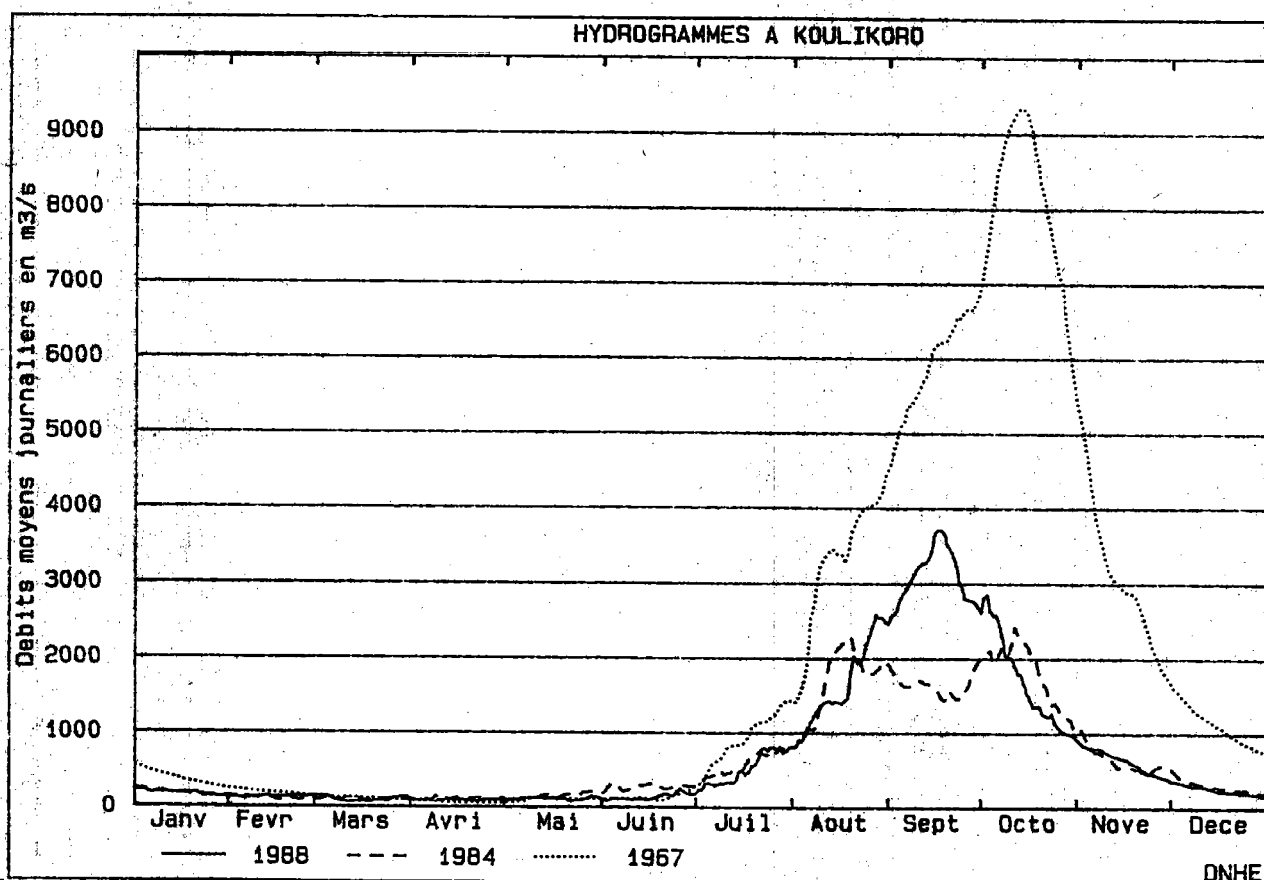


# REPUBLIQUE DU MALI

MINISTERE DE L'INDUSTRIE DE L'HYDRAULIQUE  
ET DE L'ENERGIE

DIRECTION NATIONALE DE L'HYDRAULIQUE  
ET DE L'ENERGIE

## *ANNUAIRE HYDROLOGIQUE DU MALI ANNEE 1988*



DIVISION HYDROLOGIE - BAMAKO juillet 1989

03/0105

03/0105

## PRESENTATION

LES STATIONS DU RESEAU NATIONAL SONT CLASSEES PAR ORDRE ALPHABETIQUE ( QUELQUEFOIS LEGEREMENT DECALE POUR LAISSER HAUTEURS ET DEBITS DE LA MEME STATION SUR LA MEME PAGE ).

LES STATIONS DU BASSIN DU NIGER ( PAGES BLANCHES ) PRECEDENT CELLES DU BASSIN DU SENEGAL ( PAGES VERTES). POUR LES PRINCIPALES STATIONS LES DEBITS INTERANNUELS SONT RAJOUTES EN BAS DE PAGE. LA PERIODE DE REFERENCE EST 1951-88. POUR PLUSIEURS STATIONS QUI ONT ETE INSTALLEES APRES 1951 LA PERIODE DE CALCUL DES MOYENNES EST PLUS COURTE.

LE MAXIMUM ET LE MINIMUM OBSERVES POUR CHAQUE MOIS DE CETTE PERIODE ONT ETE REPORTES APRES LA MOYENNE.

LES LACUNES ONT ETE COMBLEES ET DES CORRECTIONS FAITES PARTOUT OU CELA ETAIT POSSIBLE : LES VALEURS RECONSTITUEES SONT PRECEDEES DU SIGNE ETOILE (\*).

LES LECTURES SONT DE TRES BONNE QUALITE CETTE ANNEE GRACE A UN CONTROLE SERRE DES LECTEURS. SEULE LA STATION DE FOUROU N'A PU ETRE PUBLIEE.

LA TABLE DES MATIERES EST LA SUIVANTE:

- 1- PRESENTATION
- 2- COMMENTAIRE HYDROLOGIQUE
- 3- LISTE ET CARTE DES STATIONS
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- 5- HAUTEURS ET DEBITS BASSIN DU NIGER .....pages blanches
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TOUTE OBSERVATION SUR LA PRESENTATION OU LA QUALITE DE CES DONNEES NE POURRA ETRE QUE BENEFIQUE ET SERA LA BIENVENUE.

BAMAKO JUILLET 1989

### 3-Le Niger aval

Les hauteurs du Niger à Mopti et à l'aval de Mopti sont le résultat de la conjonction des crues du Niger et du Bani. Ces deux dernières étant inférieures à la médiane, la résultante à Mopti l'est bien sûr aussi. La pointe 1988 ayant été précocée sur les deux bassins elle l'est aussi à Mopti.

A Diré les mêmes observations qu'à Mopti sont valables.

### 4-Le bassin du Sénégal

Pour le bassin du Sénégal la Figure 3 présente les hauteurs maximales à Daka Saidou. La pointe 1988 y est nettement supérieure à celle toutes les années précédentes depuis 1981 et atteint la médiane 1951-87 (valeur centrale des 37 années calculée jour par jour). Les débits du Sénégal sont artificiels depuis la mise en eau du barrage de Manantaly en 1987 mais la pointe 1988 est à peu près naturelle, les débits du Bafing ayant transité par le barrage dont la cote amont est restée constante au moment du maximum (début septembre).

La figure 13 permet de voir la gestion du barrage à partir de la station de Dibia située à l'aval.

## ANALYSE DE LA CRUE

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### Bassin du Niger

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#### 1- Haut Niger ( à l'amont du delta intérieur )

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Les pluies ont été abondantes en juillet et août ( plus de 300 mm pour chacun des 2 mois à Bamako ) mais très faibles après le 10 septembre. Nous avons donc une crue avec une seule pointe atteinte dès la mi septembre ( le 16/9 à Bamako ). Le maximum ( 2 m 92 ) a été un peu supérieur à celui de 1987 ( 2 m 70 ).

La décrue a été très rapide comme le montre la figure No 4 de Koulikoro et est en avance de plus de 10 jours par rapport à 1987.

L'étiage 1988 ( crue 1987-88 ) a été inférieur à celui de 1987 (figure 16), la gestion du barrage de Sélingué ayant été différente: la centrale thermique de Bamako a été mise en marche dès début mars d'où des débits turbinés moindres à partir de la même date. D'autre part la centrale hydro-électrique de Sotuba était en pleine charge en 1988 contrairement à début 87, d'où également débits moindres par rapport à l'étiage 1987 (Sélingué ayant turbiné plus en 1987 pour compenser le manque à produire de Sotuba), les débits naturels ( Niger à Banankoro ) étant similaires pour les deux étiages.

La figure 16 montre que les débits 1988 ont été largement inférieurs à ceux de 1987 durant tout l'étiage. Celui ci a cependant été très largement soutenu par les débits turbinés à Sélingué . Ainsi au

mois de mai le débit à Koulikoro était de 110 m<sup>3</sup>/s, à comparer au débit de Banankoro: 3m<sup>3</sup>/s. (figure 17)

La figure 16 montre également ce soutien d'étiage. Il suffit de comparer 1988 à 1973. En débits naturels 1988 aurait été bien inférieur à 1973 où le débit de base était nettement supérieur début janvier.

## 2- Bassin du Bani

Les hydrogrammes du Bani à Douna montrent que 1988 a été nettement meilleur que 1987 même si l'on reste sous la moyenne ( 5m55 en 1988 contre 7m58 en année médiane ). Là aussi le maximum a été atteint dès la mi-septembre et la décrue a été rapide mais au-dessus de celle de l'an dernier. Durant l'étiage le fleuve a complètement cessé de couler durant 1 mois 1/2.

## 3- Niger aval ( delta intérieur et à l'aval du delta )

La crue du Niger amont ayant été un peu meilleure à celle de 1987 et celle du Bani nettement meilleure, on a assisté à une crue satisfaisante à Mopti, bien que largement sous la moyenne ( 5m70 contre 6m65 ). Satisfaisante parce que suffisante pour remplir les casiers d'irrigation de la région. La conjonction des deux décrues du Niger ( en avance sur 1987 ) et du Bani ( meilleure que 1987 ) donne une décrue similaire à celle de l'an dernier .

Plus à l'aval ( Diré ) la crue a été meilleure que 1987 ( 4m59 contre 4m01 , médiane = 5m46 ) et la décrue largement au-dessus de celle de l'an dernier.

L'étiage 1987-88 a été inférieur à celui de l'année précédente à Mopti et Diré pour les mêmes raisons qu'à Koulikoro: moins de débits turbinés à Sélingué, en particulier en mai et juin 1988 où une grosse partie des débits turbinés à Sélingué a été reprise à Markala alors qu'en 1987 les débits turbinés excédaient largement les besoins de l'Office du Niger. A Markala il y avait néanmoins un minimum "assuré" d'environ 30 m<sup>3</sup>/s dû d'une part aux fuites au niveau des vannes du barrage et d'autre part aux restitutions du canal du Macina suralimenté par suite d'une vanne bloquée en position ouverte au début du canal, au point A.

## Bassin du Sénégal

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La crue du Sénégal est désormais très influencée par le barrage de Manantaly aussi bien à l'étiage qu'en crue. En 1988 il y a eu plusieurs lâchures à l'étiage en particulier mi-mai. La crue naturelle a été forte ( 5m60 à Daka Saidou à l'amont du barrage le 8/9 contre 4m41 le 25/9/87 ) et la pointe de mi-septembre à Kayes correspond en gros aux débits naturels, le barrage ayant laissé passer la pointe sans l'écrêter. La pointe du Bafing correspondant aux pointes du Baoulé et du Bakoye, le maximum à Kayes a été proche de celui de l'année médiane ( 7m57 contre 8m28 ).

Bamako juillet 1989

LISTE ALPHABETIQUE DES STATIONS DU BASSIN DU NIGER  
LA NUMEROTATION CORRESPOND A CELLE DE LA CARTE DE REPERAGE.

| STATION                                | COURS D'EAU  | LATITUDE<br>LONGITUDE | SURFACE<br>(KM2) | ANNEE<br>DEBUT | PUBLIES<br>page      |
|----------------------------------------|--------------|-----------------------|------------------|----------------|----------------------|
| 1 AKKA<br>zérop=258.38m IGN            | ISSA BER     | 15 24'N<br>04 14'W    | --               | 1955           | Haut. 1<br>Débit 1   |
| 2 ANSONGO<br>zérop=242.22m IGN         | NIGER        | 15 40'N<br>00 30'E    | --               | 1949           | Haut. 1<br>Débit 1   |
| 3 BAHAKO VILLE<br>zérop=316.40m IGN    | NIGER        | 12 37'N<br>08 00'W    | 117000           | 1949           | Haut. 2<br>Débit 2   |
| 4 BAMBBA<br>zérop=253.27m IGN          | NIGER        | 17 02'N<br>01 24'W    | --               | 1967           | Haut. 2<br>Débit 2   |
| 5 BANANKORO<br>zérop=329.09m IGN       | NIGER        | 11 41'N<br>08 40'W    | 71800            | 1967           | Haut. 2<br>Débit 2   |
| 6 BANANSO<br>zérop= non connu          | BAFINI       | 10 53'N<br>06 02'W    | 3850             | 1976           | Haut. 3<br>Débit 3   |
| 7 BENENY KEGNY<br>zérop=265.89m IGN    | BANI         | 13 23'N<br>04 55'W    | 116000           | 1949           | Haut. 3<br>Débit 3   |
| 8 BINTAGOUNGOU<br>zérop= non connu     | L FAGUIBINE  | 16 45'N<br>03 44'W    | --               | 1976           | Haut. 4<br>Débit 4   |
| 9 BOUGOUBERY<br>zérop=257.16m IGN      | BARA ISSA    | 16 05'N<br>03 28'W    | --               | 1954           | Haut. 4<br>Débit 4   |
| 10 BOUGOUNI<br>zérop=311.72m IGN       | BAOULE       | 11 24'N<br>07 27'W    | 15700            | 1956           | Haut. 4<br>Débit 4   |
| 11 BOUGOUNI<br>zérop= non connu        | MONO         | 11 27'N<br>07 31'W    | 930              | 1975           | Haut. 5<br>Débit 5   |
| 12 BOUREM SIDEY<br>zérop=258.20m IGN   | M DE KONDI   | 16 21'N<br>03 22'W    | --               | 1954           | Haut. 6<br>Débit 6   |
| 13 BOWARA<br>zérop= non connu          | KOBI         | 11 07'N<br>06 04'W    | 280              | 1976           | Haut. 5<br>Débit 5   |
| 14 DINSO<br>zérop= non connu           | OUASSOULOU   | 10 28'N<br>08 05'W    | --               | 1983           | Haut. 6<br>Débit 6   |
| 15 DIOILA<br>zérop=278.42m IGN         | BAOULE       | 12 31'N<br>06 48'W    | 32500            | 1953           | Haut. 6<br>Débit 6   |
| 16 DIRE<br>zérop=256.85m IGN           | NIGER        | 16 16'N<br>03 23'W    | 340000           | 1924           | Haut. 7<br>Débit 7   |
| 17 DOUNA<br>zérop=270.72m IGN          | BANI         | 13 13'N<br>05 54'W    | 102000           | 1922           | Haut. 7<br>Débit 7   |
| 18 FINKOLO<br>zérop= non connu         | FARAKO       | 11 16'N<br>05 30'W    | 745              | 1976           | Haut. 8<br>Débit 8   |
| 19 FOUROU<br>zérop= non connu          | BAGOE        | 10 43'N<br>06 13'W    | 9800             | 1975           | Haut. 8<br>Débit 8   |
| 20 GAO<br>zérop=245.08m IGN            | NIGER        | 16 15'N<br>00 03'W    | 350000           | 1947           | Haut. 8<br>Débit 8   |
| 21 GOUALA<br>zérop= non connu          | SANKARANI    | 11 52'N<br>08 14'W    | 35300            | 1953           | Haut. 8<br>Débit 8   |
| 22 GOUNDAM<br>zérop=253.27m IGN        | M DE GOUNDAM | 16 25'N<br>03 39'W    | --               | 1937           | Haut. 9<br>Débit 9   |
| 23 GOURMA RHAROUS<br>zérop=253.88m IGN | NIGER        | 16 53'N<br>01 55'W    | --               | 1954           | Haut. 9<br>Débit 9   |
| 24 KANKELA<br>zérop= non connu         | KANKELABA    | 10 49'N<br>06 40'W    | 7200             | 1971           | Haut. 9<br>Débit 9   |
| 25 KARA<br>zérop=267.16m IGN           | DIAKA        | 14 10'N<br>05 01'W    | --               | 1952           | Haut. 10<br>Débit 10 |

| STATION                                 | COURS D'EAU | LATITUDE<br>LONGITUDE | SURFACE<br>(KM2) | ANNEE<br>DEBUT | PUBLIES<br>page      |
|-----------------------------------------|-------------|-----------------------|------------------|----------------|----------------------|
| 26 KE MACINA<br>zérop=268.86m IGN       | NIGER       | 13 57'N<br>05 22'W    | 141000           | 1952           | Haut. 10<br>Débit 10 |
| 27 KENIEROBA<br>zérop=324.00m IGN       | NIGER       | 12 06'N<br>08 19'W    | 113000           | 1953           | Haut. 11<br>Débit 11 |
| 28 KIRANGO<br>zérop=274.99m IGN         | NIGER       | 13 43'N<br>06 03'W    | 137000           | 1925           | Haut. 11<br>Débit 11 |
| 29 KLELA<br>zérop= non connu            | LOTIO       | 11 41'N<br>05 35'W    | 3685             | 1976           | Haut. 11<br>Débit 11 |
| 30 KOKALA<br>zérop= non connu           | BAOULE      | 12 04'N<br>07 10'W    | 22125            | 1971           | Haut. 12<br>Débit 12 |
| 31 KOLLE<br>zérop= non connu            | BAOULE      | 11 44'N<br>06 51'W    | 3050             | 1971           | Haut. 12<br>Débit 12 |
| 32 KORIENTZE<br>zérop=257.23m IGN       | COLI COLI   | 15 23'N<br>03 47'W    | --               | 1959           | Haut. 12<br>Débit 12 |
| 33 KORODOUGOU MARKA<br>zérop= non connu | BANIFING    | 12 26'N<br>06 16'W    | 18200            | 1971           | Haut. 13<br>Débit 13 |
| 34 KORYOUME<br>zérop=256.19m IGN        | NIGER       | 16 40'N<br>03 02'W    | 342000           | 1975           | Haut. 13<br>Débit 13 |
| 35 KOULIKORO<br>zérop=290.08m IGN       | NIGER       | 12 52'N<br>07 33'W    | 120000           | 1907           | Haut. 14<br>Débit 14 |
| 36 KOUORO<br>zérop= non connu           | BANIFING    | 12 01'N<br>05 41'W    | 14300            | 1957           | Haut. 14<br>Débit 14 |
| 37 LABBEZANGA<br>zérop=226.63m IGN      | NIGER       | 14 58'N<br>00 41'E    | --               | 1977           | Haut. 13<br>Débit 13 |
| 38 LELEHOYE<br>zérop= non connu         | NIGER       | 14 32'N<br>00 30'E    | --               | 1979           | Haut. 15<br>Débit 15 |
| 39 LOULOUNI<br>zérop= non connu         | KOBAFINI    | 10 54'N<br>05 37'W    | 762              | 1976           | Haut. 15<br>Débit 15 |
| 40 MADINA DIASSA<br>zérop= non connu    | BAOULE      | 10 48'N<br>07 40'W    | 7900             | 1971           | Haut. 15<br>Débit 15 |
| 41 MANANKORO<br>zérop= non connu        | DEGOU       | 10 28'N<br>07 27'W    | --               | 1975           | Haut. 16<br>Débit 16 |
| 42 MOPTI<br>zérop=260.62m IGN           | BANI        | 14 29'N<br>04 12'W    | --               | 1922           | Haut. 16<br>Débit 16 |
| 43 NANTAKA<br>zérop=260.78m IGN         | NIGER       | 14 32'N<br>04 13'W    | 282000           | 1953           | Haut. 17<br>Débit 17 |
| 44 NIAFUNKE<br>zérop=257.66m IGN        | ISSA BER    | 15 56'N<br>03 59'W    | --               | 1922           | Haut. 17<br>Débit 17 |
| 45 PANKOUREU<br>zérop=285.34m IGN       | BAGOE       | 11 25'N<br>06 34'W    | 31800            | 1956           | Haut. 17<br>Débit 17 |
| 46 SAH<br>zérop=258.54m IGN             | BARA ISSA   | 15 37'N<br>04 03'W    | --               | 1976           | Haut. 18<br>Débit 18 |
| 47 SARAFERE<br>zérop=259.01m IGN        | BARA ISSA   | 15 49'N<br>03 42'W    | --               | 1954           | Haut. 18<br>Débit 18 |
| 48 SEGOU<br>zérop=278.46m IGN           | NIGER       | 13 27'N<br>06 17'W    | 134000           | 1945           | Haut. 18<br>Débit 18 |
| 49 SELINGUE<br>zérop=328.85m IGN        | SANKARANI   | 11 35'N<br>08 10'W    | 34200            | 1964           | Haut. 19<br>Débit 19 |
| 50 SOFARA<br>zérop=262.76m IGN          | BANI        | 14 01'N<br>04 15'W    | 129000           | 1952           | Haut. 19<br>Débit 19 |

LISTE ALPHABETIQUE DES STATIONS DU BASSIN DU NIGER  
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| STATION                                  | COURS D'EAU  | LATITUDE<br>LONGITUDE | SURFACE<br>(KM2) | ANNEE<br>DEBUT | PUBLIES<br>page      |
|------------------------------------------|--------------|-----------------------|------------------|----------------|----------------------|
| 51 TAMANI<br>zérop=282.36m IGN           | NIGER        | 13 21'N<br>06 50'W    | 130000           | 1952           | Haut. 20             |
| 52 TIENKONGO<br>zérop= non connu         | BAGOE        | 11 09'N<br>06 26'W    | 24800            | 1971           | Haut. 20             |
| 53 TIELEMBEYA<br>zérop=266.32m IGN       | NIGER        | 14 09'N<br>04 59'W    | --               | 1939           | Haut. 20<br>Débit 20 |
| 54 TINDIRMA<br>zérop=257.02m IGN         | ISSA BER     | 16 07'N<br>03 38'W    | --               | 1955           | Haut. 21             |
| 55 TONDIFARMA AMONT<br>zérop=257.29m IGN | ISSA BER     | 16 04'N<br>03 48'W    | --               | 1955           | Haut. 21             |
| 56 TONDIFARMA AVAL<br>zérop=257.12m IGN  | ISSA BER     | 16 05'N<br>03 48'W    | --               | 1955           | Haut. 21             |
| 57 TONDIGAME<br>zérop=259.81m IGN        | LAC FATI     | 16 15'N<br>03 39'W    | --               | 1955           | Haut. 21             |
| 58 TONKA<br>zérop=257.62m IGN            | ISSA BER     | 16 08'N<br>03 45'W    | --               | 1954           | Haut. 22             |
| 59 TOSSAYE<br>zérop=248.63m IGN          | NIGER        | 16 56'N<br>00 35'W    | 348000           | 1954           | Haut. 22<br>Débit 22 |
| 60 TYO<br>zérop= non connu               | BAGOE        | 12 27'N<br>06 33'W    | --               | 1971           | Haut. 22             |
| 61 ZANIENA<br>zérop= non connu           | DEKOROBOUGOU | 11 15'N<br>06 25'W    | 736              | 1976           | Haut. 23<br>Débit 23 |
| 62 ZANTIEBOUGOU<br>zérop= non connu      | BANIFING     | 11 23'N<br>07 17'W    | 1665             | 1975           | Haut. 23<br>Débit 23 |

LISTE ALPHABETIQUE DES STATIONS DU BASSIN DU SENEGAL  
LA NUMEROTATION CORRESPOND A CELLE DE LA CARTE DE REPERAGE.

| STATION                               | COURS D'EAU | LATITUDE<br>LONGITUDE | SURFACE<br>(KM2) | ANNEE<br>DEBUT | PUBLIES<br>page      |
|---------------------------------------|-------------|-----------------------|------------------|----------------|----------------------|
| 63 AMBIDEDI<br>zérop= 17.67 MIGN      | SENEGAL     | 14 35'N<br>11 47'W    | 159000           | 1909           | Haut. 24<br>Débit 24 |
| 64 BAFING MAKANA<br>zérop=220.50 MIGN | BAFING      | 12 33'N<br>10 16'W    | 21700            | 1954           | Haut. 24<br>Débit 24 |
| 65 BAOULE GARE<br>zérop= NON CONNU    | BAOULE      | 12 53'N<br>08 38'W    | --               | 1977           | Haut. 25             |
| 66 DAKA SAIDOU<br>zérop=307.13 MIGN   | BAFING      | 12 15'N<br>10 20'W    | 15500            | 1952           | Haut. 25<br>Débit 25 |
| 67 DIANGOLA<br>zérop= NON CONNU       | BAKOYE      | 12 47'N<br>09 28'W    | 12100            | 1967           | Haut. 25             |
| 68 DIBIA<br>zérop= NON CONNU          | BAFING      | 13 14'N<br>10 48'W    | 33000            | 1956           | Haut. 26<br>Débit 26 |
| 69 FADOUGOU<br>zérop=119.03 MIGN      | FALEME      | 12 31'N<br>11 23'W    | 9300             | 1952           | Haut. 26<br>Débit 26 |
| 70 FELOU<br>zérop= 23.51 MIGN         | SENEGAL     | 14 21'N<br>11 21'W    | 131000           | 1932           | Haut. 27             |
| 71 GALOUGO<br>zérop= 69.24 MIGN       | SENEGAL     | 13 51'N<br>11 03'W    | 126900           | 1904           | Haut. 27<br>Débit 27 |
| 72 GOUTINA<br>zérop= 47.60 MIGN       | SENEGAL     | 14 01'N<br>11 06'W    | 127000           | 1956           | Haut. 27             |
| 73 GOURBASSY<br>zérop= NON CONNU      | FALEME      | 13 23'N<br>11 38'W    | 15000            | 1954           | Haut. 28<br>Débit 28 |
| 74 KABATE<br>zérop= NON CONNU         | KOLIMBINE   | 14 31'N<br>11 13'W    | 25000            | 1968           | Haut. 28<br>Débit 28 |
| 75 KAYES<br>zérop= 20.16 MIGN         | SENEGAL     | 14 27'N<br>11 26'W    | 157400           | 1903           | Haut. 29<br>Débit 29 |
| 76 MAHINA<br>zérop= 89.55 MIGN        | BAFING      | 13 45'N<br>10 51'W    | 37000            | 1904           | Haut. 29             |
| 77 MANANTALY<br>zérop=150.53 MIGN     | BAFING      | 13 12'N<br>10 27'W    | 27800            | 1986           | Haut. 29             |
| 78 MISSIRA<br>zérop= NON CONNU        | BAOULE      | 13 45'N<br>08 30'W    | 11400            | 1969           | Haut. 30             |
| 79 MOUSSALA<br>zérop= NON CONNU       | FALEME      | 12 31'N<br>11 18'W    | 7420             | 1968           | Haut. 30<br>Débit 30 |
| 80 NIORO DU SAHEL<br>zérop= NON CONNU | FAKHA       | 15 14'N<br>09 36'W    | 32               | 1977           | Haut. 30             |
| 81 OUALIA<br>zérop=108.16 MIGN        | BAKOYE      | 13 36'N<br>10 23'W    | 84400            | 1954           | Haut. 31<br>Débit 31 |
| 82 SIRAMAKANA<br>zérop=157.03 MIGN    | BAOULE      | 13 34'N<br>09 53'W    | 58000            | 1954           | Haut. 31<br>Débit 31 |
| 83 TOUKOTO<br>zérop=161.05 MIGN       | BAKOYE      | 13 27'N<br>09 53'W    | 16000            | 1954           | Haut. 32<br>Débit 32 |

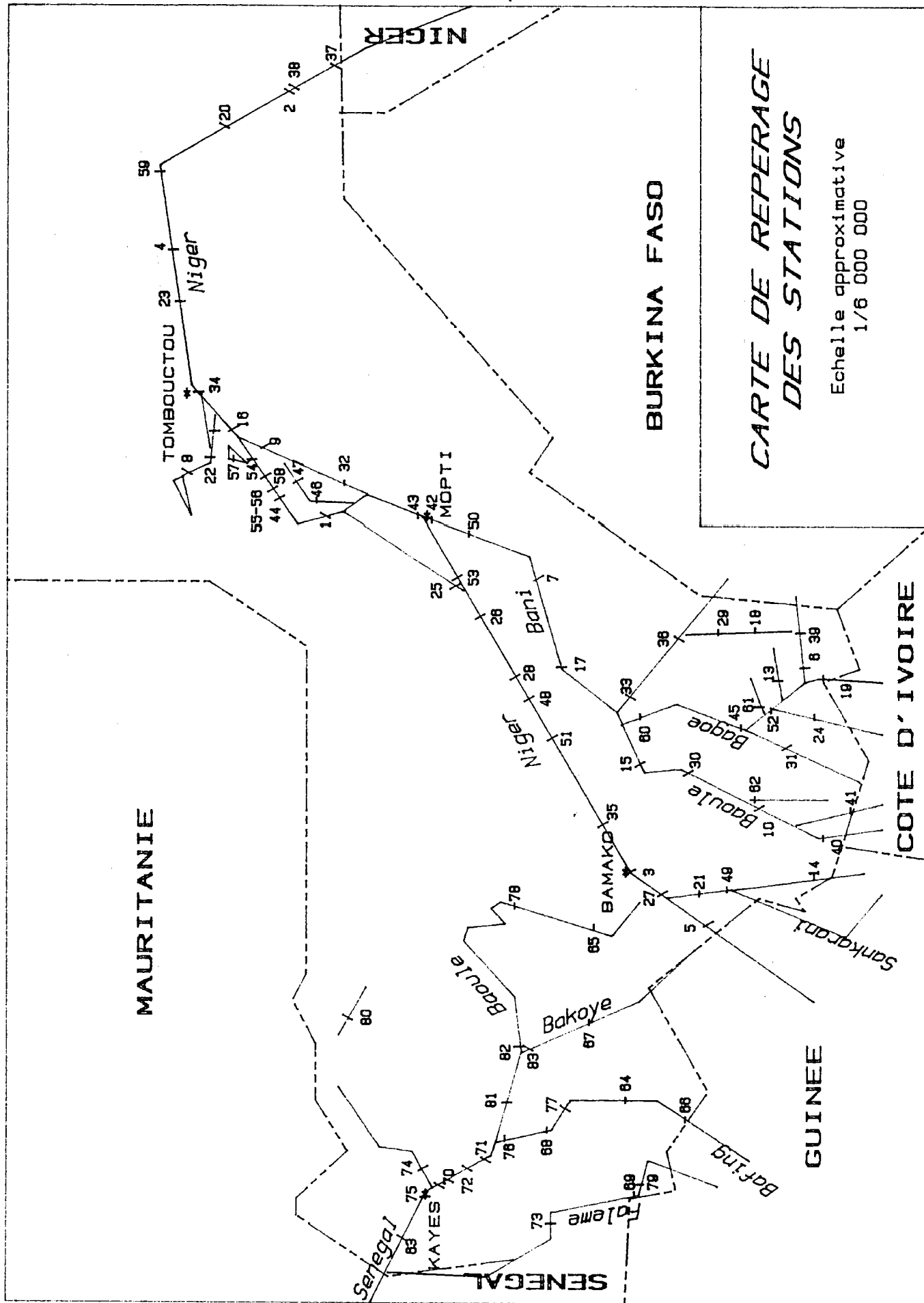


Figure No 1

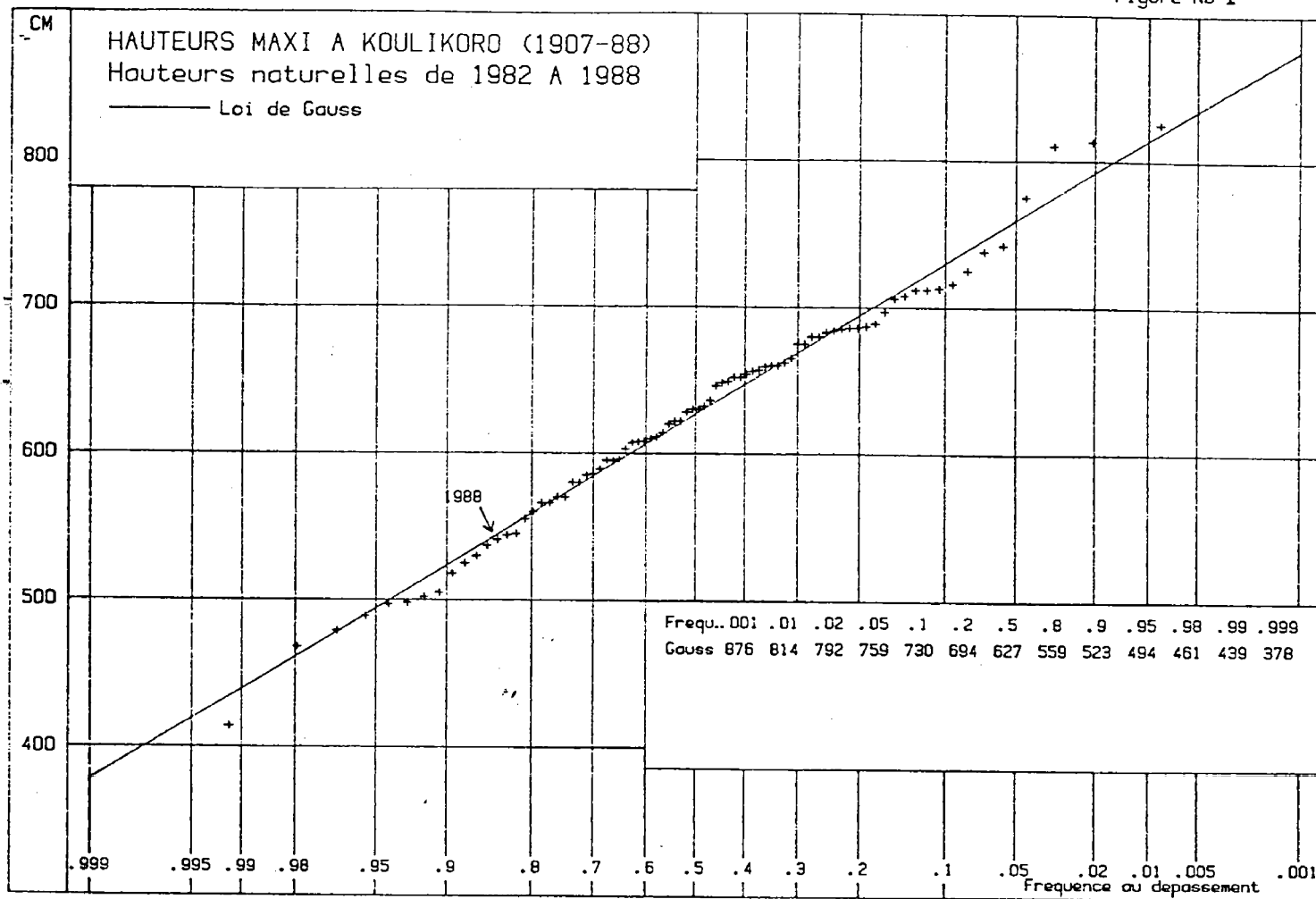
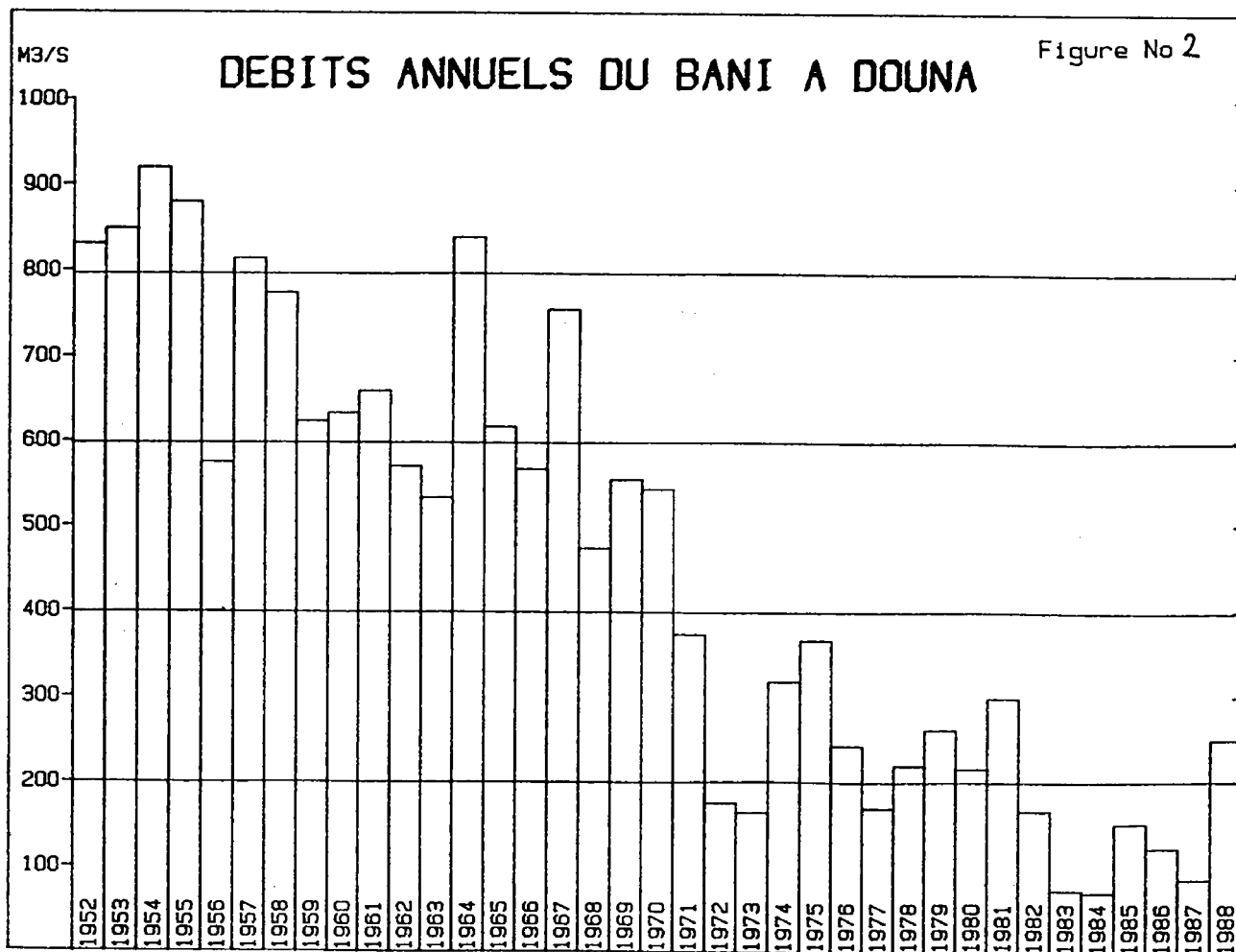


Figure No 2



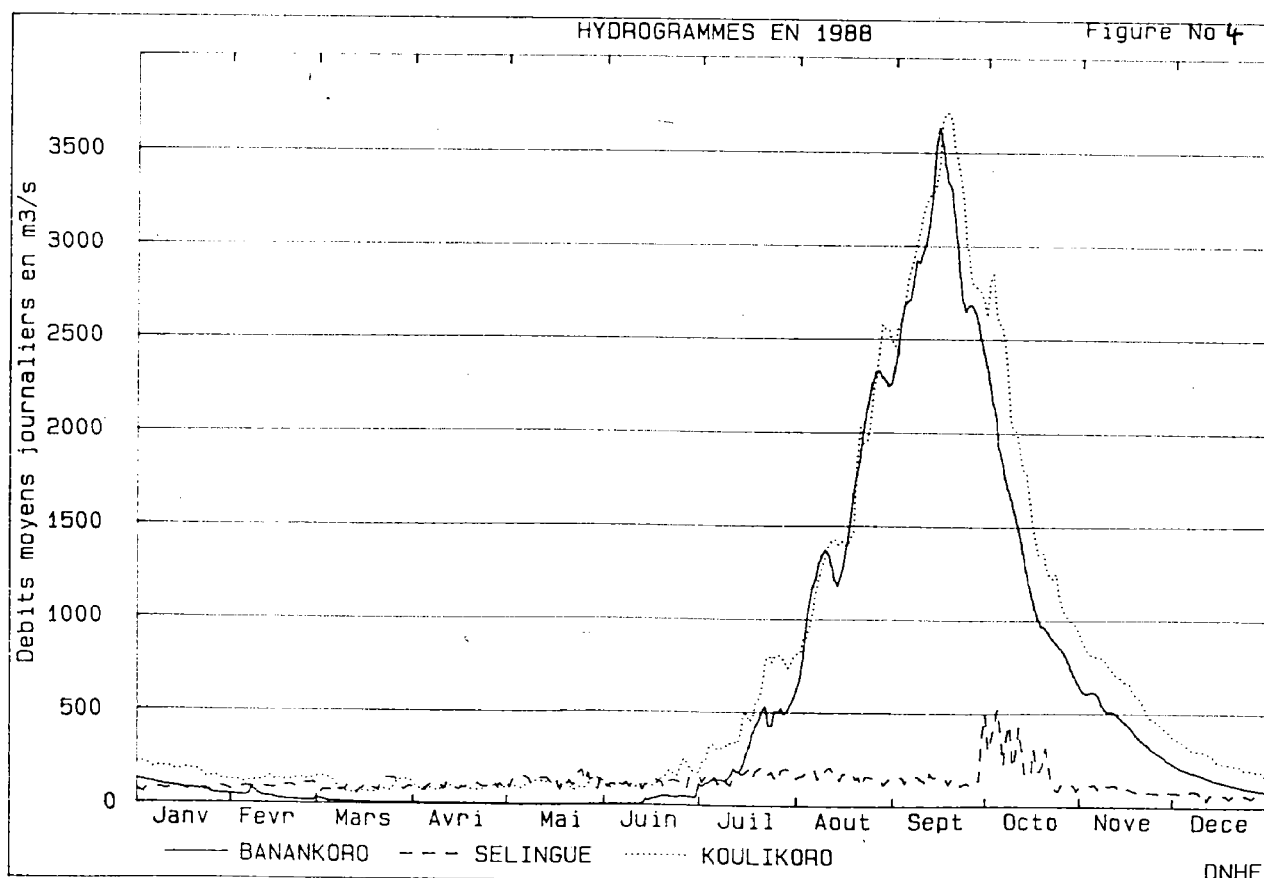
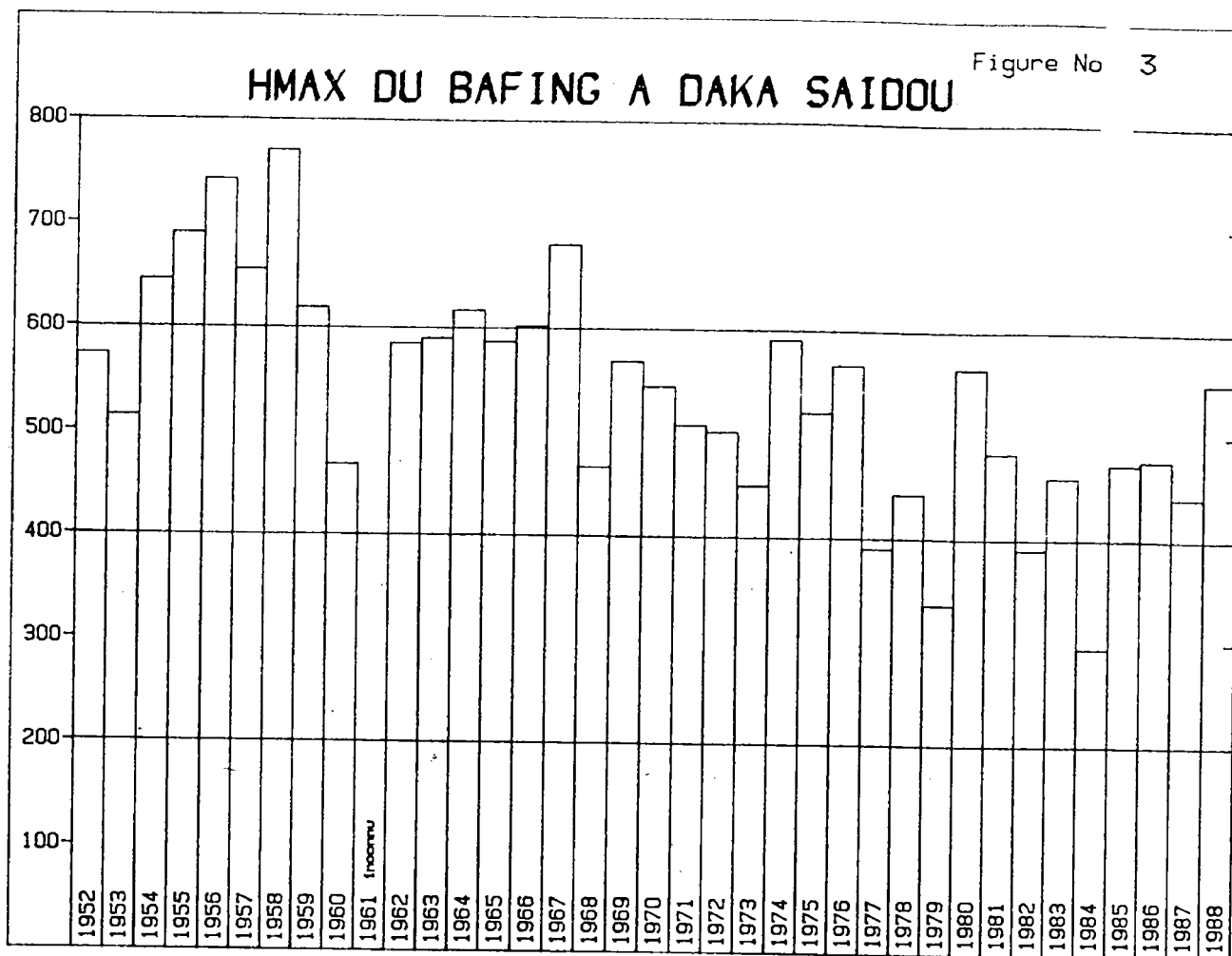


Figure 4 : Le barrage de Sélingué ne s'est rempli que fin septembre et les débits déversés ont été limités à une vingtaine de jours. La crue à Koulikoro est donc à peine supérieure à celle de Banankoro seule.

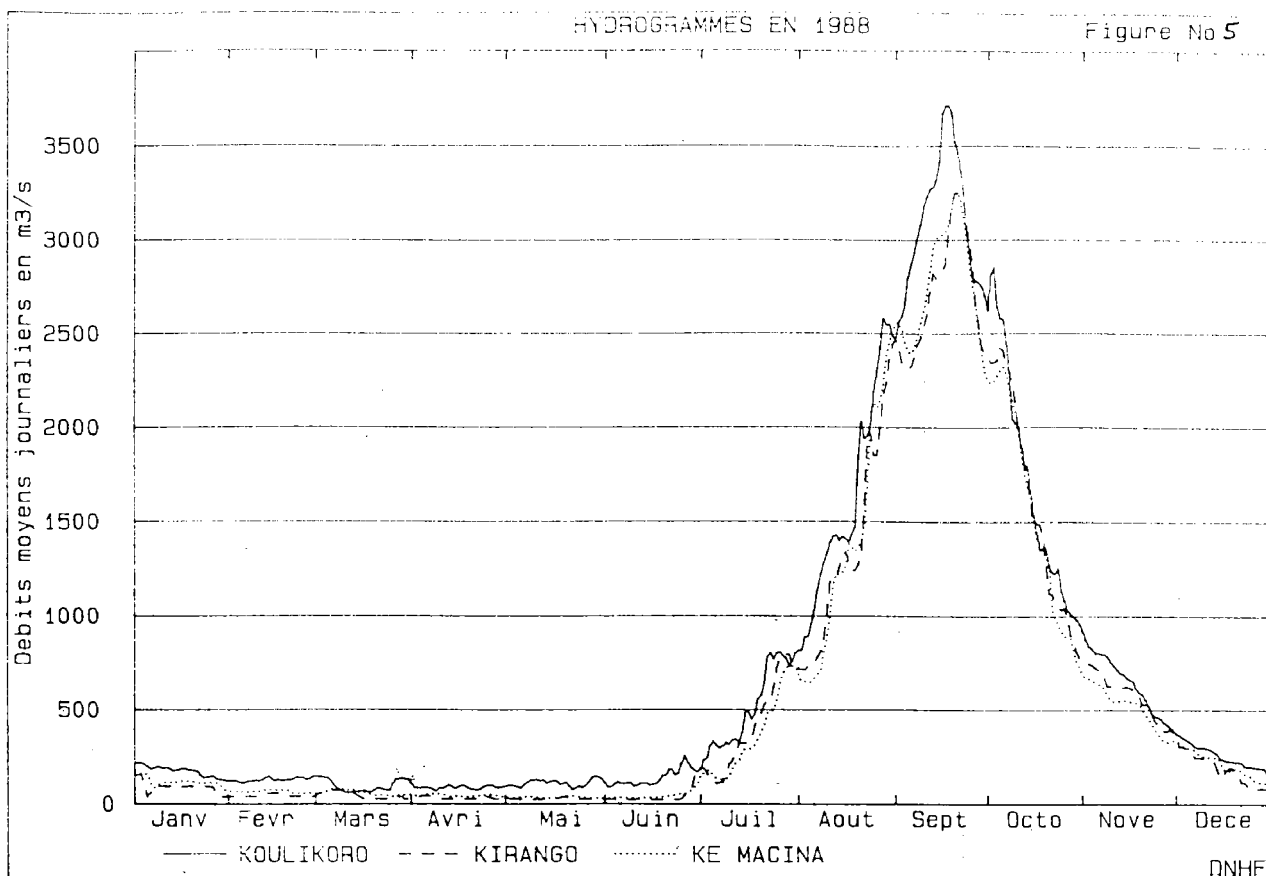


Figure 5 : La propagation des débits se suit bien de Koulikoro à Kirango et Ke Macina. A noter la perte de débits entre Koulikoro et Kirango en crue et à l'étiage (prélèvements de l'Office du Niger à l'étiage: voir détail figure 18)

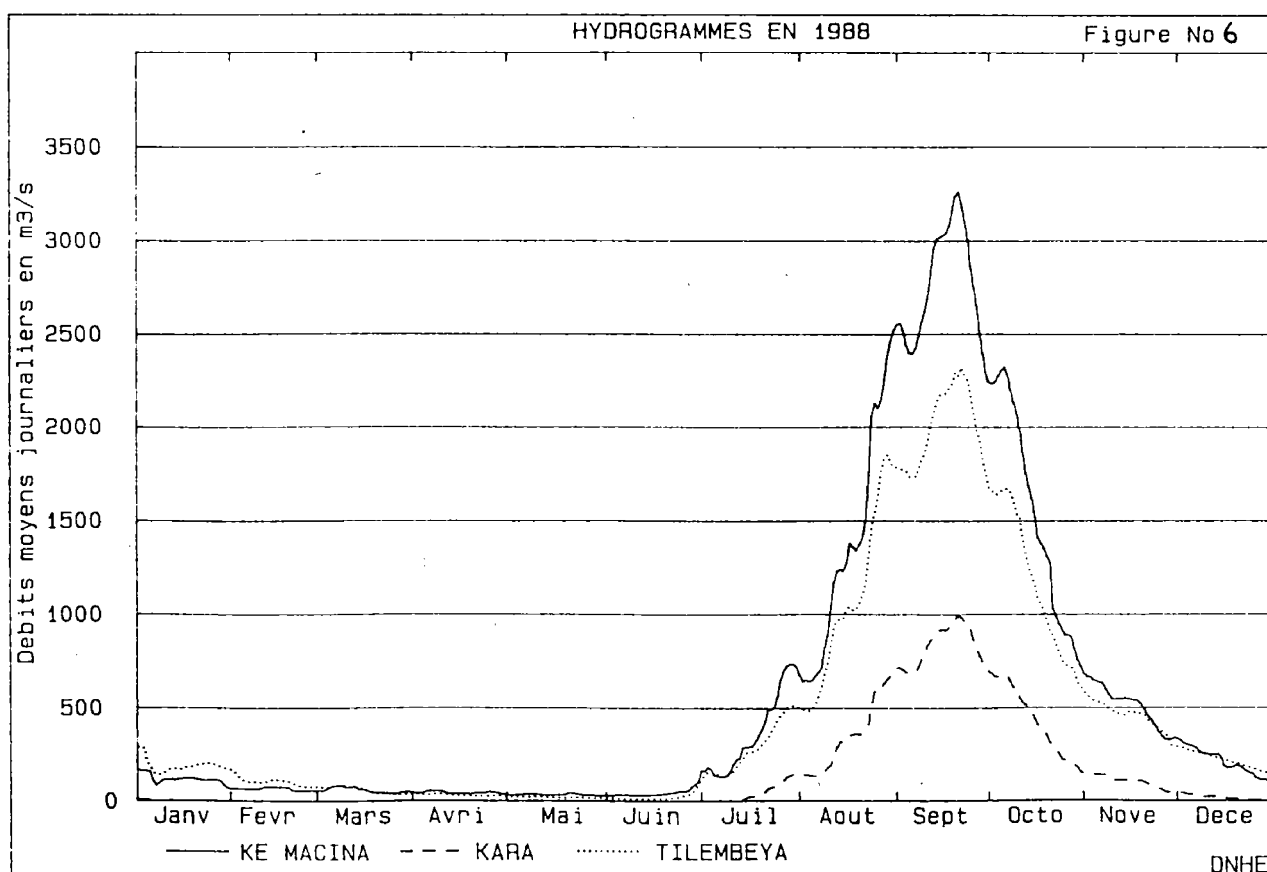
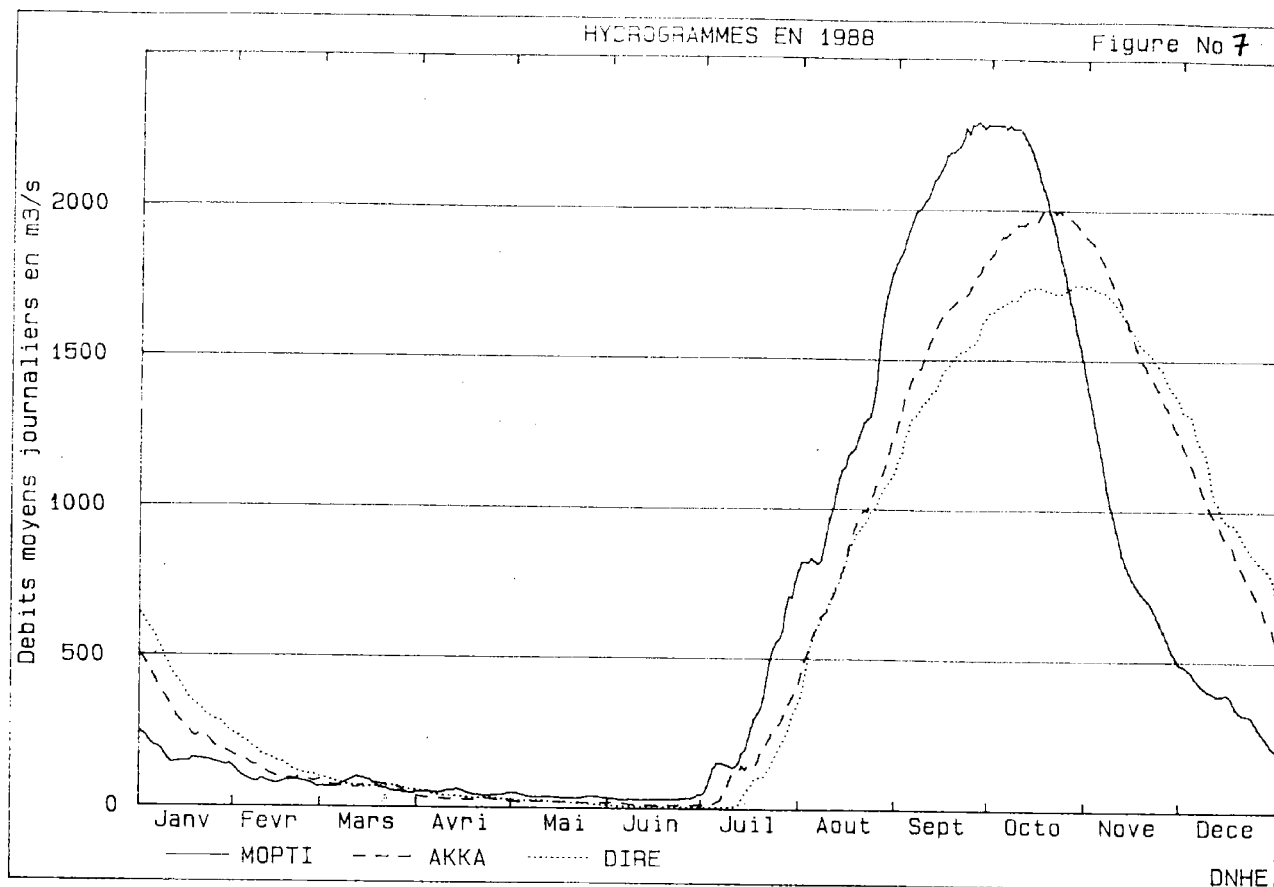
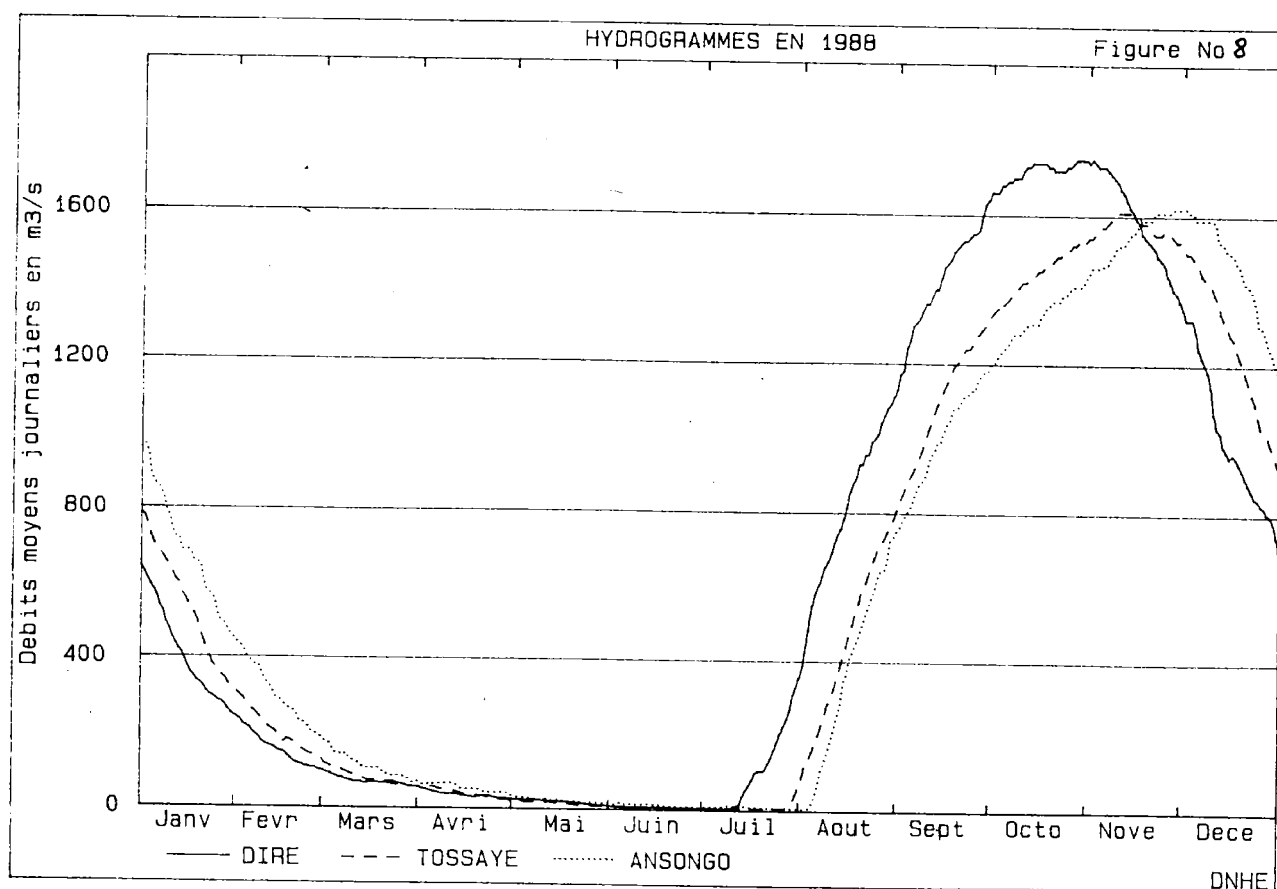


Figure 6 : Les débits de Ke Macina se partagent entre le Diaka à Kara et le Niger à Tilembeya.



Figures 7 et 8 : Elles permettent de suivre la propagation de la crue du Niger. A noter: le décalage et les pertes, de l'amont vers l'aval.



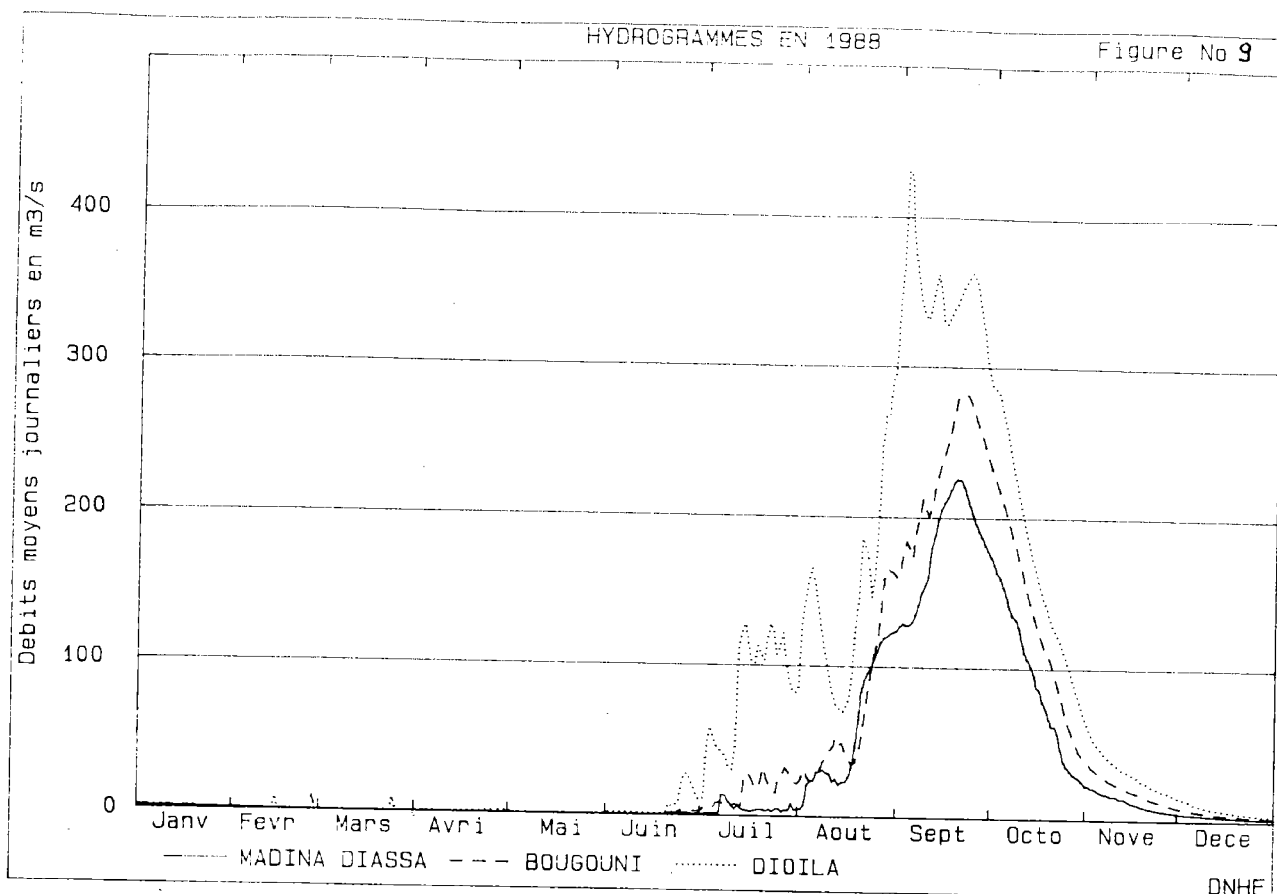


Figure 9 : Les trois stations sont sur le Baoulé. A noter le démarrage précoce de la crue à Dioila dû aux apports de la région de Ouelessebougou.

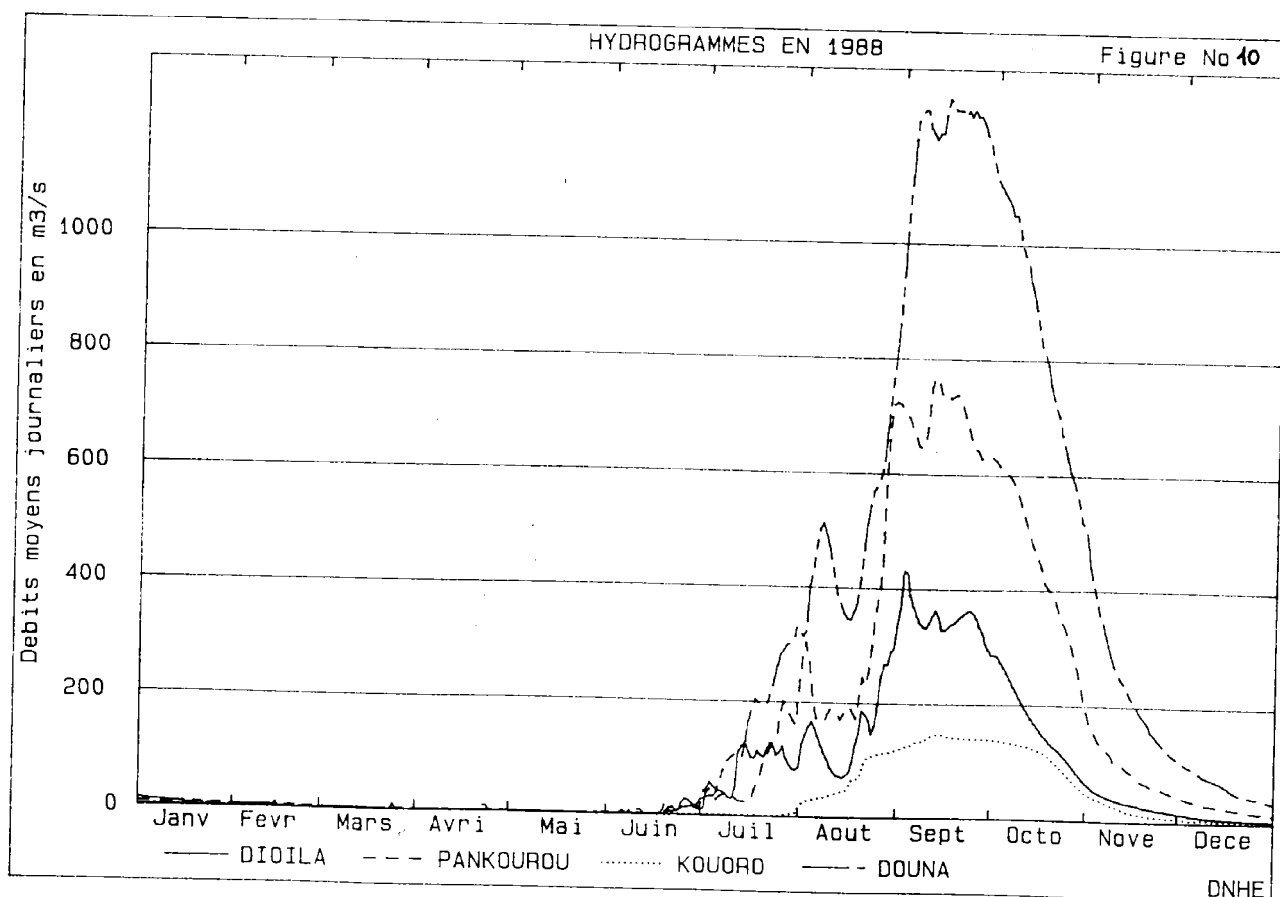


Figure 10 : Les débits du Bani à Douna sont la résultante des trois affluents: Baoulé à Dioila, Bagoé à Pankourou, Banifing à Kouoro.

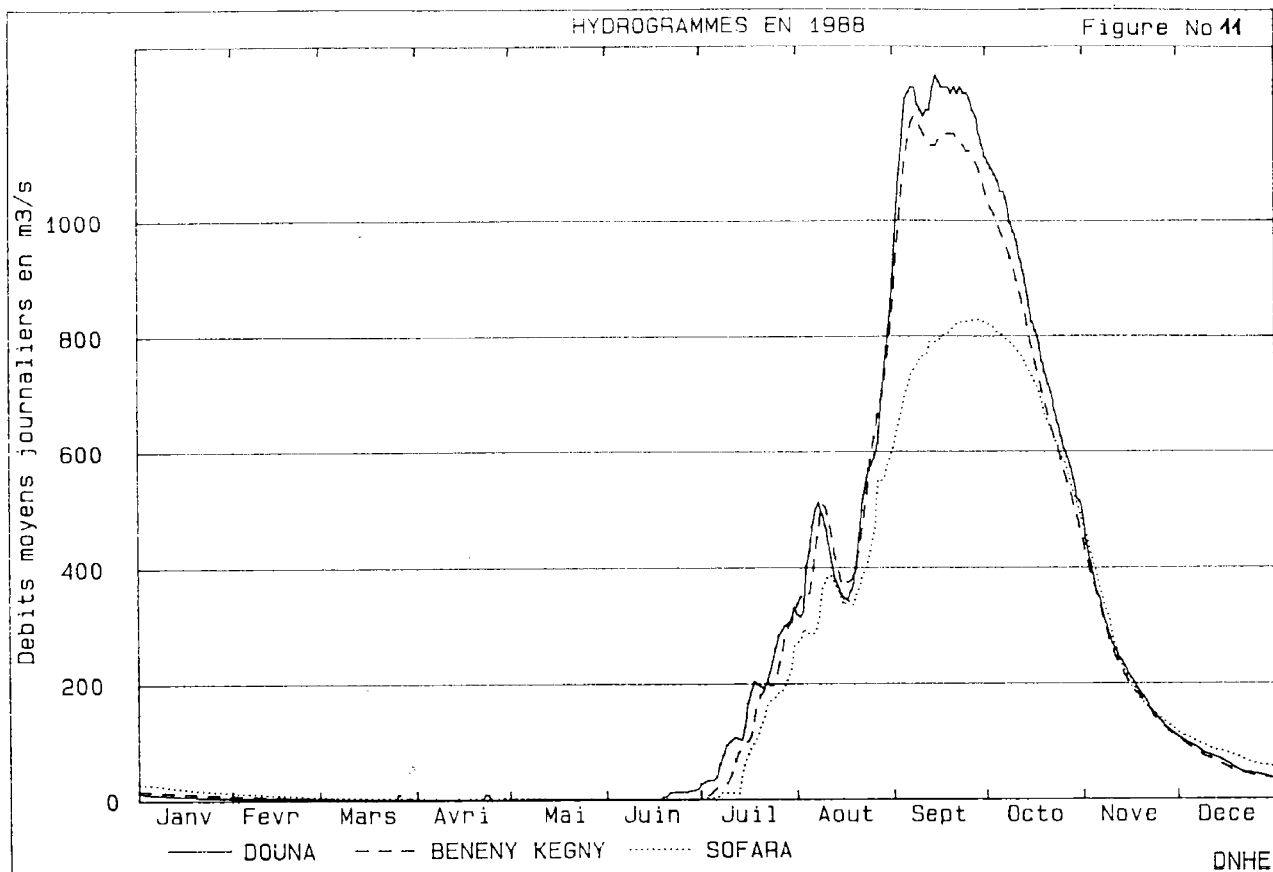


Figure 11 : Les trois stations sont sur le Bani. Peu de pertes entre Douna et Beneny-Kegny mais pertes appréciables entre Beneny Kegny et Sofara dans les plaines d'inondation.

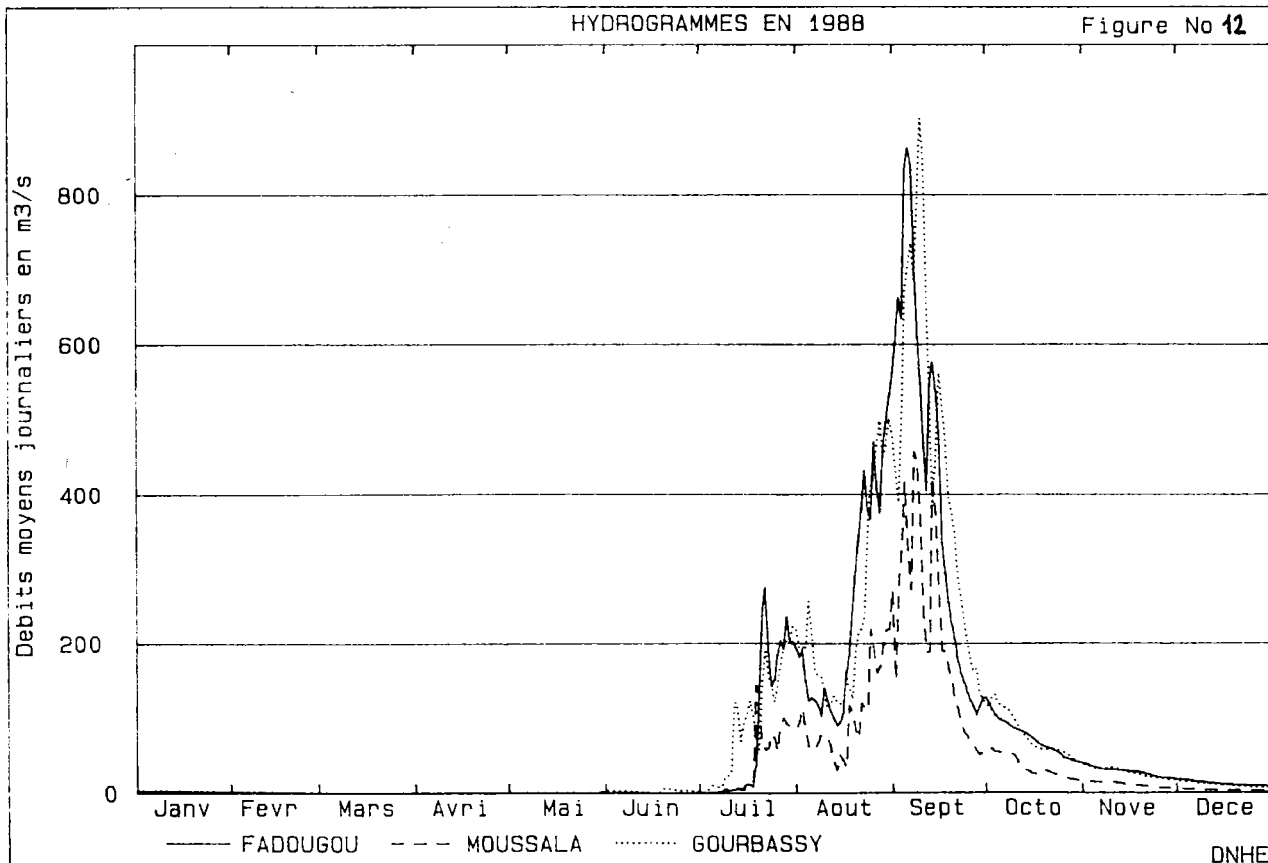


Figure 12 : Fadougou et Gourbassy sont sur la Falémé et sont bien liées, les apports intermédiaires étant faibles. Moussala est sur une des deux branches qui constituent la Falémé.

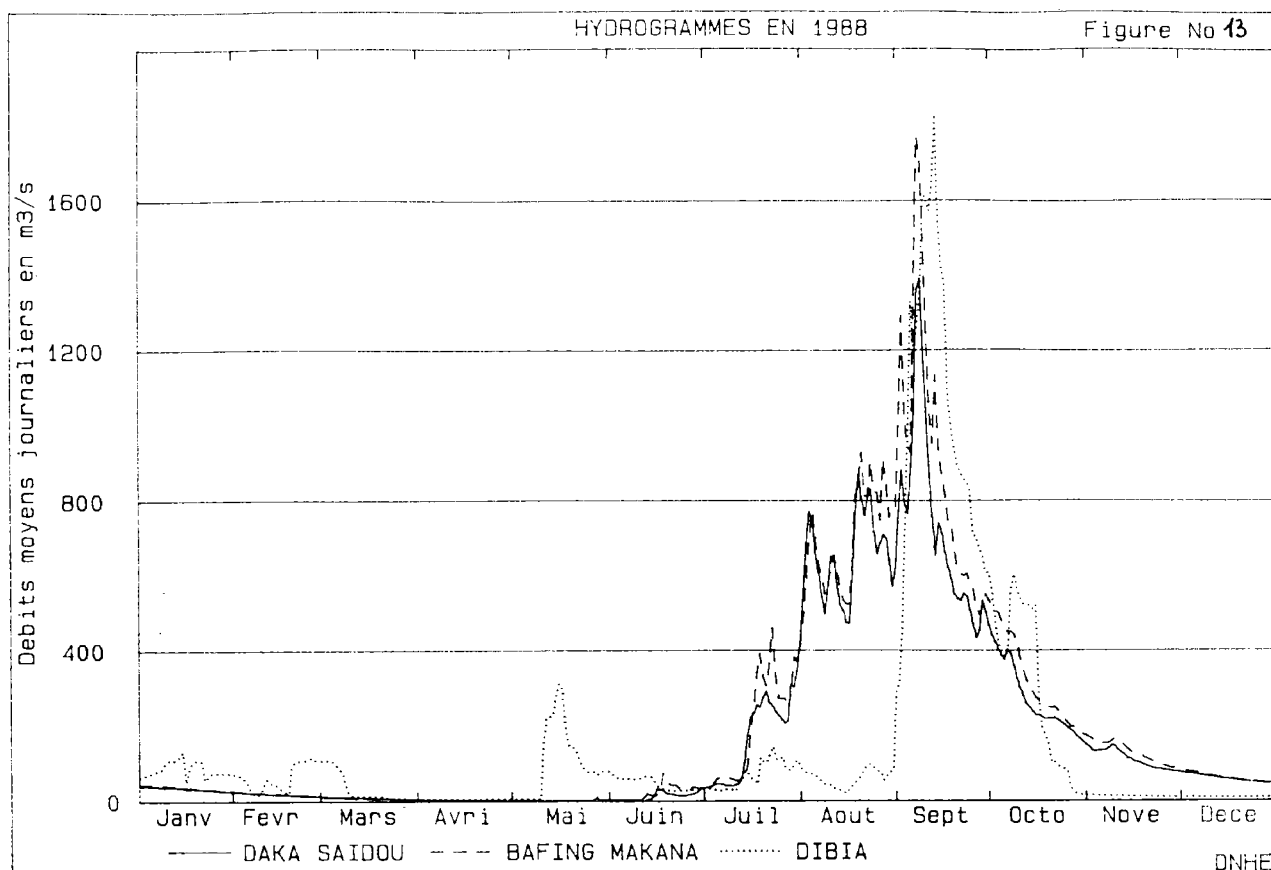


Figure 13 : Les trois stations sont sur le Bafing mais Dibia l'est à l'aval du barrage de Manantaly. Dibia traduit donc la gestion du barrage. Lâchures et fermetures se sont suivies durant l'étiage. Remplissage partiel de juin à fin août. De fin août à mi-septembre la cote amont de la retenue est restée stable, les apports ayant transité dans la retenue. Fermeture totale à partir du 25 octobre.

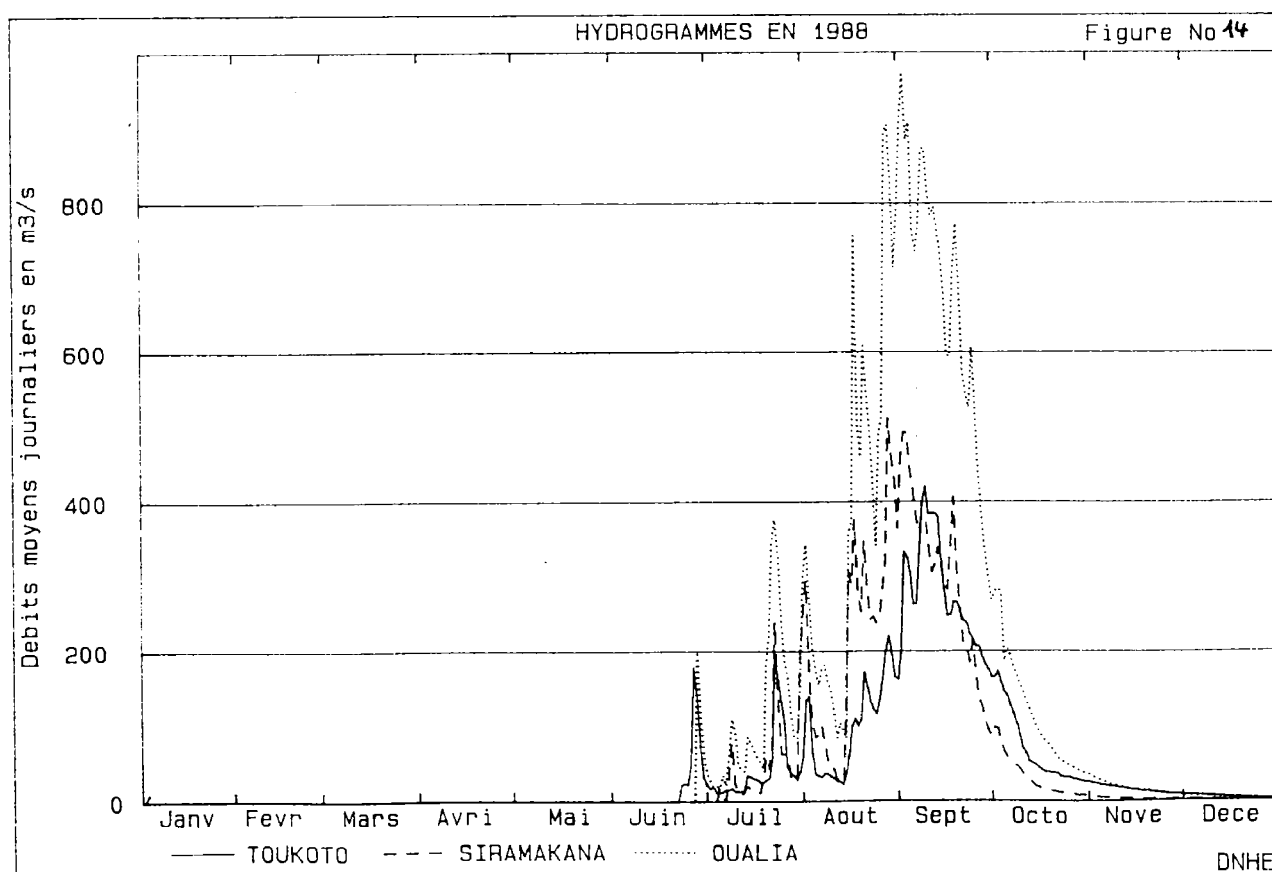


Figure 14 : Le Bakoye à Oualia est la résultante des débits du Baoulé à Siramakana et du Bakoye à Toukoto.

