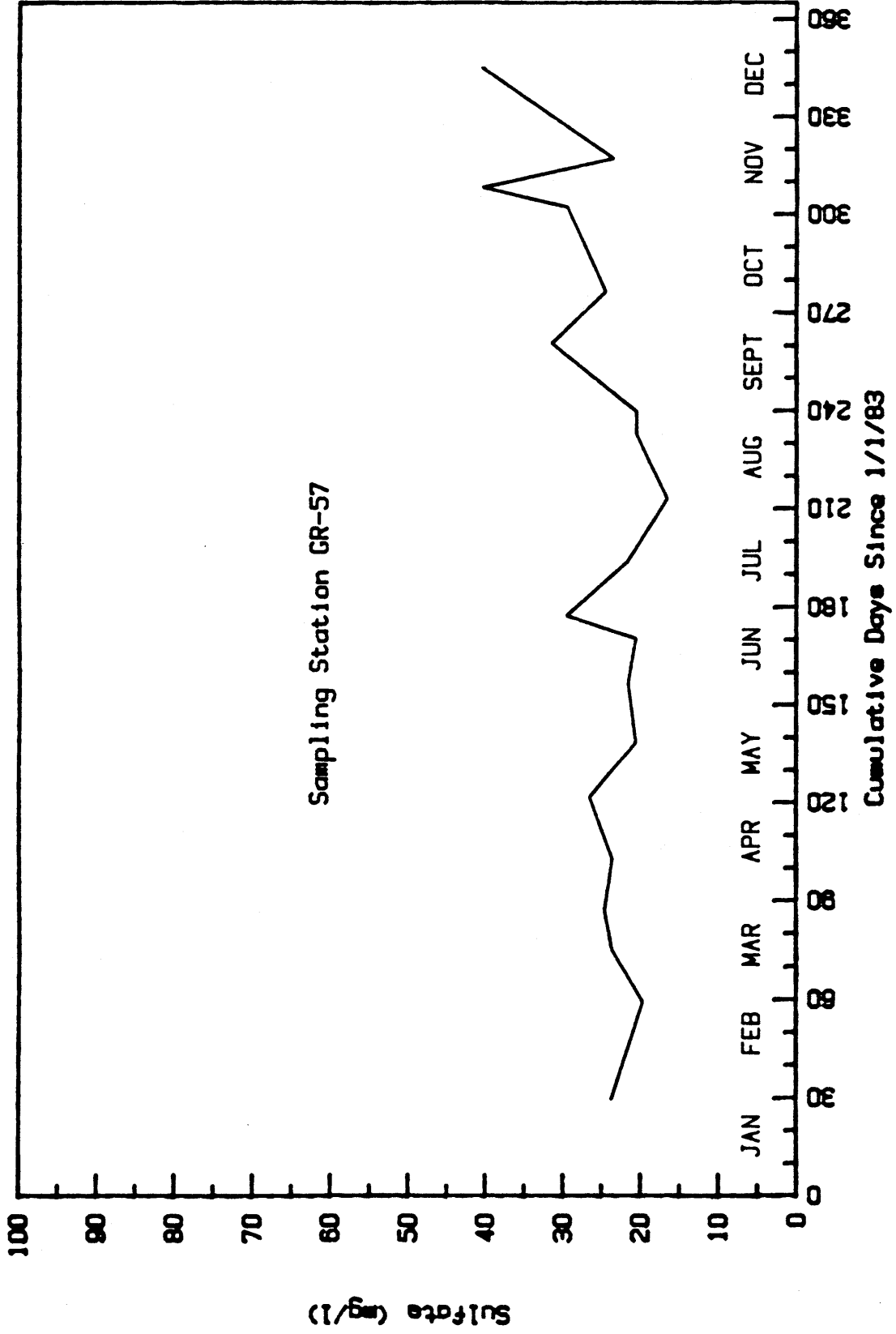


r. e. wright associates, inc.

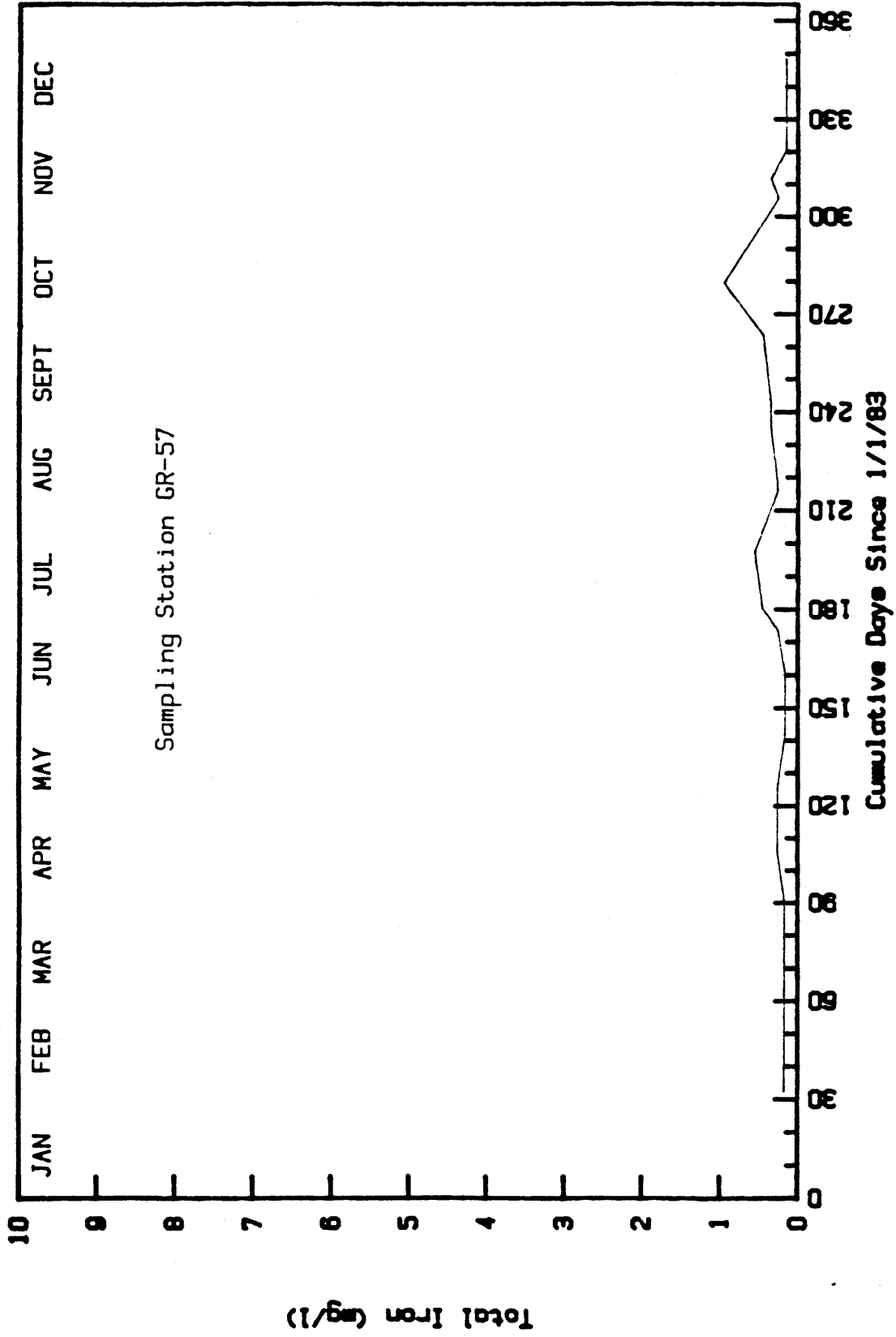
Mashudda Strip Mine Project



Mashudda Strip Mine Project



MASHUDDA STRIP MINE PROJECT

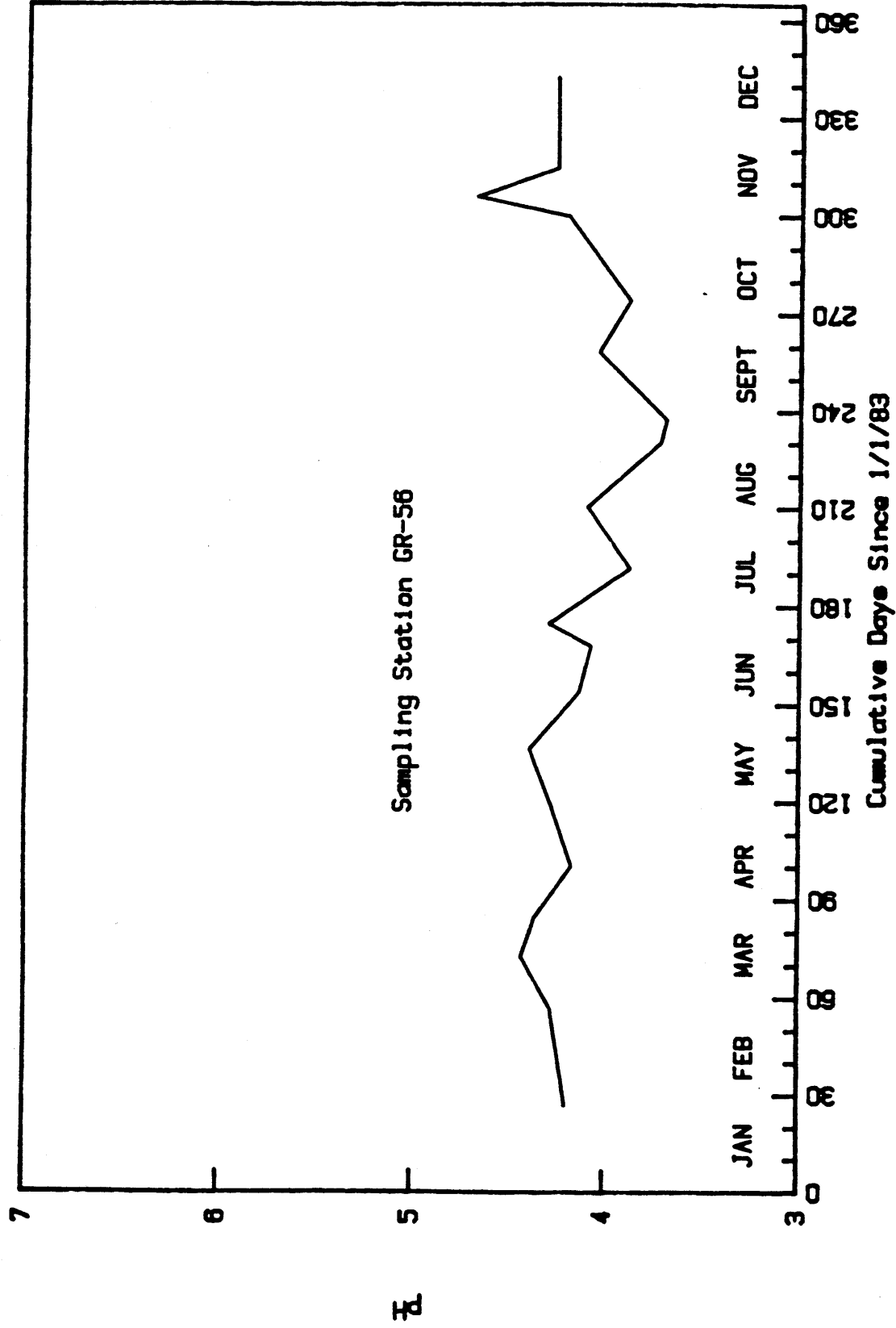


GLADE RUN
at Road Bridge Near Headwaters

Sample Station GR-56

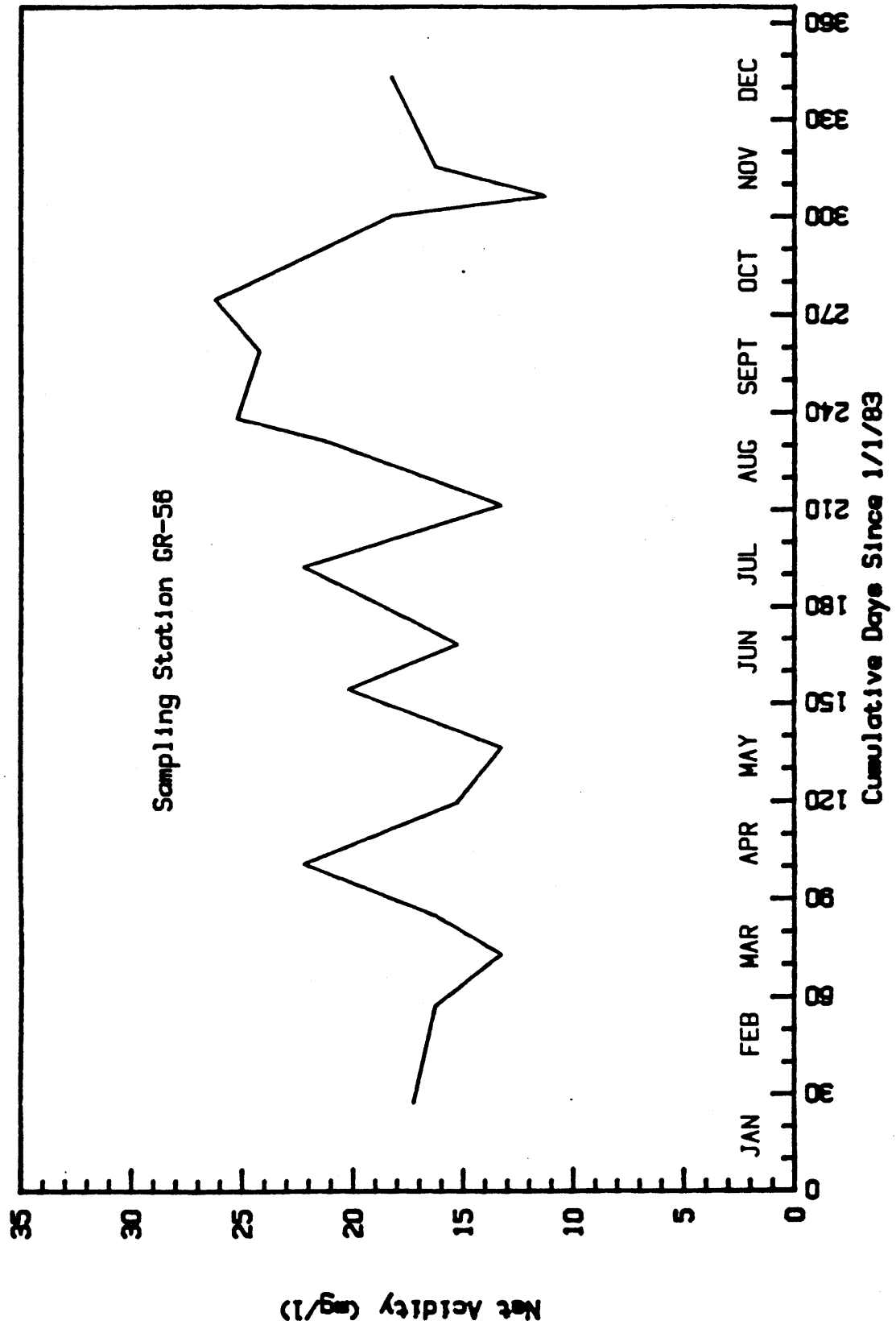
| Sampling Date | pH | Acidity mg/l | Alkalinity mg/l | Sulfates mg/l | Iron, mg/l | |
|------------------|------|-----------------|--------------------|------------------|------------|---------|
| | | | | | Total | Ferrous |
| 6/11/82 | 4.30 | 14 | 0 | 44 | 0.9 | 0.6 |
| 7/22/82 | 3.77 | 21 | 0 | 91 | 2.3 | 1.8 |
| 10/5/82 | 3.88 | 19 | 0 | 81 | 2.3 | 1.1 |
| 10/23/82 | 3.96 | 16 | 0 | 30 | 1.9 | 1.7 |
| 11/20/82 | 4.10 | 18 | 0 | 23 | 0.8 | 0.5 |
| 1/29/83 | 4.19 | 17 | 0 | 78 | 1.0 | 0.6 |
| 2/28-3/1/83 | 4.27 | 16 | 0 | 49 | 0.7 | 0.3 |
| 3/16-18/83 | 4.42 | 13 | 0 | 72 | 0.6 | 0.4 |
| 3/28-29/83 | 4.35 | 16 | 0 | 68 | 0.4 | 0.1 |
| 4/13-14/83 | 4.16 | 22 | 0 | 78 | 0.7 | 0.2 |
| 5/2-3/83 | 4.27 | 15 | 0 | 54 | 0.6 | 0.2 |
| 5/19/83 | 4.38 | 13 | 0 | 60 | 1.0 | 0.3 |
| 6/6-7/83 | 4.12 | 20 | 0 | 82 | 0.7 | 0.3 |
| 6/20-21/83 | 4.06 | 15 | 0 | 70 | 1.1 | 0.7 |
| 6/27/83 | 4.28 | 17 | 0 | 49 | 3.2 | 1.4 |
| 7/14/83 | 3.86 | 22 | 0 | 89 | 3.3 | 1.8 |
| 8/2/83 | 4.08 | 13 | 0 | 65 | 1.3 | 0.9 |
| 8/22-23/83 | 3.70 | 21 | 0 | 91 | 2.5 | 1.9 |
| 8/29-30/83 | 3.67 | 25 | 0 | 62 | 3.5 | 2.1 |
| 9/19/83 | 4.02 | 24 | 0 | 101 | 2.2 | 0.9 |
| 10/5-6/83 | 3.86 | 26 | 0 | 88 | 2.1 | 0.9 |
| 10/31/83 | 4.18 | 18 | 0 | 69 | 1.1 | 0.3 |
| 11/6/83 | 4.66 | 12 | 1 | 21 | 0.2 | 0 |
| 11/15/83 | 4.24 | 16 | 0 | 58 | 0.5 | 0.2 |
| 12/13-14/83 | 4.24 | 18 | 0 | 70 | 0.4 | 0.2 |
| 1/11/84 | 4.17 | 23 | 0 | 64 | 0.8 | 0.3 |
| 1/19-20/84 | 4.17 | 24 | 0 | 98 | 0.7 | 0.3 |
| 2/8/84 | 4.30 | 17 | 0 | 59 | 2.2 | 0.4 |
| 2/16/84 | 4.42 | 17 | 0 | 32 | 0.2 | 0 |
| 3/6/84 | 4.26 | 18 | 0 | 34 | 0.4 | 0 |
| 4/3/84 | 4.33 | 14 | 0 | 45 | 0.3 | 0.1 |

