

No 571 Waf. Mar. 4. 1886.

B. Comd. to officers
of the P. W. Dept. for
guidance, with
reference to the
latter part of para
2 of the foregoing
Order.

C. E. for I. S. 2/3/86
C. E. for Rys. I, II, III, IV, V, VI Copies
S. E. I. K. S. S.
msg. Arch. to Govt. S.
min. Ch. In. S. R. S. S. 2.3-86
Ry. Sect. S.
State Ry. Sect. S.
Supt. In. H. Works S.
Sect. S.

22/3

Gobt. of (1886) Madras.
PENSION.

102 SC



Issued

Recd. 2/3/86

Encl.

G.O., 23rd February 1886, No. 176.

No 571 Waf. March 4. 1886

FEBRUARY.

Gratuity.

Sanctioning the retention in the service of
M. Venkanamah, late Lock Superintendent,
Godavari, after the date of medical certificate,
and permitting to count that period for —

2 Copies to body

2ND FEBRUARY 1886, No. 82A, REVENUE.

GOVERNMENT OF MADRAS.
REVENUE DEPARTMENT.

READ—the following letter from H. W. MEDLICOTT, Esq., Director, Geological Survey of India, to the Secretary to the Government of Madras, Revenue Department, dated Calcutta, 28th December 1885, No. 555 :—

I have the honor to submit a copy of a letter received from Dr. King on the subject of his recent visit to Vizianagrum. It scarcely needed the stratigraphical discussion given in this letter to declare that the prospect of artesian springs in such rocks was absolutely hopeless.

ENCLOSURE.

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I have the honor to report to you, for the information of the Madras Government, concerning the possibilities of artesian well exploration at Vizianagrum.

2. Shortly after my arrival in Vizianagrum, I found that Mr. Foote had already, on the limited information that could be supplied to him by the local authorities, expressed an opinion that there was no ground for concluding that artesian conditions could be expected to occur. My subsequent examination entirely confirms Mr. Foote's view; for neither do the physical conditions of the country nor the stratigraphy of the rocks present any features conducive to water percolation other than that capable of being tapped by ordinary wells.

3. The circumstances of the boring, the failure of which as an artesian development eventually attracted the attention of the Madras Government to the question now treated of, are briefly these. Within the last two years, His Highness the Maharajah of Vizianagrum desired to have an artesian well so as to increase the rather scanty and precarious water-supply of his chief town. In due course, Mr. W. A. Frazer, a Canadian Well-Engineer, turned up, and undertook the work in the form of sinking a boring on the eastern glaciis of the Vizianagrum fort to a depth of 350 feet through the living rock. Water only stood in this small but deep hole, as it would have done in any ordinary well, within 20 to 30 feet of the surface; but, by the judicious use of what is called in Mr. Frazer's report an American artesian pump (a form of force pump), a sort of outflow was produced, on the strength of which extravagant estimates were made. Mr. Frazer wrote :—"Based on a long experience of these pumps, I should say that the stream pumped would yield about 4 to 5,000 gallons per diem. The yield could have however been increased by running the pumps faster," &c. Subsequently, Mr. T. D. Harris, the Executive Engineer of Vizagapatam, was requested to make an inspection of the rock. It is only necessary here to quote the following passage from his report—"All then being in order, the pump was started at ¼ past 4 o'clock (evening of 9th July last) and worked to a ¼ past 5 o'clock, exactly one hour; during this period there was no hitch or stoppage whatever, but the quantity of water pumped was at the rate of only ½ a cubic foot per minute, or 30 cubic feet per hour: when the well was pumped perfectly dry the water was sweet, but wonderfully discolored, and particularly the last stuff brought up being a dark bluish mud. The pump, I may state, was put down to a depth of 344 feet or nearly the bottom of the boring; thus it will be seen that pumping by steam, oxen or coolie labor is absolutely out of the question, there being no water to pump."

4. No record of any kind appears to have been kept of the rocks pierced, though Mr. Frazer gives a general account of their style; but the presence of a quantity of fresh quartz debris and white clay around the site of the boring bears witness to the existence of a very hard quartzo-felspathic gneiss with intercalated bands having a more felspathic constitution.

5. The fact is, Vizianagrum stands on a broad band of such gneisses striking nearly east and west, though just to the eastward of the town this band, or the strike of it, trends round to the northward and ultimately joins in, by a U-shaped bend with a belt of similar rocks, also coming in from the westward, alongside the base of the lofty Chota Himalaya ridge (4 or 5 miles north of the city). A much lower but very conspicuous white ridge of essentially quartzose gneisses and quartz-rock, a mile or so to north north-west of the town, constitutes

a strong nucleus or core, around which the band just described lies with its strata dipping away at various angles, southward on the town side, eastward under the hills north-east of the town, and northwards on the Chota Himalaya side. Or, in other words, the rocks of Vizianagrum and its neighbourhood are lying, or are arranged, as the end portion of a long ellipsoidal dome-like anticlinal which has been so truncated or cut down by denudation that there is a low country or plain exposure of its edges on the town side and a hilly tract of core and remnants of the northerly-dipping limit or abutment of the great arch on the other or Chota Himalaya flank.

6. Thus, even were these crystalline, and likewise much fractured, strata able to hold water in any regular or confined channels, such as those of porous layers between impervious ores, that water would still only settle downwards to the permanent saturation level below the surface, and, in a plain country like that under consideration, this level could never except during exceptional times of flood, be more than a few feet over the lowest surface depressions. Neither could the hills to the north and north-east of the town give any head of water, or appreciable outflow from the edges of their strata, except to the northward plains or on the slopes to that side, their dip being as already described in that direction.

