ソロモン諸島国 ソロモン諸島水道公社

ソロモン諸島国 水道公社無収水対策プロジェクト

プロジェクト事業完了報告書 (サポーティングレポート)

平成 28 年 8 月 (2016 年)

独立行政法人国際協力機構 (JICA)

八千代エンジニヤリング株式会社 横浜ウォーター株式会社

環境 JR 16 - 088 ソロモン諸島国 ソロモン諸島水道公社

ソロモン諸島国 水道公社無収水対策プロジェクト

プロジェクト事業完了報告書 (サポーティングレポート)

平成 28 年 8 月 (2016 年)

独立行政法人国際協力機構 (JICA)

八千代エンジニヤリング株式会社 横浜ウォーター株式会社

水道公社無収水対策プロジェクト プロジェクト事業完了報告書 (サポーティングレポート)

目次

第3章	成果および達成度	·S3
S3.3-1	達成度および課題、チャレンジ、提言	·S3.3-1-1
第4章	成果-1の活動:「無収水削減に係る計画プロセスが体系化される。」	·S4
S4.3-1	水理計算書	·S4.3-1-1
S4.5-1	年次行動計画 2013	·S4.5-1-1
S4.5-2	年次行動計画 2014	·S4.5-2-1
S4.5-3	年次個人行動計画に基づく自己評価	·S4.5-3-1
S4.7-1	無収水削減活動に係るコスト・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・	·S4.7-1-1
S4.8-1	戦略実施計画	·S4.8-1-1
第5章	成果-2の活動:「パイロット・エリア及び漏水管理区域におけるプロジェク	アトを通して、
無収水	削減に係る実施手法が確立される。」	·S5
S5.5-1	漏水探知機材のO&Mハンドブック	·S5.5-1-1
S5.5-2	無収水削減手法マニュアル	·S5.5-2-1
S5.5-3	データベース・ルール・ブック	·S5.5-3-1
S5.5-4	データベースO&Mマニュアル・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・	·S5.5-4-1
第6章	成果-3の活動:「無収水削減が手法に従ってパイロット・エリア及び漏水管	理区域 (LCZ)
におい	て実施され、無収水率がモニタリングおよび維持活動される。」	·S6
S6.3-1	データベースの更新項目	·S6.3-1-1
S6.3-2更	ē新された配水管網······	·S6.3-2-1
S6.4-1包	E用水量および流入水量・夜間最小水量の測定結果	·S6.4-1-1
S6.4-2	ステップ・テスト結果	·S6.4-2-1
S6.4-3源	オ水記録シート・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・	·S6.4-3-1
S6.5-1無	馬収水率	·S6.5-1-1
第7章	成果-4の活動:「検針・料金請求に係る管理手法が改善される。」	·S7
S7.1-1標	票準手順書(SOP)-検針および請求チーム	·S7.1-1-1
S7.2-1核	針演習	·S7.2-1-1
S7.2-2カ	<道メータの組立・分解	·S7.2-2-1
S7.3-1 F	FAO ······	·S7.3-1-1

第8章 投入	·S8
S8.1-1供与機材状態 ·····	··S8.1-1-1
第11章 最終能力評価および能力開発	·S9
S11.1-1能力評価および能力開発計画	·S11.1-1-1
第13章 会議およびワークショップ	·S13
S13.1-1第1回JCCの発表資料······	··S13.1-1-1
S13.1-2第2回JCCの発表資料······	··S13.1-2-1
S13.1-3第3回JCCの発表資料 ······	··S13.1-3-1
S13.1-4第4回JCCの発表資料······	·S13.1-4-1
S13.1-5第5回JCCの発表資料·····	··S13.1-5-1
S13.3-1能力評価の結果及び能力開発ニーズ	·S13.3-1-1
S13.3-2第1次本邦研修の報告会 ·····	··S13.3-2-1
S13.3-3配水量分析のレビュー	··S13.3-3-1
S13.3-4 パイロット・プロジェクトの進捗と達成度に係るミニ・ワークショップ…	··S13.3-4-1
S13.3-5 GISデータベースの目的	··S13.3-5-1
S13.3-6 ブレインストーミング ·····	··S13.3-6-1
S13.3-7無収水削減に係る訓練(漏水探知)	·S13.3-7-1
S13.3-8第2次本邦研修の報告会 ·····	··S13.3-8-1
S13.3-9無収水削減活動(夜間最小流量およびステップテスト)に係る集中講義…	··S13.3-9-1
S13.3-10第二回検針業務に係るロール・プレイ ·····	··S13.3-10-1
S13.3-11無収水削減活動に係る補習 · · · · · · · · · · · · · · · · · · ·	·S13.3-11-1
S13.3-12無収水削減活動(夜間最小流量およびステップテスト)に係る集中講義…	··S13.3-12-1
S13.3-13 GISに係る集中講義 ·····	··S13.3-13-1
S13.3-14無収水削減活動全体に係る集中講義 · · · · · · · · · · · · · · · · · · ·	·S13.3-14-1
S13.3-15 GISデータベースのワークフロー	··S13.3-15-1
S13.3-16検針および請求、顧客ケア業務に係る集中講義	··S13.3-16-1
S13.3-17 無収水のレビューに係る補足講義 ·····	··S13.3-17-1
S13.3-18第3次本邦機研修の報告会 ·····	··S13.3-18-1
S13.3-19プロジェクトの進捗および課題 ·····	··S13.3-19-1
S13.3-20 GIS データベースに係る現行活動	··S13.3-20-1
S13.3-21 DMA対象の無収水削減活動およびモニタリング ·····	··S13.3-21-1
S13.3-22 ミニ・ワークショップ (JICAインターンシップ・プログラムによる社会的	的側面に係る現
况把握)	··S13.3-22-1
S13.3-23検針訓練(不法接続および宅内漏水発見手法	··S13.3-23-1
S13.3-24 ワークショップ (DMAを対象とした水理解析)	··S13.3-24-1
S13.3-25 DMAを対象とする漏水探知手法フォローアップ講義	··S13.3-25-1
S13.3-26 ミニ・ワークショップ (第3回JCCのテーマおよび無収水削減の戦略実施計	画に係る発表)

	·S13.3-26-1
S13.3-27 GISレビュー (GISおよびGPS概要) に係る講義 ······	·S13.3-27-1
S13.3-28水道の基本計画検討と水理解析に係る講義(活動1-3および3-1、3-2、3-4、	3-8)
	·S13.3-28-1
S13.3-29検針・請求チーム、顧客サービス・チームに係る講義······	·S13.3-29-1
813.3-30漏水探知に係る講義	·S13.3-30-1
813.3-31漏水探知に係る講義	·S13.3-31-1
S13.3-32 ワークショップ(プロジェクト進捗、課題提起、チャレンジ事項に係る系	ě表)
	·S13.3-32-1
S13.3-33水道の基本計画検討と水理解析に係る講義(活動1-3および3-1、3-2、3-4、	3-8)
	·S13.3-33-1
S13.3-34 GISレビュー (GISおよびGPS概要) に係る講義	·S13.3-34-1
S13.3-35無収水プロジェクトに係るGISのワークショップ	·S13.3-35-1



S3.3-1. 達成度および課題、チャレンジ、提言

30th June 2016

The Project for Improvement of Non-Revenue Water Reduction Capacity for Solomon Islands Water Authority in Solomon Islands

Achievement, Issue, Challenge and Recommendation

Contents

1.	Pre	oject Outline	1
2.	Pre	oject Design	1
	(1)	Overall Goal	1
	(2)	Project Purpose	1
	(3)	Outputs	2
	(4)	Inputs	2
3.	Ac	chievement, Issue, Challenge and Recommendation	2
	(1)	Achievement of Project Purpose	2
	(2)	Achievement of Outputs	4
		Output 1	4
		Output 2	8
		Output 3	14
		Output 4	16
	(3)	Expected Achievement of Overall Goal	16
	(4)	Issue and Challenge in NRW Reduction	16

1. Project Outline

- Project Title: The Project for Improvement of Non-Revenue Water Reduction Capacity for Solomon Islands Water Authority in Solomon Islands
- Counterpart: Solomon Islands Water Authority (Solomon Water)
- Relevant Organization: Ministry of Mines, Energy and Rural Electrification (MMERE), The Australian Department of Foreign Affairs and Trade (DFAT)
- Project Period (R/D: 27th July 2012 and revised on 30th October 2015): November 2012 to June 2016 (3 years and 9 months)
- Relevant Cooperation: "The Project for Improvement of Water Supply System in Honiara and Auki" Grant Aid Project by Japan, "Solomon Water's Two-year Plan" assisted by DFAT

2. Project Design

See the PDM₄ and the PO₄ for details.

- (1) Overall Goal: SW's service levels are improved and SW's revenue is increased.
- (2) Project Purpose: SW is assisted to achieve its target of reducing the NRW ratio in Honiara to

30% by 2015.

(3) Outputs:

- 1) Planning process of SW for NRW reduction is systematized.
- 2) The procedure for NRW reduction is established through the pilot areas and LCZs.
- NRW reduction is implemented in accordance with the procedure in pilot areas and/or LCZs
 in the selected DMAs, and then improved NRW ratio is monitored and maintained.
- 4) Water meter reading and billing process management are improved.

(4) Inputs:

- 1) Inputs from the Japanese side
- Expert: 8 experts
- Equipment: bulk flow meters, sluice valves for isolation, ultrasonic flow meters, data loggers, leakage detection equipment, GPSs, office automation equipment, customer meters, pickup trucks, an excavator and etc.
- Training in Japan: 3 times for 12 trainees in total (April and October 2013, and June 2014)
- 2) Inputs from the Solomon Islands side
 - Personnel: 25 members (NRW Management Team: 4, NRW Action Team: 21)
 - Project office and facilities for the project implementation, including office furniture, electricity and communication equipment
 - Pipes, fittings and other materials for NRW reduction measures such as repair and meter installation
- Installation of flow meters and customer meters, and repair works

3. Achievement, Issue, Challenge and Recommendation

(1) Achievement of Project Purpose

<u>Project Purpose</u>: SW is assisted to achieve its target of reducing the NRW ratio in Honiara to 30% by 2015.

<u>Indicator 1</u>: The NRW ratio is reduced by 30 points in each pilot project area, the selected DMAs and/or LCZs.

Indicator 2: Regarding the pilot project areas, selected DMAs, and/or LCZs where the NRW ratio before the implementation of NRW reduction measures are less than 30%, the NRW reduction measures are implemented in accordance with features of each area and/or zone, so that effectiveness of the NRW reduction measures are validated.

Status of the Achievement:

Pilot Project Areas

After the selection of 15 pilot project areas and prioritization in March 2013, the Project commenced the pilot projects in April 2013 and completed all projects by September 2014 (see *Table 1*).

The Project achieved the conditions stipulated by Indicator 1 in all pilot project areas except for "No.8:Mbaranamba". In "No.3:Lenggakiki" and "No.5:Tuvaruhu-1", the Project could not achieve the reduction target of 30 points initially during implementing the NRW reduction activities, therefore the Project took additional countermeasures leading to successful results.

In "No.8: Mbaranamba" where NRW ratio before the activities was less than 30%, the Project achieved conditions stipulated by Indicator 2.

Table 1 Reduction Point of NRW Ratio before/after NRW Reduction Activities in Pilot Project Areas

No	Amaa Ma	Area No Area Name		NRW Ratio (%)		
NO Alea NO		Alea Name	Before	After	Reduction Point	
1	No.9	White River- Namo Ruka	86.5	32.2	54.3	
2	No.10	Independence Valley	57.7	9.9	47.9	
3	No.3	Lenggakiki	62.0	33.2	28.8	
		After additional countermeasures		14.7	47.3	
4	No.5	Mbokonavera-1	53.1	14.7	38.5	
5	No.14	Tuvaruhu-1	65.4	41.4	24.0	
		After additional countermeasures		11.0	54.4	
6	No.15	Tuvaruhu-2	67.2	20.5	46.7	
7	No.6	Vavaea Ridge	63.1	27.2	35.8	
8	No.4	Mbokona	50.2	19.2	31.0	
9	No.8	Mbaranamba	23.2	3.5	19.7	
10	No.2	Mbua Valley	50.9	6.8	44.1	
11	No.11	Bahai Kukum	58.6	16.2	42.4	
12	No.7	Panatina Valley	37.9	6.7	31.2	
13	No.12	Naha 2	51.7	15.6	36.1	
14	No.13	Naha 3	60.9	25.8	35.1	
15	No.1	FFA Kola Road	47.1	14.9	32.2	

Note: Due to rounding process, value in the first decimal place of reduction point is not necessarily identical to the deference between after and before of NRW ratio.

DMAs and/or LCZs

After demarcation of 28 DMAs and the prioritization in September 2014, the Project commenced the NRW reduction activities in DMAs in December 2014. As of June 2016, the NRW reduction activities were completed and then monitoring and maintenance have been done in four DMAs, and the NRW reduction activities are ongoing in remaining DMAs (see *Table 2*).

Table 2 Reduction Point of NRW Ratio before/after NRW Reduction Activities in DMAs

No	DMA	DMA Name	NRW Ra	Reduction	
NO	No.	DIVIA Name	Before	After	Point
1	No. 10	Lenggakiki	42.6	22.6	20.0
2	No. 6	Tasahe A&B*1	85.8	44.6	41.3
		After pressure control		32.7	53.1
3	No. 17	West Kola Ridge A*1	60.4	18.4	42.0
4	No.7	Tasahe C	38.1	7.5	30.6

Note: Due to rounding process, value in the first decimal place of reduction point is not necessarily identical to the deference between after and before of NRW ratio.

(2) Achievement of Outputs

Output 1: Planning process of SW for NRW reduction is systematized.

Indicator 1-1: Annual budget for NRW reduction is secured in the pilot project areas and LCZs.

With the secured budget, the NRW reduction activities in 15 pilot project areas were completed. As of March 2016, the NRW reduction activities were completed and then monitoring and maintenance have been done in four DMAs, and the NRW reduction activities are ongoing in remaining DMAs.

1) Initial Cost incurred in NRW Reduction Activities

Pilot Project Areas

The actual cost incurred for the NRW reduction activities in 15 pilot project areas is shown in *Table 3*. Total initial cost is about SBD2.23 million, which equates to cost per pilot area to be about SBD148,800, cost per household to be SBD1,525 and cost per km of pipeline to be SBD10,400.

Table 3 Initial Cost for NRW Reduction Activities in Pilot Project Areas

No	Area No	Area Name	Pipeline Length (m)	Total No. of Household	Personnel Cost (SBD)	Consumable Cost (SBD)	Material & Equipment (SBD)	Total Initial Cost (SBD)
			[1]	[2]	[3]	[4]	[5]	[6]=[3]+[4] +[5]
1	No.9	White River- Namo Ruka	1,063	83	74,710	2,306	22,673	99,689
2	No.10	Independence Valley	2,184	91	78,825	2,207	32,889	113,921
3	No.3	Lenggakiki	2,481	161	55,087	971	59,810	115,868
4	No.5	Mbokonavera-1	1,104	76	48,515	269	32,138	80,922
5	No.14	Tuvaruhu-1	1,206	48	43,084	884	32,769	76,737
6	No.15	Tuvaruhu-2	1,371	62	45,669	942	43,438	90,049
7	No.6	Vavaea Ridge	1,298	163	56,752	4,081	104,816	165,649
8	No.4	Mbokona	1,419	110	91,461	7,417	146,267	245,145
9	No.8	Mbaranamba	1,512	100	39,498	5,959	38,764	84,221
10	No.2	Mbua Valley	1,990	122	125,706	6,701	175,856	308,263
11	No.11	Bahai Kukum	1,692	182	95,068	6,349	180,944	282,361
12	No.7	Panatina Valley	885	60	82,801	6,033	41,097	129,931
13	No.12	Naha 2	786	57	92,066	6,289	32,058	130,413
14	No.13	Naha 3	960	67	100,337	6,495	24,927	131,759
15	No.1	FFA Kola Road	2,276	82	101,699	4,831	69,906	176,436
Tota	al		22,227	1,464	1,131,278	61,734	1,018,264	2,231,364

DMAs and/or LCZs

The actual cost incurred for the NRW reduction activities in four completed DMAs is shown in *Table 4*. Total initial cost for four DMAs is about SBD1.99 million, which equates to cost per household to be SBD2,397 and cost per km of pipeline to be SBD83,950.

^{*1} DMAs in which were selected under SW-JICA commitment and NRW reduction activities were completed by the Project. In other two DMAs, NRW reduction activities were completed by SW as of March 2016.

Table 4 Initial Cost for NRW Reduction Activities in DMAs

No	Area No	Area Name	Pipeline Length (m)	Total No. of Household	Personnel Cost (SBD)	Consumable Cost (SBD)	Material & Equipment (SBD)	Total Initial Cost (SBD)
			[1]	[2]	[3]	[4]	[5]	[6]=[3]+[4] +[5]
1	No.10	Lenggakiki	4,035	215	177,039	11.044	264,737	452,819
2	No.6	Tasahe A&B*1	6,719	202	239,040	23,103	415,388	677,531
3	No.17	West Kola Ridge A*1	9,060	225	155,955	11,474	169,949	337,377
4	No.7	Tasahe C	3,859	187	181,672	11,890	326,041	519,603
Tota	al		23,673	829	753,706	57,511	1,176,115	1,987,330

Note: Initial cost incurred for the NRW reduction activities in "No.10: Lenggakiki" does not include one in pilot area "Lenggakiki" which is a part of the DMA.

2) Benefit from the NRW Reduction Activities

Revenue per billed water l in Honiara scheme of SBD17.61/ m^{3} is applied based on operational and financial data of SW in 2015.

In consideration of intermittent water supply in most of Honiara, the Project regards the benefit of NRW reduction as "increase in revenue water" only.

Pilot Project Areas

Annual increased revenue is estimated at SBD9.16 million to be generated by NRW reduction in 15 pilot project areas (see *Table 5*).

Table 5 Increase in Revenue Water and Revenue by NRW Reduction Activities in Pilot Project Areas

			Revenue Wa	ter (m³/day)	Estimated Daily	Estimated Daily
No	Area	Area Name	Before	After*1	Increased Revenue Water (m³/day)	Increased Revenue. (SBD/day)
	No		[1]	[2]	[3]=[2]-[1]	[4]=[3]xRevenue per Billed Water
1	No.9	White River- Namo Ruka	47.0	235.2	188.3	3,316
2	No.10	Independence Valley	67.5	144.0	76.4	1,345
3	No.3	Lenggakiki	224.9	504.5	279.7	4,926
4	No.5	Mbokonavera-1	83.7	152.5	68.7	1,210
5	No.14	Tuvaruhu-1	36.6	94.2	57.6	1,014
6	No.15	Tuvaruhu-2	37.4	90.6	53.2	937
7	No.6	Vavaea Ridge	185.6	365.5	179.9	3,168
8	No.4	Mbokona	61.8	100.3	38.5	678
9	No.8	Mbaranamba	122.5	153.9	31.4	553
10	No.2	Mbua Valley	146.2	277.3	131.1	2,309
11	No.11	Bahai Kukum	135.2	273.6	138.4	2,437
12	No.7	Panatina Valley	58.0	87.1	29.2	514
13	No.12	Naha 2	46.8	81.8	35.0	616
14	No.13	Naha 3	53.6	101.9	48.2	849
15	No.1	FFA Kola Road	113.8	183.0	69.2	1,219
Tota	al		1,420.6	2,845.4	1,424.8	25,091

^{*1} To make before-after conditions consistent each other, these are calculated by the formula "(System input volume before NRW measures) / (System input volume after NRW measures) × (Volume of actual revenue water after NRW measures)"

DMAs and/or LCZs

Annual increased revenue is estimated at SBD9.51 million to be generated by NRW reduction in four completed DMAs (see *Table 6*).

Table 6 Increase in Revenue Water and Revenue by NRW Reduction Activities in DMAs

			Revenue Wa	ter (m ³ /day)	Estimated Daily	Estimated Daily
No	Area No	Area Name	Before	After*1	Increased Revenue Water (m³/day)	Increased Revenue. (SBD/day)
	NO		[1]	[2]	[3]=[2]-[1]	[4]=[3]xRevenue per Billed Water
1	No.10	Lenggakiki	446.9	602.9	156.0	2,747
2	No.6	Tasahe A&B*1	241.4	1,147.5	906.0	15,955
3	No.17	West Kola Ridge A*1	256.4	528.7	272.3	4,795
4	No.7	Tasahe C	294.4	439.9	145.5	2,562
Tota	Total		1,239.1	2,719.0	1,479.8	26,059

^{*1} To make before-after conditions consistent each other, these are calculated by the formula "(System input volume before NRW measures) / (System input volume after NRW measures) × (Volume of actual revenue water after NRW measures)"

3) Result of Cost-Effectiveness Analysis

The Project applies the following assumptions to cost-benefit analysis:

■ Possible increase of NRW following the initial NRW reduction activities is reduced by NRW

^{*1} DMAs in which were selected under SW-JICA commitment and NRW reduction activities were completed by the Project. In other two DMAs, NRW reduction activities were completed by SW as of March 2016.

 $^{^{1} \ \} Revenue \ per \ billed \ water = "Annual \ income" \ / \ "Annual \ billed \ water" \ in \ Honiara \ (SBD72,946,294 \ / \ 4,142,234m^{3})$

^{*2} DMAs in which were selected under SW-JICA commitment and NRW reduction activities were completed by the Project. In other two DMAs, NRW reduction activities were completed by SW as of March 2016.

- monitoring and maitenance for three years.
- Recurring cost for NRW reduction required to maintain conditions well for three years is 100% of the initial cost spent in the NRW reduction activities.

Pilot Project Areas

As a result of cost-benefit analysis based on the above assumptions, the increased revenue in 15 pilot project areas is estimated at SBD27.1 million through initial and recurrent activities of NRW reduction for three years as shown in *Table 7*. This greatly exceeds SBD4.5 million of the initial and maintenance cost incurred, which means 6.1 times.

Therefore, NRW reduction is definitely beneficial to services and business of SW.

Table 7 Cost-Effectiveness of NRW Reduction Activities in Pilot Project Areas

No	Area No.	Area Name		l Increased ne Water	Revenue by	Increased Revenue per Water	Initial Cost incurred*2	Initial and Recurring Cost for 3 years*3
			(m³/day)	(m ³ /3yrs)	(SBD/day)	(SBD/3yrs)	(SBD)	(SBD/3yrs)
1	No.9	White River - Namo Ruka	188.3	203,364	3,316	3,581,240	99,689	199,378
2	No.10	Independence Valley	76.4	82,512	1,345	1,453,036	113,921	227,842
3	No.3	Lenggakiki	279.7	302,076	4,926	5,319,558	115,868	231,736
4	No.5	Mbokonavera-1	68.7	74,196	1,210	1,306,592	80,922	161,844
5	No.14	Tuvaruhu-1	57.6	62,208	1,014	1,095,483	76,737	153,474
6	No.15	Tuvaruhu-2	53.2	57,456	937	1,011,800	90,049	180,098
7	No.6	Vavaea Ridge	179.9	194,292	3,168	3,421,482	165,649	331,298
8	No.4	Mbokona	38.5	41,580	678	732,224	245,145	490,290
9	No.8	Mbaranamba	31.4	33,912	553	597,190	84,221	168,442
10	No.2	Mbua Valley	131.1	141,588	2,309	2,493,365	308,263	616,526
11	No. 11	Bahai Kukum	138.4	149,472	2,437	2,632,202	282,361	564,722
12	No.7	Panatina Valley	29.2	31,536	514	555,349	129,931	259,862
13	No.12	Naha 2	35.0	37,800	616	665,658	130,413	260,826
14	No. 13	Naha 3	48.2	52,056	849	916,706	131,759	263,518
15	No.1	FFA Kola Road	69.2	74,736	1,219	1,316,101	176,436	352,872
		Total	1,424.8	1,538,784	25,091	27,097,986	2,231,364	4,462,728

DMAs and/or LCZs

As a result of cost-benefit analysis based on the above assumptions, the increased revenue in four completed DMAs is estimated at SBD28.1 million through initial and recurrent activities of NRW reduction for three years as shown in *Table 8*. This greatly exceeds SBD4.0 million of the initial and maintenance cost incurred, which means 7.1 times.

Therefore, NRW reduction is definitely beneficial to services and business of SW.

Table 8 Cost-Effectiveness of NRW Reduction Activities in DMAs

No	Area No.	Area Name	Area Name Estimated Increased Revenue by Revenue per Billed Water		Initial Cost incurred*2	Initial and Recurring Cost for 3 years*3		
			(m ³ /day)	(m ³ /3yrs)	(SBD/day) (SBD/3yrs)		(SBD)	(SBD/3yrs)
1	No.10	Lenggakiki	156.0	168,480	2,747	2,966,933	452,819	905,638
2	No.6	Tasahe A&B*1	906.0	978,480	15,955	17,231,033	677,531	1,355,062
3	No.17	West Kola Ridge A*1	272.3	294,084	4,795	5,178,819	337,377	674,754
4	No.7	Tasahe C	145.5	157,140	2,562	2,767,235	519,603	1,039,206
		Total	1,479.8	1,598,184	26,059	28,144,020	1,987,330	3,974,660

^{*1} DMAs in which were selected under SW-JICA commitment and NRW reduction activities were completed by the Project. In other two DMAs, NRW reduction activities were completed by SW as of March 2016.

<u>Indicator 1-2</u>: The strategic implementation (rolling-out) plan for NRW reduction is approved and reviewed as when it is necessary by management of SW.

Based on the results of the pilot projects, the Project Team commenced preparation of the Strategic Implementation (Rolling-out) Plan at the end of Phase-3 of the Project corresponding to the first quarter of 2015, and then the Plan was approved in October 2015 and reviewed in Phase-5.

Output 2: The procedure for NRW reduction is established through the pilot areas and LCZs.

<u>Indicator 2-1</u>: Manuals for NRW reduction measures are prepared and revised as when it is necessary, including workflow of DMA-based monitoring and maintenance for improved NRW ratio.

Manuals for NRW reduction consist of three components: "1. NRW Reduction Measures" including workflow of DMA-based monitoring and maintenance of improved NRW ratio, "2. Leakage Detection Techniques" and "3. Database Update". Forms for record and analysis have been used, improved and updated in consideration for user-friendliness through the Project. The manual will be prepared with the above forms in the Phase-4.

<u>Indicator 2-2</u>: The number of authorizations and disconnections of illegal connections is increased in the pilot project areas, the selected DMAs and/or LCZs.

Pilot Project Areas

140 illegal connections including parasite users were identified which account for 9.6% of 1,464 households in total. Out of 140, 38 connections were legalized (authorized) and 102 connections were disconnected. This means that only 27.1% became valid customers while 72.9% were disconnected (see *Table 9*).

While the monthly number of legalizations (authorizations) of illegal connections as a result of a campaign by Solomon Water prior to the Project was about 10 in whole of Honiara as of November 2011, the monthly number of disconnections of illegal connections was about 20 according to

information gathered from Solomon Water in an interview. Assuming these figures are regarded as the baseline in the whole Honiara, the baseline figure in 15 pilot project areas is estimated at 3.5 for legalization (authorization) and 6.5 for disconnection respectively as a result of conversion by proportion to the pipeline length as well as pilot project period (2.6 month per area). Therefore, the total number of legalizations (authorizations) and disconnections of illegal connections was increased from 10 (3.5+6.5) to 140 (38+102) for 15 pilot project areas as a result of the NRW reduction activities. The baseline figure however is only reference.

Table 9 Number of Authorizations and Disconnections of Illegal Connections in Pilot Project Areas

No	Area No	Area Name	Total Household	Illegal Connection*1	Percentage of Illegal Connection in Total Household	Legalization / Authorization	Percentage of Legalization in Illegal Connection	Disconnection	Percentage of Disconnection in Illegal Connection
			[1]	[2]	[3]=[2]/[1] x100	[4]	[5]=[4]/[2] x100	[6]	[7]=[6]/[2] x100
1	No.9	White River- Namo Ruka	83	28	33.7%	6	21.4%	22	78.6%
2	No.10	Independence Valley	91	7	7.7%	1	14.3%	6	85.7%
3	No.3	Lenggakiki	161	35	21.7%	1	2.9%	34	97.1%
4	No.5	Mbokonavera-1	76	2	2.6%	0	0.0%	2	100.0%
5	No.14	Tuvaruhu-1	48	6	12.5%	3	50.0%	3	50.0%
6	No.15	Tuvaruhu-2	62	11	17.7%	3	27.3%	8	72.7%
7	No.6	Vavaea Ridge	163	0	0.0%	0	0.0%	0	0.0%
8	No.4	Mbokona	110	10	9.1%	5	50.0%	5	50.0%
9	No.8	Mbaranamba	100	2	2.0%	2	100.0%	0	0.0%
10	No.2	Mbua Valley	122	13	10.7%	7	53.8%	6	46.2%
11	No.11	Bahai Kukum	182	14	7.7%	8	57.1%	6	42.9%
12	No.7	Panatina Valley	60	0	0.0%	0	0.0%	0	0.0%
13	No.12	Naha 2	57	2	3.5%	0	0.0%	2	100.0%
14	No.13	Naha 3	67	10	14.9%	2	20.0%	8	80.0%
15	No.1	FFA Kola Road	82	0	0.0%	0	0.0%	0	0.0%
Tota	al		1,464	140	9.6%	38	27.1%	102	72.9%

Note: Called "Parasite", illegal users who obtain water from un-metered (or direct line: D/L) customers are included.

DMAs and/or LCZs

In four DMAs, 47 illegal connections including parasite users were identified which account for 5.7% of 829 households in total. Out of 47, 33 connections were legalized (authorized) and 14 connections were disconnected. This means that only 70.2% became valid customers while 29.8% were disconnected (see *Table 10*).

Table 10 Number of Authorizations and Disconnections of Illegal Connections in DMAs

No	Area No	Area Name	Total Household	Illegal Connection*1	Percentage of Illegal Connection in Total Household	Legalization/ Authorization	Percentage of Legalization in Illegal Connection	Disconnection	Percentage of Disconnection in Illegal Connection
			[1]	[2]	[3]=[2]/[1] x100	[4]	[5]=[4]/[2] x100	[6]	[7]=[6]/[2] x100
1	No.10	Lenggakiki	215	0	0.0%	0	0.0%	0	0.0%
2	No.6	Tasahe A&B*1	202	17	8.4%	5	29.4%	12	70.6%
3	No.17	West Kola Ridge A*1	225	1	0.4%	1	100.0%	0	0.0%
4	No.7	Tasahe C	187	29	15.5%	27	93.1%	2	6.9
Tot	al	<u> </u>	829	47	5.7%	33	70.2%	14	29.8%

Note: Called "Parasite", illegal users who obtain water from un-metered (or direct line: D/L) customers are included.

<u>Indicator 2-3</u>: The number of new service connections and replacement of malfunctioning customer meters is increased in the pilot project areas and LCZs.

Pilot Project Areas

There are 268 households that were found to be un-connected or in other words they do not have water connections from Solomon Water's pipeline network (not including illegal connections), which account for 18.3% of the total number of household. As a result of the NRW reduction activities, 31 households proceeded to become connected or re-connected and account for 11.6% of the total un-connection households (see *Table 11*). The total number of valid customers decreased before and after the NRW reduction activities (see *Table 12*), and **Section 3. (4) 3)** describes the reason of decrease in customers.

Generally, un-connection households (not including illegal connections) rely on springs, rain water, water purchased from private water tanker and from metered customers.

^{*1} DMAs in which were selected under SW-JICA commitment and NRW reduction activities were completed by the Project. In other two DMAs, NRW reduction activities were completed by SW as of March 2016.

Table 11 Number of New Service Connections and Re-connections in Pilot Project Areas

No	Area No	Area Name	Total Household	Un- connection*1 (before)	Percentage of Un-connection in Total Household	New/Re- Connectio	Percentage of New/Re- connection in Un-connection
			[1]	[2]	[3]=[2]/[1] x100	[4]	[5]=[4]/[2] x100
1	No.9	White River- Namo Ruka	83	11	13.3%	2	18.2%
2	No.10	Independence Valley	91	16	17.6%	3	18.8%
3	No.3	Lenggakiki	161	11	6.8%	6	54.5%
4	No.5	Mbokonavera-1	76	10	13.2%	0	0.0%
5	No.14	Tuvaruhu-1	48	4	8.3%	3	75.0%
6	No.15	Tuvaruhu-2	62	10	16.1%	1	10.0%
7	No.6	Vavaea Ridge	163	69	42.3%	8	11.6%
8	No.4	Mbokona	110	12	10.9%	6	50.0%
9	No.8	Mbaranamba	100	20	20.0%	0	0.0%
10	No.2	Mbua Valley	122	16	13.1%	1	6.3%
11	No.11	Bahai Kukum	182	53	29.1%	1	1.9%
12	No.7	Panatina Valley	60	9	15.0%	0	0.0%
13	No.12	Naha 2	57	13	22.8%	0	0.0%
14	No.13	Naha 3	67	2	3.0%	0	0.0%
15	No.1	FFA Kola Road	82	12	14.6%	0	0.0%
Tota	ıl		1,464	268	18.3%	31	11.6%

^{*1} Illegal connections including parasite users are not included.

Table 12 Number of Customers before/after NRW Reduction Activities in Pilot Project Areas

No	Area No	Area Name	Total Household	Customer (before)	Percentage of Customer in Household (before)	Customer (after)	Percentage of Customer in Household (after)
			[1]	[2]	[3]=[2]/[1] x100	[4]	[5]=[4]/[1] x100
1	No.9	White River- Namo Ruka	83	44	53.0%	52	62.7%
2	No.10	Independence Valley	91	68	74.7%	72	79.1%
3	No.3	Lenggakiki	161	115	71.4%	120	74.5%
4	No.5	Mbokonavera-1	76	64	84.2%	64	84.2%
5	No.14	Tuvaruhu-1	48	38	79.2%	28	58.3%
6	No.15	Tuvaruhu-2	62	41	66.1%	32	51.6%
7	No.6	Vavaea Ridge	163	94	57.7%	93	57.1%
8	No.4	Mbokona	110	88	80.0%	86	78.2%
9	No.8	Mbaranamba	100	78	78.0%	80	80.0%
10	No.2	Mbua Valley	122	93	76.2%	100	82.0%
11	No.11	Bahai Kukum	182	115	63.2%	97	53.3%
12	No.7	Panatina Valley	60	51	85.0%	50	83.3%
13	No.12	Naha 2	57	42	73.7%	42	73.7%
14	No.13	Naha 3	67	55	82.1%	56	83.6%
15	No.1	FFA Kola Road	82	70	85.4%	64	78.0%
Tota	ıl		1,464	1,056	72.1%	1,036	70.8%

The Project also installed 378 customer meters to new or unmetered or reconnected customers. In addition, 596 meters were also replaced with new ones. This amount to 974 meters out of 1,000 meters

procured by JICA, which means the meters were effectively used (see *Table 13*). Meanwhile, the Two-year Plan also procured about 3,000 meters. In DMAs, both the remaining 26 meters procured by JICA and the meters procured by the Two-year Plan have been installed.

The monthly number of new service connections and replacement of malfunctioning customer meters by Solomon Water before the Project was about 30 in the whole Honiara according to interview to Solomon Water. This figure also includes unmetered (direct line: D/L) connections in occasions when SW is out of its stock of meters. Assuming this figure is regarded as the baseline in the whole Honiara, the baseline in 15 pilot project areas is estimated at 10 as a result of conversion by proportion of the pipeline length as well as the pilot project period (2.6 month per area). Therefore, the number of new service connections and replacement of malfunctioning customer meters was increased from 10 to 974 in 15 pilot project areas as a result of the NRW reduction activities. The baseline figure however is only reference.

Table 13 Number of New Installation and Replacement of Customer Meter in Pilot Project Areas

No	Area No	Area Name	Total Household	Meter New Installation	Meter Replace't	Replacement & New Installation	Percentage of Replace't & New Installation in Total Household
			[1]	[2]	[3]	[4]=[2]+[3]	[5]=[4]/[1]x100
1	No.9	White River- Namo Ruka	83	37	12	49	59.0%
2	No.10	Independence Valley	91	37	35	72	79.1%
3	No.3	Lenggakiki	161	29	89	118	73.3%
4	No.5	Mbokonavera-1	76	30	32	62	81.6%
5	No.14	Tuvaruhu-1	48	16	11	27	56.3%
6	No.15	Tuvaruhu-2	62	16	16	32	51.6%
7	No.6	Vavaea Ridge	163	36	57	93	57.1%
8	No.4	Mbokona	110	45	28	73	66.4%
9	No.8	Mbaranamba	100	11	39	50	50.0%
10	No.2	Mbua Valley	122	34	58	92	75.4%
11	No.11	Bahai Kukum	182	44	53	97	53.3%
12	No.7	Panatina Valley	60	15	35	50	83.3%
13	No.12	Naha 2	57	6	36	42	73.7%
14	No.13	Naha 3	67	9	46	55	82.1%
15	No.1	FFA Kola Road	82	13	49	62	75.6%
Tota	ıl		1,464	378	596	974	66.5%

DMAs and/or LCZs

In four DMAs, there are 57 households that were found to be un-connected or in other words they do not have water connections from Solomon Water's pipeline network (not including illegal connections), which account for 6.9% of the total number of household. As a result of the NRW reduction activities, 36 households proceeded to become connected or re-connected and account for 63.2% of the total un-connection households (see *Table 14*). The total number of valid customers increased before and after the NRW reduction activities (see *Table 15*).

Table 14 Number of New Service Connections and Re-connections in DMAs

No	Area No	Area Name	Total Household	Un- connection*1 (before)	Percentage of Un-connection in Total Household	New/Re- Connectio n	Percentage of New/Re- connection in Un-connection
			[1]	[2]	[3]=[2]/[1] x100	[4]	[5]=[4]/[2] x100
1	No.10	Lenggakiki	215	5	2.3%	0	0.0%
2	No.6	Tasahe A&B*2	202	30	14.9%	28	93.3%
3	No.17	West Kola Ridge A*2	225	13	5.8%	5	38.5%
4	No.7	Tasahe C	187	9	4.8%	3	33.3%
Tota	Total		829	57	6.9%	36	63.2%

^{*1} Illegal connections including parasite users are not included.

Table 15 Number of Customers before/after NRW Reduction Activities in DMAs

No	Area No	Area Name	Total Household	Customer (before)	Percentage of Customer in Household (before)	Customer (after)	Percentage of Customer in Household (after)
			[1]	[2]	[3]=[2]/[1] x100	[4]	[5]=[4]/[1] x100
1	No.10	Lenggakiki	215	210	97.7%	210	97.7%
2	No.6	Tasahe A&B*1	202	155	76.7%	179	88.6%
3	No.17	West Kola Ridge A*1	225	211	93.8%	198	88.0%
4	No.7	Tasahe C	187	149	79.7%	179	95.7%
Tota	ıl	·	829	725	87.5%	766	92.4%

^{*1} DMAs in which were selected under SW-JICA commitment and NRW reduction activities were completed by the Project. In other two DMAs, NRW reduction activities were completed by SW as of March 2016.

In four DMAs, the Project also installed 137 customer meters to new or unmetered or reconnected customers, 198 meters were also replaced with new ones. This amount to 335 meters (see *Table 16*), and this means the remaining 26 out of 1,000 meters procured by JICA were effectively used.

Table 16 Number of New Installation and Replacement of Customer Meter in DMAs

No	Area No	Area Name	Total Household	Meter New Installation	Meter Replace't	Replacement & New Installation	Percentage of Replace't & New Installation in Total Household
			[1]	[2]	[3]	[4]=[2]+[3]	[5]=[4]/[1]x100
1	No.10	Lenggakiki	215	6	69	75	34.9%
2	No.6	Tasahe A&B*1	202	72	40	112	55.4%
3	No.17	West Kola Ridge A*1	225	36	56	92	40.9%
4	No.7	Tasahe C	187	23	33	56	29.9%
Tota	ıl		829	137	198	335	40.4%

^{*1} DMAs in which were selected under SW-JICA commitment and NRW reduction activities were completed by the Project. In other two DMAs, NRW reduction activities were completed by SW as of March 2016.

<u>Output 3</u>: NRW reduction is implemented in accordance with the procedure in pilot areas and/or LCZs in the selected DMAs, and then improved NRW ratio is monitored and maintained.

<u>Indicator 3-1</u>: The number of pipe repairs is increased in the pilot project areas and LCZs.

Pilot Project Areas

There were 191 leak points detected, which were repaired as a part of the NRW reduction measures (see *Table 17*).

Table 17 Number of Leak Point and Pipe Repair in Pilot Project Areas

No	Area No	Area Name	Pipe Length (m)	No. of Leak Point	No. of Pipe Repair	Per-km Leak Point
			[1]	[2]	[3]	[4]=[2]/[1] x1,000m
1	No.9	White River- Namo Ruka	1,063	13	13	12
2	No.10	Independence Valley	2,184	12	12	5
3	No.3	Lenggakiki	2,481	31	31	12
4	No.5	Mbokonavera-1	1,104	13	13	12
5	No.14	Tuvaruhu-1	1,206	9	9	7
6	No.15	Tuvaruhu-2	1,371	9	9	7
7	No.6	Vavaea Ridge	1,298	11	11	8
8	No.4	Mbokona	1,419	25	25	18
9	No.8	Mbaranamba	1,512	12	12	8
10	No.2	Mbua Valley	1,990	18	18	9
11	No.11	Bahai Kukum	1,692	18	18	11
12	No.7	Panatina Valley	885	3	3	3
13	No.12	Naha 2	786	2	2	3
14	No.13	Naha 3	960	10	10	10
15	No.1	FFA Kola Road	2,276	5	5	2
Tota	ıl		22,227	191	191	9

Leakage ratios were reduced by repair of damaged parts of pipeline, and the average of reduction point of leakage ratio is 27.7 (see *Table 18*).

^{*2} DMAs in which were selected under SW-JICA commitment and NRW reduction activities were completed by the Project. In other two DMAs, NRW reduction activities were completed by SW as of March 2016.

Table 18 Reduction Point of Leakage Ratio before/after NRW Reduction Activities in Pilot Project

Areas

No	Area No	Area Name	Leakage Ratio (%, before) [1]	Leakage Ratio (%, after)	Reduction Point [3]=[1]-[2]
1	No.9	White River- Namo Ruka	49.2	30.7	18.5
2	No.10	Independence Valley	15.7	8.6	7.1
3	No.3	Lenggakiki	52.1	14.3	37.8
4	No.5	Mbokonavera-1	50.1	10.6	39.5
5	No.14	Tuvaruhu-1	59.4	11.0	48.4
6	No.15	Tuvaruhu-2	52.8	19.4	33.4
7	No.6	Vavaea Ridge	60.7	24.7	36.0
8	No.4	Mbokona	44.7	19.0	25.7
9	No.8	Mbaranamba	21.3	3.3	18.0
10	No.2	Mbua Valley	39.7	6.7	33.0
11	No.11	Bahai Kukum	42.7	16.2	26.5
12	No.7	Panatina Valley	24.8	6.1	18.7
13	No.12	Naha 2	42.5	14.9	27.6
14	No.13	Naha 3	42.1	25.8	16.3
15	No.1	FFT Kola Road	44.5	14.9	29.6
Ave	rage		42.8	15.1	27.7

The monthly number of pipe repairs by Solomon Water before the Project was 46 in the whole Honiara as of December 2012. Assuming this figure is regarded as the baseline in the whole Honiara, the baseline in 15 pilot project areas is estimated at 15 as a result of conversion by proportion of pipeline length as well as pilot project period (2.6 month per area). Therefore, the number of pipe repairs was increased from 15 to 191 in 15 pilot project areas as a result of the NRW reduction activities. The baseline figure however is only reference.

DMAs and/or LCZs

In four DMAs, there were 82 leak points detected, which were repaired as a part of the NRW reduction measures (see *Table 19*).

Table 19 Number of Leak Point and Pipe Repair in DMAs

No	Area No	Area Name	Pipe Length (m)	No. of Leak Point	No. of Pipe Repair	Per-km Leak Point
	INO		[1]	[2]	[3]	[4]=[2]/[1] x1,000m
1	No.10	Lenggakiki	4,035	10	10	2.5
2	No.6	Tasahe A&B*1	6,719	24	24	3.6
3	No.17	West Kola Ridge A*1	9,060	17	17	1.9
4	No.7	Tasahe C	3,859	31	31	8.0
Tota	ıl		23,673	82	82	3.5

^{*1} DMAs in which were selected under SW-JICA commitment and NRW reduction activities were completed by the Project. In other two DMAs, NRW reduction activities were completed by SW as of March 2016.

In four DMAs, leakage ratios were reduced by repair of damaged parts of pipeline, and the average of reduction point of leakage ratio is 31.6 (see *Table 20*).

Table 20 Reduction Point of Leakage Ratio before/after NRW Reduction Activities in DMAs

	No	Area No	Area Name	Leakage Ratio (%, before)	Leakage Ratio (%, after)	Reduction Point [3]=[1]-[2]
ļ				[1]	[2]	[3]-[1]-[2]
	1	No.10	Lenggakiki	35.0	22.4	12.6
Ì	2	No.6	Tasahe A&B*1	83.1	32.6	50.5
	3	No.17	West Kola Ridge A*1	55.5	18.0	37.5
	4	No.7	Tasahe C	31.6	5.7	25.9
ĺ	Ave	rage		51.3	19.7	31.6

^{*1} DMAs in which were selected under SW-JICA commitment and NRW reduction activities were completed by the Project. In other two DMAs, NRW reduction activities were completed by SW as of March 2016.

<u>Indicator 3-2</u>: Data and records of DMA-based monitoring and maintenance for improved NRW ratio are accumulated to sustain NRW reduction activities in the selected DMAs.

In four DMAs including the selected two DMAs in which NRW reduction activities were completed, data and records of DMA-based monitoring and maintenance for improved NRW ratio have been accumulated to sustain NRW reduction activities.

The data and records are, for example, system input volume, revenue (billed) water volume, NRW volume and ratio. Then, they have been represented monthly in bar and line graphs for monitoring.

Output 4: Water meter reading and billing process management are improved.

<u>Indicator 4-1</u>: Standard operating procedures (SOP) and training materials are formulated.

Draft of SOP on customer meter reading and billing system was prepared temporarily in April 2013, and will be completed with training materials based on knowledge and issues obtained through routine works.

(3) Expected Achievement of Overall Goal

<u>Indicator 1</u>: NRW reduction activities are carried on by Task Force composed of relevant Departments or Units.

Since the Task Force Team comprehensively implements NRW reduction which consists of baseline activities and monitoring and maintenance activities, overall goal will be achieved.

(4) Issues and Challenges in NRW Reduction

1) Legalization of Illegal Connections

As shown in *Table 9* the number of legalization of illegal connections is 38 and accounts for 27.1% of the total 140 illegal connections identified in 15 pilot project areas. Behind the illegal connections is the fact that water users are not satisfied with water tariff and its frequent increase, besides they are not

adequately aware of beneficiary-pay principle. To win over customers through legalization as a solution to illegal connections, it is essential for Solomon Water to carry on awareness activities to obtain water user's understanding of water tariff and beneficiary-pay principle, with development of an appropriate water tariff structure and an attempt to improve water supply facilities and services.

2) New Service Connections and Re-connections

As shown in *Table 11* the number of new connection and re-connection of un-connection household (excluding illegal connections and parasite users) is 31 and accounts for 11.6% of the total 268 un-connection household found in 15 pilot project areas. To attract new customers, it is essential for Solomon Water to carry on awareness activities to obtain water user's understanding of water tariff and beneficiary-pay principle, with development of an appropriate water tariff structure and an attempt to improve water supply facilities and services.

3) Increase in Customers

In 15 pilot project areas, legalization of illegal connections, and new connection and re-connection of un-connected households contributed positively and to added 69 to the number of the valid customers. While this is happening, in the period of pilot projects, Solomon Water disconnected 28 metered customers as part of its disconnection activities, representing 4.1% of all metered customers before the pilot projects as well as 61 un-metered customers representing 16.4% of all un-metered customers before the pilot projects also in the pilot project areas. This massive disconnection is not part of the pilot projects but Solomon Water's routine works against unpaid arrears. This means 89 customers in total representing 8.4% of all customers before the pilot projects were removed from the valid customer list in spite of the 69 customers increase by the pilot projects. Consequently there are 20 customers less after the NRW reduction activities compared to before (see *Table 12* and *Table 21*). One of the reasons behind the unpaid arrears is the customer's complaints against water tariff.

Although NRW reduction activities can contribute to not only reduction of NRW in quantity but also increase in customers and thus revenue, maintaining or increasing further customers is an issue. To avoid losing customers, it is essential for Solomon Water to carry on awareness activities to obtain water user's understanding of water tariff and beneficiary-pay principle, with development of an appropriate water tariff structure and an attempt to improve water supply facilities and services.

4) Effective Leakage Detection and Systematic Revelation of Illegal Connections

As shown in *Table 18* and *Table 20*, a certain volume of leakage, which may include unidentified illegal water usage, still remains in some pilot project areas even after the NRW reduction activities. So it is a challenge to detect leakages effectively and find out illegal connections systematically. To maintain pipelines easily, it is essential for Solomon Water to improve the accuracy of pipeline information, develop further and update database including records of leakage repair as well as illegal connection, and also to find out irregularity in consumption by monitoring of its record.

5) Continuance of NRW Reduction in DMAs and Strengthening of DMA Management

Solomon Water completed NRW reduction in four DMAs including the selected two DMAs under commitment between SW and JICA, then has managed these DMAs, specifically monitored these DMAs and maintained the improved NRW ratio. Also, Solomon Water has implemented NRW reduction in the remaining 24 DMAs.

However, Solomon Water does not have a clear vision and concrete framework of DMA Management (Monitoring & Maintenance) in order to maintain the reduced NRW ratio after NRW reduction activities, so this fact makes sustainability of DMA Management doubtful. The reason is that the present organizational structure of Solomon Water is still not robust in terms of the following points:

- Concentration in command channel on NRW reduction activities
- Non-existence of the dedicated section for periodical monitoring in DMAs after NRW reduction
- Inadequacy of the team for illegal connections on a regular basis
- Inadequacy of the dedicated staff for hydraulic analysis

In consideration of them, some of the management of Solomon Water had dealt with organizational reform for sustainable NRW reduction and DMA Management in the future. However, this effort has been suspended and leadership for introduction of DMA Management is absent in the management of Solomon Water.

The JICA Expert Team will encourage Solomon Water to promote organizational reform so that NRW reduction and DMA Management become more sustainable.

Table 21 Change in the Number of Customers before/after NRW Reduction Activities in Pilot Project Areas

		Tubic 2.	Change	in inc 11t	imoer of Ci	шыс	mers bejore	ajiei 11	11 11 1100	inciton 11	mrines in	 ioi Frojeci Areas		
No	Area No	Area Name	Metered Customer (before)	Un-metered (D/L) Customer (before)	Total Customer (before)		Conversion from Un-metered (D/L) to Metered	Legalization	New/Re- Connection	Disconnection of Metered Customer	Disconnection of Un-metered (D/L) Customer	Metered Customer (after)	Un-metered (D/L) Customer (after)	Total Customer (after)
			[1]	[2]	[3]=[1]+[2]		[4]	[5]	[6]	[7]	[8]	[9]= [1]+[4]+[5]+[6]-[7]	[10]= [2]-[4]-[8]	[11]=[9]+[10]
1	No.9	White River- Namo Ruka	13	31	44		29	6	2	0	0	50	2	52
2	No.10	Independence Valley	35	33	68		33	1	3	0	0	72	0	72
3	No.3	Lenggakiki	93	22	115		22	1	6	2	0	120	0	120
4	No.5	Mbokonavera-1	34	30	64		30	0	0	0	0	64	0	64
5	No.14	Tuvaruhu-1	18	20	38		10	3	3	6	10	28	0	28
6	No.15	Tuvaruhu-2	19	22	41		12	3	1	3	10	32	0	32
7	No.6	Vavaea Ridge	57	37	94		28	0	8	0	9	93	0	93
8	No.4	Mbokona	45	43	88		34	5	6	4	9	86	0	86
9	No.8	Mbaranamba	69	9	78		9	2	0	0	0	80	0	80
10	No.2	Mbua Valley	67	26	93		26	7	1	1	0	100	0	100
11	No.11	Bahai Kukum	61	54	115		35	8	1	8	19	97	0	97
12	No.7	Panatina Valley	36	15	51		15	0	0	1	0	50	0	50
13	No.12	Naha 2	36	6	42		6	0	0	0	0	42	0	42
14	No.13	Naha 3	48	7	55		7	2	0	1	0	56	0	56
15	No.1	FFA Kola Road	53	17	70		13	0	0	2	4	64	0	64
Tota	ı		684 (64.8%)	372 (35.2%)	1,056 (100%)		309 (83.1%)*1	38	31	28 (4.1%)*2	61 (16.4%) *3	1,034 (99.8%)	2 (0.2%)	1,036 (100%)
								6	9	(8.4	9 %)* ⁴			

^{*1} Percentage of conversion from un-metered (D/L) to metered in un-metered (D/L) customers (before countermeasures). ([4]/[2]x100)

19

Table 22 Change in the Number of Customers before/after NRW Reduction Activities in DMAs

						 Cusiomers							
No	Area No	Area Name	Metered Customer (before)	Un-metered (D/L) Customer (before)	Total Customer (before)	Conversion from Un-metered (D/L.) to Metered	Legalization	New/Re- Connection	Disconnection of Metered Customer	Disconnection of Un-metered (D/L) Customer	Metered Customer (after)	Un-metered (D/L) Customer (after)	Total Customer (after)
			[1]	[2]	[3]=[1]+[2]	[4]	[5]	[6]	[7]	[8]	[9]= [1]+[4]+[5]+[6]-[7]	[10]= [2]-[4]-[8]	[11]=[9]+[10]
1	No.10	Lenggakiki	204	6	210	6	0	0	0	0	210	0	210
2	No.6	Tasahe A&B*5	112	43	155	39	5	28	5	4	179	0	179
3	No.17	West Kola Ridge A*5	178	33	211	28	1	5	14	5	198	0	198
4	No.7	Tasahe C	140	9	149	9	27	3	0	0	179	0	179
Tot	Total		634 (87.4%)	91 (12.6%)	725 (100%)	82 (90.1%)*1	33	36	19 (3.0%)*2	9 (9.9%)*3	766 (100%)	0 (0%)	766 (100%)
							6	9	(3.9				

20

^{*2} Percentage of disconnection of metered customers in metered customers (before countermeasures) ([7]/[1]x100)

^{*3} Percentage of disconnection of un-metered (D/L) customers in un-metered (D/L) customers (before countermeasures) ([8]/[2]x100)

^{*4} Percentage of disconnection in total household (before countermeasures) (([7]+[8])/[3]x100)

^{*1} Percentage of conversion from un-metered (D/L) to metered in un-metered (D/L) customers (before countermeasures). ([4]/[2]x100)

*2 Percentage of disconnection of metered customers in metered customers (before countermeasures). ([7]/[1]x100)

*3 Percentage of disconnection of un-metered (D/L) customers (before countermeasures) ([8]/[2]x100)

*4 Percentage of disconnection in total household (before countermeasures). ([7]/[8]X]3X100)

*5 DMAs in which were selected under SW-JICA commitment and NRW reduction activities were completed by the Project. In other two DMAs, NRW reduction activities were completed by SW as of March 2016

第4章 成果-1 の活動:「無収水削減に係る計 画プロセスが体系化される。」

S4.3-1 水理計算書

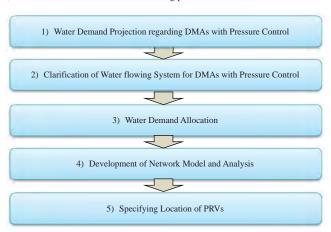
Hydraulic Analysis of DMAs in Honiara (Report)

This report is the result of hydraulic analysis of the existing network in seven DMAs and examination for PRV Specifications.

1. Hydraulic Analysis of the existing distribution and Examination for PRV Specification

(1) Examination Process

The hydraulic specialist recruited by SW recommended 10 PRVs to be installed and their specifications in June 2014. NRW Project Team reviewed the specifications of the PRVs and their locations, and advised SW on them in the following process:



(2) Water Demand Projection regarding DMAs with Pressure Control

Water demand is compiled in two categorized tables; one is the table for water demand of DMAs with pressure control and the other is that of DMAs which influence the other DMAs with pressure control. The result of estimated water demand is shown in '1' and 'II' of Attachement-1.

The following are the design criteria for water demand projection:

- Estimating based on the billed water consumption in the past one year.
- In addition to the above billed water consumption, considering the number of illegal connections based on experienced results of pilot project.
- Applying growth rate of 3.1% based on Master Plan (2006) for water demand for the next five years.
- Applying 30% of NRW ratio based on overall goal shown in PDM.

The Project for Improvement of Non-Revenue Water Reduction Capacity for Solomon Islands Water Authority in Solomon Islands

- Applying 0.6* and 1.4 of low and peak hourly factor respectively
- * Factor of 0.6 was applied for verification of a flow range of PRVs.

(3) Clarification of Water flowing System for DMAs with Pressure Control

In order to analyze distribution network of DMAs with pressure control, conceptual diagrams of water flowing system is illustrated in **Attachment-2**.

Peak hourly factor of 1.4 is applied for hydraulic analysis of distribution network but not that of transmission lines.

(4) Water Demand Allocation

Water demand is allocated at each node experientially. Water demand per node for all is constant in a particular DMA but water demand per node depends on water consumed in each DMA (see Attachment-2).

(5) Development of Network Model and Analysis

The existing distribution network drawn in MapInfo is exported to Water GEM for hydraulic analysis. The following are design criteria for hydraulic analysis of the distribution network.

- Calculation Formula: Hazen-Williams
- Static head: 70m or less
- Velocity Coefficient (C) for Galvanized pipe & DI and PVC & polyethylene pipe: 100 and 110 respectively
- Minimum Residual Pressure: 0.1Mpa at each node (except particular node)

Output data of network analysis and the network model is shown in **Attachment-3** and **Attachment-4** respectively. In the light of reducing pressure with PRVs, some existing pipelines in No.8 Ngossi, No.11 Vavaea Ridge and No.19 Tanuli & Mbua Valley must be replaced with a larger size of pipes because of the encounter of negative pressure.

(6) Specifying Location of PRVs

After identifying location on the network model diagrams tentatively, NRW Action Team has the site reconnaissance to identify exact location of PRVs to be installed properly with GPS.

Location of PRVs with coordinates measured by using GPS was plotted on the diagrams (see Attachment-4). Attachment-5 shows picture of their location.

(7) Summary of PRVs and Bulk Flow Meters to be installed in DMAs with Pressure Control NRW Project Team suggested seven PRVs in six DMAs. Number of chamber as'Type-2' and 'Type-3' (see 'V' of Attachment-1) is four and three respectively.

The Project for Improvement of Non-Revenue Water Reduction Capacity for Solomon Islands Water Authority in Solomon Islands

DMAs	Area	Size of PRVs	Chamber Type*	Bulk Flow Meter		placed wi pes in the network to	U
No.6 Tasahe A&B	Tasahe A	40mm x 1	Type-2	-			
No.0 Tasane A&B	Tasahe B	40mm x 1	Type-2	-			
No.8 Ngossi	All areas	80mm	Type-3	80mm	100mm	->	150mm
140.0 14g0331	Anarcas	x 1	Type-3	x 1	L=1	,051m (P	VC)
No. 9 Mbokona	Eastern at upstream	40mm x 1	Type-2	-			
No.11 Vavaea	T.T	50mm	T 2		100mm	->	150mm
Ridge	Upper area	x 1	Type-2	-	L=	542m (PV	/C)
No.13 Mbokonavera	All areas	80mm	T 2	80mm			
No.15 Midokonavera	An areas	x 1	Type-3	x 1			
No.19 Tanuli &	All areas	50mm	Tuna 2	50mm	25mm	->	50mm
Mbua Valley	An areas	x 1	Type-3	x 1	L=	161m (PV	/C)

Note: See the conceptual diagram shown in Attachment-2

End

Attachment-5





No.6 Tasahe A & B (A) (Type-2)

No.6 Tasahe A & B (B) (Type-2)





No.8 Ngossi (Type-3)

No.9 Mbokona (Type-2)





No.11 Vavaea Ridge (Type-2)

No.13 Mbokonabera (Type-3)





No.19 Tanuli & Mbua Valley (Type-3)

Attachment-1

	Actual Average Customer Consumption in	Daily Water Consumption	Ratio of Illegal Connection	Assumed Water Consumption of the Total existing	Predicted Water Consumption	NRW Ratio for	Predicted Water	Predicted Water	Range of (m ³	Flow Rate /hr)	Remarks (Estimated Water	
DMAs with Pressure Control	Oct. 2013 to Sep. 2014 (m³/month)	Rate (LCD)	(%)		after Five Years*1	Future (%)	Demand (m³/month)	Demand (m³/day)	Min. (x 0.6)	Max. (x 1.4)	Demand (m³/day) based on Number of Customers)	
	a)	-	b)	c) = a) / ((100- b)/100)	d) = c) x $(1+0.031)^5$	e)	f) = d) / (100- e))/100	g) =f) /30	h) = g) x 0.6/24	i) = g) x 1.4/24	Customers)	
No.6 Tasahe A&B	3,991	172	20	4,989	5,812	30	8,303	277	6.9	16.2	212	
No.8 Ngossi	13,118	193	10	14,576	16,980	30	24,257	809	20.2	47.2	625	
No. 9 Mbokona	12,548	191	5	13,208	15,386	30	21,980	733	18.3	42.8	604	
No.11 Vavaea Ridge	12,981	192	10	14,423	16,802	30	24,003	800	20.0	46.7	907	
No.13 Mbokonavera	12,971	178	10	14,412	16,789			799	20.0	46.6		
No.19 Tanuli & Mbua Valley	11,468	151	10	12,742	14,843	30	21,204	707	17.7	41.2	698	
No.22 Kombito Boaderline, Jakson Ridge & Bura	13,001	132	20	16,251	18,931	30	27,044	901	22.5	52.6	907	
Total	80,078	173		90,601	105,543		150,775	5,026	126	293	4,622	

Note: *1: Suject to the constant daily water consumption rate, annual population growth rate of 3.1% was tentatively applied for future water consumption.

Π . S_1	II. Specification of Pressure Reducing Valves	sure Redu	cing Valves
No.	Item		Description
1	Manufacturer:		Bermad Waterworks
2	Product:		Pressure Reducing Valvε
3	Brand Name:		Y Pattern, Throttling Plug (V-Port), 700 Metric
	Flow Range (m ³ /hr)	$40 \mathrm{mm}$	10-35
	Flow Range (m³/hr)	$50 \mathrm{mm}$	10-42
_	Flow Range (m ³ /hr)	$80 \mathrm{mm}$	19-95
4	Flow Range (m ³ /hr)	100 mm	23-170
	Flow Range (m ³ /hr)	150mm	78-390
	Flow Range (m³/hr) 200mm	200mm	140-690

III. Specidication of PRVs, Bulk Flow Meter and Chamber

DMAs	Area	Proportion of Population			tate (m³/hr) W 30%]	ID No. of	Size of	Chamber	Existing	Pipelines	By-pass l	Pipelines	Tee	90 Bend	Bulk Flow	Sluice	Valve	Pressure Relief Valve & Strainer	To be replaced with larger size pipes in the whole network
DIVIAS	Aica	1)	2	2)	3) =1) x 2)	PRVs	PRVs	Type	Diamter A.	Material	Diamter B.	Material	(Cast Iron)	(PVC)	Meter	On the Existing	On the By- pass	On the By- pass	Existing to New
	Tasahe A	35%	Min	6.9	2.4	PRV-H12	40mm	Type-2	80mm	PVC	40mm	PVC	80 x 40mm	40mm		80mm	40mm	40mm	
No.6 Tasahe A&B	1 asalie A	3370	Max.	16.2	5.7	FKV-1112	x 1	1 ype-2	SOIIIII	TVC	4011111	TVC	x 2	x 2	-	x 1	x 1	x 1 (each)	
NO.0 Tasane A&B	Tasahe B	55%	Min	6.9	3.8		40mm	Type-2	100mm	PVC	40mm	PVC	100 x 40mm	40mm		100mm	40mm	40mm	
	1 asalie B	3370	Max.	16.2	8.9		x 1	Type-2	Toomin	TVC	4011111	TVC	x 2	x 2	-	x 1	x 1	x 1 (each)	
No.8 Ngossi	All areas	100%	Min	20.2	20.2	PRV-H13	80mm	Type-3	100mm	PVC	80mm	PVC	100 x 80mm	80mm	80mm	100mm	80mm	80mm	100mm -> 150mm
110.0 11g0331	Anarcas	10070	Max.	47.2	47.2	1 K V - 1113	x 1	1урс-5	Tooliiii	1 10	Gomm	1 10	x 2	x 2	x 1	x 1	x 1	x 1 (each)	L=1,051m
No. 9 Mbokona	All areas	30%	Min	18.3	5.5	PRV-H02	40mm	Type-2	80mm	PVC	40mm	PVC	80 x 40mm	40mm		80mm	40mm	40mm	
140. 7 WIOOKOIIA	Anarcas	3070	Max.	42.8	12.8	1 K V-1102	x 1	1 ypc-2	Gomm	1 40	4011111	1 10	x 2	x 2	_	x 1	x 1	x 1 (each)	
No.11 Vavaea Ridge	Upper area	85%	Min	20.0	17.0	PRV-H03	50mm	Type-2	100mm	PVC	50mm	PVC	100 x 50mm	50mm		100mm	50mm	50mm	100mm -> 150mm
140.11 Vavaca Kluge	opper area	0570	Max.	46.7	39.7	1 K V-1103	x 1	1 ypc-2	Tooliiii	1 40	John	1 10	x 2	x 2		x 1	x 1	x 1 (each)	L=542m
No.13 Mbokonavera	All areas	100%	Min	20.0	20.0	PRV-H05	80mm	Type-3	100mm*	PVC	80mm	PVC	100 x 80mm	80mm	80mm	100mm*	80mm	80mm	
110.15 Mookollavela	An areas	100%	Max.	46.6	46.6		x 1	1 ypc-3	100IIIII	1 4 C	GOIIIII	1,40	x 2	x 2	x 1	x 1	x 1	x 1 (each)	
No.19 Tanuli & Mbua	Western area	100%	Min	17.7	17.7	PRV-H11	50mm	Type-3	100mm	PVC	50mm	PVC	100 x 50mm	50mm	50mm	100mm	50mm	50mm	25mm -> 50mm
Valley	** Colcili died	100%	Max.	41.2	41.2		x 1	1 ype-3	10011111	1 4 C	John	1 70	x 2	x 2	x 1	x 1	x 1	x 1 (each)	L= 161m

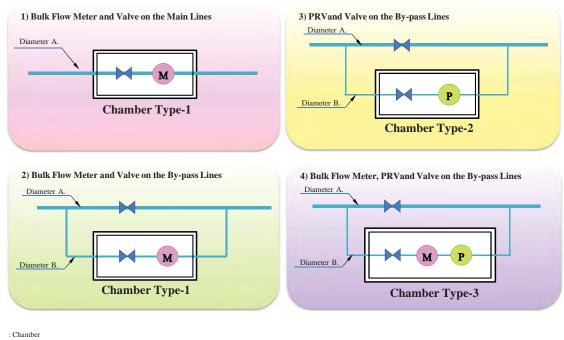
Note: Minor fitting such as spigot pipes are not listed in the table.

IV. Flow Range of Pressure Reducing Valve; 'Y

Size of PRVs	Flow Range of 'Y Pattern,
40mm	10-35
50mm	10-42
80mm	19-95
100mm	23-170

Source: Bermad Waterworks

V. Types of Chamber for Bulk Flow Meters, PRVs and Valves



: Bulk Flow Meter

Legend

: Pressure Reducing Valve

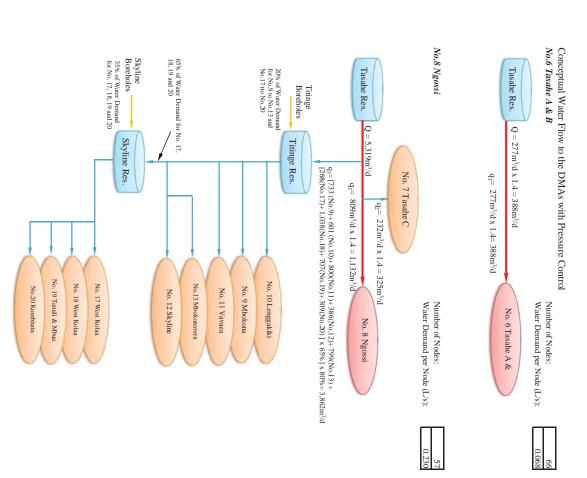
: Valve

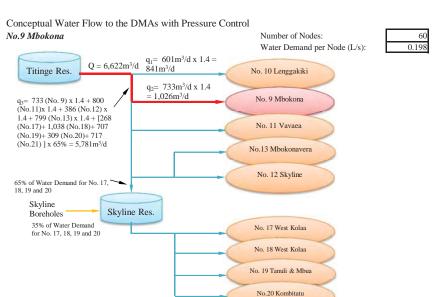
^{*} The existing pipelines is 100mm. This pipelines will be shifted to JICA grant pipeline of 150mm in future. At this moment, bypass pipes for PRV will be equiped with the existing pipelines of 100mm. When shifted to 150mm, bypass pipes will be re-equiped with main lines of 150mm.

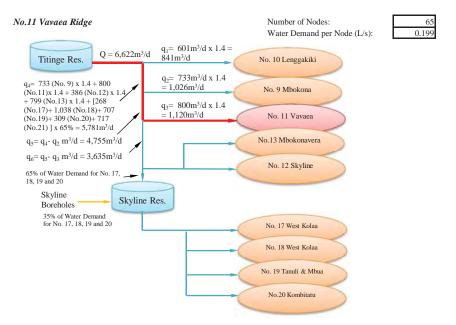
Attachment-1

	Number of Customers in DMAs with	Actual Average Customer Consumption in	Daily Water	Ratio of Illegal	Assumed Water Consumption of the Total existing	Predicted Water	NRW Ratio for	Predicted Water	Predicted Water	Range of I		Remarks
DMAs with Pressure Control	Pressure Control in Aug. 2014	Oct. 2013 to Sep. 2014 (m³/month)	Consumption Rate (LCD)	Connection (%)	Households (m³/month)	Consumption after Five Years*1	Future (%)	(m³/month) (m³/day)	Demand (m³/day)	Min. (x 0.6)	Max. (x 1.4)	(Estimated Water Demand (m ³ /day) based on Number of Customers)
		a)	-	b)	c) = a) / ((100- b)/100)	d) = c) x (1+0.031)^5	e)	f) = d) / (100- e))/100	g) =f) /30	h) = g) x 0.6/24	i) = g) x 1.4/24	customersy
No.7 Tasahe C	136	3,768	123	10	4,187	4,877	30	6,967	232	5.8	13.5	-
No.10 Lenggakiki	208	9,743	208	10	10,826	12,611	30	18,016	601	15.0	35.1	-
No.12 Skyline	173	5,564		20	6,955	8,102	30	11,574	386		22.5	-
No.17 West Kolaa Ridge A	153	3,872	112	20	4,840	5,638	30	8,054	268	6.7	15.6	-
No.18 West Kolaa Ridge B & C and Naha Height	514	14,964	129	20	18,705	21,790	30	31,129	1,038	26.0	60.6	-
No.20 Kombitatu	217	4,452	91	20	5,565	6,483	30	9,261	309	7.7	18.0	-
No.21 Trecce House, Bura Height and Naha Valley	448	11,625	115	10	12,917	15,047	30	21,496	717	17.9	41.8	-
Total	1,849	53,988	132		63,995	74,548		106,497	3,551	89	207	-

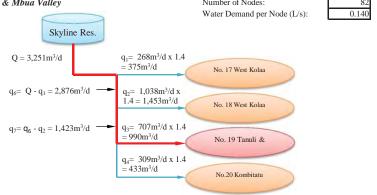
Note: *1: Suject to the constant daily water consumption rate, annual population growth rate of 3.1% was tentatively applied for future water consumption.

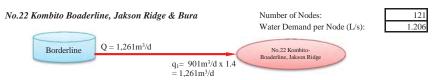






Conceptual Water Flow to the DMAs with Pressure Control No.13 Mbokonavera Number of Nodes: Water Demand per Node (L/s): 0.135 $q_1 = 601 m^3 / d \times 1.4 = 841 m^3 / d$ $Q = 6,155 \text{m}^3/\text{d}$ Titinge Res. No. 10 Lenggakiki $q_2 = 733 \text{m}^3/\text{d} \times 1.4$ $\begin{array}{l} q_{5} \!\!\! = 733 \ (No.\ 9)\ x\ 1.4 + 800 \\ (No.11)x\ 1.4 + 386 \ (No.12)\ x \end{array}$ = 1.026m³/d No. 9 Mbokona 1.4 + 799 (No.13) x 1.4 + [268 / $q_3 = 800 \text{m}^3 / \text{d x } 1.4$ (No.17)+ 1,038 (No.18)+ 707 $= 1.120 \text{m}^3/\text{d}$ No. 11 Vavaea (No.19)+ 309 (No.20)] x 65% $q_4 = 799 \text{m}^3 / \text{d} \times 1.4$ $= 5.314 \text{m}^3/\text{d}$ $= 1,119 \text{ m}^3/\text{d}$ No.13 Mbokonavera $q_6 = q_{5^-} \, q_2 \, = 4,\!288 m^3\!/d$ No. 12 Skyline $q_7 = q_6 - q_3 = 3,168 m^3/d$ $q_4 = 386 \text{m}^3 / \text{d} \times 1.4$ 540m³/d Skyline Skyline Res. Boreholes 35% of Water Demand No. 17 West Kolaa Ridge for No. 17, 18, 19 and 20 No. 18 West Kolaa No. 19 Tanuli & Mbua No.20 Kombitatu Number of Nodes: No.19 Tanuli & Mbua Valley





Attachment-3 Attachment-3

No. 6 Tasahe A & B Network Table - Links

Network Table -					
Link ID	Length	Diameter	Flow	Velocity	Unit Headloss
LIIK ID	m	mm	LPS	m/s	m/km
Pipe p-57	2	20	-0.27	0.87	83.15
Pipe p-38	2	30	-0.14	0.19	3.2
Pipe p-30	3	75	0.75	0.17	0.87
Pipe p-47	3	30	0.1	0.14	1.81
Pipe p-35	3	50	-0.2	0.1	0.56
Pipe p-11	3	100	1.63	0.21	0.9
Pipe p-44	3	30	-0.2	0.29	6.77
Pipe p-41	3	30	0.14	0.19	3.19
Pipe p-43	4	30	0.14	0.19	3.19
Pipe p-26	3	100	1.56	0.2	0.83
Pipe p-48	6	30	-0.14	0.19	3.2
Pipe p-16	6	75	0.2	0.05	0.08
Pipe p-6	8	100	-0.34	0.04	0.05
Pipe p-7	6	100	-0.07	0.01	0.05
Pipe p-25	7	75	1.49	0.34	3.11
Pipe p-5	8	100	-0.54	0.07	0.12
Pipe p-32	8	50	-0.14	0.07	0.12
Pipe p-36	8	50	-0.14	0.07	0.27
Pipe p-36 Pipe p-21	8	75	1.16	0.07	1.94
Pipe p-23	9	75	1.10	0.20	2.32
	13	75	0.14	0.29	0.04
Pipe p-15	11	75	-1.02	0.03	1.54
Pipe p-1	13	30	0.07	0.23	0.89
Pipe p-53	13	100	-0.88	0.11	0.89
Pipe p-10	14	50			0.29
Pipe p-34	15	75	-0.2	0.1	0.28
Pipe p-17	23	30	0.41	0.09	
Pipe p-51	23		0.14	0.19	3.2
Pipe p-56		20	-0.07	0.22	6.38
Pipe p-27	22	75	0.27	0.06	0.13
Pipe p-13	23	100	-2.72	0.35	2.32
Pipe p-24	30	75	1.42	0.32	2.85
Pipe p-59	30	20	-0.07	0.22	6.38
Pipe p-54	36	30	-0.07	0.1	0.89
Pipe p-28	34	75	0.41	0.09	0.28
Pipe p-58	35	20	-0.07	0.22	6.38
Pipe p-20	37	20	0.95	3.03	846.23
Pipe p-40	39	20	0.07	0.22	6.38
Pipe p-52	40	30	-0.07	0.1	0.89
Pipe p-55	40	20	-0.2	0.65	48.81
Pipe p-19	43	75	0.82	0.18	1.02
Pipe p-14	45	100	-3.06	0.39	2.89
Pipe p-50	63	30	0.07	0.1	0.89
Pipe p-49	53	30	-0.07	0.1	0.89
Pipe p-46	51	30	0.05	0.07	0.5
Pipe p-18	51	75	0.48	0.11	0.37
Pipe p-42	53	30	0.07	0.1	0.89
Pipe p-62	72	32	0.14	0.17	2.33
Pipe p-45	72	30	-0.14	0.19	3.2
Pipe p-33	118	50	-0.07	0.03	0.07
Pipe p-29	78	75	0.68	0.15	0.73
Pipe p-8	87	100	-2.85	0.36	2.54
Pipe p-9	101	100	-2.78	0.35	2.43
Pipe p-39	114	30	-0.07	0.1	0.89
Pipe p-22	130	75	1.22	0.28	2.16
Pipe p-4	130	100	-0.82	0.1	0.25
Pipe p-63	143	32	0.07	0.08	0.65
Pipe p-61	136	30	-0.07	0.1	0.89
Pipe p-37	167	50	-0.07	0.03	0.07
PC P 3/	107	50	-0.07	0.03	0.07

No. 6 Tasahe A & B Network Table - Links

Network Table - Links								
Link ID	Length	Diameter	Flow	Velocity	Unit Headloss			
LIIK ID	m	mm	LPS	m/s	m/km			
Pipe p-3	228	100	-3.12	0.4	3.01			
Pipe p-31	249	75	-0.2	0.05	0.08			
Pipe P-64	654	75	-1.09	0.25	1.74			
Pipe P-65	369	75	-1.16	0.26	1.94			
Pipe P-66	16	100	-0.95	0.12	0.33			
Pipe P-67	9	100	1.7	0.22	0.97			
Pipe P-68	236	100	-3.19	0.41	3.13			
Pipe P-69	368	100	3.26	0.42	3.26			
Pipe P-70	50	100	4.42	0.56	5.72			
Pipe P-71	510	75	1.16	0.26	1.94			
Pipe P-72	510	100	3.26	0.42	3.26			

No. 6 Tasahe A & B

Network Table	- Nodes						
	Elevation	Base Demand	Head	Effective Pressure	a	Effective	Static
Node ID	D				Static Pressure	Pressure	Pressure
		esult of analysis				With 1	
T T 1	m	LPS	m	m	m	m 42.20	m
June J-1	55 55	0.068	114.4	59.28	97 97	42.28	60
June J-2	50	0.068 0.068	114.58 114.55	59.47 64.42	102	42.47 47.42	60
Junc J-3 Junc J-4	50	0.068	114.56	64.43	102	47.42	65
June J-4 June J-5	72	0.068	148.86	76.70	80	27.7	28
June J-6	72	0.0689	148.85	76.70	80	27.7	28
June J-7	72	0.05	146.66	74.51	80	57.51	43
June J-8	72	0.05	146.65	74.50	80	57.5	43
June J-9	71	0.068	148.8	77.64	81	28.64	29
June J-10	71	0.068	148.8	77.64	81	28.64	29
June J-11	75	0.068	146.77	71.63	77	54.63	40
June J-12	75	0.068	146.77	71.62	77	54.62	40
June J-13	71	0.068	146.71	75.56	81	58.56	44
June J-14	71	0.068	146.74	75.58	81	58.58	44
June J-15	70	0.068	146.34	76.19	82	59.19	45
June J-16	70	0.068	146.33	76.18	82	59.18	45
June J-17	71	0.068	146.74	75.58	81	58.58	44
June J-18	71	0.068	146.72	75.57	81	58.57	44
Junc J-19	75	0.068	146.76	71.62	77	54.62	40
Junc J-20	75	0.068	147.28	72.14	77	55.14	40
Junc J-21	75	0.068	147.3	72.15	77	55.15	40
June J-22	50	0.068	114.56	64.43	102	47.43	65
June J-23	71	0.068	146.74	75.58	81	58.58	44
Junc J-24	75	0.068	146.74	71.60	77	54.6	40
June J-25	71	0.068	146.74	75.59	81	58.59	44
June J-26	71	0.068	146.73	75.58	81	58.58	44
June J-27	71	0.068	146.73	75.58	81	58.58	44
June J-28	71	0.068	148.79	77.64	81	28.64	29
June J-29	70	0.068	146.36	76.21	82	59.21	45
June J-30	71	0.05	146.64	75.49	81	58.49	44
June J-31	50	0.068	114.56	64.43	102	47.43	65
June J-32	73	0.068	148.87	75.72	79	75.72	79
June J-33	70.5	0.068	148.79	78.13	82	29.13	30
June J-34	70.2	0.068	148.78	78.42	82	29.42	30
June J-35	75	0.068	146.77	71.63	77	54.63	40
June J-36	75	0.068	146.77	71.63	77	54.63	40
June J-37	52	0.068	114.57	62.44	100	45.44	63
June J-38	70	0.068	148.78	78.63	82	29.63	30
June J-39	68	0.068	148.71	80.55	84	31.55	32
Junc J-40	55	0.068	112.3	57.18	97	40.18	60
June J-41	55	0.068	112.44	57.32	97	40.32	60
June J-42	75	0.068	146.78	71.63	77	54.63	40
June J-43	75	0.068	146.83	71.69	77	54.69	40
June J-44	55	0.068	112.25	57.13	97	40.13	60
June J-45	65	0.068	148.75	83.59	87	34.59	35
June J-46	63	0.068	114.41	51.30	89	34.3	52
June J-47	64	0.068	114.63	50.53	88	33.53	51
June J-48	70	0.068	146.09	75.93	82	58.93	45
June J-49	48	0.068	114.52	66.39	104	49.39	67
June J-50	76	0.068	147.43	71.29	76	54.29	39
June J-51	62	0.068	148.66	86.48	90	37.48	38
June J-52	75	0.068	147.23	72.09	77	55.09	40
June J-53	72	0.05	146.63	74.48	80	57.48	43
June J-54	70	0.068	146.68	76.52	82	59.52	45
June J-55	53	0.068	148.84	95.65	99	46.65	47
June J-56	51	0.068	148.67	97.47	101	48.47	49

No. 6 Tasahe A & B Network Table - Nodes

	Elevation	Base Demand	Head	Effective Pressure		Effective	Static
Node ID	Elevation	base Demand	пеаа	Effective Pressure	Static Pressure	Pressure	Pressure
Node ID	R	esult of analysis	s by using W	VaterGEM		With I	PRV
	m	LPS	m	m	m	m	m
June J-57	60	0.068	146.48	86.31	92	69.31	55
June J-58	65	0.068	146.72	81.55	87	64.55	50
June J-59	75	0.068	147.08	71.93	77	54.93	40
June J-60	45	0.068	114.45	69.31	107	52.31	70
June J-61	30	0.068	148.58	118.34	122	69.34	70
June J-62	30	0.068	146.36	116.13	122	99.13	85
June J-63	51	0.068	148.78	97.59	101	48.59	49
June J-64	85	0.068	148.12	62.99	67	45.99	30
June J-65	80	0.068	150.01	69.87	72	69.87	72
Junc J-66	90	0	150.72	60.60	62	60.60	62
June J-67	80	0.068	148.85	68.68	72	68.68	72
Junc J-68	90	0	150.05	59.93	62	59.93	62
Junc J-69	145	0	151.71	6.70	7	6.70	7
Resvr R-1	152	#N/A	152	0.00	0	0.00	0

: Static Head of at least 70m

: Nodes to be covered with PRV₁ (East)

: Nodes to be covered with PRV₂ (West)

No. 8 Ngossi

Network Table -	Links				
Link ID	Length	Diameter	Flow	Velocity	Unit Headloss
	m	mm	LPS	m/s	m/km
Pipe p-45	3	100	0.69	0.09	0.19
Pipe p-9	3	75	-1.83	0.41	4.55
Pipe p-38	3	100	7.1	0.9	13.77
Pipe p-36	3	75	-3.21	0.73	12.82
Pipe p-24	4	50	1.6	0.82	25.6
Pipe p-8	3	75	-1.6	0.36	3.55
Pipe p-7	4	75	3.43	0.78	14.57
Pipe p-11	5	75	0.92	0.21	1.26
Pipe p-27	6	40	0.23	0.18	2.07
Pipe p-12	6	75	0.23	0.05	0.1
Pipe p-35	7	75	-0.69	0.16	0.74
Pipe p-14	7	75	-0.23	0.05	0.1
Pipe p-26	9	40	-0.46	0.36	7.46
Pipe p-10	9	75	1.37	0.31	2.67
Pipe p-41	10	100	9.39	1.2	23.1
Pipe p-37	26	75	3.66	0.83	16.42
Pipe p-22	63	50	0.69	0.35	5.33
	80	25	-0.46	0.93	73.61
Pipe p-32	81	25	-0.46	0.93	73.61
Pipe p-30					
Pipe p-44	83 104	50 32	0.69	0.35	5.33
Pipe p-33			0.23	0.28	6.13
Pipe p-29	104	25	-0.23	0.47	20.39
Pipe p-18	106	50	-0.92	0.47	9.08
Pipe p-48	112	40	0.23	0.18	2.07
Pipe p-6	121	75	-1.37	0.31	2.67
Pipe p-47	114	50	0.23	0.12	0.7
Pipe p-19	175	50	-0.46	0.23	2.52
Pipe p-31	116	25	-0.23	0.47	20.39
Pipe p-5	119	75	-0.69	0.16	0.74
Pipe p-3	127	75	-0.46	0.1	0.35
Pipe p-43	132	50	0.46	0.23	3
Pipe p-1	148	75	0.69	0.16	0.74
Pipe p-2	146	75	-0.23	0.05	0.1
Pipe p-21	151	50	-0.23	0.12	0.7
Pipe p-15	151	75	0.23	0.05	0.1
Pipe p-51	171	32	0.23	0.28	6.13
Pipe p-23	186	50	0.69	0.35	5.33
Pipe p-46	194	100	0.46	0.06	0.09
Pipe p-25	249	40	-0.23	0.18	2.07
Pipe p-42	264	50	0.23	0.12	0.83
Pipe p-16	296	50	2.98	1.52	96.11
Pipe p-28	288	40	-0.23	0.18	2.07
Pipe p-40	317	100	9.62	1.22	24.16
Pipe p-50	425	100	-0.23	0.03	0.02
Pipe p-49	367	100	0.23	0.03	0.02
Pipe p-34	579	100	-0.46	0.06	0.09
Pipe p-20	512	50	1.37	0.7	19.24
Pipe P-52	527	100	7.33	0.93	14.6
Pipe P-53	75	50	1.14	0.58	16.38
Pipe P-54	196	50	0.69	0.35	6.36
Pipe P-55	7	100	9.16	1.17	22.07
Pipe P-56	896	100	8.24	1.05	18.16
Pipe P-57	3	75	-1.83	0.41	4.55
Pipe P-58	278	75	-2.29	0.52	6.88
Pipe P-59	110	75	-0.23	0.05	0.1
Pipe P-60	73	75	-0.69	0.16	0.74
Pipe P-61	27	152	3.43	0.19	0.56
Pipe P-62	852	300	61.5	0.87	3.56

Attachment-3 Attachment-3

No. 8 Ngossi Network Table - Links

Link ID	Length	Diameter	Flow	Velocity	Unit Headloss
LIIK ID	m	mm	LPS	m/s	m/km
Pipe P-64	1,052	300	13.05	0.18	0.2
Pipe P-66	1,118	225	44.69	1.12	8
Pipe P-65	300	225	3.76	0.09	0.08

Attachment-3 Attachment-3

No. 8 Ngossi

Network Table - Nodes							
	Elevation	Base Demand	Head	Effective Pressure	Static Pressure	Effective Pressure	Static Pressure
Node ID	R	esult of analysis	by using W	VaterGEM	Static Fressure	With I	
	m	LPS	m	m	m	m	m
Junc J-1	30	0.23	124.44	94.25	122	69.25	64
Junc J-2	30	0.23	124.44	94.25	122	69.25	64
Junc J-3	45	0.23	116.21	71.06	107	46.06	49
June J-4	45	0.23	116.22	71.08	107	46.08	49
June J-5	45	0.23	116.75	71.61	107	46.61	49
Junc J-6	45	0.23	116.71	71.57	107	46.57	49
June J-7	45	0.23	116.67	71.53	107	46.53	49
June J-8	80	0.23	120.27	40.19	72	15.19	14
June J-9	80	0.23	120.18	40.10	72	15.10	14
June J-10	45	0.23	116.20	71.05	107	46.05	49
June J-11	45	0.23	116.28	71.14	107	46.14	49
June J-12	45	0.23	116.19	71.05	107	46.05	49
June J-13	45	0.23	116.19	71.05	107	46.05	49
June J-14	45	0.23	116.34	71.19	107	46.19	49
June J-15	45	0.23	116.32	71.19	107	46.18	49
June J-15	45	0.23	116.32	71.16	107	46.05	49
June J-10	80	0.23	140.71	60.59	72	35.59	14
June J-17	80	0.23	140.71	60.60	72	35.60	14
June J-18	50	0.23	116.08	65.95	102	40.95	44
June J-20	50	0.23	116.08	65.95	102	40.95	44
June J-20	47	0.23	115.80	68.67	102	43.67	47
June J-22	47	0.23	115.87	68.73	105	43.73	47
June J-22	80	0.23	141.10	60.98	72	35.98	14
June J-23	80	0.23	140.87	60.75	72	35.75	14
June J-24 June J-25	55	0.23	103.41	48.32	97	23.32	39
	65	0.23		44.24	87	19.24	29
Junc J-26 Junc J-27	70	0.23	109.33 104.38	34.31	82	9.31	24
	70	0.23	110.32	40.24	82	15.24	24
Junc J-28 Junc J-29	50	0.23	113.79	63.66	102	38.66	44
June J-29	46	0.23	113.79	67.21	102	42.21	48
June J-31	87	0.23	148.74	61.62	65	36.62	7
	85	0.23	148.11	62.98	67	37.98	9
June J-32	40	0.23	101.30				54
June J-33	50			61.18	112	36.18	44
June J-34	45	0.23	114.75	64.62	102	39.62	49
June J-35 June J-36	18	0.23	114.69 114.46	69.55	107 134	44.55 71.27	76
		0.23		96.27			
June J-37 June J-38	37 37	0.23 0.23	124.43 124.35	87.25 87.17	115 115	62.25 62.17	57 57
June J-38 June J-39	46	0.23	112.90	66.77	106	41.77	48
June J-39 June J-40	55	0.23	102.00	46.91	97	21.91	39
June J-40 June J-41	45	0.23	115.78	70.64	107	45.64	49
June J-41 June J-42	43	0.23	115.78	72.59	107	47.59	51
June J-42 June J-43	78	0.23	117.79	39.71	74	14.71	16
June J-45 June J-44	75	0.23	117.79	42.31	77	17.31	19
June J-44 June J-45	43	0.23	117.39	72.58	109	47.58	51
June J-45 June J-46	43	0.23	112.80	70.66	110	47.38	52
June J-46 June J-47	25	0.23	116.06	90.88	110	65.88	69
June J-47 June J-48	80	0.23	119.04	38.96	72	13.96	14
June J-48 June J-49		0.23	117.99	57.87	92	32.87	34
	60 48				104		46
June J-50		0.23	114.68	66.55		41.55	
June J-51	24	0.23	115.29	91.11	128	66.11	70
June J-52	56	0.23	117.18	61.05	96	36.05	38
June J-53	18	0.23	115.74	97.55	134	72.55	76
June J-54	90	0.00	148.76	58.64	62	33.64	4
June J-55	50	0.23	140.65	90.47	102	65.47	44
June J-56	50	0.23	140.66	90.48	102	65.48	44

No. 8 Ngossi Network Table - Nodes

Network Table - Nodes								
Node ID Elevation	Elevation Ba	Daga Damand	Head	Effective Pressure		Effective	Static	
	Elevation	Base Demand	rieau	Effective Flessule	Static Pressure	Pressure	Pressure	
Noue ID	R	Result of analysis by using WaterGEM				With I	PRV	
	m	LPS	m	m	m	m	m	
June J-57	50	0.23	114.76	64.63	102	39.63	44	
Junc J-58	73	0.23	114.75	41.67	79	16.67	21	
Junc J-59	127	0	148.97	22.20	25	22.20	25	
Junc J-60	130	44.69	140.02	10.00	22	10.00	22	
Junc J-61	95	3.76	148.94	53.84	57	53.84	57	
Resvr R-1	152	#N/A	152	0.00	0	0.00	0	

: Static Head of at least 70m : Nodes to be covered with PRV

No.9 Mbokona

Network Table -	Links				
Link ID	Length	Diameter	Flow	Velocity	Unit Headloss
LIIK ID	m	mm	LPS	m/s	m/km
Pipe Mb-19	5	50	0.40	0.20	2.34
Pipe Mb-24	6	50	0.40	0.20	1.96
Pipe Mb-25	9	50	0.80	0.41	7.07
Pipe Mb-15	11	75	3.40	0.77	14.30
Pipe Mb-20	10	50	0.40	0.20	2.34
Pipe Mb-31	10	40	-1.00	0.80	37.79
Pipe Mb-11	11	100	12.00	1.53	36.38
Pipe Mb-12	13	100	0.80	0.10	0.24
Pipe Mb-7	19	100	-11.20	1.43	38.21
Pipe Mb-30	20	40	1.80	1.43	112.24
Pipe Mb-37	24	40	-0.40	0.32	6.92
Pipe Mb-54	28	15	0.20	1.13	191.05
Pipe Mb-51	31	32	0.80	0.99	62.13
Pipe Mb-33	42	32	0.40	0.50	17.21
Pipe Mb-52	46	32	0.60	0.75	43.51
Pipe Mb-44	64	32	0.20	0.25	4.77
Pipe Mb-6	81	116	-5.80	0.55	4.59
Pipe Mb-53	60	25	0.40	0.81	68.34
Pipe Mb-34	63	32	0.20	0.25	4.77
Pipe Mb-26	68	50	2.60	1.32	62.69
Pipe Mb-3	82	116	-6.80	0.64	7.36
Pipe Mb-47	95	25	0.20	0.41	15.87
Pipe Mb-29	89	40	1.00	0.80	31.68
Pipe Mb-42	108	63	0.20	0.06	0.21
Pipe Mb-27	91	50	1.60	0.81	25.51
Pipe Mb-45	93	50	0.40	0.20	1.96
Pipe Mb-35	104	32	0.20	0.25	4.77
Pipe Mb-5	122	63	-3.40	1.09	39.88
Pipe Mb-50	142	40	0.20	0.16	1.61
Pipe Mb-36	144	50	1.40	0.71	19.92
Pipe Mb-18	174	50	0.20	0.10	0.65
Pipe Mb-28	159	40	-0.40	0.32	6.92
Pipe Mb-40	154	50	0.20	0.10	0.65
Pipe Mb-23	156	50	0.20	0.10	0.54
Pipe Mb-22	163	50	0.60	0.31	4.15
Pipe Mb-8	171	100	0.60	0.08	0.14
Pipe Mb-13	178	100	0.80	0.10	0.24
Pipe Mb-16	182	75	3.20	0.72	12.78
Pipe Mb-10	210	100	0.20	0.03	0.02
Pipe Mb-1	213	100	-11.20	1.43	38.21
Pipe Mb-9	241	100	0.40	0.05	0.07
Pipe Mb-32	311	25	-0.20	0.41	18.93
Pipe Mb-21	454	50	0.20	0.10	0.65
Pipe P-1	60	50	-0.60	0.31	4.15
Pipe P-2	195	50	-1.00	0.51	10.68
Pipe P-3	16	75	5.60	1.27	42.98
Pipe P-4	29	75	4.40	1.00	27.50
Pipe P-5	20	63	4.20	1.35	58.98
Pipe P-6	69	63	0.60	0.19	1.61
Pipe P-7	78	63	3.20	1.03	35.64
Pipe P-8	44	63	2.00	0.64	14.93
Pipe P-9	6	25	0.80	1.63	206.79
Pipe P-10	41	25	0.20	0.41	15.87
Pipe P-11	8	40	1.60	1.27	75.64
Pipe P-12	6	40	0.40	0.32	5.80
Pipe P-13	606	116	6.60	0.62	6.96
Pipe P-14	91	116	6.00	0.57	5.84
Pipe P-15	182	63	1.20	0.38	4.86

No.9 Mbokona Network Table - Links

Link ID	Length	Diameter	Flow	Velocity	Unit Headloss	
LIIKID	m	mm	LPS	m/s	m/km	
Pipe P-16	118	63	0.40	0.13	0.64	
Pipe P-17	24	100	-7.00	0.89	16.00	
Pipe P-18	71	100	-7.60	0.97	18.63	
Pipe P-19	76	50	0.60	0.31	4.15	
Pipe P-20	118	50	0.20	0.10	0.54	
Pipe P-23	253	100	12.00	1.53	36.38	
Pipe P-24	150	225	55.00	1.38	11.75	
Pipe P-26	168	225	76.73	1.93	21.77	
Pipe P-27	231	225	67.00	1.68	16.93	
Pipe P-28	1,091	200	9.73	0.31	0.84	

No.9 Mbokona

Network Table	- Nodes						
Node ID	Elevation	Base Demand	Head	Effective Pressure	Static Pressure	Effective Pressure	Static Pressure
Node ID	R	esult of analysis	hy using V	VaterGEM		With	PRV
	m	LPS	m	m	m	m	m
Junc J-1	70	0.20	99.45	29.39	62	29.39	62
June J-2	70	0.20	99.43	29.87	63	29.87	63
June J-3	58	0.20	103.50	45.41	74	45.41	55
June J-4	60	0.20	103.49	43.40	72	43.40	53
June J-5	53	0.20	99.27	46.17	79	46.17	60
June J-6	55	0.20	99.20	44.12	77	44.12	58
June J-7	80	0.20	105.98	25.93	52	25.93	52
Junc J-8	80	0.20	105.83	25.78	52	25.78	52
Junc J-9	80	0.20	104.65	24.60	52	24.60	52
June J-10	80	0.20	104.63	24.58	52	24.58	52
June J-11	78	0.20	87.84	9.82	54	9.82	54
June J-12	80	0.20	88.23	8.21	52	8.21	52
Junc J-13	90	0.00	115.23	25.18	42	25.18	42
June J-14	90	0.00	114.84	24.79	42	24.79	42
June J-16	90	0.00	114.11	24.06	42	24.06	42
June J-17	79	0.20	85.36	6.34	53	6.34	53
June J-18	77	0.20	84.72	7.70	55	7.70	55
Junc J-19	80	0.20	87.57	7.56	52	7.56	52
Junc J-20	59	0.20	95.33	36.26	73	36.26	73
Junc J-21	60	0.20	95.50	35.43	72	35.43	72
Junc J-22	72	0.20	73.96	1.95	60	1.95	60
June J-23	67	0.20	68.65	1.64	65	1.64	65
Junc J-24	75	0.20	81.92	6.91	57	6.91	57
June J-25	75	0.20	80.01	5.00	57	5.00	57
Junc J-26	71	0.20	98.53	27.47	61	27.47	42
June J-27	58	0.20	97.80	39.72	74	39.72	55
Junc J-28	75	0.20	78.03	3.02	57	3.02	57
Junc J-29	75	0.20	98.54	23.50	57	23.50	57
Junc J-30	75	0.20	97.04	21.99	57	21.99	57
Junc J-31	72	0.20	85.97	13.94	60	13.94	60
Junc J-32	55	0.20	92.88	37.80	77	37.80	58
June J-33	58	0.20	92.57	34.50	74	34.50	55
Junc J-34	70	0.20	98.92	28.86	62	28.86	62
June J-35	68	0.20	97.50	29.44	64	29.44	45
June J-36	80	0.20	103.67	23.62	52	23.62	52
June J-37	80	0.20	104.27	24.23	52	24.23	52
Junc J-38	55	0.20	93.82	38.74	77	38.74	77
June J-39	80	0.20	95.75	15.72	52	15.72	52
Junc J-40	78	0.20	84.76	6.74	54	6.74	54
June J-41	61	0.20	93.12	32.05	71	32.05	52
June J-42	73	0.20	93.09	20.05	59	20.05	40
June J-43	50	0.20	93.19	43.11	82	43.11	63
Junc J-44	62	0.20	92.81	30.75	70	30.75	51
June J-45	50	0.20	96.94	46.85	82	46.85	63
Junc J-46	77	0.20	95.56	18.53	55	18.53	55
June J-47	65	0.20	95.75	30.69	67	30.69	67
Junc J-48	54	0.20	95.25	41.17	78	41.17	78
Junc J-49	78	0.20	91.00	12.97	54	12.97	54
June J-50	78	0.20	95.86	17.82	54	17.82	54
June J-51	67	0.20	85.52	18.48	65	18.48	65
June J-52	58	0.20	85.29	27.23	74	27.23	74
June J-53	43	0.20	94.08	50.97	89	50.97	70
June J-54	64	0.20	99.32	35.25	68	35.25	68
June J-55	77	0.20	86.62	9.60	55	9.60	55
June J-56	79	0.20	95.46	16.43	53	16.43	53

No.9 Mbokona Network Table - Nodes

Node ID	Elevation	Base Demand	Head	Effective Pressure	Static Pressure	Effective Pressure	Static Pressure
	R	esult of analysis	by using V		With	PRV	
	m	LPS	m	m	m	m	m
June J-57	72	0.20	103.41	31.34	60	31.34	41
Junc J-58	82	0.20	114.79	32.72	50	32.72	50
Junc J-59	79	0.20	114.77	35.69	53	35.69	53
Junc J-60	65	0.20	114.75	49.65	67	49.65	67
Junc J-61	80	0.20	114.75	34.68	52	34.68	52
June J-62	72	0.20	97.84	25.78	60	25.78	60
June J-63	56	0.20	78.84	22.79	76	22.79	76
Junc J-66	78	0.20	104.34	26.28	54	26.28	54
Junc J-67	100	0.00	124.43	24.55	32	24.55	32
Junc J-68	90	55.00	122.67	32.60	42	32.60	42
Junc J-70	90	0.00	114.83	24.78	42	24.78	42
June J-71	118	0.00	128.34	9.87	14	9.87	14
June J-72	81	9.73	127.42	46.33	51	46.33	51
Resvr R-1	132	#N/A	132.00	0.00	0	0.00	(

: Static Head of at least 70m : Nodes to be covered with PRV

No.11 Vavaya Ridge

Link ID	Length	Diameter	Flow	Velocity	Unit Headloss
	m	mm	LPS	m/s	m/km
Pipe p-56	3	100	-3.70	0.47	2.32
Pipe p-57	2	100	7.12	0.91	13.85
Pipe p-55	3	100	3.70	0.47	2.32
Pipe p-1	2	100	2.81	0.36	2.96
Pipe p-21	2	50	-0.49	0.25	3.41
Pipe p-5	3 4	40	1.81	1.44	113.78 37.52
Pipe p-58	5	100 100	-12.20	1.55 0.84	
Pipe p-13	5	100	6.60 0.40	0.05	12.03
Pipe p-14 Pipe p-16	3	75	-0.40	0.03	0.07
Pipe p-10	5	100	-4.32	0.09	5.49
Pipe p-9	6	50	-0.38	0.33	2.10
Pipe p-35	7	40	0.40	0.19	6.92
Pipe p-18	7	50	-1.60	0.32	30.44
Pipe p-34	7	40	-0.12	0.10	0.77
Pipe p-52	9	63	-3.48	1.12	34.85
Pipe p-60	8	50	-0.40	0.20	1.96
Pipe p-12	10	100	0.20	0.03	0.02
Pipe p-54	10	100	-8.12	1.03	17.66
Pipe p-53	9	100	-7.12	0.91	13.85
Pipe p-2	13	100	6.00	0.76	12.03
Pipe p-24	14	50	-0.68	0.35	6.20
Pipe p-8	11	100	-7.20	0.92	14.13
Pipe p-26	14	50	0.60	0.31	4.95
Pipe p-49	16	100	3.08	0.39	3.49
Pipe p-4	20	100	5.80	0.74	11.30
Pipe p-6	26	100	2.01	0.26	1.59
Pipe p-47	30	100	-0.20	0.03	0.02
Pipe p-19	31	50	-1.80	0.92	37.85
Pipe p-10	33	100	-6.80	0.87	12.71
Pipe p-39	34	40	-0.20	0.16	1.61
Pipe p-48	35	100	-12.00	1.53	36.39
Pipe p-63	37	32	0.40	0.50	17.21
Pipe p-36	58	40	0.20	0.16	1.92
Pipe p-65	55	50	0.20	0.10	0.54
Pipe p-37	57	40	0.28	0.22	3.52
Pipe p-17	75	75	-0.20	0.05	0.08
Pipe p-43	94	32	0.20	0.25	4.77
Pipe p-61	101	50	0.20	0.10	0.54
Pipe p-42	78	100	-0.20	0.03	0.02
Pipe p-20	115	50	-2.00	1.02	46.01
Pipe p-44	87	50	0.20	0.10	0.54
Pipe p-32	102	32	0.20	0.25	4.77
Pipe p-30	89	50	0.88	0.45	8.39
Pipe p-64	93	32	0.20	0.25	5.69
Pipe p-28	100 114	50 40	0.20	0.10	0.54
Pipe p-38	114	40	0.08	0.06	0.33
Pipe p-59	231	50	0.20 0.70	0.16	1.61 5.51
Pipe p-31				0.36	
Pipe p-46	198 235	100 50	2.61 -0.20	0.33	2.58 0.54
Pipe p-25 Pipe p-45	233	50	-0.20	0.10	8.78
	513	100	-7.00	0.46	13.41
Pipe p-11	543	100	-12.20	1.55	37.52
Pipe p-7	543				
Pipe p-29	993	50 100	-0.80 -11.80	0.41 1.50	7.07 35.28
Pipe p-51 Pipe P-66	41	50	-0.20	0.10	0.54
LIDG L-00	41	50	-0.20	0.10	0.54

Attachment-3 Attachment-3

No.11 Vavaya Ridge Network Table - Links

Link ID	Length	Diameter	Flow	Velocity	Unit Headloss
LIIK ID	m	mm	LPS	m/s	m/km
Pipe P-68	564	100	2.60	0.33	2.14
Pipe P-69	166	100	2.20	0.28	1.57
Pipe P-70	13	100	1.30	0.17	0.71
Pipe P-71	159	50	1.09	0.55	14.88
Pipe P-72	41	50	0.49	0.25	3.37
Pipe P-73	190	50	-0.58	0.29	4.62
Pipe P-74	18	50	-0.29	0.15	1.29
Pipe P-75	265	50	-0.20	0.10	0.54
Pipe P-76	38	50	-0.60	0.31	4.15
Pipe P-77	66	100	-0.40	0.05	0.07
Pipe P-78	194	100	-0.80	0.10	0.24
Pipe P-79	54	100	2.79	0.35	2.91
Pipe P-80	38	100	2.59	0.33	2.53
Pipe P-81	61	40	-0.92	0.73	32.54
Pipe P-82	21	40	-1.61	1.28	91.64
Pipe P-84	264	100	11.88	1.51	35.69
Pipe P-85	765	300	55.07	0.78	2.90
Pipe P-86	5	300	13.00	0.18	0.20
Pipe P-87	370	225	42.07	1.06	7.15
Pipe P-27	289	300	76.68	1.08	5.35
Pipe P-88	80	300	66.94	0.95	4.16
Pipe P-89	1,091	200	9.73	0.31	0.84