Mashudda Strip Mine Project

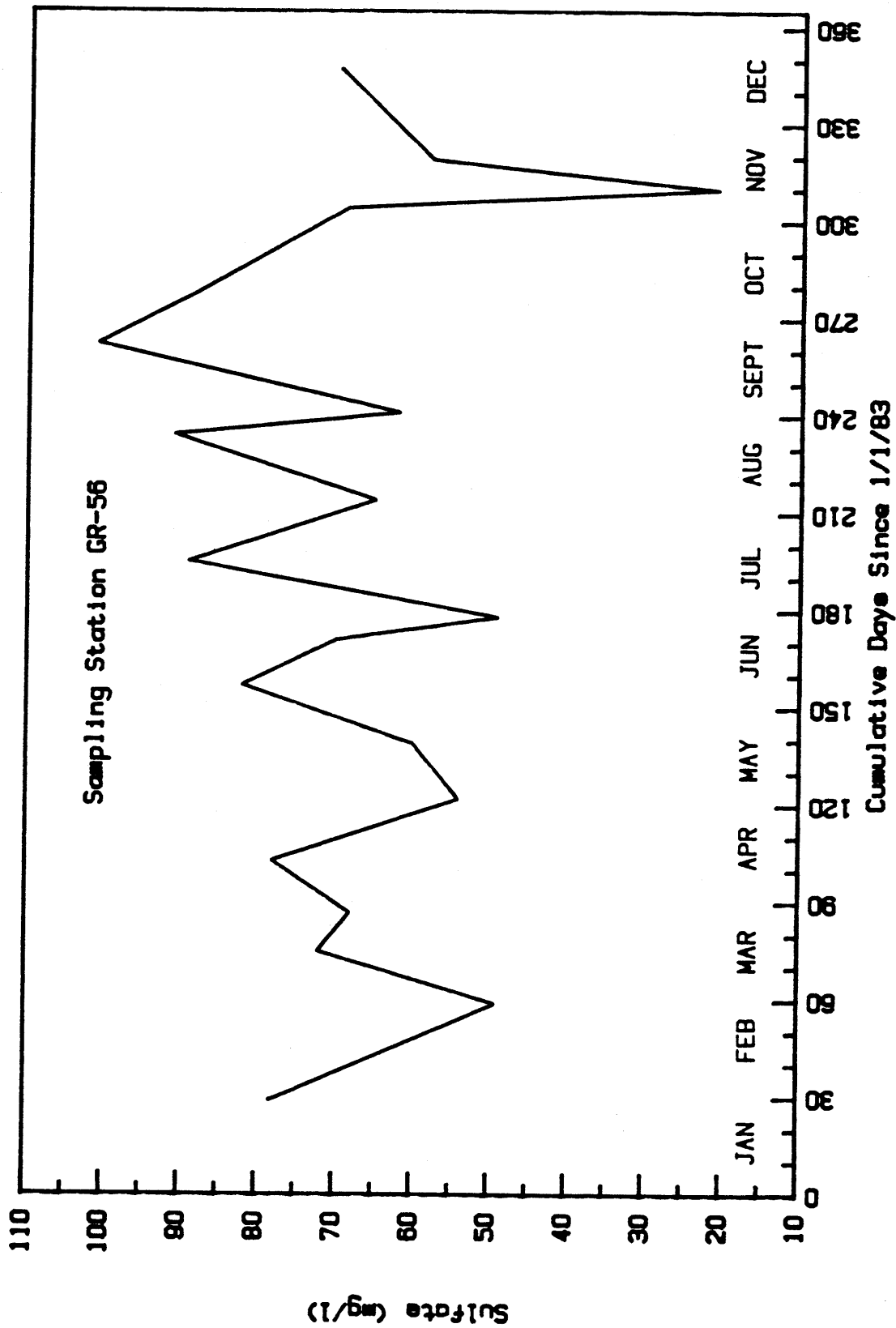


r.e. wright associates, inc.

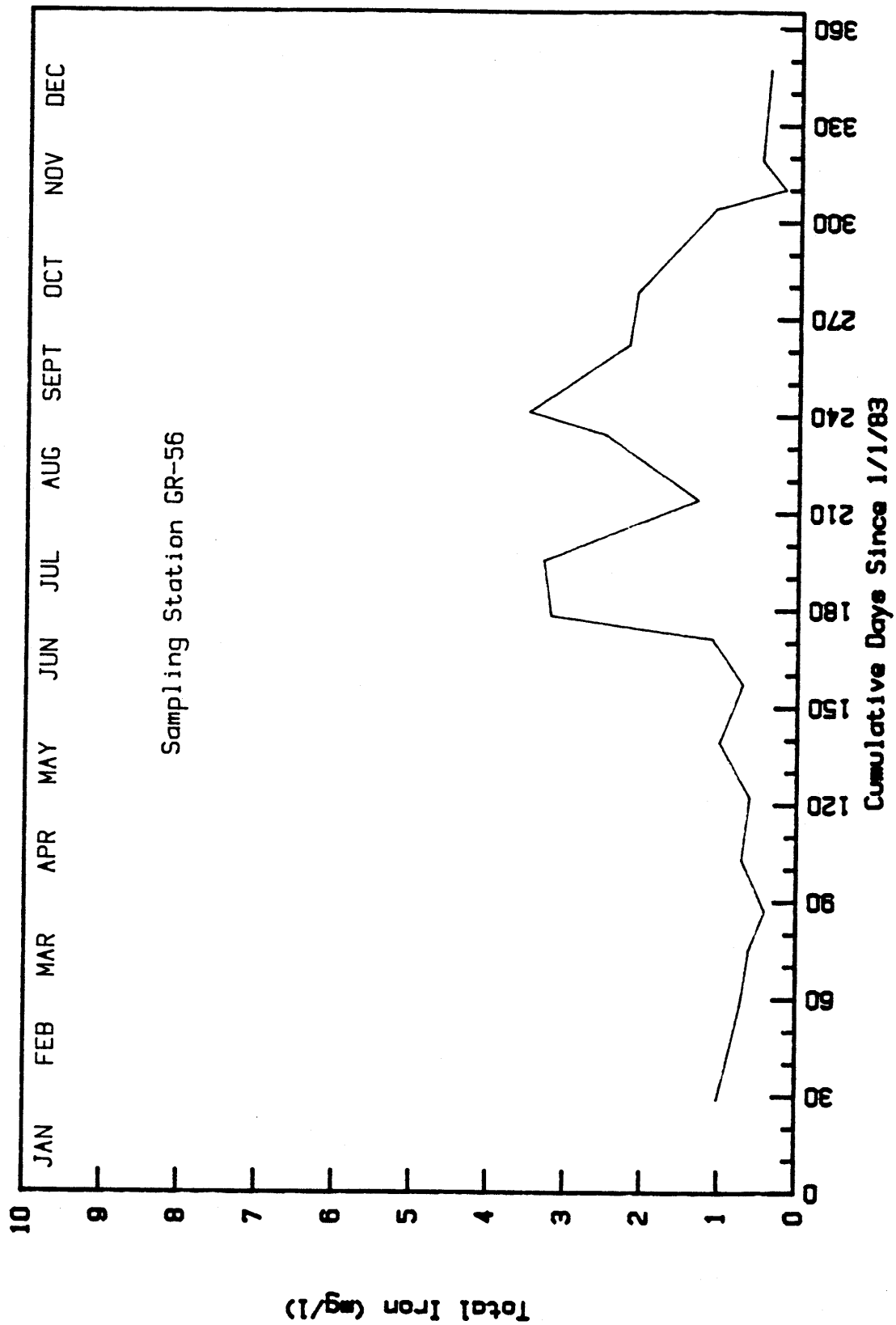
Mashudda Strip Mine Project



Mashudda Strip Mine Project



MASHUDDA STRIP MINE PROJECT

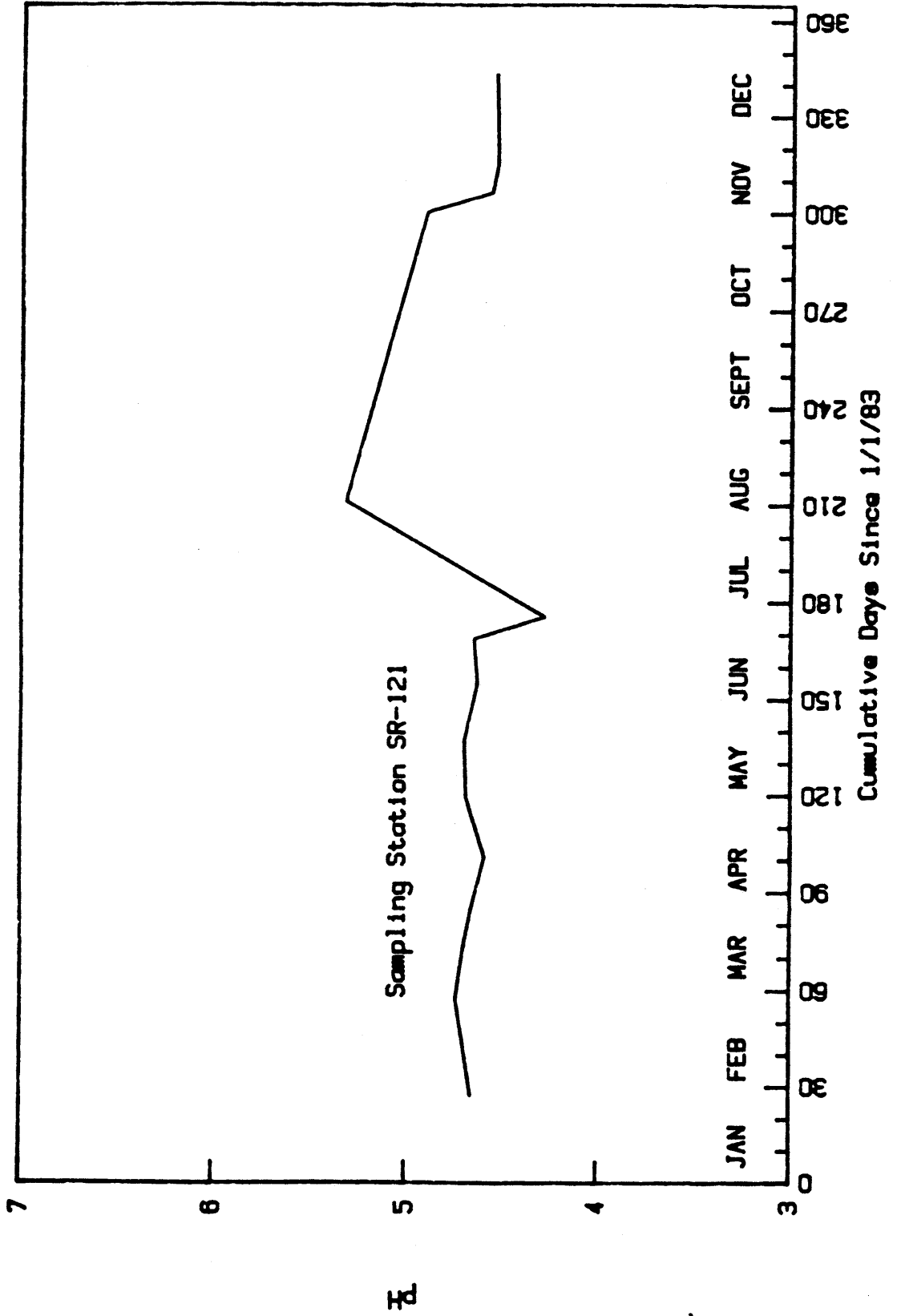


SCOTT'S RUN
Upstream from Mouth at Jeep Trail

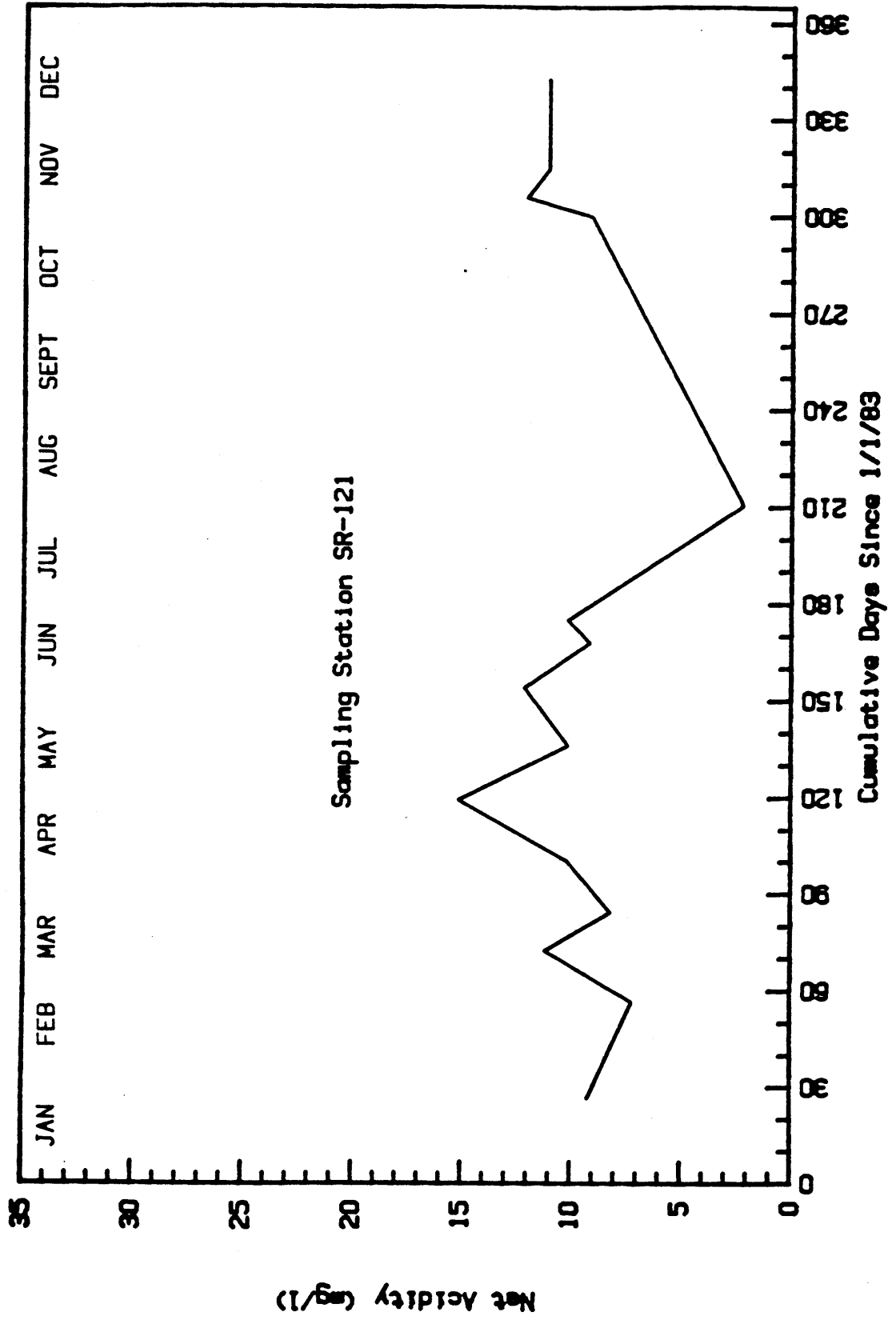
Sampling Station SR-121

| Sampling Date | pH | Acidity mg/l | Alkalinity mg/l | Sulfates mg/l | Iron, mg/l | |
|---------------|-------------------------|-----------------|--------------------|------------------|------------|---------|
| | | | | | Total | Ferrous |
| 6/11/82 | 4.65 | 11 | 3 | 21 | 0.4 | 0.4 |
| 7/22/82 | 6.05 | 5 | 4 | 21 | 2.5 | 1.1 |
| 10/5/82 | 5.42 | 3 | 4 | 21 | 3.4 | 2.6 |
| 10/23/82 | 5.13 | 6 | 2 | 13 | 1.5 | 0.1 |
| 11/20/82 | 4.67 | 12 | 1 | 27 | 0.6 | 0.4 |
| 1/29/83 | 4.65 | 10 | 1 | 31 | 0.2 | 0.1 |
| 2/28-3/1/83 | 4.73 | 8 | 1 | 19 | 0.1 | 0 |
| 3/16-18/83 | 4.69 | 11 | 0 | 27 | 0.2 | 0.1 |
| 3/28-29/83 | 4.65 | 9 | 1 | 28 | 0.1 | 0 |
| 4/13-14/83 | 4.58 | 11 | 1 | 22 | 0.2 | 0.1 |
| 5/2-3/83 | 4.68 | 16 | 1 | 23 | 0.3 | 0.1 |
| 5/19/83 | 4.69 | 11 | 1 | 20 | 0.4 | 0.1 |
| 6/6-7/83 | 4.62 | 13 | 1 | 45 | 0.4 | 0.1 |
| 6/20-21/83 | 4.64 | 10 | 1 | 21 | 0.5 | 0 |
| 6/27/83 | 4.27 | 11 | 1 | 23 | 1.3 | 0.5 |
| 7/14/83 | DRY | | | | | |
| 8/2/83 | 5.31 | 4 | 2 | 15 | 0.7 | 0.2 |
| 8/22-23/83 | DRY | | | | | |
| 8/29-30/83 | NO FLOW - STAGNANT POND | | | | | |
| 10/5-6/83 | NO FLOW - STAGNANT POND | | | | | |
| 10/31/83 | 4.89 | 11 | 2 | 35 | 0.6 | 0.1 |
| 11/6/83 | 4.55 | 13 | 1 | 24 | 0.2 | 0.1 |
| 11/15/83 | 4.52 | 12 | 1 | 33 | 0.2 | 0 |
| 12/13-14/83 | 4.53 | 12 | 1 | 27 | 0.2 | 0 |
| 1/11/84 | 4.69 | 12 | 1 | 21 | 0 | 0 |
| 1/19-20/84 | 4.59 | 14 | 1 | 20 | 0.2 | 0.1 |
| 2/8/84 | 4.58 | 12 | 0 | 17 | 0.2 | 0 |
| 2/16/84 | 4.56 | 14 | 1 | 21 | 0 | 0 |
| 3/6/84 | 4.57 | 13 | 1 | 20 | 0.2 | 0 |
| 4/3/84 | 4.64 | 8 | 1 | 16 | 0 | 0 |

