# Local & Munl. (1897) Department.

MISCELLANEOUS.

G.O., No. 1362 Mu.

DATED 5. 6. 97

INDEXED.

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[Despatch Abstract.]

Trichinopoly Water-Supply

Communicating to the Public Works Department letter from the Sanitary Engineer submitting his remarks on the report of the Agent, South Indian Railway, regarding the ~~unsatisfactory~~ manner in which the requirements of the Railway are met by the ~~_____~~ and drawing the attention of the Municipal Council, Trichinopoly to the Sanitary Engineer's observations thereon in paragraphs 5 and 9 of his letter.

## BACK PAPERS.

| G.O. | No. | Department. | Date. | G.O. | No. | Department. | Date. |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

## FURTHER PAPERS.

| G.O. | No. | Department. | Date. | G.O. | No. | Department. | Date. |
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# Local & Munl. (1897) Department.

**CURRENT No.** 2015/M

C.P. 1910 and 2015 M/97

Misc No. 1362 M. mis. dt 5-6-97.

**Order.**

The letter from the Sanitary Engineer, read above, will be Communicated to the Public works Department.

2. The attention of the municipal Council is drawn to the Sanitary Engineer's observations in paras. 5 and 9 of his letter.

S.R. 27/5/97

31/5/97

To

The Public works Department.

" Chairman, mc. Trichinopoly

thro the Collector

Dups 11/6/97

**From**

The Sanitary Engineer to Government,

**No.** 926

**Dated** 21st. May 1897.

**Received** 22 MAY 1897

**Registered** 22-5-97

**Enclosures** ~~One file of papers~~ C.P. 1910/97 with reference

**Spare copies**

## SUBJECT.

Trichinopoly Water Supply.

Submitting his remarks on letter from the Agent, South Indian Railway reporting the unsatisfactory manner in which the requirements of the South Indian Railway are met by _____.

## BACK PAPERS.

| G.O. | No. | Department. | Date. |
|---|---|---|---|
| Gp | 1731 | L | 10-10-96 |
| " | 850 | L | 9-4-97 |
| " | 714 | L | 27-3-97 |
| " | 230 | L | 18-2-97 |
| " | 2073 | L | 9-12-95 |

## FURTHER PAPERS.

| G.O. | No. | Department. | Date. |
|---|---|---|---|
| | | | |

# Local & Munl. (1897) Department.

Aus.

CURRENT No. 1910.

SANITARY ENGINEER Letter No. 1220 21 MAY 97 TO THE GOVERNMENT OF MADRAS.

Letter No. 926 1897

TO BE RETURNED WITH REPLY.

From

Public Works Department
Railway Branch.

No. 134. D

No 586 dated 17th May 1897.
~~Order~~

Referred to the Sanitary Engineer for early remarks.

S Henley
Secretary to Govt.

| | |
|---|---|
| Dated | 6. 5. 97 |
| Received | 10. 5. 97 |
| Registered | 10. 5. 97. |
| Enclosures | 3. |
| Spare copies. | |

V.R. 14/5/97
Talbot George 15th May 1897

SUBJECT.

Transferring letter from the Agent, South Indian Railway, regarding the Trichinopoly Waterworks No. 453 of 26. 4. 97, for favor of necessary action.

To

The Sanitary Engineer

13/5

## BACK PAPERS.

| G.O. | No. | Department. | Date. |
|---|---|---|---|
| Cus | 1173 | Ry | 97 |
| Go | 850. | | |
| - | 1731 | | 9-4-97 |
| | | | 10-10-96 |

## FURTHER PAPERS.

| G.O. | No. | Department. | Date. |
|---|---|---|---|
| | | | |

R. Form No. 11

No. 1340

Government of Madras.

LOCAL & MUNICIPAL DEPT.
CURRENT No. 1910. M

**PUBLIC WORKS DEPARTMENT,**

RAILWAY BRANCH.

SANITARY ENGINEER TO THE GOVERNMENT OF MADRAS. Register No. 1220 21 MAY 1897

MEMORANDUM.

