88

(1) பக்கங்களின் எண்ணிக்கை ~~88~~

(2) புதுக்கித் திருப்பிய நாள் 5/8/88

(3) ஆதாரங்குறிப்பவர் சுருக்கொப்பம்

தமிழ்நாடு ஆவணக் காப்பகம்.

தமிழ்நாடு அரசு

பொதுப்பணித் துறை

அரசாணை எண்.
மு. கோப்புத் தாள் எண். 3609 W

அச்சகம்
பலவகை

நாள் : 14.11.1888 ~~198~~.

டுக்கவோ கண்டபடி கையாளவோ கூடாது

. ar-I—18,006—15-6-87.

A.D. முத்துவேல்

A/3609

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Military Works.

READ—the following papers:—

From Colonel M. PROTHEROE, C.B., C.S.I., Officiating Quartermaster-General, to the Secretary to Government, Military Department (*through* the Controller of Military Accounts), dated Ootacamund, 14th July 1888, No. 2356 B.

I have the honor, by order, to submit, for the favorable consideration and orders of Government, the accompanying report made by the Executive Engineer, Bellary division, detailing proposals for improving the water-supply to the cantonment of Bellary.

2. These proposals, in which the Commander-in-Chief concurs generally, contemplate the utilisation of the water in the Fort ditch, which is at present not available for military requirements, but is used mainly by the civil population of the Cowl bazaar, though the entire and very considerable expenditure involved in bringing the water to this ditch from the Alipur tank has been an Imperial * charge and was incurred mainly for the benefit of the troops quartered in the cantonment of Bellary, whose requirements His Excellency therefore considers to have the first claim on the water in this reservoir.

3. As Bellary is frequently very short of water in wells, on which alone the British troops, and to a great extent the Native troops, have to rely, and the water in which is generally of inferior quality, Sir Charles Arbuthnot considers it would be most desirable to place within reach of the troops a supply of comparatively good water, more especially as the scheme for doing so is in fact merely the completion of a project on which a large sum has been sunk out of Imperial funds from which at present no return whatever is obtained.

* Proceedings of Government, No. 1065, dated 13th August 1872.

ENCLOSURES.

BELLARY CANTONMENT WATER-SUPPLY.

European Infantry and Royal Artillery—Sources of supply.—The European Infantry Regiment and the two batteries of Artillery are supplied entirely from wells.

2. *Artesian well for drinking water.*—Of these the principal is the artesian well, which supplies all the European troops with excellent water for drinking and cooking purposes. The water is raised in a môt by bullocks in the usual manner.

The lift is about 60 feet. A masonry conduit runs from the well to two dip wells in the European Infantry lines, and from these water is distributed by puckallies. The arrangement for drawing water is a very clumsy one, and its subsequent distribution in mussucks is open to grave objection.

3. *Wells for supply of water for horses and ablution.*—Water for inferior purposes is obtained from one well in the European Infantry lines and two wells in the Royal Artillery lines.

There are three wells in the European Infantry lines, but two have been abandoned.

There is a very fine well near Lake's bungalow. This is a military well, but has not been much used on account of its distance from the lines.

This year the 8-1st Royal Artillery have watered their horses at the well.

4. *Supply insufficient.*—The artesian well is capable of supplying the European troops with drinking water, and it is only in exceptionally dry seasons that all essential requirements could not be met. The supply of water for the battery horses, for the plunge-baths, and for washing purposes generally is, however, quite insufficient even when there is only one battery in the station.

5. *Native troops—Sources of supply.*—The Native Infantry and Cavalry Regiments are supplied from the Alipur tank and from wells.

6. *Alipur tank.*—The Alipur tank has from first to last cost Government about 1¼ lakhs, paid out of Military funds.

The tank was completed in 1872. It is a purely military work and was constructed with the object of improving the water-supply of the cantonment.

Water is led off by a channel which falls into Fischer's tank, and from here two channels take off, one going to the Fort ditch and the other to the Native Infantry coonta.

7. *Fort ditch.*—The Fort ditch is deep and narrow and makes a good storage reservoir. Its capacity is far greater than that of the Native Infantry tank and, if filled up in January from the Alipur tank, it is more than capable of meeting all the wants of the garrison during the dry months.

Strange to say, however, the Fort ditch, which ought to be the chief source of supply to the cantonment, is almost exclusively used by the population in the Cowl bazaar.

The municipality therefore are the chief gainers by a work which cost them nothing, and which was intended by Government for the supply of the cantonment.

The Cowl bazaar used formerly to be in cantonment limits and was originally, I imagine, looked upon as a military bazaar. It has now a very large population.

8. *Native Infantry coonta.*—Situated close to the Native Infantry lines. About 12 feet of water in tank when full. There are two calingulas and surplus water falls into the Native Cavalry coonta.

If the Native Infantry coonta is filled in January it holds a sufficient supply to last throughout the hot weather for one regiment. When water fails wells in the neighbouring nulla are resorted to. There are no conservancy arrangements. The tank ought to be fenced round to prevent cattle from fouling the water.

9. *Native Cavalry coonta.*—This only gets a supply after the Native Infantry coonta has filled, a small and shallow tank not suitable for storage. It is said that it has not been used for drinking purposes for the past six years. At the time of inspection the water in the tank had an extremely offensive smell. It might be worth while to clean out the tank and fence it.

11th May 1888.

It is immediately below the bund of the Native Infantry coonta and would always get a certain amount of water by percolation. Drinking water for the Cavalry is now obtained from a well below the bund of the Native Infantry coonta. There were only a few inches of water in this well on the 11th May and it cannot furnish a sufficient supply, so that water has to be obtained from wells in the neighbouring nulla. The horses are watered from a private well which is rented for Rs. 70 a month.

10. *Native troops inadequately supplied.*—Under existing arrangements the Native troops alone out of the entire garrison derive any benefit from the Alipur tank. In fact it may be said that only the Native Infantry Regiments are benefited as the Cavalry coonta is not used.

It must be further observed that even the Infantry Regiments cannot depend on getting in their coonta a supply sufficient to carry them through the hot weather. Wells have generally to be resorted to, and water obtained from a distance with considerable difficulty.

11. *Proposals for improving water-supply of cantonment.*—The water from the artesian well should, it is considered, be pumped up and conveyed in pipes to the barracks whence it would be distributed by means of stand-posts.

Under existing arrangements the water runs many chances of being fouled owing to the buckets and mussucks not being clean.

In the foregoing paragraphs it has been shown that while all the troops in the garrison are inadequately supplied with water, no use whatever is made of the Fort ditch, the best military storage reservoir, except to supply the Cowl bazaar, which is outside cantonment limits. There can be no doubt that this is a state of affairs which was not contemplated by Government when the Alipur tank was made, and before any water is supplied to the Cowl bazaar from the Fort ditch, it is only right that all military requirements should be first satisfied.

There is no doubt about the Fort ditch being able to meet all military demands, and in the undersigned's opinion it would be far better to trust to this source than to sink wells for the supply of water for the Royal Artillery plunge-bath and other purposes.

12. *Extra supply for Royal Artillery.*—It is believed that if the plunge-bath was supplied from the Fort ditch the other two wells in the Royal Artillery lines would be sufficient for providing all the water required for the horses of one battery and for purposes of ablution.

If two batteries were permanently stationed in Bellary, there would be no difficulty in obtaining the water required from the Fort ditch.

13. *Extra supply for European Infantry Regiment.*—The water for the plunge-bath and for washing purposes generally is now obtained from one well. If the plunge-bath were filled from the Fort ditch, the well would be quite capable of supplying all the other water required.

A new plunge-bath has been sanctioned and this could be placed much nearer the Fort ditch than the present one, though this has not been taken into consideration in the approximate estimate for pipes.

14. *Extra supply for Native Infantry and Native Cavalry.*—Arrangements would have to be made for supplementing the supply obtained from the Native Infantry coonta. A couple of dip wells in the Native Infantry lines could be supplied by pipes from the Fort ditch. Similar arrangements would be required for the Native Cavalry lines. A water-trough would also be required which would be supplied with Fort ditch water. By this arrangement it would be no longer necessary to pay Rs. 840 a year for the well which is now used.

15. *Works necessary to carry out the above proposals and their cost.*—The improvements which have been suggested above would involve the construction of the following works, the approximate cost of which is also given :—

Drinking water for European troops.

	Rs.
Engine and shed at artesian well	8,000
Pipes and stand-posts	10,000

Supply of Royal Artillery and European Infantry plunge-baths and Native troops.

Engine and shed at Fort ditch	15,000
Pipes for supply of Royal Artillery and European Infantry plunge-bath	12,000
Pipes, watering trough and dip wells for Native Cavalry and Infantry	15,000
Total ...	60,000

The annual cost would be—

	Rs.
Interest and depreciation at 10 per cent.	6,000
Working expenses	4,000
Total ...	10,000

16. *Present cost of water-supply.*—The amount spent in 1887-88 by the Commissariat Department for the European troops was Rs. 3,704-6-7. This is in addition to the cost of the regimental establishments which amounted to Rs. 4,979-8-0. To these two items must be added Rs. 15,000 being interest on cost of Alipur tank together with working expenses, cost of repairs, &c.

17. *Comparison between cost of present and proposed systems.*—Whatever system of water-supply was adopted, the cost of the regimental establishments would not be affected. If, however, the new arrangements were carried out it would be possible to save the Rs. 3,704-6-7 spent by the Commissariat Department.

The total cost of the present and proposed arrangements would be as follows :—

Present.

	Rs.
Alipur tank interest, &c.	15,000
Commissariat charges	3,700
Regimental establishment	5,000
Total ...	23,700

Proposed.