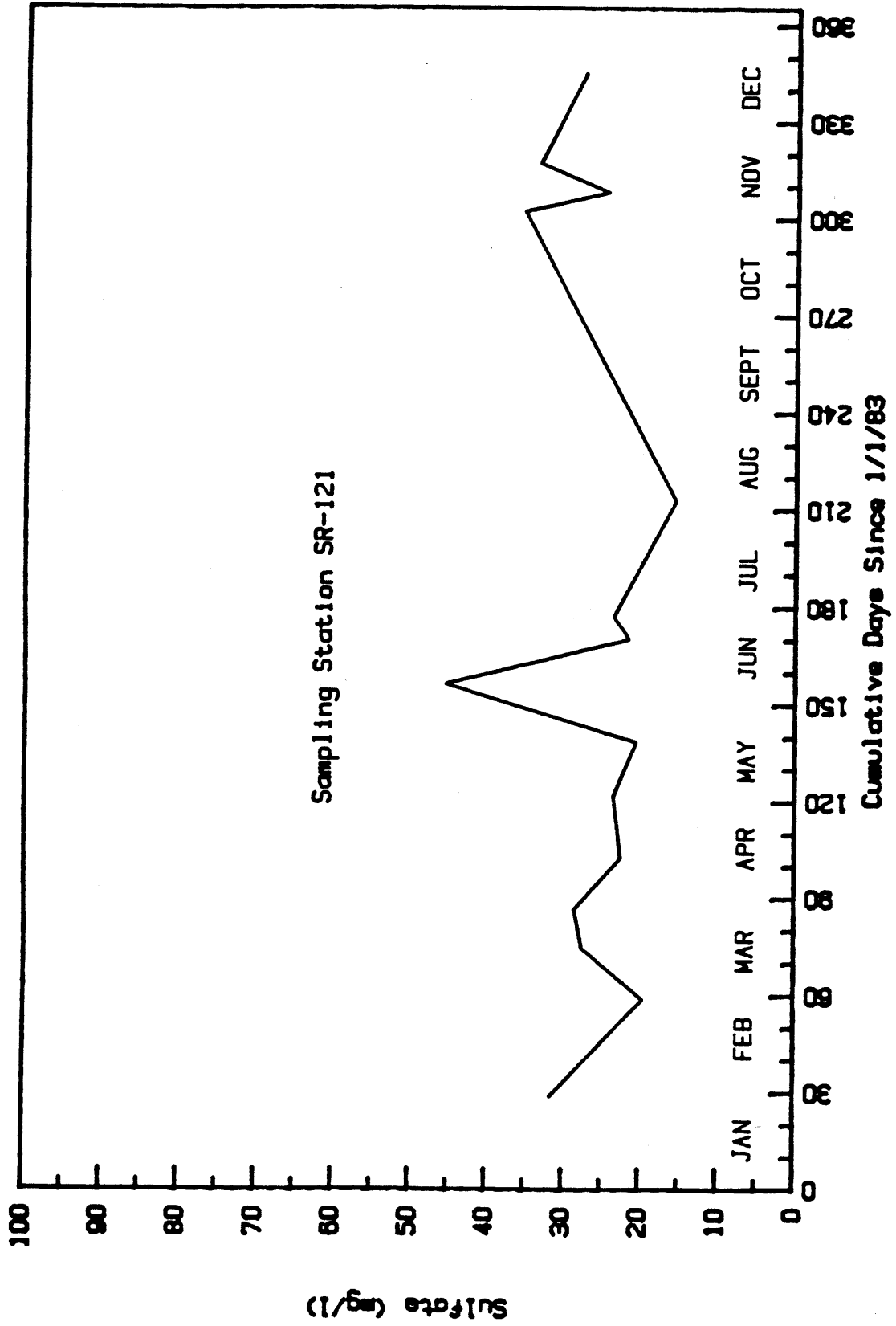
Mashudda Strip Mine Project



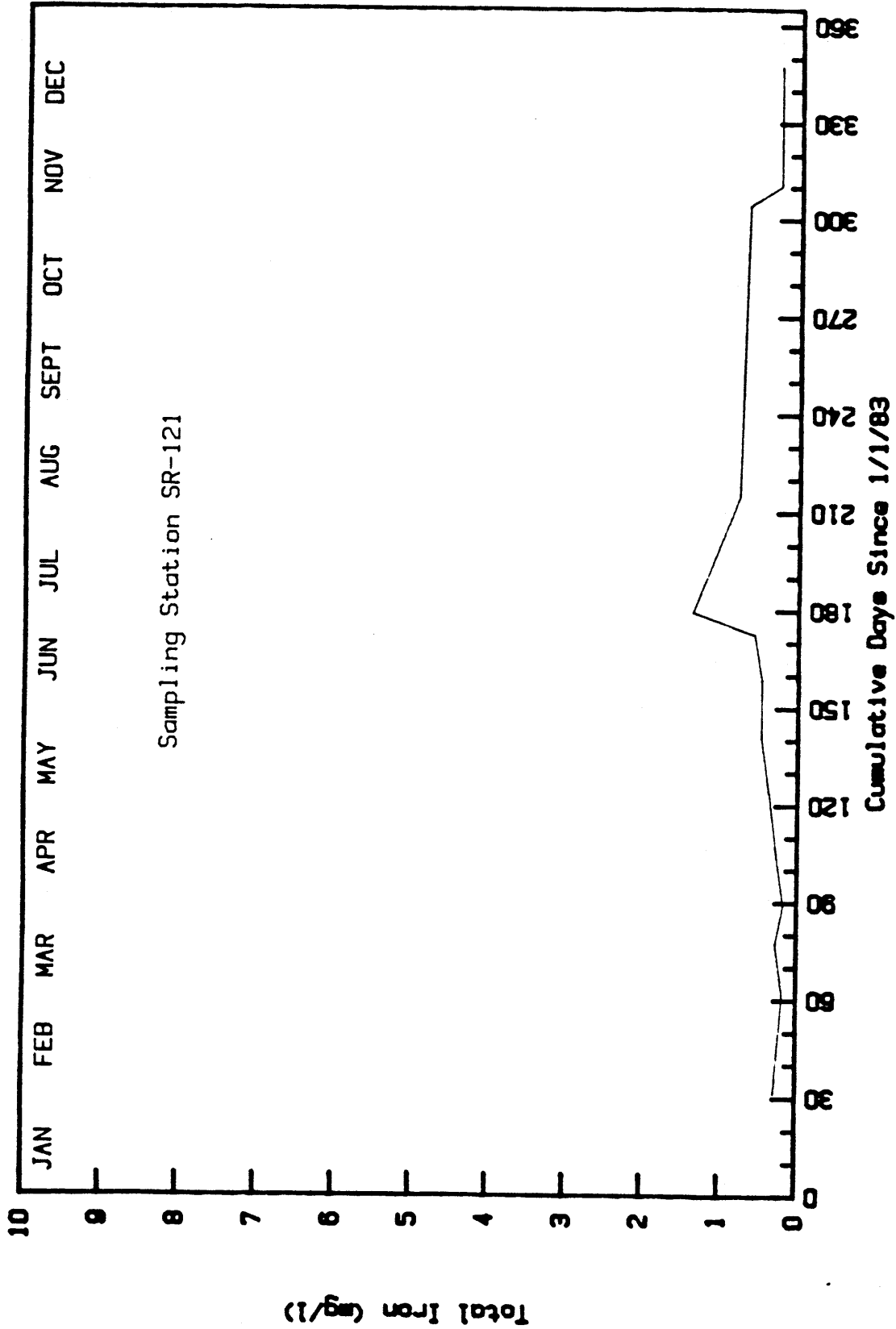
Mashudda Strip Mine Project



Mashudda Strip Mine Project



MASHUDDA STRIP MINE PROJECT

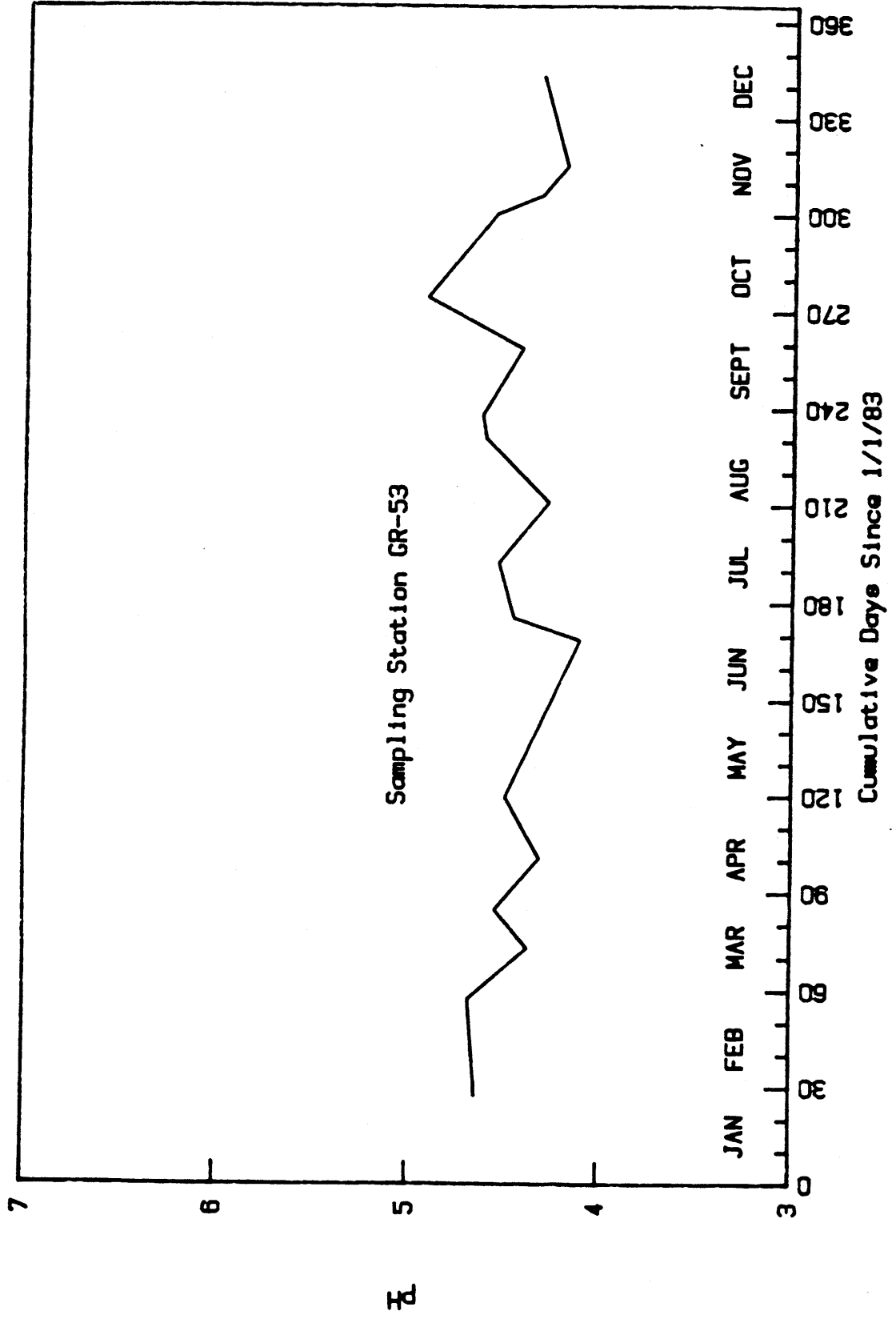


GLADE RUN
Upstream from Mouth of Big Piney

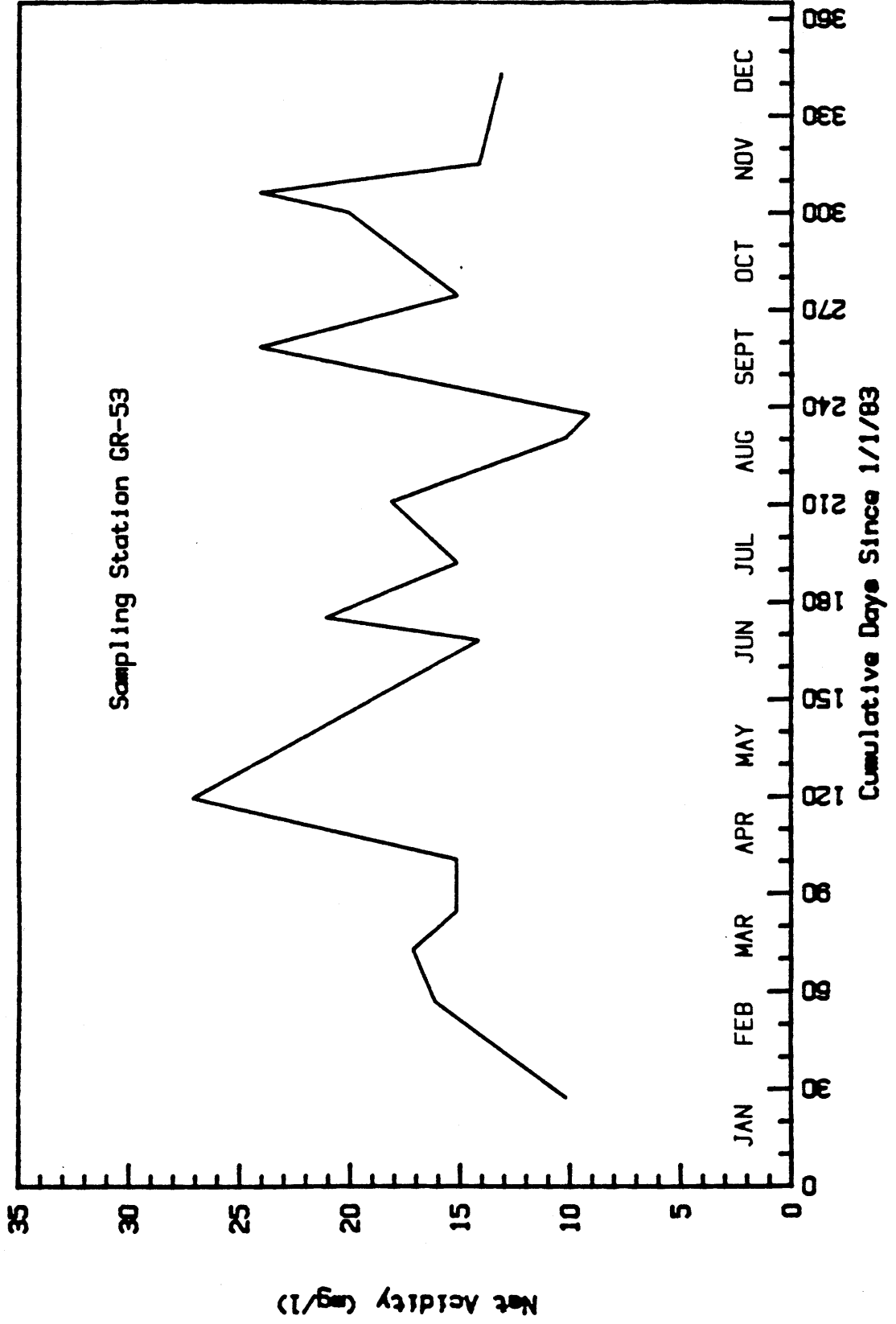
Sampling Station GR-53

| Sampling Date | pH | Acidity mg/l | Alkalinity mg/l | Sulfates mg/l | Iron, mg/l | |
|---------------|--------------|-----------------|--------------------|------------------|------------|---------|
| | | | | | Total | Ferrous |
| 6/11/82 | 4.61 | 13 | 5 | 52 | 0.7 | 0.5 |
| 7/22/82 | 4.41 | 20 | 0 | 58 | 0.9 | 0.3 |
| 10/5/82 | 4.53 | 13 | 1 | 66 | 0.5 | 0.2 |
| 10/23/82 | 4.70 | 9 | 1 | 25 | 0.2 | 0 |
| 11/20/82 | 4.63 | 11 | 1 | 25 | 0.1 | 0 |
| 1/29/83 | 4.62 | 11 | 1 | 32 | 0.2 | 0.1 |
| 2/28-3/1/83 | 4.66 | 17 | 1 | 30 | 0.2 | 0 |
| 3/16-18/83 | 4.35 | 17 | 0 | 42 | 0.2 | 0.1 |
| 3/28-29/83 | 4.52 | 15 | 0 | 48 | 0.1 | 0 |
| 4/13-14/83 | 4.29 | 15 | 0 | 37 | 0.2 | 0.1 |
| 5/2-3/83 | 4.47 | 27 | 0 | 30 | 0.3 | 0 |
| 6/20-21/83 | 4.08 | 14 | 0 | 57 | 1.0 | 0.6 |
| 6/27/83 | 4.43 | 21 | 0 | 37 | 0.4 | 0.2 |
| 7/14/83 | 4.51 | 16 | 1 | 31 | 0.7 | 0.3 |
| 8/2/83 | 4.25 | 18 | 0 | 49 | 0.4 | 0.2 |
| 8/22-23/83 | 4.58 | 11 | 1 | 38 | 0.7 | 0.2 |
| 8/29-30/83 | 4.60 | 10 | 1 | 54 | 0.9 | 0.2 |
| 9/19/83 | 4.39 | 24 | 0 | 73 | 5.2 | 1.0 |
| 10/5-6/83 | 4.89 | 16 | 1 | 29 | 1.3 | 0.2 |
| 10/31/83 | 4.53 | 21 | 1 | 69 | 0.3 | 0.1 |
| 11/6/83 | 4.29 | 24 | 0 | 28 | 0.2 | 0 |
| 11/15/83 | 4.16 | 14 | 0 | 53 | 0.5 | 0.2 |
| 12/13-14/83 | 4.29 | 13 | 0 | 47 | 0.4 | 0.2 |
| 1/11/84 | 4.42 | 19 | 0 | 40 | 0.1 | 0.1 |
| 1/19-20/84 | INACCESSIBLE | | | | | |
| 2/8/84 | 4.37 | 24 | 0 | 30 | 0.2 | 0 |
| 2/16/84 | 4.42 | 18 | 0 | 25 | 0.3 | 0 |
| 3/6/84 | 4.38 | 22 | 0 | 28 | 0.2 | 0 |

