



YE / 16.02 / 23/8

①

Draft E 20 memo at face for approval.

23/8

SC For Fairing M

23/8

③

By 5.9.72

C.S., Draft memo at center for consideration pt.

16.10.72

④

SC Good. As it is, this amended pt - SPW in Flat out at the airport etc. at the moment

16/10

Office

Research fair.

⑤

17.10.72

By 20.12.72 (KIV)

⑥

D.C.S.,

to see SPW's report before submission to C.S. pt.

28.10.72

ACS R 612. Can we implement  
X11 ?

27/10

CS. (8)  
No problem.

The Officer will require to be informed of the  
re designation gazetted.

2/11

DCS Good. All proceed.

3/11

Report (10)

All make 1 copy of R 623  
to be sent to SPV together with the 2  
copies of the report + face.

7/12

Res How many 10 been seen &  
implemented?

CS yes

7/12

~~10~~

11.12.72

YE (12)  
Your BU on R 628 seem to have been  
overlooked.

2. Mr Cassels is clearly v. conscientious, but

one can see why his letters irritate SOU.  
However in view of Mr Steele's report, I  
would suggest that we mount a G.M. meeting  
next week at which we should discuss with  
SOU 5000 and perhaps Ag Officer (since the  
Water Supply's hazard is the adjacent Farm  
buildings) — also RSC — what we should  
do about the situation.

(13)

to King Sir,  
Please arrange to meeting as soon  
possible. If the matter is impossibly small  
we should not bother to do so.

29/12

A.G.  
29/12

(14)

~~YE~~  
You (13). Would 1000 on Friday 5<sup>th</sup> be  
convenient?

(15)

to King Sir,  
I suggest  
we meet at 10.00 am on  
Fri the 6<sup>th</sup> to meet to handle.

2/1

(16)

A.G.  
3 Jan

RSC  
I have had a go at a letter  
to Mr H.H. Is the draft at face in  
order from the legal point of view?

25/11

(17)

G. S.

Provided the S. M. O. has been appointed an inspector under the S. J. Ordinance. The S. M. O. is ex-officio Chairman of the Board of Health.

J.P.B.  
26.i.73.

(18)

C.S.

It appears that no inspector was ever appointed under the Slaughtering and Inspection Ord. (Cap 65).

Draft G. H. submitted.

§

29. 1. 73.

(19)

Typist,

Re. fair G. H. and letter at Public Health Dr. Ashmore will be signing the letter)

§

29. 1. 73.

(20)

YE  
F

Minutes Form (16) and R 675, my manuscript draft and Gazette notice.

I suggest we play it as per my draft and the appointment of SMO as Inspector if YE agrees.

A. M. B. M. / I agree.

(21)

B.V. 2 Feb 73

31/1

B.V. / 5

(22)

CJ

You asked for R663 to be resubmitted when papers re R Stewarts course were removed. File only submitted

RTH  
27.5.73

(23)

F.S

R 663. Could you do worse for the payment of £467 to the Ministry of Agriculture Fisheries and Food as before Ian Adamson Vet at SA?

J  
28/5

(24)

y & 1/6

Draft dispatched to Ian Adamson today.

J  
29/5

(25)

C.S.

R666. I have been checking SPW re order of Water Meters. If nothing has happened by say 1<sup>st</sup> October, he will need to send a telegram.

RTH  
6.9.73

J  
1/9

BU 1/10/73

RECORD:

SPW not available but message left with clerk RTH  
2.10.73

BU ~~20~~ 10.73

(26)

Y/E

R667 para 3.

I have heard various reports of unnecessary pumping & leakage but imagine this has all been stopped.

SPW has submitted an indent for  $\frac{3}{2}$  meters which goes out in Monday's mail.

  
5.10.73

BU ~~1/11~~  
(re 668)

BU ~~10/11/73~~

BU ~~16/11/73~~

BU ~~27/11~~

BU ~~12/12~~

BU ~~10/1/74~~

BU ~~10/2/74~~

BU ~~10/3/74~~

BU ~~10/4~~

BU ~~28/4~~

BU ~~16/8/74~~

(668 + 670)

BU ~~11.11.74~~

RSC

(677)

I shall be most grateful for your opinion on; (a) whether this is a petition under the Constitution and, (b) what is the correct process it should follow. Whatever the outcome I should like if possible for LegCo to dispose of this at the next session (November)

*SM*  
C.S.

30.9.74

C.S.

This petition is not a petition under the Constitution as it does not strictly comply with the rules controlling petitions.

2. Order 7 of the Legislative Council Standing Rules and Orders (R.E.L. Vol. II p. 45) provides:

"(1) Every petition must be presented by a Member who shall be responsible for seeing that it complies with the following provisions (otherwise it will not be received by the Council), namely -

- (a) it is addressed to the Council;
- (b) it is properly and respectfully worded;
- (c) it concludes with a prayer setting forth the general object of the petition;
- (d) no documents are attached;
- (e) when asking for a grant of public money or the release of a debt to public funds, the recommendation of the Governor thereto has been signified;
- (f) it has at least one signature on the sheet on which the prayer of the petition appears, and has at least the prayer at the head of each subsequent sheet of signatures.

(2) In presenting a petition a Member shall confine himself to a statement of the persons from whom it comes, the number of signatures attached to it and the material allegations and requests contained in it.

(3) All petitions shall be ordered to lie upon the Table without question put unless the Member presenting it move for it to be read, printed, or referred to a Select Committee. In making such a Motion the Member shall state concisely his reason therefor.

(4) No debate shall be permitted on such motion, nor shall any other Member speak upon, or in relation to, such petition except to second such motion formally.

(5) Such motion being seconded, the question shall be put whether the petition shall be dealt with as proposed in the motion.

(6) If a motion that a petition be read is carried, the Clerk shall read the petition.

3. Order 47 provides:

"Any of these Standing Rules and Orders may be suspended with the consent of the President and the majority of Members present.

27B. RSC 4.10.74

Y.E.

Ref: 28 and 67

After I had written the letter which lies at centre but which was not sent it occurred to me that there are two ways of applying this. It could, as Bennett suggests in 28, be taken as a private Motion; alternatively it could be dealt with administratively, Government taking note of the weight of public opinion and referring it back through Exco to the Legislature for an amendment Ordinance.

2. There does seem to be a fair weight of public opinion behind the proposal that meters are unnecessary and Y.E. may think that Exco should be given opportunity to consider this before work actually starts.

3. The Exco paper will of course refer to the previous arguments and the fact that £6,000 worth of meters are already on the Islands, awaiting adaptors before they can be fitted.

*[Signature]*  
CS  
18.10.74

30

*H. S. / Pl. Don't refer to Exco paper to start and we will give it a further meeting.*

*[Signature]*  
21/10/74

31

*DCS*

*30 / Can you pl. let me have a rough draft*

*[Signature]*  
21.10.

32

*CS / Draft EXCO memo spec rd*

*22th*  
22.10

33

*R. P/A [Signature] 13/11*

*20 5.12.74*  
*19.11.74*  
*5.11.74*  
Bull.  
(Exco draft)

34.

C.S.,

Letter at p. (681) from the Hon. W.E. Bowles submitted for H.E.'s consideration pl.

*[Signature]*  
29.11.74

35

*[Handwritten:]* may be pleased to consent in terms of Rule 9A of the Leg. Co. S. R. Orders (p. 47 RL 1950) as amended by Min. 6. of the Leg. Co. Minutes for meeting on 6 March 1952 & p. 126 1952 Gazette.

*[Handwritten:]* 29/11  
36

*[Handwritten:]* b. b. / yes I consent /

*[Handwritten:]* 29/11/74

37

RSC

Following on LegCo decision yesterday not to proceed with the installation of water meters, will you kindly advise me if there is any need to amend or repeal any legislation.

*[Handwritten:]* A.E.  
~~C.S.~~

*[Signature]*  
CS  
5.12.74

*[Handwritten:]* No consequential amendment or repeal required.

*[Handwritten:]* Pl. notify Councilors

*[Handwritten:]* 8E.B.  
11.11.74.

C.S.

A reply to (685) is still outstanding pt?

35

13. 4. 75

FS. (685) pt.

15/4

36

A.S.

The <sup>Agency's</sup> Development Fund has borne the cost of the radio meters.

2. Expenditure on radio meters amounted to £2085.

3. The proceeds of the sale of the radio meters will be credited to the Development Fund when the radio meters are sold.

4. If the full cost of the meters is not recovered the difference can only be classified as negative expenditure and we should report the matter to members if essential. No other action is necessary.

16/4/75

SU 5/5/75 (687/688)

37

C.S.,

(690) To see pl. This is interesting i.v.o. the statement by S.P.W. that the High Level Tank will have to be replaced shortly. This type of tank can be done in units when a replacement is being formally considered.

2.5.75

38

BU 5.5.75

D.C.S.,

To see you by a previous page pl.

C.S. has yet to see 37.

5.5.75

39

BU 12.5.75

E.S.

Pl see 37

20/14/5

40

DCS,

39 & 37

Pl. have SPW comment: 22

5/15/5

41

BU 27/5/75 (687, 688)

DFG

SPC wanted info abt (691) 9

BU 1/10/75 (690)

OS.

693 notice thank you

27/6. 30/6/75

CS

43

Pl see your (687). We could get these back to the UK on a BAS vessel if there is a market for them. I have not seen a reply from DPW

DPW 21/10

44

DCS

Many thanks. Yes, no limit has to be so, he should retain enough to meter leaks and for industrial/business users in case we have to meter those concerns in the future. SFC must be told ... DCS to note.

DPW 26/10

45

DFS

44 Pl note for SFC

46

DPW 30/10

DCS.

44 notes thank you

DPW 30/10/10

Bu 15/1/76(695)

47.

es  
Ref (497) "I cannot see why SPW cannot write to Johnston. H. of Is are supposed to handle departmental affairs.

*[Signature]* 14/3

48

DCS  
47 For. He shd send it (when he gets his clerk back?).

*[Signature]*

49

*[Signature]* 21/1

*[Signature]*

Bu 3/12/75 (696)

Bu 17/12/75 (696)

|

CS  
Ref (696) APW is now to speak to the Team on the various Reports?

51

20/11/76

DCS He should submit papers.

52

22/12  
20/11/76

OM

Any response to (699)?

20/11/76

53

DCS

Negative

20/11/76

54

Ref. 53 APW informed 12/1/76

55

CS  
(699) No takers for the re surfacing of Brandon Road.

20/11/76

56

DCS There would be APW in other roads. He should also put APW on a programme

21/11/76

replied  
Copied  
to  
PW 2/1/76

57

em

Who is tackling the memo to SPW about unanswered memos. (697) & (687) require action by SPW who leaves on 16 Dec

DLH 12/16

58

Registry

There is a memo from SPW for this?

DLH 11/2

59



Bu 24/2/76

Bu 19/2/76

Bu 16/3/76

Bu 28/7/76 (100)

59

Registry

Attach

- ① Mr R Stokes report on the Siltation Plant
- ② Mr C. Conits & Pile

60

CS - You have

been

DLH  
8/4

Y.B.

(701) makes depressing reading, but we were warned of the situation by Mr R Stocks in his reports which were copied to the Economic Survey Team at (18) (23) and (24) of DEV/8/1.

- 2. The present SPW recommends a complete survey by a Water Filtration Engineer. Mr Casserly of the Crown Agents visited the Colony in 1972 and prepared a report on the Stanley Water Supply. A recommendation of his was that a visit be paid annually by a Water Engineer - see 13.0 at p. 40 of the attached report. We have never had this visit.
- 3. We can await the outcome of Lord Shackleton's report or we can take steps now to obtain the services of a Water Engineer on TA terms. Everything seems to be awaiting Lord Shackleton's report, and I suppose this too can await the report; but we would need to take early action if there is no recommendation about the Stanley Water Supply.
- 4. With regard to roads, this is as the SPW says, a major item calling for a programme. Mr Turner considered we would need about 8 men with an experienced Foreman. JCL are experienced road builders.