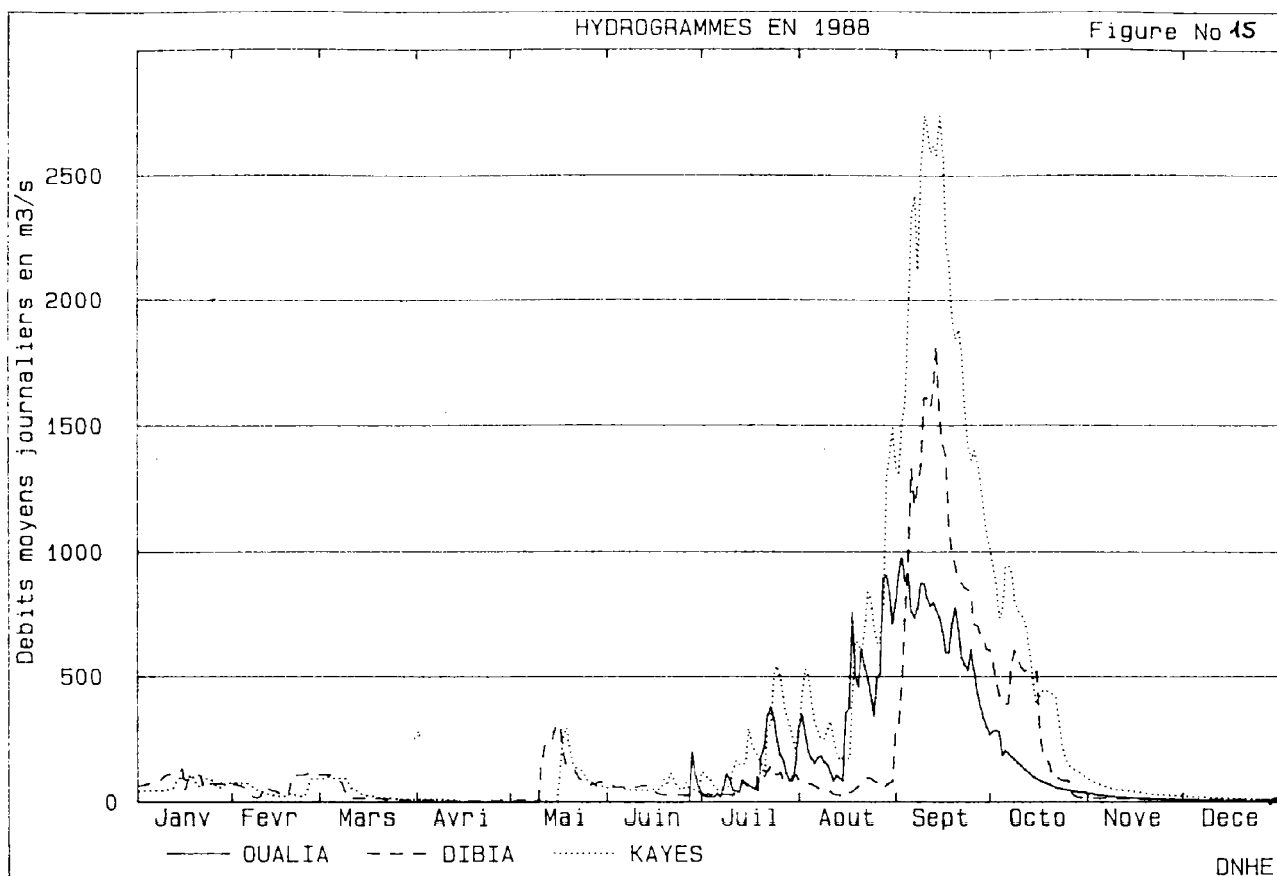


Figure 15 : Les débits du Sénégal à Kayes sont la résultante de ceux du Bakoye à Oualia et du Bafing à Toukoto.

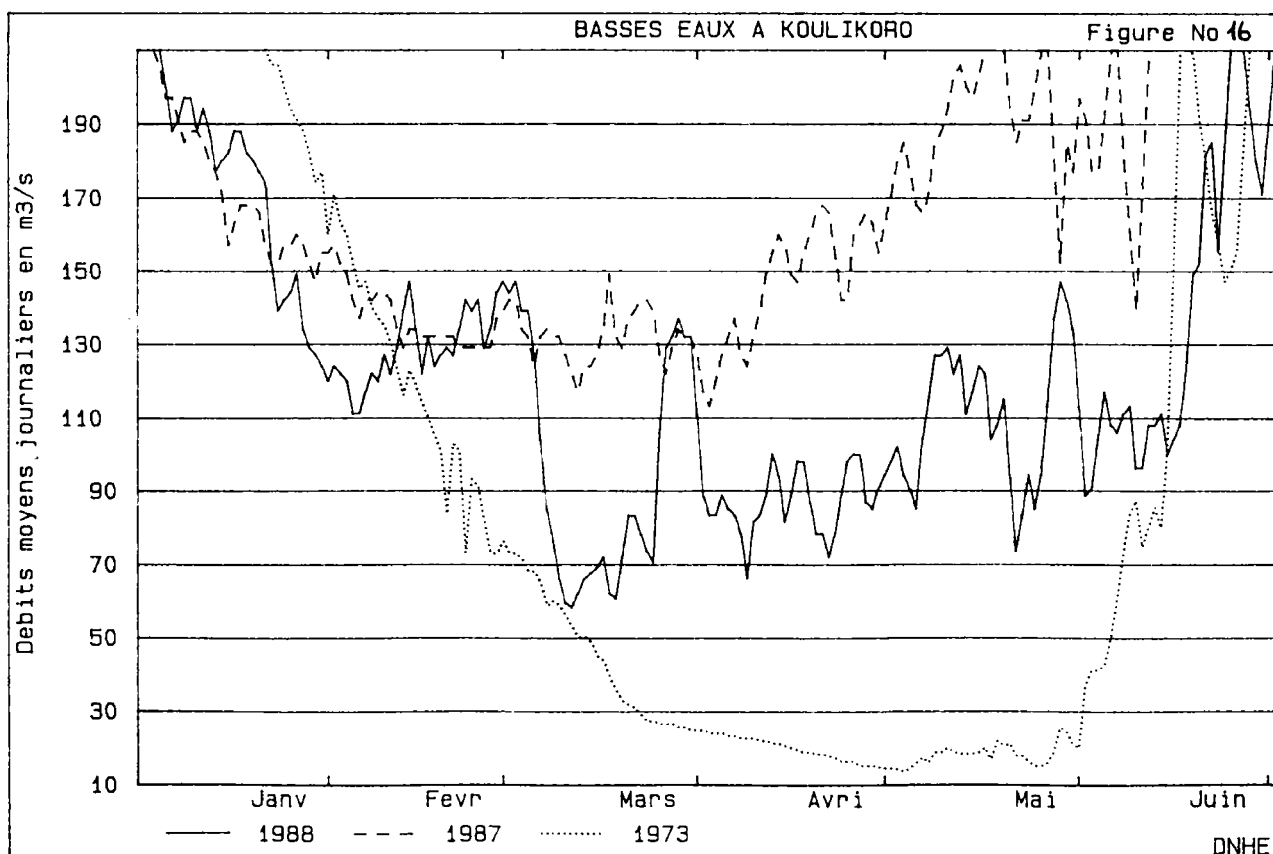


Figure 16 : Les basses eaux à Koulikoro dépendent des débits turbinés à Sélingué. Débits naturels en 1973. Débits soutenus en 87 et 88.

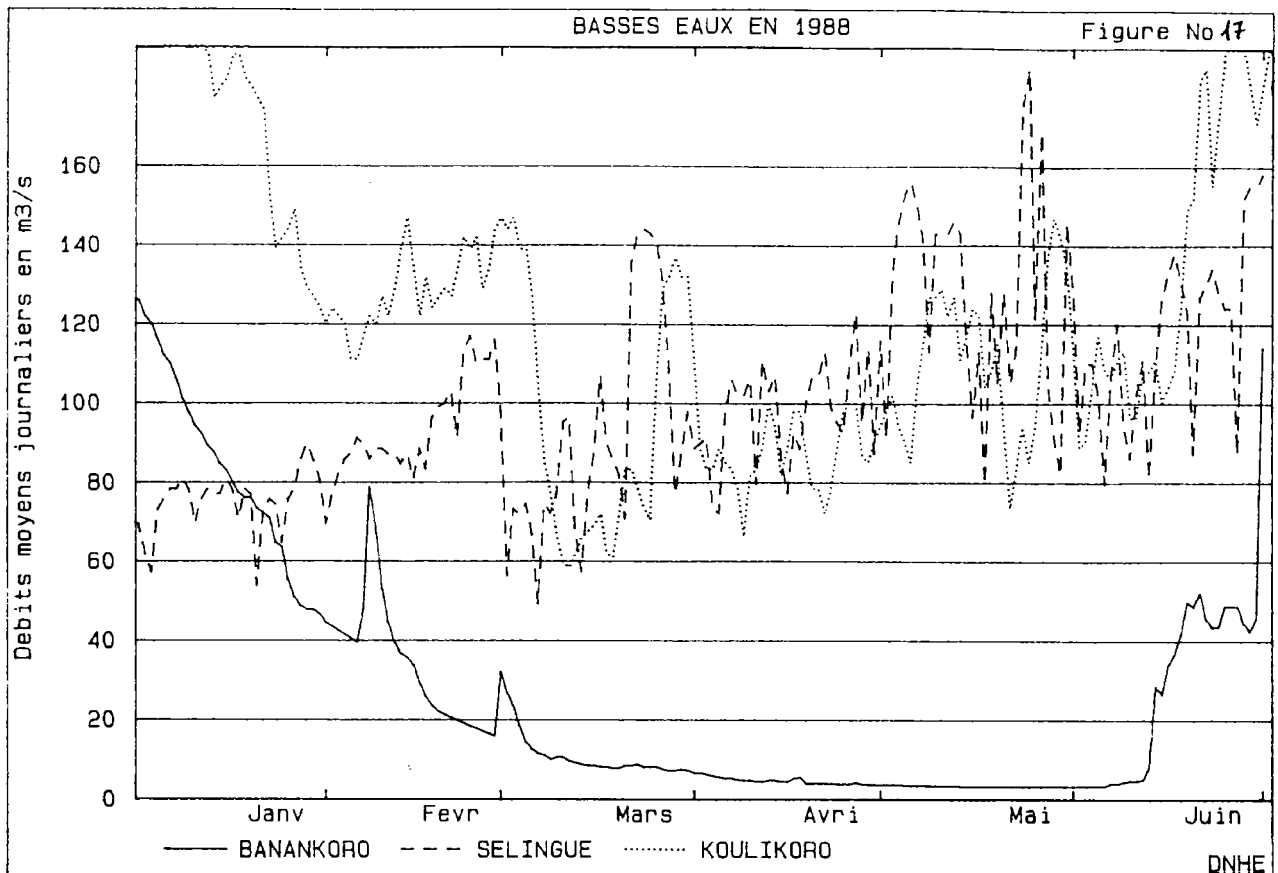


Figure 17 : Les débits à Koulikoro sont la somme de ceux du Niger à Banankoro et du Sankarani à Sélingué. A noter les 2 pointes début et fin février à Banankoro (pluies précoces en Guinée?). La chute des débits turbinés à Sélingué début mars est due à la mise en service de la centrale de Bamako.

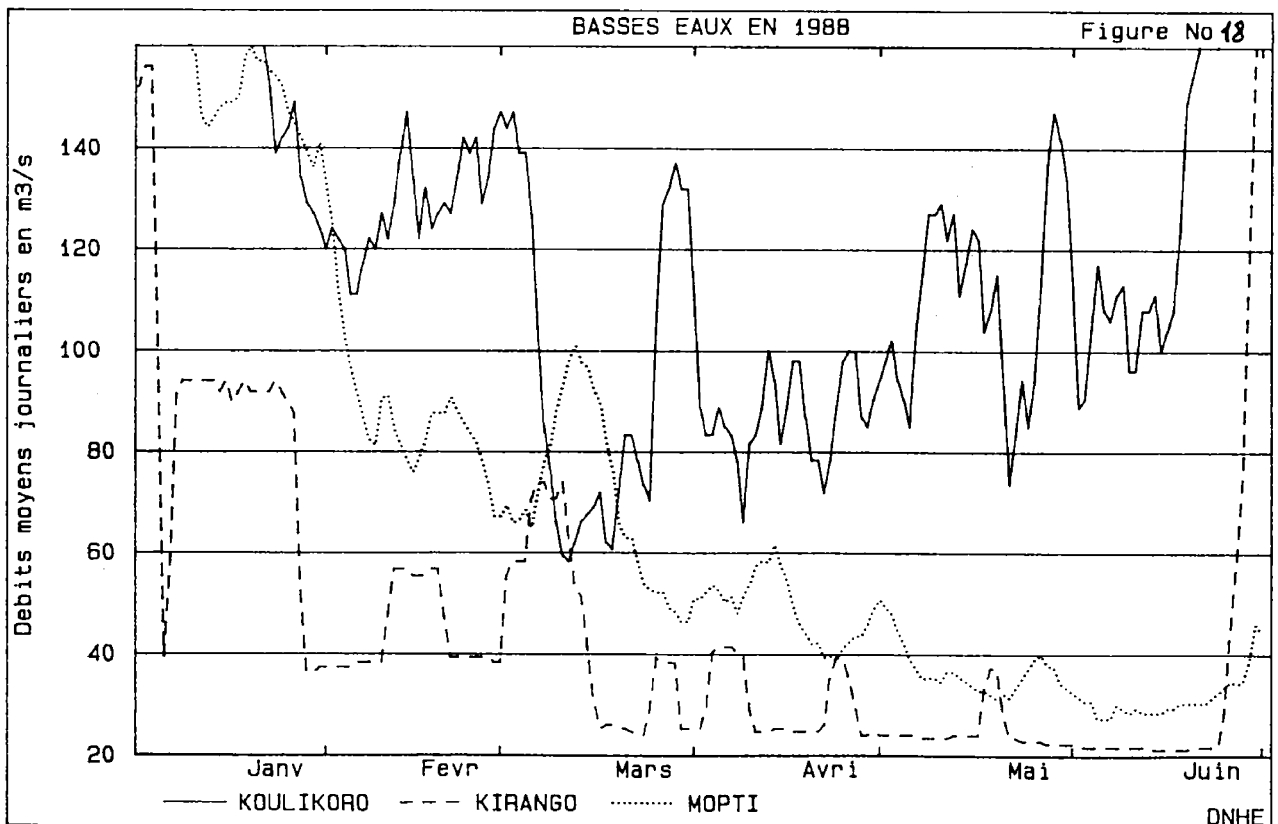


Figure 18 : Une grande partie des débits à l'aval de Koulikoro est reprise par l'Office du Niger. Kirango est à l'aval du barrage de Markala. Les débits à Mopti sont supérieurs à ceux de Kirango à cause des restitutions de l'Office par le canal du Macina.



| 188A BER A AKKA EN 1988              |      |      |      |     |      |      |      |      |      |      |      | DNHE |  |
|--------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|------|--|
| HAUTEURS MOYENNES JOURNALIERES en cm |      |      |      |     |      |      |      |      |      |      |      |      |  |
| Zero de l'échelle = 258.38 m IGN     |      |      |      |     |      |      |      |      |      |      |      |      |  |
| JANV                                 | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |  |
| 1                                    | 199  | 70   | 18   | -12 | -31  | -38  | -42  | 137  | 298  | 397  | 427  | 381  |  |
| 2                                    | 197  | 68   | 15   | -14 | -32  | -37  | -38  | 148  | 303  | 399  | 427  | 348  |  |
| 3                                    | 193  | 67   | 15   | -16 | -32  | -39  | -38  | 193  | 312  | 402  | 426  | 344  |  |
| 4                                    | 189  | 64   | 12   | -17 | -32  | -32  | -40  | 163  | 316  | 408  | 425  | 340  |  |
| 5                                    | 183  | 61   | 12   | -18 | -32  | -38  | -31  | 169  | 321  | 406  | 423  | 336  |  |
| 6                                    | 178  | 57   | 12   | -20 | -32  | -38  | -27  | 174  | 325  | 408  | 422  | 332  |  |
| 7                                    | 173  | 54   | 10   | -20 | -31  | -41  | -13  | 183  | 328  | 411  | 420  | 328  |  |
| 8                                    | 169  | 54   | 9    | -21 | -29  | -42  | 0    | 186  | 329  | 413  | 419  | 324  |  |
| 9                                    | 164  | 53   | 6    | -22 | -29  | -46  | 12   | 189  | 335  | 415  | 417  | 319  |  |
| 10                                   | 160  | 48   | 6    | -23 | -27  | -48  | 23   | 195  | 339  | 416  | 416  | 313  |  |
| 11                                   | 155  | 43   | 6    | -23 | -27  | -46  | 28   | 199  | 344  | 416  | 414  | 309  |  |
| 12                                   | 150  | 39   | 6    | -23 | -28  | -46  | 29   | 203  | 347  | 418  | 411  | 306  |  |
| 13                                   | 143  | 36   | 9    | -24 | -30  | -47  | 39   | 209  | 351  | 419  | 409  | 302  |  |
| 14                                   | 137  | 33   | 9    | -24 | -31  | -50  | 38   | 213  | 355  | 419  | 406  | 297  |  |
| 15                                   | 131  | 31   | 10   | -25 | -31  | -51  | 40   | 217  | 360  | 420  | 403  | 294  |  |
| 16                                   | 125  | 28   | 11   | -26 | -32  | -49  | 42   | 227  | 364  | 422  | 400  | 292  |  |
| 17                                   | 119  | 25   | 12   | -26 | -32  | -48  | 38   | 234  | 366  | 424  | 396  | 287  |  |
| 18                                   | 112  | 26   | 14   | -26 | -33  | -47  | 44   | 239  | 368  | 425  | 393  | 281  |  |
| 19                                   | 107  | 25   | 15   | -24 | -33  | -47  | 57   | 245  | 371  | 426  | 391  | 276  |  |
| 20                                   | 109  | 23   | 13   | -22 | -34  | -46  | 63   | 249  | 373  | 426  | 387  | 272  |  |
| 21                                   | 105  | 26   | 13   | -20 | -34  | -46  | 68   | 253  | 375  | 426  | 384  | 268  |  |
| 22                                   | 101  | 22   | 12   | -19 | -35  | -48  | 74   | 254  | 377  | 428  | 382  | 265  |  |
| 23                                   | 102  | 22   | 10   | -21 | -35  | -48  | 84   | 261  | 378  | 429  | 379  | 260  |  |
| 24                                   | 97   | 22   | 10   | -22 | -35  | -47  | 89   | 265  | 381  | 429  | 375  | 256  |  |
| 25                                   | 91   | 21   | 14   | -23 | -35  | -46  | 92   | 269  | 385  | 429  | 372  | 252  |  |
| 26                                   | 87   | 19   | 9    | -24 | -36  | -46  | 98   | 273  | 387  | 429  | 369  | 248  |  |
| 27                                   | 84   | 21   | 2    | -25 | -36  | -45  | 106  | 276  | 388  | 429  | 366  | 242  |  |
| 28                                   | 80   | 23   | -1   | -27 | -35  | -43  | 112  | 279  | 391  | 429  | 362  | 236  |  |
| 29                                   | 80   | 20   | -4   | -28 | -35  | -41  | 117  | 285  | 392  | 428  | 358  | 233  |  |
| 30                                   | 76   |      | -8   | -30 | -35  | -46  | 122  | 290  | 395  | 428  | 355  | 227  |  |
| 31                                   | 73   |      | -11  | -35 |      |      | 128  | 293  |      | 427  |      | 222  |  |

hauteur mini = -51 cm      première observation le 15/06  
 hauteur maxi = 429 cm      première observation le 23/10

LE SIGNE + PRECEDE LES HAUTEURS RECONSTITUEES .

188A

| 188A BER A AKKA EN 1988           |      |      |      |      |      |      |      |      |      |      |      | DNHE |  |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|--|
| DEBITS MOYENS JOURNALIERS en m3/s |      |      |      |      |      |      |      |      |      |      |      |      |  |
| Surface = non connue              |      |      |      |      |      |      |      |      |      |      |      |      |  |
| JANV                              | FEVR | MARS | AVRI | MAI  | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |  |
| 1                                 | 503. | 167. | 81.1 | 34.9 | 19.2 | 16.6 | 13.6 | 435. | 1290 | 1830 | 1900 | 1210 |  |
| 2                                 | 494. | 164. | 76.0 | 33.3 | 18.6 | 15.2 | 16.5 | 499. | 1320 | 1870 | 1890 | 1190 |  |
| 3                                 | 477. | 163. | 75.7 | 31.5 | 18.7 | 13.9 | 17.0 | 519. | 1380 | 1900 | 1870 | 1160 |  |
| 4                                 | 461. | 156. | 70.3 | 30.8 | 19.0 | 18.4 | 16.1 | 562. | 1400 | 1910 | 1850 | 1140 |  |
| 5                                 | 439. | 150. | 70.3 | 30.1 | 19.1 | 16.2 | 23.8 | 586. | 1430 | 1910 | 1830 | 1110 |  |
| 6                                 | 421. | 142. | 70.8 | 28.3 | 19.2 | 14.2 | 28.3 | 604. | 1430 | 1920 | 1810 | 1090 |  |
| 7                                 | 401. | 136. | 68.3 | 28.4 | 20.0 | 12.5 | 46.3 | 641. | 1470 | 1940 | 1780 | 1060 |  |
| 8                                 | 384. | 136. | 67.3 | 28.6 | 21.5 | 12.0 | 67.1 | 648. | 1470 | 1930 | 1760 | 1040 |  |
| 9                                 | 366. | 133. | 62.8 | 28.8 | 21.8 | 10.1 | 92.3 | 659. | 1500 | 1930 | 1730 | 1010 |  |
| 10                                | 351. | 124. | 63.8 | 28.9 | 23.0 | 10.8 | 116. | 687. | 1530 | 1930 | 1710 | 991. |  |
| 11                                | 335. | 115. | 63.9 | 26.0 | 22.9 | 10.2 | 124. | 708. | 1560 | 1930 | 1690 | 973. |  |
| 12                                | 317. | 109. | 64.6 | 26.1 | 22.0 | 10.3 | 124. | 730. | 1580 | 1960 | 1680 | 956. |  |
| 13                                | 296. | 105. | 70.4 | 25.3 | 20.2 | 10.0 | 144. | 762. | 1610 | 1960 | 1630 | 935. |  |
| 14                                | 285. | 100. | 70.8 | 25.4 | 19.3 | 8.89 | 133. | 788. | 1630 | 1960 | 1590 | 912. |  |
| 15                                | 272. | 98.5 | 72.6 | 24.7 | 19.3 | 8.28 | 145. | 812. | 1650 | 1960 | 1570 | 900. |  |
| 16                                | 259. | 94.6 | 74.1 | 24.0 | 18.8 | 9.33 | 147. | 844. | 1670 | 1980 | 1540 | 894. |  |
| 17                                | 251. | 91.0 | 75.4 | 24.1 | 18.5 | 9.77 | 140. | 904. | 1670 | 2000 | 1510 | 867. |  |
| 18                                | 238. | 94.0 | 78.8 | 24.1 | 17.9 | 10.2 | 156. | 931. | 1680 | 2000 | 1490 | 836. |  |
| 19                                | 230. | 93.0 | 80.1 | 26.0 | 17.9 | 10.2 | 157. | 961. | 1690 | 2000 | 1480 | 814. |  |
| 20                                | 237. | 90.0 | 75.8 | 27.8 | 17.2 | 10.7 | 204. | 980. | 1700 | 2000 | 1480 | 798. |  |
| 21                                | 230. | 96.0 | 74.4 | 29.7 | 17.2 | 9.90 | 218. | 998. | 1700 | 1990 | 1440 | 775. |  |
| 22                                | 222. | 90.0 | 71.6 | 30.5 | 16.6 | 9.89 | 236. | 992. | 1710 | 2000 | 1420 | 754. |  |
| 23                                | 227. | 90.2 | 67.3 | 28.3 | 16.7 | 10.3 | 265. | 1030 | 1720 | 1990 | 1400 | 736. |  |
| 24                                | 217. | 89.7 | 66.0 | 27.0 | 16.7 | 10.3 | 277. | 1050 | 1740 | 1980 | 1380 | 718. |  |
| 25                                | 208. | 87.6 | 71.3 | 25.8 | 16.7 | 10.8 | 283. | 1080 | 1770 | 1970 | 1350 | 698. |  |
| 26                                | 195. | 84.2 | 62.8 | 24.7 | 16.1 | 10.9 | 301. | 1100 | 1780 | 1970 | 1340 | 678. |  |
| 27                                | 190. | 86.8 | 61.6 | 23.7 | 16.1 | 11.4 | 330. | 1120 | 1790 | 1960 | 1310 | 649. |  |
| 28                                | 184. | 90.5 | 47.2 | 22.0 | 16.7 | 12.4 | 351. | 1150 | 1820 | 1930 | 1280 | 622. |  |
| 29                                | 184. | 85.0 | 43.8 | 21.3 | 16.8 | 13.6 | 370. | 1190 | 1820 | 1930 | 1260 | 609. |  |
| 30                                | 178. |      | 38.7 | 19.8 | 16.8 | 11.2 | 391. | 1230 | 1840 | 1920 | 1240 | 582. |  |
| 31                                | 173. |      | 35.3 |      | 16.7 |      | 416. | 1250 |      | 1910 |      | 561. |  |

Moy 1988: 297. 112. 66.5 26.8 18.6 11.6 173. 855. 1610 1930 1570 880. 631.

Moy55-88: 1580 897. 468. 191. 68.4 88.1 361. 1020 1780 2350 2660 2330 993.

Mini obs: 194. 71.8 43.0 22.7 9.22 3.77 108. 470. 1070 1270 1080 829. 448.

Maxi obs: 3600 2620 1650 797. 260. 291. 631. 1680 2410 3380 4130 4260 1940

 Débit mini = 8.28 m3/s      première observation le 15/06  
 Débit maxi = 2000 m3/s      première observation le 17/10

| NIBER A ANSONGO EN 1988                             |      |      |      |      |     |      |      |      |      |      |      | DNHE |  |
|-----------------------------------------------------|------|------|------|------|-----|------|------|------|------|------|------|------|--|
| HAUTEURS MOYENNES JOURNALIERES en cm                |      |      |      |      |     |      |      |      |      |      |      |      |  |
| Zero de l'échelle = 242.22 m IGN                    |      |      |      |      |     |      |      |      |      |      |      |      |  |
|                                                     | JANV | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |  |
| 1                                                   | 221  | 155  | 106  | 75   | 61  | 46   | 40   | 32   | 199  | 241  | 260  | 271  |  |
| 2                                                   | 220  | 154  | 104  | 74   | 60  | 45   | 40   | 32   | 201  | 242  | 260  | 270  |  |
| 3                                                   | 218  | 152  | 104  | 78   | 59  | 50   | 40   | 38   | 203  | 243  | 260  | 270  |  |
| 4                                                   | 212  | 149  | 100  | 74   | 58  | 48   | 40   | 51   | 204  | 244  | 260  | 269  |  |
| 5                                                   | 210  | 147  | 100  | 75   | 58  | 46   | 40   | 65   | 206  | 245  | 261  | 269  |  |
| 6                                                   | 209  | 146  | 99   | 75   | 58  | 45   | 41   | 77   | 209  | 246  | 261  | 269  |  |
| 7                                                   | 208  | 144  | 98   | 75   | 57  | 47   | 44   | 90   | 211  | 247  | 262  | 269  |  |
| 8                                                   | 206  | 144  | 100  | 78   | 53  | 47   | 48   | 96   | 212  | 247  | 263  | 269  |  |
| 9                                                   | 202  | 140  | 95   | 75   | 53  | 45   | 44   | 103  | 213  | 247  | 264  | 269  |  |
| 10                                                  | 200  | 137  | 94   | 75   | 56  | 45   | 42   | 109  | 216  | 248  | 264  | 268  |  |
| 11                                                  | 196  | 135  | 93   | 75   | 56  | 46   | 40   | 115  | 219  | 249  | 264  | 265  |  |
| 12                                                  | 194  | 133  | 92   | 75   | 55  | 47   | 48   | 121  | 220  | 250  | 265  | 265  |  |
| 13                                                  | 194  | 129  | 89   | 72   | 55  | 47   | 44   | 127  | 222  | 250  | 266  | 264  |  |
| 14                                                  | 190  | 128  | 89   | 70   | 55  | 45   | 42   | 138  | 222  | 250  | 266  | 263  |  |
| 15                                                  | 190  | 127  | 87   | 70   | 55  | 45   | 41   | 142  | 225  | 250  | 267  | 263  |  |
| 16                                                  | 190  | 125  | 88   | 70   | 53  | 45   | 41   | 150  | 227  | 251  | 268  | 262  |  |
| 17                                                  | 189  | 124  | 88   | 70   | 52  | 45   | 40   | 153  | 228  | 252  | 268  | 261  |  |
| 18                                                  | 186  | 122  | 88   | 70   | 52  | 42   | 39   | 157  | 230  | 253  | 269  | 260  |  |
| 19                                                  | 186  | 122  | 87   | 70   | 52  | 41   | 39   | 160  | 230  | 253  | 269  | 258  |  |
| 20                                                  | 185  | 120  | 83   | 69   | 52  | 41   | 39   | 164  | 231  | 254  | 269  | 257  |  |
| 21                                                  | 179  | 116  | 83   | 67   | 51  | 40   | 38   | 168  | 233  | 254  | 270  | 257  |  |
| 22                                                  | 176  | 116  | 81   | 67   | 49  | 40   | 37   | 172  | 234  | 254  | 270  | 255  |  |
| 23                                                  | 175  | 115  | 82   | 66   | 48  | 39   | 36   | 175  | 234  | 255  | 270  | 253  |  |
| 24                                                  | 174  | 113  | 82   | 66   | 46  | 40   | 36   | 178  | 235  | 255  | 270  | 249  |  |
| 25                                                  | 171  | 110  | 81   | 66   | 50  | 42   | 36   | 183  | 235  | 256  | 270  | 249  |  |
| 26                                                  | 165  | 110  | 81   | 66   | 49  | 41   | 35   | 185  | 237  | 257  | 270  | 247  |  |
| 27                                                  | 164  | 109  | 80   | 67   | 49  | 39   | 35   | 185  | 238  | 257  | 271  | 245  |  |
| 28                                                  | 163  | 108  | 79   | 67   | 49  | 42   | 34   | 188  | 239  | 257  | 271  | 243  |  |
| 29                                                  | 160  | 107  | 76   | 63   | 48  | 38   | 34   | 195  | 239  | 257  | 271  | 241  |  |
| 30                                                  | 158  | 76   | 62   | 46   | 38  | 33   | 196  | 241  | 258  | 271  | 240  |      |  |
| 31                                                  | 157  | 77   |      | 47   |     | 33   | 198  |      | 259  |      | 235  |      |  |
| hauteur mini = 32 cm première observation le 01/06  |      |      |      |      |     |      |      |      |      |      |      |      |  |
| hauteur maxi = 271 cm première observation le 27/11 |      |      |      |      |     |      |      |      |      |      |      |      |  |

| NIGER A BAMAKO EN 1988               |      |      |      |     |      |      |      |      |      |      |      | DNHE |
|--------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm |      |      |      |     |      |      |      |      |      |      |      |      |
| Zero de l'échelle = 316.40 m IGN     |      |      |      |     |      |      |      |      |      |      |      |      |
| JANV                                 | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                    | 40   | 20   | 21   | 9   | 16   | 8    | 43   | 114  | 236  | 2263 | 118  | 84   |
| 2                                    | 41   | 18   | 19   | 11  | 12   | 24   | 80   | 118  | 236  | 2246 | 118  | 88   |
| 3                                    | 36   | 16   | 22   | 9   | 12   | 38   | 60   | 124  | 241  | 2242 | 114  | 88   |
| 4                                    | 34   | 17   | 18   | 9   | 10   | 25   | 54   | 132  | 248  | 238  | 114  | 84   |
| 5                                    | 32   | 18   | 8    | 8   | 14   | 28   | 50   | 148  | 282  | 238  | 118  | 81   |
| 6                                    | 31   | 18   | 18   | 4   | 21   | 28   | 53   | 154  | 232  | 225  | 114  | 80   |
| 7                                    | 32   | 18   | 8    | 6   | 24   | 26   | 56   | 160  | 288  | 214  | 114  | 80   |
| 8                                    | 32   | 18   | 2    | 9   | 28   | 16   | 53   | 162  | 262  | 205  | 111  | 81   |
| 9                                    | 32   | 20   | -6   | 11  | 36   | 20   | 48   | 168  | 268  | 204  | 109  | 81   |
| 10                                   | 39   | 23   | -6   | 14  | 26   | 30   | 51   | 170  | 265  | 203  | 106  | 49   |
| 11                                   | 31   | 24   | 2    | 14  | 29   | 26   | 54   | 171  | 268  | 192  | 104  | 80   |
| 12                                   | 30   | 21   | 3    | 12  | 36   | 23   | 52   | 171  | 270  | 193  | 104  | 46   |
| 13                                   | 28   | 18   | 7    | 8   | 31   | 25   | 44   | 168  | 275  | 194  | 103  | 43   |
| 14                                   | 27   | 23   | 7    | 11  | 34   | 29   | 80   | 163  | 284  | 178  | 103  | 39   |
| 15                                   | 26   | 19   | 2    | 14  | 40   | 24   | 70   | 164  | 291  | 167  | 96   | 40   |
| 16                                   | 26   | 18   | -6   | 13  | 38   | 29   | 70   | 163  | 290  | 8144 | 94   | 40   |
| 17                                   | 28   | 18   | -6   | 9   | 32   | 36   | 80   | 171  | 290  | 160  | 92   | 38   |
| 18                                   | 28   | 18   | 10   | 6   | 12   | 39   | 88   | 177  | 286  | 162  | 90   | 38   |
| 19                                   | 25   | 18   | 11   | 4   | 13   | 42   | 88   | 201  | 285  | 162  | 88   | 36   |
| 20                                   | 23   | 18   | 9    | 2   | 7    | 43   | 96   | 199  | 280  | 151  | 83   | 33   |
| 21                                   | 24   | 19   | 7    | 9   | 28   | 39   | 108  | 201  | 276  | 181  | 78   | 31   |
| 22                                   | 22   | 19   | 4    | 12  | 23   | 34   | 111  | 206  | 288  | 187  | 76   | 33   |
| 23                                   | 19   | 19   | 1    | 14  | 34   | 40   | 110  | 210  | 281  | 148  | 76   | 33   |
| 24                                   | 22   | 17   | 19   | 14  | 36   | 46   | 112  | 218  | 249  | 139  | 73   | 32   |
| 25                                   | 22   | 18   | 21   | 13  | 34   | 49   | 112  | 220  | 248  | 138  | 70   | 32   |
| 26                                   | 21   | 19   | 21   | 11  | 44   | 40   | 109  | 236  | 248  | 132  | 68   | 29   |
| 27                                   | 19   | 20   | 22   | 11  | 42   | 40   | 104  | 239  | 248  | 134  | 67   | 28   |
| 28                                   | 20   | 20   | 21   | 12  | 38   | 38   | 104  | 235  | 245  | 131  | 64   | 27   |
| 29                                   | 19   | 20   | 20   | 13  | 38   | 32   | 108  | 231  | 243  | 129  | 61   | 27   |
| 30                                   | 20   | 17   | 13   | 30  | 44   | 114  | 230  | 241  | 128  | 59   | 28   |      |
| 31                                   | 20   | 8    |      | 20  |      | 114  | 231  |      | 121  |      |      | 28   |

hauteur mini = -4 cm première observation le 09/03  
hauteur maxi = 291 cm première observation le 18/09

LE SIGNE + PRECEDE LES HAUTEURS RECONSTITUEES .

1hm

| NIGER A BANANKORO EN 1988            |      |      |      |     |      |      |      |      |      |      |      | DNHE |
|--------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm |      |      |      |     |      |      |      |      |      |      |      |      |
| Zero de l'échelle = 329.09 m IGN     |      |      |      |     |      |      |      |      |      |      |      |      |
| JANV                                 | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                    | 127  | 71   | 84   | 18  | 8    | 6    | 117  | 278  | 900  | 484  | 243  | 167  |
| 2                                    | 127  | 72   | 80   | 18  | 8    | 6    | 124  | 292  | 918  | 471  | 241  | 163  |
| 3                                    | 124  | 70   | 47   | 17  | 8    | 6    | 127  | 320  | 829  | 464  | 242  | 160  |
| 4                                    | 124  | 69   | 37   | 16  | 7    | 6    | 133  | 338  | 831  | 443  | 263  | 189  |
| 5                                    | 122  | 68   | 34   | 15  | 7    | 6    | 138  | 349  | 832  | 436  | 262  | 187  |
| 6                                    | 121  | 76   | 32   | 15  | 7    | 10   | 134  | 358  | 842  | 424  | 289  | 184  |
| 7                                    | 119  | 102  | 31   | 14  | 7    | 10   | 134  | 366  | 884  | 416  | 280  | 183  |
| 8                                    | 116  | 94   | 29   | 13  | 6    | 12   | 132  | 372  | 883  | 410  | 249  | 181  |
| 9                                    | 114  | 81   | 30   | 13  | 7    | 13   | 138  | 378  | 889  | 402  | 242  | 149  |
| 10                                   | 112  | 73   | 30   | 12  | 7    | 13   | 144  | 373  | 864  | 398  | 242  | 146  |
| 11                                   | 111  | 68   | 28   | 12  | 6    | 14   | 157  | 363  | 874  | 385  | 241  | 143  |
| 12                                   | 109  | 65   | 27   | 13  | 6    | 24   | 152  | 354  | 889  | 374  | 239  | 141  |
| 13                                   | 108  | 64   | 26   | 13  | 5    | 26   | 153  | 350  | 814  | 363  | 235  | 137  |
| 14                                   | 106  | 62   | 25   | 12  | 5    | 24   | 160  | 357  | 623  | 352  | 231  | 136  |
| 15                                   | 105  | 87   | 25   | 12  | 4    | 62   | 164  | 367  | 616  | 343  | 228  | 134  |
| 16                                   | 103  | 83   | 24   | 15  | 4    | 65   | 190  | 379  | 608  | 338  | 225  | 131  |
| 17                                   | 101  | 80   | 24   | 16  | 4    | 70   | 214  | 394  | 597  | 328  | 220  | 129  |
| 18                                   | 100  | 48   | 23   | 10  | 4    | 78   | 224  | 413  | 594  | 322  | 214  | 127  |
| 19                                   | 100  | 47   | 23   | 10  | 4    | 77   | 231  | 428  | 581  | 321  | 209  | 124  |
| 20                                   | 98   | 46   | 25   | 10  | 4    | 80   | 242  | 438  | 566  | 318  | 205  | 123  |
| 21                                   | 97   | 45   | 25   | 10  | 4    | 74   | 247  | 452  | 546  | 314  | 201  | 121  |
| 22                                   | 96   | 44   | 26   | 10  | 4    | 72   | 224  | 465  | 531  | 311  | 198  | 118  |
| 23                                   | 91   | 43   | 24   | 9   | 4    | 72   | 224  | 474  | 526  | 308  | 193  | 116  |
| 24                                   | 90   | 42   | 24   | 9   | 5    | 77   | 242  | 483  | 529  | 303  | 190  | 114  |
| 25                                   | 83   | 41   | 24   | 9   | 4    | 77   | 240  | 489  | 529  | 302  | 187  | 112  |
| 26                                   | 79   | 40   | 22   | 11  | 4    | 77   | 240  | 490  | 525  | 298  | 184  | 111  |
| 27                                   | 77   | 39   | 21   | 9   | 5    | 73   | 239  | 487  | 519  | 292  | 181  | 109  |
| 28                                   | 76   | 40   | 21   | 8   | 5    | 71   | 242  | 485  | 509  | 288  | 176  | 107  |
| 29                                   | 76   | 63   | 22   | 8   | 5    | 74   | 249  | 481  | 502  | 279  | 173  | 106  |
| 30                                   | 75   | 21   | 8    | 5   | 123  | 256  | 482  | 494  | 273  | 170  | 104  |      |
| 31                                   | 73   | 19   |      | 5   |      | 266  | 491  |      | 268  |      |      | 103  |

hauteur mini = 4 cm première observation le 15/05  
hauteur maxi = 623 cm première observation le 14/09

| NIGER A BAMBA EN 1988                |      |      |      |     |      |      |      |      |      |      |      | DNHE |
|--------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm |      |      |      |     |      |      |      |      |      |      |      |      |
| Zero de l'échelle = 253.27 m IGN     |      |      |      |     |      |      |      |      |      |      |      |      |
| JANV                                 | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                    | 302  | 198  | 125  | 100 | 75   | 56   | 37   | 109  | 298  | 374  | 406  | 410  |
| 2                                    | 300  | 196  | 125  | 100 | 74   | 56   | 36   | 132  | 300  | 376  | 407  | 409  |
| 3                                    | 298  | 193  | 124  | 99  | 73   | 54   | 36   | 141  | 300  | 378  | 407  | 408  |
| 4                                    | 296  | 191  | 123  | 98  | 72   | 53   | 35   | 149  | 306  | 380  | 409  | 406  |
| 5                                    | 294  | 189  | 123  | 97  | 72   | 53   | 35   | 157  | 312  | 382  | 410  | 405  |
| 6                                    | 292  | 187  | 121  | 96  | 71   | 52   | 34   | 167  | 318  | 384  | 410  | 403  |
| 7                                    | 289  | 185  | 119  | 95  | 70   | 51   | 34   | 174  | 317  | 385  | 411  | 400  |
| 8                                    | 287  | 182  | 118  | 94  | 69   | 50   | 33   | 180  | 320  | 387  | 412  | 398  |
| 9                                    | 285  | 178  | 116  | 93  | 69   | 49   | 32   | 189  | 323  | 388  | 413  | 396  |
| 10                                   | 283  | 173  | 115  | 92  | 69   | 48   | 32   | 197  | 326  | 389  | 413  | 393  |
| 11                                   | 279  | 171  | 114  | 91  | 68   | 48   | 32   | 201  | 328  | 390  | 414  | 392  |
| 12                                   | 275  | 167  | 113  | 90  | 67   | 47   | 32   | 209  | 331  | 391  | 414  | 389  |
| 13                                   | 271  | 163  | 112  | 90  | 67   | 46   | 32   | 218  | 338  | 392  | 414  | 386  |
| 14                                   | 267  | 161  | 112  | 89  | 67   | 45   | 32   | 222  | 338  | 394  | 416  | 383  |
| 15                                   | 263  | 160  | 112  | 89  | 67   | 45   | 32   | 227  | 341  | 395  | 417  | 380  |
| 16                                   | 259  | 158  | 112  | 88  | 66   | 44   | 31   | 233  | 348  | 398  | 417  | 378  |
| 17                                   | 255  | 157  | 111  | 88  | 65   | 44   | 31   | 237  | 348  | 396  | 418  | 376  |
| 18                                   | 250  | 155  | 111  | 88  | 65   | 44   | 31   | 241  | 381  | 398  | 419  | 374  |
| 19                                   | 245  | 151  | 110  | 87  | 64   | 44   | 30   | 246  | 383  | 398  | 418  | 370  |
| 20                                   | 240  | 148  | 110  | 87  | 64   | 44   | 30   | 253  | 388  | 399  | 416  | 367  |
| 21                                   | 234  | 146  | 110  | 87  | 63   | 43   | 30   | 258  | 388  | 399  | 418  | 365  |
| 22                                   | 231  | 144  | 109  | 86  | 62   | 43   | 29   | 261  | 362  | 400  | 414  | 361  |
| 23                                   | 228  | 142  | 106  | 84  | 61   | 42   | 29   | 266  | 364  | 400  | 414  | 357  |
| 24                                   | 226  | 140  | 108  | 82  | 60   | 41   | 29   | 270  | 364  | 401  | 414  | 352  |
| 25                                   | 221  | 138  | 106  | 80  | 60   | 41   | 29   | 274  | 366  | 401  | 414  | 347  |
| 26                                   | 215  | 136  | 105  | 79  | 59   | 39   | 28   | 277  | 367  | 402  | 413  | 345  |
| 27                                   | 212  | 134  | 104  | 78  | 59   | 39   | 28   | 281  | 368  | 403  | 412  | 344  |
| 28                                   | 209  | 130  | 104  | 78  | 58   | 38   | 28   | 283  | 369  | 403  | 411  | 341  |
| 29                                   | 205  | 126  | 103  | 77  | 58   | 37   | 27   | 287  | 370  | 403  | 411  | 339  |
| 30                                   | 201  | 102  | 77   | 57  | 37   | 27   | 273  | 372  | 404  | 411  | 336  |      |
| 31                                   | 200  | 102  | 57   | 57  | 26   | 294  | 405  | 333  |      |      |      |      |

hauteur mini = 26 cm première observation le 31/07  
hauteur maxi = 419 cm première observation le 18/11

| NIGER A BANANKORO EN 1988                            |      |      |      |      |      |      |      |      |      |      |      | DNHC |
|------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| DEBITS MOYENS JOURNALIERS en m3/s                    |      |      |      |      |      |      |      |      |      |      |      |      |
| Surface = 71800 ha2                                  |      |      |      |      |      |      |      |      |      |      |      |      |
|                                                      | JANV | FEVR | MARS | AVRI | MAI  | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |
| 1                                                    | 126. | 43.5 | 26.7 | 6.61 | 3.64 | 3.36 | 103. | 678. | 2420 | 2270 | 613. | 222. |
| 2                                                    | 122. | 42.8 | 23.5 | 6.24 | 3.64 | 3.25 | 116. | 777. | 2580 | 2160 | 602. | 211. |
| 3                                                    | 120. | 41.5 | 18.4 | 5.89 | 3.64 | 3.36 | 122. | 958. | 2680 | 2100 | 608. | 202. |
| 4                                                    | 116. | 40.5 | 14.4 | 5.86 | 3.49 | 3.36 | 134. | 1090 | 2700 | 1920 | 613. | 199. |
| 5                                                    | 112. | 39.5 | 12.6 | 5.25 | 3.49 | 3.36 | 139. | 1170 | 2710 | 1860 | 608. | 194. |
| 6                                                    | 110. | 47.7 | 11.8 | 5.28 | 3.49 | 4.00 | 137. | 1210 | 2800 | 1760 | 892. | 185. |
| 7                                                    | 106. | 78.8 | 11.0 | 4.96 | 3.49 | 4.00 | 137. | 1300 | 2920 | 1700 | 847. | 183. |
| 8                                                    | 101. | 68.4 | 10.0 | 4.67 | 3.36 | 4.44 | 132. | 1340 | 2910 | 1680 | 822. | 178. |
| 9                                                    | 97.6 | 63.1 | 10.5 | 4.67 | 3.49 | 4.67 | 139. | 1370 | 2970 | 1980 | 808. | 172. |
| 10                                                   | 94.2 | 44.8 | 10.8 | 4.44 | 3.49 | 4.67 | 160. | 1350 | 3010 | 1920 | 808. | 168. |
| 11                                                   | 92.5 | 39.5 | 9.60 | 4.44 | 3.36 | 4.96 | 194. | 1290 | 3110 | 1450 | 803. | 158. |
| 12                                                   | 89.3 | 34.6 | 9.19 | 4.67 | 3.36 | 8.10 | 180. | 1210 | 3260 | 1360 | 494. | 153. |
| 13                                                   | 87.7 | 35.7 | 8.80 | 4.60 | 3.25 | 28.4 | 183. | 1180 | 3530 | 1270 | 476. | 144. |
| 14                                                   | 84.7 | 33.8 | 8.44 | 4.44 | 3.25 | 26.7 | 217. | 1230 | 3430 | 1190 | 458. | 141. |
| 15                                                   | 83.2 | 29.3 | 8.44 | 4.44 | 3.16 | 33.8 | 277. | 1300 | 3590 | 1120 | 445. | 137. |
| 16                                                   | 80.2 | 28.9 | 8.10 | 8.25 | 3.16 | 36.6 | 316. | 1400 | 3430 | 1060 | 432. | 131. |
| 17                                                   | 77.4 | 23.8 | 8.10 | 8.86 | 3.16 | 41.8 | 387. | 1820 | 3340 | 1010 | 411. | 127. |
| 18                                                   | 76.0 | 22.0 | 7.79 | 4.00 | 3.16 | 49.8 | 428. | 1670 | 3310 | 971. | 387. | 123. |
| 19                                                   | 76.0 | 21.2 | 7.79 | 4.00 | 3.16 | 48.7 | 458. | 1770 | 3180 | 963. | 368. | 117. |
| 20                                                   | 73.4 | 20.8 | 8.44 | 4.00 | 3.16 | 52.0 | 508. | 1850 | 3030 | 944. | 353. | 115. |
| 21                                                   | 72.1 | 19.8 | 8.44 | 4.00 | 3.16 | 45.6 | 538. | 2000 | 2840 | 917. | 339. | 111. |
| 22                                                   | 70.9 | 19.1 | 8.80 | 4.00 | 3.16 | 43.3 | 428. | 2110 | 2700 | 897. | 327. | 106. |
| 23                                                   | 64.7 | 18.4 | 8.10 | 3.81 | 3.16 | 43.3 | 428. | 2190 | 2650 | 878. | 309. | 102. |
| 24                                                   | 63.5 | 17.8 | 8.10 | 3.81 | 3.25 | 48.7 | 508. | 2270 | 2680 | 858. | 298. | 98.8 |
| 25                                                   | 55.3 | 17.1 | 8.10 | 3.81 | 3.16 | 48.7 | 499. | 2320 | 2680 | 839. | 287. | 98.5 |
| 26                                                   | 50.9 | 16.5 | 7.80 | 4.21 | 3.16 | 48.7 | 822. | 2330 | 2650 | 814. | 277. | 93.9 |
| 27                                                   | 48.7 | 15.8 | 7.24 | 3.81 | 3.25 | 44.3 | 494. | 2300 | 2590 | 777. | 267. | 90.8 |
| 28                                                   | 47.7 | 32.0 | 7.24 | 3.44 | 3.25 | 42.3 | 808. | 2280 | 2500 | 735. | 250. | 87.8 |
| 29                                                   | 47.7 | 34.7 | 7.50 | 3.64 | 3.25 | 45.6 | 842. | 2250 | 2430 | 701. | 241. | 86.3 |
| 30                                                   | 46.4 |      | 7.24 | 3.64 | 3.25 | 114. | 877. | 2260 | 2360 | 667. | 231. | 83.4 |
| 31                                                   | 44.5 |      | 6.61 |      | 3.25 |      | 629. | 2340 |      | 639. |      | 82.0 |
| 1988                                                 | 81.9 | 33.8 | 10.3 | 4.58 | 3.31 | 29.8 | 327. | 1620 | 2910 | 1240 | 429. | 139. |
| 1989                                                 | 176. | 87.0 | 48.4 | 33.2 | 88.4 | 230. | 719. | 2010 | 3130 | 2430 | 1080 | 404. |
| 1990                                                 | 61.8 | 23.8 | 6.64 | 3.03 | 3.31 | 18.7 | 225. | 1140 | 1630 | 1140 | 429. | 139. |
| 1991                                                 | 421. | 206. | 134. | 88.5 | 213. | 780. | 1470 | 3170 | 8020 | 3710 | 3770 | 1380 |
| Debit mini = 3.16 m3/s premiere observation le 18/05 |      |      |      |      |      |      |      |      |      |      |      |      |
| Debit maxi = 3630 m3/s premiere observation le 14/09 |      |      |      |      |      |      |      |      |      |      |      |      |
| Lame d'eau ecoulee = 250 mm                          |      |      |      |      |      |      |      |      |      |      |      |      |

LE SIGNE : PRECEDE LES HAUTEURS RECONSTITUEES . 1bm  
LE SIGNE , INDIQUE L'ABSENCE D'ECOULEMENT . 1bm

| BANI A BENENY KEONY EN 1986                                                                                          |      |      |      |      |     |      |      |      |      |      |      | DNHE |
|----------------------------------------------------------------------------------------------------------------------|------|------|------|------|-----|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm                                                                                 |      |      |      |      |     |      |      |      |      |      |      |      |
| Zéro de l'échelle = 265.87 m IGN                                                                                     |      |      |      |      |     |      |      |      |      |      |      |      |
|                                                                                                                      | JANV | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |
| 1                                                                                                                    | 82   | 31   | 14   | -8   | -21 | -25  | -27  | 232  | 437  | 529  | 338  | 138  |
| 2                                                                                                                    | 81   | 31   | 14   | -9   | -21 | -25  | 27   | 284  | 434  | 526  | 328  | 135  |
| 3                                                                                                                    | 81   | 30   | 13   | -10  | -21 | -25  | 34   | 251  | 471  | 523  | 318  | 132  |
| 4                                                                                                                    | 80   | 29   | 12   | -9   | -22 | -25  | 46   | 283  | 487  | 520  | 308  | 129  |
| 5                                                                                                                    | 49   | 28   | 12   | -9   | -22 | -25  | 84   | 266  | 500  | 517  | 298  | 126  |
| 6                                                                                                                    | 49   | 28   | 10   | -10  | -22 | -26  | 87   | 287  | 512  | 514  | 286  | 123  |
| 7                                                                                                                    | 48   | 28   | 10   | -11  | -22 | -26  | 40   | 305  | 520  | 510  | 274  | 121  |
| 8                                                                                                                    | 47   | 27   | 8    | -12  | -22 | -26  | 64   | 324  | 524  | 507  | 262  | 118  |
| 9                                                                                                                    | 46   | 26   | 7    | -13  | -23 | -26  | 75   | 326  | 528  | 503  | 252  | 116  |
| 10                                                                                                                   | 45   | 25   | 6    | -12  | -23 | -26  | 89   | 323  | 526  | 499  | 243  | 115  |
| 11                                                                                                                   | 44   | 25   | 5    | -13  | -23 | -26  | 107  | 317  | 527  | 494  | 234  | 113  |
| 12                                                                                                                   | 44   | 24   | 4    | -14  | -23 | -26  | 114  | 309  | 531  | 489  | 225  | 111  |
| 13                                                                                                                   | 43   | 23   | 4    | -15  | -23 | -26  | 119  | 301  | 532  | 485  | 218  | 108  |
| 14                                                                                                                   | 42   | 23   | 4    | -15  | -23 | -27  | 125  | 293  | 534  | 476  | 211  | 106  |
| 15                                                                                                                   | 42   | 22   | 3    | -15  | -23 | -27  | 126  | 285  | 537  | 470  | 204  | 104  |
| 16                                                                                                                   | 41   | 21   | 3    | -15  | -23 | -27  | 132  | 284  | 539  | 463  | 198  | 102  |
| 17                                                                                                                   | 40   | 20   | 2    | -15  | -23 | -27  | 153  | 279  | 540  | 456  | 196  | 98   |
| 18                                                                                                                   | 39   | 19   | 1    | -16  | -23 | -28  | 165  | 277  | 542  | 448  | 191  | 96   |
| 19                                                                                                                   | 38   | 18   | 1    | -16  | -23 | -24  | 173  | 282  | 542  | 441  | 185  | 94   |
| 20                                                                                                                   | 37   | 18   | 1    | -17  | -23 | -24  | 176  | 289  | 542  | 433  | 181  | 92   |
| 21                                                                                                                   | 36   | 18   | 0    | -18  | -23 | -24  | 188  | 3300 | 543  | 426  | 177  | 91   |
| 22                                                                                                                   | 36   | 17   | -1   | -18  | -23 | -28  | 182  | 314  | 543  | 419  | 170  | 90   |
| 23                                                                                                                   | 36   | 16   | -2   | -18  | -23 | -24  | 182  | 326  | 542  | 412  | 165  | 88   |
| 24                                                                                                                   | 35   | 14   | -4   | -19  | -24 | -24  | 189  | 342  | 542  | 405  | 161  | 86   |
| 25                                                                                                                   | 35   | 16   | -5   | -19  | -24 | -24  | 199  | 351  | 542  | 397  | 157  | 85   |
| 26                                                                                                                   | 35   | 16   | -5   | -20  | -24 | -24  | 210  | 361  | 542  | 390  | 154  | 84   |
| 27                                                                                                                   | 34   | 15   | -5   | -20  | -24 | -25  | 223  | 369  | 540  | 383  | 150  | 83   |
| 28                                                                                                                   | 34   | 15   | -5   | -20  | -24 | -25  | 230  | 376  | 539  | 375  | 147  | 82   |
| 29                                                                                                                   | 33   | 15   | -6   | -21  | -24 | -25  | 234  | 389  | 536  | 367  | 144  | 81   |
| 30                                                                                                                   | 32   |      | -6   | -21  | -24 | -25  | 242  | 404  | 533  | 357  | 140  | 80   |
| 31                                                                                                                   | 32   |      | -7   |      | -24 |      | 248  | 418  |      | 349  |      | 79   |
| Hauteur mini = -28 cm      première observation le 18/06<br>Hauteur maxi = 543 cm      première observation le 21/09 |      |      |      |      |     |      |      |      |      |      |      |      |

LE SIGNE 1 PRECEDE LES HAUTEURS RECONSTITUEES .

| ALIMENTATION FASUBI A BINTABOUNGOU EN 1988               |      |      |      |     |      |      |      |      |      |      |      |     |
|----------------------------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|-----|
| HAUTEURS MOYENNES JOURNALIERES en cm                     |      |      |      |     |      |      |      |      |      |      |      |     |
| Zero de l'échelle = non connu                            |      |      |      |     |      |      |      |      |      |      |      |     |
| JANV                                                     | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |     |
| 1                                                        | 46   | .    | .    | .   | .    | .    | .    | .    | .    | .    | 63   | 118 |
| 2                                                        | 49   | .    | .    | .   | .    | .    | .    | .    | .    | .    | 49   | 110 |
| 3                                                        | 44   | .    | .    | .   | .    | .    | .    | .    | .    | .    | 76   | 116 |
| 4                                                        | 43   | .    | .    | .   | .    | .    | .    | .    | .    | .    | 82   | 116 |
| 5                                                        | 42   | .    | .    | .   | .    | .    | .    | .    | .    | .    | 88   | 116 |
| 6                                                        | 43   | .    | .    | .   | .    | .    | .    | .    | .    | .    | 90   | 116 |
| 7                                                        | 42   | .    | .    | .   | .    | .    | .    | .    | .    | .    | 92   | 118 |
| 8                                                        | 41   | .    | .    | .   | .    | .    | .    | .    | .    | .    | 94   | 114 |
| 9                                                        | 39   | .    | .    | .   | .    | .    | .    | .    | .    | .    | 100  | 111 |
| 10                                                       | 37   | .    | .    | .   | .    | .    | .    | .    | .    | .    | 103  | 107 |
| 11                                                       | 36   | .    | .    | .   | .    | .    | .    | .    | .    | .    | 108  | 104 |
| 12                                                       | 38   | .    | .    | .   | .    | .    | .    | .    | .    | .    | 107  | 102 |
| 13                                                       | 33   | .    | .    | .   | .    | .    | .    | .    | .    | .    | 108  | 101 |
| 14                                                       | 33   | .    | .    | .   | .    | .    | .    | .    | .    | .    | 109  | 100 |
| 15                                                       | 32   | .    | .    | .   | .    | .    | .    | .    | .    | .    | 110  | 96  |
| 16                                                       | 32   | .    | .    | .   | .    | .    | .    | .    | .    | .    | 111  | 98  |
| 17                                                       | 32   | .    | .    | .   | .    | .    | .    | .    | .    | .    | 112  | 98  |
| 18                                                       | 28   | .    | .    | .   | .    | .    | .    | .    | .    | .    | 112  | 93  |
| 19                                                       | 24   | .    | .    | .   | .    | .    | .    | .    | .    | .    | 112  | 91  |
| 20                                                       | 24   | .    | .    | .   | .    | .    | .    | .    | .    | .    | 110  | 89  |
| 21                                                       | 22   | .    | .    | .   | .    | .    | .    | .    | .    | .    | 110  | 87  |
| 22                                                       | 20   | .    | .    | .   | .    | .    | .    | .    | .    | .    | 111  | 86  |
| 23                                                       | 20   | .    | .    | .   | .    | .    | .    | .    | .    | .    | 113  | 83  |
| 24                                                       | 18   | .    | .    | .   | .    | .    | .    | .    | .    | .    | 116  | 81  |
| 25                                                       | 16   | .    | .    | .   | .    | .    | .    | .    | .    | .    | 118  | 79  |
| 26                                                       | 14   | .    | .    | .   | .    | .    | .    | .    | .    | .    | 116  | 78  |
| 27                                                       | 12   | .    | .    | .   | .    | .    | .    | .    | .    | .    | 118  | 79  |
| 28                                                       | 10   | .    | .    | .   | .    | .    | .    | .    | .    | .    | 118  | 78  |
| 29                                                       | 12   | .    | .    | .   | .    | .    | .    | .    | .    | .    | 117  | 76  |
| 30                                                       | 14   | .    | .    | .   | .    | .    | .    | .    | .    | .    | 116  | 74  |
| 31                                                       | 13   | .    | .    | .   | .    | .    | .    | .    | .    | .    | 88   | 71  |
| hauteur mini = à sec      première observation le 01/02  |      |      |      |     |      |      |      |      |      |      |      |     |
| hauteur maxi = 118 cm      première observation le 27/11 |      |      |      |     |      |      |      |      |      |      |      |     |

LE SIGNE . INDIQUE L'ABSENCE D'ÉCOULEMENT .

1ba

| BAOULE A BOUGOUNI EN 1988                                |      |      |      |     |      |      |      |      |      |      |      |     |
|----------------------------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|-----|
| HAUTEURS MOYENNES JOURNALIERES en cm                     |      |      |      |     |      |      |      |      |      |      |      |     |
| Zero de l'échelle = 311.72 à 18M                         |      |      |      |     |      |      |      |      |      |      |      |     |
| JANV                                                     | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |     |
| 1                                                        | 62   | 44   | 24   | 4   | -7   | .    | 84   | 150  | 353  | 430  | 178  | 99  |
| 2                                                        | 41   | 45   | 23   | 3   | -8   | .    | 81   | 143  | 372  | 423  | 170  | 97  |
| 3                                                        | 41   | 45   | 22   | 3   | -8   | .    | 84   | 152  | 380  | 417  | 167  | 98  |
| 4                                                        | 40   | 44   | 21   | 2   | -8   | .    | 85   | 146  | 376  | 409  | 164  | 93  |
| 5                                                        | 39   | 44   | 20   | 2   | -9   | .    | 99   | 148  | 367  | 401  | 161  | 92  |
| 6                                                        | 39   | 43   | 19   | 1   | -9   | .    | 103  | 154  | 389  | 392  | 157  | 90  |
| 7                                                        | 38   | 43   | 18   | 0   | .    | .    | 100  | 164  | 399  | 383  | 154  | 89  |
| 8                                                        | 38   | 42   | 18   | 0   | .    | .    | 87   | 173  | 413  | 378  | 151  | 87  |
| 9                                                        | 37   | 41   | 17   | 0   | .    | .    | 190  | 179  | 405  | 366  | 149  | 86  |
| 10                                                       | 36   | 40   | 16   | -1  | .    | .    | 194  | 187  | 400  | 357  | 146  | 84  |
| 11                                                       | 36   | 39   | 15   | -1  | .    | .    | 98   | 190  | 407  | 347  | 144  | 82  |
| 12                                                       | 35   | 39   | 14   | -1  | .    | .    | 94   | 201  | 424  | 337  | 142  | 81  |
| 13                                                       | 35   | 38   | 13   | -2  | .    | .    | 91   | 193  | 432  | 329  | 140  | 80  |
| 14                                                       | 34   | 38   | 12   | -2  | .    | .    | 182  | 195  | 442  | 319  | 137  | 78  |
| 15                                                       | 34   | 37   | 12   | -3  | .    | .    | 158  | 184  | 480  | 310  | 135  | 78  |
| 16                                                       | 33   | 36   | 12   | -3  | .    | .    | 151  | 176  | 487  | 301  | 133  | 77  |
| 17                                                       | 33   | 35   | 12   | -4  | .    | .    | 140  | 170  | 468  | 294  | 131  | 76  |
| 18                                                       | 33   | 34   | 11   | -4  | .    | .    | 6    | 131  | 172  | 481  | 286  | 128 |
| 19                                                       | 32   | 33   | 10   | -5  | .    | .    | 5    | 143  | 183  | 492  | 282  | 126 |
| 20                                                       | 31   | 32   | 10   | -6  | .    | .    | 6    | 166  | 198  | 494  | 278  | 123 |
| 21                                                       | 30   | 31   | 9    | -7  | .    | .    | 6    | 149  | 223  | 495  | 263  | 120 |
| 22                                                       | 30   | 30   | 8    | -7  | .    | .    | 47   | 138  | 248  | 493  | 255  | 118 |
| 23                                                       | 29   | 30   | 8    | -8  | .    | .    | 64   | 130  | 268  | 489  | 244  | 116 |
| 24                                                       | 29   | 29   | 7    | -9  | .    | .    | 72   | 124  | 284  | 482  | 232  | 114 |
| 25                                                       | 29   | 28   | 6    | -9  | .    | .    | 72   | 152  | 296  | 474  | 220  | 111 |
| 26                                                       | 28   | 27   | 6    | -9  | .    | .    | 71   | 187  | 320  | 467  | 212  | 109 |
| 27                                                       | 28   | 26   | 6    | -9  | .    | .    | 68   | 165  | 380  | 460  | 203  | 107 |
| 28                                                       | 27   | 25   | 6    | -9  | .    | .    | 71   | 189  | 359  | 452  | 195  | 108 |
| 29                                                       | 27   | 24   | 5    | -6  | .    | .    | 67   | 153  | 386  | 444  | 188  | 103 |
| 30                                                       | 26   | 24   | 5    | -6  | .    | .    | 70   | 143  | 355  | 437  | 183  | 101 |
| 31                                                       | 26   | 24   | 4    | .   | .    | .    | 142  | 351  | .    | 179  | .    | 64  |
| hauteur mini = à sec      première observation le 07/05  |      |      |      |     |      |      |      |      |      |      |      |     |
| hauteur maxi = 493 cm      première observation le 21/09 |      |      |      |     |      |      |      |      |      |      |      |     |

LE SIGNE . PRECEDE LES HAUTEURS RECONSTITUEES .  
LE SIGNE . INDIQUE L'ABSENCE D'ÉCOULEMENT .

1ba

| BARRA 188A A DOUBOUBERY EN 1988                          |      |      |      |     |      |      |      |      |      |      |      |     |
|----------------------------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|-----|
| HAUTEURS MOYENNES JOURNALIERES en cm                     |      |      |      |     |      |      |      |      |      |      |      |     |
| Zero de l'échelle = 257.16 à 18M                         |      |      |      |     |      |      |      |      |      |      |      |     |
| JANV                                                     | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |     |
| 1                                                        | 242  | 116  | 83   | 36  | 6    | .    | .    | 122  | 301  | 408  | 443  | 402 |
| 2                                                        | 236  | 115  | 81   | 33  | 5    | .    | .    | 134  | 307  | 410  | 443  | 401 |
| 3                                                        | 229  | 112  | 79   | 29  | 5    | .    | .    | 140  | 315  | 411  | 443  | 400 |
| 4                                                        | 223  | 110  | 79   | 27  | 4    | .    | .    | 148  | 321  | 411  | 443  | 399 |
| 5                                                        | 219  | 108  | 77   | 26  | 2    | .    | .    | 156  | 328  | 412  | 442  | 399 |
| 6                                                        | 214  | 107  | 77   | 25  | 0    | .    | .    | 165  | 332  | 413  | 442  | 397 |
| 7                                                        | 208  | 106  | 76   | 21  | .    | .    | .    | 174  | 333  | 414  | 441  | 398 |
| 8                                                        | 201  | 105  | 75   | 18  | .    | .    | .    | 183  | 336  | 417  | 441  | 394 |
| 9                                                        | 196  | 102  | 75   | 14  | .    | .    | .    | 191  | 340  | 417  | 440  | 393 |
| 10                                                       | 191  | 99   | 74   | 11  | .    | .    | .    | 194  | 344  | 416  | 440  | 391 |
| 11                                                       | 184  | 99   | 74   | 10  | .    | .    | .    | 197  | 349  | 416  | 439  | 390 |
| 12                                                       | 181  | 98   | 73   | 11  | .    | .    | .    | 202  | 354  | 416  | 439  | 389 |
| 13                                                       | 179  | 97   | 71   | 11  | .    | .    | .    | 4    | 206  | 357  | 416  | 439 |
| 14                                                       | 177  | 97   | 70   | 12  | .    | .    | .    | 8    | 209  | 362  | 417  | 438 |
| 15                                                       | 176  | 96   | 69   | 12  | .    | .    | .    | 12   | 214  | 364  | 418  | 438 |
| 16                                                       | 176  | 96   | 67   | 13  | .    | .    | .    | 15   | 217  | 368  | 418  | 437 |
| 17                                                       | 175  | 95   | 64   | 13  | .    | .    | .    | 16   | 221  | 372  | 419  | 437 |
| 18                                                       | 174  | 95   | 61   | 14  | .    | .    | .    | 17   | 225  | 375  | 419  | 436 |
| 19                                                       | 173  | 94   | 60   | 18  | .    | .    | .    | 19   | 229  | 381  | 420  | 438 |
| 20                                                       | 170  | 93   | 58   | 18  | .    | .    | .    | 20   | 233  | 383  | 420  | 432 |
| 21                                                       | 164  | 91   | 54   | 13  | .    | .    | .    | 28   | 237  | 385  | 422  | 450 |
| 22                                                       | 189  | 90   | 50   | 11  | .    | .    | .    | 36   | 241  | 388  | 425  | 429 |
| 23                                                       | 155  | 89   | 47   | 10  | .    | .    | .    | 50   | 246  | 392  | 429  | 426 |
| 24                                                       | 150  | 89   | 46   | 9   | .    | .    | .    | 61   | 250  | 394  | 432  | 424 |
| 25                                                       | 146  | 86   | 45   | 9   | .    | .    | .    | 74   | 254  | 396  | 434  | 420 |
| 26                                                       | 140  | 86   | 43   | 8   | .    | .    | .    | 86   | 261  | 397  | 436  | 414 |
| 27                                                       | 136  | 84   | 41   | 7   | .    | .    | .    | 94   | 268  | 399  | 438  | 412 |
| 28                                                       | 131  | 84   | 39   | 7   | .    | .    | .    | 102  | 277  | 402  | 439  | 409 |
| 29                                                       | 127  | 84   | 38   | 7   | .    | .    | .    | 108  | 284  | 405  | 440  | 406 |
| 30                                                       | 122  | 83   | 37   | 6   | .    | .    | .    | 114  | 293  | 406  | 441  | 404 |
| 31                                                       | 119  | 82   | 37   | 6   | .    | .    | .    | 118  | 298  | 407  | 442  | 311 |
| hauteur mini = à sec      première observation le 07/05  |      |      |      |     |      |      |      |      |      |      |      |     |
| hauteur maxi = 443 cm      première observation le 01/11 |      |      |      |     |      |      |      |      |      |      |      |     |

LE SIGNE . INDIQUE L'ABSENCE D'ÉCOULEMENT .

1ba

| BAOULE A BOUGOUNI EN 1988                                 |      |      |      |      |      |      |      |      |      |      |      | DNHE      |
|-----------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|-----------|
| DEBITS MOYENS JOURNALIERS en m3/s                         |      |      |      |      |      |      |      |      |      |      |      |           |
| ~~~~~                                                     |      |      |      |      |      |      |      |      |      |      |      |           |
| Surface = 18700 ka2                                       |      |      |      |      |      |      |      |      |      |      |      |           |
|                                                           | JANV | FEVR | MARS | AVRI | MAI  | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE      |
| 1                                                         | 1.97 | .736 | .050 | .000 | .000 | .000 | 4.88 | 24.9 | 161. | 226. | 37.2 | 7.94      |
| 2                                                         | 1.88 | .675 | .037 | .000 | .000 | .000 | 4.37 | 31.0 | 177. | 220. | 34.5 | 7.48      |
| 3                                                         | 1.88 | .675 | .026 | .000 | .000 | .000 | 4.88 | 25.8 | 184. | 218. | 33.0 | 7.04      |
| 4                                                         | 1.80 | .616 | .017 | .000 | .000 | .000 | 5.06 | 23.2 | 180. | 208. | 31.4 | 6.61      |
| 5                                                         | 1.71 | .616 | .008 | .000 | .000 | .000 | 7.94 | 24.1 | 173. | 202. | 30.0 | 6.40      |
| 6                                                         | 1.71 | .559 | .000 | .000 | .000 | .000 | 8.91 | 26.7 | 191. | 194. | 28.1 | 6.00      |
| 7                                                         | 1.62 | .559 | .000 | .000 | .000 | .000 | 8.18 | 31.4 | 200. | 186. | 26.7 | 5.80      |
| 8                                                         | 1.62 | .504 | .000 | .000 | .000 | .000 | 8.80 | 36.1 | 212. | 180. | 25.4 | 5.42      |
| 9                                                         | 1.54 | .451 | .000 | .000 | .000 | .000 | 6.00 | 39.4 | 205. | 172. | 24.5 | 5.24      |
| 10                                                        | 1.46 | .400 | .000 | .000 | .000 | .000 | 6.82 | 44.0 | 201. | 165. | 23.2 | 4.88      |
| 11                                                        | 1.46 | .370 | .000 | .000 | .000 | .000 | 7.71 | 45.7 | 207. | 156. | 22.4 | 4.54      |
| 12                                                        | 1.38 | .370 | .000 | .000 | .000 | .000 | 6.82 | 52.6 | 221. | 148. | 21.6 | 4.37      |
| 13                                                        | 1.38 | .340 | .000 | .000 | .000 | .000 | 6.20 | 47.4 | 228. | 142. | 20.8 | 4.21      |
| 14                                                        | 1.30 | .340 | .000 | .000 | .000 | .000 | 25.8 | 48.8 | 236. | 134. | 19.6 | 3.90      |
| 15                                                        | 1.30 | .312 | .000 | .000 | .000 | .000 | 28.6 | 42.2 | 243. | 128. | 18.8 | 3.90      |
| 16                                                        | 1.22 | .285 | .000 | .000 | .000 | .000 | 25.4 | 37.7 | 249. | 121. | 18.1 | 3.75      |
| 17                                                        | 1.22 | .259 | .000 | .000 | .000 | .000 | 20.8 | 34.5 | 259. | 116. | 17.4 | 3.60      |
| 18                                                        | 1.22 | .235 | .000 | .000 | .000 | .000 | 17.4 | 33.5 | 270. | 110. | 16.3 | 3.46      |
| 19                                                        | 1.14 | .211 | .000 | .000 | .000 | .000 | 22.0 | 42.8 | 280. | 107. | 15.6 | 3.32      |
| 20                                                        | 1.07 | .188 | .000 | .000 | .000 | .000 | 32.4 | 50.7 | 282. | 102. | 14.7 | 3.19      |
| 21                                                        | 1.00 | .167 | .000 | .000 | .000 | .000 | 24.5 | 66.5 | 282. | 93.3 | 13.7 | 3.06      |
| 22                                                        | 1.00 | .147 | .000 | .000 | .000 | .799 | 20.0 | 83.0 | 281. | 87.8 | 13.1 | 2.93      |
| 23                                                        | .931 | .147 | .000 | .000 | .000 | 2.16 | 17.0 | 76.8 | 277. | 80.3 | 12.5 | 2.93      |
| 24                                                        | .931 | .128 | .000 | .000 | .000 | 3.06 | 15.0 | 108. | 271. | 72.3 | 11.9 | 2.81      |
| 25                                                        | .931 | .110 | .000 | .000 | .000 | 3.06 | 25.8 | 117. | 264. | 64.6 | 11.0 | 2.69      |
| 26                                                        | .864 | .093 | .000 | .000 | .000 | 2.93 | 28.1 | 135. | 258. | 59.5 | 10.5 | 2.58      |
| 27                                                        | .864 | .078 | .000 | .000 | .000 | 2.98 | 31.9 | 139. | 252. | 53.9 | 9.93 | 2.47      |
| 28                                                        | .799 | .063 | .000 | .000 | .000 | 2.93 | 29.0 | 166. | 245. | 48.8 | 9.41 | 2.36      |
| 29                                                        | .799 | .050 | .000 | .000 | .000 | 2.47 | 26.3 | 164. | 238. | 44.5 | 8.91 | 2.26      |
| 30                                                        | .736 | .000 | .000 | .000 | .000 | 2.81 | 22.0 | 183. | 232. | 41.6 | 8.42 | 2.16      |
| 31                                                        | .736 | .000 | .000 | .000 | .000 |      | 21.6 | 160. |      | 39.4 |      | 2.16      |
| 1988:                                                     | 1.27 | .334 | .004 | .000 | .000 | .760 | 16.7 | 69.8 | 232. | 126. | 19.4 | 4.18 39.2 |
| 4-88:                                                     | 15.9 | 7.41 | 3.12 | 1.31 | 1.36 | 3.00 | 32.0 | 208. | 406. | 293. | 110. | 37.8 87.0 |
| obs:                                                      | 1.27 | .334 | .004 | .000 | .000 | .491 | 11.8 | 82.4 | 72.9 | 18.6 | 3.51 | 16.0      |
| obs:                                                      | 48.1 | 26.4 | 10.8 | 6.72 | 3.81 | 10.0 | 104. | 483. | 703. | 780. | 320. | 108. 212. |
| Débit mini = .000 m3/s      première observation le 06/03 |      |      |      |      |      |      |      |      |      |      |      |           |
| Débit maxi = 282. m3/s      première observation le 20/09 |      |      |      |      |      |      |      |      |      |      |      |           |
| Lame d'eau écoulée = 79 mm                                |      |      |      |      |      |      |      |      |      |      |      |           |

| MONO A BOUBOUNI EN 1988              |      |      |      |      |     |      |      |      |      |      |      | DNHE |
|--------------------------------------|------|------|------|------|-----|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm |      |      |      |      |     |      |      |      |      |      |      |      |
| Zéro de l'échelle = 311.72 m IGN     |      |      |      |      |     |      |      |      |      |      |      |      |
|                                      | JANV | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |
| 1                                    | .    | .    | .    | .    | .   | .    | 39   | 168  | 347  | 168  | 40   | 26   |
| 2                                    | .    | .    | .    | .    | .   | .    | 87   | 386  | 314  | 177  | 40   | 25   |
| 3                                    | .    | .    | .    | .    | .   | .    | 47   | 352  | 284  | 189  | 39   | 25   |
| 4                                    | .    | .    | .    | .    | .   | .    | 38   | 225  | 276  | 168  | 37   | 24   |
| 5                                    | .    | .    | .    | .    | .   | .    | 26   | 145  | 205  | 152  | 38   | 23   |
| 6                                    | .    | .    | .    | .    | .   | .    | 37   | 118  | 193  | 143  | 42   | 23   |
| 7                                    | .    | .    | .    | .    | .   | .    | 28   | 102  | 337  | 8128 | 42   | 23   |
| 8                                    | .    | .    | .    | .    | .   | .    | 26   | 106  | 389  | 108  | 33   | 23   |
| 9                                    | .    | .    | .    | .    | .   | .    | 7    | 98   | 303  | 96   | 30   | 23   |
| 10                                   | .    | .    | .    | .    | .   | .    | 7    | 83   | 279  | 87   | 32   | 22   |
| 11                                   | .    | .    | .    | .    | .   | .    | 119  | 94   | 228  | 80   | 32   | 21   |
| 12                                   | .    | .    | .    | .    | .   | .    | 109  | 69   | 362  | 73   | 32   | 21   |
| 13                                   | .    | .    | .    | .    | .   | 19   | 86   | 66   | 335  | 67   | 32   | 21   |
| 14                                   | .    | .    | .    | .    | .   | 18   | 170  | 86   | 283  | 62   | 32   | 21   |
| 15                                   | .    | .    | .    | .    | .   | 12   | 128  | 85   | 230  | 59   | 30   | 20   |
| 16                                   | .    | .    | .    | .    | .   | 11   | 123  | 85   | 218  | 87   | 30   | 20   |
| 17                                   | .    | .    | .    | .    | .   | 13   | 48   | 84   | 210  | 86   | 30   | 19   |
| 18                                   | .    | .    | .    | .    | .   | 38   | 39   | 83   | 268  | 55   | 28   | 19   |
| 19                                   | .    | .    | .    | .    | .   | 41   | 86   | 84   | 308  | 61   | 29   | 19   |
| 20                                   | .    | .    | .    | .    | .   | 100  | 297  | 63   | 286  | 60   | 29   | 19   |
| 21                                   | .    | .    | .    | .    | .   | 69   | 250  | 88   | 230  | 78   | 28   | 18   |
| 22                                   | .    | .    | .    | .    | .   | 40   | 167  | 81   | 214  | 61   | 26   | 18   |
| 23                                   | .    | .    | .    | .    | .   | 26   | 147  | 48   | 182  | 56   | 26   | 18   |
| 24                                   | .    | .    | .    | .    | .   | 39   | 122  | 47   | 165  | 53   | 26   | 17   |
| 25                                   | .    | .    | .    | .    | .   | 37   | 168  | 44   | 151  | 52   | 27   | 17   |
| 26                                   | .    | .    | .    | .    | .   | 29   | 185  | 43   | 188  | 80   | 27   | 17   |
| 27                                   | .    | .    | .    | .    | .   | 24   | 140  | 183  | 232  | 49   | 27   | 16   |
| 28                                   | .    | .    | .    | .    | .   | 47   | 104  | 261  | 236  | 47   | 27   | 19   |
| 29                                   | .    | .    | .    | .    | .   | 64   | 76   | 245  | 214  | 44   | 26   | 18   |
| 30                                   | .    | .    | .    | .    | .   | 47   | 69   | 421  | 179  | 43   | 26   | 14   |
| 31                                   | .    | .    | .    | .    | .   |      | 185  | 341  |      | 41   |      | 14   |

hauteur mini = 4 sec

hauteur maxi = 421 cm

première observation le 01/01

première observation le 30/08

LE SIGNE : PRECEDE LES HAUTEURS RECONSTITUEES .  
LE SIGNE , INDIQUE L'ABSENCE D'ECOULEMENT .

