

(1) Number of pages_____

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TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

DEPARTMENT

G.O. No.	P.W.D. 285	Press.
B.P. No.		Mis.
Dated	2.2.1881	197

Not to be folded or roughly handled

285

Buildings and Roads.

Civil Works.

In G.O., No. 114, dated 13th January 1877, instructions were issued for observations being taken at convenient places with a view to ascertain the state of the terranean water-supply on the upland plains between the hills and the sea; and District Engineers of the Chingleput, North Arcot, Nellore, Kistna, and Godavery tracts were called on to make a weekly record for submission to Government at the of each calendar month.

3. The results have been submitted and plotted in the Government Office selected wells on a set of diagrams which embrace the whole year 1877, from January to December. The observations should be maintained at those places which are specified below, but may be discontinued at all other localities.

4. The diagrams plotted include the following wells:—

In the North Arcot District.

Chingleput District.

Coimbatore District.

Godavery District.

Kistna District.

Guntoor	...	...	...	...	...	...	...	1
Chilakalumpett	...	...	...	...	...	...	...	1
Rapully	...	...	...	...	...	...	...	1
Masulipatam	...	...	...	...	...	...	...	1

4

Nellore District.

Nellore	...	...	...	...	...	...	...	1
Gudur Chuttrum	...	...	...	...	...	...	...	1
Gudur	...	...	...	...	...	...	...	1
Ongole	...	...	...	...	...	...	...	1

4

Salem District.

Vaniambady	...	...	...	...	...	...	...	1
Terupatur	...	...	...	...	...	...	...	1
Uttankara	...	...	...	...	...	...	...	1
Singarapett	...	...	...	...	...	...	...	1

4

On the Line of the Madras Railway.

Trivellore	...	...	...	...	...	...	...	1
Vellore	...	...	...	...	...	...	...	1
Tripatore	...	...	...	...	...	...	...	1
Salem	...	...	...	...	...	...	...	1
Somanore	...	...	...	...	...	...	...	1
Arconum	...	...	...	...	...	...	...	1
Cuddapah	...	...	...	...	...	...	...	1
Gooty	...	...	...	...	...	...	...	1
Adoni	...	...	...	...	...	...	...	1
Bellary	...	...	...	...	...	...	...	1

10

5. The Madras Railway Company and the President of the Madras Municipality will be requested to continue the observations which have hitherto been taken under their directions, and to submit the results monthly for record.

6. Of the four places in North Arcot two* are indicative of river flow, and not of the state of the sub-soil water; but of the two remaining places, Chittore shows a materially improved condition, water level being 21 feet on January 1st and 12 feet on December 31st; though Vellore shows no improvement, the Railway well indicating a diminished supply being 2 feet lower on December 31st than on January 1st.

7. The observations in Chingleput are unfortunately rendered of little value, having apparently been discontinued on 30th April, the reasons for which, the Governor in Council desires, may be promptly explained.

8. In Coimbatore the observations commenced on 1st May, and indicate a rise towards 31st December, except in the Jail well at Coimbatore itself, where the level appears to be $6\frac{1}{2}$ feet lower on 31st December than on 1st May, but as the whole of this occurred in the first week of August, there is probably some error in this return, or other explanation.

9. In the Godavery District the returns commence on 1st February. At Rajahmundry and Jaggampetta the water level has returned on December 31st to the identical level; at Thadakalapudi it is 3 feet higher; and at Gopalapuram 4 feet higher.

10. In Kistna all stand from 1 to 3 feet higher.

11. In Nellore the returns were discontinued on October 31st at three stations, and on September 30th at one. All at the end of the return indicate a considerable reduction of level, but the discontinuance has vitiated any comparison, and the reason must be explained.

12. In Salem the returns only date from 1st May. Three* indicate a rise varying from 2 to 5 feet; one at Hanoomathentum in Uttengiri Taluq shows no perceptible increase. Of the wells on the Railway, the returns of which, however, end on September 30th, but date back from 1st October 1876, Vellore, Tripatore, Adoni, Bellary, show a fall; Trivellore, Cuddapah remain the same, and Salem, Somanore, Arconum, Gooty have increased, Gooty in a remarkable manner probably due to some exceptional circumstances. The steady fall at Bellary is very noticeable.

13. The Governor in Council much regrets that the discontinuance of some of these returns has deprived them of much of their interest. A knowledge of the state of the sub-soil water, its increase or diminution as affecting supplies of drinking water, as well as cultivation are of much importance. Such knowledge is not to be obtained by fitful observations, but by steady and persistent record. The intended comparison with the rainfall returns is unfortunately rendered almost impossible unless indeed notes exist from which the records can be completed.

14. In tabulating the figures it will be more convenient in future if all the wells are measured in the same way. Some are now given from the bottom of well; some from the ground level, which for the purpose is the most convenient.

15. The observations should be continued for the same wells, and some should also be selected in Vizagapatam, Kurnool, Bellary, in the dry taluqs of Trichinopoly, Madura, Tinnevely, and in South Arcot.

16. The height* of the wells above mean sea level would also, when readily known, be of value.

(True Extract.)

(Signed) E. A. FOORD, Colonel, R.E.,
Secretary to Government, P.W.D.

To the District Engineer, Chingleput.
" " " North Arcot.
" " " Nellore.
" " " Kistna.
" " " Godavery.
" " " Coimbatore.
" " " Salem.
" " " Vizagapatam.
" " " Kurnool.
" " " Bellary.
" " " Trichinopoly.
" " " Madura.
" " " Tinnevely.
" " " South Arcot.
" " " Revenue Board.
" " " Consulting Engineer for Railways.
" " " President, Madras Municipal Commission.
" " " Famine Department.
" " " Financial "

Exd. T. D. Ryan.

Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of (1878) Madras.

PUBLIC WORKS.

To
THE DISTRICT ENGINEER,
CHINGLEPUT,
&c. &c. &c.

Dated April 4th.

Issued

Recd.

Encl.

G. O., 4th April 1878, No. 1,699 W.

APRIL

No. 55.

Subterranean water-supply.

285/3
GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

16th July 1878, No. 2,899 W.

General
Establishment.

Read the following paper:—

No. 163. From Colonel P. O'CONNELL, R.E., Superintending Engineer, Chingleput, to the Chief Engineer, Public Works Department, dated St. Thomas' Mount, 27th May 1878, No. 1,976.

In reference to paragraph 7 of G.O., No. 1,699 W, dated 4th April 1878, I have the honor to inform you that the register of subterranean water-supply was kept up in this district up to the end of May 1877, registers for which month were forwarded to you from this office on the 13th June 1877, numbered 874-I, 874-J, and 874-K. The observations were discontinued subsequent to that month on the orders of the then Superintending Engineer—*vide* letter from Range Officer, No. 586, dated 7th June 1877, and Superintending Engineer's reply thereto (copies enclosed).

From W. F. DONAGHUE, Esq., Sub-Engineer, No. 3 Range, to the Superintending Engineer, Chingleput, dated Rajah's Chatram, 7th June 1877, No. 586.

I HAVE the honor to forward herewith the subterranean drainage register for the month of May, and to inquire whether these registers are required to be kept up, now that there is so much water all over the district.

From Colonel F. J. MOBERLY, R.E., Superintending Engineer, Chingleput, to the Sub-Engineer, Chingleput Range, dated St. Thomas' Mount, 13th June 1877, No. 874-B.