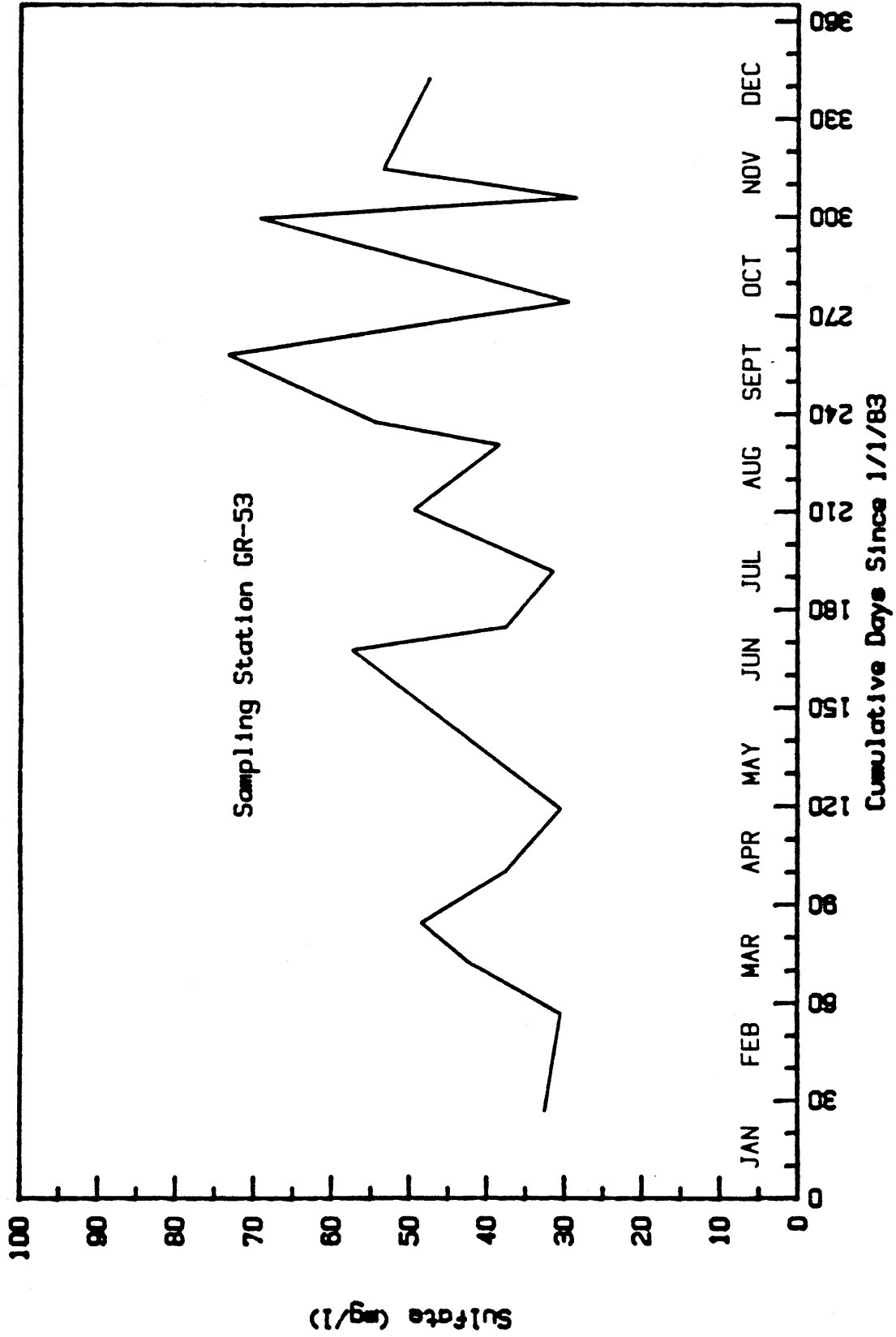
Mashudda Strip Mine Project



Mashudda Strip Mine Project

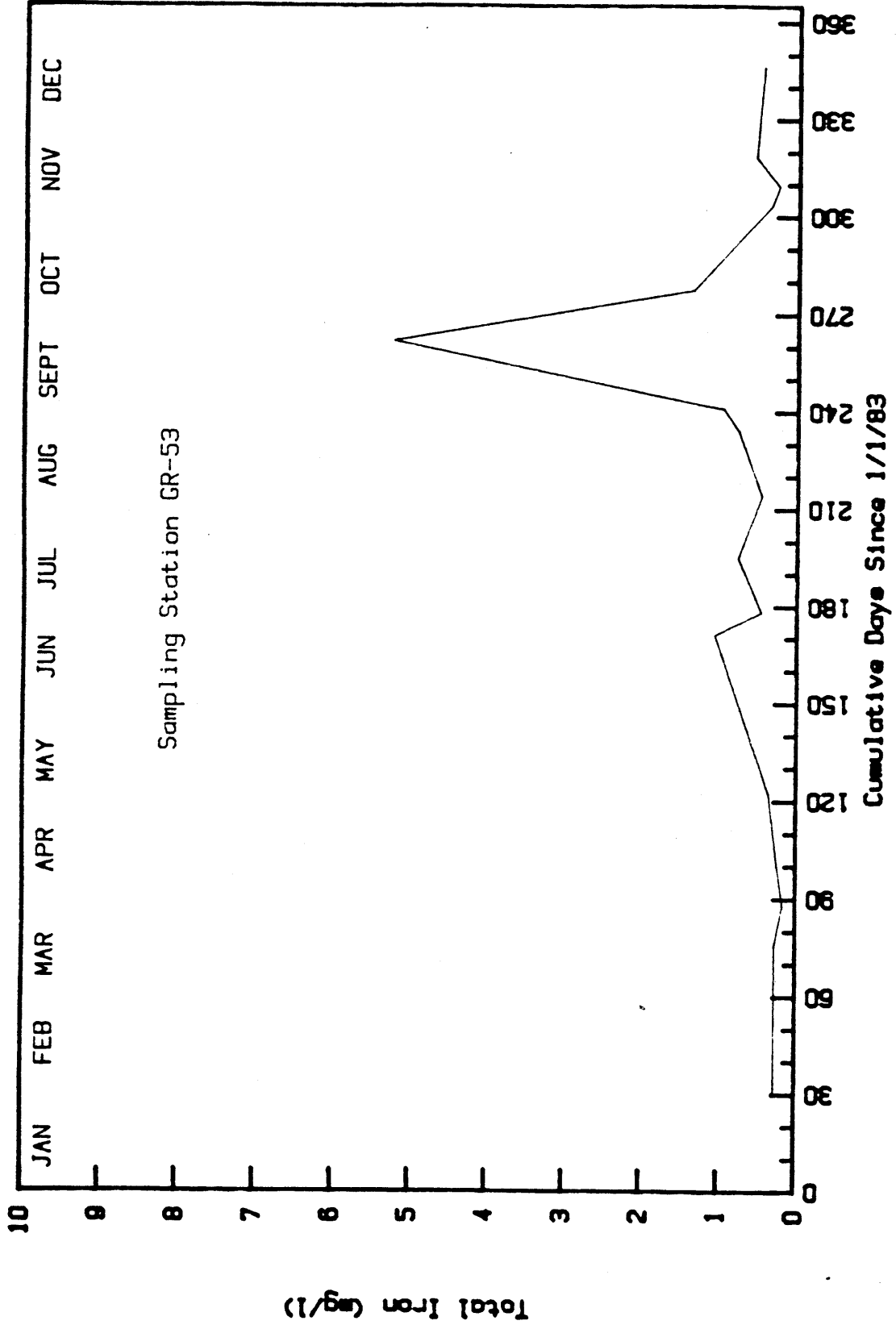


Mashudda Strip Mine Project



r. e. wright associates, inc.

MASHUDDA STRIP MINE PROJECT

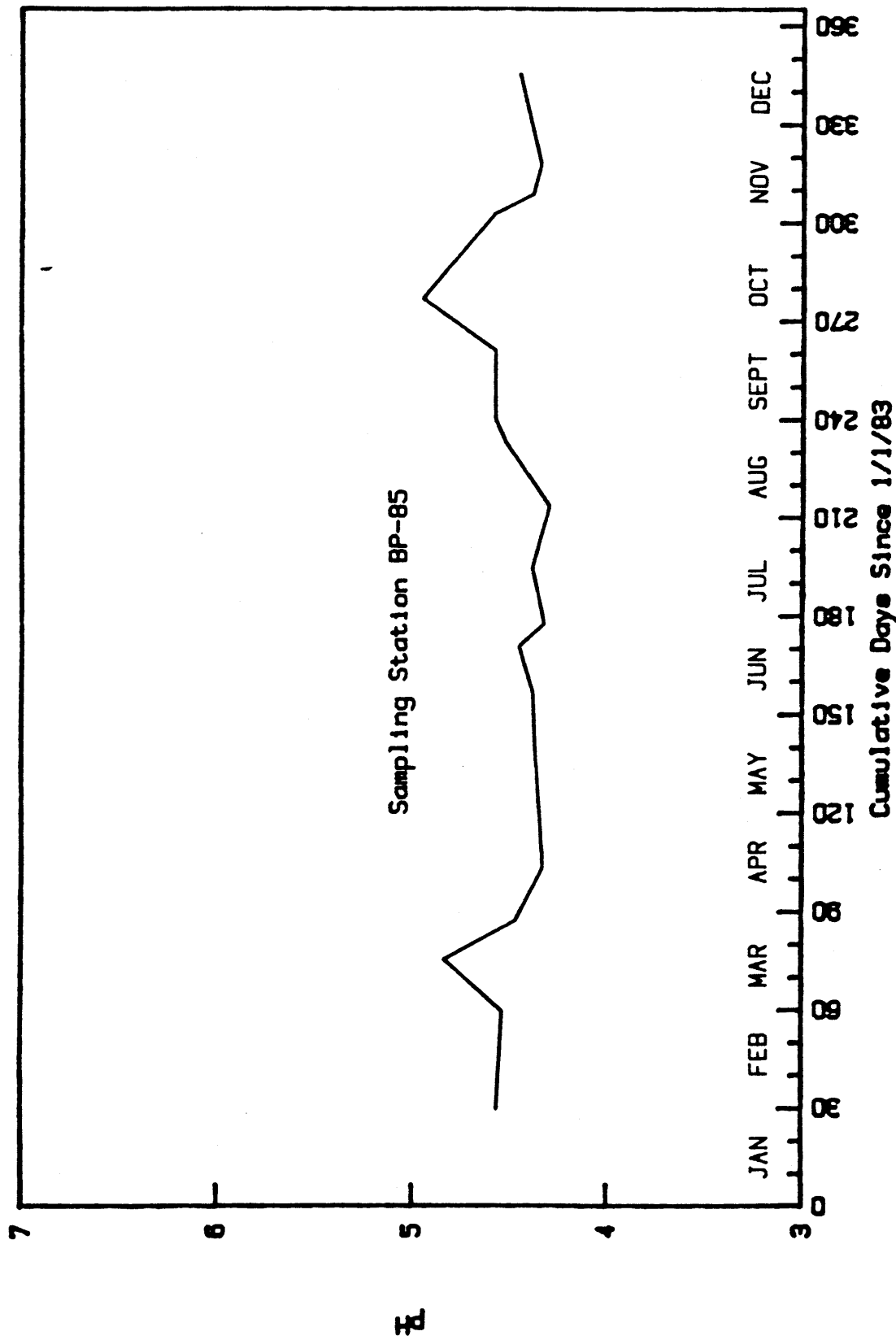


BIG PINEY
Right Branch

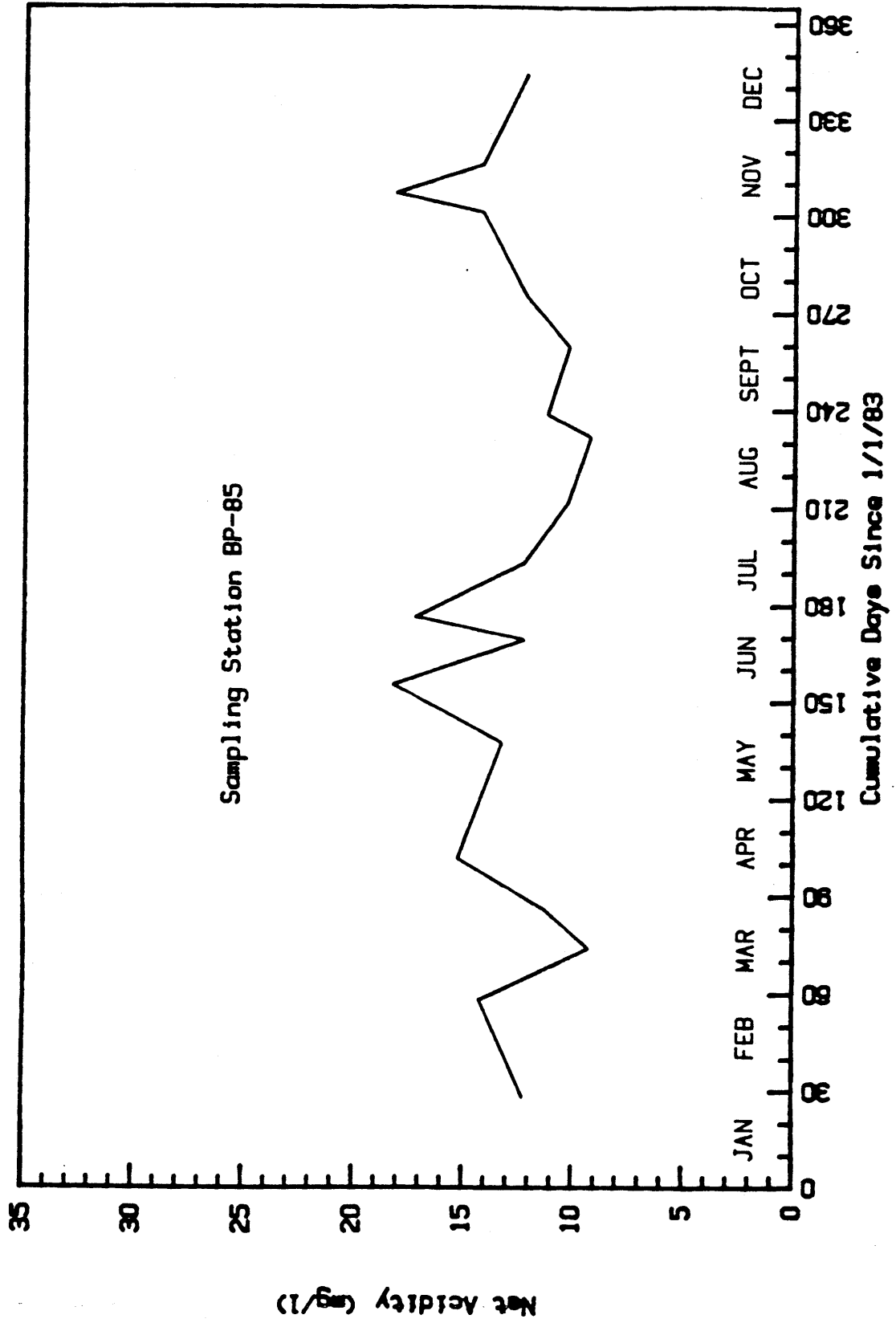
Sampling Station BP-85

| Sampling Date | pH | Acidity mg/l | Alkalinity mg/l | Sulfates mg/l | Iron, mg/l | |
|------------------|------|-----------------|--------------------|------------------|------------|---------|
| | | | | | Total | Ferrous |
| 6/11/82 | 4.44 | 13 | 0 | 30 | 0.3 | 0.2 |
| 7/22/82 | 4.28 | 12 | 0 | 29 | 0.3 | 0.1 |
| 10/5/82 | 4.48 | 10 | 0 | 35 | 0.3 | 0.2 |
| 10/23/82 | 4.54 | 9 | 1 | 32 | 0.1 | 0.1 |
| 11/20/82 | 4.50 | 13 | 0 | 34 | 0 | 0 |
| 1/29/83 | 4.54 | 13 | 1 | 28 | 0.2 | 0.1 |
| 2/28-3/1/83 | 4.51 | 14 | 0 | 36 | 0.1 | 0 |
| 3/16-18/83 | 4.81 | 11 | 2 | 39 | 0.2 | 0 |
| 3/28-29/83 | 4.44 | 11 | 0 | 26 | 0.1 | 0 |
| 4/13-14/83 | 4.30 | 15 | 0 | 34 | 0.2 | 0.1 |
| 5/19/83 | 4.34 | 13 | 0 | 34 | 0.3 | 0.1 |
| 6/6-7/83 | 4.35 | 18 | 0 | 29 | 0.2 | 0.1 |
| 6/20-21/83 | 4.42 | 12 | 0 | 25 | 0.2 | 0 |
| 6/27/83 | 4.29 | 17 | 0 | 31 | 0.4 | 0.1 |
| 7/14/83 | 4.35 | 12 | 0 | 20 | 0.5 | 0.2 |
| 8/2/83 | 4.26 | 10 | 0 | 21 | 0.3 | 0.1 |
| 8/22-23/83 | 4.49 | 9 | 0 | 38 | 0.4 | 0.1 |
| 8/29-30/83 | 4.54 | 11 | 0 | 20 | 0.2 | 0.2 |
| 9/19/83 | 4.54 | 10 | 0 | 35 | 0.4 | 0.2 |
| 10/5-6/83 | 4.91 | 13 | 1 | 23 | 0.3 | 0 |
| 10/31/83 | 4.54 | 15 | 1 | 37 | 0.3 | 0.1 |
| 11/6/83 | 4.34 | 18 | 0 | 31 | 0.2 | 0 |
| 11/15/83 | 4.30 | 14 | 0 | 30 | 0.2 | 0 |
| 12/13-14/83 | 4.41 | 12 | 0 | 31 | 0.2 | 0 |
| 1/11/84 | 4.44 | 14 | 0 | 29 | 0.3 | 0.1 |
| 1/19-20/84 | 4.41 | 14 | 0 | 30 | 0.5 | 0.2 |
| 2/8/84 | 4.44 | 16 | 0 | 27 | 0.2 | 0 |
| 2/16/84 | 4.44 | 17 | 0 | 23 | 0.2 | 0 |
| 3/6/84 | 4.34 | 24 | 0 | 24 | 0.2 | 0 |
| 4/3/84 | 4.50 | 13 | 0 | 24 | 0.1 | 0 |