16a

| MONO A BOUGOUNI EN 1988                              |      |      |      |      |      |      |      |      |      |      |      | DNHE |
|------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| DEBITS MOYENS JOURNALIERS en m3/s                    |      |      |      |      |      |      |      |      |      |      |      |      |
| ~~~~~                                                |      |      |      |      |      |      |      |      |      |      |      |      |
| Surface = 930 km2                                    |      |      |      |      |      |      |      |      |      |      |      |      |
| JANV                                                 | FEVR | MARS | AVRI | MAI  | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                                    | .000 | .000 | .000 | .000 | .000 | .701 | 5.71 | 18.5 | 5.71 | .725 | .417 |      |
| 2                                                    | .000 | .000 | .000 | .000 | .000 | 2.12 | 22.4 | 15.4 | 6.20 | .725 | .397 |      |
| 3                                                    | .000 | .000 | .000 | .000 | .000 | .897 | 18.9 | 13.0 | 6.86 | .701 | .397 |      |
| 4                                                    | .000 | .000 | .000 | .000 | .000 | .678 | 9.04 | 12.5 | 5.71 | .655 | .357 |      |
| 5                                                    | .000 | .000 | .000 | .000 | .000 | .417 | 4.56 | 7.81 | 4.90 | .678 | .357 |      |
| 6                                                    | .000 | .000 | .000 | .000 | .000 | .655 | 3.33 | 7.09 | 4.46 | .773 | .357 |      |
| 7                                                    | .000 | .000 | .000 | .000 | .000 | .458 | 2.68 | 17.8 | 3.64 | .773 | .357 |      |
| 8                                                    | .000 | .000 | .000 | .000 | .000 | .417 | 2.84 | 19.6 | 2.92 | .860 | .357 |      |
| 9                                                    | .000 | .000 | .000 | .000 | .000 | 7    | 2.52 | 14.5 | 2.48 | .500 | .357 |      |
| 10                                                   | .000 | .000 | .000 | .000 | .000 | 7    | 1.98 | 12.7 | 2.12 | .843 | .338 |      |
| 11                                                   | .000 | .000 | .000 | .000 | .000 | .000 | 3.38 | 2.37 | 9.26 | 1.68 | .543 | .319 |
| 12                                                   | .000 | .000 | .000 | .000 | .000 | .000 | 2.96 | 1.82 | 19.9 | 1.64 | .543 | .319 |
| 13                                                   | .000 | .000 | .000 | .000 | .000 | .276 | 2.08 | 1.43 | 17.3 | 1.46 | .543 | .319 |
| 14                                                   | .000 | .000 | .000 | .000 | .000 | .187 | 6.92 | 1.14 | 13.0 | 1.31 | .543 | .319 |
| 15                                                   | .000 | .000 | .000 | .000 | .000 | .132 | 3.77 | 1.11 | 9.38 | 1.22 | .800 | .300 |
| 16                                                   | .000 | .000 | .000 | .000 | .000 | .116 | 3.55 | 1.11 | 8.62 | 1.16 | .800 | .300 |
| 17                                                   | .000 | .000 | .000 | .000 | .000 | .149 | .923 | 1.08 | 6.12 | 1.14 | .800 | .276 |
| 18                                                   | .000 | .000 | .000 | .000 | .000 | .678 | .701 | 1.05 | 11.7 | 1.11 | .458 | .276 |
| 19                                                   | .000 | .000 | .000 | .000 | .000 | .749 | 2.08 | 1.08 | 14.6 | 1.28 | .479 | .276 |
| 20                                                   | .000 | .000 | .000 | .000 | .000 | 2.60 | 14.0 | 1.34 | 13.2 | 1.25 | .479 | .276 |
| 21                                                   | .000 | .000 | .000 | .000 | .000 | 1.92 | 10.7 | 1.19 | 9.38 | 1.81 | .458 | .252 |
| 22                                                   | .000 | .000 | .000 | .000 | .000 | .725 | 5.66 | 1.00 | 8.37 | 1.14 | .458 | .252 |
| 23                                                   | .000 | .000 | .000 | .000 | .000 | .417 | 4.65 | .923 | 4.47 | 1.14 | .458 | .252 |
| 24                                                   | .000 | .000 | .000 | .000 | .000 | .701 | 3.51 | .897 | 5.96 | 1.05 | .458 | .250 |
| 25                                                   | .000 | .000 | .000 | .000 | .000 | .655 | 5.71 | .822 | 4.85 | 1.03 | .437 | .230 |
| 26                                                   | .000 | .000 | .000 | .000 | .000 | .479 | 8.05 | .797 | 6.81 | .975 | .437 | .230 |
| 27                                                   | .000 | .000 | .000 | .000 | .000 | .377 | 4.32 | 6.83 | 9.81 | .949 | .437 | .208 |
| 28                                                   | .000 | .000 | .000 | .000 | .000 | .897 | 2.76 | 11.4 | 9.77 | .897 | .437 | .187 |
| 29                                                   | .000 | .000 | .000 | .000 | .000 | 1.37 | 1.74 | 10.4 | 8.37 | .822 | .417 | .187 |
| 30                                                   | .000 | .000 | .000 | .000 | .000 | .897 | 1.82 | 26.2 | 6.31 | .797 | .417 | .168 |
| 31                                                   | .000 | .000 | .000 | .000 | .000 |      | 8.05 | 17.9 |      | .749 |      | .168 |
| May                                                  | .000 | .000 | .000 | .000 | .000 | .431 |      | 5.33 | 11.3 | 2.26 | .538 | .292 |
| Debit mini = .000 m3/s première observation le 01/01 |      |      |      |      |      |      |      |      |      |      |      |      |
| Debit maxi = 26.2 m3/s première observation le 30/08 |      |      |      |      |      |      |      |      |      |      |      |      |

| KOSI A BOWARA EN 1988                                                   |      |      |      |      |     |      |      |      |      |      | DNHE |      |
|-------------------------------------------------------------------------|------|------|------|------|-----|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm                                    |      |      |      |      |     |      |      |      |      |      |      |      |
| Zéro de l'échelle = non connu                                           |      |      |      |      |     |      |      |      |      |      |      |      |
|                                                                         | JANV | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |
| 1                                                                       | .    | .    | .    | .    | .   | .    | 146  | 232  | 86   | 48   | 26   | 13   |
| 2                                                                       | .    | .    | .    | .    | .   | .    | 90   | 227  | 85   | 44   | 25   | 13   |
| 3                                                                       | .    | .    | .    | .    | .   | .    | 99   | 102  | 82   | 41   | 24   | 13   |
| 4                                                                       | .    | .    | .    | .    | .   | .    | 84   | 80   | 80   | 87   | 24   | 13   |
| 5                                                                       | .    | .    | .    | .    | .   | .    | 37   | 41   | 96   | 108  | 24   | 12   |
| 6                                                                       | .    | .    | .    | .    | .   | .    | 32   | 71   | 107  | 60   | 24   | 11   |
| 7                                                                       | .    | .    | .    | .    | .   | .    | 32   | 117  | 200  | 44   | 23   | 11   |
| 8                                                                       | .    | .    | .    | .    | .   | .    | 30   | 102  | 88   | 40   | 23   | 11   |
| 9                                                                       | .    | .    | .    | .    | .   | .    | 38   | 62   | 132  | 39   | 22   | 11   |
| 10                                                                      | .    | .    | .    | .    | .   | 27   | 117  | 44   | 281  | 38   | 22   | .    |
| 11                                                                      | .    | .    | .    | .    | .   | 21   | 45   | 80   | 146  | 35   | 21   | .    |
| 12                                                                      | .    | .    | .    | .    | .   | .    | 35   | 41   | 62   | 33   | 20   | .    |
| 13                                                                      | .    | .    | .    | .    | .   | .    | 31   | 81   | 65   | 32   | 20   | .    |
| 14                                                                      | .    | .    | .    | .    | .   | .    | 203  | 62   | 149  | 31   | 19   | .    |
| 15                                                                      | .    | .    | .    | .    | .   | 15   | 80   | 42   | 224  | 83   | 19   | .    |
| 16                                                                      | .    | .    | .    | .    | .   | .    | 77   | 39   | 147  | 88   | 18   | .    |
| 17                                                                      | .    | .    | .    | .    | .   | .    | 48   | 40   | 96   | 39   | 18   | .    |
| 18                                                                      | .    | .    | .    | .    | .   | .    | 41   | 41   | 198  | 37   | 17   | .    |
| 19                                                                      | .    | .    | .    | .    | .   | 50   | 47   | 36   | 100  | 33   | 16   | .    |
| 20                                                                      | .    | .    | .    | .    | .   | 66   | 49   | 84   | 65   | 40   | 16   | .    |
| 21                                                                      | .    | .    | .    | .    | .   | 36   | 39   | 277  | 87   | 36   | 17   | .    |
| 22                                                                      | .    | .    | .    | .    | .   | 31   | 34   | 254  | 49   | 35   | 14   | .    |
| 23                                                                      | .    | .    | .    | .    | .   | 50   | 31   | 86   | 46   | 32   | 18   | .    |
| 24                                                                      | .    | .    | .    | .    | .   | 86   | 29   | 74   | 72   | 31   | 15   | .    |
| 25                                                                      | .    | .    | .    | .    | .   | 85   | 178  | 46   | 104  | 29   | 15   | .    |
| 26                                                                      | .    | .    | .    | .    | .   | 32   | 140  | 248  | 56   | 28   | 15   | .    |
| 27                                                                      | .    | .    | .    | .    | .   | 37   | 48   | 146  | 49   | 29   | 14   | .    |
| 28                                                                      | .    | .    | .    | .    | .   | 32   | 40   | 101  | 66   | 29   | 14   | .    |
| 29                                                                      | .    | .    | .    | .    | .   | 29   | 46   | 95   | 68   | 28   | 13   | .    |
| 30                                                                      | .    | .    | .    | .    | .   | 25   | 76   | 75   | 88   | 27   | 13   | .    |
| 31                                                                      | .    | .    | .    | .    | .   | .    | 202  | 57   | .    | 26   | .    | .    |
| hauteur mini = 6 sec                      première observation le 01/01 |      |      |      |      |     |      |      |      |      |      |      |      |
| hauteur maxi = 281 cm                    première observation le 10/09  |      |      |      |      |     |      |      |      |      |      |      |      |

**LE BIONE . INDIQUE L'ABSENCE D'ECOULEMENT .**

1 b1

| KOB1 A BOWARA EN 1955                                |      |      |      |      |      |      |      |      |      |      |      | DNHE |
|------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| DEBITS MOYENS JOURNALIERS en m3/s                    |      |      |      |      |      |      |      |      |      |      |      |      |
| ~~~~~                                                |      |      |      |      |      |      |      |      |      |      |      |      |
| Surface = 280 km2                                    |      |      |      |      |      |      |      |      |      |      |      |      |
|                                                      | JANV | FEVR | MARS | AVRI | MAI  | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |
| 1                                                    | .000 | .000 | .000 | .000 | .000 | .000 | 3.37 | 7.14 | .639 | .341 | .018 | .000 |
| 2                                                    | .000 | .000 | .000 | .000 | .000 | .000 | 1.81 | 8.63 | .612 | .316 | .015 | .000 |
| 3                                                    | .000 | .000 | .000 | .000 | .000 | .000 | 1.73 | 1.81 | .533 | .243 | .012 | .000 |
| 4                                                    | .000 | .000 | .000 | .000 | .000 | .000 | 3.86 | .480 | .480 | 1.43 | .012 | .000 |
| 5                                                    | .000 | .000 | .000 | .000 | .000 | .000 | .156 | .243 | 1.65 | 3.91 | .012 | .000 |
| 6                                                    | .000 | .000 | .000 | .000 | .000 | .000 | .062 | 1.03 | 1.93 | .744 | .012 | .000 |
| 7                                                    | .000 | .000 | .000 | .000 | .000 | .000 | .062 | 2.26 | 4.40 | .316 | .010 | .000 |
| 8                                                    | .000 | .000 | .000 | .000 | .000 | .000 | .030 | 1.81 | .671 | .220 | .010 | .000 |
| 9                                                    | .000 | .000 | .000 | .000 | .000 | .000 | .116 | .796 | 2.80 | .198 | .008 | .000 |
| 10                                                   | .000 | .000 | .000 | .000 | .000 | .020 | 2.26 | .316 | 18.8 | .176 | .008 | .000 |
| 11                                                   | .000 | .000 | .000 | .000 | .000 | .006 | .341 | .480 | 3.37 | .116 | .006 | .000 |
| 12                                                   | .000 | .000 | .000 | .000 | .000 | .000 | .116 | .243 | .796 | .080 | .004 | .000 |
| 13                                                   | .000 | .000 | .000 | .000 | .000 | .000 | .006 | .507 | .874 | .062 | .004 | .000 |
| 14                                                   | .000 | .000 | .000 | .000 | .000 | .000 | .660 | .796 | 3.50 | .046 | .003 | .000 |
| 15                                                   | .000 | .000 | .000 | .000 | .000 | .000 | 1.26 | .266 | 8.33 | .580 | .003 | .000 |
| 16                                                   | .000 | .000 | .000 | .000 | .000 | .000 | 1.18 | .198 | 3.41 | .671 | .001 | .000 |
| 17                                                   | .000 | .000 | .000 | .000 | .000 | .000 | .422 | .220 | 1.65 | .198 | .001 | .000 |
| 18                                                   | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .243 | 6.26 | .156 | .000 | .000 |
| 19                                                   | .000 | .000 | .000 | .000 | .000 | .000 | .480 | .395 | .136 | 1.78 | .080 | .000 |
| 20                                                   | .000 | .000 | .000 | .000 | .000 | .000 | .879 | .491 | 1.36 | .874 | .220 | .000 |
| 21                                                   | .000 | .000 | .000 | .000 | .000 | .136 | .198 | 15.2 | .665 | .136 | .000 | .000 |
| 22                                                   | .000 | .000 | .000 | .000 | .000 | .006 | .046 | .098 | 7.57 | .451 | .116 | .000 |
| 23                                                   | .000 | .000 | .000 | .000 | .000 | .000 | .480 | .046 | 1.41 | .368 | .062 | .000 |
| 24                                                   | .000 | .000 | .000 | .000 | .000 | .000 | 1.41 | .027 | 1.10 | .105 | .046 | .000 |
| 25                                                   | .000 | .000 | .000 | .000 | .000 | .000 | 1.38 | 4.97 | .368 | 1.86 | .027 | .000 |
| 26                                                   | .000 | .000 | .000 | .000 | .000 | .833 | 3.11 | 11.0 | .639 | .024 | .000 | .000 |
| 27                                                   | .000 | .000 | .000 | .000 | .000 | .186 | .422 | 3.37 | .451 | .027 | .000 | .000 |
| 28                                                   | .000 | .000 | .000 | .000 | .000 | .062 | .220 | 1.78 | .879 | .027 | .000 | .000 |
| 29                                                   | .000 | .000 | .000 | .000 | .000 | .027 | .368 | 1.63 | .751 | .024 | .000 | .000 |
| 30                                                   | .000 | .000 | .000 | .000 | .000 | .018 | 1.16 | 1.13 | .671 | .020 | .000 | .000 |
| 31                                                   | .000 | .000 | .000 | .000 | .000 |      | 6.93 | .665 |      | .018 | .000 | .000 |
| Moy                                                  | .000 | .000 | .000 | .000 | .000 | .188 | 1.23 | 2.52 | 2.35 | .343 | .005 | .000 |
| Débit mini = .000 m3/s première observation le 01/01 |      |      |      |      |      |      |      |      |      |      |      |      |
| Débit maxi = 15.8 m3/s première observation le 10/09 |      |      |      |      |      |      |      |      |      |      |      |      |
| Débit moyen annuel = .353 m3/s                       |      |      |      |      |      |      |      |      |      |      |      |      |
| Lame d'eau écoulée = 62 mm                           |      |      |      |      |      |      |      |      |      |      |      |      |

| MARISOT DE KONDI A SOUREM BIDEY EN 1988 DNHE |      |      |      |     |      |      |      |      |      |      |      |
|----------------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm         |      |      |      |     |      |      |      |      |      |      |      |
| Zero de l'échelle = 208.20 m IGN             |      |      |      |     |      |      |      |      |      |      |      |
| JANV                                         | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |
| 1                                            | 132  | .    | .    | .   | .    | .    | .    | 178  | 272  | 306  | 270  |
| 2                                            | 128  | .    | .    | .   | .    | .    | .    | 181  | 274  | 306  | 272  |
| 3                                            | 124  | .    | .    | .   | .    | .    | .    | 187  | 275  | 307  | 269  |
| 4                                            | 119  | .    | .    | .   | .    | .    | .    | 193  | 277  | 307  | 267  |
| 5                                            | 116  | .    | .    | .   | .    | .    | .    | 198  | 279  | 306  | 264  |
| 6                                            | 113  | .    | .    | .   | .    | .    | .    | 202  | 281  | 307  | 261  |
| 7                                            | 109  | .    | .    | .   | .    | .    | .    | 206  | 282  | 306  | 258  |
| 8                                            | 105  | .    | .    | .   | .    | .    | .    | 209  | 282  | 304  | 255  |
| 9                                            | 99   | .    | .    | .   | .    | .    | .    | 213  | 284  | 306  | 251  |
| 10                                           | 97   | .    | .    | .   | .    | .    | .    | 216  | 285  | 305  | 248  |
| 11                                           | 92   | .    | .    | .   | .    | .    | .    | 81   | 219  | 286  | 305  |
| 12                                           | 86   | .    | .    | .   | .    | .    | .    | 87   | 224  | 287  | 305  |
| 13                                           | 81   | .    | .    | .   | .    | .    | .    | 93   | 227  | 289  | 304  |
| 14                                           | 77   | .    | .    | .   | .    | .    | .    | 99   | 230  | 291  | 303  |
| 15                                           | 73   | .    | .    | .   | .    | .    | .    | 104  | 233  | 293  | 302  |
| 16                                           | .    | .    | .    | .   | .    | .    | .    | 110  | 237  | 295  | 301  |
| 17                                           | .    | .    | .    | .   | .    | .    | .    | 117  | 240  | 297  | 300  |
| 18                                           | .    | .    | .    | .   | .    | .    | .    | 118  | 243  | 298  | 299  |
| 19                                           | .    | .    | .    | .   | .    | .    | .    | 124  | 245  | 299  | 297  |
| 20                                           | .    | .    | .    | .   | .    | .    | .    | 131  | 248  | 300  | 295  |
| 21                                           | .    | .    | .    | .   | .    | .    | .    | 137  | 250  | 301  | 293  |
| 22                                           | .    | .    | .    | .   | .    | .    | .    | 142  | 253  | 302  | 292  |
| 23                                           | .    | .    | .    | .   | .    | .    | .    | 148  | 255  | 303  | 291  |
| 24                                           | .    | .    | .    | .   | .    | .    | .    | 150  | 257  | 303  | 290  |
| 25                                           | .    | .    | .    | .   | .    | .    | .    | 153  | 259  | 304  | 288  |
| 26                                           | .    | .    | .    | .   | .    | .    | .    | 156  | 261  | 305  | 286  |
| 27                                           | .    | .    | .    | .   | .    | .    | .    | 159  | 263  | 305  | 285  |
| 28                                           | .    | .    | .    | .   | .    | .    | .    | 163  | 265  | 307  | 282  |
| 29                                           | .    | .    | .    | .   | .    | .    | .    | 166  | 267  | 308  | 280  |
| 30                                           | .    | .    | .    | .   | .    | .    | .    | 170  | 269  | 308  | 277  |
| 31                                           | .    | .    | .    | .   | .    | .    | .    | 173  | 306  | 306  | 163  |

hauteur mini = 4 sec      première observation le 16/01  
hauteur maxi = 307 cm      première observation le 28/10

LE SIGNE . INDIQUE L'ABSENCE D'EGCOULEMENT .

1bm

| OUASSOULOU A DINBO EN 1988 DNHE      |      |      |      |     |      |      |      |      |      |      |      |
|--------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm |      |      |      |     |      |      |      |      |      |      |      |
| Zero de l'échelle = non connu        |      |      |      |     |      |      |      |      |      |      |      |
| JANV                                 | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |
| 1                                    | 60   | 45   | 30   | .   | .    | 6    | 48   | 329  | 351  | 323  | 126  |
| 2                                    | 59   | 44   | 32   | .   | .    | 40   | 47   | 335  | 347  | 312  | 124  |
| 3                                    | 59   | 44   | 33   | .   | .    | 33   | 46   | 352  | 343  | 296  | 122  |
| 4                                    | 58   | 43   | 33   | .   | .    | 26   | 59   | 363  | 345  | 275  | 120  |
| 5                                    | 58   | 42   | 32   | .   | .    | 19   | 63   | 375  | 347  | 262  | 118  |
| 6                                    | 58   | 42   | 29   | .   | .    | 21   | 62   | 389  | 343  | 248  | 116  |
| 7                                    | 57   | 41   | 26   | .   | .    | 23   | 63   | 390  | 348  | 239  | 113  |
| 8                                    | 56   | 41   | 23   | .   | .    | 24   | 56   | 362  | 357  | 232  | 111  |
| 9                                    | 56   | 40   | 20   | .   | .    | 25   | 56   | 353  | 388  | 222  | 108  |
| 10                                   | 55   | 40   | 18   | .   | .    | 28   | 54   | 338  | 397  | 213  | 106  |
| 11                                   | 54   | 39   | 16   | .   | .    | 24   | 53   | 318  | 406  | 206  | 104  |
| 12                                   | 54   | 39   | 14   | .   | .    | 27   | 52   | 298  | 410  | 199  | 102  |
| 13                                   | 53   | 38   | 12   | .   | .    | 26   | 51   | 290  | 428  | 193  | 98   |
| 14                                   | 53   | 38   | 10   | .   | .    | 30   | 73   | 282  | 438  | 188  | 95   |
| 15                                   | 52   | 37   | 9    | .   | .    | 33   | 86   | 322  | 455  | 184  | 93   |
| 16                                   | 52   | 37   | 7    | .   | .    | 34   | 88   | 355  | 457  | 180  | 91   |
| 17                                   | 51   | 37   | 8    | .   | .    | 35   | 90   | 385  | 462  | 175  | 89   |
| 18                                   | 51   | 36   | 6    | .   | .    | 37   | 91   | 433  | 477  | 173  | 87   |
| 19                                   | 50   | 36   | 7    | .   | .    | 38   | 93   | 452  | 483  | 170  | 85   |
| 20                                   | 50   | 36   | 7    | .   | .    | 43   | 94   | 468  | 487  | 167  | 83   |
| 21                                   | 50   | 35   | 6    | .   | .    | 41   | 93   | 463  | 478  | 164  | 81   |
| 22                                   | 49   | 35   | 5    | .   | .    | 42   | 96   | 442  | 469  | 161  | 79   |
| 23                                   | 49   | 34   | 4    | .   | .    | 46   | 97   | 431  | 452  | 158  | 78   |
| 24                                   | 48   | 34   | 3    | .   | .    | 49   | 103  | 422  | 443  | 150  | 77   |
| 25                                   | 48   | 33   | 2    | .   | .    | 51   | 122  | 420  | 433  | 143  | 75   |
| 26                                   | 47   | 33   | 1    | .   | .    | 53   | 146  | 414  | 423  | 146  | 74   |
| 27                                   | 47   | 32   | 1    | .   | .    | 52   | 171  | 407  | 397  | 142  | 73   |
| 28                                   | 46   | 31   | 1    | .   | .    | 50   | 245  | 402  | 388  | 138  | 71   |
| 29                                   | 46   | 31   | 0    | .   | .    | 49   | 322  | 387  | 365  | 136  | 74   |
| 30                                   | 45   | 0    | .    | .   | .    | 49   | 352  | 373  | 342  | 133  | 73   |
| 31                                   | 445  | 0    | .    | .   | .    | 359  | 353  | 353  | 353  | 130  | 47   |

hauteur mini = 4 sec      première observation le 01/04  
hauteur maxi = 487 cm      première observation le 20/09

LE SIGNE . PRECEDE LES HAUTEURS RECONSTITUEES .  
LE SIGNE . INDIQUE L'ABSENCE D'EGCOULEMENT .

1bm

| BAOULE A DIOILA EN 1988 DNHE         |      |      |      |     |      |      |      |      |      |      |      |
|--------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm |      |      |      |     |      |      |      |      |      |      |      |
| Zero de l'échelle = 278.42 m IGN     |      |      |      |     |      |      |      |      |      |      |      |
| JANV                                 | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |
| 1                                    | 30   | 4    | -27  | -52 | .    | -95  | 49   | 232  | 433  | 378  | 149  |
| 2                                    | 29   | 3    | -27  | -53 | .    | -93  | 131  | 249  | 481  | 374  | 142  |
| 3                                    | 28   | 2    | -28  | -54 | .    | -91  | 147  | 263  | 479  | 366  | 136  |
| 4                                    | 27   | 2    | -29  | -55 | .    | -88  | 135  | 272  | 480  | 360  | 132  |
| 5                                    | 27   | 1    | -30  | -56 | .    | -87  | 127  | 262  | 437  | 352  | 128  |
| 6                                    | 26   | 1    | -31  | -57 | .    | -84  | 123  | 246  | 425  | 342  | 124  |
| 7                                    | 26   | 0    | -32  | -58 | .    | -82  | 120  | 229  | 416  | 333  | 120  |
| 8                                    | 25   | -1   | -33  | -59 | .    | -81  | 114  | 213  | 411  | 325  | 117  |
| 9                                    | 25   | -2   | -33  | -60 | .    | -79  | 103  | 200  | 409  | 315  | 114  |
| 10                                   | 24   | -5   | -34  | -62 | .    | -77  | 100  | 184  | 415  | 307  | 111  |
| 11                                   | 23   | -6   | -35  | -62 | .    | -76  | 8129 | 175  | 424  | 298  | 108  |
| 12                                   | 22   | -8   | -36  | -63 | .    | -75  | 8213 | 166  | 431  | 291  | 105  |
| 13                                   | 21   | -10  | -36  | -65 | .    | -74  | 225  | 164  | 424  | 282  | 103  |
| 14                                   | 20   | -11  | -37  | -67 | .    | -72  | 232  | 161  | 408  | 274  | 102  |
| 15                                   | 19   | -12  | -38  | -68 | .    | -71  | 216  | 166  | 407  | 267  | 100  |
| 16                                   | 18   | -12  | -38  | -69 | .    | -70  | 201  | 173  | 410  | 259  | 98   |
| 17                                   | 18   | -13  | -39  | -70 | .    | -69  | 200  | 193  | 414  | 252  | 97   |
| 18                                   | 17   | -13  | -41  | -71 | .    | -67  | 215  | 232  | 416  | 246  | 94   |
| 19                                   | 17   | -14  | -42  | -72 | .    | -64  | 208  | 253  | 420  | 239  | 92   |
| 20                                   | 16   | -16  | -42  | -75 | .    | -67  | 203  | 292  | 424  | 232  | 91   |
| 21                                   | 16   | -17  | -43  | -79 | .    | -60  | 220  | 286  | 427  | 227  | 89   |
| 22                                   | 16   | -18  | -43  | -81 | .    | -55  | 232  | 277  | 430  | 223  | 88   |
| 23                                   | 15   | -19  | -43  | -84 | .    | -58  | 225  | 282  | 432  | 217  | 86   |
| 24                                   | 15   | -20  | -44  | -86 | .    | -67  | 208  | 266  | 429  | 210  | 85   |
| 25                                   | 14   | -21  | -45  | -88 | .    | -97  | 213  | 303  | 423  | 203  | 83   |
| 26                                   | 12   | -22  | -46  | -89 | .    | -96  | 225  | 346  | 412  | 195  | 82   |
| 27                                   | 9    | -24  | -47  | 7   | .    | -88  | 201  | 361  | 405  | 187  | 81   |
| 28                                   | 9    | -26  | -48  | -91 | .    | -80  | 188  | 361  | 391  | 179  | 79   |
| 29                                   | 8    | -27  | -50  | -92 | .    | -68  | 179  | 379  | 385  | 172  | 78   |
| 30                                   | 7    | -51  | -94  | .   | .    | -64  | 177  | 384  | 376  | 163  | 76   |
| 31                                   | 5    | -82  | .    | .   | .    | -182 | 415  | 384  | 376  | 163  | 76   |

hauteur mini = 4 sec      première observation le 01/05  
hauteur maxi = 481 cm      première observation le 02/09

LE SIGNE . PRECEDE LES HAUTEURS RECONSTITUEES .  
LE SIGNE . INDIQUE L'ABSENCE D'EGCOULEMENT .

1bm

| BAOULE A DIOILA EN 1988           |      |      |      |      |      |      |      |      |      |      |      | DNHE                          |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|-------------------------------|
| DEBITS MOYENS JOURNALIERS en m3/s |      |      |      |      |      |      |      |      |      |      |      |                               |
| Surface = 32500 ka2               |      |      |      |      |      |      |      |      |      |      |      |                               |
|                                   | JANV | FEVR | MARS | AVRI | MAI  | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE                          |
| 1                                 | 1.93 | .174 | .000 | .218 | .000 | 1.80 | 11.7 | 128. | 365. | 285. | 60.3 | 14.0                          |
| 2                                 | 1.81 | .167 | .000 | .238 | .000 | 1.69 | 48.2 | 143. | 431. | 283. | 85.4 | 13.5                          |
| 3                                 | 1.69 | .163 | .000 | .258 | .000 | 1.59 | 58.9 | 157. | 428. | 273. | 51.4 | 13.0                          |
| 4                                 | 1.57 | .163 | .000 | .280 | .000 | 1.44 | 50.6 | 166. | 388. | 265. | 48.8 | 11.7                          |
| 5                                 | 1.57 | .164 | .000 | .302 | .000 | 1.39 | 45.6 | 156. | 370. | 255. | 46.3 | 10.8                          |
| 6                                 | 1.46 | .164 | .000 | .326 | .000 | 1.25 | 43.1 | 141. | 353. | 243. | 43.8 | 10.4                          |
| 7                                 | 1.46 | .170 | .000 | .350 | .000 | 1.17 | 41.3 | 128. | 341. | 232. | 41.3 | 9.62                          |
| 8                                 | 1.36 | .172 | .000 | .374 | .000 | 1.12 | 37.8 | 112. | 334. | 223. | 39.5 | 8.88                          |
| 9                                 | 1.36 | .172 | .000 | .400 | .000 | 1.04 | 31.6 | 101. | 331. | 212. | 37.8 | 8.92                          |
| 10                                | 1.26 | .160 | .000 | .454 | .000 | .958 | 30.0 | 87.2 | 339. | 203. | 36.0 | 7.84                          |
| 11                                | 1.16 | .152 | .000 | .454 | .000 | .918 | 46.9 | 79.9 | 352. | 193. | 34.4 | 7.82                          |
| 12                                | 1.07 | .130 | .006 | .482 | .000 | .880 | 112. | 72.8 | 362. | 185. | 32.7 | 7.29                          |
| 13                                | .983 | .100 | .006 | .540 | .000 | .842 | 122. | 71.3 | 352. | 176. | 31.6 | 6.90                          |
| 14                                | .900 | .086 | .014 | .602 | .000 | .770 | 128. | 69.0 | 329. | 168. | 31.1 | 6.60                          |
| 15                                | .821 | .074 | .022 | .634 | .000 | .734 | 114. | 72.8 | 328. | 161. | 30.0 | 6.32                          |
| 16                                | .747 | .074 | .022 | .666 | .000 | .700 | 102. | 78.3 | 332. | 153. | 28.5 | 6.04                          |
| 17                                | .747 | .062 | .030 | .700 | .000 | .666 | 101. | 74.9 | 338. | 146. | 27.8 | 5.78                          |
| 18                                | .678 | .062 | .050 | .734 | .000 | .602 | 113. | 128. | 341. | 141. | 25.7 | 5.82                          |
| 19                                | .678 | .050 | .062 | .770 | .000 | 1.26 | 107. | 147. | 346. | 134. | 24.3 | 5.04                          |
| 20                                | .612 | .040 | .062 | .880 | .000 | 7.20 | 103. | 186. | 352. | 128. | 23.7 | 4.82                          |
| 21                                | .612 | .022 | .074 | 1.04 | .000 | 5.28 | 117. | 180. | 366. | 124. | 22.4 | 4.61                          |
| 22                                | .612 | .014 | .074 | 1.12 | .000 | 6.60 | 128. | 171. | 360. | 120. | 21.7 | 4.61                          |
| 23                                | .552 | .006 | .074 | 1.25 | .000 | 7.52 | 122. | 146. | 363. | 119. | 20.5 | 4.40                          |
| 24                                | .532 | .000 | .086 | 1.35 | .000 | 21.1 | 107. | 160. | 399. | 109. | 19.9 | 4.21                          |
| 25                                | .495 | .000 | .100 | 1.44 | .000 | 27.8 | 112. | 198. | 391. | 103. | 18.7 | 3.86                          |
| 26                                | .396 | .000 | .114 | 1.49 | .000 | 27.1 | 122. | 248. | 335. | 96.6 | 18.2 | 3.69                          |
| 27                                | .279 | .000 | .130 | 7    | .000 | 21.7 | 102. | 267. | 325. | 89.7 | 17.6 | 3.69                          |
| 28                                | .279 | .000 | .146 | 1.59 | .000 | 17.0 | 90.6 | 267. | 306. | 83.1 | 16.8 | 3.54                          |
| 29                                | .280 | .000 | .180 | 1.64 | .000 | 11.2 | 83.1 | 290. | 299. | 77.8 | 16.0 | 3.40                          |
| 30                                | .224 | .198 | 1.78 |      | .000 | 9.62 | 81.8 | 296. | 286. | 70.8 | 14.9 | 3.07                          |
| 31                                | .187 | .218 |      | .000 |      |      | 88.6 | 339. |      | 69.3 |      | 2.91                          |
| May 1988:                         | .913 | .088 | .054 |      | .000 | 6.10 | 83.8 | 197. | 348. | 169. | 31.2 | 6.84 65.9                     |
| May07-88:                         | 26.1 | 13.2 | 8.77 | 2.23 | 0.38 | 11.6 | 49.4 | 264. | 889. | 419. | 184. | 82.2 95.4                     |
| Mini obs:                         | .913 | .088 | .001 | .000 | .000 | 1.31 | 9.30 | 80.1 | 91.5 | 79.9 | 26.1 | 4.85 25.8                     |
| Maxi obs:                         | 169. | 116. | 88.9 | 21.7 | 37.3 | 40.6 | 149. | 634. | 1440 | 1160 | 471. | 167. 316.                     |
| Debit mini = .000 m3/s            |      |      |      |      |      |      |      |      |      |      |      | premiere observation le 24/02 |
| Debit maxi = 431. m3/s            |      |      |      |      |      |      |      |      |      |      |      | premiere observation le 02/09 |

| 1884 DER A DIRE EN 1988                             |      |      |      |     |      |      |      |      |      |      |      | DNHE |
|-----------------------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm                |      |      |      |     |      |      |      |      |      |      |      |      |
| Zéro de l'échelle = 236.85 m IGN                    |      |      |      |     |      |      |      |      |      |      |      |      |
| JANV                                                | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                                   | 268  | 148  | 81   | 56  | 25   | 84   | 8-11 | 185  | 326  | 424  | 458  | 420  |
| 2                                                   | 265  | 146  | 79   | 55  | 24   | 83   | 8-11 | 167  | 328  | 428  | 458  | 418  |
| 3                                                   | 263  | 142  | 78   | 51  | 24   | 82   | 8-11 | 180  | 337  | 430  | 458  | 416  |
| 4                                                   | 260  | 140  | 75   | 48  | 24   | 81   | 8-12 | 191  | 341  | 432  | 459  | 414  |
| 5                                                   | 258  | 138  | 74   | 46  | 24   | 80   | 8-12 | 198  | 347  | 434  | 459  | 411  |
| 6                                                   | 255  | 134  | 71   | 44  | 23   | 80   | 8-12 | 203  | 350  | 435  | 459  | 409  |
| 7                                                   | 249  | 131  | 71   | 43  | 23   | 80   | 8-12 | 210  | 354  | 436  | 459  | 408  |
| 8                                                   | 246  | 128  | 68   | 42  | 24   | 81   | 8-7  | 217  | 358  | 437  | 458  | 408  |
| 9                                                   | 239  | 123  | 67   | 40  | 23   | 81   | 8-2  | 222  | 364  | 439  | 458  | 406  |
| 10                                                  | 236  | 120  | 65   | 40  | 23   | 81   | 8-1  | 227  | 365  | 441  | 457  | 393  |
| 11                                                  | 231  | 118  | 63   | 38  | 23   | 81   | 8-1  | 233  | 369  | 443  | 457  | 386  |
| 12                                                  | 227  | 116  | 63   | 38  | 23   | 81   | 8-1  | 238  | 372  | 444  | 456  | 383  |
| 13                                                  | 222  | 115  | 62   | 34  | 23   | 81   | 8-1  | 241  | 373  | 445  | 455  | 377  |
| 14                                                  | 219  | 112  | 60   | 32  | 21   | 81   | 8-1  | 247  | 377  | 447  | 454  | 375  |
| 15                                                  | 212  | 110  | 60   | 32  | 19   | 81   | 8-1  | 253  | 384  | 448  | 452  | 370  |
| 16                                                  | 207  | 109  | 61   | 32  | 18   | 81   | 8-1  | 262  | 386  | 450  | 451  | 367  |
| 17                                                  | 201  | 106  | 60   | 32  | 18   | 82   | 8-2  | 267  | 388  | 452  | 449  | 364  |
| 18                                                  | 197  | 102  | 60   | 33  | 18   | 82   | 8-2  | 270  | 393  | 452  | 447  | 361  |
| 19                                                  | 192  | 98   | 57   | 33  | 17   | 83   | 8-3  | 278  | 396  | 452  | 446  | 356  |
| 20                                                  | 189  | 95   | 60   | 32  | 16   | 84   | 8-4  | 279  | 400  | 452  | 444  | 351  |
| 21                                                  | 184  | 94   | 62   | 32  | 15   | 84   | 8-4  | 285  | 402  | 452  | 443  | 346  |
| 22                                                  | 178  | 92   | 63   | 32  | 14   | 85   | 8-5  | 287  | 403  | 452  | 441  | 340  |
| 23                                                  | 174  | 89   | 63   | 32  | 13   | 86   | 8-6  | 294  | 405  | 453  | 439  | 334  |
| 24                                                  | 172  | 88   | 62   | 32  | 12   | 86   | 8-6  | 297  | 407  | 453  | 438  | 332  |
| 25                                                  | 169  | 86   | 57   | 32  | 11   | 87   | 8-7  | 299  | 408  | 454  | 436  | 329  |
| 26                                                  | 166  | 84   | 60   | 31  | 10   | 88   | 8-8  | 305  | 410  | 455  | 434  | 327  |
| 27                                                  | 164  | 83   | 60   | 30  | 9    | 89   | 8-9  | 310  | 415  | 456  | 432  | 323  |
| 28                                                  | 161  | 82   | 60   | 30  | 8    | 90   | 8-9  | 312  | 418  | 457  | 430  | 321  |
| 29                                                  | 156  | 80   | 60   | 29  | 7    | 91   | 8-10 | 317  | 418  | 457  | 428  | 317  |
| 30                                                  | 152  | 78   | 58   | 27  | 6    | 91   | 8-11 | 318  | 423  | 457  | 425  | 312  |
| 31                                                  | 150  | 77   | 58   | 27  | 5    | 92   | 8-12 | 320  | 427  | 457  | 423  | 304  |
| hauteur mini = -12 cm première observation le 04/07 |      |      |      |     |      |      |      |      |      |      |      |      |
| hauteur maxi = 459 cm première observation le 04/11 |      |      |      |     |      |      |      |      |      |      |      |      |

LE SIGNE + PRECEDE LES HAUTEURS RECONSTITUEES .

lba

| BANI A DOUNA EN 1988                                |      |      |      |     |      |      |      |      |      |      |      | DNHE |
|-----------------------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm                |      |      |      |     |      |      |      |      |      |      |      |      |
| Zéro de l'échelle = 270.72 m IGN                    |      |      |      |     |      |      |      |      |      |      |      |      |
| JANV                                                | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                                   | 48   | 23   | 16   | -1  | .    | .    | 70   | 264  | 492  | 518  | 319  | 144  |
| 2                                                   | 46   | 20   | 16   | -1  | .    | .    | 73   | 268  | 513  | 516  | 308  | 140  |
| 3                                                   | 44   | 23   | 16   | -2  | .    | .    | 74   | 304  | 528  | 513  | 298  | 137  |
| 4                                                   | 43   | 23   | 16   | -2  | .    | .    | 74   | 314  | 548  | 510  | 286  | 135  |
| 5                                                   | 41   | 23   | 18   | -2  | .    | .    | 80   | 332  | 549  | 506  | 280  | 132  |
| 6                                                   | 42   | 22   | 14   | -3  | .    | .    | 103  | 343  | 552  | 504  | 270  | 129  |
| 7                                                   | 40   | 22   | 12   | -3  | .    | .    | 118  | 347  | 550  | 499  | 259  | 125  |
| 8                                                   | 40   | 25   | 12   | -3  | .    | .    | 134  | 340  | 544  | 491  | 249  | 121  |
| 9                                                   | 39   | 25   | 11   | -4  | .    | .    | 139  | 332  | 542  | 487  | 242  | 119  |
| 10                                                  | 38   | 24   | 11   | -4  | .    | .    | 144  | 320  | 539  | 483  | 237  | 117  |
| 11                                                  | 37   | 24   | 10   | -4  | .    | .    | 147  | 307  | 540  | 475  | 230  | 115  |
| 12                                                  | 36   | 24   | 8    | -4  | .    | .    | 145  | 295  | 542  | 469  | 227  | 113  |
| 13                                                  | 34   | 24   | 8    | -5  | .    | .    | 143  | 289  | 550  | 462  | 222  | 111  |
| 14                                                  | 34   | 24   | 8    | -5  | .    | .    | 140  | 283  | 555  | 452  | 215  | 108  |
| 15                                                  | 34   | 24   | 8    | -5  | .    | .    | 184  | 279  | 553  | 444  | 211  | 105  |
| 16                                                  | 34   | 23   | 8    | -6  | .    | .    | 198  | 278  | 552  | 440  | 204  | 102  |
| 17                                                  | 33   | 23   | 8    | -6  | .    | .    | 208  | 284  | 551  | 435  | 200  | 97   |
| 18                                                  | 33   | 21   | 6    | -6  | .    | .    | 30   | 205  | 290  | 550  | 425  | 94   |
| 19                                                  | 33   | 22   | 6    | -7  | .    | .    | 32   | 203  | 307  | 548  | 419  | 91   |
| 20                                                  | 31   | 21   | 6    | -7  | .    | .    | 46   | 201  | 324  | 552  | 413  | 88   |
| 21                                                  | 31   | 20   | 5    | -7  | .    | .    | 47   | 205  | 347  | 549  | 409  | 86   |
| 22                                                  | 31   | 19   | 5    | -8  | .    | .    | 48   | 214  | 358  | 552  | 400  | 83   |
| 23                                                  | 30   | 19   | 5    | -8  | .    | .    | 48   | 227  | 367  | 548  | 393  | 80   |
| 24                                                  | 30   | 20   | 5    | -9  | .    | .    | 49   | 238  | 370  | 548  | 386  | 78   |
| 25                                                  | 30   | 18   | 4    | -9  | .    | .    | 49   | 248  | 375  | 545  | 379  | 76   |
| 26                                                  | 28   | 18   | 2    | -9  | .    | .    | 90   | 252  | 382  | 542  | 374  | 74   |
| 27                                                  | 28   | 17   | 2    | -9  | .    | .    | 92   | 254  | 402  | 538  | 368  | 70   |
| 28                                                  | 28   | 16   | 2    | -9  | .    | .    | 93   | 258  | 419  | 532  | 361  | 68   |
| 29                                                  | 27   | 16   | 2    | -10 | .    | .    | 96   | 262  | 432  | 527  | 349  | 66   |
| 30                                                  | 27   | 2    | -10  | .   | .    | .    | 67   | 272  | 447  | 522  | 347  | 64   |
| 31                                                  | 26   | 1    | .    | .   | .    | .    | 264  | 467  | 538  | 538  | 347  | 62   |
| hauteur mini = 4 sec première observation le 01/03  |      |      |      |     |      |      |      |      |      |      |      |      |
| hauteur maxi = 555 cm première observation le 14/09 |      |      |      |     |      |      |      |      |      |      |      |      |

LE SIGNE . INDIQUE L'ABSENCE D'ECOULEMENT .

lba

| 1884 DER A DIRE EN 1988                        |      |      |      |      |      |      |      |      |      |      |      | DNHE |
|------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| DEBITS MOYENS JOURNALIERS en m <sup>3</sup> /s |      |      |      |      |      |      |      |      |      |      |      |      |
| Surface = 340000 ka <sup>2</sup>               |      |      |      |      |      |      |      |      |      |      |      |      |
| JANV                                           | FEVR | MARS | AVRI | MAI  | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                              | 640. | 238. | 96.7 | 57.1 | 25.3 | 11.4 | 4.44 | 386. | 1170 | 1660 | 1780 | 1320 |
| 2                                              | 626. | 232. | 92.8 | 55.4 | 24.7 | 10.8 | 4.90 | 439. | 1180 | 1660 | 1740 | 1320 |
| 3                                              | 608. | 221. | 90.8 | 49.9 | 24.8 | 10.3 | 4.57 | 499. | 1240 | 1680 | 1730 | 1320 |
| 4                                              | 593. | 216. | 88.7 | 46.4 | 24.8 | 9.77 | 4.48 | 549. | 1260 | 1680 | 1730 | 1290 |
| 5                                              | 579. | 211. | 83.7 | 44.1 | 25.0 | 9.28 | 4.58 | 582. | 1300 | 1690 | 1730 | 1240 |
| 6                                              | 563. | 200. | 79.0 | 41.8 | 24.3 | 9.32 | 4.69 | 603. | 1310 | 1690 | 1720 | 1220 |
| 7                                              | 536. | 193. | 78.8 | 40.8 | 24.5 | 9.38 | 4.82 | 629. | 1320 | 1700 | 1710 | 1200 |
| 8                                              | 522. | 184. | 74.2 | 39.8 | 25.2 | 8.37 | 6.71 | 653. | 1340 | 1700 | 1700 | 1180 |
| 9                                              | 490. | 175. | 73.0 | 38.1 | 24.3 | 8.40 | 7.62 | 668. | 1360 | 1700 | 1690 | 1140 |
| 10                                             | 474. | 169. | 70.7 | 38.3 | 24.2 | 8.43 | 17.1 | 690. | 1360 | 1720 | 1670 | 1070 |
| 11                                             | 451. | 165. | 68.1 | 36.5 | 24.1 | 8.44 | 23.9 | 718. | 1380 | 1730 | 1660 | 1030 |
| 12                                             | 436. | 162. | 68.7 | 35.8 | 24.1 | 8.45 | 28.8 | 741. | 1400 | 1730 | 1640 | 1020 |
| 13                                             | 421. | 159. | 67.4 | 33.1 | 24.0 | 8.44 | 35.8 | 786. | 1400 | 1740 | 1620 | 985. |
| 14                                             | 411. | 152. | 65.2 | 31.3 | 22.4 | 8.44 | 82.0 | 782. | 1430 | 1740 | 1610 | 971. |
| 15                                             | 392. | 149. | 65.9 | 31.6 | 20.9 | 8.43 | 63.9 | 813. | 1460 | 1740 | 1590 | 955. |
| 16                                             | 373. | 147. | 68.1 | 31.8 | 20.2 | 8.40 | 78.7 | 855. | 1470 | 1740 | 1580 | 962. |
| 17                                             | 357. | 139. | 67.1 | 32.0 | 20.2 | 7.88 | 97.3 | 879. | 1480 | 1740 | 1550 | 954. |
| 18                                             | 347. | 131. | 67.2 | 33.2 | 20.1 | 7.87 | 103. | 896. | 1500 | 1730 | 1540 | 938. |
| 19                                             | 336. | 123. | 65.6 | 33.3 | 19.5 | 7.34 | 105. | 930. | 1510 | 1730 | 1530 | 921. |
| 20                                             | 330. | 118. | 67.4 | 32.4 | 18.9 | 6.85 | 108. | 929. | 1520 | 1720 | 1520 | 900. |
| 21                                             | 321. | 116. | 70.4 | 32.3 | 18.3 | 6.83 | 124. | 956. | 1530 | 1720 | 1510 | 883. |
| 22                                             | 308. | 113. | 71.7 | 32.3 | 17.6 | 6.38 | 140. | 977. | 1530 | 1720 | 1490 | 865. |
| 23                                             | 299. | 108. | 71.6 | 32.1 | 17.0 | 5.97 | 162. | 989. | 1540 | 1720 | 1480 | 846. |
| 24                                             | 295. | 108. | 69.7 | 31.9 | 16.4 | 5.96 | 183. | 999. | 1550 | 1730 | 1470 | 841. |
| 25                                             | 289. | 105. | 64.9 | 31.7 | 15.9 | 5.39 | 205. | 1010 | 1550 | 1730 | 1440 | 827. |
| 26                                             | 282. | 106. | 66.0 | 30.7 | 15.3 | 5.26 | 225. | 1040 | 1560 | 1740 | 1420 | 820. |
| 27                                             | 280. | 100. | 65.4 | 29.6 | 14.6 | 4.94 | 243. | 1060 | 1600 | 1750 | 1400 | 805. |
| 28                                             | 272. | 98.8 | 64.7 | 29.6 | 13.9 | 4.95 | 267. | 1080 | 1630 | 1750 | 1390 | 798. |
| 29                                             | 259. | 94.9 | 64.0 | 28.7 | 13.3 | 4.67 | 309. | 1090 | 1640 | 1750 | 1370 | 779. |
| 30                                             | 249. | 90.7 | 60.7 | 26.9 | 12.6 | 4.42 | 330. | 1110 | 1660 | 1750 | 1350 | 743. |
| 31                                             | 243. | 89.0 | 59.0 | 26.0 | 12.0 | 4.42 | 356. | 1130 | 1740 | 1740 | 1340 | 701. |

Moy 1988: 406. 183. 71.7 36.2 20.3 7.70 107. 820. 1440 1720 1580 995. 613.

Moy51-88: 1560 1080 615. 251. 75.7 46.1 250. 854. 1470 1600 1750 1870 955.

Mini obs: 274. 104. 49.1 14.7 9.19 5.30 25.8 446. 1040 1200 1110 642. 455.

Maxi obs: 2890 2210 1680 943. 396. 215. 623. 1310 1780 2090 2390 2610 1590

Debit mini = 4.42 m

| FARAKO A FINKOLO EN 1988             |      |      |      |     |      |      |      |      |      |      |      | DNHE |
|--------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm |      |      |      |     |      |      |      |      |      |      |      |      |
| Zéro de l'échelle = non connu        |      |      |      |     |      |      |      |      |      |      |      |      |
| JANV                                 | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                    | 77   | 76   | 75   | 94  | 96   | 102  | 91   | 107  | 110  | 108  | 98   | 92   |
| 2                                    | 77   | 76   | 75   | 94  | 96   | 99   | 91   | 100  | 116  | 108  | 98   | 92   |
| 3                                    | 77   | 76   | 75   | 94  | 94   | 98   | 91   | 100  | 113  | 123  | 97   | 92   |
| 4                                    | 77   | 76   | 75   | 93  | 94   | 91   | 91   | 98   | 110  | 126  | 97   | 92   |
| 5                                    | 77   | 76   | 75   | 93  | 94   | 86   | 90   | 97   | 247  | 113  | 97   | 92   |
| 6                                    | 77   | 76   | 75   | 93  | 93   | 86   | 90   | 122  | 175  | 111  | 97   | 92   |
| 7                                    | 77   | 76   | 74   | 92  | 93   | 85   | 90   | 100  | 133  | 110  | 96   | 92   |
| 8                                    | 77   | 76   | 74   | 92  | 93   | 104  | 94   | 100  | 119  | 108  | 96   | 92   |
| 9                                    | 77   | 76   | 74   | 92  | 93   | 97   | 97   | 100  | 118  | 106  | 96   | 91   |
| 10                                   | 77   | 76   | 74   | 92  | 93   | 98   | 96   | 97   | 111  | 106  | 96   | 91   |
| 11                                   | 77   | 76   | 74   | 92  | 93   | 98   | 94   | 105  | 104  | 100  | 96   | 91   |
| 12                                   | 77   | 76   | 74   | 92  | 93   | 94   | 92   | 100  | 114  | 100  | 96   | 91   |
| 13                                   | 77   | 76   | 73   | 92  | 93   | 92   | 92   | 100  | 110  | 100  | 95   | 91   |
| 14                                   | 77   | 76   | 73   | 92  | 93   | 92   | 119  | 112  | 100  | 95   | 91   |      |
| 15                                   | 77   | 76   | 73   | 92  | 93   | 91   | 99   | 136  | 111  | 100  | 95   | 91   |
| 16                                   | 77   | 76   | 75   | 92  | 93   | 91   | 97   | 116  | 111  | 100  | 95   | 91   |
| 17                                   | 77   | 76   | 75   | 92  | 93   | 90   | 96   | 237  | 128  | 100  | 94   | 91   |
| 18                                   | 77   | 76   | 75   | 92  | 93   | 90   | 95   | 121  | 118  | 100  | 94   | 90   |
| 19                                   | 77   | 76   | 75   | 92  | 93   | 97   | 93   | 218  | 114  | 100  | 94   | 90   |
| 20                                   | 77   | 76   | 75   | 92  | 93   | 93   | 102  | 120  | 111  | 100  | 94   | 90   |
| 21                                   | 76   | 76   | 75   | 92  | 93   | 93   | 95   | 110  | 110  | 100  | 94   | 90   |
| 22                                   | 76   | 76   | 75   | 92  | 93   | 93   | 99   | 105  | 110  | 100  | 94   | 90   |
| 23                                   | 76   | 76   | 75   | 91  | 95   | 95   | 95   | 105  | 110  | 100  | 94   | 90   |
| 24                                   | 76   | 76   | 75   | 91  | 90   | 93   | 96   | 106  | 107  | 100  | 94   | 90   |
| 25                                   | 76   | 76   | 75   | 91  | 90   | 92   | 102  | 100  | 108  | 100  | 94   | 90   |
| 26                                   | 76   | 76   | 75   | 91  | 90   | 92   | 100  | 114  | 129  | 100  | 93   | 90   |
| 27                                   | 76   | 76   | 75   | 91  | 90   | 92   | 100  | 135  | 116  | 101  | 93   | 90   |
| 28                                   | 76   | 76   | 75   | 100 | 93   | 92   | 100  | 122  | 111  | 101  | 92   | 90   |
| 29                                   | 76   | 76   | 75   | 100 | 88   | 91   | 100  | 109  | 110  | 101  | 92   | 90   |
| 30                                   | 76   | 76   | 75   | 100 | 87   | 91   | 96   | 118  | 108  | 100  | 92   | 90   |
| 31                                   | 76   | 76   | 75   | 102 | 99   | 100  | 112  | 99   | 99   | 99   | 90   | 90   |

hauteur mini = 73 cm      première observation le 13/03  
hauteur maxi = 247 cm      première observation le 05/09

| NIGER A BAO EN 1988                  |      |      |      |     |      |      |      |      |      |      |      | DNHE |
|--------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm |      |      |      |     |      |      |      |      |      |      |      |      |
| Zéro de l'échelle = 245.08 ± 18N     |      |      |      |     |      |      |      |      |      |      |      |      |
| JANV                                 | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                    | 273  | 164  | 93   | 86  | 41   | 21   | 16   | 34   | 233  | 306  | 338  | 350  |
| 2                                    | 270  | 161  | 92   | 55  | 40   | 20   | 17   | 44   | 235  | 308  | 339  | 349  |
| 3                                    | 267  | 159  | 90   | 84  | 40   | 20   | 18   | 48   | 238  | 309  | 340  | 349  |
| 4                                    | 265  | 157  | 89   | 84  | 39   | 26   | 17   | 59   | 241  | 310  | 341  | 348  |
| 5                                    | 263  | 154  | 87   | 85  | 38   | 25   | 16   | 68   | 245  | 311  | 342  | 347  |
| 6                                    | 260  | 151  | 86   | 86  | 37   | 24   | 15   | 74   | 248  | 312  | 343  | 346  |
| 7                                    | 257  | 148  | 85   | 87  | 37   | 24   | 14   | 84   | 251  | 313  | 344  | 346  |
| 8                                    | 254  | 146  | 83   | 87  | 36   | 23   | 13   | 93   | 254  | 314  | 345  | 345  |
| 9                                    | 251  | 143  | 82   | 88  | 35   | 23   | 12   | 100  | 257  | 315  | 346  | 344  |
| 10                                   | 248  | 140  | 80   | 89  | 34   | 23   | 12   | 115  | 260  | 317  | 347  | 343  |
| 11                                   | 244  | 136  | 79   | 88  | 33   | 22   | 11   | 123  | 263  | 318  | 348  | 342  |
| 12                                   | 241  | 133  | 78   | 87  | 32   | 22   | 10   | 130  | 266  | 320  | 349  | 341  |
| 13                                   | 238  | 129  | 77   | 86  | 30   | 21   | 17   | 139  | 269  | 321  | 350  | 340  |
| 14                                   | 234  | 126  | 76   | 85  | 30   | 21   | 16   | 146  | 271  | 322  | 350  | 339  |
| 15                                   | 230  | 123  | 75   | 84  | 30   | 21   | 15   | 154  | 273  | 323  | 351  | 338  |
| 16                                   | 226  | 119  | 74   | 84  | 29   | 21   | 14   | 159  | 276  | 324  | 352  | 336  |
| 17                                   | 222  | 117  | 73   | 83  | 28   | 20   | 14   | 165  | 280  | 325  | 352  | 334  |
| 18                                   | 219  | 115  | 71   | 82  | 28   | 20   | 13   | 173  | 282  | 326  | 353  | 332  |
| 19                                   | 216  | 113  | 70   | 82  | 27   | 20   | 17   | 179  | 284  | 328  | 353  | 330  |
| 20                                   | 212  | 111  | 69   | 81  | 26   | 20   | 16   | 184  | 286  | 329  | 354  | 328  |
| 21                                   | 209  | 109  | 68   | 80  | 26   | 19   | 15   | 190  | 289  | 330  | 354  | 326  |
| 22                                   | 208  | 107  | 67   | 79  | 25   | 19   | 14   | 195  | 291  | 331  | 354  | 323  |
| 23                                   | 200  | 105  | 66   | 78  | 25   | 18   | 14   | 199  | 293  | 332  | 354  | 320  |
| 24                                   | 196  | 103  | 65   | 77  | 24   | 18   | 13   | 204  | 294  | 332  | 353  | 318  |
| 25                                   | 192  | 101  | 64   | 76  | 24   | 17   | 12   | 209  | 296  | 333  | 353  | 315  |
| 26                                   | 187  | 99   | 63   | 75  | 23   | 17   | 12   | 214  | 298  | 334  | 352  | 312  |
| 27                                   | 182  | 98   | 62   | 74  | 23   | 16   | 11   | 217  | 300  | 335  | 352  | 309  |
| 28                                   | 178  | 96   | 61   | 73  | 22   | 16   | 11   | 221  | 302  | 335  | 351  | 306  |
| 29                                   | 175  | 94   | 60   | 72  | 21   | 15   | 10   | 224  | 303  | 336  | 351  | 301  |
| 30                                   | 171  | 92   | 59   | 71  | 21   | 15   | 10   | 228  | 305  | 337  | 350  | 297  |
| 31                                   | 167  | 90   | 57   | 70  | 21   | 15   | 10   | 232  | 308  | 338  | 350  | 294  |

hauteur mini = 10 cm      première observation le 29/07  
hauteur maxi = 354 cm      première observation le 20/11

| SANKARANI A BOUALA EN 1988           |      |      |      |     |      |      |      |      |      |      |      | DNHE |
|--------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm |      |      |      |     |      |      |      |      |      |      |      |      |
| Zéro de l'échelle = non connu        |      |      |      |     |      |      |      |      |      |      |      |      |
| JANV                                 | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                    | 111  | 108  | 130  | 128 | 137  | 139  | 186  | 192  | 326  | 366  | 174  | 124  |
| 2                                    | 104  | 116  | 98   | 122 | 123  | 132  | 164  | 197  | 336  | 384  | 172  | 121  |
| 3                                    | 95   | 117  | 100  | 123 | 149  | 145  | 167  | 206  | 346  | 373  | 172  | 118  |
| 4                                    | 88   | 119  | 110  | 111 | 187  | 137  | 162  | 224  | 352  | 380  | 170  | 117  |
| 5                                    | 106  | 121  | 107  | 111 | 187  | 141  | 164  | 234  | 351  | 390  | 174  | 111  |
| 6                                    | 106  | 122  | 99   | 132 | 161  | 123  | 163  | 238  | 358  | 358  | 172  | 124  |
| 7                                    | 106  | 123  | 87   | 137 | 155  | 146  | 142  | 234  | 371  | 310  | 166  | 125  |
| 8                                    | 109  | 118  | 104  | 134 | 148  | 141  | 155  | 240  | 375  | 341  | 171  | 124  |
| 9                                    | 109  | 122  | 106  | 134 | 153  | 131  | 166  | 249  | 374  | 314  | 169  | 127  |
| 10                                   | 107  | 116  | 113  | 132 | 155  | 125  | 139  | 250  | 376  | 285  | 166  | 118  |
| 11                                   | 102  | 115  | 117  | 126 | 153  | 142  | 165  | 254  | 380  | 313  | 168  | 109  |
| 12                                   | 108  | 116  | 112  | 135 | 152  | 136  | 182  | 245  | 371  | 338  | 165  | 81   |
| 13                                   | 110  | 117  | 106  | 141 | 158  | 122  | 178  | 235  | 403  | 265  | 162  | 113  |
| 14                                   | 109  | 121  | 86   | 131 | 148  | 182  | 186  | 234  | 414  | 290  | 154  | 112  |
| 15                                   | 112  | 115  | 113  | 119 | 133  | 149  | 187  | 230  | 419  | 234  | 159  | 113  |
| 16                                   | 111  | 125  | 128  | 117 | 124  | 162  | 191  | 247  | 413  | 248  | 154  | 112  |
| 17                                   | 108  | 118  | 127  | 120 | 127  | 158  | 194  | 254  | 408  | 266  | 151  | 109  |
| 18                                   | 101  | 130  | 122  | 107 | 120  | 159  | 181  | 268  | 406  | 225  | 149  | 96   |
| 19                                   | 111  | 134  | 117  | 133 | 136  | 148  | 205  | 275  | 404  | 239  | 140  | 92   |
| 20                                   | 110  | 135  | 112  | 137 | 136  | 134  | 213  | 278  | 394  | 247  | 133  | 106  |
| 21                                   | 95   | 131  | 119  | 138 | 138  | 153  | 214  | 286  | 384  | 212  | 129  | 106  |
| 22                                   | 109  | 129  | 159  | 139 | 128  | 162  | 197  | 293  | 372  | 204  | 136  | 109  |
| 23                                   | 110  | 137  | 161  | 133 | 147  | 186  | 198  | 307  | 353  | 200  | 134  | 109  |
| 24                                   | 113  | 140  | 162  | 130 | 174  | 189  | 196  | 312  | 352  | 192  | 134  | 103  |
| 25                                   | 113  | 141  | 161  | 130 | 165  | 156  | 184  | 318  | 352  | 191  | 128  | 102  |
| 26                                   | 112  | 140  | 158  | 132 | 149  | 141  | 183  | 329  | 352  | 194  | 128  | 92   |
| 27                                   | 115  | 139  | 151  | 133 | 160  | 140  | 204  | 327  | 347  | 192  | 124  | 103  |
| 28                                   | 118  | 138  | 152  | 136 | 131  | 174  | 203  | 320  | 343  | 189  | 120  | 106  |
| 29                                   | 120  | 133  | 123  | 142 | 113  | 171  | 206  | 316  | 340  | 185  | 128  | 110  |
| 30                                   | 118  | 127  | 124  | 113 | 172  | 192  | 222  | 440  | 178  | 126  | 110  |      |
| 31                                   | 114  | 130  | 146  | 175 | 224  | 168  |      |      |      |      |      |      |

hauteur mini = 81 cm      première observation le 12/12  
hauteur maxi = 440 cm      première observation le 30/09

LE SIGNE # PRECEDE LES HAUTEURS RECONSTITUEES.

| SANKARANI A BOUALA EN 1988                                             |      |      |      |      |      |      |      |      |      |      |      | DNHE      |
|------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|-----------|
| DEBITS MOYENS JOURNALIERS en m <sup>3</sup> /s                         |      |      |      |      |      |      |      |      |      |      |      |           |
| ~~~~~                                                                  |      |      |      |      |      |      |      |      |      |      |      |           |
| Surface = 38300 ha2                                                    |      |      |      |      |      |      |      |      |      |      |      |           |
| ~~~~~                                                                  |      |      |      |      |      |      |      |      |      |      |      |           |
|                                                                        | JANV | FEVR | MARS | AVRI | MAI  | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE      |
| 1                                                                      | 68.8 | 60.9 | 95.2 | 92.3 | 108. | 108. | 172. | 180. | 412. | 500. | 186. | 86.6      |
| 2                                                                      | 59.6 | 74.1 | 82.2 | 83.8 | 85.2 | 98.1 | 143. | 186. | 433. | 477. | 184. | 82.4      |
| 3                                                                      | 48.9 | 76.9 | 64.8 | 85.2 | 123. | 114. | 147. | 199. | 455. | 516. | 184. | 78.2      |
| 4                                                                      | 41.6 | 79.6 | 67.4 | 68.8 | 133. | 105. | 140. | 226. | 468. | 532. | 188. | 76.9      |
| 5                                                                      | 62.2 | 82.4 | 63.8 | 68.8 | 133. | 111. | 143. | 242. | 466. | 556. | 186. | 68.8      |
| 6                                                                      | 62.2 | 83.8 | 63.4 | 98.1 | 139. | 85.2 | 142. | 249. | 482. | 438. | 134. | 86.6      |
| 7                                                                      | 62.2 | 85.2 | 40.6 | 105. | 131. | 118. | 113. | 242. | 511. | 380. | 146. | 88.0      |
| 8                                                                      | 66.1 | 82.8 | 89.6 | 101. | 121. | 111. | 131. | 252. | 620. | 488. | 182. | 86.6      |
| 9                                                                      | 66.1 | 83.8 | 62.2 | 101. | 100. | 96.6 | 146. | 267. | 518. | 388. | 180. | 90.9      |
| 10                                                                     | 63.5 | 75.5 | 71.4 | 98.1 | 131. | 88.0 | 108. | 269. | 523. | 331. | 146. | 78.2      |
| 11                                                                     | 87.0 | 74.1 | 76.9 | 89.4 | 128. | 113. | 148. | 276. | 532. | 386. | 148. | 66.1      |
| 12                                                                     | 64.8 | 75.5 | 70.1 | 103. | 127. | 104. | 167. | 260. | 558. | 438. | 144. | 34.8      |
| 13                                                                     | 67.4 | 76.9 | 62.2 | 111. | 135. | 83.8 | 162. | 244. | 588. | 295. | 140. | 71.4      |
| 14                                                                     | 66.1 | 82.4 | 39.6 | 96.6 | 121. | 127. | 172. | 242. | 617. | 269. | 129. | 70.1      |
| 15                                                                     | 70.1 | 74.1 | 71.4 | 79.6 | 100. | 123. | 173. | 236. | 630. | 242. | 136. | 71.4      |
| 16                                                                     | 68.8 | 88.0 | 92.3 | 76.9 | 86.6 | 140. | 179. | 264. | 614. | 265. | 129. | 70.1      |
| 17                                                                     | 64.8 | 78.2 | 90.9 | 81.0 | 90.9 | 135. | 182. | 276. | 601. | 297. | 123. | 60.9      |
| 18                                                                     | 55.8 | 95.2 | 83.8 | 63.8 | 81.0 | 136. | 166. | 300. | 601. | 228. | 123. | 80.0      |
| 19                                                                     | 68.8 | 101. | 76.9 | 100. | 104. | 121. | 197. | 313. | 590. | 280. | 110. | 45.7      |
| 20                                                                     | 67.4 | 103. | 70.1 | 105. | 104. | 101. | 209. | 318. | 563. | 264. | 100. | 62.2      |
| 21                                                                     | 48.9 | 96.6 | 79.6 | 107. | 107. | 128. | 211. | 333. | 541. | 208. | 93.7 | 62.2      |
| 22                                                                     | 66.1 | 93.7 | 136. | 108. | 92.3 | 140. | 166. | 346. | 513. | 196. | 104. | 66.1      |
| 23                                                                     | 67.4 | 108. | 139. | 100. | 120. | 132. | 187. | 374. | 470. | 190. | 101. | 66.1      |
| 24                                                                     | 71.4 | 110. | 140. | 95.2 | 156. | 131. | 185. | 384. | 468. | 180. | 161. | 58.3      |
| 25                                                                     | 71.4 | 111. | 139. | 98.2 | 144. | 132. | 169. | 396. | 468. | 179. | 92.3 | 87.0      |
| 26                                                                     | 70.1 | 110. | 135. | 98.1 | 123. | 111. | 168. | 419. | 468. | 182. | 92.3 | 45.7      |
| 27                                                                     | 74.1 | 108. | 125. | 100. | 138. | 110. | 196. | 414. | 437. | 180. | 86.6 | 58.3      |
| 28                                                                     | 78.2 | 107. | 98.1 | 104. | 96.6 | 156. | 194. | 400. | 448. | 176. | 81.0 | 62.2      |
| 29                                                                     | 81.0 | 100. | 85.2 | 113. | 71.4 | 192. | 199. | 392. | 442. | 171. | 92.3 | 67.4      |
| 30                                                                     | 78.2 | 90.9 | 86.6 | 71.4 | 184. | 180. | 404. | 688. | 688. | 162. | 89.4 | 67.4      |
| 31                                                                     | 72.8 | 95.2 |      | 118. |      | 184. | 408. |      | 148. |      |      | 62.2      |
| ~~~~~                                                                  |      |      |      |      |      |      |      |      |      |      |      |           |
| Moy 1988:                                                              | 65.8 | 88.6 | 84.8 | 93.8 | 113. | 119. | 168. | 300. | 522. | 307. | 125. | 67.7 171. |
| ~~~~~                                                                  |      |      |      |      |      |      |      |      |      |      |      |           |
| Moy83-88:                                                              | 93.5 | 61.9 | 80.1 | 51.6 | 69.7 | 105. | 224. | 595. | 1080 | 896. | 407. | 151. 207. |
| Mini obs:                                                              | 33.2 | 14.9 | 11.1 | 9.71 | 19.4 | 42.4 | 39.7 | 158. | 373. | 176. | 128. | 64.6 171. |
| Maxi obs:                                                              | 167. | 98.3 | 122. | 152. | 181. | 218. | 481. | 1070 | 1730 | 1910 | 886. | 324. 243. |
| ~~~~~                                                                  |      |      |      |      |      |      |      |      |      |      |      |           |
| Débit mini = 34.8 m <sup>3</sup> /s      premiere observation le 12/12 |      |      |      |      |      |      |      |      |      |      |      |           |
| Débit maxi = 688. m <sup>3</sup> /s      premiere observation le 30/09 |      |      |      |      |      |      |      |      |      |      |      |           |
| Lame d'eau écoulée = 183 mm                                            |      |      |      |      |      |      |      |      |      |      |      |           |

| MARBOT DE BOUNDAM A BOUNDAM EN 1988 DNHE |      |      |      |     |      |      |      |      |      |      |      |
|------------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm     |      |      |      |     |      |      |      |      |      |      |      |
| Zéro de l'échelle = 253.27 m IGN         |      |      |      |     |      |      |      |      |      |      |      |
| JANV                                     | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |
| 1                                        | 134  | 90   | 24   | .   | .    | .    | .    | 128  | 181  | 212  | 203  |
| 2                                        | 133  | 89   | 22   | .   | .    | .    | .    | 129  | 182  | 213  | 204  |
| 3                                        | 130  | 86   | 20   | .   | .    | .    | .    | 132  | 184  | 215  | 203  |
| 4                                        | 129  | 84   | 18   | .   | .    | .    | .    | 144  | 186  | 214  | 201  |
| 5                                        | 127  | 83   | 16   | .   | .    | .    | .    | 143  | 187  | 214  | 199  |
| 6                                        | 124  | 81   | 13   | .   | .    | .    | .    | 141  | 188  | 215  | 198  |
| 7                                        | 125  | 79   | 12   | .   | .    | .    | .    | 151  | 190  | 216  | 197  |
| 8                                        | 124  | 77   | 10   | .   | .    | .    | .    | 148  | 191  | 216  | 195  |
| 9                                        | 122  | 75   | 7    | .   | .    | .    | .    | 147  | 192  | 216  | 193  |
| 10                                       | 121  | 73   | 4    | .   | .    | .    | .    | 149  | 193  | 217  | 191  |
| 11                                       | 120  | 71   | 2    | .   | .    | .    | .    | 152  | 194  | 217  | 190  |
| 12                                       | 118  | 69   | 0    | .   | .    | .    | .    | 155  | 194  | 217  | 188  |
| 13                                       | 116  | 67   | .    | .   | .    | .    | .    | 156  | 196  | 217  | 185  |
| 14                                       | 114  | 65   | .    | .   | .    | .    | .    | 158  | 197  | 217  | 182  |
| 15                                       | 113  | 63   | .    | .   | .    | .    | .    | 163  | 198  | 217  | 181  |
| 16                                       | 111  | 60   | .    | .   | .    | .    | .    | 166  | 199  | 217  | 179  |
| 17                                       | 110  | 58   | .    | .   | .    | .    | .    | 164  | 200  | 217  | 176  |
| 18                                       | 108  | 55   | .    | .   | .    | .    | .    | 164  | 201  | 216  | 174  |
| 19                                       | 106  | 52   | .    | .   | .    | .    | .    | 167  | 202  | 216  | 172  |
| 20                                       | 105  | 49   | .    | .   | .    | .    | .    | 168  | 203  | 216  | 170  |
| 21                                       | 104  | 46   | .    | .   | .    | .    | .    | 169  | 203  | 214  | 168  |
| 22                                       | 102  | 44   | .    | .   | .    | .    | .    | 170  | 204  | 214  | 165  |
| 23                                       | 101  | 40   | .    | .   | .    | .    | .    | 171  | 205  | 213  | 163  |
| 24                                       | 100  | 38   | .    | .   | .    | .    | .    | 173  | 206  | 212  | 161  |
| 25                                       | 99   | 36   | .    | .   | .    | .    | .    | 174  | 206  | 211  | 158  |
| 26                                       | 98   | 35   | .    | .   | .    | .    | .    | 175  | 207  | 211  | 155  |
| 27                                       | 96   | 32   | .    | .   | .    | .    | 122  | 177  | 208  | 210  | 153  |
| 28                                       | 95   | 29   | .    | .   | .    | .    | 122  | 178  | 209  | 208  | 151  |
| 29                                       | 95   | 26   | .    | .   | .    | .    | 127  | 179  | 209  | 208  | 150  |
| 30                                       | 94   | .    | .    | .   | .    | .    | 128  | 180  | 210  | 207  | 148  |
| 31                                       | 92   | .    | .    | .   | .    | .    | 128  | .    | 211  | .    | 146  |

hauteur mini = 4 sec      première observation le 13/03  
hauteur maxi = 217 cm      première observation le 10/11

LE SIGNE . PRECEDE LES HAUTEURS RECONSTITUEES . 1bm  
LE SIGNE . INDIQUE L'ABSENCE D'ECOULEMENT . 1bm

| NISER A SOURRA RHAROUS EN 1988 DNHE  |      |      |      |     |      |      |      |      |      |      |      |
|--------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm |      |      |      |     |      |      |      |      |      |      |      |
| Zéro de l'échelle = 253.88 m IGN     |      |      |      |     |      |      |      |      |      |      |      |
| JANV                                 | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |
| 1                                    | 313  | 193  | 113  | 75  | 42   | 22   | 8    | 134  | 315  | 404  | 433  |
| 2                                    | 310  | 189  | 112  | 74  | 40   | 21   | 8    | 141  | 318  | 406  | 431  |
| 3                                    | 306  | 186  | 110  | 74  | 40   | 21   | 7    | 151  | 324  | 408  | 442  |
| 4                                    | 301  | 183  | 108  | 73  | 39   | 20   | 7    | 158  | 328  | 410  | 443  |
| 5                                    | 298  | 180  | 106  | 72  | 39   | 20   | 6    | 165  | 332  | 412  | 443  |
| 6                                    | 294  | 177  | 105  | 71  | 38   | 19   | 5    | 172  | 335  | 413  | 444  |
| 7                                    | 291  | 174  | 102  | 70  | 37   | 18   | 5    | 183  | 338  | 414  | 445  |
| 8                                    | 288  | 170  | 100  | 69  | 36   | 18   | 4    | 194  | 343  | 415  | 445  |
| 9                                    | 284  | 166  | 98   | 67  | 34   | 17   | 4    | 202  | 345  | 417  | 445  |
| 10                                   | 279  | 162  | 96   | 65  | 34   | 17   | 3    | 210  | 349  | 418  | 446  |
| 11                                   | 275  | 159  | 94   | 63  | 33   | 17   | 3    | 215  | 351  | 419  | 446  |
| 12                                   | 273  | 156  | 91   | 61  | 33   | 17   | 10   | 222  | 353  | 420  | 446  |
| 13                                   | 269  | 153  | 88   | 59  | 34   | 16   | 11   | 230  | 359  | 421  | 447  |
| 14                                   | 266  | 151  | 86   | 57  | 33   | 16   | 11   | 236  | 362  | 423  | 447  |
| 15                                   | 261  | 149  | 85   | 56  | 32   | 16   | 10   | 242  | 365  | 424  | 446  |
| 16                                   | 257  | 146  | 84   | 55  | 31   | 15   | 10   | 246  | 368  | 425  | 446  |
| 17                                   | 253  | 143  | 83   | 54  | 30   | 15   | 7    | 252  | 372  | 426  | 446  |
| 18                                   | 249  | 141  | 82   | 53  | 30   | 15   | 9    | 257  | 375  | 428  | 446  |
| 19                                   | 244  | 139  | 81   | 51  | 29   | 15   | 11   | 264  | 377  | 429  | 444  |
| 20                                   | 239  | 137  | 80   | 50  | 29   | 14   | 18   | 268  | 380  | 430  | 443  |
| 21                                   | 234  | 135  | 78   | 48  | 28   | 13   | 27   | 273  | 383  | 431  | 443  |
| 22                                   | 229  | 132  | 77   | 47  | 28   | 13   | 38   | 277  | 384  | 432  | 443  |
| 23                                   | 224  | 129  | 76   | 47  | 27   | 12   | 47   | 281  | 388  | 433  | 441  |
| 24                                   | 220  | 127  | 76   | 46  | 27   | 13   | 58   | 286  | 390  | 433  | 440  |
| 25                                   | 216  | 124  | 76   | 45  | 26   | 12   | 65   | 292  | 392  | 434  | 439  |
| 26                                   | 213  | 122  | 75   | 44  | 26   | 11   | 73   | 296  | 394  | 434  | 439  |
| 27                                   | 209  | 120  | 75   | 43  | 25   | 10   | 84   | 299  | 396  | 435  | 438  |
| 28                                   | 206  | 118  | 74   | 44  | 24   | 10   | 96   | 303  | 398  | 436  | 437  |
| 29                                   | 202  | 116  | 74   | 43  | 24   | 9    | 104  | 307  | 400  | 437  | 436  |
| 30                                   | 199  | .    | 73   | 42  | 24   | 9    | 113  | 309  | 402  | 438  | 435  |
| 31                                   | 196  | .    | 73   | .   | 23   | .    | 124  | 312  | .    | 439  | 436  |

hauteur mini = 4 cm      première observation le 08/07  
hauteur maxi = 447 cm      première observation le 13/11

LE SIGNE . PRECEDE LES HAUTEURS RECONSTITUEES . 1bm

| MARBOT DE BOUNDAM A BOUNDAM EN 1988 DNHE |      |      |      |      |      |      |      |      |      |      |      |
|------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|
| DEBITS MOYENS JOURNALIERS en m3/s        |      |      |      |      |      |      |      |      |      |      |      |
| Surface = non connue                     |      |      |      |      |      |      |      |      |      |      |      |
| JANV                                     | FEVR | MARS | AVRI | MAI  | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |
| 1                                        | 3.26 | .000 | .000 | .000 | .000 | .000 | .000 | 2.02 | 20.2 | 34.5 | 31.3 |
| 2                                        | 3.04 | .000 | .000 | .000 | .000 | .000 | .000 | 2.20 | 20.7 | 34.9 | 30.9 |
| 3                                        | 2.40 | .000 | .000 | .000 | .000 | .000 | .000 | 2.82 | 21.6 | 34.9 | 30.4 |
| 4                                        | 2.20 | .000 | .000 | .000 | .000 | .000 | .000 | 5.83 | 22.5 | 35.4 | 29.5 |
| 5                                        | 1.84 | .000 | .000 | .000 | .000 | .000 | .000 | 5.85 | 22.9 | 35.4 | 28.6 |
| 6                                        | 1.66 | .000 | .000 | .000 | .000 | .000 | .000 | 5.04 | 23.4 | 35.8 | 28.1 |
| 7                                        | 1.50 | .000 | .000 | .000 | .000 | .000 | .000 | 5.05 | 24.3 | 35.8 | 27.6 |
| 8                                        | 1.34 | .000 | .000 | .000 | .000 | .000 | .000 | 7.03 | 24.8 | 36.2 | 26.7 |
| 9                                        | 1.06 | .000 | .000 | .000 | .000 | .000 | .000 | 6.71 | 25.0 | 36.2 | 25.7 |
| 10                                       | .724 | .000 | .000 | .000 | .000 | .000 | .000 | 7.36 | 25.7 | 36.7 | 24.8 |
| 11                                       | .800 | .000 | .000 | .000 | .000 | .000 | .000 | 8.41 | 26.2 | 36.7 | 24.3 |
| 12                                       | .666 | .000 | .000 | .000 | .000 | .000 | .000 | 9.56 | 26.2 | 36.7 | 23.4 |
| 13                                       | .844 | .000 | .000 | .000 | .000 | .000 | .000 | 10.0 | 27.1 | 36.7 | 22.0 |
| 14                                       | .434 | .000 | .000 | .000 | .000 | .000 | .000 | 10.8 | 27.6 | 36.7 | 20.7 |
| 15                                       | .383 | .000 | .000 | .000 | .000 | .000 | .000 | 12.8 | 28.1 | 36.7 | 20.2 |
| 16                                       | .292 | .000 | .000 | .000 | .000 | .000 | .000 | 14.0 | 28.6 | 36.7 | 19.4 |
| 17                                       | .250 | .000 | .000 | .000 | .000 | .000 | .000 | 14.0 | 29.1 | 36.7 | 18.1 |
| 18                                       | .174 | .000 | .000 | .000 | .000 | .000 | .000 | 14.0 | 29.5 | 36.7 | 17.2 |
| 19                                       | .116 | .000 | .000 | .000 | .000 | .000 | .000 | 14.4 | 30.0 | 36.2 | 16.4 |
| 20                                       | .088 | .000 | .000 | .000 | .000 | .000 | .000 | 14.8 | 30.4 | 35.8 | 15.6 |
| 21                                       | .064 | .000 | .000 | .000 | .000 | .000 | .000 | 15.2 | 30.4 | 35.4 | 14.8 |
| 22                                       | .026 | .000 | .000 | .000 | .000 | .000 | .000 | 15.6 | 30.9 | 35.4 | 13.6 |
| 23                                       | .012 | .000 | .000 | .000 | .000 | .000 | .000 | 16.0 | 31.3 | 34.9 | 12.8 |
| 24                                       | .000 | .000 | .000 | .000 | .000 | .000 | .000 | 16.8 | 31.8 | 34.8 | 12.1 |
| 25                                       | .000 | .000 | .000 | .000 | .000 | .000 | .000 | 17.2 | 31.8 | 34.0 | 10.6 |
| 26                                       | .000 | .000 | .000 | .000 | .000 | .000 | .000 | 17.7 | 32.2 | 34.0 | 9.56 |
| 27                                       | .000 | .000 | .000 | .000 | .000 | .000 | .000 | 18.6 | 33.7 | 33.6 | 8.78 |
| 28                                       | .000 | .000 | .000 | .000 | .000 | .000 | .000 | 1.06 | 18.9 | 33.1 | 8.05 |
| 29                                       | .000 | .000 | .000 | .000 | .000 | .000 | .000 | 1.84 | 19.4 | 33.1 | 7.70 |
| 30                                       | .000 | .000 | .000 | .000 | .000 | .000 | .000 | 2.02 | 19.8 | 33.6 | 7.03 |
| 31                                       | .000 | .000 | .000 | .000 | .000 | .000 | .000 | 2.02 | 34.0 | .    | 6.41 |

Moy 1988: .744 .000 .000 .000 .000 .000 .000 .288 11.7 28.0 35.3 19.1 7.93

Moy 31-88: 126. 80.4 35.6 12.0 3.67 1.16 .898 3.16 23.8 46.2 66.3 105. 38.6

Mini obs: .034 .000 .000 .000 .000 .000 .000 .903 9.49 18.3 2.89 2.44

Maxi obs: 340. 280. 189. 95.6 85.3 24.2 12.2 22.4 85.2 91.8 133. 253. 118.