Ostacamund
*Dated Madras,* 6th May 189 7.

Letter from the Agent, South Indian Railway, No. 453 dated 26th April 1897.

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Transferred to the Local and Municipal Department for favor of necessary action.

SECRETARIAT GOVERNMENT OF MADRAS LOCAL & MUNICIPAL DEPARTMENT 7 MAY 1897

Francis V. Spring

Offg: Joint Secretary.

No. 453.

# South Indian Railway Co., Ld.

AGENT'S OFFICE,

Trichinopoly, 26th April 1897.

*From*

THE AGENT,
SOUTH INDIAN RAILWAY,

*To*

THE CONSULTING ENGINEER
FOR RAILWAYS,
MADRAS.

*Sir,*

I have the honor to bring to your notice the extremely unsatisfactory manner in which the requirements of this railway are met by the Trichinopoly joint water supply. During the early morning especially, it frequently happens that the supply fails entirely or is so scanty and intermittent as to be useless. As you are aware at this period of the day we have to water a large number of engines, and in consequence of the failure of the Municipal supply, the engines have to be watered from our private pumping station on the Wyaigondan Channel. We are therefore put to the expense of keeping up a separate pumping station in addition to contributing to the joint scheme. I have addressed the Chairman, Trichinopoly Municipal Council, on the subject, a copy of which letter I attach, but as my remonstrance has had no effect, I am constrained to bring the matter to your notice.

At my request the Locomotive Superintendent inspected the pumping stations on 25th March last and I have the pleasure to forward you a copy

1859
27/4/97

copy of his report No. A $\frac{2553}{322}$ dated 26th March 1897. I trust that the various points brought to notice by Mr. Crighton may receive early attention, and that steps may be taken to ensure the quantity of water to which it is entitled being regularly delivered to this Railway.

I have the honor to be,
Sir,
Your most obedient Servant,
A.G. Kelly.
Captain, R.E.,
Agent.

2 Enclosures by Bookpost-
R.S.D

**From**
The Agent,
South Indian Railway,
*Trichinopoly.*

**To**
The Consulting Engineer for
Railways,
*Madras.*

Dated
Received } 189 .
No.

Enclosure.

20th Started 11-30 Stopped 11-50
" " 12-8 " 12-25

No further supply during the day.

(True Copy)
H. Holmwood
for Agent

Agent's Office
Trichinopoly
24th April 1897

R.S.D

19/10. 9a 7/89

2 1869 7
453 26.4.97
A



# South Indian Railway

Copy of a letter, N= R901/$\frac{6}{1430}$, dated 29th March 1897 from the Agent, S. I. Ry., to the Chairman, Trichinopoly Municipality.

I have the honor to bring to your notice the extremely irregular manner in which the water supply for this railway is being worked, and I shall be obliged if you will kindly take steps to ensure a regular and sufficient supply being delivered. We have been put to the greatest trouble to keep our engines going during the past fortnight and have had to resort to our own pumping station at the Wyacondan Channel. As an illustration of what is happening I subjoin particulars of the actual working for the 19th and 20th.

| | | | | |
|---|---|---|---|---|
| 19th | Started | 6.5 | Stopped | 6.12 |
| " | " | 6.18 | " | 6.25 |
| " | " | 6.30 | " | 6.35 |
| " | " | 6.55 | " | 8.5 |
| " | " | 8.25 | " | 8.35 |
| " | " | 8.40 | " | 9.45 |
| " | " | 9.55 | " | 10.20 |
| " | " | 10.59 | " | 12.10 |
| " | " | 16.30 | " | 17.0 |
| 20th | " | 5.15 | " | 6.0 |
| " | " | 6.10 | " | 6.45 |
| " | " | 7.5 | " | 7.20 |
| " | " | 8.20 | " | 8.50 |
| " | " | 9.5 | " | 9.15 |
| " | " | 10.0 | " | 10.4 |
| " | " | 10.15 | " | 10.30 |
| " | " | 10.55 | " | 11.5 |

# South Indian Railway.

Copy of a letter, No. A 2553/322, dated 26th March 1897.
from the Loco. and Carr. Superintendent, S. I. Ry.,
to the Agent, South Indian Railway.

