

Local & Munl. (1897) Department.

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G.O., No. 230 M

DATED 16-2-97

DESPATCHED

[Despatch Abstract.]

Water works.

Communicating with remark, to the Municipal Councils of Madura, Trichinopoly and Adoni for early attention, Sanitary Engineer's inspection notes on the — of these towns

BACK PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

Government (1897) of Madras. LOCAL AND MUNICIPAL.

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G.O., No. 230 M., 16th February 1897.

FEBRUARY.

Water-works.

Communicating, with remark, to the Municipal Councils of Madura, Trichinopoly and Adoni, for early attention, Sanitary Engineer's inspection notes on the — of those towns.

GOVERNMENT OF MADRAS.

LOCAL AND MUNICIPAL DEPARTMENT.

READ—the following paper :—

From J. A. JONES, Esq., MEM. INST. C.E., F.R.S.E., Sanitary Engineer to Government, to the Secretary to Government, Local and Municipal Department, dated Fort St. George, 29th January 1897, No. 195.

With reference to G.O., No. 847 M., dated 15th May 1896, I have the honour to forward notes of inspection of the existing water-works at—

- | | |
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| (1) Madura. | (3) Adóni. |
| (2) Trichinopoly. | |

The two former were inspected by myself, the latter by the Assistant Sanitary Engineer ; paragraphs 9 and 11 of the latter note are remarks and recommendations by the Sanitary Engineer.

2. I send these notes to Government in view that they may be forwarded to the councils concerned with the recommendation of Government that—

With regard to Madura—

- (1) A larger stock of fuel is maintained ;
 (2) That the ladder required is at once provided ;

With regard to Trichinopoly—

- (1) Care is taken to supply proper oil for the valuable machinery which Government has in part paid for ;
 (2) Care is taken to have valves, &c., carefully attended to ;
 (3) And that service pipes are laid of a suitable size and waste of fuel and money prevented ;
 (4) That the South Indian Railway Company may be called on to provide at once the valve mentioned in paragraph 4 ;

With regard to Adóni—

- (1) The council's attention may be very earnestly called to the very great necessity there is for constant care and watchfulness in regard to filtration and to the fact that the late bad supply has been due entirely to carelessness in this respect ;
 (2) The council should at once consider proposals for maintaining a supply between April and July, when the present supply may fail.

ENCLOSURE.

MADURA WATER-WORKS.

INSPECTED 21ST JANUARY 1897.

(1) *Head Works*.—The river was in flood and the site of the filters could not be inspected.

The pumping station and its surroundings were in fair order, but the following points require attention :—

Fencing.—The material for fencing the station yard is on the ground ; it is desirable it should be erected as soon as possible.

Repairs are required to the plastering of the walls of the boiler room and the whole walls should be cement-washed.

The 6" scour valve pit should be built up to protect valve from danger.

The engines were working well ; it is reported that the supply of water has been ample for many months, in fact since the Periyár works commenced to discharge freely.

Suitable ladders are very much required at this station to control the valves on the steam-pipes ; at present, men have to stand on hot surfaces to work them and danger may occur thereby. The stock of fuel was extremely low ; there should always be six months' stock at least on hand. The arrangements for the supply of fuel are apparently at present unsatisfactory.

(2) *Fountains, &c.*—The fountains in the town are in fairly good order. They require cement-washing. House services are being laid in the town to a considerable extent ; these are being furnished with plain bib taps, not self-closing, to prevent waste of water ; it is strongly advised, especially as Madura has a high-pressure pumping scheme, that none but self-closing taps be permitted to be used. As the council lays on the house services, this recommendation can be easily attended to.

TRICHINOPOLY WATER-WORKS.

INSPECTED 22ND JANUARY 1897.

Main Station.

(1) *Head Works*.—The river Cauvery is still in flood to a slight extent.

These works have been in operation (before completion) since 27th April last ; the screening chamber—the last portion of the work—is just being completed.