Débit mini = .000 m3/s      première observation le 24/01  
Débit maxi = 36.7 m3/s      première observation le 10/11

| KANKELABA A KANKELA EN 1988                         |      |      |      |      |     |      |      |      |      |      | DNHE |      |
|-----------------------------------------------------|------|------|------|------|-----|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm                |      |      |      |      |     |      |      |      |      |      |      |      |
| Zéro de l'échelle = non connu                       |      |      |      |      |     |      |      |      |      |      |      |      |
|                                                     | JANV | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |
| 1                                                   | 157  | 157  | 144  | 122  | 138 | 125  | 175  | 286  | 605  | 482  | 210  | 172  |
| 2                                                   | 157  | 157  | 143  | 121  | 136 | 130  | 180  | 257  | 605  | 479  | 212  | 171  |
| 3                                                   | 157  | 156  | 143  | 119  | 135 | 142  | 183  | 246  | 612  | 486  | 211  | 170  |
| 4                                                   | 156  | 156  | 142  | 119  | 135 | 142  | 183  | 237  | 606  | 473  | 209  | 169  |
| 5                                                   | 156  | 156  | 141  | 118  | 134 | 143  | 202  | 232  | 597  | 490  | 206  | 169  |
| 6                                                   | 156  | 156  | 140  | 117  | 134 | 143  | 193  | 250  | 610  | 477  | 205  | 168  |
| 7                                                   | 155  | 155  | 140  | 116  | 132 | 142  | 186  | 362  | 634  | 457  | 203  | 167  |
| 8                                                   | 155  | 155  | 139  | 116  | 132 | 142  | 180  | 395  | 630  | 438  | 201  | 167  |
| 9                                                   | 155  | 155  | 138  | 115  | 131 | 140  | 176  | 362  | 623  | 428  | 198  | 167  |
| 10                                                  | 155  | 154  | 137  | 114  | 129 | 140  | 173  | 335  | 635  | 423  | 196  | 168  |
| 11                                                  | 156  | 154  | 136  | 114  | 128 | 140  | 170  | 320  | 638  | 421  | 194  | 168  |
| 12                                                  | 157  | 154  | 135  | 113  | 128 | 139  | 171  | 353  | 632  | 419  | 192  | 167  |
| 13                                                  | 159  | 154  | 134  | 112  | 127 | 138  | 178  | 354  | 624  | 409  | 180  | 171  |
| 14                                                  | 159  | 154  | 133  | 111  | 126 | 137  | 183  | 328  | 624  | 394  | 180  | 173  |
| 15                                                  | 159  | 153  | 133  | 111  | 128 | 137  | 187  | 324  | 622  | 361  | 188  | 173  |
| 16                                                  | 159  | 152  | 133  | 110  | 124 | 137  | 185  | 326  | 611  | 340  | 185  | 174  |
| 17                                                  | 159  | 152  | 132  | 109  | 123 | 137  | 219  | 343  | 600  | 316  | 184  | 175  |
| 18                                                  | 159  | 151  | 132  | 108  | 122 | 136  | 214  | 361  | 592  | 298  | 183  | 176  |
| 19                                                  | 159  | 151  | 131  | 108  | 121 | 140  | 211  | 376  | 587  | 280  | 182  | 178  |
| 20                                                  | 159  | 151  | 130  | 108  | 119 | 141  | 217  | 381  | 575  | 269  | 181  | 180  |
| 21                                                  | 159  | 150  | 129  | 109  | 119 | 140  | 217  | 391  | 557  | 256  | 180  | 181  |
| 22                                                  | 159  | 149  | 129  | 109  | 118 | 145  | 226  | 373  | 539  | 247  | 179  | 181  |
| 23                                                  | 159  | 148  | 128  | 110  | 117 | 191  | 236  | 616  | 525  | 241  | 178  | 180  |
| 24                                                  | 158  | 148  | 128  | 111  | 116 | 187  | 247  | 646  | 507  | 239  | 177  | 180  |
| 25                                                  | 158  | 147  | 126  | 110  | 115 | 181  | 254  | 666  | 495  | 237  | 175  | 180  |
| 26                                                  | 158  | 146  | 126  | 109  | 114 | 178  | 248  | 627  | 499  | 232  | 173  | 180  |
| 27                                                  | 158  | 146  | 125  | 113  | 113 | 175  | 235  | 667  | 515  | 225  | 172  | 180  |
| 28                                                  | 158  | 145  | 125  | 116  | 113 | 174  | 258  | 665  | 513  | 221  | 173  | 180  |
| 29                                                  | 158  | 145  | 124  | 132  | 111 | 172  | 286  | 651  | 505  | 220  | 173  | 180  |
| 30                                                  | 157  |      | 124  | 136  | 111 | 170  | 289  | 655  | 503  | 218  | 173  | 180  |
| 31                                                  | 157  |      | 123  |      | 111 |      | 287  | 633  |      | 215  |      | 180  |
| hauteur mini = 108 cm première observation le 18/04 |      |      |      |      |     |      |      |      |      |      |      |      |
| hauteur maxi = 667 cm première observation le 27/08 |      |      |      |      |     |      |      |      |      |      |      |      |

| DIAKA A KARA EN 1988                 |      |      |      |     |      |      |      |      |      |      |      | DNHE |
|--------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm |      |      |      |     |      |      |      |      |      |      |      |      |
| Zéro de l'échelle = 267.16 m IGN     |      |      |      |     |      |      |      |      |      |      |      |      |
| JANV                                 | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                    | 80   | 822  | 13   | .   | .    | .    | 45   | 181  | 370  | 393  | 185  | 117  |
| 2                                    | 75   | 821  | 13   | .   | .    | .    | 57   | 179  | 368  | 386  | 184  | 116  |
| 3                                    | 71   | 20   | 13   | .   | .    | .    | 60   | 178  | 368  | 383  | 183  | 112  |
| 4                                    | 70   | 20   | 13   | .   | .    | .    | 59   | 176  | 362  | 383  | 182  | 108  |
| 5                                    | 70   | 20   | 13   | .   | .    | .    | 55   | 175  | 361  | 386  | 182  | 107  |
| 6                                    | 67   | 17   | 13   | .   | .    | .    | 54   | 177  | 363  | 385  | 180  | 105  |
| 7                                    | 50   | 17   | 20   | .   | .    | .    | 47   | 183  | 367  | 378  | 181  | 103  |
| 8                                    | 35   | 18   | 20   | .   | .    | .    | 47   | 185  | 376  | 368  | 178  | 90   |
| 9                                    | 35   | 18   | 21   | .   | .    | .    | 47   | 172  | 388  | 388  | 174  | 95   |
| 10                                   | 32   | 18   | 22   | .   | .    | .    | 60   | 197  | 396  | 380  | 165  | 98   |
| 11                                   | 46   | 17   | 21   | .   | .    | .    | 68   | 218  | 403  | 341  | 165  | 95   |
| 12                                   | 46   | 17   | 22   | .   | .    | .    | 74   | 230  | 411  | 336  | 165  | 93   |
| 13                                   | 45   | 17   | 20   | .   | .    | .    | 74   | 240  | 418  | 331  | 165  | 93   |
| 14                                   | 44   | 18   | 20   | .   | .    | .    | 84   | 243  | 421  | 320  | 165  | 89   |
| 15                                   | 45   | 20   | 19   | .   | .    | .    | 94   | 245  | 422  | 310  | 168  | 87   |
| 16                                   | 46   | 20   | 18   | .   | .    | .    | 93   | 255  | 423  | 298  | 164  | 76   |
| 17                                   | 48   | 20   | 17   | .   | .    | .    | 99   | 256  | 428  | 290  | 163  | 74   |
| 18                                   | 48   | 20   | 18   | .   | .    | .    | 97   | 257  | 433  | 286  | 163  | 74   |
| 19                                   | 48   | 19   | 14   | .   | .    | .    | 111  | 254  | 443  | 276  | 163  | 75   |
| 20                                   | 47   | 20   | 14   | .   | .    | .    | 119  | 256  | 450  | 261  | 159  | 74   |
| 21                                   | 47   | 20   | 13   | .   | .    | .    | 131  | 260  | 452  | 285  | 154  | 70   |
| 22                                   | 44   | 19   | 12   | .   | .    | .    | 135  | 270  | 453  | 249  | 150  | 65   |
| 23                                   | 42   | 19   | 12   | .   | .    | .    | 139  | 300  | 456  | 236  | 148  | 63   |
| 24                                   | 45   | 18   | 10   | .   | .    | .    | 149  | 318  | 454  | 228  | 139  | 60   |
| 25                                   | 45   | 17   | 10   | .   | .    | .    | 182  | 317  | 447  | 222  | 135  | 55   |
| 26                                   | 45   | 16   | 9    | .   | .    | .    | 161  | 324  | 439  | 221  | 125  | 50   |
| 27                                   | 44   | 16   | 9    | .   | .    | .    | 170  | 330  | 428  | 219  | 122  | 46   |
| 28                                   | 44   | 14   | 8    | .   | .    | .    | 175  | 340  | 418  | 210  | 120  | 46   |
| 29                                   | 43   | 13   | 6    | .   | .    | .    | 180  | 349  | 406  | 208  | 118  | 44   |
| 30                                   | 43   | 8    | .    | .   | .    | .    | 185  | 356  | 398  | 193  | 120  | 40   |
| 31                                   | 42   | 4    | .    | .   | .    | .    | 183  | 367  |      | 186  |      | 38   |

hauteur mini = 4 sec      première observation le 01/04  
 hauteur maxi = 486 cm      première observation le 23/09

LE SIGNE + PRECEDE LES HAUTEURS RECONSTITUEES .      lba  
 LE SIGNE . INDIQUE L'ABSENCE D'ECOULEMENT .      lba

| NIGER A KE MACINA EN 1988            |      |      |      |     |      |      |      |      |      |      |      | DNHE |
|--------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm |      |      |      |     |      |      |      |      |      |      |      |      |
| Zéro de l'échelle = 265.86 m IGN     |      |      |      |     |      |      |      |      |      |      |      |      |
| JANV                                 | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                    | 126  | 76   | 68   | 58  | 48   | 44   | 117  | 224  | 443  | 442  | 234  | 164  |
| 2                                    | 123  | 75   | 68   | 57  | 48   | 48   | 123  | 224  | 442  | 438  | 233  | 160  |
| 3                                    | 122  | 74   | 72   | 57  | 51   | 49   | 121  | 222  | 437  | 438  | 230  | 158  |
| 4                                    | 122  | 74   | 78   | 62  | 51   | 48   | 111  | 221  | 435  | 440  | 228  | 157  |
| 5                                    | 120  | 74   | 84   | 66  | 53   | 47   | 106  | 222  | 433  | 443  | 226  | 156  |
| 6                                    | 101  | 73   | 84   | 66  | 54   | 47   | 107  | 223  | 433  | 443  | 225  | 154  |
| 7                                    | 88   | 73   | 87   | 66  | 54   | 47   | 106  | 225  | 436  | 438  | 220  | 149  |
| 8                                    | 75   | 73   | 85   | 66  | 53   | 46   | 108  | 239  | 442  | 434  | 215  | 146  |
| 9                                    | 101  | 74   | 84   | 67  | 53   | 46   | 114  | 247  | 446  | 428  | 210  | 146  |
| 10                                   | 102  | 74   | 79   | 65  | 52   | 46   | 126  | 264  | 482  | 418  | 209  | 145  |
| 11                                   | 102  | 81   | 81   | 60  | 49   | 47   | 133  | 282  | 463  | 403  | 209  | 145  |
| 12                                   | 102  | 81   | 85   | 56  | 47   | 47   | 135  | 291  | 475  | 389  | 209  | 145  |
| 13                                   | 100  | 81   | 80   | 54  | 46   | 48   | 148  | 293  | 479  | 379  | 209  | 145  |
| 14                                   | 102  | 81   | 74   | 55  | 46   | 50   | 147  | 294  | 480  | 372  | 209  | 141  |
| 15                                   | 103  | 80   | 74   | 55  | 48   | 50   | 147  | 301  | 481  | 359  | 208  | 129  |
| 16                                   | 105  | 80   | 72   | 54  | 49   | 50   | 150  | 313  | 483  | 345  | 208  | 125  |
| 17                                   | 104  | 80   | 67   | 54  | 49   | 53   | 156  | 309  | 489  | 340  | 208  | 125  |
| 18                                   | 104  | 80   | 63   | 53  | 50   | 53   | 162  | 308  | 500  | 337  | 207  | 127  |
| 19                                   | 104  | 80   | 61   | 53  | 58   | 56   | 167  | 307  | 511  | 332  | 204  | 130  |
| 20                                   | 102  | 70   | 59   | 58  | 59   | 59   | 177  | 309  | 518  | 327  | 199  | 128  |
| 21                                   | 101  | 68   | 60   | 58  | 57   | 60   | 189  | 317  | 520  | 294  | 195  | 124  |
| 22                                   | 100  | 68   | 59   | 58  | 54   | 62   | 189  | 340  | 520  | 288  | 191  | 120  |
| 23                                   | 101  | 68   | 58   | 59  | 52   | 65   | 192  | 376  | 520  | 282  | 185  | 117  |
| 24                                   | 102  | 68   | 55   | 63  | 49   | 65   | 201  | 384  | 513  | 277  | 178  | 115  |
| 25                                   | 102  | 68   | 53   | 65  | 49   | 65   | 216  | 380  | 506  | 273  | 172  | 108  |
| 26                                   | 102  | 68   | 54   | 62  | 49   | 68   | 225  | 385  | 494  | 273  | 167  | 104  |
| 27                                   | 102  | 68   | 60   | 60  | 47   | 79   | 230  | 394  | 477  | 270  | 166  | 102  |
| 28                                   | 100  | 68   | 61   | 56  | 45   | 86   | 233  | 411  | 465  | 260  | 166  | 102  |
| 29                                   | 89   | 68   | 63   | 53  | 44   | 94   | 234  | 428  | 433  | 250  | 167  | 100  |
| 30                                   | 80   | 63   | 52   | 44  | 116  | 234  | 434  | 447  | 244  | 166  | 100  |      |
| 31                                   | 77   | 60   |      | 44  |      | 227  | 439  |      | 237  |      |      | 102  |

hauteur mini = 44 cm      première observation le 29/05  
 hauteur maxi = 520 cm      première observation le 21/09

| DIAKA A KARA EN 1988              |      |      |      |      |      |      |      |      |      |      |      | DNHE |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| DEBITS MOYENS JOURNALIERS en m3/s |      |      |      |      |      |      |      |      |      |      |      |      |
| Surface = non connue              |      |      |      |      |      |      |      |      |      |      |      |      |
| JANV                              | FEVR | MARS | AVRI | MAI  | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                 | 11.2 | .000 | .000 | .000 | .000 | .000 | .437 | 142. | 716. | 682. | 139. | 41.2 |
| 2                                 | 8.26 | .000 | .000 | .000 | .000 | .000 | 2.09 | 137. | 705. | 667. | 138. | 40.0 |
| 3                                 | 6.36 | .000 | .000 | .000 | .000 | .000 | 2.68 | 135. | 692. | 663. | 138. | 36.3 |
| 4                                 | 5.92 | .000 | .000 | .000 | .000 | .000 | 2.45 | 132. | 684. | 666. | 136. | 32.8 |
| 5                                 | 6.01 | .000 | .000 | .000 | .000 | .000 | 1.70 | 132. | 684. | 673. | 137. | 32.0 |
| 6                                 | 4.79 | .000 | .000 | .000 | .000 | .000 | 1.54 | 139. | 696. | 667. | 133. | 30.3 |
| 7                                 | .937 | .000 | .000 | .000 | .000 | .000 | .620 | 154. | 717. | 642. | 135. | 28.8 |
| 8                                 | .048 | .000 | .000 | .000 | .000 | .000 | .623 | 161. | 788. | 606. | 129. | 18.2 |
| 9                                 | .048 | .000 | .000 | .000 | .000 | .000 | .633 | 179. | 795. | 678. | 126. | 22.3 |
| 10                                | .019 | .000 | .000 | .000 | .000 | .000 | 2.64 | 193. | 837. | 853. | 106. | 22.2 |
| 11                                | .487 | .000 | .000 | .000 | .000 | .000 | 8.95 | 253. | 862. | 827. | 106. | 22.1 |
| 12                                | .492 | .000 | .000 | .000 | .000 | .000 | 9.13 | 288. | 887. | 813. | 107. | 20.6 |
| 13                                | .403 | .000 | .000 | .000 | .000 | .000 | 9.25 | 318. | 901. | 499. | 107. | 20.6 |
| 14                                | .321 | .000 | .000 | .000 | .000 | .000 | 16.0 | 322. | 919. | 468. | 107. | 14.8 |
| 15                                | .406 | .000 | .000 | .000 | .000 | .000 | 24.4 | 325. | 917. | 440. | 107. | 16.1 |
| 16                                | .502 | .000 | .000 | .000 | .000 | .000 | 23.4 | 333. | 915. | 406. | 106. | 9.20 |
| 17                                | .723 | .000 | .000 | .000 | .000 | .000 | 28.2 | 357. | 931. | 385. | 103. | 8.14 |
| 18                                | .723 | .000 | .000 | .000 | .000 | .000 | 27.3 | 363. | 945. | 374. | 103. | 9.20 |
| 19                                | .723 | .000 | .000 | .000 | .000 | .000 | 40.8 | 355. | 977. | 347. | 102. | 8.64 |
| 20                                | .603 | .000 | .000 | .000 | .000 | .000 | 49.6 | 365. | 992. | 308. | 93.9 | 8.12 |
| 21                                | .602 | .000 | .000 | .000 | .000 | .000 | 64.9 | 381. | 984. | 293. | 85.4 | 6.16 |
| 22                                | .314 | .000 | .000 | .000 | .000 | .000 | 70.9 | 417. | 966. | 268. | 79.2 | 4.11 |
| 23                                | .183 | .000 | .000 | .000 | .000 | .000 | 76.9 | 523. | 952. | 246. | 71.9 | 3.37 |
| 24                                | .395 | .000 | .000 | .000 | .000 | .000 | 92.7 | 588. | 916. | 219. | 64.2 | 2.36 |
| 25                                | .391 | .000 | .000 | .000 | .000 | .000 | 96.7 | 584. | 863. | 212. | 59.3 | 1.81 |
| 26                                | .388 | .000 | .000 | .000 | .000 | .000 | 112. | 609. | 816. | 210. | 48.2 | 945  |
| 27                                | .308 | .000 | .000 | .000 | .000 | .000 | 127. | 629. | 779. | 206. | 45.3 | 470  |
| 28                                | .304 | .000 | .000 | .000 | .000 | .000 | 136. | 658. | 741. | 187. | 43.8 | 471  |
| 29                                | .234 | .000 | .000 | .000 | .000 | .000 | 146. | 668. | 713. | 177. | 41.8 | 300  |
| 30                                | .029 | .000 | .000 | .000 | .000 | .000 | 155. | 681. | 691. | 153. | 44.0 | 095  |
| 31                                | .000 | .000 | .000 | .000 | .000 | .000 | 147. | 714. |      | 140. |      | 076  |

Moy 1988: 1.68 .000 .000 .000 .000 .000 47.3 363. 832. 418. 98.1 14.9 148.

Moy52-88: 73.4 24.7 6.73 2.46 1.68 28.0 238. 804. 1310 1190 607. 223. 375.  
 Mini obs: .337 .000 .000 .000 .000 .000 13.9 186. 413. 418. 98.1 14.9 127.  
 Maxi obs: 233. 108. 42.9 33.7 23.8 168. 667. 1350 1660 1680 1340 597. 616.

Débit mini = .000 m3/s      première observation le 31/01  
 Débit maxi = 992. m3/s      première observation le 20/09

| NIGER A KE MACINA EN 1988         |      |      |      |      |      |      |      |      |      |      |      | DNHE |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| DEBITS MOYENS JOURNALIERS en m3/s |      |      |      |      |      |      |      |      |      |      |      |      |
| Surface = 141000 km2              |      |      |      |      |      |      |      |      |      |      |      |      |
|                                   | JANV | FEVR | MARS | AVRI | MAI  | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |
| 1                                 | 169. | 64.0 | 55.9 | 41.9 | 30.1 | 26.6 | 163. | 643. | 2360 | 2230 | 666. | 323. |
| 2                                 | 162. | 62.8 | 56.0 | 40.6 | 30.2 | 27.6 | 181. | 648. | 2320 | 2240 | 663. | 307. |
| 3                                 | 160. | 61.8 | 62.1 | 40.7 | 33.4 | 31.6 | 172. | 641. | 2440 | 2270 | 647. | 298. |
| 4                                 | 161. | 62.7 | 71.4 | 46.9 | 33.6 | 30.6 | 141. | 647. | 2400 | 2300 | 642. | 274. |
| 5                                 | 156. | 63.4 | 81.5 | 82.1 | 38.7 | 29.6 | 133. | 669. | 2390 | 2320 | 633. | 290. |
| 6                                 | 107. | 62.2 | 81.5 | 82.0 | 36.8 | 29.6 | 129. | 690. | 2420 | 2280 | 630. | 282. |
| 7                                 | 83.6 | 62.4 | 86.3 | 81.8 | 36.8 | 29.6 | 128. | 715. | 2480 | 2200 | 601. | 264. |
| 8                                 | 97.3 | 62.5 | 82.0 | 81.6 | 35.6 | 28.6 | 135. | 821. | 2360 | 2130 | 572. | 252. |
| 9                                 | 110. | 64.2 | 79.6 | 92.8 | 35.5 | 28.6 | 183. | 888. | 2620 | 2080 | 548. | 290. |
| 10                                | 113. | 67.3 | 70.6 | 49.7 | 34.4 | 28.6 | 195. | 1030 | 2700 | 1990 | 842. | 245. |
| 11                                | 114. | 75.5 | 73.2 | 43.1 | 31.2 | 29.7 | 222. | 1170 | 2820 | 1860 | 544. | 245. |
| 12                                | 116. | 75.4 | 79.4 | 38.4 | 29.3 | 29.3 | 230. | 1230 | 2960 | 1750 | 546. | 245. |
| 13                                | 112. | 75.3 | 70.6 | 36.2 | 28.8 | 30.8 | 286. | 1240 | 3010 | 1680 | 548. | 246. |
| 14                                | 116. | 74.7 | 61.3 | 37.6 | 28.7 | 33.0 | 291. | 1230 | 3020 | 1620 | 548. | 231. |
| 15                                | 117. | 72.5 | 61.3 | 37.6 | 30.7 | 33.1 | 292. | 1270 | 3030 | 1520 | 542. | 187. |
| 16                                | 122. | 72.1 | 58.5 | 36.7 | 31.6 | 33.1 | 295. | 1380 | 3040 | 1410 | 539. | 174. |
| 17                                | 119. | 71.7 | 81.4 | 36.9 | 31.8 | 36.5 | 320. | 1360 | 3080 | 1350 | 535. | 174. |
| 18                                | 119. | 71.6 | 46.1 | 36.0 | 32.6 | 36.6 | 348. | 1340 | 3160 | 1350 | 524. | 180. |
| 19                                | 119. | 71.4 | 43.6 | 36.2 | 41.6 | 40.1 | 383. | 1370 | 3240 | 1310 | 501. | 170. |
| 20                                | 114. | 64.3 | 41.6 | 42.0 | 42.9 | 43.8 | 428. | 1400 | 3260 | 1280 | 467. | 183. |
| 21                                | 112. | 53.6 | 43.1 | 42.0 | 40.2 | 45.4 | 490. | 1490 | 3200 | 1030 | 448. | 171. |
| 22                                | 109. | 53.7 | 42.2 | 41.9 | 36.6 | 48.3 | 491. | 1710 | 3110 | 987. | 428. | 158. |
| 23                                | 111. | 53.8 | 41.3 | 42.9 | 34.2 | 82.8 | 506. | 2060 | 3010 | 947. | 400. | 147. |
| 24                                | 112. | 84.0 | 38.0 | 47.9 | 31.0 | 83.7 | 585. | 2130 | 2850 | 914. | 370. | 143. |
| 25                                | 111. | 84.2 | 38.8 | 50.2 | 30.9 | 84.1 | 649. | 2100 | 2750 | 888. | 347. | 124. |
| 26                                | 111. | 84.7 | 37.0 | 45.9 | 30.9 | 89.0 | 700. | 2140 | 2650 | 888. | 328. | 115. |
| 27                                | 110. | 85.1 | 44.1 | 43.3 | 29.0 | 77.4 | 723. | 2230 | 2590 | 879. | 326. | 111. |
| 28                                | 105. | 85.4 | 45.4 | 38.5 | 27.3 | 89.9 | 736. | 2380 | 2390 | 816. | 328. | 112. |
| 29                                | 84.6 | 55.6 | 48.1 | 33.2 | 26.3 | 105. | 733. | 2460 | 2290 | 756. | 334. | 107. |
| 30                                | 69.7 | 46.3 | 34.1 | 26.6 | 16.2 | 122. | 2520 | 2520 | 2240 | 722. | 331. | 108. |
| 31                                | 65.2 | 44.5 |      | 26.6 |      | 677. | 2350 |      |      | 683. |      | 114. |

| NISER A KENIEROBA EN 1988                           |      |      |      |     |      |      |      |      |      |      |      |     | DNHE |
|-----------------------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|-----|------|
| HAUTEURS MOYENNES JOURNALIERES en cm                |      |      |      |     |      |      |      |      |      |      |      |     |      |
| Zero de l'échelle = 324.00 m IGN                    |      |      |      |     |      |      |      |      |      |      |      |     |      |
| JANV                                                | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |     |      |
| 1                                                   | 118  | 81   | 92   | 79  | 80   | 82   | 134  | 231  | 399  | 422  | 230  | 148 |      |
| 2                                                   | 112  | 84   | 78   | 75  | 74   | 78   | 133  | 240  | 409  | 410  | 228  | 148 |      |
| 3                                                   | 108  | 85   | 75   | 73  | 82   | 80   | 132  | 253  | 419  | 409  | 226  | 142 |      |
| 4                                                   | 105  | 85   | 74   | 69  | 88   | 81   | 130  | 272  | 428  | 405  | 227  | 139 |      |
| 5                                                   | 108  | 86   | 72   | 68  | 71   | 81   | 134  | 285  | 426  | 401  | 228  | 134 |      |
| 6                                                   | 108  | 86   | 68   | 77  | 93   | 73   | 139  | 290  | 431  | 371  | 226  | 136 |      |
| 7                                                   | 108  | 87   | 61   | 81  | 91   | 79   | 130  | 295  | 443  | 360  | 222  | 138 |      |
| 8                                                   | 108  | 91   | 64   | 81  | 88   | 85   | 130  | 301  | 446  | 367  | 220  | 137 |      |
| 9                                                   | 102  | 96   | 67   | 80  | 82   | 80   | 135  | 307  | 448  | 357  | 215  | 136 |      |
| 10                                                  | 105  | 93   | 70   | 80  | 86   | 75   | 130  | 309  | 450  | 342  | 213  | 133 |      |
| 11                                                  | 101  | 86   | 72   | 74  | 88   | 79   | 135  | 308  | 454  | 344  | 212  | 129 |      |
| 12                                                  | 102  | 83   | 71   | 81  | 87   | 83   | 137  | 303  | 464  | 349  | 211  | 120 |      |
| 13                                                  | 102  | 83   | 67   | 82  | 88   | 74   | 156  | 294  | 480  | 324  | 208  | 121 |      |
| 14                                                  | 100  | 83   | 60   | 81  | 88   | 83   | 159  | 294  | 492  | 310  | 202  | 122 |      |
| 15                                                  | 100  | 81   | 63   | 72  | 81   | 97   | 164  | 295  | 495  | 300  | 202  | 121 |      |
| 16                                                  | 98   | 84   | 72   | 69  | 71   | 100  | 174  | 308  | 491  | 293  | 197  | 120 |      |
| 17                                                  | 98   | 82   | 78   | 72  | 75   | 103  | 186  | 315  | 484  | 299  | 194  | 117 |      |
| 18                                                  | 94   | 84   | 75   | 66  | 67   | 104  | 189  | 330  | 481  | 286  | 189  | 114 |      |
| 19                                                  | 94   | 84   | 72   | 74  | 76   | 104  | 205  | 344  | 476  | 282  | 184  | 109 |      |
| 20                                                  | 94   | 87   | 70   | 81  | 76   | 96   | 220  | 348  | 467  | 283  | 178  | 111 |      |
| 21                                                  | 89   | 84   | 67   | 81  | 81   | 102  | 220  | 357  | 452  | 291  | 173  | 112 |      |
| 22                                                  | 91   | 80   | 87   | 83  | 78   | 108  | 221  | 364  | 437  | 278  | 171  | 112 |      |
| 23                                                  | 92   | 85   | 95   | 80  | 76   | 107  | 219  | 378  | 427  | 264  | 170  | 112 |      |
| 24                                                  | 91   | 86   | 96   | 78  | 94   | 104  | 216  | 382  | 426  | 268  | 166  | 108 |      |
| 25                                                  | 86   | 87   | 97   | 74  | 98   | 102  | 211  | 388  | 427  | 254  | 163  | 108 |      |
| 26                                                  | 88   | 88   | 96   | 80  | 88   | 103  | 211  | 399  | 428  | 284  | 189  | 102 |      |
| 27                                                  | 88   | 87   | 93   | 81  | 92   | 95   | 216  | 399  | 421  | 292  | 186  | 102 |      |
| 28                                                  | 88   | 89   | 84   | 79  | 81   | 113  | 216  | 393  | 417  | 249  | 182  | 103 |      |
| 29                                                  | 89   | 84   | 74   | 83  | 71   | 113  | 218  | 388  | 415  | 244  | 182  | 103 |      |
| 30                                                  | 89   | 75   | 76   | 64  | 112  | 222  | 391  | 441  | 239  | 180  | 103  |     |      |
| 31                                                  | 84   | 79   | 84   |     |      | 224  | 394  |      | 231  |      | 102  |     |      |
| hauteur mini = 60 cm première observation le 14/03  |      |      |      |     |      |      |      |      |      |      |      |     |      |
| hauteur maxi = 495 cm première observation le 15/09 |      |      |      |     |      |      |      |      |      |      |      |     |      |

| LOTIO A KLELA EN 1988                               |      |      |      |     |      |      |      |      |      |      |      |     | DNHE |
|-----------------------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|-----|------|
| HAUTEURS MOYENNES JOURNALIERES en cm                |      |      |      |     |      |      |      |      |      |      |      |     |      |
| Zero de l'échelle = non connu                       |      |      |      |     |      |      |      |      |      |      |      |     |      |
| JANV                                                | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |     |      |
| 1                                                   | 65   | 82   | 70   | 60  | 68   | 62   | 160  | 362  | 622  | 248  | 287  | 80  |      |
| 2                                                   | 65   | 82   | 68   | 60  | 83   | 95   | 162  | 385  | 565  | 238  | 283  | 80  |      |
| 3                                                   | 158  | 81   | 68   | 60  | 95   | 98   | 161  | 362  | 542  | 239  | 7    | 80  |      |
| 4                                                   | 185  | 81   | 67   | 60  | 93   | 55   | 157  | 337  | 420  | 238  | 192  | 80  |      |
| 5                                                   | 186  | 80   | 67   | 60  | 90   | 55   | 55   | 311  | 420  | 229  | 164  | 200 |      |
| 6                                                   | 182  | 80   | 67   | 60  | 88   | 55   | 62   | 298  | 376  | 220  | 233  | 205 |      |
| 7                                                   | 7    | 80   | 66   | 60  | 85   | 7    | 120  | 562  | 345  | 218  | 233  | 90  |      |
| 8                                                   | 7    | 75   | 66   | 60  | 81   | 111  | 131  | 610  | 311  | 207  | 230  | 85  |      |
| 9                                                   | 7    | 75   | 66   | 59  | 79   | 110  | 135  | 600  | 312  | 200  | 185  | 123 |      |
| 10                                                  | 80   | 75   | 66   | 58  | 78   | 108  | 142  | 582  | 323  | 190  | 183  | 150 |      |
| 11                                                  | 65   | 75   | 66   | 58  | 76   | 108  | 143  | 365  | 343  | 188  | 182  | 143 |      |
| 12                                                  | 65   | 75   | 65   | 7   | 75   | 115  | 62   | 351  | 345  | 182  | 180  | 150 |      |
| 13                                                  | 65   | 75   | 65   | 7   | 75   | 148  | 58   | 348  | 335  | 177  | 178  | 148 |      |
| 14                                                  | 67   | 78   | 63   | 62  | 74   | 148  | 59   | 345  | 314  | 173  | 178  | 66  |      |
| 15                                                  | 67   | 75   | 63   | 64  | 74   | 147  | 60   | 347  | 320  | 168  | 178  | 65  |      |
| 16                                                  | 67   | 75   | 62   | 66  | 71   | 147  | 60   | 348  | 318  | 164  | 179  | 65  |      |
| 17                                                  | 66   | 78   | 62   | 68  | 69   | 141  | 60   | 340  | 318  | 160  | 180  | 125 |      |
| 18                                                  | 65   | 78   | 62   | 69  | 68   | 132  | 60   | 331  | 317  | 181  | 180  | 132 |      |
| 19                                                  | 65   | 78   | 61   | 60  | 67   | 114  | 60   | 332  | 316  | 143  | 181  | 136 |      |
| 20                                                  | 65   | 75   | 61   | 64  | 66   | 112  | 60   | 320  | 310  | 136  | 181  | 165 |      |
| 21                                                  | 63   | 78   | 61   | 63  | 66   | 121  | 60   | 640  | 300  | 130  | 180  | 182 |      |
| 22                                                  | 7    | 75   | 61   | 62  | 65   | 112  | 60   | 641  | 298  | 128  | 180  | 180 |      |
| 23                                                  | 7    | 78   | 60   | 61  | 63   | 111  | 60   | 615  | 290  | 120  | 189  | 186 |      |
| 24                                                  | 58   | 75   | 60   | 60  | 62   | 100  | 60   | 640  | 280  | 115  | 156  | 142 |      |
| 25                                                  | 58   | 78   | 60   | 59  | 60   | 80   | 60   | 641  | 280  | 111  | 185  | 128 |      |
| 26                                                  | 55   | 78   | 59   | 7   | 60   | 62   | 60   | 642  | 280  | 108  | 184  | 126 |      |
| 27                                                  | 55   | 78   | 58   | 63  | 60   | 125  | 60   | 642  | 280  | 105  | 178  | 125 |      |
| 28                                                  | 55   | 70   | 58   | 66  | 60   | 142  | 61   | 663  | 276  | 100  | 180  | 122 |      |
| 29                                                  | 55   | 70   | 57   | 65  | 61   | 143  | 62   | 655  | 272  | 265  | 180  | 120 |      |
| 30                                                  | 7    | 57   | 65   | 61  | 140  | 63   | 635  | 266  | 276  | 7    | 118  |     |      |
| 31                                                  | 102  | 56   | 61   | 61  | 65   | 622  | 6290 |      |      |      | 115  |     |      |
| hauteur mini = 55 cm première observation le 26/01  |      |      |      |     |      |      |      |      |      |      |      |     |      |
| hauteur maxi = 663 cm première observation le 28/08 |      |      |      |     |      |      |      |      |      |      |      |     |      |

LE SIGNE + PRECEDE LES HAUTEURS RECONSTITUEES .

1bm

| NISER A KIRANGO EN 1988                             |      |      |      |     |      |      |      |      |      |      |      |     | DNHE |
|-----------------------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|-----|------|
| HAUTEURS MOYENNES JOURNALIERES en cm                |      |      |      |     |      |      |      |      |      |      |      |     |      |
| Zero de l'échelle = 274.99 m IGN                    |      |      |      |     |      |      |      |      |      |      |      |     |      |
| JANV                                                | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |     |      |
| 1                                                   | 71   | 13   | 28   | -1  | -3   | -7   | 82   | 190  | 382  | 370  | 194  | 112 |      |
| 2                                                   | 72   | 13   | 30   | 4   | -3   | -7   | 75   | 189  | 378  | 375  | 194  | 112 |      |
| 3                                                   | 72   | 13   | 30   | 16  | -3   | -7   | 64   | 192  | 372  | 376  | 193  | 110 |      |
| 4                                                   | 83   | 13   | 30   | 17  | -3   | -7   | 60   | 192  | 372  | 382  | 191  | 110 |      |
| 5                                                   | 15   | 14   | 38   | 17  | -3   | -7   | 56   | 195  | 373  | 381  | 189  | 105 |      |
| 6                                                   | 30   | 14   | 40   | 17  | -3   | -7   | 58   | 200  | 378  | 374  | 188  | 98  |      |
| 7                                                   | 49   | 14   | 40   | 16  | -4   | -7   | 58   | 204  | 384  | 371  | 182  | 98  |      |
| 8                                                   | 50   | 14   | 38   | 15  | -4   | -7   | 75   | 214  | 387  | 363  | 178  | 98  |      |
| 9                                                   | 50   | 14   | 38   | 4   | -4   | -7   | 89   | 232  | 393  | 355  | 175  | 98  |      |
| 10                                                  | 50   | 22   | 40   | -2  | -4   | -7   | 94   | 254  | 398  | 341  | 175  | 96  |      |
| 11                                                  | 50   | 29   | 33   | -2  | -4   | -7   | 105  | 255  | 409  | 328  | 175  | 96  |      |
| 12                                                  | 50   | 29   | 26   | -2  | -3   | -7   | 116  | 255  | 418  | 321  | 174  | 94  |      |
| 13                                                  | 50   | 29   | 25   | -1  | -3   | -8   | 116  | 263  | 416  | 317  | 174  | 92  |      |
| 14                                                  | 49   | 28   | 17   | -1  | -3   | -8   | 116  | 270  | 417  | 300  | 174  | 68  |      |
| 15                                                  | 50   | 28   | 6    | -1  | -3   | -8   | 116  | 272  | 419  | 288  | 174  | 68  |      |
| 16                                                  | 48   | 28   | -1   | -2  | -3   | -8   | 122  | 266  | 421  | 290  | 172  | 78  |      |
| 17                                                  | 49   | 29   | 0    | -2  | 9    | -8   | 136  | 261  | 434  | 288  | 172  | 82  |      |
| 18                                                  | 50   | 29   | 0    | -2  | 13   | -8   | 143  | 261  | 447  | 282  | 167  | 82  |      |
| 19                                                  | 49   | 22   | -1   | -2  | 13   | -7   | 150  | 264  | 453  | 264  | 158  | 75  |      |
| 20                                                  | 49   | 15   | -1   | -2  | 3    | -7   | 158  | 271  | 453  | 246  | 158  | 68  |      |
| 21                                                  | 49   | 15   | -2   | 0   | -4   | -7   | 162  | 298  | 451  | 245  | 158  | 58  |      |
| 22                                                  | 49   | 15   | -3   | 12  | -4   | -7   | 162  | 338  | 449  | 241  | 150  | 58  |      |
| 23                                                  | 50   | 15   | -3   | 19  | -5   | -7   | 175  | 339  | 440  | 236  | 142  | 81  |      |
| 24                                                  | 49   | 15   | 4    | 15  | -5   | 3    | 191  | 327  | 431  | 234  | 138  | 42  |      |
| 25                                                  | 48   | 15   | 15   | 11  | -8   | 20   | 199  | 327  | 422  | 236  | 130  | 42  |      |
| 26                                                  | 47   | 16   | 14   | 8   | -5   | 30   | 202  | 341  | 402  | 229  | 130  | 42  |      |
| 27                                                  | 26   | 14   | 14   | -3  | -4   | 61   | 202  | 359  | 394  | 217  | 129  | 44  |      |
| 28                                                  | 12   | 14   | 14   | -3  | -6   | 67   | 202  | 364  | 383  | 213  | 132  | 44  |      |
| 29                                                  | 12   | 14   | -1   | -2  | -6   | 84   | 192  | 377  | 379  | 204  | 128  | 44  |      |
| 30                                                  | 13   | -1   | -3   | -6  | 82   | 193  | 384  | 378  | 199  | 123  | 44   |     |      |
| 31                                                  | 13   | -1   |      | -6  | 190  | 387  |      | 198  |      |      | 44   |     |      |
| hauteur mini = -8 cm première observation le 13/06  |      |      |      |     |      |      |      |      |      |      |      |     |      |
| hauteur maxi = 453 cm première observation le 19/09 |      |      |      |     |      |      |      |      |      |      |      |     |      |

LE SIGNE + PRECEDE LES HAUTEURS RECONSTITUEES .

1bm

| NISER A KIRANGO EN 1988 |  |  |
|-------------------------|--|--|
|-------------------------|--|--|

| BADULE A KOKALA EN 1988                                  |      |      |      |     |      |      |      |      |      |      |      |    | DNHE |
|----------------------------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|----|------|
| HAUTEURS MOYENNES JOURNALIERES en cm                     |      |      |      |     |      |      |      |      |      |      |      |    |      |
| Zéro de l'échelle = non connu                            |      |      |      |     |      |      |      |      |      |      |      |    |      |
| JANV                                                     | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |    |      |
| 1                                                        | 34   | 20   | 2    | -22 | -43  | -87  | 46   | 248  | 436  | 398  | 188  | 74 |      |
| 2                                                        | 34   | 20   | 2    | -22 | -43  | -60  | 119  | 258  | 448  | 395  | 182  | 72 |      |
| 3                                                        | 33   | 20   | 1    | -23 | -44  | -60  | 103  | 262  | 443  | 387  | 145  | 71 |      |
| 4                                                        | 33   | 19   | 1    | -23 | -44  | -61  | 102  | 265  | 430  | 378  | 134  | 68 |      |
| 5                                                        | 32   | 19   | 0    | -24 | -45  | -62  | 84   | 248  | 419  | 365  | 130  | 66 |      |
| 6                                                        | 32   | 19   | 0    | -25 | -46  | -68  | 79   | 227  | 392  | 357  | 127  | 65 |      |
| 7                                                        | 32   | 18   | 0    | -26 | -47  | -69  | 78   | 216  | 388  | 342  | 122  | 64 |      |
| 8                                                        | 31   | 17   | -1   | -27 | -47  | -61  | 78   | 228  | 378  | 331  | 118  | 63 |      |
| 9                                                        | 31   | 16   | -2   | -27 | -48  | -62  | 145  | 220  | 368  | 320  | 114  | 62 |      |
| 10                                                       | 31   | 16   | -3   | -28 | -49  | -63  | 142  | 198  | 410  | 318  | 110  | 60 |      |
| 11                                                       | 30   | 14   | -4   | -29 | -50  | -64  | 232  | 198  | 412  | 307  | 108  | 58 |      |
| 12                                                       | 30   | 14   | -5   | -30 | -52  | -64  | 228  | 194  | 409  | 297  | 105  | 58 |      |
| 13                                                       | 29   | 15   | -6   | -31 | -52  | -65  | 225  | 188  | 408  | 293  | 102  | 56 |      |
| 14                                                       | 29   | 14   | -6   | -32 | -53  | -65  | 192  | 187  | 407  | 284  | 102  | 56 |      |
| 15                                                       | 28   | 13   | -7   | -33 | -53  | -63  | 174  | 185  | 405  | 278  | 102  | 55 |      |
| 16                                                       | 28   | 12   | -8   | -34 | -53  | -63  | 161  | 189  | 402  | 264  | 99   | 54 |      |
| 17                                                       | 27   | 12   | -9   | -34 | -54  | -61  | 158  | 191  | 402  | 260  | 99   | 54 |      |
| 18                                                       | 26   | 10   | -10  | -35 | -54  | -48  | 148  | 193  | 413  | 256  | 98   | 54 |      |
| 19                                                       | 26   | 9    | -11  | -36 | -55  | -42  | 152  | 195  | 415  | 253  | 98   | 53 |      |
| 20                                                       | 25   | 9    | -12  | -37 | -55  | 59   | 181  | 196  | 418  | 246  | 95   | 52 |      |
| 21                                                       | 25   | 8    | -12  | -37 | -56  | 54   | 182  | 197  | 426  | 238  | 93   | 52 |      |
| 22                                                       | 25   | 7    | -13  | -38 | -57  | 47   | 182  | 198  | 430  | 228  | 91   | 50 |      |
| 23                                                       | 24   | 6    | -14  | -38 | -58  | 48   | 180  | 200  | 439  | 223  | 89   | 49 |      |
| 24                                                       | 24   | 6    | -15  | -39 | -59  | 48   | 177  | 205  | 434  | 216  | 86   | 48 |      |
| 25                                                       | 24   | 5    | -16  | -39 | -60  | 50   | 178  | 221  | 428  | 207  | 84   | 48 |      |
| 26                                                       | 23   | 4    | -17  | -40 | -60  | 52   | 174  | 226  | 419  | 198  | 81   | 48 |      |
| 27                                                       | 23   | 3    | -18  | -41 | -63  | 55   | 168  | 319  | 410  | 192  | 80   | 47 |      |
| 28                                                       | 22   | 2    | -19  | -42 | -64  | 53   | 165  | 328  | 407  | 185  | 78   | 46 |      |
| 29                                                       | 22   | 2    | -19  | -43 | -66  | 51   | 161  | 360  | 395  | 178  | 77   | 45 |      |
| 30                                                       | 21   | -20  | -43  | -58 | 46   | 212  | 388  | 392  | 171  | 78   | 45   |    |      |
| 31                                                       | 21   | -21  | -59  |     |      | 225  | 420  |      | 165  |      |      |    |      |
| hauteur mini = -65 cm      première observation le 13/06 |      |      |      |     |      |      |      |      |      |      |      |    |      |
| hauteur maxi = 456 cm      première observation le 01/09 |      |      |      |     |      |      |      |      |      |      |      |    |      |

LE SIGNE + PRECEDE LES HAUTEURS RECONSTITUEES .

15m

| KOLI KOLI A KORIENTZE EN 1988                            |      |      |      |     |      |      |      |      |      |      |      |     | DNHE |
|----------------------------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|-----|------|
| HAUTEURS MOYENNES JOURNALIERES en cm                     |      |      |      |     |      |      |      |      |      |      |      |     |      |
| Zéro de l'échelle = 257.23 m IGN                         |      |      |      |     |      |      |      |      |      |      |      |     |      |
| JANV                                                     | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |     |      |
| 1                                                        | 160  | 79   | 836  | 18  | .    | .    | .    | 63   | 291  | 337  | 359  | 283 |      |
| 2                                                        | 187  | 77   | 833  | 16  | .    | .    | .    | 74   | 285  | 339  | 357  | 280 |      |
| 3                                                        | 154  | 76   | 833  | 15  | .    | .    | .    | 86   | 261  | 340  | 356  | 277 |      |
| 4                                                        | 181  | 74   | 832  | 13  | .    | .    | .    | 101  | 265  | 342  | 356  | 273 |      |
| 5                                                        | 149  | 73   | 31   | 10  | .    | .    | .    | 107  | 269  | 344  | 354  | 270 |      |
| 6                                                        | 146  | 72   | 30   | 7   | .    | .    | .    | 117  | 273  | 346  | 354  | 268 |      |
| 7                                                        | 143  | 70   | 28   | 5   | .    | .    | .    | 124  | 278  | 347  | 352  | 263 |      |
| 8                                                        | 139  | 68   | 27   | 4   | .    | .    | .    | 130  | 279  | 349  | 350  | 259 |      |
| 9                                                        | 136  | 67   | 26   | 2   | .    | .    | .    | 136  | 283  | 350  | 347  | 257 |      |
| 10                                                       | 131  | 64   | 26   | 1   | .    | .    | .    | 145  | 286  | 351  | 347  | 254 |      |
| 11                                                       | 128  | 62   | 26   | 1   | .    | .    | .    | 152  | 287  | 353  | 346  | 250 |      |
| 12                                                       | 123  | 61   | 25   | 2   | .    | .    | .    | 159  | 289  | 353  | 343  | 246 |      |
| 13                                                       | 120  | 60   | 24   | 1   | .    | .    | .    | 164  | 294  | 354  | 340  | 241 |      |
| 14                                                       | 117  | 58   | 27   | .   | .    | .    | .    | 171  | 298  | 356  | 336  | 236 |      |
| 15                                                       | 115  | 55   | 29   | .   | .    | .    | .    | 176  | 306  | 357  | 334  | 232 |      |
| 16                                                       | 113  | 53   | 28   | .   | .    | .    | .    | 185  | 308  | 357  | 331  | 227 |      |
| 17                                                       | 110  | 50   | 27   | .   | .    | .    | .    | 197  | 310  | 358  | 327  | 224 |      |
| 18                                                       | 107  | 49   | 26   | .   | .    | .    | .    | 203  | 312  | 356  | 324  | 219 |      |
| 19                                                       | 105  | 47   | 25   | .   | .    | .    | .    | 208  | 315  | 357  | 319  | 216 |      |
| 20                                                       | 103  | 44   | 24   | .   | .    | .    | .    | 211  | 317  | 361  | 315  | 215 |      |
| 21                                                       | 100  | 43   | 22   | .   | .    | .    | .    | 214  | 319  | 363  | 312  | 212 |      |
| 22                                                       | 100  | 42   | 20   | .   | .    | .    | .    | 218  | 321  | 360  | 310  | 208 |      |
| 23                                                       | 100  | 40   | 18   | .   | .    | .    | .    | 222  | 324  | 358  | 308  | 205 |      |
| 24                                                       | 99   | 40   | 16   | .   | .    | .    | .    | 224  | 326  | 359  | 306  | 201 |      |
| 25                                                       | 97   | 38   | 15   | .   | .    | .    | .    | 12   | 227  | 326  | 361  | 304 | 200  |
| 26                                                       | 96   | 37   | 14   | .   | .    | .    | .    | 19   | 229  | 327  | 360  | 302 | 196  |
| 27                                                       | 93   | 39   | 18   | .   | .    | .    | .    | 27   | 231  | 329  | 360  | 300 | 191  |
| 28                                                       | 89   | 40   | 21   | .   | .    | .    | .    | 35   | 235  | 331  | 362  | 296 | 188  |
| 29                                                       | 87   | 38   | 23   | .   | .    | .    | .    | 43   | 240  | 333  | 359  | 293 | 185  |
| 30                                                       | 82   | 23   | .    | .   | .    | .    | .    | 50   | 245  | 335  | 357  | 287 | 181  |
| 31                                                       | 80   | 20   | .    | .   | .    | .    | .    | 56   | 247  |      | 359  |     | 177  |
| hauteur mini = à sec      première observation le 14/04  |      |      |      |     |      |      |      |      |      |      |      |     |      |
| hauteur maxi = 363 cm      première observation le 21/10 |      |      |      |     |      |      |      |      |      |      |      |     |      |

LE SIGNE + PRECEDE LES HAUTEURS RECONSTITUEES .  
LE SIGNE - INDIQUE L'ABSENCE D'ECOULEMENT .

15m

| BANIFINS A KOLONDIÉBA EN 1988                            |      |      |      |     |      |      |      |      |      |      |      |    | DNHE |
|----------------------------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|----|------|
| HAUTEURS MOYENNES JOURNALIERES en cm                     |      |      |      |     |      |      |      |      |      |      |      |    |      |
| Zéro de l'échelle = non connu                            |      |      |      |     |      |      |      |      |      |      |      |    |      |
| JANV                                                     | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |    |      |
| 1                                                        | 71   | 60   | .    | .   | .    | 211  | 8370 | 8504 | 8394 | 172  | 100  |    |      |
| 2                                                        | 71   | 60   | .    | .   | .    | 162  | 375  | 509  | 329  | 171  | 99   |    |      |
| 3                                                        | 70   | 59   | .    | .   | .    | 173  | 366  | 503  | 321  | 164  | 98   |    |      |
| 4                                                        | 70   | 59   | .    | .   | .    | 144  | 345  | 496  | 308  | 161  | 96   |    |      |
| 5                                                        | 69   | 59   | .    | .   | .    | 134  | 334  | 488  | 297  | 154  | 95   |    |      |
| 6                                                        | 68   | 58   | .    | .   | .    | 1124 | 298  | 488  | 285  | 151  | 93   |    |      |
| 7                                                        | 67   | 58   | .    | .   | .    | 118  | 290  | 810  | 273  | 146  | 92   |    |      |
| 8                                                        | 66   | 57   | .    | .   | .    | 140  | 267  | 830  | 261  | 146  | 90   |    |      |
| 9                                                        | 66   | 57   | .    | .   | .    | 170  | 244  | 840  | 253  | 144  | 89   |    |      |
| 10                                                       | 65   | 57   | .    | .   | .    | 1182 | 221  | 860  | 243  | 142  | 88   |    |      |
| 11                                                       | 65   | .    | .    | .   | .    | 1194 | 235  | 880  | 235  | 138  | 87   |    |      |
| 12                                                       | 65   | .    | .    | .   | .    | 1176 | 230  | 600  | 228  | 135  | 86   |    |      |
| 13                                                       | 64   | .    | .    | .   | .    | 128  | 261  | 897  | 220  | 133  | 85   |    |      |
| 14                                                       | 64   | .    | .    | .   | .    | 138  | 244  | 893  | 218  | 130  | 84   |    |      |
| 15                                                       | 64   | .    | .    | .   | .    | 143  | 230  | 893  | 209  | 128  | 83   |    |      |
| 16                                                       | 64   | .    | .    | .   | .    | 149  | 254  | 893  | 204  | 126  | 82   |    |      |
| 17                                                       | 63   | .    | .    | .   | .    | 187  | 249  | 894  | 204  | 128  | 82   |    |      |
| 18                                                       | 63   | .    | .    | .   | .    | 230  | 230  | 893  | 200  | 123  | 80   |    |      |
| 19                                                       | 63   | .    | .    | .   | .    | 269  | 262  | 891  | 200  | 121  | 80   |    |      |
| 20                                                       | 63   | .    | .    | .   | .    | 278  | 266  | 887  | 215  | 120  | 81   |    |      |
| 21                                                       | 63   | .    | .    | .   | .    | 295  | 275  | 874  | 215  | 118  | 81   |    |      |
| 22                                                       | 63   | .    | .    | .   | .    | 295  | 280  | 854  | 212  | 118  | 78   |    |      |
| 23                                                       | 63   | .    | .    | .   | .    | 67   | 286  | 276  | 834  | 210  | 113  | 78 |      |
| 24                                                       | 62   | .    | .    | .   | .    | 128  | 263  | 883  | 819  | 208  | 110  | 77 |      |
| 25                                                       | 62   | .    | .    | .   | .    | 1124 | 290  | 8316 | 492  | 201  | 108  | 76 |      |
| 26                                                       | 62   | .    | .    | .   | .    | 167  | 322  | 345  | 472  | 195  | 104  | 75 |      |
| 27                                                       | 62   | .    | .    | .   | .    | 120  | 335  | 398  | 447  | 189  | 104  | 74 |      |
| 28                                                       | 61   | .    | .    | .   | .    | 172  | 307  | 477  | 429  | 182  | 102  | 73 |      |
| 29                                                       | 61   | .    | .    | .   | .    | 144  | 310  | 803  | 398  | 174  | 100  | 73 |      |
| 30                                                       | 61   | .    | .    | .   | .    | 116  | 8335 | 803  | 380  | 174  | 100  | 72 |      |
| 31                                                       | 60   | .    | .    | .   | .    | 365  | 803  |      | 172  |      |      | 72 |      |
| hauteur mini = à sec      première observation le 11/02  |      |      |      |     |      |      |      |      |      |      |      |    |      |
| hauteur maxi = 600 cm      première observation le 12/09 |      |      |      |     |      |      |      |      |      |      |      |    |      |

LE SIGNE + PRECEDE LES HAUTEURS RECONSTITUEES .  
LE SIGNE - INDIQUE L'ABSENCE D'ECOULEMENT .

15m

| BANIFINS A KOLONDIÉBA EN 1988                        |      |      |      |      |      |      |      |      |      |      |      | DNHE |      |
|------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| DEBITS MOYENS JOURNALIERS en m3/s                    |      |      |      |      |      |      |      |      |      |      |      |      |      |
| ~~~~~                                                |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Surface = 3050 km2                                   |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                                                      | JANV | FEVR | MARS | AVRI | MAI  | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                                    | .280 | .121 | .000 | .000 | .000 | .000 | 10.1 | 29.8 | 50.4 | 27.9 | 5.91 | 1.34 |      |
| 2                                                    | .280 | .121 | .000 | .000 | .000 | .000 | 4.98 | 30.5 | 50.9 | 27.3 | 5.80 | 1.30 |      |
| 3                                                    | .250 | .110 | .000 | .000 | .000 | .000 | 4.00 | 29.2 | 49.9 | 23.2 | 5.29 | 1.25 |      |
| 4                                                    | .250 | .110 | .000 | .000 | .000 | .000 | 3.64 | 26.4 | 48.8 | 21.6 | 4.78 | 1.17 |      |
| 5                                                    | .235 | .110 | .000 | .000 | .000 | .000 | 3.05 | 24.9 | 47.6 | 20.2 | 4.44 | 1.13 |      |
| 6                                                    | .221 | .100 | .000 | .000 | .000 | .000 | 2.60 | 20.3 | 47.6 | 18.7 | 4.10 | 1.05 |      |
| 7                                                    | .207 | .100 | .000 | .000 | .000 | .000 | 2.18 | 19.3 | 51.0 | 17.2 | 3.78 | 1.01 |      |
| 8                                                    | .193 | .090 | .000 | .000 | .000 | .000 | 3.41 | 16.5 | 54.2 | 15.8 | 3.78 | .932 |      |
| 9                                                    | .193 | .090 | .000 | .000 | .000 | .000 | 6.70 | 13.8 | 55.8 | 14.9 | 3.46 | .893 |      |
| 10                                                   | .180 | .090 | .000 | .000 | .000 | .000 | 6.95 | 11.2 | 59.0 | 13.7 | 3.53 | .858 |      |
| 11                                                   | .180 | .000 | .000 | .000 | .000 | .000 | 8.22 | 12.8 | 62.2 | 12.8 | 3.29 | .818 |      |
| 12                                                   | .180 | .000 | .000 | .000 | .000 | .000 | 4.32 | 12.2 | 65.5 | 12.0 | 3.11 | .781 |      |
| 13                                                   | .167 | .000 | .000 | .000 | .000 | .000 | 2.71 | 15.8 | 65.0 | 11.1 | 3.00 | .745 |      |
| 14                                                   | .167 | .000 | .000 | .000 | .000 | .000 | 3.29 | 13.8 | 64.4 | 10.5 | 2.83 | .708 |      |
| 15                                                   | .167 | .000 | .000 | .000 | .000 | .000 | 3.59 | 14.5 | 64.4 | 9.88 | 2.71 | .673 |      |
| 16                                                   | .167 | .000 | .000 | .000 | .000 | .000 | 3.97 | 15.2 | 64.4 | 9.30 | 2.60 | .638 |      |
| 17                                                   | .155 | .000 | .000 | .000 | .000 | .000 | 7.48 | 14.4 | 64.8 | 9.30 | 2.55 | .638 |      |
| 18                                                   | .155 | .000 | .000 | .000 | .000 | .000 | 12.2 | 14.5 | 64.7 | 8.87 | 2.44 | .609 |      |
| 19                                                   | .155 | .000 | .000 | .000 | .000 | .000 | 16.8 | 15.9 | 64.0 | 8.87 | 2.34 | .569 |      |
| 20                                                   | .155 | .000 | .000 | .000 | .000 | .000 | 17.8 | 16.4 | 63.4 | 10.5 | 2.29 | .603 |      |
| 21                                                   | .155 | .000 | .000 | .000 | .000 | .000 | 19.9 | 17.5 | 61.3 | 10.5 | 2.18 | .603 |      |
| 22                                                   | .155 | .000 | .000 | .000 | .000 | .000 | 19.9 | 18.1 | 58.0 | 10.2 | 2.03 | .581 |      |
| 23                                                   | .155 | .000 | .000 | .000 | .000 | .000 | 207  | 18.8 | 17.6 | 54.8 | 10.0 | 1.93 | .581 |
| 24                                                   | .143 | .000 | .000 | .000 | .000 | .000 | 2.71 | 16.0 | 18.5 | 52.4 | 9.74 | 1.79 | .468 |
| 25                                                   | .143 | .000 | .000 | .000 | .000 | .000 | 2.50 | 19.3 | 22.6 | 48.2 | 8.98 | 1.70 | .436 |
| 26                                                   | .143 | .000 | .000 | .000 | .000 | .000 | 5.39 | 23.4 | 26.4 | 45.1 | 8.33 | 1.60 | .404 |
| 27                                                   | .143 | .000 | .000 | .000 | .000 | .000 | 2.29 | 25.1 | 33.7 | 41.2 | 7.69 | 1.51 | .372 |
| 28                                                   | .132 | .000 | .000 | .000 | .000 | .000 | 5.91 | 21.4 | 45.8 | 38.4 | 6.95 | 1.43 | .341 |
| 29                                                   | .132 | .000 | .000 | .000 | .000 | .000 | 3.66 | 21.8 | 49.9 | 33.7 | 6.32 | 1.34 | .341 |
| 30                                                   | .132 | .000 | .000 | .000 | .000 | .000 | 2.08 | 25.1 | 49.9 | 31.2 | 6.11 | 1.34 | .310 |
| 31                                                   | .121 | .000 | .000 | .000 | .000 | .000 | 29.1 | 49.9 |      | 5.91 |      |      | .310 |
| Moy                                                  | .177 | .034 | .000 | .000 | .000 | .000 | .825 | 12.0 | 23.1 | 54.1 | 12.6 | 2.97 | .718 |
| Débit mini = .000 m3/s première observation le 11/02 |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Débit maxi = 65.5 m3/s première observation le 12/09 |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Débit moyen annuel = 8.88 m3/s                       |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lame d'eau écoulée = 72 mm                           |      |      |      |      |      |      |      |      |      |      |      |      |      |

| BANIFINS A KORODOUGOU MARKA EN 1988                 |      |      |      |      |      |      |      |      |      |      |      |      |
|-----------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm                |      |      |      |      |      |      |      |      |      |      |      |      |
| Zéro de l'échelle = non connu                       |      |      |      |      |      |      |      |      |      |      |      |      |
|                                                     | JANV | FEVR | MARS | AVRI | MAI  | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |
| 1                                                   | 70   | 44   | 13   | -18  | 8-44 | 8-71 | 148  | 197  | 8497 | 831  | 308  | 97   |
| 2                                                   | 69   | 42   | 12   | 8-19 | -45  | -72  | 8143 | 8200 | 8818 | 8828 | 8298 | 898  |
| 3                                                   | 68   | 40   | 11   | -20  | -46  | 8-73 | 141  | 204  | 8833 | 828  | 282  | -92  |
| 4                                                   | 67   | 40   | 10   | 8-21 | -47  | -73  | 8140 | 8218 | 844  | 8821 | 8271 | 890  |
| 5                                                   | 66   | 39   | 8    | -22  | 8-48 | 8-74 | 138  | 226  | 882  | 818  | 288  | 88   |
| 6                                                   | 65   | 38   | 8    | 8-23 | -49  | 8-74 | 8142 | 8232 | 8883 | 8816 | 8246 | 886  |
| 7                                                   | 72   | 37   | 7    | -24  | 8-50 | -75  | 145  | 238  | 884  | 814  | 234  | 84   |
| 8                                                   | 880  | 836  | 6    | 8-28 | -51  | 8-76 | 8188 | 8236 | 8860 | 8810 | 8223 | 883  |
| 9                                                   | 85   | 38   | 5    | -26  | 8-52 | -77  | 161  | 234  | 888  | 808  | 213  | 81   |
| 10                                                  | 89   | 34   | 4    | 8-27 | -83  | 8-77 | 8164 | 8240 | 8870 | 8804 | 8204 | 880  |
| 11                                                  | 89   | 33   | 3    | -28  | 8-84 | -78  | 167  | 8246 | 871  | 8800 | 198  | 78   |
| 12                                                  | 887  | 131  | 1    | 8-29 | -58  | 8-77 | 8173 | 284  | 8873 | 496  | 8187 | 877  |
| 13                                                  | 85   | 29   | -1   | -30  | 8-56 | 8-76 | 8179 | 8262 | 876  | 8492 | 180  | 78   |
| 14                                                  | 882  | 28   | -2   | 8-31 | -86  | -83  | 184  | 268  | 8876 | 489  | 8174 | 873  |
| 15                                                  | 79   | 827  | -3   | -32  | 8-87 | 184  | 8187 | 8310 | 876  | 8488 | 168  | 72   |
| 16                                                  | 78   | 26   | 8-4  | 8-33 | -58  | 8165 | 8189 | 343  | 8874 | 482  | 8162 | 870  |
| 17                                                  | 70   | 26   | -4   | -34  | 8-58 | 176  | 191  | 8382 | 872  | 8479 | 187  | 69   |
| 18                                                  | 867  | 25   | 8-8  | 8-38 | -89  | 8174 | 8190 | 344  | 8871 | 479  | 8181 | 868  |
| 19                                                  | 65   | 824  | -6   | -36  | 8-89 | 173  | 186  | 8372 | 870  | 468  | 148  | 67   |
| 20                                                  | 68   | 23   | 8-7  | 8-37 | -60  | 8168 | 8184 | 381  | 8868 | 4462 | 8139 | 866  |
| 21                                                  | 64   | 822  | 8-7  | -38  | 8-61 | 161  | 181  | 8396 | 868  | 8487 | 134  | 68   |
| 22                                                  | 864  | 21   | -8   | 8-39 | -62  | 8187 | 8182 | 411  | 8860 | 8449 | 8129 | 868  |
| 23                                                  | 63   | 19   | 8-9  | -40  | 8-63 | 182  | 192  | 8422 | 888  | 8441 | 129  | 64   |
| 24                                                  | 62   | 18   | -10  | 8-60 | -64  | 8186 | 8208 | 434  | 8888 | 8433 | 8122 | 863  |
| 25                                                  | 60   | 817  | 8-11 | -41  | 8-68 | 188  | 212  | 8440 | 882  | 428  | 118  | 62   |
| 26                                                  | 860  | 16   | -12  | 8-41 | -66  | 8188 | 8208 | 8448 | 8850 | 8411 | 8118 | 864  |
| 27                                                  | 89   | 16   | 8-13 | -42  | -67  | 183  | 204  | 482  | 847  | 399  | 111  | 68   |
| 28                                                  | 88   | 816  | -14  | 8-42 | -68  | 8180 | 8199 | 8482 | 8842 | 8378 | 8109 | 867  |
| 29                                                  | 87   | 15   | 8-18 | -43  | -69  | 147  | 194  | 482  | 841  | 361  | 8106 | 69   |
| 30                                                  | 86   |      | -16  | 8-43 | -70  | 8146 | 8193 | 8460 | 837  | 8341 | 102  | 69   |
| 31                                                  | 880  |      | 8-17 | -70  |      |      | 191  | 8478 |      | 321  |      | 69   |
| hauteur mini = -78 cm première observation le 11/06 |      |      |      |      |      |      |      |      |      |      |      |      |
| hauteur maxi = 876 cm première observation le 14/09 |      |      |      |      |      |      |      |      |      |      |      |      |

LE SIGNE 8 PRECEDE LES HAUTEURS RECONSTITUEES .

1bm

| NISER A KORYOUME EN 1988             |      |      |      |      |     |      |      |      |      |      |      |      | DNHE                          |
|--------------------------------------|------|------|------|------|-----|------|------|------|------|------|------|------|-------------------------------|
| HAUTEURS MOYENNES JOURNALIERES en cm |      |      |      |      |     |      |      |      |      |      |      |      |                               |
| Zéro de l'échelle = 286.19 m IGN     |      |      |      |      |     |      |      |      |      |      |      |      |                               |
|                                      | JANV | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |                               |
| 1                                    | 266  | 136  | 97   | 28   | -21 | -51  | -67  | 126  | 300  | 393  | 431  | 409  |                               |
| 2                                    | 261  | 133  | 93   | 28   | -22 | -52  | -67  | 134  | 304  | 395  | 432  | 406  |                               |
| 3                                    | 288  | 128  | 92   | 27   | -23 | -53  | -67  | 142  | 310  | 396  | 433  | 408  |                               |
| 4                                    | 283  | 125  | 91   | 23   | -24 | -53  | -67  | 180  | 314  | 398  | 433  | 402  |                               |
| 5                                    | 248  | 123  | 91   | 22   | -24 | -54  | -67  | 187  | 318  | 403  | 434  | 400  |                               |
| 6                                    | 246  | 121  | 49   | 19   | -24 | -53  | -67  | 169  | 322  | 404  | 434  | 397  |                               |
| 7                                    | 245  | 110  | 47   | 13   | -23 | -56  | -67  | 177  | 325  | 405  | 434  | 393  |                               |
| 8                                    | 239  | 112  | 43   | 11   | -23 | -57  | -61  | 182  | 329  | 407  | 434  | 389  |                               |
| 9                                    | 234  | 106  | 41   | 8    | -24 | -58  | -60  | 188  | 333  | 408  | 434  | 386  |                               |
| 10                                   | 229  | 101  | 39   | 2    | -25 | -59  | -58  | 198  | 336  | 408  | 434  | 379  |                               |
| 11                                   | 226  | 99   | 37   | 0    | -26 | -59  | -44  | 204  | 339  | 409  | 434  | 374  |                               |
| 12                                   | 223  | 97   | 33   | -2   | -28 | -57  | -38  | 211  | 343  | 412  | 434  | 371  |                               |
| 13                                   | 218  | 96   | 31   | -8   | -29 | -56  | -27  | 214  | 346  | 414  | 434  | 369  |                               |
| 14                                   | 213  | 94   | 33   | -7   | -29 | -56  | -20  | 219  | 349  | 418  | 433  | 363  |                               |
| 15                                   | 209  | 91   | 33   | -8   | -30 | -56  | -9   | 225  | 356  | 416  | 432  | 360  |                               |
| 16                                   | 205  | 87   | 34   | -9   | -31 | -57  | 1    | 232  | 357  | 418  | 432  | 356  |                               |
| 17                                   | 199  | 83   | 33   | -11  | -32 | -58  | 14   | 236  | 359  | 419  | 431  | 352  |                               |
| 18                                   | 190  | 80   | 32   | -12  | -34 | -60  | 25   | 242  | 364  | 420  | 429  | 350  |                               |
| 19                                   | 184  | 77   | 32   | -13  | -35 | -61  | 34   | 247  | 367  | 421  | 427  | 346  |                               |
| 20                                   | 180  | 74   | 32   | -14  | -37 | -61  | 34   | 254  | 369  | 423  | 425  | 342  |                               |
| 21                                   | 177  | 72   | 32   | -15  | -38 | -62  | 41   | 260  | 372  | 423  | 423  | 338  |                               |
| 22                                   | 170  | 71   | 32   | -16  | -39 | -63  | 44   | 263  | 375  | 424  | 422  | 330  |                               |
| 23                                   | 164  | 70   | 31   | -16  | -41 | -63  | 83   | 268  | 377  | 425  | 422  | 326  |                               |
| 24                                   | 163  | 69   | 31   | -15  | -42 | -64  | 60   | 272  | 379  | 425  | 421  | 323  |                               |
| 25                                   | 160  | 67   | 30   | -14  | -43 | -64  | 70   | 274  | 380  | 426  | 419  | 319  |                               |
| 26                                   | 157  | 62   | 29   | -14  | -44 | -64  | 80   | 278  | 382  | 427  | 418  | 317  |                               |
| 27                                   | 154  | 60   | 29   | -15  | -45 | -65  | 85   | 281  | 384  | 428  | 417  | 314  |                               |
| 28                                   | 151  | 57   | 30   | -17  | -46 | -65  | 93   | 285  | 386  | 429  | 415  | 311  |                               |
| 29                                   | 144  | 57   | 31   | -18  | -47 | -66  | 104  | 288  | 389  | 429  | 413  | 306  |                               |
| 30                                   | 143  |      | 31   | -19  | -48 | -66  | 114  | 292  | 392  | 430  | 411  | 303  |                               |
| 31                                   | 141  |      | 29   | -49  |     |      | 124  | 297  |      | 430  |      | 300  |                               |
| hauteur mini = -67 cm                |      |      |      |      |     |      |      |      |      |      |      |      | première observation le 01/07 |
| hauteur maxi = 434 cm                |      |      |      |      |     |      |      |      |      |      |      |      | première observation le 05/11 |

| NIGER A LABBEZANGA EN 1988                          |      |      |      |      |     |      |      |      |      |      |      |      | DNHE |
|-----------------------------------------------------|------|------|------|------|-----|------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm                |      |      |      |      |     |      |      |      |      |      |      |      |      |
| Zéro de l'échelle = 226.63 m IGN                    |      |      |      |      |     |      |      |      |      |      |      |      |      |
|                                                     | JANV | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                                   | 219  | 185  | 151  | 123  | 108 | 85   | 66   | 78   | 199  | 218  | 228  | 8237 |      |
| 2                                                   | 218  | 184  | 150  | 123  | 108 | 85   | 67   | 80   | 200  | 219  | 228  | 8237 |      |
| 3                                                   | 217  | 183  | 150  | 123  | 108 | 84   | 69   | 92   | 201  | 219  | 229  | 8237 |      |
| 4                                                   | 216  | 182  | 149  | 123  | 106 | 83   | 67   | 98   | 201  | 219  | 229  | 8237 |      |
| 5                                                   | 215  | 181  | 148  | 123  | 106 | 82   | 68   | 94   | 202  | 220  | 229  | 8237 |      |
| 6                                                   | 213  | 180  | 147  | 123  | 106 | 81   | 65   | 139  | 203  | 220  | 229  | 8237 |      |
| 7                                                   | 212  | 179  | 146  | 122  | 105 | 81   | 64   | 137  | 204  | 220  | 230  | 8237 |      |
| 8                                                   | 211  | 178  | 144  | 122  | 103 | 81   | 64   | 142  | 205  | 221  | 230  | 8237 |      |
| 9                                                   | 209  | 177  | 144  | 121  | 103 | 82   | 68   | 135  | 206  | 221  | 230  | 8237 |      |
| 10                                                  | 208  | 176  | 143  | 121  | 101 | 82   | 78   | 135  | 206  | 221  | 231  | 8237 |      |
| 11                                                  | 207  | 175  | 142  | 122  | 101 | 82   | 83   | 139  | 208  | 222  | 231  | 8237 |      |
| 12                                                  | 206  | 173  | 141  | 123  | 100 | 82   | 84   | 148  | 209  | 222  | 231  | 8236 |      |
| 13                                                  | 205  | 171  | 140  | 121  | 100 | 80   | 82   | 150  | 210  | 222  | 232  | 8236 |      |
| 14                                                  | 204  | 169  | 138  | 120  | 99  | 79   | 86   | 155  | 210  | 223  | 232  | 8236 |      |
| 15                                                  | 203  | 168  | 136  | 119  | 99  | 78   | 85   | 166  | 210  | 223  | 232  | 8234 |      |
| 16                                                  | 202  | 167  | 134  | 119  | 98  | 77   | 83   | 177  | 211  | 223  | 233  | 8234 |      |
| 17                                                  | 201  | 166  | 134  | 118  | 97  | 76   | 80   | 178  | 211  | 224  | 233  | 8233 |      |
| 18                                                  | 201  | 168  | 133  | 118  | 97  | 76   | 79   | 178  | 212  | 224  | 234  | 8233 |      |
| 19                                                  | 200  | 164  | 132  | 118  | 96  | 76   | 79   | 182  | 213  | 224  | 234  | 8233 |      |
| 20                                                  | 199  | 163  | 132  | 114  | 95  | 75   | 78   | 180  | 213  | 226  | 235  | 8232 |      |
| 21                                                  | 198  | 162  | 131  | 114  | 94  | 75   | 81   | 181  | 214  | 226  | 235  | 8231 |      |
| 22                                                  | 197  | 161  | 130  | 114  | 93  | 75   | 82   | 183  | 214  | 226  | 236  | 8231 |      |
| 23                                                  | 196  | 158  | 130  | 114  | 92  | 74   | 82   | 184  | 218  | 228  | 236  | 8230 |      |
| 24                                                  | 195  | 157  | 129  | 114  | 92  | 74   | 81   | 187  | 218  | 228  | 236  | 8229 |      |
| 25                                                  | 193  | 156  | 129  | 114  | 92  | 73   | 81   | 189  | 216  | 226  | 236  | 8228 |      |
| 26                                                  | 192  | 155  | 126  | 108  | 91  | 72   | 81   | 191  | 216  | 226  | 236  | 8228 |      |
| 27                                                  | 190  | 154  | 126  | 113  | 91  | 70   | 80   | 192  | 217  | 227  | 237  | 8227 |      |
| 28                                                  | 189  | 153  | 127  | 112  | 90  | 69   | 80   | 194  | 217  | 227  | 237  | 8226 |      |
| 29                                                  | 188  | 152  | 126  | 111  | 89  | 68   | 79   | 195  | 217  | 227  | 237  | 8225 |      |
| 30                                                  | 187  | 151  | 124  | 108  | 86  | 67   | 79   | 196  | 218  | 228  | 237  | 8225 |      |
| 31                                                  | 186  |      | 123  |      | 85  |      | 78   | 198  |      | 228  |      | 8224 |      |
| hauteur mini = 44 cm première observation le 07/07  |      |      |      |      |     |      |      |      |      |      |      |      |      |
| hauteur maxi = 237 cm première observation le 01/12 |      |      |      |      |     |      |      |      |      |      |      |      |      |

| NIBER A KOULIKORO EN 1988                           |      |      |      |     |      |      |      |      |      |      |      | DNHE |
|-----------------------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm                |      |      |      |     |      |      |      |      |      |      |      |      |
| Zéro de l'échelle = 290.08 m IGN                    |      |      |      |     |      |      |      |      |      |      |      |      |
| JANV                                                | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                                   | 93   | 89   | 47   | 42  | 47   | 42   | 97   | 217  | 399  | 421  | 228  | 133  |
| 2                                                   | 93   | 88   | 68   | 39  | 49   | 43   | 100  | 227  | 402  | 424  | 220  | 130  |
| 3                                                   | 93   | 87   | 68   | 39  | 45   | 50   | 119  | 227  | 408  | 406  | 218  | 128  |
| 4                                                   | 91   | 83   | 65   | 42  | 43   | 56   | 125  | 236  | 420  | 401  | 218  | 128  |
| 5                                                   | 87   | 83   | 60   | 40  | 40   | 82   | 120  | 246  | 426  | 400  | 215  | 122  |
| 6                                                   | 83   | 84   | 80   | 39  | 80   | 81   | 114  | 259  | 431  | 390  | 214  | 118  |
| 7                                                   | 84   | 88   | 40   | 36  | 85   | 83   | 119  | 269  | 437  | 376  | 214  | 116  |
| 8                                                   | 84   | 87   | 39   | 28  | 80   | 84   | 123  | 276  | 443  | 384  | 212  | 116  |
| 9                                                   | 84   | 80   | 28   | 38  | 80   | 84   | 121  | 281  | 481  | 382  | 208  | 116  |
| 10                                                  | 83   | 88   | 23   | 39  | 81   | 84   | 127  | 288  | 488  | 380  | 208  | 115  |
| 11                                                  | 85   | 81   | 22   | 42  | 88   | 82   | 128  | 291  | 488  | 340  | 202  | 113  |
| 12                                                  | 83   | 85   | 25   | 48  | 80   | 82   | 128  | 292  | 489  | 331  | 199  | 110  |
| 13                                                  | 79   | 88   | 28   | 48  | 83   | 83   | 136  | 289  | 462  | 330  | 198  | 107  |
| 14                                                  | 80   | 83   | 29   | 38  | 86   | 88   | 161  | 291  | 469  | 317  | 195  | 100  |
| 15                                                  | 81   | 88   | 30   | 42  | 89   | 80   | 162  | 290  | 488  | 303  | 193  | 98   |
| 16                                                  | 83   | 82   | 32   | 47  | 88   | 82   | 183  | 288  | 491  | 294  | 192  | 96   |
| 17                                                  | 83   | 89   | 28   | 47  | 80   | 89   | 188  | 292  | 491  | 284  | 188  | 95   |
| 18                                                  | 81   | 80   | 24   | 41  | 82   | 89   | 174  | 297  | 488  | 284  | 181  | 95   |
| 19                                                  | 80   | 81   | 32   | 34  | 85   | 70   | 178  | 334  | 477  | 285  | 179  | 94   |
| 20                                                  | 79   | 80   | 39   | 34  | 85   | 81   | 190  | 383  | 472  | 273  | 174  | 94   |
| 21                                                  | 78   | 83   | 39   | 32  | 83   | 82   | 212  | 344  | 465  | 270  | 168  | 93   |
| 22                                                  | 70   | 86   | 34   | 36  | 37   | 71   | 210  | 348  | 486  | 269  | 160  | 87   |
| 23                                                  | 68   | 85   | 33   | 42  | 48   | 74   | 210  | 381  | 439  | 272  | 156  | 86   |
| 24                                                  | 66   | 84   | 31   | 47  | 40   | 91   | 218  | 367  | 431  | 288  | 155  | 86   |
| 25                                                  | 67   | 81   | 81   | 48  | 45   | 103  | 216  | 377  | 420  | 282  | 153  | 85   |
| 26                                                  | 69   | 83   | 61   | 48  | 84   | 94   | 213  | 387  | 418  | 245  | 149  | 84   |
| 27                                                  | 63   | 87   | 62   | 41  | 84   | 85   | 211  | 401  | 417  | 243  | 146  | 83   |
| 28                                                  | 61   | 88   | 64   | 40  | 88   | 80   | 208  | 398  | 416  | 241  | 143  | 83   |
| 29                                                  | 60   | 88   | 62   | 43  | 86   | 77   | 209  | 398  | 411  | 239  | 140  | 78   |
| 30                                                  | 59   | 82   | 45   | 83  | 81   | 218  | 393  | 404  | 236  | 138  | 135  | 77   |
| 31                                                  | 57   | 83   | 84   | 84  | 217  | 391  | 231  |      |      |      |      | 74   |
| hauteur mini = 22 cm première observation le 11/03  |      |      |      |     |      |      |      |      |      |      |      |      |
| hauteur maxi = 491 cm première observation le 16/09 |      |      |      |     |      |      |      |      |      |      |      |      |

LE SIGNE + PRECEDE LES HAUTEURS RECONSTITUEES .

