S-4-2-5 Lungga River (Refer to B1. 3.2.(e))

Survey Location of water flow and Quality of LUNGGA River

Lungga-1

NO.1 Middle reach of Lungga river NO.1 Middle reach of Lungga river (Existed Dam planning location) Survey Date: December.2005 $Q=23.568 \text{m}^3/\text{s}$ Survey Date: June.2005 $O = 16.587 \text{m}^3/\text{s}$ Width B=53.00m Width B=35.00m Maximum depth H =0.920m Maximum depth H =0.820m Maximum velocity V=1.100m/sec

NO.2 Downstream of Lungga River
Survey Date: June.2005
Q=16.686m³/s
B=37.50m
h =0.730m
Maximum velocity V=1.230m/sec

NO.2 Downstream of Lungga River
<u>Survey Date: December.2005</u>
Q=29.589m³/s
Width B=50.00m
Maximum depth H =0.860m
Maximum velocity V=1.080m/sec

S-4-2-6 Noro (Refer to C1. 1.(3).(a))

Noro water resources

Noro-1





No.1 Zaita river Upstream of the intake facility <u>Survey Date: June.2005</u> **Q=0.127m³/s** Width B=3.40m Maximum depth H=0.230m No.1 Zaita river <u>Survey Date:December.2005</u> **Q=0.107m³/s** Width B=4.00m Maximum depth H =0.400m Maximum velocity V=0.135m/sec





No.2 Zaita river Downstream of the intake facility <u>Survey Date: June.2005</u> **Q=0.105m³/s** Width B=3.50m Maximum depth H=0.160m Maximum velocity V=0.270m/sec No.2 Zaita river <u>Survey Date:December.2005</u> **Q=0.088m³/s** Width B=4.20m Maximum depth H =0.410m Maximum velocity V=0.099m/sec

SIWA Intake Facility of Noro



S-4-2-7 Auki (Refer to C2. 1.(3).(a))

Water survey point of Auki

Auki-1



NO.1 Lebagnali Water Resources <u>Survey Date:June.2005</u> **Q=0.0042m³/s** Immediate Down stream of Lebagnali water Resources Point



NO.1 Lebagnali Water Resorces <u>Survey Date:June.2005</u> **Q=0.0085m³/s** Width B=m Maximum depth H =m Maximum velocity V=m/sec





No.2 Outlet of Tributary leading to Lebagnali	No.2 Outlet of Tributary leading to Lebagnali
water resources Outlet of Tributary	water resources Outlet of Tributary
Survey Date: June. 2005	Survey Date:Nov.2005
Q=0.039m ³ /s	Q=0.054m ³ /s
Width B=2.40m	Width B=3.40m
Maximum depthH=0.320m	Maximum depthH=0.312m
Maximam velocity=0.120m/sec	Maximam velocity=0.172m/sec

Auki-2



NO.3

Main stream of immediate upstream of confluence <u>Survey Date:June.2005</u> **Q=0.151m³/s** Width B=2.10m Maximum depth H=0.250m Maximum velocity = 0.640m/sec



Main stream of immediate upstream of confluence <u>Survey Date:June.2005</u> **Q=0.313m³/s** Width B=9.0m Maximum depth H=0.641m Maximum velocity = 0.128m/sec

NO.3



No.4 Middle reach of the river <u>Survey Date:June.2005</u> **Q=0.101m³/s** Width B=0.80m Maximum depth H=0.440m Maximum velocity = 0.420m/sec



No.4 Middle reach of the river <u>Survey Date:Nov.2005</u> **Q=0.439m³/s** Width B=4.60m Maximum depth H=0.450m Maximum velocity = 0.501m/sec

Auki-3



NO.5

Down stream of Kawaibala River near to River Crossing Structure of water pipe Kawaibala SIWA water Resources <u>Survey Date:June.2005</u> **Q=0.247m³/s** Width B=10.00m Maximum depth H=0.008m Maximum velocity =0.730 m/sec

NO.5

Down stream of Kawaibala River near to River Crossing Structure of water pipe Kawaibala SIWA water Resources <u>Survey Date:Nov.2005</u> **Q=0.509m³/s** Width B=12.60m Maximum depth H=0.500m Maximum velocity = 0.179m/sec S-4-2-8 Tulagi (Refer to C3. 1.(3).(a))

Kawaibala Water Resources(Spring water)



Survey point of Tulagi

Tulagi-1





No.1 SIWA water resources <u>Survey Date:June.2005</u> **Q=0.022m³/s** Width B=0.25m Maximum depth H =0.14m Maximum velocity V=0.25m/sec No.1 SIWA water resources (upstream of survey point of June) <u>Survey Date: December.2005</u> **Q=0.107m³/s** Width B=3.60m Maximum depth H =0.42m Maximum velocity V=0.25m/sec