Alipur tank interest, &c.	15,000
Regimental establishment	5,000
Annual cost of new works	10,000
Total ...	30,000

It will be seen therefore that the proposed arrangements will cost annually Rs. 6,300 more than at present.

It must, however, be borne in mind that the greater portion of the extra expenditure now proposed is simply to complete the Alipur tank scheme on which 1¼ lakhs have already been spent. By carrying out the works which have been suggested, Government will get a fair return for the money already spent, whereas at present it costs more than Rs. 15,000 a year to furnish a supply which is not even sufficient for the Native Infantry Regiments of the garrison.

BELLARY,
1st June 1888.

(Signed) A. H. GARRETT
Executive Engineer.

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Bellary,
1st June 1888.

(Signed) A. H. Garrett
Executive Engineer.

From Lieutenant-Colonel C. F THOMAS, Officiating Controller of Military Accounts, to the Secretary to Government, Military Department, dated Madras, 28th September 1888, A.

In forwarding the accompanying letter * from the Quartermaster-General, I have the honor to give below details of the expenditure incurred during 1887-88 in obtaining water for the troops at Bellary :—

* No. 2356 B., dated 14th July 1888, submitting a report detailing proposals for improving the water-supply in the cantonment of Bellary.

PAID REGIMENTALLY.

G/2nd Brigade, Royal Artillery.

	Rs.	A.	P.
Hire of bullocks for drawing water for horses from April to July 1887, and from 17th November 1887 to 28th February 1888	192	4	0
Three puckallies at Rs. 10-11-10 each and one bheastie at Rs. 7 from 1st April 1887 to 31st March 1888	470	10	0
Rice money on account of do.	54	10	4

S/1st Brigade, Royal Artillery.

Three puckallies at Rs. 10-11-10 each and one bheastie at Rs. 7 from 1st April 1887 to 31st March 1888	470	10	0
Rice money on account of do.	54	10	4

Head-quarters and Wing, 1st Battalion, Duke of Cornwall's Light Infantry.

Eight puckallies at Rs. 10-11-10 each from 1st April 1887 to 31st March 1888	1,631	0	0
Rice money on account of do.	109	4	8

Native Regiments and Depots.

Pay of puckallies	1,972	4	0
Rice money on account of do.	211	0	0
Total per annum ...	4,566	5	4

Native Cavalry—For drawing water for horses.

	Per mensem. Rs.
Hire of two pairs of bullocks with drivers	40
Well apparatus	10
Rent of well	20
Total † per mensem ...	70
Total per annum ...	840 0 0

PAID BY THE COMMISSARIAT DEPARTMENT.

Plunge-baths and wash-houses.

Hire of bullocks for drawing water from wells and drawing water-carts	1,836	1	5
Hire of coolies for emptying water-bags	469	3	0
Well gear	145	4	0
Repair of well gear	65	8	0
Do. of water carts	110	0	8
Greasing do.	25	8	0

For cooking and drinking purposes.

Hire of bullocks	106	0	0
Well gear	150	0	0
Repair of well gear	44	4	0
Total per annum ...	2,951	13	1
Total annual cost of existing establishment, &c. ...	8,358	2	5

† This is the item referred to in para. 14 of the Executive Engineer's report.

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2. The cost of the proposed scheme according to para. 17 of the Executive Engineer's report is as follows :—

	Rs.	A.	P.
Initial expenditure	60,000	0	0
Annual expenditure.			
Existing regimental establishments	4,566	5	4
Working expenses	4,000	0	0
Interest and depreciation at 10 per cent. on initial expenditure	6,000	0	0
Total per annum ...	14,566	5	4

or an annual extra expenditure of Rs. 6,208-2-11 over the existing cost of establishments paid by the Military Department.

3. As, however, the estimated annual interest and depreciation (Rs. 6,000) is an item which will apparently appear in the accounts of the Public Works Department, the actual extra annual expenditure that will fall on the Military Department is Rs. 208-2-11, presuming that the working expenses (Rs. 4,000), of which no details are given, are to be borne by the Military Department (*vide* para. 1 of Quartermaster-General's letter No. 2795 B. of 21st August 1888, attached).

4. The sanction of the Government of India will be necessary to carry out the proposed scheme, the initial cost of which the Quartermaster-General states * will be borne by the Public Works Department.

* *Vide* para. 3 of Quartermaster-General's No. 2795 B., dated 21st August 1888.

5. It is not stated in the correspondence now forwarded what arrangements it is proposed to make with the Civil and Municipal authorities should the Military take possession of the Alipur tank and the Fort ditch at Bellary, of which sources of water-supply the former authorities have been allowed the right of use for so many years past.

6. The statement in para. 2 of the Quartermaster-General's letter of 21st ultimo "that at Secunderabad the entire charges in connection with the water works which supply the troops, including working expenses, are met in the Public Works Department" is not quite correct. Under the Proceedings of Government marginally noted, † fuel and other articles are supplied by the Commissariat Department on the indent of the Executive Engineer, Secunderabad, and charged finally in the Commissariat accounts. The amount so charged during 1887-88 was Rs. 5,015-12-2, besides Rs. 3,227-8-4 on account of expenses incurred for coolies, well gear, &c., for plunge-baths, wash-houses and soldiers' gardens. In addition to the above sums charged in the Commissariat accounts an expenditure of Rs. 840-1-8 ‡ per mensem, or Rs. 10,081-4-0 per annum, is incurred regimentally on account of bheasties, puckallies and coolies employed in obtaining water for drinking purposes.

† P.G., No. 3423, dated 16th Oct. 1873.
" " 6936, " 3rd Nov. 1880.
P.G., No. 4669, dated 23rd August 1879.

	Rs.	A.	P.
‡ British troops	264	2	8
Native do.	575	15	0
Total ...	840	1	8

From Brigadier-General M. PROTHEROE, C.B., C.S.I., Quartermaster-General, to the Controller of Military Accounts, dated Ootacamund, 21st August 1888, No. 2795 B.

In returning the enclosure of your letter No. 2553, dated 17th instant, I have the honor, by order, to inform you that, if the practice in regard to similar charges in connection with the Ulsoor water works at Bangalore is followed, the item of Rs. 4,000 for working expenses will form an annual charge against the Military Department.

2. I would note, however, that at Secunderabad the entire charges in connection with the water works, which supply the troops, including working expenses, are met in the Public Works Department, and it seems a question for Government to decide which system is correct.

3. The item of Rs. 6,000 interest and depreciation in the proposed initial outlay would not be an actual disbursement, and at any rate must be nominally debitable to the Public Works Department by which department funds for the execution of the proposed works would be found.

No. 7085, Military.

Forwarded to the Public Works Department for favor of remarks.

2. The papers submitted contain a rough sketch of the improvements proposed by the Executive Engineer, Bellary division, and an approximate estimate of the initial outlay and annual expenditure involved.

3. It would seem advisable that the question of the water-supply for the civil population, in the event of the supply from the Alipur tank and the Fort ditch being reserved for the use of the Military, should be inquired into before detailed estimates are prepared for the proposed improvements.

4. Definite information is not afforded in regard to the source from which the required funds for the improvements should be provided.

(By order.)

Fort St. George,
25th October 1888. (Signed) A. KENNEY-HERBERT, Brigdr.-Genl.,
Secretary to Government.

From Brigadier-General M. PROTHEROE, C.B., C.S.I., Quartermaster-General to the Secretary to Government, Military Department, dated Ootacamund, 26th October 1888, No. 3578 B.

I have the honor, by order of the Commander-in-Chief, to forward, for the information of Government, in continuation of this office letter No. 2556 B., dated 14th July 1888, the correspondence as per margin, in connection with the water-supply scheme for the cantonment of Bellary, and to state that His Excellency concurs in the opinion of the Surgeon-General, Her Majesty's Forces, as expressed in his letter No. 2784, dated 17th instant.

I. Letter No. B.D./524, dated 14th September 1888, from the Officer Commanding Ceded Districts, with six enclosures.
II. Letter No. 2784, dated 17th October 1888, from the Surgeon-General, Her Majesty's Forces.

2. I am to state that, as it is proposed that the water of the Fort ditch should be used by the troops for ablution and sundry purposes (as well as that from the artesian well which is sufficient for drinking purposes only), effectual measures should be taken to preserve it from contamination, and this the Commander-in-Chief considers can probably be done without much difficulty, by enclosing it and preventing its removal except by means of pumps, &c.

Enclosures.

From Colonel C. S. STEWARD, Commanding Ceded Districts, to the Quartermaster-General, dated Bellary, 14th September 1888, No. B.D/524.

I have the honor to forward, in connection with the scheme for the water-supply of Bellary, submitted to you under this office No. B.D./242, of 19th June 1888, the correspondence as per margin from the Senior Medical officer at Bellary on the above subject.

2. In my opinion Brigade Surgeon Donaldson takes a pessimistic view of the water-supply from the Fort ditch.

I. Letter No. S./756, dated 30th August 1888, from Senior Medical officer, with analytical reports on water.
II. Letter No. B.D./498 of 5th September 1888, from Deputy Assistant Quartermaster-General, to Senior Medical officer.
III. Letter No. S./779, dated 7th September 1888, from Senior Medical officer.

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3. For the greater part of the year no water is run into this ditch from the Alipur and Fischer's tanks, but after heavy periodical rains large quantities are let in by means of open channels. These channels, when they require it, are on those occasions previously cleaned under the orders of the Executive Engineer, and precautions are taken by the Police to prevent pollution as far as possible.

4. It is impossible to prevent animals drinking at the Fischer and Alipur tanks, as the former is situated just beyond the western limits of the cantonment and the latter is about five miles distant from cantonment boundaries.