16m

| BANIFINS A KOUDORO EN 1988                          |      |      |      |     |      |      |      |      |      |      |      | DNHE |
|-----------------------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm                |      |      |      |     |      |      |      |      |      |      |      |      |
| Zéro de l'échelle = non connu                       |      |      |      |     |      |      |      |      |      |      |      |      |
| JANV                                                | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                                   | 36   | 36   | 21   | 4   | 1    | 44   | 83   | 199  | 710  | 777  | 320  | 88   |
| 2                                                   | 40   | 34   | 20   | 1   | 0    | 36   | 82   | 219  | 725  | 774  | 308  | 85   |
| 3                                                   | 42   | 33   | 20   | -1  | -2   | 30   | 82   | 231  | 728  | 778  | 293  | 80   |
| 4                                                   | 44   | 33   | 19   | -2  | -2   | 26   | 83   | 239  | 729  | 769  | 280  | 74   |
| 5                                                   | 45   | 33   | 19   | -3  | 3    | 26   | 85   | 246  | 746  | 766  | 267  | 77   |
| 6                                                   | 46   | 32   | 17   | -4  | 10   | 29   | 87   | 255  | 757  | 762  | 254  | 79   |
| 7                                                   | 48   | 31   | 16   | -6  | 17   | 29   | 88   | 267  | 765  | 758  | 237  | 81   |
| 8                                                   | 40   | 30   | 14   | -7  | 20   | 34   | 88   | 266  | 766  | 764  | 222  | 81   |
| 9                                                   | 44   | 29   | 14   | -8  | 22   | 46   | 83   | 280  | 772  | 748  | 211  | 80   |
| 10                                                  | 48   | 28   | 13   | -1  | 22   | 58   | 80   | 289  | 776  | 744  | 198  | 78   |
| 11                                                  | 48   | 27   | 12   | 0   | 22   | 86   | 86   | 299  | 803  | 738  | 185  | 73   |
| 12                                                  | 48   | 26   | 11   | 2   | 22   | 83   | 87   | 312  | 812  | 733  | 172  | 69   |
| 13                                                  | 47   | 28   | 10   | 2   | 20   | 81   | 82   | 323  | 817  | 727  | 160  | 66   |
| 14                                                  | 45   | 28   | 9    | 2   | 19   | 83   | 88   | 331  | 818  | 720  | 150  | 68   |
| 15                                                  | 43   | 24   | 8    | 2   | 17   | 86   | 38   | 343  | 809  | 712  | 142  | 71   |
| 16                                                  | 41   | 24   | 8    | 1   | 14   | 86   | 34   | 391  | 802  | 702  | 139  | 71   |
| 17                                                  | 440  | 23   | 9    | 0   | 18   | 66   | 39   | 456  | 797  | 692  | 129  | 68   |
| 18                                                  | 438  | 22   | 9    | -1  | 14   | 64   | 28   | 460  | 795  | 679  | 123  | 67   |
| 19                                                  | 437  | 20   | 9    | -2  | 13   | 61   | 28   | 464  | 792  | 689  | 118  | 65   |
| 20                                                  | 435  | 20   | 8    | -2  | 11   | 56   | 32   | 533  | 788  | 639  | 114  | 67   |
| 21                                                  | 434  | 20   | 6    | -2  | 9    | 80   | 40   | 621  | 786  | 619  | 109  | 67   |
| 22                                                  | 432  | 21   | 6    | -2  | 8    | 48   | 43   | 644  | 785  | 589  | 106  | 68   |
| 23                                                  | 431  | 22   | 6    | -2  | 7    | 48   | 45   | 655  | 784  | 569  | 104  | 73   |
| 24                                                  | 430  | 22   | 9    | -1  | 6    | 49   | 48   | 664  | 784  | 549  | 101  | 74   |
| 25                                                  | 429  | 23   | 13   | 2   | 8    | 48   | 56   | 671  | 784  | 512  | 99   | 74   |
| 26                                                  | 28   | 23   | 14   | 2   | 4    | 48   | 47   | 678  | 785  | 479  | 93   | 72   |
| 27                                                  | 32   | 22   | 14   | 3   | 35   | 44   | 79   | 681  | 784  | 454  | 93   | 70   |
| 28                                                  | 45   | 21   | 12   | 3   | 46   | 39   | 84   | 684  | 783  | 424  | 92   | 68   |
| 29                                                  | 41   | 20   | 11   | 2   | 67   | 43   | 91   | 690  | 782  | 394  | 91   | 66   |
| 30                                                  | 39   | 9    | 2    | 65  | 49   | 94   | 698  | 780  | 366  | 91   | 65   | 68   |
| 31                                                  | 38   | 6    | 85   | 168 | 704  | 340  |      |      |      |      |      | 64   |
| hauteur mini = -7 cm première observation le 08/04  |      |      |      |     |      |      |      |      |      |      |      |      |
| hauteur maxi = 817 cm première observation le 13/09 |      |      |      |     |      |      |      |      |      |      |      |      |

LE SIGNE + PRECEDE LES HAUTEURS RECONSTITUEES .

16m

| NIBER A KOULIKORO EN 1988         |      |      |      |      |      |      |      |      |      |      |      | DNHE |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| DEBITS MOYENS JOURNALIERS en m3/s |      |      |      |      |      |      |      |      |      |      |      |      |
| Surface = 120000 ka2              |      |      |      |      |      |      |      |      |      |      |      |      |
| JANV                              | FEVR | MARS | AVRI | MAI  | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                 | 219. | 124. | 144. | 88.6 | 98.0 | 88.6 | 232. | 817. | 2560 | 2810 | 875. | 363. |
| 2                                 | 219. | 122. | 147. | 83.3 | 102. | 90.4 | 242. | 889. | 2690 | 2880 | 858. | 351. |
| 3                                 | 219. | 120. | 139. | 83.3 | 94.2 | 104. | 308. | 889. | 2660 | 2640 | 824. | 343. |
| 4                                 | 213. | 111. | 139. | 88.6 | 90.4 | 117. | 331. | 937. | 2800 | 2580 | 803. | 331. |
| 5                                 | 200. | 111. | 127. | 85.0 | 85.0 | 108. | 312. | 1030 | 2870 | 2870 | 803. | 319. |
| 6                                 | 188. | 117. | 104. | 83.3 | 104. | 106. | 277. | 1140 | 2930 | 2480 | 796. | 304. |
| 7                                 | 191. | 122. | 85.0 | 78.3 | 115. | 111. | 308. | 1220 | 3010 | 2270 | 796. | 297. |
| 8                                 | 197. | 120. | 76.6 | 66.1 | 127. | 113. | 323. | 1280 | 3080 | 2040 | 782. | 297. |
| 9                                 | 197. | 127. | 66.1 | 81.6 | 127. | 96.1 | 316. | 1330 | 3180 | 2020 | 784. | 297. |
| 10                                | 188. | 122. | 89.4 | 83.3 | 129. | 76.1 | 339. | 1370 | 3230 | 2000 | 734. | 293. |
| 11                                | 194. | 129. | 88.2 | 88.6 | 122. | 108. | 343. | 1420 | 3270 | 1900 | 713. | 286. |
| 12                                | 188. | 139. | 62.0 | 100. | 127. | 108. | 331. | 1430 | 3280 | 1800 | 694. | 276. |
| 13                                | 177. | 147. | 66.1 | 94.2 | 111. | 111. | 376. | 1400 | 3320 | 1790 | 688. | 268. |
| 14                                | 180. | 134. | 67.5 | 81.6 | 117. | 100. | 489. | 1420 | 3420 | 1640 | 671. | 249. |
| 15                                | 182. | 122. | 69.0 | 88.6 | 124. | 104. | 494. | 1410 | 3670 | 1630 | 659. | 235. |
| 16                                | 188. | 132. | 71.9 | 98.0 | 122. | 108. | 481. | 1390 | 3710 | 1440 | 653. | 229. |
| 17                                | 188. | 124. | 62.0 | 98.0 | 104. | 124. | 475. | 1430 | 3710 | 1390 | 614. | 226. |
| 18                                | 182. | 127. | 60.7 | 84.8 | 108. | 149. | 585. | 1470 | 3670 | 1380 | 592. | 226. |
| 19                                | 180. | 129. | 71.9 | 78.3 | 115. | 182. | 576. | 1830 | 3520 | 1360 | 581. | 222. |
| 20                                | 177. | 127. | 83.3 | 78.3 | 94.2 | 182. | 442. | 2030 | 3460 | 1260 | 585. | 222. |
| 21                                | 174. | 134. | 83.3 | 71.9 | 73.8 | 185. | 782. | 1940 | 3340 | 1230 | 524. | 219. |
| 22                                | 182. | 142. | 78.3 | 78.3 | 83.3 | 185. | 803. | 1950 | 3280 | 1220 | 484. | 200. |
| 23                                | 139. | 139. | 73.8 | 88.6 | 94.2 | 163. | 768. | 2010 | 3030 | 1250 | 465. | 197. |
| 24                                | 142. | 142. | 70.4 | 98.0 | 85.0 | 213. | 803. | 2190 | 2930 | 1130 | 460. | 197. |
| 25                                | 144. | 129. | 106. | 100. | 94.2 | 282. | 810. | 2300 | 2800 | 1080 | 481. | 194. |
| 26                                | 149. | 134. | 129. | 100. | 113. | 222. | 789. | 2420 | 2780 | 1030 | 432. | 191. |
| 27                                | 134. | 144. | 132. | 86.8 | 137. | 194. | 775. | 2580 | 2770 | 1010 | 419. | 188. |
| 28                                | 129. | 147. | 137. | 85.0 | 147. | 180. | 734. | 2580 | 2780 | 995. | 406. | 188. |
| 29                                | 127. | 147. | 132. | 70.4 | 142. | 171. | 761. | 2550 | 2700 | 980. | 393. | 166. |
| 30                                | 124. | 132. | 94.2 | 134. | 182. | 803. | 2490 | 2620 | 957. | 371. | 171. |      |
| 31                                | 120. | 111. | 113. | 113. | 817. | 2460 | 919. |      |      |      |      | 163. |

Moy 1988: 174. 130. 95.0 86.9 111. 140. 929. 1660 3100 1660 628. 248. 714.

Moy51-88: 364. 188. 109. 78.2 108. 311. 1070 2830 4720 4100 1970 786. 1390

Mini obs: 138. 71.3 30.5 19.7 18.2 70.9 331. 1200 1650 1660 628. 248. 636.

Maxi obs: 768. 412. 272. 198. 261. 823. 2160 4370 7050 8000 8380 1810 2090

Débit mini = 88.2 m3/s première observation le 11/03  
Débit maxi = 3710 m3/s première observation le 16/09  
Lame d'eau écoulée = 188 mm

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| NIGER A LELEHOYE EN 1988                            |      |      |      |     |      |      |      |      |      |      |      | DNHE |
|-----------------------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm                |      |      |      |     |      |      |      |      |      |      |      |      |
| Zero de l'échelle = non connu                       |      |      |      |     |      |      |      |      |      |      |      |      |
| JANV                                                | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                                   | 300  | 214  | 173  | 120 | 92   | 61   | 47   | 47   | 261  | 310  | 340  | 358  |
| 2                                                   | 299  | 214  | 172  | 119 | 88   | 84   | 80   | 44   | 261  | 310  | 340  | 358  |
| 3                                                   | 297  | 213  | 170  | 118 | 84   | 88   | 82   | 47   | 263  | 311  | 341  | 358  |
| 4                                                   | 292  | 210  | 165  | 117 | 84   | 64   | 48   | 47   | 264  | 312  | 341  | 357  |
| 5                                                   | 289  | 209  | 160  | 117 | 84   | 66   | 46   | 48   | 267  | 313  | 341  | 357  |
| 6                                                   | 281  | 207  | 162  | 119 | 81   | 89   | 82   | 118  | 270  | 314  | 342  | 357  |
| 7                                                   | 280  | 208  | 159  | 118 | 79   | 89   | 48   | 129  | 271  | 316  | 342  | 357  |
| 8                                                   | 277  | 204  | 155  | 117 | 79   | 88   | 49   | 143  | 270  | 317  | 342  | 358  |
| 9                                                   | 271  | 204  | 153  | 117 | 78   | 84   | 89   | 104  | 277  | 318  | 343  | 358  |
| 10                                                  | 270  | 203  | 151  | 115 | 78   | 87   | 84   | 164  | 281  | 318  | 344  | 359  |
| 11                                                  | 268  | 200  | 150  | 115 | 78   | 89   | 49   | 171  | 281  | 319  | 345  | 359  |
| 12                                                  | 261  | 200  | 149  | 114 | 78   | 63   | 62   | 179  | 282  | 320  | 346  | 358  |
| 13                                                  | 260  | 200  | 147  | 110 | 78   | 88   | 87   | 190  | 282  | 321  | 347  | 357  |
| 14                                                  | 259  | 200  | 143  | 109 | 77   | 96   | 82   | 201  | 283  | 321  | 349  | 357  |
| 15                                                  | 259  | 200  | 142  | 109 | 77   | 88   | 81   | 202  | 288  | 322  | 351  | 354  |
| 16                                                  | 254  | 199  | 142  | 108 | 76   | 88   | 82   | 210  | 288  | 322  | 351  | 353  |
| 17                                                  | 251  | 197  | 141  | 102 | 75   | 87   | 82   | 213  | 291  | 323  | 352  | 351  |
| 18                                                  | 250  | 196  | 139  | 101 | 74   | 89   | 49   | 218  | 292  | 324  | 353  | 347  |
| 19                                                  | 249  | 194  | 138  | 100 | 73   | 87   | 44   | 218  | 293  | 325  | 355  | 347  |
| 20                                                  | 248  | 192  | 135  | 104 | 72   | 84   | 84   | 224  | 298  | 328  | 357  | 345  |
| 21                                                  | 244  | 191  | 133  | 102 | 73   | 82   | 46   | 226  | 298  | 330  | 357  | 342  |
| 22                                                  | 241  | 188  | 131  | 98  | 69   | 82   | 45   | 231  | 299  | 332  | 357  | 340  |
| 23                                                  | 239  | 186  | 130  | 98  | 68   | 83   | 46   | 232  | 299  | 333  | 357  | 339  |
| 24                                                  | 238  | 184  | 129  | 94  | 66   | 82   | 46   | 236  | 300  | 334  | 357  | 339  |
| 25                                                  | 232  | 183  | 129  | 90  | 64   | 81   | 84   | 240  | 300  | 337  | 357  | 339  |
| 26                                                  | 229  | 179  | 128  | 84  | 66   | 80   | 44   | 244  | 301  | 337  | 358  | 338  |
| 27                                                  | 226  | 177  | 115  | 96  | 64   | 80   | 44   | 246  | 304  | 338  | 358  | 334  |
| 28                                                  | 224  | 174  | 113  | 97  | 64   | 82   | 47   | 248  | 306  | 338  | 358  | 331  |
| 29                                                  | 221  | 174  | 112  | 96  | 63   | 83   | 45   | 250  | 307  | 339  | 358  | 329  |
| 30                                                  | 220  | 171  | 111  | 94  | 64   | 82   | 44   | 254  | 308  | 339  | 358  | 326  |
| 31                                                  | 218  | 170  | 110  | 92  | 62   | 84   | 84   | 257  | 339  | 339  | 358  | 323  |
| hauteur mini = 44 cm première observation le 19/07  |      |      |      |     |      |      |      |      |      |      |      |      |
| hauteur maxi = 359 cm première observation le 10/12 |      |      |      |     |      |      |      |      |      |      |      |      |

LE SIGNE + PRECEDE LES HAUTEURS RECONSTITUEES .

18a

| KOBAFINI A LOULOUNI EN 1988                         |      |      |      |     |      |      |      |      |      |      |      | DNHE |
|-----------------------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm                |      |      |      |     |      |      |      |      |      |      |      |      |
| Zero de l'échelle = non connu                       |      |      |      |     |      |      |      |      |      |      |      |      |
| JANV                                                | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                                   | 100  | 102  | 82   | 71  | 183  | 144  | 168  | 204  | 237  | 218  | 181  | 118  |
| 2                                                   | 97   | 99   | 78   | 69  | 134  | 144  | 129  | 226  | 237  | 212  | 180  | 118  |
| 3                                                   | 97   | 95   | 78   | 70  | 118  | 128  | 118  | 215  | 232  | 214  | 176  | 117  |
| 4                                                   | 94   | 95   | 80   | 67  | 113  | 108  | 113  | 208  | 234  | 229  | 174  | 115  |
| 5                                                   | 94   | 96   | 81   | 77  | 110  | 102  | 111  | 196  | 237  | 224  | 172  | 115  |
| 6                                                   | 95   | 88   | 81   | 110 | 107  | 102  | 118  | 234  | 232  | 220  | 169  | 111  |
| 7                                                   | 100  | 88   | 80   | 124 | 104  | 99   | 124  | 239  | 233  | 213  | 164  | 117  |
| 8                                                   | 101  | 88   | 76   | 105 | 101  | 103  | 127  | 228  | 231  | 209  | 161  | 122  |
| 9                                                   | 100  | 87   | 78   | 96  | 100  | 103  | 121  | 207  | 224  | 206  | 188  | 124  |
| 10                                                  | 101  | 82   | 77   | 91  | 99   | 107  | 121  | 197  | 216  | 203  | 187  | 123  |
| 11                                                  | 100  | 80   | 74   | 90  | 98   | 106  | 155  | 195  | 212  | 200  | 185  | 119  |
| 12                                                  | 98   | 86   | 76   | 89  | 98   | 110  | 147  | 190  | 210  | 200  | 181  | 117  |
| 13                                                  | 97   | 82   | 77   | 88  | 96   | 104  | 140  | 184  | 208  | 199  | 146  | 116  |
| 14                                                  | 95   | 88   | 76   | 86  | 95   | 103  | 178  | 187  | 213  | 197  | 148  | 116  |
| 15                                                  | 95   | 88   | 73   | 85  | 95   | 132  | 233  | 214  | 216  | 195  | 144  | 116  |
| 16                                                  | 92   | 85   | 72   | 84  | 93   | 136  | 218  | 218  | 209  | 193  | 143  | 116  |
| 17                                                  | 91   | 76   | 71   | 82  | 92   | 112  | 217  | 231  | 230  | 192  | 140  | 116  |
| 18                                                  | 90   | 69   | 71   | 83  | 95   | 108  | 176  | 234  | 239  | 193  | 140  | 117  |
| 19                                                  | 91   | 77   | 70   | 81  | 99   | 161  | 192  | 241  | 228  | 198  | 139  | 117  |
| 20                                                  | 91   | 79   | 70   | 82  | 91   | 157  | 187  | 280  | 217  | 197  | 136  | 117  |
| 21                                                  | 92   | 79   | 69   | 81  | 90   | 157  | 186  | 240  | 213  | 194  | 126  | 118  |
| 22                                                  | 90   | 82   | 70   | 92  | 97   | 157  | 187  | 238  | 212  | 187  | 124  | 117  |
| 23                                                  | 91   | 83   | 69   | 112 | 93   | 186  | 178  | 236  | 212  | 184  | 121  | 115  |
| 24                                                  | 91   | 84   | 69   | 109 | 94   | 182  | 171  | 239  | 227  | 182  | 121  | 116  |
| 25                                                  | 91   | 84   | 71   | 99  | 100  | 172  | 183  | 231  | 238  | 183  | 121  | 116  |
| 26                                                  | 91   | 80   | 72   | 98  | 95   | 161  | 192  | 258  | 248  | 181  | 120  | 116  |
| 27                                                  | 95   | 77   | 77   | 111 | 93   | 142  | 190  | 251  | 236  | 196  | 120  | 115  |
| 28                                                  | 95   | 78   | 78   | 104 | 94   | 125  | 176  | 246  | 229  | 194  | 119  | 115  |
| 29                                                  | 101  | 78   | 74   | 178 | 99   | 124  | 173  | 245  | 221  | 195  | 119  | 116  |
| 30                                                  | 100  | 73   | 169  | 97  | 150  | 170  | 242  | 217  | 196  | 118  | 118  | 118  |
| 31                                                  | 103  | 73   | 73   | 93  | 186  | 239  | 189  | 189  | 189  | 189  | 116  | 116  |
| hauteur mini = 49 cm première observation le 18/02  |      |      |      |     |      |      |      |      |      |      |      |      |
| hauteur maxi = 258 cm première observation le 26/08 |      |      |      |     |      |      |      |      |      |      |      |      |

LE SIGNE + PRECEDE LES HAUTEURS RECONSTITUEES .

18a

| BAOULE A MADINA DIABBA EN 1988                      |      |      |      |     |      |      |      |      |      |      |      | DNHE |
|-----------------------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm                |      |      |      |     |      |      |      |      |      |      |      |      |
| Zero de l'échelle = non connu                       |      |      |      |     |      |      |      |      |      |      |      |      |
| JANV                                                | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                                   | 88   | 73   | 61   | 42  | 27   | 17   | 81   | 114  | 428  | 901  | 178  | 111  |
| 2                                                   | 88   | 73   | 60   | 41  | 26   | 27   | 90   | 128  | 428  | 491  | 173  | 110  |
| 3                                                   | 88   | 72   | 60   | 40  | 25   | 24   | 90   | 173  | 427  | 485  | 172  | 109  |
| 4                                                   | 87   | 72   | 59   | 39  | 28   | 23   | 87   | 183  | 427  | 474  | 168  | 109  |
| 5                                                   | 86   | 72   | 59   | 38  | 24   | 22   | 86   | 183  | 431  | 462  | 163  | 108  |
| 6                                                   | 84   | 71   | 58   | 38  | 24   | 22   | 89   | 201  | 439  | 449  | 160  | 107  |
| 7                                                   | 84   | 71   | 57   | 37  | 23   | 21   | 148  | 203  | 482  | 440  | 158  | 106  |
| 8                                                   | 83   | 70   | 57   | 36  | 22   | 30   | 146  | 206  | 467  | 435  | 156  | 105  |
| 9                                                   | 85   | 70   | 56   | 35  | 22   | 28   | 133  | 200  | 478  | 427  | 153  | 104  |
| 10                                                  | 84   | 70   | 56   | 35  | 21   | 28   | 123  | 198  | 485  | 410  | 155  | 103  |
| 11                                                  | 83   | 70   | 55   | 34  | 21   | 28   | 112  | 181  | 821  | 398  | 149  | 102  |
| 12                                                  | 82   | 69   | 54   | 33  | 20   | 28   | 123  | 186  | 836  | 386  | 148  | 102  |
| 13                                                  | 82   | 69   | 54   | 33  | 19   | 27   | 112  | 174  | 855  | 379  | 147  | 101  |
| 14                                                  | 82   | 69   | 53   | 32  | 19   | 27   | 106  | 180  | 867  | 368  | 143  | 99   |
| 15                                                  | 81   | 68   | 53   | 32  | 18   | 35   | 104  | 180  | 877  | 349  | 139  | 98   |
| 16                                                  | 81   | 68   | 52   | 31  | 18   | 34   | 99   | 190  | 882  | 344  | 138  | 98   |
| 17                                                  | 80   | 67   | 52   | 31  | 17   | 74   | 108  | 210  | 890  | 328  | 136  | 97   |
| 18                                                  | 80   | 67   | 51   | 29  | 16   | 74   | 109  | 248  | 600  | 318  | 133  | 96   |
| 19                                                  | 79   | 66   | 51   | 29  | 16   | 79   | 108  | 288  | 604  | 303  | 131  | 95   |
| 20                                                  | 79   | 66   | 50   | 28  | 14   | 88   | 108  | 338  | 603  | 290  | 129  | 94   |
| 21                                                  | 78   | 66   | 49   | 28  | 14   | 92   | 102  | 356  | 896  | 290  | 127  | 93   |
| 22                                                  | 77   | 65   | 49   | 27  | 14   | 89   | 110  | 366  | 885  | 278  | 125  | 92   |
| 23                                                  | 77   | 65   | 48   | 27  | 13   | 91   | 101  | 372  | 873  | 250  | 123  | 91   |
| 24                                                  | 77   | 65   | 47   | 26  | 12   | 91   | 112  | 385  | 861  | 228  | 122  | 90   |
| 25                                                  | 77   | 65   | 47   | 26  | 11   | 88   | 113  | 395  | 851  | 218  | 120  | 90   |
| 26                                                  | 75   | 64   | 46   | 25  | 10   | 87   | 101  | 406  | 842  | 210  | 119  | 89   |
| 27                                                  | 75   | 64   | 45   | 25  | 9    | 83   | 109  | 411  | 834  | 203  | 117  | 89   |
| 28                                                  | 74   | 63   | 44   | 24  | 9    | 82   | 108  | 413  | 826  | 198  | 116  | 88   |
| 29                                                  | 74   | 63   | 43   | 24  | 9    | 82   | 129  | 416  | 819  | 194  | 115  | 88   |
| 30                                                  | 74   | 63   | 43   | 28  | 7    | 79   | 112  | 417  | 810  | 188  | 113  | 87   |
| 31                                                  | 73   | 62   | 42   | 6   | 6    | 112  | 420  | 177  | 177  | 177  | 87   | 87   |
| hauteur mini = 6 cm première observation le 31/05   |      |      |      |     |      |      |      |      |      |      |      |      |
| hauteur maxi = 604 cm première observation le 19/09 |      |      |      |     |      |      |      |      |      |      |      |      |

LE SIGNE + PRECEDE LES HAUTEURS RECONSTITUEES .

18a

| BAOULE A MADINA DIABBA EN 1988                             |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| DEBITS MOYENS JOURNALIERS en m3/s                          |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Surface = 7900 ka2                                         |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                                                            | JANV | FEVR | MARS | AVRI | MAI  | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                                          | 1.53 | .485 | .102 | .012 | .000 | .000 | .765 | 4.91 | 127. | 149. | 22.3 | 4.38 |      |
| 2                                                          | 1.53 | .485 | .080 | .011 | .000 | .000 | 1.71 | 7.20 | 129. | 143. | 20.9 | 4.21 |      |
| 3                                                          | 1.53 | .437 | .080 | .010 | .000 | .000 | 1.71 | 20.9 | 128. | 140. | 20.6 | 4.03 |      |
| 4                                                          | 1.44 | .437 | .070 | .009 | .000 | .000 | 1.44 | 23.8 | 128. | 134. | 19.4 | 4.03 |      |
| 5                                                          | 1.35 | .437 | .070 | .008 | .000 | .000 | 1.35 | 23.8 | 130. | 148. | 18.0 | 3.89 |      |
| 6                                                          | 1.35 | .392 | .042 | .008 | .000 | .000 | 1.62 | 29.3 | 135. | 140. | 17.2 | 3.74 |      |
| 7                                                          | 1.35 | .392 | .034 | .007 | .000 | .000 | 13.8 | 29.9 | 142. | 133. | 16.7 | 3.89 |      |
| 8                                                          | 1.27 | .350 | .034 | .006 | .000 | .000 | 13.1 | 30.9 | 130. | 133. | 16.1 | 3.43 |      |
| 9                                                          | 1.27 | .350 | .044 | .003 | .000 | .000 | 9.22 | 29.0 | 155. | 128. | 15.3 | 3.31 |      |
| 10                                                         | 1.19 | .350 | .044 | .003 | .000 | .000 | 6.74 | 28.4 | 160. | 119. | 15.8 | 3.17 |      |
| 11                                                         | 1.11 | .350 | .040 | .004 | .000 | .000 | 4.85 | 23.2 | 180. | 110. | 14.2 | 3.03 |      |
| 12                                                         | 1.04 | .318 | .034 | .003 | .000 | .000 | 6.74 | 24.7 | 188. | 104. | 13.8 | 3.03 |      |
| 13                                                         | 1.04 | .318 | .034 | .003 | .000 | .000 | 4.85 | 21.1 | 198. | 102. | 13.5 | 2.92 |      |
| 14                                                         | 1.04 | .318 | .030 | .002 | .000 | .000 | 3.89 | 22.9 | 203. | 94.7 | 12.2 | 2.66 |      |
| 15                                                         | .965 | .286 | .030 | .002 | .000 | .005 | 3.31 | 22.9 | 210. | 87.8 | 10.9 | 2.64 |      |
| 16                                                         | .965 | .286 | .026 | .001 | .000 | .004 | 2.48 | 23.9 | 213. | 85.2 | 10.6 | 2.56 |      |
| 17                                                         | .896 | .256 | .026 | .001 | .000 | .936 | 3.43 | 32.2 | 218. | 77.8 | 10.1 | 2.43 |      |
| 18                                                         | .896 | .256 | .022 | .000 | .000 | .645 | 4.05 | 44.2 | 223. | 73.4 | 9.22 | 2.33 |      |
| 19                                                         | .829 | .228 | .022 | .000 | .000 | .829 | 3.89 | 40.7 | 225. | 66.9 | 8.69 | 2.22 |      |
| 20                                                         | .829 | .228 | .020 | .000 | .000 | 1.53 | 3.89 | 82.4 | 228. | 61.8 | 8.17 | 2.11 |      |
| 21                                                         | .765 | .228 | .019 | .000 | .000 | 1.91 | 3.03 | 90.9 | 221. | 61.5 | 7.68 | 2.01 |      |
| 22                                                         | .703 | .200 | .019 | .000 | .000 | 1.53 | 4.21 | 95.7 | 213. | 56.7 | 7.20 | 1.91 |      |
| 23                                                         | .703 | .200 | .018 | .000 | .000 | 1.81 | 2.92 | 98.7 | 208. | 46.0 | 6.74 | 1.81 |      |
| 24                                                         | .703 | .200 | .017 | .000 | .000 | 1.81 | 4.35 | 105. | 202. | 38.2 | 6.32 | 1.71 |      |
| 25                                                         | .703 | .200 | .017 | .000 | .000 | 1.53 | 4.73 | 110. | 196. | 34.8 | 6.09 | 1.71 |      |
| 26                                                         | .589 | .174 | .016 | .000 | .000 | 1.44 | 2.92 | 116. | 191. | 32.2 | 5.88 | 1.62 |      |
| 27                                                         | .589 | .174 | .019 | .000 | .000 | 1.11 | 4.05 | 119. | 187. | 29.9 | 5.48 | 1.62 |      |
| 28                                                         | .536 | .148 | .014 | .000 | .000 | 1.04 | 3.89 | 120. | 182. | 28.4 | 5.28 | 1.53 |      |
| 29                                                         | .536 | .148 | .013 | .000 | .000 | 1.04 | 8.17 | 122. | 178. | 27.1 | 5.09 | 1.53 |      |
| 30                                                         | .536 | .013 | .000 | .000 | .000 | .829 | 4.35 | 123. | 174. | 28.3 | 4.73 | 1.44 |      |
| 31                                                         | .485 | .012 | .000 | .000 | .000 |      | 4.85 | 124. |      | 22.6 |      | 1.44 |      |
| Moy 1988:                                                  | .976 | .298 | .036 | .003 | .000 | .587 | 4.31 | 58.3 | 181. | 87.7 | 11.8 | 2.65 | 29.0 |
| Moy 71-88:                                                 | 4.34 | 1.82 | .609 | .478 | .526 | 1.59 | 12.9 | 101. | 186. | 116. | 41.0 | 12.2 | 36.3 |
| Mini obs:                                                  | .976 | .298 | .036 | .003 | .000 | .004 | 8.23 | 9.83 | 68.1 | 50.7 | 11.8 | 2.65 | 12.2 |
| Maxi obs:                                                  | 12.8 | 5.30 | 1.78 | 2.78 | 3.00 | 6.63 | 50.7 | 218. | 385. | 225. | 175. | 39.1 | 64.3 |
| Débit mini = .000 m3/s      première observation est 18/04 |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Débit maxi = 225. m3/s      première observation est 19/09 |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lame d'eau écoulée = 116 mm                                |      |      |      |      |      |      |      |      |      |      |      |      |      |

| DEGOU A MANANKORO EN 1988            |      |      |      |      |     |      |      |      |      |      |      | DHNE |
|--------------------------------------|------|------|------|------|-----|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm |      |      |      |      |     |      |      |      |      |      |      |      |
| Ière de l'échelle = non connu        |      |      |      |      |     |      |      |      |      |      |      |      |
|                                      | JANV | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |
| 1                                    | 142  | 130  | 109  | .    | .   | .    | 155  | 318  | 827  | 831  | 247  | 148  |
| 2                                    | 142  | 129  | 108  | .    | .   | .    | 156  | 323  | 838  | 810  | 244  | 167  |
| 3                                    | 142  | 129  | 102  | .    | .   | .    | 158  | 313  | 842  | 488  | 239  | 164  |
| 4                                    | 142  | 128  | 100  | .    | .   | .    | 168  | 295  | 853  | 464  | 234  | 163  |
| 8                                    | 142  | 127  | .    | .    | .   | .    | 230  | 281  | 885  | 444  | 230  | 163  |
| 6                                    | 141  | 127  | .    | .    | .   | .    | 249  | 269  | 660  | 434  | 227  | 142  |
| 7                                    | 141  | 126  | .    | .    | .   | .    | 229  | 263  | 716  | 422  | 224  | 161  |
| 8                                    | 141  | 125  | .    | .    | .   | .    | 210  | 257  | 735  | 415  | 220  | 160  |
| 9                                    | 141  | 125  | .    | .    | .   | .    | 194  | 253  | 749  | 416  | 216  | 159  |
| 10                                   | 141  | 124  | .    | .    | .   | .    | 187  | 259  | 777  | 418  | 213  | 157  |
| 11                                   | 140  | 124  | .    | .    | .   | .    | 182  | 267  | 792  | 414  | 210  | 156  |
| 12                                   | 139  | 124  | .    | .    | .   | .    | 177  | 274  | 820  | 412  | 206  | 156  |
| 13                                   | 139  | 123  | .    | .    | .   | .    | 170  | 285  | 827  | 399  | 204  | 155  |
| 14                                   | 139  | 123  | .    | .    | .   | 126  | 166  | 292  | 834  | 388  | 201  | 155  |
| 18                                   | 138  | 122  | .    | .    | .   | 128  | 168  | 318  | 834  | 368  | 198  | 154  |
| 16                                   | 138  | 122  | .    | .    | .   | 122  | 164  | 319  | 828  | 358  | 195  | 153  |
| 17                                   | 138  | 122  | .    | .    | .   | 126  | 217  | 322  | 824  | 384  | 190  | 182  |
| 18                                   | 137  | 122  | .    | .    | .   | 122  | 220  | 324  | 816  | 337  | 189  | 181  |
| 19                                   | 137  | 122  | .    | .    | .   | 128  | 236  | 328  | 810  | 324  | 188  | 180  |
| 20                                   | 137  | 121  | .    | .    | .   | 132  | 242  | 342  | 800  | 307  | 185  | 180  |
| 21                                   | 137  | 121  | .    | .    | .   | 135  | 241  | 360  | 792  | 301  | 183  | 149  |
| 22                                   | 137  | 121  | .    | .    | .   | 139  | 241  | 388  | 781  | 292  | 181  | 149  |
| 23                                   | 137  | 120  | .    | .    | .   | 142  | 241  | 429  | 742  | 285  | 179  | 148  |
| 24                                   | 137  | 119  | .    | .    | .   | 143  | 243  | 480  | 711  | 281  | 177  | 147  |
| 28                                   | 136  | 119  | .    | .    | .   | 148  | 244  | 490  | 680  | 276  | 174  | 146  |
| 26                                   | 135  | 119  | .    | .    | .   | 145  | 249  | 496  | 668  | 273  | 174  | 145  |
| 27                                   | 134  | 118  | .    | .    | .   | 146  | 268  | 496  | 642  | 271  | 172  | 145  |
| 28                                   | 133  | 113  | .    | .    | .   | 148  | 279  | 494  | 634  | 266  | 171  | 144  |
| 29                                   | 132  | 111  | .    | .    | .   | 146  | 282  | 493  | 578  | 262  | 171  | 143  |
| 30                                   | 131  | .    | .    | .    | .   | 146  | 280  | 806  | 555  | 288  | 170  | 143  |
| 31                                   | 131  | .    | .    | .    | .   | .    | 290  | 822  | .    | 285  | .    | 143  |

hauteur mini = 8 sec

hauteur maxi = 834 cm

première observation le 03/03

première observation le 14/09

LE SIGNE . INDIQUE L'ABSENCE D'EGOUTEMENT .
lha

**LE BIGNÉ . INDIQUE L'ABSENCE D'ÉCOULEMENT .**

| DEBIS A MANANKORO en 1988                                         |      |      |      |      |      |      |      |      |      |      |      | DNHE |
|-------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| DEBITS MOYENS JOURNALIERS en m <sup>3</sup> /s                    |      |      |      |      |      |      |      |      |      |      |      |      |
| ~~~~~                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| Surface = non connus                                              |      |      |      |      |      |      |      |      |      |      |      |      |
|                                                                   | JANV | FEVR | MARS | AVRI | MAI  | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |
| 1                                                                 | .168 | .035 | .000 | .000 | .000 | .000 | .375 | 7.61 | 18.9 | 19.1 | 3.48 | .629 |
| 2                                                                 | .168 | .032 | .000 | .000 | .000 | .000 | .390 | 7.92 | 19.3 | 18.1 | 3.34 | .605 |
| 3                                                                 | .168 | .032 | .000 | .000 | .000 | .000 | .420 | 7.31 | 19.6 | 16.9 | 3.10 | .537 |
| 4                                                                 | .168 | .028 | .000 | .000 | .000 | .000 | .539 | 6.18 | 20.2 | 15.8 | 2.88 | .515 |
| 5                                                                 | .168 | .028 | .000 | .000 | .000 | .000 | 2.70 | 5.32 | 22.1 | 14.8 | 2.70 | .515 |
| 6                                                                 | .152 | .025 | .000 | .000 | .000 | .000 | 3.88 | 4.43 | 27.2 | 14.2 | 2.57 | .493 |
| 7                                                                 | .152 | .022 | .000 | .000 | .000 | .000 | 2.66 | 4.30 | 32.2 | 13.6 | 2.43 | .471 |
| 8                                                                 | .152 | .018 | .000 | .000 | .000 | .000 | 1.90 | 3.78 | 34.8 | 13.2 | 2.28 | .430 |
| 9                                                                 | .152 | .018 | .000 | .000 | .000 | .000 | 1.35 | 3.98 | 37.1 | 13.2 | 2.13 | .435 |
| 10                                                                | .152 | .015 | .000 | .000 | .000 | .000 | 1.13 | 4.09 | 42.6 | 13.2 | 2.01 | .405 |
| 11                                                                | .135 | .015 | .000 | .000 | .000 | .000 | .990 | 4.82 | 46.0 | 13.2 | 1.90 | .390 |
| 12                                                                | .118 | .015 | .000 | .000 | .000 | .000 | .854 | 4.91 | 54.3 | 13.1 | 1.75 | .390 |
| 13                                                                | .118 | .011 | .000 | .000 | .000 | .000 | .677 | 5.86 | 86.7 | 12.3 | 1.68 | .378 |
| 14                                                                | .118 | .011 | .000 | .000 | .000 | .000 | .922 | 5.99 | 59.1 | 11.7 | 1.88 | .375 |
| 15                                                                | .101 | .007 | .000 | .000 | .000 | .000 | .889 | 7.43 | 89.1 | 10.6 | 1.48 | .360 |
| 16                                                                | .101 | .007 | .000 | .000 | .000 | .000 | .837 | 7.67 | 87.0 | 10.0 | 1.38 | .344 |
| 17                                                                | .101 | .007 | .000 | .000 | .000 | .000 | .922 | 2.16 | 7.86 | 83.7 | 9.77 | .122 |
| 18                                                                | .084 | .007 | .000 | .000 | .000 | .000 | .907 | 2.28 | 7.98 | 83.0 | 9.76 | .119 |
| 19                                                                | .084 | .007 | .000 | .000 | .000 | .000 | .918 | 2.96 | 8.22 | 81.1 | 7.98 | .116 |
| 20                                                                | .084 | .004 | .000 | .000 | .000 | .000 | .941 | 3.24 | 9.06 | 48.0 | 6.74 | .108 |
| 21                                                                | .084 | .004 | .000 | .000 | .000 | .000 | .950 | 3.19 | 10.1 | 46.0 | 6.86 | 1.02 |
| 22                                                                | .084 | .004 | .000 | .000 | .000 | .000 | .118 | 3.19 | 11.7 | 43.8 | 8.99 | .962 |
| 23                                                                | .084 | .000 | .000 | .000 | .000 | .000 | .168 | 3.19 | 14.0 | 39.9 | 8.86 | .907 |
| 24                                                                | .084 | .000 | .000 | .000 | .000 | .000 | .188 | 3.29 | 18.1 | 31.6 | 8.32 | .884 |
| 25                                                                | .067 | .000 | .000 | .000 | .000 | .000 | .218 | 3.34 | 17.1 | 28.8 | 8.02 | .776 |
| 26                                                                | .050 | .000 | .000 | .000 | .000 | .000 | .218 | 3.88 | 17.4 | 27.8 | 4.88 | .776 |
| 27                                                                | .047 | .000 | .000 | .000 | .000 | .000 | .234 | 4.87 | 17.4 | 29.9 | 4.74 | .726 |
| 28                                                                | .044 | .000 | .000 | .000 | .000 | .000 | .266 | 9.20 | 17.3 | 28.3 | 4.46 | .701 |
| 29                                                                | .041 | .000 | .000 | .000 | .000 | .000 | .234 | 5.37 | 17.3 | 21.6 | 4.24 | .701 |
| 30                                                                | .038 | .000 | .000 | .000 | .000 | .000 | .234 | 5.26 | 17.9 | 20.3 | 4.03 | .677 |
| 31                                                                | .038 | .000 | .000 | .000 | .000 | .000 |      | 5.84 | 18.6 |      | 3.88 | .185 |
| Mo                                                                | .107 | .012 | .000 | .000 | .000 | .000 | .069 | 2.48 | 9.62 | 37.4 | 10.0 | 1.68 |
| Débit mini = .000 m <sup>3</sup> /s première observation le 23/02 |      |      |      |      |      |      |      |      |      |      |      |      |
| Débit maxi = 89.1 m <sup>3</sup> /s première observation le 14/09 |      |      |      |      |      |      |      |      |      |      |      |      |
| Débit moyen annuel = 5.14 m <sup>3</sup> /s                       |      |      |      |      |      |      |      |      |      |      |      |      |

[illegible]

| NIGER A MOITI EN 1988             |      |      |      |      |      |      |      |      |      |      |      | DHNE |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| DEBITS MOYENS JOURNALIERS en m3/s |      |      |      |      |      |      |      |      |      |      |      |      |
| ~~~~~                             |      |      |      |      |      |      |      |      |      |      |      |      |
| Surface = 282000 km2              |      |      |      |      |      |      |      |      |      |      |      |      |
|                                   | JANV | FEVR | MARS | AVRI | MAI  | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |
| 1                                 | 247. | 125. | 69.4 | 50.9 | 43.9 | 31.4 | 83.0 | 821. | 1840 | 2280 | 1390 | 489. |
| 2                                 | 240. | 112. | 69.8 | 52.3 | 48.0 | 30.6 | 73.9 | 823. | 1860 | 2280 | 1340 | 480. |
| 3                                 | 235. | 103. | 66.8 | 53.6 | 44.8 | 30.6 | 103. | 819. | 1900 | 2280 | 1280 | 471. |
| 4                                 | 217. | 76.6 | 68.5 | 52.5 | 42.1 | 27.2 | 138. | 839. | 1930 | 2280 | 1230 | 462. |
| 5                                 | 207. | 91.4 | 64.9 | 50.2 | 39.0 | 27.3 | 152. | 826. | 1960 | 2270 | 1180 | 443. |
| 6                                 | 199. | 86.8 | 72.1 | 61.3 | 37.0 | 27.3 | 151. | 817. | 1990 | 2280 | 1120 | 430. |
| 7                                 | 176. | 82.2 | 78.1 | 48.0 | 35.1 | 30.0 | 150. | 823. | 2000 | 2270 | 1040 | 418. |
| 8                                 | 188. | 81.1 | 81.3 | 51.8 | 38.2 | 29.1 | 146. | 864. | 2010 | 2270 | 1010 | 410. |
| 9                                 | 173. | 90.6 | 88.2 | 53.8 | 35.3 | 28.3 | 143. | 920. | 2030 | 2270 | 978. | 401. |
| 10                                | 188. | 91.0 | 93.4 | 57.4 | 34.8 | 29.3 | 137. | 971. | 2040 | 2260 | 931. | 397. |
| 11                                | 146. | 84.4 | 98.4 | 58.4 | 36.8 | 28.4 | 141. | 1000 | 2070 | 2240 | 890. | 392. |
| 12                                | 144. | 81.3 | 101. | 58.1 | 36.8 | 28.4 | 144. | 1080 | 2100 | 2220 | 848. | 385. |
| 13                                | 148. | 78.4 | 97.8 | 61.6 | 38.5 | 28.4 | 188. | 1100 | 2110 | 2200 | 817. | 389. |
| 14                                | 148. | 78.8 | 96.8 | 57.3 | 34.6 | 28.4 | 197. | 1130 | 2130 | 2170 | 793. | 386. |
| 15                                | 149. | 78.6 | 92.0 | 54.8 | 33.6 | 29.3 | 230. | 1140 | 2160 | 2140 | 772. | 391. |
| 16                                | 149. | 82.0 | 89.2 | 49.8 | 32.7 | 29.3 | 270. | 1180 | 2180 | 2100 | 755. | 384. |
| 17                                | 130. | 87.6 | 81.8 | 46.0 | 32.7 | 30.3 | 301. | 1190 | 2190 | 2070 | 738. | 365. |
| 18                                | 198. | 87.6 | 76.0 | 44.0 | 31.9 | 30.3 | 316. | 1200 | 2190 | 2040 | 724. | 343. |
| 19                                | 160. | 87.5 | 65.2 | 41.9 | 31.1 | 30.4 | 334. | 1230 | 2200 | 1970 | 712. | 332. |
| 20                                | 157. | 90.7 | 62.8 | 42.2 | 32.2 | 30.3 | 371. | 1260 | 2210 | 1960 | 701. | 324. |
| 21                                | 157. | 88.1 | 62.8 | 39.3 | 31.3 | 30.3 | 437. | 1290 | 2230 | 1920 | 689. | 322. |
| 22                                | 185. | 88.8 | 58.0 | 39.6 | 33.3 | 31.3 | 497. | 1300 | 2270 | 1870 | 668. | 320. |
| 23                                | 194. | 83.7 | 53.8 | 38.9 | 35.2 | 32.4 | 834. | 1310 | 2280 | 1830 | 644. | 313. |
| 24                                | 182. | 81.8 | 52.6 | 41.2 | 37.1 | 33.4 | 888. | 1360 | 2280 | 1790 | 622. | 296. |
| 25                                | 147. | 78.0 | 52.0 | 42.4 | 39.0 | 34.6 | 867. | 1430 | 2260 | 1740 | 598. | 279. |
| 26                                | 143. | 73.6 | 52.2 | 43.6 | 37.9 | 34.1 | 891. | 1560 | 2290 | 1690 | 575. | 263. |
| 27                                | 142. | 67.1 | 49.0 | 43.6 | 37.7 | 34.7 | 868. | 1680 | 2280 | 1630 | 552. | 250. |
| 28                                | 139. | 67.1 | 48.2 | 45.7 | 37.8 | 38.6 | 709. | 1710 | 2270 | 1590 | 527. | 235. |
| 29                                | 136. | 68.9 | 46.2 | 48.9 | 34.3 | 46.0 | 704. | 1780 | 2280 | 1530 | 506. | 218. |
| 30                                | 141. | 46.3 | 50.8 | 33.3 | 44.1 | 757. | 1790 | 2280 | 1500 | 490. | 208. | 208. |
| 31                                | 133. | 81.0 |      |      | 32.3 | 793. | 1820 |      | 1450 |      |      | 200. |

May 1988: 167. 85.6 70.3 49.0 36.4 31.5 340. 1190 2130 2010 838. 353. 609.

|            |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| May 51-88: | 732. | 345. | 156. | 77.2 | 54.6 | 123. | 543. | 1300 | 2400 | 2780 | 2390 | 1520 | 1060 |
|------------|------|------|------|------|------|------|------|------|------|------|------|------|------|

|           |      |      |      |      |      |      |      |      |      |      |      |      |      |
|-----------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Mini obs1 | 146. | 63.3 | 42.2 | 18.4 | 7.18 | 2.42 | 174. | 634. | 1110 | 1290 | 963. | 285. | 411. |
|-----------|------|------|------|------|------|------|------|------|------|------|------|------|------|

Debit min1 = 27.2 m3/s premiere observation le 04/06

Débit maxi = 2290 m3/s première observation le 26/09

Lame d'eau écoulée = 68 mm

| NIGER A NANTAKA EN 1988              |      |      |      |      |     |      |      |      |      |      | DNHE |      |
|--------------------------------------|------|------|------|------|-----|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm |      |      |      |      |     |      |      |      |      |      |      |      |
| Zero de l'échelle = 260.78 m IGN     |      |      |      |      |     |      |      |      |      |      |      |      |
|                                      | JANV | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |
| 1                                    | 172  | 8106 | 868  | 84   | 84  | 28   | 80   | 278  | 437  | 840  | 8482 | 247  |
| 2                                    | 166  | 877  | 865  | 83   | 80  | 28   | 68   | 301  | 463  | 841  | 8444 | 245  |
| 3                                    | 163  | 872  | 865  | 83   | 46  | 21   | 83   | 302  | 471  | 841  | 8438 | 242  |
| 4                                    | 159  | 888  | 866  | 83   | 42  | 23   | 102  | 304  | 476  | 842  | 8427 | 238  |
| 9                                    | 184  | 888  | 863  | 82   | 37  | 19   | 108  | 302  | 480  | 842  | 8418 | 235  |
| 4                                    | 180  | 882  | 868  | 83   | 35  | 20   | 106  | 301  | 485  | 842  | 8407 | 231  |
| 7                                    | 148  | 877  | 74   | 84   | 36  | 20   | 108  | 302  | 488  | 843  | 398  | 227  |
| 8                                    | 142  | 877  | 874  | 86   | 36  | 21   | 107  | 308  | 491  | 844  | 387  | 224  |
| 9                                    | 134  | 882  | 878  | 87   | 36  | 22   | 106  | 317  | 494  | 844  | 376  | 220  |
| 10                                   | 128  | 882  | 881  | 89   | 38  | 22   | 108  | 326  | 497  | 844  | 367  | 218  |
| 11                                   | 120  | 879  | 884  | 61   | 38  | 22   | 106  | 332  | 801  | 843  | 388  | 218  |
| 12                                   | 118  | 877  | 886  | 63   | 38  | 23   | 112  | 337  | 808  | 842  | 347  | 214  |
| 13                                   | 118  | 878  | 885  | 68   | 38  | 20   | 128  | 344  | 808  | 841  | 339  | 214  |
| 14                                   | 118  | 873  | 885  | 60   | 38  | 23   | 128  | 349  | 812  | 838  | 331  | 216  |
| 18                                   | 118  | 874  | 883  | 84   | 36  | 28   | 139  | 384  | 818  | 834  | 328  | 217  |
| 16                                   | 117  | 877  | 882  | 81   | 34  | 24   | 152  | 362  | 817  | 834  | 319  | 217  |
| 17                                   | 118  | 879  | 878  | 46   | 32  | 24   | 160  | 368  | 819  | 831  | 313  | 213  |
| 18                                   | 121  | 880  | 74   | 44   | 30  | 23   | 168  | 366  | 821  | 827  | 309  | 207  |
| 19                                   | 121  | 881  | 67   | 44   | 31  | 22   | 178  | 371  | 823  | 828  | 308  | 202  |
| 20                                   | 121  | 881  | 67   | 43   | 32  | 24   | 188  | 378  | 826  | 821  | 302  | 200  |
| 21                                   | 121  | 881  | 62   | 43   | 34  | 24   | 204  | 377  | 827  | 818  | 294  | 200  |
| 22                                   | 121  | 880  | 98   | 41   | 38  | 24   | 217  | 379  | 829  | 813  | 292  | 200  |
| 23                                   | 120  | 879  | 98   | 40   | 38  | 27   | 228  | 380  | 831  | 808  | 287  | 194  |
| 24                                   | 118  | 878  | 88   | 43   | 41  | 28   | 234  | 387  | 834  | 802  | 283  | 190  |
| 28                                   | 117  | 876  | 88   | 46   | 41  | 26   | 237  | 376  | 836  | 489  | 276  | 188  |
| 26                                   | 116  | 873  | 82   | 48   | 40  | 28   | 242  | 414  | 837  | 489  | 270  | 179  |
| 27                                   | 118  | 868  | 49   | 48   | 37  | 31   | 292  | 426  | 838  | 484  | 263  | 173  |
| 28                                   | 114  | 867  | 46   | 82   | 32  | 33   | 262  | 434  | 838  | 479  | 289  | 167  |
| 29                                   | 113  | 869  | 47   | 84   | 32  | 33   | 271  | 440  | 839  | 473  | 283  | 160  |
| 30                                   | 114  | 88   | 80   | 84   | 32  | 37   | 282  | 448  | 840  | 466  | 249  | 156  |
| 31                                   | 112  | 80   |      |      | 31  |      | 291  | 452  |      | 489  |      | 183  |

hauteur mini = 19 cm  
hauteur maxi = 844 cm

première observation le 05/06  
première observation le 08/10

1 from

| ISBA DER A NIAPUNKE EN 1988                         |      |      |      |      |     |      |      |      |      |      |      |      | DNHE |
|-----------------------------------------------------|------|------|------|------|-----|------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en ca                |      |      |      |      |     |      |      |      |      |      |      |      |      |
| Zéro de l'échelle = 257.66 m ION                    |      |      |      |      |     |      |      |      |      |      |      |      |      |
|                                                     | JANV | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                                   | 238  | 114  | 54   | 31   | 11  | -2   | -21  | 194  | 323  | 419  | 449  | 395  |      |
| 2                                                   | 253  | 112  | 84   | 30   | 10  | -2   | -20  | 164  | 327  | 421  | 449  | 393  |      |
| 3                                                   | 249  | 108  | 82   | 29   | 10  | -3   | -16  | 178  | 336  | 423  | 449  | 390  |      |
| 4                                                   | 247  | 106  | 80   | 28   | 10  | -1   | -12  | 184  | 341  | 425  | 449  | 387  |      |
| 5                                                   | 243  | 102  | 47   | 28   | 9   | 2    | -9   | 192  | 344  | 427  | 449  | 383  |      |
| 6                                                   | 238  | 99   | 44   | 27   | 9   | 0    | -8   | 198  | 349  | 429  | 448  | 379  |      |
| 7                                                   | 233  | 97   | 43   | 27   | 9   | -2   | -3   | 206  | 353  | 431  | 446  | 377  |      |
| 8                                                   | 228  | 96   | 42   | 27   | 9   | -3   | 0    | 212  | 356  | 433  | 446  | 373  |      |
| 9                                                   | 224  | 93   | 42   | 26   | 10  | -3   | 6    | 217  | 359  | 438  | 448  | 367  |      |
| 10                                                  | 220  | 90   | 41   | 26   | 11  | -4   | 17   | 222  | 363  | 436  | 444  | 362  |      |
| 11                                                  | 216  | 88   | 40   | 26   | 11  | -8   | 28   | 227  | 368  | 437  | 443  | 356  |      |
| 12                                                  | 205  | 86   | 38   | 25   | 10  | -8   | 34   | 231  | 372  | 438  | 443  | 352  |      |
| 13                                                  | 195  | 82   | 37   | 24   | 9   | -13  | 43   | 236  | 374  | 440  | 442  | 349  |      |
| 14                                                  | 185  | 78   | 37   | 24   | 8   | -15  | 53   | 243  | 377  | 441  | 439  | 346  |      |
| 15                                                  | 182  | 75   | 38   | 23   | 7   | -17  | 58   | 247  | 380  | 443  | 437  | 341  |      |
| 16                                                  | 176  | 73   | 39   | 23   | 6   | -17  | 60   | 254  | 386  | 444  | 435  | 337  |      |
| 17                                                  | 169  | 69   | 40   | 22   | 5   | -18  | 61   | 261  | 389  | 446  | 433  | 334  |      |
| 18                                                  | 165  | 67   | 41   | 22   | 5   | -18  | 63   | 266  | 391  | 448  | 429  | 331  |      |
| 19                                                  | 159  | 65   | 42   | 21   | 4   | -18  | 68   | 272  | 393  | 447  | 427  | 326  |      |
| 20                                                  | 155  | 63   | 43   | 20   | 4   | -18  | 72   | 276  | 398  | 448  | 424  | 321  |      |
| 21                                                  | 151  | 61   | 44   | 20   | 4   | -19  | 79   | 280  | 397  | 449  | 422  | 317  |      |
| 22                                                  | 149  | 61   | 45   | 19   | 3   | -19  | 85   | 283  | 400  | 448  | 420  | 311  |      |
| 23                                                  | 145  | 60   | 44   | 18   | 3   | -20  | 94   | 288  | 402  | 448  | 418  | 307  |      |
| 24                                                  | 142  | 59   | 43   | 17   | 3   | -21  | 104  | 292  | 404  | 448  | 416  | 305  |      |
| 25                                                  | 139  | 58   | 41   | 16   | 2   | -21  | 110  | 294  | 406  | 449  | 414  | 303  |      |
| 26                                                  | 135  | 57   | 39   | 15   | 2   | -21  | 115  | 298  | 408  | 449  | 411  | 300  |      |
| 27                                                  | 131  | 56   | 41   | 14   | 1   | -22  | 124  | 301  | 410  | 450  | 408  | 296  |      |
| 28                                                  | 129  | 55   | 40   | 14   | 1   | -22  | 130  | 303  | 412  | 451  | 405  | 292  |      |
| 29                                                  | 125  | 54   | 39   | 12   | 1   | -22  | 137  | 307  | 415  | 451  | 403  | 286  |      |
| 30                                                  | 119  | 53   | 36   | 11   | -1  | -22  | 142  | 313  | 417  | 450  | 400  | 280  |      |
| 31                                                  | 116  | 33   |      |      | -1  |      | 147  | 320  |      | 449  |      | 274  |      |
| hauteur mini = -22 ca première observation le 27/04 |      |      |      |      |     |      |      |      |      |      |      |      |      |
| hauteur maxi = 451 ca première observation le 28/10 |      |      |      |      |     |      |      |      |      |      |      |      |      |

| BASEE A PANKOUROU EN 1988                                  |    |    |    |     |    |     |     |     |     |     | DNHE |     |
|------------------------------------------------------------|----|----|----|-----|----|-----|-----|-----|-----|-----|------|-----|
| HAUTEURS MOYENNES JOURNALIERES en cm                       |    |    |    |     |    |     |     |     |     |     |      |     |
| 3ère de l'échelle = 288,34 m IGN                           |    |    |    |     |    |     |     |     |     |     |      |     |
| JANV FEVR MARS AVRI MAI JUIN JUIL AOÛT SEPT OCTO NOVE DECE |    |    |    |     |    |     |     |     |     |     |      |     |
| 1                                                          | 87 | 33 | 18 | -1  | 13 | -10 | 198 | 444 | 733 | 675 | 361  | 167 |
| 2                                                          | 84 | 32 | 15 | -1  | 9  | -10 | 198 | 463 | 728 | 669 | 351  | 162 |
| 3                                                          | 85 | 32 | 15 | -2  | 8  | -11 | 174 | 443 | 722 | 664 | 341  | 158 |
| 4                                                          | 84 | 32 | 14 | -2  | 6  | -11 | 147 | 407 | 712 | 661 | 330  | 153 |
| 5                                                          | 82 | 31 | 14 | -3  | 6  | 88  | 129 | 378 | 703 | 689 | 322  | 150 |
| 6                                                          | 80 | 30 | 13 | -3  | 5  | 37  | 142 | 357 | 691 | 684 | 318  | 146 |
| 7                                                          | 80 | 29 | 12 | -4  | 4  | 19  | 181 | 358 | 689 | 647 | 311  | 141 |
| 8                                                          | 49 | 28 | 12 | -5  | 3  | 70  | 183 | 358 | 694 | 637 | 306  | 137 |
| 9                                                          | 49 | 27 | 11 | -5  | 2  | 61  | 188 | 349 | 714 | 626 | 293  | 133 |
| 10                                                         | 48 | 27 | 11 | -6  | 2  | 57  | 183 | 377 | 757 | 612 | 287  | 131 |
| 11                                                         | 47 | 26 | 10 | -6  | 1  | 63  | 133 | 374 | 768 | 602 | 285  | 129 |
| 12                                                         | 46 | 25 | 10 | -7  | 0  | 28  | 122 | 370 | 763 | 588 | 282  | 127 |
| 13                                                         | 46 | 25 | 9  | -7  | 0  | 29  | 117 | 341 | 780 | 579 | 273  | 124 |
| 14                                                         | 45 | 24 | 8  | -7  | -1 | 24  | 114 | 348 | 747 | 570 | 267  | 121 |
| 15                                                         | 45 | 24 | 8  | -8  | -1 | 38  | 115 | 380 | 750 | 562 | 262  | 119 |
| 16                                                         | 44 | 23 | 8  | -8  | -2 | 28  | 120 | 380 | 744 | 553 | 250  | 117 |
| 17                                                         | 43 | 23 | 8  | -8  | -2 | 34  | 173 | 372 | 746 | 538 | 242  | 114 |
| 18                                                         | 42 | 23 | 7  | -8  | -3 | 56  | 199 | 364 | 749 | 530 | 234  | 112 |
| 19                                                         | 42 | 22 | 6  | -9  | -3 | 111 | 244 | 392 | 744 | 526 | 229  | 109 |
| 20                                                         | 41 | 22 | 6  | -9  | -4 | 101 | 281 | 420 | 734 | 521 | 224  | 107 |
| 21                                                         | 40 | 20 | 5  | -9  | -5 | 85  | 298 | 409 | 724 | 511 | 216  | 105 |
| 22                                                         | 40 | 20 | 5  | -10 | -6 | 64  | 310 | 426 | 711 | 500 | 206  | 102 |
| 23                                                         | 39 | 19 | 5  | -10 | -6 | 61  | 320 | 457 | 698 | 490 | 201  | 99  |
| 24                                                         | 38 | 19 | 5  | -10 | -7 | 74  | 328 | 497 | 688 | 482 | 200  | 97  |
| 25                                                         | 37 | 19 | 4  | -10 | -7 | 87  | 368 | 519 | 686 | 470 | 198  | 95  |
| 26                                                         | 37 | 18 | 3  | -11 | -8 | 90  | 387 | 550 | 678 | 460 | 192  | 92  |
| 27                                                         | 34 | 18 | 2  | -11 | -8 | 83  | 378 | 655 | 678 | 444 | 187  | 91  |
| 28                                                         | 34 | 17 | 2  | -11 | -8 | 80  | 368 | 715 | 678 | 432 | 182  | 89  |
| 29                                                         | 34 | 16 | 1  | -10 | -9 | 86  | 359 | 738 | 680 | 414 | 177  | 87  |
| 30                                                         | 33 |    | 1  | 19  | -9 | 89  | 353 | 740 | 678 | 392 | 172  | 86  |
| 31                                                         | 33 |    | 0  |     | -9 |     | 405 | 738 |     | 376 |      | 83  |
| hauteur mini = -11 cm première observation le 26/04        |    |    |    |     |    |     |     |     |     |     |      |     |
| hauteur maxi = 768 cm première observation le 11/09        |    |    |    |     |    |     |     |     |     |     |      |     |

LE SIGNE 0 PRECEDE LES HAUTEURS RECONSTITUEES .

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| BASSE A FANKOUROU EN 1988         |      |      |      |      |      |      |      |      |      |      |      |      | DNHE |  |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|--|
| DEBITS MOYENS JOURNALIERS en m3/s |      |      |      |      |      |      |      |      |      |      |      |      |      |  |
| ~~~~~                             |      |      |      |      |      |      |      |      |      |      |      |      |      |  |
| Surface = 31800 ka2               |      |      |      |      |      |      |      |      |      |      |      |      |      |  |
|                                   | JANV | FEVR | MARS | AVRI | MAI  | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |  |
| 1                                 | 7.09 | 2.13 | .868 | .180 | .480 | .000 | 44.9 | 278. | 713. | 624. | 170. | 42.9 |      |  |
| 2                                 | 6.86 | 1.98 | .837 | .180 | .376 | .000 | 39.4 | 304. | 701. | 618. | 139. | 40.9 |      |  |
| 3                                 | 6.62 | 1.98 | .837 | .160 | .382 | .000 | 35.7 | 276. | 676. | 607. | 149. | 39.4 |      |  |
| 4                                 | 6.39 | 1.98 | .808 | .160 | .308 | .000 | 33.2 | 227. | 680. | 603. | 138. | 37.4 |      |  |
| 5                                 | 5.94 | 1.84 | .808 | .140 | .308 | 6.62 | 27.2 | 186. | 667. | 600. | 130. | 36.3 |      |  |
| 6                                 | 5.49 | 1.70 | .480 | .140 | .288 | 2.79 | 33.3 | 166. | 648. | 592. | 126. | 34.8 |      |  |
| 7                                 | 5.49 | 1.87 | .452 | .120 | .268 | 6.66 | 36.7 | 167. | 645. | 582. | 120. | 33.0 |      |  |
| 8                                 | 5.27 | 1.43 | .482 | .100 | .280 | 10.3 | 34.4 | 167. | 633. | 567. | 116. | 31.8 |      |  |
| 9                                 | 5.27 | 1.33 | .426 | .100 | .232 | 13.2 | 39.4 | 179. | 684. | 531. | 108. | 30.0 |      |  |
| 10                                | 5.05 | 1.33 | .426 | .080 | .232 | 7.09 | 27.4 | 189. | 751. | 530. | 101. | 29.3 |      |  |
| 11                                | 4.83 | 1.22 | .400 | .080 | .216 | 8.83 | 30.0 | 185. | 768. | 516. | 100. | 28.6 |      |  |
| 12                                | 4.61 | 1.12 | .400 | .060 | .200 | 1.12 | 26.2 | 180. | 760. | 494. | 97.3 | 27.9 |      |  |
| 13                                | 4.61 | 1.12 | .376 | .060 | .200 | 1.87 | 28.1 | 170. | 740. | 479. | 91.1 | 26.9 |      |  |
| 14                                | 4.40 | 1.02 | .382 | .060 | .180 | 1.22 | 24.1 | 178. | 735. | 465. | 87.2 | 25.8 |      |  |
| 15                                | 4.40 | 1.02 | .352 | .040 | .180 | 2.44 | 23.8 | 192. | 740. | 482. | 84.1 | 25.1 |      |  |
| 16                                | 4.18 | .932 | .382 | .040 | .160 | 1.12 | 23.8 | 192. | 730. | 438. | 77.2 | 24.4 |      |  |
| 17                                | 3.97 | .932 | .382 | .040 | .160 | 2.61 | 48.3 | 183. | 734. | 411. | 73.0 | 23.4 |      |  |
| 18                                | 3.76 | .932 | .330 | .040 | .140 | 6.86 | 84.1 | 173. | 738. | 403. | 69.1 | 22.8 |      |  |
| 19                                | 3.76 | .848 | .308 | .020 | .140 | 22.4 | 74.0 | 208. | 730. | 397. | 66.9 | 21.8 |      |  |
| 20                                | 3.56 | .848 | .308 | .020 | .120 | 19.1 | 96.6 | 245. | 715. | 389. | 64.8 | 21.1 |      |  |
| 21                                | 3.35 | .700 | .288 | .020 | .100 | 14.3 | 109. | 230. | 699. | 374. | 61.7 | 20.4 |      |  |
| 22                                | 3.35 | .700 | .288 | .000 | .080 | 8.78 | 119. | 283. | 679. | 358. | 58.3 | 19.4 |      |  |
| 23                                | 3.16 | .666 | .288 | .000 | .080 | 8.04 | 128. | 296. | 659. | 343. | 56.8 | 18.5 |      |  |
| 24                                | 2.97 | .666 | .288 | .000 | .060 | 11.9 | 136. | 384. | 644. | 332. | 56.5 | 17.9 |      |  |
| 25                                | 2.79 | .666 | .268 | .000 | .060 | 14.9 | 178. | 386. | 641. | 314. | 55.6 | 17.3 |      |  |
| 26                                | 2.79 | .632 | .250 | .000 | .040 | 15.8 | 201. | 434. | 628. | 300. | 53.1 | 16.4 |      |  |
| 27                                | 2.28 | .632 | .232 | .000 | .040 | 14.3 | 190. | 894. | 628. | 278. | 51.0 | 16.1 |      |  |
| 28                                | 2.28 | .600 | .232 | .000 | .040 | 13.0 | 178. | 883. | 628. | 261. | 48.9 | 15.5 |      |  |

| BARRA 188A A BAH EN 1988                                 |      |      |      |     |      |      |      |      |      |      |      | DNHE |
|----------------------------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm                     |      |      |      |     |      |      |      |      |      |      |      |      |
| Zéro de l'échelle = 258.54 m IGN                         |      |      |      |     |      |      |      |      |      |      |      |      |
| JANV                                                     | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                                        | 203  | 93   | 35   | 4   | .    | .    | 170  | 291  | 382  | 411  | 343  |      |
| 2                                                        | 200  | 91   | 33   | 3   | .    | .    | 174  | 294  | 384  | 411  | 340  |      |
| 3                                                        | 198  | 89   | 32   | 1   | .    | .    | 184  | 299  | 385  | 411  | 337  |      |
| 4                                                        | 192  | 84   | 31   | 1   | .    | .    | 191  | 308  | 388  | 410  | 335  |      |
| 5                                                        | 188  | 82   | 30   | .   | .    | .    | 196  | 309  | 390  | 409  | 331  |      |
| 6                                                        | 185  | 78   | 29   | .   | .    | .    | 203  | 313  | 391  | 407  | 328  |      |
| 7                                                        | 182  | 75   | 27   | .   | .    | .    | 208  | 317  | 392  | 407  | 325  |      |
| 8                                                        | 177  | 72   | 27   | .   | .    | .    | 207  | 321  | 394  | 407  | 318  |      |
| 9                                                        | 172  | 70   | 26   | .   | .    | .    | 210  | 324  | 396  | 405  | 311  |      |
| 10                                                       | 168  | 69   | 25   | .   | .    | .    | 214  | 327  | 398  | 403  | 307  |      |
| 11                                                       | 160  | 66   | 24   | .   | .    | .    | 218  | 329  | 399  | 402  | 303  |      |
| 12                                                       | 154  | 65   | 22   | .   | .    | .    | 222  | 332  | 401  | 398  | 300  |      |
| 13                                                       | 153  | 63   | 21   | .   | .    | .    | 223  | 336  | 402  | 396  | 296  |      |
| 14                                                       | 151  | 60   | 22   | .   | .    | .    | 229  | 339  | 403  | 393  | 293  |      |
| 15                                                       | 149  | 58   | 21   | .   | .    | .    | 227  | 344  | 404  | 391  | 290  |      |
| 16                                                       | 147  | 54   | 19   | .   | .    | .    | 233  | 347  | 406  | 390  | 287  |      |
| 17                                                       | 143  | 55   | 17   | .   | .    | .    | 239  | 351  | 407  | 387  | 284  |      |
| 18                                                       | 140  | 53   | 17   | .   | .    | .    | 242  | 354  | 408  | 384  | 282  |      |
| 19                                                       | 139  | 51   | 16   | .   | .    | .    | 246  | 356  | 409  | 380  | 277  |      |
| 20                                                       | 129  | 49   | 14   | .   | .    | .    | 4    | 250  | 359  | 410  | 376  | 271  |
| 21                                                       | 124  | 47   | 12   | .   | .    | .    | 35   | 254  | 362  | 410  | 375  | 264  |
| 22                                                       | 120  | 45   | 10   | .   | .    | .    | 62   | 257  | 364  | 410  | 373  | 259  |
| 23                                                       | 118  | 44   | 8    | .   | .    | .    | 75   | 259  | 364  | 410  | 371  | 258  |
| 24                                                       | 117  | 43   | 6    | .   | .    | .    | 93   | 262  | 368  | 411  | 368  | 254  |
| 25                                                       | 115  | 42   | 5    | .   | .    | .    | 112  | 265  | 370  | 411  | 364  | 252  |
| 26                                                       | 113  | 40   | 4    | .   | .    | .    | 122  | 268  | 371  | 412  | 361  | 246  |
| 27                                                       | 111  | 38   | 5    | .   | .    | .    | 136  | 271  | 373  | 412  | 357  | 244  |
| 28                                                       | 108  | 37   | 4    | .   | .    | .    | 142  | 274  | 375  | 413  | 354  | 241  |
| 29                                                       | 102  | 34   | 5    | .   | .    | .    | 148  | 279  | 377  | 412  | 350  | 234  |
| 30                                                       | 99   |      | 4    | .   | .    | .    | 156  | 283  | 380  | 411  | 347  | 229  |
| 31                                                       | 97   |      | 4    | .   | .    | .    | 163  | 287  |      | 411  |      | 222  |
| hauteur mini = à sec      première observation le 05/04  |      |      |      |     |      |      |      |      |      |      |      |      |
| hauteur maxi = 413 cm      première observation le 28/10 |      |      |      |     |      |      |      |      |      |      |      |      |

LE SIGNE . INDIQUE L'ABSENCE D'ECOULEMENT .

1ba

| BARRA 188A A BARAFERE EN 1988                            |      |      |      |     |      |      |      |      |      |      |      | DNHE |
|----------------------------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm                     |      |      |      |     |      |      |      |      |      |      |      |      |
| Zéro de l'échelle = 259.01 m IGN                         |      |      |      |     |      |      |      |      |      |      |      |      |
| JANV                                                     | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                                        | 218  | 129  | 72   | 39  | 7    | .    | 179  | 293  | 380  | 408  | 344  |      |
| 2                                                        | 214  | 125  | 70   | 38  | 4    | .    | 190  | 295  | 382  | 409  | 343  |      |
| 3                                                        | 214  | 122  | 69   | 37  | 5    | .    | 197  | 301  | 382  | 409  | 339  |      |
| 4                                                        | 212  | 118  | 68   | 37  | 4    | .    | 201  | 304  | 383  | 409  | 335  |      |
| 5                                                        | 209  | 115  | 67   | 36  | 2    | .    | 206  | 307  | 385  | 409  | 331  |      |
| 6                                                        | 207  | 114  | 66   | 35  | 1    | .    | 213  | 309  | 387  | 408  | 348  |      |
| 7                                                        | 204  | 112  | 65   | 35  | .    | .    | 216  | 312  | 388  | 408  | 345  |      |
| 8                                                        | 201  | 109  | 63   | 34  | .    | .    | 219  | 317  | 389  | 407  | 341  |      |
| 9                                                        | 198  | 100  | 62   | 34  | .    | .    | 221  | 320  | 390  | 407  | 337  |      |
| 10                                                       | 195  | 100  | 61   | 33  | .    | .    | 224  | 323  | 392  | 407  | 334  |      |
| 11                                                       | 193  | 99   | 60   | 32  | .    | .    | 229  | 327  | 394  | 406  | 330  |      |
| 12                                                       | 190  | 99   | 59   | 30  | .    | .    | 233  | 330  | 396  | 406  | 328  |      |
| 13                                                       | 187  | 99   | 58   | 29  | .    | .    | 234  | 334  | 398  | 403  | 323  |      |
| 14                                                       | 182  | 98   | 57   | 27  | .    | .    | 238  | 338  | 399  | 401  | 323  |      |
| 15                                                       | 179  | 98   | 56   | 25  | .    | .    | 237  | 341  | 400  | 398  | 321  |      |
| 16                                                       | 174  | 97   | 55   | 24  | .    | .    | 244  | 343  | 401  | 394  | 315  |      |
| 17                                                       | 173  | 94   | 54   | 23  | .    | .    | 247  | 347  | 402  | 392  | 313  |      |
| 18                                                       | 170  | 95   | 53   | 22  | .    | .    | 249  | 350  | 403  | 390  | 309  |      |
| 19                                                       | 164  | 93   | 52   | 21  | .    | .    | 252  | 352  | 404  | 387  | 305  |      |
| 20                                                       | 162  | 90   | 51   | 20  | .    | .    | 256  | 353  | 405  | 388  | 301  |      |
| 21                                                       | 159  | 88   | 50   | 19  | .    | .    | 259  | 354  | 405  | 385  | 295  |      |
| 22                                                       | 155  | 86   | 49   | 17  | .    | .    | 263  | 356  | 408  | 382  | 292  |      |
| 23                                                       | 151  | 84   | 48   | 16  | .    | .    | 266  | 359  | 405  | 381  | 288  |      |
| 24                                                       | 148  | 82   | 47   | 15  | .    | .    | 268  | 362  | 408  | 380  | 285  |      |
| 25                                                       | 145  | 81   | 46   | 13  | .    | .    | 270  | 365  | 406  | 378  | 283  |      |
| 26                                                       | 143  | 80   | 45   | 12  | .    | .    | 274  | 368  | 407  | 375  | 279  |      |
| 27                                                       | 142  | 78   | 44   | 11  | .    | .    | 72   | 280  | 371  | 408  | 373  | 277  |
| 28                                                       | 141  | 74   | 43   | 10  | .    | .    | 132  | 285  | 372  | 408  | 372  | 271  |
| 29                                                       | 139  | 73   | 42   | 9   | .    | .    | 184  | 287  | 375  | 408  | 371  | 266  |
| 30                                                       | 136  |      | 41   | 8   | .    | .    | 167  | 289  | 378  | 408  | 369  | 258  |
| 31                                                       | 133  |      | 40   | .   | .    | .    | 175  | 291  |      | 408  |      | 255  |
| hauteur mini = à sec      première observation le 07/05  |      |      |      |     |      |      |      |      |      |      |      |      |
| hauteur maxi = 409 cm      première observation le 02/11 |      |      |      |     |      |      |      |      |      |      |      |      |

LE SIGNE . INDIQUE L'ABSENCE D'ECOULEMENT .