In reference to your No. 586, dated 7th June 1877, I have the honor to inform you that the subterranean water registers referred to need no longer be kept up.

No. 164. ORDER THREEON, 16th July 1878, No. 2,899 W.

With the letter above recorded Colonel O'Connell submits copy of a letter from Colonel F. J. Moberly, No. 874-B, dated 13th June 1877, written as District Engineer of Chingleput, in which, without consulting Government or informing them, he directed the discontinuance of the reports of the subterranean water levels specially ordered by G.O., of the 13th June 1877, No. 114, to be made weekly and reported monthly.

2. Colonel Moberly has thus destroyed the continuous series of observations which the Government had ordered. He has failed to carry out a distinct and positive order and has thus merited the severe censure of the Government. The occurrence indicates Colonel Moberly's unfitness for the responsible duties of a Superintending Engineer which will be noted accordingly.

(True Extract.)

(Signed) E. A. FOORD, Colonel, R.E.,
Secretary to Govt., P.W.D.

To Colonel F. J. Moberly, R.E.

Exd. T. D. Ryan.
Spare Copies

★
GENERAL
ESTABLISHMENT

Cont. of 1875

PUBLIC WORKS.

Colonel F. J. Moberly, R.E.

1878

1878

1878

G.O. No. 100-104

JULY.

No. 100-104

Colonel F. J. Moberly, R.E. — Consensus
for the authorized disbursement of
the reports of the sub-surface water levels
of the Chingleput District.

2/25/78

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

6th August 1878, No. 3,163 W.

General.
Establishment.

Read the following paper:—

No. 90. From Colonel F. J. MOBERLY, R.E., to the Chief Engineer, Public Works Department, dated Bangalore, 29th July 1878. No. 88.

I HAVE the honor to observe that I have not here any document to refer to in replying to G.O., No. 2,899 W, dated 16th July 1878, but I have a distinct remembrance of having pointed out, probably in forwarding some of the returns, that, as there were no deep wells in the Chingleput District, the observations would be of *sub-surface*, not of *subterranean*, water-supply; in connection also with my report on this subject I brought to notice the extraordinary find of water on the high ground near Pannur.

2. I am under the impression that, in reply to these remarks, and with reference to the utter change in the state of surface and sub-surface supply consequent on the heavy fall of rain in the end of May 1877, I received a memorandum dispensing with the submission of these returns, as I have been generally very careful to apply for authority. I would respectfully observe that my belief is supported by the fact that no call for these returns has been made during twelve months in which they have not been supplied.

3. Under the idea that their resumption might be again ordered after the effect of the cyclone had passed off, I gave directions to the Range Officers to procure levels of the ground near selected wells convenient for observation, so that we might compare the water surfaces throughout the district; and to assist in doing this I obtained the levels of the two railway lines from BM, of which the Range Officers could reduce their levels to one standard.

4. Beside the railway BM, the Range Officers had the levels of the irrigation projects and river embankments; but the heavy labor thrown on the small establishment in estimating and measuring work for famine coolies probably prevented them from completing the details, which could have been however done in a few days if the examination of wells had been again required.

5. It would appear from the order under reply that this instruction for resumption of registers was issued on the 13th June 1877, G.O., No. 114, but I cannot recall to memory the receipt of this Government Order, and, if it were received, I cannot understand how the Range Officers did not act upon it as cancelling the instructions in my letter of the same date. The original order regarding observing water-supply was issued some months before June.

No. 91.

ORDER THEREON, 6th August 1878, No. 3,163 W.

ORDERED to be recorded.

(True Extract.)

(Signed) E. A. FOORD, Colonel, R.E.,
Secretary to Govt., P.W.D.

To Colonel F. J. Moberly.

GENERAL
ESTABLISHMENT

Subt. of (1878) *Public Works*

PUBLIC WORKS.

Colonel F. J. MORSLEY.

Dated August 6th

Issued

Recd.

Encl.

O. O., 6th August 1878, No. 1183 W.

AUGUST.

1878.

Colonel F. J. Morsley, R.E.—The original
copy of — is in the possession of
the Department and the attention of
the levels of the Chief Engineer District.

23/10

My dear General

The manner of
obtaining reliable infor-
mation indicated & pro-
posed is the best — but it
causes delay —

In the mean time
we suggest that a Special
order might be sent to all
Range officers to observe & report along

Has lines the person
supposed to be made & to submit.

And practical infor-
-mation as to how can be
afforded by the

13/11 J. J. Robinson

5/20 December 21
1876

Dear General Walker

It seems important
to know the state of future
water supply - especially
in these seasons of scarcity -
is there or is there not - a
subsoil water flow from
the hills towards the sea?
- at what depth -?
If the subsoil level were
ascertained & noted, would it
be selected spots, where

deep wells exist & competent
officers are at hand. That
process would be simple &
the cost nominal - if the
measures are taken from
a defined mark on surface
or on building of well -
the measures could be
readily adjusted with care
at any given date -

Where no wells exist it
would not cost much to
sink - wells so sunk need

not be very large - if water
attained value would be
great - if water not reached
it would not be great -
the present season gives an
opportunity that may not
occur again for many years
if doing this - and the
operation would employ a few
hands - the plans should
be made as the
upper water of Portleirion pond
distance near $2\frac{8}{9}$
and on similar dry

On relief there may be
keys - and in discussing
matters with this sort of
to assume -

I think it would be
very desirable to have some
wells sunk (either existing
or new ones) in the districts
such as that between Luomun
Pany - near the fortification
upper waters - in the Permai
upper district - & in similar

places to ascertain whether
there is or is not. Subterranean
water. which can be obtained
in any quantity for man &
stock - or even in scarcity for
irrigation - It seems to be
a most fertile & one which
in such a season ^{as this} could be largely
proved -

At Madras it would seem
that there is a large supply
of fresh water at some depth
which is rapidly circulating

3-94
through the sand from the
slopes of the hills — if this
so it could be tapped in
the country say West of the
Madras rail — it would be
of much value — The
sinking of such wells would
not be costly — would supply
a certain number of houses
& might be of much value —
it would also seem very
desirable that a careful
search should be kept of the
underground water level in
the vicinity of the railway stations

I have doubts that any
existing wells which would
make it to be done — I
think a ~~complete~~ ^{complete} knowledge
of the subterranean water supply
of much importance for future
guidance in respect to the
of the risks of these dry seasons
which seem to be of increasing
frequency — and I think
it would be well if General
Walker was to give such
directions as may be
necessary to have it done
1875

3-94

Carefully noted & recorded
at a sufficient number
of places

James J. Tully
Washington (Mass.)

285
1/3

My friend
L. W. [unclear]
[unclear]

pages 1 & 2 are the
original [unclear]

23/2

It is desired by the [unclear]
the [unclear] that observa-
tions should be made &
recorded of the depth at
which water is found
at various localities con-
venient for the purpose
between the sea board
and the upland water.
Sheds, in the Districts of
Chingleput, North Arcot,
Mellore, Kistna, Godavari,
South Arcot, & Tanjore.

The District Engineers
concerned will accordingly
select the localities
at which deep wells
are available for the purpose

or may be constructed.
 List, and competent
 observers are assigned;
 and will arrange for
 weekly observations be-
 ing recorded; which
 shall be referred here-
 after to one common
 station for each line of
 observation - L.M.