The station yard is in good order and a large supply of fuel available. The engines were working well and satisfactorily ; but it was reported that proper oil is not supplied as required. There are certain kinds of oil absolutely necessary for the proper working and care of these engines, and a supply of each kind should always be on hand ; for want of proper oil the bearings had been running hot ; this is liable to damage the engines and, in fact, it is not safe to run these engines under such conditions as want of proper oil. The driver is well aware of what is required and a statement of the supplies likely to be required half-yearly was sent to the Chairman before the works were opened ; six months' stock of oil should always be in hand.

(2) *Valves*.—The masonry of a main valve on the main road near the Kodamurti bridge has been removed and the valve left uncovered and unprotected for months. There is a large open pit round the valve dangerous to carts and passengers ; any heavy cart going into the pit might break the valve and the water-supply of the whole town would then be shut off, as no spare valves of this size are kept in stock. I understand that the valves in the town are not opened and closed regularly, nor properly oiled and attended to ; this is a matter requiring attention ; it is necessary for the valves always to be in working order, though they may not of necessity require to be closed for months or even years, but they must be always ready to be so.

The practice of allowing ordinary coolies and private parties to open and close hydrants should be stopped. No one but proper turncocks should have any keys belonging to the water-supply nor interfere with it in any way. It is difficult to regulate the machinery at the pumping station if hydrants are opened suddenly or many at a time.

(3) *House Services*.—These are being laid to private houses. Some of these are laid with pipes 2", 1½" and 1¼" diameter. This size of pipes is much too large, especially in the lower parts of the town where the pressure is very considerable, and discretion should be used in placing small pipes, say, ¾" where the pressure is high and 1" where pressure is lower, that is in the higher parts of the town. In no case, except perhaps a large manufactory, can it be necessary to use 2" pipes ; great waste ensues by such a course and besides there is the unnecessary expense.

Ordinary discharge cocks are allowed to be used ; this is most inexpedient and none but self-closing taps should be permitted. Waste of water from the former is inevitable and this means more pumping and more fuel.

Sub-Station.

(4) This station has not yet begun to work regularly, but will now do so ; it was working on date of inspection. The Railway Company and Military Lines are the chief consumers of water pumped up at this station. The Railway consumption is large, because there is no self-closing valve in their tank and the water overflows and waste ensues causing extra pumping at both main and sub-station. The Company should be called upon to supply at once a proper self-closing valve.

The self-closing valve at the sub-pumping station itself is out of order.

So is the pressure recorder.

The former can probably be repaired in Trichinopoly, but the latter should be sent to Messrs. P. Orr & Sons, Madras.

The fuel delivered at this station is much too large for the boilers and should be cut up to proper size before delivery.

(5) *Fountains.*—The fountains appeared to be in fairly good working order. A supervisor is very much required on these works; a man who has some special knowledge of water-works and of the requirements would save the municipality more than his pay by a careful interest and constant watch over the subordinates and the consumption of oil, fuel, &c.

ADONI WATER-WORKS.

INSPECTION NOTES—17TH TO 20TH JANUARY 1897.

These works have been in operation since September 1895. The tank received a very scanty supply during 1896. At present (20th January 1897) the height of water in the tank is 7 feet and holds about four months' supply; probably the supply will not last even so long.

2. The supply to the town, though filtered, is far from being satisfactory. The water from the taps emits an unpleasant smell and has a yellowish tinge somewhat similar to the state of things existing in Madras when the Red Hills water falls low and has to be pumped.

3. The tank water is very highly coloured. The colour is imparted to it by the presence of organic matter and not suspended silt. Water drawn from the tank and preserved in a pot for 48 hours did not lose any of its colour by sedimentation. An analysis shows it, however, to be fit for use.

4. The filters have been worked very irregularly and carelessly during the past two months. The municipal overseer was put on famine-relief works and the water-works were practically deprived of his supervision, and during such time the filters had been left to be worked as they liked by four coolies. It cannot be impressed too strongly on the council that the working of filters requires much intelligence and much delicate and careful attention. Filters of the size at Adóni, were they in England, would probably receive the daily attention of an Engineer drawing from £200 to £300 per annum. Of course, the municipality of Adóni cannot afford to have such Engineers, and this fact is mentioned to emphasise the necessity for constant attention to the filters from such staff as is available to the municipality. A great mistake was made in allotting other work to the overseer and leaving the filters to the tender mercies of four coolies.