No.11 Vavaya Ridge Network Table - Nodes

Network Table	- IVoues						
	Elevation	Base Demand	Head	Effective Pressure	Static Pressure	Effective	Static
Node ID	_				Static Flessure	Pressure Pressure	
		•	is by using WaterGEM			With PRV	
T T 1	m	LPS	m	m	m	m	m
Junc J-1 Junc J-2	45 45	0.20	70.69 70.70	25.64 25.65	87 87	25.64 25.65	37 37
June J-2 June J-3	45	0.00	70.76	25.71	87	25.71	37
June J-4	45	0.00	70.73	25.68	87	25.68	37
June J-5	63	0.20	62.80	-0.20	69	-0.20	19
June J-6	63	0.20	62.79	-0.21	69	-0.21	19
June J-7	55	0.20	60.06	5.05	77	5.05	27
Junc J-8	55	0.20	60.07	5.06	77	5.06	27
Junc J-9	55	0.20	62.24	7.22	77	7.22	27
June J-10	55	0.20	61.95	6.94	77	6.94	27
June J-11	110	0.00	127.76	17.72	22	17.72	22 22
Junc J-12	110	0.00	127.90	17.86	22	17.86	22
June J-13	63	0.20	63.24	0.24	69	0.24	19
Junc J-14	63	0.20	63.18	0.18	69	0.18	19
June J-15	63	0.20	63.18	0.18	69	0.18	19
June J-16	56	0.20	62.28	6.27	76	6.27	26
June J-17	56	0.20	62.28	6.27	76	6.27	26
June J-18	30	0.20	59.14	29.09	102	29.09	52
Junc J-19	30	0.20	59.16	29.10	102	29.10	52
June J-20	58	0.20	58.07	0.07	74	0.07	24
June J-21	58	0.20	58.02	0.02	74	0.02	24
June J-22	20	0.20	62.57	42.49	112	42.49	62
June J-23	20	0.20	62.79	42.70	112	42.70	62
June J-24	58	0.20	58.07	0.07	74	0.07	24
June J-25	45	0.20	70.76	25.71	87	25.71	37
June J-26	45	0.20	71.06	26.01	87	26.01	37
Junc J-27 Junc J-28	20	0.20 0.20	62.49 62.50	42.40 42.42	112 112	42.40 42.42	62 62
June J-28 June J-29	63	0.20	63.18	0.18	69	0.18	19
June J-30	45	0.20	70.88	25.83	87	25.83	37
June J-31	63	0.20	63.02	0.02	69	0.02	19
June J-32	30	0.20	58.31	28.25	102	28.25	52
June J-33	30	0.20	58.40	28.34	102	28.34	52
June J-34	43	0.20	70.54	27.48	89	27.48	39
June J-35	35	0.20	70.83	35.76	97	35.76	47
June J-36	40	0.20	70.83	30.77	92	30.77	42
June J-37	40	0.20	63.98	23.93	92	23.93	42
June J-38	63	0.20	63.66	0.65	69	0.65	19
June J-39	56	0.20	62.48	6.47	76	6.47	26
Junc J-40	52	0.20	62.53	10.51	80	10.51	30
Junc J-41	80	0.20	106.11	26.05	52	26.05	52
June J-42	80	0.20	107.38	27.33	52	27.33	52
June J-43	55	0.20	60.17	5.16	77	5.16	27
Junc J-44	53	0.20	59.53	6.52	79	6.52	29
June J-45	48	0.20	57.91	9.89	84	9.89	34
Junc J-46	47	0.20	70.83	23.78	85	23.78	35
June J-47	33	0.20	70.80	37.73	99	37.73	49
June J-48	38	0.20	58.11	20.07	94	20.07	44
June J-49	30	0.20	62.27	32.21	102	32.21	52
June J-50	80	0.20	123.82	43.73	52	43.73	52
June J-51	75	0.20	123.37	48.27	57	48.27	57
June J-52	20	0.20	61.76	41.68	112	41.68	62
June J-53	5	0.20	61.71	56.59	127	56.59	77
June J-54	15	0.20	70.76	55.65	117	55.65	67 29
June J-55	53	0.20	69.26	16.23	79	16.23	29

No.11 Vavaya Ridge Network Table - Nodes

Node ID	Elevation	Base Demand	Head	Static Pressure		Effective Pressure	Static Pressure
	Re	esult of analysis	by using W	aterGEM	With PRV		
	m	LPS	m	m	m	m	m
June J-56	23	0.20	62.44	39.36	109	39.36	59
June J-57	55	0.20	57.59	2.58	77	2.58	27
June J-58	50	0.20	59.00	8.99	82	8.99	32
June J-59	20	0.20	62.52	42.43	112	42.43	62
Junc J-60	53	0.20	62.54	9.52	79	9.52	29
Junc J-61	55	0.20	60.04	5.03	77	5.03	27
June J-62	53	0.20	69.52	16.49	79	16.49	29
June J-63	42	0.20	69.21	27.16	90	27.16	40
Junc J-64	37	0.20	60.41	23.37	95	23.37	45
June J-65	20	0.20	58.18	38.10	112	38.10	62
Junc J-66	60	0.20	62.64	2.64	72	2.64	22
June J-67	69	0.20	123.67	54.56	63	54.56	63
Junc J-68	20	0.20	61.74	41.66	112	41.66	62
Junc J-69	80	0.20	123.97	43.89	52	43.89	52
Junc J-70	125	0.00	130.12	5.11	7	5.11	7
June J-71	90	11.88	120.70	30.63	42	30.63	42
June J-72	111	0.00	127.90	16.87	21	16.87	21
June J-73	100	42.07	125.25	25.20	32	25.20	32
June J-74	81	9.73	129.53	48.43	51	48.43	51
June J-75	126	0.00	130.45	4.44	6	4.44	6
Resvr R-1	132	#N/A	132.00	0.00	0	0.00	0

: Static Head of at least 70m

: Nodes to be covered with PRV

Attachment-3 Attachment-3

No. 13 Mbokonabera

Link ID	Length	Diameter	Flow	Velocity	Unit Headloss
	m	mm	LPS	m/s	m/km
Pipe p-29	4	75	-10.66	2.41	118.7
Pipe p-79	3	75	0.94	0.21	1.3
Pipe p-1	4	150	-0.41	0.02	0.0
Pipe p-30	4	75	-10.53	2.38	116.0
Pipe p-7	5	100	-0.27	0.03	0.0
Pipe p-31	5	75	0.41	0.09	0.2
Pipe p-35	6	50	-0.14	0.07	0.3
Pipe p-32	7	75	-9.99	2.26	105.2
Pipe p-9	7	75	2.92	0.66	12.8
Pipe p-37	7	50	-0.32	0.16	1.5
Pipe p-4	8	150	-0.14	0.01	0.0
Pipe p-73	8	50	3.46	1.76	127.1
Pipe p-90	8	25	0.54	1.10	99.8
	9				
Pipe p-17	9	75	1.22	0.28	2.5
Pipe p-88		50	2.34	1.19	51.7
Pipe p-2	10	150	-0.67	0.04	0.0
Pipe p-38	10	50	-0.45	0.23	2.9
Pipe p-8	11	75	0.14	0.03	0.0
Pipe p-20	11	75	5.45	1.23	34.2
Pipe p-46	12	50	-1.75	0.89	30.2
Pipe p-56	11	40	0.41	0.32	5.9
Pipe p-72	12	50	-0.14	0.07	0.3
Pipe p-67	13	75	2.16	0.49	7.3
Pipe p-19	15	75	5.58	1.26	35.8
Pipe p-86	17	32	0.14	0.17	2.3
Pipe p-51	16	50	0.27	0.14	0.9
Pipe p-25	18	75	-2.88	0.65	10.5
Pipe p-48	19	50	-0.54	0.28	3.4
Pipe p-75	19	75	-3.73	0.28	20.2
Pipe p-55	20	40	-0.27	0.21	3.3
Pipe p-13	22	75	2.84	0.64	12.1
Pipe p-13	21	75	5.31	1.20	38.9
Pipe p-57	23	40	-0.14	0.11	0.7
		40			
Pipe p-58	23		0.14	0.11	0.7
Pipe p-42	24	50	-0.14	0.07	0.2
Pipe p-36	28	50	-0.72	0.37	6.9
Pipe p-26	29	75	-0.14	0.03	0.0
Pipe p-40	36	50	-0.54	0.28	4.0
Pipe p-18	29	75	-4.91	1.11	28.2
Pipe p-6	36	100	-0.14	0.02	0.0
Pipe p-14	36	75	2.56	0.58	10.1
Pipe p-22	35	75	5.18	1.17	31.1
Pipe p-15	36	75	2.30	0.52	8.2
Pipe p-11	54	75	3.06	0.69	14.0
Pipe p-77	38	75	-12.56	2.84	160.6
Pipe p-84	40	50	0.14	0.07	0.2
Pipe p-70	48	50	-0.94	0.48	9.6
Pipe p-91	49	25	0.41	0.83	69.9
Pipe p-85	50	40	0.14	0.11	0.7
Pipe p-65	53	50	0.14	0.07	0.2
Pipe p-39	58	50	-0.14	0.07	0.3
	58	32	0.14	0.07	2.3
Pipe p-80	58	15	0.14	0.17	110.0
Pipe p-82					
Pipe p-44	58	50	-1.49	0.76	22.2
Pipe p-16	59	75	1.08	0.24	2.0
Pipe p-64	61	50	0.14	0.07	0.2
Pipe p-24	61	75	-2.75	0.62	9.6
Pipe p-81	67	75	0.14	0.03	0.0

No. 13 Mbokonabera Network Table - Links

Network Table -	Length	Diameter	Flow	Velocity	Unit Headloss
Link ID	m	mm	LPS	m/s	m/km
Pipe p-71	67	50	0.81	0.41	7.23
Pipe p-3	70	150	-0.81	0.05	0.04
Pipe p-28	84	32	0.14	0.17	2.30
Pipe p-74	71	50	3.33	1.69	118.07
Pipe p-59	74	40	0.14	0.11	0.78
Pipe p-47	75	50	0.14	0.07	0.26
Pipe p-53	82	50	-0.14	0.07	0.26
Pipe p-52	85	50	0.27	0.14	0.95
Pipe p-62	100	25	0.14	0.28	9.14
Pipe p-50	101	50	-0.41	0.21	2.00
Pipe p-69	103	75	0.14	0.03	0.04
Pipe p-66	103	25	0.14	0.28	7.66
Pipe p-76	120	75	-3.87	0.88	18.14
Pipe p-61	137	25	-0.14	0.28	7.66
Pipe p-10	132	75	3.19	0.72	15.17
Pipe p-60	133	25	0.14	0.28	7.66
Pipe p-41	160	50	-1.40	0.71	23.71
Pipe p-49	144	50	0.14	0.07	0.26
Pipe p-33	152	75	-9.86	2.23	102.61
Pipe p-87	152	32	0.14	0.17	2.30
Pipe p-23	151	75	1.89	0.43	4.82
Pipe p-5	169	150	-0.14	0.01	0.00
Pipe p-34	179	75	-9.59	2.17	97.47
Pipe p-63	198	25	0.14	0.28	9.14
Pipe p-27	287	75	2.48	0.56	7.96
Pipe p-54	256	40	0.27	0.21	2.80
Pipe p-45	273	50	-1.62	0.83	26.10
Pipe p-12	296	75	3.11	0.70	14.42
Pipe p-78	461	75	0.41	0.09	0.28
Pipe P-95	77	40	0.54	0.43	10.12
Pipe P-96	47	40	0.27	0.21	2.80
Pipe P-97	8	50	-0.67	0.34	5.16
Pipe P-98	24	50	-0.94	0.48	9.62
Pipe P-99	154	50	-1.22	0.62	15.32
Pipe P-100	9	32	2.21	2.75	407.30
Pipe P-101	30	32	0.67	0.84	45.36
Pipe P-102	72	75	1.89	0.43	5.75
Pipe P-103	74	75	1.62	0.37	4.32
Pipe P-104	102	75	1.35	0.31	3.08
Pipe P-105	395	225	71.25	1.79	18.98
Pipe P-106	1,091	100	9.73	1.24	24.69
Pipe P-107	4	225	61.51	1.55	14.45
Pipe P-108	264	100	11.88	1.51	35.69
Pipe P-109	770	225	49.64	1.25	9.72
Pipe P-110	578	116	12.96	1.23	20.38
Pipe P-111	370	225	36.67	0.92	3.12
Pipe P-112	541	150	19.21	1.09	12.07
Pipe P-113	85	152	17.47	0.96	6.96
Pipe P-114	388	50	2.50	1.27	58.30
Pipe P-115	143	50	1.25	0.64	16.15
Pipe P-116	257	100	2.5	0.32	1.99
Pipe P-117	555	150	12.96	0.73	3.28

No. 13 Mbokonabera

Network Table	Network Table - Nodes									
Node ID	Elevation	Base Demand	Head	Effective Pressure	Static Pressure	Effective Pressure	Static Pressure			
Node ID	Re	esult of analysis	by using W	aterGEM		With	PRV			
	m	LPS	m m		m	m	m			
June J-1	30	0.14	100.98	70.84	102	65.84	42			
Junc J-2	30	0.14	101.41	71.27	102	66.27	42			
June J-3	5	0.14	45.33	40.25	127	35.25	67			
Junc J-4	5	0.14	45.33	40.24	127	35.24	67			
June J-5	5	0.14	45.32	40.24	127	35.24	67			
Junc J-6	5	0.14	45.32	40.24	127	35.24	67			
June J-7	30	0.14	100.48	70.34	102	65.34	42			
Junc J-8	30	0.14	100.48	70.34	102	65.34	42			
Junc J-9	30	0.14	100.48	70.34	102	65.34	42			
Junc J-10	10	0.14	51.85	41.77	122	36.77	62			
June J-11	10	0.14	51.86	41.77	122	36.77	62			
June J-12	30	0.14	99.77	69.63	102	64.63	42			
June J-13	10	0.14	51.91	41.83	122	36.83	62			
Junc J-14	10	0.14	51.82	41.73	122	36.73	62			
June J-15	10	0.14	51.83	41.74	122	36.74	62			
Junc J-16	5	0.14	45.32	40.24	127	35.24	67			
June J-17	20	0.14	64.09	44.01	112	39.01	52			
Junc J-18	20	0.14	63.05	42.96	112	37.96	52			
June J-19	43	0.14	54.48	11.95	90	6.95	30			
Junc J-20	43	0.14	53.64	11.11	90	6.11	30			
June J-21	5	0.14	45.47	40.39	127	35.39	67			
Junc J-22	5	0.14	45.45	40.37	127	35.37	67			
June J-23	45	0.14	59.95	14.92	87	9.92	27			
Junc J-24	45	0.14	59.46	14.43	87	9.43	27			
June J-25	5	0.14	45.32	40.24	127	35.24	67			
June J-26	23	0.14	63.85	40.77	109	35.77	49			
June J-27	23	0.14	63.85	40.77	109	35.77	49			
Junc J-28	23	0.14	66.13	43.55	110	38.55	50			
June J-29	23	0.14	65.77	43.18	110	38.18	50			
June J-30	30	0.14	101.06	70.92	102	65.92	42			
June J-31	35	0.14	61.81	26.76	97	21.76	37			
June J-32	35	0.14	61.75	26.69	97	21.69	37			
June J-33	20	0.14	64.09	44.00	112	39.00	52			
June J-34	5	0.14	46.62	41.53	127	36.53	67			
June J-35	5	0.14	46.52	41.44	127	36.44	67			
June J-36	23	0.14	66.66	44.07	110	39.07	50			
June J-37	50	0.14	90.05	39.97	82	34.97	22			
June J-38	50	0.14	90.01	39.93	82	34.93	22			
June J-39	33	0.14	61.83	29.27	100	24.27	40			
Junc J-40	33	0.14	61.81	28.75	99	23.75	39			
June J-41	30	0.14	62.83	32.76	102	27.76	42			
Junc J-42	25	0.14	63.02	37.94	107	32.94	47			
June J-43	33	0.14	61.76	28.71	99	23.71	39			
June J-44	20	0.14	64.48	44.39	112	39.39	52			
June J-45	15	0.14	51.84	36.76	117	31.76	57			
Junc J-46	15	0.14	51.90	36.83	117	31.83	57			
June J-47	10	0.14	47.55	37.47	122	32.47	62			
Junc J-48	7	0.14	47.27	40.19	125	35.19	65			
June J-49	23	0.14	64.95	41.86	109	36.86	49			
June J-50	34	0.14	61.73	27.67	98	22.67	38			
June J-51	36	0.14	61.73	25.68	96	20.68	36			
June J-52	10	0.14	47.54	37.46	122	32.46	62			
June J-53	12	0.14	52.05	39.97	120	34.97	60			
June J-54	47	0.14	62.23	15.20	85	10.20	25			
June J-55	50	0.14	62.24	12.21	82	7.21	22			

No. 13 Mbokonabera Network Table - Nodes

Network Table	Elevation	Base Demand	Head	Effective Pressure	Static Pressure	Effective	Static
Node ID	D	1. 6. 1.	1 ' 77	CENT.	Static Pressure	Pressure	Pressure
		esult of analysis					PRV
I I 50	m 20	LPS	m	m 70.24	m	m (5.24	m
June J-56	30	0.14	100.48	70.34	102	65.34	42
June J-57	5	0.14	46.91	41.83	127	36.83	67
June J-58	10 30	0.14	52.67	42.58	122	37.58	62 42
June J-59		0.00	107.46	77.30	102	72.30	22
June J-60	50	0.14	89.10	39.02	82	34.02	
Junc J-61 Junc J-62	50 30	0.14 0.14	89.09 62.29	39.01 32.23	82 102	34.01 27.23	22 42
	41	0.14	50.18	9.16	91	4.16	31
Junc J-63 Junc J-64	50	0.14	89.23	39.15	82	34.15	22
June J-65	60	0.14	89.23	29.14	72	24.13	12
June J-66	26	0.14	84.15	58.03	106	53.03	46
June J-67	18	0.14	84.13	66.00	114	61.00	54
June J-68	28	0.14	51.88	24.34	105	19.34	45
June J-69	5	0.14	46.11	41.02	103	36.02	67
June J-70	10	0.14	45.97	35.90	127	30.02	62
June J-71	20	0.14	45.46	25.41	112	20.41	52
June J-72	43	0.14	92.63	49.53	89	44.53	29
June J-73	39	0.14	93.93	54.82	93	49.82	33
June J-74	10	0.14	46.50	36.43	122	31.43	62
June J-75	5	0.14	45.79	40.71	127	35.71	67
June J-76	5	0.14	45.79	40.70	127	35.70	67
June J-77	38	0.14	49.98	12.46	95	7.46	35
June J-78	15	0.14	54.66	39.58	117	34.58	57
June J-79	55	0.14	92.58	37.50	77	32.50	17
Junc J-80	38	0.14	61.56	24.01	95	19.01	35
Junc J-81	45	0.14	61.54	16.51	87	11.51	27
Junc J-82	45	0.14	61.54	16.51	87	11.51	27
Junc J-83	50	0.14	61.73	11.71	82	6.71	22
Junc J-84	15	0.14	45.99	30.93	117	25.93	57
Junc J-85	10	0.14	47.27	37.19	122	32.19	62
Junc J-86	8	0.14	60.94	53.33	125	48.33	65
Junc J-87	50	0.14	90.01	39.93	82	34.93	22
Junc J-88	40	0.14	49.13	9.11	92	4.11	32
Junc J-89	30	0.14	106.61	76.46	102	71.46	42
Junc J-90	3	0.14	105.60	102.89	130	97.89	70
Junc J-91	45	0.14	55.84	10.82	87	5.82	27
June J-92	43	0.14	61.77	19.24	90	14.24	30
Junc J-93	50	0.14	90.28	40.20	82	35.20	22
Junc J-94	50	0.14	89.93	39.85	82	34.85	22
June J-95	5	0.14	45.32	40.24	127	35.24	67
Junc J-96	5	0.14	43.51	38.44	127	33.44	67
Junc J-97	60	0.14	107.33	47.24	72	42.24	12
Junc J-108	128	0.00	124.50	-3.49	4	-3.49	4
Junc J-109	81	9.73	97.56	16.53	51	16.53	51
Junc J-110	128	0.00	124.45	-3.55	4	-3.55	4
June J-111	100	11.88	115.02	14.99	32	14.99	32
June J-112	110	0.00	116.96	6.95	22	6.95	22
June J-113	75	12.96	105.19	30.13	57	30.13	57
Junc J-114	102	0.00	115.81	13.78	30	13.78	30
June J-115	88	0.00	109.28	21.24	44	21.24	44
Junc J-116	112	17.47	115.22	3.21	20	3.21	20
June J-117	75	2.50	86.66	11.63	57	11.63	57
Junc J-118	80	1.25	106.97	26.92	52	26.92	52
Junc J-119	65	2.5	108.77	43.68	67	43.68	67
Resvr R-2	132	#N/A	132	0	0	0.00	0

No. 13 Mbokonabera Network Table - Nodes

_	Network rable	: - INOUES						
	Node ID	Elevation	Base Demand	Head	Effective Pressure	Static Pressure	Effective Pressure	Static Pressure
ı		Re	esult of analysis	by using W		With	PRV	
ı		m	LPS	m	m	m	m	m

Static Head of at least 70m : Nodes to be covered with PRV

No.19 Tanuli & Mbua Valley Network Table - Links

Network Table - Links					
Link ID	Length	Diameter	Flow	Velocity	Unit Headloss
	m	mm	LPS	m/s	m/km
Pipe TMbVpipes-23	4	75	-0.98	0.22	1.05
Pipe TMbVpipes-19	5	75	0.84	0.19	0.79
Pipe TMbVpipes-29	6	50	1.68	0.86	20.48
Pipe TMbVpipes-16	7	75	4.48	1.01	17.49
Pipe TMbVpipes-1	7	100	11.48	1.46	24.61
Pipe TMbVpipes-7	7	75	7.42	1.68	44.52
Pipe TMbVpipes-26	8	50	1.12	0.57	9.68
Pipe TMbVpipes-78	8	100	-0.28	0.04	0.03
Pipe TMbVpipes-62	9	30	0.42	0.59	18.93
Pipe TMbVpipes-27	9	50	0.28	0.14	0.74
Pipe TMbVpipes-12	10	75	1.12	0.25	1.34
Pipe TMbVpipes-10	10	75	4.76	1.08	19.57
Pipe TMbVpipes-69	10	40	-0.14	0.11	0.60
Pipe TMbVpipes-28	10	50	0.14	0.07	0.21
Pipe TMbVpipes-18	12	75	8.40	1.90	56.02
Pipe TMbVpipes-58	12	25	0.28	0.57	21.72
Pipe TMbVpipes-24	12	75	-0.84	0.19	0.79
Pipe TMbVpipes-2	12	100	11.48	1.46	24.60
Pipe TMbVpipes-71	13	40	0.00	0.00	0.00
Pipe TMbVpipes-33	13	50	0.42	0.21	1.57
Pipe TMbVpipes-77	14	40	-0.28	0.22	2.20
Pipe TMbVpipes-45	14	40	0.70	0.56	12.01
Pipe TMbVpipes-4	15	75	-0.14	0.03	0.03
Pipe TMbVpipes-41	16	40	0.56	0.45	7.94
Pipe TMbVpipes-36	16 17	50 25	0.28	0.14 0.29	0.75 6.02
Pipe TMbVpipes-53	20	50	0.14	0.29	0.02
Pipe TMbVpipes-31 Pipe TMbVpipes-52	20	25	-0.14	0.07	6.02
Pipe TMbVpipes-52	22	75	-0.14	0.29	0.37
Pipe TMbVpipes-38	23	40	-2.52	2.01	128.82
Pipe TMbVpipes-49	25	25	0.14	0.29	6.02
Pipe TMbVpipes-13	27	75	0.98	0.22	1.05
Pipe TMbVpipes-6	28	75	7.28	1.65	42.98
Pipe TMbVpipes-61	29	30	-1.54	2.18	210.18
Pipe TMbVpipes-42	32	40	0.42	0.33	4.66
Pipe TMbVpipes-35	33	50	0.14	0.07	0.21
Pipe TMbVpipes-44	36	40	0.14	0.11	0.61
Pipe TMbVpipes-63	37	50	-1.40	0.71	14.63
Pipe TMbVpipes-70	37	50	-0.28	0.14	0.74
Pipe TMbVpipes-43	38	40	-0.14	0.11	0.61
Pipe TMbVpipes-57	42	50	-2.10	1.07	31.00
Pipe TMbVpipes-9	44	75	6.86	1.55	38.50
Pipe TMbVpipes-34	46	50	0.70	0.36	4.05
Pipe TMbVpipes-76	52	40	2.94	2.34	171.30
Pipe TMbVpipes-32	66	25	-0.14	0.29	6.02
Pipe TMbVpipes-56	142	50	-2.24	1.14	34.93
Pipe TMbVpipes-72	82	32	0.14	0.17	1.81
Pipe TMbVpipes-22	78	75	-1.12	0.25	1.34
Pipe TMbVpipes-20	83	75	-2.10	0.48	4.30
Pipe TMbVpipes-54	83	25	-0.14	0.29	6.02
Pipe TMbVpipes-14	85	75	0.14	0.03	0.03
Pipe TMbVpipes-40	85	40	-0.70	0.56	12.03
Pipe TMbVpipes-8	88	75	7.14	1.62	41.46
Pipe TMbVpipes-60	115	30	0.14	0.20	2.48
Pipe TMbVpipes-59	102	20	0.14	0.45	17.84
Pipe TMbVpipes-51	99	25	0.84	1.71	166.37
Pipe TMbVpipes-15	108	75	4.62	1.05	18.51
Pipe TMbVpipes-48	110	30	-0.14	0.20	2.48

No.19 Tanuli & Mbua Valley
Network Table - Links

Network Table - Links							
Link ID	Length	Diameter	Flow	Velocity	Unit Headloss		
	m	mm	LPS	m/s	m/km		
Pipe TMbVpipes-30	121	50	1.26	0.64	12.02		
Pipe TMbVpipes-39	122	40	-2.38	1.89	115.89		
Pipe TMbVpipes-47	128	40	0.14	0.11	0.61		
Pipe TMbVpipes-73	152	32	0.14	0.17	1.81		
Pipe TMbVpipes-55	126	20	-0.14	0.45	17.84		
Pipe TMbVpipes-50	124	25	0.42	0.86	46.02		
Pipe TMbVpipes-25	136	50	-0.14	0.07	0.21		
Pipe TMbVpipes-64	149	50	0.98	0.50	7.56		
Pipe TMbVpipes-74	150	50	0.28	0.14	0.74		
Pipe TMbVpipes-65	152	40	-2.80	2.23	156.50		
Pipe TMbVpipes-68	162	25	1.12	2.28	282.68		
Pipe TMbVpipes-17	225	75	1.82	0.41	3.30		
Pipe TMbVpipes-21	226	75	-1.96	0.44	3.78		
Pipe TMbVpipes-66	332	75	-0.14	0.03	0.03		
Pipe TMbVpipes-67	435	75	-0.70	0.16	0.56		
Pipe TMbVpipes-3	644	100	-0.70	0.09	0.14		
Pipe P-1	28	40	0.56	0.45	7.94		
Pipe P-3	91	75	6.72	1.52	37.06		
Pipe P-5	143	75	6.30	1.43	32.88		
Pipe P-6	76	75	6.02	1.36	30.23		
Pipe P-7	52	50	-0.56	0.28	2.67		
Pipe P-8	74	50	-0.84	0.43	5.67		
Pipe P-9	21	25	0.56	1.14	78.39		
Pipe P-11	182	40	0.42	0.33	4.66		
Pipe P-13	11	40	0.28	0.22	2.20		
Pipe P-14	181	40	0.14	0.11	0.61		
Pipe P-16	39	200	11.48	0.37	0.65		
Pipe P-17	1,179	200	49.18	1.57	9.55		
Pipe P-19	752	200	44.88	1.43	8.06		
Pipe P-20	1,013	200	28.08	0.89	3.38		
Pipe P-21	100	100	4.30	0.55	3.06		
Pipe P-22	100	100	16.80	2.14	38.21		
Pipe P-23	43	150	16.60	0.94	5.19		
Pipe P-24	614	150	5.00	0.28	0.56		
Pipe P-25	597	200	11.60	0.37	0.66		
Pipe P-26	73	100	3.08	0.39	1.65		

No.19 Tanuli & Mbua Valley Network Table - Nodes

Network Table	e - Nodes						
Node ID	Elevation	Base Demand	Head	Effective Pressure	Static Pressure	Effective Pressure	Static Pressure
1100012	Re	esult of analysis	by using W	aterGEM		With	PRV
	m	LPS	m	m	m	m	m
Junc J-1	30	0.14	54.63	24.58	80	24.58	45
June J-1 June J-2	30	0.14	54.63	24.58	80	24.58	45
June J-3	60	0.14	88.11	28.05	50	28.05	15
June J-4	60	0.14	88.10	28.05	50	28.05	15
June J-5	58	0.14	67.85	9.83	52	9.83	17
June J-6	58	0.14	67.73	9.71	52	9.71	17
June J-7	60	0.14	68.71	8.69	50	8.69	15
Junc J-8	60	0.14	68.60	8.58	50	8.58	15
Junc J-9	60	0.00	88.93	28.88	50	28.88	50
Junc J-10	60	0.00	88.77	28.71	50	28.71	15
June J-11	60	0.14	87.79	27.74	50	27.74	15
June J-12	15	0.14	38.72	23.67	95	23.67	60
June J-13	15	0.14	38.65	23.60	95	23.60	60
June J-14	15	0.14	54.37	39.30	95	39.30	60
June J-14 June J-15	15	0.14	54.37	39.30	95	39.30	60
					95		
June J-16	20	0.14	45.27	25.22		25.22	55
June J-17	20	0.14	45.11	25.06	90	25.06	55
Junc J-18	60	0.14	67.72	7.70	50	7.70	15
June J-19	50	0.14	70.89	20.85	60	20.85	25
June J-20	50	0.14	70.88	20.84	60	20.84	25
June J-21	50	0.14	70.71	20.66	60	20.66	25
Junc J-22	14	0.14	19.99	5.98	96	5.98	61
June J-23	15	0.14	20.00	4.99	95	4.99	60
June J-24	61	0.14	67.72	6.70	49	6.70	14
June J-25	60	0.14	77.88	17.84	50	17.84	15
June J-26	60	0.14	77.62	17.58	50	17.58	15
June J-27	30	0.14	54.62	24.57	80	24.57	45
June J-27 June J-28	60	0.00	89.24	29.18	50	29.18	50
June J-29	13	0.14	19.99	6.98	97	6.98	62
June J-30	54	0.14	70.67	16.63	56	16.63	21
June J-31	50	0.14	70.65	20.60	60	20.60	25
June J-32	15	0.14	54.34	39.27	95	39.27	60
June J-33	30	0.14	54.74	24.69	80	24.69	45
Junc J-34	31	0.14	54.56	23.52	79	23.52	44
June J-35	10	0.14	20.01	9.99	100	9.99	65
June J-36	12	0.14	20.01	7.99	98	7.99	63
June J-37	48	0.14	55.95	7.94	62	7.94	27
June J-38	47	0.14	55.83	8.81	63	8.81	28
June J-39	19	0.14	80.68	61.56	91	61.56	56
June J-40	18	0.14	80.58	62.45	92	62.45	57
June J-40 June J-41	16	0.14	20.03	4.02	92	4.02	59
June J-41 June J-42	18	0.14	20.03	2.02	92	2.02	57
June J-43	18	0.14	80.56	62.44	92	62.44	57
June J-44	16	0.14	20.01	4.01	94	4.01	59
June J-45	60	0.14	65.65	5.64	50	5.64	15
June J-46	41	0.14	20.59	-20.37	69	-20.37	34
June J-47	41	0.14	20.44	-20.52	69	-20.52	34
June J-48	59	0.14	70.85	11.83	51	11.83	16
Junc J-49	60	0.14	86.57	26.52	50	26.52	15
June J-50	36	0.14	53.36	17.32	74	17.32	39
June J-51	19	0.14	39.26	20.22	91	20.22	56
June J-52	45	0.14	55.68	10.66	65	10.66	30
June J-53	52	0.14	70.66	18.62	58	18.62	23
	45						30
June J-54		0.14	55.65	10.63	65	10.63	
June J-55	45	0.14	55.65	10.63	65	10.63	30

No.19 Tanuli & Mbua Valley Network Table - Nodes

Network Table	- Nodes						
Node ID	Elevation	Base Demand	Head	Effective Pressure	Static Pressure	Effective Pressure	Static Pressure
	Re	esult of analysis	by using W	aterGEM		With	PRV
	m	LPS	m	m	m	m	m
June J-56	25	0.14	46.58	21.53	85	21.53	50
June J-57	65	0.14	82.92	17.88	45	17.88	10
June J-58	63	0.14	81.23	18.20	47	18.20	12
June J-59	60	0.14	88.65	28.59	50	28.59	15
June J-60	55	0.14	79.68	24.63	55	24.63	20
Junc J-61	20	0.14	19.60	-0.40	90	-0.40	55
June J-62	50	0.14	51.53	1.53	60	1.53	25
June J-63	27	0.14	20.17	-6.82	83	-6.82	48
Junc J-64	23	0.14	20.02	-2.97	87	-2.97	52
June J-65	68	0.00	89.04	21.00	42	21.00	42
June J-66	45	0.14	55.59	10.57	65	10.57	30
June J-67	10	0.14	70.03	59.91	100	59.91	65
June J-68	27	0.14	70.53	43.45	83	43.45	48
June J-69	60	0.14	70.85	10.83	50	10.83	15
June J-70	21	0.14	21.03	0.03	89	0.03	54
June J-71	15	0.14	44.83	29.77	95	29.77	60
June J-72	59	0.14	75.79	16.76	51	16.76	16
June J-73	15	0.14	37.52	22.48	95	22.48	60
June J-74	15	0.14	44.84	29.78	95	29.78	60
June J-75	46	0.14	66.27	20.23	64	20.23	29
June J-76	25	0.14	54.27	29.21	85	29.21	50
June J-77	53	0.14	73.19	20.15	57	20.15	22
June J-78	55	0.14	72.91	17.88	55	17.88	20
June J-79	63	0.14	80.68	17.64	47	17.64	12
Junc J-80	12	0.14	86.40	74.25	98	74.25	63
June J-81	10	0.14	38.69	28.63	100	28.63	65
Junc J-82	5	0.14	54.36	49.27	105	49.27	70
June J-83	10	0.14	88.01	77.86	100	77.86	65
Junc J-84	36	0.14	54.34	18.30	74	18.30	39
June J-85	46	0.14	53.49	7.48	64	7.48	29
June J-86	46	0.14	53.47	7.45	64	7.45	29
Junc J-87	67	0.00	89.26	21.81	43	21.81	43
Junc J-88	95	0.00	98.75	3.74	15	3.74	15
Junc J-89	80	0.00	92.69	12.44	30	12.44	30
Junc J-90	85	4.30	98.44	13.41	25	13.41	25
Junc J-91	72	16.80	88.87	16.83	38	16.83	38
Junc J-92	50	5.00	88.69	38.62	60	38.62	60
Junc J-93	48	11.60	88.65	40.57	62	40.57	62
Resvr R-1	110	#N/A	110.00	0.00	0	0.00	0

: Static Head of at least 70m : Nodes to be covered with PRV

No.22 Kombito Borderline, Jakson Ridge & Bura Network Table - Links

Network Table -					
Link ID	Length	Diameter	Flow	Velocity	Unit Headloss
	m	mm	LPS	m/s	m/km
Pipe p-1420	3	100	-0.54	0.07	0.12
Pipe p-1835	3	75	0.06	0.01	0.01
Pipe p-683	3	75	0.06	0.01	0.01
Pipe p-1831	3	100	0.12	0.02	0.01
Pipe p-1830	3	75	0.06	0.01	0.01
Pipe p-458	2	100	-1.29	0.16	0.59
Pipe p-1834	3	75	0.06	0.01	0.01
Pipe p-1805	3	150	13.15	0.74	5.98
Pipe p-1843	2	63	0.36	0.12	0.52
Pipe p-1743	2	150	-1.77	0.10	0.14
Pipe p-1839	2	50	1.09	0.56	12.56
Pipe p-1742	2	50	-0.10	0.05	0.14
Pipe p-1840	2	50	1.09	0.56	12.57
Pipe p-1842	2	63	0.36	0.12	0.52
Pipe p-409	2	100	-0.42	0.05	0.07
Pipe p-678	2	75	-9.00	2.04	86.74
Pipe p-1812	3	150	-10.68	0.60	4.07
Pipe p-451	2	100	-0.42	0.05	0.07
Pipe p-1832	5	75	-2.15	0.49	6.11
Pipe p-177	5	75	-9.84	2.23	102.32
Pipe p-679	4	75	-9.12	2.06	88.89
Pipe p-161	5	150	1.51	0.09	0.11
Pipe p-1007	5	50	0.36	0.18	1.61
Pipe p-1018	6	63	0.13	0.04	0.08
Pipe p-1841	8	32	-0.23	0.28	6.03
Pipe p-1036	6	50	0.48	0.24	2.74
Pipe p-457	6	100	-0.72	0.09	0.20
Pipe p-1009	6	50	-2.04	1.04	39.95
Pipe p-445	6	100	-3.03	0.39	2.84
Pipe p-1019	8	50	0.12	0.06	0.21
Pipe p-1037	8	50	0.36	0.18	1.61
Pipe p-1027	9	100	-0.45	0.06	0.08
Pipe p-1035	9	50	0.12	0.06	0.21
Pipe p-1829	10	32	0.11	0.13	1.53
Pipe p-1836	10	63	-0.48	0.15	0.89
Pipe p-449	10	100	2.55	0.32	2.06
Pipe p-455	10	100	-0.15	0.02	0.01
Pipe p-936	11	50	0.48	0.24	2.74
Pipe p-1026	11	100	-0.57	0.07	0.13
Pipe p-1034	11	50	0.24	0.12	0.76
Pipe p-1028	11	100	-1.20	0.15	0.51
Pipe p-165	13	150	-10.56	0.60	3.99
Pipe p-448	12	100	-1.53	0.20	0.81
Pipe p-1810	15	150	2.11	0.12	0.20
Pipe p-1025	13	50	0.36	0.12	1.61
Pipe p-1809	13	150	-10.68	0.60	4.07
Pipe p-1006	14	50	0.60	0.31	4.15
Pipe p-1020	13	50	-0.23	0.12	0.69
Pipe p-1833	16	63	0.49	0.16	0.94
Pipe p-1005	16	50	0.12	0.06	0.21
Pipe p-1837	19	32	-0.11	0.13	1.50
Pipe p-1045	18	100	0.36	0.05	0.06
Pipe p-450	19	100	1.23	0.16	0.53
Pipe p-680	20	75	0.12	0.10	0.03
Pipe p-1029	21	100	-0.42	0.05	0.07
Pipe p-1029	24	150	-0.42	0.03	0.07
	25	40	-0.72	0.04	2.25
Pipe p-1186	54	20	0.12	0.19	18.27
Pipe p-1441	54	20	0.12	0.58	18.27

Attachment-3 Attachment-3

No.22 Kombito Borderline, Jakson Ridge & Bura

Link ID	Length	Diameter	Flow	Velocity	Unit Headloss
	m	mm	LPS	m/s	m/km
Pipe p-1014	31	50	0.12	0.06	0.2
Pipe p-682	33	75	-2.62	0.59	8.8
ipe p-166	33	150	-10.68	0.60	4.0
Pipe p-1440	36	40	0.12	0.10	0.0
ipe p-442	35	100	-0.12	0.02	0.0
Pipe p-1442	36	32	0.12	0.15	1.5
Pipe p-1017	39	63	-0.96	0.31	3.2
Pipe p-453	45	100	-0.51	0.06	0.
Pipe p-163	49	150	-10.44	0.59	3.
Pipe p-1022	59	50	0.12	0.06	0.3
Pipe p-1827	49	20	0.12	0.38	18.
Pipe p-454	50	100	-0.27	0.03	0.0
Pipe p-1815	53	50	0.24	0.12	0.
Pipe p-1043	53	100	-0.12	0.02	0.0
Pipe p-1460	55	32	0.12	0.15	1.5
Pipe p-1811	54	150	1.99	0.11	0.
Pipe p-1894	61	40	-0.24	0.11	2.:
ripe p-1894 Pipe p-444	66	100	-2.91	0.19	2.0
Pipe p-1008	67	50	-1.92	0.98	35.
Pipe p-1669	70	100	0.45	0.06	0.0
Pipe p-1816	75	40	-0.12	0.10	0.
	74	100	0.43	0.10	0.0
Pipe p-392	79	150	13.03	0.03	5.5
Pipe p-1806	87	50		0.74	2.
Pipe p-1004	92	40	0.48		
Pipe p-1185	95		-0.12	0.10	0.0
Pipe p-1042		100	0.12	0.02	0.0
Pipe p-1296	111	25	0.12	0.24	6.
Pipe p-1038	98	50	-0.12	0.06	0.1
Pipe p-1845	101	50	0.12	0.06	0.1
Pipe p-1994	108	150	-0.12	0.01	0.0
Pipe p-1903	135	32	0.12	0.15	1.
Pipe p-456	109	100	-0.60	0.08	0.
Pipe p-1023	109	50	-0.12	0.06	0.3
Pipe p-1817	137	40	0.00	0.00	0.0
Pipe p-484	111	100	-0.12	0.02	0.0
Pipe p-1828	162	20	0.48	1.53	238.
Pipe p-1033	119	50	0.00	0.00	0.0
Pipe p-443	167	100	2.67	0.34	2.:
Pipe p-1024	127	50	-0.12	0.06	0.3
Pipe p-1826	133	20	0.24	0.76	65.
Pipe p-1016	163	32	-0.12	0.15	1.3
Pipe p-935	139	50	0.36	0.18	1.0
Pipe p-1030	140	50	0.12	0.06	0.3
Pipe p-1469	191	100	0.19	0.02	0.0
ipe p-1701	153	150	0.12	0.01	0.0
Pipe p-1772	164	75	-8.28	1.87	74.
Pipe p-1844	193	50	0.12	0.06	0.
Pipe p-1003	168	100	0.12	0.02	0.0
Pipe p-1807	175	150	12.91	0.73	5.
Pipe p-452	190	100	-0.87	0.11	0.:
Pipe p-1459	206	40	0.24	0.19	2.
Pipe p-1808	210	150	12.91	0.73	5.
Pipe p-431	227	100	1.03	0.13	0.
Pipe p-1838	231	50	-1.44	0.73	20.
Pipe p-1814	252	150	0.00	0.00	0.0
Pipe p-1614	255	150	1.63	0.09	0.
Pipe p-1032	270	50	0.12	0.09	0.2
ripe p-1032 Pipe p-168	270	150	-9.96	0.06	3.:

No.22 Kombito Borderline, Jakson Ridge & Bura

Network Table - 1					
Link ID	Length	Diameter	Flow	Velocity	Unit Headloss
	m	mm	LPS	m/s	m/km
Pipe p-160	396	50	0.12	0.06	0.21
Pipe p-1640	366	50	0.24	0.12	0.76
Pipe p-1670	457	100	-1.41	0.18	0.69
Pipe p-1993	814	150	-0.48	0.03	0.01
Pipe p-1470	651	40	0.00	0.00	0.00
Pipe p-1700	1,016	150	0.24	0.01	0.00
Pipe p-569	1,018	100	-0.31	0.04	0.04
Pipe P-76	4	200	-13.87	0.44	1.63
Pipe P-79	60	25	-0.24	0.49	22.24
Pipe P-80	32	25	-0.36	0.73	47.13
Pipe P-85	55	100	0.00	0.00	0.00
Pipe P-90	21	150	0.00	0.00	0.00
Pipe P-91	171	100	0.07	0.01	0.00
Pipe P-93	10	150	0.00	0.00	0.00
Pipe P-95	11	150	0.48	0.03	0.01
Pipe P-96	14	300	13.87	0.20	0.23
Pipe P-97	9	152.4	0.36	0.02	0.01
Pipe P-98	153	75	-5.76	1.30	37.97
Pipe P-99	33	75	-6.12	1.39	42.48
Pipe P-101	17	50	-1.08	0.55	12.32
Pipe P-102	63	50	-0.60	0.31	4.15
Pipe P-103	65	50	-0.84	0.43	7.73
Pipe P-104	31	50	-0.12	0.06	0.21
Pipe P-105	5	50	0.24	0.12	0.76
Pipe P-106	46	40	-0.12	0.10	0.62
Pipe P-107	60	40	0.00	0.00	0.00
Pipe P-108	78	150	-13.27	0.75	6.08
Pipe P-109	49	150	-13.75	0.78	6.50
Pipe P-110	139	50	0.36	0.18	1.61
Pipe P-111	42	50	0.12	0.06	0.21
Pipe P-112	4	75	8.88	2.01	84.61
Pipe P-113	161	75	8.64	1.96	80.42
Pipe P-114	118	32	0.36	0.45	14.16
Pipe P-115	14	32	0.12	0.15	1.85

Attachment-3 Attachment-3

No.22 Kombito Borderline, Jakson Ridge & Bura

Network Table	- Nodes	.,					
Node ID	Elevation	Base Demand	Head	Effective Pressure	Static Pressure	Effective Pressure	Static Pressure
	D	esult of analysis	by using W	otorGEM	-	With	PRV
Node ID	m	LPS	m m	m	m	m	m
June J-27	41	0.12	44.61	3.61	43	3.61	43
June J-28	41	0.12	44.62	3.61	43	3.61	43
June J-45	15	0.12	44.92	29.86	69	29.86	69
Junc J-46	15	0.12	44.92	29.86	69	29.86	69
June J-53	15	0.12	44.56	29.50	69	29.50	69
June J-54	15	0.12	44.56	29.50	69	29.50	69
June J-55	73	0.12	83.20	10.18	11	10.18	11
June J-56	73	0.12	83.18	10.16	11	10.16	11
Junc J-72	25	0.12	44.77	19.73	59	19.73	59
Junc J-73	25	0.12	44.77	19.73	59	19.73	59
Junc J-108	54	0.12	80.47	26.42	30	26.42	30
Junc J-109	54	0.12	80.47	26.42	30	26.42	30
Junc J-114	15	0.12	44.95	29.89	69	29.89	69
June J-115	15	0.00	44.92	29.86	69	29.86	69
Junc J-122	15	0.00	44.90	29.84	69	29.84	69
June J-152	43	0.00	44.61	1.61	41	1.61	41
June J-153	43	0.00	44.61	1.61	41	1.61	41
June J-201	30	0.12	77.87	47.78	54	47.78	54
June J-202	30	0.12	78.08	47.98	54	47.98	54
June J-203	51	0.00	80.42	29.36	33	29.36	33
Junc J-204	51	0.00	80.43	29.37	33	29.37	33
Junc J-226	43	0.00	44.61	1.61	41	1.61	41
June J-323	15	0.12	44.89	29.83	69	29.83	69
June J-333	30	0.00	78.44	48.35	54	48.35	54
June J-334	30	0.12	79.00	48.91	54	48.91	54
June J-387	56	0.12	80.44	24.39	28	24.39	28
Junc J-388	56	0.12	80.44	24.39	28	24.39	28
Junc J-389	25	0.12	49.79	24.74	59	24.74	59
June J-390	25	0.12	49.78	24.73	59	24.73	59 69
Junc J-496 Junc J-499	15 15	0.12 0.12	44.90 44.90	29.84 29.84	69	29.84 29.84	69
June J-499 June J-502	16	0.12	44.55	28.50	69 68	28.50	68
June J-503	16	0.12	44.54	28.48	68	28.48	68
June J-523	15	0.12	44.56	29.50	69	29.50	69
June J-533	20	0.12	52.18	32.12	64	32.12	64
June J-534	20	0.12	52.43	32.36	64	32.36	64
June J-563	18	0.12	45.19	27.14	66	27.14	66
June J-564	18	0.12	45.21	27.16	66	27.16	66
Junc J-586	45	0.12	44.47	-0.53	39	-0.53	39
June J-593	15	0.12	44.89	29.83	69	29.83	69
Junc J-691	16	0.12	44.52	28.47	68	28.47	68
June J-715	42	0.12	44.61	2.61	42	2.61	42
June J-772	18	0.12	44.56	26.50	66	26.50	66
June J-773	20	0.12	44.55	24.50	64	24.50	64
June J-777	15	0.12	44.91	29.85	69	29.85	69
Junc J-802	25	0.12	44.76	19.72	59	19.72	59
Junc J-806	30	0.12	44.65	14.62	54	14.62	54
June J-807	35	0.12	44.63	9.61	49	9.61	49
Junc J-812	15	0.12	44.55	29.49	69	29.49	69
June J-850	48	0.12	80.35	32.29	36	32.29	36
June J-851	48	0.12	80.32	32.26	36	32.26	36
June J-859	20	0.12	44.56	24.51	64	24.51	64
Junc J-860	21	0.12	44.55	23.50	63	23.50	63
June J-863	35	0.12	44.62	9.60	49	9.60	49
June J-865	64	0.12	80.23	16.20	20	16.20	20

No.22 Kombito Borderline, Jakson Ridge & Bura Network Table - Nodes

Node ID								
Node ID		Elevation	Base Demand	Head	Effective Pressure	a	Effective	Static
Node D	Node ID					Static Pressure	Pressure	Pressure
Node D		Re	esult of analysis	by using W	aterGEM		With	PRV
June J. 866 65 0.12 80.28 15.25 19 15.25 June J. 1866 65 0.12 80.28 15.25 19 15.25 June J. 1873 15 0.12 44.88 29.82 69 29.82 June J. 1883 50 0.12 80.48 30.42 34 30.42 34 30.42 June J. 1884 48 0.12 80.48 32.42 36 32.42 June J. 1884 48 0.12 80.48 32.42 36 32.42 June J. 1885 50 0.12 43.62 18.56 59 18.60 June J. 1914 25 0.12 43.62 18.58 59 18.56 June J. 1914 25 0.12 43.62 18.58 59 18.58 June J. 1959 30 0.12 78.44 48.34 54 48.34 June J. 1959 30 0.12 78.48 48.28 54 48.28 June J. 1959 30 0.12 78.38 48.28 54 48.28 June J. 1959 38 0.12 49.50 11.48 46 11.48 June J. 1000 43 0.12 49.50 64.8 41 66.48 June J. 1000 43 0.12 49.50 64.8 41 66.48 June J. 1007 56 14 0.12 44.54 30.48 70 30.48 June J. 1056 14 0.12 44.54 32.48 72 32.48 June J. 1057 12 0.12 44.54 32.48 72 32.48 June J. 1057 12 0.12 44.54 32.48 72 32.48 June J. 1085 30 0.12 77.55 47.46 54 47.46 June J. 1086 30 0.12 77.55 47.46 54 47.46 June J. 1166 31 0.12 78.09 46.99 53 46.99 June J. 1166 31 0.12 78.14 43.30 49 49 43.06 June J. 1166 35 0.12 78.14 43.30 49 43.06 49 43.06 June J. 1166 35 0.12 78.14 43.30 49 43.06 June J. 1222 32 0.12 44.41 12.39 52 12.39 June J. 1248 20 0.12 6.29 -11.69 66 -11.69 June J. 1248 20 0.12 6.29 -11.69 66 -11.69 June J. 1248 20 0.12 43.43 19.39 60 19.39 60 19.39 June J. 1248 20 0.12 43.43 19.39 60 19.39 60 June J. 1248 20 0.12 43.49 19.39 60 44 13.69 June J. 1249 22 22 0.12 43.02 19.98 59 19.98 June J. 1249 25 0.12 43.00 13.88 54 13.88 June J. 1289 50 0.12 77.61 27.55 34 27.55 June J. 1299 24 0.12 43.60 13.88 33.52 June J. 1299 24 0.12 43.60 33.88 54 13.88 June J. 1299 24 0.12 43.60 33.88 54 13.88 54 13.88 June J. 1299 32 0.02 6.28 13.69 64 13.69 64 13.69 13.88 June J. 1299 32 0.02 6.28 13.69 64 13.69 64 13.69 64 June J. 1299 32 0.02 6.28 13.69 64 13.69 64 13.69 64 June J. 1299 32 0.02 6.28 9.13.69 64 13.69 64 13.69 64 June J. 1299 32 0.02 6.28 9.13.69 64 13.69 64 13.69 64 June J. 1299 32 0.02 6.28 9.13.69 64 13.69 64 13.69 64 June J. 1299 32 0.02 6.28 9.13.69 64 13.69 64 13.69 64 13.69 64 13.69 64 13.69 64 13.69 64 13.69 64 13.69 64 13.69 64	Node ID					m	m	m
Janc J. 1873								19
Jame J-1883						69		69
Janc J. 1884								34
June J-1913								36
Janc J-1914 2-5								59
Junc J-958 30								59
Junc J-1996 30								54
Junc J-996								54
June 1-1999 38								69
Inic 1-1000								46
June J-1056								41
June J-1057 12								70
Junc J-1085 30								70
June J-1086 30								54
June J-1165								54
Junc J-1166 35 0.12 78.14 43.06 49 43.06 49 Junc J-1223 32 0.12 44.41 12.39 52 12.39 39 Junc J-1223 24 0.12 43.43 19.39 60 19.39 60 Junc J-1247 18 0.12 6.29 -11.69 66 -11.69 66 Junc J-1248 20 0.12 6.28 -13.69 64 -13.69 67 67 67 67 67 67 67								53
Junc J-1222 32								53 49
Junc J-1223 24 0.12 43.43 19.39 60 19.39 Junc J-1247 18 0.12 6.29 -11.69 66 -11.69 6 Junc J-1248 20 0.12 6.28 -13.69 64 -13.69 6 Junc J-1289 50 0.12 77.61 27.55 34 27.55 Junc J-1290 44 0.12 77.58 33.52 40 33.52 Junc J-1291 25 0.12 45.02 19.98 59 19.98 Junc J-1292 22 0.12 45.02 19.98 59 19.98 Junc J-1303 30 0.12 6.29 -13.69 64 -13.69 6 Junc J-1303 30 0.12 43.90 13.88 54 13.88 Junc J-1304 24 0.12 43.84 19.80 60 19.80 Junc J-1404 29 0.12 43.61 14.58 55 14.58								52
Junc J-1247 18 0.12 6.29 -11.69 66 -11.69 6 Junc J-1248 20 0.12 6.28 -13.69 64 -13.69 6 Junc J-1289 50 0.12 77.61 27.55 34 27.55 Junc J-1290 44 0.12 77.58 33.52 40 33.52 Junc J-1291 25 0.12 45.02 19.98 59 11.99 Junc J-1293 20 0.12 6.29 -13.69 64 -13.69 Junc J-1303 30 0.12 43.90 13.88 54 13.88 Junc J-1304 24 0.12 43.84 19.80 60 19.80 Junc J-1395 48 0.12 43.61 14.58 55 14.58 Junc J-1404 29 0.12 43.61 14.58 55 14.58 Junc J-1414 28 0.12 35.11 7.09 56 7.09 Junc J-1440 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
Junc J-1248 20 0.12 6.28 -13.69 64 -13.69 6 Junc J-1289 50 0.12 77.61 27.55 34 27.55 34 27.55 33.52 40 32.29 42 42 42								60
Junc J-1289 50 0.12 77.61 27.55 34 27.55 Junc J-1290 44 0.12 77.58 33.52 40 33.52 Junc J-1291 25 0.12 45.02 19.98 59 19.98 Junc J-1292 22 0.12 45.02 22.97 62 22.97 62 Junc J-1293 20 0.12 62.9 -13.69 64 -13.69 64 Junc J-1304 24 0.12 43.90 13.88 54 13.88 Junc J-1304 24 0.12 43.84 19.80 60 19.80 Junc J-1305 48 0.12 80.04 31.98 36 31.98 Junc J-1404 29 0.12 43.61 14.58 55 14.58 Junc J-1413 30 0.12 36.01 6.00 54 6.00 Junc J-1414 28 0.12 35.11 7.09 56 7.09 Junc J-1440								66
Junc J-1290 44 0.12 77.58 33.52 40 33.52 Junc J-1291 25 0.12 45.02 19.98 59 19.98 Junc J-1292 22 0.12 45.02 22.97 62 22.97 Junc J-1293 20 0.12 6.29 -13.69 64 -13.69 Junc J-1303 30 0.12 43.90 13.88 54 13.88 Junc J-1304 24 0.12 43.84 19.80 60 19.80 Junc J-1404 29 0.12 43.61 14.58 55 14.58 Junc J-1404 29 0.12 35.11 7.09 56 7.09 Junc J-1413 30 0.12 36.01 6.00 54 6.00 Junc J-1440 28 0.12 35.11 7.09 56 7.09 Junc J-1440 25 0.12 64.54 36.47 56 36.47 Junc J-1448 10 0.12								64
Junc J-1291 25 0.12 45.02 19.98 59 19.98 Junc J-1292 22 0.12 45.02 22.97 62 22.97 62 Junc J-1293 20 0.12 6.29 -13.69 64 -13.69 6 Junc J-1303 30 0.12 43.90 13.88 54 13.88 Junc J-1304 24 0.12 43.84 19.80 60 19.80 6 Junc J-1395 48 0.12 80.04 31.98 36 31.98 Junc J-1404 29 0.12 43.61 14.58 55 14.58 Junc J-1413 30 0.12 36.01 6.00 54 6.00 Junc J-1414 28 0.12 35.11 7.09 56 7.09 Junc J-1441 28 0.12 64.58 39.51 59 39.51 Junc J-1441 28 0.12 64.54 36.47 56 36.47								34
Junc J-1292 22 0.12 45.02 22.97 62 22.97 6 Junc J-1293 20 0.12 6.29 -13.69 64 -13.69 64 Junc J-1303 30 0.12 43.90 13.88 54 13.88 Junc J-1304 24 0.12 43.84 19.80 60 19.80 Junc J-1395 48 0.12 80.04 31.98 36 31.98 Junc J-1404 29 0.12 43.61 14.58 55 14.58 Junc J-1414 28 0.12 36.01 6.00 54 6.00 Junc J-1414 28 0.12 35.11 7.09 56 7.09 Junc J-1440 25 0.12 64.58 39.51 59 39.51 Junc J-1448 10 0.12 64.54 36.47 56 36.47 Junc J-1448 10 0.12 79.53 74.38 79 74.38 Junc J-1460								40
Junc J-1293 20 0.12 6.29 -13.69 64 -13.69 6 Junc J-1303 30 0.12 43.90 13.88 54 13.88 Junc J-1304 24 0.12 43.84 19.80 60 19.80 Junc J-1395 48 0.12 80.04 31.98 36 31.98 Junc J-1404 29 0.12 43.61 14.58 55 14.58 Junc J-1413 30 0.12 36.01 6.00 54 6.00 Junc J-1414 28 0.12 35.11 7.09 56 7.09 Junc J-1440 25 0.12 64.58 39.51 59 39.51 Junc J-1440 25 0.12 64.58 39.51 59 39.51 Junc J-1441 28 0.12 64.58 39.51 59 39.51 Junc J-1460 5 0.12 79.63 69.49 74 69.49 Junc J-1549 10								59
Junc J-1303 30 0.12 43.90 13.88 54 13.88 Junc J-1304 24 0.12 43.84 19.80 60 19.80 Junc J-1395 48 0.12 80.04 31.98 36 31.98 Junc J-1404 29 0.12 43.61 14.58 55 14.58 Junc J-1413 30 0.12 36.01 6.00 54 6.00 Junc J-1414 28 0.12 35.11 7.09 56 7.09 Junc J-1440 25 0.12 64.58 39.51 59 39.51 Junc J-1441 28 0.12 64.54 36.47 56 36.47 Junc J-1448 10 0.12 44.54 34.47 74 34.47 Junc J-1459 10 0.12 79.63 69.49 74 69.49 Junc J-1460 5 0.12 79.53 74.38 79 74.38 Junc J-1511 24 0.12								62
Junc J-1304 24 0.12 43.84 19.80 60 19.80 Junc J-1395 48 0.12 80.04 31.98 36 31.98 Junc J-1404 29 0.12 43.61 14.58 55 14.58 Junc J-1413 30 0.12 36.01 6.00 54 6.00 Junc J-1414 28 0.12 35.11 7.09 56 7.09 Junc J-1440 25 0.12 64.58 39.51 59 39.51 Junc J-1441 28 0.12 64.54 36.47 56 36.47 Junc J-1448 10 0.12 79.63 69.49 74 69.49 Junc J-1460 5 0.12 79.53 74.38 79 74.38 Junc J-1511 24 0.12 50.88 26.83 60 26.83 Junc J-1585 38 0.12 64.50 26.44 46 26.44 Junc J-1589 50 0.12								64
Junc J-1395 48 0.12 80.04 31.98 36 31.98 Junc J-1404 29 0.12 43.61 14.58 55 14.58 Junc J-1413 30 0.12 36.01 6.00 54 6.00 Junc J-1414 28 0.12 35.11 7.09 56 7.09 Junc J-1440 25 0.12 64.58 39.51 59 39.51 Junc J-1441 28 0.12 64.54 36.47 56 36.47 Junc J-1448 10 0.12 44.54 34.47 74 34.47 Junc J-1459 10 0.12 79.53 74.38 79 74.38 Junc J-1460 5 0.12 79.53 74.38 79 74.38 Junc J-1511 24 0.12 50.88 26.83 60 26.83 6 Junc J-1585 38 0.12 64.50 26.44 46 26.44 4 Junc J-1789								54
Junc J-1404 29 0.12 43.61 14.58 55 14.58 Junc J-1413 30 0.12 36.01 6.00 54 6.00 Junc J-1414 28 0.12 35.11 7.09 56 7.09 Junc J-1440 25 0.12 64.58 39.51 59 39.51 Junc J-1441 28 0.12 64.58 39.51 59 39.51 Junc J-1448 10 0.12 44.54 34.47 74 34.47 Junc J-1459 10 0.12 79.63 69.49 74 69.49 Junc J-1460 5 0.12 79.53 74.38 79 74.38 Junc J-1511 24 0.12 50.88 26.83 60 26.83 Junc J-1512 20 0.12 51.02 30.95 64 30.95 Junc J-1585 38 0.12 64.50 26.44 46 26.44 Junc J-1589 50 0.12								60
Junc J-1413 30 0.12 36.01 6.00 54 6.00 Junc J-1414 28 0.12 35.11 7.09 56 7.09 Junc J-1440 25 0.12 64.58 39.51 59 39.51 Junc J-1441 28 0.12 64.54 36.47 56 36.47 Junc J-1448 10 0.12 44.54 34.47 74 34.47 Junc J-1459 10 0.12 79.63 69.49 74 69.49 Junc J-1460 5 0.12 79.53 74.38 79 74.38 Junc J-1511 24 0.12 50.88 26.83 60 26.83 Junc J-1512 20 0.12 51.02 30.95 64 30.95 Junc J-1585 38 0.12 64.50 26.44 46 26.44 Junc J-1589 50 0.12 80.35 30.28 34 30.28 Junc J-1716 30 0.12								36
Junc J-1414 28 0.12 35.11 7.09 56 7.09 Junc J-1440 25 0.12 64.58 39.51 59 39.51 Junc J-1441 28 0.12 64.54 36.47 56 36.47 Junc J-1448 10 0.12 44.54 34.47 74 34.47 Junc J-1459 10 0.12 79.63 69.49 74 69.49 Junc J-1460 5 0.12 79.53 74.38 79 74.38 Junc J-1511 24 0.12 50.88 26.83 60 26.83 Junc J-1512 20 0.12 51.02 30.95 64 30.95 Junc J-1585 38 0.12 64.50 26.44 46 26.44 46 Junc J-1589 50 0.12 80.35 30.28 34 30.28 Junc J-1646 73 0.12 82.71 9.69 11 9.69 Junc J-1740 12								55
Junc J-1440 25 0.12 64.58 39.51 59 39.51 Junc J-1441 28 0.12 64.54 36.47 56 36.47 Junc J-1448 10 0.12 44.54 34.47 74 34.47 Junc J-1459 10 0.12 79.63 69.49 74 69.49 Junc J-1460 5 0.12 79.53 74.38 79 74.38 Junc J-1511 24 0.12 50.88 26.83 60 26.83 Junc J-1512 20 0.12 51.02 30.95 64 30.95 Junc J-1585 38 0.12 64.50 26.44 46 26.44 46 Junc J-1589 50 0.12 80.35 30.28 34 30.28 Junc J-1646 73 0.12 82.71 9.69 11 9.69 Junc J-1740 12 0.12 44.54 32.48 72 32.48 Junc J-1758 52								54
Junc J-1441 28 0.12 64.54 36.47 56 36.47 Junc J-1448 10 0.12 44.54 34.47 74 34.47 Junc J-1459 10 0.12 79.63 69.49 74 69.49 Junc J-1460 5 0.12 79.53 74.38 79 74.38 Junc J-1511 24 0.12 50.88 26.83 60 26.83 6 Junc J-1512 20 0.12 51.02 30.95 64 30.95 64 Junc J-1585 38 0.12 64.50 26.44 46 26.44 4 Junc J-1589 50 0.12 80.35 30.28 34 30.28 Junc J-1646 73 0.12 82.71 9.69 11 9.69 Junc J-1716 30 0.12 78.03 47.93 54 47.93 Junc J-1740 12 0.12 44.54 32.48 72 32.48 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>56</td></td<>								56
Junc J-1448 10 0.12 44.54 34.47 74 34.47 Junc J-1459 10 0.12 79.63 69.49 74 69.49 Junc J-1460 5 0.12 79.53 74.38 79 74.38 Junc J-1511 24 0.12 50.88 26.83 60 26.83 6 Junc J-1512 20 0.12 51.02 30.95 64 30.95 6 Junc J-1585 38 0.12 64.50 26.44 46 26.44 4 Junc J-1589 50 0.12 80.35 30.28 34 30.28 3 Junc J-1646 73 0.12 82.71 9.69 11 9.69 1 Junc J-1716 30 0.12 78.03 47.93 54 47.93 3 Junc J-1740 12 0.12 79.82 27.76 32 27.76 3 Junc J-1758 52 0.12 79.14 44.05 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>59</td>								59
Junc J-1459 10 0.12 79.63 69.49 74 69.49 Junc J-1460 5 0.12 79.53 74.38 79 74.38 Junc J-1511 24 0.12 50.88 26.83 60 26.83 Junc J-1512 20 0.12 51.02 30.95 64 30.95 Junc J-1585 38 0.12 64.50 26.44 46 26.44 Junc J-1589 50 0.12 80.35 30.28 34 30.28 Junc J-1646 73 0.12 82.71 9.69 11 9.69 Junc J-1716 30 0.12 78.03 47.93 54 47.93 5 Junc J-1740 12 0.12 44.54 32.48 72 32.48 Junc J-1758 52 0.12 79.82 27.76 32 27.76 3 Junc J-1764 23 0.12 44.50 21.46 61 21.46 6								56
Junc J-1460 5 0.12 79.53 74.38 79 74.38 Junc J-1511 24 0.12 50.88 26.83 60 26.83 6 Junc J-1512 20 0.12 51.02 30.95 64 30.95 6 Junc J-1585 38 0.12 64.50 26.44 46 26.44 4 Junc J-1589 50 0.12 80.35 30.28 34 30.28 Junc J-1646 73 0.12 82.71 9.69 11 9.69 Junc J-1716 30 0.12 78.03 47.93 54 47.93 Junc J-1740 12 0.12 44.54 32.48 72 32.48 7 Junc J-1758 52 0.12 79.82 27.76 32 27.76 3 Junc J-1759 35 0.12 79.14 44.05 49 44.05 4 Junc J-1770 31 0.12 44.50 21.46 61 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>74</td>								74
Junc J-1511 24 0.12 50.88 26.83 60 26.83 6 Junc J-1512 20 0.12 51.02 30.95 64 30.95 6 Junc J-1585 38 0.12 64.50 26.44 46 26.44 4 Junc J-1589 50 0.12 80.35 30.28 34 30.28 3 Junc J-1646 73 0.12 82.71 9.69 11 9.69 Junc J-1716 30 0.12 78.03 47.93 54 47.93 Junc J-1740 12 0.12 44.54 32.48 72 32.48 Junc J-1758 52 0.12 79.82 27.76 32 27.76 Junc J-1759 35 0.12 79.14 44.05 49 44.05 Junc J-1764 23 0.12 44.50 21.46 61 21.46 6 Junc J-1770 31 0.12 44.75 13.72 53 13.								74
Junc J-1512 20 0.12 51.02 30.95 64 30.95 6 Junc J-1585 38 0.12 64.50 26.44 46 26.44 4 Junc J-1589 50 0.12 80.35 30.28 34 30.28 3 Junc J-1646 73 0.12 82.71 9.69 11 9.69 Junc J-1716 30 0.12 78.03 47.93 54 47.93 5 Junc J-1740 12 0.12 44.54 32.48 72 32.48 7 Junc J-1758 52 0.12 79.82 27.76 32 27.76 3 Junc J-1759 35 0.12 79.14 44.05 49 44.05 Junc J-1764 23 0.12 44.50 21.46 61 21.46 61 21.46 61 21.46 61 21.46 61 21.77 80 0.12 83.99 3.98 4 3.98 3.98 <								79
Junc J-1585 38 0.12 64.50 26.44 46 26.44 4 Junc J-1589 50 0.12 80.35 30.28 34 30.28 3 Junc J-1646 73 0.12 82.71 9.69 11 9.69 Junc J-1716 30 0.12 78.03 47.93 54 47.93 9 Junc J-1740 12 0.12 44.54 32.48 72 32.48 Junc J-1758 52 0.12 79.82 27.76 32 27.76 3 Junc J-1759 35 0.12 79.14 44.05 49 44.05 Junc J-1764 23 0.12 44.50 21.46 61 21.46 6 Junc J-1770 31 0.12 44.50 13.72 53 13.72 3 Junc J-1777 80 0.12 83.99 3.98 4 3.98 Junc J-1778 82 0.00 83.99 1.99 2								60
Junc J-1589 50 0.12 80.35 30.28 34 30.28 Junc J-1646 73 0.12 82.71 9.69 11 9.69 Junc J-1716 30 0.12 78.03 47.93 54 47.93 Junc J-1740 12 0.12 44.54 32.48 72 32.48 72 Junc J-1758 52 0.12 79.82 27.76 32 27.76 32 Junc J-1759 35 0.12 79.14 44.05 49 44.05 49 Junc J-1764 23 0.12 44.50 21.46 61 21.46 6 Junc J-1770 31 0.12 44.75 13.72 53 13.72 3 Junc J-1777 80 0.12 83.99 3.98 4 3.98 Junc J-1778 82 0.00 83.99 1.99 2 1.99 Junc J-1791 82 0.12 82.00 0.00 2 0.00 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>64</td>								64
Junc J-1646 73 0.12 82.71 9.69 11 9.69 Junc J-1716 30 0.12 78.03 47.93 54 47.93 5 Junc J-1740 12 0.12 44.54 32.48 72 32.48 Junc J-1758 52 0.12 79.82 27.76 32 27.76 3 Junc J-1759 35 0.12 79.14 44.05 49 44.05 4 Junc J-1764 23 0.12 44.50 21.46 61 21.46 6 Junc J-1770 31 0.12 44.75 13.72 53 13.72 3 Junc J-1777 80 0.12 83.99 3.98 4 3.98 Junc J-1778 82 0.00 83.99 1.99 2 1.99 Junc J-1791 82 0.12 82.00 0.00 2 0.00 Junc J-1792 82 0.12 81.75 -0.25 2 -0.25						-		46
Junc J-1716 30 0.12 78.03 47.93 54 47.93 Junc J-1740 12 0.12 44.54 32.48 72 32.48 Junc J-1758 52 0.12 79.82 27.76 32 27.76 Junc J-1759 35 0.12 79.14 44.05 49 44.05 Junc J-1764 23 0.12 44.50 21.46 61 21.46 6 Junc J-1770 31 0.12 44.75 13.72 53 13.72 3 Junc J-1777 80 0.12 83.99 3.98 4 3.98 Junc J-1778 82 0.00 83.99 1.99 2 1.99 Junc J-1791 82 0.12 82.00 0.00 2 0.00 Junc J-1792 82 0.12 81.75 -0.25 2 -0.25 Junc J-1803 21 0.12 43.60 22.55 63 22.55								34
Junc J-1740 12 0.12 44.54 32.48 72 32.48 Junc J-1758 52 0.12 79.82 27.76 32 27.76 Junc J-1759 35 0.12 79.14 44.05 49 44.05 Junc J-1764 23 0.12 44.50 21.46 61 21.46 6 Junc J-1770 31 0.12 44.75 13.72 53 13.72 3 Junc J-1777 80 0.12 83.99 3.98 4 3.98 Junc J-1778 82 0.00 83.99 1.99 2 1.99 Junc J-1791 82 0.12 82.00 0.00 2 0.00 Junc J-1792 82 0.12 81.75 -0.25 2 -0.25 Junc J-1803 21 0.12 43.60 22.55 63 22.55								11
Junc J-1758 52 0.12 79.82 27.76 32 27.76 3 Junc J-1759 35 0.12 79.14 44.05 49 44.05 49 Junc J-1764 23 0.12 44.50 21.46 61 21.46 61 Junc J-1770 31 0.12 44.75 13.72 53 13.72 5 Junc J-1777 80 0.12 83.99 3.98 4 3.98 Junc J-1778 82 0.00 83.99 1.99 2 1.99 Junc J-1791 82 0.12 82.00 0.00 2 0.00 Junc J-1792 82 0.12 81.75 -0.25 2 -0.25 Junc J-1803 21 0.12 43.60 22.55 63 22.55								54
Junc J-1759 35 0.12 79.14 44.05 49 44.05 4 Junc J-1764 23 0.12 44.50 21.46 61 21.46 6 Junc J-1770 31 0.12 44.75 13.72 53 13.72 5 Junc J-1777 80 0.12 83.99 3.98 4 3.98 Junc J-1778 82 0.00 83.99 1.99 2 1.99 Junc J-1791 82 0.12 82.00 0.00 2 0.00 Junc J-1792 82 0.12 81.75 -0.25 2 -0.25 Junc J-1803 21 0.12 43.60 22.55 63 22.55 63								72
Junc J-1764 23 0.12 44.50 21.46 61 21.46 6 Junc J-1770 31 0.12 44.75 13.72 53 13.72 5 Junc J-1777 80 0.12 83.99 3.98 4 3.98 Junc J-1778 82 0.00 83.99 1.99 2 1.99 Junc J-1791 82 0.12 82.00 0.00 2 0.00 Junc J-1792 82 0.12 81.75 -0.25 2 -0.25 Junc J-1803 21 0.12 43.60 22.55 63 22.55 63								32
Junc J-1770 31 0.12 44.75 13.72 53 13.72 2 Junc J-1777 80 0.12 83.99 3.98 4 3.98 Junc J-1778 82 0.00 83.99 1.99 2 1.99 Junc J-1791 82 0.12 82.00 0.00 2 0.00 Junc J-1792 82 0.12 81.75 -0.25 2 -0.25 Junc J-1803 21 0.12 43.60 22.55 63 22.55 63	June J-1759							49
Junc J-1777 80 0.12 83.99 3.98 4 3.98 Junc J-1778 82 0.00 83.99 1.99 2 1.99 Junc J-1791 82 0.12 82.00 0.00 2 0.00 Junc J-1792 82 0.12 81.75 -0.25 2 -0.25 Junc J-1803 21 0.12 43.60 22.55 63 22.55 63								61
Junc J-1778 82 0.00 83.99 1.99 2 1.99 Junc J-1791 82 0.12 82.00 0.00 2 0.00 Junc J-1792 82 0.12 81.75 -0.25 2 -0.25 Junc J-1803 21 0.12 43.60 22.55 63 22.55 63								53
Junc J-1791 82 0.12 82.00 0.00 2 0.00 Junc J-1792 82 0.12 81.75 -0.25 2 -0.25 Junc J-1803 21 0.12 43.60 22.55 63 22.55	June J-1777							4
Junc J-1792 82 0.12 81.75 -0.25 2 -0.25 Junc J-1803 21 0.12 43.60 22.55 63 22.55 6	Junc J-1778	82	0.00	83.99	1.99	2	1.99	2
Junc J-1803 21 0.12 43.60 22.55 63 22.55	Junc J-1791	82	0.12	82.00	0.00	2	0.00	2
Junc J-1803 21 0.12 43.60 22.55 63 22.55	June J-1792	82	0.12	81.75	-0.25	2	-0.25	2
		21	0.12			63		63
Junc J-1806 82 0.12 83.67 1.67 2 1.67	Junc J-1806	82	0.12	83.67	1.67	2	1.67	2
Junc J-1807 81 0.12 81.98 0.98 3 0.98						3		3

Attachment-3

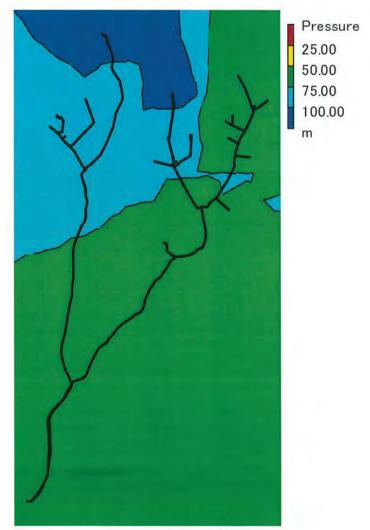
No.22 Kombito Borderline, Jakson Ridge & Bura

Network	Table -	Nodes

Network Table	- Nodes	T		Г	T		
	T21	D D 1	** 1	Ecc .: D		Effective	Static
Node ID	Elevation	Base Demand	Head	Effective Pressure	Static Pressure	Pressure	Pressure
	R	esult of analysis	by using W	aterGEM		With	PRV
Node ID	m	LPS	m	m	m	m	m
Junc J-1838	18	0.12	6.29	-11.68	66	-11.68	66
Junc J-1854	82	0.00	84.00	1.99	2	1.99	2
Junc J-1869	16		43.61	27.56	68	27.56	68
Junc J-1902	39	0.12	44.46	5.45	45	5.45	45
Junc J-1906	25	0.12	80.10	54.99	59	54.99	59
Junc J-1910	30	0.12	44.52	14.49	54	14.49	54
Junc J-1929	45	0.12	80.30	35.23	39	35.23	39
Junc J-1930	50	0.12	80.30	30.24	34	30.24	34
Junc J-1950	72	0.12	83.99	11.96	12	11.96	12
Junc J-1951	70	0.12	83.99	13.96	14	13.96	14
Junc J-1969	42	0.12	44.73	2.72	42	2.72	42
Junc J-1971	55	0.12	79.81	24.76	29	24.76	29
Junc J-1972	46	0.12	78.14	32.08	38	32.08	38
Junc J-1990	68	0.00	81.70	13.67	16	13.67	16
Junc J-1997	24	0.12	50.85	26.80	60	26.80	60
Junc J-2116	45	0.12	80.39	35.32	39	35.32	39
Junc J-2138	76	0.12	83.99	7.97	8	7.97	8
Junc J-2139	84	0.00	84.00	0.00	0	0.00	0
Junc J-2141	58	0.12	78.94	20.90	26	20.90	26
Junc J-2142	45	0.00	78.94	33.87	39	33.87	39
Junc J-2144	76	0.12	83.99	7.97	8	7.97	8
Junc J-2165	52	0.12	44.54	-7.63	32	-7.63	32
Junc J-2167	44	0.00	44.61	1.08	40	1.08	40
Junc J-2168	30	0.07	80.30	50.25	54	50.25	54
Junc J-2169	70	0.00	83.20	13.17	14	13.17	14
Junc J-2170	64	0.00	80.43	16.42	20	16.42	20
Junc J-2171	50	0.00	78.44	28.18	34	28.18	34
Junc J-2172	33		50.88	18.33	51	18.33	51
Junc J-2173	25		44.55	19.51	59	19.51	59
Junc J-2174	43	0.00	64.54	21.28	41	21.28	41
Resvr R-1	84	#N/A	84.00	0.00	0	0.00	0

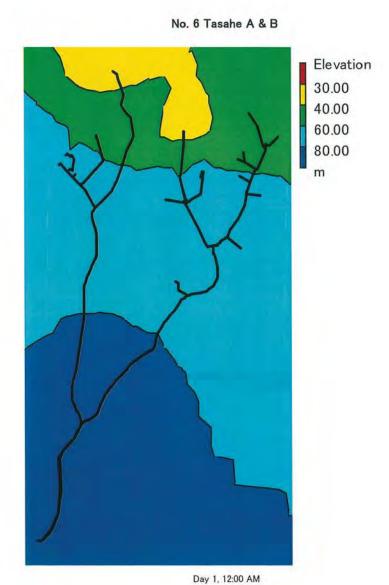
: Static Head of at least 70m : Nodes to be covered with PRV

No. 6 Tasahe A & B

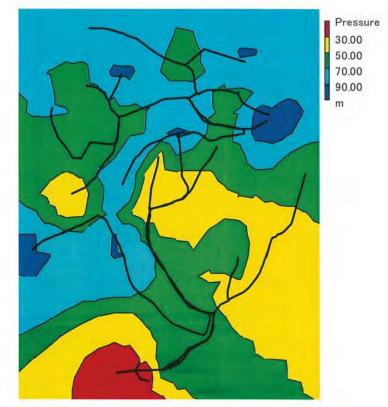


Day 1, 12:00 AM

EPANET 2 Page 1

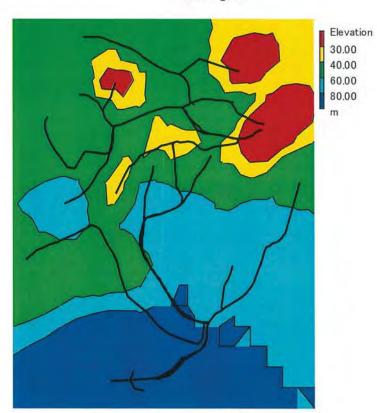


No. 8 Ngossi

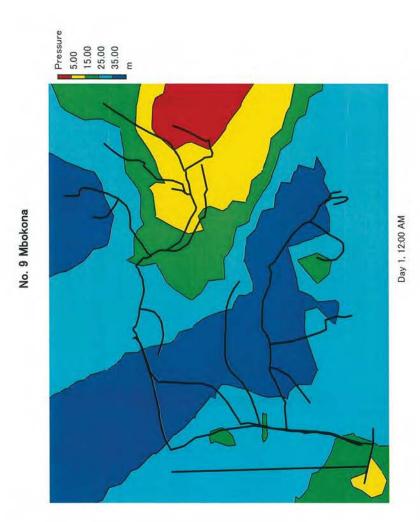


Day 1, 12:00 AM

No. 8 Ngossi

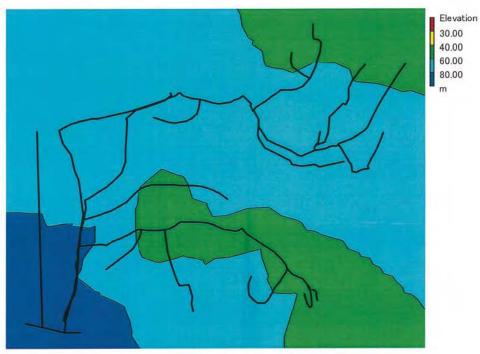


Day 1, 12:00 AM



EPANET 2 Page 1

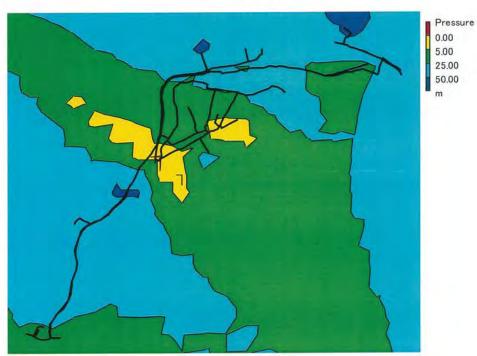
No. 9 Mbokona



Day 1, 12:00 AM

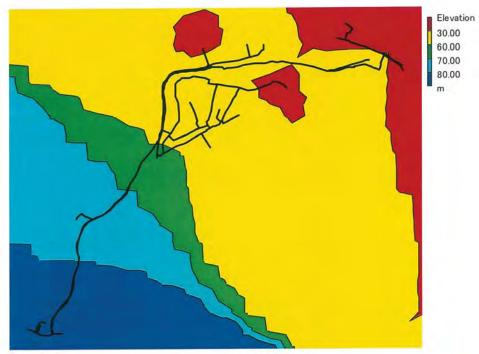
EPANET 2 Page 1

No.11 Vavaya Ridge



Day 1, 12:00 AM

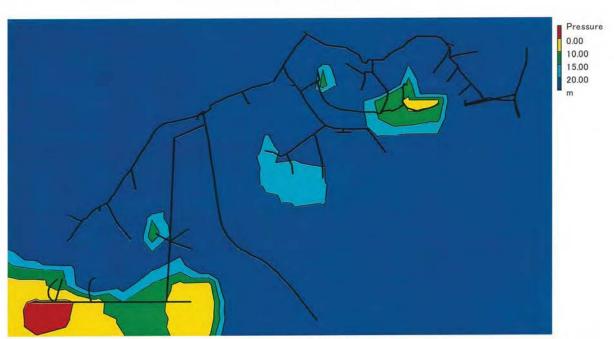
No.11 Vavaya Ridge



Day 1, 12:00 AM

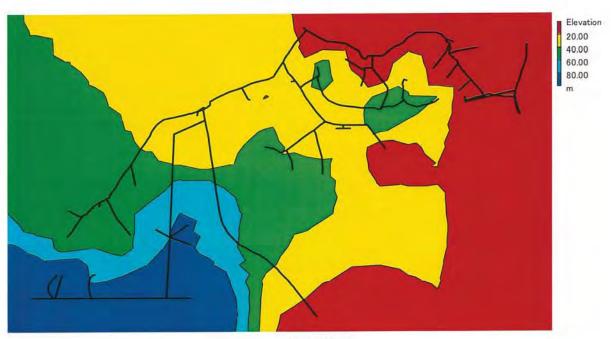
Page 1

No.13 Mbokonabera



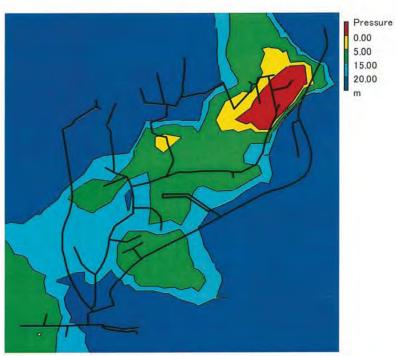
Day 1, 12:00 AM

No.13 Mbokonabera



Day 1, 12:00 AM

No.19 Mba Valley



Day 1, 12:00 AM

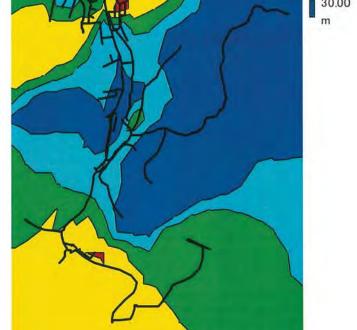
EPANET 2 Page 1



Day 1, 12:00 AM

No. 22 Kombito Borderline, Jakson Ridge & Bura





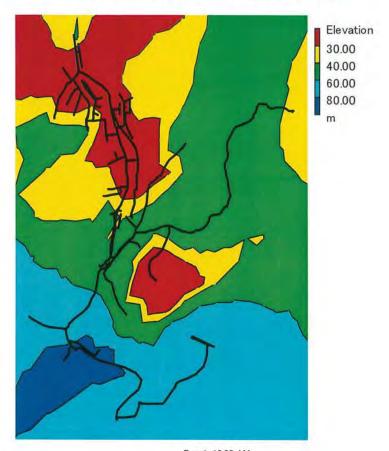
Day 1, 12:00 AM

EPANET 2

EPANET 2

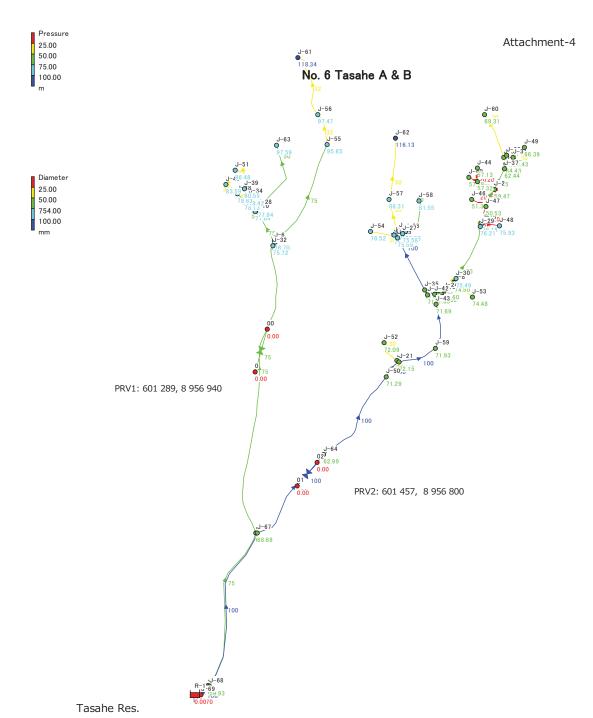
Page 1

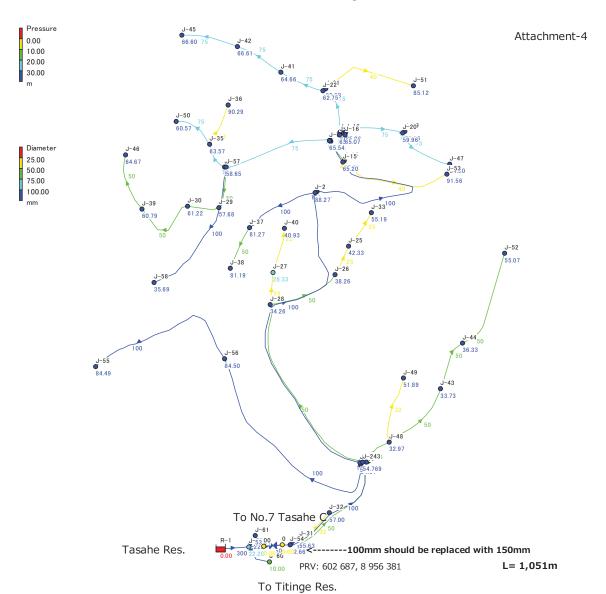
No. 22 Kombito Borderline, Jakson Ridge & Bura

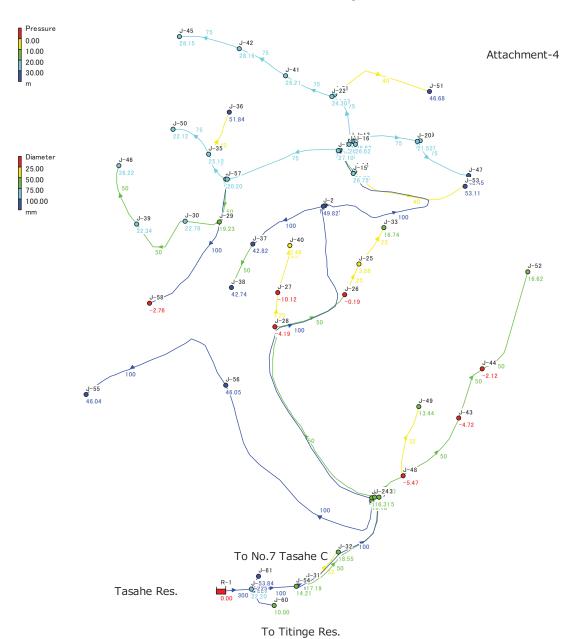


Day 1, 12:00 AM

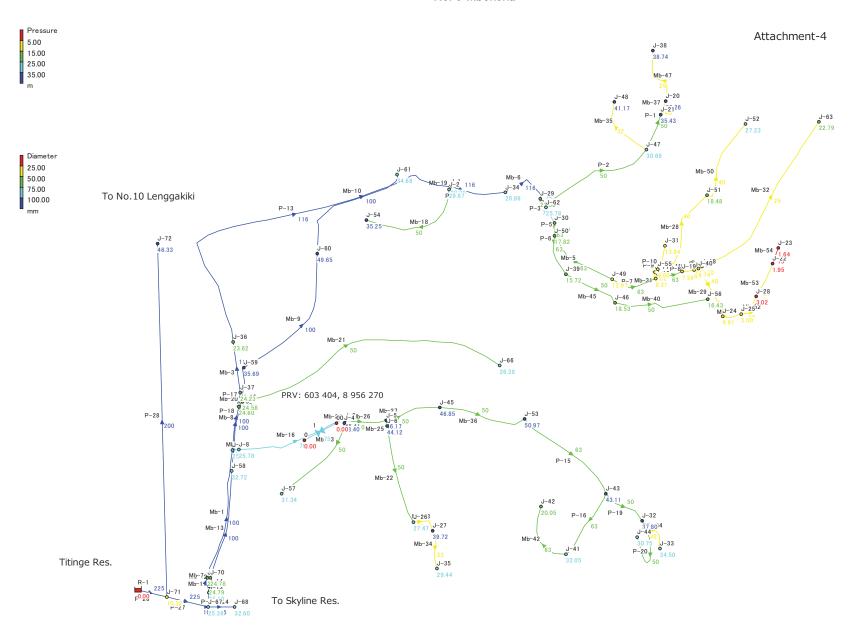
EPANET 2 Page 1



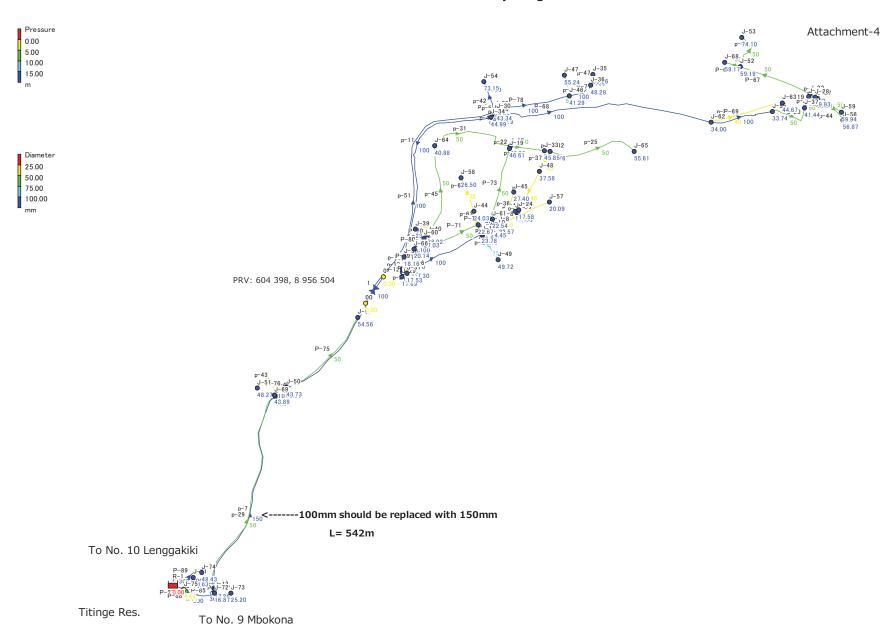




No. 9 Mbokona

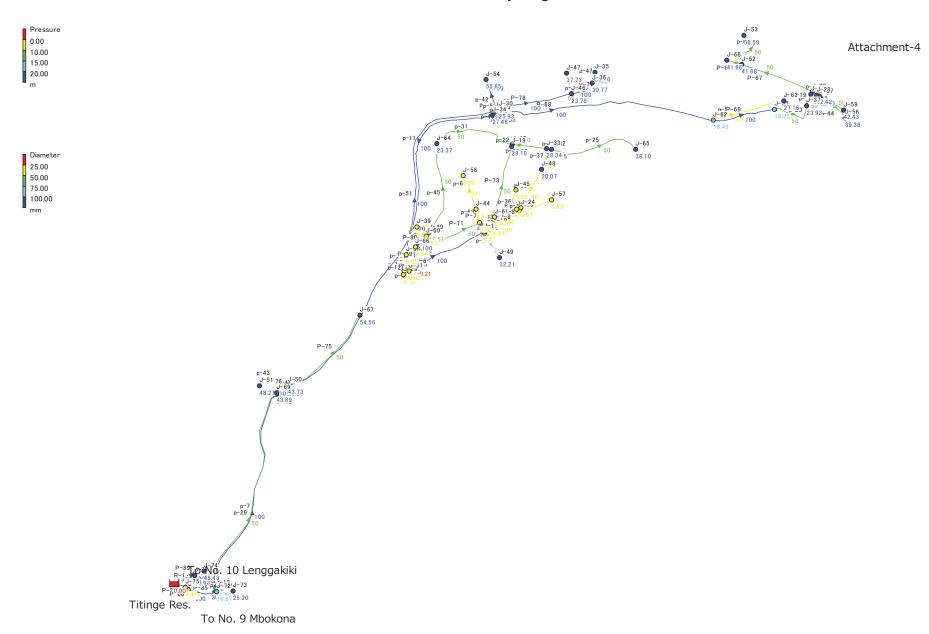


No.11 Vavaya Ridge

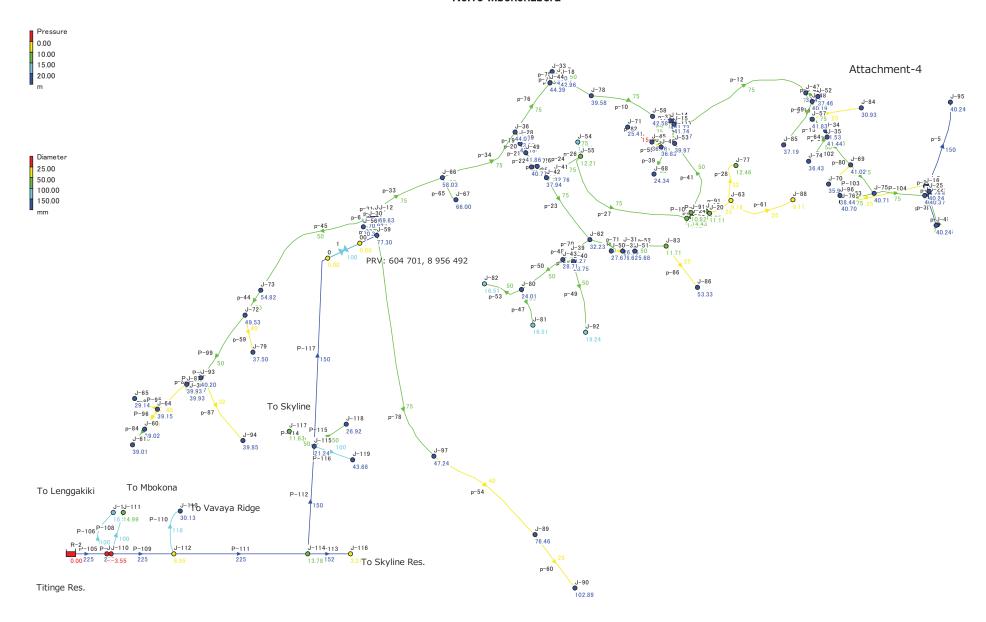


EPANET 2

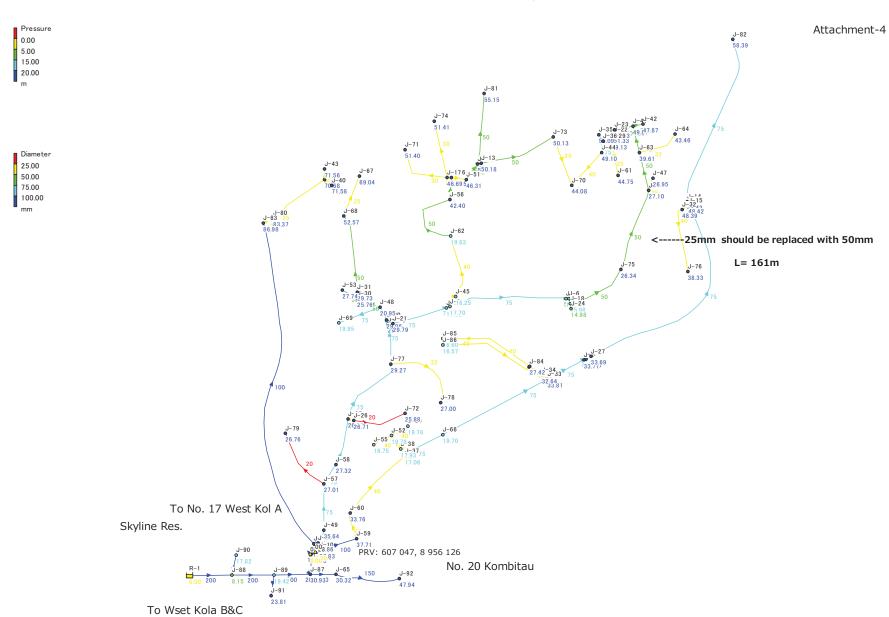
No.11 Vavaya Ridge



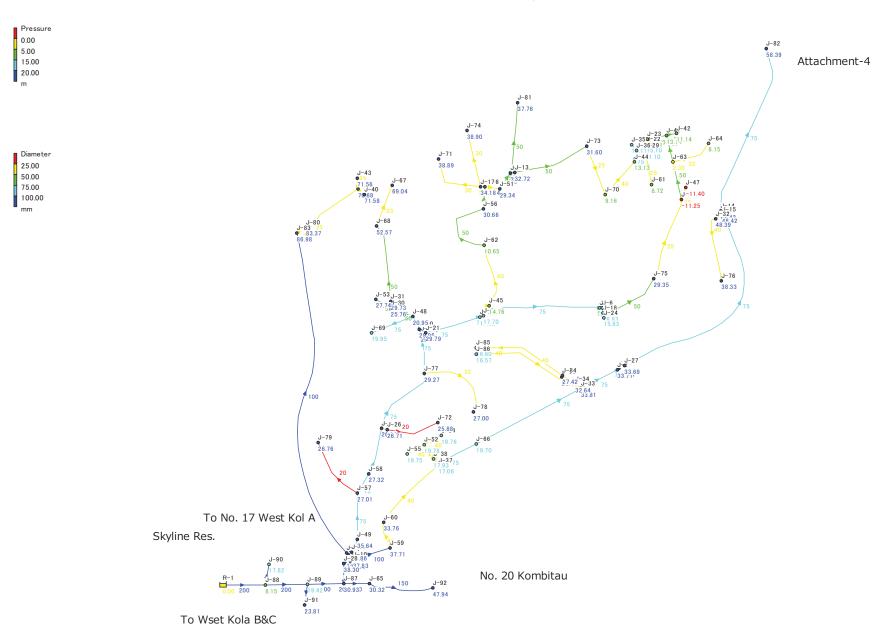
No.13 Mbokonabera



No.19 Mba Valley

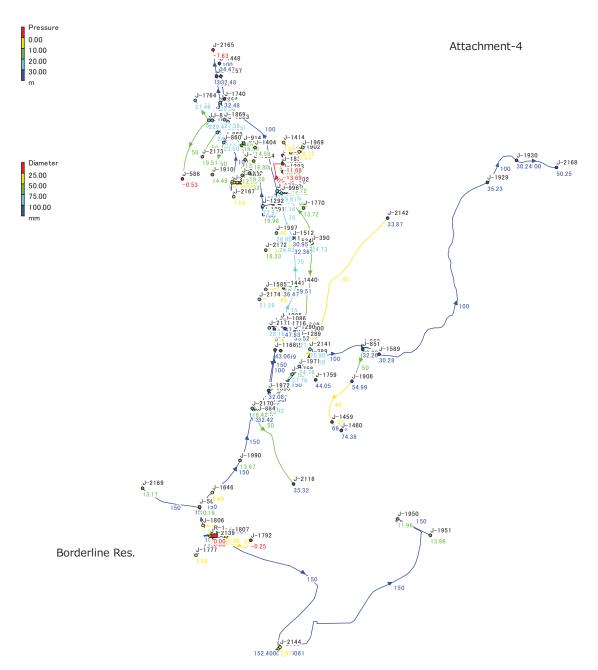


No.19 Mba Valley



EPANET 2

No. 22 Kombito Borderline, Jakson Ridge & Bura









The Project for Improvement of Non-Revenue Water Reduction Capacity for Solomon Islands Water Authority in Solomon Islands

Annual Action Plan 2013 on NRW Reduction

April, 2013

Prepared by Project Team

Table of Contents

Chapter 1	IIITOUUCIOII	1
1.1 N	RW Reduction Activities	1
	roject Team	
	ollaboration with the Two-year Plan of Solomon Water	
Chapter 2	Preparatory Actions for Pilot Project Implementation	
	election Procedures of Pilot Project Areas	
2.2 In	nplementation Period of Preparatory Actions	7
Chapter 3	Actions for Pilot Project Implementation on NRW Reduction	8
3.1 FI	ow of Actions for Pilot Project Implementation on NRW Reduction	8
3.2 D	escription of Actions for Pilot Project Implementation on NRW Reduction	9
3.2.1	Action A1: Preparation of drawings of distribution networks	9
3.2.2	Action A2: Update and upgrade of drawings and attributes of distribution	
	networks	9
3.2.3	Action B1: Field survey, finding and function check of valves	9
3.2.4	Action B2: Pipe installation, excavation of ultrasonic flow meter chamber and	
	valve replacement (if needed)	9
3.2.5	Action B3: Isolation of pilot project areas	
3.2.6	Action B4: Measurement of Minimum Night Flow and water pressure (before	
	repair/measures)	10
3.2.7	Action B5: Step test, leakage detection by acoustic equipment at tap and on	
	road surface, and identification of leakage points	11
3.2.8	Action B6: Repair of leakage and recording	
3.2.9	Action B7: Measurement of Minimum Night Flow and water pressure (after repair/measures)	
2 2 10	Action C1: Listing of customers	
	Action C1: Listing of customers Action C2: Verification of installed and operating conditions, and accuracy of	14
	water meters, illegal connections and domestic water leakage	14
3.2.12	Action C3: Data collection of billed water consumption (before	1.5
2 2 12	repair/measures)	15
3.2.13	Action C4: Replacement of malfunctioning water meters and disconnection of	1.5
2 2 14	illegal connections	
	Action C5: Data collection of billed water consumption (after repair/measures)	
	VA Water Balance and Evaluation in the Pilot Projects	
3.3.1	Calculation of Non Revenue Water (before repair/measures)	
3.3.2	Calculation of Non Revenue Water (after repair/measures)	
3.3.3	Evaluation of Non Revenue Water Reduction Ratio	13
Chapter 4	Implementation Schedule of NRW Reduction Activities	16
Chapter 5	Cost Estimate	17
Chapter 6	Pilot Project Report and Workshop	19
Chapter 7	Record Form and Log Sheet	20

Annex

1.	Location Map of the Pilot Project Areas	A-1
2.	Plan Layout of pilot project areas	A-2
3.	Items to be updated for GIS Database	A-9
4.	Workflow of GIS Database	A-11
5.	Solomon Water GIS Information Sheet	A-12
6.	Valve condition checking list	A-13
7.	Leakage record sheet	A-14
8.	Valve operation sheet for Step Test	A-15
9.	Normalization Process of Service Connection	A-16
10.	Detailed Implementation Schedule of Actions for per-Pilot Projects	A-17
11.	Detailed Implementation Schedule of Actions for per-DMA	A-18

54.5-1-2

Abbreviation

AUD Australian Dollar

AusAID Australian Agency for International Development

CP Counterpart

DMA District Metered Area

GIS Geographical Information System IWA International Water Association

JICA Japan International Cooperation Agency

LCZ Leakage Control Zone
MNF Minimum Night Flow
NRW Non Revenue Water
OJT On-the-Job Training

RAP SIWA Short Term Recovery Strategy and Action Plan (30 May 2011)

SBD Solomon Islands Dollar

Chapter 1 Introduction

\$4.5-1

In order to carry out Non Revenue Water (NRW) reduction activities in Honiara City under the Project for Improvement of Non Revenue Water Reduction Capacity for Solomon Islands Water Authority in Solomon Islands (hereinafter "the Project"), the Project Team has formulated the Annual Action Plan 2013 (Phase-2) on NRW Reduction through the pilot projects to be implemented from April 2013 to March 2014.