5. With regard to the suggestions in the second letter of the Senior Medical officer, I have to report that, unless a special staff be entertained, a more careful supervision of the sources of supply is impossible; 2ndly, that any interference with the supply of water to the natives from the Fort ditch must lead to complications with the municipality of Bellary; 3rdly, the supply of water from wells sunk within a short distance of the Fort ditch appears worthy of consideration; 4thly, the fencing in of the Fort ditch would be a great expense, and if the fence were made sufficiently close and substantial to prevent the ingress and egress of individuals, it would be objectionable from a defensive point of view as affording cover to an assailant on the very crest of the glacis.

From the Medical officer in charge, Station Hospital, Bellary, to the Deputy Assistant Quartermaster-General, Ceded Districts, dated Bellary, 30th August 1888, No. S./756.

With reference to the scheme of the Executive Engineer, Bellary, for improving the supply of the water to this station, which I have just seen, I would beg to be allowed to make the following remarks. The water for the troops is of two kinds—

(1) For drinking purposes.
(2) For ablution.

The requisites for the former are that the supply shall be good and abundant, and that it shall be kept free from contamination from its source to the end of its distribution. I submit an analysis of this water from the so-called artesian well used for British troops; it is a good water and the supply is as a rule abundant, but the plan submitted by the Executive Engineer is not sufficient to protect this supply from contamination; the entrance to the well, a large opening, many yards square, is left wholly uncovered; it is enclosed by a stone wall and this is the only protection from the entry of dead leaves and filth of any kind into the well; the water will therefore be exposed to contamination from this source and any vindictive person might poison the water and the garrison along with it. I would recommend that the well be roofed in; if this is done the plan proposed by the Executive Engineer would be sufficient from a sanitary point of view.

2. *Ablution (chiefly bath) water.*—For British troops it is proposed to take this from the Fort ditch; this water is not suitable for ablution purposes—

(1) It is turbid and might from this cause give rise to ophthalmia.
(2) It is used by the natives of a large neighbouring bazaar—the Cowl bazaar—for drinking and other purposes, and water so polluted if distributed over barracks for ablution purposes might be the means of introducing such diseases as cholera, dysentery or enteric fever.

I enclose a report of its analysis; it is a softer water than that from the so-called artesian well, and the microscope shows no bacilli in the sediment. I would beg to point out, however, that neither chemistry nor the microscope will show when a water is capable of generating disease; this must be arrived at by carefully considering whether it is possible to introduce disease into the water in question, and the Fort ditch, which is little better than a native tank, is liable to this at any moment.

3. The Executive Engineer's letter only deals with the distribution of water as far as the stand-posts in barracks; from these it would have to be conveyed to the filters, and for this purpose galvanized iron buckets only should be used. I enclose an analysis of water taken from a pukall filled from the artesian well; it will be seen that it becomes loaded with organic matter and, when thus contaminated, quickly destroys the purifying power of the charcoal in a Macnamara filter. Water is distributed this way now in barracks, and if this was continued the improvements in the water-supply noted in the Executive Engineer's letter would be diminished in amount.

I would beg the favor of this letter being forwarded to the Quartermaster-General in connection with the report from the Executive Engineer.

Analysis of water from Artesian well.

A. Physical properties.

1.	Color	Colorless.
2.	Clearness	Clear.
3.	Sediment	None.
4.	Lustre	Good.
5.	Taste	No taste.
6.	Smell	None.
7.	Reaction	Very faintly acid.

B. Chemical analysis.

1.	Chlorine	About 1·48 grains per gallon.
2.	Sulphuric acid	Do. 1 grain do.
3.	Phosphoric acid	Present.
4.	Nitrous acid	None present by the K.I. and starch test.
5.	Nitric acid	Gold chloride was unacted upon.
6.	Organic matter	Trace.
7.	Ammonia	14° Clark's scale.
8.	Total hardness	4·20° do.
9.	Permanent	9·89° do.
10.	Removable	21 grains per gallon.
11.	Total solids	

1st July 1888.

(Signed) J. D. RECKITT, Surgeon, M.S.

Analysis of water from Puckall of Bheastie at Dip-well.

A. Physical properties.

1.	Color	Colorless.
2.	Clearness	Clear.
3.	Sediment	None.
4.	Lustre	Good.
5.	Taste	None.
6.	Smell	Do.
7.	Reaction	Faintly acid.

B. Chemical analysis.

1.	Chlorine	About 1·48 grains per gallon.
2.	Sulphuric acid	Do. ½ grain, do.
3.	Phosphoric acid	Very faint trace.
4.	Nitrous acid	None.
5.	Nitric acid	Do.
6.	Organic matter	Present in considerable deposit with gold chloride test.
7.	Ammonia	None.
8.	Total hardness	15·75° Clark's scale.
9.	Permanent	7° do.
10.	Removable	8·75° do.
11.	Total solids	24 grains per gallon.
12.	Total oxidizable matter (in terms of O required for oxidation)	·1855 do.

14th July 1888.

(Signed) J. D. RECKITT, Surgeon, M.S.

Fort Ditch water.

0.	Color	Yellowish brown.
1.	Reaction	Faintly acid.
2.	Sediment	Considerable.
3.	Clearness	Turbid, semi-transparent.
4.	Lustre	Bad.
5.	Taste	Unpleasant.
6.	Smell	Indescribable odor.

7.	Chlorine	1·48 grains per gallon.
8.	Total hardness	5·6 do.
9.	Removable	4·2 do.
10.	Fixed	1·4 do.
11.	Organic matter (gold test)	Small amount.
12.	Sulphuric acid	Trace.
13.	Nitric acid	None.
14.	Nitrous acid	Do.
15.	Ammonia	Do.
16.	Total solids	12·6 grains per gallon.

Bellary,
26th August 1888.

(Signed) J. D. RECKITT, Surgeon, M.S.

From Captain H. W. IND, Deputy Assistant Quartermaster-General, Ceded Districts, to the Senior Medical officer, Station Hospital, Bellary, dated Bellary, 5th September 1888, No. B.D./498.

With reference to your letter No. S./756, dated 30th August 1888, enclosing analytical report on the water supplied to the troops at Bellary both from the Fort ditch for ablution and the artesian well for drinking purposes, and your remarks on the former as being unsuitable for ablution purposes, I have the honor, by order, to bring the following facts to your notice for favor of consideration. The Fort ditch supply forms part of an extensive scheme (sanctioned and in a great part carried out) for the supply of good water to the troops at Bellary. It was sanctioned after years of consideration and upwards of 1½ lakhs of rupees were spent on it. It is to be presumed that the quality of the water was tested at the time, and it is a fact that thousands of inhabitants of the Cowl bazaar depend entirely on this water for drinking purposes and suffer no harm. The danger of washing in such water seems to be a remote one. The water in the Fort ditch is to a great extent obtained by drawing off water from the Alipur tank which also supplies the Native Infantry and Cavalry toontas, and the quality of this water is believed to be excellent.

2. As regards the pollution of the Fort ditch by the natives who draw water therefrom, I have to inform you that the Police are most strict in preventing any such pollution.

3. The Fort ditch has always been regarded as the main water-supply of Bellary, and no alternative source of supply has been or apparently can be suggested without the expenditure of an enormous sum of public money and the throwing away of the money already laid out in the Alipur and Fischer tank scheme.

4. With reference to your remarks on the supply of drinking water from the artesian well and the possible contamination of the water from leaves and outside filth, I would wish to point out that there are no trees or vegetation near the well, and that the open ground round it is remarkable for its cleanliness. The high wall round the well therefore appears to afford sufficient protection, though as a matter of fact the erection of a pumping apparatus as suggested by the Executive Engineer would necessitate its being covered in.

5. As to your recommendation that drinking water should be distributed from stand-posts by means of iron buckets instead of by puckallies, I would wish to point out that these buckets are already authorized by appendix 21, Commissariat Code, page 355, but their issue to the troops at Bellary would be useless until suitable means have been provided for the filling of the buckets.

6. With reference to the analysis of the water from a puckall, will you please inform me if any examination was made of the bag in question subsequent to the water being taken from it, and if any report on this matter was made to the Executive Commissariat officer.

7. As this point and also that of the iron buckets can be settled locally, I have the honor by direction to inform you that the Officer Commanding Ceded Districts does not think it desirable to forward your letter in its present form to the Quartermaster-General as the condemnation of a scheme which has been carefully thought out by other officers would not appear to be expedient unless an alternative scheme can be suggested.

From the Medical officer in charge, Station Hospital, to the Deputy Assistant Quartermaster-General, Ceded Districts, dated Bellary, 7th September 1888, No. S./779.

I have carefully considered your letter No. B.D./498, dated 5th September 1888, concerning the Bellary water-supply.

1. With regard to the drinking water. As you seem to think that the scheme of the Executive Engineer includes the roofing of the well, no sanitary objection can be taken to this part, which is otherwise satisfactory. The puckall was examined with the view of showing that water distributed in this way will always be contaminated, whether the puckall is new or old, more so of necessity in a dirty puckall than in a perfectly clean one, but always in both; no

report was considered necessary to be sent to the Executive Commissariat officer as he could not mend matters.

2. *Ablution water from Fort ditch.*—The water is turbid and under no sanitary regulation with which I am acquainted is water of this kind allowed to be issued for ablution. It is in my opinion a grave sanitary mistake to supply British troops and natives from the same place of water-supply; it is well known that natives, probably from centuries of constant use, can use a water-supply with impunity, which would prove dangerous to British troops. The supply of the Fort ditch is from two sources—

(1) *The Fort rock.*—This is unobjectionable.

