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GENERAL INTRODUCTION

David Lashley & Partners Inc was requested by the Canadian Development Assistance Programme to visit the islands of Grenada, St.Vincent, St. Lucia, Dominica, Antigua, Montserrat, St. Kitts, Nevis and Anguilla, to collect information on the National Water Supply of each territory for Disaster Preparedness purposes.

Meetings were arranged and information requested in advance of a visit to each island. The islands were visited during the period June 25, to July 7, 1990. Generally, the staff of the Water Utilities were helpful and cooperative. However, there were a few exceptions and in some instances information proved difficult to obtain. Where problems were encountered in an island, these are referenced in the introduction section to the information on the particular island.

The format of our presentation follows the item numbering of the Description of Services which is included as Appendix A for ease of reference.

It should be noted that we have not collected data from the National Fire Services of each territory but their fire tender resources may possibly be drawn upon by national Emergency Relief Organisations to assist with water distribution in emergency situations.

GRENADA

GRENADA

Introduction

The following information was obtained from Mr. Alphonsus Daniel, Water Engineer at the Central Water Commission.

There are ten pumping stations as listed in the following information. However, only five of these are currently in operation. The other five are new wells about to be commissioned. The wells have been drilled and the pump station buildings constructed but no pumps have yet been installed.

Of the five pumping stations currently in operation, one is a surface intake, one is a booster station and the other three are for wells.

- 1.0 The following Pump Station Data Sheets provide the information collected.
- 2.0 The Central Water Commission does not own any portable generators.
- 3.0 None of the pumping stations are essential to prevent a life threatening situation but the pumped intake at Apsley Hill is important as this is the only source of water to the Mardigras Treatment Plant from which water distributes under gravity to the surrounding area. The wells at Chemin are also important as these are sometimes used to supplement the treated water from Mama Cannes which reduces in the dry season.
- 4.0 There are at least six water tankers in Grenada. The Central Water Commission owns two, of 1350 and 1500 gallon capacity (both down for repairs at present). Mr. C. Griffith owns three of unknown capacity of which two are believed to be working. The Grenada Airports Authority also owns one truck of unknown capacity which is stationed at Point Salines Airport.
- 5.0 The total reservoir capacity is given as 3.5Mg,, and it is estimated that at least 90% of the population can receive some degree of water from these reservoirs on a gravity basis.
- 6.0 All of Grenada's water supply is distributed by gravity except for the area served by the Mardigras Treatment Plant. The wells are used to supplement the surface flows.

PUMPING STATION DATA

1. Location: Grenada
2. Name: Baillies Bacolet No 1 and 2

Pumps

3. Manufacturer's Name: Pleuger
4. Model Name/No.: QN63-22+M6-71
5. Rating: 140 g/m at 555ft.
6. Percentage of Total Water Supply: 3.5 (No. 1) 2 (No.2)

Motor Unit

7. Manufacturer's Name: Franklyn Electric
Model Name/No:
8. Motor Power Rating: 40 HP Frame:
9. Operating Speed: 2840 RPM Type:
10. Power Consumption: 58 amps - 30 KW

Electricity Supply

11. No. of Phases: 3
12. No. of Cycles: 50
13. Voltage: 415

Control Panel

14. Control Panel Manufacturer's Name: Furnas
15. Starter Type:

Standby Generator

16. Manufacturer's Name:
17. Model Name/No.:
18. KVA:
19. KW:
20. P. Factor:
21. Percentage of Pumping Stations
Power requirement that can be
supplied: Nil

PUMPING STATION DATA

1. Location: Grenada

Name: Boca Secondary School

Pumps

3. Manufacturer's Name: Grundfos Submersible

4. Model Name/No.: SP45/12

5. Rating: at

6. Percentage of Total Water Supply: 1

Motor Unit

7. Manufacturer's Name:
Model Name/No:

8. Motor Power Rating: 15 KW Frame:

9. Operating Speed: Type:

10. Power Consumption:

Electricity Supply

11. No. of Phases: 3

12. No. of Cycles: 50

13. Voltage: 440

Control Panel

14. Control Panel Manufacturer's Name: Cougar Pumps Ltd.

15. Starter Type:

Standby Generator

16. Manufacturer's Name:

17. Model Name/No.:

18. KVA:

19. KW:

20. P. Factor:

21. Percentage of Pumping Stations
Power requirement that can be
supplied: Nil

PUMPING STATION DATA

1. Location: Grenada
Name: Apsley Hill Pumping Station (2nd Pump used as standby)

Pumps

3. Manufacturer's Name: Peabody Floway
4. Model Name/No.: 8J01
5. Rating: 140g/m at 435 ft TDH
6. Percentage of Total Water Supply: 3

Motor Unit

7. Manufacturer's Name: Brown Boveri Canada
Model Name/No: 365UPR-2DLAJZ
8. Motor Power Rating: 40HP Frame:
9. Operating Speed: 1450 RPM Type:
10. Power Consumption:

Electricity Supply

11. No. of Phases: 3
12. No. of Cycles: 50
13. Voltage: 415

Control Panel

14. Control Panel Manufacturer's Name: KLOCKNER MOELLER
15. Starter Type:

Standby Generator

16. Manufacturer's Name: Simpower Generator with White Diesel Engine
17. Model Name/No.: SP55D3PH
18. KVA: 68.75
19. KW: 65
20. P. Factor: 0.8
21. Percentage of Pumping Stations Power requirement that can be supplied: 100

PUMPING STATION DATA

1. Location: Grenada

Name: Apsley Hill Pumping Station

Pumps

3. Manufacturer's Name: Peabody Floway

4. Model Name/No.: 8J01

5. Rating: 140g/m at 435 ft TDH

6. Percentage of Total Water Supply: 3

Motor Unit

7. Manufacturer's Name: Brown Boveri Canada

Model Name/No: 365UPR-2DLAJZ

8. Motor Power Rating: 25HP

Frame:

9. Operating Speed: 1450 RPM

Type:

10. Power Consumption:

Electricity Supply

11. No. of Phases: 3

12. No. of Cycles: 50

13. Voltage: 415

Control Panel

14. Control Panel Manufacturer's Name: KLOCKNER MOELLER

15. Starter Type:

Standby Generator

16. Manufacturer's Name: Simpower Generator with White Diesel Engine

17. Model Name/No.: SP55D3PH

18. KVA: 68.75

19. KW: 65

20. P. Factor: 0.8

21. Percentage of Pumping Stations
Power requirement that can be
supplied: 100

PUMPING STATION DATA

1. Location: Grenada

Name: Chemin No. 1

Pumps

3. Manufacturer's Name: Grundfos

4. Model Name/No.: SP45/21

5. Rating:

6. Percentage of Total Water Supply: 3

Motor Unit

7. Manufacturer's Name:
Model Name/No:

8.. Motor Power Rating: 40HP

Frame:

9. Operating Speed:

Type:

10. Power Consumption:

Electricity Supply

11. No. of Phases: 3

12. No. of Cycles: 50

13. Voltage: 415

Control Panel

14. Control Panel Manufacturer's Name: Fluidtron Controls
Inc

15. Starter Type:

Standby Generator

16. manufacturer's Name:

17. Model Name/No.:

18. KVA:

19. KW:

20. P. Factor:

21. Percentage of Pumping Stations
Power requirement that can be
supplied: Nil

PUMPING STATION DATA

1. Location: Grenada
Name: Chemin No. 2

Pumps

3. Manufacturer's Name: Grundfos
4. Model Name/No.: SP45/15
5. Rating: 110g/m at 450 -550 ft
6. Percentage of Total Water Supply: 3

Motor Unit

7. Manufacturer's Name: Franklyn Electric
Model Name/No: 78150020
8.. Motor Power Rating: 20HP Frame:
9. Operating Speed: 2870 RPM Type:
10. Power Consumption:

Electricity Supply

11. No. of Phases: 3
12. No. of Cycles: 50
13. Voltage: 415

Control Panel

14. Control Panel Manufacturer's Name: Archer Industrial
Systems Ltd
15. Starter Type:

Standby Generator

16. Manufacturer's Name:
17. Model Name/No.:
18. KVA:
19. KW:
20. P. Factor:
21. Percentage of Pumping Stations
Power requirement that can be
supplied: Nil

PUMPING STATION DATA

1. Location: Grenada

Name: Chemin No. 4

Pumps

3. Manufacturer's Name: Grundfos

4. Model Name/No.: SP45/15

5. Rating:

6. Percentage of Total Water Supply: 2

Motor Unit

7. Manufacturer's Name: Franklyn Electric
Model Name/No:

8.. Motor Power Rating: 20HP Frame:

9. Operating Speed: Type:

10. Power Consumption:

Electricity Supply

11. No. of Phases: 3

12. No. of Cycles: 50

13. Voltage: 415

Control Panel

14. Control Panel Manufacturer's Name: Archer Industrial
Systems Ltd.

15. Starter Type:

Standby Generator

16. Manufacturer's Name:

17. Model Name/No.:

18. KVA:

19. KW:

20. P. Factor:

21. Percentage of Pumping Stations
Power requirement that can be
supplied: Nil

PUMPING STATION DATA

1. Location: Grenada

Name: Chemin No. 5

Pumps

3. Manufacturer's Name: Grundfos

4. Model Name/No.: SP45/21

5. Rating: at

6. Percentage of Total Water Supply: 3.5

Motor Unit

7. Manufacturer's Name: Franklyn Electric
Model Name/No:

8.. Motor Power Rating: Frame:

9. Operating Speed: Type:

10. Power Consumption:

Electricity Supply

11. No. of Phases: 3

12. No. of Cycles: 50

13. Voltage: 415

Control Panel

14. Control Panel Manufacturer's Name: Archer Industrial
Systems Ltd

15. Starter Type:

Standby Generator

16. Manufacturer's Name:

17. Model Name/No.:

18. KVA:

19. KW:

20. P. Factor:

21. Percentage of Pumping Stations
Power requirement that can be
supplied: Nil

PUMPING STATION DATA

1. Location: Grenada
Name: Woburn - Booster Pump - Low Reservoir to high Reservoir

Pumps

3. Manufacturer's Name: Weir of Scotland
4. Model Name/No.: SNBA Monoglide
5. Rating: 250g/m at
6. Percentage of Total Water Supply:

Motor Unit (Deisel)

7. Manufactured to: B.S. 649
Serial No: 17255T3A29-7
8. Motor Power Rating: 3 Cylinder 22KW
9. Operating Speed: Type:
10. Power Consumption:

Electricity Supply

11. No. of Phases:
12. No. of Cycles:
13. Voltage:

Control Panel

14. Control Panel Manufacturer's Name:
15. Starter Type:

Standby Generator

16. Manufacturer's Name:
17. Model Name/No.:
18. KVA:
19. KW:
20. P. Factor:
21. Percentage of Pumping Stations
Power requirement that can be
supplied: Nil

PUMPING STATION DATA

1. Location: Grenada

Name: Woodlands No. 2

Pumps

3. Manufacturer's Name: Grundfos

4. Model Name/No.: SP45/18

5. Rating: at

6. Percentage of Total Water Supply:

Motor Unit

7. Manufacturer's Name:
Model Name/No:

8.. Motor Power Rating: Frame:

9. Operating Speed: Type:

10. Power Consumption:

Electricity Supply

11. No. of Phases: 3

12. No. of Cycles: 50

13. Voltage: 415

Control Panel

14. Control Panel Manufacturer's Name: Northwest Switchgear

15. Starter Type:

Standby Generator

16. Manufacturer's Name:

17. Model Name/No.:

18. KVA:

19. KW:

20. P. Factor:

21. Percentage of Pumping Stations
Power requirement that can be
supplied: Nil

PUMPING STATION DATA

1. Location: Grenada

Name: Woodlands No. 3

Pumps

3. Manufacturer's Name: Grundfos

4. Model Name/No.: SP45/18

5. Rating: at

6. Percentage of Total Water Supply:

Motor Unit

7. Manufacturer's Name: Franklyn Electric
Model Name/No:

8.. Motor Power Rating: 30HP Frame:

9. Operating Speed: Type:

10. Power Consumption:

Electricity Supply

11. No. of Phases: 3

12. No. of Cycles: 50

13. Voltage: 415

Control Panel

14. Control Panel Manufacturer's Name: Fluidtron Controls Inc

15. Starter Type:

Standby Generator

16. Manufacturer's Name:

17. Model Name/No.:

18. KVA:

19. KW:

20. P. Factor:

21. Percentage of Pumping Stations
Power requirement that can be
supplied: Nil

ST. VINCENT

ST. VINCENT

Introduction

The following information was received from Mr. Garth Saunders of the Water Authority.

- 1.0 There are no water supply pumps in St. Vincent. The water distribution system is 100% gravity fed.
- 2.0 The Authority has no generator sets.
- 3.0 Not applicable.
- 4.0 The Central Water and Sewerage Authority owns three water tankers of unknown capacity.
- 5.0 The total reservoir capacity is 1.8 Mg (see attached sheet). 100% of the population can receive water from these reservoirs on a gravity basis.
- 6.0 All areas are gravity fed.

ST. VINCENT WATER SYSTEM - DETAILS

System Name	No. and Type of Intake	Intake Capacity 000's gals/day		System Design Capacity 000's gals/day	Popul. served	Galls. Available per day		Total Storage Capacity 000's gals	Storage Consumer	Treatment
		Season	Year			Season	Year			
1 Mamoon	1 River	40	200	280	2,000	20	100	60	30	None
2 Majorca	1 River	500	850	500	5,000	55	100	75	7	Drip feed Chlor.
3 John Williams	1 River	170	250	250	None	55	87.5	3		
4 Dalaway	2 River	1200	2,700	2,700	30,000	50	90	705	20	Gas Chlor. - none old system
		100	300	300	4,500	20	65	30		sedimentation.
10 Montreal	2 Spr.	400	1,000	4"/250 5"/450	4,500	25	55	565	36	Drip feed Chlorination + Sedimentation
12 Camel	2 Spr.	40	45	55	800	50	50	3	10	None
14 Greys	2 Spr.	75	100	100	2,000	25	50	28	14	Drip feed Chlorinator
16 Laurels	2 Spr.	80	80	25	5,000	7	7	12	2	Drip feed Chlorinator
18 Eigner Lowmans	1 River	100	100	100	2,200	45	45	18	8	Drip feed - 8 Chlorinator - 6 Sand filter
19 Laurel	1 Spr.	20	30	20	1,500	20	20	3	5	Sand filter Drip feed Chlorinator
20 South Rivers	2 Spr.	180	220	20	6,000	20	20	31	15	Drip feed Chlorinator
21 Evans	1 Spr.	15	15	15	2,500	6	6	45	1	Drip feed Chlor.
22 Georgetown	2 Spr.	95	95	200	6,500	15	15	95	14	Drip feed chlor.
23 Sandy Bay	1 River	90	90	50	3,000	45	45	35	10	None
24 Chica	1 River	50	50	50	900	55	55	—	7	factories (None)
25 Fancy	1 River	50	50	50	100	125	125	—	2	Poor filter
Chateau Belair	2 River	80	120	120	3,500	25	20	25	7	Sand filter, poor
26 Spr. Village	1 Spr.	28	28	24	900	25	25	12	13	None

ST. LUCIA

ST. LUCIA

Introduction

The following information was collected in St. Lucia and by fax and telephone calls to Mr. J. E. Charles of the Water & Sewerage Authority.