Annual Action Plan 2013

Purpose of the Project is, "Non Revenue Water (NRW) ratio in Honiara City is reduced.".

1.1 NRW Reduction Activities

(1) Non Revenue Water in IWA Water Balance

NRW is defined as International Water Association (IWA) Water Balance as shown in Table 1-1.

			1	able 1-1 IWA Water Balance															
	Mater Department of the Production of the Produc	_ u	rized	authorized onsumption	l n	Billed Authorized	Billed metered consumption	Revenue											
		ıe			Consumption	Billed unmetered consumption	Water												
			ıe		utho	utho	Unbilled Authorized	Unbilled metered consumption											
on olum		C	Consumption	Unbilled unmetered consumption															
roducti		Unauthorized consumption (incl. illegal connections)	Non																
ter P		System I	System l	System J Water Losses	em]	em]	em]	Water Losses	System I Water Losses	em	em	rem .	rem .	em	E E	e m		Metering inaccuracies	Revenue Water
Wai					Syst Water Losses	Water	Water Losses				Leakage on transmission and/or distribution networks	(NRW)							
			Real Losses	Leakage and overflow at utility's storage tanks															
				Leakage on service connections to customer meters															
	Treatment Losses (Backwash, etc.) and Evaporation																		

Table 1-1 IWA Water Ralance

(2) Sequence of NRW Reduction Activities

Sequence of NRW reduction activities in each pilot project is summarized as shown in Figure 1-1.

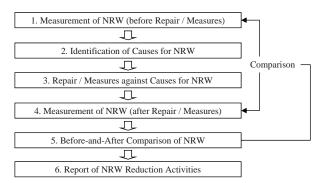


Figure 1-1 Summarized Flow of NRW Reduction Activities

Project Team 1

1.2 Project Team

The Project Team on NRW reduction activities is composed of NRW Management Team, NRW Action Team and JICA Expert Team.

JICA Expert Team convened the explanatory meeting with members of NRW Management and Action Teams on project implementation sequence including pilot project procedures on 22 November 2012, and each Expert has trained them through preparatory actions in order to formulate the annual action plan.

(1) NRW Management Team

NRW Management Team consisting of five managers of Solomon Islands Water Authority (hereinafter "Solomon Water") is involved in implementation of the Pilot Project.

Table 1-2 Member List of NRW Management Team

Name	Position in the Project (Position in Solomon Water)	
Mr. Richard AUSTIN	Project Director (General Manager)	
Mr. Ray ANDRESEN	Project Manager (Operation & Technical Manager)	
Mr. Ronald DAVIES	(Finance & Administration Manager)	
Ms. Tima KOFANA	(Human Resources Manager)	
Ms. Ellen INAHIA	(Service Delivery & Communications Manager)	

(2) NRW Action Team

19 counterparts of NRW Action Team involved in implementation of the Pilot Project are listed below:

Table 1-3 Member List of NRW Action Team

D. W. C. d. D. C. (D. W. C. M.)				
Name	Position in the Project (Position in Solomon Water)			
NRW Technical Sub-Team				
Mr. Benjamin BILLY	Action Team Leader 1 / Sub-Team Leader (NRW Taskforce Leader)			
Mr. Austin ATA	Deputy Sub-Team Leader (Customer Connections)			
Mr. Moses RAMO	(Customer Connections)			
Mr. Silas TALOSUI	Deputy Sub-Team Leader (Network Maintenance & Repair)			
Mr. Mathias BERA	Pipe Repair (Network Maintenance & Repair)			
Mr. Layten JACOB	Deputy Sub-Team Leader (Procurement)			
Mr. Frank DAUKALIA	Meter Repair/Replacement (Pipe Materials Management & Procurement)			
Mr. Chris MERIKO	Deputy Sub-Team Leader (Water Resources & Treatment)			
Customer Service Sub-Team	ı			
Ms. Ellen INAHIA	Action Team Leader 2 / Sub-Team Leader (Service Delivery Com. Manager)			
Ms. Beverly SAOHU	Deputy Sub-Team Leader (Customer Care)			
Ms. Sophia TANGO	(Community Relations & Media Assistant)			
Ms. Daisy MENAGA	Deputy Sub-Team Leader (Meter Reading)			
Ms. Mary TAFOA	Deputy Sub-Team Leader (Billing)			
Mr. Lawrence IROI	(Chief Accountant)			
GIS Sub-Team				
Mr. Japhliet ROUHANA	Sub-Team Leader (IT Administration)			
Mr. Gavin BARE	(GIS Technician)			
Leakage Detection Sub-Team				
Mr. Eric UNGA	Sub-Team Leader (Leakage)			
Mr. Matthew MAFE	(Plumber)			

Project Team 2

Name	Position in the Project (Position in Solomon Water)		
Mr. David AKOEASI	(Plumber)		

(3) JICA Expert Team

JICA Expert Team on implementation of the pilot projects consists of eight Japanese members (see Table 1-4).

Table 1-4 Member List of JICA Expert Team

Name	Expertise		
Mr. Taketoshi FUJIYAMA	Leader / Water Supply Planning, Operation and Management		
Mr. Akinori MIYOSHI	Deputy Leader / NRW Reduction Measures -1		
Mr. Masatoshi SENO	NRW Reduction Measures -2		
Mr. Akihiko OKAZAKI	Leakage Detection Technology		
Mr. Masakazu ASAI	GIS		
Mr. Kenji KASAMATSU	Customer Service & Public Relations		
Mr. Norio ISHIJIMA	GIS Adviser		
Ms. Akiko SAKAMOTO	Coordinator		

1.3 Collaboration with the Two-year Plan of Solomon Water

In April 2013, AusAID is expected to approve its grant aid assistance for the implementation of Two-Year Plan (The Solomon Water Development Plan, 2013-2015). The Plan continues the improvements in water supply services implemented during the RAP.

The Two-Year Plan proposes improvements in all parts of the Solomon Water business but especially improvements in the water distribution network and NRW reduction. It will be implemented from approximately May 2013 for two years and the overall budget for the Plan is approximately AUD 11 million.

The Objectives of the Plan as they relate to improving the water network and NRW are:

- > Introduction of comprehensive water pressure management
- Renovation, replacement or redesign of the small diameter network for improved hydraulic capacity
- > Improved connectivity and reliability of the water transmission network
- Reduction in NRW Goals of NRW ratio (Honiara city): 30% in 2015, 20% (held) in 2017

With regard to NRW reduction, high network pressures have been identified as a major cause of physical losses (leakage) as a result of high leakage rates at high pressures and through the damage and deterioration that high pressures are causing to the pipelines. Solomon Water expects that pressure management will help reduce leakage significantly in addition to protecting the network against damaging high pressures and providing water at more comfortable pressures to customers. Solomon Water has requested that the JICA Expert Team assist in providing technical co-operation in the 11 to 13 District Metered Areas (DMA's) that will be created as pressure management zones.

Through discussion, it has been agreed in principle that the NRW activities planned for the project pilot zones can be transferred to working in the new DMA's when they have been defined. The timing of the transfer of activity under this technical co-operation will depend on the completion of the works

Project Team 3

Annual Action Plan 2013

to install and commission of the pressure management systems but is likely to be in approximately October 2013. Solomon Water has the required funding available to implement the pressure management strategy and will also be able to support the creation of discrete DMA's and leakage control zones (LCZ's)

Project Team 4

Chapter 2 Preparatory Actions for Pilot Project Implementation

Prior to pilot project implementation, the Project Team selected 15 pilot project areas through preparatory actions during the period from December 2012 to February 2013.

As the Project's activity is transferred from the original project pilot zones to NRW reduction in the new DMAs, the JICA Expert team will assist Solomon Water in implementing the preparatory actions to establish the DMAs.

2.1 Selection Procedures of Pilot Project Areas

The selection procedures for the pilot project areas are shown in Figure 2-1. The selection of the DMAs will also follow a similar procedure but selection and prioritisation will also take into account the scale of the benefits for NRW reduction that can be expected in each of the DMA's and other operational benefits.

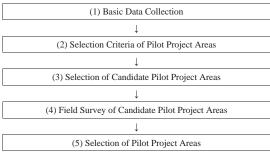


Figure 2-1 Selection Procedures of Pilot Project Areas

(1) Basic Data Collection

Basic data such as pipe material, diameter, location, base map on water distribution networks, and number of households, etc. are collected at the beginning of selection of pilot project areas and/or DMAs.

(2) Selection Criteria of Pilot Project Areas

The pilot project areas are selected based on the following criteria:

- 1) Easy isolation from surrounding area with existing valves.
- 2) Drawings or GIS maps are available to show location of the valves.
- 3) Distribution flow is enough and stable.
- 4) Size of the areas is suitable for easy monitoring.
- 5) Residential areas where 100 households are located are preferable so as to count easily.
- 6) Dendritically-expanded distribution networks are preferable.
- 7) Distribution pipelines are 250 mm or less in diameter and around 1.0km in length.

Meanwhile, DMAs are selected out of 11-13 candidate DMAs which will be identified by Solomon Water in the light of at least the following criteria:

- 1) Easy isolation from surrounding area with existing valves.
- 2) Drawings or GIS maps are available to show location of the valves.
- 3) Distribution flow is enough and stable.

Project Team 5

Annual Action Plan 2013

- 4) Size of the areas is suitable for easy monitoring.
- Local operational knowledge of the condition of the systems is predicted to be used for NRW reduction
- 6) The operational benefits in terms of reduction in water rationing if applicable.

(3) Selection of Candidate Pilot Project Areas

23 candidate pilot project areas were selected according to the above selection criteria. The candidate pilot areas are shown in Table 2-1.

Table 2-1 Candidate Pilot Project Areas

No	Name	Remarks
1	FFA Kola Road	Previously proposed before the Project
2	Mbua Valley	Previously proposed before the Project
3	Lenggakiki	Previously proposed before the Project
4	Mbokona	Proposed in the Project
5	Mbokonavera 1	Previously proposed before the Project
6	Vavaea Ridge	Previously proposed before the Project
7	Panatina Valley	Previously proposed before the Project
8	Panatina Mbaranamba	Previously proposed before the Project
9	White River Namo Ruka	Proposed in the Project
10	Independence Valley	Proposed in the Project
11	Bahai Kukum	Proposed in the Project
12	Naha 2	Proposed in the Project
13	Naha 3	Proposed in the Project
14	Tuvaruhu-1	Proposed in the Project
15	Tuvaruhu-2	Proposed in the Project
16	Mboona Valley	Previously proposed before the Project
17	Mbokonavera 2	Previously proposed before the Project
18	Panatina Ridge	Previously proposed before the Project
19	White River Windy Valley	Proposed in the Project
20	Matevale St – Point Cruz	Proposed in the Project
21	Tasahe A & B	Proposed in the Project
22	Vura 3-2	Proposed in the Project
23	Ranadi Industrial	Proposed in the Project

(4) Field Survey of Candidate Pilot Project Areas and Selection of Pilot Project Areas

The Project Team conducted field surveys to verify number of households, valves and their locations and functionality for isolation, water meters, pipeline routes and so forth in the candidate pilot project areas.

Finally, the Project Team selected 15 areas out of 23 candidate areas for pilot project implementation on NRW reduction (see Annex-A-1). The results of the field surveys are shown in Table 2-2. Each plan layout of the pilot project is shown in Annex A-2.

Table 2-2 Results of Field Survey in Candidate Pilot Project Areas

No	Name	Pipe	Pipe	Valves to be	No. of Household
		Diameter	Length	Procured	
1	FFA Kola Road	D25-D75	1.6 km	25 mm x 1 set	83
				100 mm x 1 set	
2	Mbua Valley	D40-D75	2.0 km	50 mm x 1 set	137
				80 mm x 1 set	
3	Lenggakiki	D40-D75	1.8 km	150mm x 1 set	119
4	Mbokona	D30-D75	1.5 km	80 mm x 1 set	100
5	Mbokonavera 1	D25-D75	0.9 km	80 mm x 1 set	78
6	Vavaea Ridge	D50-D100	1.3 km	To be Surveyed	130

Project Team 6

No	Name	Pipe	Pipe	Valves to be	No. of Household
		Diameter	Length	Procured	
7	Panatina Valley	D40-D75	0.6 km	80 mm x 1 set	53
8	Panatina Mbaranamba	D40-D75	1.4 km	To be Surveyed	53
9	White River Namo Ruka	D40-D75	1.1 km	-	78
10	White River Windy Valley	D30-D63	1.1 km	-	110
11	Bahai Kukum	D50-D100	1.3 km	100 mm x 1 set	100
12	Naha 2	D40-D100	0.6 km	To be Surveyed	78
13	Naha 3	D25-D100	0.7 km	To be Surveyed	56
14	Tuvaruhu-1	D40-D75	1.0 km	To be Surveyed	42
15	Tuvaruhu-2	D25-D75	0.5 km	To be Surveyed	63
16	Mboona Valley	Disqu	ualified (diffic	ulty in demarcation to pr	oper size)
17	Mbokonavera 2	Disqua	lified (inadequ	ate water flow and distri	bution time)
18	Panatina Ridge			ty in clarification of pipe	
19	White River Windy Valley	Disqua	lified (inadequ	ate water flow and distri	bution time)
20	Matevale St - Point Cruz		Disqualif	fied (not residential area)	
21	Tasahe A & B	Disqua	lified (inadequ	ate water flow and distri	bution time)
22	Vura 3-2	Disqua		ate water flow and distri	
23	Ranadi Industrial		Disqualit	ried (not residential area)	

2.2 Implementation Period of Preparatory Actions

Period of the surveys carried out actually in the Project is shown in Table 2-3.

Table 2-3 Implementation Period of Preparatory Actions

No	Pilot Project Area											iary, 2013																					
		14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	FFA Kola Road						П	П				П			П	П		П	П		П	П	П	П	П	П		П	П				_
2	Mbua Valley																		П														_
3	Lenggakiki																																
4	Mbokona																																
5	Mbokonavera 1																																
6	Vavaea Ridge																																$\overline{}$
7	Panatina Valley																																$\overline{}$
8	Panatina Mbaranamba																																
9	White River Namo Ruka																																
10	Independence Valley																																
11	Bahai Kukum		l		: Cl	hekinç	Valv	es ar	d rep	air (if	neede	d)												П									$\overline{}$
12	Naha 2		l																														$\overline{}$
13	Naha 3		1		: Co	onfima	ition o	f Isola	ation a	nd B	ounda	ry																					_
14	Tuv aruhu-1		1																														_
15	Tuvaruhu-2																																

Project Team 7

Chapter 3 Actions for Pilot Project Implementation on NRW Reduction

3.1 Sequence of Actions for Pilot Project Implementation on NRW Reduction

After the selection of pilot project areas, NRW Action Team proceeds to following actions for pilot project implementation on NRW reduction:

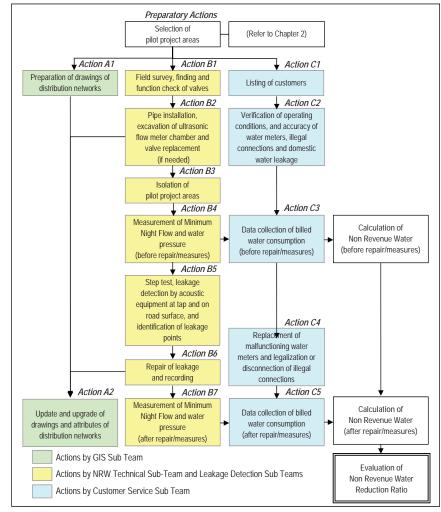


Figure 3-1 Sequence of Actions for Pilot Project Implementation on NRW Reduction

Also in the DMAs, same actions will be taken by NRW Action Team.

3.2 Description of Actions for Pilot Project Implementation on NRW Reduction

3.2.1 Action A1: Preparation of drawings of distribution networks

Before execution of field survey of Action B1, drawings of distribution networks for the pilot project areas, which is in appropriate scale, are prepared by GIS Sub-Team.

3.2.2 Action A2: Update and upgrade of drawings and attributes of distribution networks

During execution of other actions, GIS Sub-Team records the coordinates of the following items as shown in Table 3-1, and updates and upgrades the drawings of distribution networks and database. Items data of which is recorded and updated are shown in Annex A-3 for further details. 15 layers consisting of at least 200 items, shown in Annex A-3, should be updated so as to operate and maintain water supply facilities and to manage customer services efficiently. Workflow for updating data is illustrated in Annex A-4. Information of the water supply facilities will be recorded on the sheet as shown in Annex-5 in the site.

Table 3-1 Selected items to be updated

No	Layer	No	Layer
1	Water distribution pipes	9	Leakage location
2	Sluice valve (gate valve)	10	Bore holes
3	Hydrant	11	Pump station
4	Air valve	12	Service reservoir
5	Flow meters	13	Distribution area of source
6	Feeder pipes (service pipes)	14	Customer's information
7	Water meter	15	Water quality (Fixed-point observation)
8	Water pipe bridge		

3.2.3 Action B1: Field survey, finding and function check of valves

NRW Technical Sub-Team executes field survey in the pilot project areas and verifies the existing data to check the following items:

Exact boundary of the area
Number of households
Routes and material of distribution pipelines
Locations, size and conditions of break pressure tanks and reservoirs
Locations, diameters and conditions of valves
Routes, diameters and material of service connection pipelines
Locations, diameter and conditions of water meters
Locations and conditions of fire hydrants
Water leakages visually observed without equipment of leakage detection
Locations and conditions of illegal connections
Locations and conditions of domestic water leakage

Operating condition of valves can be checked with "Valve Condition Checking List" as shown in Annex A-6. The list will be useful for future maintenance of the valves and system operation.

3.2.4 Action B2: Pipe installation, excavation of ultrasonic flow meter chamber and valve replacement (if needed)

According to the results by the Action B1, in order to proceed to isolation of the pilot project areas, NRW Technical Sub-Team takes measures as follows:

Project Team 9

Annual Action Plan 2013

□ Excavation of pit for flow meter
 □ Replacement of malfunctioning valves by new ones, or
 □ Installation of new valves
 □ Installation of pipes (if needed)

3.2.5 Action B3: Isolation of pilot project areas

After the measures of the Action B2, NRW Technical Sub-Team closes valves required for isolation of the pilot project area, which means to make sure of inlet of water to be controlled, and then checks if water pressure decreases in the pipelines.

3.2.6 Action B4: Measurement of Minimum Night Flow and water pressure (before repair/measures)

(1) Measurement of Minimum Night Flow

NRW Technical Sub-Team measures "System Input Volume" for at least 24 hours in the isolated distribution networks of the pilot project areas, with ultrasonic flow meter to be installed temporarily in the pit through Action B2. The lowest flow rate for 24 hours is defined as Minimum Night Flow.

The ultrasonic flow meter should be installed at the inlet point to the pilot area as shown in Figure 3-2.

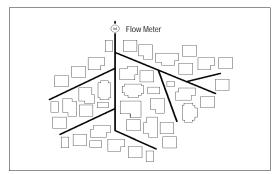


Figure 3-2 Installation Point of Flow Meter

The flow meter is ultrasonic type (see Figure 3-3), which can measure water flow in pipe by catching variation in the velocity of ultrasonic waves. An advantage of the meter is to measure water flow without interrupting water supply in the pilot project areas.



Figure 3-3 Ultrasonic Flow Meter

Annual Action Plan 2013 Annual Action Plan 2013

Measurement of Water Pressure

The higher water pressure rises, the more water leakage increases. NRW Technical Sub-Team measures water pressure for at least 24 hours with automatic data logger (see Figure 3-4) to be installed at the point where ultrasonic flow meter is installed.



Figure 3-4 Data Logger

3.2.7 Action B5: Step test, leakage detection by acoustic equipment at tap and on road surface, and identification of leakage points

After measurement of water flow and pressure under the Action B4, Leakage Detection Sub-Team starts to detect water leakage in the pilot project areas as follows:

	To hispeet exposed leakage visually
	To select serious water leakage sections through step tests
	To detect water leaking sound by means of electronic acoustic rod
	To detect water leaking points by means of leakage detector
	To detect water leaking points by means of correlator
	To identify the exact point of leakage by means of acoustic rod

To inspect exposed leakage visually

The entire results of leakage detection should be recorded in "Leakage Record Sheet" as shown in Annex A-7 so that Solomon Water can operate and maintain water supply system efficiently, and identify the prioritized pipelines to be replaced immediately with their sheets.

(1) Step Test

Project Team

NRW Technical Sub-Team finds out water leakages along branch lines in the pilot project area by measuring change in water flow and pressure with the ultrasonic flow meter and data logger to be installed at an inlet point to the distribution network, after closing the valves located at branching points (see Figure 3-5). In order to record flow rate and water pressure by branch pipeline, "Valve Operating Sheet for Step Test" as shown in Annex A-8 can be used.

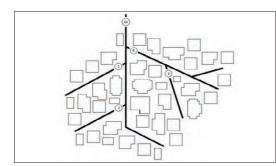


Figure 3-5 Concept of Step Test

Detection of Water Leaking Sound by Electronic Acoustic Rod

When water leakage occurs, the water leaking sound spreads through pipeline. So, Leakage Detection Sub-Team detects the sound with electronic acoustic rod at the point where valves are installed. Equipment of water leaking sound detection is shown in Figure 3-6.

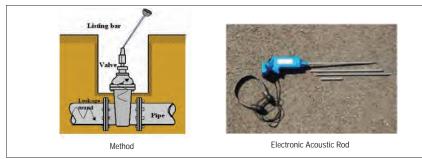


Figure 3-6 Method and Equipment of Water Leaking Sound Detection

Detection of Water Leaking Points by means of Leakage Detector

Leakage Detection Sub-Team identifies locations of leaking points with leakage detector, as shown in Figure 3-7.

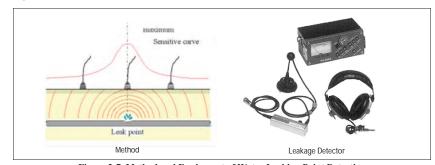


Figure 3-7 Method and Equipment of Water Leaking Point Detection

12

(4) Detection of Water Leaking Points by means of Correlator

Leakage Detection Sub-Team detects water leaking point with correlator, which intercepts leaking noise caught between two certain points (valves) equipped tentatively with sensor each and also measures the difference in transmission time, as shown in Figure 3-8.

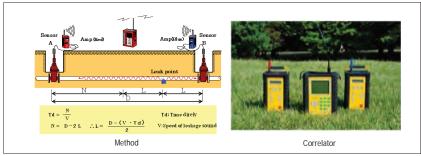


Figure 3-8 Method and Equipment of Water Leaking Sound Detection]

(5) Identification of the Exact Point of Leakage by means of Acoustic Rod

After detection of water leaking points, Leakage Detection Sub-Team drills some holes at the detected leaking points and inserts acoustic rod into each hole to identify exact point of leakage as shown in Figure 3-9.

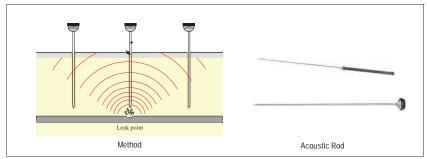


Figure 3-9 Method of Identification of Precise Water Leaking Points

(6) Pipe Locating Device

As a supporting device of locating metal materials such as pipes and valves during the above Actions, metal locator is effective, which can detect the magnetic field created by metal materials (see Figure 3-10).

Project Team 13



Figure 3-10 Metal Locator

3.2.8 Action B6: Repair of leakage and recording

As a result of the above Actions for water leakage detection, Leakage Detection Sub-Team makes a prioritized list of water leaking points and estimates cost of the repair. After procurement or preparation of materials, the Team repairs the water leakage points immediately.

3.2.9 Action B7: Measurement of Minimum Night Flow and water pressure (after repair/measures)

In order to verify System Input Volume after repair/measures, NRW Technical Sub-Team measures again water flow and pressure in the pilot project area in the same way as the above Action B4.

3.2.10 Action C1: Listing of customers

Customer Service Sub-Team makes a list of the customers supplied in the target pilot project area. The list should contain service situation of the customers. The Team also organizes information on the illegal users or non-supplied households if possible.

3.2.11 Action C2: Verification of installed and operating conditions, and accuracy of water meters, illegal connections and domestic water leakage

Based on the customer list prepared by Action C1, Customer Service Sub-Team verifies installed and operating conditions by visual check, and also accuracy of water meters with Test Water Meter shown in Figure 3-11.



Figure 3-11 Method of Checking Accuracy of Test Water Meters

Customer Service Sub-Team identifies the illegal users and verifies domestic water leakage including water waste in their properties in order to clarify quantitative water usage

3.2.12 Action C3: Data collection of billed water consumption (before repair/measures)

In order to sum up billed water consumption in the pilot project area before repair/measures, the Customer Service Sub-Team reads and records all functioning water meters twice at intervals of 24 hours.

3.2.13 Action C4: Replacement of malfunctioning water meters and disconnection of illegal connections

As stated in the Action C2, there are various types of service connections such as legal ones with metered, flat rate (direct lines) and also illegal connections. Approach to water meter installation has been determined by the customer as shown in Annex A-9.

In order for registered customers to understand fundamental principle on water supply service, Customer Service Sub-team explains importance of the installation of water meter to the customers without a functioning meter. Water meter in 'Gallon' unit are also replaced with that in 'Cubic meter' unit so as to avoid misreading and confusion in record for billing

Meanwhile, as a social intervention and countermeasure against illegal users, NRW Technical Sub-Team and Customer Service Sub-Team explain negative effects caused by illegal connections and importance of tariff collection in water supply management to them, and also persuade of legalization through mutual communication. Finally based on informed choice, illegal connections are legalized by registration if agreed and then water meter are installed through the necessary procedures as shown in Annex A-9, or are disconnected if disagreed in principle. But, Customer Service Sub-Team should attempt to avoid disconnection through the repeated communication.

3.2.14 Action C5: Data collection of billed water consumption (after repair/measures)

In order to sum up billed water consumption in the pilot project area after repair/measures, the Customer Service Sub-Team reads and records all functioning water meters twice at intervals of 24 hours.

3.3 IWA Water Balance and Evaluation in the Pilot Projects

3.3.1 Calculation of Non Revenue Water (before repair/measures)

Billed water consumption is deducted from the System Input Volume to figure out NRW ratio before repair of water leakage or measures against malfunctioning water meters, illegal connections and so on.

3.3.2 Calculation of Non Revenue Water (after repair/measures)

Billed water consumption is deducted from the System Input Volume to figure out NRW ratio after repair of water leakage or measures against malfunctioning water meters, illegal connections and so on.

3.3.3 Evaluation of Non Revenue Water Reduction Ratio

The Project Team compares the calculation results of NRW between before and after NRW reduction activities, as mentioned in the above 3.3.1 and 3.3.2, and evaluates the activities in terms of cost-effectiveness, that is, cost of the activities against improvement in income from water tariff collection. If improvement in NRW ratio does not reach the certain target as expected, the Project Team needs to clarify the reasons and repeat the actions for NRW reduction.

Project Team 15

Chapter 4 Implementation Schedule of NRW Reduction Activities

The Project Team proposes implementation schedule for 15 pilot projects from April 2013 to March 2014, as shown in Table 4-1.

However, the pilot zones can be transferred to working in the DMA from November 2013. The timing of the transfer of activities will depend on the completion of the works to install and that of the definition of the pressure management system.

Table 4-1 Implementation Schedule of NRW Reduction Activities

Area									2013	3									2014									
	A	or.	N	Лау		Jun.		Jul.		Aug	Ţ.	Sep		Oct.]	Nov	Dec.		Dec.		Jan			Feb	.	N	Mar.	
PP1					П							П										П					П	П
PP2																											П	╗
PP3		Т			П																						П	П
PP4		Т		Т																							\Box	╗
PP5																												
PP6	П	Т	П	Т								П										П					П	П
PP7																												
PP8		Т		Т		П																					П	П
PP9	П	Т	П	Т																		П				П	П	П
DMA1			П	\top																								\Box
PP10		Т	П	Т		П																						П
PP11																												\Box
PP12		Т	П	Т		П																						П
PP13		Т																										╗
PP14																												\Box
PP15		Т																										

Annex A-10 and Annex-11 show detailed implementation schedule with man-day of each action for per-pilot project areas and that for per-DMA respectively.

Project Team

Chapter 5 Cost Estimate

Based on Annex A-10 and Annex A-11, the Project Team estimates cost of implementation of perpilot project and per-DMA, as shown in Table 5-1 and Table 5-2 respectively.

Table 5-1 Cost Estimate per Pilot Project

_				
No	Action	Unit Cost	Cost	Man-
		(SBD)	(SBD)	Day
GIS	Sub Team			
A1	Preparation of drawings of distribution networks	975	975	1.0
A2	Update and upgrade of drawings and attributes of distribution networks	624	3,744	6.0
	Sub Total		4,719	7.0
Tec	hnical Sub Team and Leakage Detection Sub Team			
В1	Field survey, finding and function check of valves	936	2,808	3.0
B2	Pipe installation, excavation of flow meter chamber and valve replacement (if needed)	8,085	16,170	2.0
В3	Isolation of pilot project areas	936	1,872	2.0
B4	Measurement of Minimum Night Flow and water pressure (before repair/measures)	1,613	2,420	1.5
B5	Step test, leakage detection by acoustic equipment at tap and on road surface, and identification of leakage points			
	Step test	1,603	3,206	2.0
	Leakage Detection	1,405	4,215	3.0
В6	Repair of leakage and recording	25,653	76,959	3.0
В7	Measurement of Minimum Night Flow and water pressure (after repair/measures)	1,613	2,420	1.5
	Sub Total		110,069	18.0
Cus	tomer Services Sub Team			
C1	Listing of customers	961	1,922	2.0
C2	Installed and operating conditions, and accuracy of water meters, illegal connections and domestic water leakage			
	Illegal connections	506	1,012	2.0
	Malfunctioning water meters	361	722	2.0
	Water Meter Accuracy	361	722	2.0
C3	Data collection of billed water consumption (before repair/measures)	1,010	2,020	2.0
C4	Replacement of malfunctioning water meters and legalization or disconnection of illegal connections			
	Explanatory meeting and follow-up (soft component)	1,746	10,476	6.0
	Replacement of malfunctioning water meters	6,239	12,478	2.0
	Installation of water meters	6,239	12,478	2.0
	Disconnection of illegal connections	5,495	10,990	2.0
C5	Data collection of billed water consumption (after repair/measures)	1,010	2,020	2.0
	Sub Total		54.840	24.0
IW/	A Water Balance		,	
-	Calculation of Non Revenue Water (before repair/measures)	777	1,554	2.0
-	Calculation of Non Revenue Water (after repair/measures)	777	1,554	2.0
-	Evaluation of Non Revenue Water Reduction Ratio	777	777	1.0
	Sub Total		3,885	5.0
	Total		173,513	54.0

Therefore, grand total of the implementation cost of 9 pilot projects from April to October 2013 is as follows:

SBD 173,513 / pilot project x 9 projects = <u>SBD 1,561,617</u>

Table 5-2 Cost Estimate per-DMA

No	Action	Unit Cost (SBD)	Cost (SBD)	M an- Day
GIS	Sub Team	, ,		Ť
A1	Preparation of drawings of distribution networks	975	2,925	3
A2	Update and upgrade of drawings and attributes of distribution networks	624	9,984	16
	Sub Total		12,909	19
Tech	mical Sub Team and Leakage Detection Sub Team			
В1	Field survey, finding and function check of valves	936	12,168	13
B2	Pipe installation, excavation of flow meter chamber and valve replacement (if needed)	8,085	40,425	5
В3	Isolation of DMA area	936	5,616	6
B4	Measurement of Minimum Night Flow and water pressure (before repair/measures)	1,613	3,226	2
B5	Step test, leakage detection by acoustic equipment at tap and on road surface, and identification of leakage points			
	Step test	1,603	9,618	6
	Leakage Detection	1,405	18,265	13
В6	Repair of leakage and recording	25,653	333,489	13
В7	Measurement of Minimum Night Flow and water pressure (after repair/measures)	1,613	3,226	2
	Sub Total		426,033	60
Cust	omer Services Sub Team		The state of the s	
C1	Listing of customers	961	5,766	6
C2	Installed and operating conditions, and accuracy of water meters, illegal connections and domestic water leakage			
	Illegal connections	506	3,036	6
	M alfunctioning water meters	361	2,166	6
	Water Meter Accuracy	361	2,166	6
C3	Data collection of billed water consumption (before repair/measures)	1,010	4,040	4
C4	Replacement of malfunctioning water meters and legalization or disconnection of illegal connections			
	Explanatory meeting and follow-up (soft component)	1,746	26,190	15
	Replacement of malfunctioning water meters	6,239	43,673	7
	Installation of water meters	6,239	49,912	8
	Disconnection of illegal connections	5,495	27,475	5
C5	Data collection of billed water consumption (after repair/measures)	1,010	4,040	4
	Sub Total		168,464	67
Wat	er Audit			
-	Calculation of Non Revenue Water (before repair/measures)	777	3,108	4
-	Calculation of Non Revenue Water (after repair/measures)	777	3,108	4
-	Evaluation of Non Revenue Water Reduction Ratio	777	2,331	3
	Sub Total		8,547	11
	Total		615,953	157

Implementation cost per DMA from November 2013 is as follows:

SBD 615,953 per DMA

Chapter 6 Pilot Project Report and Workshop

The Project Team proposes contents of each pilot project report as shown in Table 6-1, and convenes workshops so as to share the activities and the results in the entire Solomon Water.

Table 6-1 Content of Pilot Project Report

	Table 6-1 Content of	ent of Pilot Project Report								
Team	In charge	Contents								
NRW Management Team	Team Members	Annual action plan on NRW reduction								
	Action Team Leaders	Numbers of population and households in project area Both planned and actual work schedules Input manpower by work item NRW ratio before and after measures Total cost on NRW reduction measurement, including personnel, fuel and pipe material costs Issues and problems arising from measurement Suggestions for future improvement								
	GIS Sub-Team	Location of pilot project area Information on distribution network								
NRW Action	Leakage Detection Sub-Team	Result of minimum night flow survey Result of water meter survey Result of illegal connection survey								
Team	NRW Technical Sub-Team (Pipe Maintenance & Repair)	Pipe repairing (location, number of cases)								
	NRW Technical Sub-Team (Service Pipe Connection)	Number of newly-registered connection								
	NRW Technical Sub-Team (Service Pipe Disconnection)	1) Number of disconnection								
	Customer Service Sub-Team (Water Meter Reading, Billing and Tariff Collection)	Result of illegal connection survey Result of water meter survey Income from collection (before and after measures)								
	NRW Technical Sub-Team (Pipe Materials Management and Procurement)	Procured materials and number, etc								

Project Team 19

Chapter 7 Record Form and Log Sheet

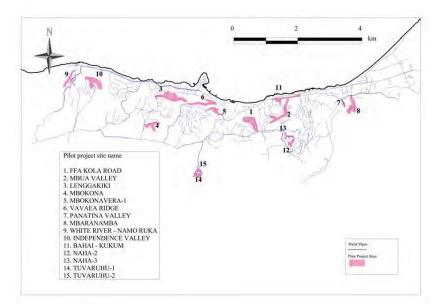
During the pilot implementation, the Project Team records results of actions and keeps a log of various data observed in the field.

Table 7-1 Items to be recorded and Log to be kept

No	Items / Log	In charge	Remarks
1	GIS Information Sheet	GIS Sub-Team	Annex A-5
2	Valve conditions checking list	NRW Technical Sub-Team	Annex A-6
3	Leakage record sheet	Leakage Detection Sub-Team	Annex A-7
4	Valve operation sheet for Step Test	NRW Technical Sub-Team	Annex A-8

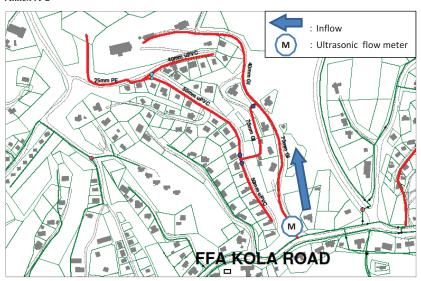
Annex



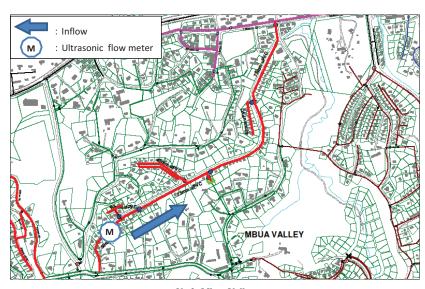


Location Map of the Pilot Project Areas

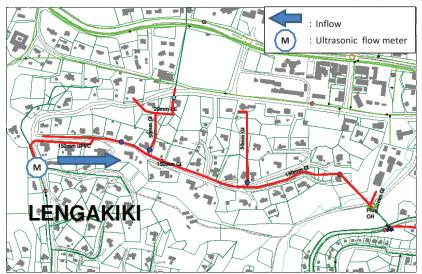
Annex A-2



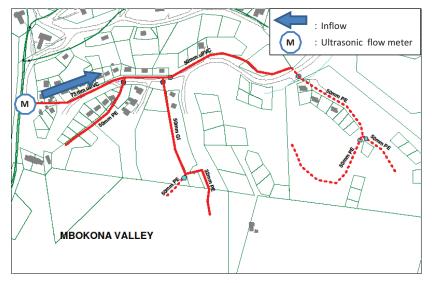
No.1: FFA Kola Road



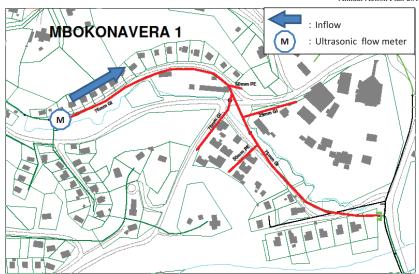
No.2: Mbua Valley



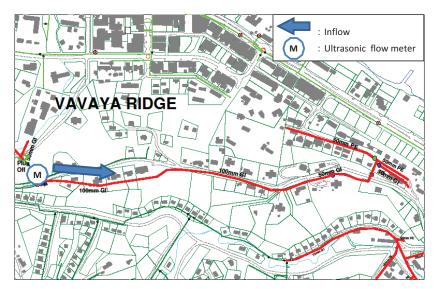
No.3: Lenggakiki



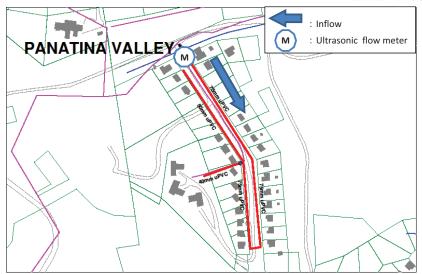
No.4: Mbokona



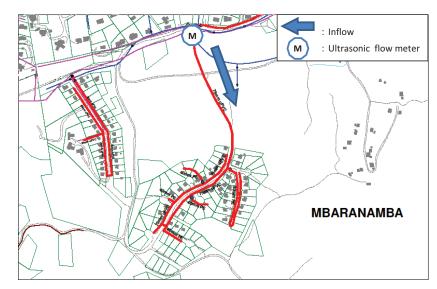
No.5: Mbokonavera 1



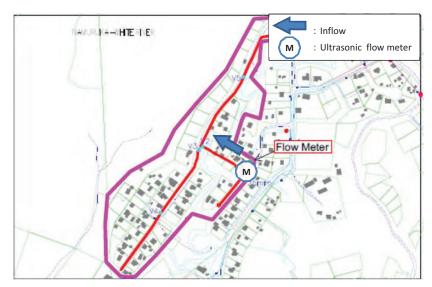
No.6: Vavaea Ridge



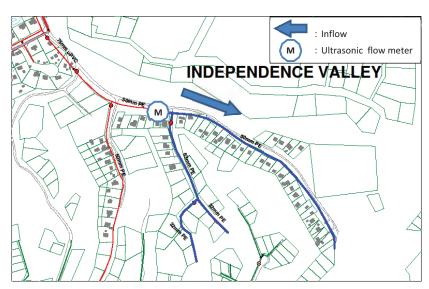
No.7: Panatina Valley



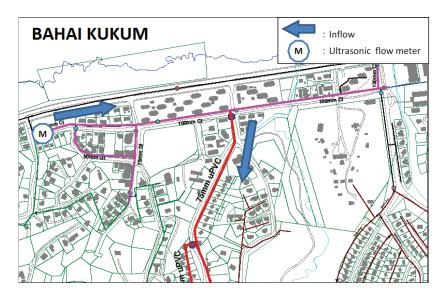
No.8: Panatina Mbaranamba



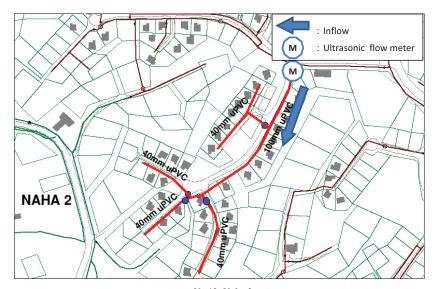
No.9: White River Namo Ruka



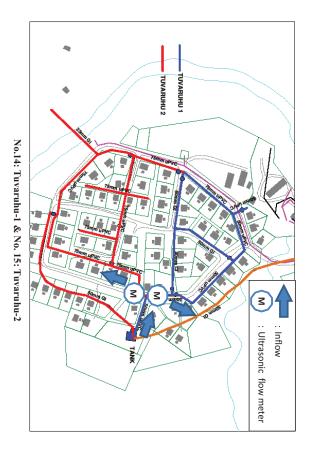
No.10: Independence Valley

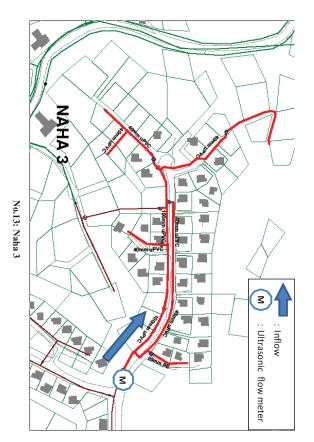


No.11: Bahai Kukum



No.12: Naha 2





Annual Action Plan 2013

Annex A-3

A-8

Items to be updated for GIS Database

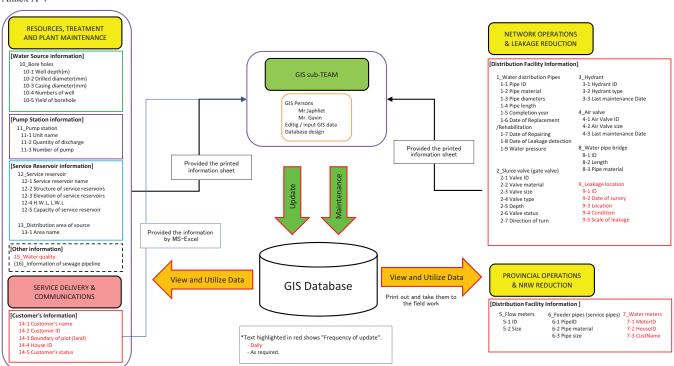
			prog	ress of da	tabase	Priolity of	Frequency		
	No.	GIS subject	covered	partly	not at all	updating and/or newly input*	of update	Remarks	Original data source
		1. Distribution Facility information							
	Graphic	Water distribution pipes	•			1	required		SIWA (NO & LR)
	1-1	Pipe ID			•	3	required		SIWA (NO & LR)
	1-2	Pipe material	•			1	required		SIWA (NO & LR)
	1-3	Pipe diameters	•			1	required		SIWA (NO & LR)
1	1-4	Pipe length	•			1	required		SIWA (NO & LR)
1	1-5	Completion year		•		1	required		SIWA (NO & LR)
	1-6	Date of Replacement / Rehabilitation			•	1	required		SIWA (NO & LR)
	1-7	Date of Repairing			•	1	required		SIWA (NO & LR)
	1-8	Date of Leakage detection			•	2	required		SIWA (NO & LR)
	1-9	Water pressure			•	2	required		SIWA (NO & LR)
	Graphic	Sluice valve (gate valve)	•			1	required		SIWA (NO & LR)
	2-1	Valve ID			•	1	required		SIWA (NO & LR)
	2-2	Valve material	1	•	T	1	required	1	SIWA (NO & LR)
	2-3	Valve size	1	•	1	1	required		SIWA (NO & LR)
2	2-4	Valve type		•		1	required		SIWA (NO & LR)
	2-5	Depth			•	1	required		SIWA (NO & LR)
	2-6	Valve status		•		1	required		SIWA (NO & LR)
	2-7	Direction of turn		-		1	required		SIWA (NO & LR)
			•			1	required		SIWA (NO & LR)
	3-1	Hydrant ID			•	1	required		SIWA (NO & LR)
3	3-2	Hydrant type				1	required		SIWA (NO & LR)
	3-3	Last maintenance Date			ě	i	required		SIWA (NO & LR)
		Air valve		•	-	1	required		SIWA (NO & LR)
	4-1	Air Valve ID			•	1	required		SIWA (NO & LR)
4	4-2	Air Valve size			•	1	required		SIWA (NO & LR)
	4-3	Last maintenance Date			•	1	required		SIWA (NO & LR)
			•			1	required		SIWA (PO & NRW R)
5	5-1	ID.			•	1	required		SIWA (PO & NRW R)
-	5-2	Size			•	1	required		SIWA (PO & NRW R)
				•	-	1	required	approx.60% is covered	SIWA (PO & NRW R)
	6-1	PipeID			•	1	required		SIWA (PO & NRW R)
6	6-2	Pipe material				1	required		SIWA (PO & NRW R)
	6-3	Pipe size				1	required		SIWA (PO & NRW R)
				•		1	Daily	no update since 1995	SIWA (PO & NRW R)
	7-1	MeterID			•	1	Daily		SIWA (PO & NRW R)
7	7-2	HouseID	1			1	Daily	1	SIWA (PO & NRW R)
	7-3	CustName	1			1	Daily	1	SIWA (PO & NRW R)
		Water pipe bridge				1	required		SIWA (NO & LR)
	8-1	ID				1	required		SIWA (NO & LR)
8	8-2	Length				i	required		SIWA (NO & LR)
	8-3	Pipe material	1			1	required	1	SIWA (NO & LR)
	Graphic	Leakage location	1			1	Daily		SIWA (NO & LR)
	9-1	ID				1	Daily		SIWA (NO & LR)
	9-2	Date of survey				1	Daily		SIWA (NO & LR)
9	9-3	Location Location	1			1	Daily	1	SIWA (NO & LR)
	9-3	Condition				1	Daily		SIWA (NO & LR)
	9-5	Scale of leakage	_			1	Daily	l	SIWA (NO & LR)
	9-3	orate or readage			_		Dally		Oliny (Ino a cit)

			prog	ress of da	tabase	Priolity of	-				
	No.	GIS subject	covered	partly	not at all	updating and/or newly input*	Frequency of update	Remarks	Original data source		
		2. Water Source information									
	Graphic	Bore holes	•			1	required		SIWA (RT & PM)		
	10-1	Well depth(m)		•		1	required		SIWA (RT & PM)		
10	10-2	Drilled diameter(mm)		•		1	required		SIWA (RT & PM)		
10	10-3	Casing diameter(mm)		•		1	required		SIWA (RT & PM)		
	10-4	Numbers of well			•	1	required		SIWA (RT & PM)		
	10-5	Yield of borehole			•	1	required		SIWA (RT & PM)		
		3. Pump Station information									
	Graphic	Pump station	•			1	required		SIWA (RT & PM)		
11	11-1	Unit name			•	1	required		SIWA (RT & PM)		
	11-2	Quantity of discharge			•	1	required		SIWA (RT & PM)		
	11-3	Number of pump			•	1	required		SIWA (RT & PM)		
		4. Service reservoir information									
	Graphic	Service reservoir	•			1	required		SIWA (NO & LR)		
	12-1	Service reservoir name			•	2	-		SIWA (RT & PM)		
12	12-2	Structure of service reservoirs			•	2	-		SIWA (RT & PM)		
12	12-3	Elevation of service reservoirs	•			2	required		SIWA (RT & PM)		
		H.W.L, L.W.L			•	2	required		SIWA (RT & PM)		
	12-5	Capacity of service reservoir			•	2	required		SIWA (RT & PM)		
13		Distribution area of source			•	1	required		SIWA (RT & PM)		
	13-1	Area name			•	1	required		SIWA (RT & PM)		
		5. Customer's information									
	14-1	Customer's name			•	1	Daily		SIWA (CC)		
		Customer ID			•	1	Daily		SIWA (CC)		
14		Boundary of plot (land)		•		3	required	no update since 2000	Min. of Lands & Housing		
		House ID			•	3	Daily		SIWA (NO & LR)		
	14-5	Customer's status		•		3	Daily		SIWA (CC)		
		6. Other informations									
		Water quality (Fixed-point observation)			•	2	Daily / Monthly		SIWA (RT & PM)		
(16)	Graphic	Information of sewage pipeline		•		1	required	1	SIWA (RT & PM)		
					*	Prioty "1": immediate Prioty "2": soonest		PO & NRW R	Network Operations & Leakage Reduction Provincial Operations & NRW Reduction		
						Prioty "3": asap			Resources, Treatment & Plant Maintenance		
								CC	Customer Care		

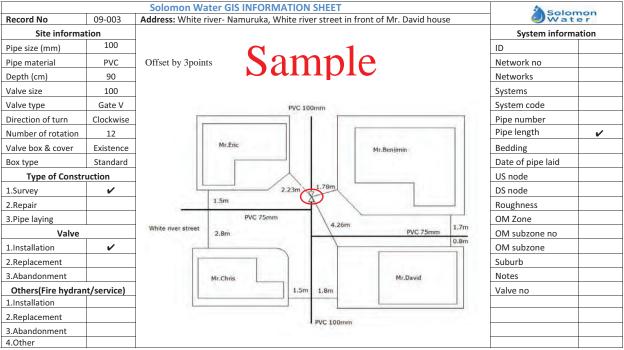
Project Team A-10

Annual Action Plan 2013

Annex A-4



Workflow of GIS Database



 Officer:
 Leak detection team: Eric
 GIS team: Gavin

 Signature:
 Date:
 26 March, 2013

Project Team A-12

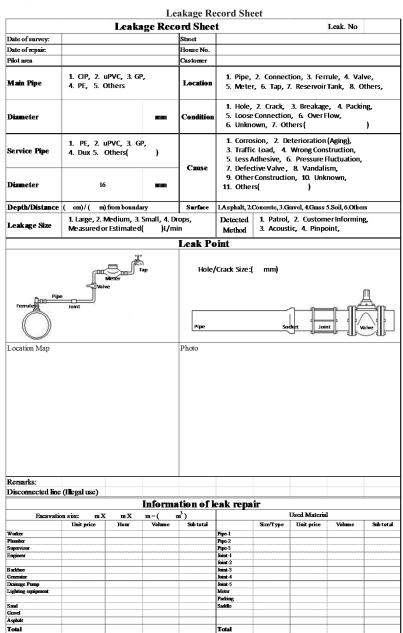
Project Team

			Tria			Fir	е Нус	Irant							Va	lve						7		Nai
3	2	_	Trial No,		HS	₹	H	HZ	Ħ	VI2	YI.	VIO	5	≨	S	8	Si.	¥	ప	Ś	<u>\</u>	N _o .		ne of
			Date																			Detected date		Name of Pilot Area:
			te																			Diameter (mm)		a:
			Starting time																			Pipe material		
			g time																			Type of valve		
			Ending time																			Valve Cover (Ok/Non)	Valve Cover	
			Isolation OK/NO	Isolation check																		Leak(Y/N)	Viewing	
				check																		Direction (Clockwise/ Anticlockwise)	Direction	
																						Number of turns	Rotation	
			Remarks																			Little Open (sound of water passing)	Sound check	Supplying hour:
																						Remarks		

Annex A-6

Valve Condition Checking List

Annual Action Plan 2013



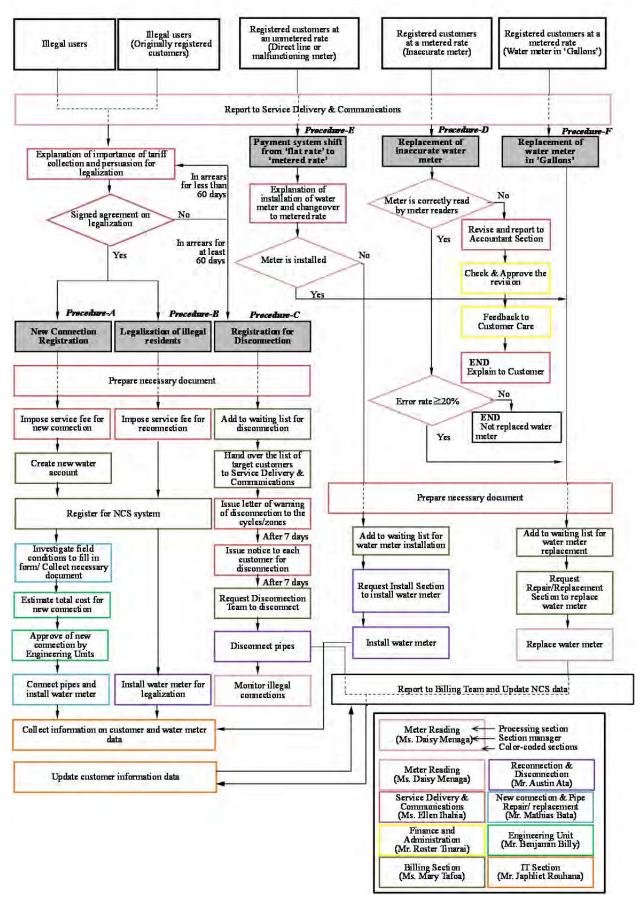
Project Team A-14

Annex A-8

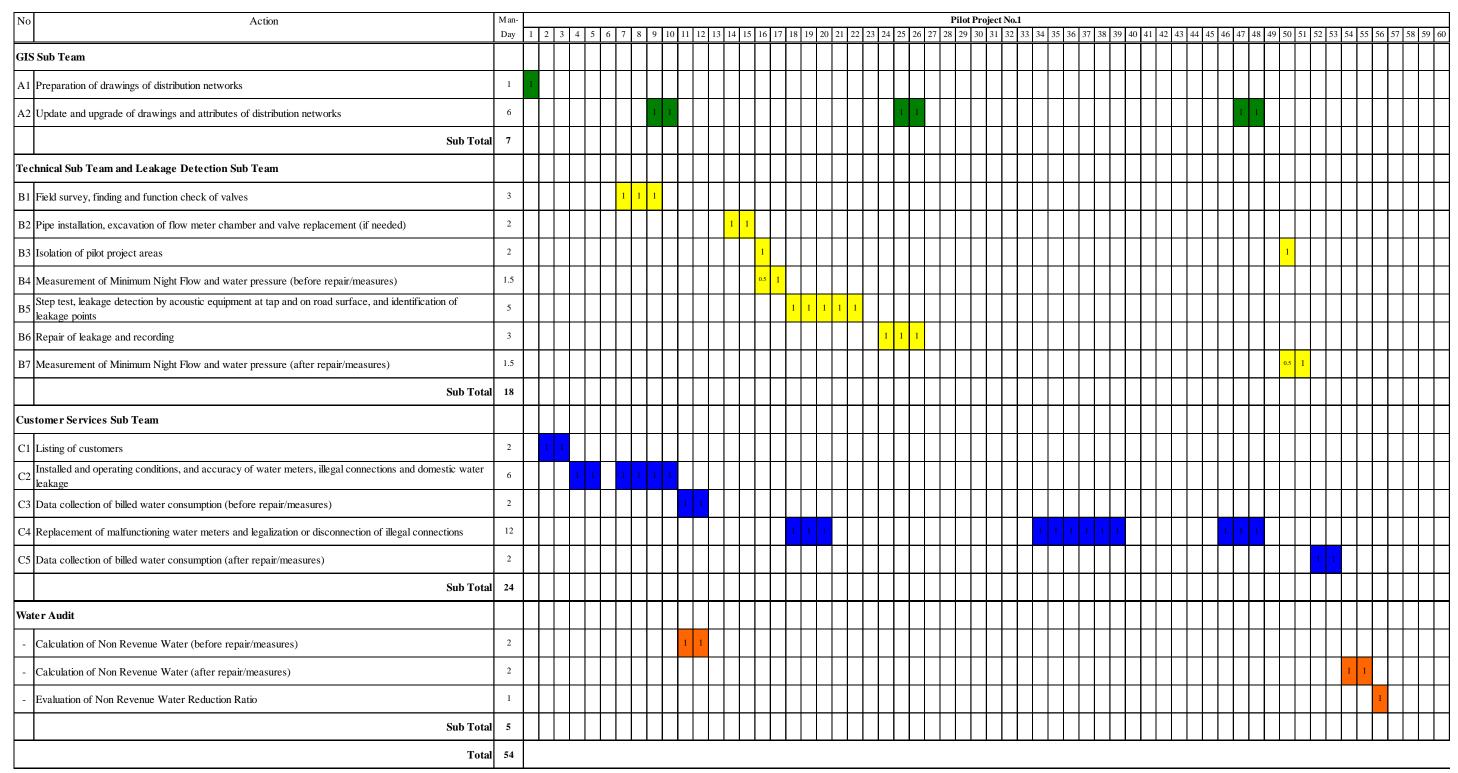
Valve Operation Sheet of Step Test

	Pilot area	:					Trial number_
No,	Status	Valve No,	Operating Time	Flow rate(m3/h)	MNF(m3/h)	MNF(m3/h)	Remarks
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
14							

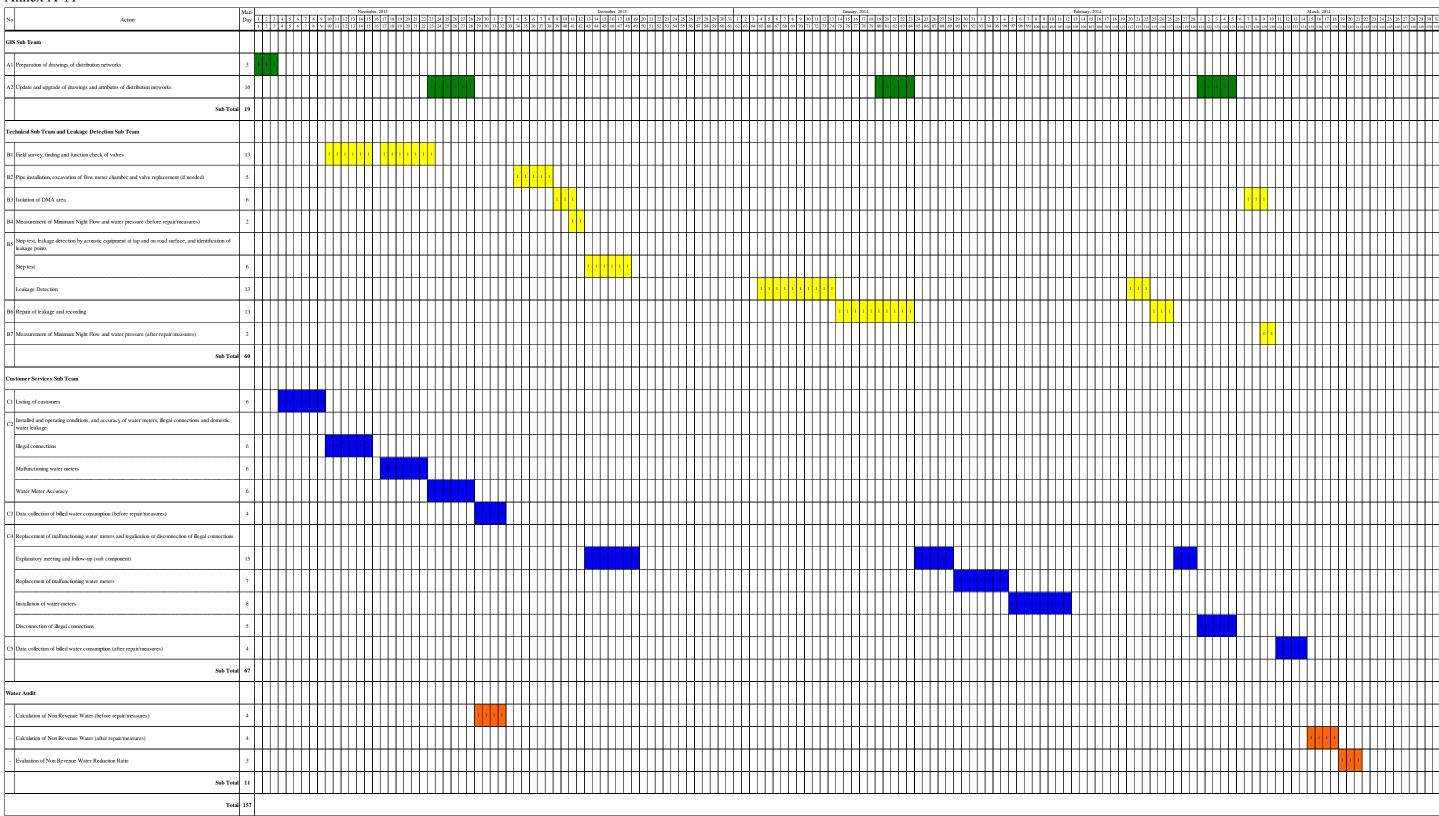
Project Team A-15



Normalization Process of Service Connection



Detailed Implementation Schedule of Actions for per-Pilot Projects



Detailed Implementation Schedule of Actions for per-DMA



The Project for Improvement of Non-Revenue Water Reduction Capacity for Solomon Islands Water Authority in Solomon Islands

Annual Action Plan 2014 on NRW Reduction

June, 2014

Prepared by Project Team

Table of Contents

Chapte	r 1 Introduction	1
1.1	Project Purpose, Outputs and Activities of the Project	1
1.2	Two Year Plan of Solomon Water	1
1.3	Scope of Responsibilities, Contribution and Cooperation between the Project and	
	the Two Year Plan	3
1.4	Definition of Terms	5
1.5	Spatial Relationship among DMA, LCZ and PCZ/Non-PCZ	6
1.6	Project Team and Persons involved	6
Chapte	r 2 Outline of the Project Activities for NRW Reduction	9
2.1	Components in the Project	9
2.2	Overall Implementing Flow	
2.3	Overall Implementing Schedule	9
Chapte		
	and DMA Management	12
3.1	Review of Existing Data	
3.2	Provisional Demarcation of DMAs and LCZs	
3.3	Data Improvement	
3.4	Installation of Flow Meters, Valves and Isolation	
3.5	Creation of DMAs and LCZs	
3.6	Strategic Implementation Plan for NRW Reduction	
3.7	GIS Data Updating and Workflow of GIS Database	
3.8	Manual for NRW Reduction	15
Chapte	r 4 Component-B: NRW Reduction in the selected DMAs/LCZs	16
4.1	Selection of Two DMAs	16
4.2	Data Improvement (in detail)	16
4.3	Installation of Flow Meters, Valves and Isolation	
4.4	Creation of the selected DMAs and LCZs	16
4.5	Preparatory Activities before NRW Reduction	17
4.6	NRW Reduction Activities in each LCZ	18
4.7	IWA Water Balance and Evaluation	24
4.8	Monitoring of the selected DMAs	24
Chapte	r 5 Cost Estimation	25
Chapte	r 6 Reports, Documents and Workshops	26
Chapte	r 7 Record Forms and Log Sheets	26
Chapte	r 8 Individual Action Plan	27
8.1	Evaluation of Individual Action Plan 2013	27
8.2	Individual Actin Plan 2014.	27

Annex

Annex 1	Project Design Matrix ₂ (PDM ₂)	A-1
Annex 2	Location Map of Pressure or Non Pressure Control Zones	A-2
Annex 3	Workflow of Construction and Update of GIS Database	A-3
Annex 4	Items to be updated for GIS Database	A-4
Annex 5	Form for Data Collection and Updating (Example)	A-5
Annex 6	Detailed Implementation Schedule of Component-B	A-6
Annex 7	Valve Conditions Checking List	A-7
Annex 8	Leakage Record Sheet	A-8
Annex 9	Valve Operating Sheet for Step Test	A-9
Annex 10	Normalization Process of Service Connections	A-10
Annex 11	Meter Replacement/Installation Form	A-11
Annex 12	Evaluation Results of Individual Action Plan 2013	A-13
Annex 13	Individual Action Plan 2014	A-**

Abbreviation

(iii)

AUD	Australian Dollar
CP	Counterpart
DFAT	Australian Department of Foreign Affairs and Trade
DMA	District Metered Area
GIS	Geographical Information System
IAP	Individual Action Plan
JICA	Japan International Cooperation Agency
LCZ	Leakage Control Zone
MNF	Minimum Night Flow
NRW	Non Revenue Water
OJT	On-the-Job Training
PCZ	Pressure Control Zone
SBD	Solomon Islands Dollar
SOP	Standard Operating Procedure
SW	Solomon Water
TWP	Two Year Plan of Solomon Water

Annual Action Plan 2014

Chapter 1 Introduction

In order to carry out Non Revenue Water (NRW) reduction activities in Honiara City under the Project for Improvement of Non Revenue Water Reduction Capacity for Solomon Islands Water Authority in Solomon Islands (hereinafter "the Project"), the Project Team formulates this Annual Action Plan 2014 (Phase-3, April 2014 to March 2015), which describes an approach to NRW and efforts at NRW reduction by the Project, in consideration of the lessons learned from Phase-2 and also in cooperation with the Two Year Plan of Solomon Water.

1.1 Project Purpose, Outputs and Activities of the Project

The purpose of the Project is that "Solomon Water is assisted to achieve its target of reducing the NRW ratio in Honiara to 30% by 2015".

The objectively verifiable indicator for the purpose is that "The NRW ratio is reduced by 30 points in each pilot project area, selected District Meter Areas (DMAs) and/or Leakage Control Zones (LCZs)".

In order to accomplish the purpose, the following four outputs were identified for the Project:

- 1. Planning process of SW for NRW reduction is systemized.
- 2. The procedures for NRW reduction is established through pilot projects and DMAs/LCZs.
- NRW reduction is implemented in accordance with the procedures in pilot projects and DMAs/LCZs.
- 4. Water meter reading and billing process management are improved.

A number of activities and associated inputs for the each output were also specified, which are shown in Table 1-1 and Annex 1, Project Design Matrix₂ (PDM₂).

1.2 Two Year Plan of Solomon Water

Based on the Two Year Plan of Solomon Water, which is assisted financially by Australian Government, a variety of interventions has been introduced to improve levels of water supply services.

The objective of the Two Year Plan is that "Solomon Water provides improved levels of service (in terms of quality, quantity and reliability) to a larger proportion of the population in the existing service areas, based on a sound financial position".

In order to achieve the objective, Solomon Water identified the five outputs for the Two Year Plan as follows:

- 1. Improved levels of service for water supply
- 2. Improved customer care and communications
- 3. Strengthened financial management and administration
- 4. Improved organizational capacity
- 5. Improved strategic planning

A number of activities for the each output were also specified, which are shown in Programme Logic of the Two Year Plan, shown in Figure 1-1.

Source: PDM₂

	SW's service levels are improved and SW's revenue is increased.
Overall Goal	Indicators 1. The NRW ratio in Honiara City is reduced to 20%* by 2018. 2. Ratio of operational revenue-to-expenditure is sustained at greater than 100%.
Project Purpose	SW is assisted to achieve its target of reducing the NRW ratio in Honiara to 30%* by 2015. <u>Indicator</u>
Lupose	1. The NRW ratio is reduced by 30** points in each pilot project area, selected DMAs and/or LCZs.
	Output-1: Planning process of SW for NRW reduction is systemized.
	Indicators 1-1. Annual budget for NRW reduction is secured in the pilot project areas and DMAs/LCZs. 1-2. The strategic implementation (rolling-out) plan for NRW reduction is approved by management of SW. Activities 1-1 Establish the NRW Management Team in SW. 1-2 Review the current NRW reduction activities done by SW. 1-3 Assist in hydraulic analysis including identification of problems in the existing network.
	1-4 Select pilot project areas and DMAs. 1-5 Formulate an annual action plan on NRW reduction in the pilot project areas and DMAs/LCZs. 1-6 Monitor the progress of NRW reduction activities in the pilot project areas and DMAs/LCZs.
	 1-7 Analyze cost-effectiveness of NRW reduction activities. 1-8 Prepare strategic implementation (rolling-out) plan for NRW reduction in the whole Honiara City.
	Output-2: The procedure for NRW reduction is established through the pilot projects and DMAs/LCZs.
	Indicators
	 2-1. A manual for NRW reduction measures is revised. 2-2. The number of authorizations and disconnections of illegal connections is increased in the pilot project are:
	and DMAs/LCZs. 2-3. The number of new service connections and replacement of malfunctioning customer meters is increased the pilot project areas and DMAs/LCZs.
	Activities 2-1 Establish the NRW Action Team in SW.
	2-2 Check existing flow meters and replace the malfunctioning meters with new ones at all the water sources. 2-3 Conduct training on NRW reduction for the NRW Action Team.
	Output-3: NRW reduction is implemented in accordance with the procedure in pilot projects an DMAs/LCZs,
Outputs	<u>Indicators</u>
and	3-1. The number of pipe repairs is increased in the pilot project areas and LCZ.
Activities	Activities 3-1 Provide assistance in the definition and creation of discrete DMA's and their boundaries.
	3-2 Provide assistance in the creation of LCZ within the DMAs.
	3-3 Update existing water distribution network drawings by using GIS in the pilot project areas and DMAs. 3-4 Install necessary valves for isolation of the pilot project areas and DMAs, install flow meters, and measu the NRW ratio before implementation of the pilot project.
	3-5 Identify the causes of NRW (water leakage, illegal connections and meter-related losses) in the pilot proje areas and DMAs through the OJT.
	3-6 Implement NRW reduction measures such as legalization of users, leakage detection, leakage repair, wat meter installation and optimization of water pressure in the pilot project areas and DMAs, and measure the NRW ratio after implementation of pilot project.
	3-7 Prepare reports of results including cost and benefit.
	3-8 Provide advice for the improvement of pipe system design, installation and network operation.
	 3-9 Convene the workshops to share the experiences, outcomes and etc. of the pilot projects. 3-10 Provide capacity development and training using the DMA's and LCZ's as the basis for NRW reduction.
	activities.
	3-11 Prepare a manual for NRW reduction. (not mentioned in PDM ₂)
	Output-4: Water meter reading and billing process management are improved. Indicator
	4-1. Standard operating procedures (SOP) and training materials are formulated.
	Activities 4-1 Formulate the work schedule and staff assignment plan for water meter readers.
	4-2 Conduct training on water meter reading and reporting methods for anomalies and illegal connections for water meter readers.
	4-3 Promote PR activities on water conservation and saving, and water tariff for the customers.
	4-4 Monitor the water meter reading and billing activities.

Project Team 2

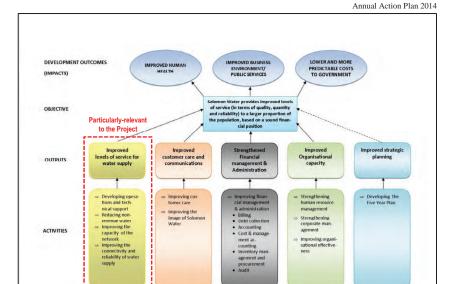


Figure 1-1 Programme Logic of Two Year Plan of Solomon Water

The output particularly-relevant to the Project is the 1st output "Improved levels of service for water supply" and its activities are:

- Developing operations and technical support

Source: Two Year Plan of Solomon Water

- Reducing NRW (including pressure management)
- Improving the capacity of the network (such as renovation, replacement and redesign)
- Improving the connectivity and reliability of water supply

1.3 Scope of Responsibilities, Contribution and Cooperation between the Project and the Two Year Plan

The Project is not only to create own outputs but also to contribute to creation of the outputs of the Two Year Plan of Solomon Water.

Table 1-2 shows the scope of responsibilities and also how the activities of the Project in the Phase-3, which are described in detail in this Annual Action Plan 2014, contribute to and cooperate mutually with the activities of Two Year Plan particularly for its 1st output "Improved levels of service for water supply".

Annual Action Plan 2014

Table 1-2 Scope of Responsibilities, Contribution and Cooperation between the Project and the Two Year Plan

		(()
Activities in the Project		Activities for 1 "Output in the Two Year Plan
sist in hydraulic analysis including identification of problems in the existing network.		2.1 Developing operations and technical support
		2.1.1 System Monitoring
lect pilot project areas and DMAs.	· /	- Review, procure and install SCADA/Telemetry
		- Recruit and train technicians
onitor the progress of NRW reduction activities in the pilot project areas and DMAs/LCZs.	i 	2.1.2 Hydraulic Modelling of the Network
		- Procure modelling software
alyze cost-effectiveness of NRW reduction activities.	· 	- Establish modelling unit, recruit and train modellers
		- Develop a calibrated network model
pare strategic implementation (rolling-out) plan for NRW reduction in the whole Honiara City.	· 	2.2 Reducing NRW
	<u></u>	2.2.2 Pressure Management
anduct training on NRW reduction for the NRW Action Team.	}	- Procure, install PRVs and meters in chambers
	<u>*</u>	- Customer awareness campaign
ovide assistance in the definition and creation of discrete DMA's and their boundaries.	*	- Set up selected high priority supply zones as DMAs
ovide assistance in the creation of LCZ within the DMAs.		- Procure, install GSM data loggers in DMAs
	·	- NRW task force role expanded to include management of pressure zone
date existing water distribution network drawings by using GIS in the pilot project areas and	1	- Geospatial referencing of all registered connections/meters
IAS.	P	- Establish MapInfo GIS link to customer billing
	<u>></u>	- Ongoing monitoring of DMAs
stall necessary valves for isolation of the pilot project areas and DMAs, install flow meters, and	<u></u> </th <td>2.2.3 Increasing Rate of Progress of NRW Reduction</td>	2.2.3 Increasing Rate of Progress of NRW Reduction
asure the NRW ratio before implementation of the pilot project.	2	- Specs for materials identified and made available for installation
entify the causes of NRW (water leakage, illegal connections and meter-related losses) in the)	- Train supervisors
ot project areas and DMAs through the OJT.	1	- Detailed in the field audit of illegal connections
plement NRW reduction measures such as legalization of users, leakage detection, leakage	1	- Disconnection of illegal connections
air, water meter installation and optimization of water pressure in the pilot project areas and	1	- Fit meters to flat rate connections
AAs, and measure the NRW ratio after implementation of pilot project.	2	- Procure materials for leak repair and main replacement
		- Recruit additional staff for leak repair, meter and billing teams
spare reports of results including cost and benefit.		- Vehicle and plant
ovide advice for the improvement of pipe system design, installation and network operation.	1	2.3 Improving the capacity of the network
mvene the workshops to share the experiences, outcomes and etc. of the pilot projects.		- Review and select appropriate design standard
rovide capacity development and training using the DMA's and LCZ's as the basis for NRW	·	- Trial relocation of first 200 customer meters
luction activities.	-	- Improve capacity of SW repair team
	¥	- Prepare prioritized main upgrade programme
repare a manual for NRW reduction. (not mentioned in PDM ₂)	<i>→</i>	- Rolling upgrade of distribution system
omote PR activities on water conservation and saving, and water tariff for the customer	-	2.4 Improving the connectivity and reliability of water supply
onitor the water meter reading and billing activities		Transmission, reservoir, borehole replacement/maintenance and generator

Annual Action Plan 2014

1.4 Definition of Terms

(1) Non Revenue Water (NRW)

NRW is characterized in the International Water Association (IWA) Water Balance as shown in Table 1-3.

Table 1-3 NRW in the IWA Water Balance

		_ =	Billed Authorized	Billed metered consumption	Revenue		
		prized	Consumption	Billed unmetered consumption	Water		
	je	Authorized Consumption	Unbilled Authorized	Unbilled metered consumption	_		
on	Volume	C	Consumption	Unbilled unmetered consumption			
Production	System Input V		Apparent Losses	Unauthorized consumption (incl. illegal connections)	Non		
ter Pı	em I		ripparent Bosses	Metering inaccuracies	Revenue Water		
Water	Syst	Water Losses		Leakage on transmission and/or distribution networks	(NRW)		
			Real Losses	Leakage and overflow at utility's storage tanks			
				Leakage on service connections to customer meters			
	Tre	atment	Losses (Backwash, etc.)	and Evaporation			

(2) District Metered Area (DMA)

"District Metered Area (DMA)" is defined as a discrete area of a distribution system permanently created by isolation or the complete disconnection of pipe work in which the quantities of water inflow and outflow the area are metered. The water flow is analyzed to quantify the level of NRW. In this way, it is possible to determine more precisely where and when it is most beneficial to undertake NRW reduction activities.

(3) Leakage Control Zone (LCZ)

"Leakage Control Zone (LCZ)" specially-introduced in Solomon Water is defined as a discrete zone of a distribution system tentatively created for implementation of countermeasures such as Active Leakage Control against leakage (rather NRW) by isolation or the complete disconnection of pipe work in which the quantities of water inflow and outflow the area are metered temporarily.

The Project assumes each DMA consists of a number of LCZs, but that may be not always the case because of DMA size or configuration of network. The size of LCZ and procedures of countermeasures are supposedly almost same as those of the Pilot Project in the Phase-2.

(4) Pressure Control Zone (PCZ) under the Two Year Plan

One of important factors in lowering and subsequently maintaining a low level of NRW in a water network is "Pressure Control". The division of network into DMAs facilitates the creation of a permanent pressure control system, thus enabling pressure reduction in DMAs which reduces the level of background leakage, the rate of flow of individual bursts and the rate of the annual burst frequency.

Solomon Water has already set up eight zones as "Pressure Control Zones (PCZs)" in which Pressure Reducing Valve (PRV) to be installed in the near future, and also other remaining zones as "Non Pressure Control Zones (Non-PCZs)", totally 29 zones for the whole water supply area of Honiara City under the Two Year Plan. Their locations are shown in Annex 2.

Annual Action Plan 2014

Table 1-4 Pressure	Control Zones	or Non Pressure	Control Zone	s in Honiara City

No	Name		No	Name	
1	White River Gravity	Non-PCZ	16	Mbua Valley	PCZ
2	White River Gravity	Non-PCZ	17	Tracce House	Non-PCZ
3	Rove	Non-PCZ	18	West Kolaa Ridge B	PCZ
4	Tasahe A and B	PCZ	19	West Kolaa Ridge C	PCZ
5	Tasahe C	Non-PCZ	20	Tuvaruhu	Non-PCZ
6	Ngossi	Non-PCZ	21	Naha Valley 1	Non-PCZ
7	Bokona 1	PCZ	22	Vuri Height	Non-PCZ
8	Bokona 2	Non-PCZ	23	Naha Valley 2	Non-PCZ
9	Lenggakiki	Non-PCZ	24	Jakson Ridge	Non-PCZ
10	Vavaea Rigde	PCZ	25	Panatina West side	Non-PCZ
11	Bokonavera	Non-PCZ	26	Panatina Industrial	Non-PCZ
12	Mataniko SIWA	Non-PCZ	27	Panatina Gravity West	Non-PCZ
13	Skyline	Non-PCZ	28	Panatina Aiport	Non-PCZ
14	West Kolaa Ridge A	PCZ	29	Panatina Valley	Non-PCZ
15	Tanuli	PCZ			

Source: Two Year Plan of Solomon Water

(5) DMA Management and Maintenance

"DMA Management" (i.e. DMA-based Monitoring) is defined as a solution to NRW by creation of permanent leakage (rather NRW) control system by dividing the network into a number of sectors called DMA so that NRW in each sector can be quantified and the detection activities can always be directed to the part of the network with the most NRW. Once an acceptable level of NRW is achieved by countermeasures, the water flow into the area and water consumption in the area is monitored to identify new leakages or illegal connections immediately and prioritized them for solution. Then, further countermeasures are taken as "DMA Maintenance" to keep the acceptable level of NRW.

So, DMA Management and Maintenance contributes to shifting current passive leakage (rather NRW) control to active one.

1.5 Spatial Relationship among DMA, LCZ and PCZ/Non-PCZ

The following schematic drawing shows spatial relationship among DMA, LCZ and PCZ/Non-PCZ.

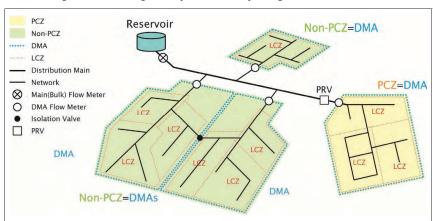


Figure 1-2 Spatial Relationship among DMA, LCZ and PCZ/Non-PCZ (an example)

Project Team 6

1.6 Project Team and Persons involved

The Project is carried out by the Project Team composed of the NRW Management Team, the NRW Action Team and the JICA Expert Team, in close cooperation with an expert on hydraulic analysis for supervising implementation of the Two Year Plan.

(1) NRW Management Team

The NRW Management Team consists of five managers of Solomon Water (see Table 1-5).

Table 1-5 Member List of NRW Management Team

Name	Position in the Project	Job Title in SW	Nationality
Mr. Richard AUSTIN	Project Director	General Manager	British
Mr. Ray ANDRESEN	Project Manager	Operations& Technical	Solomon Islander
		Manager	
Ms. Debbie JOHNSEN	Finance & Administration	Finance & Administration	Australian
	Manager	Manager	
Ms. Tima KOFANA	Human Resources Manager	Human Resources Manager	Fijian/
			Solomon Islander
Ms. Ellen MARUAROFA	Service Delivery&	Service Delivery&	Solomon Islander
	Communications Manager	Communications Manager	

Source: Organization Chart of SW

Note: Ms. Ellen Maruarofa is also a member of NRW Action Team.

(2) NRW Action Team

The NRW Action Team consists of 20 counterparts of Solomon Water and has been facilitated by an in-house consultant (see Table 1-6).

Table 1-6 Member List of NRW Action Team

	Table 1-6 Member List of	INKW ACION I Cam	
Name	Position in the Project	Job Title in SW	Division
Technical Sub-Team			
Mr. Benjamin BILLY	Action Team Leader 1 /	Network Operations Team	Operations &
	Sub-Team Leader (NRW	Leader	Technical
	Taskforce Leader)		
Mr. Austin ATA	Deputy Sub-Team Leader	Service Coordinator	Service Delivery &
	(Customer Connections)		Communications
Mr. Moses RAMO	(Customer Connections)	New Connections Works	Service Delivery &
		Officer	Communications
Mr. Silas TALOSUI	Deputy Sub-Team Leader	Network Maintenance	Operations &
	(Network Maintenance &	Team Leader	Technical
	Repair)		
Mr. Mathias BERA	Pipe Repair (Network Pipe	Technical Assistant for	Operations &
	Maintenance & Repair)	Network Operations	Technical
Mr. Layten JACOB	Deputy Sub-Team Leader	Procurement Coordinator	Finance &
	(Procurement)		Administration
Mr. Frank DAUKALIA	Meter Repair/Replacement	Technical Assistant for	Operations &
	(Pipe Materials Management	Network Operations	Technical
	& Procurement)		
Mr. Chris MERIKO	Deputy Sub-Team Leader	Source Treatment & Plant	Operations &
	(Water Resources &	Team Leader	Technical
	Treatment)		
Customer Service Sub-T		T	
Ms. Ellen	Action Team Leader 2 /	Service Delivery &	Service Delivery &
MARUAROFA	Sub-Team Leader(Customer	Communications Manager	Communications
	Care & Communications		
	Manager)		
Ms. Beverly SAOHU	Deputy Sub-Team Leader	Customer Care Team	Service Delivery &

Annuai Action Fian 2014					
Name	Position in the Project	Job Title in SW	Division		
	(Customer Care)	Leader	Communications		
Mr. Carlos SALIGA	Deputy Sub-Team Leader	Communications & Public	Service Delivery &		
	(Community Relations &	Relations Team Leader	Communications		
	Media)				
Ms. Sophia TANGO	(Community Relations &	Communications & Public	Service Delivery &		
	Media Assistant)	Relations Assistant	Communications		
Ms. Daisy MENAGA	Deputy Sub-Team Leader	Meter Reading Team	Finance &		
	(Meter Reading)	Leader	Administration		
Ms. Mary TAFOA	Deputy Sub-Team Leader	Billing Team Leader	Finance &		
	(Billing)		Administration		
Mr. Lawrence IROI	(Chief Accountant)	Accountant	Finance &		
			Administration		
GIS Sub-Team					
Mr. Gavin BARE	Sub-Team Leader (GIS	GIS Technician for	Operations &		
	Technician)	Network Operations	Technical		
Mr. Japhliet ROUHANA	(IT Administration)	IT Technician	Finance &		
			Administration		
Leakage Detection Sub-T	Team				
Mr. Eric UNGA	Sub-Team Leader (Leakage)	Provincial & Leakage	Operations &		
		Operations Team Leader	Technical		
Mr. Matthew MAFE	Plumber	Plumber for Provincial &	Operations &		
		Leakage Operations	Technical		
Mr. David AKOEASI	Plumber	Plumber for Provincial &	Operations &		
		Leakage Operations	Technical		
Consultant					

Source: Organization Chart of SW

Note: Ms. Ellen Maruarofa is also a member of NRW Management Team.

In-house Consultant

(3) JICA Expert Team

Ms. Marista KAPINI

In the Phase-3, the JICA Expert Team consisting of the following Japanese members assists the Project (see Table 1-7).

In-house Consultant

Table 1-7 Member List of JICA Expert Team

Name	Expertise
Mr. Taketoshi FUJIYAMA	Leader /Water Supply Planning, Operation and Management
Mr. Akinori MIYOSHI	Deputy Leader / NRW Reduction Measures -1
Mr. Akihiko OKAZAKI	Leakage Detection Technology
Mr. Masakazu ASAI	GIS
Mr. Yoshiharu WADA	Customer Services & Public Relations
Mr. Kazutoshi MASUDA	GIS Advisor (Support Member)

(4) Expert for Two Year Plan

The following expert on hydraulic analysis to supervise technically implementation of the Two Year Plan is assigned by Solomon Water.

Ms. Kristina KARAVASILI, Technical Coordinator for Water Supply Systems

Project Team 8

Annual Action Plan 2014

Chapter 2 Outline of the Project Activities for NRW Reduction

This chapter describes an overall implementing flow and schedule of NRW reduction by the Project in the Phase-3.

2.1 Components in the Project

The Project is divided into two components conveniently as follows, and the following chapters describe them each.

Component-A: Preparation for Future NRW Reduction by DMA and DMA Management (Chapter 3)

In consideration of future implementation of NRW reduction activities and establishment of DMA management after the Project, the Project creates DMAs/LCZs and formulates "Strategic Implementation Plan" together with assistance in GIS data updating and database, and preparation of manual on NRW reduction.

Component-B: NRW Reduction in the selected DMAs/LCZs (Chapter 4)

The Project selects and creates two DMA and some LCZs in early stage of Component-A, and then implement NRW reduction activities (countermeasures against NRW), evaluates IWA water balance and monitor NRW in the selected DMAs.

2.2 Overall Implementing Flow

The activities of both the Project and Two Year Plan listed in Table 1-2 are illustrated by using key processes in Figure 2-1, but the actual sequence will not necessarily be the same as the one planned in the figure.

2.3 Overall Implementing Schedule

Based on the activities and the overall implementing flow, the Project Team proposes implementing schedule tentatively from April 2014 to March 2015, as shown in Table 2-1.

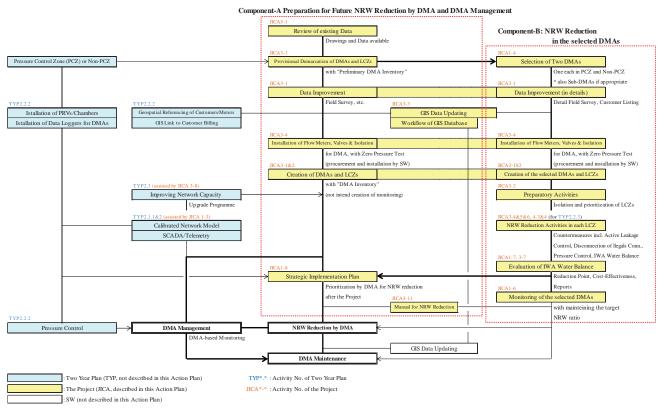
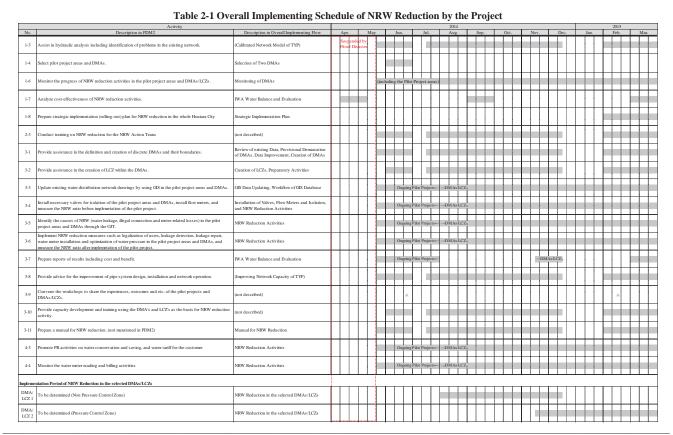


Figure 2-1 Overall Implementing Flow by Two Year Plan and the Project

Project Team 10

Annual Action Plan 2014



Chapter 3 Component-A: Preparation for Future NRW Reduction by

DMA, DMA Management and Maintenance

Along the "Implementing Flow" described in a preceding chapter, this chapter goes into detail of the processes for Component-A "Preparation for Future NRW Reduction by DMA and DMA Management" in the Phase-3.

3.1 Review of Existing Data

Prior to creation of DMAs and LCZs in the whole of Honiara City, the Project collects and reviews existing data such as the currently-updated network drawings and other data available including customer data.

It is necessary to fully understand and confirm the existing network configuration, and to plan measures required for DMA Management such as installation of DMA flow meters and isolation valves.

3.2 Provisional Demarcation of DMAs and LCZs

Because of discrepancy between the network drawings and the actually-installed pipelines, the Project defines the boundary of DMAs including LCZs provisionally with "Preliminary DMA Inventory" by using the above existing data and also considering the pressure control zones or non-pressure control zones set by the Technical Coordinator for the Two Year Plan.

The factors to be taken into consideration for designing a DMA in the Project are as follows and basically used as items of the inventory.

- Suitably-sized DMA/LCZ for efficient NRW reduction and DMA management (500-600
- Configuration of network (the discrete area without outflowing into adjacent DMAs/LCZs is much more preferable, and the area with water cascading into adjacent DMAs/LCZs should be avoided.)
- Ease of isolation physically and economically
- Single inlet

Project Team

- Ground elevation of inlet point and outflow point from reservoir or water source if direct supply
- Variation of ground level (contour, height and bottom)
- Length and diameter of network in the area
- Conditions of network (hydraulic defectiveness, aged deterioration)
- Reliability and accuracy of data of facilities, network and customers
- Leakage frequency (area where leakage is common)
- Number of metered customers
- Number of direct-line customers (meters to be installed)
- Number of houses and commercial buildings
- Area characteristic (urban- or community- residential, commercial, industrial, governmental)
- Number of frequency of illegal connection (area where illegal connections exist or doubtful area)
- Density of customers per km of network
- Continuous (24hrs/7days) or intermittent water supply
- Water source(s) on which the area depends
- O&M cost per revenue water supplied to the area

- Water supply volume (estimate)

Annual Action Plan 2014

In the process of preparation of Preliminary DMA Inventory, the Project selects two DMAs for NRW reduction in the Phase-3, which is described in the Chapter 4.

3.3 Data Improvement

The design of DMAs based on accurate and reliable data is a key to success of DMA management. In order to ensure creation of DMAs including LCZs, the Project confirms and updates the existing data and raises their accuracy through field surveys and confirmation.

3.4 Installation of Flow Meters, Valves and Isolation

Once the demarcation is verified through the above data improvement, the Project determines position the DMA flow meters and valves in each DMA, which are procured and then installed or replaced by Solomon Water. After the installation or replacement, the Project confirms whether each DMA is isolated or not by "Zero Pressure Test", which involves closing the supply to a DMA and checking that the pressure drops towards zero. All boundary and divisional valves should be sounded to check whether the valves are tight. If faulty valves are found, these should be rectified and the test repeated.

A typical procedure for a zero pressure test is as follows, which are modified according to conditions of the DMA. On completion of the test, the supply valve is reopened. The pressure is monitored to ensure that supply has been restored to the DMA.

Typical Procedure of Zero Pressure Test

- 1. Indicate boundary valves by marking valve covers (e.g. often by painting the valve cover red).
- 2. Arrange for the test to take place between am 1:00 and am 5:00. Inform customers with special needs (hospitals, dialysis patients etc.)
- 3. Ensure staffs have plans indicating the boundary, boundary valves, and the inlet valve.
- 4. Set up pressure gauges or loggers at key locations such as fire hydrants, faucets, and pipe ends if flat landscape throughout the DMA.
- 5. Close the inlet valve to isolate the DMA.
- 6. Analyze the pressure data. If the pressure drops to zero then it is likely that the boundary is tight or at the very least, if there is an unknown connection, it is likely to be very small. However, if after 10 minutes, the pressure has not dropped, a second check should be made by simulating a consumption (e.g. opening a fire hydrant and faucets within the DMA) to induce some flow, which should zero the pressure. If there are no unknown connections, the pressure should remain at the low level when the hydrant is closed.
- 7. If the test fails, i.e. the pressure creeps up; it is likely that there is an unknown connection. An assessment of the heads (pressure + ground level) at each of the monitoring points will allow the area of a potential inlet to be identified. Further investigation is then necessary, possibly with additional zoning of the DMA, to identify the unknown inlet. It cannot be over stressed the importance of verifying the tightness of the DMA boundary, as all subsequent leakage location activities is dependent on the accuracy of the leakage estimate.

Source: IWA

3.5 Creation of DMAs and LCZs

Only after isolation of the DMAs including LCZs is confirmed, they can be created, but LCZs are demarcated only at this stage.

Based on the Preliminary DMA Inventory and its update or modification through the previous processes, the Project prepares "DMA Inventory" to be still updated continuously in the future.

3.6 Strategic Implementation Plan for NRW Reduction

Throughout the end of the Phase-3 until the beginning of the Phase-4, in consideration of the result of implementation of NRW reduction activities in the selected DMAs/LCZs (detailed in Chapter 4), the Project prepares "Strategic Implementation Plan for NRW Reduction" for Solomon Water to prioritize the DMAs in NRW reduction activities by using DMA Inventory after the Project, and proposes implementing schedule, structure and procedures, and estimates costs of the activities in the future.

Items to be described in the Strategic Implementation Plan are currently proposed as follows:

- Objective
- Definition of Terms
- DMAs in Honiara
- Implementing Structure
- Overall Implementing Flow
- Overall Implementing Schedule
- Prioritization of DMAs for NRW Reduction
- Procedures of NRW Reduction in a DMA
- DMA Management (DMA-based Monitoring System)
- Cost Estimation
- Log sheet, Forms

3.7 GIS Data Updating and Workflow of GIS Database

In order to operate and maintain water supply facilities and to manage customer services efficiently, the Solomon Water needs to utilize GIS database effectively. The workflow for construction and update of GIS database, which will be described in detail in the operational manual (draft), is illustrated in Annex 3.

The GIS Sub-Team updates geospatial referencing of the items as shown in Table 3-1, and then updates and upgrades the drawings of distribution networks and database. Their detail and attributes are shown in Annex 4, which is used as a sheet for progress management.

Besides, the GIS Sub-Team and staffs of related sections have discussed information of the water supply facility and have created forms for data collection and updating, as an example shown in Annex 5. These forms are basically filled in on site.

Table 3-1 Items to be undated

Table 5-1 items to be updated				
No	Layer	No	Layer	
1	Water pipes	9	Leakage location	
2	Sluice valve (gate valve)	10	Boreholes	
3	Fire hydrant	11	Pump stations	
4	Air valve	12	Service reservoirs	
5	Flow meters	13	Distribution area of source	
6	Feeder pipes (service connection pipelines)	14	Customer's information	
7	Water meters	15	Water quality (Fixed-point observation)	
8	Water pipe bridge	16	Wastewater pipe, Manhole	

Project Team

3.8 Manual for NRW Reduction

The Project prepares a manual for operation and maintenance especially targeting NRW reduction including Active Leakage Control (leakage identification, detection and repair), which consequently contributes to future NRW reduction in the created DMAs, as well as a manual for GIS data updating and development of GIS database.

Items to be described in the manual for NRW reduction are currently proposed as follows:

- NRW Reduction Concept, Approach and Methodology
- Preparation and Methods of Isolation
- Flow & Water Pressure Survey
- Leakage Detection Survey
- Recording and Data Management
- IWA Water Balance
- Cost-effectiveness Analysis

Items to be described in the manual or standard operating procedure (SOP) for GIS data updating and development of GIS database are currently proposed as follows:

- GIS data operational structure
- Database contents and management
- Data updating and maintenance
- Detail of data updating

Chapter 4 Component-B: NRW Reduction in the selected DMAs/LCZs

Along the "Implementing Flow" described in Chapter 2, this chapter goes into detail of the processes for Component-B "NRW Reduction in the selected DMAs and LCZs" in the Phase-3.

The Project Team proposes detailed implementation schedule of Component-B with man-day of each action, from April 2013 to March 2014, as shown in Annex 6.

4.1 Selection of Two DMAs

Based on the Preliminary DMA Inventory, the proposed criteria of selection and intention of Solomon Water, the Project examines the provisionally-demarcated DMAs in a comprehensive manner and then selects two of them for implementation of NRW reduction activities in terms of feasibility as the first trial subsequent to the past pilot projects.

The criteria of selection are proposed as follows:

- One DMA in PCZs and another DMA in Non-PCZs
- Not complicated network configuration (Dendritically-expanded networks are preferable.)
- Discrete DMA without outflowing into adjacent DMAs (preferable)
- Single inlet and easy isolation
- Proper size and number of customers (500-600) suitable for implementation and monitoring
- Domestic area (preferable)
- Enough and hydraulically-stable supply of water into the DMA
- Leakage or burst frequency (area where leakage or burst is common)
- Number of frequency of illegal connection (area where illegal connections exist or doubtful area)
- Conditions of network (hydraulic defectiveness, aged deterioration)

4.2 Data Improvement (in detail)

The design of DMAs based on accurate and reliable data is a key to success of DMA management. In order to ensure creation of DMAs including LCZs, the Project confirms and updates the existing data and raises their accuracy through field surveys and confirmation.

In preparation for implementation of NRW reduction in the selected two DMAs, the Project conducts field surveys, customer listing and so on preferentially and in detail to verify conditions of the areas.

4.3 Installation of Flow Meters, Valves and Isolation

Once the demarcation is verified through the above data improvement, the Project determines position the DMA flow meters and valves in the selected DMAs, which are procured and then installed or replaced by Solomon Water. After the installation or replacement, the Project confirms whether the selected DMAs are isolated or not by "Zero Pressure Test", which its procedure is explained in Section 3.2.

4.4 Creation of the selected DMAs and LCZs

Only after isolation of the DMAs including LCZs is confirmed, they can be created, but LCZs are demarcated only at this stage.

Project Team 16

Annual Action Plan 2014

4.5 Preparatory Activities before NRW Reduction

4.5.1 Methodology to narrow down NRW

Among some LCZs and extended distribution networks, priority approach to targeting area and effective countermeasures against NRW should be considered and taken. The approach can be divided conceptually into the following three methods in order of steps.

Methodology to narrow down NRW

- Area Method: To prioritize areas (LCZs) containing larger NRW relatively (see Section 4.5.3).
- <u>Line Method</u>: To prioritize pipeline sections containing larger NRW relatively (see Step Test in Action B3, Section 4.6.2).
- Point Method: To detect and finally identify cause of NRW. (For example, leakage detection methods with Electronic Acoustic Rod, Leakage Detector, Correlator and Accosting Rod in Action B3, Section 4.6.2).

4.5.2 Isolation of LCZs

Prior to implementation of NRW reduction, LCZs should be isolated and then it be confirmed. Procedure of isolation of LCZs is as follows:

Procedure of Isolation of LCZs

- 1. Identify boundary and inlet of LCZs.
- Excavate a pit and if necessary replace existing pipe by PVC pipe and install a valve or replace the existing valve by new one at inlet of each LCZ. (*The pit should be left until NRW reduction activities are completed.)
- 3. Install isolation valve(s) at boundary to adjacent LCZ(s) if necessary.
- Confirm if each LCZ is isolated by water flow check (Check visually whether water flow from all faucets stops or not after closing of inlet and isolation valves in the daytime).

4.5.3 Prioritization of LCZs

LCZs should be prioritized for efficient implementation. As an area method to narrow down NRW, procedure of prioritization of LCZs is as follows, unless water cascades into adjacent LCZ(s). If so, implementation should be done in order from the downstream LCZ to the upstream LCZ.

Procedure of Prioritization of LCZs

- Estimate daily water consumption roughly in each LCZ, based on number of customers or meter reading records if possible.
- Install ultrasonic flow meter and pressure gauge tentatively at inlet of each LCZ to measure water flow and pressure in 24 hours.
- 3. Graph and analyze the measured data to estimate NRW in each LCZ.
- 4. Compare the estimated NRW of LCZs, and prioritize them for reduction activities.

4.6 NRW Reduction Activities in each LCZ

4.6.1 Flow of Actions in Implementation of NRW Reduction

After the prioritization of LCZs, the NRW Action Team proceeds to following actions (see Figure 4-1) in implementation of NRW reduction in each LCZ.

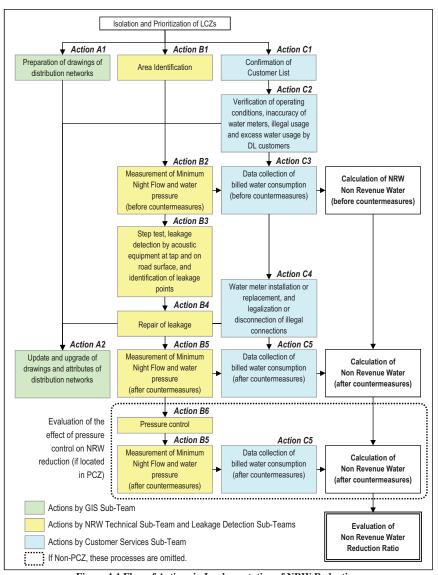


Figure 4-1 Flow of Actions in Implementation of NRW Reduction

Project Team

4.6.2 Description of Actions in Implementation of NRW Reduction

(1) Action A1: Preparation of drawings of distribution networks

Before other actions, drawings of distribution networks are prepared by the GIS Sub-Team, which should be in appropriate scale.

(2) Action A2: Update and upgrade of drawings and attributes of distribution networks

The GIS Sub-Team updates and upgrades GIS data in accordance with the workflow of GIS database prepared by the activity described above in Section 3-7.

(3) Action B1: Area identification

The NRW Technical Sub-Team identifies the LCZ by verifying particularly the following items:

- Exact boundary of the LCZ and inlet point
- Route, location, diameter and conditions of network, valves, fire hydrants
- Location, diameter and conditions of water meters
- Location and conditions of existing valves
- Number of households and customers
- Water leakages visually observed
- Location, type and conditions of illegal connections
- Location, quantity and conditions of excess usage by direct-line customers

Operating conditions of valves should be checked with "Valve Conditions Checking List" as shown in Annex 7. The list is useful for future maintenance of the valves and system operation.

(4) Action B2: Measurement of Minimum Night Flow and water pressure (before countermeasures)

1) Measurement of Minimum Night Flow

The NRW Technical Sub-Team measures System Input Volume for at least 24 hours into the isolated LCZ, with ultrasonic flow meter to be installed temporarily at an inlet. The lowest flow rate for 24 hours is defined as Minimum Night Flow.

The flow meter is ultrasonic type (see Figure 4-2), which can measure water flow in pipe by catching variation in the velocity of ultrasonic waves. An advantage of the meter is to measure water flow without interrupting water supply in the LCZ.

2) Measurement of Water Pressure

The higher water pressure rises, the more water leakage increases. The NRW Technical Sub-Team measures water pressure for at least 24 hours with automatic data logger (see Figure 4-3) to be installed temporarily at an inlet together with ultrasonic flow meter.



Figure 4-2 Ultrasonic Flow Meter



Figure 4-3 Data Logger

(5) Action B3: Step test, leakage detection by acoustic equipment at tap and on road surface, and identification of leakage points

After measurement of water flow and pressure by the above Action B2, the Leakage Detection Sub-Team detects water leakage in the LCZ as follows:

- Inspect surface/exposed leakage visually
- Identify pipeline sections having serious water leakage by step test
- Detect water leaking sound with electronic acoustic rod
- Detect water leaking points with leakage detector
- Detect water leaking points with correlator
- Identify water leaking points precisely with acoustic rod

All results of leakage detection should be recorded in "Leakage Record Sheet" as shown in Annex 8 so that Solomon Water can trace them when it comes to further intervention.

1) Step Test

As a line method to narrow down leakages, For prioritization of detection among a number of pipeline sections, the NRW Technical Sub-Team identifies which sections have serious water leakage in the LCZ by "Step Test"

By closing valves installed at appropriate locations such as branch points in order at a fixed interval, Step Test assists in measuring change in water flow and pressure with ultrasonic flow meter and data logger at an inlet, and then in identifying the degree of leakage (see Figure 4-4). If necessary, valve should be replaced or newly-installed.

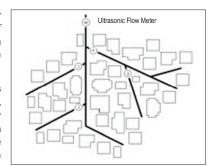


Figure 4-4 Step Test

In order to record the result of Step Test, "Valve Operating Sheet for Step Test" as shown in Annex 9 should be used.

2) Detection of Water Leaking Sound with Electronic Acoustic Rod

When water leakage occurs, the water leaking sound spreads through pipeline. So, the Leakage Detection Sub-Team detects the sound with Electronic Acoustic Rod at the point where valves are installed. Equipment of water leaking sound detection is shown in Figure 4-5.

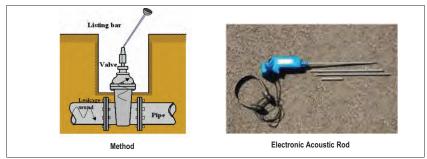


Figure 4-5 Method and Equipment of Water Leaking Sound Detection

Project Team 20 Project Team

Annual Action Plan 2014

21

3) Detection of Water Leaking Points with Leakage Detector

The Leakage Detection Sub-Team detects leaking points with Leakage Detector, as shown in Figure 4-6.

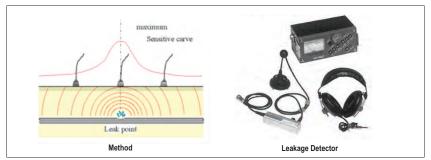


Figure 4-6 Method and Equipment of Water Leaking Point Detection

4) Detection of Water Leaking Points with Correlator

The Leakage Detection Sub-Team detects water leaking point with Correlator, which intercepts leaking noise caught between two certain points such as valves equipped tentatively with sensor each and also measures the difference in transmission time, as shown in Figure 4-7.

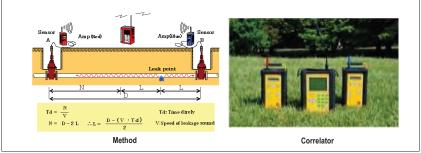


Figure 4-7 Method and Equipment of Water Leaking Point Detection

5) Precise Identification of Water Leaking Points with Acoustic Rod

After detection of water leaking points, the Leakage Detection Sub-Team drills some holes at the detected leaking points and inserts Acoustic Rod into each hole to identify leakage points precisely as shown in Figure 4-8.