(2) *Fischer's and Alipur tanks.*—Both these are subject to pollution. The Alipur tank is close to the native village of Alipur and does not seem to have any guard over it to prevent pollution. (The entrance of cattle, sheep, &c., into it and its being used by natives for various purposes—bathing, washing, &c.) The village of Alipur has a good well of its own and the natives need not use the tank; it is a long way from its chief source of supply, viz., the Copper mountain range of mountains, and this intervening ground is always liable to deteriorate the water-supply; its present condition is mentioned in my letter No. S./756 of 30th August 1888. The water from the Alipur tank runs into Fischer's tank: this tank is close to the Native Infantry lines and is also liable to contamination. A few days ago I saw in it a large flock of sheep, goats and cattle and dhobies washing their clothes. The water from Fischer's tank runs through channels to the Fort ditch and native lines; that running to the Fort ditch is in some parts used by the natives as a latrine; I have not unfrequently seen natives using it. The water in the Fort ditch is constantly contaminated by hundreds of dirty gurrahs and chatties belonging to natives being dipped into it daily and other pollution may not unfrequently be seen by an occasional observer of the Fort ditch; the Police do not understand sanitation and what to them seems of no importance may be to a sanitary officer of much moment.

From the above explanation it follows that the water of the Fort ditch is in its present state unfit for distribution to British troops for any purpose. The plan of taking part of the water-supply for Bellary from the Copper mountain range is an excellent one, although it has not been carried out to suit modern sanitary ideas, and the Fort ditch, which is the reservoir from which this water is supplied, may be made to meet the wants of the troops if the following principles are attended to:—

(1) Careful supervision of sources of supply, tanks and channels.

(2) Purifying the water from the Fort ditch before delivery.

With reference to the second part of the above, I may be allowed to make the following suggestions: these need not be carried into effect if better means can be obtained of meeting the same end:—

(1) The natives should not be allowed to touch the water directly: water from the Fort ditch should be run off for them by means of taps.

(2) Wells should be dug within a few yards of the Fort ditch and water supplied from this source only for the troops. By this means a good supply would be obtained and the water purified and cleared.

(3) The ditch itself should be fenced round its open side so as to prevent all intrusion.

I have complied with the latter part of your letter, and I hope for this reason and because it would be unfortunate if a water-supply was used for the troops which was in any way open to suspicion, that the Officer Commanding the station will be pleased to reconsider his decision and forward the whole of the correspondence on this subject, local although some of it may seem, to the Quartermaster-General. In accordance with A.R.I., volume VI, section XIX, paras. 1554 and 1557, I am required to submit this correspondence to the Administrative Medical officer.

From Sir J. A. HANBURY, M.B., K.C.B., Surgeon-General, Her Majesty's Forces, to the Quartermaster-General, dated Ootacamund, 17th October 1888, No. 2784.

With reference to your letter No. 3359 B., dated 9th October 1888, the enclosures of which are herewith returned, I have the honor to make the following remarks:—

(*a*) That the artesian well from which it is proposed to obtain drinking water for European troops should be carefully protected from pollution by all outside influences.

(*b*) That mussucks and puckalls be not used for the conveyance of drinking water.

2. With regard to the water-supply in the Fort ditch reservoir, if it be such as described in Brigade Surgeon J. Y. Donaldson's letter No. S./779 of the 7th September 1888, I am of opinion that it is totally unfit for distribution to European troops for any purpose; and, speaking generally, I entirely concur with this Medical officer's opinion that it is a grave sanitary mistake to supply British troops with water from tanks or reservoirs to which natives can obtain access.

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3. Whatever measures may be adopted for the completion and improvement of the present scheme, the water-supply for drinking and ablution purposes for European troops should be placed beyond suspicion.

No. 7355, Military.

Forwarded to the Public Works Department in continuation of Military Department No. 7085, dated 25th October 1888.

(By order.)

Fort St. George, 6th November 1888. (Signed) A. KENNEY-HERBERT, Brigdr.-Genl., Secretary to Government.

Order—dated 14th November 1888, No. 3609 W., Public Works.

The foregoing papers relative to the proposed improvement of the water-supply to the cantonment of Bellary suggest in the first instance the following questions:—

(1) How the civil population is to be supplied with water if the Fort ditch reservoir is to be closed to them and reserved entirely for the military.

(2) What department is to provide funds for the initial expenditure on improvements.

(3) What department should find funds for the working expenses and interest on capital expended.

2. The Government in the Public Works Department consider it desirable that these questions should be thoroughly inquired into and reported upon by a committee which should include representatives of the different interests involved.

3. A committee composed as under will accordingly assemble at Bellary at as early a date as practicable for the purpose indicated above:—

President.

The Collector of the district.

Members.

The Chairman of the Municipal Council.
The Superintending Engineer.
A Military officer.
A Military Medical officer.

4. The Public Department will be asked to issue the necessary instructions to the Collector and the Local and Municipal Department will be good enough to invite the Chairman of the Bellary Municipal Council to act as a member of the committee.

5. His Excellency the Commander-in-Chief will be requested through the Military Department to nominate the two military members of the committee and to intimate their names to the President, who should take the further necessary steps for assembling the committee.

6. Pending the receipt of the proceedings of the committee no further action will be taken in the matter.

(True Extract.)

Captain, R.E.,
Under-Secy. to Govt., P.W.D.

To the Public Department.
" Military "
" Local and Municipal Department.
" Superintending Engineer, III Circle.
" Examiner, Public Works Accounts.

Exd. J. Henricus.

Spare Copies

Cowle bazaar, though the entire and very considerable expenditure involved in bringing the water to this ditch from the Alipur Tank has been an imperial charge and was incurred mainly for the benefit of the troops quartered in the Cantonment of Bellary, whose requirements his Excellency therefore considers to have the first claim on the water in this reservoir.

x P.C. No 1165 dated 13th August 1872

3. As Bellary is frequently very short of water in wells, on which alone the British troops, and to a great extent, the Native troops have to rely, and the water in which is generally of inferior quality, Sir Charles Trevelyan considers it would be most desirable to place within reach of the troops a supply of comparatively good water in reservoirs, as the scheme for bringing as in fact would the condition of a project on which a large sum has

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has been sunk out of Imperial Funds for which at present no return whatever is obtained.

I have the honor to be
Sir
Your Obedient Servant
[signature] Colonel
Offg: Quarter Master General

Encl.

Govt Contr: of Military Accounts

Military (1888) Department

No 7131

From

The Offg. Lieutenant Governor

To

The Secretary to Government

Military Department

No 2356 B

Dated 14th July 1888.

Received 18 July 1888.

Enclosures. 1

Submits Report detailing proposals for improving the water supply to the Cantonment of Bellary.

Bellary Cantonment Water supply.

9/3609 3 81

1. European Infantry and Royal Artillery. Sources of Supply.

The European Infantry Regiment and the two batteries of Artillery are supplied entirely from wells.

2 Artesian well for drinking water.

Of these the principal is the Artesian well which supplies all the European troops with excellent water for drinking and cooking purposes. The water is raised in a mot by bullocks in the usual manner.

The lift is about 60 feet. A masonry conduit runs from the well to two distributing wells in the E. I. Lines, and from these water is distributed by buckalies. The arrangement for drawing water is a very clumsy one, and its subsequent distribution in barracks is open to

to grave objection.

Water for inferior purposes is obtained from one well in the E. I. Lines, and two wells in the R. A. Lines.

There are 3 wells in the E. I. Lines but two have been abandoned.

There is a very fine well near Lakes Bungalow. This is a Military well but has not been much used on account of its distance from the Lines.

This year the 5/11th Kut. have watered their horses at the well.

Wells for supply of water for horses and ablutions. 3.

Supply insufficient. 4.

The Artesian well is capable of supplying the European troops with drinking water, and it is only in exceptionally dry seasons that all essential requirements could not be met. The supply of water for the battery horses, for the plunge baths, and for washing purposes generally is however quite insufficient even when there is only one battery in the Station.

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5 Native Troops. Sources of supply. The Native Infantry and Cavalry Regiments are supplied from the Alipur Tank and from wells.

6. Alipur Tank. The Alipur Tank has from first to last cost Government about 1½ lacs paid out of military funds.

The tank was completed in 1872. It is a purely military work and was constructed with the object of improving the water supply of the Cantonment.

Water is led off by a

a Channel which falls into Fischer's tank, and from here two Channels take off, one going to the Fort Ditch, and the other to the Native Infantry Coonta.

The Fort Ditch is deep and narrow and makes a good storage reservoir. Its capacity is far greater than that of the Native Infantry Tank and if filled up in January from the Eclipse Tank, it is more than capable of meeting all the wants of the garrison during the dry months.

Strange to say however the Fort Ditch, which ought to be the Chief Source of supply to the Cantonment, is almost Exclusively used by the population in the Cowl Bazaar.

Fort Ditch. 7.

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The Municipality therefore are the Chief gainers by a work which cost them Rs. Nothing, and which was intended by Government for the supply of the Cantonment.

8 Native Infantry Coonta. Situated close to the N. E. Lines. About 12 feet of water in tank when full. There are two Calingulas and surplus water falls into the Native Cavalry Coonta.

If the Native Infantry Coonta is filled in January it holds a sufficient supply to last throughout the hot weather for one Regiment. When water fails wells in the neighbouring nulla are resorted to. There are no Conservancy

conservancy arrangements.
The tank ought to be fenced round to prevent cattle from fouling the water.

This only gets a supply after the S. I. Coonta has filled. A small and shallow tank not suitable for storage. It is said that it has not been used for drinking purposes for the past 6 years. At the time of inspection the water in the tank had an extremely offensive smell. It might be worth while to clean out the tank & fence it. It is immediately below the bund of the S. I. Coonta and would always get a certain amount of water by percolation. Drinking water for the Cavalry is now obtained from a well below the bund of the S. I. Coonta. There were

Native Cavalry 9.
Coonta

11th May 1888

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here only a few inches of water in this well on the 11th May, and it cannot furnish a sufficient supply, so that water has to be obtained from wells in the neighbouring gulla. The horses are watered from a private well which is rented for Rs 7 a month.