There are more than 38 pumping stations in St. Lucia; only a few of these pumping stations were visited due to time and terrain constraints. Other information presented on those pumping stations equipped with Grundfos pumps was obtained by fax after the visit.

- 1.0 The following Pumping Station Data sheets present the information collected on those pumping stations that were visited.

Most of the pumping stations visited were on the list of facilities considered essential by the Manager; however, it was not possible to visit all of the stations on the list.

The fold out chart following the Pumping Station Data sheets indicates which pumping stations are equipped with Grundfos pumps and the size of the motors. Additional information to complete the chart will follow as an addendum if it becomes available.

- 2.0 The Water and Sewerage Authority does not own any portable generators.
- 3.0 The following list indicates the facilities that are considered essential.

Talvan
Bocage
Hill 20
Union
Cul-de-Sac
Roseau
Ravine Poisson
Thomazo
Vieux Fort
Magritoute
Belvedere

These supply the major population centres, hospitals, etc.

- 4.0 The Water and Sewerage Authority does not own any water tankers. Privately owned tankers each of 1200 gallon capacity are:

Transport & Handling Services Limited - 1 Nr

Philgence Transport & Handling Services Limited - 1 Nr

Hackshaw's Water Trucking Service - 1 Nr.

Crown Agents Water Trucking Service - 2 Nr.

The above are all believed to be in working condition.

- 5.0 The total reservoir capacity is 4.5Mg. Approximately 21% of the stored water is supplied on a complete gravity basis.
- 6.0 Only the rural areas receive water on a total gravity basis.

PUMPING STATION DATA

1. Location: St. Lucia
Name: Bocage (3 Pumps, 2 Duty, 1 Standby)
Pumps
3. Manufacturer's Name: S.P.P. Pumps Limited
4. Model Name/No.: GH06C/14
5. Rating: 11.4 l/s at 123.19m
6. Percentage of Total Water Supply: 4
Motor Unit
7. Manufacturer's Name: Newman
Model Name/No:
8. Motor Power Rating: 40 HP Frame:
9. Operating Speed: 2950 RPM Type:
10. Power Consumption: 56 Amps
Electricity Supply
11. No. of Phases: 3
12. No. of Cycles: 50
13. Voltage: 415
Control Panel
14. Control Panel Manufacturer's Name: Allenwest WestLine
15. Starter Type: Star Delta
Standby Generator
16. Manufacturer's Name: Electric Construction Ltd with Rolls
Royce Deisel
17. Model Name/No.: A280/22
18. KVA:
19. KW: 100
20. P. Factor:
21. Percentage of Pumping Stations
Power requirement that can be
supplied: 100

PUMPING STATION DATA

1. Location: St. Lucia

Name: Bocage (Cont'd)

Pumps

3. Manufacturer's Name: Grundfos

4. Model Name/No.: GR60 80

5. Rating: at

6. Percentage of Total Water Supply:

Motor Unit

7. Manufacturer's Name: GEC Motor Alpac Induction Motor
Model Name/No:

8.. Motor Power Rating: 2.2KW Frame:

9. Operating Speed: 2925 RPM Type:

10. Power Consumption: 41.5 Amps

Electricity Supply

11. No. of Phases: 3

12. No. of Cycles: 50

13. Voltage: 415

Control Panel

14. Control Panel Manufacturer's Name: Allenwest Westline

15. Starter Type: Star Delta

Standby Generator

16. Manufacturer's Name:

17. Model Name/No.:

18. KVA:

19. KW:

20. P. Factor:

21. Percentage of Pumping Stations
Power requirement that can be
supplied: 100

PUMPING STATION DATA

1. Location: St. Lucia

Name: Bocage (Cont'd)

Pumps

3. Manufacturer's Name: Johnson Pump Company

4. Model Name/No.:

5. Rating: at

6. Percentage of Total Water Supply:

Motor Unit

7. Manufacturer's Name: Brown Boveri Canada
Model Name/No: 256UPR-DLHTS

8. Motor Power Rating: 15 HP Frame:

9. Operating Speed: 2395 RPM Type:

10. Power Consumption: 19 Amps

Electricity Supply

11. No. of Phases: 3

12. No. of Cycles: 50

13. Voltage: 415

Control Panel

14. Control Panel Manufacturer's Name: Allenwest Westline

15. Starter Type: Star Delta

Standby Generator

16. Manufacturer's Name:

17. Model Name/No.:

18. KVA:

19. KW:

20. P. Factor:

21. Percentage of Pumping Stations
Power requirement that can be
supplied: 100

PUMPING STATION DATA

1. Location: St. Lucia
Name: Hill 20 (4 Pumps, 2 Identical)

Pumps

3. Manufacturer's Name: Grundfos
4. Model Name/No.: CR60 60
5. Rating: at
6. Percentage of Total Water Supply: 3.5

Motor Unit

7. Manufacturer's Name: General Electric Canada
Model Name/No: D160 MD
- 8.. Motor Power Rating: 15KW Frame:
9. Operating Speed: 2900 RPM Type:
10. Power Consumption: 27.5 Amps