The subject is one to
 be investigated by the
 light of what is already
 known as to the geology
 of those Districts - And
 the AD Supt of the Geo-
 logical Survey has been
 visiting the Madras
 Presidency will be re-
 quested to indicate the

lines along which obser-
 vations should be taken
 by the Sub. Lts Officers
 most conveniently situ-
 ated for the purpose -
 Wells in actual use could
 not be utilized for the pur-
 pose in view, as their
 levels are ~~are~~ affected
 by their more or less use.
 It will in most cases
 therefore be necessary
 that new wells of small
 diameter shall be sunk
 for the special purpose -
 Their construction will
 be undertaken by the
 District Superintendents
 carried at such places
 V.B.

3-94

Public Works Department.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Under date the

Read the following:-

N^o 7
18

It is decided
by His Grace the
Governor that obser-
vations should be
made and recorded
of the depth at which
water is found at
various localities con-
venient for the purpose
between the sea board
and the upland water-
sheds, in the Districts
of Chingleput, North
Arcot, Bellary, Madras
City, and South Arcot.

The lines indicated
by the Geological Dept.
as being the most con-
venient for regular
observations, to be made
and recorded weekly,
and referred to as
common datum for
each line of observation.

G.M.

and Tanjore.

The subject is now
to be investigated by
the light of what is
already known as
to the Geology of those
Districts. And the
Deputy Superintendent
of the Geological Sur-
vey now working
in the Madras Presi-
dency will be requested
to indicate the lines
along which observa-
tions should be taken
by the Public Works Officers.
Wells in actual use
could not be utilized
for the purpose in view,
as their levels are
ascertained by the

285/7

It will in most
cases therefore be
necessary that new
wells of small dia-
meter shall be sunk
for the special pur-
pose. Their construction
will be undertaken
by the District Engineer
Command. At such
places on the lines
indicated by the
Geological Department
as may be most
convenient for regular
observations, the ma-
terials shall be
and recorded weekly
and referred to

one

Our communications
for each line of obser-
vation.

Ann

Sub Committee
Notes & Copy

Memo.

25/10

I have experienced
great difficulty in dis-
satisfactorily disposing
of the letters of Mrs Grace
the Governor to Sir W.
Robinson and myself,
in the subject of Sub-
sist water -

My first proposal
is shown in the first
2 paras. of rough draft
herewith forwarded.
It was considered by
members of Council to
submit to Mrs Grace's
wishes better than the
unrevised draft which

T.M.P.

I substituted for it.
And as I assured them
that no definite result
of any value would
ensue from such
instructions to District
Superintendents, I was al-
lowed to place my-
self in communication
with Mr. King
on the subject - This
however I have not
succeeded in doing
owing to his absence
from Madrid, with a
vague address at
Hegwada, from which
place comes no answer
to my letters - Not to lose

time a modified order
was finally issued, of
which copy is inclosed -
The localities specified
in Mr. Jones's letters have
rather justified me;
especially that between
Arconum and Poncey,
which is well known
to be an alluvial val-
ley. The old course
of the River Palas now
debranching south of
Jadus - In it occurs
the Chimamapelt de-
posit of boulders wh.
is being used for the

285
19

J.M.P.

for abstraction is to facility in
sinking them - no time will be
lost in selecting the best lines
of observation, and commencing
a weekly record, report of
which will be communicated
to Government at the end of
each calendar month.

of subterranean water as could
be obtained for cultivation
or otherwise beneath the
apparently dry plains &
old river channels.

Such prominent
exists in the hills in
England - or

between the North & South
range & the coast of
Africa - where the fossils
water may be commonly
found under the sand
not far from the sea.

existing wells of abundance
be taken at same
time of day - will give
the average water level
nearly sufficiently accurate
whether it may be expensive

230
I supplement them
after a few weeks return
I mentioned the position
river became the
subject of much so by
and the position
coming of the Plateau
up to place the
heights of the Indian
water level it would
be found to the sea -
known it is now I
am most anxious to
get the information as
extensive as possible.

24
Bel

P. H. Dept

No 152 of 23 Jan 77

Circular Memorandum

The District Engineers
Concerned are desired to take
prompt action on G.O. No 114
of 13th January; the object
which is the ascertainment
of sub soil water level at
this period of the dry season
and in each successive
month up to next rains
over the general area of the
Districts selected.

2. Existing wells, if observations be taken at the same hour of day, will give the average water level readily and sufficiently precise. But they may have to be

supplemented by new wells
in particular localities, as
the observations should be
made as extensively as
possible.

L.M.M.
23.1.

CR No 152 of 23 Jan 77

B.L. Chingleput
Kath Arcat
Kellor
Kistna
Kodavay
23/1/77

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Under date the

Read the following:—

From

The Supt. Engineer
Chingleput

(No. 152 of 23 Jan 1877)

The Superintendent
Engineer has mistaken the
intention of Government.
What is wanted is infor-
-mation as to the depths
below the ground surface
at which water is to be
found in each area
throughout the year. No
wells which always have
water in them are deep
enough for this purpose.

The Chief Engineer Co-

-mmander Mem. No 152 of

23rd ultimo will have

L. S. Chingleput
in charge

Supplemented the pro-
-positions contained
in G.O. No. 114 of the 13th
January 1877, it is hoped,
sufficiently.

W. 2/2

His Hon. the Governor

1032

Received as amended

W. 6/2

S. L. Chingleput - ref.

8/10/77
Circ - 2-2-77

No. 3691

CHINGLEPUT SUPERINTENDING ENGINEER'S OFFICE,
Camp Street Road, Chingleput,
SAINT THOMAS' MOUNT, 26 January 1877.

FROM

THE SUPERINTENDING ENGINEER,

Chingleput.

TO

The Secretary of Government
Department Public Works.

SIR,

In reply to G.O. No. 114 of 13th instant
I have the honor to report that I
delayed writing till I could
learn of any Range officers whether
any of them knew of a deep well
in the district, as I was under
the impression that there was not
one. My opinion has been con-
firmed.

2. There is a large amount of
water passing through the distt.
about 10 feet from the ground surface,
but this is not I presume what
is intended by "subterranean
supply". & carry out the wishes of
the Government we need to dig
wells from which this surface
water

3. Even in solid basalt I have come upon water a few feet below the surface from which as from many other water holes in the district crops of ragy, cholam, inferior rice and garden produce are even now being raised.

4. If wells are sunk I would suggest Peramburam, Trinellore, Tanjipour and a short distance south of Ponery between the two rivers as being good sites for gauging.

5. But if I am right in my idea as to the intention of Government these wells must be 60 or 70 feet deep and I have no means of sinking such. I believe an Artesian well was tried in Madras some years ago; it might be worth while to examine the record as to its performance.

6. Except in the alluvial valley as above mentioned the Chingleput District is represented in the geological map as all lying on rock.

Yours most obedient servant
J. H. B. Colwell
Superintendent Chingleput

GO No 114 - 2 - 13 - 177

P.W.D.
1 FEB 77
No 1032

Hydro's information
regarding depth
wells in the Chingleput
District.

Dated 26th
Received January 1877
No 3691

From
The District Engineer
Chingleput Dist.
To
The Secretary to Govt
Chingleput Dist.
26/1/77

No 20

Public Works Department

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Under date the

1 Feb 77

Read the following:—

From

The Supg. Engr. Chingleput (H.C. No 3691 dated 26th Jan 77)

The Supg. Engr. Chingleput should
no time in recording
actual water level
many places as he
and arranging to con-
such record
If there is a large
quantity of water pay
the district at 80 f
deep it is not appar-
why it should not
utilized for cultiva-
at once.

by 6/2

Supg. Engr. Chingleput.
Chingleput Dist.
Recd 8-2-77

11/13

Gen 2-7

29

30.3.94

1032

GOVT. OF MADRAS

PUBLIC WORKS

To Mr. J. H. M. Shaw-Stewart, R.E.,
Consulting Engineer for Railways,

Dated
Issued
Recd.