10 Native troops in adequately supplied

Under existing arrangements the native troops alone out of the entire garrison derive any benefit from these Supply Tanks. In fact it may be said that only the Native Infantry Regiments are benefitted as the Cavalry Coonta is not used.

It must be further observed that even the Infantry Regiments cannot depend on getting in their Coonta

Coonta a supply sufficient
to carry them through the
hot weather. Wells have
generally to be resorted to,
and water obtained from
a distance with considerable
difficulty.

The water from the Artesian Proposals for 11.
well should it is considered improving water
be pumped up and con- Supply of Cantonment
veyed in pipes to the barracks
whence it would be dis-
tributed by means of
standposts.

Under existing arrange-
ments the water runs many
chances of being fouled
owing to the buckets and
mussucks not being clean.

In the foregoing paras
it has been shown that
while all the troops in the
garrison are inadequately
supplied with water, no
use whatever is made
of the Fort Ditch, the best

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best Military Storage
Reservoir, except to supply
the Cowl Bazaar which is
outside Cantonment limits.
There can be no doubt that
this is a state of affairs
which was not contemplated
by Government when the
Shalimar Tank was made,
and before any water
is supplied to the Cowl
Bazaar from the Fort Ditch
it is only right that all
Military requirements should
be first satisfied.
There is no doubt about the
Fort Ditch being able to
meet all Military demands
and in the undersigned's
opinion it would be
far better to trust to this
source than to sink wells
for the supply of water for
the R. A. Plunge bath and
other purposes.

It is believed that if the Plunge Bath was supplied from the Fort Ditch the other two wells in the R. A. lines would be sufficient for providing all the water required for the horses of one battery and for purposes of ablution.

Extra Supply 12. for R. A.

If two batteries were permanently stationed in Bellary, there would be no difficulty in obtaining the water required from the Fort Ditch.

The water for the Plunge bath and for washing purposes generally is now obtained from one well. If the Plunge Bath were filled from the Fort Ditch the well would

Extra supply for Eo. I. Regiment. 13

A new Plunge Bath has been sanctioned, and this could be placed much nearer the Fort Ditch than the present one, though this has not been taken into consideration in the approximate Estimate for pipes.

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would be quite capable of supplying all the other water required.

14. Extra supply for Native Infantry & Native Cavalry. Arrangements would have to be made for supplementing the supply obtained from the ct. d. Coonta. A couple of dip wells in the ct. d. Lines could be supplied by pipes from the Fort Ditch. Similar arrangements would be required for the Native Cavalry lines. A water trough would also be required which would be supplied with water from Fort Ditch. By this arrangement it would be no longer necessary to pay the 840 a year for the well which is now used.

15 Works necessary to carry out the. The improvements which have been suggested

suggested above would involve the construction of the following works, the approximate cost of which is also given.

the above proposals and their Cost.

Drinking water for E. Troops

Engine & Shed at Artesian well	8000
Pipes and standposts	10000

Supply of R. A. & E. F. Lines Baths & Native Troops.

Engine & Shed at Fort Ditch	15000
Pipes for supply of R. A. and E. F. Lines Bath	12000
Pipes watering trough and dip-wells for Native Cavalry and Infantry	15000
Total	60000

The annual cost would be

Interest and depreciation at 10 p.c.	6000
Working expenses	4000
Total	10000.

16. Present cost of water supply.

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The Amount spent in 1887.88, by the Commissariat Department for the European Troops was Rs 3704-6-7 This is in addition to the cost of the Regimental Establishments which amounted to Rs 4979-8-0. To these two items must be added Rs 1500 being interest on cost of Aliput Tank together with working Expenses Cost of Repairs &c &c

17. Comparison between Cost of present & proposed systems.

Whatever system of water supply was adopted the cost of the regimental Establishments would not be affected. If however the new arrangements were carried out it would be possible to save the Rs 3704-6-7 spent by the Commissariat Department.

The total cost of the

the present and proposed arrangements would be as follows:

Present.	Rs
Aliput Tank interest @	15000
Contt Charges	3700
Regimental Estabt	5000
Total	23700

Proposed	
Aliput Tank interest	15000
Regimental Estabt	5000
Annual cost of new works	10000
Total	30000.

It will be seen therefore that the proposed arrangements will cost annually Rs 6300 more than at present.

It must however be borne in mind that the greater portion of the extra expenditure now proposed, is simply to complete the Aliput Tank scheme, on which 1½ lacs have already

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already been spent. By carrying out the works which have been suggested, Government will get a fair return for the money already spent, whereas at present it costs more than Rs 15000 a year to furnish a supply which is not even sufficient for the A.S. regiments of the garrison.

Secy. Supply & Transport Bellary 1 June 88

Actg. Chief Engineer
Excc. Engineer

Form No. 23 A. / 10 B.

11 Sp

M. / 3609

THE CONTROLLER OF MILITARY ACCOUNTS 23 AUG 88 MADRAS.

QUARTER MASTER GENERAL'S OFFICE,

Ootacamund,

21st August 188 .

No. 2795 B

From

BRIGADIER-GENERAL M. PROTHEROE, C.B., C.S.I.,

QUARTER MASTER GENERAL,

To

THE Controller of Military Accounts
Fort Saint George

SIR,

In returning the enclosure of your letter No. 2553 dated 17th instant, I have the honor, by order to inform you that, if the practice in regard to similar charges in connection with the Nelson Water Works at Bangalore is followed, the item of Rs. 4000 for working expenses will form an annual charge against the Military Department

2. I would note, however, that at Secundrabad the entire charges in connection with the water works, which supply the Troops, including working expenses, are met in the Public Works Department, and it seems a question for Government to decide which system is correct

The

3. The item of Rs. 6 000 interest and depreciation in the proposed initial outlay would not be an actual disbursement, and at any rate must be nominally debitable to the Public Works Department by which Department funds for the execution of the proposed works would be found

I have the hong to be
Sir
Your obedient Servant
D. Sweeney
Lieut: Colonel
D: Quarter Master General

Encl.

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From

THE QUARTER MASTER GENERAL,

To

THE

No.

Dated
Received } 188

ENCLOSURES.

A 19/2609 Madras, 28th September 1888.

From

Lieut.-Colonel C. E. Thomas,
Offg. Controller of Military Accounts,

To

Brigadier-General A. Kenney-Herbert,
Secretary to Government,
Military Department.

Sir,

In forwarding the accompanying (a) letter from the Quarter Master General, I have the honor to give below details of the expenditure incurred during 1887-88 in obtaining water for the troops at Bellary :-

(a) No 2066 A dated 14th July 1888 submitting a special detail Pay and Allowance Roll for supplying Water to the Regiments [illegible]

Paid regimentally.

G/2nd Brigade Royal Artillery.

Hire of bullocks for drawing water for horses from April to July 1887, and from 17th November 1887 to 28th February 1888 — Rs 192-4--

3 Puckallies at Rs 10-11-10 each and 1 Bheastie at Rs 7 from 1st April 1887 to 31st March 1888 — " 470-10--

Rice Money on account of do — " 54-10-4

S/1st Brigade Royal Artillery.

3 Puckallies at Rs 10-11-10 each and 1 Bheastie at Rs 7 from 1st April 1887 to 31st March 1888 — " 470-10--

Rice Money on account of do — " 54-10-4

Head Quarters & Wing 1st Bn Duke of Cornwalls Light Infantry.

8 Puckallies at Rs 10-11-10 each from 1st April 1887 to 31st March 1888 — " 1031---

Rice Money on account of do — " 109-4-8

Native Regiments and Depots.

Pay of Puckallies — " 772-4--

Rice Money on account of do — " 211---

Total per annum Rs 4566-5-4

Native Cavalry – For drawing Water for Horses.

	per mensem
Hire of two pairs bullocks with drivers	Rs 40
Well apparatus	10
Rent of well	20
Total per mensem	70
Total per annum	840 – –

Paid by the Commissariat Department.

Plunge baths and Wash houses.

Hire of bullocks for drawing water from wells and drawing water carts	Rs 1826-1-5
Hire of Coolies for emptying water bags	469-3-–
Well gear	145-4-–
Repair of well gear	65-8-–
— Do — water carts	110-–-8
Greasing — do	25-8-–

For cooking and drinking purposes.

Hire of bullocks	106-–-–
Well gear	150-–-–
Repair of well gear	144-4-–
Total per annum	Rs 2951-13-4

Total annual cost of existing establishment &c — Rs 8358-2-5

2. The cost of the proposed scheme, according to para 17 of the Executive Engineers report is as follows:–

Initial expenditure — Rs 60000

Annual expenditure

Existing regimental establishments	Rs 4566-5-4
Working expenses	4000-–-–
Interest and depreciation at 10 per cent on initial expenditure	6000-–-–
Total per annum	Rs 14566-5-4

or an annual extra expenditure of Rs 6208-2-8 over the existing cost of establishments paid by the Military Department

3. As however the estimated annual interest

(1) This is Para 17 of the Report

(2) Para 2 of Q.M.G.'s letter No. 2795 B. of 21st August 1888.

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interest and depreciation – Rs 6,000 – is an item which will apparently appear in the accounts of the Public Works Department, the actual extra annual expenditure that will fall on the Military Department is Rs 208-2-11, presuming that the working expenses (Rs 4000) of which no details are given, are to be borne by the Military Department – Vide para 1 of Quarter Master General's letter No. 2795 B. of 21st August 1888, attached.

4. The sanction of the Government of India will be necessary to carry out the proposed scheme, the initial cost of which, the Quarter Master General states, will be borne by the Public Works Department.