Now  
the  
No

DM 9/4

ACS not disturbing  
 Shall bring up at Ex10  
 on 14/4/76 and we  
 should aim to obtain a  
 visit by a Water Engineer  
 very soon.  
 I propose to telegraph  
 after Ex10., to J.(O./40) EV.  
 12/6

63

A/ AS

See ED to Extract id.c. ~~25/4~~

Y.D. ~~25/4~~ 64

Mr Royans has submitted at the face of the file a draft for replacement tanks. I have queried his earlier statement that we should await the report of views of the Water Engineer. He <sup>now</sup> thinks that the tanks would be of use for other things, ~~even if the Engineer recommended~~ and that we should go ahead and order. He thinks the cost will be in the region of £10,000 - £12,000.

2. We should proceed to order by telegram to come by the next charter vessel?

✓  
12/14?

~~25/4~~  
28/4

65

ACS

Yp, ~~25/4~~ at  
Proposed to submit draft tel.  
Plan indent No. ~~25/4~~  
we should mention ~~25/4~~  
Sealing date. 66

VE

Draft tel S/c pl

~~25/4~~ 28/4

67

ACS

tel. despatched. (copy)  
will follow in box ~~25/4~~ 29/4

68

Ag. DCS

68

2 draft TA application

pl

DCM 13/5

69

Ag. C.S.

1. Draft at centre o.f.c. please.
2. At (714) we are asked to submit A7 - the form completed in draft at centre is, I think, A1. If A7 in the telegram is not a transmission error for A1, we should ask what is the form they require (I don't know a form A7).
3. I wonder how far the recommendations made by Mr Casserly in 1972, have been implemented? I see that in 1972 it was reckoned that the filtration plant had a further useful life of 15 years! At p. 599 the recommendation that we had annual visits by water engineers was modified to perhaps one every three years - even that is overdue for implementation!

in 0491/III

Y.B.  30/5

70

19.5.76

To see (716) of which is a follow up to (714)

It is true that no action was taken to implement the recommendations of Mr Casserly but the annual visit was considered at (499) in 0491/II to be unnecessary; a visit every three years was considered satisfactory.

The Crown Agents being asked to report on a proposed fire fighting system refers I am sure to the proposal to pump water up Philomel Hill. Mr Royans does not like this and has recently made an alternative suggestion.

71



30.5.76

D.C.S

Please comment accordingly in reply  
 to 716. I feel sure the Skeel  
 Report will have something on this  
 also. See after issue  
 2/7/54  
 Please

M. Skelton  
 30/5

72

It is requested that, in any reference to this memorandum, the above number and date should be quoted.

## MEMORANDUM



August 4th, 1972.

TO: The Colonial Secretary,

FROM: Superintendent of Works.

The Secretariat.

Stanley, Falkland Islands.

Stanley.

SUBJECT :-

STANLEY WATER SUPPLY:COMMENT:

- p.1. 1.0 General Description. No Comment.
- p.3. 2.0 Water Consumption.
- 2.1 Metering: It is correct to say no proper record was kept (in book form) but flowmeter charts are, and have been to the best of my knowledge always been filed at the Plant. These are renewed weekly and usually done by the first operator on Monday morning.
- p.6. 2.5 (i) to (iv) Can only agree with these items, and special consideration is justified.
- p.7. (a) The meter in question may appear to be a simple remedy, but owing to non-existent personnel it is a staff problem rather than mechanical. This meter in question, out of action for 3 1/2 years speaks for itself, the organisation has never lent itself to cope with daily care, it was not even when Public Works were highly gifted with many skilled expatriate staff, but I see no reason why it could not be remedial if recommendations work hand in hand with staff.
- (b) This meter has now been applied for.
- p.8. 3.2 Recommended improvements. The dry spell Nov.1970. During this period we did divert the flow from Mount William holding tanks by means of PVC Piping into the old existing pipeline down to the Filtration Plant intake, but the existing pipework is 70 percent rusted away, hence the discontinuation of this practice as soon as we were able to. The proposal of conveying supplement water from Mt. William to the Filtration Plant (for dry spells) from the two reports Pape and Casserly conflict a little. The Casserly report 3.2 points out the advantage of the Pape report, 'bottom of Page 46' of water diversion by channel, in Appendix I of the Casserly report 'piped' from Mount William to Filtration. For economy purposes 'channels' is feasible and except for the use of the J.C.B. no material cost need be involved.
- p.9. 3.3.1. This also could be executed, for both 3.2 and 3.3.1. omitting pipework, estimated cost of approximately £50 would suffice.
- p.9. 3.3.3. Chamber. These faults have been corrected.
- p.11. 4.1(a) It is not quite correct to say there is no work on Saturdays, every Saturday morning the day operator of that particular week is working at the Plant. There is no Senior Operator, and all operators do a shift on their own at all times. We have now (except during sickness, injury, holiday) three regular operators, personnel are no longer changed frequently, but it is true to say part-timers are not really interested, indeed under the present staff system at the Plant, every effort has to be maintained to install interest in the regular operators.
- p.11 4.1 (b) This is worth considering, also in conjunction of Town metering in the future. I would like to emphasize the paragraph "The Senior Plant Operator should not be required to do shift work" I believe ninety percent of the deficiencies and improvements can be overcome, simply by nominating one person to be in charge.

607

It is physically impossible to expect the present plant operator to continue doing indefinitely what he is doing today, and also work on full-time shift work, 'we are very fortunate', he has worked many seven day weeks, and has often been called to the Plant at all hours in addition to his normal shift, and seeks nothing in return except the satisfaction that the working of the Plant does not return to the hopeless situation it was in when he took over. Mr. Casserly states: "the work will keep him well occupied during the day. Mr. R Stewart being the type of man he is would not restrict his activities solely to the day, but as would be necessary at anytime the Plant was operating.

- p.11. (c) If para. 4.1 (b) is adopted there would be no problem in maintaining a reasonable standard as recommended here.
- p.21. 4.4.1. (a) and (b) Chemical Storage. We learned from experience that six months stock was not sufficient due to shipping problems. We now carry a twelve month stock.
- p.22. 4.4.2. Fencing. Financial provision has now been made and work will be undertaken in the near future.
- p.24. 5.0 Rising Main. Remedial work has been carried out and much improvement has been made.
- p.24. 5.1 Air Valves. It is going to remain a difficult proposition to regularly maintain, Air valves, hydrants, stop-cocks which number over one hundred throughout Stanley Water Supply. I don't know about 15 years ago, but today we have no recognised plumbers, pipe-fitters, or water official. It is just another item that could be overcome with improved staff.
- p.25 6.1 Main Service Reservoir. I am afraid Mr. Casserly was not accurately informed with reference to cleaning out the reservoir, once in about every twelve months is much nearer. It is common practice for the term 'clean out' to refer to the whole of the reservoir when in actual fact it is only one section that is cleaned out at any one time.
- p.30 8.0 to 8.5(b) The recommendations are well worth considering, it could be beneficial from the economy angle in the long run.
- p.34 11.0 to 11(d) Metering is also a sound proposal.

SUMMARY:

Generally, Mr. Casserly's report fits the part, his recommendations are for good purpose, and none are formidable tasks to execute, but without first allocating these duties (and there are many of them) to someone, we, with our present Water Supply staff could expect only to scratch the surface.

The point that concerns me most, is that the technical side of it all, which is also the most essential part, gained little or nothing from the Water Engineers visit except his recommendations. His terms of reference were carried out but, but unfortunately, it did not include putting theory into practice right away, consequently we still do not have a man trained enough to reach the standard recommended, but if recommendation p.31 85(a) training is carried out, then we shall at last have foundations on which we can work from.

*W. L. L. L.*  
Superintendent of Works.

# CONFIDENTIAL EXECUTIVE COUNCIL

No. 55/72

Casserly Report on Stanley Water Supply

Memorandum by the Colonial Secretary

Mr. M. J. P. Casserly visited the Colony in January of this year to report on the Colony Capital's water supply. A copy of his report is attached together with a copy of the Superintendent of Works' detailed comments on the points made.

2. This is a useful report and it is clear that the question of metering water supplies and the introduction of economic charges should be studied in the context of next year's estimates.

3. Honourable members are invited to consider the report, and it is proposed that a formal letter of thanks should be sent to Mr. Casserly.

  
(T. H. Layng)  
COLONIAL SECRETARY

Ref: 0491/IV  
24th August 1972

HRT.

EXTRACT FROM MINUTES OF EXECUTIVE COUNCIL MEETING NO. 5/72 HELD ON  
6TH, 7TH AND 13TH SEPTEMBER, 1972

8. CASSERLY REPORT ON STANLEY WATER SUPPLY (Memo 55/72)

Council received the Report by Mr. M. J. P. Casserly on the Stanley Water Supply, together with detailed comments by the Superintendent of Works on the points made in it. After consideration it was recommended that the minor improvements suggested in the report should be implemented forthwith and a check made to try and ascertain how much water was being lost through faulty mains and poor connections. The question of metering the water supply and the introduction of economic charges would then be studied in the context of next year's estimates.

*Browning*  
CLERK TO COUNCIL

## MEMORANDUM

612

It is requested that, in any reference to this memorandum the above number and date should be quoted.



October 25th, 1972.

The Colonial Secretary,

FROM: Superintendent of Works

The Secretariat,

Stanley, Falkland Islands.

Stanley.

## SUBJECT :-

Casserly Report.  
Stanley Water Supply.  
Your Memo PWD 13/12 refers.

Progress on the summary of recommendations, pages 41-42 of the report.

- Section 2.1 Recording Daily.
- 2.5 Meter ordered from UK. (Repair Meter)\*
- 3.2 The clay wing walls have not been overlooked. Weather conditions and other priorities have restricted the movement of Plant.
- 3.3.1. New pipework has been installed.
- 3.3.3. Chamber intake complete as recommended and details of performance despatched to Mr. Casserly.\*
- 4.0 Plant operations are carried out according to Manuals of instructions as and where practicable. \*
- 4.1 See Summary. \*
- 4.2 Excellent log sheets are recorded in PWD office, at the Plant, and a copy despatched to Crown Agents monthly.
- 4.3.1. Flowmeter checked but findings not complete. \*
- 4.3.2. Additional sand placed.
- 4.3.3. Laboratory equipment already obtained and installed at the Plant.
- 4.3.4. Trials are limited. \*
- 4.4.1. We now have 12-24 months stock.
- 4.4.2. (a) Fencing. If within 6 to 8 weeks a start cannot be made owing to priority pressure, the work will be recommended for tender.  
 (b) Sheep Slaughtering should be stopped but perhaps more appropriate by the Chairman Health Board and Hydatid Committee. There is no proper provision for the 28 day offal isolation period.
- 5.0 This has been done successfully but only in sections. \*
- 6.1 This is normal procedure (by supervision) \*
- 6.2 Meter and valves duties-no appropriation.\*
- 6.3 Under new management and much improved. \*
- 6.4 Owing to priorities this should be entered into 73/74 estimates.
- 6.5 The tank has been drained off. No further progress made. It is a fair sized undertaking requiring financial provision. Perhaps better reviewed for a Winter job-when a saving can be more clearly seen under Water Supply.
- 6.6 As for 6.5

Section

- 6.7 From the main to the Marine Barracks is an Admiralty commitment. I recommend the Agent (F.I.C. Manager) be informed and a p.p. valve be installed as near to the mains as practicable.
- 7.2 Scouring and Sterilising of Mains is done whenever practicable. \*
- 7.3 \*
- 7.4 \*
- 7.5 \*
- 7.6 As in 6.5 and 6.6 will be undertaken when labour finance and supervision are available. (Winter recommendations)\*
- 8.0 This is most essential to maintain efficiency but is a matter for the appointments board.
- 9.0 Records are maintained and being despatched as requested where ever practicable.\*
- 10.0 \*

Summary. Asterisk denotes all items which can never be remedied a hundred percent and in some cases never undertaken until Section 8.0 Organisation has first been determined. Much has been done, but this only proves the interest and willingness of the staff involved indirectly. I emphasise indirectly because these duties have for the greater part never been allocated. There is still no-one to allocate them to. There is no Senior Filtration Operator, No Plumber, no inspector of Water Works. The cooperation I receive from the present staff is highly commendable, but for how long will it last? Experience is being gained the hard way.