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Trichinopoly Municipal water supply.

According to your request I inspected yesterday afternoon the main pumping station at the Cauvery river and the subsidiary station at Comerford's crossing and from what I observed of the water supply, I am of opinion that the junction station will never under the present circumstances obtain a regular and reliable supply of water for the Loco, Engineering and Station requirements. At present the Municipal water works appear to require a properly paid official to take in hand the looking-after and management of the town supply, as from what I learnt, the water is being recklessly wasted at the hydrants throughout the town and in private house supply. In many cases private houses have two inch pipes leading into them from the main pipe and many houses have 3 or 4 of such like pipes and no metre or check is kept on the quantity used by private individuals.

The main and subsidiary pumping engines are

AGENT'S OFFICE,
24th April TRICHINOPOLY.
1897.

(True Copy)
H. Johnston
for Agent.

Accompaniment to the Agent's letter No. 453
of 26th April 1897. H.S.E.D

Copy continued.

-are in every respect first class machines and capable of ~~living~~ pumping -a very large amount of water if worked properly; but they must be looked after and supplied with stores as there is difficulty -at present in -getting requirements complied with and repairs executed. There are three engines at the -main pumping station.

The pump well from which the main engine -draws its water is in my opinion much too small in diameter as it is only 5 feet, whereas the suction pipe leading into this well from the engine is 10 inches in diameter and a few strokes of one engine lifts the water therefrom -quicker than it can be supplied from the filtration wells from the bed of the river. These filtration wells are sunk 20 feet below the surface of the river bed and are connected by a collecting pipe 15 inches diameter laid only 8 feet below the surface, so that when the water goes below 8 feet no further supply can be obtained, although the wells may have about 10 or 12 feet of water in them below that point. This pipe is found to become useless when the water sinks below 8 feet from the level of the river bed. This collecting pipe delivers the water into the filtration tank which is a large well close adjoining the

AGENT'S OFFICE,
TRICHINOPOLY.
24th April 1897.

(True Copy)
H S Johnston
for Agent.

Accompaniment to the Agent's letter No. 453
of 26th April 1897. H.S.E.D

Copy continued.

the pumping station and I am of opinion that it would be advantageous if the engine suction pipes are taken direct into this well instead of from the present pumping well; the collecting pipe should be sunk so as to draw the water from the bottom of each of the filtration wells instead of as at present, 8 feet from the surface.

From the main pumping station the water is forced for the supply of the lower portion of Trichinopoly Fort and from thence to the subsidiary station at Cornerford's crossing where it is delivered into a tank underneath the subsidiary pump; at certain times of the morning and evening when the public are drawing water at the hydrants and for private houses throughout the town, the water seldom reaches this subsidiary engine unless the main pump is worked at a speed beyond what should be necessary; and as only one of the main pumping engines can be worked at a time, the supply is not maintained regularly and therefore the subsidiary engine has to stop and go on as the water comes to it.

Upon this subsidiary pumping engine, the higher parts of Trichinopoly and of junction station are

AGENT'S OFFICE,
TRICHINOPOLY.
24th April 1897.

(True Copy)
H Solomon
for Agent.

Accompaniment to the Agent's letter No. 453
of 26th April 1897. H.S.E.D

Copy continued.

are dependent and it is most important that the supply of water for this engine should be regular and plentiful and measures should be taken by the Municipality to ensure this being done or the upper part of the town and the junction will not be properly treated.

The main pumping engine which I saw working is giving about 45,000 gallons per hour and worked at a pressure of 85 lbs of steam; this was all which could be obtained for the entire supply of Trichinopoly and is perfectly inadequate for the requirements of the place.

I think steps should be taken to shift the suction pipes of the 3 main pumping engines into the filtration tank and that the collecting pipe communicating with the wells at the bed of the river should be lowered so as to obtain the supply from the bottom of each well.