1ba

| NIGER A SEGOU EN 1988                                    |      |      |      |     |      |      |      |      |      |      |      | DNHE |
|----------------------------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm                     |      |      |      |     |      |      |      |      |      |      |      |      |
| Zéro de l'échelle = 278.46 m IGN                         |      |      |      |     |      |      |      |      |      |      |      |      |
| JANV                                                     | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                                        | 287  | 307  | 323  | 283 | 279  | 261  | 295  | 315  | 376  | 381  | 329  | 293  |
| 2                                                        | 286  | 307  | 323  | 287 | 279  | 265  | 290  | 321  | 371  | 380  | 328  | 293  |
| 3                                                        | 285  | 311  | 322  | 287 | 279  | 265  | 290  | 324  | 369  | 383  | 326  | 293  |
| 4                                                        | 281  | 313  | 323  | 287 | 279  | 265  | 289  | 326  | 370  | 387  | 323  | 290  |
| 5                                                        | 289  | 314  | 322  | 287 | 279  | 264  | 290  | 328  | 371  | 383  | 318  | 288  |
| 6                                                        | 298  | 316  | 320  | 286 | 280  | 263  | 300  | 333  | 378  | 379  | 315  | 290  |
| 7                                                        | 302  | 318  | 318  | 284 | 281  | 263  | 309  | 336  | 382  | 377  | 311  | 291  |
| 8                                                        | 303  | 318  | 313  | 283 | 280  | 265  | 314  | 343  | 387  | 373  | 314  | 293  |
| 9                                                        | 304  | 319  | 308  | 280 | 280  | 266  | 317  | 354  | 388  | 368  | 314  | 293  |
| 10                                                       | 304  | 318  | 303  | 274 | 282  | 267  | 314  | 353  | 393  | 366  | 315  | 293  |
| 11                                                       | 304  | 318  | 300  | 276 | 283  | 269  | 321  | 350  | 400  | 394  | 316  | 293  |
| 12                                                       | 305  | 317  | 295  | 276 | 283  | 269  | 318  | 349  | 397  | 347  | 316  | 290  |
| 13                                                       | 306  | 316  | 290  | 276 | 283  | 270  | 316  | 352  | 398  | 344  | 316  | 287  |
| 14                                                       | 306  | 318  | 282  | 278 | 284  | 271  | 316  | 352  | 400  | 341  | 312  | 289  |
| 15                                                       | 306  | 318  | 280  | 276 | 285  | 273  | 317  | 348  | 401  | 348  | 311  | 293  |
| 16                                                       | 306  | 318  | 278  | 277 | 285  | 273  | 321  | 342  | 407  | 381  | 310  | 296  |
| 17                                                       | 306  | 317  | 273  | 278 | 280  | 275  | 330  | 344  | 415  | 346  | 309  | 293  |
| 18                                                       | 305  | 316  | 273  | 279 | 275  | 278  | 331  | 344  | 420  | 334  | 308  | 290  |
| 19                                                       | 305  | 318  | 272  | 283 | 275  | 280  | 329  | 350  | 422  | 321  | 306  | 288  |
| 20                                                       | 304  | 316  | 272  | 284 | 273  | 282  | 324  | 358  | 421  | 328  | 304  | 286  |
| 21                                                       | 303  | 317  | 270  | 285 | 272  | 285  | 326  | 370  | 418  | 334  | 303  | 284  |
| 22                                                       | 302  | 317  | 270  | 285 | 270  | 290  | 331  | 373  | 415  | 333  | 298  | 284  |
| 23                                                       | 301  | 318  | 270  | 288 | 266  | 298  | 334  | 381  | 410  | 338  | 299  | 283  |
| 24                                                       | 300  | 318  | 272  | 281 | 265  | 304  | 334  | 349  | 404  | 332  | 299  | 283  |
| 25                                                       | 296  | 318  | 273  | 276 | 264  | 308  | 335  | 359  | 392  | 336  | 300  | 287  |
| 26                                                       | 294  | 320  | 268  | 276 | 263  | 310  | 334  | 370  | 385  | 333  | 300  | 294  |
| 27                                                       | 291  | 321  | 268  | 276 | 259  | 314  | 328  | 378  | 383  | 330  | 300  | 298  |
| 28                                                       | 295  | 321  | 270  | 279 | 285  | 316  | 323  | 378  | 378  | 328  | 300  | 301  |
| 29                                                       | 298  | 322  | 272  | 280 | 286  | 308  | 316  | 386  | 381  | 328  | 295  | 302  |
| 30                                                       | 302  |      | 275  | 279 | 257  | 300  | 320  | 384  | 381  | 331  | 294  | 305  |
| 31                                                       | 308  |      | 278  |     | 262  |      | 318  | 383  |      | 330  |      | 306  |
| hauteur mini = 255 cm      première observation le 28/05 |      |      |      |     |      |      |      |      |      |      |      |      |
| hauteur maxi = 422 cm      première observation le 19/09 |      |      |      |     |      |      |      |      |      |      |      |      |

| BARRA 188A A BARAFERE EN 1988                                               |      |      |      |      |      |      |       |      |      |      |      | DNHE |
|-----------------------------------------------------------------------------|------|------|------|------|------|------|-------|------|------|------|------|------|
| DEBITS MOYENS JOURNALIERS en m3/s                                           |      |      |      |      |      |      |       |      |      |      |      |      |
| ~~~~~                                                                       |      |      |      |      |      |      |       |      |      |      |      |      |
| Surface = non connue                                                        |      |      |      |      |      |      |       |      |      |      |      |      |
|                                                                             | JANV | FEVR | MARS | AVRI | MAI  | JUIN | JUIL  | AOUT | SEPT | OCTO | NOVE | DECE |
| 1                                                                           | 35.5 | 12.4 | 5.56 | .000 | .000 | .000 | .000  | 43.2 | 100. | 174. | 182. | 102. |
| 2                                                                           | 34.5 | 11.6 | 5.22 | .000 | .000 | .000 | .000  | 48.5 | 102. | 175. | 182. | 97.9 |
| 3                                                                           | 33.5 | 10.8 | 5.08 | .000 | .000 | .000 | .000  | 52.1 | 106. | 173. | 181. | 92.0 |
| 4                                                                           | 32.5 | 10.1 | 4.75 | .000 | .000 | .000 | .000  | 53.5 | 109. | 174. | 180. | 86.7 |
| 5                                                                           | 31.6 | 10.0 | 4.85 | .000 | .000 | .000 | .000  | 54.6 | 113. | 175. | 179. | 81.8 |
| 6                                                                           | 30.8 | 10.2 | 4.67 | .000 | .000 | .000 | .000  | 57.3 | 115. | 177. | 177. | 80.0 |
| 7                                                                           | 29.5 | 10.4 | 4.47 | .000 | .000 | .000 | .000  | 57.8 | 118. | 178. | 175. | 78.6 |
| 8                                                                           | 28.1 | 10.3 | 4.15 | .000 | .000 | .000 | .000  | 57.5 | 124. | 180. | 171. | 77.7 |
| 9                                                                           | 26.8 | 9.63 | 3.98 | .000 | .000 | .000 | .000  | 57.5 | 126. | 181. | 167. | 77.7 |
| 10                                                                          | 25.7 | 10.0 | 3.80 | .000 | .000 | .000 | .000  | 59.1 | 128. | 184. | 164. | 75.3 |
| 11                                                                          | 25.0 | 10.2 | 3.62 | .000 | .000 | .000 | .000  | 61.3 | 133. | 185. | 188. | 77.1 |
| 12                                                                          | 23.9 | 10.3 | 3.45 | .000 | .000 | .000 | .000  | 62.6 | 136. | 187. | 195. | 74.9 |
| 13                                                                          | 22.9 | 10.5 | 3.27 | .000 | .000 | .000 | .000  | 63.1 | 139. | 189. | 147. | 72.6 |
| 14                                                                          | 21.4 | 10.4 | 3.11 | .000 | .000 | .000 | .000  | 63.9 | 142. | 189. | 144. | 71.1 |
| 15                                                                          | 20.6 | 10.7 | 2.92 | .000 | .000 | .000 | .000  | 65.3 | 143. | 189. | 138. | 67.9 |
| 16                                                                          | 19.7 | 10.3 | 2.74 | .000 | .000 | .000 | .000  | 69.4 | 144. | 188. | 134. | 65.1 |
| 17                                                                          | 18.6 | 9.94 | 2.54 | .000 | .000 | .000 | .000  | 70.9 | 147. | 187. | 130. | 61.3 |
| 18                                                                          | 17.9 | 9.56 | 2.37 | .000 | .000 | .000 | .000  | 72.0 | 149. | 186. | 129. | 56.6 |
| 19                                                                          | 17.2 | 9.07 | 2.19 | .000 | .000 | .000 | .000  | 74.0 | 150. | 186. | 129. | 54.6 |
| 20                                                                          | 16.8 | 8.50 | 2.01 | .000 | .000 | .000 | .000  | 74.8 | 150. | 186. | 130. | 51.8 |
| 21                                                                          | 16.6 | 8.07 | 1.83 | .000 | .000 | .000 | .000  | 79.1 | 152. | 186. | 128. | 50.0 |
| 22                                                                          | 16.3 | 7.61 | 1.64 | .000 | .000 | .000 | .000  | 81.5 | 154. | 185. | 127. | 48.3 |
| 23                                                                          | 15.9 | 7.26 | 1.46 | .000 | .000 | .000 | .000  | 83.5 | 157. | 184. | 129. | 47.2 |
| 24                                                                          | 15.7 | 6.95 | 1.28 | .000 | .000 | .000 | .000  | 84.9 | 160. | 184. | 128. | 45.3 |
| 25                                                                          | 15.6 | 6.82 | 1.10 | .000 | .000 | .000 | .000  | 86.1 | 164. | 184. | 126. | 44.2 |
| 26                                                                          | 15.4 | 6.72 | .913 | .000 | .000 | .000 | .000  | 88.3 | 168. | 184. | 121. | 42.9 |
| 27                                                                          | 15.2 | 6.42 | .731 | .000 | .000 | .000 | 9.04  | 91.9 | 170. | 186. | 119. | 42.2 |
| 28                                                                          | 15.0 | 5.80 | .548 | .000 | .000 | .000 | 29.20 | 95.4 | 170. | 186. | 116. | 40.3 |
| 29                                                                          | 14.8 | 5.67 | .367 | .000 | .000 | .000 | 32.6  | 96.7 | 172. | 185. | 112. | 38.8 |
| 30                                                                          | 13.7 |      | .184 | .000 | .000 | .000 | 37.8  | 98.2 | 174. | 185. | 107. | 36.5 |
| 31                                                                          | 13.2 |      | .000 | .000 | .000 |      | 41.3  | 99.4 |      | 183. |      | 35.6 |
| Moy 1988: 21.9 9.17 2.74 .000 .000 .000 4.70 71.1 141. 183. 146. 63.8 53.5  |      |      |      |      |      |      |       |      |      |      |      |      |
| Moy 54-88: 168. 93.1 39.6 13.5 4.86 3.97 23.3 85.3 166. 222. 246. 226. 106. |      |      |      |      |      |      |       |      |      |      |      |      |
| Mini obs: 13.6 6.97 1.39 .000 .000 .000 .731 40.7 79.0 97.6 68.4 30.0 38.0  |      |      |      |      |      |      |       |      |      |      |      |      |
| Maxi obs: 347. 264. 158. 65.8 25.0 26.6 67.6 188. 242. 306. 365. 388. 199.  |      |      |      |      |      |      |       |      |      |      |      |      |
| Débit mini = .000 m3/s première observation le 31/03                        |      |      |      |      |      |      |       |      |      |      |      |      |
| Débit maxi = 189. m3/s première observation le 13/10                        |      |      |      |      |      |      |       |      |      |      |      |      |

| BANKARANI A BELINGUE EN 1988         |      |      |      |     |      |      |      |      |      |      |      |     | DNHE |
|--------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|-----|------|
| HAUTEURS MOYENNES JOURNALIERES en cm |      |      |      |     |      |      |      |      |      |      |      |     |      |
| Zéro de l'échelle = 328.88 ± 18M     |      |      |      |     |      |      |      |      |      |      |      |     |      |
| JANV                                 | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |     |      |
| 1                                    | 100  | 106  | 89   | 116 | 117  | 118  | 141  | 164  | 158  | 282  | 129  | 107 |      |
| 2                                    | 94   | 110  | 103  | 117 | 147  | 131  | 158  | 165  | 163  | 288  | 131  | 103 |      |
| 3                                    | 90   | 113  | 102  | 103 | 156  | 131  | 141  | 175  | 163  | 331  | 134  | 102 |      |
| 4                                    | 103  | 114  | 104  | 102 | 161  | 125  | 154  | 188  | 142  | 373  | 133  | 94  |      |
| 5                                    | 108  | 117  | 98   | 122 | 163  | 108  | 160  | 188  | 158  | 308  | 136  | 104 |      |
| 6                                    | 107  | 116  | 93   | 128 | 159  | 129  | 133  | 186  | 163  | 209  | 119  | 112 |      |
| 7                                    | 107  | 113  | 104  | 125 | 153  | 138  | 139  | 185  | 167  | 296  | 139  | 112 |      |
| 8                                    | 109  | 115  | 102  | 125 | 133  | 119  | 156  | 183  | 166  | 333  | 135  | 111 |      |
| 9                                    | 107  | 115  | 106  | 128 | 184  | 113  | 136  | 179  | 186  | 197  | 131  | 97  |      |
| 10                                   | 100  | 114  | 120  | 108 | 184  | 125  | 129  | 191  | 151  | 236  | 132  | 110 |      |
| 11                                   | 108  | 114  | 121  | 132 | 184  | 132  | 162  | 194  | 136  | 322  | 134  | 69  |      |
| 12                                   | 107  | 112  | 98   | 126 | 186  | 109  | 173  | 178  | 178  | 254  | 132  | 97  |      |
| 13                                   | 106  | 114  | 90   | 129 | 184  | 130  | 174  | 179  | 164  | 178  | 113  | 98  |      |
| 14                                   | 106  | 109  | 106  | 113 | 135  | 143  | 169  | 180  | 164  | 172  | 123  | 99  |      |
| 15                                   | 109  | 115  | 114  | 106 | 121  | 147  | 178  | 174  | 167  | 165  | 120  | 98  |      |
| 16                                   | 107  | 111  | 129  | 118 | 133  | 151  | 187  | 174  | 164  | 256  | 121  | 97  |      |
| 17                                   | 101  | 121  | 116  | 115 | 108  | 146  | 158  | 181  | 188  | 185  | 114  | 94  |      |
| 18                                   | 107  | 123  | 113  | 124 | 144  | 160  | 176  | 136  | 183  | 111  | 82   |     |      |
| 19                                   | 106  | 124  | 110  | 129 | 147  | 114  | 187  | 185  | 184  | 208  | 101  | 94  |      |
| 20                                   | 87   | 126  | 101  | 129 | 144  | 143  | 195  | 162  | 189  | 260  | 96   | 96  |      |
| 21                                   | 103  | 117  | 149  | 133 | 127  | 148  | 176  | 129  | 149  | 193  | 102  | 102 |      |
| 22                                   | 105  | 133  | 184  | 123 | 134  | 148  | 169  | 163  | 130  | 138  | 107  | 101 |      |
| 23                                   | 104  | 136  | 188  | 120 | 178  | 144  | 178  | 166  | 137  | 116  | 106  | 95  |      |
| 24                                   | 96   | 131  | 184  | 118 | 181  | 141  | 159  | 161  | 142  | 109  | 104  | 91  |      |
| 25                                   | 108  | 132  | 183  | 131 | 139  | 141  | 145  | 164  | 131  | 133  | 104  | 83  |      |
| 26                                   | 107  | 132  | 146  | 140 | 171  | 114  | 181  | 163  | 147  | 128  | 100  | 92  |      |
| 27                                   | 113  | 139  | 130  | 120 | 127  | 160  | 188  | 183  | 180  | 136  | 95   | 98  |      |
| 28                                   | 116  | 122  | 104  | 134 | 117  | 162  | 189  | 134  | 180  | 134  | 108  | 99  |      |
| 29                                   | 113  | 136  | 114  | 114 | 110  | 162  | 182  | 146  | 304  | 133  | 107  | 99  |      |
| 30                                   | 109  | 122  | 135  | 186 | 164  | 169  | 188  | 360  | 112  | 107  | 98   |     |      |
| 31                                   | 100  | 115  | 144  | 186 | 160  | 126  |      |      |      |      |      | 93  |      |

hauteur mini = 69 cm      première observation le 11/12  
hauteur maxi = 373 cm      première observation le 04/10

| BANI A BOFARA EN 1988                |      |      |      |     |      |      |      |      |      |      |      |     | DNHE |
|--------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|-----|------|
| HAUTEURS MOYENNES JOURNALIERES en cm |      |      |      |     |      |      |      |      |      |      |      |     |      |
| Zéro de l'échelle = 262.76 ± 18M     |      |      |      |     |      |      |      |      |      |      |      |     |      |
| JANV                                 | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |     |      |
| 1                                    | 87   | 28   | 5    | -16 | -8   | -32  | -8   | 263  | 424  | 814  | 420  | 165 |      |
| 2                                    | 96   | 27   | 5    | -17 | -10  | -32  | -8   | 274  | 431  | 814  | 408  | 162 |      |
| 3                                    | 88   | 24   | 4    | -18 | -10  | -32  | -6   | 267  | 438  | 813  | 398  | 159 |      |
| 4                                    | 84   | 26   | 4    | -19 | -11  | -33  | -7   | 267  | 448  | 812  | 389  | 156 |      |
| 5                                    | 83   | 25   | 3    | -20 | -11  | -33  | -8   | 267  | 454  | 812  | 374  | 152 |      |
| 6                                    | 82   | 25   | 3    | -21 | -12  | -34  | -8   | 273  | 462  | 811  | 365  | 148 |      |
| 7                                    | 81   | 25   | 2    | -22 | -12  | -35  | -8   | 285  | 466  | 810  | 350  | 145 |      |
| 8                                    | 80   | 24   | 1    | -23 | -13  | -36  | -7   | 314  | 471  | 809  | 344  | 142 |      |
| 9                                    | 49   | 23   | 0    | -24 | -18  | -37  | -6   | 322  | 477  | 808  | 323  | 139 |      |
| 10                                   | 47   | 22   | -1   | -24 | -17  | -38  | -5   | 329  | 479  | 806  | 310  | 136 |      |
| 11                                   | 46   | 21   | -1   | -25 | -19  | -38  | -4   | 331  | 482  | 805  | 297  | 133 |      |
| 12                                   | 45   | 20   | -2   | -25 | -20  | -39  | -3   | 329  | 490  | 804  | 288  | 130 |      |
| 13                                   | 44   | 19   | -3   | -25 | -20  | -39  | -2   | 328  | 491  | 802  | 275  | 129 |      |
| 14                                   | 43   | 19   | -4   | -26 | -21  | -37  | -2   | 328  | 492  | 800  | 268  | 128 |      |
| 15                                   | 42   | 19   | -5   | -26 | -21  | -37  | -1   | 319  | 494  | 798  | 258  | 126 |      |
| 16                                   | 41   | 18   | -5   | -27 | -22  | -37  | 0    | 325  | 497  | 796  | 257  | 124 |      |
| 17                                   | 40   | 17   | -6   | -27 | -22  | -38  | 0    | 319  | 498  | 793  | 240  | 122 |      |
| 18                                   | 39   | 16   | -6   | -28 | -23  | -38  | 0    | 314  | 501  | 789  | 233  | 120 |      |
| 19                                   | 38   | 15   | -7   | -28 | -24  | -38  | 0    | 319  | 503  | 788  | 226  | 118 |      |
| 20                                   | 37   | 14   | -7   | -29 | -24  | -35  | 0    | 320  | 503  | 785  | 220  | 115 |      |
| 21                                   | 36   | 12   | -8   | -29 | -25  | -36  | 0    | 329  | 507  | 779  | 214  | 112 |      |
| 22                                   | 36   | 11   | -9   | -30 | -26  | -37  | 0    | 330  | 508  | 771  | 209  | 109 |      |
| 23                                   | 35   | 10   | -10  | -30 | -27  | -37  | 0    | 337  | 509  | 767  | 204  | 106 |      |
| 24                                   | 35   | 9    | -11  | -31 | -28  | -39  | 0    | 347  | 510  | 760  | 199  | 104 |      |
| 25                                   | 34   | 8    | -11  | -31 | -28  | -40  | 0    | 357  | 511  | 757  | 194  | 102 |      |
| 26                                   | 34   | 7    | -12  | -32 | -26  | -40  | 0    | 389  | 512  | 752  | 189  | 100 |      |
| 27                                   | 33   | 7    | -12  | 0   | -27  | -41  | 0    | 389  | 513  | 745  | 184  | 97  |      |
| 28                                   | 32   | 6    | -13  | 0   | -28  | -41  | 0    | 390  | 514  | 740  | 180  | 96  |      |
| 29                                   | 31   | 6    | -13  | 0   | -29  | -42  | 0    | 398  | 514  | 735  | 175  | 96  |      |
| 30                                   | 30   | 5    | -14  | 0   | -30  | -42  | 0    | 405  | 514  | 730  | 170  | 95  |      |
| 31                                   | 29   | 4    | -15  | 0   | -31  | 0    | 0    | 412  | 515  | 725  | 165  | 94  |      |

hauteur mini = -42 cm      première observation le 29/06  
hauteur maxi = 814 cm      première observation le 28/09

LE SIGNE + PRECEDE LES HAUTEURS RECONSTITUEES .

| BANKARANI A BELINGUE EN 1988      |      |      |      |      |      |      |      |      |      |      |      |      | DNHE |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| DEBITS MOYENS JOURNALIERS en m3/s |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Surface = 34200 ka2               |      |      |      |      |      |      |      |      |      |      |      |      |      |
| JANV                              | FEVR | MARS | AVRI | MAI  | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |      |
| 1                                 | 69.5 | 77.0 | 56.2 | 89.8 | 91.2 | 92.8 | 124. | 188. | 149. | 300. | 107. | 78.3 |      |
| 2                                 | 62.1 | 82.1 | 73.2 | 91.2 | 133. | 110. | 149. | 159. | 186. | 362. | 110. | 73.2 |      |
| 3                                 | 57.3 | 85.9 | 72.0 | 73.2 | 146. | 110. | 124. | 178. | 156. | 441. | 114. | 72.0 |      |
| 4                                 | 73.2 | 87.2 | 74.5 | 72.0 | 193. | 102. | 143. | 196. | 125. | 825. | 113. | 62.1 |      |
| 5                                 | 75.7 | 91.2 | 67.0 | 97.8 | 156. | 79.5 | 152. | 196. | 149. | 398. | 117. | 77.0 |      |
| 6                                 | 78.3 | 89.8 | 49.2 | 106. | 180. | 107. | 113. | 193. | 186. | 224. | 93.8 | 84.7 |      |
| 7                                 | 78.3 | 85.9 | 74.5 | 102. | 141. | 120. | 121. | 144. | 163. | 376. | 121. | 84.7 |      |
| 8                                 | 80.8 | 88.8 | 72.0 | 102. | 113. | 93.8 | 146. | 188. | 161. | 445. | 116. | 83.4 |      |
| 9                                 | 78.3 | 88.8 | 77.0 | 106. | 143. | 85.9 | 117. | 181. | 146. | 211. | 110. | 68.8 |      |
| 10                                | 69.5 | 87.2 | 95.1 | 79.5 | 143. | 102. | 107. | 201. | 138. | 274. | 111. | 82.1 |      |
| 11                                | 78.7 | 87.2 | 96.4 | 111. | 143. | 111. | 155. | 206. | 117. | 424. | 114. | 34.1 |      |
| 12                                | 78.3 | 84.7 | 67.0 | 103. | 146. | 80.8 | 172. | 180. | 180. | 304. | 111. | 65.8 |      |
| 13                                | 77.0 | 87.2 | 57.3 | 107. | 143. | 109. | 173. | 181. | 158. | 180. | 85.9 | 67.0 |      |
| 14                                | 77.0 | 80.8 | 77.0 | 85.9 | 116. | 127. | 160. | 137. | 188. | 170. | 99.1 | 68.3 |      |
| 15                                | 80.8 | 88.8 | 87.2 | 77.0 | 96.4 | 133. | 180. | 173. | 163. | 189. | 95.1 | 67.0 |      |
| 16                                | 78.3 | 83.4 | 107. | 92.5 | 113. | 138. | 194. | 173. | 158. | 307. | 96.4 | 65.8 |      |
| 17                                | 70.7 | 94.4 | 89.8 | 88.5 | 79.5 | 131. | 149. | 183. | 149. | 191. | 87.2 | 62.1 |      |
| 18                                | 78.3 | 99.1 | 85.9 | 100. | 128. | 123. | 183. | 177. | 117. | 188. | 85.4 | 48.1 |      |
| 19                                | 77.0 | 100. | 82.1 | 107. | 105. | 87.2 | 194. | 144. | 143. | 229. | 70.7 | 62.1 |      |
| 20                                | 85.8 | 103. | 70.7 | 107. | 128. | 127. | 208. | 155. | 150. | 314. | 64.6 | 64.6 |      |
| 21                                | 73.2 | 91.2 | 136. | 113. | 108. | 130. | 177. | 107. | 136. | 204. | 72.0 | 72.0 |      |
| 22                                | 78.7 | 113. | 143. | 99.1 | 114. | 134. | 166. | 156. | 109. | 120. | 78.3 | 70.7 |      |
| 23                                | 74.8 | 117. | 144. | 98.1 | 178. | 128. | 180. | 161. | 118. | 89.8 | 77.0 | 63.3 |      |
| 24                                | 64.6 | 110. | 143. | 92.8 | 185. | 124. | 180. | 153. | 128. | 80.8 | 74.5 | 58.5 |      |
| 25                                | 78.7 | 111. | 141. | 110. | 121. | 124. | 130. | 188. | 110. | 113. | 74.5 | 49.2 |      |
| 26                                | 78.3 | 111. | 131. | 123. | 169. | 87.2 | 183. | 156. | 133. | 106. | 69.5 | 89.7 |      |
| 27                                | 85.9 | 116. | 109. | 93.1 | 105. | 132. | 196. | 141. | 137. | 117. | 63.3 | 67.0 |      |
| 28                                | 89.8 | 97.8 | 77.0 | 114. | 91.2 | 185. | 198. | 114. | 137. | 114. | 79.5 | 68.3 |      |
| 29                                | 85.9 | 117. | 87.2 | 87.2 | 82.1 | 155. | 186. | 131. | 370. | 113. | 78.3 | 68.3 |      |
| 30                                | 80.8 | 97.8 | 116. | 146. | 158. | 166. | 149. | 498. | 84.7 | 78.3 | 67.0 |      |      |
| 31                                | 69.5 | 88.5 | 128. | 146. | 152. | 103. |      |      |      |      |      | 60.9 |      |

Moy 1988: 78.0 95.1 91.2 78.1 129. 117. 160. 164. 163. 234. 92.2 66.9 124.

Moy64-88: 83.4 60.1 80.1 53.9 64.3 106. 217. 447. 1030 789. 326. 145. 294.

Mini obs: 37.0 23.1 14.4 14.6 14.3 24.3 48.9 113. 127. 234. 78.0 86.3 124.

Maxi obs: 181. 111. 124. 166. 196. 301. 942. 1170 1800 1670 886. 283. 800.

| NIGER A TAMANI EN 1988                              |      |      |      |     |      |      |      |      |      |      |      | DNHE |
|-----------------------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm                |      |      |      |     |      |      |      |      |      |      |      |      |
| Zero de l'échelle = 282.36 m IGN                    |      |      |      |     |      |      |      |      |      |      |      |      |
| JANV                                                | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                                   | 898  | 862  | 870  | 866 | 83   | 68   | 886  | 8212 | 394  | 412  | 232  | 8142 |
| 2                                                   | 898  | 862  | 871  | 856 | 83   | 61   | 888  | 8218 | 396  | 417  | 227  | 8139 |
| 3                                                   | 898  | 861  | 871  | 850 | 84   | 55   | 894  | 8219 | 398  | 421  | 222  | 8136 |
| 4                                                   | 897  | 860  | 870  | 848 | 86   | 52   | 8108 | 8223 | 401  | 414  | 219  | 8132 |
| 5                                                   | 898  | 860  | 870  | 846 | 85   | 58   | 8120 | 8229 | 408  | 407  | 217  | 8129 |
| 6                                                   | 892  | 860  | 868  | 844 | 83   | 64   | 8124 | 8238 | 417  | 403  | 215  | 8126 |
| 7                                                   | 889  | 861  | 864  | 840 | 82   | 64   | 8121 | 8248 | 421  | 397  | 214  | 8123 |
| 8                                                   | 889  | 862  | 858  | 838 | 85   | 63   | 8119 | 8258 | 425  | 389  | 213  | 8122 |
| 9                                                   | 889  | 863  | 850  | 834 | 60   | 61   | 8119 | 8268 | 431  | 370  | 212  | 8121 |
| 10                                                  | 888  | 863  | 840  | 833 | 63   | 60   | 8122 | 8276 | 436  | 360  | 209  | 8119 |
| 11                                                  | 887  | 863  | 834  | 834 | 65   | 57   | 8124 | 8283 | 441  | 359  | 207  | 8117 |
| 12                                                  | 886  | 863  | 834  | 834 | 64   | 58   | 8123 | 8289 | 446  | 348  | 204  | 8118 |
| 13                                                  | 884  | 864  | 826  | 844 | 63   | 59   | 8126 | 8292 | 448  | 340  | 200  | 8113 |
| 14                                                  | 884  | 868  | 827  | 844 | 62   | 57   | 8135 | 8292 | 481  | 337  | 197  | 8111 |
| 15                                                  | 885  | 871  | 829  | 846 | 62   | 55   | 8181 | 8290 | 460  | 332  | 196  | 8108 |
| 16                                                  | 886  | 869  | 832  | 843 | 63   | 56   | 8160 | 8286 | 469  | 319  | 196  | 8104 |
| 17                                                  | 887  | 868  | 838  | 843 | 63   | 58   | 8159 | 8286 | 477  | 301  | 196  | 8101 |
| 18                                                  | 886  | 866  | 832  | 846 | 64   | 59   | 8158 | 8288 | 480  | 286  | 192  | 8099 |
| 19                                                  | 885  | 866  | 830  | 846 | 62   | 64   | 8163 | 8298 | 479  | 285  | 188  | 8098 |
| 20                                                  | 883  | 866  | 830  | 844 | 60   | 73   | 8174 | 8308 | 476  | 282  | 182  | 8097 |
| 21                                                  | 881  | 868  | 838  | 840 | 54   | 80   | 8189 | 8320 | 472  | 277  | 179  | 8096 |
| 22                                                  | 880  | 869  | 840  | 837 | 51   | 87   | 8206 | 8336 | 466  | 271  | 178  | 8094 |
| 23                                                  | 876  | 870  | 840  | 836 | 49   | 88   | 8212 | 8343 | 487  | 272  | 170  | 8092 |
| 24                                                  | 872  | 869  | 838  | 838 | 49   | 86   | 8212 | 8380 | 448  | 271  | 164  | 8090 |
| 25                                                  | 870  | 868  | 838  | 842 | 51   | 84   | 8211 | 8388 | 433  | 264  | 160  | 8089 |
| 26                                                  | 868  | 866  | 842  | 848 | 52   | 99   | 8209 | 8368 | 425  | 285  | 159  | 8088 |
| 27                                                  | 869  | 866  | 852  | 849 | 53   | 104  | 8208 | 8360 | 421  | 248  | 186  | 8087 |
| 28                                                  | 871  | 867  | 862  | 848 | 57   | 98   | 8202 | 8390 | 419  | 244  | 183  | 8085 |
| 29                                                  | 868  | 868  | 868  | 848 | 66   | 95   | 8201 | 8397 | 417  | 242  | 148  | 8084 |
| 30                                                  | 866  | 868  | 850  | 850 | 70   | 87   | 8203 | 8399 | 415  | 240  | 148  | 8084 |
| 31                                                  | 864  | 867  |      |     | 68   |      | 8207 | 8396 |      | 238  |      | 8083 |
| hauteur mini = 26 cm première observation le 13/03  |      |      |      |     |      |      |      |      |      |      |      |      |
| hauteur maxi = 480 cm première observation le 18/09 |      |      |      |     |      |      |      |      |      |      |      |      |

LE SIGNE + PRECEDE LES HAUTEURS RECONSTITUEES .

| BASSE A TIENKONGO EN 1988                           |      |      |      |     |      |      |      |      |      |      |      | DNHE |
|-----------------------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm                |      |      |      |     |      |      |      |      |      |      |      |      |
| Zero de l'échelle = non connu                       |      |      |      |     |      |      |      |      |      |      |      |      |
| JANV                                                | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                                   | 69   | 84   | ?    | ?   | ?    | 2    | 68   | 348  | 620  | 670  | 348  | 8144 |
| 2                                                   | 69   | 82   | ?    | ?   | ?    | 4    | 74   | 352  | 656  | 665  | 336  | 8141 |
| 3                                                   | 68   | 48   | ?    | ?   | ?    | 6    | 82   | 356  | 680  | 683  | 328  | 8138 |
| 4                                                   | 68   | 43   | ?    | ?   | ?    | 7    | 91   | 360  | 688  | 688  | 318  | 8135 |
| 5                                                   | 68   | 40   | ?    | ?   | ?    | 10   | 99   | 365  | 695  | 664  | 295  | 8132 |
| 6                                                   | 67   | 37   | ?    | ?   | ?    | 14   | 115  | 370  | 702  | 640  | 286  | 8128 |
| 7                                                   | 67   | 32   | ?    | ?   | ?    | 15   | 123  | 380  | 710  | 646  | 277  | 8125 |
| 8                                                   | 66   | 27   | ?    | ?   | ?    | 18   | 135  | 385  | 720  | 642  | 268  | 8122 |
| 9                                                   | 66   | 25   | ?    | ?   | ?    | 13   | 146  | 374  | 731  | 633  | 258  | 8119 |
| 10                                                  | 66   | 22   | ?    | ?   | ?    | 16   | 159  | 367  | 745  | 628  | 244  | 8116 |
| 11                                                  | 65   | 20   | ?    | ?   | ?    | 18   | 168  | 380  | 750  | 610  | 235  | 8113 |
| 12                                                  | 65   | 18   | ?    | ?   | ?    | 20   | 179  | 388  | 752  | 603  | 220  | 8110 |
| 13                                                  | 64   | 17   | ?    | ?   | ?    | 25   | 188  | 395  | 762  | 596  | 218  | 8107 |
| 14                                                  | 64   | 15   | ?    | ?   | ?    | 27   | 195  | 410  | 772  | 580  | 217  | 8104 |
| 15                                                  | 63   | 13   | ?    | ?   | ?    | 28   | 199  | 419  | 779  | 572  | 216  | 8101 |
| 16                                                  | 62   | 9    | ?    | ?   | ?    | 31   | 220  | 430  | 783  | 564  | 210  | 8099 |
| 17                                                  | 62   | 8    | ?    | ?   | ?    | 35   | 228  | 443  | 788  | 556  | 190  | 8097 |
| 18                                                  | 62   | 6    | ?    | ?   | ?    | 38   | 235  | 460  | 780  | 552  | 188  | 8095 |
| 19                                                  | 61   | 5    | ?    | ?   | ?    | 40   | 246  | 470  | 770  | 547  | 187  | 8093 |
| 20                                                  | 61   | 4    | ?    | ?   | ?    | 42   | 260  | 478  | 776  | 538  | 185  | 8090 |
| 21                                                  | 61   | 4    | ?    | ?   | ?    | 43   | 278  | 486  | 776  | 524  | 180  | 8088 |
| 22                                                  | 60   | 3    | ?    | ?   | ?    | 45   | 283  | 489  | 774  | 506  | 176  | 8086 |
| 23                                                  | 60   | 2    | ?    | ?   | ?    | 42   | 295  | 495  | 760  | 488  | 175  | 8084 |
| 24                                                  | 60   | 1    | ?    | ?   | ?    | 44   | 298  | 510  | 736  | 472  | 174  | 8081 |
| 25                                                  | 59   | ?    | ?    | ?   | ?    | 80   | 310  | 522  | 731  | 465  | 172  | 8079 |
| 26                                                  | 59   | ?    | ?    | ?   | ?    | 85   | 314  | 526  | 724  | 444  | 168  | 8077 |
| 27                                                  | 58   | ?    | ?    | ?   | ?    | 85   | 317  | 530  | 687  | 420  | 166  | 8075 |
| 28                                                  | 58   | ?    | ?    | ?   | ?    | 87   | 320  | 540  | 685  | 380  | 164  | 8073 |
| 29                                                  | 58   | ?    | ?    | ?   | ?    | 60   | 327  | 556  | 684  | 376  | 150  | 8070 |
| 30                                                  | 58   | ?    | ?    | ?   | ?    | 62   | 336  | 564  | 682  | 362  | 148  | 8068 |
| 31                                                  | 57   | ?    | ?    | ?   | ?    | 346  | 370  |      | 350  |      |      | 8066 |
| hauteur mini = 1 cm première observation le 24/02   |      |      |      |     |      |      |      |      |      |      |      |      |
| hauteur maxi = 788 cm première observation le 17/09 |      |      |      |     |      |      |      |      |      |      |      |      |

LE SIGNE + PRECEDE LES HAUTEURS RECONSTITUEES .

| NIGER A TILMBEYA EN 1988                            |      |      |      |     |      |      |      |      |      |      |      | DNHE |
|-----------------------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm                |      |      |      |     |      |      |      |      |      |      |      |      |
| Zero de l'échelle = 266.32 m IGN                    |      |      |      |     |      |      |      |      |      |      |      |      |
| JANV                                                | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                                   | 199  | 8134 | 887  | 887 | 841  | 829  | 116  | 8248 | 483  | 492  | 282  | 193  |
| 2                                                   | 198  | 8125 | 887  | 888 | 840  | 828  | 125  | 8245 | 485  | 487  | 277  | 190  |
| 3                                                   | 196  | 8116 | 886  | 885 | 840  | 828  | 128  | 8243 | 485  | 484  | 273  | 188  |
| 4                                                   | 199  | 8110 | 888  | 883 | 840  | 828  | 126  | 8243 | 480  | 483  | 270  | 183  |
| 5                                                   | 190  | 8107 | 890  | 885 | 840  | 827  | 122  | 8246 | 478  | 485  | 268  | 180  |
| 6                                                   | 133  | 8108 | 891  | 886 | 840  | 827  | 1117 | 8285 | 477  | 484  | 265  | 178  |
| 7                                                   | 126  | 8104 | 892  | 889 | 841  | 826  | 1118 | 8266 | 479  | 486  | 263  | 176  |
| 8                                                   | 126  | 8103 | 891  | 888 | 842  | 826  | 1117 | 8280 | 483  | 482  | 257  | 174  |
| 9                                                   | 128  | 8102 | 889  | 888 | 842  | 826  | 1123 | 293  | 484  | 477  | 253  | 172  |
| 10                                                  | 132  | 8101 | 887  | 887 | 842  | 826  | 1126 | 313  | 491  | 478  | 249  | 170  |
| 11                                                  | 135  | 8102 | 889  | 884 | 839  | 826  | 1138 | 328  | 500  | 458  | 247  | 168  |
| 12                                                  | 134  | 8106 | 890  | 881 | 837  | 826  | 1145 | 336  | 509  | 445  | 245  | 166  |
| 13                                                  | 135  | 8109 | 890  | 880 | 836  | 826  | 1154 | 339  | 515  | 433  | 243  | 163  |
| 14                                                  | 133  | 8109 | 886  | 849 | 836  | 826  | 1165 | 342  | 521  | 428  | 247  | 161  |
| 15                                                  | 134  | 8109 | 888  | 849 | 835  | 827  | 1168 | 354  | 522  | 419  | 248  | 161  |
| 16                                                  | 138  | 8108 | 876  | 848 | 835  | 828  | 1168 | 355  | 523  | 400  | 247  | 157  |
| 17                                                  | 140  | 8107 | 871  | 847 | 834  | 829  | 1170 | 380  | 527  | 393  | 246  | 155  |
| 18                                                  | 140  | 8106 | 868  | 847 | 834  | 830  | 1175 | 350  | 532  | 386  | 246  | 151  |
| 19                                                  | 141  | 8106 | 866  | 847 | 835  | 831  | 8184 | 351  | 542  | 378  | 245  | 151  |
| 20                                                  | 144  | 8101 | 863  | 847 | 838  | 833  | 8191 | 357  | 542  | 362  | 242  | 149  |
| 21                                                  | 146  | 874  | 862  | 846 | 840  | 836  | 8196 | 368  | 552  | 357  | 237  | 144  |
| 22                                                  | 148  | 892  | 862  | 846 | 839  | 838  | 8205 | 397  | 553  | 346  | 235  | 144  |
| 23                                                  | 149  | 890  | 860  | 846 | 837  | 842  | 8215 | 421  | 556  | 337  | 231  | 141  |
| 24                                                  | 150  | 889  | 859  | 847 | 835  | 848  | 8224 | 433  | 554  | 327  | 228  | 139  |
| 25                                                  | 149  | 889  | 857  | 850 | 834  | 851  | 8232 | 445  | 548  | 322  | 224  | 136  |
| 26                                                  | 144  | 888  | 856  | 851 | 833  | 855  | 8238 | 460  | 541  | 321  | 218  | 133  |
| 27                                                  | 146  | 888  | 856  | 849 | 833  | 866  | 8248 | 469  | 533  | 319  | 214  | 131  |
| 28                                                  | 143  | 888  | 857  | 846 | 832  | 872  | 8250 | 477  | 518  | 315  | 199  | 129  |
| 29                                                  | 141  | 888  | 858  | 844 | 832  | 894  | 8252 | 477  | 508  | 301  | 196  | 127  |
| 30                                                  | 140  |      | 860  | 842 | 831  | 8106 | 8251 | 478  | 496  | 295  | 194  | 125  |
| 31                                                  | 138  |      | 859  |     | 830  |      | 8250 | 481  |      | 287  |      | 121  |
| hauteur mini = 26 cm première observation le 07/06  |      |      |      |     |      |      |      |      |      |      |      |      |
| hauteur maxi = 956 cm première observation le 23/09 |      |      |      |     |      |      |      |      |      |      |      |      |

LE SIGNE + PRECEDE LES HAUTEURS RECONSTITUEES .

| NIGER A TILMBEYA EN 1988          |                                                      |      |      |      |      |      |      |      |      |      |      | DNHE |
|-----------------------------------|------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|
| DEBITS MOYENS JOURNALIERS en m3/s |                                                      |      |      |      |      |      |      |      |      |      |      |      |
| ~~~~~                             |                                                      |      |      |      |      |      |      |      |      |      |      |      |
| Surface = non connue              |                                                      |      |      |      |      |      |      |      |      |      |      |      |
|                                   | JANV                                                 | FEVR | MARS | AVRI | MAI  | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |
| 1                                 | 288.                                                 | 156. | 72.5 | 33.0 | 18.6 | 11.3 | 138. | 491. | 1770 | 1660 | 565. | 285. |
| 2                                 | 285.                                                 | 137. | 72.6 | 31.0 | 17.9 | 10.8 | 187. | 484. | 1770 | 1640 | 548. | 280. |
| 3                                 | 281.                                                 | 119. | 71.0 | 31.0 | 18.0 | 10.8 | 162. | 483. | 1760 | 1640 | 536. | 270. |
| 4                                 | 201.                                                 | 108. | 74.1 | 31.0 | 18.1 | 10.8 | 185. | 494. | 1730 | 1660 | 531. | 268. |
| 5                                 | 182.                                                 | 103. | 77.4 | 30.9 | 18.1 | 10.3 | 144. | 518. | 1730 | 1670 | 526. | 261. |
| 6                                 | 148.                                                 | 100. | 79.1 | 31.9 | 18.1 | 10.3 | 133. | 864. | 1730 | 1670 | 518. | 287. |
| 7                                 | 135.                                                 | 99.1 | 80.8 | 35.0 | 18.8 | 9.88 | 129. | 619. | 1770 | 1680 | 512. | 292. |
| 8                                 | 138.                                                 | 98.6 | 78.8 | 33.8 | 19.5 | 9.89 | 135. | 683. | 1820 | 1600 | 494. | 248. |
| 9                                 | 145.                                                 | 97.8 | 75.1 | 33.8 | 19.5 | 9.90 | 150. | 744. | 1860 | 1830 | 482. | 244. |
| 10                                | 159.                                                 | 96.6 | 71.4 | 32.6 | 19.5 | 9.92 | 158. | 851. | 1920 | 1820 | 470. | 240. |
| 11                                | 168.                                                 | 98.8 | 74.0 | 29.6 | 17.3 | 9.94 | 187. | 935. | 2010 | 1400 | 465. | 235. |
| 12                                | 172.                                                 | 107. | 75.1 | 26.7 | 15.9 | 10.0 | 206. | 972. | 2080 | 1320 | 461. | 230. |
| 13                                | 171.                                                 | 113. | 74.6 | 25.8 | 15.3 | 10.0 | 229. | 973. | 2130 | 1250 | 456. | 224. |
| 14                                | 167.                                                 | 113. | 68.1 | 25.0 | 15.3 | 10.0 | 257. | 976. | 2170 | 1200 | 473. | 219. |
| 15                                | 169.                                                 | 112. | 59.2 | 25.0 | 14.7 | 10.5 | 263. | 1030 | 2180 | 1150 | 476. | 219. |
| 16                                | 178.                                                 | 109. | 53.7 | 24.2 | 14.8 | 11.0 | 264. | 1040 | 2180 | 1080 | 473. | 210. |
| 17                                | 182.                                                 | 106. | 47.2 | 23.4 | 14.2 | 11.6 | 249. | 1020 | 2210 | 1050 | 467. | 206. |
| 18                                | 183.                                                 | 103. | 43.6 | 23.5 | 14.2 | 12.2 | 282. | 1030 | 2230 | 1010 | 465. | 197. |
| 19                                | 185.                                                 | 103. | 41.3 | 23.6 | 14.8 | 12.8 | 306. | 1060 | 2290 | 964. | 459. | 197. |
| 20                                | 192.                                                 | 93.3 | 38.2 | 23.7 | 16.7 | 14.1 | 325. | 1100 | 2270 | 906. | 443. | 192. |
| 21                                | 195.                                                 | 81.3 | 37.3 | 22.8 | 18.1 | 16.1 | 341. | 1160 | 2320 | 883. | 423. | 185. |
| 22                                | 199.                                                 | 78.2 | 37.5 | 22.8 | 17.4 | 17.6 | 371. | 1320 | 2280 | 833. | 411. | 181. |
| 23                                | 200.                                                 | 75.2 | 33.6 | 22.8 | 16.0 | 21.0 | 406. | 1470 | 2230 | 792. | 395. | 175. |
| 24                                | 201.                                                 | 73.8 | 34.7 | 23.6 | 14.7 | 26.6 | 457. | 1350 | 2170 | 747. | 383. | 171. |
| 25                                | 198.                                                 | 74.1 | 32.7 | 26.1 | 14.0 | 29.8 | 482. | 1640 | 2070 | 724. | 369. | 164. |
| 26                                | 190.                                                 | 72.9 | 31.8 | 27.0 | 13.4 | 34.4 | 480. | 1760 | 1980 | 720. | 350. | 157. |
| 27                                | 183.                                                 | 73.4 | 31.8 | 25.1 | 13.4 | 48.2 | 501. | 1830 | 1920 | 711. | 338. | 153. |
| 28                                | 179.                                                 | 73.7 | 32.9 | 22.5 | 12.8 | 56.7 | 513. | 1850 | 1810 | 693. | 294. | 149. |
| 29                                | 173.                                                 | 74.0 | 33.9 | 20.9 | 12.9 | 93.5 | 513. | 1810 | 1750 | 631. | 289. | 145. |
| 30                                | 169.                                                 |      | 36.1 | 19.4 | 12.3 | 117. | 503. | 1780 | 1670 | 612. | 286. | 141. |
| 31                                | 164.                                                 |      | 35.0 |      | 11.8 |      | 497. | 1780 |      | 583. |      | 132. |
| Moy                               | 186.                                                 | 98.3 | 55.1 | 26.9 | 16.0 | 22.6 | 293. | 1100 | 1990 | 1150 | 445. | 209. |
|                                   | Débit mini = 9.88 m3/s première observation le 07/06 |      |      |      |      |      |      |      |      |      |      |      |
|                                   | Débit maxi = 2320 m3/s première observation le 21/09 |      |      |      |      |      |      |      |      |      |      |      |
|                                   | Débit moyen annuel = 466. m3/s                       |      |      |      |      |      |      |      |      |      |      |      |

| NIGER A TINDIRMA EN 1988                            |      |      |      |     |      |      |      |      |      |      |      |     | DNHE |
|-----------------------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|-----|------|
| HAUTEURS MOYENNES JOURNALIERES en cm                |      |      |      |     |      |      |      |      |      |      |      |     |      |
| Zero de l'échelle = 257.02 m IGN                    |      |      |      |     |      |      |      |      |      |      |      |     |      |
| JANV                                                | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |     |      |
| 1                                                   | 278  | 143  | 73   | 80  | 22   | 0    | -14  | 8180 | 329  | 437  | 479  | 429 |      |
| 2                                                   | 271  | 139  | 73   | 49  | 21   | -1   | -18  | 8187 | 332  | 438  | 478  | 423 |      |
| 3                                                   | 268  | 136  | 74   | 47  | 20   | -2   | -16  | 8164 | 338  | 438  | 476  | 421 |      |
| 4                                                   | 268  | 134  | 74   | 45  | 19   | -2   | -13  | 8171 | 341  | 440  | 478  | 418 |      |
| 5                                                   | 260  | 131  | 71   | 42  | 19   | -2   | -10  | 8179 | 347  | 442  | 474  | 418 |      |
| 6                                                   | 256  | 129  | 69   | 41  | 20   | -2   | -9   | 8186 | 353  | 444  | 472  | 412 |      |
| 7                                                   | 250  | 126  | 67   | 39  | 20   | -3   | -8   | 8193 | 359  | 446  | 470  | 409 |      |
| 8                                                   | 245  | 124  | 66   | 37  | 20   | -3   | 0    | 8200 | 365  | 448  | 468  | 406 |      |
| 9                                                   | 240  | 123  | 63   | 36  | 19   | -2   | 8    | 8207 | 371  | 450  | 467  | 403 |      |
| 10                                                  | 238  | 119  | 61   | 35  | 19   | -2   | 14   | 8214 | 378  | 452  | 467  | 401 |      |
| 11                                                  | 230  | 118  | 60   | 37  | 18   | -3   | 24   | 8221 | 379  | 483  | 466  | 398 |      |
| 12                                                  | 226  | 112  | 59   | 36  | 18   | -3   | 31   | 8229 | 383  | 484  | 466  | 396 |      |
| 13                                                  | 222  | 109  | 60   | 35  | 18   | -3   | 38   | 8236 | 386  | 485  | 468  | 394 |      |
| 14                                                  | 218  | 107  | 61   | 33  | 17   | -3   | 48   | 8243 | 390  | 486  | 464  | 388 |      |
| 15                                                  | 213  | 104  | 62   | 31  | 17   | -8   | 56   | 8250 | 394  | 487  | 463  | 382 |      |
| 16                                                  | 207  | 102  | 60   | 29  | 16   | -7   | 60   | 8257 | 396  | 488  | 462  | 376 |      |
| 17                                                  | 202  | 100  | 58   | 28  | 15   | -7   | 63   | 8262 | 401  | 489  | 461  | 370 |      |
| 18                                                  | 197  | 98   | 56   | 27  | 14   | -8   | 64   | 8264 | 403  | 490  | 460  | 366 |      |
| 19                                                  | 192  | 96   | 57   | 28  | 13   | -9   | 71   | 8271 | 408  | 493  | 458  | 362 |      |
| 20                                                  | 187  | 93   | 59   | 29  | 12   | -9   | 76   | 8278 | 408  | 495  | 458  | 358 |      |
| 21                                                  | 184  | 91   | 60   | 30  | 11   | -9   | 80   | 8280 | 411  | 496  | 458  | 354 |      |
| 22                                                  | 180  | 89   | 61   | 32  | 10   | -10  | 82   | 8284 | 414  | 497  | 452  | 352 |      |
| 23                                                  | 175  | 87   | 62   | 31  | 9    | -11  | 890  | 8289 | 417  | 498  | 450  | 346 |      |
| 24                                                  | 171  | 86   | 61   | 30  | 8    | -11  | 898  | 8293 | 419  | 499  | 447  | 341 |      |
| 25                                                  | 168  | 83   | 60   | 29  | 7    | -12  | 107  | 8298 | 422  | 471  | 444  | 336 |      |
| 26                                                  | 165  | 81   | 59   | 28  | 6    | -13  | 114  | 8302 | 425  | 472  | 441  | 331 |      |
| 27                                                  | 162  | 79   | 57   | 27  | 5    | -14  | 120  | 8307 | 428  | 473  | 439  | 326 |      |
| 28                                                  | 158  | 77   | 56   | 26  | 4    | -15  | 128  | 8311 | 431  | 475  | 437  | 321 |      |
| 29                                                  | 155  | 75   | 55   | 25  | 3    | -15  | 135  | 8316 | 433  | 476  | 435  | 316 |      |
| 30                                                  | 151  | 73   | 53   | 24  | 2    | -16  | 140  | 8320 | 435  | 478  | 433  | 312 |      |
| 31                                                  | 147  | 72   | 52   | 23  | 1    | -16  | 146  | 8325 | 438  | 480  | 431  | 308 |      |
| hauteur mini = -16 cm première observation le 30/04 |      |      |      |     |      |      |      |      |      |      |      |     |      |
| hauteur maxi = 480 cm première observation le 31/10 |      |      |      |     |      |      |      |      |      |      |      |     |      |

LE SIGNE + PRECEDE LES HAUTEURS RECONSTITUEES .

1bm

| NIGER A TONDIFARMA AMONT EN 1988                    |      |      |      |     |      |      |      |      |      |      |      |     | DNHE |
|-----------------------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|-----|------|
| HAUTEURS MOYENNES JOURNALIERES en cm                |      |      |      |     |      |      |      |      |      |      |      |     |      |
| Zero de l'échelle = 257.29 m IGN                    |      |      |      |     |      |      |      |      |      |      |      |     |      |
| JANV                                                | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |     |      |
| 1                                                   | 278  | 146  | 89   | 67  | 48   | 33   | 28   | 180  | 345  | 443  | 474  | 421 |      |
| 2                                                   | 270  | 144  | 89   | 66  | 49   | 33   | 30   | 176  | 348  | 444  | 474  | 417 |      |
| 3                                                   | 268  | 141  | 87   | 63  | 46   | 40   | 31   | 205  | 358  | 445  | 474  | 414 |      |
| 4                                                   | 263  | 139  | 84   | 60  | 47   | 38   | 32   | 212  | 362  | 447  | 474  | 411 |      |
| 5                                                   | 261  | 137  | 80   | 58  | 47   | 36   | 35   | 220  | 366  | 449  | 474  | 408 |      |
| 6                                                   | 254  | 136  | 878  | 57  | 48   | 35   | 38   | 229  | 369  | 451  | 473  | 406 |      |
| 7                                                   | 249  | 131  | 77   | 56  | 45   | 35   | 34   | 237  | 375  | 453  | 472  | 403 |      |
| 8                                                   | 246  | 127  | 75   | 56  | 46   | 34   | 40   | 242  | 379  | 455  | 472  | 399 |      |
| 9                                                   | 241  | 124  | 76   | 56  | 47   | 36   | 46   | 247  | 384  | 457  | 471  | 392 |      |
| 10                                                  | 236  | 122  | 72   | 55  | 47   | 36   | 53   | 252  | 387  | 459  | 471  | 384 |      |
| 11                                                  | 231  | 120  | 71   | 50  | 47   | 36   | 61   | 255  | 390  | 461  | 470  | 380 |      |
| 12                                                  | 227  | 117  | 69   | 49  | 47   | 34   | 74   | 259  | 393  | 462  | 468  | 376 |      |
| 13                                                  | 221  | 113  | 67   | 49  | 46   | 35   | 83   | 265  | 397  | 464  | 464  | 372 |      |
| 14                                                  | 216  | 111  | 65   | 49  | 45   | 35   | 90   | 270  | 400  | 468  | 462  | 368 |      |
| 15                                                  | 212  | 109  | 74   | 52  | 44   | 34   | 95   | 274  | 404  | 467  | 461  | 364 |      |
| 16                                                  | 207  | 107  | 75   | 53  | 43   | 33   | 98   | 285  | 406  | 468  | 460  | 360 |      |
| 17                                                  | 201  | 104  | 75   | 533 | 433  | 33   | 100  | 289  | 409  | 470  | 459  | 357 |      |
| 18                                                  | 192  | 99   | 74   | 54  | 42   | 32   | 101  | 295  | 413  | 472  | 456  | 354 |      |
| 19                                                  | 188  | 98   | 75   | 54  | 41   | 32   | 101  | 299  | 415  | 473  | 454  | 351 |      |
| 20                                                  | 185  | 97   | 76   | 54  | 41   | 32   | 105  | 303  | 418  | 473  | 450  | 346 |      |
| 21                                                  | 179  | 96   | 78   | 55  | 40   | 31   | 114  | 306  | 420  | 473  | 446  | 341 |      |
| 22                                                  | 175  | 94   | 78   | 56  | 40   | 31   | 121  | 308  | 423  | 473  | 445  | 333 |      |
| 23                                                  | 171  | 94   | 78   | 54  | 39   | 30   | 128  | 310  | 426  | 473  | 444  | 325 |      |
| 24                                                  | 170  | 94   | 78   | 53  | 39   | 29   | 141  | 314  | 428  | 473  | 442  | 323 |      |
| 25                                                  | 169  | 93   | 75   | 53  | 39   | 30   | 145  | 318  | 429  | 473  | 440  | 322 |      |
| 26                                                  | 166  | 92   | 74   | 52  | 40   | 29   | 148  | 322  | 431  | 473  | 438  | 321 |      |
| 27                                                  | 163  | 89   | 74   | 50  | 39   | 29   | 154  | 325  | 433  | 474  | 435  | 318 |      |
| 28                                                  | 158  | 87   | 75   | 49  | 37   | 29   | 164  | 328  | 436  | 474  | 431  | 315 |      |
| 29                                                  | 153  | 87   | 73   | 48  | 36   | 26   | 169  | 333  | 439  | 474  | 428  | 310 |      |
| 30                                                  | 151  | 70   | 46   | 35  | 28   | 174  | 337  | 441  | 474  | 424  | 424  | 304 |      |
| 31                                                  | 149  | 67   | 43   | 33  | 28   | 177  | 341  | 474  | 474  | 424  | 424  | 300 |      |
| hauteur mini = 26 cm première observation le 29/04  |      |      |      |     |      |      |      |      |      |      |      |     |      |
| hauteur maxi = 474 cm première observation le 27/10 |      |      |      |     |      |      |      |      |      |      |      |     |      |

LE SIGNE + PRECEDE LES HAUTEURS RECONSTITUEES .

1bm

| NIGER A TONDIFARMA AVAL EN 1988      |      |      |      |      |                               |      |      |      |      |      |      |      |
|--------------------------------------|------|------|------|------|-------------------------------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm |      |      |      |      |                               |      |      |      |      |      |      |      |
| Zero de l'échelle = 257.12 m IGN     |      |      |      |      |                               |      |      |      |      |      |      |      |
|                                      | JANV | FEVR | MARS | AVRI | MAI                           | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |
| 1                                    | 275  | 146  | 89   | 67   | 48                            | 33   | 28   | 180  | 345  | 443  | 474  | 421  |
| 2                                    | 270  | 144  | 89   | 66   | 49                            | 33   | 30   | 176  | 348  | 444  | 474  | 417  |
| 3                                    | 265  | 141  | 87   | 63   | 46                            | 40   | 31   | 205  | 358  | 445  | 474  | 414  |
| 4                                    | 263  | 139  | 84   | 60   | 47                            | 38   | 32   | 212  | 362  | 447  | 474  | 411  |
| 5                                    | 261  | 137  | 80   | 58   | 47                            | 36   | 35   | 220  | 366  | 449  | 474  | 408  |
| 6                                    | 254  | 136  | 878  | 57   | 48                            | 35   | 38   | 229  | 369  | 451  | 473  | 406  |
| 7                                    | 249  | 131  | 77   | 56   | 45                            | 35   | 34   | 237  | 375  | 453  | 472  | 403  |
| 8                                    | 246  | 127  | 75   | 56   | 46                            | 34   | 40   | 242  | 379  | 455  | 472  | 399  |
| 9                                    | 241  | 124  | 76   | 56   | 47                            | 36   | 46   | 247  | 384  | 457  | 471  | 392  |
| 10                                   | 236  | 122  | 72   | 55   | 47                            | 36   | 53   | 252  | 387  | 459  | 471  | 384  |
| 11                                   | 231  | 120  | 71   | 50   | 47                            | 36   | 61   | 255  | 390  | 461  | 470  | 380  |
| 12                                   | 227  | 117  | 69   | 49   | 47                            | 34   | 74   | 259  | 393  | 462  | 468  | 376  |
| 13                                   | 221  | 113  | 67   | 49   | 46                            | 35   | 83   | 265  | 397  | 464  | 464  | 372  |
| 14                                   | 216  | 111  | 73   | 49   | 45                            | 35   | 90   | 270  | 400  | 468  | 462  | 368  |
| 15                                   | 212  | 109  | 74   | 52   | 44                            | 34   | 95   | 274  | 404  | 467  | 461  | 364  |
| 16                                   | 207  | 107  | 75   | 53   | 43                            | 33   | 98   | 285  | 406  | 468  | 460  | 360  |
| 17                                   | 201  | 104  | 75   | 533  | 433                           | 33   | 100  | 289  | 409  | 470  | 459  | 357  |
| 18                                   | 192  | 99   | 74   | 54   | 42                            | 32   | 101  | 295  | 413  | 472  | 456  | 354  |
| 19                                   | 188  | 98   | 75   | 54   | 41                            | 32   | 101  | 299  | 415  | 473  | 454  | 351  |
| 20                                   | 185  | 97   | 76   | 54   | 41                            | 32   | 105  | 303  | 418  | 473  | 450  | 346  |
| 21                                   | 179  | 96   | 78   | 55   | 40                            | 31   | 114  | 306  | 420  | 473  | 446  | 341  |
| 22                                   | 175  | 94   | 78   | 56   | 40                            | 31   | 121  | 308  | 423  | 473  | 445  | 333  |
| 23                                   | 171  | 94   | 78   | 54   | 39                            | 30   | 128  | 310  | 426  | 473  | 444  | 325  |
| 24                                   | 170  | 94   | 78   | 53   | 39                            | 29   | 141  | 314  | 428  | 473  | 442  | 323  |
| 25                                   | 169  | 93   | 875  | 53   | 39                            | 30   | 145  | 318  | 429  | 473  | 440  | 322  |
| 26                                   | 166  | 92   | 74   | 52   | 40                            | 29   | 148  | 322  | 431  | 473  | 438  | 321  |
| 27                                   | 163  | 89   | 74   | 50   | 39                            | 29   | 154  | 325  | 433  | 474  | 435  | 318  |
| 28                                   | 158  | 87   | 75   | 49   | 37                            | 29   | 164  | 328  | 436  | 474  | 431  | 315  |
| 29                                   | 153  | 87   | 73   | 48   | 36                            | 26   | 169  | 333  | 439  | 474  | 428  | 310  |
| 30                                   | 151  | 70   | 46   | 35   | 28                            | 174  | 337  | 441  | 474  | 424  | 424  | 304  |
| 31                                   | 149  | 67   | 43   | 33   | 28                            | 177  | 341  | 474  | 474  | 424  | 424  | 300  |
| hauteur mini = 26 cm                 |      |      |      |      | première observation le 29/06 |      |      |      |      |      |      |      |
| hauteur maxi = 474 cm                |      |      |      |      | première observation le 27/10 |      |      |      |      |      |      |      |

| NIGER A TONKA EN 1988                |      |      |      |     |      |      |      |      |      |      |      | DNHE |
|--------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm |      |      |      |     |      |      |      |      |      |      |      |      |
| Zéro de l'échelle = 207.62 m IGN     |      |      |      |     |      |      |      |      |      |      |      |      |
| JANV                                 | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                    | 222  | 94   | 32   | ?   | ?    | ?    | ?    | 116  | 270  | 391  | 426  | 374  |
| 2                                    | 218  | 98   | 31   | ?   | ?    | ?    | ?    | 131  | 295  | 393  | 426  | 374  |
| 3                                    | 213  | 94   | 30   | ?   | ?    | ?    | ?    | 132  | 302  | 396  | 426  | 371  |
| 4                                    | 211  | 93   | 29   | ?   | ?    | ?    | ?    | 144  | 307  | 398  | 427  | 367  |
| 5                                    | 207  | 92   | 28   | ?   | ?    | ?    | ?    | 182  | 311  | 399  | 427  | 364  |
| 6                                    | 204  | 91   | 27   | ?   | ?    | ?    | ?    | 161  | 317  | 400  | 426  | 389  |
| 7                                    | 200  | 78   | 27   | ?   | ?    | ?    | ?    | 165  | 320  | 402  | 426  | 386  |
| 8                                    | 197  | 74   | ?    | ?   | ?    | ?    | ?    | 179  | 322  | 404  | 428  | 382  |
| 9                                    | 192  | 70   | ?    | ?   | ?    | ?    | ?    | 179  | 327  | 405  | 428  | 347  |
| 10                                   | 187  | 66   | ?    | ?   | ?    | ?    | ?    | 188  | 330  | 406  | 424  | 341  |
| 11                                   | 182  | 65   | ?    | ?   | ?    | ?    | ?    | 191  | 334  | 408  | 424  | 334  |
| 12                                   | 176  | 65   | ?    | ?   | ?    | ?    | ?    | 197  | 339  | 409  | 423  | 331  |
| 13                                   | 171  | 62   | ?    | ?   | ?    | ?    | ?    | 201  | 340  | 412  | 421  | 328  |
| 14                                   | 166  | 61   | ?    | ?   | ?    | ?    | ?    | 207  | 348  | 413  | 419  | 325  |
| 15                                   | 161  | 60   | ?    | ?   | ?    | ?    | ?    | 212  | 349  | 418  | 418  | 321  |
| 16                                   | 155  | 58   | ?    | ?   | ?    | ?    | ?    | 221  | 352  | 416  | 414  | 319  |
| 17                                   | 153  | 90   | ?    | ?   | ?    | ?    | ?    | 226  | 356  | 418  | 414  | 318  |
| 18                                   | 148  | 47   | ?    | ?   | ?    | ?    | ?    | 230  | 359  | 420  | 411  | 310  |
| 19                                   | 143  | 47   | ?    | ?   | ?    | ?    | ?    | 236  | 363  | 420  | 407  | 305  |
| 20                                   | 138  | 43   | ?    | ?   | ?    | ?    | ?    | 242  | 363  | 423  | 408  | 301  |
| 21                                   | 133  | 42   | ?    | ?   | ?    | ?    | ?    | 248  | 367  | 424  | 403  | 296  |
| 22                                   | 128  | 42   | ?    | ?   | ?    | ?    | ?    | 247  | 370  | 426  | 400  | 289  |
| 23                                   | 122  | 41   | ?    | ?   | ?    | ?    | ?    | 258  | 372  | 428  | 398  | 283  |
| 24                                   | 120  | 40   | ?    | ?   | ?    | ?    | ?    | 269  | 373  | 428  | 396  | 283  |
| 25                                   | 117  | 38   | ?    | ?   | ?    | ?    | ?    | 261  | 378  | 426  | 394  | 280  |
| 26                                   | 114  | 38   | ?    | ?   | ?    | ?    | ?    | 267  | 380  | 426  | 392  | 277  |
| 27                                   | 110  | 34   | ?    | ?   | ?    | ?    | ?    | 270  | 382  | 424  | 391  | 273  |
| 28                                   | 108  | 34   | ?    | ?   | ?    | ?    | ?    | 272  | 384  | 427  | 385  | 269  |
| 29                                   | 100  | 33   | ?    | ?   | ?    | ?    | ?    | 278  | 388  | 427  | 381  | 264  |
| 30                                   | 98   | ?    | ?    | ?   | ?    | ?    | ?    | 285  | 389  | 426  | 378  | 258  |
| 31                                   | 96   | ?    | ?    | ?   | ?    | ?    | ?    | 286  |      | 426  |      | 252  |

hauteur mini = 27 cm première observation le 06/03  
hauteur maxi = 427 cm première observation le 28/10

| NIGER A TOSSAYE EN 1988              |      |      |      |     |      |      |      |      |      |      |      | DNHE |
|--------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm |      |      |      |     |      |      |      |      |      |      |      |      |
| Zéro de l'échelle = 248.63 m IGN     |      |      |      |     |      |      |      |      |      |      |      |      |
| JANV                                 | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                    | 342  | 256  | 190  | 181 | 119  | 103  | 85   | 167  | 348  | 428  | 461  | 440  |
| 2                                    | 340  | 254  | 188  | 181 | 118  | 102  | 85   | 182  | 351  | 430  | 462  | 444  |
| 3                                    | 334  | 252  | 184  | 182 | 117  | 101  | 85   | 188  | 355  | 432  | 463  | 443  |
| 4                                    | 350  | 248  | 184  | 182 | 116  | 100  | 84   | 196  | 358  | 431  | 464  | 461  |
| 5                                    | 344  | 244  | 183  | 182 | 116  | 99   | 84   | 204  | 360  | 433  | 465  | 460  |
| 6                                    | 344  | 243  | 182  | 181 | 116  | 98   | 82   | 212  | 363  | 435  | 466  | 458  |
| 7                                    | 341  | 241  | 180  | 149 | 114  | 96   | 81   | 220  | 364  | 437  | 467  | 457  |
| 8                                    | 339  | 238  | 178  | 148 | 114  | 95   | 80   | 228  | 367  | 438  | 468  | 456  |
| 9                                    | 334  | 235  | 174  | 147 | 114  | 92   | 79   | 235  | 373  | 440  | 469  | 455  |
| 10                                   | 332  | 233  | 174  | 146 | 113  | 92   | 79   | 241  | 377  | 441  | 470  | 453  |
| 11                                   | 329  | 229  | 172  | 145 | 113  | 93   | 79   | 244  | 379  | 442  | 471  | 450  |
| 12                                   | 326  | 227  | 170  | 144 | 113  | 92   | 79   | 253  | 383  | 443  | 472  | 447  |
| 13                                   | 324  | 225  | 168  | 142 | 114  | 92   | 79   | 260  | 386  | 444  | 473  | 444  |
| 14                                   | 319  | 222  | 164  | 140 | 113  | 91   | 79   | 266  | 389  | 445  | 474  | 442  |
| 15                                   | 317  | 220  | 164  | 137 | 112  | 91   | 81   | 272  | 393  | 446  | 475  | 440  |
| 16                                   | 314  | 214  | 163  | 136 | 111  | 91   | 81   | 278  | 396  | 447  | 474  | 438  |
| 17                                   | 312  | 217  | 163  | 136 | 110  | 91   | 81   | 284  | 399  | 448  | 473  | 434  |
| 18                                   | 309  | 216  | 162  | 135 | 109  | 91   | 82   | 290  | 402  | 449  | 472  | 432  |
| 19                                   | 306  | 214  | 161  | 134 | 108  | 91   | 83   | 295  | 404  | 450  | 471  | 429  |
| 20                                   | 298  | 210  | 160  | 134 | 107  | 90   | 84   | 301  | 406  | 451  | 470  | 425  |
| 21                                   | 294  | 208  | 159  | 133 | 105  | 90   | 82   | 305  | 409  | 452  | 469  | 422  |
| 22                                   | 288  | 204  | 158  | 131 | 104  | 89   | 82   | 310  | 411  | 453  | 469  | 418  |
| 23                                   | 284  | 204  | 157  | 129 | 103  | 89   | 86   | 315  | 412  | 454  | 469  | 414  |
| 24                                   | 279  | 202  | 156  | 128 | 102  | 88   | 85   | 320  | 414  | 455  | 470  | 409  |
| 25                                   | 274  | 201  | 155  | 126 | 101  | 88   | 84   | 324  | 416  | 456  | 470  | 404  |
| 26                                   | 272  | 198  | 153  | 124 | 101  | 88   | 87   | 327  | 418  | 457  | 469  | 401  |
| 27                                   | 269  | 197  | 152  | 124 | 102  | 88   | 95   | 330  | 420  | 458  | 468  | 399  |
| 28                                   | 267  | 196  | 152  | 124 | 102  | 87   | 110  | 333  | 422  | 459  | 467  | 396  |
| 29                                   | 263  | 195  | 152  | 123 | 102  | 86   | 122  | 337  | 424  | 460  | 467  | 392  |
| 30                                   | 260  | 192  | 151  | 121 | 103  | 89   | 137  | 340  | 426  | 460  | 466  | 388  |
| 31                                   | 258  | 192  | 151  | 121 | 103  | 89   | 152  | 344  |      | 461  |      | 384  |

hauteur mini = 79 cm première observation le 09/07  
hauteur maxi = 475 cm première observation le 15/11

LE SIGNE ? PRECEDE LES HAUTEURS RECONSTITUEES .

16a

| BABOE A TYO EN 1988                  |      |      |      |     |      |      |      |      |      |      |      | DNHE |
|--------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm |      |      |      |     |      |      |      |      |      |      |      |      |
| Zéro de l'échelle = non connu        |      |      |      |     |      |      |      |      |      |      |      |      |
| JANV                                 | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                    | 101  | 73   | 52   | 34  | 29   | 19   | 143  | 284  | 386  | 516  | 311  | 191  |
| 2                                    | 100  | 72   | 51   | 36  | 29   | 22   | 150  | 285  | 390  | 511  | 299  | 188  |
| 3                                    | 99   | 70   | 51   | 36  | 29   | 24   | 156  | 287  | 394  | 507  | 291  | 187  |
| 4                                    | 98   | 69   | 50   | 35  | 30   | 25   | 162  | 289  | 403  | 500  | 286  | 186  |
| 5                                    | 98   | 69   | 50   | 35  | 30   | 25   | 171  | 291  | 408  | 495  | 278  | 185  |
| 6                                    | 97   | 68   | 49   | 35  | 31   | 40   | 182  | 293  | 415  | 489  | 262  | 184  |
| 7                                    | 97   | 68   | 48   | 35  | 31   | 72   | 193  | 296  | 423  | 483  | 255  | 183  |
| 8                                    | 96   | 67   | 48   | 35  | 31   | 103  | 204  | 299  | 432  | 480  | 248  | 181  |
| 9                                    | 95   | 67   | 47   | 36  | 30   | 135  | 204  | 303  | 441  | 477  | 245  | 178  |
| 10                                   | 93   | 66   | 47   | 36  | 29   | 182  | 202  | 307  | 453  | 478  | 241  | 176  |
| 11                                   | 92   | 66   | 46   | 36  | 28   | 167  | 200  | 311  | 464  | 466  | 238  | 175  |
| 12                                   | 90   | 65   | 46   | 37  | 28   | 182  | 201  | 314  | 470  | 457  | 235  | 173  |
| 13                                   | 89   | 64   | 45   | 37  | 27   | 176  | 204  | 317  | 481  | 440  | 230  | 171  |
| 14                                   | 88   | 63   | 45   | 36  | 27   | 163  | 207  | 320  | 492  | 436  | 227  | 170  |
| 15                                   | 88   | 62   | 44   | 35  | 27   | 184  | 211  | 322  | 507  | 431  | 224  | 169  |
| 16                                   | 87   | 60   | 44   | 35  | 26   | 147  | 215  | 322  | 513  | 428  | 222  | 168  |
| 17                                   | 86   | 59   | 44   | 34  | 26   | 138  | 219  | 320  | 528  | 422  | 218  | 167  |
| 18                                   | 85   | 59   | 43   | 34  | 26   | 128  | 223  | 323  | 539  | 417  | 216  | 165  |
| 19                                   | 85   | 58   | 43   | 34  | 26   | 118  | 227  | 327  | 541  | 411  | 213  | 163  |
| 20                                   | 84   | 58   | 42   | 33  | 26   | 113  | 232  | 332  | 550  | 403  | 211  | 162  |
| 21                                   | 83   | 57   | 41   | 33  | 26   | 107  | 236  | 335  | 558  | 396  | 209  | 159  |
| 22                                   | 82   | 56   | 40   | 32  | 25   | 102  | 240  | 339  | 563  | 389  | 208  | 157  |
| 23                                   | 81   | 55   | 40   | 31  | 25   | 107  | 243  | 344  | 568  | 382  | 206  | 154  |
| 24                                   | 79   | 55   | 39   | 31  | 24   | 112  | 289  | 347  | 584  | 374  | 204  | 152  |
| 25                                   | 78   | 54   | 39   | 30  | 24   | 116  | 264  | 352  | 582  | 367  | 201  | 150  |
| 26                                   | 77   | 54   | 38   | 29  | 19   | 121  | 267  | 354  | 587  | 358  | 199  | 147  |
| 27                                   | 76   | 53   | 38   | 29  | 19   | 126  | 270  | 361  | 594  | 348  | 198  | 145  |
| 28                                   | 76   | 53   | 37   | 30  | 20   | 128  | 273  | 366  | 591  | 337  | 196  | 142  |
| 29                                   | 75   | 52   | 37   | 30  | 21   | 133  | 277  | 368  | 596  | 328  | 195  | 141  |
| 30                                   | 75   | 52   | 36   | 29  | 21   | 137  | 281  | 375  | 622  | 323  | 193  | 139  |
| 31                                   | 74   | 51   | 36   | 29  | 20   | 142  | 283  | 378  |      | 317  |      | 137  |

hauteur mini = 18 cm première observation le 26/05  
hauteur maxi = 558 cm première observation le 21/09

LE SIGNE ? PRECEDE LES HAUTEURS RECONSTITUEES .

16a

| NIGER A TOSSAYE EN 1988                                                    |      |      |      |      |      |      |      |      |      |      |      | DNHE |
|----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| DEBITS MOYENS JOURNALIERS en m3/s                                          |      |      |      |      |      |      |      |      |      |      |      |      |
| Surface = 348000 km2                                                       |      |      |      |      |      |      |      |      |      |      |      |      |
|                                                                            | JANV | FEVR | MARS | AVRI | MAI  | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |
| 1                                                                          | 785  | 300  | 118  | 85.1 | 19.3 | 8.80 | 4.67 | 92.8 | 832  | 1340 | 1840 | 1800 |
| 2                                                                          | 777  | 297  | 114  | 85.1 | 18.8 | 7.92 | 4.66 | 124  | 851  | 1380 | 1850 | 1800 |
| 3                                                                          | 785  | 290  | 110  | 84.3 | 17.7 | 7.37 | 4.66 | 138  | 874  | 1370 | 1840 | 1490 |
| 4                                                                          | 723  | 276  | 104  | 84.2 | 17.0 | 6.85 | 4.53 | 158  | 895  | 1360 | 1870 | 1470 |
| 5                                                                          | 703  | 268  | 104  | 84.0 | 17.0 | 6.67 | 4.53 | 180  | 907  | 1370 | 1870 | 1460 |
| 6                                                                          | 693  | 258  | 102  | 84.8 | 17.1 | 6.81 | 4.26 | 204  | 926  | 1380 | 1880 | 1440 |
| 7                                                                          | 679  | 251  | 98.9 | 81.6 | 17.1 | 6.17 | 4.16 | 231  | 946  | 1390 | 1970 | 1430 |
| 8                                                                          | 668  | 241  | 98.3 | 80.1 | 17.1 | 6.03 | 4.04 | 258  | 966  | 1400 | 1990 | 1420 |
| 9                                                                          | 654  | 231  | 91.6 | 48.5 | 17.1 | 5.61 | 3.94 | 284  | 994  | 1410 | 1610 | 1410 |
| 10                                                                         | 637  | 228  | 88.2 | 47.1 | 16.3 | 5.63 | 3.95 | 307  | 1020 | 1420 | 1610 | 1390 |
| 11                                                                         | 623  | 213  | 84.9 | 45.8 | 16.3 | 5.79 | 3.96 | 326  | 1040 | 1420 | 1610 | 1370 |
| 12                                                                         | 607  | 208  | 81.6 | 44.8 | 16.3 | 5.66 | 3.98 | 354  | 1070 | 1430 | 1610 | 1340 |
| 13                                                                         | 598  | 203  | 78.6 | 42.1 | 15.8 | 5.68 | 4.00 | 384  | 1090 | 1430 | 1610 | 1320 |
| 14                                                                         | 570  | 194  | 75.8 | 39.8 | 14.7 | 5.84 | 4.01 | 413  | 1110 | 1440 | 1610 | 1300 |
| 15                                                                         | 559  | 189  | 72.6 | 36.4 | 14.0 | 5.86 | 4.26 | 441  | 1130 | 1450 | 1610 | 1280 |
| 16                                                                         | 543  | 173  | 71.2 | 35.4 | 13.3 | 5.88 | 4.26 | 471  | 1180 | 1480 | 1600 | 1270 |
| 17                                                                         | 531  | 181  | 71.4 | 35.4 | 12.6 | 5.84 | 4.27 | 501  | 1170 | 1460 | 1580 | 1240 |
| 18                                                                         | 514  | 179  | 70.0 | 34.3 | 11.9 | 5.84 | 4.40 | 532  | 1190 | 1470 | 1580 | 1220 |
| 19                                                                         | 498  | 173  | 68.6 | 33.2 | 11.3 | 5.84 | 4.82 | 568  | 1200 | 1470 | 1570 | 1200 |
| 20                                                                         | 463  | 163  | 67.1 | 33.2 | 10.7 | 5.80 | 4.66 | 589  | 1210 | 1480 | 1560 | 1170 |
| 21                                                                         | 443  | 158  | 65.6 | 32.2 | 9.80 | 5.39 | 4.43 | 607  | 1230 | 1490 | 1550 | 1150 |
| 22                                                                         | 418  | 153  | 64.1 | 30.1 | 8.96 | 5.23 | 4.82 | 630  | 1240 | 1490 | 1550 | 1120 |
| 23                                                                         | 400  | 148  | 62.6 | 28.1 | 8.43 | 5.24 | 5.16 | 658  | 1240 | 1500 | 1550 | 1100 |
| 24                                                                         | 381  | 143  | 61.3 | 27.1 | 7.93 | 5.11 | 5.14 | 679  | 1280 | 1510 | 1540 | 1040 |
| 25                                                                         | 371  | 140  | 59.9 | 25.2 | 7.44 | 5.10 | 5.13 | 700  | 1270 | 1510 | 1540 | 1030 |
| 26                                                                         | 358  | 134  | 57.2 | 23.3 | 7.47 | 5.10 | 5.74 | 718  | 1280 | 1520 | 1550 | 1020 |
| 27                                                                         | 349  | 132  | 55.9 | 23.4 | 6.01 | 5.10 | 7.18 | 730  | 1290 | 1520 | 1540 | 1010 |
| 28                                                                         | 343  | 130  | 56.1 | 23.4 | 5.02 | 4.96 | 14.9 | 747  | 1300 | 1530 | 1530 | 987  |
| 29                                                                         | 328  | 128  | 56.3 | 22.6 | 5.02 | 4.83 | 28.8 | 769  | 1320 | 1540 | 1530 | 963  |
| 30                                                                         | 318  |      | 56.4 | 20.9 | 5.88 | 5.23 | 43.3 | 783  | 1330 | 1530 | 1510 | 941  |
| 31                                                                         | 311  |      | 56.8 |      | 5.84 |      | 65.9 | 808  |      | 1540 |      | 916  |
| Moy 1988: 636. 199. 78.1 38.9 13.0 5.81 5.81 464. 1110 1450 1570 1240 560. |      |      |      |      |      |      |      |      |      |      |      |      |
| Moy54-88: 1630 1250 779. 358. 126. 67.1 134. 583. 1170 1520 1710 1770 519. |      |      |      |      |      |      |      |      |      |      |      |      |
| Mini obs: 324. 144. 44.8 21.4 7.89 4.25 5.21 214. 773. 1040 1120 724. 418. |      |      |      |      |      |      |      |      |      |      |      |      |
| Maxi obs: 2350 2290 2000 1380 673. 238. 462. 1030 1490 1730 1940 2190 1460 |      |      |      |      |      |      |      |      |      |      |      |      |
| Débit mini = 3.74 m3/s première observation le 09/07                       |      |      |      |      |      |      |      |      |      |      |      |      |
| Débit maxi = 1610 m3/s première observation le 09/11                       |      |      |      |      |      |      |      |      |      |      |      |      |
| Lame d'eau écoulée = 51 mm                                                 |      |      |      |      |      |      |      |      |      |      |      |      |

| DEKOROBBOUGOU A ZANIENA EN 1988      |      |      |      |     |      |      |      |      |      |      |      | DNHE |
|--------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm |      |      |      |     |      |      |      |      |      |      |      |      |
| Zéro de l'échelle = non connu        |      |      |      |     |      |      |      |      |      |      |      |      |
| JANV                                 | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                    | .    | .    | .    | .   | 7    | 90   | 278  | 496  | 349  | 153  | 90   |      |
| 2                                    | .    | .    | .    | .   | 7    | 104  | 274  | 510  | 348  | 152  | 88   |      |
| 3                                    | .    | .    | .    | .   | 7    | 112  | 267  | 490  | 345  | 150  | 84   |      |
| 4                                    | .    | .    | .    | .   | 7    | 110  | 264  | 488  | 345  | 149  | 85   |      |
| 5                                    | .    | .    | .    | .   | 7    | 99   | 259  | 485  | 338  | 146  | 83   |      |
| 6                                    | .    | .    | .    | .   | 7    | 77   | 236  | 482  | 334  | 145  | 80   |      |
| 7                                    | .    | .    | .    | .   | 7    | 81   | 253  | 482  | 328  | 143  | 78   |      |
| 8                                    | .    | .    | .    | .   | 7    | 75   | 248  | 477  | 323  | 140  | 76   |      |
| 9                                    | .    | .    | .    | .   | 7    | 88   | 251  | 472  | 317  | 138  | 74   |      |
| 10                                   | .    | .    | .    | .   | 7    | 60   | 251  | 468  | 311  | 136  | 72   |      |
| 11                                   | .    | .    | .    | .   | 7    | 46   | 249  | 464  | 308  | 133  | 69   |      |
| 12                                   | .    | .    | .    | .   | 7    | 38   | 244  | 460  | 300  | 131  | 67   |      |
| 13                                   | .    | .    | .    | .   | 7    | 35   | 236  | 458  | 294  | 130  | 65   |      |
| 14                                   | .    | .    | .    | .   | 7    | 31   | 239  | 448  | 292  | 128  | 63   |      |
| 15                                   | .    | .    | .    | .   | 7    | 112  | 236  | 443  | 293  | 126  | 61   |      |
| 16                                   | .    | .    | .    | .   | 7    | 172  | 311  | 440  | 287  | 124  | 58   |      |
| 17                                   | .    | .    | .    | .   | 7    | 235  | 310  | 433  | 281  | 122  | 54   |      |
| 18                                   | .    | .    | .    | .   | 7    | 227  | 299  | 427  | 277  | 119  | 54   |      |
| 19                                   | .    | .    | .    | .   | 7    | 219  | 293  | 424  | 270  | 118  | 51   |      |
| 20                                   | .    | .    | .    | .   | 7    | 210  | 289  | 419  | 263  | 115  | 49   |      |
| 21                                   | .    | .    | .    | .   | 7    | 207  | 284  | 416  | 255  | 113  | 46   |      |
| 22                                   | .    | .    | .    | .   | 7    | 197  | 281  | 412  | 247  | 111  | 45   |      |
| 23                                   | .    | .    | .    | .   | 7    | 178  | 276  | 406  | 239  | 107  | 43   |      |
| 24                                   | .    | .    | .    | .   | 7    | 167  | 270  | 399  | 233  | 105  | 41   |      |
| 25                                   | .    | .    | .    | .   | 7    | 222  | 278  | 395  | 227  | 104  | 38   |      |
| 26                                   | .    | .    | .    | .   | 7    | 333  | 347  | 389  | 220  | 102  | 35   |      |
| 27                                   | .    | .    | .    | .   | 7    | 327  | 344  | 380  | 213  | 100  | 33   |      |
| 28                                   | .    | .    | .    | .   | 7    | 324  | 337  | 372  | 207  | 98   | 28   |      |
| 29                                   | .    | .    | .    | .   | 7    | 299  | 346  | 368  | 203  | 95   | 26   |      |
| 30                                   | .    | .    | .    | .   | 7    | 282  | 338  | 364  | 197  | 93   | 23   |      |
| 31                                   | .    | .    | .    | .   |      | 285  | 330  |      | 194  |      | 21   |      |

hauteur mini = 4 sec      première observation le 01/01  
hauteur maxi = 867 cm      première observation le 26/08

LE SIGNE . INDIQUE L'ABSENCE D'ECOLEMENT .

