M.R.O. 1—77,006—8-6-37.

(1) Number of pages 16

(2) Date of repair 28—7-40.

(3) Initials of the Referencer

MADRAS RECORD OFFICE.

Government of Madras.

Financial DEPARTMENT.

G.O. No. 1129	Press / Mis.
187-188	187-188
Dated 24-5-	1875.

9/10

Not to be folded or roughly handled

Municipal—Water-supply.

No. 187. Read the following letter from Captain R. THOMPSON, R.E., District Engineer, Presidency, to Colonel G. W. WALKER, R.E., Chief Engineer and Secretary to Government, Public Works Department, Fort St. George, dated Fort St. George, 10th May 1875, No. 671:—

In accordance with your verbal instructions on the subject, I have endeavoured to ascertain, as accurately as possible, the amount of water supplied daily from the Seven Wells.

Enclosures.
One memorandum.
Two original memorandums returned.

2. I have the honor to enclose a memorandum on the subject by Mr. Grainger, the General Superintendent of Public Works Stores, under whose personal observation the measuring of the water was conducted.

3. A "Register" or "Tell Tate" was attached for five days (*viz.*, from the 26th to 30th of last month) to one of the two picottahs at the Southern Cistern. The average number of lifts in twenty-four hours was shown by the "Register" to be 6,845 for each of the two picottahs, or 4·7 lifts each per minute, and the amount of water delivered per diem from the Southern Cistern to be 101,990 gallons.

4. One picottah works at the Northern Cistern, but only for eighteen hours per diem. Taking the number of lifts to be the same for this picottah as the average number for each of the two picottahs at the Southern Cistern, it would deliver 38,248 gallons per diem. The total number of gallons supplied daily from the two cisterns is therefore 140,238.

5. I believe the method adopted by Mr. Grainger to measure the supply was a good and accurate one.

MEMORANDUM.

The Seven Wells water-supply is utilized to its fullest extent in its present state.

2. About 207,360 gallons of water per diem of twenty-four hours are supplied from the wells, as per the following.

3. One iron bucket containing 10 gallons of water delivers only eight, the remainder being spilt and left undelivered in the bucket.

In one minute a picottah makes six strokes and delivers 48 gallons.

In sixty minutes, equal one hour, 360 strokes, or 2,880 gallons.

In twenty-four hours 8,640 strokes, or 69,120 gallons.

Three picottahs keep the two reservoirs at the Seven Wells, which respectively supply the mains, north and south of the wells (see plan), full and deliver $3 \times 69{,}120 = 207{,}360$ gallons as noted above.

The cost of the establishment is per mensem Rupees 859-4-9.

The average quantity of water supplied to each department is exhibited in the statement appended.

FORT ST. GEORGE,
12*th April* 1875.

(Signed) J. GODDARD, Lieut.-Colonel, R.E.,
District Engineer, Presidency.

Statement showing the Average Quantity of Water supplied to Public Institutions per Day in Gallons.

	Gallons.
Gunpowder Factory	5,414
Arrack Distillery	7,323
Bullet Factory	735
Commissary-General's Office and its Department	3,966
General Hospital	11,999
Medical College	62
Stamp Office	72
Body Guard	62
Ordnance Department	9,475
Military Guard, Bank of Madras	62
Superintendent of Marine	52
Master Attendant's Office	573
Sea Custom Office	306
Department, Public Works Stores Workyard	796
District Engineer, Presidency, for works	2,955
Government Shipping	32
Private Shipping	1,666
Telegraph Department	252
Penitentiary	3,739
High Court of Judicature	27
Town Police	66
Marine Police	82
Jemadar's Guard	52
Justice Jail	767
Camp Equipage Depôt	32
Ordnance Stores Lascars	33
Medical Stores	409
Grand Jail	766
Fort supply	155,585
Total	207,360

Seven Wells Water-supply.

At the South Cistern ninety lifts with two picottahs working together raised the water-level in the cistern 21·25 inches.

Area of water service in cistern = 10·666 × 10·625 = 113·32 square feet.

Area of water surface in the tubs = $(2·3)^2 \times ·7854 \times 2 = 8·30$. Total of water surface = 121·62 square feet.

∴ quantity of water in depth of 21·25 inches, or 1·77 feet = 215·26 cubic feet.