X // Section 8.5. Training. ✓ Done

(a) Mr. R. Stewart should be recognised as a Senior, he carries the same scale H as in other Seniors. The term 'assistant' Filtration Operators Should be operators. The term assistant is misleading and comes from the days when two operators were employed on the same shift doing the same work, at the same time. Now it is one man, one shift. I strongly support the recommendation of a UK course for Mr. R. Stewart. With the anticipated development in the near future, the appointment of an inspector of Waterworks (para 8.4) will be inevitable, and there fore money well spent in his training now, subject to UK reports.

8.5.6. The initiative has been taken and a youth is being successfully trained in all aspects (on hourly rate). Improvements are taking place and there has been evidence of improved economy. Though the staff problem is not yet stabilised.

At an early date it needs:

1. Senior Filtration Plant Operator.
2. Filtration Plant Operators.
1. Trainee.

The responsibilities include the Filtration Plant; pipelines, valves, etc., to and including the reservoirs, pumps & lines to and including the High Level Tank (duties were previously that of the Water Bailiff, now abolished) and general assistance to the Plumbing section in larger undertakings appertaining to Stanley Water Supply.

*L. J. Lyons*  
Superintendent of Works.

618

FWD/13/12

8th November 1972.

The Chief Secretary,  
Stanley.

The Superintendent,  
Public Works Department.

c.c. Mr. R. Stewart (u.f.s. SPW)  
Financial Secretary

Redesignation of Filtration  
Plant Operator

This is to confirm that the post of Filtration  
Plant Operator has been redesignated Senior  
Filtration Plant Operator with effect from 1st  
October 1972.

(H. D. Bound)  
for CHIEF SECRETARY

PORT STANLEY PLANT OPERATING LOG

## CALCULATIONS FOR CHEMICAL DOSING

(A) Sulphate of Alumina (or Alumino-ferric or filter alum)

1. According to the meter readings on the log sheet for 4 September 1972 and 5 September 1972, a total of 133,900 gallons of water was pumped and treated on 4 September 1972, and 84lbs. of alum was used.
2. The conventional method of stating doses of chemicals in water supplies is in parts per million since to state merely the weight of chemical used means nothing unless the amount of water treated is also given. Stating the dose in parts per million gives the complete picture.
3. The calculation for translating the weight of chemical used into parts per million (p.p.m.) is simple and as follows:

$$\begin{aligned}
 & 1 \text{ gallon water} = 10\text{lbs.} \\
 \therefore & 133,900 \text{ galls.} = 1,339,000\text{lbs of water} \\
 & 84\text{lbs of alum was used for } 1,339,000\text{lbs. of water} \\
 \therefore & \frac{84 \times 1,000,000}{1,339,000} \text{ lbs of alum was used for } 1,000,000\text{lbs of} \\
 & \hspace{15em} \text{water.} \\
 & = 63.5\text{lbs of alum was used for } 1,000,000\text{lbs of water}
 \end{aligned}$$

or 63.5 parts per million (p.p.m.). The amount given in the log sheet is 140ppm. Therefore either the weight of alum is wrong or the calculation is incorrect. It could be that the flow meter is not reading correctly, but I have no means of checking this since the log sheet does not give the time when the high-lift pump stopped operating on that day. The pumps are rated at 6000 g.p.h. - see page 1 of the Report, February 1972. Assuming that the pumps operate for 10 hours, then the amount pumped on 4 September 1972 was 60,000 gallons or 600,000lbs and 84lbs of alum was used

$$\therefore \text{ the chemical dose was } \frac{84 \times 1,000,000}{600,000} \text{ p.p.m.}$$

or 140 p.p.m

However, making assumptions of this sort is most unsatisfactory - the pumps are 15 years old and may be working well below their rated capacity - and therefore the meter should be checked against the pumping capacity of each high lift pump. A method of doing this is given on page 14 of my Report. Before this test is carried out, however, the measuring device for the flowmeter in the clear water well should be dismantled, taken out of the line and checked. This device, which is probably an orifice plate inserted between two flanges in the pipeline, can be located by the two copper tubes or pipes

/connecting

connecting it to the meter itself. The above tubes will be connected into the pipeline, one upstream and one downstream of the orifice plate. The general condition of the device should be noted and recorded on the log sheet and great care must be taken to ensure that it and its' components are re-installed in their correct position. If the device is an orifice plate, the top of the plate will be marked "top" and should be so re-installed. When the orifice plate has been removed, the opportunity should be taken to clean the main with a foam swab if possible, between the clear water well and the scour valve downstream. The sooner this is done the better.\* If one examines columns 4, 5 and 6 for September 1972, some glowing inconsistencies are obvious:

e.g. on 8 September 1972 the amount of water pumped is less than half that pumped on 7 September 1972, yet the same weight of alum is used on both days and the chemical dose is stated to be the same! There are many other similar examples.

(B) Sodium Carbonate (or Soda Ash)

Calculating the chemical dose for this chemical for the same day as in (A), we find the same discrepancy. If the flow meter is correct, the chemical dose is 11.9p.p.m. If we make the same assumptions for duration and pumping capacity as in (A), the chemical dose is 26.6 p.p.m. The same inconsistencies mentioned in (A) apply here also, and for (C) below.

(C) Sodium Aluminate

A similar calculation for this chemical will show the respective doses to be 6.7 ppm and 15 ppm.

(D) Active Elements of chemicals and their relation to the doses

It should be noted that chemical doses are generally recorded based on the amount of the active element of each chemical being used. This adds a slight complication to the calculation and, as it was all very unfamiliar to the waterworks personnel in Stanley, I omitted it when preparing the log sheet. Hence the "NOTE" at the bottom of each sheet.

It would be as well, however, if in the near future, the chemical doses could be calculated and recorded in the conventional manner, as follows:

Sulphate of Alumina - the active element is  $Al_2O_3$  and is only about 22% of the bulk chemical as delivered to the filter house,

\* See NOTE on next page.

/Sodium Carbonate

Sodium Carbonate - the active element is  $\text{Na}_2\text{CO}_3$  and is almost 100% of the bulk chemical.

Sodium Aluminate - the active element is  $\text{Al}_2\text{O}_3$  and is only about 55% of the bulk chemical.

Reverting now to the calculation for Sulphate of Alumina on page 1, 84lbs of the chemical was used

∴  $84 \times 22\%$  or 18.5lbs, effective.

Based on a flow of 133,900 galls., the chemical dose is  
$$\frac{18.5 \times 1,000,000}{1,339,000} = 13.8\text{p.p.m.}$$

The calculation for Sodium Carbonate will remain unchanged, since the amount of active element is 100% of the bulk chemical For Sodium Aluminate, the calculation is:

9 lbs of the chemical used ∴  $9 \times 55\%$  or 4.95lbs effective

∴ chemical dose is  $\frac{4.59 \times 1,000,000}{1,339,000} = 3.44\text{p.p.m.}$

To avoid any misunderstanding, however, it is suggested that this alteration be postponed until 1 March 1973.

Note.

The installation and maintenance booklets on the Electroflo meter should still be in the filter House and should be consulted. The copper tubes leading from the meter itself to the orifice plate should be inspected and cleaned - blockages in these tubes could account for at least some of the irregularity in the readings. Great care must be taken to avoid losing any of the mercury in the manometer at the back of the meter.

COMMENTS ON THE CHEMICAL DOSING

1. On 24 February 1972 I sent a list of chemical doses to the Superintendent of Works for testing in the laboratory. Copy attached - Appendix 1. These tests were carried out and I received the results on 17 April 1972 - copy attached - Appendix 2. My letter of 18 April 1972 recommended the use of the dose in Test 16 in the plant and your cable No.136 of 27 July confirmed that this dose was now in use in the plant.

2. According to the August-September 1972 log sheets however, the chemical dose has changed considerably from that of Test 16 and it would be interesting to know the reasons for the changes. For comparison the doses in terms of actual chemical used, p.p.m. are:

|               | <u>Sulphate of Alumina</u> | <u>Soda Ash</u> | <u>Sodium Aluminate</u> |
|---------------|----------------------------|-----------------|-------------------------|
| Test 16       | 200                        | 26              | 8                       |
| Operating log | 147                        | 26              | 15                      |

3. Chemical doses for water supply cannot be fixed - they change daily, sometimes hourly. But generally there is a relationship between the main chemicals which provide a starting point and experience and tests have shown what the optimum doses of isolated chemicals are. See Appendix H of Report. Usually the effective dose of soda ash lies between half and two-thirds that of Alum - while the requirement of Sodium Aluminate should not exceed 8p.p.m of actual chemical. This is an expensive chemical and at first sight, it appears that twice as much as is necessary is being used. It is therefore suggested that the dosage be re-checked to confirm that the optimum amount of chemical is being used. The Sodium Aluminate should be added near the Intake - not in the Low Lift Sump well.

5. On 6 March 1972, I wrote to the Superintendent of Works asking him to have some tests carried out in the laboratory with Magnafloc and on 18 March received a cable stating that the results would be sent to me when the tests were complete. I have not yet received the results. If the tests have not been carried out, could they please be done early.

6. Could I please be informed (a) if the floating bowl arrangement for gravity feed is in operation; (b) is it being used at the valve chamber near Intake for Sodium Aluminate? (c) do you require more 'Magnafloc' for testing?

7. The Colour of the Fully Treated Water appears to be still very high - the acceptable limit for this is 5 units, and this should be attainable if extensive and continuous testing is carried out, the lab. The aim for Turbidity should be to attain a reading of less than 1 unit. Both colour and turbidity should be tested at varying hours during the day. The results for the second half of September seem to be an improvement on the previous results, but it is again recommended that laboratory flocculation test, be carried out as often as possible during the day, every day, until the whole range of chemical doses discussed has been systematically tested and checked and recorded on the laboratory sheets and the optimum doses determined and checked which will give acceptable colour and turbidity values.

/I notice

OPERATIONS ON POND AND FILTERS OPERATIONS

1. Summary

There are two low lift pumps - these should operate in alternate days. The same applies to high lift pumps, according to the log

8. I notice the comment "No reagent" in two places. Do you wish me to do anything about this? If so, please cable. Could you please let me know how the colour units for the raw and treated water are determined.

This should eliminate errors. Will the low lift pump not really pump the 24 hours on 24 September 1952. If not, how was the water pumped off, since the high lift pump did not operate throughout the day? How could filters be working on that day since the high lift pumps were not working? There are two pump discharge outlets in the pond of the log sheet.

2. Water Used

The figures regarding the amount of water used in very incomplete and even the figures given do not substantiate present day practice. According to the log sheet and making assumptions of 40 hours pumping the amount of water used is 40 of the treated water produced, approx. It is very rare indeed, for this percentage to be below 20 - generally, it is about 30. So, either the filters are not being washed properly or the quantity of raw water is not being correctly measured or recorded. This should be done at each wash.

3. Operating Logs

It is not necessary to type the log sheet being sent to this office. A photograph of the actual filter house log will be quite adequate. A complete log is submitted regularly once a month at least better than a typed log sheet every six months.

COMMENTS ON PUMP AND FILTER OPERATION

1. Pumping

There are two low lift pumps - these should operate on alternate days. The same applies to high lift pumps. According to the log sheet, one unit of each has been working the entire month.

2. Time

Time should be recorded as in column two, This should eliminate errors. Did the low lift pump No.1 really pump for 21 hours on 14 September 1972? If so, how was the water disposed of, since the high lift pumps did not operate throughout the day? How could filters be working on that day since the high lift pumps were not working? There are too many incomplete columns in this part of the log sheet.