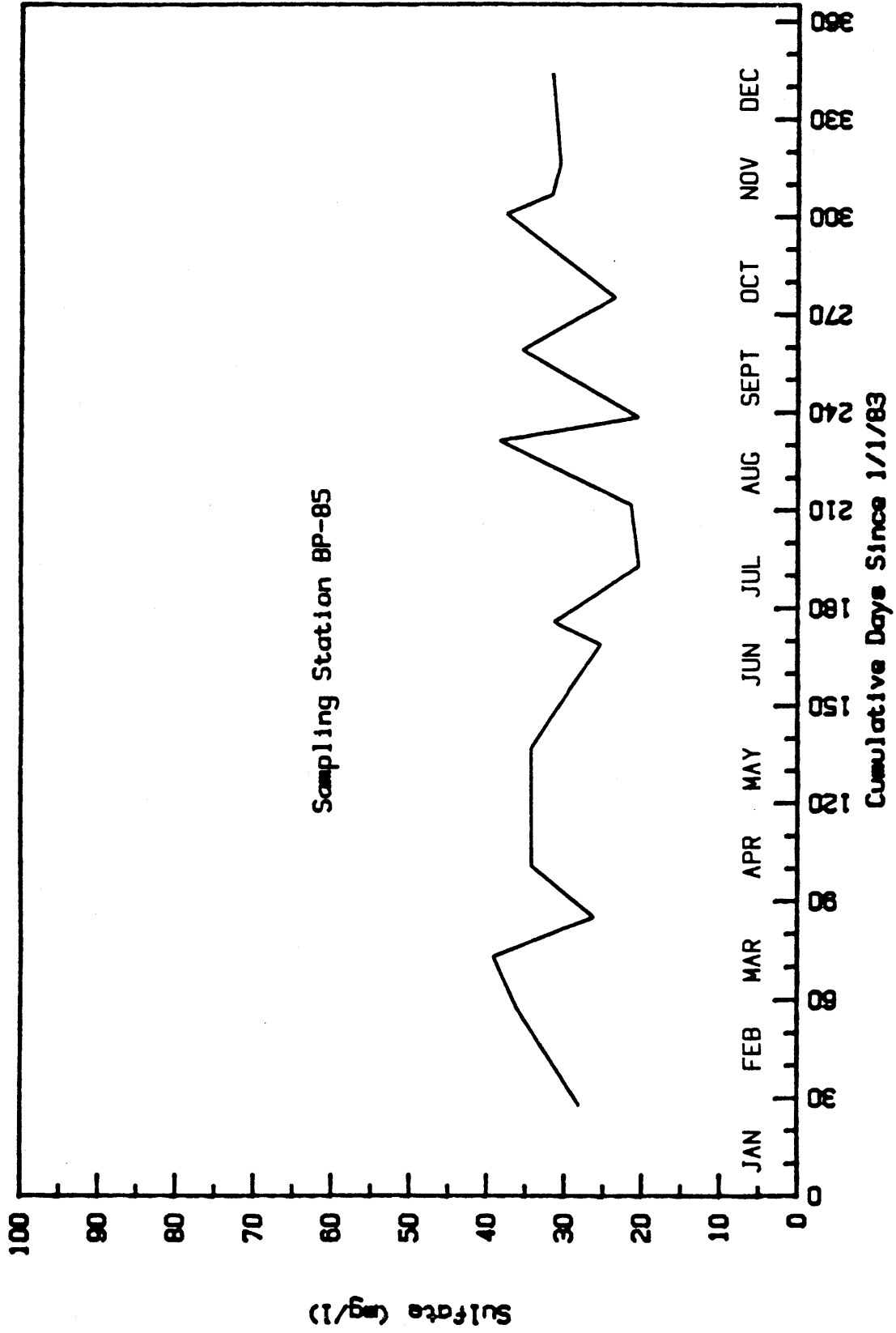
Mashudda Strip Mine Project



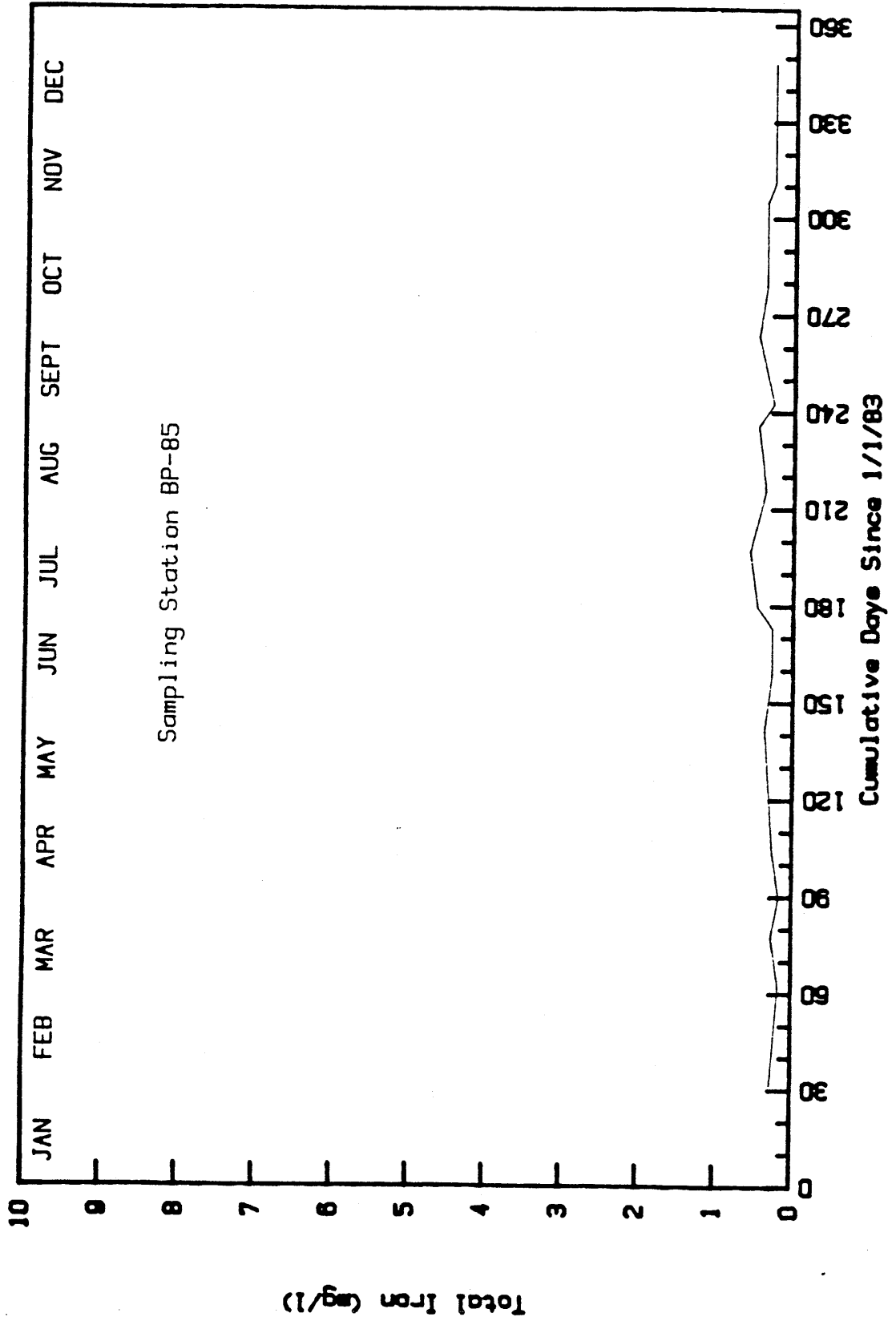
Mashudda Strip Mine Project



Mashudda Strip Mine Project



MASHUDDA STRIP MINE PROJECT

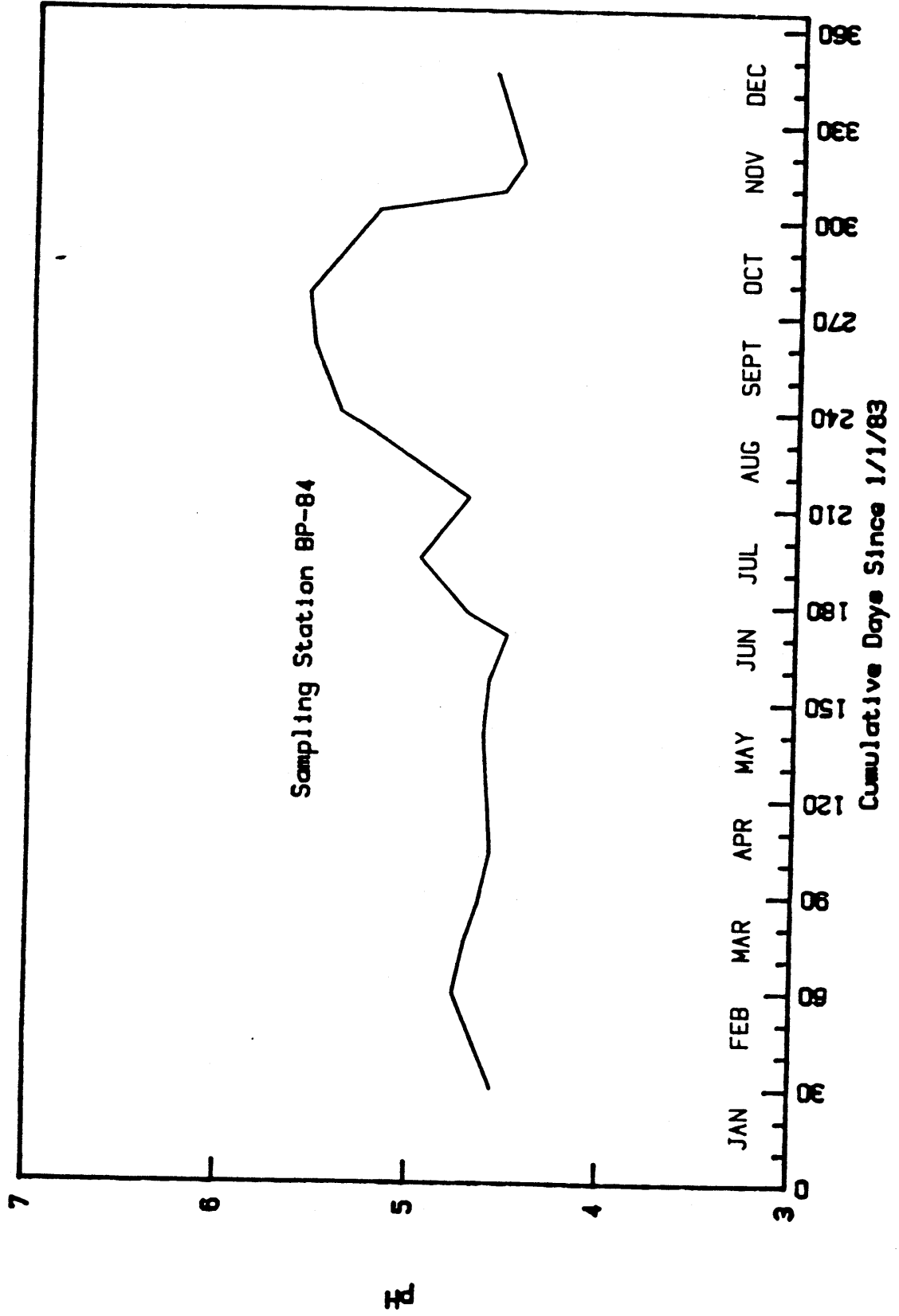


BIG PINEY
Left Branch

Sampling Station BP-84

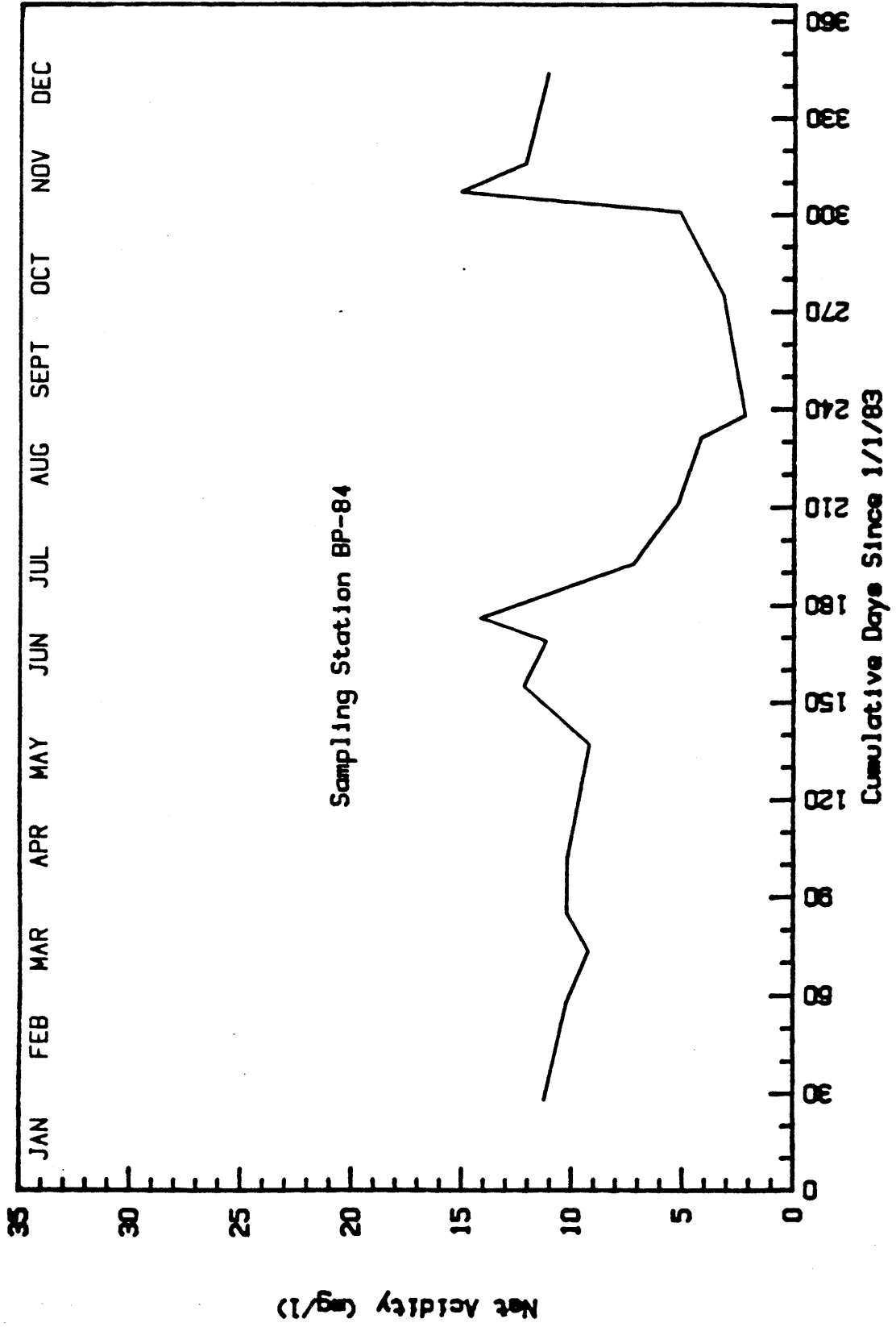
| Sampling Date | pH | Acidity mg/l | Alkalinity mg/l | Sulfates mg/l | Iron, mg/l | |
|------------------|------|-----------------|--------------------|------------------|------------|---------|
| | | | | | Total | Ferrous |
| 6/11/82 | 4.83 | 11 | 4 | 24 | 0.4 | 0.3 |
| 7/22/82 | 4.97 | 5 | 2 | 21 | 0.5 | 0.2 |
| 10/5/82 | 4.44 | 12 | 0 | 37 | 0.2 | 0.1 |
| 10/23/82 | 4.74 | 5 | 1 | 13 | 0.1 | 0 |
| 11/20/82 | 4.76 | 7 | 1 | 21 | 0.1 | 0 |
| 1/29/83 | 4.53 | 12 | 1 | 36 | 0.2 | 0.1 |
| 2/28-3/1/83 | 4.74 | 11 | 1 | 19 | 0.1 | 0 |
| 3/16-18/83 | 4.68 | 10 | 1 | 24 | 0.1 | 0 |
| 3/28-29/83 | 4.61 | 11 | 1 | 26 | 0.1 | 0 |
| 4/13-14/83 | 4.55 | 11 | 1 | 21 | 0.1 | 0 |
| 5/19/83 | 4.59 | 10 | 1 | 17 | 0.1 | 0 |
| 6/6-7/83 | 4.56 | 13 | 1 | 23 | 0.2 | 0 |
| 6/20-21/83 | 4.47 | 11 | 0 | 25 | 0.2 | 0 |
| 6/27/83 | 4.68 | 15 | 1 | 23 | 0.2 | 0 |
| 7/14/83 | 4.93 | 8 | 1 | 20 | 0.4 | 0.1 |
| 8/2/83 | 4.68 | 6 | 1 | 18 | 0.2 | 0.1 |
| 8/22-23/83 | 5.17 | 5 | 1 | 22 | 0.3 | 0.1 |
| 8/29-30/83 | 5.36 | 4 | 2 | 13 | 0.3 | 0.1 |
| 9/19/83 | 5.50 | 7 | 27 | 38 | 1.1 | 0.3 |
| 10/5-6/83 | 5.53 | 5 | 2 | 14 | 0.9 | 0.2 |
| 10/31/83 | 5.17 | 7 | 2 | 22 | 0.5 | 0.2 |
| 11/6/83 | 4.51 | 16 | 1 | 24 | 1.1 | 0.3 |
| 11/15/83 | 4.41 | 12 | 0 | 29 | 0.2 | 0 |
| 12/13-14/83 | 4.56 | 12 | 1 | 23 | 0.1 | 0 |
| 1/11/84 | 4.72 | 11 | 1 | 19 | 0.1 | 0 |
| 1/19-20/84 | 4.54 | 19 | 1 | 28 | 0.4 | 0.1 |
| 2/8/84 | 4.64 | 13 | 1 | 16 | 0.1 | 0 |
| 2/16/84 | 4.62 | 14 | 1 | 18 | 0.1 | 0 |
| 3/6/84 | 4.55 | 17 | 1 | 20 | 0.4 | 0 |
| 4/3/84 | 4.67 | 9 | 1 | 17 | 0 | 0 |