G. O. 52 Feb 1877, No. 420

Nov. 20. 1876

Wells, Chingleput Dist.

Passing orders in letters
from the Supt. Engr.
Chingleput regarding
the

Subterranean water supply

Chingleput Dist - passing
orders in letters from the
Supt. Engr. affording certain
information in connection
with the

Chingleput

RAILWAY DEPARTMENT.

CONSULTING ENGINEER'S OFFICE,

Madras, 6th December 1876.

No. 1879

FROM

LIEUT.-COLONEL J. H. M. SHAW-STEWART, R.E.,

To

Consulting Engineer for Railways,

The Chief Engineer

SIR,

Public Works Department

Enclosures.

In reply to your letter
No. 5391, dated 4th instant, I
have the honour to forward the
register showing the depth of
water in wells used for loco-
motive purposes of the Madras
Railway.

I shall feel obliged
by your returning the Register
when no longer required.

I have the honor to be, Sir,
Your most obedt. Servt.

V. Muntzmont
Colonel R.E.

Comd. Engr. for Ryrs.

13696

FORT SAINT GEORGE,
187

No. 424 of 27th January 1879

MEMORANDUM.

The undersigned has the honor to forward the following documents to the Consulting Engineer, for Railways, with reference to his letter, No. 1879, dated 6th Decr. 1879.

Register showing the depth of water in wells used for locomotive purposes of the Madras Railway.

(By Order.)

1879. Colonel,
Dy. Chief Engineer, D. P. W.

To The Commr. Engrs. for Ryds.
with one Register

Received by
Mr. S. P. D. Engrs.
D. P. W. Engrs.
D. P. W. Engrs.
D. P. W. Engrs.

Received by
Mr. S. P. D. Engrs.
D. P. W. Engrs.
D. P. W. Engrs.
D. P. W. Engrs.

RAILWAY DEPARTMENT.

No.

1007

Consulting Engineer's Office,
Madras, 23 August 1879.

MEMORANDUM.

30

Enclosure.

From

The Dy. Chief Engineer,

D. P. W.,

To

The

Engineer,

Dated

Despd.

Recd.

187

No.

ENCLOSURE.

Forwards documents noted within.

Adverting to your Memorandum No. 2794 dated 20th August 1879, the undersigned has the honor to return the statements therewith forwarded, and to request that they may be retained, as they are not required here.

Warrant

Colonel R.E.

Ins. Supr. for Rys

To

The Chief Engineer

for Irrigation

Revenue & Buildings

Madras

1

L.B. 2794-11-8-79

P.W.D.

25/3/79

25/3/79

Enclosures given to
Technical Deptt

Lodged G
26/3

und

25.8

RAILWAY DEPARTMENT.

CONSULTING ENGINEER'S OFFICE,

Madras, 25 March 1879.

No. 400

FROM

MAJOR C. J. SMITH, R.E.,

TO

Officiating Consulting Engineer for Railways,

The Chief Engineer

Public Works Department

Fort Saint George

SIR,

Enclosures.

With reference to your Memorandum No. 958 dated 17 March 1879, I have the honour to forward the original statements showing the depth of water in wells used for Locomotive purposes of the Madras and South Indian Railways, the former commencing from the third week in November and the latter from first week in February last.

The reports have been addressed upon the suggestions contained in your memorandum under acknowledgment.

I shall feel obliged by your returning the statements when no longer required

required.

I have the honor to be,
Sir,
Your most obedient servant
W. Smith Esq. Mgr. R.E.
Asst. Engr. for Railways

Cons. Engr's No. 11.

RAILWAY DEPARTMENT.

CONSULTING ENGINEER'S OFFICE,

Madras, 26th June

1879.

No. 799.

FROM

COLONEL J. H. M. SHAW-STEWART, R.E.,

TO

Consulting Engineer for Railways,

The Chief Engineer,

Public Works Department

SIR,

Enclosures.

In continuation of my letter No. 2125 dated 25th March 1879, I have the honor to forward enclosed statements showing the depth of water in wells used for Locomotive purposes on the Madras and South Indian Railways, the former from the last week, and the latter from the third week, in March 1879.

I shall feel obliged by your returning the statements when no longer required.

I have the honor to be, Sir,

Your most obedt. Servant

W. Smith

for Colonel R.E.
Asst. Engr. for Railways

ENCLOSURE.

No. 400.

Dated 25th March 1879

Received

To
The Chief Engineer
for Railways.

Presented
to Consulting Engineer
for Railways.

RAILWAY DEPARTMENT.

1879

Forwarded to
Mr. Smith Esq. Mgr. R.E.
Asst. Engr. for Railways
on 26th June 1879

~~Sp.~~ 2794

Herb Lamb George
 20 August 1899

Memorandum 33

Referring to letters dated
25th March and 26th June 1877, from the
Consulting Engineer for Railways, the
undersigned has the honor to return the
original statements therewith forwarded.

1 By Order

signed J.P.

ag: by: Oe

The Consulting Engineer for Railways.
with statements

Respectfully,
Sincerely,
[Signature]

Date *26*
 Received *June*

N. 79
ENCLOSURE.

1879.
The Consulting Engineer
To the
Hon. Secy. of the Navy.

4
 Thomas Clark
 showing the right
 of his wife
 to the property
 that he had
 purchased with
 his wife's money
 and the right
 of his wife to
 the property

No 4057.

Supg. Engr's Office

Bellary 2nd March 1881

From

The Superintending Engineer

To

The Chief Engineer

Enr.

P. W. D.

Madras.

I have the honour to request you will be so good as to inform me how far the thorough registering water in wells is to be kept up by returns from the Vellore Division.

2. There are wells numbered 21, 22, & 23 in the former Vellore Division, and there is one well in the former Ongole Division numbered 24 at Ongole. By the instructions given in your Memo No. 2685 of the 4th Aug. 1879. The register is kept at 4 other wells at Vellore and Guntur, and 3 more wells at Ongole.

with Technical Dept.

3. In the Guntur Division the register has been kept at 1 well at Guntur, and two wells at Chilahaturpett. The Ongole and Guntur Divisions are ordered to be abandoned by the P.W. Department, and it appears necessary that other arrangements should be made for these records of subterranean water level.

4. The question is asked regarding the numbered wells at Vellore and Guntur, as

the Argentine Officer states that being
now without the help of the Local Fund
Establishment, maintain engaged on in-
igation works have to be sent to take the
measurements. It has also occurred to me
that from certain walls being distinguished
by numbers, it may not be considered necessary
to keep on the register at the others.

I have you

Newbender post. L. O. L. R.
Super. Engineer 20/10/10

22760

From
The Lapaz Region
Tuxtepec.