3. Filter Wash Water

The column recording the amount of wash water used is very incomplete and even the figures given do not substantiate present day practice. According to the log sheet and making assumptions of 10 hours pumping the amount of Wash Water used is 3% of the treated water produced, approx. It is very rare indeed, for this percentage to be below 1% - generally, it is about 2%. So, either the filters are not being washed properly or the quantity of wash water is not being correctly recorded or measured. This should be done at each wash.

4. Operating Logs

It is not necessary to type the log sheet being sent to this Office. A photo-stat of the actual filter house copy will be quite adequate. A complete log in manuscript regularly once a month is much better than a typed log sheet every six months.

Jacksonland Islands  
 Standing Water Supply.

Q 3678/39 Vol 1016

APPENDIX I.

Requested Laboratory Tests on Raw Water.

NOTE. All quantities given in P.P.M. of the actual element.

| <u>Aluminium Sulfate.</u> | <u>Sodium Carbonate.</u> | <u>Sodium Aluminate.</u> |
|---------------------------|--------------------------|--------------------------|
| 200                       | 26                       | 8.0                      |
| 200                       | 26                       | 7.5                      |
| 200                       | 26                       | 7.0                      |
| 200                       | 26                       | 6.5                      |
| 200                       | 26                       | 6.0                      |
| 200                       | 26                       | 5.5                      |
| 200                       | 26                       | 5.0                      |
| 200                       | 26                       | 4.5                      |
| 200                       | 26                       | 4.0                      |
| 200.                      | 26                       | 3.5                      |
| 200                       | 26                       | 3.0                      |
| 200                       | 26                       | 2.5                      |
| 200                       | 26                       | 2.0                      |
| 200                       | 26                       | 1.5                      |
| 200                       | 26                       | 1.0                      |
| 200                       | 26                       | 0.5.                     |

If good results are obtained with any particular dose, the result should be confirmed by a 2<sup>nd</sup> test & if necessary a 3<sup>rd</sup>. Intermediate doses of Sod. Alum. e.g. 3.75, could also be tested.

Note: in every test, the Sodium aluminate is to be added after stirring has commenced & 2 minutes before the other chemicals are added.

(Observed)  
24/2/72.

Telegrams Cafoga London SEI  
Telephone 01-928 0522 (Temporary)  
Telex 919686

623  
CROWN AGENTS

FOR OVERSEA GOVERNMENTS AND ADMINISTRATIONS

'Q' Department

35-41 LOWER MARSH

LONDON SE1 7RY

Our ref Q.367/39/1

Date 8 November 1972

Your ref

T H Laing, Esq.  
Colonial Secretary  
Port Stanley  
FALKLAND ISLANDS

Dear Sir

PORT STANLEY WATER SUPPLY

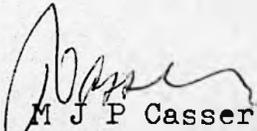
I have recently received copies of the filtration plant log sheets - August (part) and September 1972.

2 Attached are three copies of my comments two of which you may wish to pass on to P.W.D. I am afraid these are rather lengthy and critical but we might as well get the plant working properly since it is there. These are the first completed logs I've seen, and I had hoped to get one much earlier.

3 In future, could the log sheets be placed in a separate envelope and addressed to me - the last ones reached me almost by accident.

4 Although I suppose it can be said that our responsibility for the Port Stanley Water Supply terminated with the submission of our Report, we feel we want to see that Report implemented, the recommendations carried out and the Water Supply operated as it should be. If this can be done at little or no extra cost to the community, then it should be done. I have from time to time asked for information on what has been done and I await these reports with interest. If there is any way in which I can be of assistance, please let me know.

Yours faithfully

  
M J P Casserly  
for Chief Engineer (Civil)  
Engineering Services

12th December

72.

Port Stanley Water Supply

Thank you for your three letters of 23rd October, 8th November and 4th December which due to mail delays have arrived almost together.

2. This I am afraid is just an interim reply as I am sailing in a few hours for South Georgia. We are having your letters copied and forwarded to Tom Royans the Superintendent of Public Works and I will let you know his comments in due course.

3. We have of course no objection to your carrying on a semi-official correspondence direct with Mr. Royans.

4. I was interested to see Norman Barry's paper which you enclosed with your letter of October 23rd. I served for 14 years in the Solomon and neighbouring islands, and I sincerely hope that we shall be introducing water meters during the second half of next year. Our financial year begins on July 1st.

(T. H. Layng)  
CHIEF SECRETARY

M. J. P. Casserly, Esq.,  
'Q' Department,  
Crown Agents for Oversea Governments  
and Administrations,  
35-41 Lower Marsh,  
London SE1 7RY,  
United Kingdom.

c.c. Supt. of Public Works

CB

Telex  
Telephone  
Telex

Cafoga London SE1  
01-928 0522 (Temporary)  
919686

CROWN AGENTS

FOR OVERSEA GOVERNMENTS AND ADMINISTRATIONS  
Q DEPARTMENT

35-41 LOWER MARSH

LONDON SE1 7RY

Our ref Q 367/39

Date 4 December 1972

Your ref

[ T H Laing Esq  
Colonial Secretary  
Port Stanley  
FALKLAND ISLANDS ]

Dear Sir

PORT STANLEY WATER SUPPLY

I should be obliged if you could have a series of flocculation tests  
... carried out in the filter house, in accordance with the attached sheet.  
The object of these tests is to endeavour to reduce the amount of alum  
being used.

2 The sooner they are done the better and I look forward to seeing the  
results early.

Yours faithfully

*M J P Casserley*

M J P CASSERLEY (AOJ)  
for Chief Engineer (Civil)  
Engineering Services

*Can't be done  
efficiently  
Child's pride needed.*

FALKLAND ISLANDS

RAW WATER FLOCCULATION TESTS

DOSES GIVEN IN P.P.M. OF THE ACTUAL CHEMICAL USED

| <u>ALUMINIUM SULPHATE</u> | <u>SODIUM CARBONATE</u> | <u>DRY SODIUM ALUMINATE</u> |
|---------------------------|-------------------------|-----------------------------|
|                           | 26                      | 8.0                         |
|                           | "                       | 7.5                         |
|                           | "                       | 7.0                         |
|                           | "                       | 6.5                         |
|                           | "                       | 6.0                         |
| Test with 50, 45, 40,     | "                       | 5.5                         |
| 35 combined with each     | "                       | 5.0                         |
| of the doses in the       | "                       | 4.5                         |
| other columns.            | "                       | 4.0                         |
|                           | "                       | 3.5                         |
|                           | "                       | 3.0                         |
|                           | "                       | 2.5                         |
|                           | "                       | 2.0                         |
|                           | "                       | 1.5                         |
|                           | "                       | 1.0                         |
|                           | "                       | 0.5                         |

- NOTE:
1. It is imperative that, in every test, the Dry Sodium Aluminate is added after stirring has commenced and two minutes before the other chemicals are added.
  2. The dose most likely to be successful is in the region of 40 Alum. 26 Sod. Carb. and 3.5 Sod. Alum. and any number of tests in this vicinity should be carried out to establish the optimum, keeping Sod. Carb. constant at 26, the Sod. Alum. varying only slightly, between 4.5 and 3.0 and varying the Alum. to get the best results.
  3. If results are obtained with any of these doses which are at least as good as those obtained currently at plant, they should be confirmed by further tests and then adopted in the plant without delay.

627

Telegrams Cafoga London SEI  
Telephone 01-928 0522 (Temporary)  
Telex 919686

CROWN AGENTS

FOR OVERSEA GOVERNMENTS AND ADMINISTRATIONS

Q Department  
35-41 LOWER MARSH

LONDON SEI 7RY

Our ref Q367/39

Date 21st November 1972

Your ref

[ T. H. Laing, Esq.,  
Colonial Secretary,  
Port Stanley,  
Falkland Islands. ]

Dear Sir,

Electroflo Meter in Port Stanley  
Filter House

Further to my letter of 8th November I have been trying to get some information from the makers of the above instrument which would assist the Waterworks Staff on the periodic adjustment and maintenance of it. Attached are two data booklets which have been produced by the manufacturers - I do not know which one applies to the instrument in Port Stanley and, in any case, there may be a maintenance manual in the Filter House.

2 These booklets give all the required information on adjustment and maintenance and it should now be possible to carry out all the necessary checks on the meter. Could the booklets please be returned to me in due course as they are the sole remaining records of this meter.

✓  
Retained  
29/12/72  
L

3 Please let me know if there is any further assistance you require.

Yours faithfully,

*M. J. P. Casserly*  
M. J. P. Casserly  
for Chief Engineer (C)  
Engineering Services.

ALO'N

MEMORANDUM

628

is requested that any reference to this memorandum the above number and date should be quoted.

December 13th, 1972.



The Chief Secretary,

FROM: Superintendent of Works.

Stanley.

Stanley, Falkland Islands.

*B/W to me / 15/12*

SUBJECT —

STANLEY WATER SUPPLY:

I refer to Mr. Casserly's comments Q367/39/1 of 8th November 72.

All the technical data is highly commendable, and would be greatly appreciated under normal circumstances, but I am afraid it is not the slightest bit of assistance to us, equally, can our replies be of not much assistance to him, the formidable barrier being the 8,000 miles between. They have what we seek, and this point is drifting into the background, and also from the main issue-'effecting economy and the highest standard possible from our resources through efficiency'. Rapping the knuckles of the poor unfortunate with the might of science is not a productive answer.

2) The comments of Mr. Casserly, in his letter to you, appear to me to be well outside, his terms of reference, we know all things are not accurate, or as we would like them to be, that is the reason I applied for an expert to come here and try and help us—over two years ago. The correspondence we are receiving now would be accepted if we had United Kingdom standards of a full stage of trained operators, and supervisors, this is now our only problem, the rest of the recommendations would become secondary. Unfortunately Mr. Casserly was here only for a few days, our staff gained very little from the practical side, and nothing from theory, consequently most of the technical advice we get now is waste.

3) It has been recommended that a Water Engineer should make an annual visit. I would like to endorse that, adding a rider for it to be of use for the project, sufficient time be allowed in which the staff concerned could be given a course in Plant procedure, and should also be an addition to the recommendations: 8.4 a and b. 8.5 a and b which should give the Senior Operator the added advantage of further education in this field, only then will we get what we desire, and be on terms to satisfy our advisors.

*Stanley*

Superintendent of Works.

PWD/13/12

629  
3rd January 1973

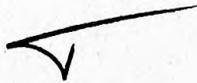
Chief Secretary

Senior Medical Officer  
Superintendent, Public Works  
G/c Agricultural Department  
Registrar Supreme Court

Stanley Water Supply

As you are aware, the Veterinary Attache at the British Embassy was very critical of the Stanley Water Supply, and the Crown Agents Water Engineer Mr. Casserley is also concerned at the present condition of the Filtration Plant.

2. A Government House meeting will thus be held in the G.H. Conference Room at 1000 on Friday 5th January, and I would be grateful if all addressees would attend.

  
(T. H. Layng)  
CHIEF SECRETARY

HRT.

Note on a meeting held at Government House to discuss Stanley Water Supply

Friday 5th January 1973

Present:-

His Excellency the Governor  
The Chief Secretary  
Senior Medical Officer  
Superintendent, Public Works  
Registrar Supreme Court  
Officer in Charge, Agricultural Department

It was decided:

1. That Registrar Supreme Court should produce a draft letter to Mr. Hills advising him that
  - a) No slaughtering may take place within  $\frac{1}{2}$  a mile of the Filtration Plant or within  $\frac{1}{2}$  a mile of the Moody Brook;
  - b) He may not in future use the mast paddock for keeping animals in. *letter sent*
  
2. That the Senior Medical Officer should write to the British Hospital in Buenos Aires and arrange a way for monthly analyses to be done of the Stanley water.
  
3. That the Superintendent of Public Works should
  - a) Formally apply for Stewart to receive overseas training;
  - b) Update his note detailing action taken following receipt of the Casserley report. *Done*

(T. E. Layng)  
CHIEF SECRETARY

HRT.