5. It is not stated in the correspondence now forwarded what arrangements it is proposed to make with the Civil and Municipal authorities should the Military take possession of the Alipur Tank and the Fort ditch at Bellary, of which sources of water supply the former authorities have been allowed the right of use for so many years past.

6. The statement in para 2 of the Quarter Master General's letter of 21st ultimo, that at Secunderabad the entire charges in connection with the water works which supply the troops, including working expenses, are met in the Public Works Department" is not quite correct. Under the Proceedings of Government marginally noted, fuel and other articles are supplied by the Commissariat Department on the indent of the Executive Engineer, Secunderabad, and charged finally in the Commissariat Accounts. The amount so charged during 1887-88 was Rs 5015-12-2, besides Rs 3227-8-4 on account of expenses incurred for coolies, well gear, &c, for plunge baths, wash houses and soldiers' gardens. In addition to the above sums charged in the Commissariat Accounts an

(3) Military Department No. 1078 dated 15th March 1878.

(4) Military Department No. 1869 dated 25th August 1879.

an expenditure of Rs 848-1-8 per mensem, or (4) Rs 10,061-4-- per annum, is incurred regimentally on account of bheasties, pukallies and coolies employed in obtaining water for drinking purposes.

I have the honor to be,
Sir,
Your obedient Sowant.

C. F. Thurnd

Lt. Colonel,
Offg. Controller of Mily. Accounts.

21/3609

25. 23-8-1872 = No 2708. R
" 14-10-1873 = 3022.
" 23-8-1879 = 4469
" 8-11-1880 = 4926.
" 6-8-1887 = 4726-R
" 23-8-1887 = 5173 R
" 11-11-1887 = 6195.
" 5-11-1887 = 6815 R
" 6-12-1887 = 7664.
" 4-6-1888 = 3711
" 8-9-1888 = 6128 R

Mily (Addl) Depth
No 7132

From

The Controller of Military Accounts,
Madras.

To

The Secretary to Government,
Military Department.

Dated 28th September 1888.
Received 1st Oct 88

Enclosures, 5

Forwards, with report, letter from the Quarter master General submitting proposals for improving the water supply in the Cantonment of Bellary

SP
Ans

REQUIRED TO BE ASSEMBLY WITH REPLY.

22/3609

No. 7085

16P

Government of Madras

MILITARY DEPARTMENT,

Fort St. George, the 25th October 1888

From the Quarter Master General, No 23564, dated 14th July 1888, submitting proposals for improving the water supply in the Cantonment of Bellary.

× original copy attached

Report from the Controller of Military Accounts, A, dated 28th Septr 1888.

× original copy attached.

Forwarded to the Public Works Department for favor of perusal & report.

2. The papers submitted contain a rough sketch of the improvements proposed by the Executive Engineer Bellary Division, and an approximate estimate of the initial outlay and annual expenditure involved.

3. It would seem advisable that

the question of the water supply for the civil population in the event of the supply from the Alipur Tank and the Fort Ditch being reserved for the use of the Military should be pursued further before detailed estimates are prepared for the proposed improvements.

4. Definite information is not afforded in regard to the source from which the required funds for the improvements should be provided.

(By Order)

Attorney Ambers

Brigade Major

Lucknow Division

To

The Public Works Department with the papers.

Deputy Quarter Master General

SECRETARIAT GOVERNMENT
26 OCT. 16
BOMBAY

Ditto

23
3609

OTHC No 10921

No 1395 Wap. 6 88
" 1960 W 2/9 88
" 194 W 2/12 1.82
" 252 C 2/1 2 82
" 564 C 2/3 87
" 2329 W 2/12 1 86

Circ - 12 - 11 - 90.

Form No. 20 A. 7 B.

30P

24/3609

QUARTER MASTER GENERAL'S OFFICE,
Ootacamund,
26th October 1888.

No. 3578 B

From

BRIGADIER-GENERAL M. PROTHEROE, C.B., C.S.I.,
QUARTER MASTER GENERAL,

To

THE SECRETARY TO GOVERNMENT,
MILITARY DEPARTMENT.

SIR,

I have the honor, by order of the Commander-in-Chief to forward for the information of Government, in continuation of this Office letter No. 2356 B dated 14th July 1888, the correspondence as per margin, in connection with the Water Supply Scheme for the Cantonment of Bellary and to state that His Excellency concurs in the opinion of the Surgeon General Her Majesty's Forces, as expressed in his letter No. 2784 dated 17th instant.

I. Letter No. B.B. 624 dated 14th September 1888 from the Officer Commanding Cadal District with 6 enclosures.

I. Letter No. 2784 dated 17th October 1888 from the Surgeon General, Her Majesty's Forces

I am to state that, as it is proposed that

25/3609

that the water of the Fort ditch should be used by the Troops for ablution and sundry purposes as well as that from the Artesian well which is sufficient for drinking purposes only) effectual measures should be taken to preserve it from contamination and this the Commander in Chief considers can probably be done without much difficulty, by enclosing it and preventing its removal except by means of pumps &c.

I have the honor to be

Sir

your Obedient Servant

M. Rosenthal Brigr Genl

Quarter Master General

Ea

W 7085 of 88

REQUESTED TO BE RETURNED WITH REPLY

317

Fort Saint George
1st November 1888.

No. 7355. Forwarded to the Public Works Dept, in continuation of Military Dept. No. 7085, dated 25th October 1888.

By order,

Attorney Herbert. Asst Secy
Secretary to Govt M. D.

Military (1888) Department.

No.

From

THE QUARTER MASTER GENERAL,

To

THE SECRETARY TO GOVERNMENT,
MILITARY DEPARTMENT.

No. 35786

Dated 26th October 1888.
Received 29th

ENCLOSURES. 4

Forwards certain correspondence in connection with the water supply Scheme for the Cantonment of Bellary.

JR
30/K circ. 12-11-88

Ans

No. B.D. 524 26/3609

Dy. Asst. Qr. Mr. General's Office
Bellary, 14th September 1888.

265

From

Colonel C. S. Stewart
Commanding, Ceded Districts

To

The Master Master General
&c &c &c

Sir,

I have the honor to forward in connection with the Scheme for the water Supply of Bellary submitted to you under this Office No. B.D. 202 of 19th June 1884, the Correspondence as per Margin from the Senior Medical Officer at Bellary on the above Subject.

I. Letter No. 3/456 d/30.8.88 from Senior Medical Officer with Analytical Reports on water.
II. Letter No. B.D. 498 d/5.8.88 from Dy. Asst. Qr. Master General to Senior Medical Officer.
III. Letter No. 3/479 d/7.9.88. from Senior Medical Officer.

2. In my opinion Brigade Surgeon Donald does takes a pessimistic view of the water Supply from the Fort Distn.

3. For the greater part of the year no water is run into this Distn from the Alipore and Fishers Tanks, but after heavy periodical rains large quantities are let in by means of open Channels. These Channels, when they require it, are on these occasions perviously Cleaned under the orders of the Executive Engineer, and precautions are taken by the Police to prevent pollution

pollution as far as possible.

4. It is impossible to prevent animals drinking at the Fisher and Alipore Tanks, as the former is situated just beyond the Western limits of the Cantonment and the latter is about 5 Miles distant from Cantonment boundaries.

5. With regard to the suggestions in the second letter of the Senior Medical Officer I have to report that unless a Special Staff be entertained a More Careful Supervision of the Sources of Supply is impossible. (2nd) That any interference with the Supply of water to other Natives from the Fort Ditch must lead to Complications with the Municipality of Bellary. (3rd) The Supply of water from wells sunk within a Short distance of the Fort Ditch appears unworthy of Consideration. (4th) The fencing in of the Fort Ditch would be a great Expense, and if the fence were made sufficiently close and Substantial to prevent the ingress and Egress of individuals it would be objectionable from a defensive point of view as affording Cover to an assailant on the very Crest of the Glacis.

I have the honor to be
Sir
Your most Obedient Servant
Jno Steward Colonel
Commanding Ceded Districts

27/3609

IA
30/X circ 12-11-78

B3/2

From

The Officer Commanding
Coast Districts

To

The Inspector Master General
Ordnance

No B.2.
524.

Bellary 14th September 1868.

Forwards report on water Supply at Bellary by Senior Medical Officer, in Connection with Scheme proposed by the Executive Engineer Bellary, forwarded with Letter No B.2. / 242 of 19th June 1868.

DEPUTY ADJUTANT GENERAL'S OFFICE
RECEIVED 17 SEP 68
DY. No. 3614 B

30/X circ 12-11-78

DEPUTY ASSISTANT ADJUTANT GENERAL'S OFFICE
DELLARY
Dy. No. B2 689
21 AUG 68

No 5/756

28/3609

Bellary
30th August 1868

174p

From

The Medical Officer in Chge
Station Hospl

To

The Dy Asst Adjt Genl Mr Forbes CB
Bellary

Sir,

With reference to the scheme of the Exec: Engineer Bellary for improving the supply of the water to this station - which I have just seen - I would beg to be allowed to make the following remarks. The water for the troops is of two kinds:-

1 - For drinking purposes.
2 - For ablution.

The requisites for the former are that the supply shall be good & abundant - and that it shall be kept free from contamination from its source to the end of its distribution. I submit an analysis of this water from the so-called Artesian well used for British troops: it is a good water and the supply is as a rule abundant but the

plan submitted by the Ex: Engineer is not sufficient to protect this supply from contamination: the entrance to the well, a large opening many yards square, is left wholly uncovered: it is enclosed by a stone wall and this is the only protection from the entry of dead leaves and filth of any kind into the well: the water will therefore be exposed to contamination from this source and any vindictive person might poison the water and the garrison along with it: I would recommend that the well be roofed in: if this is done the plan proposed by the Ex: Engineer would be sufficient from a sanitary point of view.