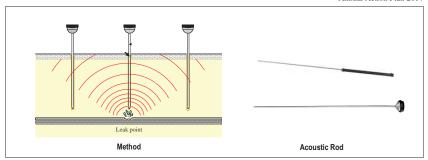


Figure 4-8 Method and Equipment of Precise Identification of Water Leaking Points

Pipe Locating Device

As a supporting device of locating metal materials such as pipes and valves in the above actions, Metal Locator assist in detecting the magnetic field created by metal materials (see Figure 4-9).



Figure 4-9 Metal Locator

Action B4: Repair of leakage

As the result of the above actions for water leakage detection, the Leakage Detection Sub-Team makes a prioritized list of water leaking points and estimates cost of the repair. Immediately after procurement or preparation of materials, the Sub-Team repairs the water leakage points.

Action B5: Measurement of Minimum Night Flow and water pressure (after countermeasures)

After countermeasures, the NRW Technical Sub-Team measures System Input Volume and water pressure for at least 24 hours into the LCZ in the same way as the above Action B4. The lowest flow rate for 24 hours is defined as Minimum Night Flow.

Action B6: Pressure control

If located in the PCZ, the Technical Sub-Team adjusts and decreases water pressure in the network by pressure reducing valve (PRV) to be installed under the Two Year Plan. The Project sets minimum and maximum pressure at a faucet as design criteria, respectively 0.15MPa (dynamic) and 0.75Mpa (static) in principle, then evaluates the effect of pressure control on NRW reduction through additional calculation of NRW after countermeasures (pressure control).

Action C1: Confirmation of Customer List **(9)**

The Customer Service Sub-Team confirms the list of the customers supplied in the LCZ. The list should contain service connection category of the customers such as metered, direct-line, domestic and commercial. The Sub-Team also confirms information on the illegal users or non-supplied households.

Project Team 22

(10) Action C2: Verification of operating conditions, inaccuracy of water meters, illegal usage and excess water usage by DL customers

Based on the customer list confirmed by the above Action C1, the Customer Service Sub-Team verifies operating conditions, inaccuracy of all functioning water meters with Test Water Meter shown in Figure 4-10 to calculate the average, and illegal usage (direct or indirect), and if any, estimates excess water usage by direct-line customers by manual measurement such as measuring cup, glass or bucket.

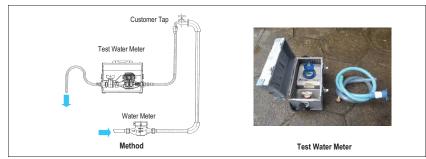


Figure 4-10 Method of Checking Accuracy of Water Meters

Action C3: Data collection of billed water consumption (before countermeasures)

In order to sum up billed water consumption in the LCZ before countermeasures, the Customer Service Sub-Team reads and records all water meters of metered customers in the LCZ twice at intervals of 24 hours, in principle at the same time as the above Action B2, Measurement of Minimum Night Flow and water pressure (before countermeasures). In case of direct-line customer, standard consumption 32 m3/month (1.06 m3/month) per customer is applied for estimation.

Action C4: Water meter installation or replacement, and legalization or disconnection of

Subject to the result of the above Action C2, there are various types of service connections such as registered ones with metered or direct-line (flat rate) and also illegal connections. Approach to water meter installation is determined by the customer as shown in Annex 10.

In order for registered customers to understand fundamental principle on water supply services, the Customer Service Sub-team explains importance of the installation/replacement of water meter to the direct-line customers. Water meter in "gallon" unit is also replaced with one in "cubic meter" unit so as to avoid misreading and confusion in record for billing. See the meter replacement/installation forms in Annex 11, prepared by Customer Services Sub-Team.

Meanwhile, as a social intervention and countermeasures against illegal users, both the NRW Technical Sub-Team and the Customer Service Sub-Team explain to them the negative effects caused by illegal connections and importance and necessity of tariff collection in water supply services, and also should persuade them to accept legalization through mutual communication. Finally based on informed choice, illegal connections are legalized by registration if agreed and then a water meter is installed through the necessary procedures, or they are disconnected in principle if disagreed. But, the Customer Service Sub-Team should make efforts to avoid disconnection through the repeated communication.

(13) Action C5: Data collection of billed water consumption (after countermeasures)

In order to sum up billed water consumption in the LCZ after countermeasures, the Customer Service Sub-Team reads and records all water meters of metered customers in the LCZ twice at intervals of 24 hours, in principle at the same time as the above Action B4, Measurement of Minimum Night Flow and water pressure (after countermeasures). No more direct-line customers exist by the above Action C4.

4.7 IWA Water Balance and Evaluation

4.7.1 Calculation of Non Revenue Water (before countermeasures)

Billed water consumption is deducted from the System Input Volume to figure out NRW ratio <u>before</u> countermeasures such as repair of water leakages, installation/replacement of water meters, and legalization/disconnection of illegal connections and so on.

4.7.2 Calculation of Non Revenue Water (after countermeasures)

Billed water consumption is deducted from the System Input Volume to figure out NRW ratio <u>after</u> countermeasures such as repair of water leakages, installation/replacement of water meters, and legalization/disconnection of illegal connections and so on.

4.7.3 Evaluation of Non Revenue Water Reduction Ratio

The Project compares the calculation results of NRW ratio between before and after countermeasures to reduce NRW, and evaluates the activities in terms of cost-effectiveness, that is, cost of the activities against the estimated income from water tariff collection.

If reduction in NRW ratio does not reach the target "30 points" in the LCZ, the Project needs to clarify the reasons, repeat the above actions or take other approaches for NRW reduction.

4.8 Monitoring of the selected DMAs

After the completion of NRW reduction activities, IWA water balance and its evaluation with successful result of NRW reduction point in the selected DMAs, the Project carries on DMA-based monitoring by monthly calculation of NRW, which means the balance after deduction of total outflow (total consumption by customers) from total inflow at bulk flow meter.

The Project sets the specific level of NRW ratio in each selected DMA, then, monitor and analysis change in NRW ratio on a monthly basis. If NRW ratio exceeds the level, countermeasures against NRW should be taken immediately.

Project Team 24

Annual Action Plan 2014

Chapter 5 Cost Estimation

Based on the implementation schedule shown in Annex 6, cost of implementation of NRW reduction activities in a DMA is estimated as below in Table 5-1.

Table 5-1 Cost Estimation per DMA

No	Action	Unit Cost	Cost	Man
		(SBD)	(SBD)	Day
GIS	Sub Team			
A1	Preparation of drawings of distribution networks	975	2,925	3
A2	Update and upgrade of drawings and attributes of distribution networks	624	9,984	16
	Sub Total		12,909	19
Tech	nical Sub Team and Leakage Detection Sub Team			
	Field survey, finding and function check of valves	936	12,168	13
B2	Pipe installation, excavation of flow meter chamber and valve replacement (if needed)	8,085	40,425	5
В3	Isolation of DM A area	936	5,616	6
B4	Measurement of Minimum Night Flow and water pressure (before repair/measures)	1,613	3,226	2
B5	Step test, leakage detection by acoustic equipment at tap and on road surface, and identification of leakage points			
	Step test	1,603	9,618	6
	Leakage Detection	1,405	18,265	13
В6	Repair of leakage, recording and pressure control	25,653	333,489	13
В7	Measurement of Minimum Night Flow and water pressure (after repair/measures)	1,613	3,226	2
	Sub Total		426,033	60
Cust	omer Services Sub Team			
C1	Listing of customers	961	5,766	6
C2	Installed and operating conditions, and accuracy of water meters, illegal connections and domestic water leakage			
	Illegal connections	506	3,036	6
	Malfunctioning water meters	361	2,166	6
	Water Meter Accuracy	361	2,166	6
C3	Data collection of billed water consumption (before repair/measures)	1,010	4,040	4
C4	Replacement of malfunctioning water meters and legalization or disconnection of illegal connections			
	Explanatory meeting and follow-up (soft component)	1,746	26,190	15
	Replacement of malfunctioning water meters	6,239	43,673	7
	Installation of water meters	6,239	49,912	8
	Disconnection of illegal connections	5,495	27,475	5
C5	Data collection of billed water consumption (after repair/measures)	1,010	4,040	4
	Sub Total		168,464	67
Wate	er Audit			
-	Calculation of Non Revenue Water (before repair/measures)	777	3,108	4
-	Calculation of Non Revenue Water (after repair/measures)	777	3,108	4
-	Evaluation of Non Revenue Water Reduction Ratio	777	2,331	3
	Sub Total		8,547	11
	Total		615,953	157

Therefore, total cost of the implementation in two DMAs from April 2014 to March 2015 is as follows:

SBD 615,953 per DMA x 2 DMAs = SBD 1,231,906

Chapter 6 Reports, Documents and Workshops

The Project proposes contents in DMA/LCZ reports as shown in Table 6-1, and convenes workshops so as to share information, knowledge and the results for the entire Solomon Water.

Table 6-1 Content of DMA/LCZ Report

Table 6-1 Content of DMA/LCZ Report					
Team In charge			Contents		
NRW Management Team	Team Members	1)	Annual Action Plan on NRW reduction		
	Action Team Leaders	1) 2) 3) 4) 5) 6) 7)	Numbers of population and households in project area Both planned and actual work schedules Input manpower by work item NRW ratio before and after measures Total cost on NRW reduction measurement, including personnel, fuel and pipe material costs Issues and problems arising from measurement Suggestions for future improvement		
	GIS Sub-Team	1) 2)	Location of DMAs/LCZs Information on distribution network		
NRW Action		1) 2) 3)	Result of minimum night flow survey Result of water meter survey Result of illegal connection survey		
Team	NRW Technical Sub-Team (Pipe Maintenance & Repair)	1)	Pipe repairing (location, number of cases)		
	NRW Technical Sub-Team (Service Pipe Connection)	1)	Number of newly-registered connection		
	NRW Technical Sub-Team (Service Pipe Disconnection)		Number of disconnection		
	Customer Service Sub-Team	1)	Result of illegal connection survey		
	(Water Meter Reading, Billing	2)	Result of water meter survey		
	and Tariff Collection) NRW Technical Sub-Team (Pipe Materials Management and Procurement)		Income from collection (before and after measures)		
			Procured materials and number, etc		

Chapter 7 Record Forms and Log Sheets

During the implementation of NRW reduction activities, the Project records the results of actions and keeps a log of various data observed in the field.

Table 7-1 Record Forms and Log Sheets

No	Items / Log	In charge	Remarks	
1	Valve Conditions Checking List	NRW Technical Sub-Team	Annex 7	
2	Leakage Record Sheet	Leakage Detection Sub-Team	Annex 8	
3	Valve Operating Sheet for Step Test	NRW Technical Sub-Team	Annex 9	
4	Meter Installation/Replacement Form	Customer Services Sub-Team	Annex 11	

Project Team 26 Project 7

Chapter 8 Individual Action Plan

8.1 Evaluation Results of Individual Action Plan 2013

Evaluation results of Individual Action Plan 2013 for the Phase-2 of each counterpart members are shown in Annex 12.

8.2 Individual Action Plan 2014

Based on experience in the Phase-2, counterpart members prepared Annual Action Plan 2014 for the Phase-3, shown in Annex 13.

ANNEX

Version 13("PDM2, PO2Rev.13.xlsx")

Date: 30 July 2013

$Annex\ 1\ Project\ Design\ Matrix^2\ (PDM^2)$

Project Design Matrix (PDM₂)

Project Title: The Project for Improvement of Non-Revenue Water Reduction Capacity for Solomon Islands Water Authority in Solomon Islands

Target Area: Honiara City

Target Group: SW Staff

Project Period: November 2012 to October 2015 (3 years)

Narrative Summary	Object	ively Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal				r
SW's service levels are improved and SW's revenue is increased.	The NRW ratio in Honiara City is reduced to 20%* by 20 Ratio of operational revenue-to-expenditure is sustained		SW Annual Operation Report SW Annual Operation Report SW Annual Operation Report	
Project Purpose				
SW is assisted to achieve its target of reducing the NRW ratio in Honiara to 30%* by 2015.			1. Project Reports	
Outputs				
Planning process of SW for NRW reduction is systematized.	1-1. Annual budget for NRW reduction is secured in the pilo 1-2. The strategic implementation (rolling-out) plan for NRW		1-1. Annual Budget Plans1-2. Strategic implementation (rolling-out) plan for NRW reduction	Budgetary and human resources necessary for stable water supply are continuously allocated by SW.
The procedure for NRW reduction is established through the pilot areas and LCZs.			2-1. Project Reports 2-2. Project Reports 2-3. Project Reports	SW staff trained by the Project continue to work in their respective positions. Natural disasters do not give a profound effect to the project activities.
NRW reduction is implemented in accordance with the procedure in pilot areas and/or LCZs.			3-1. Project Reports	
Water meter reading and billing process management are improved.	4-1. Standard operating procedures (SOP) and training mater	ials are formulated.	4-1. Project Reports	
Activities		Inputs		Precondition
 1-1. Establish the NRW Management Team in SW. 1-2. Review the current NRW reduction activities done by 1-3. Assist in hydraulic analysis including identification of 1-4. Select pilot project areas and DMAs. 1-5. Formulate an annual action plan on NRW reduction in 1-6. Monitor the progress of NRW reduction activities in 1-7. Analyze cost-effectiveness of NRW reduction activities. 1-8. Prepare strategic implementation (rolling-out) plan for 1-8. Prepare strategic implementation (rolling-out) plan for 1-9. Check existing flow meters and replace the malfunction 1-9. Conduct training on NRW reduction for the NRW Action 1-9. Provide assistance in the definition and creation of display 1-9. Provide assistance in the creation of LCZ within the 1-9. Update existing water distribution network drawings 1-9. Update existing water distribution network drawings 1-9. Identify the causes of NRW (water leakage, illegal coareas and DMAs through the OJT. 3-6. Implement NRW reduction measures such as legalizar meter installation and optimization of water pressure NRW ratio after implementation of the pilot projects 1-9. Prepare reports of results including cost and benefit. 3-8. Provide advice for the improvement of pipe system 1-9. Convene the workshops to share the experiences, ou 3-10. Provide capacity development and training using the activities. 4-1. Formulate the work schedule and staff assignment place 1-9. Provide capacity development and training and reporting for water meter reading and reporting for water meter reading and billing activities 4-5. Report the monitoring results, such as anomalies and 4-4. Monitor the water meter reading and billing activities 4-5. Report the monitoring results, such as anomalies and 4-1. 	of problems in the existing network. In the pilot project areas and LCZs, the pilot project areas and LCZs, ties. In NRW reduction in the whole Honiara City. In NRW reduction Team. It is crete DMA's and their boundaries. In DMAs. It is great areas and DMAs, install flow meters, and measure eject. In In the pilot project areas and DMAs, and measure the in the pilot project areas and DMAs, and measure the in the pilot project areas and DMAs, and measure the in the pilot projects. It is great areas and etc. of the pilot projects. It is DMA's and LCZ's as the basis for NRW reduction In In Team NRW reduction In In NRW reduction In In NRW reduction In Team N	Solomon Islands Side 1. Personnel - Project Director - Project Manager - NRW Management Team (5 members) - NRW Action Team (19 members) - Technical Sub-Team (8 members) - Customer Services Sub-Team (6 members) - GIS Sub-Team (2 members) - Leakage Detection Sub-Team (3 members) 2. Creation of discrete DMAs 3. Provision of the project offices and facilities necessary for the project implementation 4. Expenses for implementing pilot projects in Honiara City: - Provide the necessary valves, meters, pipes fittings and other materials Provide labor to implement the project including PR resources Provide management support to facilitate successful implementation of the pilot project 5. Administrative and operational expenses - Electricity, water, communication, etc Local traveling costs and daily subsistence allowance (DSA) for counterpart personnel - Others as necessary Japanese Side 1. Expert - Leader / Water Supply Planning, Operation and Management - Deputy Leader / NRW Reduction Measures -1 - NRW Reduction Measures -2 - Leakage Detection Technology - GIS - Customer Services & Public Relations - Coordinator	Japanese Side (continued) 2. Training of counterpart personnel in Japan 3. Provision of machinery and equipment ⟨Equipment by JICA Expert Team⟩ - Ultrasonic flow meter - Data logger - Water leak detector (Leak noise correlator) - Water leak detector (Acoustic type) - Non-metal pipe locator - Distance meter - Hammer drill - Drill bits - Boring bar - Generator - Acoustic rods - Residual chlorine analyzer - Bulk flow meters - Sluice valves (To isolate pilot areas) - Test meter - Handy Terminals (Data recorder of meter reading) - GPSs - Personal computers - Plotter - Printer - Multifunction copier ⟨Equipment by JICA offices⟩ - Small-size excavator - Pick-up trucks - Data loggers - Customer meters 4. Local expenses for the project activities - Teaching materials for training and workshops - Others	

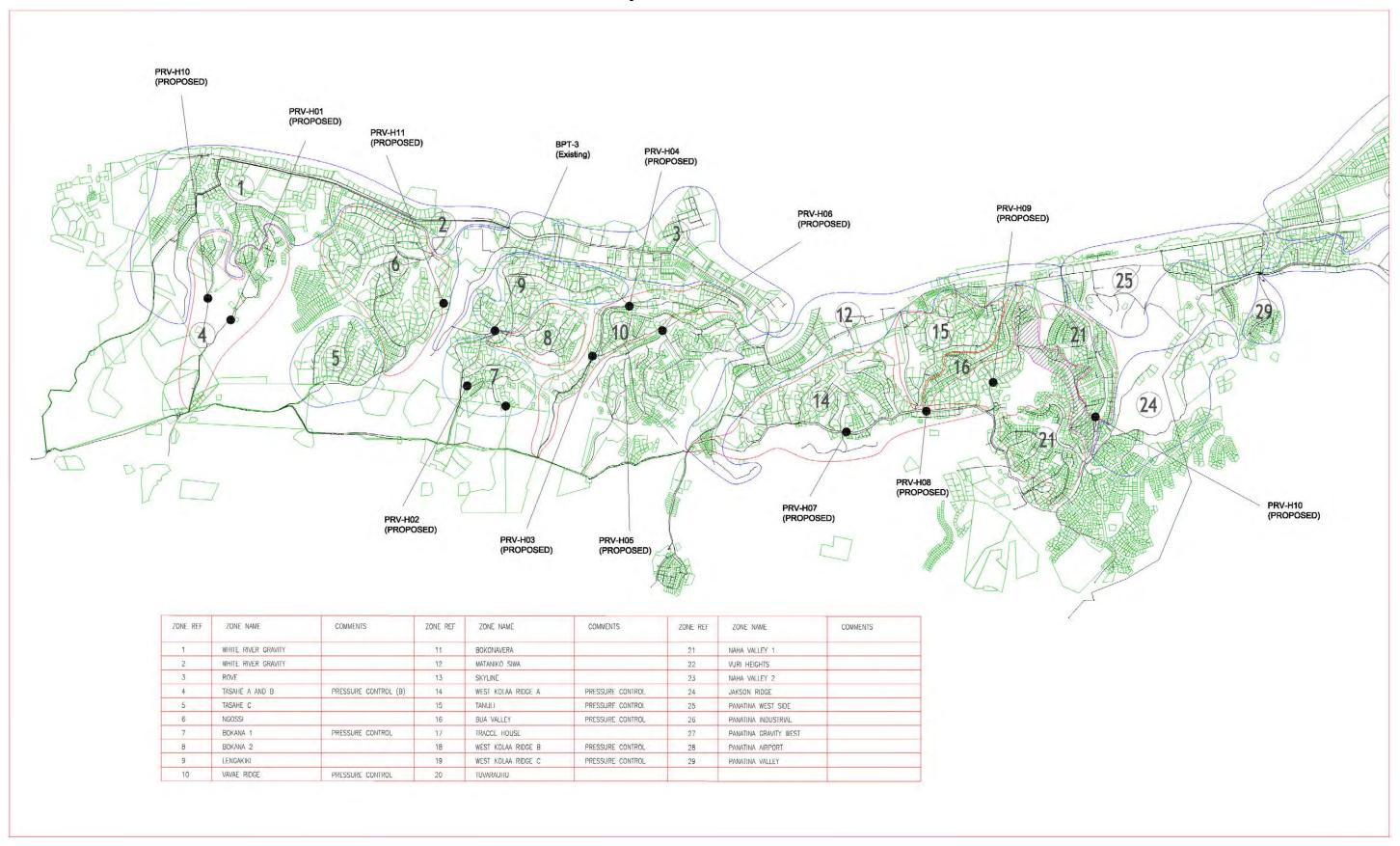
Note: Pilot Project includes NRW reduction activities not only in Pilot Area but also in DMAs.

Project Team

^{*} Indicators are based on SW's Two-year plan (2013-2015) target.

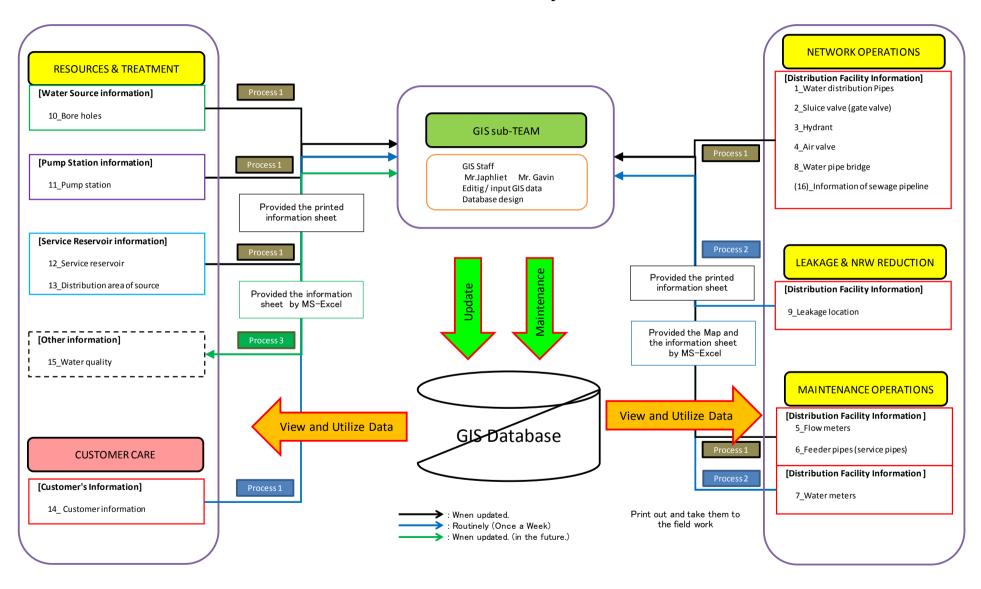
^{**} The target figure is set temporarily based on the result of only one pilot project. Therefore, the figure might be changed in next JCC based on the progress of the pilot project.

Annex 2 Location Map of Pressure or Non Pressure Control Zones



Source: Two Year Plan

Annex 3 Workflow of Construction and Update of GIS Database



Annex 4 Items to be updated for GIS Database

Property Property		Annex 4 Items to be appeared for O15 B							
Copylin Variety Vari	ľ	No.	GIS Subject					Remarks	
1.1 Ope ID		Graphic		•			required		
1.2 Pipe Canachia									
1 1 1 1 1 1 1 1 1 1									
1-4 Pipe Neigh				•					
1.5 Completion year							•••••		
Feb Date of Replacement / Archibilation	1				•				
1.7 Date of Repaining					-	•			
1-8 Dur of Lanlange descrion						·····			
Copuble Nover personare							required		
Capible Shike valve (gate valve)						•			
2-14 Wake ID		Graphic	-	•		_			
2-34 Mile size		2-1	Valve ID	•	***************************************		required		
2-24 Wake type		2-2	Valve material	•			required		
2-3 Ohre to pre required 2-3 Ohre states required 2-4 Air Valve ID required 2-4 Air Valve ID required 2-4 Air Valve ID required 2-5 Ohre widen required 2-5 Ohre widen	2	2-3	Valve size	•			required		
2-6	-	2-4	Valve type	•			required		
Capbb. Hydrant		2-5	Depth			•	required		
Caphic Hydrant			Valve status	•			required		
3-1 Hydrant ID				•			required		
3-32 Hydrant type				-					
3-3 1-yerdant type -	3			-			***************************************		
Capibic Air valve	,			-					
4-1 Air Valve ID required				-					
4 - 4 - 2				-					
4-2 Air Valve size	4								
Capple Pow meters		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		-					
S - 1				-					
Scapibs Peder pipes (service pipes) required	_			•				 	
Caphbe Feeder pipes (service pipes)	3								
6-1 Pipe P									
6-2 Pipe miterial									
Gaphic Maternater	6	:				······			
Graphic Water meter									
7-1			*	•					
7-2 HouseID									
7-3 CastName	7								
Second S									
Secondary Seco		Graphic	Water pipe bridge	-			required		
8-2 Length	۰	8-1	ID	-			required		
Graphic Leakage location	0			-			required		
9-1 ID				=					
9.2 Date of survey									
9-3									
9-4 Condition	9								
9-5 Scale of leakage		,							
Craphic How Craphic How Craphic How How									
Graphic Dorn holes		9-3		•			Daily		
10-1 Well depth(m)	tanananananan	Granhic		_			required		
10-2 Drilled diameter(mm)				_			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		
10-3 Casing diameter(mm) -		***************************************		-			***************************************		
10-4 Numbers of well	10			-					
10-5 Yield of borehole				-					
Septic S				-					
Graphic Pump station required required			3. Pump Station information				<u> </u>		
11-2 Quantity of discharge required 11-3 Number of pump required 24 Service reservoir information 12-1 Service reservoir name required 12-1 Service reservoir name required 12-2 Structure of service reservoirs required 12-3 Elevation of service reservoirs required 12-4 H.W.I., L.W.L. required 12-5 Capacity of service reservoir required 13 Graphic Distribution area of source required 13-1 Area name required 14-1 Customer's information 14-2 Customer ID Daily 14-3 Boundary of plot (land) required 14-4 House ID Daily 14-5 Customer's status Daily 14-6 Customer's status County 15 Graphic Water quality (Fixed-point observation) Daily / Monthly 15 Graphic Water quality (Fixed-point observation) Daily / Monthly 15 Graphic Water quality (Fixed-point observation) Daily / Monthly		Graphic	Pump station	-			required		
11-2 Quantity of discharge -	11			-			required		
Craphic Service reservoir information required required 12-1 Service reservoir name - 12-2 Structure of service reservoirs required 12-3 Elevation of service reservoirs required 12-4 H.W.I., L.W.L required 12-5 Capacity of service reservoir required 13-1 Area name required 13-1 Area name required 14-1 Customer's information 14-2 Customer ID Daily 14-3 Boundary of plot (land) required 14-4 House ID Daily 14-5 Customer's status Daily 14-6 Customer's status Daily 15 Graphic Other informations 15 Graphic Graphic Graphic Graphic 16 Graphic Graphic Graphic Graphic 17 Customer's name Daily 18 Graphic Graphic Graphic Graphic 19 Graphic Graphic Graphic Graphic 10 Graphic Graphic Graphic Graphic 10 Graphic Graphic Graphic Graphic 10 Graphic Graphic Graphic Graphic Graphic Graphic 10 Graphic Gr	11	11-2	Quantity of discharge	-			required		
Graphic Service reservoir				-					
12-1 Service reservoir name									
12-2 Structure of service reservoirs						•	required		
12-3 Elevation of service reservoirs required 12-4 H.W.I., L.W.L required 12-5 Capacity of service reservoir required 13-1 Area name required 13-1 Area name Area name Area name 14-1 Customer's information 14-2 Customer ID Daily 14-3 Boundary of plot (land) required 14-4 House ID Daily 14-5 Customer's status Daily 14-6 Customer's status Daily 14-7 Customer's tatus Daily 14-8 Customer's tatus Daily 14-9 Daily Daily 1							-		
12-3 Elevation of service reservoirs required 12-4 H.W.I., L.W.L required 12-5 Capacity of service reservoir required 13-1 Area name required 13-1 Area name required 14-1 Customer's information 14-2 Customer ID Daily 14-3 Boundary of plot (land) required 14-4 House ID Daily 14-5 Customer's status Daily 14-7 Customer's status Daily 15 Graphic Water quality (Fixed-point observation) Daily / Monthly 15 Graphic Water quality (Fixed-point observation) Daily / Monthly 15 Graphic Water quality (Fixed-point observation) Daily / Monthly 10 Daily / Monthly Daily / Monthly 11 Daily / Monthly Daily / Monthly 12 Daily / Monthly Daily / Monthly 13 Daily / Monthly Daily / Monthly 14 Daily / Monthly Daily / Monthly 15 Caphic Daily / Monthly 16 Daily / Monthly 17 Daily / Monthly 18 Daily / Monthly 19 Daily / Monthly 10 Daily / Monthly 11 Daily / Monthly 12 Daily / Monthly 13 Daily / Monthly 14 Daily / Monthly 15 Daily / Monthly 15 Daily / Monthly 15 Daily / Monthly 16 Daily / Monthly 17 Daily / Monthly 18 Daily / Monthly 18 Daily / Monthly 19 Daily / Monthly 19 Daily / Monthly 19 Daily / Monthly 10 Daily / Month	12								
12-5 Capacity of service reservoir required 13-1 Area name required 13-1 Area name required 14-1 Customer's information 14-2 Customer ID Daily 14-3 Boundary of plot (land) required 14-4 House ID Daily 14-5 Customer's status Daily 14-7 Customer's status Daily 14-8 Boundary of plot (land) Required 14-9 Daily 14-1 Daily 14-1 Daily 14-2 Daily 14-3 Daily 14-4 House ID Daily 14-5 Daily 14-6 Daily 14-7 Daily 14-8 Daily 14-9 Da	_								
Graphic Distribution area of source required									
13 13-1 Area name			· ·						
14-1 Customer's name	13								
14-1 Customer's name	5 5 5 5 5 5 5					_	required		
14-2 Customer ID		_		•	<u> </u>		Daily		
14 14-3 Boundary of plot (land) required 14-4 House ID Daily 14-5 Customer's status Daily 6. Other informations Daily / Monthly 15 Graphic Water quality (Fixed-point observation) Daily / Monthly									
14-4 House ID	14		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			•			
14-5 Customer's status							~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		
6. Other informations				•					
			6. Other informations						
16 Graphic Information of sewage pipeline required	15					•	Daily / Monthly		
*1 . The term of "Required" indicates the irregular undate work	16					•	required		

The term of "Required" indicates the irregular update work.

For example, such as "updating, if ten information sheets accumulate."

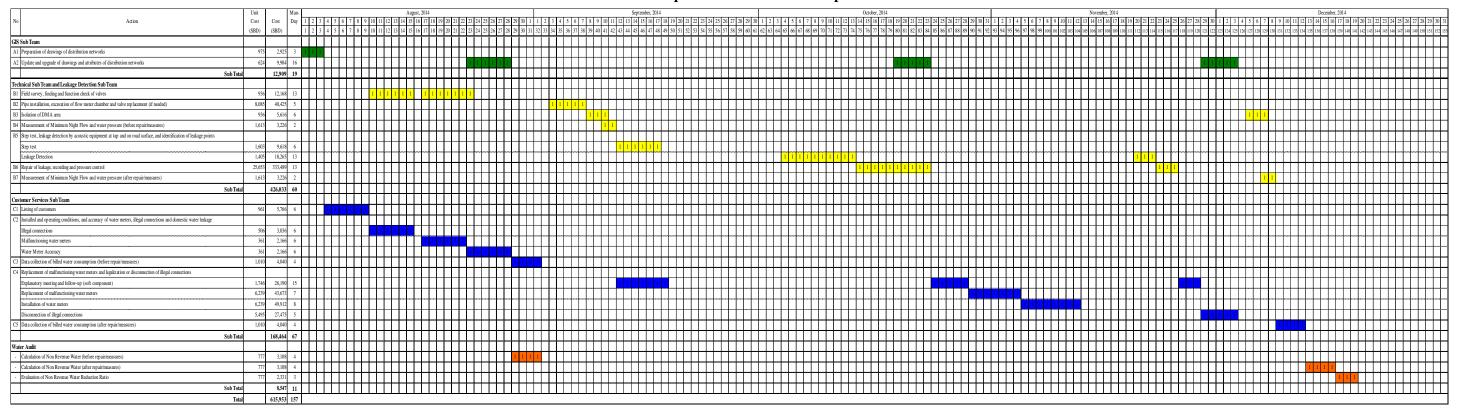
Since it is an ambiguous definition, SW and JICA expert team will discuss and decide clearly from now on. And it will indicate by an operation manual.

Annex 5 Items to be updated for GIS Database (Example)

		7.84	mex 5 nems to be upo		OID Duu	otic (Izuliipie)		
		SW GIS	S INFORMATION	SHEE	T		Solor Wat	non
Record No	09-003 Address: White river-Namuruka, White river street in front of Mr. David house							er
Site informat	ion						System informat	ion
Pipe size (mm)	100						ID	
Pipe material	PVC						Network no	
Depth (cm)	90			PVC 10	10mm		Networks	
Valve size	100				ı		Systems	
Valve type	Gate V			٦			System code	
Direction of turn	Clockwise]	Mr.Eric				Pipe number	
Number of rotation	12]	MILETIC			Mr.Benjimin	Pipe length	
Valve box & cover	Existence]		-			Bedding	
Boxtype	Standard						Date of pipe laid	
Type of Constru	uction			2.23m	1.78m		US node	
1.Survey	V		1.5m				DS node	
2.Repair			PVC 75mm				Roughness	
3.Pipe laying		White river street	2.8m		4.26m	PVC 75mm 1.7m	OM Zone	
Valve			2.011			0.8m	OM subzone no	
1.Installation	/						OM subzone	
2.Replacement							Suburb	
3.Abandonment			Mr.Chris	1		Mr.David	Notes	
Others(Fire hydran	t/service)			1.5m	1.8m		Valve no	
1.Installation]		_				
2.Replacement					PVC 100mm	1		
3.Abandonment								
4.Other								

Officer:	Leak detection team: Eric	GIS team: Gavin
Signature:		
Date:	26 March, 2013	

Annex 6 Detailed Implementation Schedule of Component-B



54.5-2-23

Annual Action Plan 2014

Annex 7 Valve Conditions Checking List

Na	me c	f Area :								Supplying hour	
1	No,	Detected date	Diameter (mm)	Pipe material	Type of valve	Valve Cover Valve Cover (Ok/Non)	Viewing Leak(Y/N)	Direction Direction (Clockwise/ Anticlockwise)	Rotation Number of turns	Sound check Little Open (sound of water passing)	Remarks
	V1										
	V2										
	V3										
	V4										
	V5										
Valve	V6										
Na Va	V7										
	V8										
	V9										
	V10										
	V11										
	V12										
	H1										
ant	H2										
Fire Hydrant	НЗ										
Fire	H4										
	H5										
		ĺ					Isolation	check			
Traia	al No,	Da	ate	Startin	ng time	Ending time	Isolation OK/NO				
	1										
	2										
	3										

Project Team A-7

Annual Action Plan 2014

Annex 8 Leakage Record Sheet

			Annex 8	Leakage l	Record Sl	heet			
		Leak	age Rec	ord Sheet				Leak. No	
Date of survey:				Street					
Date of repair:				House No.					
Area				Customer	,				
Main Pipe	1. CIP, 2. 4. PE, 5.		Р,	Location			tion, 3. Fern 7. Reservor		
Diameter			mm	Condition	Hole, 2. Crack, 3. Brakeage, 4. Packing, Loose Connection, 6. Over Flow, Unknown, 7. Others ()				
Service Pipe	1. PE, 2. 4. Dux 5.		P,)	Cause	1. Corrosion, 2. Deterioration (Aging), 3. Traffic Load, 4. Wrong Construction, 5. Less Adhesive, 6. Pressure Fluctuation, 7. Defective Valve, 8. Vandalism, 9. Other Construction, 10. Unknown, 11. Others()				
Diameter	16	5	mm	Cause					
Depth/Distance		n) from bound		Surface	1.Asphalt, 2.	Concrete, 3.0	iravel, 4.Grass	5.Soil, 6.Oth	ners
Leakage Size	1. Large, 2. Measured of			Drops, /min	Detected Method		, 2. Custom tic, 4. Pinpo		g,
	•			Leak Po	int				
Ferrula Pip Ferrula Pip Location Map	Val	Meter		Pipe		So	det Join		Talve 1
Remarks: Disconnected lin	o (Illogal uso)								
orsconnected iin	e (megai use)		Inform	ation of I	eak repa	ir			
Excavation	on size: m)	(mX	m = (m³)			Used Materia	1	
	Unit price	Hour	Volume	Sub total		Size/Type	Unit price	Volume	Sub total
Worker					Pipe-1				
Plamber Supervisor			-	-	Pipe-2 Pipe-3				
Engineer					Joint-1				
					Joint-2				
Backhor Generator				-	Joint-3 Joint-4				
Drainage Pump					Joint-5				
Lighting equipment					Meter				
700000000000000000000000000000000000000				1	Packing				
Sand Gravel			1	-	Saddle				
Asphalt									
Total					Total				
			-						

Project Team A-8

Annual Action Plan 2014

Annex 9 Valve Operating Sheet for Step Test

Area:

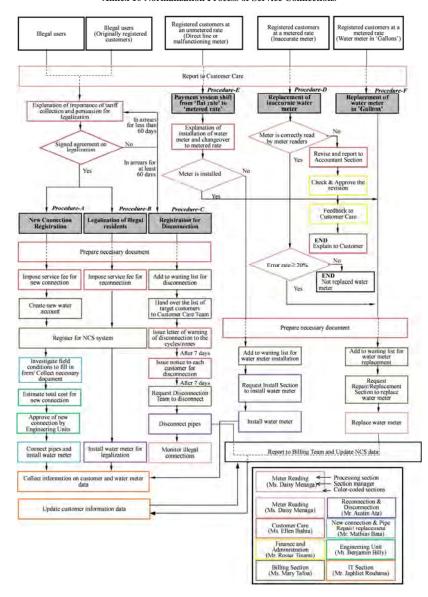
S4.5-2-24

No,	Status	Valve No,	Operating Time	Flow rate(m3/h)	MNF(m3/h)	MNF(m3/h)	Remarks
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							

Project Team A-5

Annual Action Plan 2014

Annex 10 Normalization Process of Service Connections



Project Team A-10

Annex 11 Meter Replacement/Installation Form (2 pages)

P.O.BOX 1407,HORK	ara, Solomon Islands. Pho	PME 23904/2	20000	Fac 2	UFZ)	ena	E BWCHROO	Lmoo.com.d
Part 1. Customer Detail	ls (To be filled by Custo	omer Care	Staff or other	relevant Unit	1)			
Team			Veh	cle Reg No				
Account Name				ccount No				
Location			Con	sumer Type				
Nature of Meter				Cycle No				
- Current Meter ID			Curren	t Motor Bead	ing			
Frepared by				Date				
Signed Off by				Date				
Part 2. New Meter ID D	Petalls (To be filled by t	the Meter I	Replacement	Team)	Ė			
New Meter ID		Muter Re				New Meter Read	ine	
Type of Meter	Metric	impertal	1	☐ 15 m	m T	20 mm	1	32 mm
Account Name		_	Meter Size	□ 32 m		50 mm	- 3	
100000000000000000000000000000000000000							1	
Account No			Replaced by				Dials.	
Replacement Date		Stat	as of Meser	□ ne	ed / Ex	isting Meter		New Meser
Job Completed by			Date					
Verified by Team leader			Date			Signed		
Part 3. Update of Acco	runts Information (To b	e Filled by	the Billing Ch	ek)				
New Meter ID			New Me	ter Reading			Date	
Changes done by			5	igned			Date	
Verthed by			- 1	fargi			District	
art 4. Approval by He	ad of Department		-				_	-
Signed				ate				
Comment (if any)			-					
Comment (11 art)				-118, 91111				
Part 5. Filling (Custor	mar Cara Toam)		-					
rant 2. rning (custo	mer care ream)			gned			Date	1

Project Team Project Team Project Team A-12

Please draw your sketch he	ire		

Annual Action Plan 2014

Annex 12 Evaluation Results of Individual Action Plan 2013

Performance Appraisal Interview Report

NRW Management Team

Mr. Ray ANDRESEN

Ms. Tima KOFANA

Ms. Ellen MARUAROFA

NRW Action Team

Mr. Benjamin BILLY

Mr. Austin ATA

Mr. Silas TALOSUI

Mr. Mathias BERA

Mr. Frank DAUKALIA

Ms. Beverly SAOHU

Mr. Carlos SALIGA

Ms. Sophia TANGO

Ms. Daisy MENAGA

Ms. Mary TAFOA

Mr. Marilyn PIDOKE

Mr. Gavin BARE

S4.5-2-26

Mr. Matthew MAFE

Mr. David AKOEASI

Project Team A-13

Friday 23rd May, 2014

PERFORMANCE APPRAISAL INTERVIEW REPORT NON REVENUE WATER PROJECT TEAM

Presented to:

Mr FUJIYAMA Taketoshi

Leader - JICA Expert Team

Non-Revenue Water Project JICA/YACHIYO -

Engineering /Solomon Water

Presented by:

Tima Kofana

Human Resource Manager

Solomon Water

Signature

Date:

Background:

Performance appraisal is a key evaluation process to gauge the performance of individuals and to inform employers of the challenges they face in the workplace. It also looks at option on how to improve on performance. For the NRW Project, Team Members also went through this process ending with the appraisal interview. Each team member was interviewed based on their Individual Action Plan. The performance interviews for the NRW team started on Monday 5th May, 2014 and continued until Friday 16th May, 2014. Except for 2 members, others were available for the interview. Whilst majority understood their tasks in respect to the project, others were not sure if they played any role at all. In total, the team acknowledged the importance of the project to Solomon Water. They have agreed that the NRW activities have increased their skill base and knowledge.

Friday 23" May, 2014

A summary of the each team member's achievements, challenges and recommendations for better performance and productivity is provided in the table below:

Department	Name	Achievements	Challenges	Way Forward		
Operations	1 Benjamin Billy (Team Leader)	Teamwork Acquiring new work processes, knowledge and skills from Expert team	Balancing NRW Activities and other normal activities Coordination of data Different interpretation of data No proper training in analysis and reporting of data	 Teams should be aware of their responsibility. Each team should analyse data and provide report before, submitting to team leader. 		
S4.5-2-27	2. Mathias Bera	New skills and knowledge. Working with and appreciate what other teams are doing but more needs to be done	No proper monitoring done for all activities Overall system might fail because not all teams are working together. Finance team approach is too harsh on customers Some customers can't afford so we have to be flexible Social problems not well understood	 Manpower to do regular monitoring of pilot sites. Sustainability of the project if all teams are not working together, especially finance team hard approach to customers. 		
	3, Frank Daukalia	Working with other teams	No proper flow of activity To meet deadlines have to do others tasks. Some not doing their tasks thus putting pressure on others.	 Everyone needs to be aware of their area of responsibility. Field guys need to be more responsible with their tools and equipment. 		
	4. Gavin Bare	Knowledge and skills broadened Importance of base station appreciated	Delays in procurement also contribute to slow progress in work	 Training in how to use devices and equipment so that error is minimised 		

Friday 23rd May, 2014 5. Eric Unga · Knowledge on how to use new · Still not comfortable with · More training needed on devices and equipment like same equipment. proper use of different chlorinator equipment's · Teams assist each other . Lots of things learned in the field 6. David . Still not confident in doing · Have learned a lot of skills like . Need further training on use of Akoeasi surveying, how to identify leaks, mid night test. Need equipment and how to calculate water lost supervision and guidance through leakages and the use of from Benji and Eric chlorinator machine 7. Matthew · Great learning experience Jobs delayed due to · Order directly to supplier Mafe · Enjoy sharing of workload in a unavailability of materials. rather than middle man. · Need of morning briefings like team environment Slow processes · Team is not motivated other teams · Provision of report template so that proper reporting can be done B Silas Falosur | Or Leave 20 Closs Non-Responsive - Does not trinde that he is part of NRW-Service Delivery 10. Austin Ata A privilege to be part of this team Sustainability of the project because Need to prioritize NRW activities and Learned a lot; not all teams are working together. All new connections should have raised meters not pilot sites only. Communications Like minimum night flow Finance team are not flexible with Meter raising customer who can't afford Need more staff for Illegal Team. Reliable truck/vehicle needed More awareness for customers needed. 11. Beverly Dai • Appreciate new terms and . Slow feedback from other More customer awareness mechanisms teams. · Tracking sheet for all teams Knowledge of counter measures and Too many delays in and activities. Technical test responses from others. · Follow up must be done on a · Opportunity to do more filed work, . Do not know much about regular basis

			Friday 23 rd May,	2014			
		participate in awareness and interacting with customers. • Working closely with other teams and updating each other during weekly meetings	water tariffs. Do not really understand why other teams not responding.				
S4.5-2-28	12. James Carlos	Enjoys working with the Team Leader. Have learned new things	Coordination with other teams is weak Information does not flow properly Communication to others not sufficient. Not enough resources like camera, computer and voice recorder to help in the job	NRW activities need to be spread out to everyone including every team as it affects all of us in way or the other. This will allow everyone to be informed and thus inform customers and the public appropriately			
	13. Sophia Tango	Learned new things	Sometimes cannot explain properly to customers as we don't know the right technical terms for it. Not enough cooperation from other teams	Prioritising task Time Management Team work needs to be strengthened Those with long experience need to be part of awareness team.			
-28	to Mases	Non-Responsive—Does not think that he is part of NBW					
Finance and Administration	15. Layten Jacob	Working closely with other teams	Specifications not clear. Changing shipping schedules Long custom process Confusion over exemption certificate (out-dated – don't have renewed copy) Contracts are on adhoc basis depending on need. Strict requirements often contribute to delays	Proper planning and coordination of all teams.			
	16. Dalsy Menaga	NRW project has increased my knowledge and skills From no appreciation to awareness and	Updating data on time Lack of knowledge Intimidated at first but later gained	Cooperation between everyone New vehicles to help out Work closely with Frank			

Friday 23rd May, 2014

1			1
	acknowledgment of the importance of NRW activities Very Good Team Leader Technical team helps out a lot	confidence to discuss issues	
17. Japhliet Rouhanna	Was involved at first but stepped back when Smith took over	Confusion of role	Will assist if the need arises
18. Lawrence Iroi	Not clear about role at first Link with other teams like GIS	Low Capacity of team NCS System	Coordination of all teams Work closely with GIS Proper zoning of customer base
19. Mary Tafoa	Enjoy working with other teams Able to go to field and experience firsthand what happens during awareness programs Report on monthly cycles and consumption	Extra workload Sometimes forget report Deadlines not met Customers information not clear Don't have correct figures on which customer is connected to sewerage	Need to work closely with GIS team

Annual Action Plan 2014

Annex 13 Individual Action Plan 2014

NRW Management Team

Mr. Ray ANDRESEN

Ms. Tima KOFANA

Ms. Ellen MARUAROFA

NRW Action Team

Mr. Benjamin BILLY

Mr. Austin ATA

Mr. Moses RAMO

Mr. Silas TALOSUI

Mr. Mathias BERA

Mr. Layten JACOB

Mr. Frank DAUKALIA

Mr. Chris MERIKO

Ms. Beverly SAOHU

Mr. Carlos SALIGA

Ms. Sophia TANGO

Ms. Daisy MENAGA

Ms. Mary TAFOA

Mr. Lawrence IROI

Ms. Rosta TINARAI

Mr. Gavin BARE

Mr. Japhliet ROUHANA

Mr. Eric UNGA

Mr. Matthew MAFE

Mr. David AKOEASI

Project Team A-14

	Main Activities	Verifiable Indicator		Metho	ds of Imp	lemen	tion	at at
	tribution to water supply service of mon Water							
(1)	Develop Operations Annual Plan (OAP)	1).OAP: a. Complete OAP within 1-6 months b. Complete OAP within 6-8 months c. Complete OAP within 8-12 months d. Not able to complete OAP at all.	1 2 3 4	Jul	Oct	Dex	N .	Not completed but continue with SW two year plan
(6)	Develop Operations Annual Budget (OAB)	2).OAB: a. Complete within 1-3months b. Complete within 3-6 months c. Complete within 6-9 months	2. Me weekly	et with y basi		ns tean	work ender in	town Filmed by
		d, Complete within 9-12 months e. Not able to complete at all.	weekly 4. Pre	y basis			n da i	
((ii)	Preparation of Monthly Reports	3).Monthly Reports: (a) 2 reports annually b. 10 reports annually c. 6 reports annually d. 2 reports annually e. no reports at all	basis					Abouty operations reports presented to swboard meeting
(iv)	Formulate Policies, Practices &	4) Formulation of Operations Policy/ Procedures(OPP)						

		Procedures for Systems Operation & Maintenance	a. Complete OPP within 1-6 months h. Complete OPP within 6-8 months c. Complete OPP within 8-12 months d. Not able to complete OPP at all.						Not completed. Thish set for with together with TH team funded by 2 year plan
2.	Contri	bution to pilot project							
CAE 2 30	(f) (fi)	Develop 2014 NRW Budget Formulate NRW Policy, Practice & Procedures (NRW PPP)	a. Complete Budget within 3-4 months b. Complete Budget within 4-5 months d. Not able to complete budget at all. a. Complete NRW PPP within 1-6 months b. Complete NRW PPP within 6-8 months d. Complete NRW PPP within 8-12 months Complete NRW PPP within 8-12 months Complete NRW PPP within 8-12 months		Continual	Oct W weekly Jiaison	40	Mar meeting A Expert	Used Me 2013 WAN actual spending briton more details in budget allocation for ever in monitoring
3.	Challe	nging target (Voluntary)							
	(i)	Work in partnership with the	Weekly update meetings and		Jul	Oct	Dec	Mar	
		JICA Water Supply	Liasing with JICA and Kitano	1			-	-	
		Improvement Project	Construction Group.	2	1000	1000	-	Towns .	

	A. Meeting 4 times a month Meeting 2 times a month C. Meeting once a month d. Not able to meet at all.	2. C	gress of a	update activities I liaising between a	and form	month on average due to several challonging issues arising		
4. Enlightening activities (Voluntary)								
(i) Health and Fitness	Siek days per year: (a) Zero days per year (b) 5 days per year (c) 10 days per year (d) 20 days per year		Jul	Oct	Dec	Mar	No sich day for	
		1	-				212	
		2	-	-	-	100	2013	
		1000	ariania.	Exercise medical ch	seckups			

Individual Action Plan (Challeng		(Ms. Tima Kofana, HF	RM)
Main Activities	Verifiable Indicator	Methods of Implementation	Achievement (Self-evaluation at the middle of march)
Contribution to Water Supply service of Solomon Water			
In order to contribute to Solomon Water, I will do work efficiently.	Achieve the 6 key KRA's A. 50% B. 70% C. 90% D. 100%	Jul. Oct. Dec. Mar. 1. Do work efficiently	A Was not able to achieve all KRA' as expected due to lack of support and commitment from team members
Building or developing the HR Unit	A. On a daily basis B. Twice a month C. Once a month	Jul. Oct. Dec. Mar. 1.	B The unit is now 100% operational but needs to be continuously guided to achieve objectives
		 Continuous development of unit 	
Team Management Coordinating team activities	A. Once a month B. Twice a month C. Four times a month D. None	Jul. Oct. Dec. Mar. 1.	B Meetings were happening but often there are clashes with interviews, unplanned meetings and emergencies and so often meetings are rescheduled.
Develop and Monitor the HR database	A. Twice a month B. Once a month C. On a daily basis None	1. Improve staff record keeping	C. Working closely with Payroll to ensure that both systems are in synergy. Have managed to update new staff listing and code to HR database.

[Type text]

Developing the People Management Group	A. Once a month B. Twice a month C. Four times a month D. None	Jul. Oct. Dec. Mar. 1. Up skilling of change agents.	B. Not really working as expected due to emergencies and non-availability of members
Developing People Management Platform	A. To be able to improve HR processes B. To be able to develop relevant policies like OHS C. To be able to improve management of HR	1. Develop draft policies - OHS 2. Develop PM Policy	A Ongoing. Still developing forms and reviewing older ones. Will arrange meetings with Labor division to provide awareness training for all of us. Other relevant training like First Aid has been conducted.
Reporting	D. Once a month E. Twice a month F. Four times a month G. None	1. Daily Reporting 2. Weekly Reporting 3. Fortnightly Reporting 4. Monthly Reporting	D. Provide report to GM. Team supposed to be reporting on monthly weekly basis.
	H.		
2.Contribution to pilot project In order to improve capacity for reduction of NRW, I will mentor and recruit the right people	A. To be able to recruit the right people to fill in the gaps. B. To be able to provide the right environment for learning and development. C. To be able to contribute to decision making process.	Jul. Oct. Dec. Mar. 1. 2. 3. 4. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5.	A. Recruitment target for the year almost achieved. The Challenge is finding office space to cater for new recruits.

[Type text]

C	ſ
Ĩ	`
3	_
C	,
r	ļ
J	1
Ç	

		5. Reporting	
3.Challenging target			
I will learn & work hard to present work progress during meetings	A. Two times per year B. one time per year C. Zero per year	Jul. Oct. Dec. Mar. 1. Preparing progress 2. Presenting at meetings or workshop	B. Lots of other meetings and commitment to attend. Sometimes I send the HR Generalist to attend so that he keeps us updated
	D.		

[Type text]

Individual Action Plan (Challenging Program)

(Mrs Ellen Maruarofa- Service Delivery Manager)

Main Activities	Variable Indicator	Methods of Implementation Ach					Achievement		
 Contribution to water supply se 	ervice of Solomon Water (SW)								
i. Ensure that the units of Service Delivery and Communication Department enhanced its services to its customers ii. Liaise and support the other departments of SW to deliver efficient and effective services to its customers iii. Formulate appropriate processes and procedures iv. Effective flow of information between departments.	Ensure effective facilitation of customer complaints/queries a. By hour b. By day c. After 2 days d. After 1 week e. After forthnight f. Not at all Assess and formulate customer care processes/procedures and flow of information within departments a. Achievement within 1 – 4 months b. Achieve within 4 – 7 months c. Achieve within 7 – 10 months d. Achieve after 10 months	1 2 3 4 4 To acc variou 1. 2. 3. 4. 5.	Mee Rese Trair Orie	ethods etings earch nings entatio	s to b	e utiliz	zed a		All timing as indicated on the VI column are all relevant except "f" depending on types of Customer complaints and enquiries. However, it is important to note that after dealing with huge backlogs of customer complaints, the customer care ensures that all customer complaints/enquir es are dealt with it no longer as was the case in the past. Progressive improvements so far though the need for greater efforts to be vested on this area of our service.

The most obvious achievement for the formulation of processes was the connection services. The effective and efficient flow of new connection was a precise achievement as previously installation of new water services took ages but now it only takes 3 weeks from lodge in of application to installation of meter. Other connection services were able to be monitored through the forms and processes formulated.

Improved flow of information for customer compolaints/enquiries:

		This still rer challenge departme though so progressiv have beer	for the nt me e efforts
Contribution to pilot project Work closely with the NRW consultant and the Project Coordinator to ensure its planned activities are implemented through my department team members reduction of NRW.	Continual liaison /meeting with NRW Reduction heads a. 4 times a month b. 3 times a month c. 2 times a month d. Once a month Update all NRW teams on the issues and reductions of illegal users in the pilot sites. a. Weekly basis	B. The depterant learning are shown. Ja Fe M Ap M Ju Ne In RW transhown commitment their experoles. To achieve the activities listed, the various methods to be utilized are: 1. Meetings 2. Supervision 3. On field training 4. Facilitation 5. Media	ders who t of the h have ent to cted ost of the for all
Challenging target (voluntary)			
i. Ensuring that the three units are keeping up with their expected roles noting the high demand		Ja Fe M Ap M Ju n b ar r ay ne handle cu who were	pared to

ii. iii.	on dealing with customers. Continuous commitment of field workers to report as well as disconnecting all illegals identified; thus resulting in increasing illegals inconsistency of monitoring activities as well as disconnection/reconnection practices that may resulted in increasing level of illegals	By now all are expected to be familiarizing themselves with the specific activities they are expected to perform.	referred to our customer care centre particularly for legalization of their water service. The Connection service team have worked extra hard to respond to illegal users reported to by the NRW team taking into account that the team personnel's are inadequate as well as they have a lot do in their own roles; they have been actively responded to NRW in timely manner.
			The communication team have effectively worked with the NRW for public awareness programs & distribution of NRW

		pamphlets prior to implementation of planned activities at each pilot site. The challenge faced are; Poor monitoring and inconsistent disconnections of illegal users were due to; Manpower is short Transportati on (only 2 vehicles) Weather (at firms)
 Enlightening activities (volu 		
i. Monitor progress reduction of NRW activities through activities implemented by the SDCD	Maintaining progressive reduction of NRW work by department staffs who are members of the NRW task force. a. Weekly basis b. Forthrightly basis c. Monthly basis d. Quarterly basis e. Semi-annually f. Annually	Monitoring still remains a challenge as far as 1 observed. 1

Program)	(Mr. Benjamin	Billy Sub technical Team)	
Main Activities	Verifiable Indicator	Methods of Implementation	Achievement
Contribution to water supply service of Solomon Water			
a) Management of Network Operations to achieve maximum supply durations b) Network Operations- Network Modeling.	A. Average 24.hours supply B. Average 18.hours supply C. Average 14.hours supply D. Average 12.hours supply E. Average 10.hours supply E. Average 10.hours supply A. >=6km/month B. 5km/month C. 3km/month D. 2km/month	1. Keep supply durations records 2. Liaison with source works for water sources performance 3. Liaison with pipe replacement team to improve flow and pressure. 4. Liaison with NRW team on improvement on water losses.	B. We managed to increase with the additional water sources from JICA & Rap input. But depending on the Source works and Network Maintenance we could only achieve this far. C. Could only practice with EPANET. Since we still waiting for the TA to assist me with the Water Gems Modeling software

1. Check with GIS for network updates 2. Practice Modeling software(EPANET) 3. Site visit to confirm pipe network and features at sites Collection of billing data (demand). july sept nov jan March A. Reporting 4/month Due to information not B. Reporting 2 /month available and been kept c) Staff Management - performance C. Reporting 1 /month different D. Reporting non/month ection(HR) not able to accomplish within this Daily briefing time period. Weekly 3. Fortnightly 4. Monthly A. Once a month july sept nov jan March B. Once every two month Just managed qtrly Reporting on Network Operations & NRW C. Once every three months for SW only for D. Once every six months E. Non/year operations manager 1. Get daily records of supply times 2. Get information from Daily

2

		briefing. 3. Getting information from bulk readings @ water sources and distributions. 4. Work out NRW for al systems	
Contribution to pilot project a) Pilot site isolation.	A. Isolation of sites and confirmed site boundaries & customer without assistance or supervision B. Isolation of sites and confirmed site boundaries (customer) with assistance or supervision C. Isolation of sites and confirmed site boundaries (customer) with assistant and further training.	july sept nov jan March 1 2 3 4 4 1. Identify pilot sites on GIS Map. 2. Confirm boundary at Sites with works Officers & Plumbers. 3. Confirm customer boundaries with meter readers. 4. Identify network Features & Appliances & Pipe routes	B. Able to understand Isolations of Network & Customers, thou physical checks at sites still need assistances

july sept nov jan March b) Customer registration A. distinguished customer Confident in the field to distinguish different types and categorized accordingly without advice customer types with B. distinguished customer 1. Identified directly line customers types with less advice 2. Identified parasite customers C. distinguished customer 3. Identified Illegal customers types with much advice Cross check customer status in the field D. Not confident at all to against billing Distinguish customer types july sept nov jan March A. To be able to measure Minimum c) In order to identify causes of NRW, I Able to do this activity Night Flow without any advice, to make graph and report.

B. To be able to measure Minimum Night Flow & Make graph and will learn MNF measure and report to with confident relevant team by for each pilot sites for Before and after counter measures. report with supervision only.. C. Not Able to measure Minimum Night Flow and Make graph and 1. Analysis of 24 hour consumption data report at all for metered and direct lines. 2. Categories of different connection types for apparent loss 3. Meter accuracy test results 4. Leakages component (visible &

		invisible leaks, site in inspections &	
		leakage rate.	
	A. Compile data with no	july sept nov jan March	
	assistance	1	<u>B.</u>
d) Analysis Water Audit for Solomon	B. Compiling data with some	2	Progressing on this
Water & IWA.	assistance	3	frontier, though need
	C. Compiling data with much	Identify Solomon water component of	some more
	assistant.	NRW and much with IWA tables	concentration
		Keep record of different connection	miniature details of the
		types	data inputs.
		3. Compiling tables for leakages &	
		compare with MNF data	
		july sept nov jan March	<u>B.</u>
	A. Verified cost of NRW	1	Need more
	reduction with no difficulties.		concentration on
e) Understand water supply cost.	B. Verified cost of NRW	2	collecting and analysis
-,	reduction with some advices &	3	this data, but now I
	training	Keep records of asset & materials used	contributes only data
	· ·	for each pilot sites	and not analysis of the
	C. Verified cost of NRW		and not analysis of the

with much 2. Keep records of personnel used with cost. reduction coaching and advice overtimes 3. Measure plan with actual occurrence of activities Keeping daily records of NRW cost incurred. july sept nov jan March Has the confidence in A. Differentiate NRW ratio & differentiate the NRW f) Understand NRW ratio & Water Water leakage with easy ratio & Leakages ratio B. Differentiate NRW ratio & and other NRW Leakages. Water leakage with advice components in Solomon 1. Keep tables for customer C. Differentiate NRW ratio & connections Water leakage with Advice & 2. Collect tables for meter consultation. inaccuracy 3. Collect tables for leakages 4. Collect tables for 24 hour consumptions A. One pilot site per 1.5 month B. One pilot site per 2 month july sept nov jan March C. One pilot site per 3 months g) Completion of each pilot sites More focus in capacity build training as begin D. One pilot site per > 3 month of the year , this slows



		1. Create schedule for all activities for each pilot sites with resources and time frame 2. Do over time if possible activities is lagging 3. Liaison with each Technical sub team GIS & Hence Customer care and go through their respective actives before commencement of pilot sites
Challenging target (Voluntary) a) Operation reporting & NRW presentation	A. Four times a year B. Three times a year C. Two times a year D. One times a year	1. Keeping month summary on operational for monthly data 2. Presentation to all network operations & NRW teams B. Some progress though, slows down due to commitments on the NRW project sites activities and Network operations as new supply boundaries are explore with the New Water source addition

b) Training on operations & NRW july sept nov jan March into the Honiara Water Supply system. A. Four per six months B. Three per six month C. Two per six month 1. Network modeling basics D. One per six month 2. NRW analysis Water Audit 4. Enlightening activities (Voluntary) july sept nov jan March <u>c.</u> still planning this a) Question and Answer session social A. Once every three months program with the Social group for Solomon informal sharing of experiences & B. Once every four months 1.0 Quiz of NRW components. lesson learnt on NRW activities on pilot C. Once every six months. Water. july sept nov jan March b) Sporting activities -A. 20 times a month c. B. 15 times a month C. 10 times a month achieving D. 5 time a month progress but due to to Volley ball. E. None a month much commitment in 3. Walk for life NRW & Network operations I do not have



	spare time to go out and
	have this life saving
	sporting activities.

Note: Based on Capacity Assessment & Capacity Development Plan, be requested to prepare individual Action Plan.

9

Individual Action Plan (Challenging Program) (Mr. Austin Ata - Connection Services Team Leader) December 2013 -March 2014

	Main Activities	V	erifiable Indicator	Methods of Implementation					Achieve
1.	Contribution to water supply Services of Solomon Water								
		1.1	New Connections:						New
1.1	New Connection:				Jul	Oct	Dec	Mar	Connection
		A.	3 weeks - 100%	1					-80% achie
\triangleright	Survey/assessment		4 weeks - 80%	1					Requires
\triangleright	Costing	C.	5 weeks - 60%	l					efficiency t set target
\triangleright	Approval	D.	6 weeks - 40%	2					set target
\triangleright	Installation	E.	More than 6 weeks - 20%	3					
\triangleright	Billing			4					
\triangleright	Report			1-				-	
\triangleright	Filling/achieving	1.2	Disconnection - Illegal						
			Service Users:		1				Disconnect
1.2	Disconnection – Illegal								Illegal User
	Service users:	A.	24 hours - 100%	1.	Mont	hly monito	oring		-60% achie Requires m
\triangleright	Report analysis	В.	48 hours - 80%	2.	Liaise	with key u	inits and	sections	attention.
\triangleright	Schedule	•	72 hours - 60%	3.	Custo	mer feedb	ack trend	i	proactive
\triangleright	Disconnection	D.	96 hours - 40%						approach.
\triangleright	Account validation	E.	More than 96 hours -						
\triangleright	Monitoring		20%	Discor	nection	Illegal Use	ers		
\triangleright	Report			1.	Monthl	y monitor	ing		
\triangleright	Filling/achieving	1.3	Reconnection	2.	Liaise w	ith key un	its and se	ections	
			Applications	3.	Illegal u	isers redu	ction tren	id report	Reconnect
1.3	Reconnection Applications		(Disconnections more						Application
	(Customers Disconnected		than 3 months):						-80% achie Needs a bit
	more than 3months)			Recon	nection	Applicatio	ns		efficiency t
\triangleright	Survey/assessment	A.	2 weeks - 100%	1	. Mont	hly monite	oring		achieve set
\triangleright	Costing		3 weeks - 80%	2	. Liaise	with key	units and	sections	target.
\triangleright	Approval	C.	4 weeks - 60%	3	. Custo	mer feedl	oack tren	d	
\triangleright	Reconnection	D.	5 weeks - 40%						
>	Account validation with billing	E.	More than 5 weeks – 20%						
>	Report								
>	Filling achieving								

1.4 Meter Management 1.4 Meter Meter Replacement/repairs/relocati	
(Replacement/ Replacement/repairs/rel 1. Monthly monitoring	Replacement
repairs/relocation) ocation 2. Liaise with key units and sect	tions -60% achieved
Regular Replacement Customer feedback trend	due to schedule
of meter request both A. 24 hours – 100%	days.
domestic and B. 48 hours – 80%	
commercial 72 hours – 60%	
3. Monthly D. 96 hours – 40%	
check/servicing/replac E. More than 96 hours	
ement of bulk meters – 20%	
4. Timely monthly report	
5. Regular supply of	
replacement data to	
meter reading team	
and billing	
6. Regular verification of	
material orders	
2. Contribution to NRW pilot	
Sites	
Attendance of NRW Weekly	NRW weekly
2.1 Weekly Meeting Meeting Jul Oct Dec Ma	meeting
Attendance A. Weekly – 100% 2	attendance
➤ Presentation of activity	-80% achieved.
nrogress C Monthly = 60%	Needs
Reporting D. Not at all – 40%	commitment to
	meet set target
2.2 Illegal Disconnection Monitoring of disconnected illegal 1. Prioritize key reports/activities for	regular presentation at
➤ Disconnection water users NRW meetings	
➤ Monitoring A. Weekly = 100% 2. Regular follow up with customer se	ervice for illegal Pilot site
> Reporting B. Fortnightly – 80% disconnection status.	Monitoring
Monthly – 60%	-60% once a
D. Not at all – 40%	month. Needs
	more routine

			check
3. Challenging target (Voluntary) 1. Visiting and reporting and at the pilot sites on illegal status is key activity that must be done at the NRW meeting. 2. Reporting and verification meter raising activities at the pilot sites.	Site Visits and reporting A. Once a week – 100% B. Once a fortnight – 80% Once a month – 60% D. Not at all – 40% Reporting and verification A. Weekly – 100% Fortnightly – 80% C. Monthly – 60% D. Not at all – 40%	J A S O N D J F M U U E C O E A E A E A E A E A E A E A E A E A E	Site Visit -60% Need S More routi ne visit Repo rting and Verifi catio n -80% need
			s regul ar repor ting

S4.5-2-41

4.Enlightening activities (Voluntary)	Participate in organise sporting and health activities							
	A. Weekly – 100% B. Fortnightly – 80% ■ monthly – 60% D. Not at all -40%	sports 1 2	participation activities such Volley ball Soccer And walk fo	n as:	Dec	Mar	-	60% needs active partici pation on weekly basis

Main Activities	Verifiable Indicator	ble Indicator Methods of Implementation		
1. Contribution to water supply service of Solomon Water		Implementation		
Pipe line replacement	a. Identification of pipeline to be replaced b. Replace 2 km of pipeline c. Replace more than 10km of pipeline	Jul. Oct. Dec. Mar. 1. 2. 3. 1.site visit & planning 2.Hands-on job 3.Reporting	B. identified an replaced 2km o pipe so far.	
Pipeline maintenance and leakage & repair	A .Over 50 faults per month b. Over 20 faults per month c. Under 20 faults per month	Jul. Oct. Dec. Mar. 1. 2. 3. 1.awareness 2.Hands-on job 3.Reporting	B. faults at time are still over 2 fualts per month	
Fault attendance/ attending to complains	a. Response within 1-10 days b. Response within 1-6 days c. Response within 1-3 days	Jul. Oct. Dec. Mar. 1. 2. 3. 1.training and awareness 2.Hands-on job 3.Reporting	B. response armostly 1-6 six however there are assess more than 1 days.	
Make sure of safety at work.	a. Unsafe work practices b. safe work practices with high risk c. safer work practices with low risk	Jul. Oct. Dec. Mar. 1. 2. 3. 1.training and awareness 2.Hands-on job 3.Reporting	A. Work practices are sti unsafe.	

Inside tank cleaning	a. Schedule tank cleaning b. All tank cleaning c. Tank cleaning according to schedule	Jul. Oct. Dec. Mar. 1.	a. Only scheduling has been carried out.
Tools, equipment & logistic supports	a. Few right tools b. Right tools and logistics support	1.planning 2.Hands-on job 3.Reporting Jul. Oct. Dec. Mar. 1. 2. 3. 1.training and awareness 2.Hands-on job 3.Reporting	B. Right tools and logistics however tools are missing all the time.
2 Contribution to pilot project In order to identify causes of NRW, I will learn MNF measure and report to relevant team by March 2014.	A. To be able to measure Minimum Night Flow without any advice, to make graph and report. B. To be able to measure Minimum Night Flow without any advice. C. To be able to measure Minimum Night Flow with advice	Jul. Oct. Dec. Mar. 1. 2. 3. 1.Training in office 2.Hands-on training 3.Reporting	Not even achieved A.
Be able to learn, apply the process and procedures involve in assessing NRW as conducted and carry out on pilot project sites	a. Able to carry out process of accessing NRW with advice b. Able to carry out process without advice c. Able to advice or lead a team in assessing NRW process procedures	Jul. Oct. Dec. Mar. 1. 2. 3. 1.Training in office 2.Hands-on training 3.Reporting	Not even achieved A

Be able to obtain data for and carry water audit Analysis and to calculate NRW ration.	a. Work along side someone with relevant knowledge b. Able to carry out analysis with advice c. Do it without advice.	Jul. Oct. Dec. Mar. 1. 2. 3. 1.Training in office 2.Hands-on training 3.Reporting	B have knowledge to carry out water audit analysis but not carried out an exercise for a while.
Challenging target (Voluntary) To supply water to no water areas.	a. Supply water once a week b. To supply water once a day c. To supply water 24/7	Jul. Oct. Dec. Mar. 1. 2. 3. 1.awareness 2.improve water supply 3.Reporting	B water supply are mostly 24/7 but few pockets are once a day.
3. Enlightening activities (Voluntary) To improve water supply within honiara town			

Note: Based on

54.5-2-43

Individual Action Plan (Challenging Program) Team) (Mr. Mathias Bera Network Operations Team) July 2013-March 2013

Main Activities	Verifiable Indicator	Methods of Implementation	Achievement
Main Activities J. Contribution to water supply so Solomon Water 1) In order to contribute to Solomo will work hard to ensure that installation, repair and maintenan are done according to the standards.	rvice of n Water I A. Supervise installation without assistance assistance see works B. Supervise installation with	Ind Sept New Line Mar. 1	Achievement -C- Always caught up in MRW works Most ppe installate repair and mainlenance works are close by Mainlenance from , Bo not have time to jain them.
Work with network operations and basic network modeling for Wi gravity (using EPANET)		July Sept Nov Jan. Mar. 1. J.	

			Collection of customer data – billing & other relevant source.	
2. Contribution to	pilot project			
reduction	or me to fully understand NRW activities I need to learn and ny understanding on the cost of	A. Confidently collect and analysis cost of water supply without assistance B. Confidently collect and analysis cost of water supply with assistant C. Not Confident at all in collecting and analyzing rost of water supply with or without assistance	1) Gain understanding through mini-workshops the contents that make up water supply cost. 2) Calculate water supply cost through training and close supervision. 3) Reporting and evaluation.	-C- Never actually participate in collecting and analyzing cost of water supply
	d and carry out MNF as means to IRW reduction measures.	A. Conduct MNF with no supervision B. Conduct MNF with	Jul. Stept Nov Jan Max 1	B - Since we do not have 24/7 Supply of water and pressure fluctuations the machine closes Sometimes play up

	supervision C. Conduct MNF with supervision and site coaching. D. Not Confident at all to conduct MNF with or without supervision	Training on theoretical manual & procedures for MNF & flow meter Training on MNF output in office & field Field practical on MNF measurement Evaluation & reporting on progress	
3) Understanding Step Test -	A. Carry out step test with no supervision B. Carry out step test with supervision C. Carry out step test with team assistance and closer supervision. D. Not confident in carrying out step test with or without supervision.	1) Picture and collect information on the network to be step tested 2) Get an understanding of the flow in each network when valves are closed which section of pipe line is record different flows. 3) Evaluated the result and report on the result of the step test.	-B- Still not feeting conjugant on how to set up the machine.

Understand using of leakage detection machines and methods as a media of identify leakages for NRW reduction purposes.	A. Confident in using leakage detection methods & machines without supervision B. Confident in using leakage detection methods & machines with some supervision C. Confident in using leakage detection methods & machines with much supervision D. Not confident at all to use leakage detection methods and machines with or without supervision	1) Measurement of measure visible leaks 2) Using leakage detection equipment such as acoustice rod & electronic leak acoustics & correlator. 3) Documentation of leaks & repairs 4) Differentiate leak sounds	-C- Need more prochas
5) Able to perform water audit for SW pilot vites.	A. Collect and categories components for Water Audit table for Solomon water without assistance. B. Collect and categories components for Water	Jul Sept New Jan Mar 1 2 3 4 1) Differentiate connection types	-B- Should be allow in the near Julice.

	Audit table for Solomon water with assistance C. Not confident to collect and categories components for Water Audit table for Solomon water with or without team assistance	and categories accordingly 2) Table meter accuracy table 3) Table leakage measures 4) Link SW Audit table with 1WA table.	
3. Challenging target (Voluntary)			
Presentation on Operation & NRW for pilot sites .	A. Onice every two months B. Onice every three months C. Once every six months	Jul. Sept. Nov. Jas. Mar. 1	-C- Va presentation on NRW Activities being Conducted on pilot sites over the last couple of months.
4. Enlightening activities (Voluntary)			
Playing sport activities.	A. 5 times a week B. 4 times week C. 3 times a week D. 2 times a week	Jul Sept Nov. Zan Max	-C- Depends on weather: Could go up to S times a weather.

2) Soccer
3) Volleyball
4) Wall for life

Individual Action Plan (Challenging Program)

(Mr. Frank Daukalia, NRW Technical Sub-Team Team)

Main Activities	Verifiable Indicator	Methods of Implementation	Achievement
Contribution to water supply service of Solomon Water.			
1.1 Network operations O A O A O O O O O O O O O	A. 24 hours water supply - 100% B 20 hours water supply - 80% C. 16 hours water supply - 60% D. 12 hours water supply - 40% E. 10 hours water supply - 20%	Jul Oct Dec Mar 1. 2. 3. 1. Monitoring of Source & Storage tanks. 2. Liaison with responsible teams to fix leakage on mains, service lines etc. 3. Data of Water consumption for each HH, Block etc. 4. Liaison with source workers from each source	80% water supply daily for most parts of Honiara. Other 20% for leakages, illegal connections, poor network connections and low pressure.

2.0 Contribution to pilot project			
2.1 Isolation of Pilot Site	A. Confident in Isolation of pilot sites and confirmation of boundaries (customers) without assistance or supervision. – 100% B. Confident in Isolation of pilot sites and confirmation of boundaries (customers) with less assistance80% C. Not confident at all in Isolation of pilot sites and confirmation of boundaries – 10%	Jul Oct Dec Mar 1. 2. 3. 4. 1. Identify pilot sites on topographic map (GIS). 2. Confirmation of boundaries on site with assistance of field officers. 3. Confirm customer boundary with meter readers 4. Identity network features	80% done. This job requires input from some field staff and meter readers.
2.2 Customer survey	A. Differentiate customer types & classify them without any Assistance. – 100% B. Differentiate customer types & classify them with less Assistance. – 95% C. Differentiate customer types & classify them with much assistance. – 10%	Jul Oct Dec Mar 1. 2. 3. 4. 5. 1. Confirm metered customers 2. Confirm direct line customers 3. Confirm parasite customers 4. Confirm illegal customers 5. Confirm non-exist customers etc.	95% was done. This job requires input from meter Readers and billing team.

	2.3 Customer meter inaccuracy Test	A. Conduct meter inaccuracy test efficiently& compile data with confidence 100% B. Conduct meter inaccuracy test efficiently& compile data with less assistance 95% C. Conduct meter inaccuracy test efficiently& compile data with much assistance 10%	Jul Oct Dec Mar 1	*	95% was done. Constant time interval of 5 minutes during the meter inaccuracy test. Assistance from NRW team.
S4.5-2-47	2.4 Leak detection & Compilation	A. Be able to figure out different types of leakage without any advice & compile a report 100% B. Be able to figure out leakages With less assistance & compile report 90% C. Be able to figure out leakage only 10%	Jul Oct Dec Mar 1. Second Sec	*	90% was done. This requires input from field staff that did leakage detection.
	2.5 Step Test	A. Confidently do the setup for step test and compilation of the data without supervision. 100% B. Confidently do the setup for step test and compilation of data with less assistance-90% C. Not Confident to do the setup for step test and compilation of the data at all20%	Jul Oct Dec Mar 1.	*	90% was done. Remaining percentage needs staff to assist in order to achieve.

2.6 Minimum Night Flow Measurement (MNF)	A. To be able to measure Minimum Night Flow & make graph and report without assistance100% B To be able to measure Minimum Night Flow & make graph and report with less assistance90% C. Not able to measure Minimum Night Flow & make graph and report at all 0%	Jul Oct Dec Mar 1.	 90% was done. Need assistance from other NRW project team members.
3. 0 Challenging target (Voluntary)			
3.1 Presentation of work progress at weekly meetings.	Four times every month -100% B. Twice every month -60% C. Once every month -20% D. None at all -0%	Jul Oct Dec Mar 1.	◆ 100% was done.NRW weekly Meeting presentations on field work progress.
4. 0 Enlightening activities (Voluntary)			

4.1 Solomon Water sports committee member All staff involved in sporting activities to keep them fit & healthy. Encourage staff to know each other well through social activities.	A. Zero Staff Sick leaves per month - 100% B) 5-10 Staff sick leaves per Month - 80% C. 15 Staff sick leaves per Month - 30%.		ovemen	ts.			*	80% of staff sick leaves per month. Need to organize sporting activities to keep staff fitness level back on track.
☐ Well-being of all staff	D. >= 16 staff sick leaves per Month - 5%	2. Orgai	nize wee	екіу ѕро	rung act	ivities.		
4.2 Sports involvement	A. Every day – 100% B. Three times a week – 80%	1. 2.	Jul v / Soco	Oct	Dec	Mar	*	30% of sports involvement.
S. 4.4.4.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.	Once a week - 30% D. Non per week - 0%	2. Walk	,		J			

Individual Action Plan (Challenging Program) (Ms. Beverly Sa'ohu, Team Leader customer Care) April 2014 -March 2013 Achievement (Self-evaluation at the middle of March Main Activities Verifiable Indicator Methods of Implementation 1. Contribution to water supply service of Solomon Water A. Ensure that I manage the customer care Consultation of SW policy/ Regulation: Apr Dec. Jul. Mar. department in accordance to SW regulation a. Twice a week To conduct meetings and and policy and to enhance customers' b. Once a week ensure every customers are satisfaction on deliverance of service Once a fortnight satisfied. I did it once a provided by customer service staff. d. Once a month week. To ensure that customers are attended to. e. None at all - -This is done daily when stepping in at the front counter. B. Ensure that all customers' queries are satisfactorily answered on timely manner. Customers queries are answered a. Same hour b. Same day 1. Scheduling of work for customer c. After one day Managing and supervising the d. After 3 days e. After 1 week f. Not at all customer care team. Same hour. But this depends Weekly report writing Entirely on the nature of complaint. It can take some 4. Daily meeting with customer care staff. time if the customer issue is C. Ensure that other departments are informed Assess staff performance
 Meet Daily with other team heads too complicated because we quickly on customers request to ensure that services are delivered on timely manner. Customer needs relayed to relevant have to work closely with the department other relevant departments a. Same hour
b. Same day
c. After one day
d. After 3 days
e. After 1 week
f. Not at all for feedbacks. This includes customer's correspondences. And emails from customers. D. Provide weekly updates to service delivery Manager. Same hour. Sometimes within a week. Depends on customers we have attended Weekly Reports

a. 4 times a month

b. 2 times a month and the nature of their issue.

U
4
•
O
\sim
4
œ
_

	c. 1 time a month	C.
	d. Not at all	Customer care reports are
E. Liaise with HR upon identifying ne		produced on monthly basis
customer care staff to skill by	lding	to the CC & C Manager.
requirements.	Skill assessment on staff	
	a. Once a month	
	 Once every 6 weeks 	D.
	c. Once a year	Not yet liaising with the
	d. Not at all	HRM for training in order
		to build staff skills.
		Currently I'm doing skill
		assessment on staff.
		especially monitoring the
		CC staff and also working
		closely with them at the
		front counter to identify
		skills they need to improve
		on. Especially the approach
		and the information given to
		our customers. Also
		currently I am compiling
		customer suggestion and
		comments customers usually
		fill in our feedback forms
		that we use at the front
		counter.
F. Liaise with the PR team to	form Public awareness	
customers on important events	a. Fortnightly basis	
•	b. Once a month	
	c. Once every two months	
	d. Once every 6 months	I'm liaising with the PR
	e. Not at all	team whenever they did
	C. THOU ME MAI	awareness programs,
		especially during their
		awareness events and Radio
		programs; this is when they
		need 1 customer care

			representative.
2. Contribution to pilot project			
Involve in awareness programs on pilot sites.	a. Once fortnightly b. Once a month c. Once every 3 months d. Once every 6 months e. Once a year f. Not at all	Apr. Dec. Jul. Mar.	Accompany PR team when conducted awareness on Pilots sites. So far have done I last year at NAMORUKA, with this I prepare illegal users listing and fees they are supposed to pay. In fact we have done general customer service on that awareness day.

O
4
٠.
U
J
\mathbf{r}
2.
C
č
_

Weekly reporting of status of pilot customers to other NRW Reduction sub teams.	a. 4 times a month b. 2 times c. Once a month d. Once after 2 months e. Once after 6 months f. Not at all	Apr. Dec. Jul. Mar. 1. Keep track of customers status on daily basis	Reports mainly on activated illegal users on pilot sites during NRW meetings. And also the feedback and the update customer research which was analyzed by WADA. We have gone through 15 pilot sites doing interview and also inputting data taken by customers.
Assisting customers in validating their accounts	a. The same hour b. The same day c. After I day d. After I week e. After I month	1. Provide customers with proper information on SW requirements.	A. This one is done on the same hour, and it depends entirely On the nature of complaints and the customers we have attended.
Challenging target (Voluntary) Will present work progress at the meeting or workshop.	a. Monthly basis b. After 3 months c. After 6 Months d. After 1 year e. Not at all	Apr. Dec. Jul. Mar. 1. Keep track on daily achievements and challenges 2. Prepare monthly summary reports	A. This is done on monthly basis. Sometimes During the NRW meetings.
4. Enlightening activities (Voluntary) Health and fitness	Exercise a. 5 times a week b. 3 times week c. 1 time a week d. Not at all	Apr. Dec. Jul. Mar. 1. 2 1. Walk for Life 2. Volley and netball	A. 5 times a week. Walk to and from office

Individual Action Plan (Challenging Program) (Mr. James Carlo

(Mr. James Carlos Saliga | Communications Team)

Main Activities	Verifiable Indicator	Methods of Implementation	Achievement (Self-evaluation at the middle of April
Contribution to water supply service of Solomon Water In order to contribute to Solomon Water, I will do work efficiently by abiding to the specific goals and objective of my unit, department and company as whole	A. 8hrs in a Working Day B. 40 Hrs in a Week C. 1800 Hrs in a Month D. 20 Hrs in overtime in a month	Feb. March April. May Nork key activities are scheduled into intervals which are then prioritized into order of implementation in the 5 working days in a week	Defined tasks are sometimes too many giving no room for accomplishment of all of them one time. A proper schedule of work implementation should be considered to ensure activities do not overlap each other but rather complement each other. Hence this aspect is ongoing.
Contribution to pilot project Ensure relevant key messages and notifications is disseminated to the pilot site areas and facilitation of appropriate research and survey essential to the full implementation of the NRW project.	A. To be able to state clearly the objectives and key functions of the project and key functions of the project and key functions of the project and the proje	1. Data input advise and hands on training in office 2. Assessment and analysis procedure for ICW material 3. Field implementation of research and survey activities 4. Communication, coordination and networking of activities prerequisite for the achievement of NRW activities in the pilot zones	The communication team had played an important role in the communication, networking and awareness of the NRW in key pilot site areas. However more needs to be done in this area to ensure people understand critically the importance of this program and be part of this improvement.

O
4
ċ
Ÿ
ĸ
Э
C
_

	G.	required Use the radio as an medium to share the key messages and knowledge and also update of the NRW activities in different pilot sites	5. NRW basic assessment test
Challenging target (Voluntary)			
To ensure the key messages, knowledge's, information and awareness is given on time before project commences in pilot site areas. To ensure thorough communication of NRW weekly and monthly strategies are taken heed of prior to implementation. To ensure people know about the importance of the NRW project and be part of it To be able to understand fully the technical calculations of NRW measures in different sites and be able to assess throughly how this has contributed to the improvement of revenue water in pilot site areas Ensure technical aspect of the NRW is made simpler for all staff and the public to understand how to manage NRW 4. Enlightening activities (Voluntary)	B.	Monthly 6 Months Yearly	The challenging target detailed is the important aspect considered by the communication team in this rea. Communication team in the communication team will be required to conduct awareness, brochure and pamphlets distributions The challenging target detailed is the important profeat onsidered by the communication team in this rea. Communication team and when communication team will be required to conduct awareness, brochure and pamphlets distributions
	1		

Ms. Tango: Communication / Awareness Team Individual Action Plan (Challenging Program) Main Activities Verifiable Indicator Methods of Implementation Achievement I Contribution to water supply service of Solomon Water Inoder to contribute to Solomon A. 15hrs/one month Questions asked by July Oct Dec March Water, J will involve relevant B. 10hrs/ one month students are mainly on the departments to assist our team to C. 8hrs/ month and overtime operational part of SW. Our do awareness in schools and team has involved relevant communities. (Teamwork) departments to assist us in our awareness programs. Good teamwork By involving other departments we also learn a lot from them. 2. Contribution to pilot project Pamphlets was distributed In Oder to contribute to pilot A.10 hrs. /Once a Month July Oct Dec March to NRW Pilot Sites. project our team have distributed B.11hrs./ Twice a Month NRW pamphlets to Pilot sites and | C. 9hrs./ month in overtime have involve other team members

U
1
۶.
Ÿ
Ń
- 30
O

from operations to assist in distributing the pamphlets. Notice and Information updates posted on our Facebook page and Solomon Star News paper	~	Notice and information updates posted on our Facebook and Solomon Star
A. Challenging target (Voluntary)		
A. Enlightening activities (Voluntary)		

Individual Action Plan (Challenging Program) (Ms. Daisy Menaga, Team Leader Meter Reading) Main Activities Methods of Implementation Achievement (Self-evaluation at the middle of march) 1. Contribution to Water Supply service of Solomon Water A. 10hours Overtime in a 1. Jul Sept Dec Mar Achieved 20hours and still working In contribution to Solomon Water, I will do towards achieving the target of my work more effective & efficiently month 40hours Overtime in a month B. 20hours Overtime in month C. 30hours Overtime in a month D. 40hours Overtime in a 1. Commit to work effective & month efficiently Preparation of Monthly Work Schedule A. Week one 1. Jul Sept Dec Mar Achieved A - all schedules were B. Week two prepared at week one C. Week three D. Week four 1. Availability Schedules when needed Preparation of Monthly reading Schedules Achieved A - all schedules needed A. Week one B. Week two Jul Sept Dec Mar were provided at week one C. Week three D. Week four 1. Availability of monthly reading schedules. Staff Training A. To be able to know how to Role Plays and trainings needed to Computer & Device terminal use handheld devices Jul Sept Dec Mar improve capacity building and work training B. To be able to read in this phase was carried out for our Water tariffs & charges customers water meter team members Effective Communications Training without any advice Report Writing C. Able to be answerable to Achieved D customers in a proper & polite way. D. All of the Above 1. Training in the office 2. Hands – on training 3. Reporting 4. Role play

S4.5-2-53

Downloading & Uploading Cycle readings into NCS system	A. 50% B. 70% C. 90% D. 100%	1. Effective & reliable system 2. Handheld devices must be in good condition 3. Extra hours overtime 4. Address issues affecting reading - Natural disturbances (rain & cyclone) & social unrest	Achieved D All reading Data were 100% done – updated in the system (Delayed update of Data resulted from natural disturbances and technical problem in the system)
Reporting	A. Once a month B. Twice a month C. Four times a month D. None	1. Daily Reporting 2. Weekly Reporting 3. Fortnightly Reporting 4. Monthly Reporting	Achieved C Non-revenue reading and fault updates were done weekly for progress on project sites.
Team Management • Addressing team members grievances and welfare	A. Once a month B. Twice a month C. Four times a month D. None	1. Jul Sept Dec Mar 1. 1. In Monitoring & Cancelling 2. Assessing 3. Team work & Discipline 4. Decision Making	Achieved C Team meeting and briefing is done every week. This is to ensure that task is effectively carried out and reporting of uprising issues that might affect work performance
Team Regular Meeting Updates Arising Issues	Able to know the job and the expected outcome To be able to know that the arising issues are answerable Able to know what NRW is and why it is vital	1. Improvement on Work progress 2. Good team work 3. Effective & Efficient meter reading (Accuracy)	Achieved no. 4 Team meeting for progress updates were carried out twice a week to ensure that the team know about their job and the expected outcome, identify solutions for upraising issues and have the knowledge about NRW and why it is important

2.Contribution to pilot project Updating Customer information (Changes) Meter Id's Meter locations Statuses	A. 50 B. 70 C. 90 D. <100	1. Up to date customer information update 2. Efficient & Reliable system (NCS) 3. Reporting	Achieved C updating of customer information depends on the other team that verifies the Customer Information out in the field and delay of updating resulted from system problem and/or late feedback
Reporting field findings from team members to NRW Team leader	A. Twice a month B. Once a month C. On a daily basis D. None	Jul Sept Dec Mar 1 Daily 2 Weekly 3 Fortnightly 4 Monthly	Achieved B Reports are done once a month as we visit every site once every month. However, Monitoring was now done once a week.
Downloading & Uploading Cycle readings into NCS system	A. 50% B. 70% C. 90% D. 100%	1 Jul Sept Dec Mar 1 1 . Effective & reliable system 2. Handheld devices must be in good condition 3. Extra hours overtime 4. Address issues affecting reading — Natural disturbances (rain & cyclone) & social unrest	Achieved D - all reading are uploaded and updated in the system
Networking	To be able to form a good working relationship within the sub-team members and other sub-team members	Jul Sept Dec Mar 1	Achieve 1 Good team work and still working to improve more on it also assisting in problem solving

O
4
ö
ĸ
ä
ĭ

		Team work	
		Assist is problem solving	
Weekly Meeting Team Update Updating sub-teams on work progress Issues faced	To be able to have a broader knowledge of NRW & its components Able to know that issues faced are answerable and dealt with	1. Contribution to the reduction of NRW 2. Give feedbacks during NRW weekly meetings	Achieve 1 Team Meeting and meeting conducted by NRW Team Leader for the team to broaden team's knowledge on NRW. More Knowledge on NRW More Knowledge is acquired during this phase about NRW and its Component
3.Challenging target			
I will learn & work hard to present work progress during meetings	A. Two times per year B. one time per year C. Zero per year	Jul. Oct. Dec. Mar. 1	Achieve A Attended weekly meeting except when something came up or when sick

Individual Action Plan (Challenging Program)

(Mary Tafoa, NRW Customer Care Sub-Team)

Main Activities	Verifiable Indicator	Methods of Implementation	Achievement (Self-evaluation at the middle of March
Contribution to water supply service of Solomon Water. In order to contribute to Solomon Water, I will bill customers with accurate water meter reading, efficiently and on timely basis.	A. 10hours/month in overtime B. 15hours/month in overtime C. 20hours/month in overtime D. Over 20hours/month in overtime	Nov - Jan Feb Mar. Deci3 1. Do work efficiently	B. To bill customers on timely, accurate and consistent reading each month. Month end is the deadline so over time is given every 4th weekend to do work and last day of month after 4:30pm.
2. Contribution to pilot project			day of month after 1.00pm.
In order to identify causes of NRW, beginning of each month, I will prepare customers list for the respective pilot sites: Account numbers, names, meter identification numbers, location, consumption unifvalue used per month. This report will be forward to Benjamin, Frank and other relevant team members. Provide month end report to Benjamin on monthly consumption for pilot sites.	A. To be able to extract and produce water details of customers within the pilot site requested by Benjamin Billy from NCS billing system. B. To be able to monitor the monthly water consumption at the pilot site. C. To be able to report any findings (example: high water unit used, underground leakage) at the pilot site to Benjamin Billy.	Nov Jan Feb Mar. Dec13 1.	A. I can manage to prepare customers list for pilot sites and monitor the monthly water consumption but not sort out high readings due to unable to go out to the field to identify myself.
3. Challenging target (Voluntary)			

,	
ĭ	_
č	,
r	į
c	5

	A. Two times per year B. one time per year C. Zero per year	1. 2.	ing	Jan progress at Worl	Mar.	I could not request to present the work progress by myself. I was just appointed to present it by our leader once.
4. Enlightening activities (Voluntary)						
Joining sports/Games (SW)						

	*	water supply service of Solomon Water																		
	A. Ensure that I work in accordance to SW Policy/Regulation:	Consultation of SW		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	В.				
		1	-	-	-	-	-	-	-				-	-	Currently there is no					
		regulation and policy	a. Twice a week	2	_									-	_	-	policy/regulation in			
		and to enhance (b) Once a week	and to enhance (b) Once a week		and to enhance (b.) Once a week	and to enhance (b) Once a week	3							_	_					placed, therefore to
	customer c. Once a fortnight	4			_		_				_		_	_	enhance customer					
		satisfaction on	d. Once a month	5	-	-	-	-	-	-	-	-	-	-	-	-	satisfaction on			
	deliverance of e. None at all service provided by customer service	1. Scheduling of work										-	deliverance of service provided, need to							
	8. Ensure that all customers' queries are answered are satisfactory answered on timely manner. Customer queries are answered 2. Same hour (b) Same day After one day			2. K 3. V 4. D 5. Ir	eep da Veekly vally me ndividu deet da	ily rec report eting al skill	ords of writing with a asses	ng custon sment	ner car	re staff	q					liaise with the team head and other departments B. Customer queries are answered depending on the nature of				

Methods of Implementation

(Ms. Mary Pidoke, Customer Care) March 2013-March 2014

Achievement

the nature or complaint/queries. For some can be answered right away and some depending on as soon as we get feedback

B. Other departments are informed on the same day on customer

requests

Individual Action Plan (Challenging Program)

C. Ensure that other

départments are informed quickly on

customers request to ensure that service are delivered on timely manner

Verifiable Indicator

d. After 3 days e. After 1 week f. Not at all

Customers needs relayed to relevant department

a. Same hour

B. Same day

C. After 1 day

d. After 3 days

e. After 1 week f. Not at all

Main Activities

	D. Provide weekly updates to customer service team leader	Weekly reports a. 4 times a month b. 2 times a month c. 1 time a month d. Not at all														Weekly updates is done on weekly basis
S4.	E. Ensure that I carry out personal assessment based on performance indicators outline in job descriptions	individual skill assessment a. Once a month b. Once every 6 months c. Once a year d. Not at all														D. This was not done at all because i still did not have any Job description, since I moved to customer care
S4.5-2-56	F. Liaise with PR team to inform customers on important events	Public awareness b. Fortnightly basis b. Once a month c. Once every 2 months d. Once every 6 months e. Not at all														Inform customers on important events through email, face to face when customer comes in at the customer service
	Contribution to pilot project															
	Involve in awareness programs on pilot sites	Once fortnightly Donce a month Once every 3 months	1 2		May	Jun	Jul.	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	E. I only attend 1 awareness program on pilot site at Namoruka
		d. Once every 5 months e. Once a year f. Not at all	Prepare and provide information to customers								and provide information to customers					

 Weekly reporting of 	a. 4 times a month b. 2 times a month		Apr	May	Jun.	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	<u>c.</u>		
status of pilot customers to other	b. 2 times a month	2													Weekly reporting was done fortnightly		
NRW reduction sub teams d. Once after 2 months e. After 6 months f. Not at all		Keep track of customers status on daily basis:											B				
 Assisting customer in 	a. The same hour		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Assisting customers in		
validating their	b.) The same day	1	_											-	validating accounts		
accounts	c. After 1 day	2						100	-				-	-	depends as soon as customer comes		
d. After 1 week e. After 1 month		Provide customers with proper information on SW											customer comes				
Challenging target (voluntary)	No. of the last of														4		
I will present work progress at the meeting or workshop b. After 3 months c. After 6 months	b. After 3 months c. After 6 months	1	Apr	May	Jun	Jul	Aug	Sep	Ott	Nov	Dec	lan	Feb	Mar	I dould not present work progress every time, only if I was asked to.		
	d. After 1 year e. Not at all	Keep track of daily achievements and challenges Prepare monthly summary reports															
Enlightening activities (voluntary)																	
Health and fitness Exercise		1	Apr	May	lun	Jul .	Aug	5ep	Oct	Nov	Dec	Jan	Feb	mar	A.		
The second	a.) 5 times a week b. 3 times a week	1									100	=			I did walk every day and		
	c. 1 time a week	3	-	-	-	=						-		-	as for volley ball depends on our sports		
	d. Not at all	13	1 1	to the form	1160	100			-						schedule and the		
	d. Not at all	Walk for life Valley ball Weight lifting								weather.							

04.0-2-07

Individual Action Plan (Challenging Program)

(Mr. Gavin Bare, GIS Technician)

individual Action I fan (Chancinging I fogram)		(MI. Gavin Bare, GI3 Technician)							
Main Activities	Verifiable Indicator	Methods of Implementation	Achievement						
1. Contribution to water supply service of									
Solomon Water									
Develop a reliable GIS database by collecting	Achieve Base Station By;		Base cannot be achieved						
accurate data, efficiently managing and producing	A. July – Sept	Jul. Oct. Dec. Mar.	due to a possible						
GIS information for SW operations.	B. Oct – Dec	2.	incompatibility with the						
Achieve Base Station (Improve Accuracy)	C. Jan – March	3	version of the TerraSync						
 Update/Verify Field Data. 	D. None	1. Field Work (Collection of	software being supplied.						
 Provide GIS Reports 		Data).							
	Update/Verify field data	GIS Data Managing.	Update/Verify Field data						
	A. 10km/month	3. Providing GIS Information	For the month of March						
	B. 6km/month		alone an approximately						
	C. 2km/month		42km of distribution						
	D. 0km/month		pipeline is recorded						
			(excluding pilot sites).						
	Provide GIS Reports								
	A. Fortnightly								
	B. Monthly		GIS reports weekly in						
	C. Quarterly		NRW weekly meetings.						
Contribution to pilot project									

 Record Leakage points locations 	Update/Verify field data for		Mbua Valley = 2km
 Update Pipe network locations 	NRW pilot project sites.	Jul. Oct. Dec. Mar.	Bahai/Kukum = 1.5km
 Produce relevant Maps for field work. 	A. 1 - 2 km/month	1.	Panatina = 0.9km
 Record raised customer meter locations. 	B. 500m - 1km/month	3.	
	C. 100 - 500km/month	4	Total = 4.4km
		Office and field training for	
		field officer.	
		2. Fieldwork	
		3. Reporting for update weekly	
		meetings.	
		Update GIS system.	
A. Challenging target (Voluntary)			
Do presentation of updated features of NRW and	A. Once every 2 months		E
SW system to all staff for familiarization.	B. Once every 3 months	Jul. Oct. Dec. Mar.	
	C. Once every 4 months	2.	
	D. Once every 6 months	3.	
	E. Never	1. Keep record of daily inputs	
		2. Compile monthly summary	
		3. Prepare presentation	
B. Enlightening activities (Voluntary)			
Sports Activities	a. 5 days/week		С
	b. 3 days/week	Jul. Oct. Dec. Mar.	
	c. 1 day/week	2.	

54.5-2-58		
2-7-0	C	,
7	7	ĸ
2-7-0	4	۲
7	:	
1	C	J
1		•
ç	r	Ľ
ď	٠	ď
ă	•	٦
α	2	٠.
	C	χ

d. Never	Manage time properly. Proper dieting.	
	2. Proper dieting.	

Main Activities	Verifiable Indicator	Methods of Implementation	Achievement (Self-evaluation at the middle of March
Contribution to water supply service of Solomon Water			10 1 - 1
In order to contribute to Solomon Water, I will do work efficiently.	A. 20hours/month in overtime B. 30hours/month in overtime C. 40hours/month in overtime D. Over 40hours/month in overtime	Jut. Oct. Dec. Mar I. Do work efficiently	o Achieved from I which I do over 45 hours moth in over true
2. Contribution to pilot project			11. 1. 15
In order to identify causes of NRW, I will learn MNF measure and report to relevant team by March 2014.	A. To be able to measure Minimum Night Flow without any advice, to minimum Night and report. B. To be able to measure Minimum Night Flow without any advice. C. To be able to measure Minimum Night Flow with advice	Jul Oct Dec Mar. 1. 2 3. 3. 1. Training in office 2. Hands-on training 3. Reporting	a Refuerful from about to aleasure Mining More and and addition
3. Challenging target (Voluntary)			11 10 1
I will present work progress at the meeting or workshop.	A. Two times per year B. one time per year Zero per yean	Jut Oct Dec Mar. 1. 2. 1. Preparing progress 2. Presenting at Workshop or meeting	office of form the work frequents to team leaders
4. Enlightening activities (Voluntary)			

Individual Action Plan (Challenging Program)	(Mr.Ma	Mathew mafe Leakage Assistant									
Main Activities	Verifiable Indicator	Methods of Implementation	Achievement								
 Contribution to water supply service of Solomon Water 											
Survey and identify the types of leaks.	A. 5 days / Week B. 3 days / Week C. 2 days / Week D. 1 day / Week	Basic. Report visible leaks to maintenance. Medium Listening rod.	Cheforing beach and also line britannes red								
2. Contribution to pilot project			A								
A. Locating; S/lines, Main, Valves.	LOCATING; S/Lines, W/Mains, Valves. a) Confident with no advice. b) Confident with advice. c) Less confident to locate:	Jul Oct Sep Dec Jan Mar Training on project site. Training on office. Reporting.	D two Confident with no advice								

B. Conduct minimum night flow test. C. Conduct step test.	MNF test; a) Confident with no advice. b) Confident with advice. c) Less confident. CONDUCT STEP TEST. a) Conduct with no advice. b) Conduct with advice. c) No conduct at	Athen Confidentials To Confidentials To Confidentials To Confidentials To the second of the seco
Challenging target (Voluntary)	all.	
 a) Update and analyses data collected from project site and able to determine accurately. 	A. Two times per month B. One time per month	Collecting data. Determine data. Re determines data accurately. Determines data accurately. Determines data accurately.

C		1
Ĩ	`	٠
ď		
C	5	٦
J	ı	
r	Š	
О	L	
c	5	
_	5	١
`	_	•

 Enlightening activities (Voluntary) 							12 /
Sporting activities	A. 4 times a week B. 3 times a week C. 2 times a week D. 1 times a week E. Non in a week		Nov ing vol	ley	Jan	Mar	After work his walking back home

Solomon Water a) Survey to visible leakage	A. 5 days / Week	Jul Oct Sep Nov Dec Mar	C. R. Days/week, Because Iam
b) Maintenance of visible leakage	B. 3 days / Week C. 2 days / Week D. 1 day / Week A. 6 days/Week B. 5days/Week C. 4days/Week	Identify of different types of leak Monitoring of water supply on main pipe line and service line	net only work on Survey to visible lankage, but do other work of NRW. And also the period of time I must be on Apt a Training. C 4 Days/Week, because I do some work on NRW wike Cuetonous Registration. Accounted many save meter. Inaccuracy so him not doing some work every days.

Verifiable Indicator

Individual Action Plan (Challenging Program)

Main Activities

(Mr.David Akoeasi Leakage Assistant Team)

Methods of Implementation

Achievement

4
S
ā.
N
1
σ

Contribution to pilot project	
a) Minimum Night Flow b) Step Testing c) Valve Locator	A Minimum Night Flow Confident to do MNF without supervision With supervision Not confident at all B. Step Test Confident to do ST without supervision With supervision With supervision With supervision With supervision With supervision Not confident at all C. Valve Locator Confident to do VI without supervision With supervision C. Confident to do VI without supervision With supervision C. Confident to do VI without supervision C. Confident to do VI
Challenging target (Voluntary)	a note of refuse

Individual Action Plan (Challenging Program) for Phase-3 (Mrs. Ellen Maruarofa, Service Delivery & Communications Department)

Main Activities	Verifiable Indicator	Methods of Implementation	Achievement (Self-evaluation and reason at the middle of March 2015)	Achievement (Evaluation by Chief Executive Officer at the end of March 2015)
1. Contribution to Water Supply Services of S	olomon Water (Essential)			
A. Review processes developed particularly for the Connection Services as well as the Customer Care units. B. Stabolish a customer recording system; a record plan and a customer record guideline C. Formulate relevant policies for the Connection Services. D. Formulate Communication guideline for Solomon Water	Ensure effective management of customer quires/complaints: A. Daily B. Weekly C. Monthly Depending on the nature of the complaints: the above timings are all relevant. Assess and formulate customer care processes/procedures and flow of information within departments a. Achievement within 1 – 4 months b. Achieve within 4 – 7 months c. Achieve within 7 – 10 months d. Achieve after 10 months Currently most of the processes have been developed and currently on pretesting.	Jun. Sep. Dec. Mar. 1. To achieve the activities enlisted, the various methods to be utilized are: i. Meetings ii. Research iii. Trainings iv. Orientation programs v. Face to face or direct interactions vi. Coaching/Mentoring		

54.5-2-62

2. Contribution to the Project on NRW Reduc A. Lidise with the NRW consultant and team to ensure that the three units of Service Delivery and Communication Department know their roles to meet the expected outputs for reduction of NRW activities: B. Communication Unit Establish relations with identified pilot sites Communicate information to target audience/customers Organize and facilitate awareness programs to pilot sites Help print & distribute NRW pamphilets Help print & distribute NRW pamphilets Communication appropriate information within SW C. Customer Care: Liaise with NRW team to identify and facilitate legalization of illegal customers I dentify customer issues that are significant to help reduce illegal activities D. Connection Services:	Effective monitoring of NRW activities in collaboration with NRW team as well as the units within Service Delivery and Communication Department. A. Weekly B. Monthly C. 6 Months D. Yearly Committed to include NRW activities/updates or promotional bits into the communication public awareness programs such as the radio weekly programs and print media if see fit.	Jul. Sep. Dec. Mar. 1. Jul. Sep. Dec. Mar. 2. Jul. Sep. Dec. Mar. 1. Support NRW activities by ensuring all units within understand the goal of NRW as scheduled. 2. Receive feedbacks from TLs – team leaders meeting 3. Ensure all illegal users are legalized and monitored. 4. Public awareness to be effectively provided by the Communication unit.	