Stanley, Falkland Islands.

..... January 7th, ..... 19 72.

Mr. M. J. P. Casserly,  
 Crown Agents,  
'O' Department.

Copy to Chief Secretary.



Dear Sir,

My apologies if correspondence from this office is overdue somewhat, the reasons were justified and as they were outside of the reference to Water Supply I will not bore you with the details, but one reason allied to Water Supply lay in your recommendations 4.1 and 8.5(a) which has not yet materialised, but an effort is now being made after a very constructive and interesting meeting held by H.E. the Governor. Members present were the Chief Secretary, the Senior Medical Officer, the Registrar General, the Agriculture Officer, and myself.

2) You will be pleased to know however that much has been done already towards the recommendations. (See your Summary).  
 Recommendations. Items now stand as follows.

|          |        |   |
|----------|--------|---|
| Sections | 2.1    | Complete-and in operation.  |
|          | 2.5    | Awaiting arrival of A.B.S.  |
| Section  | 3.2    | Complete-and successful.  |
|          | 3.3.1  | Complete-with new section of pipeline.  |
|          | 3.3.3  | Complete-and is being adjusted accordingly.   |
| Section  | 4.0    | Being enforced.   |
|          | 4.1    | Still in abeyance-but renewal of recommendation being made.   |
|          | 4.2    | Being enforced-whenver practicable, expected to become 100% on completion of staff deficiencies.          |
|          | 4.3.1  |   |
|          | (e)    | Meter checked. Found to be near accurate.   |
|          | 4.3.2. | Corrected-and surplus stock being catered for.  |
|          | 4.3.3  | Equipment installed.  |
|          | 4.3.4  | Operators require further instruction from A-Z simple form.   |
|          | 4.4.1  | Ample Stock.  |
|          | 4.4.2  | Fenced. Steps being taken to stop animal slaughtering.  |
| Section  | 5.0    | Cleaning being carried out.   |
| Section  | 6.1    | General practice.   |
|          | 6.2    | On the Agenda.  |
|          | 6.3    | Complete.   |
|          | 6.4    | On the Agenda.  |
|          | 6.5    | Will be included in the 73/74 Estimates.  |
|          | 6.6    | Will be included in 73/74 estimates.  |
|          | 6.7    | On the Agenda.  |
| Section  | 7.2    | Much has been done-will reach 100% on completion of improved staff position.                              |
|          | 7.3    | Provision made-but require improved staff.  |
|          | 7.4    | On the Agenda.  |
|          | 7.5    | Survey partially complete-between Plant, reservoirs and high level tank-no waste. Town Survey to be done. |
|          | 7.6    | On the 73/74 estimates.   |
| Section  | 8.0    | This is gradually taking place but not yet on a permanent basis, but this is the target.                  |
| Section  | 9.0    | Record keeping is much improved-but due to some technical deficiencies cannot yet be 100%.                |
| Section  | 10.0   | Steps are being taken to achieve regular bacteriological tests.   |
| Section  | 11.0   | Annual visit of Water Engineer-As you can see much has been done, and although it is agreed all these     |

Section 11.0  
(continued)

630

points were necessarily brought out, the emphasis is now on lack of laboratory skill necessary to maintain efficient tests and records. We have a Senior Operator and a Trainee both with potential to pick up the training, it is almost certain the proposals in theory alone will not benefit the operators a great deal without the practical knowledge.

It has been agreed that recommendations 8.5(a) is to be carried out and I have been directed by the Chief Secretary, Mr. T. Layng, to take steps to obtain a course (Rec. 8.5(b) has been carried out and is being trained accordingly, he is 17 years of age).

The visit of the Water Engineer could assist greatly if the emphasis is on laboratory needs.

The answers to some of your queries Q/367/39/1 as follows:  
A.B.C.D. The log sheets admittedly incomplete and therefore confusing, brought about by time and concentration factors which the operator could not spare having to do a shift himself and watch over two others, also the duties of the ex-Water Bailiff, the latter however has proved successful beyond all anticipation. The log sheets can be expected to improve in future months due to more time being provided, but experience being our only teacher we cannot expect perfection-until they have been taught.

Comments on the Chemical dosing.

1 to 3. I have issued instructions that in the event of an abnormality or unusual dosing that cannot be clearly stated on the log sheet that an asterisk should appear and an additional detail report attached to the log sheet.

4) Missing.

5) Magnafloc tests are being carried out but not yet complete.

6) The floating bowl has been in operation but has not yet been managed to feed at the correct volume as stated in your recommendation. Little adjustments are being made again to achieve this. (c) It may be a good idea to send more 'Magnafloc' for testing, as more likely some of the last lot used was lost during trials.

7) Have noted the comment and will take the necessary steps to continue.

8a) You will have now received a cable for requirements (b) The method used I am informed is the one taught to them by yourself.

Comments on Pump and Filter Operation:

1 to 4. The log sheets will in future have attached explanatory notes appertaining to this.

Summary:

11

It is unfortunate that the improved Water-Supply clashed with so many other items here, and in consequence communications suffered, but after reading this report, however brief it may be, I am sure you will feel your efforts are not being wasted. The fruit is a little sour yet, but it will ripen, even in this climate.

*D. W. Royce*

Superintendent of Works.

No. PWD 062.

MEMORANDUM

G35

It is requested that, in any reference to this memorandum the above number and date should be quoted.

January 9th, 1973.



TO: The Chief Secretary,

Stanley.

FROM: Superintendent of Works,  
Stanley, Falkland Islands.

SUBJECT :-

Request for Telegram.

I have the honour to request that the following telegram be sent to the Crown Agents;-

*" Following for Casserly Q Dept - from Royans.*

REQUIRE URGENTLY MORE BROMO THYMOL BLUE STOP SIX HUNDRED ML C SOLUTION  
STOP THREE HUNDRED BROMO THYMOL TABLETS."

Cable to Mr. M.J.P. Casserly, Crown Agents, 'Q' Department.

*Sw Royans*  
SUPERINTENDENT OF WORKS.  
PWD

*9/1/73*



Draft.

635

To me -  
Sp. Vote Moody Vale



Dear Sir,

Public Health.

Public reasons demand that you should not use the existing buildings at Moody Valley Farm for the purpose of slaughtering animals in numbers nor for human consumption. You are therefore requested to cease using those buildings for that purpose forthwith.

2. A building approved by me may be erected on a site approved by me, on Moody Valley Farm, for the slaughtering of animals for human consumption.

Yours faithfully,

Chairman,  
Board of Health.

Chief Sec.,

Above draft submitted etc.

I think Mr. D should be permitted to destroy the odd sheep which may be injured at shearing in his existing sheds.

S.P.B.  
5.1.73.

No. PWD 040

It is requested that, in reference to this memorandum the above number and date should be quoted.

MEMORANDUM

January 19th, 1973.



The Chief Secretary,

Stanley.

FROM: Superintendent of Works,

Stanley, Falkland Islands.

SUBJECT —

TOWN WATER SUPPLY:

Your memo PWD 13/12 of 16th January refers.

It is most unfortunate that we-with our small community are no exception to the general expectations of an odd case or two of difficult people, and in this case I have had to swallow my pride on more than one occasion in order to maintain the regulations, (banning civil servants to retaliate no matter what provocation he has to bear) I shall keep within that regulation in any event, even over the Mr. Dobbys affair.

2) What actually happens here is if PWD are sluicing pipes, valves, or watering ships, the pressure naturally falls particularly for anyone on a rising service line from the mains, Mr. Dobbys rarely fails and in no uncertain manner to remind us of it. It is not correct to say he gets no water, I made two unexpected calls to his premises since I have been here immediately I received his complaint and on both occasions water flowed, it was not a good pressure.

3) From Villiers St. east along Fitzroy Road the houses are that of Mr. Barton, Mr. Lee, and Mr. Dobbys in that order. The supply to these has never been good, and by general agreement with a predecessor of mine a new service line was put in from the high level tank mains, once the line reached the privately owned land boundary it then became the responsibility of the owners, who agreed, Mr. Dobbys was invited to tap into this new line providing he shared the cost of its installation, and had he have done so all his problems would have been solved, but he declined the offer, now I believe the offer is closed, and as it is a private matter there is nothing I can do about that, except perhaps once again advise Mr. Dobbys to re-open negotiation with his neighbours, Alternatively:-

4a) PWD cross Villiers St. again to the boundary, this incidently has been offered but refused by Mr. Dobbys on the grounds that it would cost too much to put the service line across other properties, and Government subsidise the project. This I did not agree as it would be setting a precedent in water supply which cannot be afforded, the regulation has stood firm and successful for all other business people. Cost = £40. (16 feet of road excavation)

4b) PWD extend the mains from the junction of Fitzroy Rd. and Davis St. eastwards to Mr. Dobbys boundary. Cost = £150 (150 feet of road excavation and pipework). In both cases the service lines from these mains would be in the region of 200 feet to the house and bakery.

5) I wonder if when this is all settled he will refrain from publicly 'over the phone' accuse me of being Pro-Argentine and Anti-Falkland because we water Argentine Ships.

A handwritten signature in cursive script, appearing to read "A. S. Lyons".

Superintendent of Works.

639

GOVERNMENT TELEGRAPH SERVICE

FALKLAND ISLANDS

SENT

WAP 15148-821 585968/704663 500 pads 9/69 Grp.782

| Number                                      | Office of Origin | Words | Handed in at | Date   |
|---|------------------|-------|--------------|--------|
|   | PSY              |       |              | 2.2.73 |
| To  |                  |       |              |        |
| STATPRIORITY PRIORITY HOULDERS BUENOS AIRES |                  |       |              | NO A/c |

No. 8

URGENTLY REQUIRE ONE ONLY SANDRAMO MOTOR UNIT 60 REVOLUTIONS PER  
 MINUTE REPEAT MOTOR UNIT ONLY TO FIT ELECTROFLOW METER SERIES  
 424 MODEL NUMBER 41461 MONOMETER TYPE STOP UNDERSTAND ITEM AVAIL-  
 ABLE FROM BROOME & CO MORENO 467/477 BUENOS AIRES

SECRETARY

TimeHRT.

2nd February

73

Dear Sir,

I regret that following recent inspections of the Stanley Town Water Supply, it is necessary for me to invoke powers accorded to me under the Public Health Ordinance and the Slaughtering and Inspection Ordinance and advise you that Slaughtering of any kind or description may not in future take place within a radius of half a mile of the Water Supply Filtration Plant or within half a mile of the Moody Brook.

2. The inconvenience which this will inevitably cause you is much regretted.

Yours faithfully,



Chairman  
Board of Health.

R. W. Hills, Esq.,  
Stanley.

21st February

73

Dear Sir,

I have investigated the problems you have over water and I sympathise with you in your plight.

2. The principle followed over water connections in Stanley as in virtually all other towns in the world, is that, while the civic authority lays ring mains at convenient intervals, connections from a dwelling house to the mains is at the expense of the householder.

3. I am informed that your neighbours, Mr. Lee and Mr. Barton, formerly experienced similar difficulties to yours. To overcome these, they arranged for a connection to be made to the water main in Villiers Street and paid for the connection costs involved. Mr. Lee's house is adjacent to yours, and the solution to your problem would seem to be to arrange to tap into his supply. This I understand would bring you onto the high level tank and overcome the problem you have due to your house being built some way above the level of Fitzroy Road.

Yours faithfully,



(T. H. Layng)  
CHIEF SECRETARY

Mr. T. Dobbys,

cc: Superintendent



BRITISH EMBASSY  
BUENOS AIRES  
21 March 1973

T H Layng Esq  
Chief Secretary  
Port Stanley  
Falkland Islands

REFERENCE: PWD/13/12

Dear Tom

You will note from paragraph 5 page 12 of the booklet I sent you on the bacteriological examination of water supplies that samples examined after 6 hours are virtually worthless and give misleading results. Therefore there is no point in seeking to have the examination done anywhere other than in Stanley.