Mashudda Strip Mine Project

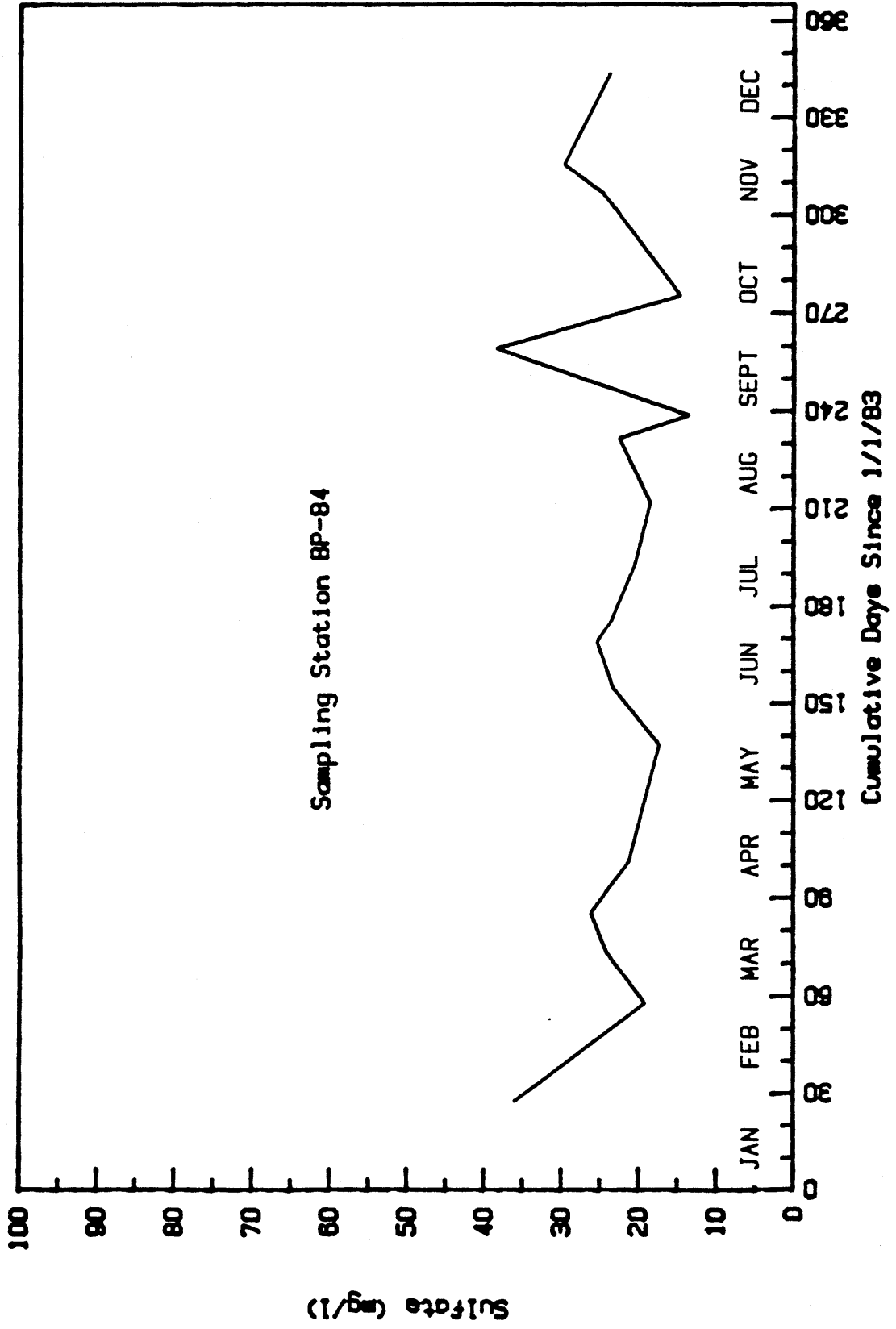


r. e. wright associates, inc.

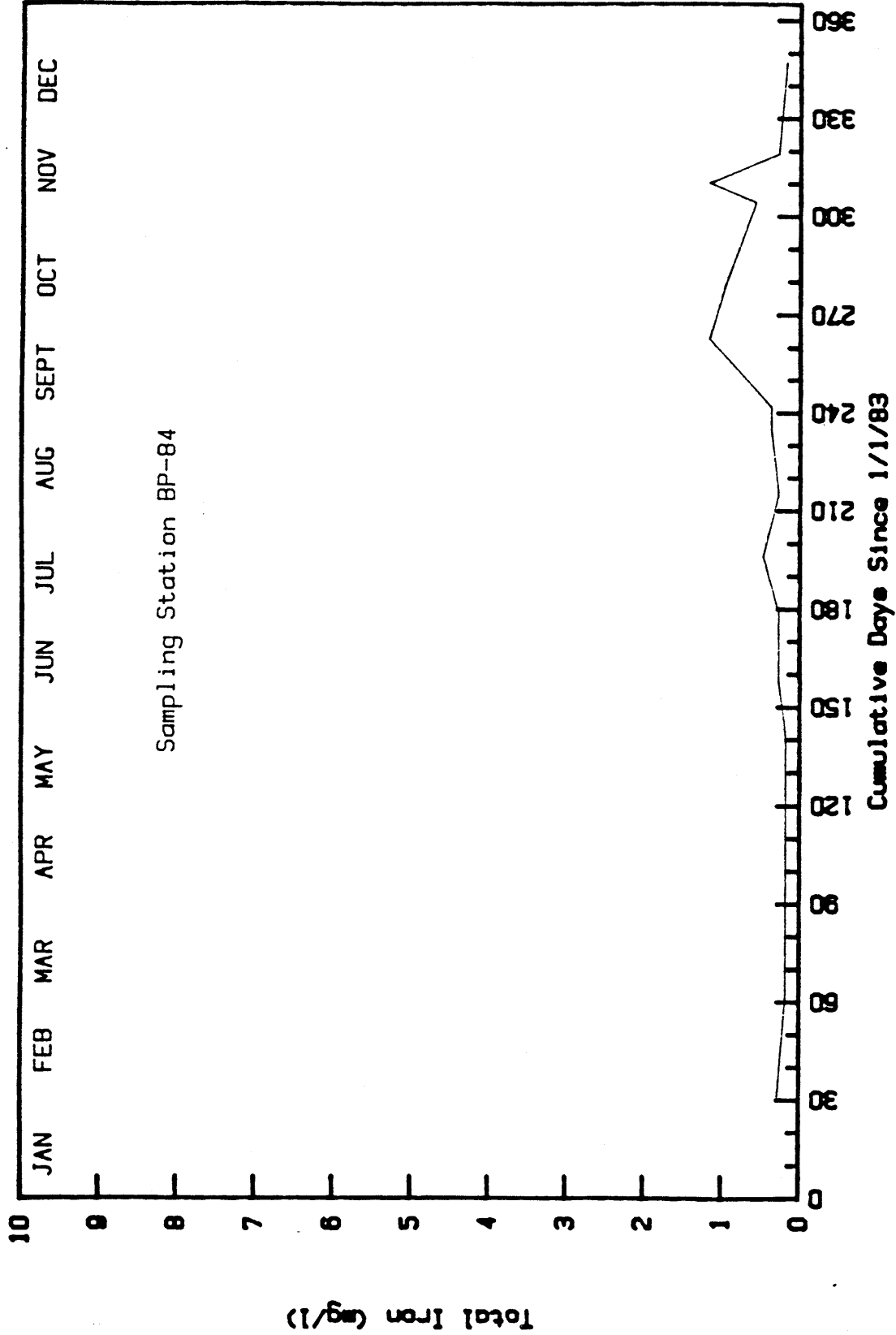
Mashudda Strip Mine Project



Mashudda Strip Mine Project



MASHUDDA STRIP MINE PROJECT



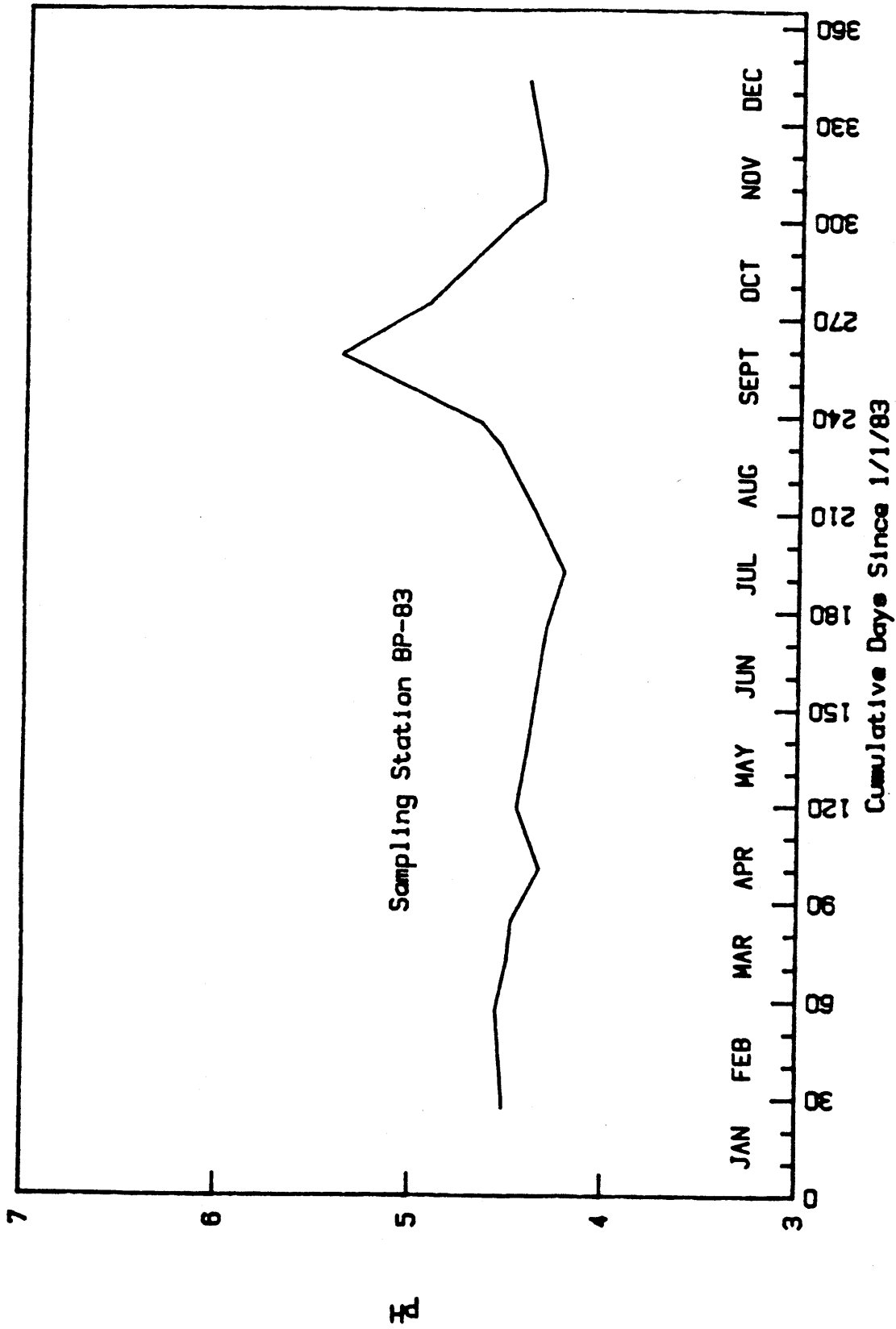
r. e. wright associates, inc.