Note: Based on Capacity Assessment	& Capacity Developme	ent Plan, be requested to	prepare Individua	l Action Plan
Self-Development or Social Action (Volunt A. Participate during company, health, social and recreation activities. B. Keep up with my morning walk program.	A. Once a week B. 5 days a week	Jul. Sep. Dec. Mar. 1. 2		
3. Challenging Target (Voluntary) A. Ensuring that the three units are keeping up with their expected roles noting the high demand on dealing with customers. B. Continuous commitment of field workers to report as well as disconnecting all illegals identified; thus resulting in increasing illegals C. Inconsistency of monitoring activities as well as disconnection/reconnection practices that may resulted in increasing level of illegals	Include NRW updates – Team Leaders Meeting A. Daily B. Weekly C. Monthly D. 6 Months	1. Ensure to check with all the concerned TLs 2. Follow up with TLs on how effective the mechanism in place for reporting of illegal activities 3. Monitor progress on all illegal activities & propose improvements		
4 Identify and liaise with relevant for disconnections of all illegals A. Maintained the continuous support and activities identified for by the NRW team to be implemented by the Connection Service team				

	Main Activities	Verifiable Indicator	Methods of Implementation	Achievement (Self-evaluation and reason at the middle of March 2015)	Achievement (Evaluation by Manager at the end of March 2015)
1.	Contribution to Water S	upply Services of Solomon	n Water (Essential)		
1.	Presentation of system Operation to operations Team.	A. Once a month B. Every two month C. Once in six months D. Once a year.	Jun Jul Aug Sept Oct Nov Dec Jan Feb Mar		
2.	Revised Job Description for Network Operation Staff	By end of June 2014 B. By end of July 2014 C. By End of August 201- D. By End of September Some progress in 2014	14 2014 2		
			Involve start on their IWP Creations. Finalized and sent to HR to check and confirm with OM		
3.	Preparation of IWP and Appraisal for Network Operations Staff.	By End Of June 2014 By End of July 2014 By End of August 2014 End of August 2014 End of the September Some progress in 2014	4 Jun Jul Aug Sept Oct Nov Dec Jan Feb M ar 2014 1.		

(Mr. Benjamin Billy NRW Technical Sub-Team)

Individual Action Plan (Challenging Program) for Phase-3

	A. Monthly	Finalized and sent to HR to check and confirm with OM.
4. Operations Monthly Report	B. Every Two Months C. Quarterly D. Every Six Months E. Once a year	Jun Jul Aug Sept Oct Nov Dec Jan Feb M ar 1 2 3 1 1 Report on Operations Performance in terms of
5. Dash Board – work	A. daily	Service level 2. Report on production cost for each system & DMA DMA Jun Jul Aug Sept Oct Nov Dec Jun Feb M
program	B. twice a week C. Weekly D. fortnightly	1
		Prepare daily work schedules Task delegation to staff status of System Operations Highlight difficulties & strategies.
2. Contribution to the Pr	roject on NRW Reduction (Essential)	

S4.5-2-64

7.	Completion of Pilot Sites.	A. B. C.	August 2014 Completion of all pilot sites by end of September 2014 Completion of all pilot sites by end of October 2014	1. I 2. 3.	2. 1 3. I	Naha 2 week FFA proof of End	alley & reparat	Cour ion & 2014	tivitie iter m Com	s. End leasure pletion	of Ju es end n beg	ne d of d in fire	lune st Jul	e 2 uly
8.	Preparation of procedure for collecting Inventory for DMAs.	A. B. C.	Inventory by end of July 2014 Preparation of Provisional DMA Inventory by end of August 2014	1. I 2. 3. I 4. 5.	2. I 3. I 4. V	Locatii Liaise & GIS Work o	ng of P ng of P with M Geo sp out Pro	ipe lii leter i pacing ductio	eader:	s for c	uston	ner loc	M ar	
9.	Selection of two of two DMA for JICA project with pressure & Non Pressure Zone	A. B. C. D.	By end of September 2014 By End of October 2014 By end of November 2014 By End of December 2014.	1. I 2. 3. 4. 5.	2. I 3. I	Locatii Liase v	sept ng of P ng of P with M Geo sp	ipe lii leter r	nes eaders				M ar	

	4. carry out Base line Data 5. Document all information for base line.
10. organize weekly meetings	A. weekly meeting B. fortnightly meeting C. monthly meeting D. Quarterly, meeting 1. prepare minutes & Reporting template 2. Organize activity schedules to action plan.
3. Challenging Target (1 Optimize running of Water supply operations.	A. Reduction of Pumping cost by 20% by end of September 2014 C. Reduction of Pumping cost by 20% by end of November 2014 D. Reduction of Pumping cost by 20% by end of Otoember 2014 D. Reduction of pumping cost by 20% by end of Otoember 2014 D. Reduction of pumping cost by 20% by end of December 2014 3. Monitor system operations service level.
6. Prepared Operational Manual. (System Operation Scenarios)	A. By end of September 2014 B. By end of October 2014 C. By End of November. D. By End of December 2014 1. Jun Jul Aug Sept Oct Nov Dec 1. Jun Jul Aug Sept Oct Nov Dec 2. Jun Jul Aug Sept Oct Nov Dec 3. Jun Jul Aug Sept Oct Nov Dec 4. Jun Jul Aug Sept Oct Nov Dec 5. July Sept Oct Nov Dec 6. July Sept Oct Nov Dec 7. July Sept Oct Nov Dec 7. July Sept Oct Nov Dec 8. July Sept Oct Nov Dec 9. July Sept Oct Nov Dec 9. July Sept Oct Nov Dec 1. Jun Jul Aug Sept Oct Nov Dec 1. Jun Jul Aug Sept Oct Nov Dec 1. Jun Jul Aug Sept Oct Nov Dec 1. July July Sept Oct Nov Dec 2. July Sept Oct Nov Dec 3. July Sept Oct Nov Dec 4. July Sept Oct Nov

10.	A. Monthly	
System Operational	B. Once every two months	Jun Jul Aug Sept Oct Nov Dec Jan Feb M
Training for System	C. Quarterly	ar l
Operational Staff.	 D. every six months 	1.
		2.
		3.
		4.
		5.
		 Prepare system configuration for operations.
		Filling of System operations forms.
		 SOP for system Operations
11. NRW monitoring	A. once a month	 Pilot & DMA NRW analysis
for DMA/ Pilot sites	B. once every two months	
TOT DIVILE THOU SILES	C. quarterly	Jun Jul Aug Sept Oct Nov Dec Jan Feb M
	D. Once every six months	ar
		2.
		3.
		5.
		3.
		Collect Consumption data from Billing.
		Collect system input from Operations
		Analysis data for NRW Components
		Report to DMA Maintenance team & Customer
		service of results.
		5. Get feedback and check result after these
		interventions.
	Social Action (Voluntary)	
12 Muscle Art	A. Twice Weekly	Jun Jul Aug Sept Oct Nov Dec Jan Feb M
training(physical-	B. Once Weekly	ar
Development)	C. Once fortnight	
	 D. Once a month 	 Attend training on Mon & Tues every week.

13 Learn about Water Gems./ Modeling software.(Self Development)	A. Once Weekly B. Once fortnight C. Once a month D. Once every two Months E. Quarterly.	Jun 1. 2. 3.	2. F	Aug Every S vith M Reading	athias g note:	& s & B	ooks a				M ar utorial
14 Bible reading (mental and Spiritual Development)	A. daily B. three times a week C. Twice Weekly D. Once Weekly	Jun 1. 2. 3. 4. 5.	2. 3 3. V 4.	Aug Reading 0 x ch Vrite d Create	apters airy fo	for Sa or this dules t	aturda readii oe we	y. ng com ekly re	pletic	g.	M

 $Note: Based \ on \ Capacity \ Assessment \ \& \ Capacity \ Development \ Plan \ , be \ requested \ to \ prepare \ Individual \ Action \ Plan.$

2. Contribution to the Project on NRW Reduction (Essential)

Individual Action Plan (Challenging Program) for Phase-3 (Mr. MATHIAS BERA, NRW Technical Sub-Team) Achievement (Self-evaluation and (Evaluation by Verifiable Indicator Main Activities Methods of Implementation reason at the middle of March 2015) Manager at the end of March 2015) 1. Contribution to Water Supply Services of Solomon Water (Essential) I will ensure that I start working on modeling for A.Start October Jun. Sep. Dec. Mar. NORO this this year. B.Start November C.Start December D.Start January 2015 E. Not start at all 1. Get pipe network features from GIS Collection of data in field and GIS Build Skeleton of Model using Water Gems vi8 software. I will make sure that I start working in Honiara model.

A. 75% complete by March B. 60% complete by March C. 30% complete by March D. 10% complete by March E. Not start at all. Jun Sep. Dec. Mar. Get pipe network features from GIS 2. Collection of data in field and Build Skeleton of Model using Water Gems vi8 software.

I will utilize my skills in modeling to regularly	A.Weekly		
determine NRW in sections of SW system and	B.Fortnightly	Jul. Sep. Dec. Mar.	
also in DMA's	C.Monthly	1.	
	D.After 3 months	2.	
	E. Not at all	3.	
		1. I will make sure that I obtain the daily	
		system input volumes through bulk	
		meters	
		2. I will analyze the data for NRW	
		3.1 will communicate my findings with	
		leakage team and maintenance team to	
		carryout site assessment and fix leaks if	
		required to.	
2 GL H . T. (W.L.)		required to.	
3. Challenging Target (Voluntary)			
Presentation on Hydraulic Modelling	A Once a month		
Updates of Solomon Water's System.	B Once in two months	1 Training need	
	C Once in three months	2 Hands on	
	D Once in six months	3 Reporting and evaluation on	
		experience and lessons learnt.	
4. Self-Development or Social Action (Volum	itary)		
Training MYY Karate Combat and Self	A. 5 times a week	Master the basic kicking,	
Defense Martial Arts.	B. 4 times a week	punching/striking and blocking	
	C. 3 times a week	techniques.	
	D. 2 times a week	Go in to Basic Kata Training	
		Go to Advance Kicking and Fighting	
		Movements.	
		Go to Advance Kata training.	

Individual Action Plan (Challen	ging Program) for P	hase 3 (Mr/Ms.	,	Team)
Main Activities	Verifiable Indicator	Methods of Implementation	Achievement (Self-evaluation and reason at the middle of March 2015)	Achievement (Evaluation by Manager at the end of March 2015)
1. Contribution to Water Supply Services of	Solomon Water (Essential)			
2. Contribution to the Project of NRW Red	uction (Essential)			
3. Challenging Target (Voluntary)				
4. Self-Development or Social Action (Volum	itary)	1		I .

Individual Action Plan (Challenging Program) for Phase-3 (Mr. Frank Daukalia, NRW Technical Sub-Team) Achievement (Self-evaluation and Achievement (Evaluation by Manager at the end of March 2015) Verifiable Indicator Methods of Implementation Main Activities reason at the middle of March 2015) 1. Contribution to Water Supply Services of Solomon Water (Essential) 1.1 Assessment and preparation of quotation for A.Everyday new applications for New water connections. B.Once every 2 days Jun. Sep. Dec. Mar. C.Once a week D.Fortnightly 1. Carry out site survey. Prepare quotation for each application. 3.Assessment, planning for installation of service line A. Every month B. Once every 2 months 1.2 I will attend monthly department meetings Jun. Sep. Dec. Mar. and report /share ideas on how to improve the operations of the company. C. Once every 3 months D. Once every 6 months Check the emails and schedule for correct time and venue. . Prepare monthly activities Conduct regular meeting to obtain up to date data on progress.

2. Contribution to the Project on NRW Red	uction / DMA (Essential)	
2.1 I will organized daily briefings and share ideas with my field staff to improve on NRW activities in the field.	A. Everyday B. Three days a week C. Once a week D. Once a month	Jul. Sep. Dec. Mar. 1. I will update on the activities completed and what task required completing each day to meet the deadline. 2. Prepare work plan each day.
2.2 I will attend the weekly meetings and share ideas with staff to improve NRW reduction activities.	A. Every weekly meeting B. Twice a month C. Once in three months D. Once in six months	1. I will check schedule of the weekly meeting every time. 2. I will report on progress of NRW activities in the Pilot Sites. 3. Hold daily meeting with field staff for task progress 4. Site Visit

2.3 I will compile and analyze raw data efficiently and effectively.	A. Daily B. Three times a week C. Once in a month D. Once in six months	Jul. Sep. Dec. Mar. 1.
1.4 I will assist NRW field team carryout Minimum Night Flow, Step Test, Leakage detection at each pilot site.	A. 100% Pilot Sites (6) B. 75% pilot sites (4) C. 50% Pilot sites (3) D. 20% Pilot sites (1)	Jul Sep. Dec. Mar.
3. Challenging Target (Voluntary)		<u>'</u>
3.1 I will compile data and report back to my department team leader the achievements at the end of each month.	A. Monthly B. After every 2 months C. After 6 months	Jul. Sep. Dec. Mar. 1

C	1
4	Þ
ċ	,
Ī	ī,
r	١.
C	j
c	c

3.2 I will monitor and manage NRW reduction activities in the field more efficient and effectively.	A. With Confidence B. With little confidence & some Supervision. C. With no confidence and much Supervision.	2. Report writing Jul. Sep. Dec. Mar. 1. Up today on the work progress in the field. 2. Set up targets to meet the dead lines.
4. Self-Development or Social Action (Volum	ntary)	
I. I will engage in all social activities organize by Solomon Water such as sports and other social gatherings.	A. Attend all organize activities on time B. Attend 50% of activities C. Not attend any organize activity	Jul. Sep. Dec. Mar. 1. Check my emails and notice boards regularly for Information and notices.

Individual Action Plan (Challenging Program) for Phase 3 (Ms. Beverly Sa'ohu, Team Leader Customer Care)

Main Activities	Verifiable Indicator	Methods of Implementation	Achievement (Self-evaluation and reason at the middle of March 2015)	Achievement (Evaluation by Manager at the end of March 2015)
1. Contribution to Water Supply Services of	Solomon Water (Essential)		1	1
I will ensure that I hold a meeting with my customer care team counterparts to discuss important issues for the day that needs to be addressed and also to inform them on important information that needs to be relayed to customers on status of SW services.	A. Daily B. Once a week C. Fortnightly D. Once a month	Jun. Sep. Dec. Mar. 1. Assess outstanding customer issue at the end of each working day to be addressed on the next day 2. Liaise with other SW departments on daily basis to better improve status of services. 3. Prepare information for the daily briefing. 4. Conduct short meeting (15 minutes) before opening of customer service counter.		
I will ensure that all customers complaints that comes through email and letters are opened daily, analyzed and immediately action or forwarded to relevant department for action in a timely manner. Along with this, I will ensure that I communicate customer issue on timely manner on progress of issues or complaints received to	A. Daily B. Weekly C. Fortnightly D. Monthly	Jun. Sep. Dec. Mar. 1. 2. 3. 4. 5.		

S4.5-2-70

our customers.			
		I will open the letter of complaint as soon as I receive it. I will make sure the entire customer complaints letter are analyzed properly. Compile all necessary documents together with appropriate form and complaint letter and forwarded to responsible units for action.	
I will ensure that I produce the Customer care Report to the SD & C Manager.	A. Weekly B. Monthly C. Every three months D. Not at all	I. Liaise with the customer care team members to collect information / data on progress of activity. Analyze and summarized information. Produce brief but relevant report out of the data.	

2. Contribution to the Project of NRW Red		Jul. Sep. Dec. Mar.	
I will make sure that I daily check the status of illegal users that have been identified within the pilot areas, if they have responded to validate their account with SW within the grace period. This information will be daily passed on to the illegal team (Under Connection services) and the NRW taskforce Leader.	B. Weekly C. Fortnightly D. Monthly	1. Make sure that I receive the illegal users list for pilot area on a timely manner. 2. I will check against the NCS system at each end of the day to see if payments are made. 3. I will notify my Customer care staffs on the names of the illegal users to keep an eye on them whenever they come in. 4. I will daily update NRW on status.	

04.5-2-7

I will ensure that I attend all NRW weekly meetings to inform the NRW counterparts on status of illegal users and also other information/ issues that is important to be discussed in the meeting	A. Weekly B. Fortnightly C. Monthly D. Not at all	I. Sep. Dec. Mar. I. Keep daily records of processing of issues. Z. Keep record of status of illegal users Provide update in the weekly meeting.	
3. Challenging Target (Voluntary)			
Ensure that I will train my junior staff to analyze and disseminate right information to customers.	A. Weekly B. Formightly C. Monthly D. Two times in a month	Jun. Sep. Dec. Mar. 1. 2. 3. 1. Assess their need. 2. Prepare session or action plan. 3. Actual training.	
4. Self-Development or Social Action (Volume			· · · · · · · · · · · · · · · · · · ·
30 Minutes' walk in the morning and evening.	A. Daily B. Weekly C. Fortnightly D. Monthly	Jun. Sep. Dec. Mar. 1. Walk to keep fit and healthy always.	

Note: Based on Capacity Assessment & Capacity Development Plan, be requested to prepare Individual Action Plan.

Individual Action Plan (Challenging Program) for Phase-3 (Mr. James Carlos Saliga, Communications) Achievement Achievement (Self-evaluation and (Evaluation by Verifiable Indicator Methods of Implementation Main Activities reason at the middle of Manager at the end of March 2015) March 2015) 1. Contribution to Water Supply Services of Solomon Water (Essential)

I will work hard with my defined communication tasks to contribute and be B. Weekly Jun. Sep. Dec. Mar. part of the daily activities of Solomon Water | C. Monthly to achieve the overall goal of Solomon 1.I will ensure PR officers also is responsible for implementation of communication activities (Radio Program & Awareness program) 2. Contribution to the Project on NRW Reduction (Essential) Be able to help the pilot site areas to know more about the NRW program, its impact Jul. Sep. Dec. Mar. and benefit to them and Solomon Water in B. To be able to deliver the Information, A. Weekly communications and awareness (ICW) B. Monthly 1. Prioritize NRW activities materials to the pilot site areas in time and C. 6 Months 2. Be able to defined key task and see if when required D. Yearly there is a need for adjustment and C. Issue of notices for illegal users with clear instructions of how to be a legal users and a improvement or prompt action. genuine customer of Solomon Water. D. Conduct research and survey when required & assist in the data input of information gathered in templates prepared by the JICA expert team E. Conduct awareness when necessary or if required F. Use the radio as an medium to share the key messages and knowledge and also update of the NRW activities in different pilot sites To ensure the key messages, knowledge's, information and awareness is given on time

(J
j	Ĺ
•	١.
C	
	ī
1	١
-	ı
-	•
	•
ı	٠

before project commences in pilot site areas.								
H. To ensure thorough communication of NRW weekly and monthly strategies are taken heed of prior to implementation.								
I. To ensure people know about the importance of the NRW project and be part of it								
J. To be able to understand fully the technical calculations of NRW measures in different sites and be able to assess thoroughly how this has contributed to the improvement of revenue water in pilot site areas								
K. Ensure technical aspect of the NRW is made simple for all staff and the public to understand how to manage NRW								
3. Challenging Target (Voluntary)								
Be able to attend all the NRW meetings,	A. Weekly							
make follow up with the key departments	B. Monthly C. 6 Months		Jul.	Sep.	Dec.	Mar.		
involved in the project and be able to translate and bring to implementation the	C. 6 Months	1.						
day to day activities which require my input,		2.						
facilitation and support.			dvisa fo	r collab	orative e	efforts in		
T.						me basic		
						gress of		
			RW					
4. Self-Development or Social Action (Volunta	ary)							
Volunteering with NRW team when carrying	A. Twice in a month	Ш	Jul.	Sep.	Dec.	Mar.		
out MNF and Step test in pilot sites and	B. Once in three months	1.						
thirty minutes work back home	C. Twice in six months	2.	_					
		3.						
		1					I .	

Individual Action Plan (Challenging Program) for Phase 3 Ms. Sophia Angelique Tango Team: CCC Achievement Achievement (Self-evaluation and (Evaluation by Main Activities Verifiable Indicator Methods of Implementation Manager at the end of March 2015) reason at the middle of March 2015) 1. Contribution to Water Supply Services of Solomon Water (Essential) Assisting customers in responding a. Five days a week July Aug Dec March to emails, telephone calls and b. Once a month c. Twice a month d. Three times a month customer queries Awareness (Schools/Communities) 2. Contribution to the Project of NRW Reduction (Essential) • I will make an effort to attend a. Every weekly July Aug Dec March NRW Weekly meeting to discuss and Share Ideas meeting b. Twice a month c. Once in three months · I will continue with my School Make sure to check meeting dates and d. Once in six attend meetings awareness activities and provide pamphlets for school students months 3. Challenging Target (Voluntary) Resources/Materials are not kept in one place. · Availability of Engineers to assist awareness team is sometimes a

challenge.

O
1
C
Y,
1
-
٠.

Main Activities	Verifiable Indicator	Methods of Implementation	Achievement (Self-evaluation and reason at the middle of March 2015)	Achievement (Evaluation by Manager at the end of March 2015)			
4. Self-Development or Social Action (Volum	4. Self-Development or Social Action (Voluntary)						
Involve in Sports to stay healthy							

Individual Action Plan (Challenging Program) for Phase 3 (Ms. Daisy Rose Menaga, Meter Reading Team)

Individual Action Plan (Challen	ging Program) for P	mase 5 (Ms. Daisy Rose Me	naga, Meter Reading	ream)	
Main Activities	Verifiable Indicator	Verifiable Indicator Methods of Implementation		Achievement (Evaluation by Manager at the end of March 2015)	
1. Contribution to Water Supply Services of	f Solomon Water (Essential)				
I will ensure that meter reader's reading schedules are prepared daily	A. Daily B. Weekly C. Monthly D. Not at all	1. Prepare reading schedule on a daily basis 2. Delegate preparation of reading schedules to others when required.			
Managing & Monitoring of Customer Meter Readings ✓ Ensure to avoid mistakes to make improvement	A. On a daily basis B. Once a week C. Once a month D. Not at all	Jul. Sept. Dec. Mar. 1. Ensure that Incoming 1. Ensure readings are inputted and uploaded into the system on the same day			
Attend to Customer Queries Ensure that customer queries are all attended to without exception in a timely manner	A. Within 10 days B. Within 20 days C. Within 30 days D. Not at all	Jun. Sept. Dec. Mar. 1. Ensure that all customer queries are attended to in a timely manner			

Main Activities	Verifiable Indicator	Methods of Implementation	Achievement (Self-evaluation and reason at the middle of March 2015)	Achievement (Evaluation by Manager at the end of March 2015)
2. Contribution to the Project of NRW Redu	action (Essential)			
Ensure attendance in NRW daily meetings by myself and/or substitute and share relevant information with team members	A.Every weekly meeting B.Twice a month C.Once in three months D.Once in six months	Jul. Sep. Dec. Mar. 2. 3. 1. I will check schedule of the weekly meeting every time and attend. 2. Share relevant information with team members		
Conduct Monitoring of status of pilot customers	A. On a monthly basis B. Once every two months C. Once in six months D. Not at all	Jul. Sept. Dec. Mar. 1. Report update in NRW weekly meeting 2. Report To NRW Team leader		
Check to verify if Meter Information for pilot site is updated in the billing system	A. Weekly B. Twice a month C. Once in three months D. Not at all	Jul. Sept. Dec. Mar. 1. Ensure that all meter installation for pilot site is updated in the system 2. Report Update to NRW Team Leader		

Main Activities 3. Challenging Target (Voluntary)	Verifiable Indicator	Methods of Implementation	Achievement (Self-evaluation and reason at the middle of March 2015)	Achievement (Evaluation by Manager at the end of March 2015)
3. Chanenging rarget (voluntary)		I		
Create a friendly and conductive working environment for team members Clean & tidy Feel happy about their work Their own space – freedom to work and communicate with co-workers Good workplace Culture	A. July B. September C. November D. February	Jul. Sept. Dec. Mar. 1. e		
4. Self-Development or Social Action (Volun			1	
Reading of Books	A. Two per week B. 1 per week C. 1 per fortnight D. 1 per month	Jul. Sept. Dec. Mar. 1.		
Create SW Netball Team	 A. By end of July B. By end of August C. By end of September D. By end of October 	Jul. Sept. Dec. Mar. 1		

Individual Action Plan (Challeng	s. Mary Tafoa, NRW E	Billing Team Leader)		
Main Activities	Verifiable Indicator	Methods of Implementation	Achievement (Self-evaluation and reason at the middle of March 2013)	Achievement (Evaluation by Manager at the end of March 2014)
1. Contribution to Water Supply Services of	Solomon Water (Essential)			
I will ensure that I am productive in my role as a billing team leader to contact SW Province officers to email me the water meter readings each month between 22 nd to 28 th . Strive to achieve accuracy in Province readings when manually inputted in the system. I must also ensure that bills are sending out to Province officer as soon as I update the readings in the NCS system. Setup the indicators so that 'A' is the 2. Contribution to the Project on NRW Redu		Mar13. Sep. Dec. Mar14. 1. I will ensure that each customer status is correct by liaise with province staff through enail or contact by phone. 2. I will backeta end update accounts that use water illegally or installation of new connection was later identified. 3. I ensure reconnection fee for province accounts are shown in each account and monitor.	A	
I update customer information. Especially pilot sites meter replaced and raised to higher ground was conscious about water consumption for each customer within the site after the meters being	A Update 50 customers a month B. 40 customers a month C. 30 customers a month D.20 customers a month	Mar13. Sep. Dec. Mar14. 1. Dec. Mar14. 1. Updating changes of meter information. 2. Report of update data to NRW team and also water consumption for pilot site	A	

Brief meetings within our section just to build our team work and improvement on some other task.	A. 6 times in a year B. 4 times in a year C. 2 times in a year D. 0 meeting	1.	Mar13.	Sep.	Dec.	Mar14.	A	
Self-Development or Social Action (Volus Join SW Sports team to walk after hours and also fun run.							A	

Individual Action Plan (Challenging Program) for Phase 3 (Mr. Lawrence Iroi, Revenue Coordinator, Revenue Management Team)

Main Activities	Verifiable Indicator	Methods of Implementation	Achievement (Self-evaluation and reason at the middle of March 2015)	Achievement (Evaluation by Manager at the end of March 2015)
1. Contribution to Water Supply Services of Solo	omon Water (Essential)		ı	İ
I will have meetings with our staff to ensure that they understand measures to detect and report	A. Once a week B. Twice a week	Jun. Sep. Dec. Mar.		
leakage and illegal activities.	C. Once a month	1.		
	D. Once every two month			
		I will prepare meeting minutes		
		and allow other members to add		
		on to the minutes before every meeting		
2. Contribution to the Project of NRW Reduction	n (Essential)			
I will attend NRW meetings and share ideas as to	A. Every weekly meeting			
how to detect and reduce NRW rate.	B. Twice a month	Jul. Sep. Dec. Mar.		
	C. Once every three month D. Once every six months	1.		
	D. Once every six months	I will check weekly schedule		
		every time		
3. Challenging Target (Voluntary)				
I will closely monitor team performance by				
ensuring reports on billing, meter reading and	A. Every weekly meeting	Jul. Sep. Dec. Mar.		
debt collection are done on time, accurate and	B. Fortnightly	1.		
relevant.	C. Once every month			
	D. Once every two months	I will monitor the progress of activities from each team from		
		team leaders		
		2. I will assist them with the		
		monthly planning and reporting		
4. Self-Development or Social Action (Voluntary))			

1 | Page

Main Activities	Verifiable Indicator	Methods of Implementation Methods of Implementation Achievement (Self-evaluation and reason at the middle of March 2015) Achievement (Evaluation by Manager at the end of March 2015)
I will interact with other team members to share	A. Daily	
ideas about improving our work environment and	B. Weekly	Jul. Sep. Dec. Mar.
customer relationship	C. Fortnightly	1.
	D. Once a month	
		I will share personal work and
		life experiences and new ideas
		about office settings and how to
		do things effectively and
		efficiently
		and the state of t

2 | Page

 $Note: Based \ on \ Capacity \ Assessment \ \& \ Capacity \ Development \ Plan, be \ requested \ to \ prepare \ Individual \ Action \ Plan.$

Individual Action Plan (Challen	bing r rogram, for r	hase 3 (Ms. Roster Tinarai,	Debt Collection Tea	Achievement
			(Self-evaluation and	(Evaluation by
Main Activities	Verifiable Indicator	Methods of Implementation	reason at the middle of	Manager at the end of
			March 2015)	March 2015)
1. Contribution to Water Supply Services of	Solomon Water (Essential)		Widi Cii 2013)	Water 2013)
1. Contribution to Water Supply Services of	Solomon water (Essential)			
Ensure that payment plan are monitored and	A. Daily	June Sept Dec Mar		
customers to turn up to pay on time or on	9	1		
due dates.	 B. Twice in a week 	2		
1	C. Every Fortnightly	3		
	D. End of each	Manually go through payment		
	D. End of each	plan customer records (NCS		
	month	system).		
	E. Once in 2 month	2. Remind customer by phone		
	E. Once in a month	when pay plan fail.		
		3. Advice disconnection team to		
		disconnect fail customers		
2. Contribution to the Project of NRW Redu Provide undate information on				
Provide update information on disconnections in pilot areas due to high	A. Once a week B. Fortnightly	June Sept Dec Mar		
outstanding bills.	C. Once in a Month			
outstanding bins.	D. Once in 3 Month			
	D. Once in 3 Month	Keep records of all disconnected		
		customers and continually cross		
		check with pilot customers.		
		Liaise with NRW counterparts on		
		regular basis.		
		Produce weekly data on		
		disconnected customers on pilot		
		areas for weekly meetings		
3. Challenging Target (Voluntary)				•
Ensure I collect 70 % of outstanding debts				
for Honiara customers	 A. Twice a week 	Jun Sept Dec Mar		
į	 B. Once a month 	1		
	 C. Twice a month 	2		
	D. Once in two	3		

Main Activities	Verifiable Indicator	Methods of Implementation	Achievement (Self-evaluation and reason at the middle of March 2015)	Achievement (Evaluation by Manager at the end of March 2015)
	month	Deliver demand notice on selected areas door to door Remind commercial customers via telephone, emails for payments. Disconnect services with outstanding bills.		
4. Self-Development or Social Action (Volum	itary)			
Sports – ensure I attend sport activity organize by SIWA	A. Once a week B. Twice in a month C. Once in a month D. Once in two month	Jun Sept Dec Mar 1		

Main Activities	Verifiable Indicator	Methods of Implementation	Achievement (Self-evaluation and reason at the middle of March 2015)	Achievement (Evaluation by Manager at the end of March 2015)
1. Contribution to Water Supply Services of				
Will ensure that all customer complaint forms are immediately segregated into order and recorded into our customer complaint database and forwarded to relevant departments for action.	A Daily B. 3 times a week C. Once a week D. Once fortnightly E. Not at all	Jun. Sep. Dec. Mar. 1.		
2. Contribution to the Project on NRW Red			1	
I will make sure that I work closely with the customer registration field team to gather information in the list of customers that are included in each pilot site and to be informed on issues or inconsistency between billing and field reports. This is to be prepared beforehand on how to handle these customer issues when they arrive at SW customer service center. The outcome of this will be informed at the NRW weekly meetings, either by me or my substitute (Beverly).	A.Daily B. Weekly C. Monthly D. Not at all	Jul. Sep. Dec. Mar. 1. Constantly check registration team on status of their activities 2. Gather customer listing with completed data from field 3. Inform CC front counter staff to identified customers to look out for 4. Gather daily customers at the end of each day to compile report		

(Ms. Marilyn B Pidoke – CC & C)

Individual Action Plan (Challenging Program) for Phase-3

		5. Keport to weekly meeting on customer issues and solutions				
3. Challenging Target (Voluntary)						
1.To come up with a mechanism to report to	1.Daily	Jul Sep Dec Mar				
our customers with regards to their	2.Weekly	1.				
complaint in a timely manner	3.Fortnightly	2.				
	4.Monthly	3.				
		1.Follow up on responsible departments				
		with regards to customer inquiries				
		2.Ensure that customer complaints are				
		solved and answered in a timely manner				
		3.Ensure that the right information is				
		relayed to customers on time				
4. Self-Development or Social Action (Voluntary)						
1.Walk from home to the work place	1.Daily	Jul Sep Dec Mar				
-	2.Weekly					
	3.Fortnightly					
	4.Monthly					
	•					

Main Activities	Verifiable Indicator	Methods of Implementation	Achievement (Self-evaluation and reason at the middle of March 2015)	Achievement (Evaluation by Manager at the end of March 2015)
1. Contribution to Water Supply Services of Develop a reliable GIS database by collecting accurate data, efficiently managing and producing GIS information for SW operations. i) Update Map of Honiara Water Supply System ii) Map Customer accounts for Honiara iii) Update Map of Honiara Waste Water System iii) Update Map of Honiara Waste Water System iv) Develop GIS Workflow	Update Map of Honiara Water Supply System A. 100% B. 75% C. 50% D. 25% Map Customer accounts for Honiara A. Data ready for use B. Data collected and prepared	1. Conduct field survey to update/locate SW assets. 2. Utilize meter readers to collect data while doing their meter reading schedule.		
	C. Data collected D. No data collected Update Map of Honiara Waste Water System A. 100% B. 75% C. 50% D. 25% Development of GIS Workflow A. Workable System B. Implementation Stage C. Development Stage D. No Activity	Liaise between departments and JICA GIS expert team in developing workflow for GIS.		

Main Activities Continue with main activities for Pilot Sites i) Record Leakage points locations ii) Update Pipe network locations iii) Record customer meter.	Verifiable Indicator Collect Field Data; A. Once a week B. Once a month C. Once every 2 months D. Once every 6 months	Methods of Implementation GPS data collected during field survey Jun. Sep. Dec. Mar. 1. Linise closely with other NRW counterparts to be informed of where every system features are installed on site. 2. Collect field data.	(Self-evaluation and reason at the middle of March 2015)	(Evaluation by Manager at the end of March 2015)
3. Challenging Target (Voluntary) Using GIS customer data to join Billing customer data to determine consumption by geographical location or supply zones in order to assist towards DMA implementation.	A. Operational B. Linking work complete but not operational. C. Linking work is still ongoing. D. Still collecting customer data.	1. Collect customer data from field 2. Laise with Billing and meter readers to properly verify each customer and their status. 3. Schedule into phases to ensure that work progress can be monitored. 4. Link customer data to GIS 5. Implement it as best suit requirement.		

(n
1	~
ċ	Г
	′'
r	્
-	'n
- 6	5
	_

Main Activities	Verifiable Indicator			Achievement (Evaluation by Manager at the end of March 2015)
4. Self-Development or Social Action (Volum	itary)			
Assist in development of GIS procedures/manual or handbook.	A. Complete by March 2015 B. 75% complete C. 50% complete D. 10% complete E. Not started	Jun. Sep. Dec. Mar. 1.		

Individual Action Plan (Challenging Program) for Phase 3 (Mr Eric Unga, NRW - Leak Detection Sub Team Leader)					
Main Activities	Verifiable Indicator	Methods of Implementation	Achievement (Self-evaluation and reason at the middle of March 2015)	Achievement (Evaluation by Manager at the end of March 2015)	
1. Contribution to Water Supply Services of	Solomon Water (Essential)				
1.11 will ensure that I have daily communication with all the 3 provincial office to be informed of their daily progresses and to learn from any immediate issues that needs to be resolved quickly. Also to inform them of important notices that they need to take note of or progress of activities that relate to the management of the provincial operation.	A. Every day B. Every alternative days C. Twice a week D. Once a week	I. I will make a daily routine to call all provincial office every morning part of the day and if necessary in the afternon to follow-up on important activities. I must ensure that I am updated on a daily basis on important information or update of activities from SW head office to pass on to provincial office. I will produce weekly report on the important events in the provincial operations.			
1.2 I will ensure that I monitor the staff appraisal work plan for the provincial office staff and to provide continual mentoring opportunities to enable them to perform to the standard required by SW.	A. Once a month B. Once in 3 months C. Once every 6 months D. Once a year	Jun Sep. Dec. Mar. 2.			

()
ĭ
ö
٠
ĸ
1
О
-

Main Activities	Verifiable Indicator	Methods of Implementation	(Self-evaluation and reason at the middle of March 2015)	(Evaluation by Manager at the end of March 2015)
		they need help with to perform according to standards. 2. I will make recommendation to the training department of HR on required field of training for the provincial staff. 3. I will communicate in confidentiality my assessment for each staff and to encourage them on regular basis to continue to strive to perform well.		
2. Contribution to the Project of NRW Reds 2.1 I will make certain that I conduct weekly meetings for the Leak Detection Team to provide opportunity where progress of leakage activities in pilot areas or DMA's can be shared and where challenges encountered can be discussed and resolved accordingly. The outcomes of these meetings will be shared during the NRW weekly meetings for further actions if required.	A. Twice a week B. Once a week C. Once in 2 weeks D. Once a month	Jul. Sep. Dec. Mar. 1. 2. 3. Create weekly meeting schedule and inform counterparts about meeting times. 2. Conduct meeting and produce minutes of meeting for records. 3. Update the outcomes of meeting to NRW meetings		

Main Activities	Verifiable Indicator	Methods of Implementation	Achievement (Self-evaluation and reason at the middle of March 2015)	Achievement (Evaluation by Manager at the end of March 2015)	Main Activities	Verifiable Indicator	Methods of Implementation	Achievement (Self-evaluation and reason at the middle of March 2015)	Achievement (Evaluation by Manager at the end of March 2015)
2. Contribution to the Project of NRW Red. 2.1 I will make certain that I conduct weekly meetings for the Leak Detection Team to provide opportunity where progress of leakage activities in pilot areas or DMA's can be shared and where challenges encountered can be discussed and resolved accordingly. The outcomes of these meetings will be shared during the NRW weekly meetings for further actions if required.	A. Twice a week B. Once a week C. Once in 2 weeks D. Once a month	they need help with to perform according to standards. 2. I will make recommendation to the training department of HR on required field of training for the provincial staff. 3. I will communicate in confidentiality my assessment for each staff and to encourage them on regular basis to continue to strive to perform well. 3. I will sept Dec. Mar. 1. Create weekly meeting schedule and inform counterparts about meeting times. 2. Conduct meeting and produce minutes of meeting for records. 3. Update the outcomes of meeting to NRW meetings			2.2 I will make sure that I am well informed about the progress of field activities in the pilot areas by daily consulting with field staff for updates, conduct site visits and assist in analyzing data. I will make sure that I will be able to confidently report on any updates of activity progress in the NRW weekly meeting 3. Challenging Target (Voluntary) 3.1 Presentation of work progress reports at the NRW meeting.	A. Once a week B. Once in 2 weeks C. Once a month	I. Make sure that I attend daily morning briefing for field staff and be informed of the progress of their activities and other activities proposed for the day. Will follow with site visits to confirm activities I will make daily records of activities achieved in each day and activities achieved in each day and activities proposed for the days ahead. I will always avail myself to assist in analyzing field data. I will prepare a short report on important achievements, progress and results to be presented in NRW meetings.		
					the NW meeting.	B. Once in 2 weeks C. Once a month	2. 3. Presentation of weekly report – progress and challenges.		

U
4
÷,
۲
\mathbf{r}
۲
ĸ

Main Activities	Verifiable Indicator	Methods of Implementation	(Self-evaluation and reason at the middle of March 2015)	(Evaluation by Manager at the end of March 2015)
4. Self-Development or Social Action (Volum	oforv)			
4. Harvolve in Solomon Water Social Activities (Sports). 4.2 Involve in Sup Sup garden	A. Once a week B. Once in 2 weeks C. Once a month A. Twice a week B. Once a week C. Once in 2 weeks	Jul. Sep. Dec. Mar. 1. Participate in volley-ball and walk for life. 2. Grow vegetables around our house (home)		

Individual Action Plan (Challenging Program) for Phase 3 (Mr. MATHEW MAFE, NRW technical Team)

Main Activities	Verifiable Indicator	Methods of Implementation	Achievement (Self- evaluation and reason at the middle of March 2015)	Achievement (Evaluation by Manager at the end of March 2015)
1. Contribution to Water Supply Services of				
2. Contribution to the Project of NRW Rec				
A. I will mastermind how to operate				
the ultrasonic flow meter and the	a. Weekly	Jul. Sep. Dec. Mar.		
correlator.	 Fortnightly 	1.		
	c. Monthly	2.		
	d. Once in two	3.		
	month.	1.1 site training		
		1.2 office training		
		1.3 workshop		
B. I will supervise the constructors at				
pilot sites according to the check		Jul. Sep. Dec. Mar.		
list.	c. Fortnightly	1.		
	d. Monthly	2.		
		3.		
		44 5 41 4 14 1		
		1.1 Provide the design and measurement for the		
		contractor. 1.2 Right materials for the task.		
		1.3 Proper installation is carried		
		1.5 Froper instanation is carried		
		Jul. Sep. Dec. Mar.		
C. I will calculate leakage lose on	a. Weekly	1.		
expose leaks from pilot sites.	b. Fortnightly	2.		
	c. Monthly	3.		
	d. Once in two	out.		
	month	1.1 Seek training from JICA		
		expert and from team		
		leaders.		
		1.2 Office training		

C	J	
4	٩	
ċ	,	
Ī	•	
ľ	١	
C	X	
c		

2. Challenging Target (Voluntary)		1.3 workshop
A. I will learn how to draw or design water utilities and related ones	a. weekly b. Monthly c. Once in two month. d. Once in three month	Jul. Sep. Dec. Mar. 1. 2. 3. 1. See responsible department to arrange training. 1.2 Seek training from expert 1.3 Office training. 1.4 Workshop.
Self-Development or Social Action (Volus A. I will play table tennis	ntary) a. Daily b. Weekly c. Fortnightly d. monthly	Jun. Sep Dec Mar 1.

 $Note: Based \ on \ Capacity \ Assessment \ \& \ Capacity \ Development \ Plan, \ be \ requested \ to \ prepare \ Individual \ Action \ Plan.$

Dydate work progress in past month at the meeting or workshop. Presenting work progress at the meeting or workshop	A. Two times per month B. One time per month	Jul Oct Nov Dec Jan Mar Chart at all, because to do Study on Years Transmit
Enlightening activities (Voluntary)		Presenting at Work or meeting.
Sporting activity	A. 15 time a month B. 12 times a month C. 8 times a month D. 6 time a month E. Non a month	Jul Oct Nov Dec Jan Mar E. Non & mounts.
		Soccer Volley ball Work for life



Friday 23" May, 2014

PERFORMANCE APPRAISAL INTERVIEW REPORT NON REVENUE WATER PROJECT TEAM

Presented to:

Mr FUJIYAMA Taketoshii

Leader - JCA Expert Team

Non-Revenue Water Project JICA/YACHIYO -

Engineering/Solomon Water

Presented by:

Tena Kofana

Human Resource Manager

Solomon Wa

Signature: Dofores

leckground.

S4.5-3-1

Performance appraisal is a key evaluation process to gauge the performance of individuals and to inform employers of the challenges tree fibes in the worthpites. It also liobs as option in how to improve or performance, For the NIM Project, Team Members also went through this process, ending with the appraisal interview. Each train member was interviewed based on their individual action Plan. The performance hereivers for the RRV team standed on Monday 8th May, 2014 and comtinued until Friday 10th May, 2014. Becast for 2 members, others were available for the interview. Whilst majority understood their tasks in respect to the project, others were not save if they played say role at all. In total, the team advovideged the importance of the project to Solmion Water. They have agreed that the NRW activities have increased their all base and knowledge.

Friday 23rd May, 2014

A summary of the each team member's achievements, challenges and recommendations for better performance and productivity is provided in the table below:

Department	Name	Achievements	Challenges	Way Forward
Operations	1. Benjamin Billy (Team Leader)	Teamwork Acquiring new work processes, knowledge and skills from Expert team	Balancing NRW Activities and other normal activities Coordination of data Different interpretation of data No proper training in analysis and reporting of data	 Teams should be aware of their responsibility. Each team should analyse data and provide report before submitting to team leader.
	2. Mathias Bera	New skills and knowledge. Working with and appreciate what other teams are doing but more needs to be done	No proper monitoring done for all activities Overall system might fail because not all teams are working together. Finance team approach is too harsh on customers Some customers can't afford so we have to be flexible Social problems not well understood	Manpower to do regular monitoring of pilot sites. Sustainability of the project if all teams are not working together, especially finance team hard approach to customers.
	3. Frank Daukalia	Working with other teams	No proper flow of activity To meet deadlines have to do others tasks. Some not doing their tasks thus putting pressure on others.	 Everyone needs to be aware of their area of responsibility. Field guys need to be more responsible with their tools and equipment.
0.0	4. Gavin Bare	Knowledge and skills broadened Importance of base station appreciated	Delays in procurement also contribute to slow progress in work	 Training in how to use devices and equipment so that error is minimised

Friday 23rd May, 2014

	V		rriday 25 iviay,	2014
	5. Eric Unga	Knowledge on how to use new devices and equipment like chlorinator Teams assist each other Lots of things learned in the field	Still not comfortable with some equipment.	More training needed on proper use of different equipment's
	6. David Akoeasi	 Have learned a lot of skills like surveying, how to identify leaks, and how to calculate water lost through leakages and the use of chlorinator machine 	 Still not confident in doing mid night test. Need supervision and guidance from Benji and Eric 	Need further training on use of equipment
	7. Matthew Mafe	Great learning experience Enjoy sharing of workload in a team environment	Jobs delayed due to unavailability of materials. Slow processes Team is not motivated	Order directly to supplier rather than middle man. Need of morning briefings like other teams Provision of report template so that proper reporting can be done
	8. Silas Talosui	On Leave		
	9. Chris Meriko	Non Responsive – Does not think that he	is part of NRW	
Service Delivery and Communications	10. Austin Ata	A privilege to be part of this team Learned a lot; Like minimum night flow Meter raising	Sustainability of the project because not all teams are working together. Finance team are not flexible with customer who can't afford	Need to prioritize NRW activities All new connections should have raised meters not pilot sites only. Need more staff for Illegal Team. Reliable truck/vehicle needed More awareness for customers needed.
	11. Beverly Dai	Appreciate new terms and mechanisms Knowledge of counter measures and Technical test Opportunity to do more filed work,	Slow feedback from other teams. Too many delays in responses from others. Do not know much about	More customer awareness Tracking sheet for all teams and activities. Follow up must be done on a regular basis

Friday 23rd May, 2014

			Friday 23" May,	2014
		participate in awareness and interacting with customers. • Working closely with other teams and updating each other during weekly meetings	water tariffs. Do not really understand why other teams not responding.	
	12, James Carlos	Enjoys working with the Team Leader. Have learned new things	Coordination with other teams is weak Information does not flow properly Communication to others not sufficient. Not enough resources like camera, computer and voice recorder to help in the job	NRW activities need to be spread out to everyone including every team as i affects all of us in way or the other. This will allow everyone to be informed and thus inform customers and the public appropriately
	13. Sophia Tango	Learned new things	Sometimes cannot explain properly to customers as we don't know the right technical terms for it. Not enough cooperation from other teams	Prioritising task Time Management Team work needs to be strengthened Those with long experience need to be part of awareness team.
	14: Moses Ramo	Non Responsive – Does not think that he	is part of NRW	
Finance and Administration	15. Layten Jacob	Working closely with other teams	Specifications not clear. Changing shipping schedules Long custom process Confusion over exemption certificate (out-dated – don't have renewed copy) Contracts are on adhoc basis depending on need. Strict requirements often contribute to delays	Proper planning and coordination of all teams.
	16. Daisy Menaga	NRW project has increased my knowledge and skills From no appreciation to awareness and	Updating data on time Lack of knowledge Intimidated at first but later gained	Cooperation between everyone New vehicles to help out Work closely with Frank

S4.5-3-2

Friday 23rd May, 2014 acknowledgment of the importance of confidence to discuss issues NRW activities Very Good Team Leader Technical team helps out a lot Will assist if the need arises 17. Japhliet Was involved at first but stepped back Confusion of role Rouhanna when Smith took over Not clear about role at first Low Capacity of team Coordination of all teams 18. Lawrence Link with other teams like GIS NCS System Work closely with GIS Proper zoning of customer base 19. Mary Tafoa Enjoy working with other teams Extra workload Need to work closely with GIS team Sometimes forget report Able to go to field and experience firsthand what happens during Deadlines not met awareness programs Customers information not clear Report on monthly cycles and Don't have correct figures on which consumption customer is connected to sewerage

Main Activities Verifiable Indicator		Verifiable Indicator		Metho	ds of Imp	olemen	ion	- 2F	
1.		ibution to water supply service of non Water							
	(i)	Develop Operations Annual Plan (OAP)	a. Complete OAP within 1-6 months b. Complete OAP within 6-8 months c. Complete OAP within 8-12 months d. Not able to complete OAP at all.	1 2 3 4	Jul	Oct	Dec	M 2	Not completed but continue with sw two year plan.
	(ii)	Develop Operations Annual Budget (OAB)	2).OAB: a. Complete within I-3months b. Complete within 3-6 months c. Complete within 6-9 months d. Complete within 9-12 months e. Not able to complete at all.	2. Me weekly achiev 3. Lia	et with y basi ements	s for u	ns tean ipdates lenges	ender of some days of	tion Finance of
	(iii)	Preparation of Monthly Reports	a). Monthly Reports: a 2 reports annually b. 10 reports annually c. 6 reports annually d. 2 reports annually e. no reports at all	4. Pre basis	epare F	rogress	report o	a mon y	Abouthy operations reports presented to swboard meeting
	(iv)	Formulate Policies, Practices &	4) Formulation of Operations Policy/Procedures(OPP)						

Procedures For Systems Operation & Maintenance	a. Complete OPP within 1-6 months b. Complete OPP within 6-8 months c. Complete OPP within 8-12 months d. Not able to complete OPP at all.						Not completed. Thish set for work together out TH team funded by 2 year plan
2. Contribution to pilot project							
(ii) Develop 2014 NRW Budget (ii) Formulate NRW Policy, Practice & Procedures (NRW PPP)	a. Complete Budget within 3-4 months b. Complete Budget within 4-5 months c. Complete Budget within 5-6 months d. Not able to complete budget at all. a. Complete NRW PPP within 1-6 months b. Complete NRW PPP within 6-8 months d. Complete NRW PPP within 8-12 months c. Not able to complete NRW PPP at all.		ontinua	Oct W weekly Iliaison		Mar	Used the 2013 NRN actual spendings with more details in budget allocation for ense in mondering
Challenging target (Voluntary)							
(i) Work in partnership with the	Weekly update meetings and		Jul	Oct	Dec	Mar	
JICA Water Supply	Liasing with JICA and Kitano	1		-			
Improvement Project	Construction Group.	2		-	-	(COM)	

•
ĭ
7
٩
Ċ
7

4. Enlightening activities (Voluntary)

(i) Health and Fitness

Individual Action Plan (Challenging Program) (Ms. Tima Kofana, HRM) Main Activities Methods of Implementation Achievement (Self-evaluation at the middle of march) 1. Contribution to Water Supply service of Solomon Water In order to contribute to Solomon Water, I Achieve the 6 key KRA's Jul. Oct. Dec. Mar. will do work efficiently. A. 50% B. 70% Was not able to achieve all KRA' as expected due to lack of support and commitment from team C. 90% D. 100% members 1. Do work efficiently Building or developing the HR Unit A. On a daily basis Jul. Oct. Dec. Mar. B. Twice a month C. Once a month The unit is now 100% operational but needs to be continuously guided to achieve objectives 1. Continuous development of unit Jul. Oct. Dec. Mar. Team Management A. Once a month B. Twice a month Meetings were happening but often there are clashes with Coordinating team activities C. Four times a month D. None interviews, unplanned meetings and emergencies and so often 1. Monitoring neetings are rescheduled. 2. Mentoring and coaching Develop and Monitor the HR database A. Twice a month Jul. Oct. Dec. Mar. B. Once a month C. On a daily basis Working closely with Payroll to ensure that both systems are in None ynergy. Have managed to update new staff listing and code to HR 1. Improve staff record latabase.

[Type text]

Developing the People Management Group	A. Once a month B. Twice a month C. Four times a month D. None	Jul. Oct. Dec. Mar. 1. 1. Up skilling of change agents.	B. Not really working as expected due to emergencies and non- availability of members
Developing People Management Platform	A. To be able to improve HR processes B. To be able to develop relevant policies like OHS C. To be able to improve management of HR	Jul. Oct. Dec. Mar. 1. 1. Develop draft policies - OHS 2. Develop PM Policy	A Ongoing. Still developing forms and reviewing older ones. Will arrange meetings with Labor division to provide awareness training for all of us. Other relevant training like First Aid has been conducted.
Reporting	D. Once a month E. Twice a month F. Four times a month G. None	1. Daily Reporting 2. Weekly Reporting 3. Fortnightly Reporting 4. Monthly Reporting	D. Provide report to GM. Team supposed to be reporting on monthly weekly basis.
	H.		
2.Contribution to pilot project			
In order to improve capacity for reduction of NRW, I will mentor and recruit the right people	A. To be able to recruit the right people to fill in the gaps. B. To be able to provide the right environment for learning and development. C. To be able to contribute to decision making process.	Jul. Oct. Dec. Mar. 1. 2. 3. 1. Recruitment 2. Job Rotation 3. Training in office 4. Hands-on training	A. Recruitment target for the year almost achieved. The Challenge is finding office space to cater for new recruits.

[Type text]

meeting 2 times a

worth on averag

due to several

challenging issues arising

1. Attend update week meeting on

2. Continual liaising and forming good

networking between all SW stakeholders

Oct Dec Mar

progress of activities

including JICA

Jul

1. Continual Exercise

2. Monthly medical checkups

a. Meeting 4 times a month

b. Meeting 2 times a month

c. Meeting once a month

d. Not able to meet at all.

Sick days per year: a. Zero days per year b. 5 days per year c. 10 days per year

d. 20 days per year

		5. Reporting	
3.Challenging target			
I will learn & work hard to present work progress during meetings	A. Two times per year B. one time per year C. Zero per year	Jul. Oct. Dec. Mar. 1. Preparing progress 2. Presenting at meetings or workshop	B. Lots of other meetings and commitment to attend. Sometimes I send the HR Generalist to attend so that he keeps us updated
	D.		

[Type text]

Individual Action Plan (Challenging Program)

(Mrs Ellen Maruarofa- Service Delivery Manager)

VIdill	Activities	Variable Indicator	Meth	ods o	f Impl	emer	ntatio	า	Achievement
1.	Contribution to water supply se	ervice of Solomon Water (SW)							
i. ii. iiv.	Contribution to water supply se Finsure that the units of Service Delivery and Communication Department enhanced its services to its customers Liaise and support the other departments of SW to deliver efficient and effective services to its customers Formulate appropriate processes and procedures Effective flow of information between departments.	Ensure effective facilitation of customer complaints/queries	vario 1. 2. 3. 4.	us me Mee Res Traii Orie	entatio	s to b	e utiliz ogran	ed a	All timing as indicated on the v column are all relevant except "f depending on types of Customer complaints and enquiries. Howeve it is important to note that after dealing with huge backlogs of customer complaints, the customer care ensures that all customer complaints in o longer as was the case in the past. Progressive improvements so far though the need for greater efforts to be vestee.

	The most obvious achievement for the formulation of processes was the connection services. The effective and efficient flow of new connection was a precise achievement as previously installation of new water services took ages but now it only takes 3 weeks from lodge in of application to installation of meter. Other connection services were able to be monitored through the forms and processes

		This still remains a challenge for the department though some progressive efforts have been made.
Contribution to pilot project	•	
Work closely with the NRW consultant and the Project Coordinator to ensure its planned activities are implemented through my department team members – reduction of NRW.	Continual liaison / meeting with NRW Reduction heads a. 4 times a month b. 3 times a month c. 2 times a month d. Once a month Update all NRW teams on the issues and reductions of illegal users in the pilot sites. a. Weekly basis	B. The department team leaders who are all part of the NRW team have shown commitment to their expected roles. To achieve the activities listed, the various methods to be utilized are: 1. Meetings 2. Supervision 3. On field training 4. Facilitation 5. Media
Challenging target (voluntary)		
 Ensuring that the three units are keeping up with their expected roles noting the high demand 		Ja Fe M Ap M Ju ne Customer care often prepared to handle customers who were being

_										
	ii.	on dealing with customers. Continuous commitment of field workers to report as well as disconnecting all illegals identified; thus resulting in increasing illegals inconsistency of monitoring activities as well as disconnection/reconnection practices that may resulted in increasing level of illegals	By nor familiar specific	arizinç fic ac	g then	nselve	es wit	h the	cted to	worked extra hard to respond to illegal users reported to by the NRW team taking into account that the team personnel's are inadequate as well as they have a lot do in their own roles; they have been actively responded to NRW in timely manner. The communication team have effectively worked with the NRW for

1

		pamphlets prior to implementation of planned activities at each pilot site. The challenge faced are: Poor monitoring and inconsistent disconnections of illegal users were due to: - Manpower is short - Transportation (only 2 vehicles) - Weather (at times)
Enlightening activities (volu	ntary)	
i. Monitor progress reduction of NRW activities through activities implemented by the SDCD	Maintaining progressive reduction of NRW work by department staffs who are members of the NRW task force. a. Weekly basis b. Forthrightly basis c. Monthly basis d. Quarterly basis e. Semi-annually f. Annually	Ja Fe M Ap M Ju remains a challenge as far as 1 observed. National Control of the Control of

Note: Based on Capacity Assessment & Capacity Development Plan, be requested to prepare individual Action Plan. Individual Action Plan (Challenging Program) (Mr. Benjamin Billy Sub technical Team)

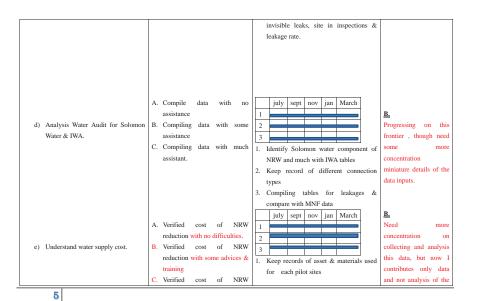
Program)	(Mr. Benjamin	Billy Sub technical Team)	
Main Activities	Verifiable Indicator	Methods of Implementation	Achievement
1. Contribution to water supply service of			
Solomon Water			
a) Management of Network Operations	A. Average 24.hours supply	july sept nov jan march	
to achieve maximum supply	B. Average 18.hours supply	1	<u>B</u> .
durations	C. Average 14.hours supply	2	We managed to increase
	D. Average 12.hours supply	3	with the additional
	E. Average 10.hours supply	4	water sources from
		Keep supply durations records	JICA & Rap input.
		2. Liaison with source works for water	But depending on the
		sources performance	Source works and
		3. Liaison with pipe replacement team to	Network Maintenance
		improve flow and pressure.	we could only achieve
		4. Liaison with NRW team on	this far.
b) Network Operations- Network	A. >=6km/month	improvement on water losses.	
Modeling.	B. 5km/month.		<u>C.</u>
	C. 3km/month	july sept nov jan March	Could only practice
	D. 2km/month	1	with EPANET. Since
		2	we still waiting for the
		3	TA to assist me with the
		4	Water Gems Modeling
			software

1. Check with GIS for network updates 2. Practice Modeling software(EPANET) 3. Site visit to confirm pipe network and features at sites 4. Collection of billing data (demand). july sept nov jan March A. Reporting 4 /month Due to information not B. Reporting 2 /month available and been kept c) Staff Management - performance C. Reporting 1 /month different D. Reporting non/month ection(HR) not able to accomplish within this Daily briefing time period. Weekly 3. Fortnightly 4. Monthly A. Once a month july sept nov jan March B. Once every two month Just managed qtrly Reporting on Network Operations & NRW C. Once every three months for SW D. Once every six months E. Non/year 1. Get daily records of supply times 2. Get information from Daily

		briefing. 3. Getting information from bulk readings @ water sources and distributions. 4. Work out NRW for al systems	
2. Contribution to pilot project			
a) Pilot site isolation.	A. Isolation of sites and confirmed site boundaries & customer without assistance or supervision B. Isolation of sites and confirmed site boundaries (customer) with assistance or supervision C. Isolation of sites and confirmed site boundaries (customer) with assistant and further training.	july sept nov jan March 1 2 3 4 1. Identify pilot sites on GIS Map. 2. Confirm boundary at Sites with works Officers & Plumbers. 3. Confirm customer boundaries with meter readers. 4. Identify network Features & Appliances & Pipe routes	B. Able to understand Isolations of Network & Customers, thou physical checks at sites still need assistances

2

b) Customer registration A. distinguished customer types and categorized accordingly without advice B. distinguished customer types with less advice C. distinguished customer types with much advice D. Not confident at all to Distinguish customer types with much advice D. Distinguish customer types c) In order to identify causes of NRW, I will learn MNF measure and report to relevant team by for each pilot sites for Before and after counter measures. Confident in the field to distinguish different customers Lidentified lineal customers Lidentified directly line customers Lidentified lineal customers Lidentified directly line customers Lidentified lineal customers Lidentified lineal customers Lidentified lineal customers Lidentifi	A. distinguished customer types and categorized accordingly without advice B. distinguished customer types with less advice C. distinguished customer types with less advice D. Not confident at all to Distinguish customer types with much advice D. Not confident at all to Distinguish customer types with much advice D. Not confident at all to Distinguish customer types c) In order to identify causes of NRW, I will learn MNF measure and report to relevant team by for each pilot sites for Before and after counter measures. A. Confident in the field to distinguish different customer types with ease. 2. Identified Illegal customers 3. Identified Illegal customers 4. Cross check customer status in the field against billing A. Confident in the field to distinguish different customer types with ease. 2. Identified Illegal customers 3. Identified Illegal customers 4. Cross check customer status in the field against billing A. Able to measure Minimum Night Flow without any advice, to make graph and report. To be able to measure Minimum Night Flow & Make graph and report with supervision only. C. Not Able to measure Minimum Night Flow and Make graph and report at all 1. Analysis of 24 hour consumption data for metered and direct lines. 2. Categories of different connection types for apparent loss 3. Meter accuracy test results 4. Leakages component (visible &				
4		c) In order to identify causes of NRW, I will learn MNF measure and report to relevant team by for each pilot sites for Before and after counter measures.	types and categorized accordingly without advice B. distinguished customer types with less advice C. distinguished customer types with much advice D. Not confident at all to Distinguish customer types A. To be able to measure Minimum Night Flow without any advice, to make graph and report. B. To be able to measure Minimum Night Flow & Make graph and report with supervision only. C. Not Able to measure Minimum Night Flow and Make graph and	1. Identified directly line customers 2. Identified parasite customers 3. Identified parasite customers 4. Cross check customer status in the field against billing july sept nov jan March 1	Confident in the field to distinguish different customer types with ease. A. Able to do this activity

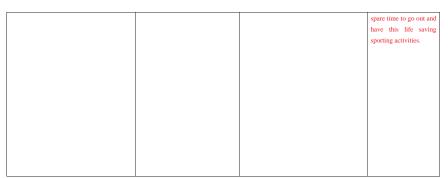


	reduction with much	2. Keep records of personnel used with	cost.
	coaching and advice	overtimes	1
		3. Measure plan with actual occurrence	
		of activities Keeping daily records of	1
		NRW cost incurred.	1
			1
		july sept nov jan March	<u>A.</u>
		1	Has the confidence in
	A. Differentiate NRW ratio &	2	differentiate the NRW
f) Understand NRW ratio & Water	Water leakage with easy	3	ratio & Leakages ratio
Leakages.	B. Differentiate NRW ratio &	4	and other NRW
	Water leakage with advice	Keep tables for customer	components in Solomon
	C. Differentiate NRW ratio &	connections	Water.
	Water leakage with Advice &	2. Collect tables for meter	1
	consultation.	inaccuracy	1
		Collect tables for leakages	1
		4. Collect tables for 24 hour	1
		consumptions	1
	A. One pilot site per 1.5 month	_	1
	B. One pilot site per 2 month	july sept nov jan March	<u>C.</u>
g) Completion of each pilot sites	C. One pilot site per 3 months	1	More focus in capacity
	D. One pilot site per > 3 month	2	build training as begin
		3	of the year , this slows
			down the

		Create schedule for all activities	implementation process as time taken to deliver
		for each pilot sites with resources and time frame 2. Do over time if possible activities is lagging 3. Liaison with each Technical sub team GIS & Hence Customer care and go through their respective actives before commencement of pilot sites	lectures in office and field going through each activities with slow pace. Also bad weather begin of this year 2014 contributes a lot in the project delays.
Challenging target (Voluntary)			
a) Operation reporting & NRW presentation	A. Four times a year B. Three times a year C. Two times a year D. One times a year	1. Keeping month summary on operational for monthly data 2. Presentation to all network operations & NRW teams	B. Some progress though, slows down due to commitments on the NRW project sites activities and Network operations as new supply boundaries are explore with the New Water source addition

(j	0
	P	
¢	ر	1
c	',	٠
7	ī	T

b) Training on operations & NRW	A. Four per six months B. Three per six month C. Two per six month D. One per six month	july sept nov jan March 1 1. Network modeling basics 2. NRW analysis Water Audit	into the Honiara Water Supply system.
Enlightening activities (Voluntary)		july sept nov jan March	<u>C.</u> still planning this
 a) Question and Answer session social informal sharing of experiences & lesson learnt on NRW activities on pilot sites. 	A. Once every three months B. Once every four months C. Once every six months.	1.0 Quiz of NRW components.	program with the Social group for Solomon Water.
b) Sporting activities -	A. 20 times a month B. 15 times a month C. 10 times a month D. 5 time a month E. None a month	1. soccer 2. Volley ball. 3. Walk for life	achieving some progress but due to to much commitment in NRW & Network operations I do not have





Individual Action Plan (Challenging Program) (Mr. Austin Ata - Connection Services Team Leader) December 2013 - March 2014

	Main Activities	V	erifiable Indicator	Methods of Implementation	Achieve
	Contribution to water supply Services of Solomon Water	L			
		1.1	New Connections:		New
1.1	New Connection:			Jul Oct Dec Mar	-80% achiev
		A.	3 weeks - 100%	1	Requires
	Survey/assessment		4 weeks – 80%		efficiency to
	Costing	C.	5 weeks – 60%		set target
	Approval	D.	6 weeks – 40%	2	
	Installation	E.	More than 6 weeks – 20%	3	
	Billing			4	
	Report				
> 1	Filling/achieving	1.2	Disconnection – Illegal	4	
			Service Users:	1	Disconnect
	Disconnection – Illegal				-60% achiev
	Service users:	A.	24 hours – 100%	Monthly monitoring	Requires m
	Report analysis	В.	48 hours – 80%	Liaise with key units and sections	attention, a
	Schedule		72 hours – 60%	 Customer feedback trend 	proactive
	Disconnection	D.	96 hours – 40%		approach.
> 1	Account validation	E.	More than 96 hours -		
	Monitoring		20%	Disconnection Illegal Users	
	Report			Monthly monitoring	
> 1	Filling/achieving	1.3	Reconnection	Liaise with key units and sections	
			Applications	 Illegal users reduction trend report 	Reconnecti Application
	Reconnection Applications		(Disconnections more		-80% achiev
	(Customers Disconnected		than 3 months):		Needs a hit
	more than 3months)			Reconnection Applications	efficiency to
	Survey/assessment	A.	2 weeks – 100%	Monthly monitoring	achieve set
	Costing		3 weeks - 80%	Liaise with key units and sections	target.
	Approval	Č.	4 weeks – 60%	 Customer feedback trend 	
> 1	Reconnection	D.	5 weeks – 40%		
		F.	More than 5 weeks - 20%		
> 1	Account validation with billing	E.	Wore than 5 weeks - 20%		
> 1		Ε.	More than 5 weeks - 20%		

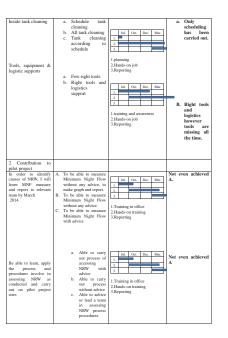
	1.4 Meter Management	1.4 Meter	Meter Replacement/repairs/relocation	Meter
	(Replacement/	Replacement/repairs/rel	Monthly monitoring	Replacement
	repairs/relocation)	ocation	Liaise with key units and sections	-60% achieved
	2. Regular Replacement		 Customer feedback trend 	due to schedule
	of meter request both	A. 24 hours – 100%		days.
	domestic and	B. 48 hours – 80%		
	commercial	72 hours – 60%		
	3. Monthly	D. 96 hours – 40%		
	check/servicing/replac ement of bulk meters	E. More than 96 hours - 20%		
		- 20%		
	Timely monthly report			
	 Regular supply of replacement data to 			
	meter reading team			
	and billing			
	Regular verification of			
	material orders			
	material orders			
2.	Contribution to NRW pilot			
	Sites			
		Attendance of NRW Weekly		NRW weekly
2.1	Weekly Meeting	Meeting	Iul Oct Dec Mar	meeting
	Attendance	A. Weekly – 100%	2 -	attendance
>	Presentation of activity	fortnightly – 80%	2	-80% achieved.
	progress	C. Monthly – 60%		Needs
>	Reporting	 D. Not at all – 40% 	3	commitment to
				meet set target
	Illegal Disconnection	Monitoring of disconnected illegal	1. Prioritize key reports/activities for regular presentation at	
>	Disconnection	water users	NRW meetings	
>	Monitoring	A. Weekly – 100%	2. Regular follow up with customer service for illegal	Pilot site
>	Reporting	B. Fortnightly – 80%	disconnection status.	Monitoring
		Monthly – 60%		-60% once a
		D. Not at all – 40%		month. Needs
				more routine

U.
4
:-
O
у.
C
٦.
α

			check
3. Challenging target (Voluntary) 1. Visiting and reporting and at the pilot sites on illegal status is key activity that must be done at the NRW meeting. 2. Reporting and verification meter raising activities at the pilot sites.	Site Visits and reporting A. Once a week – 100% B. Once a fortnight + 80% Once a month - 60% D. Not at all – 40% Reporting and verification A. Weekly – 100% Fortnightly – 80% C. Monthly – 60% D. Not at all – 40%	J	Site Visit -60% Need S More routi ne visit Repo rting and Verifi catio n -80% need s regul ar repor ting

4.Enlightening activities (Voluntary)	Participate in organise sporting and health activities A. Weekly − 100% B. Fortnightly − 80% monthly − 60% D. Not at all −40%		Jul participation activities such	Dec	Mar e organised	-	60% needs active partici on weekly basis
		1 2	Volley ball Soccer And walk fo				

ndividual Action Pla Main Activities	Verifiable Indicator	Methods of	las Talosui Achievement
Main Activities	Verifiable Indicator	Methods of Implementation	Achievement
Contribution to water supply service of Solomon Water		Implementation	
Pipe line replacement	a. Identification of pipeline to be replaced b. Replace 2 km of pipeline c. Replace more than 10km of pipeline	Jul. Oct. Dec. Mar. 1. Dec. Mar. 2. Dec. Mar. 1. Site visit & planning 2. Hands-on job 3. Reporting	B. identified and replaced 2km of pipe so far.
Pipeline maintenance and leakage & repair	A .Over 50 faults per month b. Over 20 faults per month c. Under 20 faults per month	Jul. Oct. Dec. Mar. L. 2. S.	B. faults at times are still over 20 fualts per month
Fault attendance/ attending to complains	a. Response within 1-10 days D. Response within 1-6 days C. Response within 1-3 days	Jul. Os. Doc. Mar. L. S. L. Lenning and awareness 2-Hands-on job 3-Reporting	B. response are mostly 1-6 six however there are cases more than 16 days.
Make sure of safety at work.	a. Unsafe work practices b. safe work practices with high risk c. safer work practices with low risk	Jul Oct Dec Mar. 1. 2. 3. 1. training and awareness 2.Hands-on job 3.Reporting	A. Work practices are still unsafe.



ú	Ŀ	١
-	•	
c	3	
1	ī	
C		٠
-	ï	Ī
C	C	•
-	_	

Be able to obtain data for and carry water audit Analysis and to calculate NRW ration.	Work along side someone with relevant knowledge Able to carry out analysis with advice Do it without advice.	1.Training in office 2.Hands on training 3.Reporting	B have knowledge to carry out water audit analysis but not carried out an exercise for a while.
2. Challenging target (Voluntary) To supply water to no water areas.	a. Supply water once a week b. To supply water once a day c. To supply water 24/7	I awareness 2. Limprove water supply 3. Reporting	B water supply are mostly 24/7 but few pockets are once a day.
3. Enlightening activities (Voluntary) To improve water supply within honiara town			

Note: Based on

Individual Action Plan (Challenging Program)

(Mr. Mathias Bera Network Operations Team) July 2013-March 2013

Main Activities	Verifiable Indicator	Methods of Implementation	Achievement	
Contribution to water supply service of Solomon Water				
1) In order to contribute to Solomon Water I will work hard to ensure that all pipe installation, repair and maintenance works are done according to the required standards. 2) Work with network operations and creating basic network modeling for White river gravity (using EPANET)	A. Supervise installation without assistance B. Supervise installation with assistance C. Not confident to Supervisor installation at all with or without assistance. A. Skm per month B. 3 km per month C. 2 km per month D. None per month	1) On the job training 2) Hands on training 3) Reporting and evaluation. Jai. Sept Nov Jan. Mar. Jai. Sept Nov Jan. Mar. 1) Get pipe network features from GIS. 2) Collection data both in the field & GIS. 3) Build basic skeleton EPAnet model.	-C- Moveys caught up in NRW works Most ppe installate repair and muniferance works are done by Meintenance team. Do not have time to join them. -D- Haven't got any tree time to shidy Epanet Meinual or Program:	

		Collection of customer data – billing & other relevant source.	
Contribution to pilot project			
In order for me to fully understand NR' reduction activities I need to learn at improve my understanding on the cost water supply.	analysis cost of water supply	1) Gain understanding through mini-workshops the contents that make up water supply cost. 2) Calculate water supply cost through training and close supervision. 3) Reporting and evaluation.	-C- Never actively participate in collecting and analyzing cost of water supply.
Understand and earry out MNF as means work out NRW reduction measures.	A. Conduct MNF with no supervision B. Conduct MNF with	Jul Sept Nov Jan Mar L	- B - Since we do not have 34/7 Supply of water and pressure fluctuations the machine closes. Sametimes, play, up.

	supervision C. Conduct MNF with supervision and site coaching. D. Not Confident at all to conduct MNF with or without supervision 1) Training on theoretical manual & procedures for MNF & flow meter 2) Training on MNF output in office & field 3) Field practical on MNF measurement 4) Evaluation & reporting on progress
3) Understanding Step Test -	A. Carry out step test with no supervision B. Carry out step test with supervision C. Carry out step test with team assistance and closer supervision. D. Not confident in carrying out step test with or without supervision D. Not confident in carrying out step test with or without supervision D. Vot confident in carrying out step test with or without supervision 1) Picture and collect information on the network to be step tested 2) Get an understanding of the flow in each network when valves are closed which section of pipe line is record different flows. 3) Evaluated the result and report on the result of the step test.

S4.5-3-10

Understand using of leakage detection machines and methods as a media of identify leakages for NRW reduction purposes.	A. Confident in using leakage detection methods & machines without supervision B. Confident in using leakage detection methods & machines with some supervision C. Confident in using leakage detection methods & machines with much supervision D. Not confident at all to use leakage detection methods and machines with or without supervision
 Able to perform water audit for SW pilot sites. 	A. Collect and categories components for Water Audit table for Solomon water without assistance. B. Collect and categories to water without assistance. 1) Differentiate connection types

	Audit table for Solomon water with assistance C. Not confident to collect and categories components for Water Audit table for Solomon water with or without team assistance	and categories accordingly Table meter accuracy table Table leakage measures Link SW Audit table with IWA table.	
3. Challenging target (Voluntary) Presentation on Operation & NRW for pilot sites .	A. Once every two months B. Once every three months C. Once every six months	Jul Sept Nov Jan Mar 1. 2. 3. 4 1) Training need 2) Hands on job 3) Reporting and evaluation on experience & lesson learnt.	-C- Yo presentation on NRW Activities being conducted on pilot sites over the last Eagle of months.
Enlightening activities (Voluntary) Playing sport activities.	A. 5 times a week	Jul. Sept Nov Jan. Msr.	-c-
	B. 4 times week C. 3 times a week D. 2 times a week	2. 3. 4. 1) Muscle art	Depends on weather. Could go up to S times a week during fine weather.

2) Soccer	
3) Volleyball	
4) Walk for life	

Individual Action Plan (Challenging Program)

(Mr. Frank Daukalia, NRW Technical Sub-Team Team)

Main Activities	Verifiable Indicator	Methods of Implementation	Achievement
Contribution to water supply service of Solomon Water.			
1.1 Network operations	A. 24 hours water supply – 100% B 20 hours water supply – 80% C. 16 hours water supply – 60% D. 12 hours water supply – 40% E. 10 hours water supply – 20%	Jul Oct Dec Mar 1. 2. 3. 1. Monitoring of Source & Storage tanks. 2. Liaison with responsible teams to fix leakage on mains, service lines etc. 3. Data of Water consumption for each HH, Block etc. 4. Liaison with source workers from each source	80% water supply daily for most parts of Honiara. Other 20% for leakages, illegal connections, poor network connections and low pressure.

2.0 Contribution to pilot project			
2.1 Isolation of Pilot Site	A. Confident in Isolation of pilot sites and confirmation of boundaries (customers) without assistance or supervision. – 100% Confident in Isolation of pilot	Jul Oct Dec Mar 1. 2. 3. 4.	 80% done. This job requires input from some field staff and meter readers.
	sites and confirmation of boundaries (customers) with less assistance. 80% C. Not confident at all in Isolation of pilot sites and confirmation of boundaries – 10%	I. Identify pilot sites on topographic map (GIS). Confirmation of boundaries on site with assistance of field officers. Confirm customer boundary with meter readers Identity network features	
2.2 Customer survey	A. Differentiate customer types & classify them without any Assistance. – 100% B Differentiate customer types & classify them with less Assistance. – 95% C. Differentiate customer types & classify them with much	Jul Oct Dec Mar	 95% was done. This job requires input from meter Readers and billing team.
	assistance. – 10%	Confirm direct line customers Confirm parasite customers Confirm illegal customers Confirm non-exist customers etc.	

S4.5-3-11

2.3 Customer meter inaccuracy Test	A. Conduct meter inaccuracy test efficiently& compile data with confidence 100% B. Conduct meter inaccuracy test efficiently& compile data with less assistance 95% C. Conduct meter inaccuracy test efficiently& compile data with much assistance 10%	Jul Oct Dec Mar 1.	95% was done. Constant time interval of 5 minutes during the meter inaccuracy test. Assistance from NRW team.
2.4 Leak detection & Compilation	A. Be able to figure out different types of leakage without any advice & compile a report 100% By Be able to figure out leakages With less assistance & compile report 90% C. Be able to figure out leakage only 10%	Jul Oct Dec Mar 1.	 90% was done. This requires input from field staff that did leakage detection.
2.5 Step Test	A. Confidently do the setup for step test and compilation of the data without supervision. 100% B. Confidently do the setup for step test and compilation of data with less assistance-90% C. Not Confident to do the setup for step test and compilation of the data at all20%	Jul Oct Dec Mar 1.	 90% was done. Remaining percentage needs staff to assist in order to achieve.

2.6 Minimum Night Flow Measurement (MNF)	A. To be able to measure Minimum Night Flow & make graph and report without assistance100% B To be able to measure Minimum Night Flow & make graph and report with less assistance90% C. Not able to measure Minimum Night Flow & make graph and report at all 0%	Jul Oct Dec Mar 1	 90% was done. Need assistance from other NRW project team members.
3. 0 Challenging target (Voluntary)			
3.1 Presentation of work progress at weekly meetings.	Four times every month -100% B. Twice every month -60% C. Once every month - 20% D. None at all -0%	Jul Oct Dec Mar 1	◆ 100% was done.NRW weekly Meeting presentations on field work progress.
4. 0 Enlightening activities (Voluntary)			

4.1 Solomon Water sports committee member	A. Zero Staff Sick leaves per		Jul	Oct	Dec	Mar		80% of staff sick leaves per
☐ All staff involved in sporting	month - 100%	1.		•				month. Need to organize
activities		2.						sporting activities to keep
to keep them fit & healthy.	B 5-10 Staff sick leaves per							staff fitness level back on
	Month – 80%	1. Keen	records	of staff	physical	l health		track.
 Encourage staff to know each other 			ovemen		py			
well through social activities.	C. 15 Staff sick leaves per							
	Month – 30%	2. Orga	nize wee	ekly spor	rting act	ivities.		
□ Well-being of all staff								
	D. >= 16 staff sick leaves per							
	Month - 5%							
			Jul	Oct	Dec	Mar		
4.2 Sports involvement		1.					٠	30% of sports involvement.
	A. Every day – 100%	2.	=-		=-		•	30% of sports involvement.
	B. Three times a week – 80%				_			
	B. I free times a week – 80%	1 Rugh	v / Soco	er / Vol	levhall			
	Once a week – 30%	1. Itage	,, , ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		eyoun.			
	Office a week - 30%	2. Walk	for life	by all S	W staff.			
	D. Non per week - 0%			.,				
	D. Iton per week - 0%							
							1	

4
ď.
Ÿ
ď.
٣
_
~

Individual Action Plan (Challenging Pro	ril 2014 –March 2013		
Main Activities	Verifiable Indicator	Methods of Implementation	Achievement (Self- evaluation at the middle of March
Contribution to water supply service of Solomon Water			
Ensure that I manage the customer care department in accordance to SW regulation and policy and to enhance customers' satisfaction on deliverance of service provided by customer service staff.	Consultation of SW policy/ Regulation: a. Twice a week b. Once a week c. Once a fortnight d. Once a month e. None at all	Apr Dec. Jul. Mar. 1. 2 3 4	B. To conduct meetings and ensure every customers are satisfied. I did it once a week. To ensure that customers are attended to.
B. Ensure that all customers' queries are satisfactorily answered on timely manner.	Customers queries are answered a. Same hour b. Same day c. After one day d. After 3 days e. After 1 week f. Not at all	Scheduling of work for customer care. Managing and supervising the customer care team. Weekly report writing Daily meeting with customer care staff.	This is done daily when stepping in at the front counter. A. Same hour. But this depends Entirely on the nature of complaint. It can take some time if the customer issue is
Ensure that other departments are informed quickly on customers request to ensure that services are delivered on timely manner.	Customer needs relayed to relevant department a. Same hour b. Same day c. After one day d. After 3 days e. After 1 week f. Not at all	Assess staff performance Meet Daily with other team heads	too complicated because we have to work closely with the other relevant departments for feedbacks. This includes customer's correspondences. And emails from customers.
D. Provide weekly updates to service delivery Manager.	Weekly Reports a. 4 times a month b. 2 times a month		Same hour. Sometimes within a week. Depends on customers we have attended and the nature of their issue.

		c. 1 time a month	C.
		d. Not at all	Customer care reports are
E.	Liaise with HR upon identifying needs of		produced on monthly basis
	customer care staff to skill building		to the CC & C Manager.
	requirements.	Skill assessment on staff	
	-	a. Once a month	
		 b. Once every 6 weeks 	D.
		c. Once a year	Not yet liaising with the
		d. Not at all	HRM for training in order
			to build staff skills.
			Currently I'm doing skill
			assessment on staff,
			especially monitoring the
			CC staff and also working
			closely with them at the
			front counter to identify
			skills they need to improve
			on. Especially the approach
			and the information given to
			our customers. Also
			currently I am compiling
			customer suggestion and
			comments customers usually
			fill in our feedback forms
			that we use at the front
			counter.
F.	Liaise with the PR team to inform	Public awareness	
	customers on important events	a. Fortnightly basis	
		b. Once a month	
		c. Once every two months	71 P. 11 14 4 P. T.
		d. Once every 6 months e. Not at all	I'm liaising with the PR
		e. Not at all	team whenever they did
			F8,
			especially during their awareness events and Radio
			programs; this is when they need 1 customer care
			need 1 customer care

			representative.
2. Contribution to pilot project			
 Involve in awareness programs on pilot 	 Once fortnightly 		Accompany PR team when
sites.	 Once a month 	Apr. Dec. Jul. Mar.	conducted awareness on
	 c. Once every 3 months 		Pilots sites. So far have done
	d. Once every 6 months	2.	1 last year at NAMORUKA,
	e. Once a year	3.	with this I prepare illegal
	f. Not at all		users listing and fees they
		 Prepare and Provide 	are supposed to pay. In fact
		information to customers	we have done general
			customer service on that
			awareness day.

Weekly reporting of status of pilot customers to other NRW Reduction sub teams. Assisting customers in validating their accounts	a. 4 times a month b. 2 times c. Once a month d. Once after 2 months e. Once after 6 months f. Not at all a. The same hour b. The same day c. After I day d. After I week e. After I month	1. Keep track of customers status on daily basis Apr. Dec. Jul. Mar. 1. Provide customers with proper information on SW requirements.	Reports mainly on activated illegal users on pilot sites during NRW meetings. And also the feedback and the update customer research which was analyzed by WADA, We have gone through 15 pilot sites doing interview and also inputting data taken by customers. A. This one is done on the same hour, and it depends entirely On the nature of complaints and the customers we have attended.
3. Challenging target (Voluntary)			
I will present work progress at the meeting or workshop.	a. Monthly basis b. After 3 months c. After 6 Months d. After 1 year e. Not at all	Apr. Dec. Jul. Mar. 1. Keep track on daily achievements and challenges 2. Prepare monthly summary reports	A. This is done on monthly basis. Sometimes During the NRW meetings.
4. Enlightening activities (Voluntary)			
Health and fitness	Exercise a. 5 times a week b. 3 times week c. 1 time a week d. Not at all	Apr. Dec. Jul. Mar. 1. Walk for Life 2. Volley and netball	A. 5 times a week. Walk to and from office

U
1
÷.
Ÿ
Ġ
T
_

Main Activities		Verifiable Indicator		Methods of Implementation	Achievement (Self-evaluation at the middle of April
Contribution to water supply service of Solomon Water					
In order to contribute to Solomon Water, I will do work efficiently by abiding to the specific goals and objective of my unit, department and company as whole	B. C.	Strs in a Working Day 40 Hrs in a Week 1600 Hrs in a Month 20 Hrs in overtime in a month		Feb. March April. May Work key activities are scheduled into intervals which are then prioritized into order of implementation in the 5 working lays in a week.	Defined tasks are sometim too many giving no room I accomplishment of all of the one time. A proper schedule work implementation shou be considered to ensu activities do not overlap ea other but rather compleme each other. Hence this aspr is ongoing.
2. Contribution to pilot project					
Ensure relevant key messages and notifications is disseminated to the pilot site	A.	To be able to state clearly the objectives and key functions of the project		Feb March April May.	The communication team h played an important role in t
areas and facilitation of appropriate research and survey essential to the full implementation of the NRW project.	B.	Be able to help the pilot site areas to know more about the NRW program, its impact and benefit to them and Solomon Water in whole	1. 2. 3.		communication, networki and awareness of the NRW key pilot site areas. Howe more needs to be done in ti
	C.	To be able to deliver the Information, communications and awareness (ICW) materials to the pilot site areas in time and when required		Data input advise and hands on	area to ensure peol understand critically to importance of this progra and be part of to
	D.	Issue of notices for illegal users with clear instructions of how to be a legal users and a genuine customer of Solomon Water.	2	training in office Assessment and analysis procedure for ICW material Field implementation of research and survey activities	improvement.
	E.	Conduct research and survey when required & assist in the data input of information gathered in templates prepared by the JICA expert team	4.	Communication, coordination and networking of activities prerequisite for the achievement of NRW	
	F.	Conduct awareness when necessary or if		activities in the pilot zones	1

	G.	required Use the radio as an medium to share the key messages and knowledge and also update of the NRW activities in different pilot sites	5.	NRW basic assessment test	
3. Challenging target (Voluntary)					
To ensure the key messages, knowledge's, information and awareness is given on time before project commences in pilot site areas. To ensure thorough communication of NRW weekly and monthly strategies are taken heed of prior to implementation. To ensure people know about the importance of the NRW project and be part of it. To be able to understand fully the technical calculations of NRW measures in different sites and be able to assess throughly how this has contributed to the improvement of revenue water in pilot site areas. Ensure technical aspect of the NRW is made simpler for all staff and the public to understand how to manage NRW. 4. Enlightening activities (Voluntary)	B. C.	Monthly 6 Months Yearly		Feb March April May 1.	The challenging target detailed is the important aspect considered by the communication team in this area. Communication team should embrace more the NRW content and be able to share it more clearly with the NRW audiences. This is an ongoing task for the communication team and efforts are primarily placed in facilitating communications and awareness of this important project. Ongoing task for Comm Team as evidently more needs to be done in this area
Dangarening activities (voluntary)	t		H		

Individual Action Plan (Challengin	Ms. Tango: Communication /Awareness Team									
Main Activities	Verifiable Indicator		M	ethods o	of Imple	mentation	Achievement			
Contribution to water supply service of Solomon Water										
Inoder to contribute to Solomon Water, I will involve relevant	141,041,041,041,041,041		July	Oct	Dec	March	B Questions asked by			
departments to assist our team to	C. 8hrs/ month and overtime	1.	July	Oct	Dec	March	students are mainly on the			
do awareness in schools and communities. (Teamwork)		2.					operational part of SW. Our team has involved relevant			
		- Go	ood tean	nwork			departments to assist us in our awareness programs. - By involving other departments we also learn a lot from them.			
2. Contribution to pilot project										
- In Oder to contribute to pilot		1.	July	Oct	Dec	March	B. Pamphlets was distributed to NRW Pilot Sites.			
NRW pamphlets to Pilot sites and		2.	-		+					

from operations to assist in distributing the pamphlets. Notice and Information updates posted on our Facebook page and Solomon Star News paper	7	Notice and information updates posted on our Facebook and Solomon Star
A. Challenging target (Voluntary)		
,		
A. Enlightening activities (Voluntary)		

S4.5-3-14

Individual Action Plan (Challenging Program) (Ms. Daisy Menaga, Team Leader Meter Reading) Main Activities Methods of Implementation (Self-evaluation at the middle of march) 1. Contribution to Water Supply service of Solomon Water In contribution to Solomon Water, I will do A. 10hours Overtime in a 1. Jul Sept Dec Mar Achieved 20hours and still working my work more effective & efficiently towards achieving the target of 40hours Overtime in a month B. 20hours Overtime in month C. 30hours Overtime in month D. 40hours Overtime in a 1. Commit to work effective & month efficiently Preparation of Monthly Work Schedule Jul Sept Dec Mar Achieved A – all schedules were A. Week one B. Week two C. Week three prepared at week one D. Week four 1. Availability Schedules when needed Preparation of Monthly reading Schedules A. Week one Achieved A - all schedules needed Jul Sept Dec Mar B. Week two were provided at week one C. Week three D. Week four Availability of monthly reading schedules. Staff Training A. To be able to know how to Role Plays and trainings needed to Computer & Device terminal use handheld devices Jul Sept Dec Mar improve capacity building and work training B. To be able to read in this phase was carried out for our customers water meter Water tariffs & charges team members without any advice Effective Communications Training C. Able to be answerable to Achieved D Report Writing customers in a proper & polite way. D. All of the Above Training in the office
 Hands – on training 3. Reporting Role play

Downloading & Uploading Cycle readings into NCS system	A. 50% B. 70% C. 90% D. 100%	Jul Sept Dec Mar 1. Effective & reliable system 2. Handheld devices must be in good condition 3. Extra hours overtime 4. Address issues affecting reading — Natural disturbances (rain & cyclone) & social unrest
Reporting	A. Once a month B. Twice a month C. Four times a month D. None	Achieved C Jul Sept Dec Mar
Team Management • Addressing team members grievances and welfare	A. Once a month B. Twice a month C. Four times a month D. None	1. Monitoring & Cancelling 2. Assessing 3. Team work & Discipline 4. Decision Making Achieved C Team meeting and briefing is done every week. This is to ensure that task is effectively carried out and reporting of uprising issues that might affect work performance
Team Regular Meeting Updates Arising Issues	Able to know the job and the expected outcome To be able to know that the arisin jesues are answerable Able to know what NRW is and why it is vital All of the Above	Achieved no. 4 Jul Sept Dec Mar

2.Contribution to pilot project Updating Customer information (Changes)	A. 50 B. 70 C. 90 D. <100	1. Up to date customer information update 2. Efficient & Reliable system (NCS) 3. Reporting	Achieved C updating of customer information depends on the other team that verifies the Customer Information out in the field and delay of updating resulted from system problem and/or late feedback
Reporting field findings from team members to NRW Team leader	A. Twice a month B. Once a month C. On a daily basis D. None	1 Jul Sept Dec Mar 1 1 . Daily 2. Weekly 3. Fortnightly 4. Monthly	Achieved B Reports are done once a month as we visit every site once every month. However, Monitoring was now done once a week.
Downloading & Uploading Cycle readings into NCS system	A. 50% B. 70% C. 90% D. 100%	1 Jul Sept Dec Mar 1 1 1. Effective & reliable system 2. Handheld devices must be in good condition 3. Extra hours overtime 4. Address issues affecting reading Natural disturbances (rain & cyclone) & social unrest	Achieved D — all reading are uploaded and updated in the system
Networking	To be able to form a good working relationship within the sub-team members and other sub-team members	Jul Sept Dec Mar	Achieve 1 Good team work and still working to improve more on it also assisting in problem solving

		Team work Assist is problem solving	
Weekly Meeting Team Update Updating sub-teams on work progress Issues faced	To be able to have a broader knowledge of NRW & its components Able to know that issues faced are answerable and dealt with	knowledge on Knowledge is acq	broaden team's NRW. More
3.Challenging target			
Will learn & work hard to present work progress during meetings	A. Two times per year B. one time per year C. Zero per year	Achieve A	

S4.5-3-1

Individual Action Plan (Challenging Program)

(Mary Tafoa, NRW Customer Care Sub-Team)

murviduai Action I ian (Chancignig I	Togram)	(Mary Taroa, MAN Customer Care Sub-Team)									
Main Activities	Verifiable Indicator	Methods of Implementation	Achievement (Self-evaluation at the middle of March								
1. Contribution to water supply service of Solomon Water											
In order to contribute to Solomon Water, I will bill customers with accurate water meter reading, efficiently and on timely basis.	A. 10hours/month in overtime B. 15hours/month in overtime C. 20hours/month in overtime D. Over 20hours/month in overtime	Nov - Jan Feb Mar. Dee13 1. Do work efficiently	B. To bill customers on timely, accurate and consistent reading each month. Month end is the deadline so over time is given every 4th weekend to do work and last day of month after 4:30pm.								
2. Contribution to pilot project											
In order to identify causes of NRW, beginning of each month, I will prepare customers list for the respective pilot sites: Account numbers, names, meter identification numbers, location, consumption unit/value used per month. This report will be forward to Benjaimin, Frank and other relevant team members. Provide month end report to Benjaimin on monthly consumption for pilot sites.	A. To be able to extract and produce water details of customers within the pilot site requested by Benjamin Billy from NCS billing system. B. To be able to monitor the monthly water consumption at the pilot site. C. To be able to report any findings (example: high water unit used, underground leakage) at the pilot site to Benjamin Billy.	Nov - Jan Feb Mar. Deci 3 1. 2. 3. 1. Training in office 2. Hands-on training 3. Reporting	A. I can manage to prepare customers list for pilot sites and monitor the monthly water consumption but not sort out high readings due to unable to go out to the field to identify myself.								
3. Challenging target (Voluntary)											

	A. Two times per year B. one time per year C. Zero per year	Nov – Dec13		Mar.	I could not request to present the work progress by myself. I was just appointed to present it by our leader once.
4. Enlightening activities (Voluntary)					
Joining sports/Games (SW)					

Note: Based on Capacity Assessment & Capacity Development Plan, be requested to prepare individual Action Plan

Individual Action Plan (Challenging Program)

(Ms. Mary Pidoke, Customer Care) March 2013-March 2014

tain A	ctivities	Verifiable Indicator	Me	hods	of Impl	emen	tation	1								Achievement
1.	Contribution to water supply service of Solomon Water															
A.	A. Ensure that I work in accordance to SW Policy/Regulation and policy and to enhance customer satisfaction on Control of the	Policy/Regulation: a. Twice a week b. Once a week c. Once a fortnight d. Once a month	1 2 3 4 5	Apr	May	Jun i=	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	B. Currently there is no policy/regulation in placed, therefore to enhance customer satisfaction on
8.	service provided by customer service staff	e. None at all Customer queries are	6	2. 1	Schedul Keep da Weekly Daily me	ily rec report	ords o	ng				enges				deliverance of servic provided, need to liaise with the team head and other departments
	customers' queries are salisfactory answered on timely manner	answered a. Same hour (B.) Same day c. After one day d. After 3 days e. After 1 week f. Not at all		5. 1	ndividu Meet da	al skill	asses	sment				briefi	ng			Customer queries are answered depending of the nature of complaint/queries. For some can be answered right away and some depending on as soon we get feedback.
C	Ensure that other departments are informed quickly on customers request to ensure that service are delivered on timely manner	Customers needs relayed to relevant department 3. Same hour (b) Same day 4. After 1 day 4. After 3 days 6. After 1 week 6. Not at all														B. Other departments are informed on the same day on customer requests

 Provide weekly updates to custor service team lead 														Weekly updates is done on weekly basis			
E. Ensure that I carr out personal assessment base on performance indicators outline job descriptions	Once a month Once every 6 months													D. This was not done at all because I still did not have any Job description, since I			
F. Liaise with PR tea to inform custom on important ever	rs b. Once a month													moved to customer can inform customers on important even is through email, face to face when customer comes in at the customer service			
 Contribution to p project 	ot																
 Involve in awaren programs on pilot 	b. Once a month	1 2	May	Jun	Jul —	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	E. I only attend 1 awareness program on pilot site at Namoruka and provide information to customers			

Ā	٠
ö	١
ሬ	3
7	
_	١
σ)

 Weekly reporting of status of pilot 	a. 4 times a month b. 2 times a month	1	Apr	May	Jun	Jui	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	C. Weekly reporting was				
customers to other NRW reduction sub teams	d. Once a month d. Once after 2 months e. After 6 months f. Not at all	2	1.	(eep tra	ick of	custo	ners si	latus o	in dail	y basis					done fortnightly				
 Assisting customer in validating their accounts 	a. The same hour The same day c. After 1 day d. After 1 week	1 2	Apr	May	Jun	Jui	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Assisting customers in validating accounts depends as soon as customer comes				
Challenging target (voluntary)	e. After 1 month		1. F	rovide	custor	ners	with pr	oper li	nform	ation o	in SW				A.				
I will present work progress at the meeting or workshop	a Monthly basis D. After 3 months C. After 6 months d. After 1 year e. Not at all				May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar progress eve						I could not present work progress every time, only if I was asked to.								
Enlightening activities (voluntary)																			
Health and fitness	Exercise (a.) 5 times a week	1	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	mar	A. I did walk every day and				
	b. 3 times a week c. 1 time a week	3		-		=				17	=	-			as for volley ball depends on our sports				
	d. Not at all	1 3	Walk for life Volley bull Weight lifting												schedule and the weather.				

Individual Action Plan (Challenging Program)

(Mr. Gavin Bare, GIS Technician)

marriadan raction ratin (chantenging raogram)		(iiii duriii bure, dib reciiiiciiii)									
Main Activities	Verifiable Indicator	Methods of Implementation	Achievement								
1. Contribution to water supply service of											
Solomon Water											
Develop a reliable GIS database by collecting	Achieve Base Station By;		Base cannot be achieved								
accurate data, efficiently managing and producing	A. July – Sept	Jul. Oct. Dec. Mar.	due to a possible								
GIS information for SW operations.	B. Oct – Dec	1.	incompatibility with the								
Achieve Base Station (Improve Accuracy)	C. Jan – March	3	version of the TerraSync								
Update/Verify Field Data.	D. None	1. Field Work (Collection of	software being supplied.								
Provide GIS Reports		Data).									
	Update/Verify field data	GIS Data Managing.	Update/Verify Field data								
	A. 10km/month	Providing GIS Information	For the month of March								
	B. 6km/month		alone an approximately								
	C. 2km/month		42km of distribution								
	D. 0km/month		pipeline is recorded								
			(excluding pilot sites).								
	Provide GIS Reports										
	A. Fortnightly										
	B. Monthly		GIS reports weekly in								
	C. Quarterly		NRW weekly meetings.								
2. Contribution to pilot project											

 Record Leakage points locations 	Update/Verify field data for		Mbua Valley = 2km
Update Pipe network locations	NRW pilot project sites.	Jul. Oct. Dec. Mar.	Bahai/Kukum = 1.5km
 Produce relevant Maps for field work. 	A. 1 - 2 km/month	1.	Panatina = 0.9km
 Record raised customer meter locations. 	B. 500m - 1km/month	3	
	C. 100 – 500km/month	4	Total = 4.4km
		Office and field training for field officer. Fieldwork Reporting for update weekly meetings. Update GIS system.	
A. Challenging target (Voluntary)			
Do presentation of updated features of NRW and	A. Once every 2 months		E
SW system to all staff for familiarization.	B. Once every 3 months	Jul. Oct. Dec. Mar.	
	C. Once every 4 months	2.	
	D. Once every 6 months	3.	
	E. Never	1. Keep record of daily inputs	
		2. Compile monthly summary	
		3. Prepare presentation	
B. Enlightening activities (Voluntary)		·	
Sports Activities	a. 5 days/week	l	С
	b. 3 days/week	Jul. Oct. Dec. Mar.	
	c. 1 day/week	2.	

d. Never	Manage time properly.
	2. Proper dieting.

u
1
€.
O
,
u
٠,
=

Main Activities	Verifiable Indicator Methods of Implementation (Self-evaluation		Achievement (Self-evaluation at the middle of March
 Contribution to water supply service of Solomon Water 			1.1.1.1
In order to contribute to Solomon Water, I will do work efficiently.	A. 20hours/month in overtime B. 30hours/month in overtime C. 40hours/month in overtime D. Over 40hours/month in overtime	Jul. Oct. Dec. Mar. I. Do work efficiently	o Achieved flood over which I do over 40 hours / worth in over Time
2. Contribution to pilot project			11. 1. K
In order to identify causes of NRW, I will learn MNF measure and report to relevant team by March 2014.	A. To be able to measure Minimum Night Flow without any advice, to make graph and report. B. To be able to measure Minimum Night Flow without any advice. C. To be able to measure Minimum Night Flow with advice	Jul. Oct. Dec. Mar. 1. 2. 3. 1. Training in office 2. Hands-on training 3. Reporting	a Relieved forms about the Measure Minner Wight How what and advice
3. Challenging target (Voluntary)			11 10 1
I will present work progress at the meeting or workshop.	A. Two times per year B. one time per year C. Zero per year	Jul. Oct. Dec. Mar. 1	Signal I free from a life work progres to team beaders
4. Enlightening activities (Voluntary)			

Individual Action Plan (Challenging Program)	(Mr.Ma	thew mafe Leakage Assistant	Team)
Main Activities	Verifiable Indicator	Methods of Implementation	Achievement
Contribution to water supply service of Solomon Water			
a) Survey and identify the types of leaks.	A. 5 days / Week B. 3 days / Week C. 2 days / Week D. Iday/Week	Basic. Report visible leaks to maintenance. Medium Listening rod.	Cheforing beach and also your
Contribution to pilot project			2
A. Locating; S/lines, Main, Valves,	LOCATING; S/Lines, W/Mains, Valves. a) Confident with no advice. b) Confident with advice. c) Less confident to locate.	Jul Oct Sep Dec Jan Mar Training on project site. Training on office. Reporting.	1) Have Confident with no advice

B. Conduct minimum night flow test, C. Conduct step test.	MNF test; a) Confident with no advice. b) Confident with advice. c) Less confident. CONDUCT STEP TEST. a) Conduct with no advice. b) Conduct with advice. c) No conduct at all.	A Hose Confidentists to lookent effected with us ashier
Challenging target (Voluntary)		() ()
Update and analyses data collected from project site and able to determine accurately.	A. Two times per month B. One time per month	Oct Nov Dec Jan Mar Collecting data. Determine data. Re determines data accurately. Determine data accurately. Decorption De

4. Enlightening activities (Voluntary)			12/
Sporting activities	A. 4 times a week B. 3 times a week C. 2 times a week D. 1 times a week E. Non in a week	Jul Oct Nov Dec Jan Mar 1. Playing volley 2. Playing soccer 3. Walking	After work his After work his walking back home

54.5-3-18	
<u>ب</u>	Ų
<u>ب</u>	
نا د	C
	c
	7
α	_
	α

individual Action Plan (Challenging Program)		vid Akoeasi Leakage AssistantTeam)	
Main Activities	Verifiable Indicator	Methods of Implementation	Achievement
Contribution to water supply service of Solomon Water			
solomon water (i) Survey to visible leakage (ii) Maintenance of visible leakage	A. 5 days / Week B. 3 days / Week C. 2 days / Week D. 1 day / Week A. 6 days/Week B. 5days/Week C. 4days/Week	Identify of different types of leak Monitoring of water supply on an main pipe line and service line of prevent leaks	C. a Days/week, Beause land vot only work on Suvey to Visible leakage, but do oth work of NRW. And all the period of time Imm at on Apt twaming. C. a Days/week, because do some work on NRW
			Like Custoned Registration Accounted measure meter Inaccuracy so lam not di same work every days.