At present there is no bacteriological laboratory in Stanley. My own feeling is that this would be a worthwhile addition to the hospital facilities which could also be used for testing the water supply but the installation of the laboratory and equipment together with the services of a trained laboratory technician might be beyond your financial resources.

There is a type of do-it-yourself kit known as the Millipore Filter System which does not require expert training but even this, if my memory serves me correctly, needs an autoclave.

The only place I know which has used this system is a frigorifico in Paraguay. I shall be there next week and make enquiries and let you know if anything promising results.

If you are unable to employ a bacteriological examination then you must rely upon effective and correct water treatment together with a sufficient residual level of chlorine in the treated water. This is generally assessed at not less than 0.5 parts per million, but a higher level than this will result in unpalatability for drinking purposes. The reagent used in chlorine testing is Ortho-Tolidine and this was the reagent which the plant chemist lacked during my visit, although he has the necessary testing apparatus. I am sending you what little I can spare of this reagent from my own very limited supplies, but it will at least keep you going for a time. Meanwhile I am asking for more to be sent to me and whether we can forward you supplies on a cash basis.

The plant chemist is probably already aware that Ortho-Tolidine is a carcino-genetic substance and must be handled with care. There is no need for him to be frightened but he should be careful to wash his hands under running water after using the reagent.

Kind regards  
Yours sincerely

R L Steele

647  
29th March 1973

Chief Secretary

Senior Medical Officer

cc: Superintendent, Public Works

Bacteriological examination of Stanley Water Supply

I have had discussions on the above matter recently with yourself, Dr. Cox and Mr. Steele. We have noted that an examination has to be done within 6 hours of the water sample being taken and this of course makes any analysis in Argentina out of the question.

2. Mr. Steele has very kindly given us a pamphlet on the subject which you are holding, and he has given me two bottles of Orthotolidine which are enclosed herewith. Those, together with the laboratory facilities available at the hospital here are, as I understand it from Doctor Cox, sufficient for bacteriological examinations to be done in Stanley.

3. I would be grateful, therefore, if you would arrange for the Stanley water to be checked regularly, and for the results to be communicated to the Superintendent of Public Works and to myself. I understand that Dr. Cox is particularly interested in this type of work, and no doubt the Superintendent of Public Works will be pleased to have his assistance in training and correcting any errors made by the Filtration plant chemist. I would suggest that initially tests are carried out weekly until such time as experience has shown that they can safely be conducted monthly.



(T. H. Layng)  
CHIEF SECRETARY

HRT.

29th March

73

Bacteriological examination of Stanley water

Many thanks for your most helpful letter of 21st March and the two bottles of Orthotolidine which you have sent us.

2. You will be pleased to hear that our new young doctor, Dr. Cox, is very interested in this type of work and has confirmed that his laboratory facilities in the hospital are sufficient to enable him to carry out the necessary testing. He has an autoclave, and I have asked him to order sufficient chemicals to have regular weekly tests done.

3. We have closed the slaughterhouse near the filtration plant and are not permitting sheep to graze within half a mile of the water inlet, so some progress is being made!



(T. H. Layng)

R. L. Steele, Esq.,  
British Embassy,  
Buenos Aires.



669  
BRITISH EMBASSY  
BUENOS AIRES  
30 March 1973

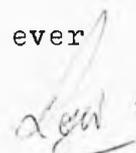
T H Layng Esq  
Chief Secretary  
Port Stanley  
Falkland Islands

Dear Tom

BACTERIOLOGICAL TESTING OF STANLEY WATER SUPPLY

As promised I made enquiries in Paraguay regarding the Millipore system. I am writing directly to the Corporation who produces this testing method in the USA and when I receive their answer I will contact you further. The method is simplicity itself and the cost FOB is about nine tenths of a dollar per sample. You will probably want to do at least one every fifteen days and probably rather more to begin with. The only equipment needed is an oven in which a temperature of 37°C can be constantly maintained for 24 hours. You probably have this facility in the laboratory left by ODA and I am sure your new young doctor, whose name escapes me, would be able to tell you whether this is so or not. Meanwhile I will get further details from the Corporation.

Yours ever

  
Roger Steele

Medical Department,  
Stanley.

.....16th April, 19 73

C. S.

I enclose a report from Dr. Cox on the problem of the  
bacteriological examination of the Stanley Water Supply.



S. M. O.



*To me ends n*

The Bacteriological Examination of the Stanley Water Supply.

Having studied the Casserly report on the Stanley Water supply, and the H.M.S.O. publication "The Bacteriological Examination of Water Supplies", and having inspected relevant parts of the filtration plant and water distribution system in Stanley I would offer the following comments on the problem.

1) Choice of Methodology. The basic examination required is that for determining the presence of coliform organisms and the organism E. coli. There are two recommended alternatives:-

- a) The multiple tube technique.
- b) The membrane filtration technique.

The first has the advantage of a high degree of accuracy and selectivity, but is time-consuming. It is the most commonly employed method in large centres.

The latter method is relatively new. Its disadvantages are 1) that one may obtain false positive results in water containing a high concentration of non-pathogenic (i.e. "safe") bacteria, and 2) that the membranes become clogged if used with water of high turbidity.

Without running some preliminary tests it is not possible accurately to determine whether or not these limitations apply to the Stanley water, but in my estimation neither of these limitations is likely to apply.

The advantage of the membrane filtration technique is the relative speed/both of setting up the tests and of obtaining the results of the initial screening tests (24hrs. compared to more than 48 hrs. with the multiple tube technique) In addition the cost in terms of glasswear and reagents is less.

I would therefore recommend the use of the membrane filtration technique, and further comments are based on this recommendation.

2) Equipment and Reagents. The Medical Department has obtained on indefinite loan from E.S.R.O. a full set of equipment for membrane filtration, including a large stock of membranes (the most expensive item) This reduces the equipment and reagents required, which would be as follows:-

|   |        |
|---|--------|
| Transformer - 240 v A.C. input, 110 v A.C. output | 1      |
| Whatman Filter Paper No 1 7 cms.                  | 500    |
| Whatman Filter Paper No 17 7 cms.                 | 500    |
| Sodium Ricinoleate                                | 25 gm  |
| Tryptone  | 100 gm |
| Tryptose  | 100 gm |
| Potassium Hydrogen Phosphate ( $K_2HPO_4$ )       | 50 gm  |
| Sodium Azide                                      | 10 gm  |
| 2,3,5-triphenyltetrazolium chloride (T.T.C.)      | 10 gm  |
| Tetra methyl-p-phenylenediamine                   | 10 gm  |
| Bacteriological Peptone                           | 200 gm |
| Teepol 610  | 100 ml |
| Phenol red  | 100 ml |

(or dry dye)

(The above quantities are only approximations)

Other reagents required are at present available in sufficient quantity in the laboratory, as is the necessary glasswear, but routine testing can not be commenced until the above items are obtained.

3) Time Required. Prior to setting up routine testing, a considerable amount of time would be involved in the preparation of reagents and the establishment of the methodology (Say a minimum of three weeks working on average two hours per day) Thereafter the amount of time required would be in the order of four hours on one day and one hour the next day each time the testing was carried out. It would however be necessary for the person carrying out the tests to be free of any other responsibilities during these hours.

The above times are based on the assumption of regularly obtaining negative results (which ought to be the case) In the event of the water being found to be contaminated at any time, this would necessitate a considerable amount of time being spent on confirmatory tests and field work to identify the source of the contamination.

4) Technical Assistance. Once the methodology had been set up and "teething troubles" remedied, these tests could readily be carried out by a technician who could be trained to perform the tests (much of the work in any case being involved with cleaning and sterilising of equipment) with supervision and interpretation of results being carried out by a member of the Medical Department. There is no such technician employed by the Medical Department, but it may be possible that one or more member of the filter plant staff could undertake this work in the hospital laboratory.

5) Sampling. Since no adequate sampling taps are available on the reticulation system (i.e. the distribution pipes in Stanley) the co-operation of several householders is being sought by the Chief Filter Plant Operator, so that outside taps connected directly to the distribution pipes may be sampled from at several strategic points on the reticulation.

Summary of Recommendations

- a) Employ a membrane filtration technique rather than the multiple tube technique. (Para 1)
- b) If the subject is thought to be an urgent one, then the items in Para 2 should be ordered by air freight.
- c) Time must specifically be set aside for the establishment of the tests and for their routine use. (Para 3)
- d) The possibility of recruiting technical assistance from the filter plant staff should be pursued. (Para 4)



Derek Cox , Medical Officer.



653  
BRITISH EMBASSY  
BUENOS AIRES  
17 April 1973

T H Layng Esq  
Chief Secretary  
Port Stanley  
Falkland Islands

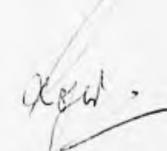
Dear Tom

I have received further supplies of Ortho-Tolidine from head office and I am sending you by this bag 8 bottles for which in due course you will receive an account.

I am also sending you a number of pamphlets on calf rearing, dairy hygiene etc which may be of interest to some of the settlement managers and others. I would be particularly grateful if you would see that Mr Pole-Evans\* gets a supply as I promised to send him these as far back as last December. Please apologise to him on my behalf for the delay which must be laid at the door of MAFF.

I have received some information from the Millipore people and it turns out that they have a distributor in Buenos Aires. Would you please let me know whether your new Medical Officer would be interested in using this system or whether he prefers to use standard laboratory techniques. Once I know his preference I can find out more about what is needed and the cost locally.

Kind regards  
Yours sincerely

  
R L Steele

\* Enclosed in separate envelope for convenience

PWD/13/12

24th April 1973

Chief Secretary

Senior Medical Officer

Bacteriological examination of Stanley Water Supply

Please thank Doctor Cox for his most useful summary of the problem which you forwarded under cover of your minute of 16th April.

2. It is assumed that you support Dr. Cox's recommendations and they are accepted. No indication is given of the cost of the equipment and reagents in paragraph 2, but on the assumption that this will not be excessive, it is agreed that they should be ordered by airfreight.

(D. R. Morrison)  
for CHIEF SECRETARY

(Drafted by T. H. Layng)

HRT.

665  
Telegrams Cafoa London SEI  
Telephone 01-928 0522 (Temporary)  
Telex 919686

Our ref Q367/39

Your ref



CROWN AGENTS

FOR OVERSEA GOVERNMENTS AND ADMINISTRATIONS

Q Department  
35-41 LOWER MARSH

LONDON SE1 7RY

Date

23 May 1973

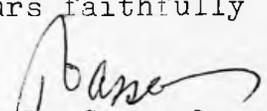
Colonial Secretary  
Port Stanley  
Falkland Islands

Dear Sir

Port Stanley Water Supply

... I enclose for information and retention by the Water Dept. <sup>a</sup>  
book entitled "Improving Water Treatment Operations" by the  
American Water Works Association. It is worth a close study  
particularly in view of R. Stewart's impending course in this  
country and I hope it will be found useful.

Yours faithfully

  
M.J.P. Casserly  
for Chief Engineer (Civil)  
Engineering Services

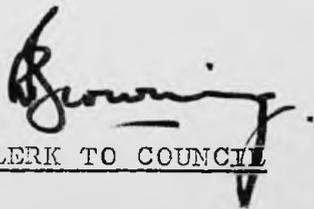
Enclosure sent to SPW

Reg.  
7/6/73

GS

xi. Water meters

In reply to a question on the subject, His Excellency the Acting Governor confirmed that water meters would be installed in all Government departments and in all government quarters.

  
CLERK TO COUNCIL

# MEMORANDUM

Reference RMD/13/12...

Date ....2nd October, 1973.....

From Senior Medical Officer

To Chief Secretary.



Casserly Report - 11.0 Metering of Supplies

I should like it to be officially recorded that I am not in approval of the introduction of water meters in Stanley.

2. If it has been established that there is no wastage through leakage in the circuit then, according to the report, the pro-rata amount of water used per capita is large compared with other parts of the world.