∴ each lift of two picottahs raises $\frac{215·26}{90} = 2·391$ cubic feet; and one bucket brings up on an average $\frac{2·391}{2} = 1·195$ cubic feet = 7·45 gallons.

The register attached to the picottah from 26th to 30th April gave the average number of lifts during twenty-four hours to be 6,845, and as two picottahs were working together the number of buckets raised in twenty-four hours was 13,690, which at 7·45 gallons per bucket gives 101,990 gallons supplied

At the North Cistern only one picottah works and that for only eighteen hours a-day, on an average, therefore, the supply at this cistern according to the above data will be 6,845 × ¾ × 7·45 = 38,248 gallons; and therefore the total supply from both cisterns is 140,238 gallons daily.

(Signed) J. N. GRAINGER,
Genl. Supdt., Public Works Stores, &c.

4th May 1875.

No. 216.

Forwarded to the Financial Department as an appendix to the Chief Engineer's memorandum communicated with G.O., No. 1287, dated 5th May 1875.

(Signed) J. O. HASTED, Major, R.E.,
Offg. Joint Secy. to Govt., P.W.D.

17*th May* 1875.

No. 188. ORDER THEREON, 24th May 1875, No. 1129.

Communicated to the President of the Municipal Commission for the town of Madras, in continuation of G.O., 19th May 1875, No. 1084.

(True Extract.)

Officiating Chief Secretary.

To the President of the Municipal Commission, Madras.

Exd. J. Wright.

Pbbl. of {1875} Madras

FINANCIAL.

To THE PRESIDENT OF THE MUNICIPAL COMMISSION, *Madras.*

Dated May, 24th.

Issued

Recd. 2nd.

G.O., 24th *May* 1875, *No.* 1129.

MAY.
Nos. 187-188.

Municipal, Water supply.—Letter from District Engineer, Presidency, forwarding report by Mr. Grainger on the water-supply of the Seven Wells, communicated to the Madras Municipality.

A 5

Memo

The seven Wells water supply is utilized to its fullest extent in its present state.

2 About 207360 gallons of water per diem of 24 hours, are supplied from the wells, as ~~under be seen~~ Per ~~from~~ the following ~~data~~.

3. One Iron Bucket containing 10 gallons of water delivers only 8. the remainder being spilt and left unDelivered in the Bucket.

In one minute a Pecottah makes 6 strokes and delivers 48 gallons

In. 60 minutes = 1 hour. . 360 strokes or 2880 Gallons
" . . . 24 hours 8640 " or 69120 Gallons

Three Pecottahs keep the 2 Reservoirs at the 7 Wells; which respectively supply the mains North & South of the wells, (see plan) full and deliver 3 × 69120 = 207360 gallons as noted above.

This is noted in para 16 of 2nd Sutherland's Report recorded with G.O. No. of 7th May 1875 as 155,325 Gallons

The cost of the Establishment is per measure Rupees 859-4-0

Vide details

The average quantity of water supplied to each department is exhibited in the Statement appended.

Jno Gordon Lt. Col. RE
Asst Engineer Presidency

Fort St George
14th April 1876.

Supposing 2 Prattahs to work 20 hours a day - and
1 Prattah — — 18 hours a day.

In the first case 18 minutes are allowed for each of 8 relays and 2 hours for dinning work. In the 2d case in addition to this the Prattah rests 4 times during the day.

Gallons	Times	Prattah	Gallons
2880	× 20	× 2	= 115200
2880	× 18	× 1	= 51840
			167040 gallons
			360
			60134400 or between gallons in the year

Statement shewing the average quantity of water supplied to public institutions per day in Gallons

Gun Powder Factory	5414	
Arrack Distillery	7323	
Bullet Factory	735	
Comy General Office & its Depth	3966	
General Hospital	11999	
Medical College	62	
Stamp office	72	
Body Guard	62	
Ordnance Deptt	9476	
Military Guard Bank of Madras	62	
Superintendent of Marine	52	
Master attendant's Office	573	
Sea Custom office	306	
P.P.W. Store work yard	796	
District Engineer Prest. for work	2955	
Government Shipping	32	
Private Shipping	1666	
Telegraph Department	262	
Penitentiary	3739	
High Court Judicature	27	
Town Police	66	
Marine Police	82	
Lunatic Asylum	52	
Invalid Jail	767	
Camp Equipage Depot	32	
Ordnance Store Godown	33	
Medical Stores	409	
Grand Jail	766	37775
Fort Supply	155585	115265
Total	207360	167040

Seventeen Millions or 1/4
Red Hills 4400 — "

Seven Wells Water Supply

At the South Cistern 90 lifts with two picottahs working together raised the water level in the cistern 21·25 inches.