A. Minimum Night Flow A. Minimum Night Flow Confident to do MNF without supervision With supervision Not confident at all B. Step Test Confident to do ST without supervision Not confident at all C. Valve Locator With supervision Not confident at all C. Valve Locator With supervision Not confident at all C. Valve Locator With supervision Not confident at all C. Valve Locator A. With supervision Not confident at all C. Valve Locator With supervision Not confident at all C. Valve Locator Confident to do VL without supervision Not confident at all C. Valve Locator C. Cenfident to do VL without supervision Not confident at all C. Valve Locator C. Cenfident to do VL without supervision Not confident at all C. Valve Locator C. Cenfident to do VL without supervision Not confident at all C. Valve Locator C. Cenfident to do VL without supervision Not confident at all C. Valve Locator C. Cenfident to do VL without supervision Not confident at all C. Valve Locator C. Cenfident to do VL without supervision Not confident at all C. Valve Locator C. Cenfident to do VL without supervision Not confident at all C. Valve Locator C. Cenfident to do VL without supervision Not confident at all C. Valve Locator C. Cenfident to do VL without supervision Not confident at all C. Valve Locator C. Cenfident to do VL without supervision C. Cenfident to do VL without supervision Not confident at all C. Valve Locator C. Cenfident to do VL without supervision C. Cenfident to do V

a) Update work progress in past month at the meeting or workshop. b) Presenting work progress at the meeting or workshop	A. Two times per month B. One time per month	Jul	Oct	Nov	Dec	Jan		C. Not at all, Breause I on I rave to do Study on ApTC Train
чениц		1 2		paring senting	0.7		neeting	Shalf an APTC Train
Enlightening activities (Voluntary) Sporting activity	A. 15 time a month B. 12 times a month C. 8 times a month D. 6 time a month	Jul	Oct	Nov	Dec	Jan	Mar	E. Non a mouth.
	E. Non a month	1 2 3		cer ley bal				

Nem Advides	Verificials Indicator	Metilods of Implementation	Achievement (Self-evaluation) (Evaluation) (Evaluation) (It valuation) (It valuat
Presentation to Water Presentation of system Operations to operations Team.	Supply Services of Solomon Water A. Once a month B. Every two month C. Once in six menths D. Once a year.	Essential) Jan Jul Aug Sept Cet Mov Dec Jan 7ck Mar Jan Jul Aug Sept Cet Mov Dec Jan 7ck Mar 1. 2. 3. 1. Preparation of Hand outs 2. Presentation of system Scenarios & Changes. 3. SOP Preparation	Update of Supply Boundaries o the dash Board and hence
Revised Job Cessripton for Network Operation Staff	A. By end of June 2014 3. By end of July 2014 C. By End of August 2014 2. By End of September 2014 E. Some progress in 2014	Jim Jul Aug Sept Cet New Dec Jan Feb M ar 1. 2. 3. 1. Create SOP for each Task for each for Network Operations 2. Involve staff on their IWP Creations. 3. Finalized and sent to HR to check and confirm with OM	Some progress. Still working on revised task &
Preparation of IWP and Appraisal for Network Operations Staff.	A. By End Of June 2014 B. By End of July 2014 C. By End of July 2014 D. End of the September 2014 E. Same progress in 2014.	Jan Jul Ang Sept Get Nev Dex Jan Feb M ar 1 2 3 1. Create SOP for each Task for each for Netwerk Operations. 2. Involve staff on their IWP Creations. 3. Finalized and sent to FR to check and confirm	created for each Staff Bet additional Staff Join so seed to Create IWP for them

		with OM.	,
Operations Monthly Report	Moathly Every Two Morths Quarterly	Jun Jul Aug Sept Dc; New Dcc Jan Feb M ext	Producing Supply Duration to the Board every Month
	D. Every Six Months E. Cince a year	Report on Operations Performance in terms of Service level Report on production cost for each system & DMA	
. Dash Board – work program	A. daily B. twice a week Weekly Fortnightly	Jun Jul Aug Sept Oct Nov Dec Jan Feb M 1. 2. 3. 4. 5. 5. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6.	Daily & weekly
		Prepare daily work schedules Task delegation to staff status of System Operations Highlight difficulties & strategies.	

2

 Completion of Pilot Sites. 	A. Completion of all pilot sites by end of July 2014 B. Completion of all pilot sites by end of August 2014 Completion of all pilot sites by end of September 2014 D. Completion of all pilot sites by end of October 2014 A. Completion of all pilot sites by end of October 2014 D. Completion of all pilot sites by end of October 2014 A. Completion of all pilot sites by end of October 2014 D. Completion of all pilot sites by end of October 2014	
Preparation of procedure for collecting Inventory for DMAs.	A: Preparation of Previsional DMA Inventory by end of July 2014 B. Preparation of Provisional DMA Inventory by end of August 2014 CP Preparation of Previsional DMA Inventory by end of September 2014 2014 D. Preparation of Previsional DMA Inventory by end of October 2014 D. Preparation of Previsional DMA Inventory by end of October 2014 Assistant from JICA Expert Team 1. Drawing of Proposed DMA Boundaries 2. Locating of Pipe lines 3. Liaise with Meter readers for customer locations & GIS Goe spacing. 4. Work out Production cost for each system.	
Selection of two of two DMA for JICA project with pressure & Non Pressure Zone	A. By end of September 2014 By End of October 2014 C. By end of November 2014 D. By End of December 2014. Jan Jul Aug Sept Oct Nov Dec Jun Feb M ur West Kola ridge A & Tassihe A & B Selected Base on a Selection Criteria with	

 Locating of Pipe lines
 Liase with Meter readers for customer locations High NRW & GIS Geo spacing
4. carry out Base line Data 5. Decument all information for base line. A) weekly meeting Weekly B. fortnightly meeting Meetings with Action 9. organize weekly C. monthly meeting Team prepare minutes & Reporting template prepare minutes & respecting companies.
 Organize activity schedules to action plan. Members & Hence meetings D. Quarterly, meeting Field Team as 3. Challenging Target (Voluntary) Jun Jul Aug Sept Oct Nos Dec Jan Feb Mar In prothough collected progress data A. Reduction of Pumping cost by 20% running of Water supply by end of September 2014

B. Reduction of Pumping cost by operations. Reduction for 20% by end of October 2014 C. Reduction of Pumping cost by 20% NRW for some priorities DMA Analysis electrical data(Cost) with Production
 Monitor production every month. by end of November 2014 Reduction of pumping cost by 20% by and of December 2014. need to happen before we can 3. Monitor system operations service level. achieved this 11. Prepared A. By end of September 2014 B. By end of October 2014 Operational Manual. (System Operation Jun Jul Aug Sept Oct Nov Dec C. By End of Nevember.

By End of December 2014 Working closely with Scenarios) Operations Advice Operational Test for system operations. 2. Collect Data for Bulk readings & Tank Level r Document this Manual production every month. 3. Daily check for Water Pressure for end of each

ι	J	ı
ú	Ŀ	١
-		
C	3	٦
C	,	J
	•	
Г	\	٥
C	È	2
	_	

		System	
12 System Operational Training for System Operational Staff.	Monthly B. Once every two months C. Quarterly D. every six months	Jun Jul Aug Sept Oct Nov Dec Jan Feb M 21	Monthly Base work on system operations for Field Staff.
3 NRW monitoring or DMA/ Pilot sites	once a month once every two months countrelly	Prepair system configuration for operations. Filling of System operations forms. SOP for system Operations Pilot & DMA NRW analysis Jun Jul Aug Sept Oct New Dec Jun Feb M.	But yet to work on SOP since System Operations secenario awaiting Modeling
	D. Once every six months	1. Collect Consumption data from Billing. 2. Collect system input from Operations 3. Analysis data for NRW Components	Monthly with Tasahe A & B , West Kola ridge & Lengkiki on Daily and
. Self-Development or So	ocial Action (Voluntary)	Report to DMA Maintenance team & Customer service of results. Get feedback and check result after these interventions.	Monthly Bases.

A. Twice Weekly
B. Once Weekly
Once formight
D. Once a month Muscle Art physical-Twice a weak. training(Development) 1. Attend training on Mon & Tues every week. With Mathias for example two example done Jun Jul Aug Sept Do: Nov Doc Jan Feb M A. Once Weakly
B. Once forthight
C. Once a month
D. Once every two Months
D Quarterly. 15 Learn about Water Gems./ Modeling software (Self Development) Mathias will conduct training Every Sunday 10:00am to 12:00 Doing tutorial with Mathias & in 2015. Reading notes & Books about modeling
 Do practical exercises. Jun Jul Aug Sept Oct Nov Dec Jan Feb Progress completed the first 5 books on of the Bible 16 Bible reading,(mental and Spiritual Development) A. daily
B. three times a week
C. Twice Weekly
D. Once Weekly 3 charpter a day but stop since last year 2014 Reading every morning and evening. 30 x chapters for Saturday. Write dairy for this reading completions. Create schedules for weekly reading.
 Completed bible reading by March 2014

Note: Bitsed on Capacity Assessment & Capacity Development Plan , be requested to prepare Individua. Act on Plan.

, recon

Main	Activities	Verifiable Indicator	Methods of Implementation	Achievement (Self-evaluation and reason at the middle of March 2015)	Achievement (Evaluation by Manager at the end of March 2015)
1. Centrib	ution to Water Supp	oly Services of Solomon Water (Essential			-
> Co > Ag > Ins > Ve > Bi	nnection rvcy/Assessment string proval stalidion rification ling tieving.	4. 3 weeks - 100% 4. 4 weeks - 80% C. 5 weeks - 60% D. 6 weeks - 40%	Dec Jan Feb Mar 1. Through daily linkages with responsible team (Customer Care) and weekly plan schedule according to the dash board 2. Collective support for improvement of NC processes and time frame 3. Weekly team briefings	New Connections Achievement — (B)	
> Fa top > Ap sci > M ch ma > W > M Update > M	Replacement cilifate olacement request proval of needabs onthip balls meter eck and internance eckly report onthip report lling changes aterials requisition pn off	A. 48 hours = 100% B. 72 hours = 50% Ø. 96 hours = 60% D. More than 96 hours = 40%	Through daily team linkages Daily dash board update of Plan activities measured against actual field output Weekly replacement update	Meter Replacement Achievement – (C)	

3. Illegal Disconnections	A. 48 hours – 100% B. 72 hours – 80% S. 96 hours – 60% D. More than 96 hours – 40%	I.Through daily team linkages 2.Daily dash board update of Plan activities measured against actual field output 3. Weekly replacement update	Illegal Disconnection Achievement (C)
4. Connection Services Monthly Report	A. 07 Days after month end − 100%. 12 Days after month end − 80%. C. 17 days after month end − 60%. D. More than 17 days after month end − 40%.	Through daify team linkages Daily dash board update of Plan activities measured against actual field output Weekly replacement update	Monthly Report Achievement – (B)
2. Contribution to the Project	on NRW Reduction (Essential)		

C	ſ
ī	7
7	
c	2
7	ī
C	١.
7	
r	Ċ
٠	3
-	

	Weekly g Attendance Presentation of pilot site and DMA activities progress Reporting update (Illegal Disconnection and Monitoring	A. Weekly – 100% Parinighty – 80% C. Monthly – 60% D. Moss than a Mowth – 40%	Through daily team linkages Daily dain board update of Plan activities measured against search field output. Weekly replacement update.	Weekly. Attendance Actievement – (B)
3. Chal	Henging Target (V	oluntary)		
6 >	Time Management Reduction of overtime worse punctuality	A. Reduce Overtime/Inteness by 100% Reduce Overtime/Inteness by 80% C. Reduce Overtime/Inteness by 60% D. Reduce Overtime/Inteness by 40% and less	Through effective Dash board schedule activities: > Staff attendance daily monitoring register > Plan activities measured against actual activities	Time Management Achievement – (B)
5ports	Self-Development Fitness Weekly games Weekly walk	at or Social Action (Voluntary)		

	Verifiable) indicators	Methods of Implementation	Achievement (Self-evaluation and reason at the middle of March 2015)	Achievement (Evaluation by Manager at the end of March 2015)
1. Contribution to Water Supply Services of				
I will ensure that J sant working on modeling for NORO this this year.	Sian October B.Sun November C.Sant December D.Sant January 2015 E. Not surn at all	Jus. Sep. Dec. Mar. 1. 2. 3. 1. Get pipe network features from GIS 2. Collection of data in field and GIS 3. Build Skeleton of Model		
I will make sure that ! start working in Honlard model.	75% complete by March B. 69% complete by Merch C. 33% complete by March D. 10% complete by March E. Not start at all.	using Water Gems vi8 seftware. Jun Sep. Dec. Mar. 1. Get pipe network features from GIS 2. Collection of Gats in field and GIS 3. Build Skelston of Model using Water Gens vi8 seftware.		

will utilize my skills in modelling to regularly determine NRW m sections of SW system and also in DMAS	A Weekly B, Formightly Moathly D, After 3 months E. Not at all	Jul Sep. Dec. Mar. J. J	
3. Challenging Target (Voluntary)	Carl Laboratory		
Fresentation on Hydraulic Modelling Updates of Solomon Water's System.	A Once a month B Once in two months Once in three months D Once in six months	1 Training need 2 Hands on 3 Reporting and evaluation on experience and lessons learnt.	
4. Self-Development or Social Action (Volum	itary)		
Training MYY Karare Combat and Self Defense Martial Arts.	S times a week d times a week	Master the basic kicking, punching/striking and blocking techniques. Go in to Basic Kata Training Go to Advance Kicking and Fighting. Movements. Go to Advance Kata training.	

Note: Based on Capacity Assessment & Capacity Development Plan, be recuested to prepare Individual Action Plan.

Individual Action Plan (Ci	allenging Program) for P	hase 3 (Mr/Ms.		Team
San	The supplier was the space	Methods of Implementation	Achievement (Self-evaluation and reason at the middle of March 2015)	Achievement (Evaluation by Manager at the end of 4. March 2015)
1. Contribution to Water Supply Se	rvices of Solomon Water (Essential)			
				1 1
				L - 2 2
2. Contribution to the Project of NF	W Reduction (Essential)			
3. Challenging Target (Voluntary)				
The state of the s			7	
				7
4. Self-Development or Social Actio	n (Voluntary)	1		
				1
	I I I I I I I I I I I I I I I I I I I			

Al Interview 7/05/15

Main Activities	lan (Challenging Program) Verifiable Indicator	Methods of Implementation	Achievement (Self-evaluation and reason at the middle of March 2015)	Achievement (Evaluation by Team Leader at the end of March 2015)
1. Contribution to Water	Supply Services of Solomon Water (Ess			
Contribution to network operations setivities for confidency water supply to customers.	A 24 haurs water supply B) 21 haurs water supply C. 16 haurs water supply D 10 haurs water supply	1. Liaison with reaponsible team to fix burst pipes on mains and service pipes. 2. Continuous technical support towards improvement of network system 3. Attendance on network operations meetings.	Supply to customers not 24hours due to power failure sometimes and NRW components.	
Technical support to field staff during field survey of new connections in Honizar and provinces	Carryout survey assessment with confidence & ro assistance Carryout survey assessment with confidence & ros assistance Lesi confidence in doing survey for new connections No confidence in doing survey for new connections.	lun Jul Aug Sept Oct New Doo Jan Feb M at 1. 2. 3. Preparation of site maps for areas to survey 2. Continuous study and familiarize with network feetures in the system 3. Research on ways to improve water supply network.	The new connection field team assists me during survey.	

Preparation of questions for new connections, meter separation, diversion, of pipeline and severage installat ons.	Full completion of quotations and submission for payment within given timeframe. some completion of quotations and submission, within timeframe. C. Late submission of quotations for payment.	1. 2. 3. 1. 2.	Conti of que Liaise	nuous otes e with	updat	e of lo	cal m	Nev e quot aterial	pricin	g for	prepa			I always achieved this target because it was scheduled accordingly.		
 Attend to customer issues regarding new connections, meter separation, diversion of pipelines. 	Confident and sort out customer issues with no assistance. Confident and sort out customer issues with a one assistance. Less confident to sort out customer issues.	1. 2. 1. 2,				Sept ervice mer ca		Nov	Des her de	Ján	Feb	M ar	•	I always confident & have the experience in sorting out customer issues on spot.		
Contribution to the Pt Supervision for Isolation and boundary of pilot sites.	oject on NRW Reduction (Essential) Conflicter in supervision during isolation of Pilot sites and confirmation of boundaries. B. Some Conflidence in supervision during isolation and confirmation of boundaries.	1. 2. 3. 1. 2.	Ident	imati				Nov aphic n				M ar		Thave the knowledge, experience & skills in supervising	V	

	No confidence at all in supervision during isolation of pilot sites and confirmation of boundaries,	3.	spacin	ng		r boun		with m	efår re	aders	& GI	S Geo	this task.	
6. Supervision of customer survey in the field and compilation of customer list.	Confident in supervision during eusterner survey. Less confidence in supervision during customer survey. No confidence in supervision during customer survey.		meter	ing te	am an	Sep: er sta d field mer se	staff.				Feb	M ar team	I am confident & have the know.edge, skills & experience to supervise this task	
7. Supervision of meter inaccuracy testing activities	Supervising of the mercring test effectively and precisely with confidence B. Supervising of metering rest with Less confidence. C. Supervising of metering test with no confidence.	1. 2. 3. 1. 2. 3.	Liais	e with	h mete	Sept dis fitti er reade	ers fo	r statu	sofm	eters.		M sir	I am confident & have the knowledge, skills & experience to supervise this task	

3

8, Supervision during leakage detection activities.	Well coordination and assisting lenkage team. B. Some coordination and assistance to lenkage team. C. Less coordination and assistance to leakage team.	1. 2.				know	of usi			Feb equipm n techn		
9. Supervision during minimum night flow a: pilot sites.	Confident in step up of flow meter and supervision. B. Some confidence in step up of flow meter and supervision C. Less confidence in step up of flow meter and supervision	1. 2 3. 1. 2. 3.		insta	Aug trainin			Dec	2an	Feb	Mar	Inm confident & have the knowledge, skills & experience in Supervising the team.
10. Supervision & observation during step test at pilot sites3	Confident in step up of flow meter and supervision B. Some confidence in step up of flow meter and supervision C. Less confidence in step up of flow meter and supervision	1. 2. 3. 4. 5. 6.	Hand	insta	Aug trainin		d	Dec	Jar	Feb	M ar	I am confident & have the knowledge, skills & experience in Supervising the team.

"
4
ċ
7
Ċ
ĸ
2.

S. Challenging Target (Vol. 11. Strictly monitor running of new connections Service pipes > 10 meters.	whole of Honiara by 2016 2. Liaise with NR	tomer care & new connection team	This will require a control of the c
12. Effective and precise raw data collected from the field	Required data collected at consecutive times within schedule. C. Require data collected several times and out of schedule. D. Wrong data collected and out of scaedule. 1. Cont data. 2. Liais conference of the conference	Jail Aug Sept Oct Nov Dec	This activity still needs improvemen tby field staff and NRW action team.

4. Self-Development or Soci	al Action (_								_	-	
13. Walking & Jogging (physical- Development)	A) B.	Twice Weekly Once Weekly Once fortnight		Jm	Jul	Aug	Sapt	Oct	Nov	Dec	Jan	Feb	M		I am always committed in
Development)	D.	Once a month	Walk & jog for 5km												this activity.
															I prioritize
14. Participation in Solomon Water	B.	Every week Twice a month		Jun	Jul	Aug	Sep	Oct	Nev	Dec	Jan	Feb	M		this activity
sports activities.(Physical	C. D.	Once a months Once after a month	1.					_						1	because it's the only time
- Development)	D.	Office after a month	3.												every staff
					2, 1		olley b	orts	cordi		ugby			1	have fun.

Individual Action Plan (Challenging Program) for Phase 3 (Ms. Beverly Sa'ohu, Team Leader Customer Care) 1. Contribution to Water Supply Services of Solomon Water (Essential) Jun. Sep. Det. Mat. I will ensure that I hold a meeting with my A. Daily B. Once a week customer care team counterparts to discuss important issues for the day that needs to be We did have a C. Fortnightly meeting once a week addressed and also to inform them on D. Once a month important information that needs to be relayed to customers on status of SW unless we have an 1. Assess outstanding customer urgent task to do services. issue at the end of each working day to be addressed on the next day 2. Liaise with other SW then we might departments on daily basis to better improve status of services. 3 Prepare information for the daily or.efing.

I will ensure that all customers complaints that comes through email and letters are

opened daily, analyzed and immediately

action or forwarded to relevant department for action in a timely manner. Along with this, I will ensure that I communicate customer issue on timely manner on progress

of issues or complaints received to our

A. Daily

B. Weekly
C. Fortnightly
D. Monthly

Conduct short meeting (15 minutes) before opening of customer service counter.

Jun. Sep. Dec. Mar.

We did that every

day. But we have

pending ones that caused by slow

customers.	B		feedback on other
		1. I will open the letter of complaint as soon as I receive it 2. I will meke sure the entire customer complaints letter are analyzed properly. 3. Compile all necessary documents together with appropriate form and complaint letter and forwarded to responsible units for action. 4. Advice customer of the process that needs to take and the status or the progress of the complaint. 5. Manthain follow up on relevant units until it is solved.	units.
I will ensure that I produce the Customer care Report to the SD & C Manager.	A. Weekly B. Monthly C. Every months D. Net at all	Jun. Sqp. Dec. Mar. 1. Liaise with the customer care team members to collect information / data on progress of activity. 2. Analyze and summarized information. 3. Produce brief but relevant report out of the data.	3.

ഗ	
4	
Ċ	
7.	
Ψ	
Ń	
4	

2. Contribution to the Project of NRW Reduction (Essential)

A. Daily

B. Weekly

C. Fortnightly

D. Menthly

· I will make sure that I daily check

the status of illegal users that have been identified within the pilot

areas, if they have responded to validate their account with SW

within the grace period. This information will be daily passed on

to the illegal team (Under

Connection services) and the NRW

taskforce Leader.

	I will ensure that I attend all NRW weskly meetings to inform the NRW counterparts on status of illegal users and also other information' issues that is important to be discussed in the meeting	A. Weekly B. Fortnightly C. Montaly D. Not at all	I. Knep daily recerds of processing of issues. 2. Knep daily recerds of processing of issues. 2. Koep record of status of illegal users 3. Provice update in the weekly meeting.	9.
3. Cha	llenging Target (Voluntary)			
	Ensure that I will train my junior staff to analyze and disseminate right information to sustomers.	Weekly Formightly Monthly Two times in a month	Jun. Sep. Dec. Max. 1. 2. 2. 3. 1. Assess their need. 2. Prepare session or action plan. 3. Actual training.	B. Done in a form of briefing but currently schedule for one on one training session.
4. Self	Development or Social Action (Volume			
1.	30 Minutes' walk in the morning and evening.	A. Daily B. Weekly C. Formigatly D. Monthly	Jun. Sep. Dec. Mar. I. Walk to keep fit and healthy	λ.

Jul. Sep. Dec. Man. B.

 Make sure that I receive the illegal users list for pilot area

2. I will check against the NCS

to see if payments are made.

3. I will notify my Customer care staffs on the names of the

them whenever they come in.
4. I will cally update NRW on

status

system at each end of the day

illegal users to keep an eye on

on a timely manner.

Note: Based on Capacity Assessment & Capacity Development Plan, be requested to prepare Ind vidual Action Plan.

Individual Action Plan (Challenging Program) for Phase 3 Ms Sophia Angelique Tango Team: CCC Achievement Achievement (Self-evaluation and reason at the middle of March 2015) Manager at the end of March 2015) Main Activities Verifiable Indicator Methods of Implementation 1. Contribution to Water Supply Services of Solomon Water (Essential) I. Attendance to customer queries by a. Every Day b. Once in 2 days July Oct Dec March phone and email. I will make it my c. Once a week goal to ensure that all customer queries d. Once in every that I receive through email and phone fort night are attended to immediately and also ensuring that the responds we provice I will make sure that I attend to achieve satisfaction to them. all incoming calls to SW. I will make sure that I check
 SW email regularly and
 acknowledge to customer that their queries been received.

3. 1 will ensure that | provide correct information to customer on the spot forward to relevant staff if required. 4. I will ensure that I am in regular contact with various departments to be updated on important information for customers. 5. I will ensure that I follow up with different department on customer issues daily. 6. Replying to customers daily

 I will make it my goal to complete all school education materials soon and start using them to provide awareness to schools in Honiara as soon as possible. 	a. By end of August b. By End of September c. By End of November d. By March 2015	I. Discuss with other SW departments on what is best to put in school education materials. Produce different types of awareness mediums based on the important information including brochures, power point presentation etc. Carryout schools awareness programs.	6,
Contribution to the Project of NRW Red I. I will make sure that for each weekly meeting, I must contribute the progress of PR activities in terms of NRW each week and also to gather information what PR activities is required for the week ahead.	a. Weekly b. Twice a month c. Once in three months d. Once in six months	1. I will ensure that all PR activities proposed by NRW is carried out within the timeline before the next meeting. 2. I will prepare brief progress	a:

O	1	
4		
Ċ	,	
ď		2
Ň		
7		

		report on PR activities for NRW to be presented in the meeting. 3. I will attend meeting and present achievements. 4. I will keep continuous contact with all NRW sub teams.	
3. Challenging Target (Voluntary)			
I will ensure that PR team has a proper archiving system to keep all PR materials for ongoing use.	Achieve by: A. September B. November C. February 2015 D. Not achieved at all	1. Create database record of all PR materials 2. Proper filing system where materials are categorized based on the contents of it.	b. November
2. I will ensure that for PR activities,	A. All of PR public	Jul Oct Dec Mar	
a representative from operation	activities B. 80% of PR public	1.	
team attends to assist in giving the	activities		
public correct information regarding technical questions	C. 50% of PR public activities D. 10% of PR public activities	I must involve at all times the operation team when preparing for public awareness program	
4. Self-Development or Social Action (Volu Involve in Sports to stay healthy	1 1000	for public awareness program	

Individual Action Plan (Challenging Program) for Phase 4 (Mar 2014 - Mar 2015) (Ms. Daisy Rose Menaga, Meter Reading

Matin Addivities	Valifi Məlindlərici	Methods of Implementation	Adhravanon Adhravanon (Gelfavillation and (Ovaliation by Grassocialistic and decrease (Ovaliation by Grassocialist and G
Contribution to Water Supply Services of While ensure that meter reader's reading schedules are prepared daily	A. Daily B. Weskly C. Monthly D. No: at all	Jun. Sep. Dec. Mar 1. Prepare reading schedule on a daily basis 2. Delegate preparation of reading schedules to others when required.	Achieved C Sometimes we experienced internet problem so Reading schedule was prepared monthly to avoid late reading as we use schedule + the handheld device
Menaging & Monitering of Customer Meter Readings Ensure to avoid mistakes to make improvement	A. On a daily basis B. Once a week C. Once a month D. Nor at all	Ini. Sept: Dec. Mar. I. Ensure that Incoming customer readings are inputted and uploaded fator the system on the same day	Achieved A Reading date were uploaded on the same day except when the system is down and we have to wait on IT team to fix the problem
Attend to Customer Queries Einstere that constomer queries are all attended to without exception in a timely manner	A. Within 10 days B. Within 20 days C. Within 30 days D. Not at all	Jun. Sept. Dec. Mar. 1. 1. Ensure that all customer queries are attended to in a timely manner.	Attending to Customer Queries was bit of a challenge before but now the length to respond improved a lot since when reading photos were introduced.

Main Astivities	Ventrable indicator	Nethods of Amplementation	Achievement (Callewinning) (Callewin
		1	Achieved A
2. Contribution to the Project of NRW Redu	setion (Essential)		
Ensure natendance in NRW daily meetings by myself and/or substitute and share relevant information with team members	A.Every weekly meeting B. Twice a month C.Onse: in three months D.Once in six morths	Ju. Sep. Dec. Muz. 1. 2. 3. 1. I will check schedule of the weekly meeting every time and attend. 2. Saure relevant information with town remitlers.	Achieved A Attended NRW daily meetings except when on annual leave and sick leave
Conduct Monitoring of status of pilot customers	A. On a monthly basis B. Once every two months C. Once in six months D. Nosara'l	I. Report update in NRW weekly meeting Report To NRW Team leader	Reports were done on a monthly basis (A) based on reports done by the meter Readers
Check to verify if Meter Information for pilot site is updated in the billing system	A. Weekly B. Twice a month C. Once in three months D. Not at ail	Jul. Sept. Dec. Mar. 1. Ensure that all meter	Weekly Cheeks to confirm Meter updated in the system

Main Activities	Valifiable indicator	Methods of tradementation	Ashievement AAchievement (Sef-evaluation and (Svaluation by reason at the middle of March 2015) March 2015)
		updated in the system 2. Report Update to NRW Team Leader	
3. Challenging Target (Voluntary)			
Create a friencly and conducive working environment for team members	A. July B. September	Jul. Sept. Dec. Mar.	Taking of reading pictures started in August
 ✓ Clean & fidy ✓ Feel happy about their work 	C. November D. February		2014 and in September,
Their own space – Freedom to work and communicate with co-workers Good workplace Culture		Create a good workplace, culture and working environment for team members	we've experienced a change in our working environment. A positive change.
4. Self-Development or Social Action (Volum			Achieved B
Reading of Books	A. Two per week B. 1 per week C. 1 per fortnight D. 1 per month	Jul. Sept Dec. Mar.	Achieved B
	D. T per monte	Read good books for self development	
Create SW Netball Team	A. By end of July B. By end of August C. By end of September D. By end of Octobet	Jul. Sept. Dec. Mar.	SW Netball team was
			established early this year. First game played
		Create a netball team for all SW ladies	in Murch 2015 against Solomon Airlines Netball team

O
4
Ċ
Į
۲
7
О

Individual Action Plan (Challen)		hase-3 (Ms	. Mary Tatoa, NRW B	
Visito Assivities	Vanfigbio indicator	Nethodsoftinglementation	Additivement (Self-sydpidlorand) respond (fromtiddloof (Mard, 2014)	Achievement (Evaluation by A Managaret the card of March 2015)
1. Contribution to Water Supply Services of	Solomon Water (Essential)			
I will ensure that I am procuedies in my role as a billing team keader to contact SW Province officers to email me the water meter readings each moral between 22 rd to 38 rd . Strive, to solvere accuracy in Province readings, when manually inputed in the system. I must also ensure that bills are sending out to Frovince officer as soon as I. update the readings in the NCS system.	A Receive readings every Mosti B. Receive readings 10 months in a year C. Receive readings twice in every 3 months D. Receive readings twice in a year	Mart's, Sep. Dec. Mart's,	A	
Setup the indicators so that 'A' is the	e nighest indicator.	connection was later identified.	/ 6	
		3. I ensure reconnection fee for prevince		
I will easure that meter reading schedule produced for meter readers to follow billing date range.	A. Prepare reading schedule once a month B. Propare reading schedule every two months C. Prepare reading schedule on quarterly.	accounts are shown in each account and mounter.	A	
I will ensure to produce water sales report, Aged debtors summizer, monthly cycle seport, Top 100 water user/sectsomers for the month and other seports to Revenue coordinator(my boxs) after month and other month and other seports to respect to the second of the second	A.Froduce monthly report on the first week. B.Froduce monthly reports on the second week. C.Froduce monthly report on the third week D.Froduce monthly reports as and when required		Α	
I will ensure that all disconnected customers who paid their bills and reconnection fees must be activated in the system (NCS) the following day	A.Every week B.Twice a month C.Once a month		A	

of the consumption.		Updating changes of meter information. Report of update data to NRW team and also water consumption for pilot site					ingut in the system per month, also in certases.			
	D.20 customers a month	2	-		-		therefore meter replacement			
nigher ground was conscious about water	B.40 customers a month C.30 customers a month	1.	-	-	-	-	There are plenty DMA and			
ites and now DMA meter replaced and raised to	month	1	Marl4	Sep.	Dec.	Mar15.	A			
Contribution to the Project on NRW Red	uction (Essential) A.Update 50 customers a							-		
							my other colleagues to be responsible for:			
	030%						Another 30% I delegate to			
nonitoring the daily activities of the tilling ection	A.80% B70% C.60% D50%						В			
will ensure to keep the records of all bills that re dispatched to SI Postal Cooperation every nontal.	A.95% B.80% C.70% D.60%					11,	В			
pon receiving the hard copy customer list from the cashier.						-				

Brief meetings within our billing section as and when any issues arise and any task to be done.	A. 12 times in a year B. 10 times in a year C. 2 times in a year D. 3 meeting	1,2	Mar14.	Sep.	Dec.	Mar15.	В	
4. Self-Development or Social Action (Volum								
Lused to walk back home after work with other ladles and participate in sports in my community.	A. 20 hours a month B. 30 hours a month C. 40 hours a month D. 0						A	

Midin∆o(tr/life)	Voille bie beite tor	archody with pleus of the	(Self-evaluation and treatment of the middle of Manager at the end of March 2015)
Contribution to Water Supply Services of Ensure that payment plan are monitored and customers to turn up to pay on time or on due dates.	A. Daily B. Twice in a week C. Every Formightly D. End of each month E. Once in 2 month	June Sept Dec Mar 1 2 3: 1. Manually go through payment plan customer records (NCS system). 2. Remind customer by phone when pay plan fail. 3. Advice disconnection team to disconnect fail customers	B. 80 % I have done this st every end of months.
 Contribution to the Project of NRW Redu Provide update information on disconnections in pilot areas due to high outstanding bills. 	setton (Essential) A. Once a weec B. Formightly C. Once in a Month D. Once in 3 Month	Sept Dec Mar Keep records of all disconnected customers and continually cross check with pilot customers. Liaise with NRW counterparts on regular pasts. Produce weekly data on disconnected customers on pilot areas for weekly meetings.	A. 60 % doing this during the period, especially to our NRW team.
Chailenging Targe: (Veluntary) Ensure 1 collect 70 % of outstanding debts for Fioniara customers	A. Twice a week B. Once a month C. Twice a month D. Once in two	Jun Sept Dec Mar	A: I have tried my best and I rate my self

Individual Action Plan (Challenging Program) for Phase 3 (Ms. Roster Tinarai, Debt Collection Team)

ഗ
4
ĊΩ
ψ
'n
7

Verlinibi stridientos	Methods of Deplementation	reason at the middle of	Manager at the end of
nioath	Deliver comand notice on selected arese door to door. Remird commercial customers via telephone, emails for payments. Disconnect services with outstanding bills.	thal I only achieve 60% or less	
ary)			
A. Once a week	Jun Sept Dec Mar	B. 40% attend to sports,	
B. Twice in a month	2	need to improve on	
D. Once in two month	Italise with the sport coordinators for activities for the week.		
	month A. Once a week B. Twice in a month C. Once in a month D. Once in two	month 1. Deliver canned notice on selected areas door to door? 2. Remird commercial customers via telephone, emails for payments. 3. Disconners services with outstanding bills. A. Once a week B. Twice in a month C. Once in a romith D. Once in two month 1. Italies with the sport coordinators	month

Individual Action Plan (Challenging Program)

(Ms. Mary Pidoke, Customer Care) March 2014-March 2015

tain A	ctivities	M	Methods of Implementation										Achievement					
1.	Contribution to water supply service of Solomon Water																- H	
A.	Ensure that I work in accordance to SW regulation and policy and to enhance customer satisfaction on deliverance of service provided by customer service staff	Consultation of SW Policy/Regulation: a. Twice a week b. Once a week c. Once a fortnight d. Once a month c. None at all		A 1 = 2 = 3 = 4 = 5 = 6		Мау	Jun]a]	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	B. Currently there is no policy/regulation in placed, therefore to enhance customer satisfaction on deliverance of service provided, need to lists with the team head and other.	
B,	Ensure that all customers' queries are satisfactory answered on timely manner	Customer queries are answered a. Same hour b. Same clay c. After one day d. After 3 days c. After I week		1. 2. 3. 4. 5.	W Da In	eekly aily me dividu	ily rec repor eeting al ski	ords of writi with a	ng custon ssmen	er car	e staff	d challe		e.			departments Customer queries are answered depending on the nature of complaint/queries For some can be answered right away and some depending on as soon as	
C	Ensure that other departments are informed quickly on customers request to easure that service are delivered on timely manner	5. Not at all Customers needs relayed to relevant department a. Same hour b. Same day c. After 1 day d. After 3 days e. After 1 week f. Not at all															we get feedback B. Other departments are informed on the same day on customer requests	
D	Provide weekly updates to customer service team leader	Weekly reports a. 4 times a month b. 2 times a month c. 1 time a month															Weekly updates is done on weekly basis	

E.	Ensure that I carry our personal assessment based on performance indicators sudhe in Job descriptions Liaise with PR team to Inform customers on Irraportant events	d. Notse all Individual skill assessment a. Once a month b. Once every 6 months c. Once a year d. Notse all Public avarentes a. Formightly basis b. Once a month c. Once every 2 months d. Once every 6 months e. Notse all		B. This was not done at all because I still did not have any job description, since! moved to customer care. I inform customers on important events through email, face to fice when customer consen in a the customer consen				
2.	Contribution to pilot project	e. Notatan						
	Involve in awareness programs on pilot sites	a. Drice formightly b. Once a month c. Once every 3 months d. Once every 6 months e. Once a year f. Not at all	Apr May Jun Jul Aug Sep Oct Rov Dec Jan Feb Mar 1 1 1 1 1 1 1 1 1	E f did not attend any awareness programs on pilot sites				
	Weekly reporting of status of pilot customers	a. 4 times a month b. 2 times a month	Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar	E. I did not do weekly				
	to other NRW reduction sub teams	c, Once a month d. Once after 2 months e. After 6 months f. Not at all	Xeep track of customers status on daily basis	reporting of status of pilot customers. I only do during Severly's absence.				
16	Assisting customer in valicating their accounts	a. The same hour b. The same day c. After 1 day	Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar	Assisting customers in validating accounts depends as soon as				
l.		d. After 1 week e. After 1 month	Provide customers with proper information on SW	customer comes				
3.	Challenging target (voluntary)							
	esent work progress at the g or workshop	a. Monthly basis b. After 3 months c. After 6 months	Apr May Jun Jul Aug Sep Ott Nov Dec Jan Feb Mar	I could not present work progress every time, only i I was asked to				

Between	d. After Lyear e. Not at all	Keep track of daily achievements and challenges Prepare monthly summary reports		
Enlightening activities (voluntary)				
Health and fitness	Exercise a. 5 times a week	Apr May Jun Jul Aug Sep Oct Nov Dec Ian Feb mar	A. I did walk every day and as	
	b. 3 times a week	b. 3 times a week	2	for votley ball depends on
	c. 1 time a week	3	our sports schedule and the	
	d. Notatall	Walk for ife Volley ball Weight lifting.	weather.	

	"
	ĭ
	ċ
	۲
	ď
r	ĸ,
	Š
	~

Many Admittes	Vorlimbe Indicator	ivelines of Englandation	Additionemia (Self-exclusion and reason at the middle of March 2015)	Additional to the Control of March 2015
Continue with main activities for Pilot Sites 1) Record Leakage points locations ii) Update Pipe network locations iii) Record castomer meter.	Collect Field Data; A. Once a week B. Once a month C. Once every 2 months D. Once every 6 months	GPS data collected during field survey Jen. Sqp. Dec. Mar. Liaise closely with other NRW counterparts to be informed of where every system features are installed on site. Collect field data.		
3. Challenging Target (Voluntary) Using GIS customer data to join Billing customer data to determine consumption by geographical location or supply zones in order to assist towards DMA implementation.	A. Operational B. Linking work complete but not operational. C. Linking work is still ongoing. D. Still collecting customer data.	1. Collect customer data from field 2. Lisise with Billing and meter readers to properly verify each customer and their status. 3. Schedule into phases to ensure that work progress can be monitored. 4. Link customer data to GIS 5. Implement It as best suit requirement.		

Individual Action Plan(Challenging Program) for Phase 3(Mr. GAVIN BARE, NRW Technical Sub-Team)

A. 100% B. 75% C. 50% D. 25%

Map Customer accounts for Honizra

A. Data ready for use B. Data collected and

preparec
C. Data collected
D. No data collected
Update Map of Honiara
Wasta Water System
A. 100%
B. 75%
C. 3056
D. 25%

Development of GIS

Workable System
 Implementation
 Stage
 Development Stage
 No Activity

Workflow

Jun. Sep. Dec. Mar.

Conduct field survey to update/locate S'W assets.

 Utilize meter readers to collect data while doing their meter

Unise between departments and

developing workflow for GIS.

JICA GIS expert team in

reading schedule.

I. Contribution to Water Supply Services of Solomon Water (Essential)

Develop a reliable GIS database by collecting accurate data, efficiently managing and modulous GIS with the Collecting for the Coll

2. Contribution to the Project of NRW Reduction (Essential)

managing and producing GIS information for SW operations.

i) Update Map of Honiara Water Supply System ii) Map Costomer accounts for Honiara iii) Update Map of Honiara Wasse Water

iv)Develop GIS Workflow

Achievement 4 (Evaluation and reason act terridale of March 2015) Achievement 4 (Evaluation by March 2015)

Al Enterview 7/05/15 4pm

Individual Action Plan (Challenging Program) for Phase 3 (Mr/MATHEW MAFE, Leakage supervisor,

NRW

-Majin Astivitiss	Vorificable Incligation	Methods of Implementation of	Collevement (Set- fusition and reason) the middle of March 201 (2015)
Contribution to Water Supply Services of A. I will learn how to upload date from Pressure longer, correlator and ultrasonic flow meter and then analyses the data.	Solomen Water (Essential) a. Weekly Formglity c. Monthly d. After two month	Jax. Sep. Dec. Mar. 1. 2. 3. 1.1 Site training 1.2 Office training 1.3 Work stop.	A. Achieved on how to upload data but still need training on how to analyses data collected.
B. I will train new staffs and appentiership on how to operate leakage equipment's'.	once in a month once in two month offer three month once in a Semester	Jun. Sep. Dec. Mar. 1.1 Plas the training and propose to the train leader. 1.2 Select staffs need training and equipment going to be used.	B. Achieved in training staff in the field on how to operate leakage equipment.

I will document reports on daily tasks and a monthly report to the team leader.	Daily b. Weekly c Fortnightly d monthly	Jul. Scp. Dec. Max.	C. Achieved on daily reporting but still working on monthly report.
		1.1 Prepared all report forms for field tasks. 1.2 Fill in report forms according to daily task completed. 1.3 Compile monthly report folder.	
A. I will mastermind how to operate	iction (Essential)		A. Achieved and
the ultrascric flow meter and the correlator.	a. Weekly Fortnightly c. Monthly d. Once in two- month.	Jul. Sep. Dez. Mar 1.1 1.2 1.3 1.1 site training 1.2 office training 1.3 workshop	can operate the ultrasonic with no support.
I will supervise the constructors at pilot sites according to the check list.	Daily b. Weekly c. Formightly d. Monthly	Jul. Sep. Dec. Mbr.	B. Actileved and able to supervise the contractors with so kelp, according to
		Provide the design and measurement for the contractor. Right materials for the task. Proper instellation is carried out.	the Siwa standard.

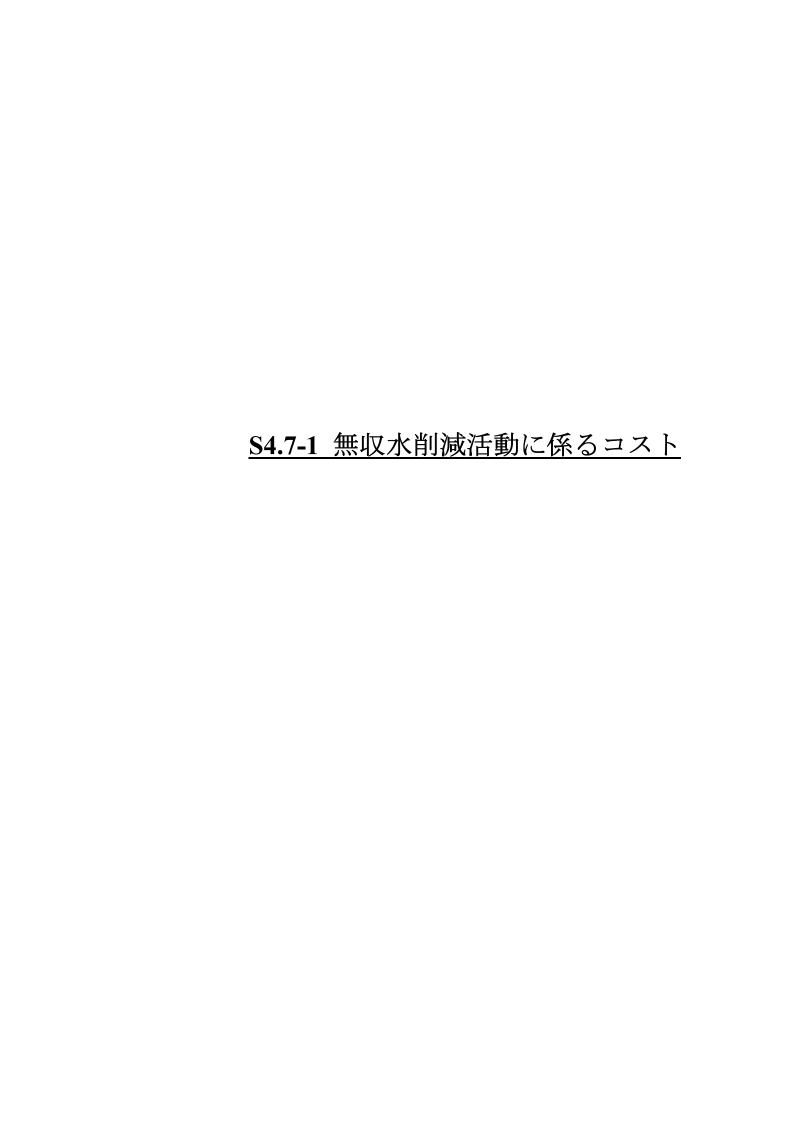
(J	1
	Ž	١
č		1
(٠	J
1	Ċ	٥
(C	5

C. 1 will calculate leakage lose on expose leaks from DMA.	ii: Weekly b: Fortughtly Mentily d: Once in two- month	Jul. Sep Dec Mir. 1.1 1.2 1.3 1.1 Seek raining from JICA expert and from 'earn leaders. 1.2 Office training 1.3 workshop	C. Achieved and understand how to calculate leakage lose on expose leaks.	
Challenging Target (Voluntary) A. 1 will learn how to draw or design water utilities and related ones	a. weeky b. Monthly c. Once in two moath Once in three moath	1.1 Sep. Des. Mar 1.1 Sep. Des. Mar 1.2 responsible department to arrange training. 1.2 Seek training from expert 1.3 Office training.	A. Nor achieved but still on going.	
Self-Development or Social Action (Volum A. I will play table terms	a. Daily Weekly c. Fortnightly d. monthly	Jun. Sop Dec Mar 1.1 allocate time after official hours	A. Some times.	

Main Aefivities			Addisvarient Calle schrift mindresson spittemitals of March code of Calles	Achievment (Oxellationby Vanageras file end of Vareh 2015)
Contribution to Water Supply Services Contribution to network operation activities for maintenance of leal and monitoring of daily water supply the supply of leakage detection maching for any team request for leasusistant,	of Sofomon Water (Essential) as A 24 hours water supply B 21 hours water supply C 15 hours water supply D 10 hours water supply D 4 hours water supply D 5 hours water supply D 6 hours water supply	Jul Oct Sep Nov Dec Mar 1. Responsible team to fixing service pipe, mains and valve. 1. Jun. Sep. Dec. Mar. 1. Licatify of different types of leaks.	> 24hours supply to customers, but dues to failure of power or NRW activities > 2 days/week or. survey, measuring and identify of leaks	
Contribution to the Project of NRW Re Assistance of Isolation boundary valves, installation of new valves, and to know pilot areas supply end.	A Confident with no supervision B. Confident with supervision C. Less confident D. No confident as	1. Identify or confirms exist valves and new valves on pilot sites. 2. Confirm of customers on pilot sites	> Confident without supervision.	

Assistance of customer registration list on pilot sites, DMA Assistance of testing meter inaccuracy and from customers request meter fault.	A Confident with no supervision B Confident with supervision C. Less confident at all A Confident with no supervision. B Confident with supervision C. Less confident b. No confident st all	Jed Sep Dec Mar. 1. To identify of customers status, and confirm customer eccounts active or not active. Jost Sep Dec Mar.	> Confident withcut supervision, I have learn knowledge and skill preferred pilot sites > Confident without supervision.
4			

3. Challenging Target (Voluntary)			
Completion of pilot sites or DMA, it challenging of old exist lines need to re locate and buried of expose pipe lines.	A. Reduction of NRW by 20% for DMA areas B. Reduction of NRW by 30% for DMA areas C. Reduction of NRW by 50% for DMA areas	Jul. Sep. Doc. Mirr. 1. 2. 3. 1 Target to NRW reduction team. For support.	> NRW teams require more support from all teams within operation teams
Collecting of leakage photos or data from pilot sites (DMA) monitoring, to control for maintenance werk.	A. Monthly (B.) Weekly C. Once/week D. Twice week	1. Monitoring to NRW reduction of DMA sites or areas.	➤ Weskly monitoring achieve, but still on going.
4. Self-Development or Social Action (Voluntar	y)		
Walk for Life and usual Solomon water activities (sport).	A. every days B. Twice a week C. Once a week D. No day at all	1. Participate on paly soccer and volley ball.	➤ Physical fitness/healta



Cost on NRW Reduction Activities a	t White River - Namo Ruka (No.9)
------------------------------------	----------------------------------

Cost on NRW Reduction Activities at White River - Namo Rul	(No.9)			
Tasks	Details	Amount of personnel (SBD)		Amount of Material & Equipment (SBD)
1. Survey of NRW ratio before countermeasures				
1.1 Preparation of network drawing		210	0	0
1.2 Field survey (Valve check, Visual leakage detection, etc)		2,584	64	0
1.3 Preparation of isolation and step test (Valve installation)		3,072	96	4,440
1.4 Preparation of customer list		236	0	0
1.5 On-site public awareness		1,219	31	0
1.6 Distribution of public awareness pamphlet		0	0	0
1.7 Connection identification and verification		3,548	64	0
1.8 Customer meter functioning check		3,548	64	0
1.9 Measurement of visibly-detected leakage		3,548	64	0
1.10 Notification letter to illegal uders		521	31	0
1.11 Customer meter reading of 24 hours consumption		1,774	64	0
1.12 MNF & Pressure measurement		3,548	64	0
1.13 Customer meter inaccuracy test (all meters)		3,548	64	0
1.14 Calculation of NRW ratio		1,608	0	0
Sub-total	L	28,964	606	4,440
2. Countermeasure			-	
2.1 Step test		1,774	64	0
2.2 Leakage detection		5,322	96	0
2.3 Pipe repair		7,120	259	1,545
2.4 Legalization of illegal connection		502	31	0
2.5 Disconnection of illegal connection		1,670	215	0
2.6 Customer meter raising (newly-installation/replacement)		17,800	650	16,688
Sub-total Sub-total	L	34,188	1,315	18,233
3. After Countermeasure				
3.1 Customer meter reading of 24 hours consumption		1,126	64	0
3.2 MNF & Pressure measurement		3,548	64	0
3.3 Customer meter inaccuracy test (random sampling)		3,378	96	0
3.4 Calculation of NRW ratio		2,010	0	0
Sub-total Sub-total		10,062	224	0
4. Routine Activities				
4.1 Update of drawings and attributes (GIS database)		1,050	161	0
4.2 Update of customer list		210	0	0
4.3 Update of billing system		236	0	0
Sub-total Sub-total	L	1,496	161	0
Total		74,710	2,306	22,673

Note: Depreciation of vehicle, some pieces of equipment such as leakage detectors, pipe detectors, etc. are not included in the cost.

Cost on NRW Reduction Activities at Lenggakiki (No.13)				
Tasks	Details	Amount of personnel (SBD)	Amount of Consumabl e (SBD)	
1. Survey of NRW ratio before countermeasures				
1.1 Preparation of network drawing		210	0	9,606
1.2 Field survey (Valve check, Visual leakage detection, etc)		668	20	0
1.3 Preparation of isolation and step test (Valve installation)		5,350	104	0
1.4 Preparation of customer list		236	0	
1.5 On-site public awareness		0	0	
1.6 Distribution of public awareness pamphlet		913	20	
1.7 Connection identification and verification	ļ <u>.</u>	7,050	104	
1.8 Customer meter functioning check 1.9 Measurement of visibly-detected leakage	-	7,050 5,592	104	0
1.10 Notification letter to illegal uders	-	3,352	20	
1.11 Customer meter reading of 24 hours consumption	ļ	1.232	41	0
1.12 MNF & Pressure measurement		2,640	41	0
1.13 Customer meter inaccuracy test (all meters)		4,980	104	
1.14 Calculation of NRW ratio		2,010	0	0
Sub-total		38,345	641	9,606
2. Countermeasure				
2.1 Step test		1,644	41	0
2.2 Leakage detection		2,796	41	0
2.3 Pipe repair		2,988	63	9,976
2.4 Legalization of illegal connection		0	0	0
2.5 Disconnection of illegal connection		292	20	0
2.6 Customer meter raising (newly-installation/replacement)	<u> </u>	0	0	40,228
Sub-total		7,720	165	50,204
3. After Countermeasure				
3.1 Customer meter reading of 24 hours consumption		1,232	41	0
3.2 MNF & Pressure measurement		3,288	41	0
3.3 Customer meter inaccuracy test (random sampling)		996	20	0
3.4 Calculation of NRW ratio		2,010	0	0
Sub-total	T	7,526	102	0
4. Routine Activities				
4.1 Update of drawings and attributes (GIS database)	ļ	1,050	63	
4.2 Update of customer list	-	210	0	
4.3 Update of billing system	I	236	0	0
Sub-total		1,496	63	0
Total		55,087	971	59,810

Note: Depreciation of vehicle, some pieces of equipment such as leakage detectors, pipe detectors, etc. are not included in the cost.

Tasks	Details	Amount of personnel (SBD)	Amount of Consumabl e (SBD)	
1. Survey of NRW ratio before countermeasures				
1.1 Preparation of network drawing		210	. 0	
1.2 Field survey (Valve check, Visual leakage detection, etc)		2,864	60	(
1.3 Preparation of isolation and step test (Valve installation)		7,160	385	2,66
1.4 Preparation of customer list		236	0	(
1.5 On-site public awareness		0	0	
1.6 Distribution of public awareness pamphlet		0	0	
1.7 Connection identification and verification		2,532 2,532	60	
1.8 Customer meter functioning check 1.9 Measurement of visibly-detected leakage		2,332	60	
1.10 Notification letter to illegal uders		511	29	
1.11 Customer meter reading of 24 hours consumption		1.266	60	
1.12 MNF & Pressure measurement		2,708	60	
1.13 Customer meter inaccuracy test (all meters)		3,798	60	
1.14 Calculation of NRW ratio		3,216	0	
Sub-total Sub-total		29,897	834	2,664
2. Countermeasure				
2.1 Step test		1,678	60	(
2.2 Leakage detection		3,356	60	
2.3 Pipe repair		4,120	122	6,16
2.4 Legalization of illegal connection		0	0	
2.5 Disconnection of illegal connection		292	29	1
2.6 Customer meter raising (newly-installation/replacement)		25,750	769	24,06
Sub-total		35,196	1,040	30,22
3. After Countermeasure				
3.1 Customer meter reading of 24 hours consumption		1,266	60	- 1
3.2 MNF & Pressure measurement		2,708	60	(
3.3 Customer meter inaccuracy test (random sampling)		5,064	122	- 1
3.4 Calculation of NRW ratio		3,618	0	
Sub-total		12,656	242	-
4. Routine Activities				
4.1 Update of drawings and attributes (GIS database)		630	91	
4.2 Update of customer list		210	0	
4.3 Update of billing system		236	0	
Sub-total Sub-total		1,076	91	
Total		78,825	2,207	32,88

Note: Depreciation of vehicle, some pieces of equipment such as leakage detectors, pipe detectors, etc. are not included in the cost.

Cost on NRW Reduction Activities at Mbokonavera-1 (No.5)

Tasks	Details	Amount of personnel (SBD)		Amount of Material & Equipment (SBD)
1. Survey of NRW ratio before countermeasures				
1.1 Preparation of network drawing		210	0	0
1.2 Field survey (Valve check, Visual leakage detection, etc)		699	3	0
1.3 Preparation of isolation and step test (Valve installation)		2,098	12	5,496
1.4 Preparation of customer list		236	0	0
1.5 On-site public awareness		0	0	
1.6 Distribution of public awareness pamphlet		689	3	
1.7 Connection identification and verification		3,340	12	
1.8 Customer meter functioning check		3,340	12	0
1.9 Measurement of visibly-detected leakage	<u> </u>	3,304 453	12	0
1.10 Notification letter to illegal uders 1.11 Customer meter reading of 24 hours consumption		2.227	8	
1.11 Customer meter reading of 24 nours consumption 1.12 MNF & Pressure measurement		2,227	8	
1.13 Customer meter inaccuracy test (all meters)	<u> </u>	2,334	12	0
1.14 Calculation of NRW ratio		1,206	0	
Sub-total		22,429	90	5,496
2. Countermeasure				
2.1 Step test		1,347	8	0
2.2 Leakage detection		2,203	8	0
2.3 Pipe repair		2,098	36	5,007
2.4 Legalization of illegal connection		210	0	0
2.5 Disconnection of illegal connection		292	3	0
2.6 Customer meter raising (newly-installation/replacement)		12,591	89	21,635
Sub-total		18,741	144	26,642
3. After Countermeasure				
3.1 Customer meter reading of 24 hours consumption		1,871	8	0
3.2 MNF & Pressure measurement		2,047	8	0
3.3 Customer meter inaccuracy test (random sampling)		935	3	0
3.4 Calculation of NRW ratio		1,206	0	0
Sub-total		6,059	19	0
4. Routine Activities				
4.1 Update of drawings and attributes (GIS database)		840	16	0
4.2 Update of customer list		210	0	
4.3 Update of billing system		236	0	0
Sub-total Sub-total		1,286	16	0
Total		48,515	269	32,138
Note: Depreciation of vehicle, some pieces of equipment such as leakage	ge detectors, pipe detectors,	etc. are not		

Cost on NRW Reduction Activities at Tuvaruhu-1 (No.14)

Cost on NRW Reduction Activities at Tuvaruhu-1 (No.14)				
Tasks	Details	Amount of personnel (SBD)	Amount of Consumabl e (SBD)	Amount of Material & Equipment (SBD)
1. Survey of NRW ratio before countermeasures				
1.1 Preparation of network drawing		210	0	0
1.2 Field survey (Valve check, Visual leakage detection, etc)		1,723	37	0
1.3 Preparation of isolation and step test (Valve installation)		3,446	146	
1.4 Preparation of customer list		236	0	
1.5 On-site public awareness		0	0	
1.6 Distribution of public awareness pamphlet 1.7 Connection identification and verification	<u> </u>	861 1,723	18 37	
1.8 Customer meter functioning check		1,723	37	
1.9 Measurement of visibly-detected leakage		1.723	37	
1.10 Notification letter to illegal uders		861	18	
1.11 Customer meter reading of 24 hours consumption		1,097	37	
1.12 MNF & Pressure measurement		3,019	37	
1.13 Customer meter inaccuracy test (all meters)		3,292	55	
1.14 Calculation of NRW ratio		2,010	0	0
Sub-total		21,924	459	0
2. Countermeasure				
2.1 Step test		1,509	37	
2.2 Leakage detection		1,263	18	0
2.3 Pipe repair		2,584	55	0
2.4 Legalization of illegal connection		0	0	0
2.5 Disconnection of illegal connection		584	37	-
2.6 Customer meter raising (newly-installation/replacement)		7,753	168	
Sub-total	,	13,693	315	0
3. After Countermeasure				
3.1 Customer meter reading of 24 hours consumption		1,097	18	0
3.2 MNF & Pressure measurement		2,371	37	0
3.3 Customer meter inaccuracy test (random sampling)		1,097	18	0
3.4 Calculation of NRW ratio		2,010	0	
Sub-total	,	6,575	73	0
4. Routine Activities				
4.1 Update of drawings and attributes (GIS database)		420	37	0
4.2 Update of customer list		236	0	
4.3 Update of billing system		236	0	0
Sub-total		892	37	0
Total		43,084	884	0
Note: Depreciation of vehicle, some pieces of equipment such as leakage	detectors who detectors	do one not		

Note: Depreciation of vehicle, some pieces of equipment such as leakage detectors, pipe detectors, etc. are not included in the cost.

Area	Pipe Distance	Number of Household	Personal Cost	Consumable	Material and Equipment	Incurred
	(m)		(SBD)	(SBD)	(SBD)	(SBD)
Tuvaruhu-1	1,205.88	47	43,084	884	32,769	76,737
Tuvaruhu-2	1371.31	62	45,669	942	43,438	90,049
	Tuvaruhu-1	Area Pipe Distance (m) Tuvaruhu-1 1,205.88	Area Pipe Distance Household (m) Tuvaruhu-1 1,205.88 47	Area Pipe Distance Household Cost (m) (SBD) Tuvaruhu-1 1,205.88 47 43,084	Area Pipe Distance Household Cost Cost (m) (SBD) (SBD) Tuvaruhu-1 1,205.88 47 43,084 884	Area Pipe Distance Household Cost Cost Equipment (m) (SBD) (SBD) (SBD) Tuvaruhu-1 1,205.88 47 43,084 884 32,769

Cost on NRW Reduction Activities at Tuvaruhu-2 (No.15)				
Tasks	Details	Amount of personnel (SBD)	Amount of Consumabl e (SBD)	Amount of Material & Equipment (SBD)
1. Survey of NRW ratio before countermeasures				
1.1 Preparation of network drawing		210	0	0
1.2 Field survey (Valve check, Visual leakage detection, etc)		1,723	37	0
1.3 Preparation of isolation and step test (Valve installation)		3,446	146	a
1.4 Preparation of customer list		236	0	0
1.5 On-site public awareness		0	0	0
1.6 Distribution of public awareness pamphlet 1.7 Connection identification and verification		861 1.723	18 37	0
1.8 Customer meter functioning check		1,723	37	0
1.9 Measurement of visibly-detected leakage		1,723	37	0
1.10 Notification letter to illegal uders		861	18	0
1.11 Customer meter reading of 24 hours consumption		1.097	37	0
1.12 MNF & Pressure measurement		3,019	37	0
1.13 Customer meter inaccuracy test (all meters)		3,292	55	0
1.14 Calculation of NRW ratio		2,010	0	0
Sub-total		21,924	459	0
2. Countermeasure				
2.1 Step test		1,509	37	0
2.2 Leakage detection		1,263	18	0
2.3 Pipe repair		2,584	55	0
2.4 Legalization of illegal connection		0	0	0
2.5 Disconnection of illegal connection		584	37	0
2.6 Customer meter raising (newly-installation/replacement)		10,338	226	0
Sub-total Sub-total		16,278	373	0
3. After Countermeasure				
3.1 Customer meter reading of 24 hours consumption		1,097	18	0
3.2 MNF & Pressure measurement		2,371	37	0
3.3 Customer meter inaccuracy test (random sampling)		1,097	18	0
3.4 Calculation of NRW ratio		2,010	0	0
Sub-total Sub-total		6,575	73	0
4. Routine Activities				
4.1 Update of drawings and attributes (GIS database)		420	37	0
4.2 Update of customer list		236	0	0
4.3 Update of billing system		236	0	0
Sub-total	······································	892	37	0
Total		45,669	942	0

Note: Depreciation of vehicle, some pieces of equipment such as leakage detectors, pipe detectors, etc. are not included in the cost.

	IT NAME: NRW Project Team 1	RECEIVED E				
	DED BY: Chris Meriko	ISSUED BY:	Geo	rge Blamo	li	
REQUISITION		DATE ISSUE	ED : 2	3/08/201	3	
JOB DESCR	PTION: Being for Required to replace Gate V	/alve @ Tuvaruh	u pilo	ot project	site	S.
Date	Materials Description	Quantity		nit Cost		tal Cost
	2" Gate Valve	5	1	310.00	\$	1.550.00
2013/0/23	50mm x 2" UPVC male valve Socket	10	\$	36.00		360.00
2013/0/23	40mm Brass Gate Valve	6	\$			2,100.00
2013/0/23	40mm PVC male Valve Socket	6	ŝ	25.00		150.00
2013/8/23	40mm PVC Compression Coupling	3	\$	40.00		120.00
2013/8/23	50mm PVC Compression Coupling	6	\$	49.00		294.00
	50mm G.I Tee	4	\$	54.00		216.00
2013/8/23	50mm x 40mm G.I Reduce Bush	2	\$	60.00		120.00
2013/8/23	ThreadTape	30	\$	4.00		120.00
2013/8/23	1" Brass Gate valve	3	\$	190.00		570.00
2013/8/23	1" PVC male Valve Socket	6	\$	18.00	\$	108.00
		Total per Re	auisi	tion =	\$	5.708.00
						-,
RECOMMENI REQUISITION		RECEIVED E ISSUED BY: DATE ISSUE	Paul D: 2	Seda 3/08/201	3	
	PTION: Being for Replacement of old gate Va					
Date	Materials Description	Quantity		nit Cost		otal Cost
	1 length 50mm UPVC Pressure Pipe	1	\$			152.00
2013/8/23	1 length 40mm PVC Pressure Pipe	1	\$	60.00	\$	60.00
2013/8/23	500 ml non pressure PVC pipe Glue	1	\$	42.00	\$	42.00
		Total per Re	quisi	tion =	\$	254.00
RECOMMENI REQUISITION		ISSUED BY: DATE ISSUE	Geo D: 2	4/08/201	li	
RECOMMENI REQUISITION	DED BY: Silas Talosui NO: 0283 PTION: Being for Repair and maintenance @	ISSUED BY: DATE ISSUE	Geo D: 2 projec	rge Blamo 4/08/201 ct sites.	li	
RECOMMENI REQUISITION JOB DESCRI Date	DED BY: Silas Talosui NO: 0283 PTION: Being for Repair and maintenance @ Materials Description	ISSUED BY: DATE ISSUE	Geo D: 2 projec	rge Blamo 4/08/201	li 3	
RECOMMENI REQUISITION JOB DESCRI Date 2013/8/24	DED BY: Silas Talosui NO: 0283 PTION: Being for Repair and maintenance @ Materials Description 80mm Stainless steel Clamp/Clip	ISSUED BY: DATE ISSUE Tuvaruhu pilot p	Geo D: 2 projec	rge Blamo 4/08/201 ct sites. nit Cost 440.00	li 3 T e	
RECOMMENI REQUISITION JOB DESCRI Date 2013/8/24	DED BY: Silas Talosui NO: 0283 PTION: Being for Repair and maintenance @ Materials Description	ISSUED BY: DATE ISSUE Tuvaruhu pilot p Quantity	Geo D: 2 projec	rge Blamo 4/08/201 ct sites. nit Cost	li 3 T e	1,760.00
RECOMMENI REQUISITION JOB DESCRI Date 2013/8/24 2013/8/24	DED BY: Silas Talosui I NO: 0283 PTION: Being for Repair and maintenance @ Materials Description 80mm Stainless steel Clamp/Clip 50mm x 2" male Poly Adaptor	ISSUED BY: DATE ISSUE Tuvaruhu pilot p Quantity 4	Geo D: 2 project U	rge Blamo 4/08/201 ct sites. nit Cost 440.00	li 3 T e \$	1,760.00
RECOMMENI REQUISITION JOB DESCRI Date 2013/8/24 2013/8/24 2013/8/24	DED BY. Silas Talosui NO: 0283 PTION: Being for Repair and maintenance @ Materials Description 80mm Stainless steel Clamp. Clip 50mm x 2" male Poly Adaptor 50mm Poly Coupling	ISSUED BY: DATE ISSUE Tuvaruhu pilot p Quantity 4 4	Geo ED: 2 project U \$ \$	rge Blamo 4/08/201 et sites. nit Cost 440.00 36.00 175.00	Te \$	1,760.00 144.00 700.00
RECOMMENI REQUISITION JOB DESCRI Date 2013/8/24 2013/8/24 2013/8/24 2013/8/24	DED BY: Silas Talosui I NO: 0283 PTION: Being for Repair and maintenance @ Materials Description Bomm Stainless steel Clamp. / Clip 50mm x 2" male Poly Adaptor 50mm Poly Coupling 40mm x 11/2" poly male adaptor	ISSUED BY: DATE ISSUE Tuvaruhu pilot p Quantity 4 4 4 4	Geo D: 2 project U \$ \$ \$	rge Blamo 4/08/201 ct sites. nit Cost 440.00 36.00 175.00 70.00	Te \$	1,760.00 144.00 700.00 280.00
RECOMMENI REQUISITION JOB DESCRI Date 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24	DED BY: Silas Talosui NO: 0283 PTION: Being for Repair and maintenance @ Materials Description 80mm Stainless steel Glamp/Clip 50mm x 2* male Pely Adaptor 50mm Poly Coupling 40mm x 1 1/2* poly male adaptor 50mm x 40mm Poly Reduce Coupling	ISSUED BY: DATE ISSUE Tuvaruhu pilot p Quantity 4 4 4 4 4 4	Geo D: 2 project \$ \$ \$ \$	rge Blamo 4/08/201 ct sites. nit Cost 440.00 36.00 175.00 70.00 65.00	Te \$	1,760.00 144.00 700.00 280.00 260.00
RECOMMENI REQUISITION JOB DESCRI Date 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24	DED BY: Silas Talosui I NO: 0283 PTION: Being for Repair and maintenance @ Materials Description Bomm Stainless steel Clamp. / Clip 50mm x 2" male Poly Adaptor 50mm Poly Coupling 40mm x 11/2" poly male adaptor	ISSUED BY: DATE ISSUE Tuvaruhu pilot p Quantity 4 4 4 4 4 4 30	Geo D: 2 project \$ \$ \$ \$ \$ \$	rge Blamo 4/08/201 ct sites. nit Cost 440.00 36.00 175.00 70.00 65.00 4.00	Te \$	1,760.00 144.00 700.00 280.00 260.00 120.00
RECOMMENI REQUISTTIOI JOB DESCRI Date 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24	DED BY: Silas Talosui NO: 0283 PTION: Being for Repair and maintenance @ Materials Description 80mm Stainless steel Clamp. Clip 50mm x 2" male Poly Adaptor 50mm Poly Coupling 40mm x 1 1/2" poly male adaptor 50mm x 40mm Poly Reduce Coupling ThreadTape	ISSUED BY: DATE ISSUE Tuvaruhu pilot p Quantity 4 4 4 4 30 Total per Re	Geo D: 2 project \$ \$ \$ \$ \$ \$ \$ quisi	rge Blamo 4/08/201 ct sites. nit Cost 440.00 36.00 175.00 70.00 65.00 4.00	To \$	1,760.00 144.00 700.00 280.00 260.00 120.00
RECOMMENI REQUISITIOD JOB DESCRI Date 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24	DED BY: Silas Talosui I NO: 0283 PTION: Being for Repair and maintenance @ Materials Description 80mm Stainless steel Clamp/Clip 50mm Poly Coupling 40mm x 1 1/2 poly male adaptor 50mm Poly Coupling 11/2 poly male adaptor 50mm x 40mm Poly Reduce Coupling ThreadTape IT NAME: NRW Project Team 1 INDED SILAS Talosui	ISSUED BY: DATE ISSUE Tuvaruhu pilot p Quantity 4 4 4 4 30 Total per RE RECEIVED BY: DATE ISSUED BY:	Geo D: 2 project \$ \$ \$ \$ \$ Quisi Geo D: 2	rge Blamo 4/08/201: bt sites. nit Cost 440.00 36.00 70.00 65.00 4.00 tion = John Tenc rge Blamo 5/08/201	Te \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	1,760.00 144.00 700.00 280.00 260.00 120.00
RECOMMENI REQUISITION JOB DESCRI Date 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24 DEPARTMEN RECOMMENI REQUISITION JOB DESCRI	DED BY: Silas Talosui NO: 0283 PTION: Being for Repair and maintenance @ Materials Description Somm Stainless steel Glamp. Clip Somm x 2" male Pely Adaptor Somm Poly Coupling 40mm x 1 1/2" poly male adaptor Somm x 40mm Poly Reduce Coupling ThreadTape IT NAME: NRW Project Team 1 DED BY: Silas Talosui NO: 0284 PTION. Being for preparation work for Water	ISSUED BY: DATE ISSUE Tuvaruhu pilot t 4 4 4 4 4 30 Total per Re RECEIVED B ISSUED BY: DATE ISSUE	Geo D: 2 project \$ \$ \$ \$ \$ \$ Geo The control of the	rge Blamo 4/08/201 tt sites. nit Cost 440.00 36.00 175.00 70.00 65.00 4.00 John Tenorge Blamo 5/08/201 varuhu.	Te \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	1,760.00 144.00 700.00 280.00 260.00 120.00 3,264.00
RECOMMENI REQUISITIOD JOB DESCRI Date 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24 DEPARTMEN RECOMMENI REQUISITIOD Date	DED BY: Silas Talosui NO: 0283 PTION: Being for Repair and maintenance ® Materials Description 80mm Stainless steel Clamp. Clip 50mm by 2" male Poly Adaptor 50mm Poly Coupling 40mm x 1 1/2" poly male adaptor 50mm x 40mm Poly Reduce Coupling ThreadTape IT NAME: NRW Project Team 1 DeD BY: Silas Talosui NC: 0284 PTION: Being for preparation work for Water Materials Description	ISSUED BY: DATE ISSUE Tuvaruhu pilot p Quantity 4 4 4 30 Total per Re RECEIVED B ISSUED BY: DATE ISSUE meter Raising © Quantity	Geo S S S S Geo Geo T U S S S S T U S S S S Geo T U U U U U U U	rge Blamo 4/08/201 ct sites. nit Cost 440.00 36.00 175.00 70.00 65.00 4.00 tion = John Tenorge Blamo 5/08/201 /aruhu. nit Cost	Te \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	1,760.00 144.00 700.00 280.00 260.00 120.00 3,264.00
RECOMMENIA REQUISITION JOB DESCRI Dete 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24 DEPARTMEN RECOMMENI REQUISITION JOB DESCRI Date 2013/8/25	DED BY: Silas Talosui NO: 0283 PTION: Being for Repair and maintenance @ Materials Description 80mm Stainless steel Glamp/Clip 50mm x 2* male Pely Adaptor 50mm Poly Coupling 40mm x 1 1/2* poly male adaptor 50mm x 40mm Poly Reduce Coupling ThreadTape IT NAME: NRW Project Team 1 DED BY: Silas Talosui NO: 0284 PTION: Being for preparation work for Water Materials Description	ISSUED BY: DATE ISSUE Tuvaruhu pilot; Quantity 4 4 4 4 30 Total per Re RECEIVED E ISSUED BY: DATE ISSUE meter Raising (Quantity	Geo UUSSSY: Geo ED: 2	rge Blamo 4/08/201 ct sites. nit Cost 440.00 36.00 175.00 70.00 65.00 4.00 tion = John Tendrige Blamo 5/08/201 varuhu. nit Cost 4.00	Ii 3 3 5 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	1,760.00 144.00 700.00 280.00 120.00 3,264.00
RECOMMENI REQUISITION JUB DESCRI Date 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24	DED BY: Silas Talosui NO: 0283 PTION: Being for Repair and maintenance ® Materials Description Somm Stainless steel Clamp. Clip Somm sty. Coupling 40mm x 1 1/2" poly male adaptor 50mm noly Coupling 17 NAME: NRW Project Team 1 DED BY: Silas Talosui NO: 0284 PTION: Being for preparation work for Water Materials Description ThreadTape ThreadTape 20 metres 16mm poly pipe	ISSUED BY: DATE ISSUE Tuvaruhu pilot te Quentity 4 4 4 4 4 30 Total per Re RECEIVED E ISSUED BY: DATE ISSUE meter Raising e Quentity 30 20	Geo Salan Sa	rge Blamo 4/08/201- tot sites. nit Cost 440.00 36.00 175.00 70.00 65.00 4.00 tion = John Tencrge Blamo 5/08/201. varuhu. nit Cost 4.00 10.00	To \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	1,760.00 144.00 700.00 280.00 120.00 3,264.00 otal Cost
RECOMMENI REQUISITION JOB DESCRI Date 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/25 2013/8/25 2013/8/25 2013/8/25	DED BY: Silas Talosui NO: 0283 PTION: Being for Repair and maintenance @ Materials Description 80mm Stainless steel Clamp/Clip 50mm x 2* male Poly Adaptor 50mm Poly Coupling 40mm x 1 1/2* poly male adaptor 50mm x 40mm Poly Reduce Coupling ThreadTape IT NAME: NRW Project Team 1 DED BY: Silas Talosui NC: 0284 PTION: Being for preparation work for Water Materials Description ThreadTape 20 metres 16mm poly pipe 15mm Stop Cook	ISSUED BY: DATE ISSUE Tuvaruhu pilot p Quentity 4 4 4 4 30 Total per Re RECEIVED B: SUED BY: DATE ISSUE Guentity 20 1	Geo ED: 2 U S S S S S Geo ED: 2 U U U S S S S S S S S S S S S S S S S	rge Blamo 4/08/201: to sites. nit Cost 440.00 36.00 175.00 70.00 65.00 4.00 tion = John Tenorge Blamo 5/08/201: varuhu. nit Cost 4.00 10.00 4.00	To \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	1,760.00 144.00 700.00 280.00 260.00 120.00 3,264.00 otal Cost 120.00 200.00 41.00
RECOMMENI REQUISITION JOB DESOR Date 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/25 2013/8/25 2013/8/25 2013/8/25	DED BY: Silas Talosui NO: 0283 PTION: Being for Repair and maintenance Materials Description Somm Stainless steel Clamp/Clip Somm Poly Coupling 40mm x 1.1/2" poly male adaptor 50mm v 1.1/2" poly male adaptor 50mm x 40mm Poly Reduce Coupling ThreadTape TRAME: NRW Project Team 1 DED BY: Silas Talosui NO: 0284 PTION: Being for preparation work for Water Materials Description ThreadTape 20 metres 16mm poly pipe 15mm Stop Cock Somm Stainless steel Clamp/Clip	ISSUED BY: DATE ISSUE Tuvaruhu pilot t Quantity	Geo ED: 2 U S S S S S Geo ED: 2 U U S S S S S S S S S S S S S S S S S	rge Blamo 4/08/201: bt sites. nit Cost 440.00 36.00 175.00 65.00 4.00 tion = John Tenc rge Blamo 5/08/201: aruhu. nit Cost 4.00 10.00 4.00	To \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	1,760.00 144.00 700.00 280.00 120.00 3,284.00 5tal Cost 120.00 200.00 41.00
RECOMMENI REQUISITION Date 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/25 2013/8/25 2013/8/25 2013/8/25 2013/8/25 2013/8/25	DED BY: Silas Talosui NO: 0283 PTION: Being for Repair and maintenance @ Materials Description 80mm Stainless steel Clamp/Clip 50mm x 2* male Poly Adaptor 50mm Poly Coupling 40mm x 1 1/2* poly male adaptor 50mm x 40mm Poly Reduce Coupling ThreadTape IT NAME: NRW Project Team 1 DED BY: Silas Talosui NO: 0284 PTION: Being for preparation work for Water Materials Description ThreadTape 20 metres 16mm poly pipe 15mm Stop Cock 80mm Stainless steel Clamp/Clip 3/4* x 1/2* Gil Reducing Bush	ISSUED BY: DATE ISSUED Tuvaruhu pilot p Quarity 4 4 4 4 4 4 30 Total per Re RECEIVED E ISSUED BY: DATE ISSUED meter Raising (Guarity 30 20 1 1 1	Geo ED: 2 Project State	rge Blamo 4/08/201: to sites. nit Cost 440.00 36.00 175.00 4.00 tion = John Tenorge Blamo 5/08/201: varuhu. nit Cost 4.00 10.00 4.00 9.00	TC \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	1,760.00 144.00 700.00 280.00 260.00 120.00 3,284.00 200.00 41.00 1,320.00 9.00
RECOMMENIR REQUISITION DESCRIPTION OF THE PROPERTY OF THE PROP	DED BY: Silas Talosui NO: 0283 PTION: Being for Repair and maintenance @ Materials Description Somm Stainless steel Clamp. Clip Somm v. 2" male Pely Adaptor Somm Poly Coupling 40mm v. 1 1/2" poly male adaptor Somm x 40mm Poly Reduce Coupling ThreadTape IT NAME: NRW Project Team 1 DED BY: Silas Talosui NO: 0284 PTION: Being for preparation work for Water Materials Description ThreadTape 20 metres 16mm poly pipe 15mm Stop Cock Somm Stainless steel Clamp. Clip 3/4" x 1/2" G.I Reducing Bush 1/2" G.I Nipple	ISSUED BY: DATE ISSUE DATE ISSUE Guantity	Geo ED: 2 project U S S S S S S S S S	rge Blamo 4/08/201: tot sites. nit Cost 440.00 36.00 175.00 70.00 65.00 4.00 tion= John Tencrge Blamo 5/08/201: varuhu. nit Cost 40.00 41.00 41.00 9.00	TC \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	1,760.00 144.00 700.00 280.00 260.00 120.00 3,264.00 00 120.00 200.00 41.00 1,320.00 9.00 40.00
RECOMMENIR REQUISITION DESCRIPTION OF THE PROPERTY OF THE PROP	DED BY: Silas Talosui NO: 0283 PTION: Being for Repair and maintenance @ Materials Description 80mm Stainless steel Clamp/Clip 50mm x 2* male Poly Adaptor 50mm Poly Coupling 40mm x 1 1/2* poly male adaptor 50mm x 40mm Poly Reduce Coupling ThreadTape IT NAME: NRW Project Team 1 DED BY: Silas Talosui NO: 0284 PTION: Being for preparation work for Water Materials Description ThreadTape 20 metres 16mm poly pipe 15mm Stop Cock 80mm Stainless steel Clamp/Clip 3/4* x 1/2* Gil Reducing Bush	ISSUED BY: DATE ISSUE Tuvaruhu pilot t Quentity 4 4 4 4 4 4 30 Total per Re RECEIVED B ISSUED BY: DATE ISSUE meter Raising © Quentity 1 1 1 5 1 1 1 1	Geo ED: 2 U S S S S S S S S S S S S S S S S S S	rge Blamo 4/08/201: tot sites. nit Cost 440.00 36.00 175.00 70.00 65.00 4.00 tion = John Tenorge Blamo 5/08/201: varuhu. nit Cost 4.00 10.00 41.00 9.00 8.00 257.00	T	1,760.00 144.01 700.00 280.00 120.00 3,264.00 200.00 41.00 1,320.00 9.00 45.00 257.00
RECOMMENIRE REQUISITION 101 DE DESCRI Date 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/25 2013/8/25 2013/8/25 2013/8/25 2013/8/25 2013/8/25 2013/8/25 2013/8/25 2013/8/25 2013/8/25 2013/8/25	DED BY: Silas Talosui NO: 0283 PTION: Being for Repair and maintenance ® Materials Description Somm Stainless steel Clamp./Clip Somm by Coupling 40mm x 1 1/2" poly male adaptor 50mm Poly Coupling 17 NAME: NRW Project Team 1 DED BY: Silas Talosui NO: 0284 PTION: Being for preparation work for Water Materials Description ThreadTape 20 metres 16mm poly pipe 15mm Stop Cook Somm Stainless steel Clamp./Clip 3/4" x 1/2" G.I Reducing Bush 1/2" G.I Nipple 3" x 3/4" Brass Tapping Saddle	ISSUED BY: DATE ISSUE Tuvaruhu pilot te 4	Geo S S S S S S S S S S S S S S S S S S S	rge Blamo 4/08/201- to sites. nit Cost 440.00 36.00 175.00 70.00 65.00 4.00 tion = John Tendrige Blamo 5/08/201- varuhu. nit Cost 4.00 10.00 41.00 440.00 9.00 8.00 257.00 tion =	To \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	1,760.00 144.01 700.00 280.00 120.00 3,264.00 200.00 41.00 1,320.00 9.00 45.00 257.00
RECOMMENIRE REQUISITION 10 DB CSCRI 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/25	DED BY: Silas Talosui NO: 0283 PTION: Being for Repair and maintenance @ Materials Description 80mm Stainless steel Glamp/Clip 50mm x 2* male Pely Adaptor 50mm Poly Coupling 40mm x 1 1/2* poly male adaptor 50mm x 40mm Poly Reduce Coupling ThreadTape IT NAME: NRW Project Team 1 DED BY: Silas Talosui NO: 0284 PTION: Being for preparation work for Water Materials Description ThreadTape 20 metres 16mm poly pipe 15mm Stop Cook 80mm Stainless steel Clamp/Clip 3/4* x 1/2* G.I Reducing Bush 1/2* G.I Reducing Bush 1/2* G.I Reducing Bush 1/2* G.I Reducing Bush 1/2* G.I Regular Standard 1/2* G.I Reducing Bush 1/2* G.I Regular Standard 1/2* G.I Regular Standard 1/2* G.I Reducing Bush 1/2* G.I Regular Standard 1/4* X 1/4* Standard 1/4* Standard 1/4* X 1/4* Standard 1/4* Sta	ISSUED BY: DATE ISSUE Tuvaruhu pilot p Guentity 4 4 4 4 30 Total per Re ISSUED BY: DATE ISSUE BSUED BY: DATE ISSUE Guentity 1 Total per Re Total per Re RECEIVED 8 1 Total per Re RECEIVED 8 1 Total per Re	Geo S S S S Geo D Tu S S S S S S S S S S S S S	rge Blamo 4/08/201- to sites. nit Cost 440.00 36.00 175.00 65.00 4.00 tion = John Tenc gre Blamo 5/08/201- aruhu. nit Cost 4.00 9.00 41.00 440.00 9.00 257.00 tion =	To S S S S S S S S S	1,760.00 144.00 700.00 280.00 280.00 120.00 3,264.00 200.00 41.00 1,320.00 9.00 45.00 257.00
RECOMMENIRE REQUISITION 10 DB CSCRI 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/25	DED BY: Silas Talosui NO: 0283 PTION: Being for Repair and maintenance ® Materials Description Somm Stainless steel Clamp./Clip Somm by Coupling 40mm x 1 1/2" poly male adaptor 50mm Poly Coupling 17 NAME: NRW Project Team 1 DED BY: Silas Talosui NO: 0284 PTION: Being for preparation work for Water Materials Description ThreadTape 20 metres 16mm poly pipe 15mm Stop Cook Somm Stainless steel Clamp./Clip 3/4" x 1/2" G.I Reducing Bush 1/2" G.I Nipple 3" x 3/4" Brass Tapping Saddle	ISSUED BY: DATE ISSUE Tuvaruhu pilot te 4	Geo S S S S Geo D Tu S S S S S S S S S S S S S	rge Blamo 4/08/201- to sites. nit Cost 440.00 36.00 175.00 65.00 4.00 tion = John Tenc gre Blamo 5/08/201- aruhu. nit Cost 4.00 9.00 41.00 440.00 9.00 257.00 tion =	To S S S S S S S S S	1,760.00 144.01 700.00 280.00 120.00 3,264.00 200.00 41.00 1,320.00 9.00 45.00 257.00
RECOMMENIRE REQUISITION JOB DESCRI Date 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/25 2013/8/25 2013/8/25 2013/8/25 2013/8/25 2013/8/25 2013/8/25 2013/8/25 2013/8/25 2013/8/25 2013/8/25 2013/8/25	DED BY: Silas Talosui NO: 0283 PTION: Being for Repair and maintenance @ Materials Description Somm Stainless steel Clamp/Clip Somm A: Talosui More Talosui Mor	ISSUED BY: DATE ISSUE Tuvaruhu pilot p Guentity 4 4 4 4 30 Total per Re ISSUED BY: DATE ISSUE BSUED BY: DATE ISSUE Guentity 1 Total per Re Total per Re RECEIVED 8 1 Total per Re RECEIVED 8 1 Total per Re	Geo ED: 2 Torojec U S S S S S Geo ED: 2 Tu U S S S S S S S S S S S S S S S S S S	rge Blamo 4/08/201 4/08/201 4/08/201 4 sites. nit Cost 440.00 175.00 70.00 65.00 4.00 175.00 70.00 10.00 4.00 10.00 4.00 10.00 4.00 9.00 8.00 257.00 tion =	T	1,760.00 144.01 700.00 280.00 120.00 3,264.00 200.00 41.00 1,320.00 9.00 45.00 257.00
RECOMMENIRE GUISTRO 10 JOB DESCRI Date 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/24 2013/8/25 2013/8/	DED BY: Silas Talosui NO: 0283 PTION: Being for Repair and maintenance @ Materials Description 80mm Stainless steel Clamp./Clip 50mm x 2* male Poly Adaptor 50mm Poly Coupling 40mm x 1 1/2* poly male adaptor 50mm x 40mm Poly Reduce Coupling ThreadTape IT NAME: NRW Project Team 1 DED BY: Silas Talosui NO: 0284 PTION: Being for preparation work for Water Materials Description ThreadTape 20 metres 16mm poly pipe 115mm Stoc Ocok 80mm Stainless steel Clamp./Clip 3/4* x 1/2* G1 Reducing Bush 1/2* G1 Nipple 3 x 3/4* Brass Tapping Saddle IT NAME: NRW Project Team 1 DED BY: Chris Meriko NO: 0285	ISSUED BY: DATE ISSUE Tuvaruhu pilot p Guentity 4 4 4 4 30 Total per Re PECEIVED B ISSUED BY: DATE ISSUE 1 1 1 Total per Re RECEIVED I ISSUED BY: DATE ISSUED BY:	Geo ED: 2 U S S S S S Geo ED: 2 TU S S S S S S Geo ED: 2 Geo ED: 2 Geo ED: 2 Ceo ED: 2	rge Blamo 44/08/201- tt sites. nit Cost 440,00 36,00 70,00 65,00 4,00 0 tion = John Tenc 10,00 41,00 41,00 41,00 9,00 tion =	T \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	1,760.00 144.00 700.00 280.00 280.00 120.00 3,264.00 3,264.00 200.00 41.00 9.00 257.00 1,987.00
RECOMMENIRE REQUISITION 10 PS	DED BY: Silas Talosui NO: 0283 PTION: Being for Repair and maintenance @ Materials Description Somm Stainless steel Clamp/Clip Somm A: Talosui More Talosui Mor	ISSUED BY: DATE ISSUE Tuvaruhu pilot p Guentity 4 4 4 4 30 Total per Re PECEIVED B ISSUED BY: DATE ISSUE 1 1 1 Total per Re RECEIVED I ISSUED BY: DATE ISSUED BY:	Geo ED: 2 U S S S S S Geo ED: 2 T U S S S S S S S S S S S S S S S S S	rge Blamo 4/08/201- ct sites. rit Cost 440.00 36.00 175.00 4.00 tion = John Tencrge Blamo 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,0	To \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	9.00 40.00 257.00 1,987.00

2013/8/26	40 KG Bag cement	5	\$	78.00	\$	390.00
2013/8/26	20 metres 16mm poly pipe	20	\$	10.00		200.00
2013/8/26	ThreadTape	10	\$	4.00		40.00
2013/8/26	3 lengths 100mm (4") Pressure Pipe	3	\$		\$	744.00
		Total per Re	quisi	tion =	\$	1,374.00
RECOMMENT REQUISITION	T NAME: NRW Project Team 1 DED BY: Chris Meriko I NO: 0286 PTION: Being for Tuvaruhu leakage test and i	RECEIVED BY: ISSUED BY: DATE ISSUE	Geor	rge Blamo 6/08/201	oli 3	ing
Date	Materials Description	Quantity		nit Cost		otal Cost
	1 length 80mm UPVC Pressure Pipe (PN 12)	1	\$	189.00		189.00
	2 litres lubricant	1	\$	319.00		319.00
		Total per Re	quisi		\$	508.00
RECOMMENI REQUISITION JOB DESCRI	PTION: Being for continue on Pilot Project @		Paul D: 2 site	Seda 8/08/201 -	3	
Date	Materials Description 1 length 50mm UPVC Pressure Pipe	Quantity		nit Cost		otal Cost
2013/8/28	1/2" G.I Nipple	1 1	\$	152.00 8.00		152.00
2013/8/28	15mm Stop Cock	1	\$	40.00		40.00
	2" PVC Tee	1	\$	68.00		68.00
2013/0/20	2" PVC Female Valve Socket	1	\$	90.00		90.00
	2" x 1/2" G.I Reducing Bush	1	Ś	35.00		35.00
2013/6/20	E X 1/E da Noddong Bdon	Total per Re				393.00
DEPARTMEN	T NAME: NRW Project team 1 DED BY: Benjimen Billy		quisi	tion = Dykes		393.00
DEPARTMEN RECOMMEND REQUISITION	T NAME: NRW Project team 1 ED BY: Benjimen Billy I NO: 0288 PTION: Being for Continue on Replacing of Ol	RECEIVED B ISSUED BY: DATE ISSUE d Gate Valve @	Par D: 2	Dykes ul Seda 9/08/201 varuhu Are	\$ 3 aa.	393.00
DEPARTMEN RECOMMENI REQUISITION JOB DESCRI Date	T NAME: NRW Project team 1 BY Senjimen Billy NO: 0288 PTION: Being for Continue on Replacing of Ol Meterials Description	RECEIVED B ISSUED BY: DATE ISSUE	quisit Par ID: 25 Tuv	Dykes ul Seda 9/08/201 varuhu Are nit Cost	3 a.	otal Cost
DEPARTMEN RECOMMENI REQUISITION JOB DESCRI Date 2013/8/29	T NAME: NRW Project team 1 IED BY: Benjimen Billy NO: 028 PTION: Being for Continue on Replacing of Ol Materials Description 11/4" (32mm) Brass Gate Valve	RECEIVED B ISSUED BY: DATE ISSUE d Gate Valve @ Quantity	Quisit Par D: 25 Tuv	Dykes ul Seda 9/08/201 varuhu Are nit Cost 180.00	3 a.	otal Cost 180.00
DEPARTMEN RECOMMENI REQUISITION JOB DESCRI Date 2013/8/29 2013/8/29	T NAME: NRW Project team 1 DED BY: Benjimen Billy I NO: 0288 PTION: Being for Continue on Replacing of Ol Meterials Description 11/4" (32mm) Brass Gate Valve 32mm Compression	RECEIVED B ISSUED BY: DATE ISSUE d Gate Valve @ Quantity 1	Par Par D: 2: Tuv	Dykes ul Seda 9/08/201: varuhu Are nit Cost 180.00 29.00	3 aa.	otal Cost 180.00 58.00
DEPARTMEN RECOMMENI REQUISITION JOB DESCRI Date 2013/8/29 2013/8/29 2013/8/29	T NAME: NRW Project team 1 DED BY: Benjimen Billy NO: 0288 PTION: Being for Continue on Replacing of Ol Materials Description 1 1/4" (32mm) Brass Gate Valve 32mm Compression Coupling	RECEIVED B ISSUED BY: DATE ISSUE dGate Valve @ Quantity 1 2 3	Y: [Par D: 25 Tuv	Dykes ul Seda 9/08/201: varuhu Are nit Cost 180.00 29.00 40.00	3 :a. T	otal Cost 180.00 58.00
DEPARTMEN RECOMMENI REQUISITION JOB DESCRI Date 2013/8/29 2013/8/29 2013/8/29 2013/8/29	T NAME: NRW Project team 1 DED BY: Benjimen Billy I NO: 0288 PTION: Being for Continue on Replacing of OI Materials Description 11/4" (32mm) Brass Gate Valve 32mm Compression 40mm PVC Compression Coupling ThreadTape	RECEIVED BY: DATE ISSUED BY: DATE ISSUE d Gate Valve @ Quantity 1 2 3 10	Par D: 25 Tuv	Dykes ul Seda 9/08/201: varuhu Are nit Cost 180.00 29.00 40.00	3 :a. \$ \$ \$	otal Cost 180.00 58.00 120.00 40.00
DEPARTMEN RECOMMENIC REQUISITION JOB DESCRI Date 2013/8/29 2013/8/29 2013/8/29 2013/8/29	T NAME: NRW Project team 1 DED BY: Benjimen Billy NO: 0288 PTION: Being for Continue on Replacing of Ol Materials Description 1.1/4" (32mm) Brass Gate Valve 32mm Compression 40mm PVC Compression Coupling ThreadTape 40 KG Bag cement	RECEIVED B ISSUED BY: DATE ISSUE Gate Valve @ Guantit	Parisit Parisi	Dykes ul Seda 9/08/201 varuhu Are nit Cost 180.00 29.00 40.00 78.00	3 :a. T	otal Cost 180.00 58.00 120.00 40.00 390.00
DEPARTMEN RECOMMENI REQUISITION JOB DESCRI Date 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29	T NAME: NRW Project team 1 IED BY: Benjimen Billy NO: 028 PTION: Being for Continue on Replacing of Ol Materials Description 1 1/4" (32mm) Brass Gate Valve 32mm Compression 40mm PVC Compression Coupling ThreadTape 40 KG Bag cement 2" G1 Tee	RECEIVED B ISSUED BY: DATE ISSUED G Gate Valve @ Quantity 2 3 10 5 1	Parisit Parisi	Dykes ul Seda 9/08/201 varuhu Are nit Cost 180.00 29.00 40.00 78.00 54.00	3 :a. Ti \$ \$ \$ \$	0tal Cost 180.00 58.00 120.00 40.00 390.00 54.00
DEPARTMEN RECOMMENI REQUISITION JOB DESCRI Date 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29	T NAME: NRW Project team 1 DED BY: Benjimen Billy NO: 0288 PTION: Being for Continue on Replacing of Ol Metorials Description 1.1/4" (32mm) Brass Gate Valve 32mm Compression 40mm PVC Compression Coupling ThreadTape 40 KG Bag cement 2" GI Tee 40mm Brass Gate Valve	RECEIVED B ISSUED BY: DATE ISSUE Id Gate Valve @ Quantity 2 3 3 10 5 1	Parisit Parisi	Dykes ul Seda 9/08/201 varuhu Are nit Cost 180.00 29.00 40.00 4.00 78.00 54.00 350.00	3 2a. T \$ \$ \$	otal Cost 180.00 58.00 120.00 40.00 390.00 54.00 700.00
DEPARTMEN RECOMMENT RECOMMENT REQUISITION JOB DESCRI 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29	T NAME: NRW Project team 1 IDED BY: Benjimen Billy I NO: 0288 PTION: Being for Continue on Replacing of Ol Materials Description 1 1/4" (32mm) Brass Gate Valve 32mm Compression 40mm PVC Compression Coupling ThreadTape 40 KG Bag cement 2" GI Tee 40mm Brass Gate Valve 50mm x 2" UPVC male valve Socket	Total per Re- RECEIVED B ISSUED BY: DATE ISSUE d Gate Valve @ Quantity 1 2 3 10 5 1 1 2 1	Y: [Pai	tion = Dykes ul Seda 9/08/201: varuhu Are nit Cost 180.00 29.00 4.00 78.00 54.00 350.00 36.00	3 :a. T \$ \$ \$ \$ \$	otal Cost 180.00 58.00 120.00 40.00 390.00 700.00
DEPARTMEN RECOMMENT REQUISITION JOB DESCRI Date 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29	T NAME: NRW Project team 1 DED BY: Benjimen Billy NO: 0288 PTION: Being for Continue on Replacing of Ol Metorials Description 1.1/4" (32mm) Brass Gate Valve 32mm Compression 40mm PVC Compression Coupling ThreadTape 40 KG Bag cement 2" GI Tee 40mm Brass Gate Valve	Total per Re RECEIVED B ISSUED BY: DATE ISSUE d Gate Valve @ Quantity 1 1 2 3 10 5 1 1 1	V: [Pai	tion = Dykes ul Seda 9/08/201 varuhu Are nit Cost 180.00 29.00 40.00 78.00 54.00 350.00 25.00	3 :a. T \$ \$ \$ \$ \$	40.00 390.00 54.00 700.00 36.00 25.00
DEPARTMEN RECOMMENT REGUISTION JOB DESCRI Date 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29	T NAME: NRW Project team 1 DED BY: Benjimen Billy NO: 0288 PTION: Being for Continue on Replacing of OI Meterials Description 1.1/4" (32mm) Brass Gate Valve 32mm Compression 40mm PVC Compression Coupling ThreadTape 40 KG Bag cement 2" GI Tee 40mm Brass Gate Valve 50mm x 2" UPVC male valve Socket 40mm x 25mm UPVC reduce Socket T NAME: NRW PROJECT TEAM 1 DED BY: Benjimen Billy NO: 0290	RECEIVED B ISSUED BY: DATE ISSUE Gate Valve @ Quantity 1 2 3 10 5 1 1 2 1 Total per Re RECEIVED B ISSUED BY: RECEIVED B ISSUED BY: DATE ISSUED BY:	Pairing Pairin	tion = Dykes ul Seda 9/08/201: arauhu Are nit Cost 180.00 29.00 40.00 78.00 54.00 350.00 36.00 25.00 tion = sul Sedia 9/08/201:	3 :a. T	otal Cost 180.00 58.00 120.00 40.00 390.00 54.00 700.00
DEPARTMEN RECOMMENT REQUISITION JOB DESCRI Date 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29	T NAME: NRW Project team 1 DED BY: Benjimen Billy I NO: 0288 PTION: Being for Continue on Replacing of OI Meterials Description 11/4" (32mm) Brass Gate Valve 32mm Compression 40mm PVC Compression Coupling ThreadTape 40 KG Bag cement 2" GI Tee 40mm Brass Gate Valve 50mm x 2" UPVC male valve Socket 40mm x 25mm UPVC reduce Socket T NAME: NRW PROJECT TEAM 1 DED BY: Benjimen Billy I NO: 0290 PTION: Being for Continue on Replacing & Re	RECEIVED B ISSUED BY: DATE ISSUE Gate Valve @ Quantity 1 2 3 10 5 1 1 2 1 Total per Re. RECEIVED B ISSUED BY: DATE ISSUE Depairing @ Tuvar	Y: [Paid Paid Paid Paid Paid Paid Paid Paid	tion = Dykes ul Seda 9/08/201 araruhu Are nit Cost 180.00 29.00 40.00 54.00 350.00 350.00 25.00 tion = Selina ul Seda	3 2a. To 5 5 5 5 5 5 5	otal Cost 180.00 58.00 120.00 40.00 390.00 54.00 700.00 25.00 1,603.00
DEPARTMEN RECOMMENTA REQUISITION JOB DESCRI 2013/8/29 20	T NAME: NRW Project team 1 DED BY: Benjimen Billy NO: 0288 PTION: Being for Continue on Replacing of OI Meterials Description 11/4" (32mm) Brass Gate Valve 32mm Compression 40mm PVC Compression Coupling Thread Tape 40 KG Bag cement 2" GJ Tee 40mm Brass Gate Valve 50mm x 2" UPVC male valve Socket 40mm x 25mm UPVC reduce Socket T NAME: NRW PROJECT TEAM 1 DED BY: Benjimen Billy NO: 0290 PTION: Being for Continue on Replacing & Re	RECEIVED B ISSUED BY: DATE ISSUE Gate Valve @ Quantity 1 2 3 10 5 1 1 2 1 Total per Re RECEIVED B ISSUED BY: RECEIVED B ISSUED BY: DATE ISSUED BY:	Y: [Paid Paid Paid Paid Paid Paid Paid Paid	tion = Dykes ul Seda 9/08/2011 aruhu Are nit Cost 180.00 29.00 78.00 78.00 36.00 35.00 tion = Selina ul Seda 9/08/201 Pilot Site.	3 3 3 5 5 5 5 5 5 5	otal Cost 180.00 58.00 120.00 40.00 390.00 54.00 700.00 36.00 25.00 1,603.00
DEPARTMEN RECOMMENT REQUISITION JOB DESCRI Date 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29	T NAME: NRW Project team 1 DED BY: Benjimen Billy I NO: 0288 PTION: Being for Continue on Replacing of OI Meterials Description 11/4" (32mm) Brass Gate Valve 32mm Compression 40mm PVC Compression Coupling ThreadTape 40 KG Bag cement 2" GI Tee 40mm Brass Gate Valve 50mm x 2" UPVC male valve Socket 40mm x 25mm UPVC reduce Socket T NAME: NRW PROJECT TEAM 1 DED BY: Benjimen Billy I NO: 0290 PTION: Being for Continue on Replacing & Re Meterials Description	RECEIVED B ISSUED BY: DATE ISSUE Gate Valve @ Quentity 10 10 10 11 11 11 11 11 11 11 11 11 11	Y: [Paid Paid Paid Paid Paid Paid Paid Paid	tion = Dykes ul Seda 9/08/2011 aruhu Are nit Cost 180.00 29.00 78.00 78.00 36.00 35.00 tion = Selina ul Seda 9/08/201 Pilot Site.	3 3 3 5 5 5 5 5 5 5 5 5	otal Cost 180.00 58.00 120.00 40.00 390.00 54.00 700.00 36.00 25.00 1,803.00
DEPARTMEN RECOMMENTARE QUISTION JOB DESCRI Date 2013/8/29	T NAME: NRW Project team 1 DED BY: Benjimen Billy NO: 0288 PTION: Being for Continue on Replacing of OI Meterials Description 11/4" (32mm) Brass Gate Valve 32mm Compression 40mm PVC Compression Coupling Thread Tape 40 KG Bag cement 2" GJ Tee 40mm Brass Gate Valve 50mm x 2" UPVC male valve Socket 40mm x 25mm UPVC reduce Socket T NAME: NRW PROJECT TEAM 1 DED BY: Benjimen Billy NO: 0290 PTION: Being for Continue on Replacing & Re	RECEIVED B ISSUED BY: DATE ISSUE d Gate Valve @ Quantity 1 1 2 3 10 5 1 1 Total per Re. RECEIVED B ISSUED BY: RECEIVED B ISSUED BY: Quantity Quantity	Paulish	Dykes ul Seda 9/08/201 araruhu Are nit Cost 180.00 40.00 40.00 54.00 350.00 350.00 25.00 tion = Selina ul Seda 9/08/201 Pilot Site, nit Cost 49.00	3 3 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	otal Cost 180.00 58.00 120.00 40.00 390.00 700.00 36.00 25.00 1,803.00
DEPARTMEN RECOMMENTAL PARTMEN REQUISTION JOB DESCRI Date 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29	T NAME: NRW Project team 1 DED BY: Benjimen Billy I NO: 0288 PTION: Being for Continue on Replacing of Ol Meterials Description 11/4" (32mm) Brass Gate Valve 32mm Compression 40mm PVC Compression Coupling ThreadTape 40 KG Bag cement 2 G11 ee 40 KG Bag cement 2 G11 ee 40 Mom Brass Gate Valve 50mm x 2" UPVC male valve Socket 40mm Brass Gate Valve 50mm LPVC reduce Socket 40mm x 25mm UPVC reduce Socket 40mm E NRW PROJECT TEAM 1 DED BY: Benjimen Billy I NO: 0290 PTION: Being for Continue on Replacing & Re Meterials Description 50mm PVC Compression Coupling 50mm G1 Nipple 50mm G1 Reducing Socket 50mm x 1" G1 Reducing Socket 50mm x 1" G1 Reducing Sucket	RECEIVED B ISSUED BY: DATE ISSUE Gate Valve @ Quantity 1 2 3 10 5 11 Total per Re. RECEIVED B ISSUED BY: DATE ISSUE Darring @ Tuvar Quantity 5 2	Y: [Paid Paid Paid Paid Paid Paid Paid Paid	tion = Dykes ul Seda 9/08/2011. Paruhu Are nit Cost 180.00 29.00 40.00 4.00 350.00 36.00 25.00 tion = Selina ul Seda 9/08/2011. Pilot Site. nit Cost 49.00 54.00 54.00 54.00 55.00 56.00 57.00	3 3 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	otal Cost 180.00 58.00 120.00 40.00 390.00 700.00 36.00 25.00 1,603.00 otal Cost 245.00 108.00 55.00
DEPARTMEN RECOMMENTA PAGE 13 A 12 A	T NAME: NRW Project team 1 DED BY: Benjimen Billy NO: 288 PTION: Being for Continue on Replacing of OI Metorials Description 1.1/4" (32mm) Brass Gate Valve 32mm Compression 40mm PVO Compression Coupling ThreadTape 40 KG Bag cement 2" GI Tee 40mm Brass Gate Valve 50mm x 2" UPVC male valve Socket 40mm x 2" UPVC reduce Socket T NAME: NRW PROJECT TEAM 1 DED BY: Benjimen Billy NO: 299 PTION: Being for Continue on Replacing & Re Metorials Description 50mm PVO Compression Coupling 50mm PVO Compression Coupling 50mm B NO: 299 50mm A I Nipple 50mm A I Reducing Socket 50mm x 3/4" GI reducing Bush 10 metres 20mm Poly Pipe	Total per Re RECEIVED B ISSUED BY: DATE ISSUE d Gate Valve @ Guantity 1 2 3 10 5 1 1 Total per Re RECEIVED B ISSUED BY: DATE ISSUED BY: DATE ISSUED By: DATE ISSUED Briting @ Tuvar Guantity 5 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	quisit Y: [Paid Paid Paid Paid Paid Paid Paid Paid	tion = Dykes ul Seda y/08/201 3800 18000 180.00 29.00 4.00 78.00 54.00 25.00	3 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	otal Cost 180,00 58,00 120,00 40,00 390,00 54,00 700,00 25,00 1,603,00 otal Cost 245,00 108,00 55,00 60,00
DEPARTMEN REQUISTITO JOB DESCRI Date 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29	T NAME: NRW Project team 1 DED BY: Benjimen Billy I NO: 0288 PTION: Being for Continue on Replacing of OI Meterials Description 11/4" (32mm) Brass Gate Valve 32mm Compression 40mm PVC Compression Coupling ThreadTape 40 KG Bag cement 2" GI Tee 40mm Brass Gate Valve 50mm x 2" UPVC male valve Socket 40mm x 25mm UPVC reduce Socket T NAME: NRW PROJECT TEAM 1 DED BY: Benjimen Billy I NO: 0290 PTION: Benjimen Billy I NO: 0290 PTION: Benjimen Billy Somm PVC Compression Coupling 50mm GI Nipple 50mm GI Nipple 50mm GI Nipple 50mm GI Nipple 50mm GI For GI reducing Bush 10 metres 20mm Poly Pipe	Total per Re RECEIVED B ISSUED BY: DATE ISSUE d Gate Valve @ Quantity 1 Total per Re RECEIVED B ISSUED BY: DATE ISSUE Basining @ Tuvar Quantity 5 1 1 2 2 1 1 1 2 2 1 1 1 2 1 1 1 2 2 1 1 1 2 1 1 1 2 2 1 1 1 2 2 1 1 1 2 2 1 1 2 1 1 2 2 1 1 2 2 1 1 2 2 2 1 1 2 2 2 2 2 2 2	Quish Y : [Pau	tion = Dykes ul Seda	3 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	otal Cost 180.00 120.00 40.00 390.00 36.00 25.00 1,603.00 1,603.00 otal Cost 245.00 60.00 60.00 60.00
DEPARTMEN RECOMMENTA REQUISITION JOB DESCRI Date 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29	T NAME: NRW Project team 1 DED BY: Benjimen Billy NO: 0288 PTION: Being for Continue on Replacing of OI Meterials Description 1 1/4" (32mm) Brass Gate Valve 32mm Compression 40mm PVC Compression Coupling Thread Tape 40 KG Bag cement 2" GJ Tee 40mm Brass Gate Valve 50mm x 2" UPVC male valve Socket 40mm x 2" UPVC male valve Socket 40mm x 25mm UPVC reduce Socket T NAME: NRW PROJECT TEAM 1 DED BY: Benjimen Billy NO: 0290 PTION: Being for Continue on Replacing & Re Meterials Description 50mm GJ Nipple 50mm x 1" GJ Reducing Socket 50mm x 3/4" GJ reducing Bush 10 metres 20mm Poly Pipe 20mm x 3/4" Poly male Adaptor	Total per Re RECEIVED B ISSUED BY: DATE ISSUE Gate Valve @ Quantity 1 2 3 10 5 1 1 Total per Re RECEIVED B ISSUED BY: DATE ISSUE RECEIVED B ISSUED BY: Quantity 5 2 1 1 Total per Re RECEIVED B ISSUED BY: DATE ISSUE Papairing @ Tuvar Quantity 5 2 1 1 2 2 1 1 2 2 1 1 2 2 1 1 2 2 2 2	quish IY: [Pai D: 2: Tuv Tuv \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	tion = Dykes ul Seda ul Seda ul Seda y 0.08 / 201. aruhu Are nit Cost 180.00 40.00 40.00 40.00 35.00 350.00 tion = Selina ul Seda y 0.08 / 201. Selina ul Seda y 0.08 / 201. Pilot Site, nit Cost 49.00 55.00 30.00 16.00 48.00 48.00 48.00	3 2a. T \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	otal Cost. 180.00 58.00 120.00 120.00 390.00 54.00 700.00 36.00 25.00 1,603.00 otal Cost. 245.00 108.00 55.00 60.00 160.00 96.00
DEPARTMEN RECOMMENT REQUISTITION 100 Dets 2013/8/29	T NAME: NRW Project team 1 DED BY: Benjimen Billy I NO: 0288 PTION: Being for Continue on Replacing of OI Meterials Description 11/4" (32mm) Brass Gate Valve 32mm Compression 40mm PVC Compression Coupling ThreadTape 40 KG Bag cement 2" GI Tee 40mm Brass Gate Valve 50mm x 2" UPVC male valve Socket 40mm x 2" UPVC reduce Socket 40mm x 25mm UPVC reduce Socket T NAME: NRW PROJECT TEAM 1 JED BY: Benjimen Billy I NO: 0290 PTION: Being for Continue on Replacing & Re Materials Description 50mm PVC Compression Coupling 50mm GI Nipple 50mm A 1" GI Reducing Socket 50mm x 3" GI reducing Bush 10 metres 20mm Poly Pipe 20mm x 3" Poly male Adaptor	Total per Re RECEIVED B ISSUED BY: DATE ISSUE d Gate Valve @ Quantity 1 2 3 10 5 1 Total per Re RECEIVED B ISSUED BY: DATE ISSUE 1 1 1 1 1 1 1 1 1 1 1 1 1	quish Y: [Pauliche Pauliche P	tion = Dykes ul Seda y/08/201 aruhu Are nit Cost 180.00 29.00 40.00 78.00 36.00 25.00 tion = Selina ul Seda y/08/201 Pilot Site. nit Cost 49.00 54.00 30.00 64.00 40.00 64.00 64.00 64.00 64.00 64.00 64.00 64.00 64.00 64.00 64.00 65.0	3 3 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	otal Cost 180.00 58.00 120.00 120.00 390.00 36.00 25.00 1,803.00 108.00 55.00 60.00 60.00 96.00 96.00 96.00 44.00
DEPARTMEN RECOMMENT REQUISTITION 100 Dets 2013/8/29	T NAME: NRW Project team 1 DED BY: Benjimen Billy NO: 0288 PTION: Being for Continue on Replacing of OI Meterials Description 1 1/4" (32mm) Brass Gate Valve 32mm Compression 40mm PVC Compression Coupling Thread Tape 40 KG Bag cement 2" GJ Tee 40mm Brass Gate Valve 50mm x 2" UPVC male valve Socket 40mm x 2" UPVC male valve Socket 40mm x 25mm UPVC reduce Socket T NAME: NRW PROJECT TEAM 1 DED BY: Benjimen Billy NO: 0290 PTION: Being for Continue on Replacing & Re Meterials Description 50mm GJ Nipple 50mm x 1" GJ Reducing Socket 50mm x 3/4" GJ reducing Bush 10 metres 20mm Poly Pipe 20mm x 3/4" Poly male Adaptor	Total per Re RECEIVED B ISSUED BY: DATE ISSUE Gate Valve @ Quantity 1 2 3 10 5 1 1 Total per Re RECEIVED B ISSUED BY: DATE ISSUE RECEIVED B ISSUED BY: Quantity 5 2 1 1 Total per Re RECEIVED B ISSUED BY: DATE ISSUE Papairing @ Tuvar Quantity 5 2 1 1 2 2 1 1 2 2 1 1 2 2 1 1 2 2 2 2	Y :	tion = Dykes ul Seda y 0.08 / 201. aruhu Are nit Cost 180.00	3 3 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	otal Cost 180.00 58.00 120.00 40.00 390.00 700.00 36.00 25.00 1,803.00