3. However, to introduce water meters "thus saving the wages of the third Operator" would, in my opinion, be a short-sighted policy. The people of Stanley are normally clean and so are their houses, with flush toilets in almost every house. To introduce water metering may, in years to come, present a Public Health problem which has not yet "reared it's ugly head" in the Falklands.

*James H. Ashmore*  
 (James H. Ashmore)  
 SENIOR MEDICAL OFFICER

12th October, 1973

Bacteriological examination of  
Stanley Water Supply

Please refer to correspondence on the above subject ending, I think, with my PWD/13/12 of 24th April in which approval was given for the necessary equipment and reagents to be ordered by air freight.

2. I would be grateful if you would let me know whether these items have now arrived and whether Dr Cox now assisted by his trainee laboratory technician will soon be in a position to start regular tests of the Stanley water.



(T.H. Layng)

Dr J.H. Ashmore, O.B.E.  
Senior Medical Officer,  
Stanley.

12th October, 1973

Water Meters

Please refer to your memorandum of the 2nd October on the above subject. I am afraid that a firm decision has been taken to instal water meters and that these are now on order.

2. I regret that I was not previously aware that you were opposed to this step and, in particular, I do not recall that at the Government House meeting in which we discussed the town water supply on the 5th January this year, you raised any objections to the proposal to introduce metering. Similarly, I have no record of your views at the time when funds were voted for meters at the Budget session of Legislative Council in May.

3. Metering has worked successfully in all the other territories where I have worked and has given rise to no public health problems. I really see no reason why the same should not hold true for the Falklands. The charge for water will be very small and it seems inconceivable that people will wash less in order to save a penny or two.

(T.H. Layng)

Dr J.H. Ashmore, C.B.E.  
Senior Medical Officer,  
Stanley.

Medical Department,  
Stanley.

FWD/13/12

.....16th October.....19...73

C. S.

Bacteriological examination of  
Stanley Water Supply

I refer to your letter FWD/13/12 of 12th October.

- 2. The items have arrived and Dr. Cox says that he is in a position to start regular tests of the Stanley water, if necessary.
- 3. However, his para 1 section 3 of his report stated that it would be necessary for the person carrying out the tests to be free of any other responsibility during the hours of testing. With only two doctors, this cannot be promised and is not feasible.
- 4. The Medical Advisor FCO/ODA, Dr. Evans, considered such tests unnecessary.



S. M. O.



TID/13/12

29th October 1973.

Chief Secretary

Senior Medical Officer

Bacteriological Testing of  
Stanley Water

Notwithstanding your note of 16th October, I would be grateful if a test of Stanley water could be done.

2. Virtually the whole town has suffered from vomiting and diarrhoea during the past months, and we surely cannot rule out the local water as being the cause of this.

(T. K. Lyons)  
CHIEF SECRETARY

# MEMORANDUM

Reference H.H.L's Memos. of 4th April, 1974.

Date 4th April, 1974.....

From Superintendent Public Works

To His Excellency the Governor.

*B. L. L. I. O. B.*  
4/4/74

Your Excellency,

I have the honour to reply to your memorandas of today's date as follows:

WATER METERS IN STANLEY

- (a) The water meters are expected amongst the cargo now being off-loaded from the M.V. Annette Danielsen. There is no record of component fittings having been ordered by the previous Supt. P.W., and without these fittings it would not be possible to instal the water meters.
- (b) There is no reference in the P.W.D files of any consultation having taken place with the health authorities.- but, it is understood that a Stanley Water Supply file is held at the Secretariat., which may prove useful in this respect.
- (c) Please refer S.H.O.

CAMP TRACKS

PWD/9/2

- (a) Cement for this project is expected to be off loaded with the cargo of the M.V. Annette Danielsen. Stone is available locally, but the reinforcement steel rods, etc. are not. The Crown Agents are unable to advise a delivery date for the steel owing to the recent industrial crisis, and general steel shortage prevailing in the U.K. Without the the reinforcement steel it would be foolhardy to construct the 9 feet slabs.

STANLEY ROADS

PWD/13/2

- (b) The ~~concrete~~ mobile asphalt mixing plant has been taken from the Army Camp (where it had been left to rust away) to the P.W.D. garage, and is in the process of being refurbished. The refurbishing has largely been a programme of 'make do & mend', but is bearing completion. In the event of a trial run being succesfully carried out then the pot-holes in the roads of Stanley will be repaired with the same materials as was originally used to construct the roads., as a crash programme. The failure of the asphalt mixing plant will result in a return to the previous pot-hole repair i.e. Concrete, and this has not proved very successful in the past.

I have the honour to be, Sir,

Your obedient servant,

*B. L. L. I. O. B.*

Superintendent of Public Works.

49.4

679

# MEMORANDUM

Refer: Water Supply

Date 24th October 1974

From Superintendent of Public Works

To Chief Secretary



## WATER METERS.

Sir

I have the honour to report that it has come to my notice that a petition against the installation of water meters to properties in Stanley has been received by Government.

I respectfully submit my observations on the matter:—

Government has in store 350 water meters for installation to private properties. Apparently there is no provision made to meter water to Government buildings, including H.M. Royal Marines, Moody Brook establishment. There is a sum of £ 6,000 in the Estimates 1974/75 for the provision, and installation costs of the 350 meters. Inadvertently, fittings have not yet been ordered. It is stated that water meters should be fitted on the consumers' side of stop-cocks, on the outside of buildings. The usual procedure is to construct a 'meter box' of brick, concrete, or of some similar material., the 'meter box' to be constructed in the ground, and to be provided with a cover of cast-iron, or concrete. The cover to be marked with an identification letter 'W'. It is not usual practice for water meters to be installed inside buildings, excepting in very large establishments where there would be a properly constructed 'Meter House'.

216  
4,666

Stanly Filtration Plant is now operating on the most economical basis that can be devised to provide a continuous supply of good quality drinking water, to the inhabitants of Stanley. No leakage of water in the supply system is now apparent. Costs of the Filtration Plant have been reduced since February, 1972 (when the Casserly Report was published). The reduced costs of the Filtration Plant has been brought about by a changed system of working, and good supervision on site. It is suspected that in the past water was pumped to waste - including week-end working at over-time rates. There is no week-end pumping now.

When the water meters are installed it will be necessary to have a meter testing, and repair shop, with heating, lighting, etc -, a meter tester/repairer, and possibly other men to assist when needed.

A test was carried out by P.W.D. on one of the meters, and it was found that continuous nuisance could be caused by the very fine filter inside the meter becoming blocked by a build-up of minute residue from peaty water after treatment - although the water is of excellent drinking quality.

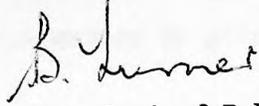
With the ever increasing costs of materials, and labour charges, it is fair to state that after the installation of the water meters the recurrent expenses could possibly run into thousands of pounds per year.

In the interest of conservation of water treated by Stanley Filtration Plant it is suggested that a regulation should be written into the Laws of the Falkland Islands, Cap.70., Stanley Waterworks, Regulations, something to the effect that no apparatus should be permitted whereby a continuous flow of water is used, - such as a water pipe being allowed to discharge continuously into a 'Gents' urinal stall,- but that an automatic, intermittent, flushing system, or a manually operated flushing system should be fitted.

Sir,

I have the honour to be,

Your obedient servant,

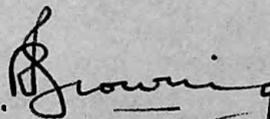
A handwritten signature in cursive script, appearing to read 'B. J. Turner'.

Superintendent of Public Works.

PWD/13/12

20. STANLEY WATER SUPPLY - METERS (Memo 51/74)

The Chief Secretary explained that the scheme to instal water meters in Stanley had been approved by the Legislature when it formally adopted the Development Plan 1973-8 in which the scheme was incorporated. In the meantime a petition against the installation of the meters bearing some 442 signatures of residents in Stanley had been received in Government. It was felt that there was some merit in the petition, particularly as there had been a reduction in the costs of providing the Stanley water supply, and the original estimate of the cost of the scheme did not take into account such items as the expense of constructing meter-boxes and the recurrent costs of maintenance etc. Council advised that the Superintendent of Works should be asked to produce detailed figures of the costs of installing the meters, the recurrent costs of the scheme, and the savings recently made at the Pumping Station; and that the matter could then be raised by a private motion in the Legislative Council.

  
CLERK OF COUNCIL

680

PWD/13/12

13th November 1974

Chief Secretary

Supt. PWD

FILTRATION PLANT

I understand that there are one or two Braithwaite tanks at Port Albermarle. When the opportunity offers will you arrange for these to be inspected to see if they can supplement or replace our own tanks which I understand may be nearing the end of a useful life.

  
V.J.P. Monk  
Chief Secretary

# MEMORANDUM

Reference ..... 040.

Date ..... 3rd December, 1974.

From Superintendent of Works.

To Chief Secretary.

## WATER METERS:

Further to my memo: on Water Meters, of 24th October, 1974, it is now stated that all the recommendations contained in the 'Casserly Report' have been put into effect excepting the following.-

### Section 6.2.

#### Main Reservoir Valves.

6" and 4" water meters were ordered on Indent PWD/155/72 on August 3rd, 1972 and for some reason, the order was cancelled. There is no record on file of why this was done.

### Section 7.3.

#### Dead Ends.

No scheme has yet been devised to connect the 'Dead ends' into a circulatory system. It would be a costly process to do so. The alternative method as suggested in the Report is being done i.e. they are being flushed out monthly. This method seems to be satisfactory.

### Section 7.5.

Much has been done to control the waste water problem, but more has to be done at the reservoir - which has quite a number of cracks on the inside which may, or may not be leaking.

### Section 11.0.

#### Metering of Supplies.

Still on the agenda.

Please Note/.....

Please Note:-

Since the Casserly Report' was received costs of running the water Filtration Plant has been reduced:-

- (a) Immediate attention to leaks.
- (b) No all night pumping.
- (c) No weekend pumping.

Apparently in the past leaks could be for prolonged periods, all night pumping, and weekend pumping (even to waste) was permitted.

*B. Turner.*

Superintendent of Works.

SER.

PWD/13/2

5 December 1974

Chief Secretary

Supt. Public Works

Water Meters

LegCo decided yesterday that Government should not proceed with the installation of water meters in Stanley. Accordingly the meters that you now have in stock should be offered for sale. I doubt whether we will get anyone on the Islands to buy them and it may be necessary to liaise with the Supplies Officer to see if they could be disposed of overseas, possibly through the Crown Agents.



A.J.P. Monk  
Chief Secretary

xvii Dis-used Reservoir

A proposal that the old reservoir in Reservoir Road should be used as a tip and afterwards turned into a garden was not approved.

*Gowing*  
CLERK OF COUNCIL

689  
April 18th. 1975.

Senior Medical Officer

Supt. Public Works

c.c. Chief Secretary ✓

Disused Reservoir in Reservoir Road



I refer to the Chief Secretary's memo dated 17 April 1975.

2. My own personal view is that the reservoir is more of a physical danger to children rather than an actual public health hazard as such. The solution to the problem that appeals best to me is for the reservoir to be filled in and to be used as an extension to the hospital gardens. Such an extension is urgently required due to the increased demands being made on the hospital gardens and to the presence of Eel worm in the potato patches at present in use. I feel therefore that this solution would overcome both problems, and I would be interested to hear your comments on this subject.

Derek Cox,  
Senior Medical Officer.

See 686

0491/D

27th May 1975

691

Chief Secretary

Supt. Public Works

USE OF WATER BY MARINES

Will you please let me have a brief report on the method by which water is supplied to Moody Brock, and an estimate of the quantity supplied to them as a percentage of total consumption in Stanley.

A J P Monk  
Chief Secretary

# MEMORANDUM

697

Reference 0491/D

Date 10th June, 1975.

27th May

From Superintendent Public Works.

To Chief Secretary.



Use of Waters by Marines.

691  
~~7/11/75~~  
~~11/11/75~~

With regard to your memo of above mentioned reference.