L.
The Chief Justice
P. M. R.
Madras.

Date 2. June 1880
Res:

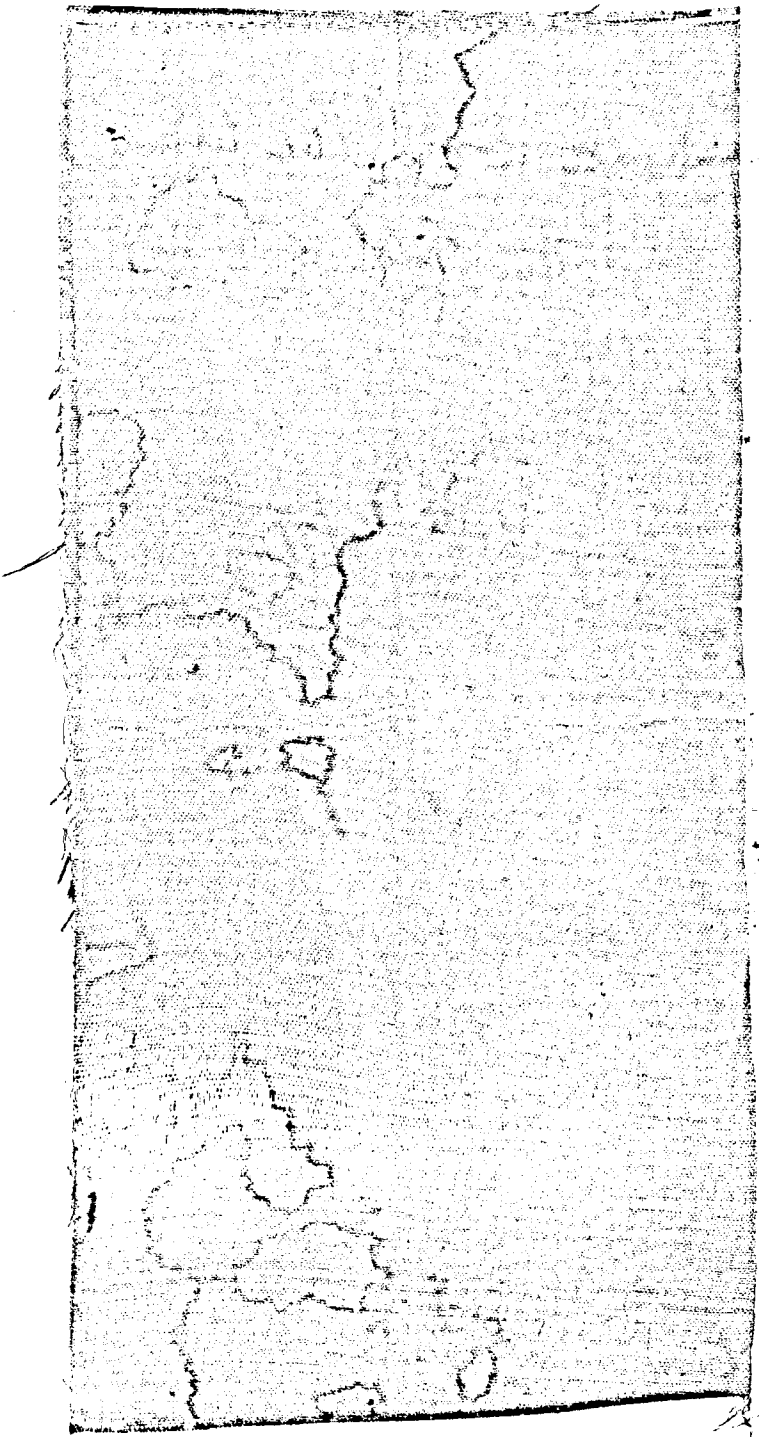
12584

Register of water in
wells.

Requesting to be informed
how far the monthly — is
to be kept up by returns
from the Yellow Book

Sir
 I have since
 found in
 2131-16-6-78-
 I have likewise
 written to Madam
 this morning
 11/11

Just a memo detailing the
 way in which observations
 about water had been
 taken. I think it was done
 by Sam Jones & myself.
 W. L. & H. L. did not approve
 & noted the instructions.
 When in my memo. The work
 was ordered in the Genl. Branch
 & my memo is probably there but



Subterranean Water Supply.
 Number of sites where observations are being made
 in each district and the number of sites indicated by the
 Public Works Department, taken on diagrams.

No.	Districts.	No. of sites indicated by P.W.D.	No. of sites collected by P.W.D.
1	North Arcot District	✓ 11	4
	Chengalpattu do	✓ 127	5
	Ceylanbat do	✓ 30	5
	Godavari do	✓ 8	4
	Krishna do	✓ 26	4
	Salew do	✓ 167	4
	Madras Railway South Arcot line	✓ 10	4
	do North Arcot line	✓ 33	5
		30	5

Chief Engineer

38

3-9/4

S. W. 39

Please see to
this request of this
June

I have a small
portion of the file
here, but some
time since I sent
you the diagrams
Dr. with a request
in return information

Should you have
any thing to add to
your previous obser-
-vations please submit
them in an office
note

Att

30/9/79

95-3-9/4

Govt. House
Cotacumund
30 Sept 1879.

Dear Colonel Sankey

His Grace desires
me to write and ask you
for the Subsoil water reports
up to midsummer, or later,
if complete.

Yours sincerely
Philip Hanks
Private Secretary.

40

25-3-9/4

P.P. 114-13-1-77
" 120-6-2-77
" 16998-11-1-78
" 28998-16-1-78
" 31637-6-8-78
" 4728-19-2-79
P.P. 2115-4-8-79
" 2752-15-8-79
" 2826-7-8-79

P. W. & C. No. 177
MADRAS MUNICIPALITY,
PUBLIC WORKS & CONSERVANCY DEPARTMENTS.

Madras, 23rd August 1879.
26/79

From N^o 177
THE VICE PRESIDENT.
Municipal Commissioner.
Madras.

To
The Acting Municipal Secretary
to Government, P.W.D.

Your letter No. 2 dated 7th inst.
has the honor to
return the maps as requested
in the above reference.

Yours faithfully
J. P. S.
Municipal Commissioner
P.W.D.

To Bets 11-10 Air 7-10-79.

25/8

For Grace to [unclear]
23 For information

In compliance with the request contained in a note from the Private Secretary to His Grace the Governor dated 30th ultimo I had to submit herewith files and diagrams with Office notes connected with the investigation which was taken place in regard to Subsoil Water Levels. Neither the maps nor the sections through the littoral tract in which the observations have been made are as yet ready and it is my doubtful when they will be. In this absence no conclusion of a reliable character can be drawn; and even with them I should fear that the practical results

4th Oct/99

with not in any
way commensurate
with the trouble that
has been devoted to
the investigation

7/10/79 *Colt*

The trouble is not
it should not be great

The Railway Co. look
for the iron pipe
success - and
keep them to give
the two a way
and the number of
wells I indicated was
not great -
Sections may have
the increased value -

There is the amount
between rainfall
and subsoil supply
Does the rainfall
in a place affect
its wells or are
they supplied by
rainfall elsewhere?

What is normal
subsoil level at
end of the stream?

it is only continuous
observation that will
tell this - I am
sorry to see that
charges have been
made in the wells

KEEP-WITH.

Current No. 661-662

Letter No. _____

Dated the 5

from the _____

Is
h

1/10

Herewith diagrams
prepared by the
Technical Dept. and
other papers in the
Office on the subject.

The diagrams are up
to date so far as in-
formation has been
received in the Office.
In reply to our call
to have the wells sum-
-bered and their
positions indicated
on maps, only two

Originally selected
for the same reason
can - Thus
destroying a great
extent the comparison

e.g. Goddard-Johnson

Kisha-Gudur Lalak

Salem - several -

By ^{20/11}
24

maps have been
received one from
the Madras Municipality
and the other from
the Consulting Engineer
for Railways.