BIG PINEY
Above Mouth of Hillen Run

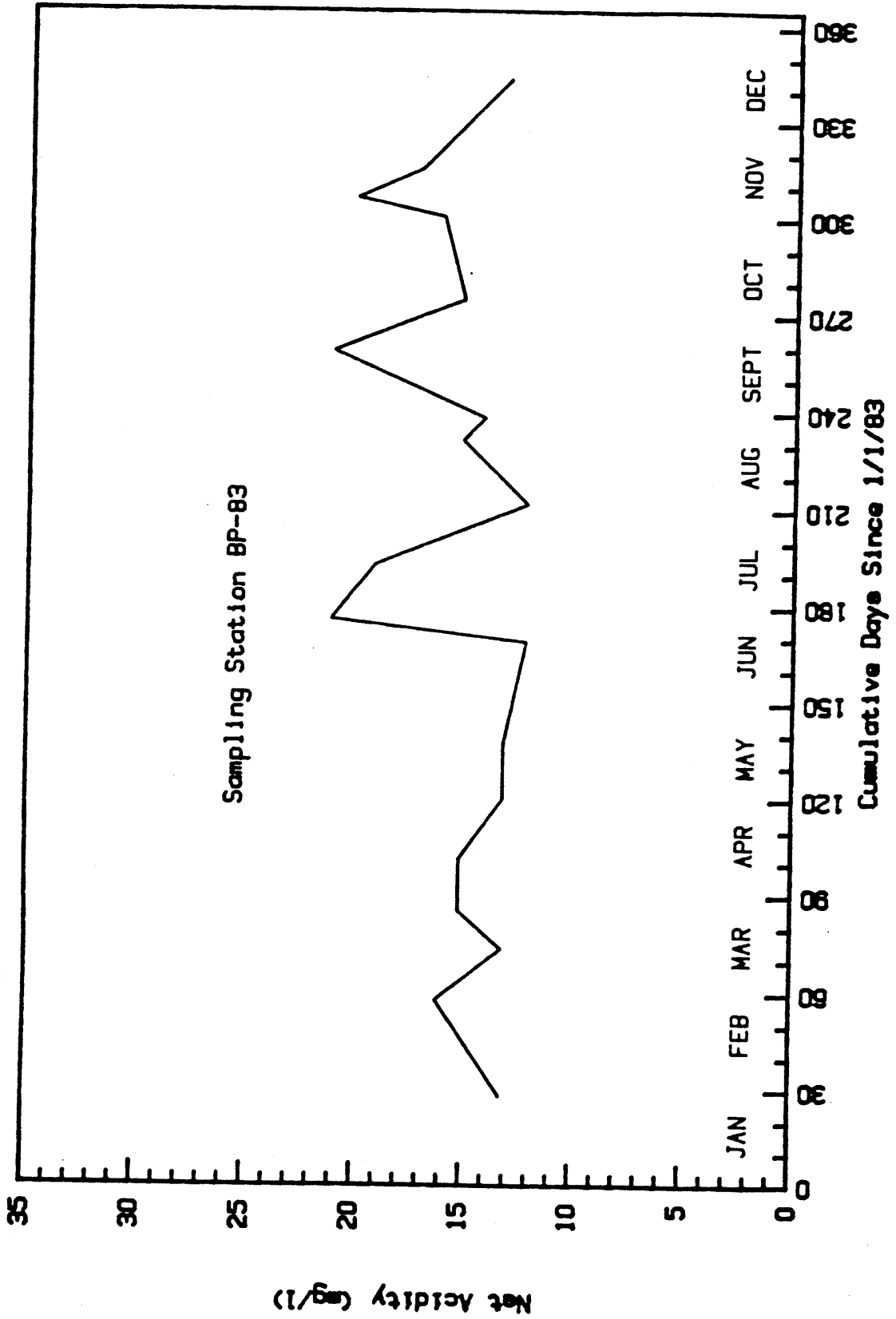
Sampling Station BP-83

| Sampling Date | pH | Acidity mg/l | Alkalinity mg/l | Sulfates mg/l | Iron, mg/l | |
|---------------|------|-----------------|--------------------|------------------|------------|---------|
| | | | | | Total | Ferrous |
| 6/11/82 | 4.41 | 19 | 0 | 50 | 1.1 | 0.7 |
| 7/22/82 | 4.33 | 12 | 0 | 27 | 2.0 | 0.9 |
| 10/5/83 | 4.54 | 10 | 1 | 43 | 0.9 | 0.4 |
| 10/23/82 | 4.40 | 8 | 0 | 25 | 0.5 | 0.2 |
| 11/20/82 | 4.55 | 12 | 1 | 42 | 0.4 | 0.1 |
| 1/29/83 | 4.50 | 13 | 0 | 33 | 0.3 | 0.2 |
| 2/28-3/1/83 | 4.54 | 17 | 1 | 35 | 0.1 | 0 |
| 3/16-18/83 | 4.48 | 13 | 0 | 30 | 0.3 | 0.1 |
| 3/28-29/83 | 4.46 | 15 | 0 | 36 | 0.1 | 0 |
| 4/13-14/83 | 4.32 | 15 | 0 | 36 | 0.3 | 0.1 |
| 5/2-3/83 | 4.44 | 13 | 0 | 49 | 0.3 | 0.1 |
| 5/19/83 | 4.39 | 13 | 0 | 22 | 0.3 | 0.1 |
| 6/20-21/83 | 4.31 | 12 | 0 | 41 | 0.4 | 0.1 |
| 6/27/83 | 4.29 | 21 | 0 | 27 | 0.9 | 0.2 |
| 7/14/83 | 4.20 | 19 | 0 | 31 | 6.5 | 3.2 |
| 8/2/83 | 4.36 | 12 | 0 | 20 | 2.7 | 1.1 |
| 8/22-23/83 | 4.54 | 15 | 0 | 45 | 6.5 | 2.6 |
| 8/29-30/83 | 4.64 | 15 | 1 | 21 | 8.8 | 3.1 |
| 9/19/83 | 5.37 | 24 | 3 | 35 | 10.0 | 1.5 |
| 10/5-6/83 | 4.91 | 16 | 1 | 21 | 7.3 | 0.7 |
| 10/31/83 | 4.47 | 16 | 0 | 40 | 0.8 | 0.4 |
| 11/6/83 | 4.33 | 20 | 0 | 28 | 0.3 | 0.1 |
| 11/15/83 | 4.32 | 17 | 0 | 29 | 0.5 | 0.2 |
| 12/13-14/83 | 4.41 | 13 | 0 | 27 | 0.3 | 0.1 |
| 1/11/84 | 4.44 | 15 | 0 | 62 | 0.3 | 0.1 |
| 1/19-20/84 | 4.43 | 18 | 0 | 28 | 0.4 | 0.1 |
| 2/8/84 | 4.46 | 19 | 0 | 29 | 0.3 | 0 |
| 2/16/84 | 4.47 | 17 | 0 | 20 | 0.3 | 0 |
| 3/6/84 | 4.44 | 22 | 0 | 44 | 0.2 | 0 |
| 4/3/84 | 4.48 | 13 | 0 | 34 | 0.3 | 0.1 |