There is a  $1\frac{1}{4}$  inch pipe tapped into the main between the filtration Plant and Stanley reservoir.

The  $1\frac{1}{4}$  inch pipe fills a 12,000 gallons high level tank at Moody Brook. Water use at Moody Brook is drawn from the 12,000 gallon high level tank.

The supply of water to Moody Brook is not metered, but Mr. Stewart ( Senior Filtration Plant Operator ) has informed me that when the old 8,000 gallons tank - since removed - was in use, 8,000 gallons would last the Marines for two full days. So, working on this basis of 4,000 gallons per day, and the average consumption in Stanley is approx:- 57,000 per day at present, the percentage of water used by Marines is 7.02%.

==

B. Stewart

Superintendent Public Works.

P/file

PW0/13/2

CHIEF

~~XXXXXX~~

694

17th October, 1975

To: Superintendent of Public Works

STANLEY WATER - COLOUR

In Council recently some Councillors referred to the discolouration of the Stanley water during recent weeks.

Personally I have noticed no significant change recently, although there are periods when the water is a brown peatish colour.

As I understand that concern about this as a health hazard has been voiced throughout Stanley, perhaps you will be good enough to let me know the cause of the discolouration together with a draft announcement to allay the public's fears.

A.J.P. Monk  
CHIEF SECRETARY

PWD/13/12

697

No.



MEMORANDUM.

It is requested that, in any reference to this memorandum the above number and date should be quoted.

11<sup>th</sup> November 1975.

To: Chief Secretary

From: Supt. Public Works.

Stanley, Falkland Islands.

SUBJECT :-

Water Supply.

11. NOV. 1975

It has come to my notice that Johnston Con. Co. Ltd have been taking a considerable amount of treated water from Stanley, to spray on the runway at Cape Pembroke, in their bowser (at 4000 gallons a time). I have spoken to Mr K. Cadman explaining the general water shortage in Stanley when they take it. Can a letter from C/Secretary ~~please~~ be sent to them on these lines, please?

B. Y. Jones.  
SKW.

699B

Ref. No. WATER METERS.

Public Works Department,  
Stanley, Falkland Islands.

C.A.REF.XC4/C2J/FALK IS 3/32865/1

OUR REF. Indent PW/157/73

10th February, 1976

Crown Agents,  
Engineering Division,  
4, Millbank,  
London, SW1P 3JD  
England.

Dear Sirs,

WATER METERS.

Under our Indent PW/157/73 we received the following water meters:--

|         |            |                 |                                  |
|---------|------------|-----------------|----------------------------------|
| No. 150 | PSM Meters | $\frac{1}{2}$ " | Serial Nos. 131851 - 132000 inc. |
| " 150   | " "        | $\frac{3}{4}$ " | " " 133451-500, 133601-700 inc.  |
| " 12    | " "        | 1"              | " " 132075 - 086 inc.            |

Owing to a change of policy regarding the installation of all the above water meters we now find that we have for disposal the following unused meters of the above mentioned batches:--

|         |        |                 |        |
|---------|--------|-----------------|--------|
| No. 140 | of the | $\frac{1}{2}$ " | meters |
| " 140   | " "    | $\frac{3}{4}$ " | "      |
| " 6     | " "    | 1"              | "      |

I have been instructed by Government to make arrangements with the Crown Agents for the return and sale of these meters in the U.K.  
Your help in this matter will be very much appreciated.

Yours faithfully,

*B. Lunn*

Superintendent of Public Works.

700

Chief

PWD/13/12

11th February, 1976

To: Superintendent of Public Works

Following my visit to the high level water tank yesterday and subsequent discussion, I shall be grateful if you will please invite tenders for the painting of the exterior of the tank as soon as possible. You should also please liaise with the Filtration Plant Operator to decide on a suitable time to paint the interior of the tank. In this connection you will, of course, have to ascertain if the special paint is available.

Advertis  
ent.

A.J.P. Monk  
CHIEF SECRETARY

Not proceeded with  
as Board of Tenders  
recommended that it  
was too late to tackle  
this job and that it would  
be better left to the summer of  
76/77

# MEMORANDUM

Refer: Circular No. 17/76

It is requested that this number and date should be quoted.

Date 7th April, 1976. (702)



From Supt. Public Works.

To Acting Chief Secretary.

Subject:- Executive Council Meeting - 14th April, 1976.

## WATER SUPPLY.

I wish to bring notice to the situation of the serious condition of this ever increasing problem, the defects are many and to say the least, becoming out of control. What I fear most is every Tank from the filtration plant to the high Level Tank (including the Concrete Reservoir) should be renewed. The condition of them are equally poor, which gives rise for concern that if one disintergrates, the others are not going to last much longer either.

2. The water used is highly corrosive, and <sup>steel</sup> ~~metal~~ tanks expensive, the time has come to switch to some material other than steel for the filtration plant tanks. A new reservoir of concrete should be considered and constructed at the High Level site, and by bypassing the existing reservoir and High Level Tank, no External Tanks would be required at all, it would also eliminate the reservoir pumping station, with all their recurrent problems. The town supply would be on a one distribution circuit instead of its present two. The pressure would increase noticeably. It would also solve the Fire Brigades problems by having a useful static tank were its most needed (the present reservoir).

3. The present reservoir is leaking, there is ample evidence of this, with adjacent ground appearance. Fifty per cent of the water produced has to be re-pumped to the High Level Tank, ~~FROM THIS RESERVOIR.~~

4. Treated water supply shows obvious deterioration, due to the poor condition of everything within the installation, the very expensive chemicals, still being used, will gradually become less effective having to pass through, or held in the reservoir and tanks, that are defective. The greater part being twenty years old.

5. It has been customary in the past to clean out all tanks, wells and reservoir, at least twice a year, and paint the the inside once a year, external paint work was done as it become necessary, I have been informed that 'through lack of funds', it has not been done for two years. I brought this point out not to "pass the book" but to make the point of how quick the deterioration can become if they are not treated.

6. What is really required is a complete survey by a Water Filtration Engineer, with the view of Modernisation and Automation, the only future for the present system - is dismal and expensive.

7. It has become a very unattractive employment for the Operators, Two have already put their notice in,. It is shift work and there is much to be done. Operators must <sup>be</sup> capable of shouldering responsibility in a Chemical Treatment Plant. Suitable replacements are going to difficult to find.

## ROADS.

*Omni* A teacher asked one of his children why he was late at school and a boy replied "Sorry Sir, but I fell down one of the holes in the road". I think there is little more, <sup>to be</sup> said about conditions, that true story sums it up.

Cont/.....

*The repaired roads*  
It is beyond anything that Public Works Department can do. Sitting in this chair I often feel like a skeleton waiting for flesh, particularly when the question of roads appear.

There is up to 35000 sq mtrs needs re-surfacing. The drainage beneath these roads are suspect; a greater part of the 6000 metres of drain and sewage pipe work would require attention or renewal, before a road programme could get underway.

2. It can only be studied on a 'Major Road Reconstruction Scheme' which I am hoping will be under consideration.

*T. W. Royans*

(T. W. Royans)

Superintendent Public Works.

crs.

*Noted.*  
*[Signature]*  
*12/1/76.*

# MEMORANDUM

707

Reference PWD/13/12

I requested that this number and date should be quoted.

Date 20th April, 1976.....

From Superintendent Public Works.

To Chief Secretary.



Subject:-

Water Supply, Mr. T. Fleuet.

I discussed his complaints with him and explained the problems with Fitzroy Road in general.

I visited a number of premises along Fitzroy Road in some cases immediately the complaints came, and although the supply there is not good, their claims were often exaggerated.

It is not really a lack of water, so much as a lack of pressure, and this becomes worse when watering ships and filling bowsers. In 1972, whilst we had a mains exposed, I had a small section removed for inspection, no - one was more surprized than me to find the main was still in good condition, the cement lining was quite clear.

As long as there is two construction outfits and ships to water Fitzroy Road will be inconvenienced, because of the insufficient head of water of the double supply system.

There is an alterative which we commenced in 71/72 and actually extended pipework to Fitzroy Road junction, the aim was to switch Fitzroy Road on the High Level Supply. I will review the situation again now and look into the material side. Previous to the Air - field Developments the complaint was rare, but as the demand may be continued for an indefinate period, the work will have to be continued.

A handwritten signature in cursive script, appearing to read "T. T. Royans".

(T. T. Royans)  
Supt. Public Works.

Crs.

# MEMORANDUM

Reference

P.W.D. 113/12

Date 28th May, 1976.

It is requested that this number and date should be quoted.

From Superintendent Public Works.

To Chief Secretary.



*Home file*

Subject:-

Water Meters.

The attached information received from Crown Agent's and Kent group in relation to the proposed sale.

It has been made obvious by the correspondence received this mail 27th May, 1976, that scrap value is all that would be offered from anyone. No way round the complicated and expensive freight costs to expect a better deal.

Suggest we preserve them until the out-come of the Shackleton Report and visiting water Engineer, who knows, the question of metering has been up and down more times than a lavatory seat. It would top the bill if they were sold as scrap, only to find yet another version in its favour.

*T. W. Rgyans*

(T. W. Rgyans)  
Supt. Public Works.

crs.

Telegrams Crown London SW1  
Telephone 01-222 7730  
Telex 916205

CROWN AGENTS

FOR OVERSEA GOVERNMENTS AND ADMINISTRATIONS

E Division

4 MILLBANK

LONDON SW1P 3JD

Our ref E6P/C2J/FALK IS 3/32865/1

Your ref PW/157/73

Date 20 May 1976

Superintendent of Public  
Works  
Public Works Department  
Stanley  
FALKLAND ISLANDS

Dear Sir

PURCHASE OF SURPLUS WATER METERS

We have considered the matter of disposal of your surplus water meters raised in your letter of the 10 February 1976. Our first approach to Kent Meters Ltd did not meet with success but after further discussions they have made an offer based on scrap values and a copy of their explanatory letter dated 13 May 1976 is ... enclosed for your information.

2 Bearing in mind the cost of packing, freighting and insuring the surplus meters back to the UK, this offer by Kent Meters Ltd is hardly worth your while to accept.

3 Although we have been watching our incoming indents for likely opportunities to make known your surpluses to prospective purchasers of water meters, no opportunity has arisen during the past six weeks. The matter of the expired 2 years maker's guarantee creates a difficulty in this form of disposal.

4 The only other suggestion we can offer is that you advertise them in the technical press, noting that the meters are calibrated in imperial gallons.

5 We much regret that we are unable to be more helpful on this occasion.

Yours faithfully



K G STRATFORD  
for the Crown Agents

SU/NAM/20



58

## Kent Meters Limited

Pondvicks Road Luton Bedfordshire LU1 3LJ  
Telephone Luton 31100 Telex 825367

your reference  
our reference

CAW/CB  
73/04208

Crown Agents,  
4, Millbank,  
London SW1P 3JD

For the attention of Mr. K.G. Stratford,  
E6 Section.

13th May, 1976

Dear Sirs,

### Falkland Islands - Surplus Water Meters

Thank you for your letter of 23rd March regarding the excess water meters held by the Public Works Dept. As outlined in our discussions on 11th May, although these meters are unused we would be unable to accept them back into our stocks and offer them as new meters due to various modifications and improvements which have been carried out on both the body and internal mechanism which make the meter obsolescent.

Regretfully, therefore, we are only able to offer to your principals a scrap value and this is, at the present time, 41p for the  $\frac{1}{2}$ " and  $\frac{3}{4}$ " meters involved and 96p for the 1" meters. This value is linked to the price of brass and should this increase or decrease from its current rate, we would reserve the right to amend the prices stated accordingly.

We are extremely sorry that we find ourselves unable to accommodate you in this matter but we would under no circumstances be able to resell the meters on the basis of unused goods as you suggest.

Yours faithfully,  
for KENT METERS LIMITED

C.A. Whiteside,  
Export Marketing Executive.



the GEORGE KENT group