1bm

| BANIFINS A ZANTIEBOUGOU EN 1988      |      |      |      |     |      |      |      |      |      |      |      | DNHE |
|--------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm |      |      |      |     |      |      |      |      |      |      |      |      |
| Zéro de l'échelle = non connu        |      |      |      |     |      |      |      |      |      |      |      |      |
| JANV                                 | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                    | 16   | .    | .    | 98  | .    | 78   | 835  | 870  | 200  | 86   | 44   |      |
| 2                                    | 16   | .    | .    | 76  | .    | 86   | 845  | 866  | 190  | 85   | 42   |      |
| 3                                    | 16   | .    | .    | 65  | .    | 145  | 812  | 480  | 180  | 84   | 39   |      |
| 4                                    | 16   | .    | .    | 88  | .    | 108  | 480  | 478  | 170  | 83   | 38   |      |
| 5                                    | 15   | .    | .    | 82  | .    | 98   | 432  | 455  | 160  | 82   | 36   |      |
| 6                                    | 14   | .    | .    | 43  | .    | 85   | 384  | 430  | 180  | 80   | 35   |      |
| 7                                    | 13   | .    | .    | 36  | .    | 70   | 330  | 408  | 140  | 78   | 34   |      |
| 8                                    | 12   | .    | .    | 34  | .    | 64   | 298  | 374  | 130  | 76   | 33   |      |
| 9                                    | 11   | .    | .    | 22  | .    | 118  | 245  | 360  | 128  | 74   | 32   |      |
| 10                                   | 11   | .    | .    | 19  | .    | 130  | 223  | 356  | 116  | 72   | 31   |      |
| 11                                   | 10   | .    | .    | 17  | .    | 185  | 209  | 365  | 110  | 71   | 30   |      |
| 12                                   | 9    | .    | .    | 9   | .    | 198  | 178  | 388  | 108  | 70   | 29   |      |
| 13                                   | 8    | .    | .    | 8   | .    | 176  | 174  | 458  | 103  | 69   | 28   |      |
| 14                                   | 8    | .    | .    | 2   | .    | 15   | 238  | 160  | 485  | 102  | 27   |      |
| 15                                   | 7    | .    | .    | .   | .    | 30   | 180  | 145  | 445  | 102  | 26   |      |
| 16                                   | 7    | .    | .    | .   | .    | 48   | 185  | 130  | 435  | 102  | 25   |      |
| 17                                   | 6    | .    | .    | .   | .    | 78   | 144  | 128  | 430  | 101  | 23   |      |
| 18                                   | 6    | .    | .    | .   | .    | 98   | 130  | 118  | 420  | 100  | 21   |      |
| 19                                   | 5    | .    | .    | .   | .    | 86   | 145  | 138  | 415  | 99   | 21   |      |
| 20                                   | 4    | .    | .    | .   | .    | 76   | 198  | 176  | 410  | 98   | 21   |      |
| 21                                   | 3    | .    | .    | .   | .    | 65   | 220  | 186  | 390  | 97   | 21   |      |
| 22                                   | 2    | .    | .    | .   | .    | 50   | 265  | 193  | 382  | 96   | 20   |      |
| 23                                   | 1    | .    | .    | .   | .    | 80   | 270  | 203  | 375  | 95   | 20   |      |
| 24                                   | 1    | .    | .    | .   | .    | 78   | 250  | 225  | 356  | 94   | 20   |      |
| 25                                   | .    | .    | .    | .   | .    | 95   | 235  | 230  | 325  | 93   | 20   |      |
| 26                                   | .    | .    | .    | .   | .    | 98   | 360  | 298  | 310  | 92   | 19   |      |
| 27                                   | .    | .    | .    | .   | .    | 86   | 397  | 380  | 286  | 91   | 18   |      |
| 28                                   | .    | .    | .    | .   | .    | 75   | 390  | 438  | 255  | 90   | 16   |      |
| 29                                   | .    | .    | .    | .   | .    | 62   | 400  | 530  | 233  | 89   | 15   |      |
| 30                                   | .    | .    | .    | .   | .    | 56   | 465  | 590  | 205  | 88   | 14   |      |
| 31                                   | .    | .    | .    | .   | .    |      | 486  | 600  |      | 87   | 17   |      |

hauteur mini = 4 sec      première observation le 25/01  
hauteur maxi = 600 cm      première observation le 31/08

LE SIGNE . INDIQUE L'ABSENCE D'ECOLEMENT .

1bm

| DEKOROBBOUGOU A ZANIENA EN 1988   |      |      |      |      |      |      |      |      |      |      |      | DNHE |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| DEBITS MOYENS JOURNALIERS en m3/s |      |      |      |      |      |      |      |      |      |      |      |      |
| Surface = 736 ka2                 |      |      |      |      |      |      |      |      |      |      |      |      |
| JANV                              | FEVR | MARS | AVRI | MAI  | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                 | .000 | .000 | .000 | .000 | .000 | 7    | .888 | 9.79 | 27.7 | 15.1 | 2.87 | .888 |
| 2                                 | .000 | .000 | .000 | .000 | .000 | 7    | 1.25 | 9.51 | 29.0 | 15.0 | 2.83 | .838 |
| 3                                 | .000 | .000 | .000 | .000 | .000 | 7    | 1.47 | 9.02 | 27.2 | 14.8 | 2.75 | .790 |
| 4                                 | .000 | .000 | .000 | .000 | .000 | 7    | 1.42 | 8.82 | 27.0 | 14.8 | 2.71 | .766 |
| 5                                 | .000 | .000 | .000 | .000 | .000 | 7    | 1.12 | 8.49 | 26.8 | 14.3 | 2.60 | .719 |
| 6                                 | .000 | .000 | .000 | .000 | .000 | 7    | .584 | 8.29 | 26.5 | 14.0 | 2.56 | .650 |
| 7                                 | .000 | .000 | .000 | .000 | .000 | 7    | .673 | 8.09 | 26.5 | 13.5 | 2.49 | .606 |
| 8                                 | .000 | .000 | .000 | .000 | .000 | 7    | .541 | 7.77 | 26.0 | 13.1 | 2.38 | .562 |
| 9                                 | .000 | .000 | .000 | .000 | .000 | 7    | .209 | 7.96 | 25.6 | 12.7 | 2.31 | .520 |
| 10                                | .000 | .000 | .000 | .000 | .000 | 7    | .250 | 7.96 | 25.2 | 12.2 | 2.24 | .478 |
| 11                                | .000 | .000 | .000 | .000 | .000 | 7    | .037 | 7.84 | 24.9 | 11.8 | 2.13 | .418 |
| 12                                | .000 | .000 | .000 | .000 | .000 | 7    | .000 | 7.52 | 24.5 | 11.4 | 2.07 | .379 |
| 13                                | .000 | .000 | .000 | .000 | .000 | 7    | .000 | 7.03 | 24.4 | 10.9 | 2.03 | .341 |
| 14                                | .000 | .000 | .000 | .000 | .000 | 7    | .000 | 7.21 | 23.5 | 10.8 | 1.97 | .304 |
| 15                                | .000 | .000 | .000 | .000 | .000 | 7    | 1.47 | 7.03 | 23.0 | 10.9 | 1.90 | .268 |
| 16                                | .000 | .000 | .000 | .000 | .000 | 7    | 3.66 | 12.2 | 22.8 | 10.4 | 1.84 | .209 |
| 17                                | .000 | .000 | .000 | .000 | .000 | 7    | 6.97 | 12.1 | 22.1 | 10.0 | 1.77 | .171 |
| 18                                | .000 | .000 | .000 | .000 | .000 | 7    | 6.49 | 11.3 | 21.6 | 9.72 | 1.68 | .137 |
| 19                                | .000 | .000 | .000 | .000 | .000 | 7    | 6.03 | 11.0 | 21.4 | 9.23 | 1.65 | .093 |
| 20                                | .000 | .000 | .000 | .000 | .000 | 7    | 5.53 | 10.6 | 20.9 | 8.75 | 1.66 | .068 |
| 21                                | .000 | .000 | .000 | .000 | .000 | 7    | 5.37 | 10.2 | 20.6 | 8.22 | 1.60 | .037 |
| 22                                | .000 | .000 | .000 | .000 | .000 | 7    | 4.85 | 10.0 | 20.3 | 7.71 | 1.45 | .029 |
| 23                                | .000 | .000 | .000 | .000 | .000 | 7    | 3.79 | 9.65 | 19.8 | 7.21 | 1.33 | .013 |
| 24                                | .000 | .000 | .000 | .000 | .000 | 7    | 3.44 | 9.23 | 19.2 | 6.85 | 1.28 | .004 |
| 25                                | .000 | .000 | .000 | .000 | .000 | 7    | 6.20 | 9.58 | 18.8 | 6.49 | 1.25 | .000 |
| 26                                | .000 | .000 | .000 | .000 | .000 | 7    | 13.9 | 34.2 | 18.3 | 6.09 | 1.20 | .000 |
| 27                                | .000 | .000 | .000 | .000 | .000 | 7    | 13.4 | 33.9 | 17.6 | 5.70 | 1.15 | .000 |
| 28                                | .000 | .000 | .000 | .000 | .000 | 7    | 13.2 | 33.3 | 17.0 | 5.37 | 1.10 | .000 |
| 29                                | .000 | .000 | .000 | .000 | .000 | 7    | 11.3 | 32.3 | 16.4 | 5.16 | 1.02 | .000 |
| 30                                | .000 | .000 | .000 | .000 | .000 | 7    | 10.1 | 31.3 | 15.7 | 4.85 | .964 | .000 |
| 31                                | .000 | .000 | .000 | .000 | .000 |      | 10.3 | 30.8 |      | 4.70 | .000 | .000 |

Moy .000 .000 .000 .000 .000 .000 4.34 13.7 22.7 10.1 1.89 .300  
Débit mini = .000 m3/s      première observation le 01/01  
Débit maxi = 34.2 m3/s      première observation le 26/08

| BANIFINS A ZANTIEBOUGOU EN 1988                      |      |      |      |      |      |      |      |      |      |      |      | DNHE |
|------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| DEBITS MOYENS JOURNALIERS en m3/s                    |      |      |      |      |      |      |      |      |      |      |      |      |
| Surface = 1665 ka2                                   |      |      |      |      |      |      |      |      |      |      |      |      |
| JANV                                                 | FEVR | MARS | AVRI | MAI  | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                                    | .000 | .000 | .000 | .000 | 2.02 | .000 | 1.17 | 29.8 | 32.4 | 7.30 | 1.56 | .249 |
| 2                                                    | .000 | .000 | .000 | .000 | 1.20 | .000 | 1.36 | 30.5 | 26.2 | 6.89 | 1.52 | .199 |
| 3                                                    | .000 | .000 | .000 | .000 | .841 | .000 | 4.33 | 28.1 | 25.8 | 6.29 | 1.48 | .140 |
| 4                                                    | .000 | .000 | .000 | .000 | .630 | .000 | 2.33 | 25.8 | 25.4 | 5.71 | 1.45 | .130 |
| 5                                                    | .000 | .000 | .000 | .000 | .460 | .000 | 2.02 | 22.5 | 24.0 | 5.15 | 1.41 | .110 |
| 6                                                    | .000 | .000 | .000 | .000 | .224 | .000 | 1.52 | 19.5 | 22.4 | 4.60 | 1.34 | .101 |
| 7                                                    | .000 | .000 | .000 | .000 | .110 | .000 | 1.00 | 15.7 | 20.7 | 4.07 | 1.27 | .092 |
| 8                                                    | .000 | .000 | .000 | .000 | .044 | .000 | .872 | 13.5 | 18.8 | 3.95 | 1.20 | .084 |
| 9                                                    | .000 | .000 | .000 | .000 | .010 | .000 | 2.81 | 10.3 | 17.3 | 3.30 | 1.13 | .076 |
| 10                                                   | .000 | .000 | .000 | .000 | .000 | .000 | 3.55 | 8.92 | 17.5 | 2.86 | 1.07 | .068 |
| 11                                                   | .000 | .000 | .000 | .000 | .000 | .000 | 4.87 | 7.81 | 18.1 | 2.57 | 1.03 | .060 |
| 12                                                   | .000 | .000 | .000 | .000 | .000 | .000 | 7.38 | 7.19 | 19.4 | 2.33 | 1.00 | .053 |
| 13                                                   | .000 | .000 | .000 | .000 | .000 | .000 | 6.06 | 6.06 | 24.2 | 2.24 | .968 | .046 |
| 14                                                   | .000 | .000 | .000 | .000 | .000 | .000 | 9.87 | 9.15 | 24.0 | 2.19 | .968 | .039 |
| 15                                                   | .000 | .000 | .000 | .000 | .000 | .060 | 6.29 | 4.33 | 23.4 | 2.19 | .904 | .032 |
| 16                                                   | .000 | .000 | .000 | .000 | .000 | .382 | 4.87 | 3.85 | 22.7 | 2.19 | .841 | .026 |
| 17                                                   | .000 | .000 | .000 | .000 | .000 | 1.17 | 4.39 | 3.30 | 22.4 | 2.15 | .779 | .015 |
| 18                                                   | .000 | .000 | .000 | .000 | .000 | 2.02 | 3.85 | 2.81 | 21.7 | 2.10 | .719 | .010 |
| 19                                                   | .000 | .000 | .000 | .000 | .000 | 1.56 | 4.33 | 3.96 | 21.4 | 2.06 | .659 | .005 |
| 20                                                   | .000 | .000 | .000 | .000 | .000 | 1.20 | 7.38 | 6.04 | 21.0 | 2.02 | .601 | .005 |
| 21                                                   | .000 | .000 | .000 | .000 | .000 | .841 | 8.74 | 6.65 | 19.7 | 1.98 | .572 | .005 |
| 22                                                   | .000 | .000 | .000 | .000 | .000 | .406 | 11.6 | 7.19 | 19.2 | 1.94 | .544 | .000 |
| 23                                                   | .000 | .000 | .000 | .000 | .000 | .406 | 11.9 | 7.81 | 18.7 | 1.90 | .488 | .000 |
| 24                                                   | .000 | .000 | .000 | .000 | .000 | 1.27 | 10.6 | 9.05 | 17.5 | 1.86 | .433 | .000 |
| 25                                                   | .000 | .000 | .000 | .000 | .000 | 1.90 | 9.47 | 9.36 | 15.4 | 1.82 | .406 | .000 |
| 26                                                   | .000 | .000 | .000 | .000 | .000 | 2.02 | 17.7 | 13.7 | 14.4 | 1.78 | .379 | .000 |
| 27                                                   | .000 | .000 | .000 | .000 | .000 | 1.56 | 20.2 | 19.1 | 12.9 | 1.74 | .352 | .000 |
| 28                                                   | .000 | .000 | .000 | .000 | .000 | 1.17 | 19.7 | 22.9 | 10.9 | 1.71 | .300 | .000 |
| 29                                                   | .000 | .000 | .000 | .000 | .000 | .749 | 20.4 | 29.4 | 9.55 | 1.67 | .274 | .000 |
| 30                                                   | .000 | .000 | .000 | .000 | .000 | .572 | 24.7 | 34.0 | 7.81 | 1.63 | .249 | .000 |
| 31                                                   | .000 | .000 | .000 | .000 | .000 |      | 26.2 | 34.8 |      | 1.59 | .000 | .000 |
| Moy                                                  | .000 | .000 | .000 | .000 | .179 | .575 | 8.43 | 14.5 | 19.8 | 2.95 | .863 | .050 |
| Débit mini = .000 m3/s première observation le 01/01 |      |      |      |      |      |      |      |      |      |      |      |      |
| Débit maxi = 34.8 m3/s première observation le 31/08 |      |      |      |      |      |      |      |      |      |      |      |      |
| Débit moyen annuel = 3.95 m3/s                       |      |      |      |      |      |      |      |      |      |      |      |      |
| Lame d'eau écoulée = 75 mm                           |      |      |      |      |      |      |      |      |      |      |      |      |

| SENEGAL A AMBIDEDI EN 1988                          |      |      |      |     |      |      |      |      |      |      |      | DNHE |
|-----------------------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm                |      |      |      |     |      |      |      |      |      |      |      |      |
| Zéro de l'échelle = 17.67 m IGN                     |      |      |      |     |      |      |      |      |      |      |      |      |
| JANV                                                | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                                   | 32   | 84   | 67   | -27 | -61  | 36   | 81   | 193  | 442  | 304  | 67   | -9   |
| 2                                                   | 32   | 84   | 66   | -28 | -62  | 37   | 85   | 232  | 474  | 344  | 58   | -12  |
| 3                                                   | 31   | 84   | 66   | -28 | -64  | 38   | 86   | 229  | 497  | 308  | 53   | -14  |
| 4                                                   | 31   | 84   | 66   | -29 | -65  | 40   | 82   | 204  | 547  | 302  | 48   | -15  |
| 5                                                   | 31   | 83   | 64   | -30 | -66  | 37   | 38   | 183  | 645  | 305  | 42   | -15  |
| 6                                                   | 32   | 88   | 64   | -31 | -68  | 33   | 34   | 160  | 638  | 302  | 44   | -16  |
| 7                                                   | 32   | 80   | 63   | -31 | -64  | 27   | 33   | 147  | 623  | 380  | 40   | -16  |
| 8                                                   | 32   | 83   | 64   | -32 | -62  | 28   | 39   | 136  | 680  | 322  | 36   | -17  |
| 9                                                   | 32   | 27   | 61   | -32 | -60  | 27   | 45   | 180  | 706  | 306  | 37   | -18  |
| 10                                                  | 32   | 23   | 55   | -33 | -60  | 26   | 60   | 162  | 703  | 301  | 33   | -20  |
| 11                                                  | 36   | 17   | 38   | -33 | -61  | 24   | 77   | 149  | 698  | 295  | 31   | -24  |
| 12                                                  | 36   | 12   | 22   | -33 | -61  | 27   | 100  | 129  | 715  | 286  | 30   | -26  |
| 13                                                  | 43   | 7    | 14   | -33 | -62  | 28   | 89   | 113  | 700  | 274  | 29   | -27  |
| 14                                                  | 88   | 3    | 9    | -34 | -63  | 28   | 93   | 104  | 712  | 238  | 27   | -29  |
| 15                                                  | 66   | 0    | 8    | -37 | -64  | 33   | 139  | 108  | 692  | 197  | 27   | -30  |
| 16                                                  | 68   | -2   | 0    | -42 | -65  | 33   | 131  | 102  | 640  | 194  | 22   | -31  |
| 17                                                  | 63   | 8-3  | -2   | -42 | -117 | 34   | 120  | 186  | 623  | 192  | 21   | -32  |
| 18                                                  | 72   | 8-4  | -4   | -43 | 149  | 103  | 111  | 218  | 578  | 208  | 18   | -33  |
| 19                                                  | 68   | 8-5  | -8   | -44 | 133  | 89   | 101  | 249  | 589  | 212  | 16   | -33  |
| 20                                                  | 93   | 9    | -10  | -46 | 105  | 61   | 96   | 282  | 642  | 208  | 12   | -34  |
| 21                                                  | 48   | 8    | -13  | -48 | 90   | 68   | 113  | 265  | 618  | 195  | 10   | -35  |
| 22                                                  | 57   | 8-3  | -16  | -50 | 85   | 88   | 128  | 319  | 489  | 140  | 8    | -36  |
| 23                                                  | 64   | 8-3  | -18  | -51 | 77   | 40   | 154  | 318  | 477  | 144  | 6    | -38  |
| 24                                                  | 68   | 2    | -20  | -52 | 71   | 61   | 224  | 294  | 467  | 125  | 5    | -40  |
| 25                                                  | 61   | 47   | -22  | -52 | 89   | 60   | 222  | 272  | 460  | 142  | 5    | -40  |
| 26                                                  | 91   | 64   | -25  | -53 | 49   | 84   | 203  | 266  | 448  | 105  | 4    | -40  |
| 27                                                  | 43   | 63   | -27  | -55 | 43   | 40   | 179  | 302  | 433  | 88   | 2    | -40  |
| 28                                                  | 44   | 67   | -28  | -56 | 40   | 34   | 166  | 398  | 410  | 86   | 0    | -40  |
| 29                                                  | 49   | 66   | -29  | -57 | 41   | 24   | 148  | 448  | 384  | 81   | -1   | -41  |
| 30                                                  | 52   |      | -28  | -59 | 40   | 40   | 182  | 479  | 371  | 75   | -2   | -41  |
| 31                                                  | 53   |      | -27  |     | 38   |      | 174  | 461  |      | 72   |      | -41  |
| hauteur mini = -66 cm première observation le 06/09 |      |      |      |     |      |      |      |      |      |      |      |      |
| hauteur maxi = 715 cm première observation le 12/09 |      |      |      |     |      |      |      |      |      |      |      |      |

LE SIGNE + PRECEDE LES HAUTEURS RECONSTITUEES .

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| DAFING A DAFING MAKANA EN 1988                      |      |      |      |     |      |      |      |      |      |      |      | DNHE |
|-----------------------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm                |      |      |      |     |      |      |      |      |      |      |      |      |
| Zéro de l'échelle = 220.80 m IGN                    |      |      |      |     |      |      |      |      |      |      |      |      |
| JANV                                                | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                                   | 97   | 62   | 30   | 4   | -9   | -19  | 72   | 590  | 740  | 611  | 272  | 181  |
| 2                                                   | 96   | 61   | 29   | 5   | -9   | -19  | 83   | 642  | 779  | 598  | 245  | 148  |
| 3                                                   | 95   | 60   | 28   | 4   | -9   | -20  | 101  | 679  | 742  | 597  | 293  | 146  |
| 4                                                   | 94   | 59   | 26   | 3   | -10  | -20  | 118  | 695  | 731  | 582  | 251  | 144  |
| 5                                                   | 94   | 57   | 26   | 3   | -10  | -21  | 122  | 677  | 728  | 572  | 250  | 142  |
| 6                                                   | 92   | 56   | 25   | 2   | -11  | -19  | 115  | 657  | 786  | 559  | 250  | 140  |
| 7                                                   | 91   | 55   | 24   | 1   | -11  | -19  | 120  | 645  | 827  | 559  | 251  | 138  |
| 8                                                   | 91   | 54   | 24   | 1   | -11  | -17  | 121  | 625  | 822  | 554  | 259  | 134  |
| 9                                                   | 90   | 53   | 23   | 1   | -12  | -14  | 116  | 636  | 801  | 540  | 264  | 131  |
| 10                                                  | 88   | 51   | 22   | 0   | -12  | -5   | 113  | 654  | 776  | 506  | 264  | 129  |
| 11                                                  | 88   | 50   | 21   | -1  | -13  | 14   | 109  | 663  | 747  | 479  | 285  | 126  |
| 12                                                  | 87   | 49   | 20   | -2  | -13  | 6    | 120  | 651  | 732  | 459  | 243  | 122  |
| 13                                                  | 85   | 48   | 18   | -2  | -14  | 12   | 141  | 630  | 759  | 437  | 232  | 120  |
| 14                                                  | 84   | 48   | 16   | -3  | -14  | 32   | 172  | 617  | 730  | 429  | 222  | 119  |
| 15                                                  | 84   | 46   | 17   | -3  | -14  | 43   | 307  | 612  | 717  | 415  | 216  | 116  |
| 16                                                  | 80   | 44   | 17   | -4  | -15  | 60   | 390  | 612  | 708  | 406  | 208  | 115  |
| 17                                                  | 80   | 44   | 17   | -4  | -15  | 141  | 475  | 640  | 690  | 400  | 206  | 114  |
| 18                                                  | 79   | 43   | 16   | -4  | -15  | 114  | 515  | 706  | 689  | 391  | 203  | 111  |
| 19                                                  | 77   | 41   | 16   | -4  | -15  | 94   | 646  | 714  | 669  | 387  | 197  | 109  |
| 20                                                  | 75   | 41   | 15   | -6  | -16  | 91   | 445  | 726  | 653  | 384  | 191  | 108  |
| 21                                                  | 75   | 39   | 14   | -6  | -16  | 90   | 493  | 705  | 648  | 387  | 185  | 106  |
| 22                                                  | 70   | 38   | 13   | -7  | -18  | 77   | 567  | 705  | 644  | 377  | 181  | 104  |
| 23                                                  | 71   | 37   | 12   | -8  | -18  | 69   | 467  | 724  | 648  | 362  | 177  | 102  |
| 24                                                  | 70   | 37   | 11   | -8  | -19  | 67   | 413  | 708  | 640  | 344  | 172  | 101  |
| 25                                                  | 69   | 35   | 10   | -8  | -19  | 62   | 411  | 707  | 632  | 329  | 168  | 99   |
| 26                                                  | 68   | 34   | 9    | -9  | -19  | 78   | 412  | 690  | 608  | 312  | 164  | 98   |
| 27                                                  | 67   | 33   | 8    | -9  | -17  | 82   | 380  | 723  | 593  | 304  | 160  | 96   |
| 28                                                  | 66   | 33   | 8    | -9  | -17  | 75   | 430  | 713  | 607  | 301  | 159  | 96   |
| 29                                                  | 65   | 31   | 8    | -9  | -18  | 68   | 507  | 692  | 626  | 287  | 157  | 95   |
| 30                                                  | 64   |      | 7    | -9  | -18  | 64   | 499  | 698  | 618  | 280  | 154  | 94   |
| 31                                                  | 63   |      | 6    |     | -18  |      | 532  | 698  |      | 278  |      | 94   |
| hauteur mini = -21 cm première observation le 05/06 |      |      |      |     |      |      |      |      |      |      |      |      |
| hauteur maxi = 827 cm première observation le 07/09 |      |      |      |     |      |      |      |      |      |      |      |      |

| SENEGAL A AMBIDEDI EN 1988        |      |      |      |      |      |      |      |      |      |      |      | DNHE |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| DEBITS MOYENS JOURNALIERS en m3/s |      |      |      |      |      |      |      |      |      |      |      |      |
| Surface = 159000 km2              |      |      |      |      |      |      |      |      |      |      |      |      |
| JANV                              | FEVR | MARS | AVRI | MAI  | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                 | 31.9 | 54.5 | 70.5 | 4.70 | 1.32 | 35.6 | 90.0 | 360. | 1270 | 916. | 70.5 | 7.41 |
| 2                                 | 31.9 | 54.5 | 69.2 | 4.57 | 1.25 | 36.6 | 88.0 | 476. | 1400 | 884. | 59.3 | 6.91 |
| 3                                 | 31.0 | 54.5 | 69.2 | 4.57 | 1.13 | 37.5 | 86.9 | 467. | 1810 | 732. | 53.4 | 6.59 |
| 4                                 | 31.0 | 54.5 | 69.2 | 4.44 | 1.07 | 39.5 | 82.2 | 398. | 1740 | 708. | 47.8 | 6.43 |
| 5                                 | 31.0 | 53.4 | 66.7 | 4.31 | 1.07 | 36.6 | 37.5 | 332. | 2230 | 720. | 41.5 | 6.43 |
| 6                                 | 31.9 | 47.8 | 66.7 | 4.18 | 1.01 | 32.8 | 33.7 | 269. | 2200 | 908. | 43.5 | 6.28 |
| 7                                 | 31.9 | 39.8 | 65.4 | 4.18 | 1.13 | 27.5 | 32.8 | 235. | 2120 | 900. | 39.5 | 6.28 |
| 8                                 | 31.9 | 32.8 | 66.7 | 4.06 | 1.25 | 25.9 | 38.5 | 207. | 2430 | 788. | 35.6 | 6.13 |
| 9                                 | 31.9 | 27.5 | 62.9 | 4.06 | 1.38 | 27.5 | 44.6 | 245. | 2580 | 724. | 36.6 | 5.97 |
| 10                                | 31.9 | 24.3 | 55.7 | 3.94 | 1.38 | 26.7 | 61.7 | 275. | 2560 | 704. | 32.8 | 5.88 |
| 11                                | 35.4 | 19.7 | 34.7 | 3.94 | 1.32 | 25.1 | 115. | 240. | 2510 | 683. | 31.0 | 5.11 |
| 12                                | 35.6 | 16.2 | 23.5 | 3.94 | 1.32 | 27.5 | 120. | 190. | 2630 | 652. | 30.1 | 4.83 |
| 13                                | 42.5 | 13.0 | 17.6 | 3.94 | 1.25 | 25.9 | 102. | 151. | 2540 | 611. | 29.2 | 4.70 |
| 14                                | 59.3 | 10.6 | 14.2 | 3.82 | 1.19 | 28.4 | 108. | 134. | 2610 | 495. | 27.5 | 4.44 |
| 15                                | 69.2 | 9.00 | 11.8 | 3.47 | 1.13 | 32.8 | 215. | 139. | 2490 | 371. | 27.5 | 4.31 |
| 16                                | 68.0 | 8.63 | 9.00 | 2.93 | 1.07 | 32.8 | 195. | 125. | 2210 | 363. | 23.5 | 4.18 |
| 17                                | 65.4 | 8.27 | 8.63 | 2.93 | 1.60 | 33.7 | 166. | 259. | 2120 | 387. | 22.7 | 4.06 |
| 18                                | 77.2 | 8.10 | 8.27 | 2.83 | 240. | 127. | 146. | 424. | 1890 | 395. | 20.4 | 3.94 |
| 19                                | 71.9 | 7.92 | 7.58 | 2.73 | 200. | 102. | 122. | 895. | 1790 | 415. | 19.0 | 3.94 |
| 20                                | 53.4 | 14.2 | 7.24 | 2.53 | 132. | 62.9 | 111. | 539. | 1710 | 404. | 16.2 | 3.82 |
| 21                                | 44.6 | 11.8 | 6.75 | 2.34 | 104. | 71.9 | 151. | 582. | 1600 | 366. | 14.9 | 3.70 |
| 22                                | 58.1 | 8.45 | 6.28 | 2.16 | 92.9 | 59.3 | 187. | 776. | 1470 | 217. | 13.6 | 3.58 |
| 23                                | 66.7 | 8.27 | 5.97 | 2.08 | 84.2 | 39.5 | 253. | 772. | 1420 | 228. | 12.4 | 3.36 |
| 24                                | 68.0 | 10.1 | 5.68 | 1.99 | 75.9 | 45.2 | 452. | 679. | 1370 | 180. | 11.8 | 3.14 |
| 25                                | 62.9 | 46.7 | 8.39 | 1.99 | 60.5 | 61.7 | 446. | 605. | 1340 | 222. | 11.8 | 3.14 |
| 26                                | 51.1 | 46.7 | 4.97 | 1.91 | 48.9 | 54.5 | 389. | 585. | 1290 | 132. | 11.2 | 3.14 |
| 27                                | 42.5 | 45.4 | 4.70 | 1.75 | 42.5 | 39.5 | 321. | 708. | 1230 | 101. | 10.1 | 3.14 |
| 28                                | 43.5 | 70.5 | 4.57 | 1.67 | 39.5 | 37.5 | 285. | 1090 | 1140 | 97.5 | 9.00 | 3.14 |
| 29                                | 48.9 | 69.2 | 4.44 | 1.60 | 40.5 | 25.1 | 238. | 1290 | 1040 | 90.0 | 8.82 | 3.03 |
| 30                                | 52.2 |      | 4.57 | 1.45 | 39.5 | 39.5 | 248. | 1430 | 984. | 81.4 | 8.63 | 3.03 |
| 31                                | 53.4 |      | 4.70 |      | 37.5 |      | 307. | 1350 |      | 77.2 |      | 3.03 |

Moy 1988: 47.9 31.6 27.8 3.17 48.7 43.7 168. 914. 1850 468. 27.3 4.61 269.

Moy51-88: 57.2 32.6 23.6 13.6 12.6 52.8 357. 1500 2080 968. 284. 108. 342.

Mini obs: 6.95 4.24 2.77 2.28 1.30 .064 63.7 288. 406. 306. 27.3 4.61 134.

Maxi obs: 161. 88.5 79.7 62.2 71.3 317. 960. 3370 4070 2660 718. 275. 790.

Débit mini = 1.01 m3/s première observation le 06/09  
Débit maxi = 2636 m3/s première observation le 12/09  
Lame d'eau écoulée = 83

| BAOULE A BAOULE GARE EN 1988         |      |      |      |     |      |      |      |      |      |      |      | DNHE |
|--------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm |      |      |      |     |      |      |      |      |      |      |      |      |
| Zéro de l'échelle = non connu        |      |      |      |     |      |      |      |      |      |      |      |      |
| JANV                                 | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                    | .    | .    | .    | .   | .    | ?    | 209  | 478  | 240  | ?    | ?    |      |
| 2                                    | .    | .    | .    | .   | .    | ?    | 248  | 248  | 249  | ?    | ?    |      |
| 3                                    | .    | .    | .    | .   | .    | ?    | 248  | 248  | 213  | ?    | ?    |      |
| 4                                    | .    | .    | .    | .   | .    | ?    | 200  | 200  | 208  | ?    | ?    |      |
| 5                                    | .    | .    | .    | .   | .    | ?    | ?    | ?    | 208  | ?    | ?    |      |
| 6                                    | .    | .    | .    | .   | .    | ?    | ?    | ?    | 200  | ?    | ?    |      |
| 7                                    | .    | .    | .    | .   | .    | ?    | ?    | ?    | 198  | ?    | ?    |      |
| 8                                    | .    | .    | .    | .   | .    | ?    | ?    | ?    | 198  | ?    | ?    |      |
| 9                                    | .    | .    | .    | .   | .    | 20   | ?    | ?    | 190  | ?    | ?    |      |
| 10                                   | .    | .    | .    | .   | .    | 197  | ?    | ?    | 187  | ?    | ?    |      |
| 11                                   | .    | .    | .    | .   | .    | 329  | ?    | ?    | 183  | ?    | ?    |      |
| 12                                   | .    | .    | .    | .   | .    | 141  | ?    | ?    | 181  | ?    | ?    |      |
| 13                                   | .    | .    | .    | .   | .    | 90   | 219  | 219  | 173  | ?    | ?    |      |
| 14                                   | .    | .    | .    | .   | .    | 12   | 87   | 274  | 274  | 148  | ?    | ?    |
| 15                                   | .    | .    | .    | .   | .    | 137  | 280  | 390  | 390  | 185  | ?    | ?    |
| 16                                   | .    | .    | .    | .   | .    | 84   | 218  | 387  | 387  | 138  | ?    | ?    |
| 17                                   | .    | .    | .    | .   | .    | ?    | 127  | 348  | 348  | 118  | ?    | ?    |
| 18                                   | .    | .    | .    | .   | .    | ?    | 182  | 348  | 348  | 118  | ?    | ?    |
| 19                                   | .    | .    | .    | .   | .    | ?    | 188  | 422  | 422  | 109  | ?    | ?    |
| 20                                   | .    | .    | .    | .   | .    | 10   | 138  | 490  | 490  | 104  | ?    | ?    |
| 21                                   | .    | .    | .    | .   | .    | ?    | 104  | 832  | 832  | 103  | ?    | ?    |
| 22                                   | .    | .    | .    | .   | .    | ?    | 139  | 832  | 460  | 100  | ?    | ?    |
| 23                                   | .    | .    | .    | .   | .    | 3    | 183  | 448  | 287  | ?    | ?    | ?    |
| 24                                   | .    | .    | .    | .   | .    | ?    | 178  | 287  | 342  | ?    | ?    | ?    |
| 25                                   | .    | .    | .    | .   | .    | 280  | 117  | 342  | 377  | ?    | ?    | ?    |
| 26                                   | .    | .    | .    | .   | .    | 138  | 121  | 377  | 384  | ?    | ?    | ?    |
| 27                                   | .    | .    | .    | .   | .    | 92   | ?    | 384  | 229  | ?    | ?    | ?    |
| 28                                   | .    | .    | .    | .   | .    | ?    | ?    | 229  | 139  | ?    | ?    | ?    |
| 29                                   | .    | .    | .    | .   | .    | ?    | ?    | 138  | 293  | ?    | ?    | ?    |
| 30                                   | .    | .    | .    | .   | .    | ?    | ?    | 293  | 318  | ?    | ?    | ?    |
| 31                                   | .    | .    | .    | .   | .    | ?    | ?    | 318  | ?    | ?    | ?    | ?    |

hauteur mini = 4 cm      première observation le 01/01  
hauteur maxi = 832 cm      première observation le 21/08

LE SIGNE . INDIQUE L'ABSENCE D'ECOLEMENT .

1ba

| BAFINS A DAKA SAIDOU EN 1988         |      |      |      |     |      |      |      |      |      |      |      | DNHE |
|--------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm |      |      |      |     |      |      |      |      |      |      |      |      |
| Zéro de l'échelle = 307.13 ± 18M     |      |      |      |     |      |      |      |      |      |      |      |      |
| JANV                                 | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                    | 69   | 93   | 38   | 18  | 1    | 13   | 64   | 329  | 374  | 288  | 138  | 92   |
| 2                                    | 68   | 93   | 38   | 17  | 1    | 12   | 64   | 370  | 428  | 281  | 130  | 91   |
| 3                                    | 68   | 92   | 34   | 17  | 4    | 12   | 67   | 377  | 403  | 273  | 128  | 90   |
| 4                                    | 67   | 91   | 38   | 16  | 4    | 11   | 72   | 388  | 374  | 244  | 130  | 90   |
| 5                                    | 67   | 91   | 34   | 16  | 4    | 10   | 72   | 344  | 428  | 241  | 129  | 89   |
| 6                                    | 67   | 90   | 34   | 18  | 3    | 14   | 71   | 347  | 447  | 272  | 130  | 88   |
| 7                                    | 66   | 90   | 33   | 18  | 3    | 11   | 68   | 328  | 844  | 248  | 133  | 87   |
| 8                                    | 69   | 49   | 33   | 18  | 2    | 12   | 47   | 309  | 881  | 284  | 137  | 86   |
| 9                                    | 68   | 49   | 32   | 14  | 1    | 11   | 66   | 338  | 802  | 237  | 138  | 85   |
| 10                                   | 68   | 48   | 32   | 14  | 0    | 10   | 70   | 341  | 467  | 224  | 131  | 84   |
| 11                                   | 68   | 47   | 31   | 12  | -1   | 33   | 72   | 342  | 424  | 214  | 124  | 83   |
| 12                                   | 64   | 46   | 31   | 12  | -2   | 47   | 83   | 334  | 373  | 204  | 123  | 82   |
| 13                                   | 64   | 46   | 31   | 11  | -3   | 43   | 111  | 317  | 343  | 199  | 117  | 81   |
| 14                                   | 63   | 48   | 30   | 10  | -3   | 40   | 188  | 312  | 388  | 193  | 114  | 80   |
| 15                                   | 63   | 48   | 29   | 9   | -3   | 89   | 183  | 300  | 381  | 187  | 112  | 80   |
| 16                                   | 62   | 44   | 29   | 9   | -4   | 60   | 190  | 299  | 348  | 184  | 110  | 79   |
| 17                                   | 62   | 43   | 29   | 8   | 1    | 87   | 203  | 344  | 362  | 183  | 109  | 78   |
| 18                                   | 61   | 43   | 27   | 8   | 3    | 49   | 200  | 398  | 342  | 180  | 104  | 77   |
| 19                                   | 61   | 42   | 26   | 8   | 4    | 47   | 214  | 425  | 328  | 181  | 104  | 76   |
| 20                                   | 60   | 42   | 25   | 7   | 12   | 45   | 221  | 407  | 324  | 181  | 102  | 76   |
| 21                                   | 60   | 41   | 25   | 7   | 14   | 42   | 206  | 394  | 322  | 182  | 100  | 75   |
| 22                                   | 59   | 40   | 24   | 6   | 14   | 40   | 201  | 408  | 328  | 179  | 99   | 74   |
| 23                                   | 59   | 40   | 23   | 6   | 18   | 38   | 193  | 414  | 324  | 173  | 99   | 74   |
| 24                                   | 58   | 39   | 22   | 6   | 18   | 38   | 187  | 381  | 313  | 171  | 98   | 74   |
| 25                                   | 58   | 39   | 21   | 6   | 14   | 43   | 180  | 363  | 299  | 167  | 97   | 73   |
| 26                                   | 57   | 38   | 21   | 4   | 14   | 46   | 174  | 372  | 283  | 163  | 96   | 73   |
| 27                                   | 56   | 38   | 20   | 4   | 34   | 48   | 177  | 379  | 292  | 159  | 95   | 72   |
| 28                                   | 56   | 37   | 19   | 3   | 17   | 55   | 230  | 374  | 322  | 183  | 94   | 72   |
| 29                                   | 55   | 36   | 19   | 2   | 16   | 43   | 228  | 388  | 312  | 149  | 94   | 72   |
| 30                                   | 55   | 19   | 2    | 15  | 42   | 249  | 333  | 298  | 144  | 93   | 71   |      |
| 31                                   | 54   | 18   |      | 14  |      | 280  | 352  |      | 139  |      | 71   |      |

hauteur mini = -4 cm      première observation le 16/05  
hauteur maxi = 881 cm      première observation le 08/09

| BAKOYE A DIANGOLA EN 1988            |      |      |      |     |      |      |      |      |      |      |      | DNHE                          |
|--------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|-------------------------------|
| HAUTEURS MOYENNES JOURNALIERES en cm |      |      |      |     |      |      |      |      |      |      |      |                               |
| ~~~~~                                |      |      |      |     |      |      |      |      |      |      |      |                               |
| Zéro de l'échelle = non connu        |      |      |      |     |      |      |      |      |      |      |      |                               |
| JANV                                 | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |                               |
| 1                                    | ?    | ?    | 135  | 106 | 80   | 63   | 220  | 260  | 625  | 444  | 238  | 213                           |
| 2                                    | ?    | ?    | 134  | 108 | 79   | 64   | 220  | 261  | 631  | 429  | 235  | 213                           |
| 3                                    | ?    | ?    | 1333 | 104 | 79   | 64   | 226  | 262  | 660  | 409  | 233  | 213                           |
| 4                                    | ?    | ?    | 133  | 103 | 78   | 64   | 224  | 274  | 641  | 397  | 232  | 212                           |
| 5                                    | ?    | ?    | 132  | 103 | 78   | 63   | 226  | 294  | 691  | 385  | 231  | 212                           |
| 6                                    | ?    | ?    | 131  | 102 | 77   | 63   | 228  | 278  | 621  | 367  | 230  | 212                           |
| 7                                    | ?    | ?    | 130  | 101 | 77   | 63   | 224  | 270  | 724  | 357  | 229  | 212                           |
| 8                                    | ?    | ?    | 130  | 100 | 76   | 62   | 222  | 282  | 769  | 346  | 228  | 211                           |
| 9                                    | ?    | ?    | 129  | 91  | 76   | 62   | 220  | 248  | 734  | 334  | 227  | 211                           |
| 10                                   | ?    | ?    | 128  | 90  | 75   | 61   | 221  | 271  | 744  | 320  | 226  | 211                           |
| 11                                   | ?    | ?    | 127  | 90  | 75   | 64   | 244  | 267  | 714  | 311  | 228  | 210                           |
| 12                                   | ?    | ?    | 126  | 89  | 74   | 64   | 248  | 283  | 677  | 303  | 224  | 210                           |
| 13                                   | ?    | ?    | 125  | 89  | 74   | 64   | 240  | 294  | 648  | 3294 | 223  | 210                           |
| 14                                   | ?    | ?    | 124  | 88  | 73   | 63   | 244  | 287  | 690  | 3290 | 222  | 210                           |
| 15                                   | ?    | ?    | 123  | 88  | 73   | 64   | 250  | 328  | 684  | 3284 | 221  | 209                           |
| 16                                   | ?    | ?    | 122  | 87  | 72   | 131  | 243  | 300  | 844  | 3278 | 220  | 209                           |
| 17                                   | ?    | ?    | 121  | 87  | 72   | 153  | 320  | 311  | 830  | 3273 | 219  | 209                           |
| 18                                   | ?    | ?    | 120  | 86  | 71   | 181  | 332  | 371  | 812  | 3269 | 219  | 208                           |
| 19                                   | ?    | ?    | 119  | 86  | 71   | 144  | 400  | 418  | 894  | 3265 | 218  | 208                           |
| 20                                   | ?    | ?    | 118  | 85  | 70   | 144  | 284  | 412  | 867  | 3263 | 217  | 208                           |
| 21                                   | ?    | ?    | 117  | 85  | 70   | 148  | 318  | 371  | 883  | 3260 | 217  | 208                           |
| 22                                   | ?    | ?    | 116  | 84  | 69   | 187  | 440  | 317  | 889  | 328  | 217  | 208                           |
| 23                                   | ?    | ?    | 115  | 84  | 69   | 148  | 394  | 304  | 861  | 324  | 216  | 207                           |
| 24                                   | ?    | ?    | 114  | 83  | 68   | 184  | 289  | 288  | 832  | 323  | 218  | 207                           |
| 25                                   | ?    | ?    | 113  | 83  | 68   | 887  | 240  | 320  | 816  | 321  | 218  | 207                           |
| 26                                   | ?    | ?    | 112  | 82  | 67   | 412  | 243  | 384  | 496  | 249  | 218  | 207                           |
| 27                                   | ?    | ?    | 111  | 82  | 67   | 278  | 282  | 838  | 477  | 247  | 218  | 207                           |
| 28                                   | ?    | ?    | 110  | 81  | 66   | 240  | 240  | 476  | 460  | 248  | 214  | 206                           |
| 29                                   | ?    | ?    | 109  | 81  | 66   | 229  | 231  | 348  | 444  | 243  | 214  | 206                           |
| 30                                   | ?    | ?    | 108  | 80  | 65   | 221  | 229  | 483  | 431  | 241  | 214  | 206                           |
| 31                                   | ?    | ?    | 107  | 80  | 65   | 241  | 611  |      | 8240 |      | 206  |                               |
| hauteur mini = 41 cm                 |      |      |      |     |      |      |      |      |      |      |      | première observation le 10/04 |
| hauteur maxi = 749 cm                |      |      |      |     |      |      |      |      |      |      |      | première observation le 08/09 |

LE SIGNE ? PRECEDE LES HAUTEURS RECONSTITUEES .

1ba

| BAFINS A DAKA SAIDOU EN 1988                         |      |      |      |      |      |      |      |      |      |      |      |      |
|------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| DEBITS MOYENS JOURNALIERS en m3/s                    |      |      |      |      |      |      |      |      |      |      |      |      |
| ~~~~~                                                |      |      |      |      |      |      |      |      |      |      |      |      |
| Surface = 18900 ha2                                  |      |      |      |      |      |      |      |      |      |      |      |      |
|                                                      | JANV | FEVR | MARS | AVRI | MAI  | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |
| 1                                                    | 42.4 | 24.8 | 11.0 | 4.00 | 1.08 | 2.73 | 36.8 | 883  | 766  | 441  | 142  | 73.2 |
| 2                                                    | 41.2 | 24.8 | 11.0 | 3.72 | 1.08 | 2.82 | 38.8 | 879  | 880  | 423  | 133  | 71.7 |
| 3                                                    | 41.2 | 23.8 | 10.4 | 3.72 | 1.29 | 2.82 | 42.4 | 770  | 790  | 403  | 130  | 70.3 |
| 4                                                    | 40.0 | 22.9 | 11.0 | 3.48 | 1.29 | 2.32 | 44.1 | 739  | 744  | 387  | 133  | 70.3 |
| 5                                                    | 40.0 | 22.9 | 10.4 | 3.48 | 1.29 | 2.13 | 46.1 | 689  | 980  | 375  | 132  | 68.8 |
| 6                                                    | 40.0 | 22.0 | 10.4 | 3.20 | 1.20 | 2.96 | 44.9 | 604  | 1030 | 401  | 133  | 67.4 |
| 7                                                    | 38.8 | 22.0 | 9.90 | 3.20 | 1.20 | 2.32 | 41.2 | 841  | 1360 | 391  | 138  | 66.0 |
| 8                                                    | 37.7 | 21.1 | 9.90 | 3.20 | 1.12 | 2.82 | 40.0 | 496  | 1390 | 389  | 149  | 64.6 |
| 9                                                    | 37.7 | 21.1 | 9.38 | 2.96 | 1.08 | 2.32 | 38.8 | 870  | 1180 | 326  | 146  | 63.2 |
| 10                                                   | 37.7 | 20.3 | 9.38 | 2.96 | 1.00 | 2.13 | 43.6 | 880  | 1030 | 299  | 139  | 61.8 |
| 11                                                   | 37.7 | 19.4 | 8.88 | 2.82 | .931 | 9.90 | 46.1 | 683  | 872  | 279  | 127  | 60.4 |
| 12                                                   | 34.8 | 18.4 | 8.88 | 2.82 | .863 | 19.4 | 60.4 | 847  | 784  | 256  | 122  | 59.1 |
| 13                                                   | 36.8 | 18.4 | 8.88 | 2.32 | .798 | 16.3 | 103  | 818  | 636  | 247  | 112  | 57.7 |
| 14                                                   | 38.4 | 17.8 | 8.40 | 2.13 | .798 | 14.1 | 174  | 804  | 739  | 237  | 111  | 56.4 |
| 15                                                   | 38.4 | 17.8 | 7.96 | 1.96 | .798 | 30.9 | 221  | 472  | 718  | 227  | 104  | 56.4 |
| 16                                                   | 34.2 | 17.0 | 7.96 | 1.96 | .738 | 32.0 | 232  | 449  | 663  | 224  | 101  | 58.1 |
| 17                                                   | 34.2 | 16.3 | 7.96 | 1.80 | 1.08 | 28.8 | 284  | 603  | 622  | 221  | 100  | 53.8 |
| 18                                                   | 33.1 | 16.3 | 7.12 | 1.80 | 1.20 | 21.1 | 249  | 773  | 891  | 216  | 94.9 | 52.8 |
| 19                                                   | 33.1 | 15.8 | 6.72 | 1.80 | 1.82 | 19.4 | 278  | 696  | 880  | 217  | 91.7 | 51.2 |
| 20                                                   | 32.0 | 15.8 | 6.33 | 1.65 | 2.82 | 17.8 | 289  | 804  | 838  | 217  | 88.8 | 51.2 |
| 21                                                   | 32.0 | 14.8 | 6.33 | 1.65 | 2.96 | 15.5 | 260  | 759  | 832  | 219  | 85.3 | 49.9 |
| 22                                                   | 30.9 | 14.1 | 5.96 | 1.82 | 2.96 | 14.1 | 251  | 808  | 890  | 214  | 83.7 | 48.6 |
| 23                                                   | 30.9 | 14.1 | 5.60 | 1.82 | 3.20 | 12.8 | 237  | 829  | 844  | 207  | 83.7 | 48.6 |
| 24                                                   | 29.8 | 13.8 | 5.25 | 1.82 | 3.20 | 12.8 | 227  | 718  | 807  | 201  | 82.2 | 48.6 |
| 25                                                   | 29.8 | 13.8 | 4.92 | 1.40 | 2.96 | 16.3 | 216  | 636  | 469  | 194  | 80.7 | 47.3 |
| 26                                                   | 28.8 | 12.8 | 4.92 | 1.29 | 2.96 | 18.6 | 204  | 689  | 433  | 187  | 79.2 | 47.3 |
| 27                                                   | 27.7 | 12.8 | 4.60 | 1.29 | 10.4 | 20.3 | 211  | 708  | 481  | 181  | 77.7 | 46.1 |
| 28                                                   | 27.7 | 12.2 | 4.29 | 1.20 | 3.72 | 26.7 | 307  | 698  | 832  | 171  | 76.2 | 46.1 |
| 29                                                   | 26.7 | 11.6 | 4.29 | 1.12 | 3.48 | 38.4 | 303  | 640  | 804  | 164  | 76.2 | 46.1 |
| 30                                                   | 26.7 |      | 4.29 | 1.12 | 3.20 | 34.2 | 348  | 870  | 467  | 156  | 74.7 | 44.9 |
| 31                                                   | 25.7 |      | 4.00 |      | 2.96 |      | 421  | 622  |      | 148  |      | 44.9 |
| 1988                                                 | 34.2 | 17.9 | 7.62 | 2.27 | 2.09 | 14.7 | 171  | 651  | 723  | 264  | 107  | 56.4 |
| 2-88                                                 | 30.1 | 30.2 | 17.4 | 10.7 | 15.8 | 72.5 | 274  | 729  | 831  | 503  | 210  | 91.3 |
| obs                                                  | 18.2 | 9.94 | 4.51 | 1.56 | .629 | 3.17 | 92.0 | 251  | 268  | 193  | 77.6 | 35.0 |
| obs                                                  | 73.1 | 62.0 | 44.0 | 42.9 | 64.7 | 201  | 366  | 1380 | 1400 | 1170 | 418  | 197  |
| Débit mini = .738 m3/s première observation le 16/05 |      |      |      |      |      |      |      |      |      |      |      |      |
| Débit maxi = 1390 m3/s première observation le 08/07 |      |      |      |      |      |      |      |      |      |      |      |      |
| Lame d'eau écoulée = 348 mm                          |      |      |      |      |      |      |      |      |      |      |      |      |

| BAFINS A DIDA EN 1988                |      |      |       |     |      |      |      |      |      |      |      | DNHE |
|--------------------------------------|------|------|-------|-----|------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm |      |      |       |     |      |      |      |      |      |      |      |      |
| Zéro de l'échelle = non connu        |      |      |       |     |      |      |      |      |      |      |      |      |
| JANV                                 | FEVR | MARS | AVRIL | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                    | 8182 | 187  | 183   | 73  | 78   | 108  | 127  | 162  | 202  | 8370 | 107  | 889  |
| 2                                    | 8184 | 184  | 182   | 73  | 74   | 100  | 128  | 187  | 334  | 8344 | 106  | 889  |
| 3                                    | 184  | 181  | 182   | 73  | 73   | 148  | 128  | 187  | 432  | 8323 | 105  | 889  |
| 4                                    | 188  | 146  | 180   | 73  | 72   | 147  | 123  | 186  | 802  | 8311 | 104  | 89   |
| 5                                    | 161  | 136  | 178   | 73  | 71   | 147  | 122  | 181  | 896  | 8309 | 104  | 89   |
| 6                                    | 164  | 122  | 167   | 73  | 71   | 8147 | 123  | 148  | 889  | 8311 | 102  | 88   |
| 7                                    | 168  | 114  | 162   | 72  | 71   | 146  | 126  | 138  | 879  | 8370 | 101  | 88   |
| 8                                    | 168  | 109  | 139   | 72  | 71   | 146  | 126  | 136  | 898  | 8386 | 100  | 88   |
| 9                                    | 177  | 118  | 114   | 72  | 70   | 147  | 124  | 138  | 663  | 8373 | 100  | 87   |
| 10                                   | 183  | 136  | 106   | 71  | 208  | 149  | 121  | 134  | 663  | 8363 | 100  | 86   |
| 11                                   | 184  | 147  | 103   | 71  | 243  | 183  | 148  | 126  | 684  | 388  | 99   | 86   |
| 12                                   | 183  | 142  | 102   | 71  | 243  | 181  | 142  | 124  | 670  | 388  | 99   | 86   |
| 13                                   | 184  | 137  | 101   | 71  | 248  | 180  | 143  | 121  | 708  | 384  | 98   | 86   |
| 14                                   | 190  | 136  | 102   | 71  | 247  | 143  | 188  | 117  | 648  | 383  | 98   | 86   |
| 15                                   | 197  | 130  | 102   | 70  | 281  | 133  | 148  | 114  | 618  | 387  | 97   | 84   |
| 16                                   | 141  | 124  | 102   | 70  | 274  | 128  | 146  | 132  | 610  | 264  | 97   | 84   |
| 17                                   | 170  | 119  | 102   | 69  | 227  | 8126 | 137  | 136  | 830  | 227  | 96   | 84   |
| 18                                   | 180  | 119  | 102   | 68  | 203  | 124  | 187  | 143  | 807  | 219  | 96   | 82   |
| 19                                   | 183  | 174  | 102   | 70  | 203  | 122  | 178  | 181  | 491  | 207  | 95   | 83   |
| 20                                   | 183  | 180  | 100   | 71  | 199  | 122  | 179  | 160  | 477  | 176  | 94   | 84   |
| 21                                   | 180  | 182  | 93    | 71  | 187  | 121  | 192  | 172  | 471  | 178  | 94   | 84   |
| 22                                   | 148  | 182  | 91    | 70  | 174  | 122  | 204  | 174  | 464  | 172  | 93   | 84   |
| 23                                   | 182  | 183  | 88    | 71  | 148  | 122  | 184  | 173  | 464  | 168  | 93   | 83   |
| 24                                   | 189  | 186  | 87    | 71  | 141  | 123  | 183  | 166  | 486  | 166  | 92   | 83   |
| 25                                   | 160  | 187  | 83    | 73  | 160  | 123  | 188  | 162  | 420  | 168  | 92   | 83   |
| 26                                   | 160  | 183  | 81    | 73  | 161  | 123  | 169  | 189  | 419  | 130  | 91   | 84   |
| 27                                   | 160  | 182  | 77    | 72  | 188  | 122  | 164  | 144  | 408  | 119  | 90   | 86   |
| 28                                   | 160  | 182  | 73    | 71  | 162  | 121  | 166  | 188  | 402  | 112  | 88   | 84   |
| 29                                   | 189  | 183  | 72    | 71  | 163  | 124  | 178  | 161  | 387  | 110  | 88   | 83   |
| 30                                   | 189  | 72   | 73    | 162 | 126  | 182  | 168  | 387  | 108  | 89   | 82   |      |
| 31                                   | 187  | 72   | 162   | 167 | 270  | 107  |      |      |      |      | 83   |      |

hauteur mini = 68 cm première observation le 18/04  
hauteur maxi = 708 cm première observation le 13/09

LE SIGNE + PRECEDE LES HAUTEURS RECONSTITUEES .

1ba

| BAFINS A DIDA EN 1988                          |      |      |       |      |      |      |      |      |      |      |      | DNHE |
|------------------------------------------------|------|------|-------|------|------|------|------|------|------|------|------|------|
| DEBITS MOYENS JOURNALIERS en m <sup>3</sup> /s |      |      |       |      |      |      |      |      |      |      |      |      |
| Surface = 33000 km <sup>2</sup>                |      |      |       |      |      |      |      |      |      |      |      |      |
| JANV                                           | FEVR | MARS | AVRIL | MAI  | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                              | 64.8 | 70.8 | 108.  | 8.00 | 8.39 | 68.2 | 31.1 | 77.4 | 318. | 887. | 13.9 | 7.98 |
| 2                                              | 67.0 | 67.0 | 107.  | 8.00 | 8.19 | 62.0 | 32.2 | 70.8 | 488. | 483. | 13.4 | 7.98 |
| 3                                              | 69.8 | 63.2 | 107.  | 8.00 | 8.00 | 84.4 | 28.9 | 70.8 | 744. | 424. | 13.0 | 7.98 |
| 4                                              | 72.1 | 85.8 | 104.  | 8.00 | 4.82 | 87.4 | 24.8 | 69.8 | 977. | 391. | 12.6 | 7.98 |
| 5                                              | 76.1 | 41.9 | 96.0  | 8.00 | 4.63 | 87.4 | 28.8 | 63.2 | 1330 | 386. | 12.6 | 7.98 |
| 6                                              | 80.2 | 28.8 | 84.4  | 8.00 | 4.63 | 87.4 | 26.8 | 84.4 | 1180 | 391. | 11.8 | 7.73 |
| 7                                              | 81.6 | 18.4 | 77.4  | 4.82 | 4.63 | 88.8 | 30.0 | 44.8 | 1260 | 887. | 11.8 | 7.73 |
| 8                                              | 85.8 | 14.7 | 48.9  | 4.82 | 4.63 | 88.8 | 30.0 | 41.9 | 1340 | 604. | 11.1 | 7.73 |
| 9                                              | 99.0 | 21.9 | 18.4  | 4.82 | 4.48 | 87.4 | 27.8 | 40.6 | 1610 | 866. | 11.1 | 7.82 |
| 10                                             | 108. | 41.9 | 13.4  | 4.63 | 182. | 60.4 | 24.8 | 39.3 | 1610 | 837. | 11.1 | 7.33 |
| 11                                             | 110. | 87.4 | 12.2  | 4.63 | 224. | 68.7 | 84.4 | 30.0 | 1870 | 823. | 10.8 | 7.33 |
| 12                                             | 108. | 80.0 | 11.8  | 4.63 | 224. | 63.2 | 80.0 | 27.8 | 1640 | 823. | 10.8 | 7.33 |
| 13                                             | 113. | 43.2 | 11.8  | 4.63 | 228. | 62.0 | 78.8 | 24.8 | 1820 | 817. | 10.4 | 7.33 |
| 14                                             | 120. | 41.9 | 11.8  | 4.63 | 278. | 81.4 | 72.1 | 21.0 | 1840 | 809. | 10.4 | 7.14 |
| 15                                             | 132. | 34.8 | 11.8  | 4.48 | 312. | 38.1 | 88.9 | 18.4 | 1420 | 820. | 10.1 | 6.97 |
| 16                                             | 48.4 | 27.8 | 11.8  | 4.48 | 298. | 32.2 | 88.8 | 36.9 | 1380 | 271. | 10.1 | 6.97 |
| 17                                             | 88.6 | 22.9 | 11.8  | 4.27 | 190. | 38.0 | 43.2 | 41.9 | 1080 | 190. | 9.80 | 6.97 |
| 18                                             | 104. | 19.3 | 11.8  | 4.16 | 143. | 27.8 | 118. | 81.4 | 998. | 173. | 9.80 | 6.66 |
| 19                                             | 108. | 94.8 | 11.8  | 4.48 | 143. | 28.8 | 101. | 43.2 | 939. | 180. | 9.80 | 6.81 |
| 20                                             | 108. | 104. | 11.1  | 4.63 | 138. | 23.8 | 102. | 74.8 | 891. | 97.8 | 9.21 | 6.97 |
| 21                                             | 104. | 107. | 8.94  | 4.63 | 118. | 24.8 | 123. | 91.6 | 871. | 101. | 9.21 | 6.97 |
| 22                                             | 34.4 | 107. | 8.42  | 4.48 | 94.8 | 28.8 | 144. | 97.8 | 884. | 91.6 | 8.94 | 6.97 |
| 23                                             | 64.8 | 108. | 7.73  | 4.63 | 81.6 | 28.8 | 110. | 93.0 | 847. | 85.8 | 8.94 | 6.81 |
| 24                                             | 73.4 | 113. | 7.82  | 4.63 | 76.1 | 26.8 | 108. | 83.0 | 821. | 83.0 | 8.67 | 6.81 |
| 25                                             | 74.8 | 118. | 6.81  | 8.00 | 74.8 | 26.8 | 116. | 77.4 | 706. | 81.6 | 8.67 | 6.81 |
| 26                                             | 74.8 | 108. | 4.83  | 8.00 | 76.1 | 26.8 | 87.2 | 73.4 | 703. | 34.8 | 8.42 | 6.97 |
| 27                                             | 74.8 | 107. | 5.78  | 4.82 | 68.2 | 23.8 | 80.2 | 82.9 | 669. | 22.9 | 8.18 | 7.33 |
| 28                                             | 74.8 | 107. | 8.00  | 4.63 | 77.4 | 24.8 | 88.0 | 68.2 | 681. | 16.8 | 7.73 | 6.97 |
| 29                                             | 73.4 | 108. | 4.82  | 4.63 | 78.8 | 27.8 | 101. | 76.1 | 607. | 13.2 | 7.73 | 6.81 |
| 30                                             | 73.4 |      | 4.82  | 8.00 | 77.4 | 30.0 | 107. | 81.6 | 607. | 14.3 | 7.73 | 6.66 |
| 31                                             | 70.8 |      | 4.82  |      | 77.4 |      | 84.4 | 288. |      | 13.9 |      | 6.81 |

Moy 88.7 65.4 30.6 4.71 108. 42.4 49.7 65.9 1050 288. 10.2 7.23  
Debit mini = 4.10 m<sup>3</sup>/s première observation le 18/04  
Debit maxi = 1820 m<sup>3</sup>/s première observation le 13/09  
Debit moyen annuel = 182. m<sup>3</sup>/s  
Lame d'eau écoulée = 145 cm

| FALEME A FADOUSSOU EN 1988           |      |      |       |     |      |      |      |      |      |      |      | DNHE |
|--------------------------------------|------|------|-------|-----|------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm |      |      |       |     |      |      |      |      |      |      |      |      |
| Zéro de l'échelle = 119.03 à 18M     |      |      |       |     |      |      |      |      |      |      |      |      |
| JANV                                 | FEVR | MARS | AVRIL | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                    | 28   | 17   | 6     | .   | .    | 12   | 240  | 807  | 204  | 108  | 47   |      |
| 2                                    | 28   | 16   | 4     | .   | .    | 14   | 248  | 838  | 198  | 103  | 46   |      |
| 3                                    | 28   | 16   | 4     | .   | .    | 16   | 232  | 824  | 187  | 100  | 48   |      |
| 4                                    | 27   | 18   | 8     | .   | .    | 18   | 207  | 627  | 182  | 98   | 44   |      |
| 5                                    | 27   | 18   | 8     | .   | .    | 19   | 211  | 641  | 179  | 96   | 63   |      |
| 6                                    | 27   | 18   | 4     | .   | .    | 21   | 208  | 630  | 177  | 94   | 61   |      |
| 7                                    | 26   | 14   | 3     | .   | .    | 23   | 201  | 860  | 174  | 93   | 89   |      |
| 8                                    | 26   | 14   | 3     | .   | .    | 27   | 186  | 811  | 170  | 93   | 88   |      |
| 9                                    | 26   | 14   | 2     | .   | .    | 29   | 223  | 480  | 167  | 92   | 88   |      |
| 10                                   | 25   | 13   | 2     | .   | .    | 32   | 207  | 436  | 165  | 92   | 86   |      |
| 11                                   | 25   | 13   | 1     | .   | .    | 34   | 193  | 407  | 163  | 91   | 85   |      |
| 12                                   | 25   | 13   | 1     | .   | .    | 36   | 182  | 478  | 161  | 91   | 84   |      |
| 13                                   | 24   | 12   | 0     | .   | .    | 38   | 172  | 494  | 158  | 90   | 83   |      |
| 14                                   | 24   | 12   | .     | .   | .    | 43   | 174  | 478  | 155  | 89   | 81   |      |
| 15                                   | 24   | 12   | .     | .   | .    | 55   | 189  | 443  | 151  | 88   | 80   |      |
| 16                                   | 23   | 11   | .     | .   | .    | 53   | 242  | 370  | 147  | 88   | 80   |      |
| 17                                   | 22   | 11   | .     | .   | .    | 48   | 241  | 346  | 142  | 87   | 49   |      |
| 18                                   | 21   | 10   | .     | .   | .    | 102  | 310  | 320  | 139  | 84   | 49   |      |
| 19                                   | 21   | 10   | .     | .   | .    | 219  | 347  | 297  | 137  | 83   | 48   |      |
| 20                                   | 21   | 10   | .     | .   | .    | 313  | 372  | 280  | 135  | 83   | 48   |      |
| 21                                   | 20   | 9    | .     | .   | .    | 333  | 394  | 255  | 133  | 81   | 47   |      |
| 22                                   | 20   | 9    | .     | .   | .    | 266  | 420  | 241  | 131  | 78   | 47   |      |
| 23                                   | 20   | 9    | .     | .   | .    | 226  | 394  | 230  | 128  | 76   | 46   |      |
| 24                                   | 19   | 8    | .     | .   | .    | 233  | 388  | 217  | 124  | 74   | 46   |      |
| 25                                   | 19   | 8    | .     | .   | .    | 262  | 440  | 207  | 118  | 72   | 45   |      |
| 26                                   | 19   | 8    | .     | .   | .    | 278  | 407  | 199  | 116  | 72   | 45   |      |
| 27                                   | 18   | 7    | .     | .   | .    | 270  | 392  | 187  | 114  | 71   | 44   |      |
| 28                                   | 18   | 7    | .     | .   | .    | 304  | 433  | 198  | 112  | 70   | 44   |      |
| 29                                   | 18   | 7    | .     | .   | .    | 277  | 453  | 210  | 110  | 69   | 43   |      |
| 30                                   | 17   | .    | .     | .   | .    | 277  | 470  | 212  | 108  | 67   | 43   |      |
| 31                                   | 17   | .    | .     | .   | .    | 270  | 486  |      | 107  |      | 42   |      |

hauteur mini = 4 sec première observation le 14/03  
hauteur maxi = 641 cm première observation le 03/09

LE SIGNE . INDIQUE L'ABSENCE D'EGCOULEMENT .

1ba

| FALEME A FADOUSSOU EN 1988                                                 |      |      |      |       |      |      |      |      |      |      |      | DNHE |
|----------------------------------------------------------------------------|------|------|------|-------|------|------|------|------|------|------|------|------|
| DEBITS MOYENS JOURNALIERS en m3/s                                          |      |      |      |       |      |      |      |      |      |      |      |      |
| Surface = 9300 km2                                                         |      |      |      |       |      |      |      |      |      |      |      |      |
|                                                                            | JANV | FEVR | MARS | AVRIL | MAI  | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |
| 1                                                                          | 3.48 | 1.28 | .170 | .000  | .000 | .000 | .642 | 182. | 402. | 120. | 38.1 | 17.3 |
| 2                                                                          | 3.48 | 1.14 | .170 | .000  | .000 | .000 | .872 | 191. | 462. | 111. | 36.9 | 16.9 |
| 3                                                                          | 3.48 | 1.14 | .170 | .000  | .000 | .000 | 1.14 | 180. | 433. | 104. | 33.0 | 16.4 |
| 4                                                                          | 3.24 | 1.00 | .122 | .000  | .000 | .000 | 1.44 | 123. | 834. | 97.3 | 33.8 | 16.0 |
| 5                                                                          | 3.24 | 1.00 | .122 | .000  | .000 | .000 | 1.60 | 127. | 843. | 96.4 | 32.4 | 15.8 |
| 6                                                                          | 3.24 | 1.00 | .084 | .000  | .000 | .000 | 1.94 | 124. | 840. | 94.8 | 31.4 | 14.7 |
| 7                                                                          | 3.00 | .872 | .034 | .000  | .000 | .000 | 2.78 | 117. | 704. | 92.2 | 30.8 | 13.8 |
| 8                                                                          | 3.00 | .872 | .034 | .000  | .000 | .000 | 3.24 | 103. | 609. | 88.7 | 30.8 | 13.4 |
| 9                                                                          | 3.00 | .872 | .034 | .000  | .000 | .000 | 3.74 | 140. | 549. | 86.0 | 30.2 | 13.4 |
| 10                                                                         | 2.78 | .753 | .034 | .000  | .000 | .000 | 4.54 | 123. | 462. | 84.3 | 30.2 | 12.6 |
| 11                                                                         | 2.78 | .753 | .023 | .000  | .000 | .000 | 5.09 | 109. | 405. | 82.4 | 29.7 | 12.2 |
| 12                                                                         | 2.78 | .753 | .023 | .000  | .000 | .000 | 5.67 | 99.3 | 345. | 80.9 | 29.7 | 11.8 |
| 13                                                                         | 2.56 | .642 | .020 | .000  | .000 | .000 | 6.27 | 90.4 | 274. | 78.3 | 29.1 | 11.4 |
| 14                                                                         | 2.56 | .642 | .000 | .000  | .000 | .000 | 7.86 | 94.0 | 239. | 78.8 | 28.9 | 10.7 |
| 15                                                                         | 2.56 | .642 | .000 | .000  | .000 | .000 | 12.2 | 106. | 480. | 72.4 | 28.0 | 10.3 |
| 16                                                                         | 2.33 | .541 | .000 | .000  | .000 | .000 | 11.4 | 161. | 334. | 69.1 | 28.0 | 10.3 |
| 17                                                                         | 2.13 | .541 | .000 | .000  | .000 | .000 | 9.88 | 183. | 294. | 63.0 | 27.4 | 9.94 |
| 18                                                                         | 1.96 | .449 | .000 | .000  | .000 | .000 | 36.2 | 242. | 253. | 62.4 | 26.9 | 9.94 |
| 19                                                                         | 1.96 | .449 | .000 | .000  | .000 | .000 | 136. | 293. | 226. | 61.0 | 26.3 | 9.58 |
| 20                                                                         | 1.96 | .449 | .000 | .000  | .000 | .000 | 246. | 337. | 203. | 59.4 | 23.2 | 9.58 |
| 21                                                                         | 1.78 | .366 | .000 | .000  | .000 | .000 | 274. | 379. | 176. | 57.9 | 24.2 | 9.22 |
| 22                                                                         | 1.78 | .366 | .000 | .000  | .000 | .000 | 189. | 431. | 160. | 56.3 | 22.6 | 9.22 |
| 23                                                                         | 1.78 | .366 | .000 | .000  | .000 | .000 | 143. | 379. | 148. | 54.0 | 21.6 | 8.87 |
| 24                                                                         | 1.60 | .291 | .000 | .000  | .000 | .000 | 151. | 367. | 134. | 51.1 | 20.6 | 8.87 |
| 25                                                                         | 1.60 | .291 | .000 | .000  | .000 | .000 | 184. | 470. | 123. | 46.8 | 19.7 | 8.53 |
| 26                                                                         | 1.60 | .291 | .000 | .000  | .000 | .000 | 203. | 403. | 115. | 43.4 | 19.7 | 8.53 |
| 27                                                                         | 1.44 | .226 | .000 | .000  | .000 | .000 | 193. | 373. | 104. | 44.0 | 19.2 | 8.19 |
| 28                                                                         | 1.44 | .226 | .000 | .000  | .000 | .000 | 239. | 461. | 114. | 42.7 | 18.7 | 8.19 |
| 29                                                                         | 1.44 | .226 | .000 | .000  | .000 | .000 | 202. | 496. | 126. | 41.4 | 18.2 | 7.86 |
| 30                                                                         | 1.28 | .000 | .000 | .000  | .000 | .000 | 202. | 529. | 128. | 40.1 | 17.3 | 7.86 |
| 31                                                                         | 1.28 | .000 | .000 | .000  | .000 | .000 | 193. | 561. |      | 39.4 |      | 7.53 |
| Moy 1988: 2.34 .636 .033 .000 .000 .000 86.0 236. 398. 71.1 27.0 11.2 71.1 |      |      |      |       |      |      |      |      |      |      |      |      |
| Moy52-88: 11.8 5.93 2.90 1.22 1.24 10.3 86.4 325. 334. 161. 52.2 24.3 83.1 |      |      |      |       |      |      |      |      |      |      |      |      |
| Mini obs: .065 .004 .000 .000 .000 .000 12.6 74.9 43.1 37.8 6.83 2.26 19.1 |      |      |      |       |      |      |      |      |      |      |      |      |
| Maxi obs: 32.1 22.4 13.1 8.06 3.88 59.9 238. 1020 1110 510. 113. 62.9 198. |      |      |      |       |      |      |      |      |      |      |      |      |
| Débit mini = .000 m3/s première observation le 14/03                       |      |      |      |       |      |      |      |      |      |      |      |      |
| Débit maxi = 863. m3/s première observation le 05/09                       |      |      |      |       |      |      |      |      |      |      |      |      |
| Lac d'eau écoulée = 241 aa                                                 |      |      |      |       |      |      |      |      |      |      |      |      |

| SENEGAL A FELOU EN 1988                             |      |      |      |     |      |      |      |      |      |      |      | DNHE |
|-----------------------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm                |      |      |      |     |      |      |      |      |      |      |      |      |
| Zéro de l'échelle = 23.81 a IGN                     |      |      |      |     |      |      |      |      |      |      |      |      |
| JANV                                                | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                                   | 89   | 108  | 120  | 36  | 18   | 98   | 119  | 224  | 379  | 309  | 98   | 48   |
| 2                                                   | 89   | 109  | 120  | 36  | 20   | 96   | 106  | 230  | 418  | 283  | 92   | 48   |
| 3                                                   | 89   | 109  | 120  | 36  | 21   | 97   | 104  | 220  | 431  | 270  | 90   | 48   |
| 4                                                   | 90   | 108  | 120  | 38  | 20   | 94   | 92   | 194  | 830  | 287  | 88   | 47   |
| 5                                                   | 89   | 103  | 119  | 38  | 20   | 91   | 90   | 184  | 832  | 318  | 84   | 46   |
| 6                                                   | 89   | 96   | 119  | 38  | 21   | 88   | 88   | 172  | 837  | 298  | 81   | 45   |
| 7                                                   | 90   | 90   | 119  | 38  | 21   | 88   | 91   | 164  | 830  | 283  | 80   | 46   |
| 8                                                   | 91   | 88   | 116  | 34  | 20   | 86   | 93   | 170  | 889  | 277  | 77   | 45   |
| 9                                                   | 92   | 83   | 108  | 34  | 17   | 84   | 104  | 178  | 608  | 273  | 75   | 43   |
| 10                                                  | 93   | 77   | 94   | 33  | 7    | 83   | 133  | 177  | 890  | 270  | 74   | 39   |
| 11                                                  | 94   | 71   | 82   | 32  | 7    | 87   | 139  | 162  | 878  | 288  | 73   | 39   |
| 12                                                  | 100  | 67   | 76   | 27  | 7    | 87   | 134  | 146  | 878  | 248  | 73   | 39   |
| 13                                                  | 113  | 64   | 69   | 19  | 7    | 87   | 143  | 141  | 877  | 230  | 70   | 37   |
| 14                                                  | 119  | 60   | 66   | 7   | 7    | 91   | 141  | 147  | 807  | 203  | 68   | 35   |
| 15                                                  | 118  | 56   | 64   | 7   | 74   | 92   | 179  | 143  | 848  | 194  | 67   | 35   |
| 16                                                  | 114  | 62   | 89   | 7   | 164  | 95   | 165  | 160  | 840  | 207  | 64   | 38   |
| 17                                                  | 128  | 73   | 84   | 7   | 187  | 100  | 184  | 208  | 901  | 210  | 65   | 34   |
| 18                                                  | 119  | 68   | 81   | 7   | 180  | 107  | 146  | 270  | 482  | 209  | 63   | 34   |
| 19                                                  | 107  | 77   | 49   | 7   | 188  | 110  | 140  | 284  | 473  | 208  | 61   | 33   |
| 20                                                  | 98   | 64   | 46   | 7   | 142  | 115  | 150  | 253  | 463  | 208  | 59   | 33   |
| 21                                                  | 113  | 60   | 43   | 7   | 135  | 99   | 173  | 274  | 449  | 194  | 57   | 31   |
| 22                                                  | 118  | 62   | 42   | 7   | 132  | 84   | 201  | 298  | 412  | 178  | 57   | 30   |
| 23                                                  | 118  | 85   | 41   | 7   | 127  | 84   | 238  | 278  | 387  | 148  | 57   | 29   |
| 24                                                  | 113  | 113  | 34   | 7   | 115  | 84   | 238  | 289  | 392  | 134  | 59   | 29   |
| 25                                                  | 109  | 122  | 32   | 7   | 109  | 76   | 221  | 248  | 368  | 128  | 58   | 28   |
| 26                                                  | 97   | 120  | 31   | 7   | 100  | 74   | 205  | 258  | 378  | 118  | 54   | 28   |
| 27                                                  | 101  | 120  | 38   | 7   | 98   | 72   | 190  | 283  | 387  | 118  | 53   | 28   |
| 28                                                  | 107  | 119  | 37   | 7   | 108  | 71   | 179  | 333  | 334  | 112  | 51   | 29   |
| 29                                                  | 108  | 120  | 37   | 7   | 103  | 83   | 169  | 401  | 324  | 110  | 50   | 29   |
| 30                                                  | 110  |      | 36   | 17  | 98   | 131  | 166  | 397  | 314  | 106  | 48   | 29   |
| 31                                                  | 109  |      | 36   |     | 95   |      | 178  | 370  |      | 100  |      | 29   |
| hauteur mini = 17 cm première observation le 30/04  |      |      |      |     |      |      |      |      |      |      |      |      |
| hauteur maxi = 607 cm première observation le 14/09 |      |      |      |     |      |      |      |      |      |      |      |      |

| SENEGAL A GOUINA EN 1988                            |      |      |      |     |      |      |      |      |      |      |      | DNHE |
|-----------------------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm                |      |      |      |     |      |      |      |      |      |      |      |      |
| Zéro de l'échelle = 47.60 a IGN                     |      |      |      |     |      |      |      |      |      |      |      |      |
| JANV                                                | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                                   | 8127 | 8180 | 8164 | 831 | 8-6  | 8128 | 8152 | 215  | 469  | 369  | 8130 | 873  |
| 2                                                   | 8124 | 8149 | 8164 | 829 | 8-6  | 8126 | 8143 | 250  | 8490 | 357  | 8128 | 872  |
| 3                                                   | 125  | 8141 | 8164 | 827 | 8-6  | 8124 | 8118 | 274  | 8511 | 352  | 8128 | 871  |
| 4                                                   | 124  | 124  | 164  | 826 | 8-7  | 8123 | 8125 | 251  | 830  | 8348 | 8121 | 870  |
| 5                                                   | 124  | 8121 | 8164 | 24  | 8-9  | 8120 | 8122 | 8246 | 8551 | 8350 | 8116 | 869  |
| 6                                                   | 124  | 8118 | 164  | 823 | 8-11 | 8116 | 8130 | 244  | 879  | 8339 | 8113 | 868  |
| 7                                                   | 124  | 8113 | 8164 | 822 | 8-12 | 8113 | 8149 | 235  | 883  | 8321 | 8111 | 868  |
| 8                                                   | 8124 | 8109 | 8182 | 820 | 8-12 | 8111 | 8190 | 247  | 8595 | 8318 | 8109 | 867  |
| 9                                                   | 8124 | 103  | 8135 | 819 | 8-12 | 8110 | 8194 | 256  | 883  | 8310 | 106  | 866  |
| 10                                                  | 129  | 898  | 8116 | 817 | 8-13 | 8108 | 8204 | 263  | 8578 | 8306 | 8108 | 865  |
| 11                                                  | 8136 | 91   | 8108 | 16  | 8-14 | 8104 | 8196 | 211  | 8568 | 8300 | 8102 | 864  |
| 12                                                  | 8180 | 885  | 8103 | 816 | 8-15 | 8105 | 8125 | 205  | 883  | 8293 | 899  | 863  |
| 13                                                  | 164  | 76   | 98   | 816 | 8-17 | 8108 | 8138 | 208  | 8600 | 8288 | 897  | 862  |
| 14                                                  | 8162 | 72   | 82   | 16  | 8-20 | 8113 | 8184 | 207  | 830  | 830  | 896  | 861  |
| 15                                                  | 186  | 888  | 886  | 818 | 8162 | 8116 | 822  | 8280 | 8828 | 8260 | 894  | 860  |
| 16                                                  | 8170 | 898  | 78   | 814 | 226  | 8126 | 8111 | 8278 | 819  | 8284 | 892  | 859  |
| 17                                                  | 181  | 106  | 873  | 812 | 8214 | 8125 | 8196 | 307  | 8800 | 8287 | 890  | 858  |
| 18                                                  | 8144 | 8100 | 863  | 811 | 200  | 8132 | 8176 | 331  | 8808 | 266  | 889  | 857  |
| 19                                                  | 134  | 892  | 883  | 89  | 8191 | 8184 | 8261 | 348  | 8800 | 8280 | 887  | 856  |
| 20                                                  | 8147 | 84   | 49   | 6   | 8183 | 8140 | 279  | 378  | 8484 | 8287 | 885  | 855  |
| 21                                                  | 8188 | 897  | 846  | 84  | 8173 | 8123 | 823  | 344  | 8470 | 8228 | 884  | 855  |
| 22                                                  | 166  | 8137 | 44   | 81  | 167  | 8113 | 841  | 8338 | 448  | 8203 | 882  | 854  |
| 23                                                  | 8180 | 8187 | 843  | 8-2 | 8188 | 8104 | 339  | 334  | 8438 | 8190 | 881  | 853  |
| 24                                                  | 8180 | 166  | 841  | 8-3 | 8147 | 897  | 310  | 328  | 8428 | 8182 | 880  | 852  |
| 25                                                  | 8141 | 8166 | 840  | 8-4 | 8140 | 94   | 291  | 8318 | 8423 | 8174 | 879  | 852  |
| 26                                                  | 134  | 164  | 839  | 8-5 | 8137 | 96   | 278  | 8343 | 419  | 8165 | 878  | 851  |
| 27                                                  | 8141 | 8166 | 37   | 8-5 | 8135 | 94   | 247  | 8367 | 8408 | 160  | 878  | 851  |
| 28                                                  | 181  | 166  | 856  | 8-5 | 8134 | 96   | 231  | 8423 | 8398 | 181  | 877  | 850  |
| 29                                                  | 181  | 166  | 35   | 8-6 | 8133 | 193  | 313  | 463  | 8384 | 145  | 875  | 850  |
| 30                                                  | 181  |      | 834  | 8-6 | 8131 | 168  | 8194 | 8413 | 8375 | 138  | 874  | 850  |
| 31                                                  | 181  |      | 833  |     | 8130 |      | 8202 | 466  |      | 133  |      | 849  |
| hauteur mini = -17 cm première observation le 13/05 |      |      |      |     |      |      |      |      |      |      |      |      |
| hauteur maxi = 608 cm première observation le 13/09 |      |      |      |     |      |      |      |      |      |      |      |      |

LE SIGNE 0 PRECEDE LES HAUTEURS RECONSTITUEES .