RECOMMENI REQUISITION	IT NAME: NRW PROJECT TEAM 1 DED BY: Eric Unga N NO: 0292 IPTION: Being for Repair & replace Gate valve @	RECEIVED BY: ISSUED BY: DATE ISSUE	Geo	orge Blame 02/09/201	oli 3	nu) .
	Materials Description	Quantity	Un	it Cost	То	tal Cost
2013/9/2	20mm Poly Coupling	2	\$	45.00	\$	90.00
2013/9/2	10 metre 20mm Pipe	10	\$	16.00	\$	160.00
2013/9/2	20mm PVC Compression Coupling	2	\$	22.00	\$	44.00
2013/9/2	1" Brass Gate valve	1	\$	190.00	\$	190.00
2013/9/2	40mm PVC male Valve Socket	3	\$	25.00	\$	75.00
2013/9/2	40mm Brass Gate Valve	1	\$	350.00	\$	350.00
2013/9/2	50mm G.I Socket	1	\$	40.00	\$	40.00
2013/9/2	40mm G.I Socket	1	\$	24.00	\$	24.00
2013/9/2	50mm x 2" UPVC male valve Socket	1	\$	36.00	\$	36.00
2013/9/2	50mm x 25mm Poly Reduce Bush	1	\$	13.00	\$	13.00
2013/9/2	40mm x 20mm Poly Reduce Bush	1	\$	9.00	\$	9.00
		Total per Red	isiuc	tion =	\$	1.031.00

	IT NAME: NRW PROJECT TEAM 2	RECEIVED E	3Y: David .A	
RECOMMEN	DED BY: Eric Unga	ISSUED BY:	Paul Seda	
REQUISITIO	N NO: 0233	DATE ISSUE	D: 10/09/201	3
JOB DESCR	IPTION: Being for continue meter raising @ Tuva	aruhu Pilot Sit	e.	
Meter I.D	13B019404 - 408(5 pieces),13B019509 -513(5	pieces),13B01	9434 - 438(5	pieces),
Meter LD	13B019444- 448(5 pieces),13B019499 -503(5 p	ieces),13B019	664 - 668(5 p	ieces),
Meter LD	13B019474 - 478(5pieces),13B019489 - 493(5	pieces),13B01	9579 - 583 &	13B019429 -
Date	Materials Description	Quantity	Unit Cost	Total Cost
2013/9/10	20mm Water Meter	50	\$ 394.00	\$ 19,700.00
	20mm Stop Cock	40	\$ 65.00	\$ 2,600.00
2013/9/10	3/4" G.I nipple	40	\$ 12.00	\$ 480.00
2013/9/10	15mm G.I elbow	120	\$ 12.00	\$ 1,440.00
2013/9/10	3/4" x 1/2" G.I Reducing Socket	20	\$ 12.00	\$ 240.00
	16mm x 1/2" female poly Adaptor	80	\$ 45.00	\$ 3,600.00
2013/9/10	ThreadTape	20	\$ 4.00	\$ 80.00
	•	Total per Rec	uisition =	\$28,140.00
DEDARTMEN	IT NAME: NRW PROJECT TEAM 1	RECEIVED E	V: Dukee	
	DED BY: Natheniel Legu (for Eric)	ISSUED BY:	George Blame	

REQUISITION NO: 0502 DATE ISSUED: 12/09/2013 JOB DESCRIPTION: Being for Measuring flow in Meters/meter testing . Meter LD 138019357 138019358				
Date	Materials Description	Quantity	Unit Cost	Total Cost
2013/9/12	20mm Water Meter	2	\$ 394.00	\$ 788.00
	20mm x 1/2" female Threaded Adaptor	2	\$ 13.00	\$ 26.00
	20mm x 3/4" Poly female Adaptor	2	\$ 48.00	\$ 96.00
	16mm Poly Coupling	1	\$ 45.00	
2013/9/12	20mm Poly Coupling	1	\$ 45.00	\$ 45.00
		Total per Re	quisition =	\$ 1,000.00

DEPARTMENT NAME: NRW PROJECT TEAM 1 RECOMMENDED BY: Benjimen Billy REQUISITION NO: 0117 JOB DESCRIPTION: Being for Meter raising @ Tuvaruhu Pilot Site.						
Date	Materials Description	Quantity	Uni	t Cost	Tot	al Cost
2013/9/16	ThreadTape	30	\$	4.00	\$	120.00
2013/9/16	10mm Steel Rods	10	\$	68.00	\$	680.00
2013/9/16	Hack Saw blade	3	\$	10.00	\$	30.00
		Total per Requisition =			\$	830.00

DEDARTMEN	NT NAME: NRW PROJECT TEAM 2	DECEIVED D	V·r	lykos				
RECOMMEN	RECEIVED BY : Dykes							
REQUISITIO	ISSUED BY: Paul Seda DATE ISSUED: 31/08/2013							
	IPTION: Being for Continue Repair & replace					ainak Cika		
Date	Materials Description	Quantity		it Cost		tal Cost		
	ThreadTape	30	\$	4.00		120.00		
2013/0/31	20 metres 20mm Poly Pipe	20	\$	16.00		320.00		
2013/0/31	25mm x 1" Female poly Adaptor	3	\$	48.00		144.00		
2013/6/31	10 metres 25mm Poly Pipe	10	\$	18.00		180.00		
	3" G.I Tee	10	\$	320.00		320.00		
2013/6/31	3" x 2" G.I Reducing Bush	1	ŝ	92.00		92.00		
2013/0/31	40mm PVC Compression Coupling		\$	40.00	\$	40.00		
2013/6/31	40mm PVC Compression Coupling	Total per Re				1.216.00		
		Total per Re	quisit	ion –	•	1,210.00		
DEDARTMEN	NT NAME: NRW PROJECT TEAM 1	DECEIVED	DV. 1	ohn Char	10			
		RECEIVED BY: John Chede ISSUED BY: Paul Seda						
REQUISITIO	DED BY: Eric Unga	DATE ISSU			9			
	IPTION: Being for Repair & replace Gate valve					T		
Date	Materials Description	Quantity		t Cost		tal Cost		
2013/9/1	40mm PVC male Valve Socket	quantity	ŝ	25.00	\$	25.00		
2013/9/1	40mm G.I Socket	+ +	\$	24.00		24.00		
2013/9/1	40mm x 1" G.I Reducing Nipple	+ +	\$	20.00	\$	20.00		
2013/9/1	25mm v 1" Fomala poly Adaptor	+ +	\$	48.00		48.00		
2013/9/1	25mm x 1" Female poly Adaptor 25mm x 1" PVC male Valve Socket	1	\$	18.00	\$	18.00		
2013/9/1	25mm Plain PVC Socket	+ +	\$	15.00		15.00		
2013/9/1	20mm PVC female Adaptor	+ +	\$	12.00		12.00		
2013/9/1	1 metre 40mm PVC pressure Pipe	1	ŝ	40.00	\$	40.00		
	I metre 40mm PVC pressure Pipe	1	\$	28.00		28.00		
0010 /0 /1								
2013/9/1	1 metre 20mm PVC pressure Pipe				Ÿ			
		Total per Re	quisit	ion =	\$	230.00		
DEPARTMEN	NT NAME: NRW PROJECT TEAM 1 DED BY: Eric Unga		guisit BY: J Paul	ion = ohn Chec Seda	ie			
DEPARTMEN RECOMMEN REQUISITIO	NT NAME: NRW PROJECT TEAM 1 DED BY: Eric Unga N NO: 0223	RECEIVED I ISSUED BY: DATE ISSUE	guisit BY: J : Paul ED: 0	ohn Cheo Seda 1/09/201	de 13	230.00		
DEPARTMEN RECOMMEN REQUISITION JOB DESCR	NT NAME: NRW PROJECT TEAM 1 DED BY: Eric Unga	RECEIVED I ISSUED BY: DATE ISSUE	BY: J Paul ED: 0	ohn Cheo Seda 1/09/201	s le l3 Site (230.00		
DEPARTMEN RECOMMEN REQUISITION JOB DESCR	NT NAME: NRW PROJECT TEAM 1 DED 1: Firio Unga N NO: 0223 PTION: Being for Repair & replace Gate valve (Materials Description	RECEIVED I ISSUED BY: DATE ISSUE Service @ the	BY: J Paul ED: 0	ohn Chec Seda 1/09/201 Project S	ie 3 Site (230.00 Tuvaruhu		
DEPARTMEN RECOMMEN REQUISITION JOB DESCR Date 2013/9/1 2013/9/1	NT NAME: NRW PROJECT TEAM 1 DED 1: Firic Ungs N NO: 0223 PTION: Being for Repair & replace Gate valve Materials Description 25mm x 1" PVC Female Socket/adaptor 125mm x 1" PVG Female Adaptor	RECEIVED I ISSUED BY: DATE ISSUE Service @ the Quantity	guisit BY: J : Paul ED: 0 Pilot Uni	ohn Chec Seda 1/09/201 Project S Cost	ie 3 Site (230.00 Tuvaruhu		
DEPARTMEN RECOMMEN REQUISITION JOB DESCR Date 2013/9/1 2013/9/1	NT NAME: NRW PROJECT TEAM 1 DED 1: Firic Ungs N NO: 0223 PTION: Being for Repair & replace Gate valve Materials Description 25mm x 1" PVC Female Socket/adaptor 125mm x 1" PVG Female Adaptor	RECEIVED ISSUED BY: DATE ISSUE Service @ the Quantity	guisit BY: J Paul ED: 0 Pilot Uni	ohn Chec Seda 1/09/201 Project S t Cost	ie 3 Site (Tuvaruhutal Cost		
DEPARTMEN RECOMMEN REQUISITION JOB DESCR Date 2013/9/1 2013/9/1	NT NAME: NRW PROJECT TEAM 1 DED BY: Eric Unga N NO: 0223 IPTION: Being for Repair & replace Gate valve Materials Description 125mm x 1" PVG Female Socket/adaptor	RECEIVED I ISSUED BY: DATE ISSUE Service @ the Quantity 1 3	BY: J Paul ED: 0 Pilot Uni	ohn Chec Seda 1/09/201 Project S t Cost 18.00 48.00	Site (230.00 (Tuvaruhu tal Cost 18.00 144.00		
DEPARTMENT RECOMMEN REQUISITION JOB DESCR Date 2013/9/1 2013/9/1 2013/9/1	NT NAME: NRW PROJECT TEAM 1 DED BY: Eric Unga NO: 0223 PTION: Being for Repair & replace Gate valve Materials Description Zömm x 1" PVC Female Socket/adaptor Zömm x 1" Poly female Adaptor Zömm by Cooping	RECEIVED ISSUED BY: DATE ISSUE Service @ the Quantity 1 3	BY: J Paul ED: 0 Pilot Uni \$	ohn Chec Seda 1/09/201 Project S t Cost 18.00 48.00 27.00	Site (Tuvaruhu tal Cost 18.00 144.00 27.00		
DEPARTMENT RECOMMEN REQUISITION JOB DESCR Date 2013/9/1 2013/9/1 2013/9/1 2013/9/1	T NAME: NRW PROJECT TEAM 1 DED BY: Eric Unga N NO: 0223 PTION: Being for Repair & replace Gate valve Materials Description 25mm x 1" PVG Female Socket/adaptor 25mm x 1" Pby female Adaptor 25mm x 1" Dy female Adaptor 25mm Poly Couping 27 x 1" GI reducing bush	RECEIVED ISSUED BY: DATE ISSUE Service @ the Quantity 1 3 1 1	BY: J : Paul ED: 0 Pilot Uni \$	ohn Chec Seda 1/09/201 Project S t Cost 18.00 48.00 27.00 50.00	Site (230.00 (Tuvaruhu tal Cost 18.00 144.00 27.00 50.00		
DEPARTMENT RECOMMEN REQUISITION DOB DESCR 2013/9/1 2013/9/1 2013/9/1 2013/9/1 2013/9/1 2013/9/1 2013/9/1	NT NAME: NRW PROJECT TEAM 1 DED BY: Eric Unga N NO: 0223 PTION: Being for Repair & replace Gate valve Materials Description Z5mm x 1" PVG Female Socket/adaptor 25mm x 1" PVG Female Adaptor 25mm you Yousing 2" x 1" G.I reducing bush 50mm x 50mm (2") female PVG Adaptor 50mm x 50mm PVG Tee	RECEIVED I ISSUED BY: DATE ISSUE @ the Quantity 1 3 1 1 1 1 1	BY: J Paul ED: 0 Pilot Uni \$	ohn Chec Seda 1/09/201 Project S t Cost 18.00 48.00 27.00 50.00 90.00	Site (Tot	230.00 (Tuvaruhu tal Cost 18.00 144.00 27.00 50.00 90.00		
DEPARTMENT RECOMMEN REQUISITION DOB DESCR 2013/9/1 2013/9/1 2013/9/1 2013/9/1 2013/9/1 2013/9/1 2013/9/1	NT NAME: NRW PROJECT TEAM 1 DED 1: Eric Unga N NO: 0223 PTION: Being for Repair & replace Gate valve Materials Description 25mm x 1" PVC Female Socket/adaptor 25mm x 1" PVG Female Adaptor 25mm x 1" Poly female Adaptor 25mm Y Gul Female Nove State	RECEIVED I ISSUED BY: DATE ISSUE Service @ the Quantity 1 1 1 1 1 3	BY: J: Paul ED: 0 Pilot Uni	ohn Chec Seda 1/09/201 Project S t Cost 18.00 48.00 50.00 90.00 90.00 49.00	Site (Tot	230.00 (Tuvaruhu tal Cost 18.00 144.00 27.00 50.00 90.00 90.00 147.00		
DEPARTMEN RECOMMEN REQUISITIO JOB DESCR Date 2013/9/1 2013/9/1 2013/9/1 2013/9/1 2013/9/1	NT NAME: NRW PROJECT TEAM 1 DED BY: Eric Unga N NO: 0223 PTION: Being for Repair & replace Gate valve Materials Description Z5mm x 1" PVG Female Socket/adaptor 25mm x 1" PVG Female Adaptor 25mm you Yousing 2" x 1" G.I reducing bush 50mm x 50mm (2") female PVG Adaptor 50mm x 50mm PVG Tee	Total per Re RECEIVED ISSUED BY: DATE ISSUE Service @ the Quantity 1 1 1 1 1	BY: J: Paul ED: 0 Pilot Uni	ohn Chec Seda 1/09/201 Project S t Cost 18.00 48.00 50.00 90.00 90.00 49.00	Site (Tot	Tuvaruhu tal Cost 18.00 144.00 50.00 90.00 90.00		
DEPARTMER RECOMMEN REQUISITIO JOB DESCR Date 2013/9/1 2013/9/1 2013/9/1 2013/9/1 2013/9/1 2013/9/1 2013/9/1	NT NAME: NRW PROJECT TEAM 1 DED BY: Eric Unga NO: 0223 PTION: Being for Repair & replace Gate valve Materials Description 25mm x 1" PVC Female Socket/adaptor 25mm x 1" PVC Female Adaptor 25mm x 1" Poly female Adaptor 25mm Poly Couping 2 x 1" G.I reducing bush 50mm (2") Female PVC Adaptor 50mm x 50mm PVC Tee 50mm PVC Compression Coupling NT NAME: NRW PROJECT TEAM 1 DED BY: Eric Unga N NO: 0222	RECEIVED ISSUED BY: DATE ISSUE BY: DATE ISSUE @ the Quantity 1 1 1 1 3 Total per Re RECEIVED ISSUED BY: DATE ISSUED BY: DATE ISSUED BY:	quisit BY: J Paul Paul Pilot Uni \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	ion = ohn Chec Sede 1/09/201 Project S t Cost 18.00 27.00 50.00 90.00 90.00 49.00 ion = ohn Chec Seda 1/09/201	Site (Tot	230.00 (Tuvaruhu tal Cost 18.00 144.00 27.00 90.00 90.00 147.00 566.00		
DEPARTMENT COMMENT COM	NT NAME: NRW PROJECT TEAM 1 DED BY : Eric Unga N NO: 0223 PTION: Being for Repair & replace Gate valve Materials Description 25mm x 1" PVG Female Socket/adaptor 25mm x 1" PVG Female Adaptor 25mm x 1" Dyl female Adaptor 25mm Poly Gouping 2" x 1" GIT reducing bush 50mm (2") female PVC Adaptor 50mm x 50mm PVC Tee 30mm PVC Compression Coupling NT NAME: NRW PROJECT TEAM 1 DED BY : Eric Unga N NO: 0222 PTION: Being for Repair & replace Gate valve	RECEIVED ISSUED BY: DATE ISSUED BY: DATE ISSUED Service @ the Quantity 1 1 1 1 1 1 1 Total per Re RECEIVED I ISSUED BY: DATE ISSUE and branch Se	quisit BY: J Paul ED: 0 Pilot Uni \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	ohn Chec Seda 1/09/201 Project S t Cost 18.00 48.00 50.00 90.00 90.00 49.00 ion =	Site (Tot	230.00 (Tuvaruhu tal Cost 18.00 144.00 27.00 90.00 90.00 147.00 566.00		
DEPARTMEN RECOMMEN REQUISITIO JOB DESCR 2013/9/1	NT NAME: NRW PROJECT TEAM 1 DED BY : Eric Unga NO: 0223 PTION: Being for Repair & replace Gate valve Materials Description 25mm x 1" PVC Female Socket/adaptor 25mm x 1" PVC Female Socket/adaptor 25mm x 1" PVC Female Adaptor 25mm Poly Couping 2" x 1" G.I reducing bush 50mm (2") Female PVC Adaptor 50mm (2") Female PVC Adaptor 50mm YC Gempression Coupling NO: 0229 TTOME: NRW PROJECT TEAM 1 DED NO: 0222 PTION: Being for Repair & replace Gate valve Materials Description	RECEIVED ISSUED BY: DATE ISSUE Service @ the Quantity 1 1 1 1 1 1 3 Total per Re RECEIVED IISSUED BY: DATE ISSUE BY: DATE ISSUED BY: DATE ISSUE and branch Se Quantity	quisit BY: J Paul ED: 0 Pilot Uni \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ Paul ED: 0 Tryice Uni	ohn Chec Seda 1/09/201 Project St Cost 18.00 48.00 50.00 90.00 90.00 90.00 49.00 ion =	de 3 Site (Tot S S S S S S S S S	230.00 Tuvaruhu tal Cost 18.00 144.00 50.00 90.00 90.00 147.00 16t Project		
DEPARTMENT AND ADDRESS AND ADD	TT NAME: NRW PROJECT TEAM 1 DED BY : Eric Unga N NO: 0223 PTION: Being for Repair & replace Gate valve Materials Description 25mm x 1 * PVG Female Socket/adaptor 25mm x 1 * PVG Female Adaptor 25mm x 1 * PVG Female Adaptor 25mm Poly Gouping 2" x 1 "G. If reducing bush 50mm (2") female PVG Adaptor 50mm x 50mm PVG Tee 50mm PVC Compression Goupling IT NAME: NRW PROJECT TEAM 1 DED BY : Eric Unga N NO: 0222 PTION: Being for Repair & replace Gate valve Materials Description 110 metres 25mm Poly Pipe	RECEIVED ISSUED BY: DATE ISSUED Service @ the Quantity 1 1 1 1 1 1 3 Total per Re RECEIVED ISSUED BY: DATE ISSUE D BY: DATE ISSUED Quantity 10 Quantity	quisit BY: J Paul ED: 0 Pilot Uni \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ Puice the paul BY: J Paul BY	ohn Chec Seda 1/09/201 Project St Cost 18.00 48.00 27.00 50.00 90.00 90.00 49.00 dependent of the cost Seda 1/09/201 pipe @ tt t Cost 18.00	de 3 Site (Tot \$ \$ \$ \$ \$ \$ \$ \$ \$ Tot Tot \$	230.00 Tuvaruhu tal Cost 18.00 144.00 27.00 50.00 90.00 147.00 568.00		
DEPARTMEN ECOMMEN EEQUISITIO JOB DESCR 2013/9/1 2013/9/1 2013/9/1 2013/9/1 2013/9/1 2013/9/1 2013/9/1 2013/9/1 2013/9/1 2013/9/1 2013/9/1 2013/9/1 2013/9/1	IT NAME: NRW PROJECT TEAM 1 DED BY : Frie Ups NO: 0223 PTION: Being for Repair & replace Gate valve Materials Description 25mm x 1" PVC Female Socket/adaptor 25mm x 1" PVC Female Socket/adaptor 25mm x 1" PVG Female Adaptor 25mm Poly Geuping 2" x 1" G.I reducing bush 50mm (2") Temale PVC Adaptor 50mm (2") Temale PVC Adaptor 50mm PVC Compression Gupling IT NAME: NRW PROJECT TEAM 1 DED BY : Frie Unga N NO: 0222 PTION: Being for Repair & replace Gate valve Materials Description 10 metres 25mm Poly Pipe	RECEIVED INSULED BY: Service @ the Quantity 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	quisit BY: J Paul ED: 0 Pilot Uni \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	ohn Chec Seda 1/09/201 Project S t Cost 18.00 48.00 50.00 90.00 90.00 90.00 90.00 100 = 000 Chec Seda 1/09/201 1/09/201 18.00 48.00	de 3 Site (Tot \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	Tuvaruht, tal Cost 18.00 144.00 50.00 90.00 90.00 147.00 566.00 lot Projectal Cost 180.00 120.00 120.00		
DEPARTMENE AUGUST AUGUS	NT NAME: NRW PROJECT TEAM 1 DED BY : Eric Unga N NO: 0223 N NO: 0223 N NO: 0226 PTION: Being for Repair & replace Gate valve Materials Description 25mm x 1 * PVG Female Socket/adaptor 25mm x 1 * PVG Female Adaptor 25mm Poly Gouping 27 * x 1 * G. I reducing bush 50mm (2") female PVG Adaptor 50mm x 50mm PVG Tee 50mm	RECEIVED ISSUED BY: DATE ISSUED Service @ the Quantity 1 1 1 1 1 1 3 Total per Re RECEIVED ISSUED BY: DATE ISSUED BY: DATE ISSUED BY: DATE ISSUED BY: 0 and branch Se Quantity 10 30 4	quisit BY: J Paul ED: 0 Pilot Uni \$ \$ \$ \$ \$ \$ \$ \$ \$ Puice Paul Price Paul Pri	ohn Chec Sede 1/09/201 Project S t Cost 18.00 27.00 50.00 90.00 48.00 ion = Ohn Chec Sede 1/09/201 pipe @ tt t Cost 18.00 4.00	de I3 Site (Tot \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	230.00 Tuvaruhu tal Cost 18.00 144.00 27.00 90.00 147.00 566.00 lot Project tal Cost 180.00 120.00 72.00		
DEPARTMER EQUISITIO JOB DESCR 2013/9/1	IT NAME: NRW PROJECT TEAM 1 DE Y: Eric Upra N NO: 0223 PTION: Being for Repair & replace Gate valve Materials Description 25mm x 1" PVG Female Socket/adaptor 25mm x 1" PVG Female Adaptor 25mm x 1" PVG Female Adaptor 25mm Poly Couping 2" x 1" GIT reducing bush 50mm (2") female PVC Adaptor 50mm x 50mm PVC Tee 50mm PVG Gompression Coupling IT NAME: NRW PROJECT TEAM 1 DED BY: Eric Unga N NO: 0222 PTION: Being for Repair & replace Gate valve Materials Description 10 metres 25mm Poly Pipe 11 Thread Tage 32mm Male PVC Valve Socket 32mm Male PVC Valve Socket	RECEIVED INSUED BY: RECEIVED INSUED BY: DATE ISSUE Quantity 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	quisit BY: J Paul ED: 0 Pilot Uni \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ Paule ED: 0 Priot Uni \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	ohn Chec Seda 1/09/201 Project S t Cost 18.00 27.00 50.00 90.00 90.00 49.00 ion = ohn Chec Seda 1/09/201 pipe @ ti t Cost 18.00 4.00 18.00	\$ S S S S S S S S S	230.00 Tuvaruhu tal Cost 18.00 144.00 27.00 90.00 90.00 147.00 566.00 lot Projectal Cost 18.000 120.00 72.00		
DEPARTMEI REQUISTION 100 DE DESCR 2013/9/1	IT NAME: NRW PROJECT TEAM 1 DED BY : Eric Unga NO: 0239 PTION: Being for Repair & replace Gate valve Materials Description 25mm x 1" PVC Female Socket/adaptor 25mm x 1" PVC Female Socket/adaptor 25mm x 1" PVC Female Adaptor 25mm PVC Couping 2" x 1" G.I reducing bush 50mm (2") Female PVC Adaptor 50mm FVC Compression Coupling IT NAME: NRW PROJECT TEAM 1 DED BY : Eric Unga NO: 0229 PTION: Being for Repair & replace Gate valve Materials Description 10 metres 25mm Poly Pipe Thread Tape 32mm Male PVC Valve Socket 32mm x 20mm G.I Reducing Socket 20mm female PVC Valve Socket	RECEIVED ISSUED BY: DATE ISSUE BY: DATE ISSUE @ the Quantity 1 1 1 1 1 3 Total per Re RECEIVED ISSUED BY: DATE ISSUED BY: DATE ISSUED BY: DATE ISSUED BY: 0 10 30 4	quisit BY: J Paul ED: 0 Pilot Uni \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	ohn Chec Sede 1/09/201 1800 27.00 27.00 90.00 90.00 90.00 90.00 49.00 ion = ohn Chec Sede 1/09/201 t Cost 18.00 4.00 18.00 18.00 18.00	Site (Inc.) Site	230.00 Tuvaruht tal Cost 18.00 144.00 90.00 90.00 90.00 147.00 566.00 tot Project tal Cost 180.00 120.00 72.00 18.00 12.00		
DEPARTMER EQUISITIO JOB DESCR 2013/9/1	IT NAME: NRW PROJECT TEAM 1 DED BY : Eric Unga N NO: 0223 PTION: Being for Repair & replace Gate valve Materials Description 25mm x 1" PVG Female Socket/adaptor 25mm x 1" PVG Female Socket/adaptor 25mm x 1" PVG Female Adaptor 25mm Poly Couping 2" x 1" GIT reducing bush 50mm (2") female PVC Adaptor 50mm x 50mm PVC Tee 30mm PVG Compression Coupling IT NAME: NRW PROJECT TEAM 1 DED BY : Eric Unga N NO: 0222 PTION: Being for Repair & replace Gate valve Interest 25mm Poly Pipe Thread Tage 32mm Male PVC Valve Socket 32mm Male PVC Valve Socket 20mm female PVC Valve Socket 32mm female PVC Valve Socket 34" GL nipple	RECEIVED INSUED BY: RECEIVED INSUED BY: DATE ISSUE Quantity 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	quisit BY: J Paul ED: 0 Pilot Uni \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ Paule ED: 0 Pilot Uni \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	ohn Chec Seda 1/09/201 Project S t Cost 18.00 27.00 50.00 90.00 90.00 49.00 ion = ohn Chec Seda 1/09/201 pipe @ ti t Cost 18.00 4.00 18.00	\$ S S S S S S S S S	230.00 Tuvaruht tal Cost 18.00 144.00 27.00 90.00 90.00 147.00 566.00 tot Project tal Cost 180.00 120.00 72.00		
DEPARTMEI REQUISTION 100 DE DESCR 2013/9/1	NT NAME: NRW PROJECT TEAM 1 DED BY : Eric Unga N NO: 0223 PTION: Being for Repair & replace Gate valve Materials Description 25mm x 1" PVC Female Socket/adaptor 25mm x 1" PVC Female Socket/adaptor 25mm Poly Couping 2" x 1" G.I reducing bush 50mm (2") Female PVC Adaptor 50mm for Couping 1" G.I reducing bush 50mm PVC Compression Coupling T NAME: NRW PROJECT TEAM 1 DED N DO: 0222 PTION: Being for Repair & replace Gate valve Materials Description 10 metres 25mm Poly Pipe 11 Pread Tape 32mm Male PVC Valve Socket 32mm x 20mm G.I Reducing Socket 20mm female PVC Valve Socket 3.4" G.I ripple 40mm PVC Valive Socket 3.4" G.I ripple	RECEIVED I ISSUED BY: DATE ISSUE BY: DATE ISSUE BY: DATE ISSUE BY: 1 1 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	quisit BY: J Paul ED: 0 Pilot Uni \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	ohn Chec Sede 1/09/201 1800 27.00 27.00 90.00 90.00 90.00 90.00 49.00 ion = ohn Chec Sede 1/09/201 t Cost 18.00 4.00 18.00 18.00 18.00	Site (Inc.) Site	230.00 Tuvaruht tal Cost 18.00 144.00 90.00 90.00 90.00 147.00 566.00 tot Project tal Cost 180.00 120.00 72.00 18.00 12.00		
DEPARTMER RECOMMEN REQUISITIO 1010 DESCR 2013/9/1	IT NAME: NRW PROJECT TEAM 1 DED BY : Eric Unga N NO: 0223 Michael Some PVC Gale Or Some PVC TEAM 1 DED BY : Eric Unga N NO: 025 No: 125mx 1" PVC Female Socket/adaptor 25mm x 1" PVG Female Socket/adaptor 25mm x 1" PVG Female Adaptor 25mm Poly Gouping 2" x 1" GIT reducing bush 50mm (2") female PVC Adaptor 50mm PVC Compression Coupling IT NAME: NRW PROJECT TEAM 1 DED BY : Eric Unga N NO: 0222 PTTON: Being for Repair & replace Gate valve Materiale Description 110 metres 25mm Poly Pipe Thread Tape 32mm Male PVC Valve Socket 32mm x 20mm GI Reducing Socket 20mm female PVC Valve Socket 34" GI nipple 40mm PVC Plain Tee 40mm PVC Plain Tee 40mm PVC Plain Tee	RECEIVED ISSUED BY: DATE ISSUI Service & the Quantity 1 1 1 1 1 1 1 1 1 1 1 1 2 3 Total per Re RECEIVED ISSUED BY: DATE ISSUI e and branch Se Quantity 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	quisit BY: J Paul BY: J Paul Uni \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ Paul Uni \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	ohn Chec Seda 1/09/201 18.00 48.00 27.00 50.00 90.00 90.00 90.00 90.00 90.00 100 = 000 100 = 000 100 = 000 100 = 000 100 = 000 100 = 000 100 = 000 = 0	Site (Tuvaruht, tal Cost 18.00 144.00 27.00 147.00 566.00 147.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 156.00 120.00 156.00		
DEPARTMER ECOMMEN RECOMMEN RECOM	IT NAME: NRW PROJECT TEAM 1 DED BY : Frie Upga N NO: 0223 PTION: Being for Repair & replace Gate valve Materials Description 25mm x 1" PVC Female Socket/adaptor 25mm x 1" PVC Female Socket/adaptor 25mm Poly Geologies 2" x 1" G.I reducing bush 50mm (2") Temale PVC Adaptor 50mm (2") Temale PVC Adaptor 50mm PVC Geologies TT NAME: NRW PROJECT TEAM 1 DED BY : Eric Unga N NO: 0222 PTION: Being for Repair & replace Gate valve Materials Description 10 metres 25mm Poly Pipe 17 mrhad Tape 32mm Male PVC Valve Socket 20mm female PVC Valve Socket 20mm female PVC Valve Socket 20mm female PVC Valve Socket 40mm PVC Female PVC Valve Socket 40mm PVC Female PVC Valve Socket 40mm PVC Female PVC Valve Socket	RECEIVED I ISSUED BY: DATE ISSUE BY: DATE ISSUE BY: DATE ISSUE BY: 1 1 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	quisit BY: J Paul D: 0 Pilot Uni \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ Paul BY: J Paul S Paul S S \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	ohn Chec Seda 1709/201 Project S t Cost 18.00 90.00 90.00 90.00 90.00 90.00 90.00 17.09/201 17.09/201 18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00	\$	230.00 Tuvaruhu tal Cost 18.00 144.00 27.00 50.00 90.00 90.00 147.00 566.00 tal Cost 180.00 120.00 120.00 12.00 12.00 12.00 12.00 35.00		
DEPARTMEN REQUISITION OF THE PROPERTY OF THE P	IT NAME: NRW PROJECT TEAM 1 DED BY : Eric Unga N NO: 0223 Michael Some PVC Gale Or Some PVC TEAM 1 DED BY : Eric Unga N NO: 025 No: 125mx 1" PVC Female Socket/adaptor 25mm x 1" PVG Female Socket/adaptor 25mm x 1" PVG Female Adaptor 25mm Poly Gouping 2" x 1" GIT reducing bush 50mm (2") female PVC Adaptor 50mm PVC Compression Coupling IT NAME: NRW PROJECT TEAM 1 DED BY : Eric Unga N NO: 0222 PTTON: Being for Repair & replace Gate valve Materiale Description 110 metres 25mm Poly Pipe Thread Tape 32mm Male PVC Valve Socket 32mm x 20mm GI Reducing Socket 20mm female PVC Valve Socket 34" GI nipple 40mm PVC Plain Tee 40mm PVC Plain Tee 40mm PVC Plain Tee	RECEIVED ISSUED BY: Service @ the Quantity 1 1 1 1 3 3 Total per Re RECEIVED ISSUED BY: DATE ISSUID RECEIVED ISSUED BY: DATE ISSUID 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1	quisit BY: J Paul BY: J Paul Uni \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ Paul Uni \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	ohn Chec Seda 1/09/201 Project S t Cost 18.00 48.00 27.00 90.00 90.00 90.00 90.00 100 = ohn Chec Seda 1/09/201 pipe @ tt t Cost 18.00 4.00 18.00 18.00 18.00 18.00 18.00 12.00 35.00 27.00 27.00 18.00 27.00	Site (230.00 Tuvaruhu tal Cost 18.00 144.00 27.00 90.00 90.00 147.00 566.00 180.00 120.00 120.00 12.00 12.00 12.00 35.00		

DEPARTMENT NAME: NRW PROJECT TEAM 1 RECOMMENDED BY: Eric Unga REQUISITION NO: 0503 JOB DESCRIPTION: Being for Meter raising @ Tuvaruhu Pilot		RECEIVED BY: Teno ISSUED BY: Paul Seda DATE ISSUED: 20/09/2013 ot Site .						
Date	Materials Description	Quantity	Hini	t Cost	Τα	tal Cost		
	20mm x 16mm Poly Reduce Coupling	10	\$	560.00				
	16mm Poly Coupling	10	ŝ	56.00 45.00	\$	450.00		
	16mm x 1/2" female poly Adaptor	10	Š	45.00	\$	450.00		
	16mm x 1/2" male Poly Adaptor	10	\$	45.00	\$	450.00		
	30 metres 16mm poly pipe	30	\$	10.00	\$	300.00		
	ThreadTape	20	ŝ	4.00	ŝ	80.00		
	20mm x 1/2" Poly female Adaptor	2	ŝ	40.00	\$	80.00		
2010/0/20	Zenim X 1/2 1 diy female / taapeer	Total per Re	quisit	ion =		2,370.00		
DEDARTMEN	IT NAME: NRW PROJECT TEAM 1	RECEIVED	BV: D	A bive				
	DED BY : Eric Unga	ISSUED BY						
REQUISITIO		DATE ISSU			3			
	IPTION: Being for Meter raising @ Tuvaruhu Pil			C, 00, 20	-			
Date	Materials Description	Quantity	Hni	t Cost	Τα	tal Cost		
	40 KG Bag cement	6	\$	78.00	\$	468.00		
	30 metres 16mm poly pipe	30	ŝ	10.00		300.00		
2010/ 0/ 20	oo medes romm poly pipe	Total per Re	quisit	ion =	\$	768.00		
DED 4 DE14E1	IT MANE NOW DOO IFOT TEAM A	DEACH IED	DV .	_				
DEPARTMENT NAME: NRW PROJECT TEAM 1 RECOMMENDED BY: M. Bera REQUISITION NO: 0294 JOB DESCRIPTION: Being for Meter raising @ Tuvaruhu Pilo		RECEIVED BY: J.Teno ISSUED BY: Paul Seda DATE ISSUED: 24/09/2013						
Date	Materials Description	Quantity	Luc	t Cost	Τ.	tal Cost		
	40 KG Bag cement	6	\$	78.00	\$	468.00		
	30 metres 16mm poly pipe	30	ŝ	10.00		300.00		
2013/3/24	30 metres form poly pipe	Total per Re			9	768.00		
		Total per re	quisit	ion –	•	/00.00		
DEPARTMENT RECOMMENT REQUISITION DESCRIPTION	RECEIVED BY: J.Teno ISSUED BY: Paul Seda DATE ISSUED: 24/09/2013							
Date	IPTION: Being for Meter raising @ Tuvaruhu Pil	Quantity	Lite	t Cost	T.	tal Cost		
	50 metres 16mm poly pipe	50	\$	10.00		500.00		
	16mm x 1/2" female poly Adaptor	10	\$	45.00		450.00		
	16mm x 1/2" male Poly Adaptor	10	\$	45.00	\$	450.00		
2013/3/24	Tottill X 1/2 Illale Foly Adaptor	Total per De	a viola	45.00		1.400.00		
		Total per re	quisit	ion –	•	1,400.00		
RECOMMEN REQUISITIO	IT NAME: NRW PROJECT TEAM 1 DED BY: Eric Unga NO: 0504 IPTION: Being for preparation of Meter raising	RECEIVED ISSUED BY DATE ISSU @ Tuvaruhu Pi	: Paul ED: 2	Seda 6/09/201				
Date	Materials Description	Quantity		t Cost	To	tal Cost		
	15mm G.I elbow	40	\$	12.00	\$	480.00		
2013/9/26	ThreadTape	20	\$	4.00	\$	80.00		
	16mm x 1/2" female poly Adaptor	20	\$	45.00	\$	900.00		
		Total per Re	quisit		\$	1,460.00		
					•			

DEPARTMENT NAME: NRW PROJECT TEAM 1 RECEIVED BY: Dyes						
	Materials Description				Tot	al Cost
2013/9/26	50 metre 20mm Pipe	50	\$	16.00	\$	800.00
2013/9/26	30 metres 16mm poly pipe	30	\$	10.00	\$	300.00
2013/9/26	20mm x 1/2" Poly male Adaptor	1	\$	40.00	\$	40.00

2013/9/2	6 20mm x 16mm Poly Reduce Coupling	-	otal per Re	\$	56.00		56.00 1.196.00
		<u></u>	otal per re	quisit	ion –	•	1,180.00
DEPARTM	ENT NAME: NRW PROJECT TEAM 1		RECEIVED	BY: T	eno		
	NDED BY : Benjimen Billy	i	SSUED BY	: Paul	Seda		
REQUISITI	ON NO: 0299		DATE ISSU			3	
	RIPTION: Being for preparation of Meter	raising @ T					
Date			Quantity			To	tal Cost
	7 30 metres 16mm poly pipe		30	\$			
2013/9/2	7 40 KG Bag cement		6	\$	78.00		
2013/9/2	7 16mm x 1/2" female poly Adaptor		10	\$	45.00		450.00
	7 16mm x 1/2" male Poly Adaptor		10	\$	45.00		450.0
2013/9/2	7 16mm Poly Coupling		10	\$	45.00		450.0
		1	otal per Re	quisit	ion =	ş	2,118.0
NED A DELA	ENT NAME: NRW PROJECT TEAM 1		RECEIVED	DV D			
						easi	
	NDED BY: Eric Unga ON NO: 0505		SSUED BY DATE ISSU			9	
	RIPTION: Being for preparation of Meter					3	
Date	Materials Description	raising @ i	Quantity		t Cost	Т	tal Cost
	7 3/4" G.I nipple		20	\$	12.00		240.0
2013/9/2	7 20mm Stop Cock		10	\$			1,680.0
2013/9/2	7 15mm G.I elbow		20	\$	12.00		240.0
2013/9/2			20	\$	45.00	\$	900.0
	7 16mm x 1/2" female poly Adaptor		20	\$	45.00		
		-	20	\$	4.00	\$	80.0
	7 16mm x 1/2" female poly Adaptor	ī		\$	4.00	\$	900.00 80.00 3,140.0 0
2013/9/2	7 16mm x 1/2" female poly Adaptor	1	20	\$ quisit	4.00 ion =	\$	80.0
2013/9/2 DEPARTM	7 16mm x 1/2" female poly Adaptor 7 ThreadTape		20 otal per Re	ğuisit BY: J	4.00 ion = ohn Tend	\$	80.0
2013/9/2 DEPARTMI RECOMME REQUISITI	7 16mm x 1/2" female poly Adaptor 7 ThreadTape ENT NAME: NRW PROJECT TEAM 1 NDED BY : Benjimen Billy ON NO: 0300	i	20 otal per Re RECEIVED SSUED BY DATE ISSU	S Quisit BY: J : Paul ED: 2	4.00 ion = ohn Tend Seda 9/09/201	\$	80.0
2013/9/2 DEPARTMI RECOMME REQUISITI JOB DESC	7 16mm x 1/2" female poly Adaptor ThreadTape ENT NAME: NRW PROJECT TEAM 1 NDED BY : Benjimen Billy ON 0:0300 RIPTION: Being for preparation of Meter	i	20 otal per Re RECEIVED SSUED BY DATE ISSU uvaruhu Pi	S Quisit BY: J : Paul ED: 2 lot Si	4.00 ion = ohn Tend Seda 9/09/201 te .	\$	80.0 3,140.0
2013/9/2 DEPARTMI RECOMME REQUISITI JOB DESC Date	7 16mm x 1/2" female poly Adaptor 7 17 ThreadTape ENT NAME: NRW PROJECT TEAM 1 NDED BY: Benjimen Billy ON NC: 0300 RIPTION: Being for preparation of Meter Meterials Description	i	20 otal per Re RECEIVED SSUED BY DATE ISSU uvaruhu Pi Quantity	BY: J : Paul ED: 2 lot Si	4.00 ion = ohn Tend Seda 9/09/201 te . t Cost	\$ 3	80.0 3,140.0
DEPARTMI RECOMME REQUISITI JOB DESC Date 2013/9/3	7 16mm x 1/2" female poly Adaptor 7 1 ThreadTape ENT NAME: NRW PROJECT TEAM 1 NDED BY : Benjimen Billy ON NO: 0300 RIPTION: Being for preparation of Meter Materials Description 29 40 KG Bas cement	raising @ T	20 otal per Re RECEIVED SSUED BY DATE ISSU uvaruhu Pi Quantity 6	S Quisit BY: J : Paul ED: 2 lot Si	4.00 ion = ohn Tend Seda 9/09/201 te .	\$ 3	80.0 3,140.0
DEPARTMI RECOMME REQUISITI JOB DESC Date 2013/9/3	7 16mm x 1/2" female poly Adaptor 7 1 ThreadTape ENT NAME: NRW PROJECT TEAM 1 NDED BY : Benjimen Billy ON NO: 0300 REPITION: Being for preparation of Meter Materials Description 29140 KG Bag cement Oortinued next page	raising @ T	20 otal per Re RECEIVED SSUED BY DATE ISSU uvaruhu Pi Quantity 6	SY: J EP: Paul ED: 2 lot Si Uni	4.00 ion = ohn Tend Seda 9/09/201 te . t Cost 78.00	\$ 3 To	80.0 3,140.0 tal Cost 468.0
DEPARTMI RECOMME REQUISITI JOB DESC Date 2013/9/2	7 16mm x 1/2" female poly Adaptor 7 ThreadTape ENT NAME: NRW PROJECT TEAM 1 NDED BY : Benjimen Billy ON NO: 0300 RIPTION: Being for preparation of Meter Materials Description 2940 KG Bag cement	raising @ T	20 otal per Re RECEIVED SSUED BY DATE ISSU uvaruhu Pi Quantity 40	S quisit BY: J : Paul ED: 2 lot Si Uni	4.00 don = ohn Tend Seda 9/09/201 te . t Cost 78.00	\$ 3 To	80.0 3,140.0 stal Cost 468.0 480.0
DEPARTMI RECOMME REQUISITI JOB DESC Date 2013/9/2 2013/9/2 2013/9/2	7 16mm x 1/2" female poly Adaptor 7 1 ThreadTape ENT NAME: NRW PROJECT TEAM 1 NDED BY : Benjimen Billy ON NC: 0300 REPTION: Being for preparation of Meter Materials Description 29 40 KG Bag cement	raising @ T	20 Otal per Re RECEIVED SSUED BY DATE ISSU uvaruhu Pi Quantity 6 40 20	BY: J : Paul ED: 2 lot Si Uni \$	4.00 don = ohn Tend Seda 9/09/201 te . t Cost 78.00 12.00 10.00	\$ 3 \$ \$	80.0 3,140.0 *tal Cost 468.0 480.0 200.0
2013/9/2 DEPARTMI RECOMME REQUISITI JOB DESC 2013/9/2 2013/9/2 2013/9/2 2013/9/2	7 16mm x 1/2" female poly Adaptor 7 ThreadTape ENT NAME: NRW PROJECT TEAM 1 NDED BY : Benjimen Billy ON NO: 300 RIPTION: Being for preparation of Meter Materials Description 29 40 KG Bag cement 9 15mm Gl elbow 9 11/2" Gl Socket 9 40 metres 16mm poly pipe	raising @ T	20 otal per Re RECEIVED SSUED BY DATE ISSU uvaruhu Pi Guantity 6 20 40	BY: J : Paul ED: 2 lot Si Uni	4.00 don =	3 3 5 \$	80.0 3,140.0 *tal Cost 468.0 480.0 200.0 400.0
2013/9/2 DEPARTMI RECOMME REQUISITI JOB DESC 2013/9/2 2013/9/2 2013/9/2 2013/9/2	7 16mm x 1/2" female poly Adaptor 7 1 ThreadTape ENT NAME: NRW PROJECT TEAM 1 NDED BY : Benjimen Billy ON NO: 0300 RIPTION: Being for preparation of Meter Meterials Description 29 40 KG Bag cement	raising @ T	20 Octal per Re RECEIVED SSUED BY DATE ISSU uvaruhu Pi Guantity 6 40 20 40 5	BY: J : Paul ED: 2 lot Si Uni \$	4.00 ion = ohn Tenc Seda 9/09/201 te . t Cost 78.00 10.00 10.00 45.00	3 To \$ \$ \$ \$	80.0 3,140.0 *tal Cost 468.0 480.0 200.0 400.0 225.0
2013/9/2 DEPARTMI RECOMME REQUISITI JOB DESC 2013/9/2 2013/9/2 2013/9/2 2013/9/2	7 16mm x 1/2" female poly Adaptor 7 ThreadTape ENT NAME: NRW PROJECT TEAM 1 NDED BY : Benjimen Billy ON NO: 300 RIPTION: Being for preparation of Meter Materials Description 29 40 KG Bag cement 9 15mm Gl elbow 9 11/2" Gl Socket 9 40 metres 16mm poly pipe	raising @ T	20 otal per Re RECEIVED SSUED BY DATE ISSU uvaruhu Pi Quantity 40 20 40 5 5	BY: J ED: 2 lot Si Uni \$	4.00 ion =	3 To \$ \$ \$ \$	80.0 3,140.0 468.0 480.0 200.0 400.0 225.0 225.0
2013/9/2 DEPARTMI RECOMME REQUISITI JOB DESC 2013/9/2 2013/9/2 2013/9/2 2013/9/2	7 16mm x 1/2" female poly Adaptor 7 1 ThreadTape ENT NAME: NRW PROJECT TEAM 1 NDED BY : Benjimen Billy ON NO: 0300 RIPTION: Being for preparation of Meter Meterials Description 29 40 KG Bag cement	raising @ T	20 Octal per Re RECEIVED SSUED BY DATE ISSU uvaruhu Pi Guantity 6 40 20 40 5	BY: J ED: 2 lot Si Uni \$	4.00 ion =	3 To \$ \$ \$ \$	80.0 3,140.0 468.0 480.0 200.0 400.0 225.0 225.0
2013/9/2 DEPARTMIRECOMMEREQUISITI JOB DESCO 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2	7 16mm x 1/2" female poly Adaptor 7 17 ThreadTape ENT NAME: NRW PROJECT TEAM 1 NDED BY: Benjimen Billy ON NO: 3030 RIPTION: Being for preparation of Meter Materials Description 29 40 KG Bag cement	raising @ T	20 otal per Re RECEIVED BY SSUED BY DATE ISSU Tuvaruhu Pi Quantity 6 40 20 40 5 5 otal per Re	S Quisit BY: J : Paul ED: 2 lot Si Uni \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	4.00 ion = ohn Tenc Seda 9/09/201 te t Cost 78.00 12.00 10.00 45.00 45.00 ion =	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	80.0 3,140.0 468.0 480.0 200.0 400.0 225.0 1,998.0
2013/9/2 DEPARTMRECOMMER	7 16mm x 1/2" female poly Adaptor 7 ThreadTape ENT NAME: NRW PROJECT TEAM 1 NDED BY : Benjimen Billy ON NC: 3030 RIPTION: Being for preparation of Meter Materials Description 29 40 KG Bag coment	raising @ T	20 otal per Re RECEIVED BY SSUED BY SATE ISSU "uvaruhu Pi Quantity 6 20 40 5 5 otal per Re RECEIVED	BY: J : Paul ED: 2 lot Si Uni \$ \$ \$ \$ \$	4.00 ion =	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	80.0 3,140.0 468.0 480.0 200.0 400.0 225.0 1,998.0
2013/9/2 DEPARTMIRECOMMERCUISITI JOB DESC Date 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 DEPARTMIRECOMMER	7. 16mm x 1/2" female poly Adaptor 7. ThreadTape ENT NAME: NRW PROJECT TEAM 1 NDED BY: Benjimen Billy ON NC: 0300 RIPTION: Being for preparation of Meter Meterials Description 29 40 KG Bag. cement 29 40 KG Bag. cement 29 15mm G.I elbow 9 15mm G.I elbow 9 15mm G.I elbow 9 172" G.I Socket 9 40 metres 16mm poly pipe 9 16mm x 1/2" female poly Adaptor 9 110mm x 1/2" male Poly Adaptor 9 15mm x 1/2" male Poly Adaptor	raising @ T	20 otal per Re RECEIVED SSUED BY DATE ISSU- uvaruhu Pi Quentity 40 20 40 5 5 otal per Re RECEIVED SSUED BY	S S S S S S S S S S S S S S S S S S S	4.00 ion = ohn Tenc Seda 9/09/201 te . 12.00 10.00 10.00 45.00 ion =	S S S S S S S	80.0 3,140.0 468.0 480.0 200.0 400.0 225.0 1,998.0
2013/9/2 DEPARTMRECOMMEREQUISTITIOD DESCO Date 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 DEPARTMRECOMMERCOMMERCOM	7 16mm x 1/2" female poly Adaptor 7 ThreadTape ENT NAME: NRW PROJECT TEAM 1 NDED BY : Benjimen Billy ON NO: 3030 RIPTION: Being for preparation of Meter Materials Description 29 40 KG Bag cement	raising @ T	20 otal per Re RECEIVED SSUED BY DATE ISSU uvaruhu P Quantity 6 20 40 5 5 otal per Re RECEIVED BY DATE ISSUED BY DATE ISSUED BY	S S S S S S S S S S S S S S S S S S S	4.00 ion =	S S S S S S S	80.0 3,140.0 468.0 480.0 200.0 400.0 225.0 225.0 1,998.0
2013/9/2 DEPARTMIREQUISITI JOB DESC 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2	7 16mm x 1/2" female poly Adaptor 7 ThreadTape ENT NAME: NRW PROJECT TEAM 1 NOED BY: Benjimen Billy ON NC: 0300 RIPTION: Being for preparation of Meter Materials Description 29 40 KG Bag cement	raising @ T	20 otal per Re RECEIVED SUBJECT SITE ISSU uvaruhu Pi 6 40 20 40 5 5 otal per Re RECEIVED SSUED BY DATE ISSU uvaruhu 2i uvaruhu 2i uvaruhu 2i uvaruhu 2i	S S S S S S S S S S S S S S S S S S S	4.00 4.00 4.00 4.00 5 6 6 6 6 6 6 6 6 6	3 3 5 5 5 5 5 5 8	80.00 3,140.00 468.00 480.00 400.00 225.00 225.00 1,998.00
2013/9/2 DEPARTMIRECOMMERCOUSTI JOB DESC 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2	7 16mm x 1/2" female poly Adaptor 7 1 ThreadTape ENT NAME: NRW PROJECT TEAM 1 NDED BY : Benjimen Billy ON NO: 3030 RIPTION: Being for preparation of Meter Materials Description 29 40 KG Bag cement 9 15mm G1 elbow 9 1172" G1 Socket 9 140 metrs 16mm poly pipe 9 140 metrs 16mm poly pipe 9 16mm x 1/2" male poly Adaptor 9 15mm X 1/2" male Poly Adaptor ENT NAME: NRW PROJECT TEAM 1 NDED BY : Benjimen Billy ON NO: 5056 RIPTION: Being for preparation of Meter Materials Description	raising @ T	20 otal per Re RECEIVED SSUED BY ATE ISSU uvaruhu Pi Guantity 6 20 40 5 5 otal per Re RECEIVED SSUED BY DATE ISSU uvaruhu 2 Quantity	\$ quisit BY: J Paul ED: 2 Paul ED: 2 Uni \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	4.00 ion =	3 3 5 5 5 5 5 5 7 8	80.0 3,140.0 480.0 480.0 200.0 400.0 225.0 225.0 1,998.0
2013/9/2 DEPARTMIREQUISITION 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2	7 16mm x 1/2" female poly Adaptor 7 ThreadTape ENT NAME: NRW PROJECT TEAM 1 NDED BY : Benjimen Billy ON NO: 0300 RIPTION: Being for preparation of Meter Materials Description 29 40 KG Bag cement	raising @ T	20 otal per Re RECEIVED BY DATE ISSU uvaruhu Pi Guentity 6 40 5 5 otal per Re RECEIVED BY DATE ISSU uvaruhu Pi Uvaruhu Pi Uvaruhu Pi Uvaruhu Pi Uvaruhu Pi Uvaruhu 2 Quentity 6	\$ quisit BY: J Paul ED: 2 lot Si Uni \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	4.00 ion =	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	80.00 3,140.00 Atal Cost 468.00 480.00 200.00 400.00 225.00 225.00 1,998.00 Atal Cost 408.00
2013/9/2 DEPARTMINE REQUISITION DESCONDANCE 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2	7 16mm x 1/2" female poly Adaptor 7 1 ThreadTape ENT NAME: NRW PROJECT TEAM 1 NDED BY : Benjimen Billy ON NO: 3030 RIPTION: Being for preparation of Meter Materials Description 19 40 KG Bag cement 15 15mm Gl elbow 16 172 Gl Socket 19 172 Gl Socket 19 172 Gl Socket 19 18mm x 1/2" female poly Adaptor 19 18mm x 1/2" male Poly Adaptor 19 18mm x 1/2" male Poly Adaptor 18 18mm x 1/2" male Poly Adaptor 19 18mm x 1/2" male Poly Adaptor 19 18mm x 1/2" poly Adaptor	raising @ T	20 otal per Re PRECEIVED SSUED BY DATE ISSU uvaruhu Pi Quantity 6 40 20 40 5 5 otal per Re RECEIVED BY DATE ISSU uvaruhu 2 Quantity 6 40 40 40 40 40 40 40 40 40 40 40 40 40	\$ quisit BY: J S Paul ED: 22 lot Si S S S S S S S S S	4.00 ion = ohn Tenc Seda 9/09/201 te t Cost 78.00 10.00 10.00 45.00 45.00 ion = avid Ako Seda 0/08/201 Site t Cost 68.00 4.00	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	80.00 3,140.00 468.00 480.00 200.00 225.00 225.00 225.00 408.00 408.00 408.00
2013/9/2 DEPARTMIRECOMMERECUMENT RECOMMERECUMENT RECOMMERECUMENT 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2	7 16mm x 1/2" female poly Adaptor 7 ThreadTape ENT NAME: NRW PROJECT TEAM 1 NDED BY : Benjimen Billy ON NC: 3030 RIPTION: Being for preparation of Meter Materials Description 29 40 KG Bag cement	raising @ T	20 otal per Re RECEIVED SSUED BY DATE ISSU Guantity 6 20 40 5 5 otal per Re RECEIVED BY SSUED BY DATE ISSU uvaruhu 2 Quantity 6 40 15	\$ squisit BY: J S S S S S S S S S S S S S S S S S S	4.00 ion = ohn Tenc Seda 9/09/201 te. t Cost 78.00 12.00 10.00 10.00 45.00 45.00 ion = ovid Ako Seda 0/09/201 te. t Cost 68.00 4.00 168.00	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	80.0 3,140.0 Atal Cost 468.0 200.0 400.0 225.0 225.0 1,998.0 Atal Cost 408.0 208.0 209.0 225.0 225.0 225.0 225.0 225.0 225.0 225.0
2013/9/2 DEPARTMIRECOMMEREQUISITIODS DESCO 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2	7 16mm x 1/2" female poly Adaptor 7 17 ThreadTape ENT NAME: NRW PROJECT TEAM 1 NDED BY : Benjimen Billy ON NO: 3030 RIPTION: Being for preparation of Meter Materials Description 19 40 KG Bag, cement	raising @ T	20 ctal per Re SUED BY DATE ISSU uvaruhu Pi Quentity 40 5 5 ctal per Re ECEIVED SSUED BY DATE ISSU uvaruhu 22 Quentity 6 40 5 6 40 40 40 40 5 5 6 40 40 40 40 40 40 40 40 40 40 40 40 40	Sequisition of the control of the co	4.00 ion = ohn Tenc Seda 9/09/201 te. 78.00 10.00 10.00 45.00 45.00 ion = ovid Ako Seda 0/09/201 Site. t Cost 68.00 4.00 168.00 12.00	3 To S S S S S S S S S S	80.0 3,140.0 468.0 480.0 200.0 400.0 225.0 225.0 1,998.0 408.0 160.0 2,520.0
2013/9/2 DEPARTMIRECOMMEREQUISITION 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2 2013/9/2	7 16mm x 1/2" female poly Adaptor 7 ThreadTape ENT NAME: NRW PROJECT TEAM 1 NDED BY : Benjimen Billy ON NC: 3030 RIPTION: Being for preparation of Meter Materials Description 29 40 KG Bag cement	raising @ T	20 otal per Re RECEIVED SSUED BY DATE ISSU Guantity 6 20 40 5 5 otal per Re RECEIVED BY SSUED BY DATE ISSU uvaruhu 2 Quantity 6 40 15	\$ squisit BY: J S S S S S S S S S S S S S S S S S S	4.00 ion = ohn Tenc Seda 9/09/201 te. t Cost 78.00 12.00 10.00 10.00 45.00 45.00 ion = ovid Ako Seda 0/09/201 te. t Cost 68.00 4.00 168.00	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	80.0 3,140.0 Atal Cost 468.0 200.0 400.0 225.0 225.0 1,998.0 Atal Cost 408.0 208.0 209.0 225.0 225.0 225.0 225.0 225.0 225.0 225.0

Date Materials Description Quantity Unit Cost Total Cost	RECOMMENI REQUISITION	IT NAME: NRW PROJECT TEAM 1 DED BY: Eric Unga NO: 0506 IPTION: Being for preparation of Meter raising @	RECEIVED E ISSUED BY: DATE ISSUE Tuvaruhu 2 F	Paul D: 30	Seda 0/09/201	3	
			Quantity	Unit	t Cost	Tot	tal Cost
2013/9/30 50 metres 16mm poly pipe 50 \$ 10.00 \$ 500.00	2012/0/20	50 metres 16mm poly pine	50	\$	10.00	\$	500.00

	Before Countermeasure	ermeasure	After Countermeasure	ermeasure	
	Before Countermeasure	Countermeasure	After Countermeasure	Routine Activities Total	Total
Personnel Cost	20,369.93	22,020.00	9,198.30	5,163.75	56,751.98
Consumable	203.04	213.72	42.74	21.37	4,080.88
Material and Equipment	11,020.00	93,796.00	0.00	0.00	104,816.00
Sub Total	31,592.96	116,029.72	9,241.04		5,185.12 165,648.86
TOTAL	147,622.69	69	14,426.17	.17	

2013/9/30 16mm x 1/2" female poly Adaptor 2013/9/30 25mm x 3/4" x 25mm Poly female threaded Te	20	\$	45.00 36.00	\$	900.00 108.00
2013/9/30 25mm x 3/4 x 25mm Poly female threaded 1e	10	\$	3,00	\$	30.00
2013/9/30 3/4 x 1/2" Poly Reducing Bush	3	\$	5.50		16.50
	Total per Per	u doit	ion -	ŧ	1 988 50

	T NAME: NRW PROJECT TEAM 1 DED BY: Eric Unga	RECEIVED E ISSUED BY: DATE ISSUE	Paul Seda	119
JOB DESCRI	PTION: Being for preparation of Meter raising @	Tuvaruhu 2 F	Pilot Site .	
Date	Materials Description	Quantity	Unit Cost	Total Cost
2013/9/30	15mm G.I elbow	20	\$ 12.00	\$ 240.00
		Total per Rec	quisition =	\$ 240.00

RECOMMEN REQUISITION	IT NAME: NRW PROJECT TEAM 1 DED BY: Eric Unga NO: 0507 IPTION: Being for Meter Raising @ the Pilot Pr	ISSUED BY: DATE ISSUE	D: 04/09/20		
Date	Materials Description	Quantity	Unit Cost	To	otal Cost
2013/10/4	40 metres 20mm Poly Pipe	40	\$ 16.00	\$	640.00
2013/10/4	20mm x 1/2" Poly female Adaptor	20	\$ 40.00	\$	800.00
2013/10/4	20mm x 16mm Poly Reduce Coupling	20	\$ 56.00	\$	1,120.00
2013/10/4	ThreadTape	10	\$ 4.00	\$	40.00
		Total per Rec	uisition =	\$	2.600.00

RECOMMEN REQUISITION	IT NAME: NRW PROJECT TEAM 1 DED BY: Eric Unga N NO: 0508 IPTION: Being for Meter Raising @ the Pilot Pro	RECEIVED BY: ISSUED BY: DATE ISSUE iect. Site (Tuv.	Paul D: 0	Seda 7/09/201		
	Materials Description	Quantity		t Cost	Tota	al Cost
2013/10/7	25mm x 3/4" male poly Adaptor	2	\$	48.00	\$	96.00
2013/10/7	25mm x 3/4" female poly Adaptor	2	\$	48.00	\$	96.00
2013/10/7	3/4" G.I nipple	1	\$	12.00	\$	12.00
		Total per Res	nuisit	ion =	2	204 00

#REF!

ocation	Vavaya Ridge								per
Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
. Personnel	Grades- Steps								
Staff-3	3.1	0	Person	15.38	115.35				
	3.2	0		15.90	119.25				
	3.3	0	Person	16.41	123.08				
	3.4	0	Person	16.92	126.90				
	3.5	0	Person	17.44	130.80				
Staff-4	4.1	10	Person	19.23	144.23	22.00		3,172.95	
	4.2	20	Person Person	20.00	150.00 155.78	38.00		5,700.00	
	4.4	0	reison	21.54	161.55			0.00	
	4.5	0		22.31	167.33			0.00	
Staff-5	5.1	0		24 10	180.75			0.00	
Dian 5	5.2	0		25.13	188.48			0.00	
	5.3	0		26.15	196.13			0.00	
	5.4	0		27.18	203.85			0.00	
	5.5	9		28.21	211.58	17.00		3.596.78	
Staff-6	6.1	2		31.54	236.55	2.00		473.10	
	6.2	8		32.82	246.15	14.00		3,446.10	
	6.3	0		34.10	255.75			0.00	
	6.4	0		35.38	265.35			0.00	
	6.5	0		36.67	275.03			0.00	
Staff-7	7.1	0		38.46	288.45			0.00	
-	7.2	0		39.74	298.05			0.00	
	7.3	0		41.03	307.73			0.00	
	7.4	0		42.31	317.33			0.00	
	7.5	0		43.59	326.93			0.00	
Staff-8	8.1	0		47.95	359.63			0.00	
	8.2	0		49.23	369.23			0.00	
	8.3	0		50.51	378.83			0.00	
	8.4	0		51.79	388.43	40.00		0.00	
	8.5	3		53.08	398.10	10.00		3,981.00	
Staff-9	9.1	0		58.21	436.58			0.00	
	9.2	0		59.49	446.18			0.00	
		0		60.77	455.78			0.00	
	9.4 9.5	0		63.33	465.38 474.98			0.00	
Sub-total	3.3			03.33	474.00	103.00		20,369.93	
. Consumable				S Per Liter	I /km	100.00	\$/km	20,000.00	
Consumanc				O I CI LIICI	LJ KIII		O'RAIII		50km/7km/liter=7.14liter
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km
Diesel	For Pick-up	114	Liter	11.80	0.1428	16.2792	1.68504	192.09	50km/7km/liter=7.14liter/50km
Engine Oil	For Excavator	0	Liter	60.00	0.0016		0.096		100km x 252days=25,200km 25,200km/ 10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km
Engine Oil	For Pick-up	114	Liter	60.00	0.0016		0.096	10.94	100km x 252days=25,200km 25,200km/ 10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km
Tires		0	Nos	770.00	0.0014		1.078	0.00	50km x 252days=12,600km 12,600km/ 30,000km x 4nos=1.68nos 1.68nos/ 252days=0.07nos/50km
Sub-total	l							203.04	
Material & quipment									
Sluice/ Gate Valve	25mm		piece					0.00	Gate Valve
Sluice/ Gate Valve	40mm	1	piece		350.00			350.00	Gate Valve
Sluice/ Gate Valve	50mm	2	piece		310.00			620.00	Gate Valve
Sluice/ Gate Valve	80mm		piece						Sluice Valve
Sluice/ Gate Valve	100mm	2	piece		2,423.00			4,846.00	Sluice Valve
Sluice/ Gate Valve	150mm		piece					0.00	Sluice Valve
Sluice/ Gate Valve	200mm		piece					0.00	Sluice Valve
Sluice/ Gate Valve	250mm		piece					0.00	Sluice Valve225mm AUD1785
Sluice/ Gate Valve	300mm		piece					0.00	
Pipes (Poly)	15mm		coil						Length on 1 coil =300m
Pipes (Poly)	20mm		coil						Length on 1 coil =300m

									per day
Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Pipes (Poly)	25mm		coil					0.00	Length on 1 coil =200m
Pipes (Poly)	50mm		coil					0.00	Length on 1 coil =150m
Pipes (PVC)	25mm		piece					0.00	
Pipes (PVC)	50mm		piece					0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm	1	piece		248.00			248.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece					0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece					0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
Other Materials								4,956.00	
Sub-total								11,020.00	
Total								31 592 96	

Total 31,592.96 1AUD=6.534SBD was applied to the above (rate as of 30 September, 2013 of Oanda).

									per day
Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Pipes (Poly)	50mm	5	coil		45.00			225.00	Length on 1 coil =150m
Pipes (PVC)	25mm		piece					0.00	
Pipes (PVC)	50mm		piece					0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece		248.00			0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece					0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece					0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm	90	piece		394.00			35,460.00	
Water Meter	25mm	3	piece		918.68			2,756.04	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
Other Materials								48,584.96	
Sub-total								93,796.00	
Total								116,029.72	
1 AUD_C 524CDD v	use applied to th			0 Ct	9012 -60			116,029.72	

1AUD=6.534SBD was applied to the above (rate as of 30 September, 2013 of Oanda).

2. Costing for Countermeasure

Location	Vavaya Ridge								per
Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
. Personnel	Grades- Steps								
Staff-3	3.1	0	Person	15.38	115.35				
	3.2	0		15.90	119.25				
	3.3	0		16.41 16.92	123.08				
	3.4	0		17.44	126.90 130.80				
Staff-4	4.1	4	Person	19.23	144.23	20.00		2.884.50	
Dian 4	4.2	8	Person	20.00	150.00	40.00		6,000.00	
	4.3	0	Person	20.77	155.78			0.00	
	4.4	0		21.54	161.55			0.00	
	4.5	0		22.31	167.33			0.00	
Staff-5	5.1	0		24.10	180.75			0.00	
	5.2	0		25.13	188.48			0.00	
	5.3 5.4	0		26.15 27.18	196.13 203.85			0.00	
	5.5	4		28.21	211.58	20.00		4.231.50	
Staff-6	6.1	0		31.54	236.55	20.00		0.00	
Stati-0	6.2	4		32.82	246.15	20.00		4,923.00	
	6.3	0		34.10	255.75			0.00	
	6.4	0		35.38	265.35			0.00	
	6.5	0		36.67	275.03			0.00	
Staff-7	7.1	0		38.46	288.45			0.00	
	7.2	0		39.74	298.05			0.00	
	7.3	0		41.03	307.73			0.00	
	7.4	0		42.31	317.33			0.00	
Staff-8	7.5 8.1	0		43.59 47.95	326.93 359.63			0.00	
Statt-6	8.2	0		49.23	369.23			0.00	
	8.3	0		50.51	378.83			0.00	
	8.4	0		51.79	388.43			0.00	
	8.5	0		53.08	398.10	10.00		3,981.00	
Staff-9	9.1	0		58.21	436.58			0.00	
	9.2	0		59.49	446.18			0.00	
	9.3	0		60.77	455.78			0.00	
	9.4	0		62.05	465.38			0.00	
	9.5	0		63.33	474.98			0.00	
Sub-total Consumable				S Per Liter	* *	110.00	S/km	22,020.00	
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	50km/7km/liter=7.14liter 11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter
Diesel	For Pick-up	120	Liter	11.80	0.1428	17.1360	1.68504	202.20	11liter +7.1liter=18.1liter/50km 50km/7km/liter=7.14liter/50km
Engine Oil	For Excavator	0	Liter	60.00	0.0016		0.096	0.00	100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km
Engine Oil	For Pick-up	120	Liter	60.00	0.0016		0.096	11.52	100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km
Γires		0	Nos	770.00	0.0014		1.078	0.00	50km x 252days=12,600km 12,600km/ 30,000km x 4nos=1.68nos 1.68nos/ 252days=0.07nos/50km
Sub-total	-							213.72	
Material &	1			1					
uipment uice/ Gate Valve	25mm		piece	-	190.00			570.00	Gate Valve
Sluice/ Gate Valve	40mm	3	piece		350.00			0.00	Gate Valve
Sluice/ Gate Valve	50mm		piece		310.00			0.00	Gate Valve
Sluice/ Gate Valve	80mm		piece					0.00	Sluice Valve
Sluice/ Gate Valve	100mm		piece		2,423.00			0.00	Sluice Valve
Sluice/ Gate Valve	150mm		piece					0.00	Sluice Valve
Sluice/ Gate Valve	200mm		piece					0.00	Sluice Valve
Sluice/ Gate Valve	250mm		piece					0.00	
Sluice/ Gate Valve	300mm		piece					0.00	
Pipes (Poly)	15mm	200	coil		14.50			2,900.00	Length on 1 coil =300m
			coil					960.00	Length on 1 coil =300m
Pipes (Poly) Pipes (Poly)	20mm 25mm	60 130	coil		16.00	per meter			Length on 1 coil =200m

3. Costing for After Countermeasure

									per
Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
. Personnel	Grades- Steps								
Staff-3	3.1	0	Person	15.38	115.35				
	3.2	0	Person	15.90	119.25				
	3.3	0	Person Person	16.41 16.92	123.08 126.90				
	3.4	0	Person	17.44	130.80				
Staff-4	4.1	3	Person	19.23	144.23	4.00		576.90	
	4.2	6	Person	20.00	150.00	32.00		4,800.00	
	4.3	0	Person	20.77	155.78			0.00	
	4.4	0		21.54	161.55			0.00	
	4.5	0		22.31	167.33			0.00	
Staff-5	5.1	0		24.10	180.75			0.00	
	5.2	0		25.13	188.48			0.00	
	5.3	0		26.15	196.13			0.00	
	5.4	0		27.18	203.85	4.00		0.00	
Staff-6	5.5 6.1	0		28.21 31.54	211.58 236.55	4.00		846.30 0.00	
Stair-0	6.2	3		32.82	246.15	4.00		984.60	
	6.3	0		34.10	255.75	4.00		0.00	
	6.4	0		35.38	265.35			0.00	
	6.5	0		36.67	275.03			0.00	
Staff-7	7.1	0		38.46	288.45			0.00	
	7.2	0		39.74	298.05			0.00	
	7.3	0		41.03	307.73			0.00	
	7.4	0		42.31	317.33			0.00	
0.000	7.5	0		43.59	326.93			0.00	
Staff-8	8.1 8.2	0		47.95 49.23	359.63 369.23			0.00	
	8.2	0		49.23 50.51	369.23			0.00	
	8.4	0		51.79	388.43			0.00	
	8.5	1		53.08	398.10	5.00		1.990.50	
Staff-9	9.1	0		58.21	436.58			0.00	
	9.2	0		59.49	446.18			0.00	
	9.3	0		60.77	455.78			0.00	
	9.4	0		62.05	465.38			0.00	
	9.5	0		63.33	474.98			0.00	
Sub-total						49.00		9,198.30	
. Consumable				S Per Liter	L/km		\$/km		50km/7km/liter=7.14liter
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter
Diesel	For Pick-up	24	Liter	11.80	0.1428	3.4272	1.68504	40.44	11liter +7.1liter=18.1liter/50km 50km/7km/liter=7.14liter/50km
Diesei	FOF FICK-up	24	Liter	11.60	0.1428	3.4272	1.06304	40.44	100km x 252days=25.200km
Engine Oil	For Excavator	0	Liter	60.00	0.0016		0.096	0.00	25,200km/ 10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km
Engine Oil	For Pick-up	24	Liter	60.00	0.0016		0.096	2.30	100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km
Tires		0	Nos	770.00	0.0014		1.078	0.00	50km x 252days=12,600km 12,600km/ 30,000km x 4nos=1.68nos 1.68nos/ 252days=0.07nos/50km
Sub-total Material &	l		-					42.74	
. Material & quipment	l			1					
quipment luice/ Gate Valve	25mm		piece	-				0.00	Gate Valve
Sluice/ Gate Valve	40mm		piece		350.00				Gate Valve
Sluice/ Gate Valve	50mm		piece		310.00			0.00	Gate Valve
Sluice/ Gate Valve	80mm		piece					0.00	Sluice Valve
Sluice/ Gate Valve	100mm		piece		2,423.00			0.00	Sluice Valve
Sluice/ Gate Valve	150mm		piece					0.00	Sluice Valve
Sluice/ Gate Valve	200mm		piece					0.00	Sluice Valve
Sluice/ Gate Valve	250mm		piece					0.00	Sluice Valve225mm AUD1785
	300mm	_	piece	_				0.00	
Sluice/ Gate Valve									
Pipes (Poly) Pipes (Poly)	15mm 20mm		coil					0.00	Length on 1 coil =300m Length on 1 coil =300m

									per day
Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Pipes (Poly)	50mm		coil					0.00	Length on 1 coil =150m
Pipes (PVC)	25mm		piece					0.00	
Pipes (PVC)	50mm		piece					0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece		248.00			0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece					0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece					0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
Other Materials							1	0.00	
Sub-total								0.00	
Total								9,241.04	

Total

1AUD=6.534SBD was applied to the above (rate as of 30 September, 2013 of Oanda).

Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Pipes (Poly)	50mm		coil					0.00	Length on 1 coil=150m
Pipes (PVC)	25mm		piece					0.00	
Pipes (PVC)	50mm		piece					0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece		248.00			0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece					0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece					0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
Other Materials							1	0.00	
Sub-total								0.00	
Total								5,185.12	

Total

1AUD=6.534SBD was applied to the above (rate as of 30 September, 2013 of Oanda).

4. Costing for Routine Activities

ocation	Vavaya Ridge					tine Act			
				Hourly					per
Items	Specification	Quantity	Unit	Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
. Personnel	Grades- Steps			(300)					
Staff-3	3.1	0	Person	15.38	115.35				
	3.2	0	Person	15.90	119.25				
	3.3	0	Person	16.41	123.08				
	3.4	0	Person	16.92	126.90				
	3.5	0	Person	17.44	130.80				
Staff-4	4.1 4.2	0	Person	19.23 20.00	144.23 150.00			0.00	
	4.3	0	Person Person	20.77	155.78			0.00	
	4.4	0	reison	21.54	161.55			0.00	
	4.5	0		22.31	167.33			0.00	
Staff-5	5.1	0		24.10	180.75			0.00	
	5.2	0		25.13	188.48			0.00	
	5.3	0		26.15	196.13			0.00	
	5.4	- 0		27.18	203.85			0.00	
	5.5	0		28.21	211.58			0.00	
Staff-6	6.1	3		31.54	236.55	5.00		1,182.75	
	6.2	0		32.82	246.15	-		0.00	
	6.3	0		34.10 35.38	255.75 265.35			0.00	
	6.5	0		36.67	275.03			0.00	
Staff-7	7.1	0		38.46	288.45			0.00	
	7.2	0		39.74	298.05			0.00	
	7.3	0		41.03	307.73			0.00	
	7.4	0		42.31	317.33			0.00	
	7.5	0		43.59	326.93			0.00	
Staff-8	8.1	0		47.95	359.63			0.00	
	8.2	0		49.23	369.23			0.00	
	8.3	0		50.51	378.83			0.00	
	8.4	0		51.79	388.43			0.00	
Staff-9	8.5 9.1	0		53.08 58.21	398.10 436.58	10.00		3,981.00	
Starr-9	9.1	0		59.49	436.58			0.00	
	9.2	0		60.77	455.78			0.00	
	9.3	0		62.05	465.38			0.00	
	9.5	0		63.33	474.98			0.00	
Sub-total		-				15.00		5,163.75	
. Consumable				\$ Per Liter	L/km		\$/km		
									50km/7km/liter=7.14liter
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter
									11liter +7.1liter=18.1liter/50km
Diesel	For Pick-up	12	Liter	11.80	0.1428	1.7136	1.68504	20.22	50km/7km/liter=7.14liter/50km
									100km x 252days=25,200km
									25,200km/ 10,000km x
Engine Oil	For Excavator	0	Liter	60.00			0.096	0.00	8liter=20.16liter
									20.16liter/
					0.0016				252days=0.08liter/day/50km 100km x 252days=25,200km
									100km x 252days=25,200km 25,200km/10,000km x
Engine Oil	For Pick-up	12	Liter	60.00			0.096	1.15	25,200km/10,000km x 8liter=20.16liter
raigine Oil	1 or Pick-up	12	Liter	00.00		1	0.096	1.15	20.16liter/
	l			1	0.0016				252days=0.08liter/day/50km
	l								50km x 252days=12,600km
Tires		0		770.00			1.078	0.00	12.600km/ 30.000km x
Tires		0	Nos	770.00			1.078	0.00	4nos=1.68nos
					0.0014				1.68nos/ 252days=0.07nos/50km
Sub-total								21.37	
Material &	1								
quipment								0.00	0
luice/ Gate Valve	25mm		piece	-	350.00				Gate Valve
Sluice/ Gate Valve Sluice/ Gate Valve	40mm 50mm		piece	-	350.00	-		0.00	Gate Valve Gate Valve
Sluice/ Gate Valve	S0mm		piece	-	310.00			0.00	Sluice Valve
Sluice/ Gate Valve	100mm		piece		2,423.00			0.00	Sluice Valve
Sluice/ Gate Valve	100mm 150mm		piece		2,923.00			0.00	Sluice Valve
Sluice/ Gate Valve	200mm		piece					0.00	Sluice Valve
Sluice/ Gate Valve	250mm		piece						Sluice Valve225mm AUD1785
Sluice/ Gate Valve	300mm		piece					0.00	
Pipes (Poly)	15mm		coil					0.00	Length on 1 coil =300m
Pipes (Poly)	20mm		coil	1				0.00	Length on 1 coil =300m
Pipes (Poly)	25mm								Length on 1 coil =200m

				Treat	ra Ri			10-	number .							196	relia Equ	iyerd.					
Arthritis	age Styn	stay spec	stay spec	Order Style	Order Style	Order Style	TOTAL MAN DAYS	Totale Total	Newsoniae Total Millane	Ale Valve	Mater Gate Valor	Slater Gale Valve	Malor Cale Valve	State Gale Value	Fign (PVC)	Rec (F)	Figns (PVC)	Elpes (PVC)	\$ 10 F 15	Stop Cork	Maire series	Water series	Titale mater
del Independation Sides	100	e o	e o	que.	que.	qu ₀	No.	Milay (ke)	(be)	23-100mm	25-10mm	00 1 00mm	130- 200mm	330- 330-um	33-90mm	80 130mm	110- 200-em	250- 300-sen	13-16mm (m)	Henry Henry	Mean	16mm	70
pel Implementation Status						_																	
Properties of referent distances	6.1	-	-	-	-	-	_																-
Tapa Committed		-	-	-	-	-	_	_															-
First survey (valve sheds, visual testage detector, etc.)	3.3		4.7				_																
Tays Committed	1		2				-		_														
President of solder and size led halve indicated	83		62							_	٠,		_	_	_	_	_	_	_		_	_	
Day Connibil	2		2	2	1	_	- 1	- 11			•	•											
Tays Committed Preparation of codomer Inc.	61	-	2	2	2			_	_	_													
Proposition of codome Inc. Sans Committed	41	-	-	-	-	_	_		_														_
Days Committed Driville public asserteds	-						_			_	_	_	_	_	_	_	_	_	_		_	_	
Drielle public assertens Sans Committeel		\vdash	\vdash	\vdash	\vdash	-		_	_	_	_	_	_	_	_	_	_	_	_	-	_	_	-
Lays Committed Distribution of public asserves complete	3.3	_	42	_	_	6.2		_	_	_	_	_	_	_	_	_	_	_	_		_	_	_
Distribution of public awareness partylled. Date Committed							-	-															-
Tays Committed Controller shelfcallers and welfsallers	-	-		-	_	1																	
Connection shelfholium and welfholium Days Committed	3.3	4.1	42	4.1	32	4.3	_	24	_	_	_	_	_	_	_	_	_	_	_	-	_	_	-
			۳				21	_	_			_	_		_		_		_			_	_
Column meter fundaming sheak San Committed			12																				-
	-						_	_															
Shouwened of visibly-detected histoge Sans Committed	13		1.7			4.2		- 12	_		_			_		_		_			_		_
Days Committed							- 11																_
Sulfaction below to Degat visions Days Committed	13	4.7	6.7	4.1	22	6.7																	_
Days Committed																							
Customer mater reading of 26 fears consumption State Committed	3.3	43	43	41		43		- 4															_
Tay Committed SSF & Penaute measurement							_																_
	33	43	43	41		4.2	-	- 12															_
Days Committed																							
Curbiner meter is accuracy limb (of meters) Days Committed	3.3	13	42		1	4.3																	_
Department of NASA retails	X1	1	2	2	1	1																	_
Citization of \$400 value									_	_	_	_	_	_	_	_	_	_	_		_	_	
Days Connelled unformassures	- 3						_																
	- 11					_																	
Day Sell	11		2				- 1	- 14		_	_	_	_	_	_	_	_	_	_		_	_	
ANALY DOCUM	3.3		6.7				- 10																_
Leakage detection Dan Committed	1		1			3		- 14	_	_	_	_	_	_	_	_	_	_	_		_	_	
	11		62			12		- 17															
Pge repair Days Committed	2 2		2 2			42	-	- 11	_	_	_	_	_	_	_	_	_	_	_	-	_	_	-
Says Connelled Legislation of Bept connection		-	-	-	-	-		_	_	_	_	_	_	_	_	_	_	_	_		_	_	_
Legislation of Begin connection Saw Committed		-	-	-	-	-																	-
Tay Connited Stormedon of Boar correction						_																	_
Departmention of degal connection Departmentied		-	-	-	-	-			_	-	_	_	_	_	_	_	_	_	_		_	_	-
and the same of th	3.3	٠	6.7	٠	Ь.	-		_	-	—	_	-	_	_	_	-	_	_	m		_	_	_
Customer mater saling towary installation (* egiscoment) Days Committed	12		12			12	-	- 11		_		-				-			4/3	193			-
er Countre measures		-		-	-	-				_	_	_	_	_	_	_	_	_	_		_	_	
Cultural mater reading of 26 hours consumption	11	-	47		-	-	_																-
Codumer mader needing of 36 hours consumption Days Committed	- 11		1			43	_	-	_	_	-	_	_	-	_	-	_	-	_		-	_	-
NV I Pessy masuring	3.3		6.7				-		_	_	_	_	_	_	_	_	_	_	_		_	_	_
Dep Commiled	11		2				- "	- "															-
Cubmer neter hassages led handon sanstrui	11		62				_	_		_	_	_	_	_	_	_	_	_	_		_	_	
Day Connibel	1	-	-	-		-	_	_		_													-
	8.0	۲	÷	÷	÷	÷	_	_	_	_	_			_		_		_			_		-
Days Committed	1	-	-	-	-	-	_	_	_	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lay Connilled dist Adioties	-					_																	_
Logic of Electrics and All Studen (CEL Science)		-	-	-	-	-	_		_	-	_	_	_	_	_	_	_	_	_		_	_	-
Opdor of disease, and abilitions (CS distance) Date Committed	7	\vdash	\vdash	\vdash	\vdash	-	_	- "	_	_	-	_	_	-	_	-	_	-	_		-	_	-
Tays Committed Spidde of sudamer Int.	6.1	_	_	_	_	_	_	-	_	_	_	_	_	_	_	_	_	_	_		_	_	_
Spale of customer list.	- 61	-	-	-	-	-			_														-
Lays Committed Logicy of Edition system	-						_	_		_	_	_	_	_	_	_	_	_	_		_	_	
	- 2																						

Cost for Mat	erials (Vavaya Ridge)					
	Γ NAME: NRW PROJECT TEAM 2	RECEIVE	D B	Y: Mafe		
	DED BY: Benjimen Billy	ISSUED E				
REQUISITION		DATE ISS	SUEL	: 16/09/201	3	
JOB DESCRIP	TION: Being for Mbokonavera & Vavaya Ri	dge .				
Date	Materials Description	Quantity	Un	it Cost	To	tal Cost
9/17/2013	100mm Flange Gilbault	2	S	580.00	S	1,160.00
9/17/2013	100mm Gilbault Joint	2	S	413.00	S	826.00
	1 lengths 100mm (4") UPVC Pressure					
9/17/2013	Pipe	1	S	248.00	S	248.00
9/17/2013	100mm Sluice Valve	1	S	2,423.00	\$	2,423.00
9/17/2013	40 KG Bag cement	3	S	78.00	\$	234.00
9/17/2013	100mm (4") x 3/4" Brass Tapping Saddle	1	S	250.00	\$	250.00
9/17/2013	Hack Saw blade	3	\$	10.00	\$	30.00
9/17/2013	1/2" x 3/4" G.I reduce nipple	1	\$	12.00	\$	12.00
9/17/2013	15mm Stop Cock	1	S	40.00	S	40.00
9/17/2013	ThreadTape	4	S	4.00	\$	16.00
		Total per F	Requi	sition =	S	5,239.00
DEPARTMENT	T NAME: NRW PROJECT TEAM 2	RECEIVE	D B	Y: Liston To	ora	
	DED BY: Nathaniel Lega	ISSUED E			oi a	
REQUISITION): 24/09/201	2	
	TION: Being for Valve installation @ Vavay		OLL	. 14/05/101	3	
Date	Materials Description	Quantity	Hn	it Cost	Tot	tal Cost
9/24/2013	100mm Sluice Valve	1	S	2.423.00	S	2.423.00
9/24/2013	100mm Gilbault Joint	2	S	413.00	S	826.00
9/24/2013	100mm Flange Gilbault	1	Š	580.00	s	580.00
9/24/2013	50mm (2") Brass Gate Valve	î	Š	310.00	Š	310.00
9/24/2013	50mm x 2" male Poly Adaptor	2	S	36.00	S	72.00
9/24/2013	15mm G.I elbow	10	S	12.00	s	120.00
		Total per F	Requi	sition =	S	4,331.00
	Γ NAME: NRW PROJECT TEAM 2			Y: Derick H	Ioa	
RECOMMEND	DED BY: Nathaniel Lega	ISSUED E	3Y: F	aul Seda		
RECOMMENI REQUISITION	DED BY: Nathaniel Lega NO: 0238	ISSUED E DATE ISS	3Y: F			
RECOMMENI REQUISITION JOB DESCRIP	DED BY : Nathaniel Lega NO: 0238 TION: Being for Valve installation @ Vavay	ISSUED E DATE ISS 7a Ridge .	BY: F	'aul Seda): 24/09/201	3	
RECOMMENI REQUISITION JOB DESCRIP Date	DED BY: Nathaniel Lega NO: 0238 TION: Being for Valve installation @ Vavay Materials Description	ISSUED E DATE ISS va Ridge . Quantity	Y: F SUEI Un	aul Seda 0: 24/09/201 it Cost	3 To	tal Cost
RECOMMENI REQUISITION JOB DESCRIP Date 9/24/2013	DED BY: Nathaniel Lega NO: 0238 TION: Being for Valve installation @ Vavay Materials Description 40mm Brass Gate Valve	ISSUED E DATE ISS 7a Ridge . Quantity	Y: F SUEI Un	aul Seda 0: 24/09/201 it Cost 350.00	3 To	350.00
RECOMMENI REQUISITION JOB DESCRIP Date 9/24/2013 9/24/2013	DED BY: Nathaniel Lega NO: 0238 TION: Being for Valve installation @ Vavas Materials Description 40mm Brass Gate Valve 40mm x 1 1/2" poly male adaptor	ISSUED E DATE ISS va Ridge . Quantity 1 2	Y: F SUEI Un \$	aul Seda 0: 24/09/201 it Cost 350.00 70.00	3 Tol	350.00 140.00
RECOMMENI REQUISITION JOB DESCRIP Date 9/24/2013 9/24/2013 9/24/2013	DED BY: Nathaniel Lega NO: 0238 TION: Being for Valve installation @ Vavay Materials Description 40mm Brass Gate Valve 40mm x 1 1/2° poly male adaptor 125mm Poly Couping	ISSUED E DATE ISS va Ridge . Quantity 1 2	Y: F SUEI Un S S	aul Seda 0: 24/09/201 it Cost 350.00 70.00 56.00	3 Tol \$ \$	350.00 140.00 56.00
RECOMMENI REQUISITION JOB DESCRIP Date 9/24/2013 9/24/2013 9/24/2013 9/24/2013	DED BY: Nathaniel Lega NO: 0238 TION: Being for Valve installation @ Vavay Materials Description 40mm Brass Gate Valve 40mm x 1 1/2" poly male adaptor 25mm Poly Couping 50mm (2") Brass Gate Valve	ISSUED E DATE ISS va Ridge . Quantity 1 2 1 1	Uni S S S	aul Seda b: 24/09/201 it Cost 350.00 70.00 56.00 310.00	Tol	350.00 140.00 56.00 310.00
RECOMMENI REQUISITION JOB DESCRIP Date 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013	DED BY: Nathaniel Lega NO: 0238 TION: Being for Valve installation @ Vavay Materials Description 40mm Brass Gate Valve 40mm x 1 1/2* poly male adaptor 25mm Poly Couping 50mm (2*) Brass Cate Valve 50mm x 2* male Poly Adaptor	ISSUED E DATE ISS TO Ridge . Quantity 1 2 1 1 2	Uni S S S S	aul Seda b: 24/09/201 it Cost 350.00 70.00 56.00 310.00 36.00	Tot	350.00 140.00 56.00 310.00 72.00
RECOMMENI REQUISITION JOB DESCRIP Date 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013	DED BY: Nathaniel Lega NO: 0238 TION: Being for Valve installation @ Vavav Materials Description 40mm Brass Gate Valve 40mm x i 1/2" poly male adaptor 25mm Poly Couping 30mm (2") Brass Gate Valve 50mm x 2" male Poly Adaptor 100mm (4") x 3/4" Brass Tapping Saddle	ISSUED E DATE ISS TARRIDGE . Quantity 1 2 1 1 2 1 1 2	Uni S S S S S S	aul Seda 0: 24/09/201 it Cost 350.00 70.00 56.00 310.00 36.00 250.00	3 S S S S S	350.00 140.00 56.00 310.00 72.00 250.00
RECOMMENI REQUISITION JOB DESCRIP Date 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013	DED BY: Nathaniel Lega NO: 0238 TION: Being for Valve installation @ Vavay Materials Description 40mm Brass Gate Valve 40mm x 1 1/2" poly male adaptor 25mm Poly Couping 50mm (2") Brass Gate Valve 50mm x 2" male Poly Adaptor 100mm (4") x 3/4" Brass Tapping Saddle 5 metre 20mm pipe	ISSUED E DATE ISS va Ridge . Quantity 1 2 1 1 2 1 5	Uni S S S S S S	aul Seda 0: 24/09/201 it Cost 350.00 70.00 56.00 310.00 36.00 250.00 16.00	3 S S S S S	350.00 140.00 56.00 310.00 72.00 250.00 80.00
RECOMMENI REQUISITION JOB DESCRIP Date 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013	DED BY: Nathaniel Lega NO: 0238 TION: Being for Valve installation @ Vavay Materials Description 40mm Brass Gate Valve 40mm x 1 1/2" poly male adaptor 25mm Poly Couping 50mm (2") Brass Gate Valve 30mm x 2" male Poly Adaptor 110mm (4") x 3/4" Brass Tapping Saddle 5 metre 20mm Pipe 20mm x 3/4" Poly male Adaptor	ISSUED E DATE ISS va Ridge . Quantity 1 2 1 1 2 1 5 1	Uni S S S S S S S	aul Seda 0: 24/09/201 it Cost 350.00 70.00 56.00 310.00 36.00 250.00 16.00 48.00	3 S S S S S S	350.00 140.00 56.00 310.00 72.00 250.00 80.00 48.00
RECOMMENI REQUISITION JOB DESCRIP Date 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013	DED BY: Nathaniel Lega NO: 0238 TION: Being for Valve installation @ Vavay Materials Description 40mm Brass Gate Valve 40mm Yass Gate Valve 40mm V1 1/2" poly male adaptor 25mm Poly Couping 50mm (2") Brass Gate Valve 50mm x 2" male Poly Adaptor 100mm (4") x 3/4" Prass Tapping Saddle 5 metre 20mm Pipe 20mm x 3/4" Poly male Adaptor ThreadTape	ISSUED E DATE ISS a Ridge . Quantity 1 2 1 1 2 1 1 6	Uni S S S S S S S S	aul Seda 0: 24/09/201 it Cost 350.00 70.00 56.00 310.00 36.00 250.00 16.00 48.00 4.00	3 S S S S S S S	350.00 140.00 56.00 310.00 72.00 250.00 80.00 48.00 24.00
RECOMMENI REQUISITION JOB DESCRIP Date 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013	DED BY: Nathaniel Lega NO: 0238 TION: Being for Valve installation @ Vavay Materials Description 40mm Brass Gate Valve 40mm x 1 1/2" poly male adaptor 25mm Poly Couping 50mm (2") Brass Gate Valve 30mm x 2" male Poly Adaptor 110mm (4") x 3/4" Brass Tapping Saddle 5 metre 20mm Pipe 20mm x 3/4" Poly male Adaptor	ISSUED E DATE ISS A Ridge . Quantity 1 2 1 1 2 1 1 5 5 1 6 6 10	Uni S S S S S S S S S	aul Seda 0: 24/09/201 at Cost 350.00 70.00 56.00 310.00 250.00 16.00 4.00 12.00	3 S S S S S S S S	350.00 140.00 56.00 310.00 72.00 250.00 80.00 48.00 24.00
RECOMMENI REQUISITION JOB DESCRIP Date 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013	DED BY: Nathaniel Lega NO: 0238 TION: Being for Valve installation @ Vavay Materials Description 40mm Brass Gate Valve 40mm Yass Gate Valve 40mm V1 1/2" poly male adaptor 25mm Poly Couping 50mm (2") Brass Gate Valve 50mm x 2" male Poly Adaptor 100mm (4") x 3/4" Prass Tapping Saddle 5 metre 20mm Pipe 20mm x 3/4" Poly male Adaptor ThreadTape	ISSUED E DATE ISS a Ridge . Quantity 1 2 1 1 2 1 1 6	Uni S S S S S S S S S	aul Seda 0: 24/09/201 at Cost 350.00 70.00 56.00 310.00 250.00 16.00 4.00 12.00	3 S S S S S S S	350.00 140.00 56.00 310.00 72.00 250.00 80.00 48.00 24.00
RECOMMENI REQUISITION JOB DESCRIP Date 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013	DED BY: Nathaniel Lega NO: 0238 TION: Being for Valve installation @ Vavav Materials Description 4domm Brass Gate Valve 4domm v 1 1/2" poly male adaptor 25mm Poly Couping 50mm (2") Brass Gate Valve 50mm x 2" male Poly Adaptor 1100mm (4") x 3/4" Brass Tapping Saddle 5 metre 20mm Pipe 20mm x 3/4" Poly male Adaptor ThreadTape 115mm G.I. elbow	ISSUED F DATE ISS a Ridge . Quantity 1 2 1 1 2 1 1 6 10 Total per F	Uni S S S S S S S S S S	aul Seda 0: 24/09/201 it Cost 350.00 70.00 56.00 310.00 36.00 250.00 16.00 48.00 4.00 12.00 sition =	3 S S S S S S S S S	350.00 140.00 56.00 310.00 72.00 250.00 80.00 48.00 24.00 120.00
RECOMMENT REQUISITION JOB DESCRIP Date 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013	ED BY: Nathaniel Lega NO: 0238 TION: Being for Valve installation @ Vavay Materials Description 40mm Brass Gate Valve 40mm y 1 1/2" poly male adaptor 25mm Poly Couping 50mm (2") Brass Gate Valve 30mm x 2" male Poly Adaptor 1100mm (4") x 3/4" Brass Tapping Saddle 5 metre 20mm Pipe 20mm x 3/4" Poly male Adaptor ThreadTape 15mm G.I elbow I NAME: NRW PROJECT TEAM 2	ISSUED F DATE ISS a Ridge . Quantity 1 2 1 1 2 1 1 6 10 Total per F	Unis SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS	aul Seda b: 24/09/201 it Cost 350.00 70.00 56.00 310.00 36.00 250.00 16.00 48.00 4.00 12.00 sition =	3 S S S S S S S S S	350.00 140.00 56.00 310.00 72.00 250.00 80.00 48.00 24.00 120.00
RECOMMENI REQUISITION JOB DESCRIP Date 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 PZ-4/2013	DED BY: Nathaniel Lega NO: 0238 TION: Being for Valve installation @ Vavav Materials Description 4domm Brass Gate Valve 4domm x 1 1/2" poly male adaptor 25mm Poly Couping 50mm (2") Brass Gate Valve 50mm x 2" male Poly Adaptor 1100mm (2") arale Poly Adaptor 1100mm (4") x 3/4" Brass Tapping Saddle 5 metre 20mm Pipe 20mm x 3/4" Poly male Adaptor Thread Tape 115mm G.I. elbow Finance State S	ISSUED F DATE ISS a Ridge . Quantity 1 2 1 1 2 1 1 5 1 1 Consider the property of the proper	Unis SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS	aul Seda b: 24/09/201 ft Cost 350.00 70.00 56.00 310.00 36.00 250.00 48.00 4.00 12.00 sition =	Tol S S S S S S S S S S S S S S S S S S S	350.00 140.00 56.00 310.00 72.00 250.00 80.00 48.00 24.00 120.00
RECOMMENT REQUISITION JOB DESCRIP Date 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 DEPARTMEN' REQUISITION	DED BY: Nathaniel Lega NO: 0238 TION: Being for Valve installation @ Vavay Materials Description 40mm Brass Gate Valve 40mm y 1 1/2" poly male adaptor 25mm Poly Couping 50mm (2") Brass Gate Valve 50mm x 2" male Poly Adaptor 100mm (4") x 3"4" Brass Tapping Saddle 5 metre 20mm Pipe 20mm x 3"4" Poly male Adaptor ThreadTape 115mm G.I elbow I NAME: NRW PROJECT TEAM 2 EDE BY: Benjimen Billy NO: 0239	ISSUED F DATE ISS a Ridge . Quantity 1 2 1 1 1 2 2 1 1 1 5 5 1 1 6 6 1 10 Total per F RECEIVE ISSUED F DATE ISSUED E DATE ISSUED	Unis SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS	aul Seda b: 24/09/201 it Cost 350.00 70.00 56.00 310.00 36.00 250.00 16.00 48.00 4.00 12.00 sition =	Tol S S S S S S S S S S S S S S S S S S S	350.00 140.00 56.00 310.00 72.00 250.00 80.00 48.00 24.00 120.00
RECOMMENT REQUISITION JOB DESCRIP Date 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 PZ-4/20	DED BY: Nathaniel Lega NO: 0238 TION: Being for Valve installation @ Vavav Materials Description Materials Description 40mm Brass Gate Valve 40mm Y 1 1/2" poly male adaptor 25mm Poly Coupling 30mm (2") Brass Gate Valve 50mm x 2" male Poly Adaptor 100mm (4") x 3/4" Farsas Tapping Saddle 5 metre 20mm Pipe 20mm x 3/4" Poly male Adaptor ThreadTape 115mm G.I elbow F NAME: NRW PROJECT TEAM 2 DED BY: Benjimen Billy NO: 0239 TION: Being for Materials to be used @ Var	ISSUED F DATE ISS a Ridge. Quantity 1 2 1 1 1 2 1 1 5 1 1 Contact of the property	Uni S S S S S S S S S S S S S S S S S S S	aul Seda b: 24/09/201 it Cost 350.00 70.00 36.00 310.00 36.00 2550.00 16.00 48.00 42.00 12.00 sition = Y: David Al aul Seda b: 27/09/201	Tol S S S S S S S S S S S S S S S S S S S	350.00 140.00 56.00 310.00 72.00 250.00 80.00 48.00 24.00 120.00
RECOMMENI PREQUISITION DOB DESCRIP Date 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 DEPARTMEN REQUISITION JOB DESCRIP Date	DED BY: Nathaniel Lega NO: 0238 TION: Being for Valve installation @ Vavay Materials Description 40mm Brass Gate Valve 40mm N 1 1/2" poly male adaptor 25mm Poly Couping 50mm (2") Brass Gate Valve 50mm x 2" male Poly Adaptor 100mm (4") x 3/4" Brass Tapping Saddle 5 metre 20mm Pipe 20mm x 3/4" Poly male Adaptor ThreadTape 15mm G.I elbow F NAME: NRW PROJECT TEAM 2 DED BY: Benjimen Billy NO: 0239 TION: Being for Materials to be used @ Vay Materials Description	ISSUED E DATE ISS a Ridge. Quantity 1 1 1 1 1 1 5 1 1 Total per F BATE ISSUED E DATE ISSUED E DAT	SY: F SUEI S S S S S S S S S S S S S S S S S S S	aul Seda 2: 24/09/201 tt Cost 350.00 70.00 56.00 310.00 36.00 250.00 16.00 4.00 12.00 sition = YY: David Al aul Seda 2: 27/09/201 tt Cost	3 Total S S S S S S S S S S S S S S S S S S S	350.00 140.00 56.00 310.00 72.00 250.00 80.00 48.00 24.00 120.00 1,450.00
RECOMMENT REQUISITION JOB DESCRIP Date 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 PZ-4/20	IED BY : Nathaniel Lega NO: 0238 ITION: Being for Valve installation @ Vavav ITION: Being for Valve installation @ Vavav ITION: Being for Valve installation @ Vavav ITION: Being for Valve 40mm Brass Gate Valve 40mm x i 1/2" poly male adaptor 25mm Poly Couping 30mm (2") Brass Gate Valve 50mm x 2" male Poly Adaptor 100mm (4") x 3/4" Brass Tapping Saddle 5 metre 20mm Pipe 20mm x 3/4" Poly male Adaptor ThreadTape 115mm G.I elbow F NAME: NRW PROJECT TEAM 2 EDD BY : Benjimen Billy NO: 0239 ITION: Being for Materials to be used @ Vav IMaterials Description IIsmm G.I elbow	ISSUED F DATE ISS a Ridge. Quantity 1 2 1 1 1 2 1 1 5 1 1 Contact of the property	Uni S S S S S S S S S S S S S S S S S S S	aul Seda b: 24/09/201 it Cost 350.00 70.00 36.00 310.00 36.00 2550.00 16.00 48.00 42.00 12.00 sition = Y: David Al aul Seda b: 27/09/201	Tol S S S S S S S S S S S S S S S S S S S	350.00 140.00 56.00 310.00 72.00 250.00 80.00 48.00 24.00 1,450.00 si
RECOMMENI REQUISITION JOB DESCRIP 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 DEPARTMEN' RECOMMENI REQUISITION JOB DESCRIP Date 9/27/2013	DED BY: Nathaniel Lega NO: 0238 TION: Being for Valve installation @ Vavav Materials Description 4domm Brass Gate Valve 4domm N 1 1/2" poly male adaptor 25mm Poly Couping 50mm x 2" male Poly Adaptor 100mm (2") Brass Gate Valve 50mm x 2" male Poly Adaptor 100mm (4") x 3/4" Brass Tapping Saddle 5 metre 20mm Pigar 20mm x 3/4" Poly male Adaptor ThreadTape 115mm G.I elbow T NAME: NRW PROJECT TEAM 2 ED BY: Benjimen Billy NO: 0239 TION: Being for Materials to be used @ Vav Materials Description 15mm G.I elbow 15mm G.I elbow 16mm x 1/2" female poly Adaptor	ISSUED E DATE ISS ava Ridge. Quantity	Un: Un:	aul Seda b: 24/09/201 it Cost 350.00 70.00 56.00 310.00 250.00 16.00 48.00 12.00 sition = Y: David Al'aul Seda b: 27/09/201 it Cost 12.00	3 Total S S S S S S S S S	350.00 140.00 56.00 310.00 72.00 250.00 80.00 48.00 24.00 120.00 1,450.00
RECOMMENI REQUISITION JOB DESCRIP Date 9/24/2013	DED BY: Nathaniel Lega NO: 0238 TION: Being for Valve installation @ Vavay Materials Description 4domm Brass Gate Valve 4domm brass Gate Valve 4domm Vi 1/2" poly male adaptor 25mm Poly Couping 50mm (2") Brass Gate Valve 30mm x 2" male Poly Adaptor 100mm (4") x 3/4" Brass Tapping Saddle 5 metre 20mm Pipe 20mm x 3/4" Poly male Adaptor ThreadTape 115mm G.I elbow F NAME: NRW PROJECT TEAM 2 EDED BY: Benjimen Billy NNO: 0239 TION: Being for Materials to be used @ Vay Materials Description 115mm G.I elbow I5mm G.I elbow Jismm G.I elbow	ISSUED E DATE ISS a Ridge. Quantity 1	Un:	aul Seda 2: 24/09/201 it Cost 350.00 70.00 56.00 310.00 250.00 250.00 48.00 4.00 12.00 sition = Y: David Al aul Seda 2: 27/09/201 it Cost 12.00 45.00	3 Total S S S S S S S S S S S S S S S S S S S	350.00 140.00 56.00 310.00 72.00 250.00 80.00 120.00 1,450.00 1,450.00
RECOMMENI REQUISITION JOB DESCRIP 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 DEPARTMEN RECOMMENI REQUISITION JOB DESCRIP Date 9/27/2013 9/27/2013 9/27/2013	DED BY: Nathaniel Lega NO: 0238 TION: Being for Valve installation @ Vavav Materials Description 4domm Brass Gate Valve 4domm v 1 1/2* poly male adaptor 25mm Poly Couping 50mm (2*) Brass Gate Valve 50mm x 2 ** male Poly Adaptor 100mm (2*) arale Poly Adaptor 100mm (2*) arale Poly Adaptor 100mm (4*) x 3/4* Brass Tapping Saddle 5 metre 20mm Pipe 20mm x 3/4* Poly male Adaptor ThreadTape 115mm G.I elbow PNAME: NRW PROJECT TEAM 2 DED BY: Benjimen Billy NO: 0239 TION: Being for Materials to be used @ Vat Materials Description 15mm G.I elbow Isom G.I elbow Isom G.I elboy Materials Description 15mm G.I elboy Isom Sing Core Materials to Description 15mm S.I elboy Materials Description 15mm S.I elboy Materials Description 15mm S.I elboy Materials Description 15mm S.I elboy Isom S.I elboy Materials Description 15mm S.I elboy Materials Description	ISSUED E DATE ISS a Ridge. Quantity 1 2 2 1 1 1 5 1 1 6 6 10 Total per F RECEIVE ISSUED E DATE ISS Aya Ridge. Quantity 48 28	Un. S S S S S S S S S	aul Seda :: 24/09/201 it Cost 355.00 70.00 56.00 310.00 36.00 250.00 18.00 48.00 48.00 12.00 sition = Y: David Al' aul Seda :: 27/09/201 it Cost 12.00 45.00 65.00	3 Total S S S S S S S S S S S S S S S S S S S	350.00 140.00 56.00 310.00 72.00 250.00 48.00 24.00 120.00 1,450.00 si
RECOMMENI REQUISITION JOB DESCRIP Date 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 9/24/2013 PZ4/2013 PZ4/2013 PZ4/2013 PZ4/2013 PZ4/2013 PZ4/2013 PZ4/2013 PZ4/2013 PZ4/2013 PZ7/2013 PZ7/2013 9/27/2013 9/27/2013 9/27/2013	DED BY: Nathaniel Lega NO: 0238 TION: Being for Valve installation @ Vavay Materials Description 4domm Brass Gate Valve 4domm brass Gate Valve 4domm Vi 1/2" poly male adaptor 25mm Poly Couping 50mm (2") Brass Gate Valve 50mm x 2" male Poly Adaptor 100mm (4") x 3/4" Brass Tapping Saddle 5 metre 20mm Pipe 20mm x 3/4" Poly male Adaptor ThreadTape 115mm G.I elbow I NAME: NRW PROJECT TEAM 2 EED BY: Benjimen Billy NO: 0239 TION: Being for Materials to be used @ Vay Materials Description 15mm G.I elbow 15mm G.I elbow 16mm x 1/2" female poly Adaptor 20mm Stop Cock ThreadTape 20mm Stop Cock ThreadTape 20mm Stop Cock ThreadTape 20mm Stop Cock ThreadTape 20mm Stop Cock	ISSUED E DATE ISS a Ridge. Quantity 1 1 2 1 1 2 1 1 5 1 6 10 10 HEELIVE ISSUED E DATE ISSUED E DAT	Un S S S S S S S S S	aul Seda 2: 24/09/201 2: 24/09/201 350.00 70.00 56.00 310.00 310.00 35.00 48.00 48.00 48.00 42.00 12.00 25/09/201 25	3 Tol	350.00 140.00 140.00 56.00 310.00 72.00 250.00 80.00 120.00 1,450.00 si lal Cost 576.00 1,260.00 780.00 80.00
RECOMMENI REQUISITION JOB DESCRIP Date 9/24/2013	DED BY: Nathaniel Lega NO: 0238 TION: Being for Valve installation @ Vavav Materials Description 4domm Brass Gate Valve 4domm v 1 1/2* poly male adaptor 25mm Poly Couping 50mm (2*) Brass Gate Valve 50mm x 2 ** male Poly Adaptor 100mm (2*) arale Poly Adaptor 100mm (2*) arale Poly Adaptor 100mm (4*) x 3/4* Brass Tapping Saddle 5 metre 20mm Pipe 20mm x 3/4* Poly male Adaptor ThreadTape 115mm G.I elbow PNAME: NRW PROJECT TEAM 2 DED BY: Benjimen Billy NO: 0239 TION: Being for Materials to be used @ Vat Materials Description 15mm G.I elbow Isom G.I elbow Isom G.I elboy Materials Description 15mm G.I elboy Isom Sing Core Materials to Description 15mm S.I elboy Materials Description 15mm S.I elboy Materials Description 15mm S.I elboy Materials Description 15mm S.I elboy Isom S.I elboy Materials Description 15mm S.I elboy Materials Description	ISSUED E DATE ISS a Ridge . Quantity	Uni	aul Seda : 24/09/201 tt Cost 355.00 70.00 56.00 310.00 36.00 255.00 4.00 4.00 4.00 12.00 sition = Y: David Al aul Seda 0: 27/09/201 tt Cost 12.00 45.00 45.00 45.00 45.00 45.00 45.00 45.00 8.00	3 Tol	350.00 140.00 140.00 310.00 72.00 250.00 80.00 120.00 1,450.00 1,260.00 1,260.00 780.00 4,728.00 4,728.00