Area of water service in Cistern = 10.666 × 10·625 = 113·32 square feet.

Area of water surface in the tubs = $(2.3)^2 \times .7854 \times 2$ = 8·30. Total water surface = 121·62 sq: feet.

∴ quantity of water in depth of 21·25 inches or 1·77 ft = 215·26 cubic feet.

∴ each lift of two picottahs raises —

$\frac{215.26}{90}$ = 2·391 cubic feet; and one bucket brings up on an average $\frac{2.391}{2}$ = 1.195 ft = 7·45 gallons.

The Register attached to the Picottah from 26th to 30th April gave the average number of lifts during 24 hours to be 6875, and as two picottahs were working together the number of buckets raised in 24 hours was 13,690 which at 7·45 gallons per bucket gives 101,990 gallons supplied.

At the North Cistern only one picottah works and that for only 18 hours a day, on an average therefore the supply at this Cistern according to the above data will be

be – 6845 × 3/4 × 7.45 = 38,248 gallons; and therefore the total supply from both cisterns is 440,238 gallons daily.

(Signed) J. N. Grainger
General Supt't P.W. Stores &c.

4 may 75.

(True copy)

Rec'd 1st May 1875

Captain R.E.
Distnct Engineer
Presidency.

Geo. G.

No. 2128/75

No. 671
From,

The Distnct Engineer
Presidency

To,

The Chief Engineer, and
Secretary to Government P.W.D.

Sir,

In accordance with your verbal instructions on the subject, I have endeavoured to ascertain as accurately as possible the amount of water supplied daily from the Seven Wells.

2. I have the honor to inclose a memo. on the subject by Mr Grainger, the General Superintendant of P.W. Stores – under whose personal observation the measuring of the water was conducted.

3. A "register" or "tell-tale" was attached for five days (viz: from the 26th to 30th ult. last month) to one of the two picottahs at the Southern Cistern. The average number of lifts in 24 hours was shown by the "Register" to be 6845 for each of the two picottahs or 4·7 lifts per minute Each, and the amount of water delivered per diem

Encl's:
1. Memo:
2. Original Memos returned.

diem from the Southern Cistern to be
101,990 gallons.

4. One picottah works at the Northern
Cistern, but only for 18 hours per diem. —
Taking the number of lifts to be the same for
this picottah as the average number for Each of
the two picottahs at the Southern Cistern,
it would deliver 38,248 gallons per diem.
The total number of gallons supplied daily
from the two cisterns is therefore 140,238.

5. I believe the method adopted by
Mr Grainger to measure the supply was
a good and accurate one.

I have the honor to be
Sir
Your most obedient servant

Robt Thompson Captain R.E.
Distrct Engineer
Presidency

Fort St George
10th May 1875.

Geo. G.
WS

Municipal Letter Recd. 6

Financial Dept. (1875) Dept.
From, No: 3128

The Distt. Engineer
Presidency
(Municipal Letter Recd 31)
To, The Chief Engineer
P.W.D.

N-1201.
Dated 10 May 1875.
Read 11
" 20
Encl 3 No: 671,

Submits a report
by Mr. Fraser on the
water supply of the
7 wells &c.

Forwarded
with enclosures

Copy sent to Municipal Dept. 24/5/75

Forwarded to the Financial Dept.
as an Appendix to the Chief Engineer's
Memorandum Communicated with G.O.
No 1289 dated 5th May 1875.

Chief Engineer's Office Joint Secy. Engineer
24th May 1875.

Read 24 May 1875.

Ordered. 24 May 1875. No 1129.

Communicated to the President
of the Municipal Commissioners for
the Town of Madras, in continuation
of G.O. 19 May 1875. No 1084

Distt Engineer instructed

To the Distt. of the Municl. Councils
Madras. Despd 7/6/75

2045

Govt. of {1875} Madras.

Financial

G.O., 24 May, 1875, No. 1129

Nos. 187-8

Municipal - Water Supply

Letter from District Engineer Presidency forwarding report by Mr. Granger on the Water Supply of the 7 Wells communicated to the Madras Municipality.