Electricity Supply

11. No. of Phases: 3
12. No. of Cycles: 50
13. Voltage: 415

Control Panel

14. Control Panel Manufacturer's Name:
15. Starter Type: Star Delta

Standby Generator

16. Manufacturer's Name: Newman Generator with Cummins Diesel
17. Model Name/No.:
18. KVA: 135
19. KW: 108
20. P. Factor:
21. Percentage of Pumping Stations
Power requirement that can be
supplied: 100

PUMPING STATION DATA

1. Location: St. Lucia
Name: Hill 20 (Pumps to separate system)
Pumps
3. Manufacturer's Name: Grundfos
4. Model Name/No.: CR30 50
5. Rating: at
6. Percentage of Total Water Supply:
Motor Unit
7. Manufacturer's Name: General Electric Canada
Model Name/No:
- 8.. Motor Power Rating: 7.5KW Frame:
9. Operating Speed: 2880 RPM Type:
10. Power Consumption: 14.8 Amps
Electricity Supply
11. No. of Phases: 3
12. No. of Cycles: 50
13. Voltage: 415
Control Panel
14. Control Panel Manufacturer's Name:
15. Starter Type:
Standby Generator
16. Manufacturer's Name:
17. Model Name/No.:
18. KVA:
19. KW:
20. P. Factor:
21. Percentage of Pumping Stations
Power requirement that can be
supplied: 100

PUMPING STATION DATA

1. Location: St. Lucia
2. Name: Marquis (2 Identical Pumps)
Pumps
3. Manufacturer's Name: Aurora Pump
4. Model Name/No.: 421-BF
5. Rating: 480g/m at 440 ft
6. Percentage of Total Water Supply: 3.5

Motor Unit

7. Manufacturer's Name: Newman Motor
Model Name/No:
8. Motor Power Rating: 30 HP Frame:
9. Operating Speed: 2950 RPM Type:
10. Power Consumption:

Electricity Supply

11. No. of Phases: 3
12. No. of Cycles: 50
13. Voltage: 415

Control Panel

14. Control Panel Manufacturer's Name: Allenwest Westline
15. Starter Type: Star Delta

Standby Generator (Nil but standby pump coupled to a new
Detroit Diesel Allison PTA 11162 Motor)

16. Manufacturer's Name:
17. Model Name/No.:
18. KVA:
19. KW:
20. P. Factor:
21. Percentage of Pumping Stations
Power requirement that can be
supplied:

PUMPING STATION DATA

1. Location: St. Lucia

Name: Talvan (4 pumps, 2 identical 30 HP, 2 identical 75HP)

Pumps

3. Manufacturer's Name: SPP Pumps Limited

4. Model Name/No.: CH06A/14

5. Rating: 9.5 l/s at 134.11m

6. Percentage of Total Water Supply: 5

Motor Unit

7. Manufacturer's Name: Newman Motor
Model Name/No:

8.. Motor Power Rating: 30 HP Frame:

9. Operating Speed: 2960 RPM Type:

10. Power Consumption: 45 Amps

Electricity Supply

11. No. of Phases: 3

12. No. of Cycles: 50

13. Voltage: 415

Control Panel

14. Control Panel Manufacturer's Name: Allenwest Westline

15. Starter Type: Star Delta

Standby Generator

16. Manufacturer's Name: Electric Construction Ltd
with Rolls Royce Diesel

17. Model Name/No.: A280/22

18. KVA: 200

19. KW: 160

20. P. Factor:

21. Percentage of Pumping Station
Power requirement that can be
supplied: Nil

PUMPING STATION DATA

1. Location: St. Lucia

Name: Talvan (Cont'd)

Pumps

3. Manufacturer's Name: SPP Pumps Limited

4. Model Name/No.: CH06A/14

5. Rating: 250g/m at 134.11m

6. Percentage of Total Water Supply:

Motor Unit

7. Manufacturer's Name: Newman Motor
Model Name/No:

8.. Motor Power Rating: 75 HP Frame:

9. Operating Speed: 2960 RPM Type:

10. Power Consumption: 93 Amps

Electricity Supply

11. No. of Phases: 3

12. No. of Cycles: 50

13. Voltage: 415

Control Panel

14. Control Panel Manufacturer's Name: Allenwest Westline

15. Starter Type: Star Delta

Standby Generator

16. Manufacturer's Name:

17. Model Name/No.:

18. KVA:

19. KW:

20. P. Factor:

21. Percentage of Pumping Stations
Power requirement that can be
supplied: 100

PUMPING STATION DATA

1. Location: St. Lucia

Name: Union (2 identical Pumps, 1 duty, 1 standby)
(Raw Water Station)

Pumps

3. Manufacturer's Name: SPP Pumps Limited

4. Model Name/No.: GH08/A/3

5. Rating: 11.4 l/s at 13.82 m

6. Percentage of Total Water Supply: 2

Motor Unit

7. Manufacturer's Name: Newman Motor
Model Name/No:

8.. Motor Power Rating: 5 HP 3.7 KW Frame:

9. Operating Speed: 1450 RPM Type:

10. Power Consumption: 8.2 Amps

Electricity Supply

11. No. of Phases: 3

12. No. of Cycles: 50

13. Voltage: 415

Control Panel

14. Control Panel Manufacturer's Name: Allenwest Westline

15. Starter Type: D.O.L.

Standby Generator

16. Manufacturer's Name:

17. Model Name/No.:

18. KVA:

19. KW:

20. P. Factor:

21. Percentage of Pumping Stations
Power requirement that can be
supplied: Nil

PUMPING STATION DATA

1. Location: St. Lucia
Name: Union (Treated Water Station)
Pumps
3. Manufacturer's Name: Sigmund Pulsometer Pumps Limited
4. Model Name/No.: GH08
5. Rating: 11.4 l/s at 134.28 m
6. Percentage of Total Water Supply:
Motor Unit
7. Manufacturer's Name: Newman Motor
Model Name/No:
8. Motor Power Rating: 30 HP Frame:
9. Operating Speed: 2945 RPM Type:
10. Power Consumption: 39 Amps
Electricity Supply
11. No. of Phases: 3
12. No. of Cycles: 50
13. Voltage: 415
Control Panel
14. Control Panel Manufacturer's Name:
15. Starter Type:
Standby Generator
16. Manufacturer's Name:
17. Model Name/No.:
18. KVA:
19. KW:
20. P. Factor:
21. Percentage of Pumping Stations
Power requirement that can be
supplied: Nil

PUMPING STATION DATA

1. Location: St. Lucia
Name: Vieux Fort (Raw Water Pumping Station)
(3 different pumps)

Pumps

3. Manufacturer's Name: Berkeley Pump
4. Model Name/No.: Serial No.: 1248133
5. Rating: at
6. Percentage of Total Water Supply: 8

Motor Unit

7. Manufacturer's Name: U.S. Electrical Motor
Model Name/No:
8. Motor Power Rating: Frame:
9. Operating Speed: 1500 RPM Type:
10. Power Consumption: 24 Amps

Electricity Supply

11. No. of Phases: 3
12. No. of Cycles: 50
13. Voltage: 400

Control Panel

14. Control Panel Manufacturer's Name: Allenwest Westline
15. Starter Type:

Standby Generator (Generator at Treated Water Plant)

16. Manufacturer's Name:
17. Model Name/No.:
18. KVA:
19. KW:
20. P. Factor:
21. Percentage of Pumping Stations
Power requirement that can be
supplied: 75

PUMPING STATION DATA

1. Location: St. Lucia
2. Name: Vieux Fort (Raw Water Cont'd)

Pumps

3. Manufacturer's Name: Berkeley Pump
4. Model Name/No.:
5. Rating: at
6. Percentage of Total Water Supply:

Motor Unit

7. Manufacturer's Name: U.S. Electrical Motor
Model Name/No:
8. Motor Power Rating: 20 HP 15 KW Frame:
9. Operating Speed: 1460 RPM Type:
10. Power Consumption: 27 Amps

Electricity Supply

11. No. of Phases: 3
12. No. of Cycles: 50
13. Voltage: 400

Control Panel

14. Control Panel Manufacturer's Name: Allenwest Westline
15. Starter Type:

Standby Generator

16. Manufacturer's Name:
17. Model Name/No.:
18. KVA:
19. KW:
20. P. Factor:
21. Percentage of Pumping Stations
Power requirement that can be
supplied: 75

PUMPING STATION DATA

1. Location: St. Lucia

Name: Vieux Fort (Raw Water Cont'd)

Pumps

3. Manufacturer's Name: Sigmund Pulsometer Pumps Ltd

4. Model Name/No.: CR60-80

5. Rating: 65 cm³/hr at 82 m

6. Percentage of Total Water Supply:

Motor Unit

7. Manufacturer's Name: G.E.C. Machines Induction Motor
Model Name/No: 8208

8.. Motor Power Rating: 22 KW Frame:

9. Operating Speed: 2910 RPM Type:

10. Power Consumption: 39 Amps

Electricity Supply

11. No. of Phases: 3

12. No. of Cycles: 50

13. Voltage: 400

Control Panel

14. Control Panel Manufacturer's Name:

15. Starter Type:

Standby Generator

16. Manufacturer's Name:

17. Model Name/No.:

18. KVA:

19. KW:

20. P. Factor:

21. Percentage of Pumping Stations
Power requirement that can be
supplied: 75

PUMPING STATION DATA

1. Location: St. Lucia
Name: Vieux Fort (Treated Water Plant)
(4 Pumps, 2 identical, 2 different)

Pumps

3. Manufacturer's Name: DELAVAL Pump
4. Model Name/No.:
5. Rating: at
6. Percentage of Total Water Supply:

Motor Unit

7. Manufacturer's Name: Canadian General Electric
Model Name/No:
8. Motor Power Rating: 75 HP Frame:
9. Operating Speed: 1480 RPM Type:
10. Power Consumption: 96 Amps