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| SENEGAL A SALOUBO EN 1988                           |      |      |      |     |      |      |      |      |      |      |      | DNHE |
|-----------------------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm                |      |      |      |     |      |      |      |      |      |      |      |      |
| Zéro de l'échelle = 67.24 a IGN                     |      |      |      |     |      |      |      |      |      |      |      |      |
| JANV                                                | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                                   | 103  | 121  | 131  | 42  | 11   | 112  | 124  | 220  | 415  | 350  | 102  | 63   |
| 2                                                   | 103  | 121  | 131  | 41  | 10   | 113  | 108  | 250  | 482  | 338  | 100  | 62   |
| 3                                                   | 103  | 121  | 131  | 40  | 10   | 107  | 108  | 227  | 455  | 330  | 97   | 61   |
| 4                                                   | 103  | 114  | 130  | 38  | 9    | 105  | 106  | 214  | 404  | 323  | 96   | 61   |
| 5                                                   | 103  | 108  | 129  | 36  | 8    | 104  | 104  | 194  | 610  | 340  | 95   | 60   |
| 6                                                   | 103  | 104  | 129  | 34  | 6    | 103  | 99   | 190  | 617  | 322  | 92   | 59   |
| 7                                                   | 103  | 101  | 126  | 33  | 4    | 101  | 103  | 187  | 622  | 315  | 86   | 57   |
| 8                                                   | 106  | 96   | 115  | 32  | 3    | 100  | 112  | 181  | 626  | 310  | 84   | 56   |
| 9                                                   | 107  | 89   | 104  | 32  | 2    | 100  | 145  | 177  | 632  | 306  | 83   | 56   |
| 10                                                  | 107  | 82   | 102  | 30  | 2    | 99   | 131  | 165  | 621  | 302  | 81   | 55   |
| 11                                                  | 118  | 77   | 88   | 29  | 1    | 102  | 135  | 157  | 608  | 300  | 80   | 55   |
| 12                                                  | 125  | 72   | 84   | 28  | 0    | 103  | 124  | 154  | 604  | 295  | 79   | 53   |
| 13                                                  | 133  | 70   | 77   | 27  | 44   | 106  | 156  | 150  | 625  | 215  | 78   | 53   |
| 14                                                  | 132  | 68   | 78   | 25  | 175  | 109  | 177  | 146  | 647  | 205  | 78   | 52   |
| 15                                                  | 124  | 88   | 70   | 24  | 178  | 107  | 172  | 171  | 668  | 200  | 78   | 50   |
| 16                                                  | 135  | 76   | 66   | 22  | 186  | 106  | 168  | 246  | 544  | 200  | 77   | 50   |
| 17                                                  | 139  | 70   | 63   | 22  | 207  | 103  | 161  | 257  | 525  | 212  | 76   | 49   |
| 18                                                  | 118  | 82   | 61   | 21  | 174  | 118  | 146  | 272  | 500  | 202  | 74   | 48   |
| 19                                                  | 112  | 78   | 67   | 20  | 152  | 135  | 134  | 286  | 520  | 197  | 73   | 47   |
| 20                                                  | 125  | 75   | 55   | 19  | 147  | 109  | 198  | 291  | 512  | 212  | 70   | 47   |
| 21                                                  | 130  | 75   | 54   | 19  | 140  | 97   | 218  | 319  | 502  | 199  | 70   | 45   |
| 22                                                  | 131  | 100  | 52   | 17  | 141  | 100  | 283  | 328  | 498  | 173  | 70   | 44   |
| 23                                                  | 125  | 128  | 52   | 17  | 126  | 88   | 269  | 300  | 456  | 166  | 69   | 43   |
| 24                                                  | 115  | 131  | 52   | 16  | 116  | 83   | 262  | 279  | 452  | 151  | 69   | 43   |
| 25                                                  | 111  | 132  | 52   | 15  | 113  | 82   | 253  | 278  | 437  | 148  | 67   | 42   |
| 26                                                  | 114  | 131  | 49   | 14  | 113  | 85   | 212  | 298  | 418  | 127  | 66   | 42   |
| 27                                                  | 119  | 130  | 47   | 13  | 113  | 85   | 193  | 351  | 410  | 125  | 65   | 41   |
| 28                                                  | 122  | 131  | 46   | 12  | 113  | 85   | 186  | 359  | 402  | 130  | 64   | 41   |
| 29                                                  | 122  | 131  | 44   | 12  | 113  | 131  | 162  | 417  | 385  | 127  | 64   | 41   |
| 30                                                  | 121  |      | 44   | 12  | 110  | 133  | 158  | 330  | 357  | 110  | 64   | 40   |
| 31                                                  | 121  |      | 43   |     | 112  |      | 193  | 358  |      | 104  |      | 40   |
| hauteur mini = 0 cm première observation le 12/05   |      |      |      |     |      |      |      |      |      |      |      |      |
| hauteur maxi = 647 cm première observation le 14/09 |      |      |      |     |      |      |      |      |      |      |      |      |

| SENEGAL A SALOUBO EN 1988                            |      |      |      |       |       |       |      |      |      |      |      | DNHE |
|------------------------------------------------------|------|------|------|-------|-------|-------|------|------|------|------|------|------|
| DEBITS MOYENS JOURNALIERS en m3/s                    |      |      |      |       |       |       |      |      |      |      |      |      |
| ~~~~~                                                |      |      |      |       |       |       |      |      |      |      |      |      |
| Surface = 126900 km2                                 |      |      |      |       |       |       |      |      |      |      |      |      |
|                                                      | JANV | FEVR | MARS | AVRI  | MAI   | JUIN  | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |
| 1                                                    | 54.2 | 77.4 | 93.4 | 7.10  | 1.37  | 64.9  | 81.9 | 330. | 1190 | 850. | 53.1 | 16.7 |
| 2                                                    | 54.2 | 77.4 | 93.4 | 6.84  | 1.25  | 66.2  | 89.9 | 435. | 1410 | 794. | 51.0 | 15.4 |
| 3                                                    | 54.2 | 77.4 | 93.4 | 6.60  | 1.28  | 61.1  | 59.9 | 394. | 1430 | 757. | 47.2 | 14.8 |
| 4                                                    | 54.2 | 66.9 | 91.7 | 6.16  | 1.13  | 56.4  | 57.3 | 310. | 2480 | 726. | 46.0 | 14.6 |
| 5                                                    | 54.2 | 89.9 | 90.0 | 5.72  | 1.02  | 55.3  | 55.3 | 246. | 2520 | 603. | 44.6 | 14.3 |
| 6                                                    | 54.2 | 85.3 | 90.0 | 5.30  | 0.810 | 54.2  | 49.7 | 234. | 2880 | 722. | 41.2 | 13.6 |
| 7                                                    | 54.2 | 52.0 | 63.1 | 5.10  | 0.620 | 52.0  | 56.4 | 229. | 2680 | 672. | 34.7 | 12.8 |
| 8                                                    | 57.5 | 46.0 | 68.8 | 4.90  | 0.53  | 51.0  | 64.9 | 207. | 2620 | 671. | 32.7 | 12.3 |
| 9                                                    | 58.7 | 37.9 | 55.3 | 4.90  | 0.430 | 51.0  | 120. | 196. | 2690 | 654. | 31.7 | 12.5 |
| 10                                                   | 58.7 | 30.7 | 83.1 | 4.50  | 0.480 | 49.7  | 132. | 165. | 2610 | 638. | 29.8 | 11.8 |
| 11                                                   | 68.8 | 26.2 | 36.8 | 4.31  | 0.373 | 53.1  | 100. | 146. | 2510 | 630. | 28.9 | 11.8 |
| 12                                                   | 63.5 | 22.1 | 32.7 | 4.12  | 0.300 | 54.2  | 139. | 139. | 2480 | 491. | 27.9 | 10.9 |
| 13                                                   | 46.9 | 20.6 | 26.2 | 3.93  | 16.6  | 57.5  | 143. | 130. | 2640 | 313. | 27.1 | 10.9 |
| 14                                                   | 95.1 | 19.2 | 24.5 | 3.56  | 19.1  | 61.1  | 235. | 122. | 2810 | 281. | 27.1 | 10.5 |
| 15                                                   | 81.9 | 34.6 | 20.6 | 3.38  | 199.  | 58.7  | 183. | 180. | 2210 | 265. | 27.1 | 9.70 |
| 16                                                   | 100. | 46.0 | 17.9 | 3.04  | 222.  | 57.5  | 172. | 420. | 2040 | 265. | 26.2 | 9.70 |
| 17                                                   | 108. | 39.0 | 16.0 | 3.04  | 287.  | 54.2  | 153. | 461. | 1900 | 304. | 25.3 | 9.32 |
| 18                                                   | 68.8 | 30.7 | 14.8 | 2.87  | 188.  | 68.8  | 122. | 318. | 1870 | 271. | 25.7 | 8.96 |
| 19                                                   | 64.9 | 27.1 | 12.8 | 2.70  | 134.  | 100.  | 98.6 | 873. | 1930 | 255. | 22.9 | 8.61 |
| 20                                                   | 63.5 | 24.3 | 11.8 | 2.53  | 124.  | 61.1  | 235. | 593. | 1810 | 304. | 20.6 | 8.61 |
| 21                                                   | 41.7 | 24.3 | 11.4 | 2.33  | 110.  | 47.2  | 323. | 709. | 1740 | 262. | 20.6 | 7.96 |
| 22                                                   | 93.4 | 51.0 | 10.5 | 2.21  | 112.  | 51.0  | 561. | 748. | 1720 | 185. | 20.6 | 7.66 |
| 23                                                   | 83.3 | 88.3 | 10.6 | 2.21  | 85.1  | 36.8  | 506. | 630. | 1440 | 167. | 19.9 | 7.37 |
| 24                                                   | 68.8 | 93.4 | 10.5 | 2.06  | 70.2  | 31.7  | 680. | 945. | 1410 | 132. | 19.9 | 7.37 |
| 25                                                   | 63.6 | 93.1 | 10.8 | 1.91  | 66.2  | 30.7  | 446. | 841. | 1320 | 126. | 18.5 | 7.10 |
| 26                                                   | 67.5 | 93.4 | 9.32 | 1.47  | 66.2  | 33.7  | 304. | 622. | 1210 | 86.7 | 17.9 | 7.10 |
| 27                                                   | 74.4 | 91.7 | 8.61 | 1.63  | 66.2  | 33.7  | 243. | 835. | 1160 | 83.5 | 17.2 | 6.84 |
| 28                                                   | 78.9 | 93.4 | 8.28 | 1.50  | 66.2  | 33.7  | 222. | 894. | 1120 | 91.7 | 16.6 | 6.84 |
| 29                                                   | 78.9 | 93.4 | 8.28 | 1.50  | 66.2  | 132.  | 157. | 1200 | 1030 | 86.7 | 16.6 | 6.84 |
| 30                                                   | 77.4 |      | 7.66 | 1.50  | 62.3  | 96.9  | 148. | 757. | 884. | 62.3 | 16.6 | 6.60 |
| 31                                                   | 77.4 |      | 7.37 |       | 64.9  |       | 249. | 889. |      | 55.3 |      | 6.60 |
| 1988:                                                | 72.9 | 85.1 | 36.5 | 3.65  | 71.2  | 37.2  | 194. | 464. | 1910 | 388. | 28.4 | 10.2 |
| 1-88:                                                | 80.1 | 47.4 | 23.6 | 11.8  | 10.1  | 73.3  | 430. | 1570 | 2030 | 1050 | 388. | 144. |
| obs:                                                 | 19.9 | 10.4 | 4.24 | 0.502 | 0.015 | 0.000 | 80.0 | 281. | 389. | 311. | 28.4 | 10.2 |
| obs:                                                 | 170. | 96.9 | 59.0 | 38.6  | 71.2  | 221.  | 1040 | 3940 | 3980 | 2650 | 1140 | 344. |
| Debit mini = .300 m3/s première observation le 12/03 |      |      |      |       |       |       |      |      |      |      |      |      |
| Debit maxi = 2810 m3/s première observation le 14/09 |      |      |      |       |       |       |      |      |      |      |      |      |
| Lame d'eau écoulée = 68 mm                           |      |      |      |       |       |       |      |      |      |      |      |      |

| FALENE A GOURBASSY EN 1988           |      |      |      |     |      |      |      |      |      |      |      | DNHE |  |
|--------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|------|--|
| HAUTEURS MOYENNES JOURNALIERES en cm |      |      |      |     |      |      |      |      |      |      |      |      |  |
| Zéro de l'échelle = non connu        |      |      |      |     |      |      |      |      |      |      |      |      |  |
| JANV                                 | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |  |
| 1                                    | 32   | 19   | 1    | -26 | -51  | 29   | 18   | 284  | 376  | 194  | 113  | 74   |  |
| 2                                    | 31   | 19   | 1    | -26 | -51  | 26   | 17   | 255  | 356  | 206  | 111  | 73   |  |
| 3                                    | 30   | 18   | 0    | -27 | -52  | 23   | 16   | 252  | 404  | 209  | 109  | 72   |  |
| 4                                    | 30   | 18   | 0    | -27 | -53  | 21   | 16   | 291  | 473  | 198  | 107  | 71   |  |
| 5                                    | 29   | 18   | -1   | -28 | -54  | 28   | 18   | 267  | 490  | 193  | 105  | 70   |  |
| 6                                    | 28   | 17   | -2   | -29 | -55  | 28   | 18   | 232  | 502  | 193  | 104  | 69   |  |
| 7                                    | 27   | 17   | -3   | -29 | -56  | 24   | 17   | 228  | 480  | 192  | 104  | 68   |  |
| 8                                    | 27   | 17   | -4   | -30 | -57  | 21   | 17   | 227  | 520  | 187  | 109  | 67   |  |
| 9                                    | 26   | 16   | -4   | -32 | -58  | 24   | 17   | 210  | 556  | 181  | 107  | 66   |  |
| 10                                   | 26   | 16   | -5   | -32 | -59  | 16   | 104  | 192  | 538  | 175  | 107  | 64   |  |
| 11                                   | 26   | 15   | -6   | -33 | -60  | 14   | 200  | 198  | 468  | 166  | 105  | 63   |  |
| 12                                   | 26   | 14   | -7   | -34 | -61  | 12   | 194  | 207  | 417  | 161  | 103  | 62   |  |
| 13                                   | 25   | 14   | -8   | -35 | -62  | 13   | 153  | 199  | 359  | 157  | 101  | 61   |  |
| 14                                   | 24   | 13   | -9   | -36 | -62  | 11   | 178  | 198  | 384  | 180  | 99   | 59   |  |
| 15                                   | 24   | 13   | -10  | -37 | -63  | 10   | 187  | 198  | 429  | 148  | 98   | 58   |  |
| 16                                   | 24   | 12   | -11  | -39 | -63  | 9    | 202  | 225  | 412  | 143  | 96   | 57   |  |
| 17                                   | 24   | 10   | -13  | -39 | -64  | 9    | 183  | 216  | 396  | 141  | 94   | 56   |  |
| 18                                   | 24   | 10   | -13  | -40 | -65  | 41   | 157  | 203  | 360  | 140  | 92   | 55   |  |
| 19                                   | 24   | 10   | -14  | -41 | -66  | 50   | 140  | 252  | 351  | 139  | 90   | 54   |  |
| 20                                   | 23   | 9    | -15  | -42 | -66  | 42   | 224  | 266  | 337  | 140  | 88   | 53   |  |
| 21                                   | 23   | 8    | -15  | -43 | -67  | 41   | 251  | 270  | 307  | 141  | 86   | 52   |  |
| 22                                   | 23   | 7    | -16  | -43 | -68  | 35   | 227  | 279  | 295  | 140  | 85   | 50   |  |
| 23                                   | 22   | 7    | -16  | -44 | -69  | 30   | 218  | 334  | 274  | 139  | 84   | 49   |  |
| 24                                   | 22   | 6    | -17  | -45 | -71  | 31   | 199  | 367  | 259  | 137  | 83   | 49   |  |
| 25                                   | 22   | 5    | -17  | -46 | -72  | 34   | 219  | 374  | 243  | 135  | 82   | 48   |  |
| 26                                   | 21   | 5    | -17  | -47 | -73  | 30   | 239  | 391  | 232  | 132  | 80   | 47   |  |
| 27                                   | 21   | 4    | -18  | -48 | -77  | 28   | 256  | 405  | 235  | 128  | 79   | 46   |  |
| 28                                   | 21   | 3    | -20  | -49 | -8   | 29   | 260  | 384  | 211  | 124  | 78   | 45   |  |
| 29                                   | 20   | 2    | -21  | -49 | 16   | 22   | 261  | 390  | 203  | 121  | 77   | 45   |  |
| 30                                   | 20   |      | -23  | -50 | 26   | 20   | 272  | 404  | 197  | 118  | 75   | 44   |  |
| 31                                   | 19   |      | -25  |     | 30   |      | 269  | 396  |      | 115  |      | 44   |  |

hauteur mini = -73 cm première observation le 24/05  
hauteur maxi = 556 cm première observation le 09/09

| COLIMBINE A KABATE EN 1988           |      |      |      |     |      |      |      |      |      |      |      | DNHE |  |
|--------------------------------------|------|------|------|-----|------|------|------|------|------|------|------|------|--|
| HAUTEURS MOYENNES JOURNALIERES en cm |      |      |      |     |      |      |      |      |      |      |      |      |  |
| Zéro de l'échelle = non connu        |      |      |      |     |      |      |      |      |      |      |      |      |  |
| JANV                                 | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |  |
| 1                                    | .    | .    | .    | .   | .    | 52   | 360  | 497  | 449  | 247  | 133  |      |  |
| 2                                    | .    | .    | .    | .   | .    | 44   | 403  | 446  | 449  | 240  | 129  |      |  |
| 3                                    | .    | .    | .    | .   | .    | 39   | 380  | 423  | 481  | 232  | 126  |      |  |
| 4                                    | .    | .    | .    | .   | .    | 33   | 294  | 434  | 449  | 223  | 121  |      |  |
| 5                                    | .    | .    | .    | .   | .    | 31   | 218  | 430  | 448  | 217  | 119  |      |  |
| 6                                    | .    | .    | .    | .   | .    | 33   | 178  | 449  | 447  | 212  | 117  |      |  |
| 7                                    | .    | .    | .    | .   | .    | 72   | 150  | 503  | 444  | 204  | 115  |      |  |
| 8                                    | .    | .    | .    | .   | .    | 88   | 142  | 561  | 439  | 200  | 108  |      |  |
| 9                                    | .    | .    | .    | .   | .    | 237  | 199  | 539  | 435  | 194  | 102  |      |  |
| 10                                   | .    | .    | .    | .   | .    | 204  | 173  | 534  | 426  | 188  | 102  |      |  |
| 11                                   | .    | .    | .    | .   | .    | 145  | 156  | 479  | 420  | 184  | 101  |      |  |
| 12                                   | .    | .    | .    | .   | .    | 105  | 142  | 476  | 413  | 180  | 101  |      |  |
| 13                                   | .    | .    | .    | .   | .    | 84   | 133  | 485  | 404  | 175  | 98   |      |  |
| 14                                   | .    | .    | .    | .   | .    | 72   | 126  | 512  | 397  | 171  | 89   |      |  |
| 15                                   | .    | .    | .    | .   | .    | 82   | 124  | 514  | 389  | 168  | 91   |      |  |
| 16                                   | .    | .    | .    | .   | .    | 72   | 128  | 503  | 380  | 165  | 87   |      |  |
| 17                                   | .    | .    | .    | .   | .    | 55   | 132  | 499  | 371  | 164  | 86   |      |  |
| 18                                   | .    | .    | .    | .   | .    | 47   | 131  | 512  | 363  | 166  | 84   |      |  |
| 19                                   | .    | .    | .    | .   | .    | 42   | 137  | 510  | 355  | 164  | 81   |      |  |
| 20                                   | .    | .    | .    | .   | .    | 230  | 44   | 145  | 505  | 348  | 160  |      |  |
| 21                                   | .    | .    | .    | .   | .    | 146  | 40   | 200  | 499  | 339  | 159  |      |  |
| 22                                   | .    | .    | .    | .   | .    | 96   | 36   | 232  | 492  | 331  | 158  |      |  |
| 23                                   | .    | .    | .    | .   | .    | 78   | 33   | 337  | 487  | 322  | 155  |      |  |
| 24                                   | .    | .    | .    | .   | .    | 204  | 34   | 349  | 481  | 310  | 154  |      |  |
| 25                                   | .    | .    | .    | .   | .    | 158  | 115  | 310  | 468  | 303  | 151  |      |  |
| 26                                   | .    | .    | .    | .   | .    | 154  | 152  | 274  | 444  | 295  | 145  |      |  |
| 27                                   | .    | .    | .    | .   | .    | 153  | 117  | 311  | 457  | 287  | 142  |      |  |
| 28                                   | .    | .    | .    | .   | .    | 111  | 131  | 396  | 451  | 290  | 143  |      |  |
| 29                                   | .    | .    | .    | .   | .    | 78   | 93   | 470  | 448  | 273  | 144  |      |  |
| 30                                   | .    | .    | .    | .   | .    | 62   | 221  | 521  | 449  | 265  | 136  |      |  |
| 31                                   | .    | .    | .    | .   | .    | 243  | 519  |      | 258  |      | 63   |      |  |

hauteur mini = 4 cm première observation le 01/01  
hauteur maxi = 561 cm première observation le 08/09

LE SIGNE . PRECEDE LES HAUTEURS RECONSTITUEES .  
LE SIGNE . INDIQUE L'ABSENCE D'ECOULEMENT .

16a

| FALENE A GOURBASSY EN 1988        |      |      |      |      |      |      |      |      |      |      |      | DNHE |  |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|--|
| DEBITS MOYENS JOURNALIERS en m3/s |      |      |      |      |      |      |      |      |      |      |      |      |  |
| Surface = 18000 ka2               |      |      |      |      |      |      |      |      |      |      |      |      |  |
| JANV                              | FEVR | MARS | AVRI | MAI  | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |  |
| 1                                 | 3.95 | 1.78 | .220 | .000 | .000 | 3.43 | 1.62 | 194. | 431. | 114. | 36.3 | 13.1 |  |
| 2                                 | 3.77 | 1.78 | .220 | .000 | .000 | 2.92 | 1.46 | 176. | 388. | 129. | 35.0 | 14.7 |  |
| 3                                 | 3.60 | 1.62 | .200 | .000 | .000 | 2.42 | 1.41 | 171. | 301. | 132. | 33.7 | 14.3 |  |
| 4                                 | 3.60 | 1.62 | .200 | .000 | .000 | 2.10 | 1.4  | 257. | 670. | 119. | 32.4 | 13.9 |  |
| 5                                 | 3.43 | 1.62 | .180 | .000 | .000 | 3.26 | 1.45 | 215. | 708. | 116. | 31.1 | 13.5 |  |
| 6                                 | 3.26 | 1.46 | .160 | .000 | .000 | 3.26 | 1.05 | 162. | 736. | 113. | 30.5 | 13.1 |  |
| 7                                 | 3.09 | 1.46 | .140 | .000 | .000 | 2.89 | 1.16 | 156. | 686. | 112. | 30.5 | 12.8 |  |
| 8                                 | 3.09 | 1.46 | .120 | .000 | .000 | 2.10 | 23.0 | 155. | 794. | 106. | 33.7 | 12.4 |  |
| 9                                 | 2.92 | 1.31 | .120 | .000 | .000 | 2.89 | 24.1 | 134. | 903. | 98.8 | 33.7 | 12.0 |  |
| 10                                | 2.92 | 1.31 | .100 | .000 | .000 | 1.31 | 30.5 | 112. | 849. | 92.0 | 32.4 | 11.4 |  |
| 11                                | 2.92 | 1.18 | .080 | .000 | .000 | 1.00 | 122. | 119. | 688. | 82.2 | 31.1 | 11.0 |  |
| 12                                | 2.92 | 1.00 | .060 | .000 | .000 | .698 | 114. | 130. | 831. | 77.1 | 29.9 | 10.7 |  |
| 13                                | 2.75 | 1.00 | .040 | .000 | .000 | .848 | 69.1 | 121. | 386. | 73.0 | 28.7 | 10.4 |  |
| 14                                | 2.57 | .848 | .020 | .000 | .000 | .848 | 93.3 | 119. | 449. | 66.3 | 27.5 | 9.78 |  |
| 15                                | 2.57 | .848 | .000 | .000 | .000 | .400 | 106. | 119. | 862. | 61.7 | 26.9 | 9.45 |  |
| 16                                | 2.57 | .478 | .000 | .000 | .000 | .380 | 124. | 153. | 518. | 59.9 | 25.8 | 9.16 |  |
| 17                                | 2.57 | .400 | .000 | .000 | .000 | .380 | 101. | 141. | 476. | 58.1 | 24.7 | 8.87 |  |
| 18                                | 2.57 | .400 | .000 | .000 | .000 | .57  | 73.0 | 125. | 396. | 57.3 | 20.0 | 7.30 |  |
| 19                                | 2.57 | .400 | .000 | .000 | .000 | 7.30 | 57.3 | 191. | 377. | 56.4 | 23.6 | 6.89 |  |
| 20                                | 2.42 | .380 | .000 | .000 | .000 | 5.76 | 151. | 213. | 348. | 57.3 | 21.8 | 6.08 |  |
| 21                                | 2.42 | .360 | .000 | .000 | .000 | 5.87 | 190. | 220. | 288. | 58.1 | 20.5 | 7.80 |  |
| 22                                | 2.42 | .340 | .000 | .000 | .000 | 4.48 | 158. | 235. | 265. | 57.3 | 20.0 | 7.30 |  |
| 23                                | 2.26 | .340 | .000 | .000 | .000 | 3.60 | 143. | 342. | 230. | 56.4 | 19.5 | 7.10 |  |
| 24                                | 2.26 | .320 | .000 | .000 | .000 | 3.77 | 121. | 411. | 202. | 54.7 | 19.0 | 7.10 |  |
| 25                                | 2.26 | .300 | .000 | .000 | .000 | 4.30 | 145. | 427. | 178. | 53.0 | 18.6 | 6.91 |  |
| 26                                | 2.10 | .300 | .000 | .000 | .000 | 3.60 | 172. | 465. | 162. | 50.9 | 17.7 | 6.71 |  |
| 27                                | 2.10 | .280 | .000 | .000 | .000 | 3.26 | 197. | 499. | 166. | 47.3 | 17.2 | 6.82 |  |
| 28                                | 2.10 | .260 | .000 | .000 | .000 | 3.60 | 278. | 204. | 447. | 43.8 | 16.8 | 6.33 |  |
| 29                                | 1.94 | .240 | .000 | .000 | .000 | 1.31 | 226  | 205. | 462. | 42.8 | 16.3 | 6.33 |  |
| 30                                | 1.94 | .000 | .000 | .000 | .000 | 2.92 | 1.94 | 223. | 501. | 39.8 | 15.5 | 6.14 |  |
| 31                                | 1.78 | .000 | .000 | .000 | .000 | 3.40 | 218. | 476. |      | 37.7 |      | 6.14 |  |

Moy 1988: 2.70 .872 .060 .000 .000 .264 2.81 100. 248. 441. 74.9 25.8 9.74 75.6  
Moy84-88: 12.9 6.48 2.94 1.10 .686 12.6 77.1 440. 552. 233. 64.7 25.5 118.  
Mini obs: 1276 .004 .000 .000 .000 .000 4.51 59.8 69.1 41.2 6.62 1.96 20.7  
Maxi obs: 32.3 19.1 9.85 4.93 4.44 52.3 291. 1010 1280 952. 143. 66.7 223.

Débit mini = .000 m3/s première observation le 19/03  
Débit maxi = 903. m3/s première observation le 09/09  
Lame d'eau écoulée = 159 mm

| COLIMBINE A KABATE EN 1988                                 |      |      |      |      |      |      |      |      |      |      |      | DNHE |      |      |
|------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| DEBITS MOYENS JOURNALIERS en m3/s                          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| ~~~~~                                                      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Surface = 25000 ka2                                        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| JANV FEVR MARS AVRI MAI JUIN JUIL AOUT SEPT OCTO NOVE DECE |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 1                                                          | .000 | .000 | .000 | .000 | .000 | .000 | .907 | 40.9 | 61.4 | 84.1 | 24.4 | 9.02 |      |      |
| 2                                                          | .000 | .000 | .000 | .000 | .000 | .000 | .878 | 47.2 | 83.7 | 84.1 | 23.6 | 8.82 |      |      |
| 3                                                          | .000 | .000 | .000 | .000 | .000 | .000 | .421 | 43.8 | 80.2 | 84.4 | 22.8 | 8.18 |      |      |
| 4                                                          | .000 | .000 | .000 | .000 | .000 | .000 | .245 | 31.3 | 81.9 | 84.1 | 21.2 | 7.83 |      |      |
| 5                                                          | .000 | .000 | .000 | .000 | .000 | .000 | .220 | 20.1 | 81.3 | 84.0 | 20.4 | 7.29 |      |      |
| 6                                                          | .000 | .000 | .000 | .000 | .000 | .000 | .248 | 14.8 | 84.1 | 83.8 | 19.7 | 7.04 |      |      |
| 7                                                          | .000 | .000 | .000 | .000 | .000 | .000 | 2.28 | 11.2 | 42.3 | 83.4 | 18.6 | 4.80 |      |      |
| 8                                                          | .000 | .000 | .000 | .000 | .000 | .000 | 1.26 | 10.2 | 71.2 | 82.8 | 18.0 | 8.98 |      |      |
| 9                                                          | .000 | .000 | .000 | .000 | .000 | .000 | .000 | 23.2 | 17.9 | 70.9 | 82.0 | 17.2 | 8.24 |      |
| 10                                                         | .000 | .000 | .000 | .000 | .000 | .000 | .000 | 18.6 | 14.3 | 67.0 | 80.7 | 16.3 | 8.24 |      |
| 11                                                         | .000 | .000 | .000 | .000 | .000 | .000 | .000 | 10.4 | 12.0 | 88.7 | 49.8 | 15.8 | 8.12 |      |
| 12                                                         | .000 | .000 | .000 | .000 | .000 | .000 | .000 | 8.89 | 10.2 | 88.2 | 48.7 | 15.2 | 8.12 |      |
| 13                                                         | .000 | .000 | .000 | .000 | .000 | .000 | .000 | 3.31 | 9.02 | 89.6 | 47.7 | 14.8 | 4.77 |      |
| 14                                                         | .000 | .000 | .000 | .000 | .000 | .000 | .000 | 2.25 | 8.18 | 83.7 | 46.4 | 14.0 | 3.80 |      |
| 15                                                         | .000 | .000 | .000 | .000 | .000 | .000 | .000 | 3.12 | 7.90 | 84.0 | 48.2 | 13.6 | 4.01 |      |
| 16                                                         | .000 | .000 | .000 | .000 | .000 | .000 | .000 | 2.28 | 8.40 | 82.3 | 43.8 | 13.2 | 3.60 |      |
| 17                                                         | .000 | .000 | .000 | .000 | .000 | .000 | .000 | 1.08 | 8.90 | 61.7 | 42.8 | 13.0 | 3.80 |      |
| 18                                                         | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .688 | 8.77 | 83.7 | 41.4 | 13.3 | 3.31 |      |
| 19                                                         | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .912 | 9.83 | 83.4 | 40.2 | 13.0 | 3.03 |      |
| 20                                                         | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .378 | 10.6 | 62.6 | 39.2 | 12.8 | 2.85 |      |
| 21                                                         | .000 | .000 | .000 | .000 | .000 | .000 | .000 | 10.7 | .430 | 18.0 | 61.7 | 37.8 | 12.4 | 2.85 |
| 22                                                         | .000 | .000 | .000 | .000 | .000 | .000 | .000 | 4.88 | .338 | 22.8 | 60.6 | 36.7 | 12.2 | 2.67 |
| 23                                                         | .000 | .000 | .000 | .000 | .000 | .000 | .000 | 2.76 | .265 | 37.6 | 89.9 | 35.4 | 11.9 | 2.17 |
| 24                                                         | .000 | .000 | .000 | .000 | .000 | .000 | .000 | 18.4 | .288 | 39.3 | 89.0 | 33.6 | 11.7 | 2.17 |
| 25                                                         | .000 | .000 | .000 | .000 | .000 | .000 | .000 | 12.2 | 6.80 | 33.6 | 87.0 | 32.6 | 11.3 | 1.94 |
| 26                                                         | .000 | .000 | .000 | .000 | .000 | .000 | .000 | 11.7 | 11.8 | 28.8 | 86.4 | 31.8 | 10.6 | 1.94 |
| 27                                                         | .000 | .000 | .000 | .000 | .000 | .000 | .000 | 11.6 | 7.04 | 33.8 | 85.3 | 30.3 | 10.2 | 1.80 |
| 28                                                         | .000 | .000 | .000 | .000 | .000 | .000 | .000 | 6.31 | 8.77 | 46.2 | 84.4 | 30.8 | 10.3 | 1.80 |
| 29                                                         | .000 | .000 | .000 | .000 | .000 | .000 | .000 | 2.76 | 4.22 | 87.3 | 84.0 | 28.3 | 10.4 | 1.72 |
| 30                                                         | .000 | .000 | .000 | .000 | .000 | .000 | .000 | 1.82 | 20.9 | 68.0 | 84.1 | 27.2 | 9.40 | 1.82 |
| 31                                                         | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | 24.1 | 64.7 | .000 | 26.2 | .000 | 1.88 |
| May 1988:                                                  | .000 | .000 | .000 | .000 | .000 | 3.60 | 8.25 | 28.8 | 89.8 | 42.9 | 18.0 | 4.26 | 13.0 |      |
| May68-88:                                                  | .804 | .070 | .003 | .000 | .000 | 1.17 | 13.3 | 31.8 | 34.1 | 20.7 | 8.34 | 2.68 | 10.1 |      |
| Mini obs:                                                  | .000 | .000 | .000 | .000 | .000 | .000 | 2.68 | 2.83 | 8.24 | .729 | .347 | .007 | 1.21 |      |
| Maxi obs:                                                  | 3.78 | .840 | .057 | .000 | .000 | 12.8 | 33.4 | 68.2 | 64.7 | 42.9 | 19.4 | 10.8 | 17.8 |      |

| SENEGAL A KAYES EN 1988                                    |     |     |     |    |     |     |     |     |     |     |     | DNHE |  |
|------------------------------------------------------------|-----|-----|-----|----|-----|-----|-----|-----|-----|-----|-----|------|--|
| HAUTEURS MOYENNES JOURNALIERES en cm                       |     |     |     |    |     |     |     |     |     |     |     |      |  |
| -----                                                      |     |     |     |    |     |     |     |     |     |     |     |      |  |
| Ière de l'échelle = 20.14 a IGN                            |     |     |     |    |     |     |     |     |     |     |     |      |  |
| JANV FEVR MARS AVRI MAI JUIN JUIL AOÛT SEPT OCTO NOVÉ DECE |     |     |     |    |     |     |     |     |     |     |     |      |  |
| 1                                                          | 100 | 122 | 131 | 84 | 26  | 108 | 140 | 240 | 481 | 376 | 126 | 72   |  |
| 2                                                          | 100 | 122 | 135 | 84 | 27  | 109 | 127 | 289 | 524 | 378 | 122 | 70   |  |
| 3                                                          | 100 | 121 | 134 | 83 | 29  | 109 | 124 | 280 | 544 | 344 | 119 | 70   |  |
| 4                                                          | 100 | 121 | 131 | 82 | 32  | 109 | 111 | 244 | 410 | 352 | 116 | 49   |  |
| 5                                                          | 100 | 120 | 132 | 82 | 34  | 107 | 102 | 220 | 487 | 376 | 113 | 67   |  |
| 6                                                          | 101 | 113 | 132 | 82 | 37  | 101 | 102 | 207 | 477 | 376 | 110 | 68   |  |
| 7                                                          | 101 | 104 | 132 | 82 | 38  | 100 | 104 | 195 | 444 | 390 | 107 | 68   |  |
| 8                                                          | 101 | 100 | 130 | 82 | 39  | 100 | 112 | 196 | 719 | 361 | 104 | 67   |  |
| 9                                                          | 102 | 96  | 122 | 82 | 39  | 100 | 110 | 210 | 755 | 352 | 101 | 65   |  |
| 10                                                         | 104 | 91  | 106 | 81 | 40  | 98  | 148 | 222 | 743 | 347 | 100 | 63   |  |
| 11                                                         | 108 | 86  | 100 | 81 | 40  | 100 | 144 | 194 | 728 | 343 | 99  | 61   |  |
| 12                                                         | 110 | 82  | 98  | 47 | 38  | 97  | 184 | 178 | 733 | 328 | 98  | 60   |  |
| 13                                                         | 123 | 79  | 86  | 43 | 34  | 100 | 188 | 163 | 724 | 301 | 97  | 60   |  |
| 14                                                         | 132 | 74  | 82  | 40 | 38  | 103 | 141 | 148 | 703 | 265 | 95  | 59   |  |
| 15                                                         | 132 | 73  | 78  | 38 | 33  | 104 | 212 | 147 | 728 | 244 | 93  | 57   |  |
| 16                                                         | 128 | 70  | 75  | 37 | 183 | 103 | 187 | 144 | 444 | 285 | 91  | 56   |  |
| 17                                                         | 138 | 77  | 72  | 34 | 202 | 107 | 178 | 280 | 481 | 263 | 90  | 56   |  |
| 18                                                         | 138 | 88  | 47  | 35 | 213 | 130 | 170 | 321 | 404 | 261 | 88  | 54   |  |
| 19                                                         | 123 | 87  | 64  | 34 | 182 | 114 | 188 | 317 | 594 | 241 | 86  | 53   |  |
| 20                                                         | 112 | 81  | 64  | 34 | 187 | 142 | 140 | 304 | 600 | 257 | 84  | 54   |  |
| 21                                                         | 114 | 75  | 42  | 33 | 190 | 131 | 211 | 334 | 982 | 253 | 82  | 54   |  |
| 22                                                         | 130 | 72  | 61  | 33 | 148 | 111 | 219 | 371 | 837 | 221 | 81  | 53   |  |
| 23                                                         | 132 | 74  | 59  | 33 | 148 | 104 | 263 | 343 | 808 | 188 | 80  | 52   |  |
| 24                                                         | 129 | 103 | 88  | 32 | 133 | 102 | 292 | 334 | 498 | 147 | 79  | 52   |  |
| 25                                                         | 120 | 130 | 86  | 31 | 121 | 122 | 278 | 318 | 904 | 188 | 79  | 51   |  |
| 26                                                         | 111 | 132 | 93  | 30 | 114 | 108 | 251 | 323 | 493 | 149 | 78  | 50   |  |
| 27                                                         | 109 | 130 | 82  | 28 | 114 | 106 | 231 | 389 | 473 | 144 | 77  | 50   |  |
| 28                                                         | 117 | 131 | 84  | 27 | 111 | 98  | 218 | 478 | 449 | 143 | 76  | 50   |  |
| 29                                                         | 119 | 132 | 84  | 28 | 111 | 91  | 197 | 498 | 425 | 140 | 75  | 50   |  |
| 30                                                         | 121 |     | 84  | 26 | 112 | 144 | 178 | 423 | 412 | 134 | 73  | 49   |  |
| 31                                                         | 122 |     | 84  |    | 108 |     | 210 | 488 |     | 129 |     | 49   |  |

hauteur mini = 26 cm

hauteur maxi = 733 cm

première observation le 30/04

première observation le 09/09

[illegible]

| GENERAL A KAYES EN 1988           |      |      |      |      |      |      |      |      |      |      |      | DHME |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| DEBITE MOYENS JOURNALIERS en m3/s |      |      |      |      |      |      |      |      |      |      |      |      |
| Surface = 157400 km2              |      |      |      |      |      |      |      |      |      |      |      |      |
|                                   | JANV | FEVR | MARS | AVRI | MAI  | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |
| 1                                 | 45.0 | 76.7 | 93.3 | 9.01 | 744  | 55.1 | 112. | 436. | 1300 | 943. | 83.8 | 20.3 |
| 2                                 | 45.0 | 76.7 | 101. | 9.01 | 804  | 56.8 | 95.7 | 932. | 1500 | 867. | 76.7 | 18.8 |
| 3                                 | 45.0 | 75.0 | 99.2 | 8.49 | 932  | 56.8 | 93.8 | 902. | 1600 | 732. | 71.7 | 18.8 |
| 4                                 | 45.0 | 75.0 | 93.3 | 7.98 | 1.26 | 56.3 | 94.3 | 393. | 1300 | 743. | 66.8 | 18.1 |
| 5                                 | 45.0 | 73.3 | 95.2 | 7.98 | 1.96 | 53.7 | 47.4 | 316. | 2350 | 943. | 62.2 | 18.1 |
| 6                                 | 46.2 | 62.2 | 95.2 | 7.98 | 2.19 | 46.2 | 47.4 | 279. | 2420 | 943. | 87.9 | 17.5 |
| 7                                 | 46.2 | 49.8 | 95.2 | 7.98 | 2.44 | 45.0 | 49.8 | 246. | 2120 | 917. | 85.7 | 17.5 |
| 8                                 | 46.2 | 45.0 | 91.3 | 7.98 | 2.71 | 45.0 | 40.8 | 248. | 2540 | 798. | 49.8 | 16.8 |
| 9                                 | 47.4 | 40.9 | 76.7 | 7.98 | 2.71 | 45.0 | 57.9 | 287. | 2740 | 763. | 46.2 | 15.5 |
| 10                                | 49.8 | 36.1 | 52.4 | 7.49 | 3.00 | 42.9 | 130. | 321. | 2690 | 743. | 45.0 | 14.2 |
| 11                                | 51.1 | 31.8 | 45.0 | 7.49 | 3.00 | 45.0 | 166. | 243. | 2590 | 728. | 44.0 | 13.0 |
| 12                                | 57.9 | 28.1 | 42.9 | 8.99 | 2.44 | 41.9 | 148. | 192. | 2620 | 660. | 42.9 | 12.4 |
| 13                                | 78.5 | 25.6 | 31.3 | 3.99 | 1.96 | 45.0 | 146. | 163. | 2580 | 574. | 41.9 | 12.4 |
| 14                                | 95.2 | 23.3 | 28.1 | 3.00 | 1.75 | 48.6 | 159. | 175. | 2740 | 452. | 39.9 | 11.8 |
| 15                                | 95.2 | 21.0 | 24.8 | 2.44 | 1.39 | 92.4 | 293. | 173. | 2590 | 387. | 38.0 | 10.6 |
| 16                                | 87.8 | 18.8 | 22.5 | 2.19 | 1.41 | 48.6 | 223. | 170. | 2220 | 421. | 36.1 | 10.1 |
| 17                                | 101. | 24.0 | 20.3 | 1.96 | 265. | 53.7 | 200. | 408. | 2180 | 446. | 35.2 | 10.1 |
| 18                                | 108. | 33.3 | 18.1 | 1.75 | 296. | 91.3 | 180. | 648. | 1910 | 440. | 33.3 | 10.1 |
| 19                                | 78.5 | 32.4 | 16.1 | 1.86 | 210. | 63.7 | 152. | 631. | 1840 | 440. | 31.8 | 9.84 |
| 20                                | 60.8 | 27.3 | 14.6 | 1.86 | 150. | 116. | 112. | 891. | 1880 | 427. | 29.8 | 9.01 |
| 21                                | 66.8 | 22.8 | 13.6 | 1.39 | 138. | 93.3 | 290. | 694. | 1780 | 414. | 28.1 | 9.01 |
| 22                                | 91.3 | 20.3 | 13.0 | 1.39 | 130. | 59.3 | 313. | 839. | 1860 | 318. | 27.3 | 8.49 |
| 23                                | 95.2 | 21.7 | 11.8 | 1.39 | 123. | 49.8 | 812. | 806. | 1420 | 218. | 26.4 | 7.98 |
| 24                                | 89.4 | 48.6 | 11.2 | 1.24 | 97.2 | 47.4 | 542. | 674. | 1360 | 173. | 25.6 | 7.98 |
| 25                                | 73.3 | 91.3 | 10.1 | 1.11 | 78.0 | 76.7 | 498. | 634. | 1400 | 146. | 28.8 | 7.49 |
| 26                                | 97.3 | 95.2 | 8.49 | 1.00 | 63.7 | 55.1 | 408. | 683. | 1380 | 133. | 24.8 | 7.00 |
| 27                                | 56.5 | 91.3 | 7.98 | 864  | 63.7 | 52.4 | 348. | 790. | 1270 | 128. | 24.0 | 7.00 |
| 28                                | 68.4 | 93.3 | 9.01 | 804  | 59.3 | 42.9 | 301. | 1270 | 1160 | 119. | 23.3 | 7.00 |
| 29                                | 71.7 | 95.2 | 9.01 | 866  | 97.3 | 36.1 | 251. | 1380 | 1040 | 112. | 22.8 | 7.00 |
| 30                                | 75.0 | 9.01 | 744  | 60.8 | 121. | 200. | 1470 | 1010 | 97.2 | 21.0 | 6.81 |      |
| 31                                | 76.7 | 9.01 |      |      | 55.1 |      | 287. | 1330 |      | 87.4 | 6.81 |      |

|           |      |      |      |      |      |      |      |      |      |      |      |      |      |
|-----------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Nov 1988: | 67.7 | 50.2 | 40.9 | 4.14 | 64.9 | 58.1 | 208. | 566. | 1920 | 493. | 41.2 | 11.8 | 294. |
| May81-88: | 87.6 | 48.0 | 24.4 | 10.1 | 7.31 | 66.2 | 436. | 1560 | 2080 | 1100 | 393. | 163. | 472. |
| Mini obs: | 17.4 | 9.67 | 4.62 | 2.94 | 835  | 307  | 92.0 | 326. | 444. | 380. | 41.2 | 11.8 | 153. |
| Maxi obs: | 189. | 116. | 58.0 | 32.7 | 64.9 | 230. | 1000 | 3540 | 3990 | 2630 | 1180 | 373. | 867. |

Débit mini = .744 m3/s    première observation le 30/04  
 Débit maxi = 2740 m3/s    première observation le 09/09  
                   Lame d'eau écoulée = 89 mm

| BAFINS A MANANTALY EN 1988           |      |      |      |      |     |      |      |      |      |      |      |      | DNHE |                               |
|--------------------------------------|------|------|------|------|-----|------|------|------|------|------|------|------|------|-------------------------------|
| HAUTEURS MOYENNES JOURNALIERES en cm |      |      |      |      |     |      |      |      |      |      |      |      |      |                               |
| Zéro de l'échelle = 150,83 m IGN     |      |      |      |      |     |      |      |      |      |      |      |      |      |                               |
|                                      | JANV | FEVR | MARS | AVRI | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | MOYE | DECE |      |                               |
| 1                                    | 415  | 460  | 445  | 349  | 350 | 436  | 390  | 392  | 409  | 471  | 350  | 350  |      |                               |
| 2                                    | 415  | 413  | 447  | 349  | 350 | 424  | 390  | 392  | 476  | 498  | 350  | 350  |      |                               |
| 3                                    | 415  | 413  | 447  | 349  | 350 | 424  | 390  | 361  | 616  | 498  | 350  | 350  |      |                               |
| 4                                    | 415  | 366  | 447  | 349  | 350 | 424  | 390  | 361  | 520  | 460  | 350  | 350  |      |                               |
| 5                                    | 415  | .    | 447  | 349  | 350 | 424  | 390  | 361  | 878  | 642  | 350  | 350  |      |                               |
| 6                                    | 415  | 336  | 447  | 349  | 350 | 424  | 390  | 361  | 720  | 556  | 350  | 350  |      |                               |
| 7                                    | 440  | 336  | 355  | 349  | 350 | 424  | 391  | 361  | 728  | 560  | 350  | 350  |      |                               |
| 8                                    | 460  | 336  | 346  | 349  | 423 | 425  | 390  | 361  | 807  | 560  | 350  | 350  |      |                               |
| 9                                    | 460  | 340  | 340  | 338  | 500 | 425  | 390  | 361  | 816  | 554  | 350  | 350  |      |                               |
| 10                                   | 460  | 3395 | 340  | 350  | 500 | 426  | 390  | 366  | 806  | 554  | 350  | 350  |      |                               |
| 11                                   | 460  | 3395 | 338  | 350  | 550 | 427  | 390  | 366  | 803  | 534  | 350  | 350  |      |                               |
| 12                                   | 400  | 3395 | 338  | 350  | 540 | 428  | 390  | 364  | 793  | 534  | 350  | 350  |      |                               |
| 13                                   | 476  | 3395 | 338  | 350  | 540 | 430  | 390  | 363  | 753  | 534  | 350  | 350  |      |                               |
| 14                                   | 440  | 393  | 338  | 350  | 530 | 434  | 390  | 364  | 676  | 494  | 350  | 350  |      |                               |
| 15                                   | .    | 393  | 338  | 350  | 530 | 394  | 392  | 364  | 676  | 494  | 350  | 350  |      |                               |
| 16                                   | .    | 3285 | 338  | 350  | 575 | 394  | 392  | 364  | 732  | 494  | 350  | 350  |      |                               |
| 17                                   | 438  | 3285 | 338  | 350  | 575 | 393  | 392  | 364  | 734  | 494  | 350  | 350  |      |                               |
| 18                                   | 438  | .    | 338  | 350  | 575 | 393  | 392  | 364  | 758  | 493  | 350  | 350  |      |                               |
| 19                                   | 438  | 448  | 338  | 350  | 575 | 392  | 392  | 364  | 754  | 493  | 350  | 350  |      |                               |
| 20                                   | 438  | 448  | 3338 | 350  | 575 | 391  | 392  | 367  | 658  | 405  | 350  | 350  |      |                               |
| 21                                   | 367  | 448  | 337  | 350  | 436 | 390  | 392  | 368  | 600  | 403  | 350  | 350  |      |                               |
| 22                                   | 456  | 448  | 320  | 350  | 436 | 390  | 392  | 368  | 572  | 403  | 350  | 350  |      |                               |
| 23                                   | 446  | 448  | 350  | 350  | 436 | 391  | 392  | 367  | 593  | 403  | 350  | 350  |      |                               |
| 24                                   | 446  | 445  | 349  | 350  | 436 | 391  | 391  | 368  | 595  | 403  | 350  | 350  |      |                               |
| 25                                   | 460  | 445  | 350  | 350  | 436 | 390  | 391  | 368  | 596  | 432  | 350  | 350  |      |                               |
| 26                                   | 460  | 445  | 350  | 350  | 436 | 390  | 392  | 367  | 593  | .    | 350  | 350  |      |                               |
| 27                                   | 460  | 445  | 350  | 350  | 436 | 390  | 391  | 368  | 564  | .    | 350  | 350  |      |                               |
| 28                                   | 460  | 445  | 350  | 350  | 436 | 390  | 392  | 367  | 568  | 280  | 350  | 350  |      |                               |
| 29                                   | 460  | 445  | 350  | 350  | 436 | 390  | 392  | 368  | 530  | 350  | 350  | 350  |      |                               |
| 30                                   | 460  | .    | 349  | 350  | 436 | 390  | 392  | 367  | 530  | 350  | 350  | 350  |      |                               |
| 31                                   | 460  | .    | 349  | .    | 436 | .    | 392  | 367  | .    | 350  | .    | 350  |      |                               |
| hauteur mini = 4 sec                 |      |      |      |      |     |      |      |      |      |      |      |      |      | première observation le 15/01 |
| hauteur maxi = 578 cm                |      |      |      |      |     |      |      |      |      |      |      |      |      | première observation le 05/09 |

LE SIGNE : PRECEDE LES HAUTEURS RECONSTITUEES .  
LE SIGNE , INDIQUE L'ABSENCE D'ECOULEMENT .  
SOURCE DE DONNEES : O.N.V.S.

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LE SIGNE + PRECEDE LES HAUTEURS RECONSTITUEES .  
LE SIGNE - INDIQUE L'ABSENCE D'ECOULEMENT .

1990

LE SIGNE 3 PRECEDE LES HAUTEURS RECONSTITUEES .  
LE SIGNE , INDIQUE L'ABSENCE D'ECOLEMENT .

1b.

|           |      |      |      |      |      |      |      |      |      |      |      |      |      |
|-----------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| May 1988: | 1.04 | .479 | .068 | .000 | .000 | .241 | 41.4 | 110. | 207. | 33.1 | 9.91 | 2.63 | 33.8 |
| May88-88: | 1.72 | .727 | .290 | .061 | .031 | 1.99 | 23.6 | 111. | 128. | 43.6 | 12.5 | 4.22 | 26.0 |
| Mini obs: | .037 | .000 | .000 | .000 | .000 | .000 | .886 | 13.9 | 19.6 | 12.2 | 1.31 | .401 | 5.24 |
| Maxi obs: | 5.54 | 2.12 | 1.20 | .500 | .265 | 7.85 | 47.0 | 340. | 257. | 97.6 | 48.9 | 13.2 | 60.5 |

Débit mini = .000 m3/s première observation le 29/03  
 Débit maxi = 457. m3/s première observation le 07/09  
 Lane d'eau écoulée = 144 m

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hauteur mini = 8 sec      première observation le 01/01
hauteur maxi = 215 cm     première observation le 14/08

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LE GIGNE . INDIQUE L'ABSENCE D'ÉCOULEMENT .

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| BAKOYE A QUALIA EN 1988              |      |      |       |     |      |      |      |      |      |      |      | DNHE |
|--------------------------------------|------|------|-------|-----|------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm |      |      |       |     |      |      |      |      |      |      |      |      |
| Zéro de l'échelle = 108.16 m IGN     |      |      |       |     |      |      |      |      |      |      |      |      |
| JANV                                 | FEVR | MARS | AVRIL | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                    | 38   | 18   | .     | .   | .    | 114  | 341  | 877  | 310  | 123  | 78   |      |
| 2                                    | 35   | 18   | .     | .   | .    | 103  | 308  | 402  | 312  | 121  | 78   |      |
| 3                                    | 34   | 17   | .     | .   | .    | 108  | 289  | 548  | 309  | 118  | 77   |      |
| 4                                    | 34   | 17   | .     | .   | .    | 104  | 238  | 877  | 247  | 116  | 74   |      |
| 5                                    | 33   | 16   | .     | .   | .    | 126  | 224  | 817  | 260  | 114  | 75   |      |
| 6                                    | 33   | 15   | .     | .   | .    | 108  | 239  | 806  | 282  | 112  | 75   |      |
| 7                                    | 32   | 15   | .     | .   | .    | 150  | 244  | 822  | 241  | 109  | 74   |      |
| 8                                    | 31   | 14   | .     | .   | .    | 191  | 227  | 863  | 233  | 108  | 73   |      |
| 9                                    | 31   | 14   | .     | .   | .    | 177  | 219  | 864  | 224  | 104  | 73   |      |
| 10                                   | 30   | 12   | .     | .   | .    | 138  | 196  | 840  | 217  | 104  | 72   |      |
| 11                                   | 30   | 12   | .     | .   | .    | 135  | 170  | 827  | 207  | 103  | 71   |      |
| 12                                   | 30   | 11   | .     | .   | .    | 131  | 164  | 832  | 199  | 102  | 70   |      |
| 13                                   | 29   | 10   | .     | .   | .    | 172  | 178  | 820  | 191  | 101  | 69   |      |
| 14                                   | 29   | 10   | .     | .   | .    | 144  | 169  | 807  | 182  | 99   | 69   |      |
| 15                                   | 28   | 10   | .     | .   | .    | 187  | 347  | 488  | 176  | 98   | 68   |      |
| 16                                   | 28   | 9    | .     | .   | .    | 150  | 354  | 480  | 170  | 94   | 67   |      |
| 17                                   | 27   | 8    | .     | .   | .    | 143  | 816  | 449  | 164  | 95   | 67   |      |
| 18                                   | 27   | 7    | .     | .   | .    | 134  | 410  | 497  | 163  | 94   | 64   |      |
| 19                                   | 26   | 7    | .     | .   | .    | 248  | 391  | 823  | 189  | 93   | 68   |      |
| 20                                   | 25   | 6    | .     | .   | .    | 272  | 484  | 490  | 184  | 91   | 64   |      |
| 21                                   | 25   | 5    | .     | .   | .    | 341  | 429  | 441  | 149  | 89   | 64   |      |
| 22                                   | 24   | 4    | .     | .   | .    | 356  | 404  | 429  | 145  | 87   | 63   |      |
| 23                                   | 23   | 4    | .     | .   | .    | 335  | 377  | 420  | 143  | 84   | 63   |      |
| 24                                   | 22   | 3    | .     | .   | .    | 287  | 339  | 485  | 141  | 84   | 62   |      |
| 25                                   | 22   | 2    | .     | .   | .    | 247  | 408  | 420  | 138  | 85   | 61   |      |
| 26                                   | 21   | 2    | .     | .   | .    | 231  | 414  | 381  | 134  | 84   | 60   |      |
| 27                                   | 21   | 1    | .     | .   | .    | 287  | 193  | 872  | 386  | 134  | 63   |      |
| 28                                   | 20   | 1    | .     | .   | .    | 197  | 171  | 576  | 338  | 431  | 82   | 60   |
| 29                                   | 20   | 0    | .     | .   | .    | 183  | 169  | 549  | 319  | 129  | 81   | 60   |
| 30                                   | 19   | .    | .     | .   | .    | 128  | 222  | 497  | 304  | 128  | 80   | 59   |
| 31                                   | 19   | .    | .     | .   | .    | 321  | 832  |      | 126  |      | 89   |      |

hauteur mini = 4 sec      première observation le 01/03  
hauteur maxi = 402 cm      première observation le 02/09

LE SIGNE . INDIQUE L'ABSENCE D'ÉCOULEMENT .

1ba

| BAOULE A BIRAMAKANA EN 1988          |      |      |       |     |      |      |      |      |      |      |      | DNHE |
|--------------------------------------|------|------|-------|-----|------|------|------|------|------|------|------|------|
| HAUTEURS MOYENNES JOURNALIERES en cm |      |      |       |     |      |      |      |      |      |      |      |      |
| Zéro de l'échelle = 187.03 m IGN     |      |      |       |     |      |      |      |      |      |      |      |      |
| JANV                                 | FEVR | MARS | AVRIL | MAI | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                    | 82   | 28   | .     | .   | .    | 83   | 330  | 397  | 222  | 126  | 103  |      |
| 2                                    | 80   | 27   | .     | .   | .    | 84   | 267  | 410  | 221  | 125  | 102  |      |
| 3                                    | 49   | 24   | .     | .   | .    | 111  | 227  | 410  | 207  | 124  | 102  |      |
| 4                                    | 49   | 23   | .     | .   | .    | 181  | 214  | 392  | 200  | 122  | 101  |      |
| 5                                    | 48   | 24   | .     | .   | .    | 124  | 218  | 381  | 194  | 121  | 101  |      |
| 6                                    | 48   | 23   | .     | .   | .    | 113  | 224  | 365  | 189  | 120  | 101  |      |
| 7                                    | 47   | 22   | .     | .   | .    | 144  | 209  | 358  | 184  | 119  | 100  |      |
| 8                                    | 47   | 20   | .     | .   | .    | 209  | 191  | 367  | 183  | 118  | 100  |      |
| 9                                    | 46   | 19   | .     | .   | .    | 159  | 191  | 367  | 179  | 117  | 100  |      |
| 10                                   | 46   | 19   | .     | .   | .    | 144  | 179  | 3380 | 173  | 117  | 99   |      |
| 11                                   | 44   | 18   | .     | .   | .    | 132  | 166  | 338  | 169  | 116  | 99   |      |
| 12                                   | 44   | 14   | .     | .   | .    | 146  | 160  | 339  | 164  | 115  | 98   |      |
| 13                                   | 43   | 15   | .     | .   | .    | 184  | 158  | 349  | 189  | 114  | 97   |      |
| 14                                   | 42   | 10   | .     | .   | .    | 150  | 233  | 339  | 154  | 113  | 97   |      |
| 15                                   | 42   | 13   | .     | .   | .    | 151  | 335  | 328  | 152  | 112  | 98   |      |
| 16                                   | 40   | 12   | .     | .   | .    | 142  | 327  | 324  | 148  | 112  | 98   |      |
| 17                                   | 40   | 10   | .     | .   | .    | 139  | 345  | 380  | 147  | 111  | 94   |      |
| 18                                   | 39   | 9    | .     | .   | .    | 167  | 323  | 377  | 148  | 110  | 93   |      |
| 19                                   | 39   | 8    | .     | .   | .    | 193  | 310  | 334  | 143  | 110  | 92   |      |
| 20                                   | 38   | 1    | .     | .   | .    | 181  | 383  | 8318 | 142  | 109  | 90   |      |
| 21                                   | 37   | .    | .     | .   | .    | 207  | 325  | 289  | 140  | 109  | 89   |      |
| 22                                   | 37   | .    | .     | .   | .    | 304  | 305  | 287  | 138  | 108  | 88   |      |
| 23                                   | 36   | .    | .     | .   | .    | 241  | 307  | 278  | 138  | 107  | 87   |      |
| 24                                   | 35   | .    | .     | .   | .    | 198  | 303  | 290  | 134  | 107  | 87   |      |
| 25                                   | 34   | .    | .     | .   | .    | 198  | 306  | 267  | 135  | 106  | 84   |      |
| 26                                   | 33   | .    | .     | .   | .    | 192  | 323  | 246  | 134  | 105  | 85   |      |
| 27                                   | 32   | .    | .     | .   | .    | 169  | 340  | 240  | 132  | 105  | 84   |      |
| 28                                   | 32   | .    | .     | .   | .    | 162  | 417  | 227  | 130  | 104  | 83   |      |
| 29                                   | 30   | .    | .     | .   | .    | 174  | 399  | 219  | 132  | 104  | 82   |      |
| 30                                   | 30   | .    | .     | .   | .    | 273  | 387  | 214  | 130  | 103  | 82   |      |
| 31                                   | 29   | .    | .     | .   | .    | 306  | 360  |      | 129  |      | 80   |      |

hauteur mini = 4 sec      première observation le 21/02  
hauteur maxi = 417 cm      première observation le 28/08

LE SIGNE . PRECEDE LES HAUTEURS RECONSTITUEES .  
LE SIGNE . INDIQUE L'ABSENCE D'ÉCOULEMENT .

1ba

| BAKOYE A QUALIA EN 1988           |      |      |      |      |      |      |      |      |      |      |      | DNHE |      |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| DEBITS MOYENS JOURNALIERS en m3/s |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Surface = 84400 km2               |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                                   | JANV | FEVR | MARS | AVRI | MAI  | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |      |
| 1                                 | .000 | .000 | .000 | .000 | .000 | .000 | 25.0 | 344. | 908. | 280. | 32.3 | 5.91 |      |
| 2                                 | .000 | .000 | .000 | .000 | .000 | .000 | 18.4 | 270. | 974. | 284. | 30.6 | 5.91 |      |
| 3                                 | .000 | .000 | .000 | .000 | .000 | .000 | 20.3 | 202. | 884. | 278. | 28.2 | 5.40 |      |
| 4                                 | .000 | .000 | .000 | .000 | .000 | .000 | 17.7 | 173. | 908. | 186. | 26.6 | 5.30 |      |
| 5                                 | .000 | .000 | .000 | .000 | .000 | .000 | 34.9 | 134. | 739. | 204. | 23.0 | 5.00 |      |
| 6                                 | .000 | .000 | .000 | .000 | .000 | .000 | 20.3 | 175. | 734. | 193. | 23.5 | 5.00 |      |
| 7                                 | .000 | .000 | .000 | .000 | .000 | .000 | 38.0 | 182. | 771. | 178. | 21.3 | 4.71 |      |
| 8                                 | .000 | .000 | .000 | .000 | .000 | .000 | 110. | 138. | 872. | 167. | 20.8 | 4.43 |      |
| 9                                 | .000 | .000 | .000 | .000 | .000 | .000 | 92.6 | 148. | 874. | 154. | 19.1 | 4.43 |      |
| 10                                | .000 | .000 | .000 | .000 | .000 | .000 | 48.9 | 117. | 814. | 145. | 17.7 | 4.16 |      |
| 11                                | .000 | .000 | .000 | .000 | .000 | .000 | 43.0 | 83.6 | 783. | 131. | 17.0 | 3.90 |      |
| 12                                | .000 | .000 | .000 | .000 | .000 | .000 | 39.3 | 104. | 795. | 121. | 16.3 | 3.65 |      |
| 13                                | .000 | .000 | .000 | .000 | .000 | .000 | 86.2 | 93.8 | 766. | 110. | 15.7 | 3.40 |      |
| 14                                | .000 | .000 | .000 | .000 | .000 | .000 | 75.9 | 82.3 | 736. | 99.0 | 14.5 | 3.40 |      |
| 15                                | .000 | .000 | .000 | .000 | .000 | .000 | 67.0 | 60.7 | 337. | 681. | 91.3 | 14.0 | 3.17 |
| 16                                | .000 | .000 | .000 | .000 | .000 | .000 | 58.0 | 373. | 895. | 83.6 | 13.0 | 2.94 |      |
| 17                                | .000 | .000 | .000 | .000 | .000 | .000 | 50.8 | 50.7 | 593. | 78.3 | 12.6 | 2.94 |      |
| 18                                | .000 | .000 | .000 | .000 | .000 | .000 | 43.9 | 802. | 712. | 74.6 | 12.1 | 2.72 |      |
| 19                                | .000 | .000 | .000 | .000 | .000 | .000 | 183. | 458. | 773. | 69.5 | 11.7 | 2.81 |      |
| 20                                | .000 | .000 | .000 | .000 | .000 | .000 | 221. | 609. | 694. | 63.1 | 10.8 | 2.31 |      |
| 21                                | .000 | .000 | .000 | .000 | .000 | .000 | 344. | 545. | 574. | 34.9 | 9.93 | 2.31 |      |
| 22                                | .000 | .000 | .000 | .000 | .000 | .000 | 377. | 493. | 545. | 32.8 | 9.13 | 2.12 |      |
| 23                                | .000 | .000 | .000 | .000 | .000 | .000 | 332. | 425. | 525. | 30.8 | 8.73 | 2.12 |      |
| 24                                | .000 | .000 | .000 | .000 | .000 | .000 | 242. | 340. | 607. | 48.8 | 8.73 | 1.93 |      |
| 25                                | .000 | .000 | .000 | .000 | .000 | .000 | 186. | 491. | 825. | 45.9 | 8.33 | 1.76 |      |
| 26                                | .000 | .000 | .000 | .000 | .000 | .000 | 164. | 811. | 435. | 43.9 | 7.98 | 1.89 |      |
| 27                                | .000 | .000 | .000 | .000 | .000 | .000 | 200. | 113. | 898. | 377. | 42.1 | 7.61 | 1.89 |
| 28                                | .000 | .000 | .000 | .000 | .000 | .000 | 118. | 84.9 | 908. | 332. | 39.3 | 7.26 | 1.89 |
| 29                                | .000 | .000 | .000 | .000 | .000 | .000 | 82.3 | 836. | 298. | 37.8 | 6.91 | 1.89 |      |
| 30                                | .000 | .000 | .000 | .000 | .000 | .000 | 36.6 | 182. | 712. | 268. | 36.6 | 6.87 | 1.43 |
| 31                                | .000 | .000 | .000 | .000 | .000 | .000 |      | 302. | 795. | 34.9 |      | 1.43 |      |

Moy 1988: .000 .000 .000 .000 .000 .000 13.9 119. 346. 470. 112. 15.8 3.28 111.

Moy84-88: 12.7 6.38 2.44 .773 .338 17.8 120. 439. 875. 240. 62.2 23.7 122.

Mini obs: .000 .000 .000 .000 .000 .000 14.6 40.4 80.3 20.4 .988 .001 13.6

Maxi obs: 42.0 23.4 12.6 4.38 1.99 73.9 296. 1280 1370 893. 170. 72.4 261.

Débit mini = .000 m<sup>3</sup>/s      première observation le 01/01  
Débit maxi = 974. m<sup>3</sup>/s      première observation le 02/09  
Lame d'eau écoulée = 41 cm

| BAOULE A BIRAMAKANA EN 1988       |      |      |      |      |      |      |      |      |      |      |      | DNHE |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| DEBITS MOYENS JOURNALIERS en m3/s |      |      |      |      |      |      |      |      |      |      |      |      |
| Surface = non connue              |      |      |      |      |      |      |      |      |      |      |      |      |
|                                   | JANV | FEVR | MARS | AVRI | MAI  | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |
| 1                                 | .112 | .000 | .000 | .000 | .000 | .000 | .298 | 295. | 437. | 97.3 | 8.64 | .472 |
| 2                                 | .100 | .000 | .000 | .000 | .000 | .000 | .304 | 171. | 492. | 98.8 | 8.30 | .432 |
| 3                                 | .090 | .000 | .000 | .000 | .000 | .000 | 1.41 | 109. | 492. | 78.0 | 4.96 | .432 |
| 4                                 | .090 | .000 | .000 | .000 | .000 | .000 | 17.3 | 85.2 | 444. | 65.0 | 4.32 | .408 |
| 5                                 | .080 | .000 | .000 | .000 | .000 | .000 | 4.96 | 86.7 | 416. | 58.0 | 4.01 | .408 |
| 6                                 | .080 | .000 | .000 | .000 | .000 | .000 | 1.84 | 100. | 376. | 82.4 | 3.71 | .408 |
| 7                                 | .070 | .000 | .000 | .000 | .000 | .000 | 29.6 | 77.9 | 360. | 47.1 | 3.42 | .400 |
| 8                                 | .070 | .000 | .000 | .000 | .000 | .000 | 77.9 | 34.6 | 381. | 46.0 | 3.14 | .400 |
| 9                                 | .040 | .000 | .000 | .000 | .000 | .000 | 23.6 | 94.6 | 381. | 42.0 | 2.87 | .400 |
| 10                                | .040 | .000 | .000 | .000 | .000 | .000 | 13.3 | 42.0 | 341. | 36.1 | 2.87 | .394 |
| 11                                | .040 | .000 | .000 | .000 | .000 | .000 | 7.88 | 29.6 | 306. | 32.3 | 2.60 | .394 |
| 12                                | .040 | .000 | .000 | .000 | .000 | .000 | 14.3 | 24.4 | 315. | 27.9 | 2.35 | .388 |
| 13                                | .030 | .000 | .000 | .000 | .000 | .000 | 19.6 | 22.8 | 338. | 23.6 | 2.10 | .382 |
| 14                                | .020 | .040 | .000 | .000 | .000 | .000 | 14.8 | 114. | 315. | 19.6 | 1.86 | .382 |
| 15                                | .020 | .000 | .000 | .000 | .000 | .000 | 17.3 | 306. | 291. | 18.0 | 1.63 | .370 |
| 16                                | .000 | .000 | .000 | .000 | .000 | .000 | 12.3 | 289. | 282. | 15.4 | 1.63 | .370 |
| 17                                | .000 | .000 | .000 | .000 | .000 | .000 | 10.9 | 376. | 341. | 14.9 | 1.41 | .364 |
| 18                                | .000 | .000 | .000 | .000 | .000 | .000 | 30.3 | 280. | 406. | 13.8 | 1.20 | .358 |
| 19                                | .000 | .000 | .000 | .000 | .000 | .000 | 59.2 | 253. | 309. | 12.8 | 1.20 | .352 |
| 20                                | .000 | .000 | .000 | .000 | .000 | .000 | 44.0 | 348. | 263. | 12.0 | 1.09 | .340 |
| 21                                | .000 | .000 | .000 | .000 | .000 | .000 | 78.0 | 284. | 211. | 11.4 | 1.09 | .334 |
| 22                                | .000 | .000 | .000 | .000 | .000 | .000 | 240. | 242. | 207. | 10.4 | .912 | .328 |
| 23                                | .000 | .000 | .000 | .000 | .000 | .000 | 127. | 244. | 185. | 10.4 | .792 | .322 |
| 24                                | .000 | .000 | .000 | .000 | .000 | .000 | 62.4 | 238. | 215. | 9.83 | .792 | .322 |
| 25                                | .000 | .000 | .000 | .000 | .000 | .000 | 62.4 | 244. | 171. | 9.12 | .688 | .316 |
| 26                                | .000 | .000 | .000 | .000 | .000 | .000 | 85.8 | 280. | 135. | 8.70 | .600 | .310 |
| 27                                | .000 | .000 | .000 | .000 | .000 | .000 | 32.3 | 318. | 126. | 7.88 | .600 | .304 |
| 28                                | .000 | .000 | .000 | .000 | .000 | .000 | 28.1 | 311. | 105. | 7.10 | .528 | .298 |
| 29                                | .000 | .000 | .000 | .000 | .000 | .000 | 37.0 | 462. | 92.7 | 7.88 | .528 | .292 |
| 30                                | .000 | .000 | .000 | .000 | .000 | .000 | 182. | 431. | 85.2 | 7.10 | .472 | .292 |
| 31                                | .000 | .000 | .000 | .000 | .000 | .000 | 244. | 364. |      | 6.72 |      | .280 |

14-00000

BAKOYE A TOUKOTO EN 1986

DNHE

DEBITS MOYENS JOURNALIERS en m3/s

~~~~~  
Surface = non connue

|    | JANV | FEVR | MARS | AVRI | MAI  | JUIN | JUIL | AOUT | SEPT | OCTO | NOVE | DECE |
|----|------|------|------|------|------|------|------|------|------|------|------|------|
| 1  | .060 | .010 | .000 | .000 | .000 | .000 | 17.0 | 139. | 196. | 149. | 24.3 | 7.04 |
| 2  | .060 | .005 | .000 | .000 | .000 | .000 | 19.0 | 139. | 333. | 172. | 23.2 | 7.04 |
| 3  | .051 | .005 | .000 | .000 | .000 | .000 | 11.9 | 63.0 | 326. | 198. | 23.7 | 7.04 |
| 4  | .051 | .000 | .000 | .000 | .000 | .000 | 11.1 | 39.8 | 307. | 149. | 21.0 | 6.45 |
| 5  | .045 | .000 | .000 | .000 | .000 | .000 | 11.9 | 34.1 | 263. | 139. | 21.0 | 5.90 |
| 6  | .045 | .000 | .000 | .000 | .000 | .000 | 14.4 | 31.8 | 263. | 126. | 20.0 | 5.90 |
| 7  | .045 | .000 | .000 | .000 | .000 | .000 | 19.2 | 36.3 | 330. | 116. | 19.0 | 5.90 |
| 8  | .040 | .000 | .000 | .000 | .000 | .000 | 17.0 | 36.3 | 400. | 103. | 19.0 | 5.37 |
| 9  | .040 | .000 | .000 | .000 | .000 | .000 | 13.5 | 32.8 | 420. | 87.3 | 18.0 | 5.37 |
| 10 | .040 | .000 | .000 | .000 | .000 | .000 | 12.7 | 30.2 | 384. | 69.2 | 17.0 | 4.88 |
| 11 | .035 | .000 | .000 | .000 | .000 | .000 | 12.7 | 26.4 | 384. | 63.0 | 17.0 | 4.88 |
| 12 | .035 | .000 | .000 | .000 | .000 | .000 | 11.1 | 25.4 | 384. | 82.4 | 16.1 | 4.88 |
| 13 | .030 | .000 | .000 | .000 | .000 | .000 | 34.1 | 22.1 | 380. | 80.1 | 18.2 | 4.43 |
| 14 | .030 | .000 | .000 | .000 | .000 | .000 | 32.8 | 36.3 | 326. | 48.0 | 14.4 | 3.61 |
| 15 | .030 | .000 | .000 | .000 | .000 | .000 | 30.2 | 60.1 | 281. | 44.2 | 14.4 | 3.61 |
| 16 | .030 | .000 | .000 | .000 | .000 | .000 | 29.0 | 100. | 248. | 40.9 | 13.5 | 3.61 |
| 17 | .025 | .000 | .000 | .000 | .000 | .000 | 28.4 | 109. | 248. | 38.3 | 12.7 | 3.24 |
| 18 | .025 | .000 | .000 | .000 | .000 | .000 | 24.3 | 100. | 246. | 38.3 | 12.7 | 3.24 |
| 19 | .025 | .000 | .000 | .000 | .000 | .000 | 27.8 | 109. | 246. | 37.2 | 12.7 | 2.91 |
| 20 | .025 | .000 | .000 | .000 | .000 | .000 | 30.2 | 172. | 282. | 37.2 | 11.1 | 2.62 |
| 21 | .025 | .000 | .000 | .000 | .000 | .000 | 52.4 | 152. | 241. | 36.3 | 11.1 | 2.62 |
| 22 | .020 | .000 | .000 | .000 | .000 | .000 | 22.1 | 196. | 132. | 238. | 32.8 | 10.4 |
| 23 | .020 | .000 | .000 | .000 | .000 | .000 | 24.3 | 162. | 122. | 223. | 31.8 | 9.70 |
| 24 | .020 | .000 | .000 | .000 | .000 | .000 | 22.1 | 132. | 114. | 216. | 31.8 | 9.70 |
| 25 | .015 | .000 | .000 | .000 | .000 | .000 | 46.0 | 108. | 139. | 206. | 31.8 | 8.30 |
| 26 | .015 | .000 | .000 | .000 | .000 | .000 | 178. | 44.2 | 162. | 206. | 29.0 | 7.65 |
| 27 | .015 | .000 | .000 | .000 | .000 | .000 | 142. | 37.2 | 199. | 192. | 29.0 | 7.65 |
| 28 | .015 | .000 | .000 | .000 | .000 | .000 | 72.8 | 34.1 | 220. | 182. | 27.8 | 7.65 |
| 29 | .010 | .000 | .000 | .000 | .000 | .000 | 31.8 | 29.0 | 196. | 178. | 26.4 | 7.65 |
| 30 | .010 | .000 | .000 | .000 | .000 | .000 | 22.1 | 38.3 | 165. | 165. | 28.4 | 7.04 |
| 31 | .010 | .000 | .000 | .000 | .000 | .000 | 57.4 | 162. |      | 28.4 |      | 1.74 |

|           |      |      |      |      |      |      |      |      |      |      |      |      |      |
|-----------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| May 1986: | .030 | .001 | .000 | .000 | .000 | 18.7 | 41.6 | 100. | 277. | 64.4 | 14.4 | 3.88 | 43.8 |
|-----------|------|------|------|------|------|------|------|------|------|------|------|------|------|

|            |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| May 94-98: | 10.3 | 5.73 | 2.98 | 1.14 | .570 | 10.3 | 47.1 | 196. | 294. | 160. | 46.4 | 17.0 | 63.7 |
|------------|------|------|------|------|------|------|------|------|------|------|------|------|------|

|           |      |      |      |      |      |      |      |      |      |      |      |      |      |
|-----------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Mini obs: | .000 | .000 | .000 | .000 | .000 | .000 | 4.88 | 37.0 | 25.4 | 18.8 | 1.83 | 1.09 | 9.80 |
| Maxi obs: | 35.3 | 29.0 | 23.2 | 9.34 | 4.33 | 32.9 | 137. | 889. | 718. | 900. | 141. | 46.7 | 135. |

Débit mini = .000 m3/s

Débit maxi = 420. m3/s

première observation le 04/02

première observation le 09/09