2 – Ablution (chiefly Bath) water.

For British Troops it is proposed to take this from the Fort-ditch: this water is not suitable for Ablution purposes:

1 – It is turbid and might from this cause give rise to Opthalmia.

2 – It is used by the natives of a large neighboring Bazaar.

73/
369

The Cowl Bazaar – for drinking and other purposes and water so polluted if distributed over barracks for ablution purposes might be the means of introducing such diseases as Cholera, Dysentery or Enteric Fever. I enclose a report of its analysis: it is a softer water than that from the so called Artesian well and the microscope shows no bacilli in the sediment. I would beg to point out however that neither chemistry nor the microscope will show when a water is capable of generating disease, this can be arrived at by carefully considering whether it is possible to introduce disease into the water in question, and the ditch which is little better than a stinking pond is liable to this at any moment.

The Ex: Engineer's letter only deals with the distribution of water so far as the Native Hospital in Barrack: from there it would have to be conveyed to the Fillers and for this purpose galvanized iron buckets only should be used. I enclose an analysis of water taken

from a Pickall filled from the
artesian well; it will be seen
that it becomes loaded with
organic matter and when thus
contaminated quickly destroys
the purifying power of the charcoal
in a Macnamara filter. Water
is distributed this way now in
Barracks and if this was
continued the improvement in the
water supply noted in the Ex.
Engineer's letter would diminished
in amount.
I would beg the favor of this letter being
forwarded to the Dr. Med. Purl in connection
with the report from the Ex. Engineer.

I have the honor to be
Sir
Your most obedt Servt

Jas. Y. Donaldson Mds
Brigade Surgeon m.s.
Medical Officer in charge
Station Hospl

Analysis of water
from
Artesian well

30/3609 19

July 1st 1889

A. Physical Properties

1 Color	Colourless
2 Clearness	Clear
3 Sediment	none
4 Lustre	good
5 Taste	No taste
6 Smell	none
7 Reaction	very faintly acid

B Chemical Analysis

1 Chlorine	about 1.40 grains per gallon
2 Sulphuric acid	1 grain per gallon
3 Phosphoric acid	Present
4 Nitrous acid	none present by the KI & starch test
5 Nitric acid	none
6 Organic matter	Gold chloride was reacted upon
7 Ammonia	Trace
8 Total hardness	14° Clark's scale
9 Permanent	4·20° " "
10 Removable	9·80° " "
11 Total solids	21 grains per gallon

1st J. Mc Neill
Surgeon m.s.

Jas. Y. Donaldson Mds
Brigade Surgeon m.s.
Med. Officer in charge
Station Hospl
Bermuda

from a Pickall filled from the artesian well: it will be seen that it becomes loaded with organic matter and when thus contaminated quickly destroys the purifying power of the charcoal in a Macnamara filter. Water is distributed this way now in Barracks and if this was continued the improvement in the water supply noted in the Ex. Engineer's letter would be diminished in amount.

I would beg the favor of this letter being forwarded to the Dr. Med. Purl. in connection with the report from the Ex. Engineer.

I have the honor to be
Sir
Your most obedt Servt

Jas. Y. Donaldson Mds
Brigade Surgeon m.s.
Medical Officer in charge
Station Hospl

30/1

Analysis of water
from
Artesian well

30/3609/17

July 12 1869.

A. Physical Properties

1 Color	Colourless
2 Clearness	Clear
3 Sediment	none
4 Lustre	good
5 Taste	No taste
6 Smell	none
7 Reaction	very faintly acid

B Chemical Analysis

1 Chlorine	about 1.48 grains per gallon
2 Sulphuric acid	1 grain per gallon
3 Phosphoric acid	Present
4 Nitrous acid	none present by the KI & starch test
5 Nitric acid	none
6 Organic matter	Sold chloride was exacted upon
7 Ammonia	Trace
8 Total hardness	14° Clarks scale
9 Permanent	4.20° "
10 Removable	9.80° "
11 Total solids	21 grains per gallon

Sd J. H. Mecartt
Surgeon m.s.

Jas. Y. Donaldson Mds
Brigade Surgeon m.s.
Med. Officer in charge
Station Hospl
Bengal

Analysis of Water
from
Vaccall of Wheeatie at Dift. Well
July 14th 1888

31/3609

A – Physical Properties

1 Color	Colourless
2 Clearness	Clear
3 Sediment	none
4 Lustre	good
5 Taste	none
6 Smell	none
7 Reaction	Faintly acid

B Chemical Analysis

1 Chlorine	abont 1.48 grains per gallon
2 Sulphuric acid	½ grain per gallon
3 Phosphoric acid	very faint trace
4 Nitrous acid	none
5 Nitric acid	none
6 Organic matter	Nearly a considerable deposit with pure chloride test
7 Ammonia	none
8 Total hardness	15.75° Clark's Scale
9 Permanent	7° " "
10 Removable	8.75° " "
11 Total solids	24 grains per gallon
12 Total oxidizable matter (in terms of O required for oxidation)	.1855 grains per gallon

[sd] Jno. McCall
Surgeon

Jno. G. Macallister Lieut
Brigade Surgeon and
Med Officer in charge
Station Hospital
Benares

Fort Dick Water 21

32/3609 a Bellary Augst 26th 1888

0	Color	Yellowish brown
1	Reaction	Faintly acid
2	Sediment	Considerable
3	Clearness	Turbid - Semi transparent
4	Lustre	Bad
5	Taste	unpleasant -
6	Smell	indescribable odor

7	Chlorine	1.48 Grains per gallon
8	Total Hardness	5.6 " "
9	Removable	4.2 " "
10	Fixed	1.4 " "
11	Organic matter (Gold beaters)	Small amount -
12	Sulphuric acid	Trace
13	Nitric acid	None
14	Nitrous acid	None
15	Ammonia	None
16	Total solids	12.6 Grains per gallon

Sd/
D. Reckitt
Surgeon Lt.

Jas. G. Donaldson M.D.
Brigade Surgeon Lt.
Med. Officer in charge
Station Hospl
Bellary

No 132. / 49 / 609

Dy. Asst. Qr. Mr. General
Bellary 5th September 1855

From

The Dy. Asst. Qr. Mr. General
Ceded Districts
Bellary

To

The Senior Medical Officer
Station Hospital
Bellary

Sir,

With reference to my letter No 3/95 dated 30th August 1855, enclosing Analytical report on the water supplied to the Troops at Bellary from the Post-Detah for ablution and the Artesian well for drinking purposes and your remarks on the former as being unsuitable for ablution purposes, I have the honor by order to bring the following facts to your notice for favour of consideration.

The Post Detah supply forms part of an extensive Scheme (sanctioned and in a great part carried out) for the supply of good water to the Troops at Bellary. It was sanctioned after years of Consideration and upwards of 1½ Lakhs of Rupees were spent on it.

It is to be presumed that the quality of the water was tested at the time and it is a fact that thousands of inhabitants of the Cowl Bazar depend entirely on this water for drinking purposes and suffer no harm.

The danger of washing in such water seems to be a remote one. The water in the Post Detah is to a great extent obtained by drawing off water from the Allipore Tank which also supplies the Native Infantry and Cavalry Coorlas, and the quality of this water is believed

me if any examination was made of the keg in question subsequent to the water being taken from it and if any report on this matter was made to the Commg Officer.

As this point and also that of the iron Buckets can be settled locally, I have the honor by direction to inform you that the Officer Commanding Forces Dist does not think it desirable to forward your letter in its present form to the Quarter Master General as the Condemnation of a Scheme which has been carefully thought out by others officers would not appear to be expedient unless an alternative Scheme can be suggested.

I have the honor to be
Sir
Your most Obedient Servant
(Signed) W. D. Ind Captain
Dy. Asst. Adjt. General Mtb

Inclosed
Captain
Dy. Asst. Adjt. General Mtb

[illegible] to be expedient.

As regards the precautions of the Fort Dictate by the Natives who draw water there from I have to inform you that the Police are most strict in preventing any such pollution.

The Fort Dictate has always been regarded as the Main water supply of Bellary and an alternative Source of Supply has been often [illegible] Can be suggested without the expenditure of an enormous sum of Public Money, and the throwing away of the Money already laid out in the Alipore and Kistna Tank Scheme.

With reference to your remarks on the Supplying of drinking water from the Artesian well and the possible Contamination of the water from Cattle and outside filth. I would wish to point out that there are no trees or Vegetation near the work and that the open ground around it is remarkable for its cleanliness. The high wall round the well therefore appears to afford sufficient protection, though as a matter of fact the erection of a [illegible] as suggested by the Executive Engineer would facilitate its being Concreted in.

As to your recommendation that drinking water should be distributed from Stand pipes by means of iron Buckets, instead of by Buckets. I would wish to point out that these Buckets are already authorized by Appendix 21 of the Commissariat Code page 355. but there is no suitable Buckets have been provided for the filling of the Buckets.

With reference to the Analysis of the water from a Bucket will you please to forward

4/

No. 8 / 777 — 37/1609

Bellary 7th September 1888

From

The Medical Officer in charge
Station Hospital

To

The Dy Asst Qr Mr Genl C.D.
Bellary

DY. ASSISTANT QR. MR. GENERAL
BELLARY
Dy No 1330
731
10 SEP. 88
C.D.

24188

Sir,

I have carefully considered your letter No B.D./498 dated 5th September 1888 concerning the Bellary Water supply.

1- With regard to the drinking water as you seem to think that the scheme of the Ex. Engineer includes the roofing of the well no Sanitary objection can be taken to this part which is otherwise satisfactory. The Puckall was examined with the view of showing that water distributed in this way will always be contaminated whether the Puckall is new or old, more so of necessity in a dirty Puckall than in a perfectly clean one, but always in both. no report was considered necessary to be sent to the Ex. Com. Officer as he could not mend matters.