Electricity Supply

11. No. of Phases: 3
12. No. of Cycles: 50
13. Voltage: 415

Control Panel

14. Control Panel Manufacturer's Name:
15. Starter Type:

Standby Generator

16. Manufacturer's Name: Petbow Generator with Rolls Royce
Diesel Engine
17. Model Name/No.: MF15 OR 53
18. KVA: 187.5
19. AMPS: 261
20. P. Factor: 0.8
21. Percentage of Pumping Stations
Power requirement that can be
supplied: 75

PUMPING STATION DATA

1. Location: St. Lucia

Name: Vieux Fort (Treated Water Plant Cont'd)

Pumps

3. Manufacturer's Name: Grundfos

4. Model Name/No.: CR60-80

5. Rating: 65 m³/hr at 82 m

6. Percentage of Total Water Supply:

Motor Unit

7. Manufacturer's Name: G.E.C. Machines Induction Motor
Model Name/No: 8208

8.. Motor Power Rating: 22 KW Frame:

9. Operating Speed: 2910 RPM Type:

10. Power Consumption: 39 Amps

Electricity Supply

11. No. of Phases: 3

12. No. of Cycles: 50

13. Voltage: 400

Control Panel

14. Control Panel Manufacturer's Name:

15. Starter Type:

Standby Generator

16. Manufacturer's Name:

17. Model Name/No.:

18. KVA:

19. KW:

20. P. Factor:

21. Percentage of Pumping Stations
Power requirement that can be
supplied: 75

PUMPING STATION DATA

1. Location: St. Lucia
Name: Vieux Fort (Treated Water Plant Cont'd)

Pumps

3. Manufacturer's Name: Sigmund Pulsometer Pumps Ltd
4. Model Name/No.: HSR 3B3
5. Rating: at
6. Percentage of Total Water Supply:

Motor Unit

7. Manufacturer's Name: Newman Motor
Model Name/No:
8. Motor Power Rating: 50HP 37 KW Frame:
9. Operating Speed: 2950 RPM Type:
10. Power Consumption: 66 Amps

Electricity Supply

11. No. of Phases: 3
12. No. of Cycles: 50
13. Voltage: 415

Control Panel

14. Control Panel Manufacturer's Name:
15. Starter Type:

Standby Generator

16. Manufacturer's Name:
17. Model Name/No.:
18. KVA:
19. KW:
20. P. Factor:
21. Percentage of Pumping Stations
Power requirement that can be
supplied: 75

PUMPING STATION DATA

1. Location: St. Lucia
2. Name: Ravine Poisson (4 identical pumps)
Pumps
3. Manufacturer's Name: Layne & Bowler Vertiline Pump
4. Model Name/No.: 10 EXLM
5. Rating: 420g/m at 290 ft
6. Percentage of Total Water Supply: 19
Motor Unit (Other 3 motors draw 54.5 amps each and
manufactured by US Electric Motors)
7. Manufacturer's Name: GE Trin Clad Vertical Motor
Model Name/No: 5K286DP5016
8. Motor Power Rating: 40 HP Frame:
9. Operating Speed: 2950 RPM Type:
10. Power Consumption: 57.4 Amps
Electricity Supply
11. No. of Phases: 3
12. No. of Cycles: 50
13. Voltage: 400
Control Panel
14. Control Panel Manufacturer's Name: Mechtron Engineering
Products Ltd
15. Starter Type: Auto Transformer
Standby Generator
16. Manufacturer's Name: Brown Bovrei Canada with Detroit
Diesil Motor
17. Model Name/No.: 523
18. KVA: 187.5
19. KW: 150
20. P. Factor:
21. Percentage of Pumping Stations
Power requirement that can be
supplied: 75

PUMPING STATION DATA

1. Location: St. Lucia
2. Name: Roseau (4 Pumps, 2 pairs of identical pumps)
Pumps
3. Manufacturer's Name: Johnson Vertical Pump
4. Model Name/No.: Serial No. TN27264
5. Rating: at
6. Percentage of Total Water Supply: 33
Motor Unit
7. Manufacturer's Name: G.E. Triclad Induction Motor
Model Name/No:
8. Motor Power Rating: 125 HP Frame:
9. Operating Speed: 1470 RPM Type:
10. Power Consumption: 165.8 Amps
Electricity Supply
11. No. of Phases: 3
12. No. of Cycles: 50
13. Voltage: 415
Control Panel
14. Control Panel Manufacturer's Name: General Electric
15. Starter Type: Star Delta
Standby Generator
16. Manufacturer's Name: Workman, Reid & Company with
Cummins Deisel
17. Model Name/No.: Serial No. 59204
18. KVA: 315
19. KW: 252
20. P. Factor: 0.8
21. Percentage of Pumping Stations
Power requirement that can be
supplied: 100

PUMPING STATION DATA

1. Location: St. Lucia
2. Name: Roseau (Cont'd)

Pumps

3. Manufacturer's Name: Peabody Floway Pump
4. Model Name/No.: Size 10
5. Rating: at 370 ft TDH
6. Percentage of Total Water Supply:

Motor Unit

7. Manufacturer's Name: Westinghouse Lifeline T AC Motor
Model Name/No:
8. Motor Power Rating: 60 HP Frame:
9. Operating Speed: 1480 RPM Type: HSB
10. Power Consumption: 72 Amps

Electricity Supply

11. No. of Phases: 3
12. No. of Cycles: 50
13. Voltage: 415

Control Panel

14. Control Panel Manufacturer's Name: Klockner Mueller
15. Starter Type: Auto Transformer

Standby Generator

16. Manufacturer's Name:
17. Model Name/No.:
18. KVA:
19. KW:
20. P. Factor:
21. Percentage of Pumping Stations
Power requirement that can be
supplied: 100

ST. LUCIA

S T O R A G E I N C A S T R I E S A R E A

<u>AREA</u>	<u>STORAGE LOCATION</u>	<u>CAPACITY (GALLONS)</u>
Marigot	Marigot	50,000
Cicéron/Town	Cicéron	1,000,000
Morne Fortune	Morne	50,000
Morne Underground	Morne	30,000
Rock Hall	Rock Hall	100,000
Entrepot	Entrepot	100,000
Morne Du Don	Morne Du Don	50,000
La Pansee	La Pansee	50,000
Vigie	Vigie	50,000
Ti Rocher	Ti Rocher	30,000
Entrepot Residence	Entrepot	300,000
Bocage	Bocage	450,000
Morne Serpent	Morne Serpent	100,000
Choc	Choc	500,000
Reduit/Gros Islet	Reduit	150,000
Marigot	Marigot	50,000

Production Islandwide

About 5.2 Million Gallons

Ind.P - Requires Indirect Pumping
P - Requires Pumping
G - Complete Gravity

ST. LUCIA

B R E A K D O W N O F S T O R A G E I N R U R A L A R E A S

<u>AREA</u>	<u>STORAGE LOCATION</u>	<u>CAPACITY</u>
Au Leon	Au Leon	50,000
La Ressource	Derniere Riviere	50,000
	Grande Riviere	15,000
Dennerly	Dennerly	82,000
Patience	Patience	50,000
Micoud	Micoud	90,000
Desruisseau	Primary Tank	50,000
	Blanchard	20,000
Desruisseau	40,000	
Tj Rocher	5,000	
Bellevue	Pierrot	50,000
Banse		
Saltibus	Saltibus	30,000
Balca/Piaye	Balca	50,000
Choiseul	Sauzay	64,000
Delcer	12,000	
	Mongouge	10,000
	Martin	7,000
	Victoria	50,000
Fond St.Jacques	H.L.	15,000
	L.L.	10,000
Soufriere	Soufriere	72,000
	Palmiste	8,000
Bouton	Bouton	175,000
Anse-La-Raye	Anse-La-Raye	44,000
Canaries	Canaries	74,000
	Canaries H.L.	4,000
Forestierre		
Monchy		100,000
Grande Riviere		20,000
Monier (upper)		15,000
Boguis		10,000
Marigot		50,000
Monier De Gazon		
Anse La Verdure		
Saltibus		

LIST OF PUMPING STATIONS EQUIPPED WITH GRUNDFOS PUMPS

HORSEPOWER	PUMP TYPE																										LOCATION							
	CP2-160	CP2-40	CP2-50	CP2-100	CP3-40	CP3-50	CP3-120	CP8-30	CP8-100	CP8-140	CP8-200	CP2-90	CP2-150	CP2-220	CR4-60	CR4-80	CR4-100	CR4-120	CR4-190	CR4-220	CR30-20	CR30-40	CR30-50	CR30-80	CR30-80/6	CR30-110		CR30-130	CR30-160	CR60-20	CR60-50	CR60-80	CR60-160	
#					2																													
ANSE LA VERDUE																																		
ANATOLE PROJECT																																		
BABONNEAU																																		
BARRE DENIS																																		
BELFOND																																		
BOCAGE BOOSTER																																		
BOIS D'INDE																																		
CANARIES/BELVERDERE																																		
CANARIES																																		
CAP ESTATE																																		
CHOC/UNION																																		
CHOISEUL/BALCA																																		
CHOISEUL/TROU COUSSON																																		
CHOISEUL/CAFFIERRE																																		
CHOISEUL/MARTIN																																		
CIGERON																																		
DENNERY																																		
FOND ST. JACQUES																																		
FORESTIERRE																																		
GADETTE																																		
HILL20																																		
LA FEUILLE																																		
LA PANSEE/LOWER																																		
LA PANSEE/UPPER																																		
MILLET 1																																		
MILLET 2																																		
MONIER																																		
MONCHY																																		
MORNE PANACHE																																		
MORNE SERPENT																																		
PATIENCE/LOMBARD																																		
PLATEAU																																		
THOMAZO																																		
TI ROCHER																																		
UNION																																		
VIGIE																																		

Notes

Denotes Single Phase 220 V Supply All other pumps have 3 Phase 400 V Supply

All mains supply is 50 Hz.

* Denotes pump for which H.P rating is not available. Grundfos Distribution Centre in Allentown PA. is investigating these sizes but have not yet replied