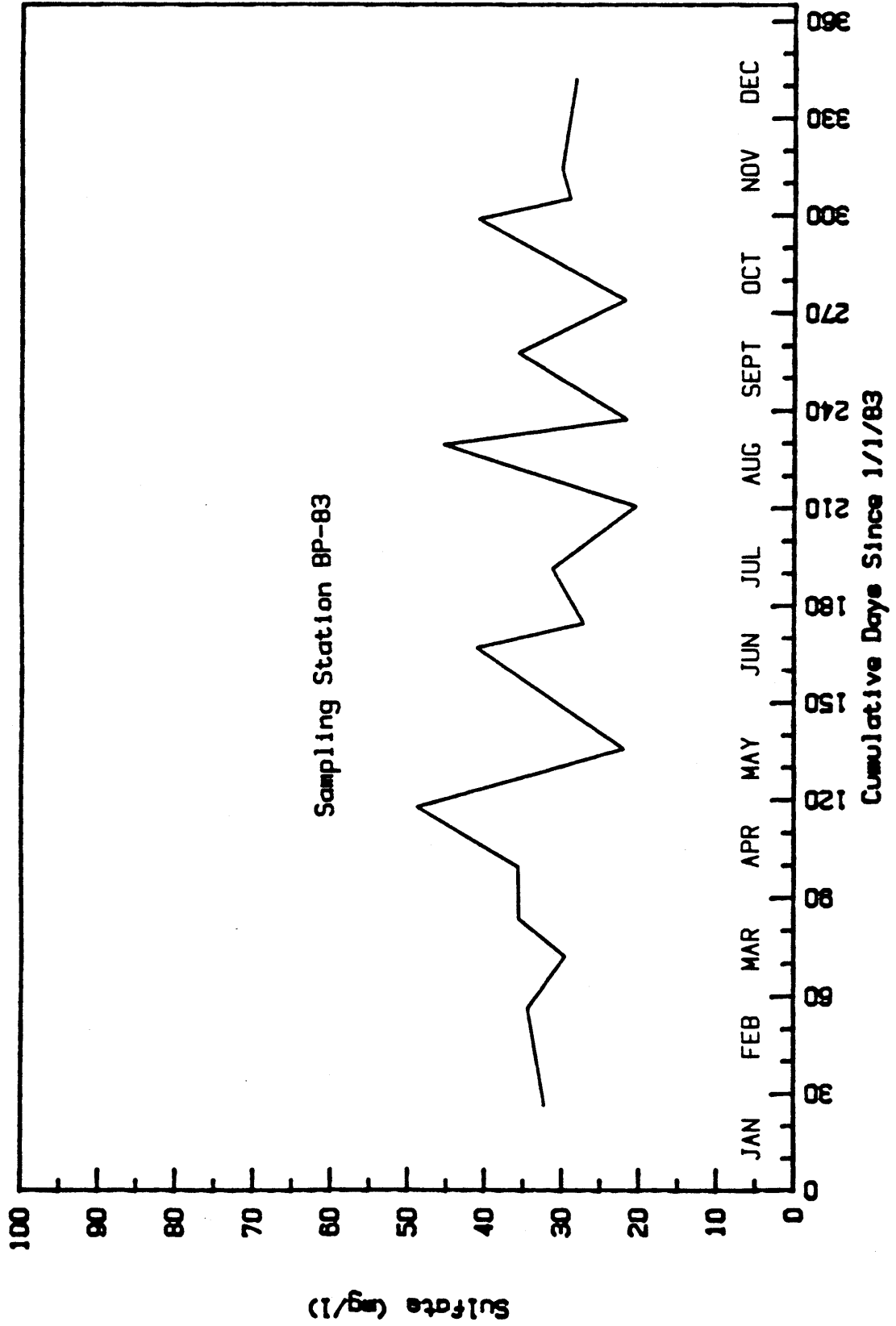
Mashudda Strip Mine Project



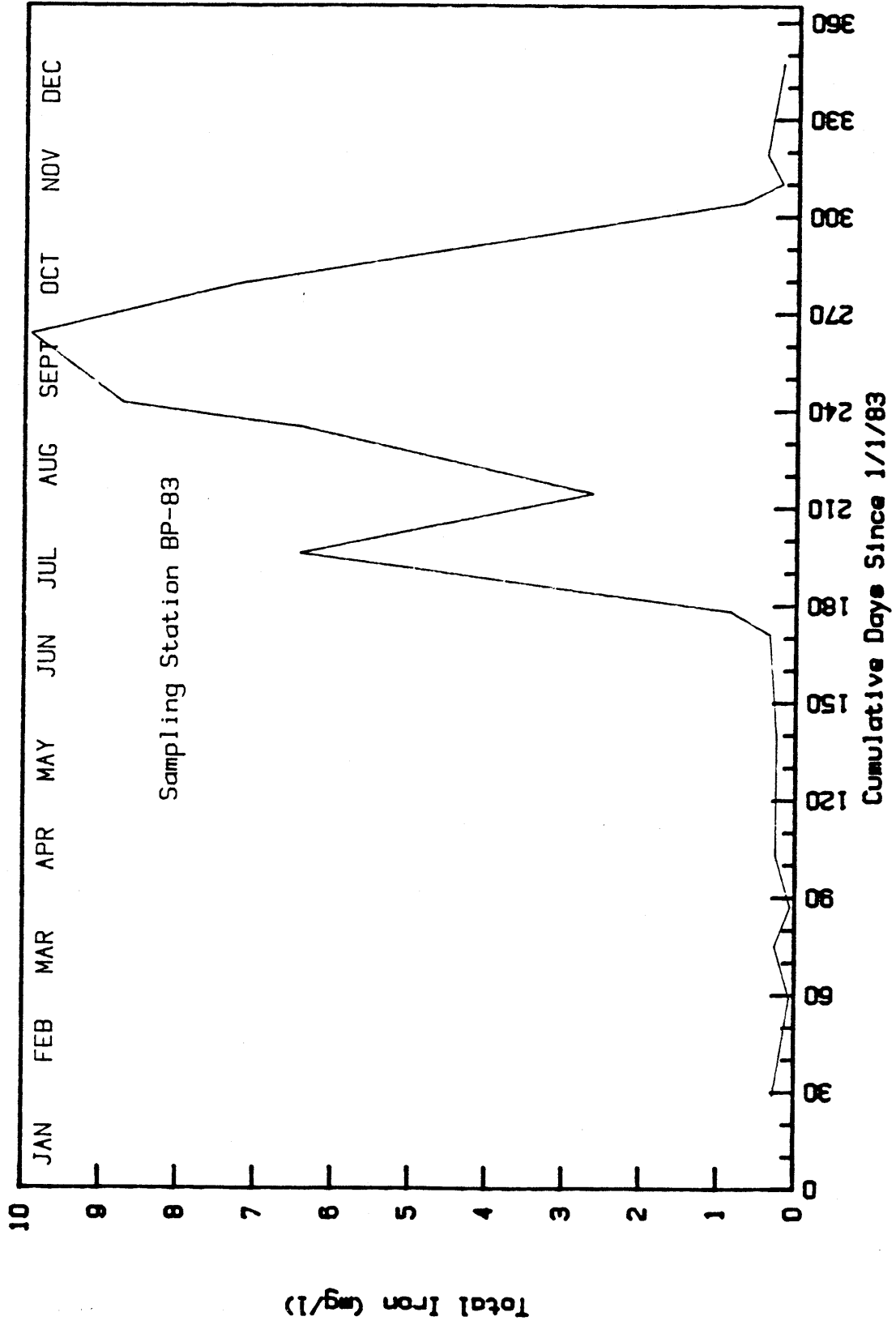
Mashudda Strip Mine Project



Mashudda Strip Mine Project



MASHUDDA STRIP MINE PROJECT

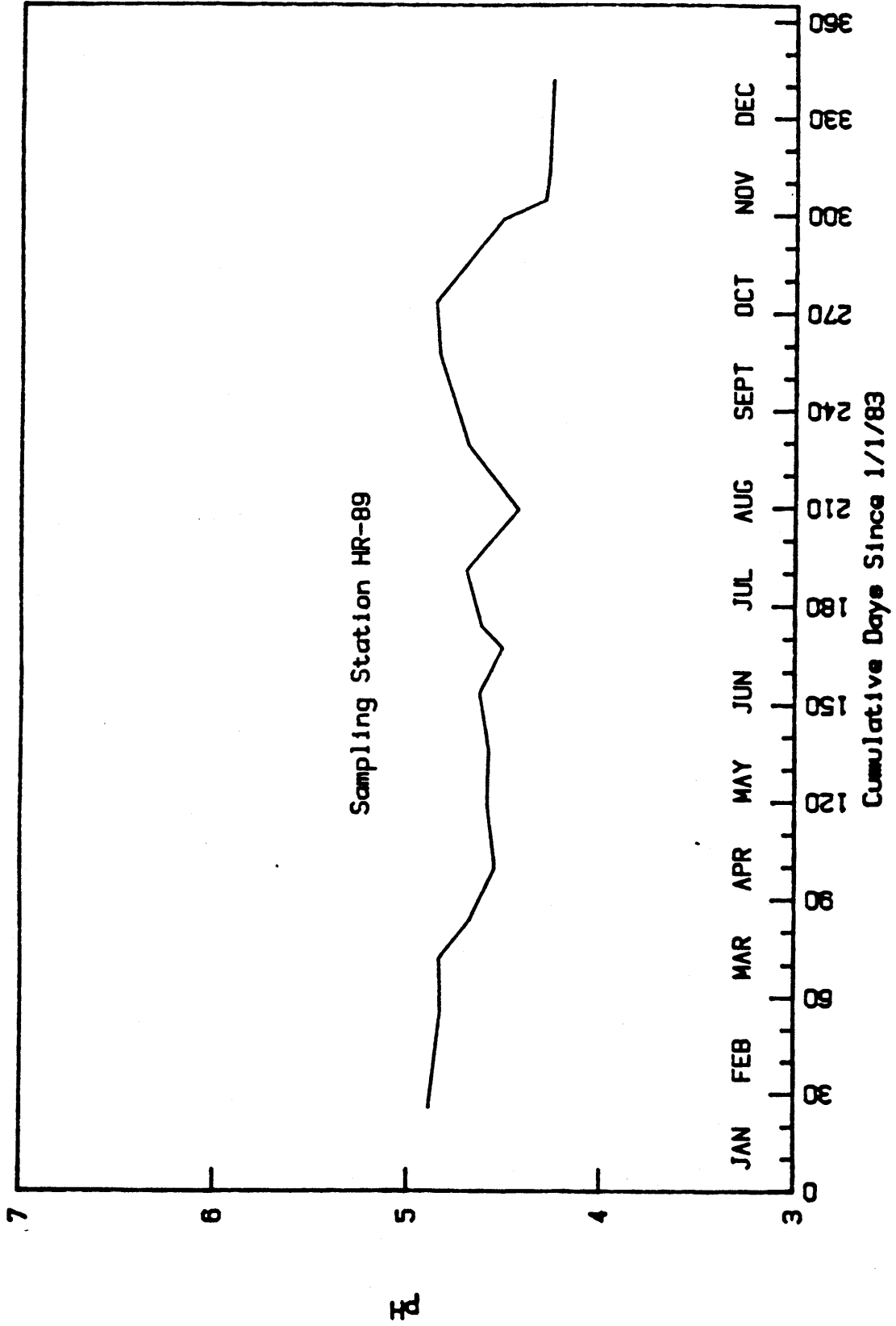


HILLEN RUN
Right Branch

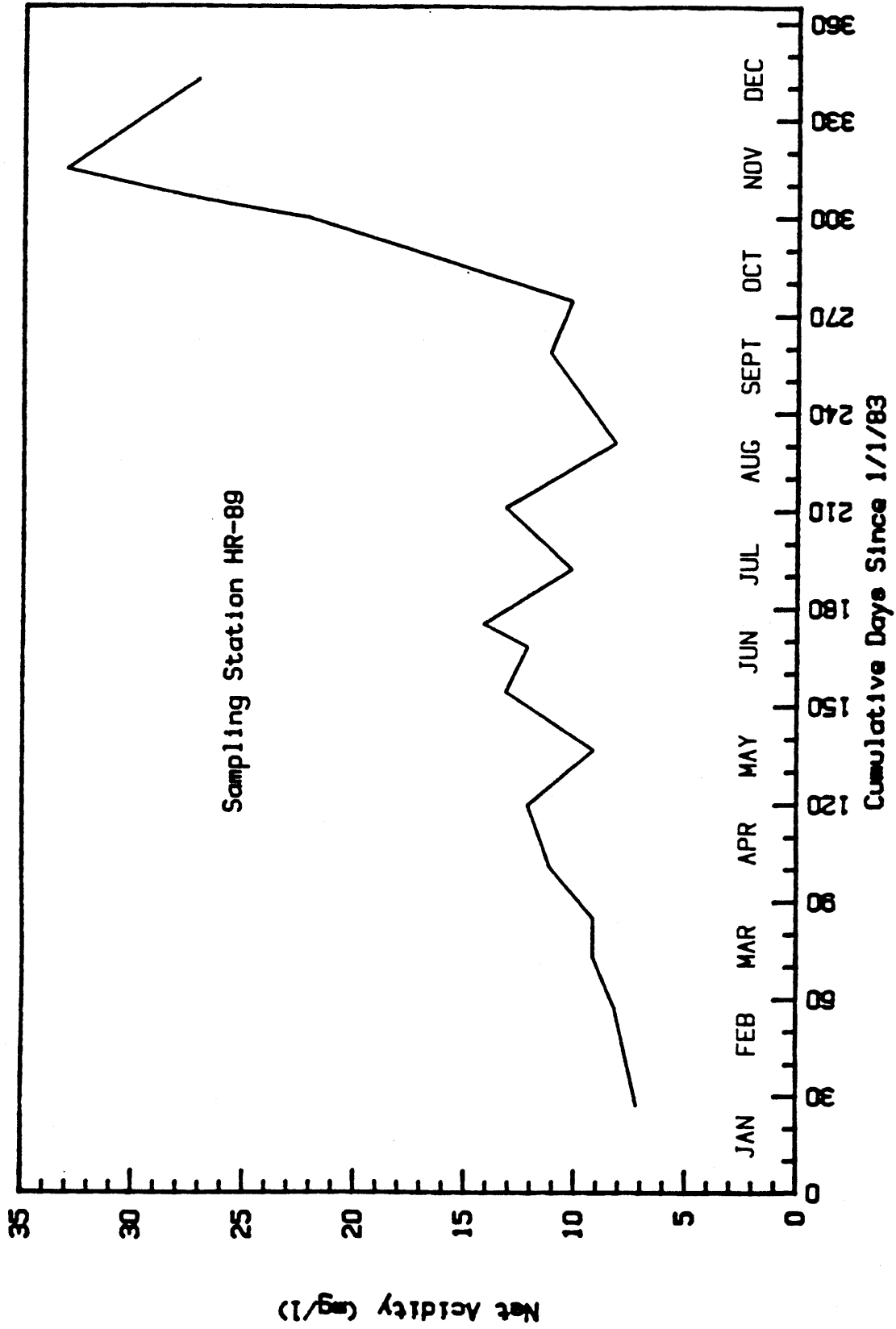
Sampling Station HR-89

| Sampling Date | pH | Acidity mg/l | Alkalinity mg/l | Sulfates mg/l | Iron, mg/l | |
|---------------|--------------------|-----------------|--------------------|------------------|------------|---------|
| | | | | | Total | Ferrous |
| 6/11/82 | NO SAMPLE | | | | | |
| 7/22/82 | 4.40 | 19 | 0 | 87 | 0.4 | 0.1 |
| 10/5/82 | 4.67 | 11 | 1 | 124 | 0.3 | 0.2 |
| 10/23/82 | 4.74 | 10 | 1 | 80 | 0 | 0 |
| 11/20/82 | 4.60 | 14 | 1 | 61 | 0 | 0 |
| 1/29/83 | 4.88 | 9 | 2 | 33 | 0.5 | 0.1 |
| 2/28-3/1/83 | 4.82 | 9 | 1 | 17 | 0 | 0 |
| 3/16-18/83 | 4.83 | 10 | 1 | 28 | 0.1 | 0 |
| 3/28-29/83 | 4.67 | 10 | 1 | 40 | 0 | 0 |
| 4/13-14/83 | 4.54 | 12 | 1 | 27 | 0.1 | 0 |
| 5/2-3/83 | 4.58 | 13 | 1 | 35 | 0.1 | 0 |
| 5/19/83 | 4.57 | 10 | 1 | 25 | 0.1 | 0 |
| 6/6-7/83 | 4.62 | 14 | 1 | 32 | 0 | 0 |
| 6/20-21/83 | 4.50 | 12 | 0 | 46 | 0.2 | 0 |
| 6/27/83 | 4.61 | 15 | 1 | 43 | 0.2 | 0 |
| 7/14/83 | 4.69 | 11 | 1 | 22 | 0.4 | 0.1 |
| 8/2/83 | 4.42 | 13 | 0 | 49 | 0.2 | 0.1 |
| 8/22-23/83 | 4.68 | 9 | 1 | 58 | 0.2 | 0 |
| 8/29-30/83 | LARGE BOTTLE EMPTY | | | | 0.3 | 0.1 |
| 9/19/83 | 4.83 | 12 | 1 | 36 | 0.2 | 0.1 |
| 10/5-6/83 | 4.85 | 11 | 1 | 28 | 0.7 | 0.1 |
| 10/31/83 | 4.50 | 22 | 0 | 97 | 0.3 | 0.2 |
| 11/6/83 | 4.28 | 27 | 0 | 72 | 0.1 | 0 |
| 11/15/83 | 4.26 | 33 | 0 | 84 | 0.2 | 0 |
| 12/13-14/83 | 4.24 | 27 | 0 | 55 | 0.3 | 0 |
| 1/11/84 | 4.41 | 25 | 0 | 45 | 0 | 0 |
| 1/19-20/84 | 4.42 | 23 | 0 | 68 | 0.3 | 0.1 |
| 2/8/84 | 4.40 | 23 | 0 | 57 | 0.2 | 0 |
| 2/16/84 | 4.41 | 21 | 0 | 38 | 0.1 | 0 |
| 3/6/84 | 4.34 | 25 | 0 | 40 | 0.2 | 0 |
| 4/3/84 | 4.45 | 16 | 0 | 34 | 0 | 0 |

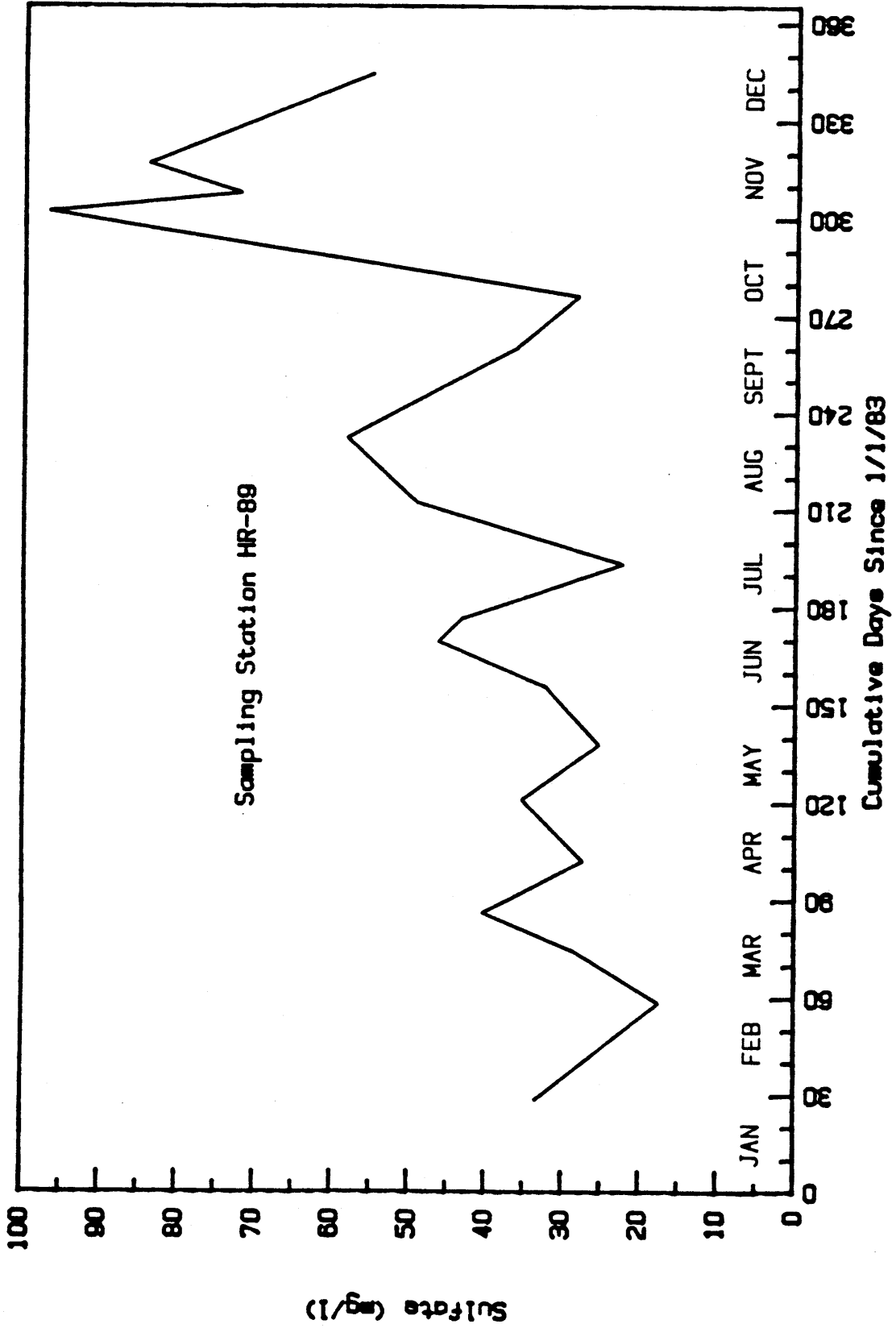
Mashudda Strip Mine Project



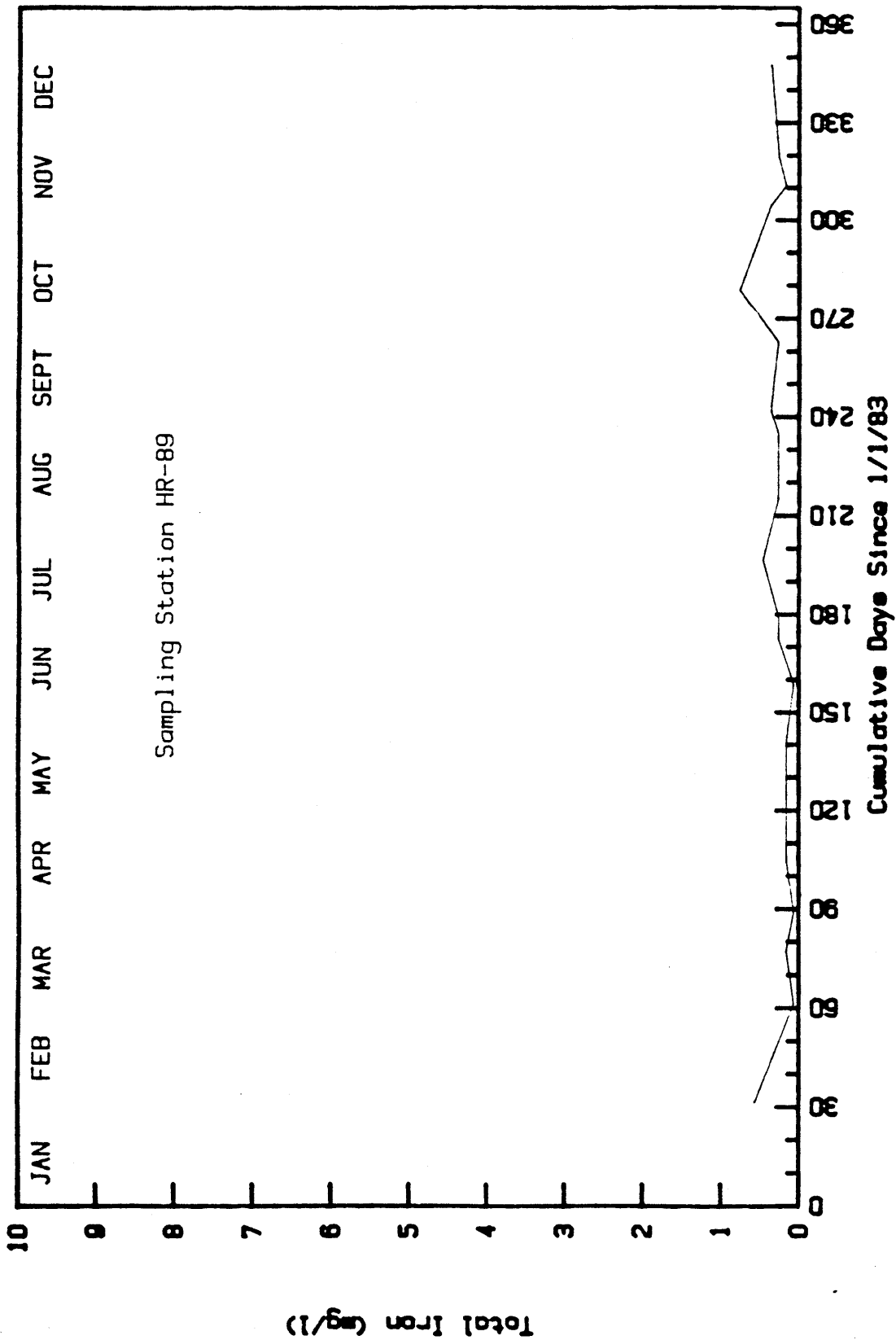
Mashudda Strip Mine Project



Mashudda Strip Mine Project



MASHUDDA STRIP MINE PROJECT

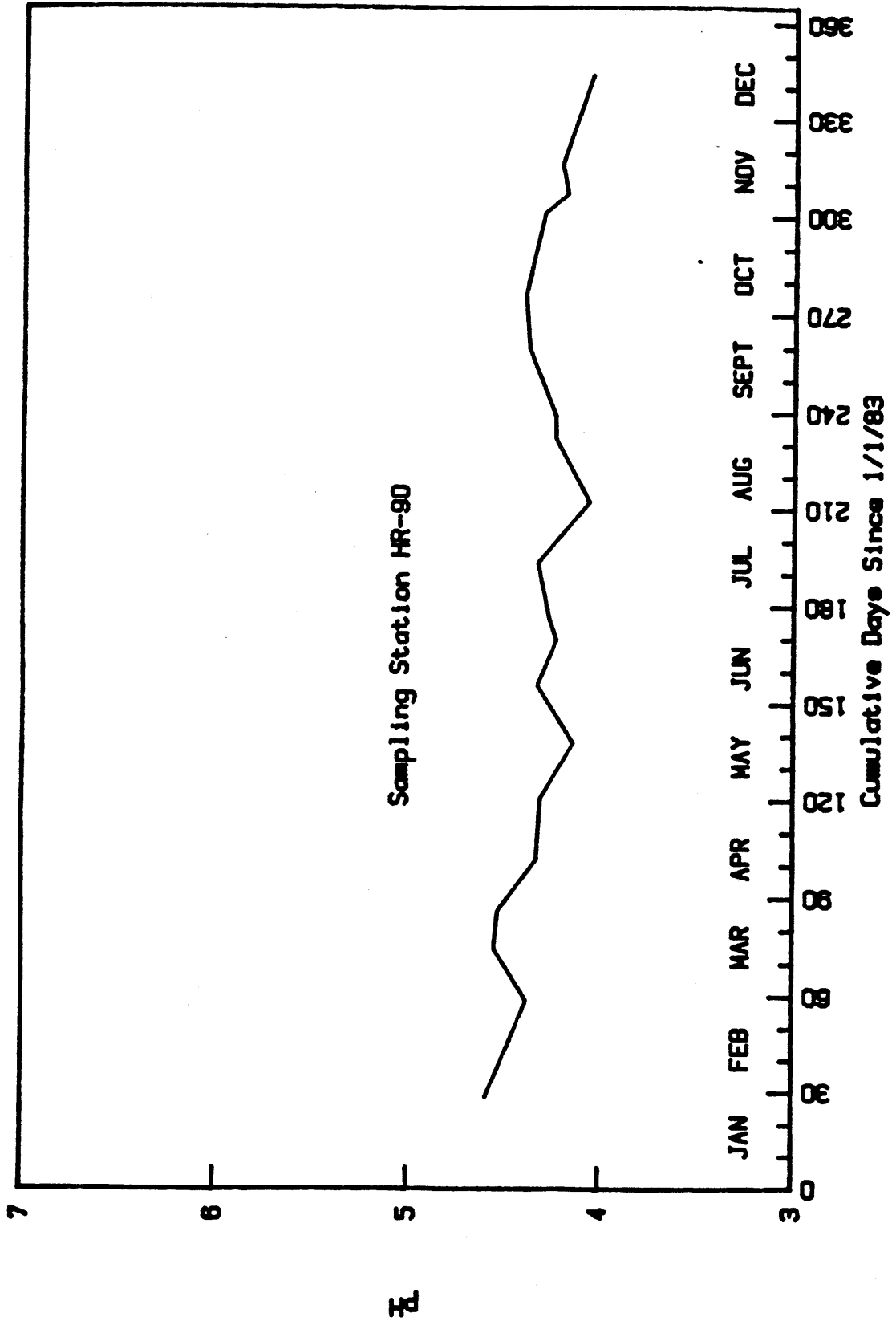


HILLEN RUN
Left Branch

Sampling Station HR-90

| Sampling Date | pH | Acidity mg/l | Alkalinity mg/l | Sulfates mg/l | Iron, mg/l | |
|------------------|------|-----------------|--------------------|------------------|------------|---------|
| | | | | | Total | Ferrous |
| 7/22/82 | 4.28 | 19 | 0 | 157 | 0.3 | 0.1 |
| 10/5/82 | 4.43 | 21 | 0 | 113 | 0.2 | 0.1 |
| 10/23/82 | 4.62 | 11 | 1 | 80 | 0 | 0 |
| 11/20/82 | 4.64 | 17 | 2 | 83 | 0 | 0 |
| 1/29/83 | 4.58 | 14 | 1 | 52 | 0.1 | 0.1 |
| 2/28-3/1/83 | 4.37 | 28 | 0 | 35 | 0.1 | 0 |
| 3/16-18/83 | 4.54 | 8 | 1 | 64 | 0.1 | 0 |
| 3/28-29/83 | 4.52 | 20 | 0 | 74 | 0 | 0 |
| 4/13-14/83 | 4.32 | 26 | 0 | 76 | 0.1 | 0 |
| 5/2-3/83 | 4.30 | 32 | 0 | 94 | 0.3 | 0.1 |
| 5/19/83 | 4.13 | 99 | 0 | 215 | 0.5 | 0.2 |
| 6/6-7/83 | 4.32 | 25 | 0 | 86 | 0.4 | 0.3 |
| 6/20-21/83 | 4.22 | 37 | 0 | 82 | 0.3 | 0.1 |
| 6/27/83 | 4.26 | 32 | 0 | 65 | 0.2 | 0 |
| 7/14/83 | 4.32 | 27 | 0 | 51 | 0.5 | 0.1 |
| 8/2/83 | 4.05 | 76 | 0 | 132 | 0.3 | 0.1 |
| 8/22-23/83 | 4.23 | 32 | 0 | 148 | 0.3 | 0.1 |
| 8/29-30/83 | 4.23 | 28 | 0 | 18 | 0.2 | 0.1 |
| 9/19/83 | 4.37 | 32 | 0 | 157 | 0.2 | 0.2 |
| 10/5-6/83 | 4.39 | 27 | 0 | 88 | 0.3 | 0 |
| 10/31/83 | 4.29 | 67 | 0 | 115 | 0.4 | 0.4 |
| 11/6/83 | 4.17 | 86 | 0 | 152 | 0.1 | 0 |
| 11/15/83 | 4.20 | 69 | 0 | 123 | 0.1 | 0 |
| 12/13-14/83 | 4.04 | 100 | 0 | 152 | 0.6 | 0.1 |
| 1/11/84 | 4.06 | 90 | 0 | 158 | 0.1 | 0.1 |
| 1/19-20/84 | 4.15 | 69 | 0 | 118 | 0.2 | 0.1 |
| 2/8/84 | 4.13 | 65 | 0 | 90 | 0.2 | 0.1 |
| 2/16/84 | 4.11 | 59 | 0 | 108 | 0.2 | 0 |
| 3/6/84 | 4.11 | 59 | 0 | 79 | 0.2 | 0 |
| 4/3/84 | 4.12 | 46 | 0 | 88 | 0.2 | 0 |

Mashudda Strip Mine Project



Mashudda Strip Mine Project