5. From calculations made from statements by the coolies as regards the extent to which the syphon was opened each day and the depth of water over the telescopic pipe, it is found that 140,000 gallons, which is a day's supply to the town, was probably passed through a single filter in four or five hours, while if the work were done properly, it would take 24 hours for one filter to pass the above quantity of water.

6. One filter that was working was regulated to the proper flow on the morning of the 19th instant. On the following morning there was a decided improvement in the colour of the affluent and on 26th January 1897 it was reported that a decided improvement had resulted.

7. The sand that is now being collected for the filter-beds is very coarse and full of dust. It is true it is being screened and washed, but it would be well to get good sand, if available, rather than get bad sand and try to improve it. The sand collected is from within the water-spread of the tank; by going quarter of a mile higher up good sand can be obtained.

8. The screen used has too large perforations. A very substantial and accurately-gauged screen can be obtained from Messrs. Richardson & Cruddas, of Bombay, for about Rs. 20. It should have $\frac{1}{8}$ " meshes.

Service Reservoir.—There is a blow in the middle of the floor of the centre reservoir. The plastering and concrete have set very hard. The sub-soil water-level is much higher than the bottom of the tank, and it must have worked through the concrete before it had set thoroughly. There is a small leak through the blow. This reservoir should be put out of use and the blow repaired during the ensuing hot weather. Detailed instruction for repairing the blow will be sent.

9. Dr. King desired the Chairman to close up all the ventilation of the service reservoir and this was about to be done without any reference to this department. Until the proposals have been fully considered this has been objected to. The Sanitary Commissioner also desires to alter the whole roofing; this cannot be done without almost rebuilding, nor, in the opinion of this department, is it necessary. He, as an alternative, desires the roof planked inside and the space filled with saw-dust or otherwise. The corrugated roof at present seems to answer all requirements. It is desirable that similar recommendations to these should not be forced on a Chairman without previous consultation with this department.

10. The distribution system is in good order. There have been no bursts on the main. There have been no new extensions of pipe lines. Two fountains and water-troughs which are due to the generosity of Sir Savalay Ramaswamy Mudaliar, and for which he has placed the necessary funds in the hands of the Sanitary Engineer, are approaching completion.

11. It is desirable, in view of the low state of the tank, to consider means for giving a supply up to July; a trench below the bund of the tank where there are wells yielding a good supply might be cut and the water pumped thence on to the filter or into the service reservoir.

ORDER—No. 230 M., dated 16th February 1897.

Communicated to the Municipal Councils of Madura, Trichinopoly and Adóni, for early attention.

2. With reference to paragraph 9 of the notes of the inspection of the Adóni water-works, no alterations should be carried out without reference to, and the approval of, the Sanitary Board.

(True Extract.)

Secretary to Government.

To the Chairman, Municipal Council, Madura.
Trichinopoly.
Adóni.

" " " " " "
" " " " " "
" Collector of Madura.
" " of Trichinopoly.
" " of Bellary.
" Sanitary Engineer.
" Sanitary Commissioner.
" Sanitary Board.

Exd. A. Baill.

Local & Munl. (1897) Department.

CURRENT No. 381/h

From

The Sanitary Engineer to Govt

Rs.

Order No. 230 M. 16-2-97

Communicated to the
Municipal Councils of Madura,
Trichinopoly and Adoni for early
attention.

No. 195

Dated 29th January 1897

Received 30th " "

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SUBJECT.

Inspection notes

Submitting his — on the
water works of Madura and
Trichinopoly and those of the asst
sanitary Engineer on Adoni
water works.

18/2/97
Shephardman & Co. Madura
" " Trichinopoly
" " Adoni
Collector of Madura
" " Trichinopoly
" " Adoni
Sanitary Engineer
" " Commr
Sanitary Board

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(True Extract.)

G. S. FORBES,
Secretary to Government.

To the Chairman, Municipal Council, Madura,
Trichinopoly,
Adóni.

Collector of Madura,
of Trichinopoly,
of Bellary,
Sanitary Engineer,
Sanitary Commissioner,
Sanitary Board.

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