I would also point out that the subsidiary pumping engine has no means of knowing when our tank at the junction engine shed is full and therefore a considerable waste occurs at times.

It appears to me ridiculous that such large pipes as 2" should be used for the supply of private dwellings, whereas in England houses are never allowed

AGENT'S OFFICE,
TRICHINOPOLY.
24th April 1897.

Accompaniment to the Agent's letter No. 453
of 26th April 1897. H.S.E.D

(True Copy)
H Solomon
for Agent.

Copy continued.

-allowed water pipes of a size larger than $\frac{5}{8}$ or $\frac{3}{4}$ of an inch.

There are many other minor improvements which an intelligent manager of the water supply might introduce for the benefit of the town and if a good man was appointed - and not interfered with by the numerous orders of the various members of the Municipality.

AGENT'S OFFICE,
TRICHINOPOLY.
24th April 1897.

Accompaniment to the Agent's letter No. 453
of 26th April 1897.

(True copy)
H Johnston
for Agent.

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S. E.
6. 1,000—8-3-97.

No. 926

GOVERNMENT OF MADRAS.

OFFICE OF SANITARY ENGINEER,

Fort St. George, 21 May 1897

LOCAL & MUNICIPAL DEPT.
CURRENT No. 2015-M

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.

SIR,

In reply to your reference No. 586 dated 17th. May 1897, I have the honor to make the following remarks:-

Taking first Mr. Creighton's letter I have to point out that he has made many statements which have no basis in fact; nor are certain of his opinions warranted by either theory or practice.

2. His first mistatement is that when the water goes below 8 feet below river bed, that is, the level of the pipe in the river, no water can be obtained.

3. As a matter of fact, the water never has gone below the 8 feet or pipe in the river, the pipe is laid 5 feet below the lowest observed water level and on the 19th. and 20th. March the dates to which ~~he~~ the Agent refers, the water was at a level of 541.00 while the bottom of the pipe in river is at a level of 533.50 or in fact the pipe was under 7.50 feet of water. This pipe, if it was only running full with 1 foot of water over its highest point, would deliver more than the total for which the scheme was designed, Viz., a maximum of 528,000 gallons in six hours or 1,468 gallons per minute; ~~when~~ the pipe is formed as a syphon the branches from it dip into the wells some 7½ feet and the pipe itself dips in to the screening chamber 5 feet so that water can be

syphoned

3
910. 4 May 1897

syphoned from the wells even if the water fell to 528.5o + 1.5o = 530 or 5½ feet below the bottom of collecting pipe in river or 8.5o feet below the lowest known water level.

4. The pipe finally discharges into the Pump well which, as stated by Mr.Creighton is 5 feet in diameter-a diameter less than at first proposed and reduced to this diameter by the makers and designers of the Engines. But apart from this, I fail to understand on what basis it is stated that a 5 feet well is not sufficient to pump out of, when it is fed by an 18" pipe. The pipe can supply the well with water twice as fast as one engine can pump and the area of the well is to the area of the pipe as 25 to 2¼.There are no good grounds whatever from the statement that the size of the well is too small or for the proposal to extend the suction pipes into the screening well, because we should have a long length of 10" suction pipe instead of the same existing length of 18" pipe. How such a change would remedy matters I fail to see.

5. As I have already pointed out to Government ,Vide my No.1559 of 19-5-96 I think it desirable that an additional well should be put down and I think the crux of the whole matter is that the engines may at times be worked at a speed above what the wells can supply.The three wells can each supply 250 gallons per minute or 750 in all = 45,000 gallons per hour.On the 19th. March the main station pumped 704,892 gallons between 4 a.m and 8 p.m, on an average 44,056 per hour;but no doubt at times the engine would be pumping very much faster than the average & hence the supply in the pump well would fail and this may have been the reason for Mr.Creighton's incorrect deductions.On the 20th. March, again the average number of gallons pumped was 695,617 between 4 a.m & 8 p.m or 45,476 per hour.Both these figures are dangerously near the maximum yield of the wells and I therefore again make the recommendation that an additional well &c. should be constructed ( vide para 13 of my No.1559 of 19-5-1896)