2 - Ablution water from Int Ditch.
The water is turbid and under no sanitary regulation with which I am acquainted is water of this kind allowed to be issued for ablution. It is in my opinion a grave sanitary mistake to supply British troops and natives from the same place of water supply: it is well known that natives, probably from centuries of constant use can use

a water supply with impunity which would prove dangerous to British troops. The supply of the Fort-Ditch is from two sources 1 – The Fort-Rock – this is unobjectionable. 2 – Fishers and Allipur Tanks. Both these are subject to pollution. The Allipur Tank is close to the native village of Allipur & does not seem to have any guard over it to prevent pollution [illegible] cattle, sheep &c into it & its being used by natives for various purposes. (bathing, washing &c) – The village of Allipur has a good well of its own and the natives need not use the Tanks, it is a long way from its chief source of supply viz. the Copper mountain range of mountains and this intervening ground is always liable to deterioration the water supply – its present condition is mentioned in my letter No. 56 of 30th ult. The water from the Allipur tank runs into Fishers Tank: this Tank is close to the native Infantry lines and is also liable to contamination. A few days ago I saw in it a large flock of sheep, goats & cattle and dhobies washing their clothes. The water from Fishers Tank runs through channels to the Fort-Ditch and native lines. [illegible] to the

Fort-Ditch is in some parts used by the natives as a latrine: I have not unfrequently seen natives using it. The water in the Fort-Ditch is constantly contaminated by hundreds of dirty furrahs and chatties belonging to natives being dipped into it daily and other pollution may not unfrequently be seen by an occasional observer of the Fort-Ditch: the police do not understand sanitation & what to them seems of no importance may be to a Sanitary Officer of much moment.

From the above explanation it follows that the water of the Fort-Ditch is in its present-state unfit for distribution to British troops for any purpose. The plan of taking part of the water supply for Bellary from the Copper mountain range is an excellent one although it has not been carried out to suit modern sanitary ideas, and the Fort-Ditch which is the reservoir from which this water is supplied may be made to meet the wants of the troops if the following principles are attended to:–

1 – Careful supervision of sources of supply, tanks & channels.

2 – Purifying the water from the Fort-Ditch before delivery.

No. 1784 / 3359 / 3609

SURGEON-GENERAL'S OFFICE, H. M.'s FORCES,
MILITARY DEPARTMENT, GOVERNMENT OF MADRAS,
Cotacamund, 17 October 1888.

From

Sir J. A. Hanbury. KCB, MRCS

SURGEON-GENERAL,
H. M.'s FORCES.

To

THE Quarter Master General,
Cotacamund.

SIR,

With reference to your letter No. 3359B dated 9th October 1888, the enclosures of which are herewith returned, I have the honor to make the following remarks:—

(a) That the artesian well, from which it is proposed to obtain drinking water for European Troops, should be carefully protected from pollution by all outside influences.

(b) That Mussucks and Puckalls be not used for the conveyance of drinking water.

2. With regard to the water supply in the Fort Ditch Reservoir, if it be such as described in Brigade Surgeon J. G. Donaldson's letter No. 8/779 of the 7th September 1888, I am of opinion that it is totally unfit for distribution to European Troops for any purpose; and speaking generally, I entirely concur with

With reference to the 2nd part of the above I may be allowed to make the following suggestions: these need not be carried into effect if better means could be obtained of meeting the same end

1- The natives should not be allowed to touch the water directly; water from the Fort Ditch should be run off for them by means of Taps.

2- Wells should be dug within a few yards of the Fort Ditch & water supplied from this source only for the Troops. By this means a good supply would be obtained & the water purified & cleared.

3- The Ditch itself should be fenced round its open side so as to prevent all intrusion. I have complied with the latter part of your letter & I hope for this reason & because it would be unfortunate if a water supply was used for the troops which was in any way open to suspicion that the Officer Commanding the Station will be pleased to reconsider his decision & forward the whole of the correspondence on this subject, local although some of it may seem, to the Quarter Master General in accordance with A. R. I. V. A. vi Sect XIX paragraphs 15-54 & 15-57 I am required to submit this correspondence to the Administrative Medical Officer.

I have the honor to be
Sir
Your most obed Servt

J. G. Donaldson Surgeon
Bde Surgeon and
Asst Officer in charge

Sidy No 3614 dated

with this Medical Officer's opinion that it is a grave Sanitary mistake to Supply British Troops with water from tanks or reservoirs to which Natives can obtain access.

3. Whatever measures may be adopted for the completion and improvement of the present Scheme, the water supply for drinking and ablution purposes for European Troops should be placed beyond Suspicion.

I have the honor to be
Sir
Your most obedt Servant
J R Martin 1613
Surgeon General,
Afric Forces.

Sept 13

38

From

THE SURGEON-GENERAL,
H. M.'s FORCES.

To

THE Quarter Master General
Ootacamund

No. 2784

Ootacamund
~~Fort St. George~~, 17th October 1888.

Submits remarks relative to the water supply at Bellary.

4003

29/3608

Might be commenced, the orders being issued in the G.O.S. and intimated by the Chief Sec. to Govt. to Govt. Nilgiri Dept.

The further papers have been recorded at the head of the draft order. All the papers will be included in the one proceedings. If approved, the papers will now be sent to H.M.

JB.
12.11.88.

39/3609

Mr. Flem
Hill
12/11/88

Public Works Department.

OF THE MADRAS GOVERNMENT.

Under date the

Read the following

(H.E. No. 2356 Bal/ July 14, 1888)
letter(" A of " 28, ")
Enclosure(" 7085 of Oct 25, ")
(" " 3578 B. of 26 Oct. 1888)
(" " 7355 of 6 Nov. 1888)

The foregoing papers relative to the proposed improvement of the water supply to the cantonment of Bellary suggest in the first instance the consideration of the following questions:—

(1) How the civil population is to be supplied with water if the Fort Lilly reservoir is to be closed to them and reserved entirely for the Military

41/3609

Inspt to be commenced, the orders being received in the P.W.D., and intimated by the Chief Sct. & Govt. Engr. and Dist. Engr.

Dem. permits having been settled; plans & estimates in duplicate can be called for here after.

Works
31.10.56

When plans must be settled before estimate can be made and detail should be furnished Committee might submit a plan in duplicate

Engr
31/10/56

B + C
July 10 1857

PUBLIC WORKS DEPARTMENT.

OF THE MADRAS GOVERNMENT.

UNDER date the

READ the following

...l (No. 1356 Bad July 14, 1858)
...lects (" " 11 dy " 28, ")
...lement (" 7085 dy Oct 25, ")
...l (" " 3078 dy 26 Oct 1855)
...t (" " 7355 dy 6 Nov 1855)

The foregoing papers relative to the proposed improvement of the water supply to the cantonment of Bellary suggest in the first instance the consideration of the following questions:—

(1) How the Civil population is to be supplied with water if the Fort tank reservoir is to be closed to them and reserved entirely for the Military

10921

3609

A.W.

3.4.88

For orders when the Supply Engrs remarks shall be called for.

CR

31.10.44

There are 3 questions to settle.

(1) How the civil population is to be supplied with water, if the Fort distributing reservoir is to be closed to them, & reserved entirely for the Military

(2) What department is to provide funds for the initial expenditure

(3) What department will have to find funds for working expenses & interest on capital.

A committee consisting of
The Collector
The President of the Municipality
The S.E.
Two Military officers, one of them being a Medical officer

H.W.

A/

42/3609

PUBLIC WORKS DEPARTMENT.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

UNDER date the

READ the following

From the Quarter Master General (No. 1356 Bal/ July 14, 1888)
" Controller, Military Audits (" " A dy " 28, ")
" Military department (" 7085 dy Octr 25, ")

From the Quarter Master General (" " 3578 B dy 26 Octr 1888)
Endorsement by the Military Department (" " 7355 dy 6 Novr 1888)

32P

The foregoing papers relative to the proposed improvement of the water supply to the cantonment of Bellary suggest in the first instance the consideration of the following questions:—

13 Nov

(1) How the civil population is to be supplied with water if the Fort distributing reservoir is to be closed to them and reserved entirely for the Military

(1) What department is to provide funds for the initial expenditure on improvements.

(2) What department should find funds for the working expenses and interest on capital expended

2. The Govt in the Pub. Dept consider it desirable that these questions should be thoroughly inquired into and reported upon by a Committee which should include representatives of the different interests involved.

A Committee composed as under will accordingly assemble at Ballarat at early a date as practicable

for the purpose indicated above:- 3 & 4

President

The Collector of the District

Members

The Chairman of the Municipal Council

The Supty Engineer

A Mining Officer

A Mining Medical Officer

4. The Public Works Dept will be asked to issue the necessary instructions to the Collector and the Local and Municipal Dept will be good enough to invite the Chairman of the Ballarat Municipal Council to act as a member of the Committee.

5 His Excellency the

Commander-in-Chief will be requested through the Military department to nominate the three military members of the Committee and to intimate their names to the President, who should take the further necessary steps for assembling the Committee.

6. Pending the receipt of the proceedings of the Committee no further action will be taken in the matter.—

Public dept.
Military dept.
L. & M. dept.
S E III Circle
Exr. P. W. A.

To, ~~the Chief Military Secretary to Govt for~~
~~transmission~~

23/2/39 II

Govt. of (1888) Madras.

PUBLIC WORKS.

15=11

Dated

Rcd. Encl.

G.O. 14 Nov. 1888, No. 3609

Water Supply to the Cantonment of Bellary

Orders appointing a Committee to report on certain questions relating to the improvement of the —

170
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