S
by Mr.
4.10

18
10

note

28

It is requested that
the diagrams showing
water levels in wells
submitted to His Grace
on the 15th October 1879.
may be returned to this
Office with a view to
the information therein
given being brought up
to date.

Recd R.
Secy to Govt M. Dept
S

11

Revised

Sept -

1873

The copies of the
after which
will consider
the same to be
them - 8

10/11/73
13/12

D. W.

Remind the
diagrams which
should be brought
up to date

It will now have
to be considered
the objects of the
currenty proposed
by this piece in view
of 20/11/73 can be met

Att

23/11/73

46A
Shall the diagrams
with a note of
the provisions be
sent to you that
you may take the
file to you.
Have same day?
May have the matter
had better be
sent till you have
returned from town.

M. 12/12

Ans

I fear but the
must stand over
till after my return

22/11/73
Att

Resubmitted.

Att

13/

6/2

made even after proper

A.U.

Send me the
drawings (with
to my house)
transmitted here
R.H.

6/2/85

W
- beneath.

W2
A.H.

General

Mr. J. M. Randall Esquire
Hydraulic Engineer 5th Local
To, Colonel R. H. Langley C. B. R. E.
Chief Engineer, R. M. S.
Madras

Sir,

I have the honor to bring to your
notice that up to this time the observations
regarding the level of water in certain wells,
of which monthly reports are submitted
to your office, have been taken by Road
Maistris working under this Department.
Now that the charge of Roads is about to be
transferred to the Local Board we
have no agency by which these measure-
ments in various scattered situations
can be made.

2. I would suggest that one of the Village
officers say the Thasur be employed to
make the necessary measurements, and
be given a form to fill up once a week, and
that I be authorized to pay 1 Rupee for
each form correctly filled up.

3. This is the only arrangement which
occurs to me, but I should mention, that
I doubt whether the measurements are
always correctly made even after proper

instructions have been given as untrained
men never recognise the importance of
being accurate.

At present 25 wells in this circle
are being gauged, 7 of these are Salub,
stations where the observations can still
be continued by the Overseer, and if the
observations are to be continued on the
plan proposed, I request you will be
good enough to sanction Rs 18 per month
remunerating the parties employed
to make the measurements.

I have the honor to be
Sir
Your Most obedt Servt

J. W. Purnell
Asst. Surg. Engineer
B. C. S.

P.W.D.

130079

General

Je n'ou.

The Supr Engineer
50 miles

Do.

The Chief Supt
P. W. D.

1.2 2139 T.T

Dated 29th Dec 179.

Water levels in
certain wells.

Offers suggestions
in regard to the obser-
vations of - to be
made in future -

J.H.

GOVT.
OF MADRAS.

187

P. W.
DEPT.

SECRETARY.

Fort St. George,

12th Dec

1879.

OFFICE NOTE

To, W

For order -

I think a preferable
plan would be to
fine up the 10 wells
in position and confine
the observations to the
even where they can
be accurately made -
Successive multiplication
of stream stations seems
highly necessary, and
inaccurate observations

are worse than none -

It will probably be
desirable to let H. S.
see these papers -

L. J.

When the collection
of this information
was commenced in 1877

I only contemplated
a few wells - at
places where fire water
was obtainable - and
as far as might be
done in 3 divisions -

- 1. Near coast
- 1. Midway between
coast & plateau
- 1. At a near foot of
plateau

I discussed the points
with Gen. Waller

it was deemed to
get a few on the
higher ground also
but now we

Nov 16-12

His friend to forward

For order

With reference to the
annexed office note
and correspondence
on the subject of con-
tinuing the gauging of
the height of water in
the wells of the 5th Circle
under the altered cir-
-cumstances of the Depart-
-ment I would solicit
his grace's instructions

I should much doubt
the advisability of
continuing any other
observations than those
which can be made
and recorded by a
dubiously reliable agency

Alt

13-12-79

More than I needed -
one point must be borne
in mind - to keep on
wells which have been
around the target - if

They are approximately
plotted on the
sketch map -
I would wish to
indicate
that I think it is
essential

29/1/90

In wells at the - - -

- - - - - District
(in division)

X Walajabad
Simunagan
Madan Nagar
Chingleput - 4 to
Chingleput District

M.D.

51

Memorandum

With reference
to G.O. No. 472 of
19th February 1879, the
Chief Engineer observes
that ^{new returns showing} ~~registers of~~ sub-
terranean water levels
have ~~not~~ been received
since ^{the} issue of the order
~~although~~ ^{notwithstanding} that
reminders have been
sent for them. He
accordingly requests
that an explanation of
the omission may be
at once furnished, and
that the ^{desired information} ~~registers~~ may
for the future be
punctually

punctually submitted.

2

List of Selected Wells.

No. District.

1. Vizagapatnam Well in Gellamanchili
2. do in Vizagapatnam
3. do in Vizianagaram
4. do in Buntipatnam
5. do in Parvatipore
6. do in Bobbili
7. do in Rajahmundry
8. do in Machilipatnam
9. do in Rajahmundry
10. Turner (do near Collector's Cutchery in Anantapur
Nam Singh's Bungalow at Boddana
Rajpet. Ravella Koli
11. do near Entrance to Village of Puttandi
12. do near Taluk Officer's Office at Suv
di Kotnur
13. do in Town of Singareddy - Kundial
14. do in do - Markapur - Cumbum
15. do in do - do - do
16. do in Visakhapatnam
17. do in Mannargudi
18. do in Chilambarau
19. Chingleput do in Wallajabad
20. do in Tirumangalam No. 1
21. do in do No. 2
22. do in Madrautacum
23. do in Chingleput
24. Coimbatore do in No. 5 yard of Central Jail
25. do in Vardamajole Naidu's Cutchery
at Pulladum
26. do in Carnar Range Office Compound
27. do in Market at Coimbatore
28. do in Taluk Cutchery Compound
at Pollachy
29. Salur do in Compound of Cutchery at Vaniambur
30. do in Gosh Dope at Serupatur
31. do in do at Attenuharai
32. do in the Phul Bagh at Singarepatt

12

E. S. S.

44 Madras — do — in Envide 13 miles North of — do —
 45 — do — in Arunachapur Chuttees — do —
 46 — do — in Pulhanotte — do — Pulney — do —
 47 — do — in Dispersary — do —
 48 — do — in Dubba Aichheis — do —
 49 Diemerelly — do — in Lauharanaimar — do —
 50 — do — in Crisilliputtur — do —
 51 — do — in Salur — do —
 52 — do — in Ootlaipidarain — do —
 53 — do — in Duticeni — do —
 54 — do — in Angineri — do —
 55 Trichinopoly — do — in Traveller Bungalows at Ellur — do —
 56 — do — in Nannathai Civil at Perambalur — do —
 57 — do — in Kilapalur — do —
 58 — do — in Seyambindasolapuram — do —
 59 Madras & Muni. — do — Near Railway Bridge — do —
 60 Capital — do — in Ramapur Street — do —
 61 — do — in Marayana Crang — do —
 62 — do — in Statham's road — do —
 63 — do — in Marshall's — do —
 64 — do — in Coomassallur — do —
 65 — do — in Triplicane High Road — do —
 66 — do — in St. Thomas' Bazaar — do —
 67 Madras Railway — do — in Tiruvallur Station — do —
 68 C. W. line — do — in Vellur Eugene shed — do —
 69 — do — do — in Tirupalur Station — do —
 70 — do — do — in Salur — do —
 71 — do — do — in Somasore — do —
 72 — do — do — in Arhinam Minnawing bath — do —
 73 A. W. line — do — in Cuddalore Eugene shed — do —
 74 — do — do — in Gooly Station — do —
 75 — do — do — in Adoni — do —
 76 — do — do — in Bellary — do —
 77 South Indian — do — in St. Thomas' Minich Station — do —
 78 Railway — do — in Panoli — do —
 79 — do — do — in Ootlo hero — do —
 80 — do — do — in Mayali — do —
 81 — do — do — in Chibacorum — do —
 82 — do — do — in Palar — do —
 83 — do — do — in Sholavandau — do —
 84 — do — do — in Tirumangalam — do —
 85 — do — do — in Soujar — do —