6. The above figures refer to the main station and of the above quantities 176,065 gallons & 171065 gallons respectively were received and pumped at the subsidiary station.Now the quantity which this station was intended to pump was

109,440 to the Town ( 8 fountains )
100,000 to the Railway
21,000 to the Sepoy lines
15,000 to the Jail

---

245,440 in 24 hours

The water inside the Jail is not yet distributed so that 15,000 gallons may be omitted.The amount which the remainder or lower portion of the town to taking at present does not exceed 700,000 — 175,000(say) = 527,000 distributed at 65 fountains = 8,108 gallons per fountain and even allowing this quantity for the upper and less populated portion ( 8 fountains) the upper town supply would be about 8 X8,108 = 64,864 gallons against 109,440, as allowed for; the sepoy lines may be considered as taking their full supply.The Railway therefore in all probability received on the two days above mentioned about $\frac{176,065 + 171,065}{2}$ (64,864 + 21,000) or 87,701 gallons per diem. The total they were intended to receive was 100,000 gallons in 24 hours but the former was delivered in 15½ hours that is between 4-30 a.m & 8 p.m.- when pumping stopped. The figure of 87,701 gallons in 15½ hours represents 135,795 in 24 hours.

7. There is no doubt that enough water can be supplied to the Company, but probably not at a rate they want it at times. On several inspections of Trichinopoly I have seen very large amount of waste from their tank and in my last inspection notes I pointed out the urgent necessity for a self closing valve. One engine can give a regular supply of water and no doubt if one engine cannot give enough at one time, two engines could for the time of extra draught by the Railway, that is at the times when they require most water and my belief is that there are large variations in their hourly demand, but this means two engines at the main station and another well. The agreement with the Company,however,is to pump & supply 100,000 gallons in 24 hours that is 4,166 gallons per hour but as shewn we have been pumping $\frac{87,701}{15.5}$ = 5,660 gallons per hour.

8. The Railway Company ought to provide a tank of much larger capacity than they have at present. I am aware that this was the intention and why it has been departed from I am unaware but if this tank were provided & furnished with a self closing valve and a meter put on the pipe line to the tank, I feel assured that not only would complaints cease but we should be able to shew that the Company were receiving all they were entitled to. Until this is done I do not think that arrangements for supply will be satisfactory because of the variation in their demand which they and not the Municipality must make arrangements to balance.

9. As to the other points in Mr. Crighton's note I am pleased to be able to agree with him. I have already in my inspection notes reported as to the size of the service pipes and I am quite in agreement with him as to a proper person being placed in complete charge of the water works. Government has lately sanctioned the proposal for an overseer on Rs 75. Such a person can have no real control; he would know nothing of the machinery or the pumping Machinery or the details of water works and would merely be a man who could look after and repair fountains, perhaps valves ( more likely not ) and lay service pipes . Something more than that is wanted in large works of this sort and I must again say as this opportunity is offered to me that I do not think that the plan of handing the maintenance of water works over to Municipal Councils can ever be a success or end otherwise than in failure or yearly decrease in efficiency and constant complaint; not that the councils would not do their duty to the best of their ability but that they are placed in charge of works which it is beyond their knowledge to deal with, and they must therefore be more or less in the hands of their subordinates. Water Works require constant care in the administration of every detail by some one acquainted not only with machinery, water works fittings, &c., but to some extent with the principles on which the work has been designed and should be administered. I trust therefore that some properly qualified officer will be appointed to the entire charge of the works.

I have the honor to be,

Sir,

Your most obedient servant,

Sanitary Engineer to Government.

Sec go 1362 h

5 697

*When given for copying* ____
*When copied* 1/1/6 ____
*When examined* ____ 1897.
*When signed* 1/1/6 ____

READ AGAIN G.O., No. , DATED
189 ,

CURRENT No.

ENCLOSURES TO C. No.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| ORDER OF GOVERNMENT .. .. .. | A | A | A | A | A | A | A | | |
| LETTER OF GOVERNMENT. | | | | | | | | | |
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