7. On the other hand, advantageously arranged and suitable strata such as those existing in extensive alluvial tracts like that of Pondicherry for instance, or again in a basinal form as in typical artesian regions, do not occur at Vizianagrum or its vicinity. There is no proper alluvial tract near the town; merely a thin superficial covering of soil and rock debris in the shallow depression for the rivulets which have been dammed up to form the one large tank and the few small ones of the place. The only river of importance is that passing 4 or 5 miles north-eastward beyond the hills which enters the sea at Konada; but it has no alluvial deposits of any width, except towards the latter town, and they are shallow and cut off at short intervals by cross barriers of rock.

So, on no view of the physical or bedded structure of the place can hope be held out for any other than the ordinary form of well, and the number of these must only be increased to meet the demand for water, or else reservoirs, for which there is no lack of suitable and capacious sites, though at a considerable distance inland, must be constructed. In this connection I may mention, though experts should be consulted on the point, that a small reservoir might possibly be advantageously made behind the strong white quartz-ridge flanking the southern slopes of the Chota Himalaya range, where an ancient breach in it is now followed by a small stream flowing to the westward.

ORDER—dated 2nd February 1886, No. 82A, Revenue.

Miscellaneous.

Communicated to the Collector of Vizagapatam in reference to the correspondence ending with Mis. G.O., No. 4776, dated 7th September 1885.

2. The Collector's attention will be directed to Dr. King's remarks in the last paragraph of his letter to the effect, viz., that the only way of improving the water-supply of Vizianagrum is by increasing the number of ordinary wells and providing reservoirs for the storage of rain and flood water, for which the natural features of the country seem to be well suited.

(True Extract.)

(Signed) J. F. PRICE,
Ag. Secretary to Government.

To the Collector of Vizagapatam.
" the Board of Revenue.
" the Public Department.
P. W. D.

Exd. W. H. French.

70 Copies.

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P. W. D.

Exd. W. H. French.

70 Copies.

No. 572 Wd/Mar. 4. 1886.

Communicated to the
Chief Engineer for Irru-
and the Superintending
Engineer I for the for-
information -

By JSS
W

Gobt. of {1886} Madras.

REVENUE.

Issued

Recd.

Encl.

G.O., 2nd February 1886, No. 82A.

No. 572 Wd/Mar. 4. 1886

FEBRUARY.

Artesian Well Exploration at
Vizianagram.

Dr. King's report regarding the possibilities of
—, communicated to the Collector of Vizagapatam,
with instructions.

With order

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S. E. II 6

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ORDER—dated 2nd February 1886, No. 82A, Revenue.

Miscellaneous.

Communicated to the Collector of Vizagapatam in reference to the correspondence ending with Mis. G.O., No. 4776, dated 7th September 1885.

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(True Extract.)

(Signed) J. F. PRICE,
Ag. Secretary to Government.

To the Collector of Vizagapatam.
„ the Board of Revenue.
„ the Public Department.

P. 25. D.

Exd. W. H. French.

70 Copies.

No 572 Wd/Mar: 4. 1886.

Communicated to the
Chief Engineer for Irru
and the Superintending
Engineers in circle for in-
formation.

Sd/- J.S.

Ch. E. for Irru
S. E. I.

Gobt. of 1886 Madras.
REVENUE.

Issued

Recd.

Encl.

G.O., 2nd February 1886, No. 82A.

No 572 Wd/Mar. 4. 1886

FEBRUARY.

Artesian Well Exploration at
Vizianagrum.

Dr. King's report regarding the possibilities of
—, communicated to the Collector of Vizagapatam,
with instructions.

With order

P.W.D

No 716 Cap No 3rd Febr'y/86

From
The Secy P.W. Dept
To The Secy Revenue Dept.

The undersigned
has the honor to request
that G.O. of 22-2-86, No 82A,
Revenue, relative to
Artesian Well explo-
-ration at Vizianagrum,
may be communicated
to the P.W. Department.

Yr Obedt Servt
J.S.

Desp No 23-2-86.

2ND FEBRUARY 1886, No. 82A, REVENUE.

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No 716 Coy 23-2-86

24/2

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ORDER—dated 2nd February 1886, No. 82A, Revenue.

Miscellaneous.

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(True Extract.)

Fredrick Rice

Ag. Secretary to Government.

To the Collector of Vizagapatam.
" the Board of Revenue.
" the Public Department
" the Public Works Dept.

Exd. W. H. French.

70 Copies.

2000

No. 572 Wd. Mar. 4. 1886

Govt. of (1886) Madras.
REVENUE.



Issued

Recd. 2/3/86

Encl.

G.O., 2nd February 1886, No. 82A.

No. 572 Wd. Mar. 4. 1886.
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2 Copies to be
With order
with the note

Communicated to
the Chief Engineer for
and the
Superintending Engineer
I perle for information.

ll.
3-3-86

Ch. En. for Encl.
S. En. III perle

2014-3-86

ll.
3-3-86

Recd. 16/14

No. 573 Wd. March 4. 1886.
B.

The appointment
The appointment
is confirmed. The
The claim to
pension will
be regulated
by the established
rule.

ll.
3-3-86

S. E. V. Circle
Encl. W. Accts.

2014-3-86

ll.
3-3-86

ll.
3-3-86

From

THE SUPERINTENDING ENGINEER,

V CIRCLE,

To

THE Chief Engineer
S. E. V. Circle.



Dated

Recd.

1st March 1886.

ENCLOSURES.

No. 573 Wd. March 4. 1886

No. 4899.

V. B. Thiruvengada Chari

Reports that he has
appointed
as a Superintendent on
Conservancy Establishment
Of. at DW under Rule 4
Section 106 & the proviso of
Section 115 of Gov. Pension
Code