88 — do — in Mysapalam Coal shed — do —
 89 — do — in Trichinopoly Fort — do —
 — do — in Conjivaram Station — do —

53.

Chief Engineer
 Madras.
 11th July 1879.

Cal. San Diego
H. M. Corcoran
Special Agent
Members of the
to the Board
the 12th of 1894

I have now been able
to see that these returns
of soil water
level are likely to
be of practical use.
The fact of insuff. water
supply is generally
painfully prominent
in inspection of these
observations. When
it occurs, it seems
sure that the lakes
are the last sources
likely to be materially
affected, so that they
furnish no warning.
I do. discontinue the
Returns, but have
a standing order that
in seasons of scarcity
to be 27, 1911, I will fall the

H. W. Hutchinson
 GOVT. } 188 . { P. W.
 OF MADRAS. } DEPT.
 59 SECRETARY.
 Chepauk, 12th Jan. 1881.
 OFFICE NOTE. 285 W
 To For orders
~~W~~
 This question of the
 maintenance of diagrams
 of subsoil water requires
 consideration -
 The observation and
 record of levels was only
 in 1877 and has been
 continued ever since,
 the levels being plotted
 in the form of diagrams
 in the Chief Engineer's
 office -
 The record of observation
 causes a great deal of
 work to the present

entailments, and the
labor of compilation in
this office is considerable;
it is open to question whether
the results are worth the
labor of collecting the
information.

That in a general way
the supply of water in
a well depends more or
less upon the rainfall in
its neighborhood is well known, nor are

any other streamlets required
to establish the fact, and
beyond this general fact
it may be doubted whether
the most elaborate ob-

servations could give
any information of value.
The ^{supply} condition of a well
depends upon other purely
local conditions & too

attention should
be given to the condition
of the country
for the supply of the
water supply of the
country report the
ascertained facts
indicating the
direction in the
subsoil sources

LB 14/1/87.
John H. Stewart
for Mr. Smith's opinion
before the order goes
out.

Nº 57-N.
Forwarded to I
for opinion.

15-1-87, I 54 H.

great an extent to
allow of any satisfactory
law being discovered
as to its connection
with the rainfall,
even if such a law could
be discovered, is it
any more than practical
value it would have.

The streamlets have
been going on now for
some years, and no
practical use whatever
has been made of them
nor is it any more to
what use they can
be turned -

SS L
I have all along
entertained some
doubts as to the
value of the streamlets.

...of continuing
these observations which
have given a great deal
of trouble to our Mountain
Men, and taken up a
great deal of the daylight-
men's time in this Office
without I fear our und
being able to print any
tangible results -

To ascertain all the
causes affecting the
rise and fall of Spring
level in any locality
we must not only have
a very accurate knowledge
of the geological facts
of both it and all
neighboring localities
but must be in a
position to eliminate
daily all the sources
of error which tend
constantly to vitiate
the findings. It is well
used in the purpose

trial conditions

To arrive at any
facts likely to prove
really useful would
require that the obser-
vations should be contin-
ued with an amount of
Scientific Accuracy which
even on the score of time
is beyond the command
of the Office and Sub-
ordinates of this Department

To arrive at results
of any scientific value
would in fact call for the
employment of a specially
Qualified and Selected
Establishment

On these grounds I should
therefore be glad if the
Government would per-
mit these findings to
be used to cease -

If desired the results
with the plans
will be circulated for
inspection

12/1/87 R.H.H.

...revenue

These remarks seem to
me to show that no
practical purpose
will be served by
continuing the observations
on the present method
& that better use of the
means available for
investigating them on
a different method
is possible & practically
useful results. As
I think they may be
of service. L.H.

31/1/17

I do not think that the
subsoil water levels in
wells, unless measured from
a bench mark the reduced
level of which is the reference
to mean sea level is known
will afford data from which
general conclusions can
safely be drawn. If the
observations were so made
& the bench mark were either
at ground level or if not its
height above ground level
noted, sections showing the
ground level from the hills
to the sea and the subsoil
water levels ^{throughout the year} could be plotted
and it could be
seen in what parts of the
country wells could be relied
on to furnish means of irrigation.
I believe that since the late
Governor Sir James ...

influence the decision of
Government in dealing with
irrigation projects of doubtful
financial merit, and
that in cases in which
such subsoil water was
at a low level it might
be proper to carry out works
for bringing a supply of water
into the tract of country
concerned, where the probable
advantages direct & indirect
might be less than would
otherwise be deemed necessary
to warrant outlay.

The effect of ^{local} rainfalls on subsoil
water level depends on the
nature of the soil - when the
surface soil is porous the water
level rises rapidly after rain.
The subsoil water levels during
a period of several years
are of course considered to

the position of wells which water
levels obtained by means
of wells for various purposes

but much collateral observation
would be needed to make
the records of value in
(1) the character of the soil
at the surface and of the
subsoil. 58
(2) the numerous absence
of wells in the neighborhood
of the places of observation
Wells at which observations are
recorded must be so cir-
cumstances as to include
the possibility of surface drainage
finding its way into them
To make the information
already collected of practical
value it would be necessary
to examine into the cir-
cumstances of the wells the
water levels in which have
been recorded; then to
reduce all the levels to mean
sea datum; then to see how
far the slope of the water surface
was normal or abnormal
& finally to account by reference
to the geological configuration
for the abnormal levels

Mr W. H. H. H. H.

See no probability at present
of the company's establishment
in dealing with the subject, being made
available.

It would be difficult to estimate what would be
the value of well arranged
and fairly complete data,
because such would probably
support ideas which are
now wanting; but I do
not now see what action
could be taken were such
data available, unless
Government contemplate
giving substantial en-
couragement to the multi-
plication of the number
of wells in which case the
information would probably
be of immediate value.

4. 23/1/91

To Mr W. H. H. H.
with reference to his note
of the 14. inst.

23/1/91

59

It is proposed
to deal with the same
for later in the
diagram as usual,
but as the arrival
of the data it
may be considered
whether these should
be continued,
the professional
officers of the
Dept. being
opposed to
the observation.

Submitted 15/1/91

15/1/91

Dr W.

In answer may
be found
Subsequently
yes 16.10.90

H.C. 27.1/1/91
Q. 13.1

1898

E. J.

Also the observation
continued in your letter
printed into S.O.
of 6: Feb. 1877 no 420
there alluded to
in your note of the
5: inst. ?

6/17/79 E. J.

Geo.