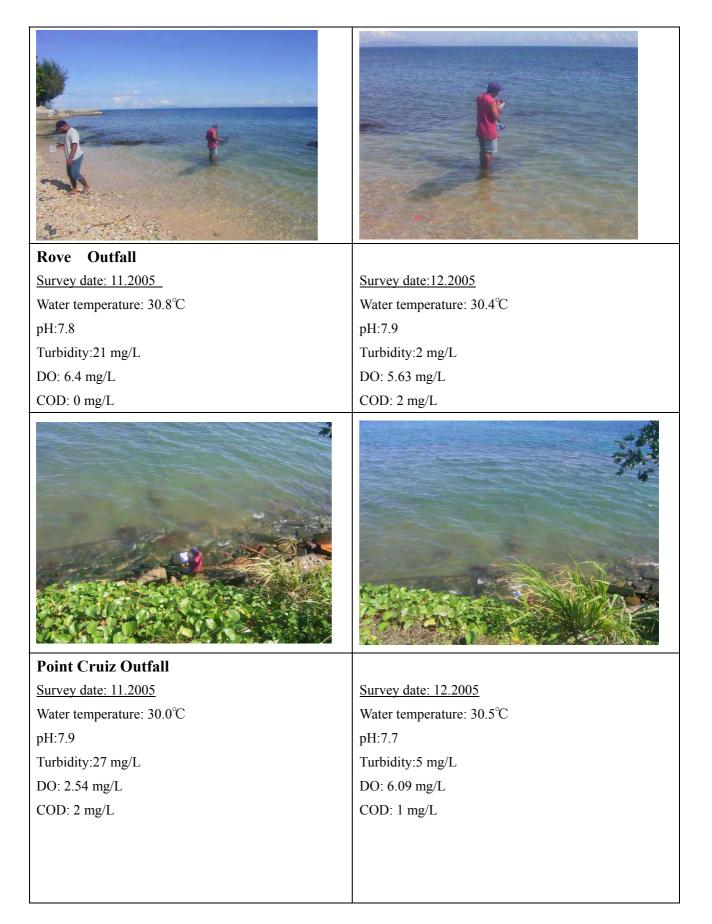
No.2 middle reach of the river <u>Survey Date:June.2005</u> **Q=0.005m³/s** Width B=0.6m Maximum depth H=0.060m Maximum velocity V=0.26m/sec



No.2 middle reach of the river <u>Survey Date: December.2005</u> **Q=0.062m³/s** Width B=2.60m Maximum depth H =0.185m Maximum velocity V=0.25m/sec

S-4-3 Photo of Field Water Quality Survey at Outfall (Refer to B1.3.4.(7))

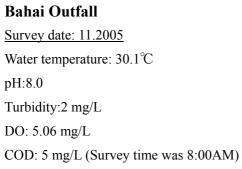
Survey point of Outfall at sea





St.Nicholas Outfall	
Survey date: 11.2005	Survey date: 12.2005
Water temperature: 31.1°C	Water temperature: 31.7°C
pH:8.1	pH:7.9
Turbidity:1mg/L	Turbidity:5mg/L
DO: 8.27 mg/L	DO: 7.4 mg/L
COD: 2 mg/L	COD: 5 mg/L







Survey date: 12.2005 Water temperature: 30.5°C pH:7.9 Turbidity:4mg/L DO: 4.97 mg/L COD: 1 mg/L(Survey time was 1:00PM)



Kukumu Outfall	
Survey date: 11.2005	Survey date: 12.2005
Water temperature: 30.9°C	Water temperature: 31.0°C
pH:8.0	pH:7.8
Turbidity:6 mg/L	Turbidity:6 mg/L
DO: 3.63 mg/L	DO: 3.62 mg/L
COD: 2 mg/L	COD: 1 mg/L





Kukum/Mbua ValleyOutfall-1 Survey date: 11.2005 Water temperature: 30.6°C pH:8.1 Turbidity:7 mg/L DO: 749 mg/L COD: 2 mg/L

Survey date: 12.2005 Water temperature: 31.4°C pH:8.0 Turbidity:7 mg/L DO: 6.56 mg/L COD: 1 mg/L

Survey point of Outfall



Kukum/MbuaValley Outfall-2	
Survey date: 11.2005	Survey date: 12.2005
Water temperature: 31.8°C	Water temperature: 31.8°C
pH:8.2	pH:7.9
Turbidity:13 mg/L	Turbidity:0 mg/L
DO: 7.75 mg/L	DO: 6.19 mg/L
COD: 2 mg/L	COD: 1 mg/L





Naha Outfall <u>Survey date: 11.2005</u> Water temperature: 30.8°C pH:8.2 Turbidity:6 mg/L DO: 6.99 mg/L COD: 2 mg/L

Survey date: 12.2005 Water temperature: 31.4°C pH:8.0 Turbidity:7 mg/L DO: 7.02 mg/L COD: 1 mg/L



Vura Outfall	
Survey date: 11.2005	Survey date: 12.2005
Water temperature: 30.4°C	Water temperature: 30.9°C
pH:8.1	pH:7.9
Turbidity:4 mg/L	Turbidity:5 mg/L
DO: 4.73 mg/L	DO: 4.59 mg/L
COD: 2 mg/L	COD: 1 mg/L



Ranadi Outfall <u>Survey date: 11.2005</u> Water temperature: 30.8°C pH:8.3 Turbidity:5 mg/L DO: 7.22 mg/L COD: 1 mg/L



Survey date: 12.2005 Water temperature: 31.4°C pH:7.9 Turbidity:5 mg/L DO: 6.09 mg/L COD: 2 mg/L

KGvi School Outfall	
Survey date: 11.2005	Survey date: 12.2005
Water temperature: 30.7°C	Water temperature: 31.8°C
pH:7.8	pH:7.6
Turbidity:35 mg/L	Turbidity:93 mg/L
DO: 0.29 mg/L	DO: 4.43 mg/L
COD: 7 mg/L(Survey time was 5:00PM)	COD: 2 mg/L(Survey time was 6:30AM)