There is no letter mine
in S.O. 6/2/77 no. 420 -
My observations are in July
no 2131 - 10/8/76

July 7/7

P.S. Probably my draft instructions
were left applicable to Ganges
interfered by others in
regards to the water observation
discovery.

E.W.

P.h. 2131 - 16 Aug. 76

give the instructions I drew

up for subsoil water level

registration ^{with gauges} but the file

does not show that these

were set aside though

I remember that such

was the case

S.O. No. 1293 of 23 May

1876 is not in file but

is in the office

and is

E.W.

May 57/79

Put up 1025/7

W. wants the file
regarding the observation
of levels of subsoil water -
Let me have it with
a note of what has
actually been done in
the connection -

2
59B

me 1877

Subterranean Water Supply

60

Picks Where Observations
taken.

Receipt of Returns from
S. Supr. & Plotted in diopad

North Arcot District	do.	April 1879
South Arcot do	do	do do
Bellary do	do	May do
Chingleput do	do	No register kept since May 1878
Cimbatore do	do	April 1879
Godavary do	do	May do
Kistna do	do	April do
Madura do	do	May do
Nellore do	do	May do
Salem do	do	No register has been kept.

for the months of November
December 1878. & January
& February 1879. vide S.
Supr. letter No 161 dated
6th July 1879. The Register
for March was returned
for correction

Tinnevely do	do.	May 1879
Tiruchinopoly do	do	May do
Madras Municipality do	do	May do
Madras Railway S.W. line do	do	March do
do do N.W. line do	do	do do
South India Railway do	do	do do

Chief Supt. Office
7th S. Group
30th June 1879

vide letter 472, dated
19th Feb 79 - remainder
sent as well as
Annual letter and

Measured by Technical
Staff regarding
Subsoil water
levels.

61

KEEP-WITH.

61

Current No. _____

Letter No. _____

Dated the _____

from the _____

Memorandum.

The Undersigned has the honor to request the Supg Engr. General Circle to be so good as to furnish this Office at an early date the following returns of Subterranean Water level:

Chingleput.

Wālayabad } from April to June 1880
 Tirumangalam }
 Madurantakam }
 Chingleput } May to June

North Arcot.

Pottus Well at Chittoor } do

Coimbatore

Well at Centa of Sail } do

do Varadara jeevan } from the last

Kaiders Chittoor } well in January

Palladam } to June

do in Naris Range } from May to

Office Compound } June

do in Market } do

Naris jeevan } well at Pallacheri } from May to June

15th July 1880.

To the Supg. Engineer
 General Circle

KEEP-WITH.

62

Current No. _____

Letter No. _____

Dated the _____

from the _____

Memorandum.

The Undersigned has the honor to request the Supg Engr. General Circle, to be so good as to furnish this Office at an early date the following returns of Subterranean Water level:

Madura.

Well in Market at } from February 1880

Indignul } to June

do in Ennode 13 miles } do do

North of Indignul } do do

do in Annayand } do do

Naris Chittoor } do do

do in Dispenary at } do do

Palmi } do do

do in Palharotti } from January

Chittoor } to June

do in Subbanachari } do do

Tinnevely

Well in Govt garden East } from May 1880

of Campmanam } to June

Arku Chittoor } do do

Shridharan Coobah } do do

Arvillilur Well in the } from April

Panjar fields } to June

of Nigittampatty } do do

Railway station Well } do do

at Sater } do do

Pillayar Koil Well } do do

on the 1st mile of } do do

Road No. XXIV } do do

Inticovii } do do

Govt. Kail

Devan Kail Well in } from April
 Mangumini Cusbat } to June -

16th July 1880.

To. The Sups Engineer
 Pond Circle.

Current No. _____

Letter No. _____

Dated the _____

from the _____

Memoandum.

The undersigned has the honor to request the Sups Eng. First Circle, to be so good, as to furnish this Office at an early date the following returns of Subterranean Water level.

Visited ¹⁸⁸⁰
 Court Well at Guntur } from January
 Fort Well at Chilkha } to June -
 Burpett } do do -

Turnover.
 Well near Collectors Cut }
 Cherry in Anantha } from April
 Jamasing bungalows } to June -
 at Bowdwarpett }
 do about 1/2 mile to S.E. } do do -
 of Patti Kondah }
 do West of Salug Over }
 Ser's Office at Nan } do do -
 di Kollur }
 do West End of Down }
 Called Appujimul } do do -
 Muchhau }
 Spiridolavany Well in } do do -
 Markapur }

Nellore.
 Appialis Well } from Dehuan to June
 Well at Police Station } do do -
 do Venkata Chellam }
 Chuttram } do do -
 Revd Hughes' Well } do do -
 Vizagapatnam }

Vizagapatam.

Well in the Bazaar at ^{1880.} from February to
 Yellamauchili } March & May to
 June
 Poli Well near Katta
 Petta Market } — do — do —
 Boravari Well at
 Vizianagaram } — do — do —
 Puntuluvau's Well
 near toll gate at
 Riniipatam } — do — do —
 Small Well in Con.
 ground of Deva
 temple at Bobbili } — do — do —
 Parvatipur Well } from January
 to March & May
 to June

16th July 1880.

[Signature]

To The Sups Engr.
Fire Circle.

P. W. SECRETARIAT-1879-80.

KEEP WITH

64

Current No _____

Letter No. _____

Dated the _____

from the _____

Memorandum.

The undersigned has the
 honor to request the Super-
 intendent of Works Godavari
 to be so good as to furnish
 this Office at an early date
 the following returns of
 Subterranean Water level.

Godavari.

Rajanagarani } ¹⁸⁸⁰
 Laggampet } from May
 Thadahalapudi } to June
 Gopaulapuram

16th July 1880.

[Signature]

To The Supd. of Works.
Godavari.

From office

No. 83W

65

PUBLIC WORKS DEPARTMENT.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

UNDER date the 2nd Febry 1879

Read the following:-

- S.D. 114, dated 13 January 1877.
- " 1299 & - - - 4 April 1878.
- " 472 & - - - 17 Febry 1879.

In the orders quoted above the Government directed a succession of observations to be taken at selected places with the view to ascertain for record the state of the subterraneous water supply.

2. These observations have accordingly been continued ever since, and the levels plotted

R.S.

in the form of diagrams
in the Chief Engineer's office.

3. It has been represented on consideration
that the labor connected with these observations, already collected,
is considerable, and that, as they are not conducted with that scientific accuracy and regard to collateral circumstances on the subject the chances which can be obtained from the same are not reliable for practical purposes, while the present circumstances the means at the disposal of the P. & D. Department do not admit of their being taken up in a more systematic manner the discontinuance of the observations is

desirable

4. The ~~Reservoir~~ in Council accordingly directs that the record be suspended. The subject should not however be entirely lost sight of. In seasons of scanty rainfall, the attention of local Public Works officers should be at once directed to the condition of well supply, and they will be expected to report to Govt any ascertained facts indicating

marked reduction
in the subsoil courses.

S
1/2

67

Superintendent 1.21-11
Capt. of Works 1.1-11
Board of Rev. 21
Cong. Eng for Ry 21
President, Adams 11-11
Sail reports 11-11
11-11-81

50.3.94

Q

Govt. of (1881) Hindustan
PUBLIC WORKS.

To ..

Date ..

Amount ..

By ..

For ..

C. O. 27th July 1881, No. 285-10

Rs. 10/-

Sub soil water for

drinking & irrigation
the record of the work
to —