	NAME: NRW PROJECT TEAM 2	RECEIVE			Kope	enao
	ED BY: Benjimen Billy	ISSUED E				
REQUISITION			UED:	10/10/201	3	
JOB DESCRIPT	ΓΙΟΝ: Being for the Pilot Project Site @ \					
Date	Materials Description	Quantity	Unit	Cost	Tot	al Cost
10/10/2013	40mm x 25mm x 40mm Poly Tee	1	S	66.00	S	66.0
10/10/2013	25mm x 20mm x 25mm Poly Tee	1	S	36.00	S	36.0
10/10/2013	20mm Poly Plain Tee	1	S	28.00	S	28.0
10/10/2013	20mm x 16mm Poly Reduce Coupling	2	S	60.00	S	120.0
10/10/2013	25mm x 1" Poly female Adaptor	1	S	48.00	S	48.0
10/10/2013	25mm G.I Plug	1	S	16.00	S	16.0
10/10/2013	25mm G.I Nipple	1	S	18.00	S	18.0
10/10/2013	3/4" x 1/2" G.I Reducing Socket	1	S	12.00	S	12.0
10/10/2013	1/2" G.I Plug	1	S	8.00	S	8.0
10/10/2013	100 metres 25mm Poly Pipe	100	S	18.00	S	1,800.0
10/10/2013	ThreadTape	3	S	4.00	S	12.0
10/10/2013	30 metres 20mm Poly Pipe	30	S	16.00	S	480.0
		Total per F	Requis	ition =	S	2,644.0
DEPARTMENT	NAME: NRW PROJECT TEAM 2	RECEIVE	DBY	: Liston To	ora	
RECOMMEND	ED BY: Eric Unga	ISSUED E	Y: Pa	ul Seda		
REQUISITION				11/10/201	3	
	ΓΙΟΝ: Being for the Pilot Project Site @ V					
Date	Materials Description	Quantity	Unit	Cost	Tot	al Cost
10/11/2013	25mm Poly Plain Tee	2	S	29.00	S	58.0
		2	s	40.00	Š	80.0
	140mm Poly Plain Counling					
10/11/2013	40mm Poly Plain Coupling				c	9951
10/11/2013 10/11/2013	5 Metres 40mm Poly Pipe	5	S	45.00	S	
10/11/2013 10/11/2013 10/11/2013 DEPARTMENT	5 Metres 40mm Poly Pipe ThreadTape 'NAME: NRW PROJECT TEAM 2	5 3 Total per F	S S Requis	45.00 4.00 ition =	S S	225.0 12.0 375.0
10/11/2013 10/11/2013 10/11/2013 0EPARTMENT	5 Metres 40mm Poly Pipe ThreadTape 'NAME: NRW PROJECT TEAM 2 ED BY: Benjimen Billy	5 3 Total per F RECEIVE ISSUED E	S Sequis ED BY SY: Je	45.00 4.00 ition =	\$ S ora	12.0
10/11/2013 10/11/2013 10/11/2013 10/11/2013 DEPARTMENT RECOMMEND REQUISITION	5 Metres 40mm Poly Pipe ThreadTape "NAME: NRW PROJECT TEAM 2 ED BY: Benjimen Billy NO: 0246 T(DN): Being for the Pilot Project Site ® V	5 3 Total per F RECEIVE ISSUED E DATE ISS	S Requis ED BY SY: Je SUED:	45.00 4.00 ition = ': Liston Terry Webo	\$ S ora	12.0
10/11/2013 10/11/2013 10/11/2013 10/11/2013 DEPARTMENT RECOMMEND REQUISITION JOB DESCRIP	5 Metres 40mm Poly Pipe ThreadTape "NAME: NRW PROJECT TEAM 2 ED BY: Benjimen Billy NO: 0246	5 3 Total per F RECEIVE ISSUED E DATE ISS	S Requis ED BY SY: Je SUED:	45.00 4.00 ition = ': Liston Terry Webo	s s ora	12.
10/11/2013 10/11/2013 10/11/2013 10/11/2013 DEPARTMENT RECOMMEND REQUISITION IOB DESCRIP	5 Metres 40mm Poly Pipe ThreadTape "NAME: NRW PROJECT TEAM 2 ED BY: Benjimen Billy NO: 0246 T(DN): Being for the Pilot Project Site ® V	5 3 Total per F RECEIVE ISSUED E DATE ISS /avaya Ridge	S Requis ED BY SY: Je SUED:	45.00 4.00 ition = 7: Liston To rry Webo 12/10/201	s s ora	12. 375.
10/11/2013 10/11/2013 10/11/2013 10/11/2013 DEPARTMENT RECOMMEND REQUISITION JOB DESCRIPT Date 10/12/2013	5 Metres 40mm Poly Pipe ThreadTape "NAME: NRW PROJECT TEAM 2 ED BY: Benjimen Billy NO: 0246 ITON: Being for the Pilot Project Site ® V Materiak Description	5 3 Total per F RECEIVE ISSUED E DATE ISS /avaya Ridge Quantity	S Requis ED BY SY: Je SUED:	45.00 4.00 ition = 7: Liston To rry Webo 12/10/201 Cost	S S ora 3	12. 375. al Cost 290.
10/11/2013 10/11/2013 10/11/2013 10/11/2013 DEPARTMENT RECOMMEND REQUISITION JOB DESCRIP Date 10/12/2013 10/12/2013	5 Metres 40mm Poly Pipe ThreadTape NAME: NRW PROJECT TEAM 2 ED BY : Benjimen Billy NO: 0248 ITON: Being for the Pilot Project Site @ V Materiak Description [25mm Poly Plain Tee	5 3 Total per F RECEIVE ISSUED E DATE ISS /avaya Ridge Quantity 10	S Requis ED BY SY: Je SUED: Unit S	45.00 4.00 ition = T: Liston To rry Webo 12/10/201 Cost 29.00	S S ora 3	12. 375. al Cost 290. 325.
10/11/2013 10/11/2013 10/11/2013 10/11/2013 DEPARTMENT RECOMMEND OR DESCRIP: Date 10/12/2013 10/12/2013	5 Metres 40mm Poly Pipe ThreadTape NAME: NRW PROJECT TEAM 2 ED BY: Benjimen Billy NO: 0246 ILON: Being for the Pilot Project Site @ V Materiab Description Z5mm Poly Plain Tee Z5mm x 16mm poly reduce coupling Z0mm x 16mm Poly Reduce Coupling	5 3 Total per F RECEIVE ISSUED B DATE ISS /avaya Ridge Quantity 10 5	S S Requis SY: Je SUED: Unit S	45.00 4.00 ition = ': Liston To rry Webo 12/10/201 Cost 29.00 65.00	ora 3 Tot	12.0 375.0
10/11/2013 10/11/2013 10/11/2013 10/11/2013 DEPARTMENT RECOMMEND REQUISITION 10B DESCRIP Date 10/12/2013 10/12/2013 10/12/2013	5 Metres 40mm Poly Pipe ThreadTape "NAME: NRW PROJECT TEAM 2 ED BY: Benjimen Billy NO: 0246 [TION: Being for the Pilot Project Site ⊚ 1 Materials Description 25mm Poly Plain Tee 25mm x 16mm poly reduce coupling	5 3 Total per F RECEIVE ISSUED E DATE ISS /avaya Ridge Quantity 10 5 10	S Requis ED BY SY: Je SUED: Unit S S	45.00 4.00 ition = T: Liston To rry Webo 12/10/201 Cost 29.00 65.00 60.00	S S ora 3 Tot S S	12. 375. al Cost 290. 325. 600.
10/11/2013 10/11/2013 10/11/2013 10/11/2013 DEPARTMENT RECOMMEND REQUISITION OB DESCRIP Date 10/12/2013 10/12/2013 10/12/2013	5 Metres 40mm Poly Pipe ThreadTape NAME: NRW PROJECT TEAM 2 ED BY : Benjimen Billy NO: 0246 TON: Benjimen Folio Project Site © V Materials Description 25mm Poly Plain Tee 25mm x 16mm poly reduce coupling 20mm x 16mm Poly Reduce Coupling ThreadTape	5 3 Total per F RECEIVE ISSUED E DATE ISS /avaya Ridge Quantity 10 5 10 10	S S S S S S S S	45.00 4.00 ition = T: Liston To rry Webo 12/10/201 Cost 29.00 65.00 4.00 21.00	S S ora 3 Tot S S S	12. 375. al Cost 290. 325. 600. 40.
10/11/2013 10/11/2013 10/11/2013 10/11/2013 10/11/2013 DEPARTMENT RECOMMEND REQUISITION OB DESCRIP Jate 10/12/2013 10/12/2013 10/12/2013	S Metres 40mm Poly Pipe ThreadTape NAME: NRW PROJECT TEAM 2 ED BY: Benjimen Billy NO: 0246 TION: Being for the Pilot Project Site X Materials Description Z5mm Poly Plain Tee Z5mm x 16mm poly reduce coupling Z0mm x 16mm Poly Reduce Coupling ThreadTape Hack Saw Blade	5 3 Total per F RECEIVE ISSUED B DATE ISS /avaya Ridge Quantity 10 5 10 10 2 Total per F	S S S Requis S S UED: Unit S S S S Requis	45.00 4.00 4.00 ition = 7: Liston Tirry Webo 12/10/201 Cost 29.00 65.00 60.00 4.00 21.00	S S Ora 3 Tot S S S S S	12. 375. al Cost 290. 325. 600. 40.
10/11/2013 10/11/2013 10/11/2013 10/11/2013 DEPARTMENT RECOMMEND REQUISITION 100B DESCRIP Date 10/12/2013 10/12/2013 10/12/2013	5 Metres 40mm Poly Pipe ThreadTape NAME: NRW PROJECT TEAM 2 ED BY: Benjimen Billy NO: 0246 IION: Being for the Pilot Project Site @ V Materials Description 25mm Poly Pain Tee 25mm x 16mm poly reduce coupling 20mm x 16mm poly Reduce Coupling ThreadTape Hack Saw Blade NAME: NRW PROJECT TEAM 2	5 3 Total per F RECEIVF ISSUED F DATE ISS /avaya Ridge Quantity 10 5 10 2 Total per F	S S S Requis S S Unit S S S Requis CD BY	45.00 4.00 ition = ': Liston Trry Webo 12/10/201 Cost 29.00 65.00 60.00 21.00 ition =	S S Ora 3 Tot S S S S S	12. 375. al Cost 290. 325. 600. 40.
10/11/2013 10/11/2013 10/11/2013 10/11/2013 DEPARTMENT RECOMMEND 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 DEPARTMENT RECOMMEND	5 Metres 40mm Poly Pipe ThreadTape NAME: NRW PROJECT TEAM 2 ED BY : Benjimen Billy No: 0246 TION: Being for the Pilot Project Site © V Materiab Description 25mm Poly Plain Tee 25mm x 16mm Poly Reduce coupling 25mm x 16mm Poly Reduce Coupling ThreadTape Hack Saw Blade NAME: NRW PROJECT TEAM 2 ED BY : Benjimen Billy	5 3 Total per F RECEIVE ISSUED E DATE ISS 'avaya Ridge Quantity 10 10 10 2 Total per F RECEIVE ISSUED E ISSUED E	S S Requis ED BY SY: Je SUED: Unit S S S Requis ED BY SY: Je	45.00 4.00 ition = ': Liston Torry Webo 12/10/201 Cost 29.00 65.00 6.00 4.00 21.00 ition = ': Liston Torry Webo	S S S S S S S S S S S S S S S S S S S	12. 375. al Cost 290. 325. 600. 40.
10/11/2013 10/11/2013 10/11/2013 10/11/2013 DEPARTMENT REQUISITION 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013	5 Metres 40mm Poly Pipe ThreadTape NAME: NRW PROJECT TEAM 2 ED BY: Benjimen Billy NO: 0246 ION: Being for the Pilot Project Site © 1 Materials Description 25mm Poly Plain Tee 25mm Poly Plain Tee 25mm Poly Plain Tee 25mm Brown 16mm Poly Reduce Coupling ThreadTape Hack Saw Blade NAME: NRW PROJECT TEAM 2 ED BY: Benjimen Billy NO: 0245	5 3 RECEIVE RECEIVE DATE ISSUED B DATE ISS JAVAYA RIdge Quantity 10 10 10 2 Total per F RECEIVE ISSUED B DATE ISS	S S S Requis S Y: Je S Unit S S S Requis S S S S S Requis	45.00 4.00 ition = ': Liston Trry Webo 12/10/201 Cost 29.00 65.00 60.00 21.00 ition =	S S S S S S S S S S S S S S S S S S S	12. 375. al Cost 290. 325. 600. 40.
10/11/2013 10/11/2013 10/11/2013 10/11/2013 DEPARTMENT RECOMMEND REQUISITION 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 DEPARTMENT RECOMMEND REQUISITION DEPARTMENT RECOMMEND REQUISITION 10/10/10/10/10/10/10/10/10/10/10/10/10/1	5 Metres 40mm Poly Pipe ThreadTape NAME: NRW PROJECT TEAM 2 ED BY : Benjimen Billy NO: 0246 TION: Being for the Pilot Project Site ® V Materials Description 25mm Poly Pain Tee 25mm x 16mm poly reduce coupling 25mm x 16mm Poly Reduce Coupling ThreadTape Hack Saw Blade NAME: NRW PROJECT TEAM 2 ED BY : Benjimen Billy NO: 0245 TION: Being for the Pilot Project Site ® V	5 Total per F RECEIVE ISSUED B DATE ISS 'avaya Ridge Quantity 10 10 10 10 2 Total per F RECEIVE ISSUED B DATE ISS 'avaya Ridge	S Sequis CD BY YY: Je SUUED: Unit S S S S S S S S S S S S S S S S S S S	45.00 4.00 ition = (*Liston Trry Webo* 12/10/201 *Cost* 29.00 65.00 60.00 4.00 21.00 ition = (*Liston Trry Webo* 12/10/201 *Cost* 29.00 21.00 *Cost* 29.00 21.00 *Cost* 29.00 21.00 *Cost* 20.00 21.00 2	S S S S S S S S S S S S S S S S S S S	12. 375. al Cost 290. 325. 600. 40. 42.
10/11/2013 10/11/2013 10/11/2013 10/11/2013 10/11/2013 10/11/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013	5 Metres 40mm Poly Pipe ThreadTape NAME: NRW PROJECT TEAM 2 ED BY : Benjimen Billy NO: 0246 ITON: Being for the Pilot Project Site @ 1 Materiah Description 25mm Poly Plain Tee 25mm x 16mm poly reduce coupling 25mm x 16mm Poly Reduce Coupling ThreadTape Hack Saw Blade NAME: NRW PROJECT TEAM 2 ED BY : Benjimen Billy NO: 0245 ITON: Being for the Pilot Project Site @ 1 Materiah Description	5 3 Total per F RECEIVE ISSUED E DATE ISS 'avaya Ridge Quantity 10 5 10 10 2 Total per F RECEIVE RECEIVE B DATE ISS 'avaya Ridge Quantity 10 Quantity Quantity Quantity Quantity Quantity Quantity Quantity Quantity Quantity	S Requis CD BY YY: Je UUED: Unit S S S S S S S S S CD BY YY: Je	45.00 4.00 4.00 ition = ': Liston Trry Webo 12/10/201 Cost 29.00 65.00 60.00 4.00 21.00 ition = ': Liston Trry Webo 12/10/201 Cost	S S S S S S S S Total	12. 375. al Cost 290. 325. 600. 40. 42. 1,297.
10/11/2013 10/11/2013 10/11/2013 10/11/2013 10/11/2013 DEPARTMENT RECOMMENDREQUISITION 10/08 DESCRIP 10/12/2013 10/12/2013 10/12/2013 10/12/2013	5 Metres 40mm Poly Pipe ThreadTape NAME: NRW PROJECT TEAM 2 ED BY: Benjimen Billy NO: 0248 ION: Being for the Pilot Project Site @ V Materials Description 25mm Poly Palain Tee 25mm x 16mm Poly Reduce Coupling 25mm x 16mm Poly Reduce Coupling ThreadTape Hack Saw Blade NAME: NRW PROJECT TEAM 2 ED BY: Benjimen Billy NO: 0245 ION: Being for the Pilot Project Site @ V Materials Description Ion: Poly Project Site @ V Materials Description Ion: Poly Project Site @ V	STATE ISSUED FEATURE OF THE STATE OF THE STA	S Requise ST BY ST JE ST	45.00 4.00 ition = C: Liston T: T: Y Webo 12/10/201 Cost 29.00 65.00 60.00 21.00 ition = C: Liston T: T: Webo 12/10/201 Cost 45.00	S S S S S S S S S S S S S S S S S S S	12. 375. al Cost 290. 325. 600. 40. 42. 1,297.
10/11/2013 10/11/2013 10/11/2013 10/11/2013 10/11/2013 10/11/2013 EECOMMEND REQUISITION OB DESCRIP John 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013	5 Metres 40mm Poly Pipe ThreadTape NAME: NRW PROJECT TEAM 2 ED BY : Benjimen Billy NO: 0246 TION: Being for the Pilot Project Site @ \ NMaterials Description 25mm Poly Plain Tee 25mm x 16mm poly reduce coupling 25mm x 16mm Poly Reduce Coupling ThreadTape Hack Saw Blade NAME: NRW PROJECT TEAM 2 ED BY : Benjimen Billy NO: 0245 TION: Being for the Pilot Project Site @ \ NMaterials Description 16mm Poly Coupling 20mm x 16mm Poly Ceduce Coupling 1700m ED Poly Coupling	5 3 Total per F RECEIVE ISSUED B DATE ISS 'avaya Ridge Quantity 10 5 10 2 Total per F RECEIVE RECEIVE RECEIVE GUARTINE GUARTI GUARTE GUARTI GU	S Requise CD BY SY: Je SUED: Unit S S S Requise SY: Je SUED: Unit S S S S S S S S S S S S S S S S S S S	45.00 4.00 ition = ': Liston Trry Webo 12/10/201 Cost 29.00 65.00 60.00 21.00 ition = ': Liston Trry Webo 12/10/201 Cost 4.00 21.00 60.00 4.00 60.00	S S S S S S S S S S S S S S S S S S S	12. 375. al Cost 290. 325. 600. 40. 42. 1,297.
10/11/2013 10/11/2013 10/11/2013 10/11/2013 10/11/2013 DEPARTMENT RECOMMEND REQUISITION 10/10/2013 10/11/2013 10/11/2013 10/11/2013 10/11/2013 10/11/2013 10/11/2013 10/11/2013	5 Metres 40mm Poly Pipe ThreadTape NAME: NRW PROJECT TEAM 2 ED BY: Benjimen Billy NO: 0246 ION: Being for the Pilot Project Site © V Materials Description 25mm Poly Plain Tee 25mm Poly Plain Tee 25mm Poly Plain Tee 25mm Poly Plain Tee 25mm Poly Reduce Coupling ThreadTape Hack Saw Blade NAME: NRW PROJECT TEAM 2 ED BY: Benjimen Billy NO: 0245 ION: 0245 ION: Being for the Pilot Project Site © V Materiaks Description Iomm Poly Coupling 20mm x 16mm Poly Reduce Coupling Iomm Poly Coupling	5 3 Total per F RECEIVE ISSUED B DATE ISS avaya Ridge Quantity 10 5 10 10 10 2 Total per F RECEIVE ISSUED B DATE ISS avaya Ridge Quantity 10 10 10 10 10 10 10 10 10 10 10 10 10	S S Requis Unit S S Requis Unit S S UDED: S S UDED: S S UDED: S S S S S S S S S S S S S S S S S S S	45.00 4.00 ition = 12/10/201 Cost 29.00 65.00 60.00 4.00 21.00 ition = 12/10/201 Cost 29.00 4.00 21.00 Cost 29.00 4.00 21.00 Cost 29.00 4.00 21.00 20 20 20 20 20 20 20 20 20 20 20 20 2	S S S Ora 3 Tot S S S S S S S S S S S S S S S S S S S	al Cost 290.1 325.1 40.1 42.1 1,297.1 al Cost 450.1 850.1
10/11/2013 10/11/2013 10/11/2013 10/11/2013 10/11/2013 DEPARTMENT RECOMMEND REQUISITION 10/10/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013	5 Metres 40mm Poly Pipe ThreadTape NAME: NRW PROJECT TEAM 2 ED BY : Benjimen Billy NO: 0246 TION: Being for the Pilot Project Site @ V Materials Description 25mm x 16mm poly reduce coupling 25mm x 16mm poly Reduce Coupling ThreadTape Hack Saw Blade NAME: NRW PROJECT TEAM 2 ED BY : Benjimen Billy NO: 0245 TION: Being for the Pilot Project Site @ V Materials Description 16mm Poly Coupling 20mm x 16mm Poly Reduce Coupling 16mm Poly Coupling	5 3 Total per F RECEIVE ISSUED F DATE ISS /avaya Ridge Quantity 10 5 10 10 2 RECEIVE ISSUED F IT RECEIVE ISSUED F IT RECEIVE ISSUED F IT I	S Sequis CD BY YY: Je SUED: Unit S S S S S S S S CEQUIS Unit S S S S S S S S S S S S S S S S S S S	45.00 4.00 ition = ': Liston Try Webo 12/10/201 Cost 29.00 60.00 4.00 21.00 ition = ': Liston Try Webo 12/10/201 Cost 45.00 60.00 40.00 21.00 60.00 40.00 21.	S S S Ora 3 Tot S S S S S S S S S S S S S S S S S S S	al Cost 290.0 325.0 40.0 42.1 1,297.0 al Cost 450.0 600.0 850.0 280.0
10/11/2013 10/11/2013 10/11/2013 10/11/2013 DEPARTMENT RECOMMEND REQUISITION 10/10/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013	5 Metres 40mm Poly Pipe ThreadTape NAME: NRW PROJECT TEAM 2 ED BY: Benjimen Billy NO: 0246 ION: Being for the Pilot Project Site © 1 Materials Description 25mm Poly Plain Tee 25mm Poly Plain Tee 25mm Poly Plain Tee 25mm Poly Plain Tee Hack Saw Blade NAME: NRW PROJECT TEAM 2 ED BY: Benjimen Billy NO: 0245 ION: 0245 ION: 9245 ION: 925 ION: 926 ION: 927 ION: 926 ION: 926 ION: 927 ION: 926 ION: 926 ION: 927 ION:	5 3 Total per F RECEIVE ISSUED E DATE ISS avaya Ridge Quantity 10 5 10 10 2 Total per F RECEIVE ISSUED E DATE ISS avaya Ridge IO 10 10 10 10 10 10 10 10 10 10 10	S S S S S S S S S S S S S S S S S S S	45.00 4.00 ition = CIListon Trry Webo 12/10/201 29.00 65.00 60.00 21.00 ition = CILISTON Trry Webo 12/10/201 Cost 45.00 60.00 85.00 28.00 40.00 21.00 ition =	S S S S S S S S S S S S S S S S S S S	al Cost 290.1 325.1 40.1 42.1 1,297.1 al Cost 450.1 600.8 550.1 280.1
10/11/2013 10/11/2013 10/11/2013 10/11/2013 10/11/2013 DEPARTMENT RECOMMEND REQUISITION 10/08 DESCRIP Date 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013	S Metres 40mm Poly Pipe ThreadTape NAME: NRW PROJECT TEAM 2 ED BY: Benjimen Billy No: 0246 TION: Being for the Pilot Project Site Tole Samm x 16mm Poly Peduce coupling 25mm Poly Plain Tee 25mm x 16mm Poly Reduce Coupling 25mm x 16mm Poly Reduce Coupling 15mm x 16mm Poly Reduce Coupling 15mm x 16mm Poly Reduce Coupling 15mm x 16mm Poly Peduce Coupling 15mm Poly Poly Foliation 15mm Poly Coupling 15mm Poly Coupling 15mm Poly Coupling 15mm Poly Poly Reduce Coupling 15mm Poly Poly Reduce Coupling 15mm Poly Coupling 15mm Poly Poly Reduce Coupling 15mm Poly Palain Tee 15mm x 12" male Poly Adaptor 15mm x 12" male Poly Adaptor	5 3 Total per F RECEIVE ISSUED B DATE ISS avaya Ridge 10 10 10 10 2 Total per F P RECEIVE Savaya Ridge Quantity 10 10 10 10 10 10 10 10 10 10 10 10 10	S S S S S S S S S S S S S S S S S S S	45.00 4.00 ition = ': Liston Torry Webo 12/10/201 Cost 29.00 65.00 4.00 21.00 ition = ': Liston Torry Webo 12/10/201 Cost 45.00 60.00 85.00 28.00 45.00 45.00	S S S S S S S S S S S S S S S S S S S	al Cost 290. 325. 600. 40. 42. 1,297. al Cost 450. 600. 850. 280. 450.
10/11/2013 10/11/2013 10/11/2013 10/11/2013 10/11/2013 10/11/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013	S Metres 40mm Poly Pipe ThreadTape NAME: NRW PROJECT TEAM 2 ED BY: Benjimen Billy NO: 0246 ION: Being for the Pilot Project Site Smm Poly Plain Tee 25mm X 16mm poly reduce coupling 25mm X 16mm Poly Reduce Coupling ThreadTape Hack Saw Blade NAME: NRW PROJECT TEAM 2 ED BY: Benjimen Billy NO: 0245 ION: 0245 ION: 0245 ION: 0245 ION: 0246 ION: 0246 ION: 0246 ION: 0246 ION: 0247 ION: 0246 ION: 0247 ION: 0247 ION: 0247 ION: 0247 ION: 0248 ION: 0249 I	5 3 Total per F RECEIVE ISSUED F DATE ISS Avaya Ridge Quantity 10 5 10 10 2 Total per F RECEIVE ISSUED F DATE ISS Avaya Ridge 10 10 10 10 10 10 10 10 10 10 10 10 10	S S S S S S S S S S S S S S S S S S S	45.00 4.00 ition = : Liston Tirry Webo 12/10/201 Cost 29.00 65.00 65.00 4.00 21.00 ition = : Liston Tirry Webo 12/10/201 Cost 45.00 60.00 45.00 45.00 45.00 45.00 45.00	S S S S S S S S S S	12.1 375.1 al Cost 290.1 325.5 600.4 40.1 1,297.1 450.6 850.2 850.2 450.4 450.4 450.4 450.4
10/11/2013 10/11/2013 10/11/2013 10/11/2013 10/11/2013 DEPARTMENT RECOMMEND REQUISITION 10/08 DESCRIP 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013	S Metres 40mm Poly Pipe	5 3 Total per F RECEIVE ISSUED B DATE ISS Avaya Ridge 10 10 10 2 Total per F Total per F 10 10 10 10 10 10 10 10 10 10 10 10 10	S Cequis ED BY YY: Je SUED: Unit S S S S S S S S S Cequis S S S S S S S S S S S S S S S S S S S	45.00 4.00 ition = : Liston Tr rry Webo : 12/10/201 Cost 29.00 65.00 65.00 4.00 21.00 ition = : Liston Tr rry Webo : 12/10/201 Cost 45.00 60.00 85.00 28.00 45.00 45.00 45.00 45.00 45.00	S S S S S S S S S S	12.1 375.1 12.3 12.0 12.0 12.0 12.0 12.0 12.0 12.0 12.0
10/11/2013 10/11/2013 10/11/2013 10/11/2013 10/11/2013 10/11/2013 EEEE COMMEND REQUISITION OOB DESCRIP JOH 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013	S Metres 40mm Poly Pipe ThreadTape NAME: NRW PROJECT TEAM 2 ED BY: Benjimen Billy NO: 0246 TION: Being for the Pilot Project Site Simm Poly Plain Tee 25mm N: 16mm poly reduce coupling 25mm X: 16mm Poly Reduce Coupling ThreadTape Hack Saw Blade NAME: NRW PROJECT TEAM 2 ED BY: Benjimen Billy NO: 0245 TION: Benjimen Billy NO: 0245 TION: Being for the Pilot Project Site Vin Materiak Description 16mm Poly Coupling 20mm X: 16mm Poly Reduce Coupling 16mm Poly Coupling 16mm N 1/2" remale poly Adaptor 16mm X 1/2" female poly Adaptor 16mm X 1/2" female poly Adaptor 10mm Poly Foughing 30 metres 20mm Poly Pipe 30 metres 20mm Poly Pipe 30 metres 20mm Poly Pipe	5 3 Total per F RECEIVE ISSUED E DATE ISS Avaya Ridge Quantity 10 10 2 Total per F Total per F DATE ISS Avaya Ridge II 0 10 10 10 10 10 10 10 10 10 10 10 10 1	Sequis CD BYY: Je SUED: Unit S S S S S S Cequis Unit S S S S S S S S S S S S S S S S S S S	45.00 4.00 ition = : Liston T rry Webo 12/10/201 Cost 29.00 65.00 65.00 4.00 21.00 ition = :: Liston Tr rry Webo 12/10/201 Cost 45.00 60.00 85.00 45.00 45.00 45.00 45.00 45.00 16.00 18.00	Tot S S S S S S S S S	12.1 375.1 al Cost 290.0 325.5 600.1 42.2 1,297.1 al Cost 450.1 850.0 280.1 450.1 450.1 450.1 450.1
10/11/2013 10/11/2013 10/11/2013 10/11/2013 10/11/2013 DEPARTMENT RECOMMEND REQUISITION 10/08 DESCRIP 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013 10/12/2013	S Metres 40mm Poly Pipe	5 3 Total per F RECEIVE ISSUED B DATE ISS Avaya Ridge 10 10 10 2 Total per F Total per F 10 10 10 10 10 10 10 10 10 10 10 10 10	Sequis Sequis CD BY YY: Je SUED: Unit S S S S S S S S S S S S S S S S S S S	45.00 4.00 ition = 'E. Liston Tr. Try Webo : 12/10/201 Cost 29.00 65.00 65.00 60.00 21.00 ition = 'E. Liston Tr. Try Webo : 12/10/201 Cost 45.00 60.00 28.00 45.00 45.00 45.00 45.00 45.00 45.00 16.00 18.00 56.00	S S S S S S S S S S	12.1 375.1 12.3 12.0 12.0 12.0 12.0 12.0 12.0 12.0 12.0

	NAME: NRW PROJECT TEAM 1		ED BY: David A	kwa'	asi
	ED BY: Benjimen Billy		BY: Paul Seda		
REQUISITION			SUED: 7/10/2013	į	
JOB DESCRIP	TION: Being for Meter Raising @ the Pilot 13B0199554 -557 (5 pieces) 13B019349-	Project Site ((Vavaya Ridge) .		
	352 (5 pieces) 13B019574-578 (5 pieces)				
Meter ID :	13B019459 -				
	463(5 pieces) 13B019399-402 (5 Pieces)				
	13B019379 - 383 (5 pieces) 13B019359 -				
	363 (5 Pices)				
	13B019559 - 563 (5 pieces)				
Date	Materials Description	Quantity	Unit Cost	Tot	tal Cost
10/7/2013	40 KG Bag cement	10	\$ 78.00		780.0
10/7/2013	10mm Steel Rods	5	\$ 68.00	S	340.0
10/7/2013	20mm Water Meter	40	\$ 394.00	S	15,760.0
10/7/2013	20mm Stop Cock	40	\$ 168.00	S	6,720.0
	•	Total per I	Requisition =	S	23,600.0
DEPARTMENT	NAME: NRW PROJECT TEAM 1	RECEIVE	ED BY: David A	kwa'a	asi
RECOMMEND	ED BY: Eric Unga	ISSUED E	Y: Paul Seda		
REQUISITION	NO: 2453	DATE ISS	SUED: 8/10/2013	\$	
JOB DESCRIPT	TION: Being for Meter Raising @ the Pilot	Project Site ((Vavaya Ridge) .		
	13B019782	-			
	,13B019495,13B019813,13019621,13B01				
Meter ID :	9620,13B019619(6 pieces)				
Date	Materials Description	Quantity	Unit Cost	Tot	tal Cost
	15mm G.I elbow	24	\$ 12.00	S	288.0
10/8/2013	3/4" x 1/2" G.I reduce Bush	6	S 18.50	S	111.0
	3/4" x 1/2" G.I reduce Socket	6	\$ 12.50	S	75.0
	16mm x 1/2" female poly Adaptor	10	\$ 45.00	\$	450.0
	20mm Water Meter	6	\$ 394.00	\$	2,364.0
10/8/2013	20mm Stop Cock	6	\$ 168.00	S	1,008.0
		Total per I	Requisition =	S	4,296.0
DEDADTMENT	NAME: NRW PROJECT TEAM 1	DECERVI	ED BY: Liston T		
	ED BY: Eric Unga		BY: Liston 1 BY: Paul Seda	ura	
REQUISITION			s x : Paul Seda SUED: 9/10/2013	,	
	NO: 0241 TION: Being for Meter Raising @ the Pilot			,	
Date	Materials Description		Unit Cost	Tet	tal Cost
	3/4" x 1/2" G.I reduce Socket	12	S 12.50		150.0
	3/4" x 1/2" G.I reduce Socket 3/4" x 1/2" G.I reduce Bush	12	S 12.50		222.0
	15mm G.I elbow	48	S 12.00		576.0
	16mm x 1/2" female poly Adaptor	24	S 45.00		1.080.0
10/9/2013	TORRIN A 1/2 Telliale pory Adaptor	64	1 43.UU		1,000.0

	10 1/0" (1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0.4	S 45.00	0 1 000 00
	16mm x 1/2" female poly Adaptor	24		\$ 1,080.00
10/9/2013	3/4" G.I Tee	1	\$ 8.00	\$ 8.00
		Total per F	Requisition =	\$ 2,036.00
DEPARTMENT	NAME: NRW PROJECT TEAM 1	RECEIVE	D BY: Liston T	ora
RECOMMEND	ED BY: Eric Unga	ISSUED E	Y: Paul Seda	
REQUISITION	NO: 0242	DATE ISS	UED: 9/10/2013	1
TOD DESCRIPT				
JOB DESCRIPT	TON: Being for Additional fittings for Mete	er Raising @	the Pilot Project	Site (Vavaya Rid
Date	Materials Description		the Pilot Project Unit Cost	Site (Vavaya Rid Total Cost
Date 10/9/2013	Materials Description 15mm G.I elbow			
Date 10/9/2013	Materials Description	Quantity	Unit Cost	Total Cost
Date 10/9/2013 10/9/2013 10/9/2013	Materials Description 15mm G.I elbow 3/4" x 1/2" G.I reduce Socket 3/4" x 1/2" G.I reduce Bush	Quantity	Unit Cost \$ 12.00 \$ 12.50	Total Cost \$ 336.00
Date 10/9/2013 10/9/2013 10/9/2013	Materials Description 15mm G.I elbow 3/4" x 1/2" G.I reduce Socket	Quantity	Unit Cost \$ 12.00 \$ 12.50	Total Cost \$ 336.00 \$ 87.50

DEPARTMENT	NAME: NRW PROJECT TEAM 2	RECEIVE	D BY: Derick F	Ioa			
RECOMMENDI	ED BY: Eric Unga	ISSUED E	Y: Paul Seda				
REQUISITION	NO: 0248	DATE ISS	UED: 14/10/201	3			
JOB DESCRIPT	TON: Being for the Pilot Project Site(Mete	er Raising) @	Vavava Ridge .				
	Materials Description	Quantity	Unit Cost	To	tal Cost		
10/14/2013	3/4" x 1/2" G.I reduce Bush	10	\$ 18.50	S	185.00		
10/14/2013	3/4" x 1/2" G.I Reducing Socket	10	\$ 12.00	S	120.00		
10/14/2013	16mm x 1/2" female poly Adaptor	20	\$ 45.00	S	900.00		
10/14/2013	ThreadTape	20	\$ 4.00	S	80.00		
	•	Total per F	Requisition =	S	1,285.00		
DEPARTMENT	NAME: NRW PROJECT TEAM 2	RECEIVE	D BY: Harrison	1			
RECOMMENDI	ED BY: Eric Unga	ISSUED E	Y: Paul Seda				
REQUISITION	NO: 0247	DATE ISSUED: 14/10/2013					
JOB DESCRIPT	TON: Being for the Pilot Project Site(Mete	er Raising) @	Vavaya Ridge .				
Date	Materials Description	Quantity	Unit Cost	Tot	tal Cost		
10/14/2013	20mm Stop Cock	10	\$ 168.00	S	1,680.00		
	3/4" x 1/2" G.I reduce Bush	10	\$ 18.50	S	185.00		
10/14/2013	3/4" x 1/2" G.I Reducing Socket	10	\$ 12.00	S	120.00		
10/14/2013	ThreadTape	20	\$ 4.00	\$	80.00		
10/14/2013	Hack Saw Blade	2	\$ 21.00	Ş	42.00		
		Total per F	Requisition =	S	2,107.00		
DEPARTMENT	NAME: NRW PROJECT TEAM 2		D BY: Harrison	ı Ma	lau		
RECOMMENDI	ED BY: Eric Unga	ISSUED E	Y: Paul Seda				
REQUISITION			SUED: 16/10/201	3			
JOB DESCRIPT	TON: Being for Vavaya Ridge Meter Raisin	g Pilot Proje	ect Site .				
	Materials Description	Quantity	Unit Cost	Tot	tal Cost		
10/16/2013	20mm Stop Cock	10	\$ 168.00	S	1,680.00		
	3/4" x 1/2" G.I Reducing Socket	10	\$ 12.00	S	120.00		
	16mm x 1/2" female poly Adaptor	20	\$ 45.00	\$	900.00		
10/16/2013	ThreadTape (3 Pkts)	30	\$ 4.00	\$	120.00		
		Total per Requisition = \$ 2,820.00					

DEPARTMENT	NAME: NRW PROJECT TEAM 2	RECEIVED BY: Liston Tora						
RECOMMEND	ED BY: Benjimen Billy	ISSUED BY: Paul Seda						
REQUISITION	NO: 0249	DATE ISS	SUED: 16/10/201	3				
JOB DESCRIP	TION: Being for Vavaya Ridge Meter Raisin	g Pilot Proje	ect Site .					
Date	Materials Description	Quantity	Unit Cost	Tot	tal Cost			
10/16/2013	20mm Stop Cock	10	\$ 168.00	S	1,680.00			
10/16/2013	3/4" x 1/2" G.I Reducing Socket	10	\$ 12.00	S	120.00			
10/16/2013	16mm x 1/2" female poly Adaptor	20	\$ 45.00	S	900.00			
10/16/2013	ThreadTape (5 Pkts)	50	\$ 4.00	\$	200.00			
	<u></u>	Total ner I	Requisition =	S	2 900 00			

DEPARTMENT	NAME: NRW PROJECT TEAM 2	RECEIVE	ED BY: Derick H	Ioa	
	ED BY: Benjimen Billy	ISSUED E	BY: Paul Seda		
REQUISITION	NO: 2301	DATE ISS	SUED: 21/10/201	3	
JOB DESCRIPT	TION: Materials required for Vavaya Ridge 12B0866668 - 672(5 pieces) 12B086768 -	Project Pilo	t Site .		
Meter ID :	772 (5 pieces) 12B086853-857 (5 pieces) 12B086898 - 902 (5 pieces)				
Date	Materials Description	Quantity	Unit Cost	Tot	tal Cost
10/21/2013	ThreadTape (6 Pkts)	60	\$ 4.00	S	240.00
10/21/2013	10mm Steel Rods	2	\$ 68.00	S	136.00
10/21/2013	3/4" G.I Elbow	20	S 14.00	\$	280.00
10/21/2013	3/4" G.I Socket	10	\$ 12.00	S	120.00
10/21/2013	20mm Water Meter	20	\$ 394.00	S	7,880.00
10/21/2013	16mm Poly Coupling	20	S 45.00	\$	900.00
10/21/2013	3/4" x 1/2" G.I reduce Bush	20	\$ 18.50	S	370.00
10/21/2013	3/4" x 1/2" G.I Reducing Socket	20	S 12.00	S	240.00
10/21/2013	16mm x 1/2" female poly Adaptor	20	\$ 45.00	\$	900.00
		Total per I	Requisition =	S	11,066.00

DEPARTMENT	NAME: NRW PROJECT TEAM 2	RECEIVE	D BY: Derick F	Ioa		
RECOMMEND	ED BY: Benjimen Billy	ISSUED BY: Paul Seda				
REQUISITION	NO: 2302	DATE ISSUED: 22/10/2013				
JOB DESCRIPT	TION: Materials required for Vavaya Ridge	Project Pilo	t Site .			
Date	Materials Description	Quantity	Unit Cost	Tota	al Cost	
10/22/2013	20mm x 3/4" Poly female Adaptor	20	\$ 48.00	\$	960.00	
10/22/2013	20mm(3/4") G.I Elbow	20	\$ 14.00	\$	280.00	
		Total per F	Requisition =	S	1,240.00	

DEPARTMENT	NAME: NRW PROJECT TEAM 2	RECEIVE	D BY: Harry		
RECOMMEND	ED BY: Eric Unga	ISSUED E	Y: Paul Seda		
REQUISITION	NO: 2303	DATE ISS	UED: 24/10/201	3	
JOB DESCRIPT	TON: Materials required for Vavaya Ridge	Project Pilo	t Site for Meter R	aising	(.
Date	Materials Description	Quantity	Unit Cost	Tota	al Cost
	20mm Water Meter	10	\$ 394.00	S	3,940.00
10/24/2013	20mm Stop Cock	5	\$ 168.00	\$	840.00
10/24/2013	16mm x 1/2" female poly Adaptor	20	\$ 45.00	\$	900.00
10/24/2013	16mm Poly Coupling	10	\$ 45.00	\$	450.00
	ThreadTape	13	\$ 4.00	\$	52.00
10/24/2013	25mm x 3/4" female poly Adaptor	10	\$ 48.00	\$	480.00
10/24/2013	25mm x 16mm poly reduce coupling	10	\$ 65.00	\$	650.00
10/24/2013	20mm x 3/4" Poly female Adaptor	10	\$ 48.00	\$	480.00
		Total per F	Requisition =	S	7,792.00

DEPARTMEN	T NAME: NRW PROJECT TEAM 1	RECEIVE	ED BY	: Andrew	Kope	enao
RECOMMEN	DED BY: Eric Unga	ISSUED I				
REQUISITION	N NO: 2304	DATE IS	SUED:	26/10/201	3	
JOB DESCRIE	PTION: Materials required for Repair @ Va	vaya Ridge P	roject	Pilot Site fo	or Me	eter Raising
	12B011101-105(5 Pieces) 12B0111151-					
Meter ID :	155 (5 pieces)					
Date	Materials Description	Quantity	Unit	Cost	Tot	al Cost
10/26/2013	40 KG Bag cement	6	\$	78.00	\$	468.00
10/26/2013	200 metres (1 roll) 16mm poly pipe	200	S	14.50	S	2,900.00
10/26/2013	20mm Water Meter	10	\$	394.00	S	3,940.00
		Total per l	Reamis	ition =	S	7.308.00

DEPARTMEN'	Γ NAME: NRW PROJECT TEAM 2	RECEIVE	ED BY: Derick	(Hoa	
RECOMMENI	DED BY: Benjimen Billy	ISSUED E	Y: Paul Seda		
REQUISITION	NO: 2307	DATE ISS	SUED: 13/11/2	013	
JOB DESCRIP	TION: Last Materials Required for Meter	raising @ Lov	ver Vavaya Rid	lge (Ro	ock Heaven)
Date	Materials Description	Quantity	Unit Cost	To	tal Cost
11/13/2013	25mm (1")G.I Elbow	4	\$ 30.0	0 \$	120.00
11/13/2013	25mm G.I Socket	1	S 14.0	0 \$	14.00
11/13/2013	25mm G.I Nipple	1	\$ 18.0	0 \$	18.00
11/13/2013	25mm x 1" Poly female Adaptor	2	\$ 48.0	0 \$	96.00
11/13/2013	3" UPVC Compression Coupling	1	\$ 190.0	0 \$	190.00
11/13/2013	1 metre 80mm UPVC Pressure Pipe	1	\$ 140.0	0 \$	140.00
11/13/2013	8" x 1 1/4" brass Saddle/Tapping band	1	\$ 844.0	0 \$	844.00
		Total per I	Requisition =	S	1,422.00

DEPARTMENT	NRW Team1	RECEIVE	ED BY: David Al	coasi		
RECOMMEND	ED BY: Chris Meriko	ISSUED BY: Paul Seda				
REQUISITION	NO: 2317	DATE ISS	SUED: 18/11/201	3		
JOB DESCRIPT	ION: Materials required for valve installme	nt/step test	@ Vavaya Ridge.			
Date	Materials Description	Quantity	Unit Cost	Total Cost		
11/18/2013	25mm x 1" Poly male Adaptor	2	\$ 50.00	S 100.00		
	ThreadTape	1	\$ 4.00	\$ 4.00		
11/18/2013	20mm x 16mm Poly Reduce Coupling	6	\$ 56.00	\$ 336.00		
	•	Total per F	Requisition =	\$ 440.00		

TOTAL MATERIAL COST FOR VAVAYA RIDGE	S	104,816.04
	_	

DEPARTMENT	NAME: NRW PROJECT TEAM 1	RECEIVE	D BY	: Harrisor	1	
RECOMMEND	ED BY: Benjimen Billy	ISSUED E	Y: Pa	ul Seda		
REQUISITION	NO: 2305	DATE ISS	UED:	28/10/201	3	
JOB DESCRIP	FION: Materials required for Repair @ Vav	aya Ridge P	roject I	Pilot Site fo	or Me	ter Raising
Date	Materials Description	Quantity	Unit	Cost	Tot	al Cost
10/28/2013	20mm Stop Cock	10	S	168.00	S	1,680.00
10/28/2013	3/4" x 1/2" G.I Reducing Socket	10	S	12.00	S	120.00
10/28/2013	3/4" x 1/2" G.I reduce Bush	10	\$	18.50	\$	185.00
10/28/2013	16mm Poly Coupling	10	\$	45.00	\$	450.00
	•	Total per F	Requisi	tion =	Ş	2,435.00

DEPARTMENT	NAME: NRW PROJECT TEAM 1	RECEIVE	ED BY: Derick F	Ioa
RECOMMEND	ED BY: Benjimen Billy	ISSUED E	Y: Paul Seda	
REQUISITION	NO: 2306	DATE ISS	UED: 29/10/201	3
JOB DESCRIPT	TON: Materials required for Repair @ Va-	aya Ridge P	roject Pilot Site f	or Meter Raising
METER I.D:	09C002273 &09C002275 , 09C002307	-	-	_
Date	Materials Description	Quantity	Unit Cost	Total Cost
	25mm x 1" Poly female Adaptor	6	\$ 48.00	\$ 288.00
10/29/2013	25mm (1")G.I Elbow	3	\$ 30.00	\$ 90.00
	1" Brass Gate valve	3	\$ 190.00	\$ 570.00
	1" G.I Nipple	3	\$ 18.00	\$ 54.00
10/29/2013	25mm G.I Socket	4	\$ 14.00	\$ 56.00
	25mm Water Meter	3	\$ 918.68	\$ 2,756.04
	1" x 3/4" G.I reduce nipple	1	\$ 16.00	\$ 16.00
	20mm(3/4") G.I Elbow	1	\$ 14.00	\$ 14.00
10/29/2013	20mm x 3/4" Poly male Adaptor	1	\$ 48.00	\$ 48.00
		Total per F	Requisition =	\$ 3,892.04

DEPARTMENT	NAME: NRW PROJECT TEAM 1	RECEIVE	ED BY: Mafe		
RECOMMEND	ED BY: Benjimen Billy	ISSUED E	Y: Paul Seda	ı	
REQUISITION	NO: 0774	DATE ISS	SUED: 31/10/2	2013	
JOB DESCRIPT	TON: Materials required for Installation @	Rock Haver	ns.		
Date	Materials Description	Quantity	Unit Cost	Т	Total Cost
10/31/2013	25mm Air Valve	1	\$ 45.0	00 \$	45.00
10/31/2013	25mm G.I Socket	1	\$ 14.0	00 \$	14.00
10/31/2013	1" x 3/4" G.I reduce nipple	1	S 16.0	00 S	16.00
		Total per F	Requisition =	S	75.00

DEPARTMENT	NAME: NRW PROJECT TEAM 2	RECEIVE	ED BY: Janan C	ари	\neg		
	ED BY: Ray Andersen	ISSUED E	ISSUED BY: Jerry Webo				
REQUISITION			SUED: 28/10/201				
JOB DESCRIPT	TON: Materials required for Repair @ Vav	aya Ridge P	roject Pilot Site f	or Meter Rais	sing.		
Date	Materials Description	Quantity	Unit Cost	Total Cost			
	30 metres 16mm poly pipe	30	S 14.50	S 435	5.00		
	20mm Poly Plain Tee	1	\$ 28.00	S 28	3.00		
	20mm x 1/2" Poly male Adaptor	1	\$ 40.00	S 40	0.00		
11/2/2013	16mm x 1/2" female poly Adaptor	5	\$ 45.00	S 225	5.00		
11/2/2013	16mm x 1/2" male Poly Adaptor	5	\$ 45.00	S 225	5.00		
		Total per F	Requisition =	\$ 953	3.00		

	TOTAL (COST FOR ME	BOKONA		
	Before Counter	measure	After Counte	rmeasure	
	Before Countermeasure	Countermeasure	After Countermeasure	Routine Activities	Total
Personnel Cost	33,599.85	48,230.55	8,734.73	896.25	91,461.3
Consumable	1,175.49	1,645.68	117.55	78.37	7,417.0
Material and Equipment	8,859.24	137,407.27	0.00	0.00	146,266.51
Sub Total	43,634.58	187,283.50	8,852.27	974.62	245,144.97
TOTAL	230,918	.08	9,826.	89	

 TOTAL
 230,918.08

 TOTAL MAN DAYS FOR MBOKOM
 608

Location	Mbokona		1. Cost	ting Be	fore Co	unterm	easure		
Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
1. Personnel	Grades- Steps								
Staff-3	3.1	0	Person	15.38	115.35				
	3.2	0	Person	15.90	119.25				
	3.3	0	Person	16.41	123.08				
	3.4	0	Person	16.92	126.90				
	3.5	0	Person	17.44	130.80				
Staff-4	4.1	40	Person	19.23	144.23	116.00		16,730.10	
	4.2	20	Person	20.00	150.00	40.00		6,000.00	
	4.3	0	Person	20.77	155.78			0.00	
	4.4	0		21.54	161.55			0.00	
	4.5	0		22.31	167.33			0.00	
Staff-5	5.1	10		24.10	180.75	20.00		3,615.00	
	5.2	0		25.13	188.48			0.00	
	5.3	0		26.15	196.13			0.00	
	5.4	0		27.18	203.85			0.00	
	5.5	10		28.21	211.58	20.00		4,231.50	
Staff-6	6.1	2		31.54	236.55	1.00		236.55	
	6.2	0		32.82	246 15			0.00	

Items	Specification	Quantity	Unit	Rate	(SBD)	Total Days	(SBD)	(SBD)	Reamarks
1 December 1	Contro Cons			(SBD)					
1. Personnel Staff-3	Grades- Steps 3.1	0	D	15.38	115.35				
Statt-3	3.1	0	Person Person	15.58	119.25				
	3.2	0		16.41	123.08				
	3.3	0	Person Person	16.92	125.08				
	3.4	0		17.44	126.90				
0.001			Person	17.44	130.80				
Staff-4	4.1	40	Person			116.00		16,730.10	
	4.2	20	Person	20.00	150.00	40.00		6,000.00	
	4.3	0	Person	20.77	155.78			0.00	
	4.4	0		21.54	161.55			0.00	
	4.5	0		22.31	167.33			0.00	
Staff-5	5.1	10		24.10	180.75	20.00		3,615.00	
	5.2	0		25.13	188.48			0.00	
	5.3	0		26.15	196.13			0.00	
	5.4	0		27.18	203.85			0.00	
	5.5	10		28.21	211.58	20.00		4,231.50	
Staff-6	6.1	2		31.54	236.55	1.00		236.55	
	6.2	0		32.82	246.15			0.00	
	6.3	0		34.10	255.75			0.00	
	6.4	0		35.38	265.35			0.00	
	6.5	0		36.67	275.03			0.00	
Staff-7	7.1	0		38.46	288.45			0.00	
	7.2	0		39.74	298.05			0.00	
	7.3	0		41.03	307.73			0.00	
	7.4	0		42.31	317.33			0.00	
	7.5	0		43.59	326.93			0.00	
Staff-8	8.1	0		47.95	359.63			0.00	
	8.2	0		49.23	369.23			0.00	
	8.3	0		50.51	378.83			0.00	
	8.4	0		51.79	388.43			0.00	
	8.5	2		53.08	398.10	7.00		2,786.70	
Staff-9	9.1	0		58.21	436.58			0.00	
	9.2	0		59.49	446.18			0.00	
	9.3	0		60.77	455.78			0.00	
	9.4	0		62.05	465.38			0.00	
	9.5	0		63.33	474.98			0.00	
Sub-total						204.00		33,599.85	
2. Consumable				\$ Per Liter	L/km		\$/km		
									50km/7km/liter=7.14liter
Pinni	P P		Y 14	11.00	0.2520		4.271.6	0.00	50km/7km/liter=7.14liter 11liter/hrs (fuel consumption for
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km
Diesel	For Excavator	660	Liter	11.80	0.3620 0.1428	94.2480	4.2716 1.68504	0.00	11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km 50km/7km/liter=7.14liter/50km
						94.2480			11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km
						94.2480			11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km 50km/7km/liter=7.14liter/50km
Diesel	For Pick-up	660	Liter	11.80		94.2480	1.68504	1,112.13	11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km 50km/7km/liter=7.14liter/50km 100km x 252days=25,200km 25,200km/10,000km x
						94.2480		1,112.13	11liter/hrs (fuel consumption for about 60PS) x 1hr=1 litter 11liter +7.1liter=18.1liter/50km 50km/7km/liter=7.14liter/50km 100km x 252days=25.200km 25.200km/10,000km x 8liter=20.16liter
Diesel	For Pick-up	660	Liter	11.80	0.1428	94.2480	1.68504	1,112.13	11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter+7-1,liter=18.1liter/50km 50km/Km/liter=7.14liter/50km 100km x 252days=25.200km 25.200km/10,000km x 8liter=20.16liter
Diesel	For Pick-up	660	Liter	11.80		94.2480	1.68504	1,112.13	11liter/hrs (fuel consumption for about 60PS) x 1hr=1 litter 11liter + 7.litter=18.litter/50km 50km/7km/litter=17.litter/50km 100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 25.2days=0.08liter/day/50km
Diesel	For Pick-up	660	Liter	11.80	0.1428	94.2480	1.68504	1,112.13	11liter/hss (fuel consumption for about 60PS) x lhr=11liter 11liter+7.1liter=18.1liter/50km 50km/7km/liter=7.1diter/50km 100km x 252.00km 25.200km/10.000km x 88liter=20.16liter 20.16liter/ 100km x 252.4dys=0.08liter/day/50km 100km x 252.4dys=0.08liter/day/50km
Diesel Engine Oil	For Pick-up For Excavator	660	Liter	11.80	0.1428	94.2480	1.68504 0.096	1,112.13	Illiter/hss (fuel consumption for about 60PS) x hr=1 litter 11 liter + 21 litter + 20 litter + 21 li
Diesel	For Pick-up	660	Liter	11.80	0.1428	94.2480	1.68504	1,112.13	11liter/hss (fuel consumption for about 60PS) x hr=11liter 11liter +7.1liter=18.1liter=50km 100km x 252days=25.200km 25.200km 0.000km x 8liter=20.16liter 25.2days=0.8liter/day/50km 100km x 252days=25.200km 25.2days=0.08liter/day/50km 100km x 252days=25.200km 25.200km 0.000km x 8liter=20.16liter
Diesel Engine Oil	For Pick-up For Excavator	660	Liter	11.80	0.1428	94.2480	1.68504 0.096	1,112.13	11liter/hss (fuel consumption for about 60PS), 14h=11lier 11lier=7,1lier=18,1lier=508m 508m/Tsnither=7,1lier=508m 1008m x 252day=25,200km 20,508m/10,000km x 8liter=20,16liter 20,16liter 1008m x 252day=25,200km 1252day=0.08liter/day,50km 1008m x 252day=25,200km 8liter=20,16liter 20,16liter
Diesel Engine Oil	For Pick-up For Excavator	660	Liter	11.80	0.1428	94.2480	1.68504 0.096	1,112.13	Illiter/hrs (fuel consumption for about 60PS), 14hr-Illiter Illiter 47. Illiter-18. Illiter/50km 50km/Tmilliter-7, Illiter-50km 100km x 252days-25,200km 100km x 252days-25,200km 25.200km/10,000km x 83kiter-20.16liter 25.2days-0.08liter/day/50km 15.200km 10,000km x 83kiter-20.16liter 25.2days-0.08liter/day/50km 15.200km 10,000km x 83kiter-20.16liter 20.16liter/ 25.2days-0.08liter/day/50km
Diesel Engine Oil	For Pick-up For Excavator	660	Liter	11.80	0.1428	94.2480	1.68504 0.096	1,112.13	11liter/hrs (fuel consumption for about 60PS), 14hr-11liter 11liter 47.1liter-18.1liter/50km 50km/Thmfilter-17.1liter-50km 100km x 252days-23_200km 100km x 252days-23_200km 100km x 252days-23_200km 1252days-20.16liter 1252days
Diesel Engine Oil Engine Oil	For Pick-up For Excavator	660	Liter	11.80	0.1428	94.2480	1.68504 0.096	1,112.13	Illiter-hrs (fuel consumption for about 60PS), Ihre-Illier Illier - Illier
Diesel Engine Oil	For Pick-up For Excavator	660	Liter Liter	60.00	0.1428 0.0016 0.0016	94.2480	0.096 0.096	1,112.13 0.00 63.36	111tier.hrs (fuel consumption for about 60PS), 14th-111tier 111tier 111t
Diesel Engine Oil Engine Oil	For Pick-up For Excavator	660	Liter Liter	60.00	0.1428	94.2480	0.096 0.096	1,112.13 0.00 63.36	Illiter-hrs (fuel consumption for about 60PS), Ihre-Illier Illier - Illier
Diesel Engine Oil Engine Oil Tires	For Pick-up For Excavator	660	Liter Liter	60.00	0.1428 0.0016 0.0016	94.2480	0.096 0.096	1,112.13 0.00 63.36	111tier.hrs (fuel consumption for about 60PS), 14th-111tier 111tier 111t
Diesel Engine Oil Engine Oil Tires Sub-total	For Pick-up For Excavator	660	Liter Liter	60.00	0.1428 0.0016 0.0016	94.2480	0.096 0.096	1,112.13 0.00 63.36	111tier.hrs (fuel consumption for about 60PS), 14th-111tier 111tier 111t
Diesel Engine Oil Engine Oil Tires Sub-total 3. Material &	For Pick-up For Excavator	660	Liter Liter	60.00	0.1428 0.0016 0.0016	94.2480	0.096 0.096	1,112.13 0.00 63.36	111tier.hrs (fuel consumption for about 60PS), 14th-111tier 111tier 111t
Diesel Engine Oil Engine Oil Tires Sub-total 3. Material & Equipment	For Pick-up For Excavator For Pick-up	660	Liter Liter Liter	60.00	0.1428 0.0016 0.0016	94.2480	0.096 0.096	1,112.13 0.00 63.36 0.00	Hiterbas (tale cossumption for about 097s) in Hiterbas (tale cossumption for about 097s) in Hiterbas (tale tale tale tale tale tale tale tale
Diesel Engine Oil Engine Oil Tires Sub-total 3. Material & Eaginement Sluice Gate Valve	For Pick-up For Excavator For Pick-up 25mm	660	Liter Liter Liter Nos	60.00	0.1428 0.0016 0.0016	94.2480	0.096 0.096	1,112.13 0.00 63.36 0.00 1,175.49	Hiterlass (tule consumption for about OPPs); Hell-Hillier Lillier 7, Hiterlass (Hiterlass Consumption for about OPPs); Hell-Hiterlass (Hiterlass Consumption); Hiterlass (Hiterlass Consumption
Diesel Engine Oil Engine Oil Tires Sub-total 3. Material & Equipment Studie Gate Valve	For Pick-up For Excavator For Pick-up 25mm 40mm	660	Liter Liter Liter Nos	60.00	0.1428 0.0016 0.0014	94.2480	0.096 0.096	1,112.13 0.00 63.36 0.00 1,175.49	Hitterbas (tule consumption for about 097s) in Hitter Sides (but confered in Hitter Sides (but c
Diesel Engine Oil Engine Oil Tires Sub-total 3. Material & Enginent State Clate Valve Sluice Clate Valve Sluice Valve Valve	For Pick-up For Excavator For Pick-up 25mm 40mm 50mm	660	Liter Liter Nos	60.00	0.1428 0.0016 0.0016 0.0014	94.2480	0.096 0.096	1,112.13 0.00 63.36 0.00 1,175.49 0.00 0.00 310.00	Hitterlass (tule consumption for about OPPs); Halter St. Hitters Chi. Hitter St. Hitter
Diesel Engine Oil Engine Oil Tires Sub-total 3. Material & Equipment of the Control of the C	For Pick-up For Excavator For Pick-up 25mm 40mm 50mm 80mm	660 0 0 0	Liter Liter Nos piece piece piece piece piece	60.00	0.0016 0.0016 0.0014 350.00 310.00 1,229.00	94.2480	0.096 0.096	1,112.13 0.00 63.36 0.00 1,175.49 0.00 0.00 310.00 2,458.00	Hiterlas (tale cossumption for about OPPs) in Hiterlas (tale Cossumption for about OPPs) in Hiterlas (Hiterlas China) (Hiterl
Diesel Engine Oil Engine Oil Tires Sub-total 3. Material & Southerland & Southerla	For Pick-up For Excavator For Pick-up 25mm 40mm 80mm 80mm	660	Liter Liter Nos piece piece piece piece piece	60.00	0.0016 0.0016 0.0014 0.0014 350.00 310.00 1,229.00 2,397.12	94.2480	0.096 0.096	1,112.13 0.00 63.36 0.00 1,175.49 0.00 0.00 310.00 2,488.00 2,397.12	Hiterbas (tale consumption for about 097s) in Hiteroflow (but 097s) in
Diesel Engine Oil Engine Oil Tires Sub-total 3. Material & Equipment State Cate Valve Slaice Gate Valve	For Pick-up For Excavator For Pick-up 25mm 40mm 50mm 80mm 100mm	660 0 0 0	Liter Liter Nos piece piece piece piece piece piece piece piece piece	60.00	0.0016 0.0016 0.0014 350.00 310.00 1,229.00	94.2480	0.096 0.096	1,112.13 0.00 63.36 0.00 1,175.49 0.00 0.00 310.00 2,458.00 0.00	Hitterbas (tule cossumption for about OPPs) in Hitter St. Hitter S
Diesel Engine Oil Engine Oil Tires Sub-total 3. Material & Engineral Stationard Stat	For Pick-up For Excavator For Pick-up 2.5mm 40mm 80mm 80mm 100mm	660 0 0 0	Liter Liter Nos piece piece piece piece piece piece piece piece	60.00	0.0016 0.0016 0.0014 0.0014 350.00 310.00 1,229.00 2,397.12	94.2480	0.096 0.096	1,112.13 0.00 63.36 0.00 1,175.49 0.00 0.00 310.00 2,458.00 2,397.12 0.00 0.00	Hiterbas (tale consumption for about 097s) in Hiterbas (tale consump
Diesel Engine Oil Engine Oil Tires Sub-total 3. Material & Societa Valve States Clate Valve	For Pick-up For Excavator For Pick-up 25mm 40mm 50mm 80mm 100mm 150mm 1250mm	660 0 0 0	Liter Liter Nos piece piece piece piece piece piece piece piece piece	60.00	0.0016 0.0016 0.0014 0.0014 350.00 310.00 1,229.00 2,397.12	94.2480	0.096 0.096	1,112.13 0.00 63.36 0.00 1,175.49 0.00 0.310.00 2,458.00 0.00 0.00 0.00 0.00	Hiterlass (tale consumption for about OPPs) it hell Hitter of the Consumption for about OPPs) it hell Hitered Stim Hitered Stim (1884) in the Consumption of the Cons
Diesel Engine Oil Engine Oil Tires Sub-total 3. Material & Engineral Stationard Stat	For Pick-up For Excavator For Pick-up 2.5mm 40mm 80mm 80mm 100mm	660 0 0 0	Liter Liter Nos piece piece piece piece piece piece piece piece	60.00	0.0016 0.0016 0.0014 0.0014 350.00 310.00 1,229.00 2,397.12	94.2480	0.096 0.096	1,112.13 0.00 63.36 0.00 1,175.49 0.00 0.310.00 2,458.00 0.00 0.00 0.00 0.00	Hiterbas (tale consumption for about 097s) in Hiterbas (tale consump
Diesel Engine Oil Engine Oil Tires Sub-total 3. Material & Societa Valve States Clate Valve	For Pick-up For Excavator For Pick-up 25mm 40mm 50mm 80mm 100mm 150mm 1250mm	660 0 0 0	Liter Liter Nos piece	60.00	0.0016 0.0016 0.0014 350.00 310.00 1,229.00 2,397.12	94.2480	0.096 0.096	1,112.13 0.00 63.36 0.00 1,175.49 0.00 0.310.00 2,458.00 0.00 0.00 0.00 0.00	Hiterlass (tale consumption for about OPPs) it hell Hitter of the Consumption for about OPPs) it hell Hitered Stim Hitered Stim (1884) in the Consumption of the Cons
Direct Engine Oil Engine Oil Tires Sub-total 3. Material & Canarase Silice Gate Valve	For Pick-up For Excavator For Pick-up 25mm 40mm 50mm 100mm 100mm 1200mm 2200mm	660 0 0 0	Liter Liter Nos piece	60.00	0.0016 0.0016 0.0014 350.00 310.00 1,229.00 2,397.12	94.2480	0.096 0.096	1,112.13 0.00 63.36 0.00 1,175.49 0.00 0.00 2.458.00 0.00	1111er/hs (tiel consumption for about 097s) 11-11/11-12/11
Diesel Engine Oil Engine Oil Engine Oil Tires Sub-total 3. Material & Engine Gal Sub-total 5. Material & Engine Gal Sub-total 5. Material & Engine Sub-total 5. Material 6. Mat	For Pick-up For Excavator For Pick-up 25mm 40mm 80mm 100mm 110mm 220mm 220mm	660 0 0 0	Liter Liter Nos piece	60.00	0.0016 0.0016 0.0014 350.00 310.00 1,229.00 2,397.12	94.2480	0.096 0.096	1,112.13 0.00 63.36 0.00 1,175.49 0.00 310.00 2,498.00 2,397.12 0.00 0.00 0.00 0.00 0.00 0.00	Hiterlass (tale consumption for about OPPs) it hell Hitter of the Consumption for about OPPs) it hell Hitered Stim Hitered Stim (1884) in the Consumption of the Cons
Diesel Engine Oil Engine Oil Engine Oil Tires Sub-total 3. Material & Engine Gal Sub-total 5. Material & Engine Gal Sub-total 5. Material & Engine Sub-total 5. Material 6. Mat	For Pick-up For Excavator For Pick-up 25mm 40mm 50mm 150mm 200mm 200mm 300mm 15mm	660 0 0 0	Liter Liter Nos piece piece piece piece piece piece piece piece piece coil coil	60.00	0.0016 0.0016 0.0014 350.00 310.00 1,229.00 2,397.12	94.2480	0.096 0.096	1,112.13 0.00 63.36 0.00 1,175.49 0.00 310.00 2,397.12 0.00 0.0	Hiterbas (tale consumption for about OPPs) Hard Hiterbas (Hard Consumption for about OPPs) Hard Tale Hiterbas (Hard Consumption for about OPPs) Hard Tale Hiterbas (Hard Consumption for about OPPs) Hard Tale
Diesel Engise Oil Engise Oil Tires Substated 3. Material & Engise Valve Stuice Gate Valve	For Pick-up For Excavator For Pick-up For Pick-up 25mm 40mm 80mm 100mm 115mm 250em 300mm 15mm 15mm 21mm	660 0 0 0	Liter Liter Liter Nos piece	60.00	0.0016 0.0016 0.0014 350.00 310.00 1,229.00 2,397.12	94.2480	0.096 0.096	1,112.13 0.00 63.36 0.00 1,175.49 0.00 0.00 2,488.00 2,488.00 0	Hiterbas (tele cossumption for about OPPs) Her Hillier

									per day
Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Pipes (PVC)	25mm		piece					0.00	
Pipes (PVC)	50mm	1	piece		154.00			154.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece		248.00			0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece					0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece					0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
Other Materials								3,540.12	
Sub-total								8,859.24	

2.	Countermeasure
----	----------------

Mbokona

									per day
Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
1. Personnel	Grades- Steps			(555)					
Staff-3	3.1	0	Person	15.38	115.35				
	3.2	0	Person	15.90	119.25				
	3.3	0	Person	16.41	123.08				
	3.4	0	Person	16.92	126.90				
	3.5	0	Person	17.44	130.80				
Staff-4	4.1	16	Person	19.23	144.23	152.00		21,922.20	
	4.2	8	Person	20.00	150.00	76.00		11,400.00	
	4.3	0	Person	20.77	155.78			0.00	
	4.4	0		21.54	161.55			0.00	
	4.5	0		22.31	167.33			0.00	
Staff-5	5.1	3		24.10	180.75	38.00		6,868.50	
	5.2	0		25.13	188.48			0.00	
	5.3	0		26.15	196.13			0.00	
	5.4	0		27.18	203.85			0.00	
	5.5	4		28.21	211.58	38.00		8,039.85	
Staff-6	6.1	0		31.54	236.55			0.00	
	6.2	0		32.82	246.15			0.00	
	6.3	0		34.10	255.75			0.00	
	6.4	0		35.38	265.35			0.00	
	6.5			36.67	275.03			0.00	
Staff-7	7.1	0		38.46	288.45			0.00	
	7.2	0		39.74	298.05 307.73			0.00	
	7.3	0		41.03 42.31	307.73			0.00	
	7.5	0		43.59	326.93			0.00	
0.00		0		47.95				0.00	
Staff-8	8.1	0		49.23	359.63				
	8.2 8.3	0		50.51	369.23 378.83			0.00	
	8.4	0		51.79	388.43			0.00	
	8.5	0		53.08	398.10			0.00	
Staff-9	9.1	0		58.21	436.58			0.00	
Stair-0	9.2	0		59.49	446.18			0.00	
	9.3	0		60.77	455.78			0.00	
	9.4	0		62.05	465.38			0.00	
	9.5	0		63.33	474.98			0.00	
Sub-total	0.0			05.05	474.00	304.00		48,230,55	
2. Consumable				S Per Liter	L/km		\$/km	10,200.00	
									50km/7km/liter=7.14liter
									11liter/hrs (fuel consumption for
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	about 60PS) x 1hr=11liter
									11liter +7.1liter=18.1liter/50km
Diesel	For Pick-up	924	Liter	11.80	0.1428	131.9472	1.68504	1,556.98	50km/7km/liter=7.14liter/50km
									100km x 252days=25,200km
									25,200km/ 10,000km x
Engine Oil	For Excavator	0	Liter	60.00			0.096	0.00	8liter=20.16liter
0									20.16liter/
					0.0016				252days=0.08liter/day/50km
									100km x 252days=25,200km
Engine Oil									100km x 252days=25,200km 25,200km/ 10,000km x
	For Pick-up	924	Liter	60.00			0.096	88.70	100km x 252days=25,200km
	For Pick-up	924	Liter	60.00			0.096	88.70	100km x 252days=25,200km 25,200km/ 10,000km x
	For Pick-up	924	Liter	60.00	0.0016		0.096	88.70	100km x 252days=25,200km 25,200km/ 10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km
	For Pick-up	924	Liter	60.00	0.0016		0.096	88.70	100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km 50km x 252days=12,600km
T'	For Pick-up				0.0016				100km x 252days=25,200km 25,200km/ 10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km
Tires	For Pick-up	924	Liter	60.00 770.00			0.096 1.078	88.70	100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 25.2days=0.08liter/day/50km 50km x 252days=12,600km 12,600km/30,000km x 4nos=1.88nos
Tires	For Pick-up				0.0016				100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter 252days=0.08liter/day/50km 50km x 252days=12,600km 12,600km/30,000km x
	For Pick-up							0.00	100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 25.2days=0.08liter/day/50km 50km x 252days=12,600km 12,600km/30,000km x 4nos=1.88nos
Sub-total	For Pick-up								100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 25.2days=0.08liter/day/50km 50km x 252days=12,600km 12,600km/30,000km x 4nos=1.88nos
Sub-total 3. Material &	For Pick-up							0.00	100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 25.2days=0.08liter/day/50km 50km x 252days=12,600km 12,600km/30,000km x 4nos=1.88nos
Sub-total 3. Material & Equipment			Nos					0.00	100km x 252days-25,200km 25,200km / 10,000km x 8llter-20,16llter 252days-0,08llter/day/50km 252days-12,600km 21,2600km / 30,000km x 4nos-1.68nos 1,88nos/252days-0,07nos/50km
Sub-total 3. Material & Equipment Sluice/ Gate Valve	25mm		Nos		0.0014			0.00 1,645.68	100km x 252days-25,200km 25,200km / 10,000km x 81lter-20,161lter 20,161lter 252days-0.081lter/day/50km 50km x 252days-12,600km 12,600km x 30,000km x 16,800km / 30,000km x 1,88nos/ 252days-0.07nos/50km
Sub-total 3. Material & Equipment Sluice/ Gate Valve Sluice/ Gate Valve	25mm 40mm		Nos piece piece		0.0014			0.00 1,645.68 0.00 0.00	100km x \$25days=25,200km \$2,200km / 10,000km x \$lite=20,16liter 225days=0.08litesiday/50km 50km x \$25days=12,600km 12,600km x 50km x 52days=1,000km 10,600km x 50km x 50km x 50km 1,68mor 252days=0.07mox50km
Sub-total 3. Material & Equipment Sluice/ Gate Valve Sluice/ Gate Valve Sluice/ Gate Valve	25mm 40mm 50mm		Nos piece piece piece		0.0014			0.00 1,645.68 0.00 0.00 0.00	100km x 252days-25,200km 25,200km 110,000km x 8liter-20,16liter 2252decs0,16liter 2252decs0,000km x 252decs0,000km x 4nos-1,58nos 1,88nos 252days-0.07nos/50km Gate Valve Gate Valve
Sub-total 3. Material & Equipment Sluice/ Gate Valve Sluice/ Gate Valve Sluice/ Gate Valve Sluice/ Gate Valve	25mm 40mm 50mm 80mm		Nos piece piece piece piece		0.0014 350.00 310.00			0.00 1,645.68 0.00 0.00 0.00	100km x 525days-25,200km 25,200km / 10,000km x 8liter-20,16liter 252days-0.08literiday/50km 252days-0.08literiday/50km 12,600km x 525days-12,600km 12,600km x 500km x 525days-10,000km 16,80moi 252days-0.07moi/50km Gate Valve Gate Valve Gate Valve Gate Valve
Sub-total 3. Material & Equipment Sluice/ Gate Valve	25mm 40mm 50mm 100mm		Nos piece piece piece piece		0.0014			0.00 1,645.68 0.00 0.00 0.00 0.00 0.00	100km x 252days-25,200km x 818er-20.1 Gilber 2 25,200km 10,000km x 818er-20.1 Gilber 2 20.1 tiller / 10.2 tiller /
Sub-total 3. Material & Equipment Sluice/ Gate Valve	25mm 40mm 50mm 80mm 100mm		Nos piece piece piece piece piece piece		0.0014 350.00 310.00			0.00 1,645.68 0.00 0.00 0.00 0.00 0.00	100km x 252days-25,200km x 8 titler-20,160km x 8 titler-20,160km x 8 titler-20,160km x 0 101-160km x
Sub-total 3. Material & Equipment Slutice/ Gate Valve	25mm 40mm 50mm 80mm 100mm 150mm		Nos piece piece piece piece piece piece piece		0.0014 350.00 310.00			0.00 1,645.68 0.00 0.00 0.00 0.00 0.00 0.00	100km x 252days-25.200km 1 100km x 812days-25.200km 1 100km x 84tter-20.10ter 2 10km 1 10km 2
Sub-total 3. Material & Equipment Sluice/ Gate Valve	25mm 40mm 50mm 80mm 100mm 150mm 200mm		Nos piece piece piece piece piece piece piece		0.0014 350.00 310.00			0.00 1,645.68 0.00 0.00 0.00 0.00 0.00 0.00 0.00	100km x 252days-25,200km x 8 titler-20,160km x 8 titler-20,160km x 8 titler-20,160km x 0 101-160km x
Sub-total 3. Material & Equipment Sluice/ Gate Valve	25mm 40mm 50mm 80mm 100mm 200mm 250mm	0	Nos piece		350.00 310.00 2,423.00			0.00 1,645.68 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	100km x 252days-25.200km x 000km x 8 diter-20.100km x 000km x 00km c 252days-15.200km 10.00km x 00km c 252days-16.200km 30km x 252days-16.200km x 00km x 252days-16.200km x 00km
Sub-total 3. Material & Equipment Sluice' Gate Valve	25mm 40mm 50mm 100mm 150mm 250mm 250mm 250mm 150mm 150mm	200	Nos piece		350.00 310.00 2,423.00			0.00 1,645.68 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0	100km x 252days-25,200km x 8 tiller-20, 168er 2 100km x 8 tiller-20, 168er 2 10, 168er 2 1
Sub-total 3. Material & Equipment Sluice/ Gate Valve Plies (Poly) Pipes (Poly) Pipes (Poly)	25mm 40mm 50mm 80mm 110mm 200mm 300mm 15mm 250mm 250mm	0	Nos piece piece piece piece piece piece piece piece coil		350.00 310.00 2,423.00			0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	100km x 252days-25,200km 1 (100km x 8) (100km x 8) (100km x 8) (100km x 8) (100km x 10km 20,10km 20,10
Sub-total 3. Material & Enquipment Sluice/ Gate Valve Pluice/ Gate Valve Plipse (Poly) Plipse (Poly)	25mm 40mm 50mm 80mm 100mm 200mm 250mm 200mm 15mm 20mm 20mm	200	Nos piece piece piece piece piece piece piece coil coil		350.00 310.00 2,423.00			0.00 1.645.68 0.00 0.	100km x 252days-25.200km 1000km x 84dise-20.100km x 84dise-20.100km x 84dise-20.100km x 84dise-20.100km x 84dise-20.100km x 95disy-16.200km x 95disy-16.200km x 100km x 95disy-16.200km x 100km x 10km
Sub-total 3. Material & Equipment Sluice/ Gate Valve Plies (Poly) Pipes (Poly) Pipes (Poly)	25mm 40mm 50mm 80mm 110mm 200mm 300mm 15mm 250mm 250mm	200	Nos piece piece piece piece piece piece piece piece coil		350.00 310.00 2,423.00			0.00 1.645.68 0.00 0.	100km x 252days-25,200km 1 (100km x 8) (100km x 8) (100km x 8) (100km x 8) (100km x 10km 20,10km 20,10

									per day
Items	Specification	Quantity	Unit	Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Pipes (PVC)	50mm		piece					0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece		248.00			0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece					0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece					0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm	44	piece		394.00			17,336.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
Other Materials								56,239.04	
Water meter	20mm	24			394.00			9,456.00	Not shown in requisition report for Mbokona
Sub-total								87,531.04	
Total								137,407.27	

Total

1AUD=6.534SBD was applied to the above (rate as of 30 September, 2013 of Oanda).

3. After Countermeasure

			3.	After (Counte	rmeasu	re		
Location	Mbokona								
Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	per d Reamarks
. Personnel	Grades- Steps			(300)					
Staff-3	3.1	0	Person	15.38	115.35				
Diam'r D	3.2	0	Person	15.90	119.25				
	3.3	0	Person	16.41	123.08				
	3.4	0	Person	16.92	126.90				
	3.5	0	Person	17.44	130.80				
Staff-4	4.1	12	Person	19.23	144.23	20.00		2.884.50	
Danii 4	4.2	6	Person	20.00	150.00	10.00		1,500.00	
	4.3	0	Person	20.77	155.78	10.00		0.00	
	4.4	0	I CLIONI	21.54	161.55			0.00	
	4.5	0		22.31	167.33			0.00	
Staff-5	5.1	3		24.10	180.75	5.00		903.75	
	5.2	0		25.13	188.48			0.00	
	5.3	0		26.15	196.13			0.00	
	5.4	0		27.18	203.85			0.00	
	5.5	3		28.21	211.58	5.00		1,057.88	
Staff-6	6.1	0		31.54	236.55			0.00	
	6.2	0		32.82	246.15			0.00	
	6.3	0		34.10	255.75			0.00	
	6.4	0		35.38	265.35			0.00	
	6.5	0		36.67	275.03			0.00	
Staff-7	7.1	0		38.46	288.45			0.00	
	7.2	0		39.74	298.05			0.00	
	7.3	0		41.03	307.73			0.00	
	7.4	0		42.31	317.33			0.00	
	7.5	0		43.59	326.93			0.00	
Staff-8	8.1	0		47.95	359.63			0.00	
	8.2	0		49.23	369.23			0.00	
	8.3	0		50.51	378.83			0.00	
	8.4	0		51.79	388.43			0.00	
	8.5	2		53.08	398.10	6.00		2,388.60	
Staff-9	9.1	0		58.21	436.58			0.00	
	9.2	0		59.49	446.18			0.00	
	9.3	0		60.77	455.78			0.00	
	9.4	0		62.05	465.38			0.00	
	9.5	0		63.33	474.98			0.00	
Sub-total						46.00		8,734.73	
. Consumable				S Per Liter	L/km		S/km		
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	50km/7km/liter=7.14liter 11liter/hrs (fuel consumption for
									about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km
Diesel	For Pick-up	66	Liter	11.80	0.1428	9.4248	1.68504	111.21	50km/7km/liter=7.14liter/50km
Engine Oil	For Excavator	0	Liter	60.00			0.096	0.00	100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter
Englik Oli	I OI LIXENVINOI	Ů	Lines	00.00	0.0016		0.070	0.00	20.16liter/ 252days=0.08liter/day/50km
Engine Oil	For Pick-up	66	Liter	60.00			0.096	6.34	100km x 252days=25,200km 25,200km/ 10,000km x 8liter=20.16liter 20.16liter/
Tires		0	Nos	770.00	0.0016		1.078	0.00	252days=0.08liter/day/50km 50km x 252days=12,600km 12,600km/30,000km x
			1403	7.70.00	0.0014		1.076	0.00	4nos=1.68nos 1.68nos/252days=0.07nos/50km
Sub-total				-				117.55	
Material &				 				117.55	
quipment	l			1					
Sluice/ Gate Valve	25mm		piece	 				0.00	Gate Valve
Sluice/ Gate Valve	40mm		piece	 	350.00				Gate Valve
Sluice/ Gate Valve	40mm 50mm			 	350.00				Gate Valve
Sluice/ Gate Valve	S0mm 80mm		piece	 	310.00				Sluice Valve
			piece	-	2,423.00	_			
Sluice/ Gate Valve Sluice/ Gate Valve	100mm 150mm		piece	-	2,423.00				Sluice Valve Sluice Valve
Sluice/ Gate Valve	200mm		piece	-	_	_		0.00	Sluice Valve
Sluice/ Gate Valve	200mm 250mm		piece	-	_	_			Sluice Valve Sluice Valve225mm AUD1785
			piece	-	_	_		0.00	Sinice varve225mm AUD1/85
Sluice/ Gate Valve	300mm		piece	-	-	-			Length on 1 coil =300m
Pipes (Poly)	15mm			-	-	-			
Pipes (Poly)	20mm	1	coil	1	1	1	1	0.00	Length on 1 coil =300m

									per day
Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Pipes (PVC)	50mm		piece					0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece		248.00			0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece					0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece					0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
Other Materials									
Sub-total								0.00	

Stin-tonal
Total

1AUD=6.534SBD was applied to the above (rate as of 30 September, 2013 of Oanda).

4. Costing for Routine Activities	ine Activities
-----------------------------------	----------------

			4. Co:	sting fo	r Routi	ne Acti	ivities		
Location	Mbokona			Ü					per day
Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
1. Personnel	Grades- Steps								
Staff-3	3.1	0	Person	15.38	115.35				
	3.2	0	Person	15.90	119.25				
	3.3	0	Person Person	16.41 16.92	123.08 126.90				
	3.4	0	Person	17.44	130.80				
Staff-4	3.5 4.1	0	Person	19.23	144.23			0.00	
Stati-4	4.2	0	Person	20.00	150.00			0.00	
	4.3	0	Person	20.77	155.78			0.00	
	4.4	0	I CLOUI	21.54	161.55			0.00	
	4.5	0		22.31	167.33			0.00	
Staff-5	5.1	0		24.10	180.75			0.00	
	5.2	0		25.13	188.48			0.00	
	5.3	0		26.15	196.13			0.00	
	5.4	0		27.18	203.85			0.00	
	5.5	1		28.21	211.58	2.00		423.15	
Staff-6	6.1	2		31.54	236.55	2.00		473.10	
	6.2	0		32.82	246.15			0.00	
	6.3	0		34.10	255.75			0.00	
	6.4	0		35.38	265.35			0.00	
	6.5	0		36.67	275.03			0.00	
Staff-7	7.1	0		38.46	288.45			0.00	
	7.2	0		39.74	298.05			0.00	
	7.3	0		41.03	307.73			0.00	
	7.4	0		42.31 43.59	317.33			0.00	
					326.93				
Staff-8	8.1	0		47.95	359.63			0.00	
	8.2 8.3	0		49.23 50.51	369.23 378.83			0.00	
	8.4	0		51.79	388.43			0.00	
	8.5	0		53.08	398.10			0.00	
Staff-9	9.1	0		58.21	436.58			0.00	
Stati-9	9.2	0		59.49	446.18			0.00	
	9.3	0		60.77	455.78			0.00	
	9.4	0		62.05	465.38			0.00	
	9.5	0		63.33	474.98			0.00	
Sub-total						4.00		896.25	
2. Consumable				S Per Liter	L/km		S/km		
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	50km/7km/liter=7.14liter 11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter
Diesel	For Pick-up	44	Liter	11.80	0.1428	6.2832	1.68504	74.14	11liter +7.1liter=18.1liter/50km 50km/7km/liter=7.14liter/50km
Engine Oil	For Excavator	0	Liter	60.00	0.0016	0.2002	0.096		100km x 252days=25,200km 25,200km/ 10,000km x 8liter=20.16liter 20.16liter/
Engine Oil	For Pick-up	44	Liter	60.00	0.0016		0.096	4.22	252days=0.08liter/day/50km 100km x 252days=25,200km 25,200km/ 10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km
Tires		0	Nos	770.00	0.0014		1.078	0.00	50km x 252days=12,600km 12,600km/ 30,000km x 4nos=1.68nos 1.68nos/ 252days=0.07nos/50km
Sub-total				_				78.37	
3. Material &				+				70.31	
Equipment	1			1					
Sluice/ Gate Valve	25mm		piece					0.00	Gate Valve
Sluice/ Gate Valve	40mm		piece		350.00			0.00	Gate Valve
Sluice/ Gate Valve	50mm		piece		310.00			0.00	Gate Valve
Sluice/ Gate Valve	80mm		piece					0.00	Sluice Valve
Sluice/ Gate Valve	100mm		piece	1 '	2,423.00			0.00	Sluice Valve
Sluice/ Gate Valve	150mm		piece					0.00	Sluice Valve
Sluice/ Gate Valve	200mm		piece					0.00	Sluice Valve
Sluice/ Gate Valve	250mm		piece						Sluice Valve225mm AUD1785
Sluice/ Gate Valve	300mm		piece					0.00	
Pipes (Poly)	15mm		coil						Length on 1 coil =300m
Pipes (Poly)	20mm		coil					0.00	Length on 1 coil =300m
Pipes (Poly)	25mm		coil					0.00	Length on 1 coil =200m
Pipes (Poly)	50mm		coil						Length on 1 coil =150m
Pipes (PVC)	25mm	1	piece	1	l l	l l		0.00	1

Pipes (PVC)	50mm	piece		0.00	
Pipes (PVC)	80mm	piece		0.00	
Pipes (PVC)	100mm	piece	248.00	0.00	
Pipes (PVC)	150mm	piece		0.00	
Pipes (PVC)	200mm	piece		0.00	
Pipes (PVC)	250mm	piece		0.00	
Pipes (PVC)	300mm	piece		0.00	
Water Meter	10mm	piece		0.00	
Water Meter	16mm	piece		0.00	
Water Meter	20mm	piece		0.00	
Water Meter	25mm	piece		0.00	
Water Meter	32mm	piece		0.00	
Water Meter	40mm	piece		0.00	
Other Materials				0.00	
Sub-total				0.00	
Total				974.62	

Cost for Mat	erials (Mbokona)					
DEPARTMEN'	T NAME: NRW PROJECT TEAM 1	RECEIVED BY: J.Teno				
	DED BY: Eric Unga	ISSUED E	Y: Jerry Web	0		
REQUISITION	NO: 0126	DATE ISS	UED: 12/10/20	013		
JOB DESCRIP	TION: Being for Mbokona Pilot Project Site	٠.				
Date	Materials Description	Quantity	Unit Cost	Total Cost		
	80mm (3") Brass Gate Valve	1	\$ 1,229.00	S	1,229.00	
	8" x 1 1/4" brass Saddle/Tapping band	1	\$ 844.00	S	844.00	
10/12/2013	15mm Stop Cock	1	\$ 95.00	S	95.00	
	1/2" G.I Nipple	1	\$ 8.00	S	8.00	
	80mm (3") Sluice Valve	1	\$ 2,397.12	S	2,397.12	
10/12/2013	80mm (3") Flange Adaptor	2	\$ 636.73	S	1,273.46	
	16mm Poly Tee	1	\$ 85.00	S	85.00	
10/12/2013	3" Gasket & boits	2	\$ 134.83	S	269.66	
		Total per F	equisition =	S	6,201.24	

	T NAME: NRW PROJECT TEAM 2 DED BY: Benjimen Billy	RECEIVED BY: John Teno ISSUED BY: Paul Seda				
REQUISITION		DATE ISSUED: 14/10/2013				
	TION: Being for Mbokona Pilot Project Site					
	Materials Description	Quantity	Unit Cost	Total Cost		
10/14/2013	3" UPVC Compression Coupling	1	\$ 180.00	S	180.00	
<u> </u>		Total per F	Requisition =	\$	180.00	

DEPARTMEN	T NAME: NRW PROJECT TEAM 2	RECEIVE	ED BY: Dykes			
RECOMMENI	DED BY: Benjimen Billy	ISSUED BY: Paul Seda				
REQUISITION	NO: 2354	DATE ISSUED: 15/10/2013				
	TION: Being for Mbokona Pilot Project Site					
	Materials Description	Quantity	Unit Cost	Total Cost		
	80mm (3") Brass Gate Valve	1	\$ 1,229.00	S 1,229.00		
	50mm UPVC Presure Pipe	1	\$ 154.00	S 154.00		
10/15/2013	2" (50mm) Gilbault Joint	1	\$ 231.00	\$ 231.00		
	3" UPVC Compression Coupling	2	\$ 180.00	\$ 360.00		
	80mm (3") UPVC Male threaded Socket	2	\$ 77.00	\$ 154.00		
	ThreadTape	10	\$ 4.00	\$ 40.00		
10/15/2013	50mm (2") Gate Valve	1	\$ 310.00	\$ 310.00		
	•	Total per F	Requisition =	\$ 2,478.00		

DEPARTMEN	DEPARTMENT NAME: NRW PROJECT TEAM 1 RECEIVED BY: Moses Metea						
RECOMMENDED BY: Benjimen Billy ISSUED BY: Paul Seda							
REQUISITION NO: 2355 DATE ISSUED: 21/10/2013							
JOB DESCRIP	JOB DESCRIPTION: Materials required for Mbokona Pilot project site .						
Meter ID :	12B011266 - 270 (5 Pieces) 12B010941 - 94	5 (5 pieces)				
Date	Materials Description	Quantity	Unit Cost	Total Cost			
	ThreadTape (5 Pkts)	50	\$ 4.00	\$	200.00		
10/21/2013	3/4" x 1/2" G.I Reducing Socket	10	\$ 12.00	S	120.00		
	16mm x 1/2" female poly Adaptor	20	\$ 45.00	S	900.00		
10/21/2013	3/4" G.I nipple	10	\$ 12.00	\$	120.00		
10/21/2013	20mm Water Meter	10 \$ 394.00 \$ 3,940.0					
		Total per F	Requisition =	S	5,280.00		

DEPARTMENT NAME: NRW PROJECT TEAM 1 RECEIVED BY: Dykes					
RECOMMENI	DED BY: Silas Talosui	ISSUED E	Y: Paul Seda		
REQUISITION	NO: 2356	DATE ISS	SUED: 21/10/20	013	
	TION: Materials required for Mbokona Pilot	project site	for Meter Raisir	ng.	
	Materials Description	Quantity	Unit Cost	Total Cost	
10/21/2013	3/4" x 1/2" G.I Reducing Socket	20	\$ 12.00	S	240.00
	16mm x 1/2" female poly Adaptor	20	\$ 45.00	S	900.00
10/21/2013	3/4" G.I nipple	10	\$ 12.00	\$	120.00
		Total per F	Requisition =	\$	1,260.00

DEPARTMEN	T NAME: NRW PROJECT TEAM 1	RECEIVE	D BY: Moses	Meitea			
RECOMMENI	RECOMMENDED BY: Silas Talosui ISSUED BY: Paul Seda						
REQUISITION NO: 2460 DATE ISSUED: 04/11/2013							
JOB DESCRIP	TION: Materials required for Project Pilot Si	ite @ Mboko	na for Meter ra	ising .			
METER I.D:	12B086598 - 602(5 Pies), 12B086843-847(5	pies),12B01	1041-045(5 pie	s),12B011226-230(5 pies)			
Date	Materials Description	Quantity	Unit Cost	Total Cost			
11/4/2013	15mm G.I elbow	80	\$ 12.00	\$ 960.00			
11/4/2013	3/4" x 1/2" G.I reduce Socket	4	\$ 12.50	\$ 50.00			
11/4/2013	20mm Stop Cock	20	\$ 180.00	\$ 3,600.00			
11/4/2013	16mm x 1/2" female poly Adaptor	40	\$ 45.00	\$ 1,800.00			
11/4/2013	3/4" G.I nipple	20	\$ 12.00	\$ 240.00			
11/4/2013	20mm Water Meter	20	\$ 394.00	\$ 7,880.00			
		Total per F	Requisition =	\$ 14,530.00			

DEPARTMEN	T NAME: NRW PROJECT TEAM 1	RECEIVE	D BY: Selina		
RECOMMEN	DED BY: M.Bera for Benjimen	ISSUED E	Y: George Bla	moli	
REQUISITIO	N NO: 2461	DATE ISS	SUED: 07/11/20	013	
JOB DESCRII	PTION: Being for continue work on Meter Ra	ising Pilot P	roject site @ M	bokona .	
Date	Materials Description	Quantity	Unit Cost	Total Cost	
11/7/2013	40 KG Bag cement	3	\$ 80.00	S	240.00
		Total per F	Requisition =	\$	240.00

DEPARTMEN	T NAME: NRW PROJECT TEAM 1	RECEIVED BY: Moses Metea			
RECOMMENI	DED BY: Eric Unga	ISSUED E	Y: Paul Seda		
REQUISITION	NO: 2462	DATE ISS	UED: 08/11/20	13	
JOB DESCRIP	TION: Being for continue work on Meter Ra	sing Pilot Project site @ Mbokona .			
Date	Materials Description	Quantity	Unit Cost	Total Cost	
11/8/2013	10mm Steel Rods	5	\$ 68.00	S	340.00
	•	Total per Requisition = S		Ş	340.00

DEPARTMENT NAME: NRW PROJECT TEAM 1 RECEIVED BY: John Teno					
RECOMMENI	DED BY: Eric Unga	ISSUED BY: George Blamoli			
REQUISITION			SUED: 13/11/20	13	
JOB DESCRIP	TION: Being for Meter Raising Project @ M	Ibokona Pilo	ot Site .		
Date	Materials Description	Quantity	Unit Cost	Total Cost	
11/13/2013	15mm Stop Cock	10	\$ 170.00	S	1,700.00
11/13/2013	20mm Stop Cock	20	\$ 180.00	\$	3,600.00
11/13/2013	16mm x 1/2" female poly Adaptor	22	\$ 45.00	\$	990.00
11/13/2013	16mm x 3/4 Female Poly Adaptor	24	\$ 50.00	\$	1,200.00
11/13/2013	16mm Poly Coupling	14	\$ 45.00	\$	630.00
11/13/2013	20mm x 16mm Poly Reduce Coupling	14	\$ 56.00	S	784.00
11/13/2013	1/2" G.I Socket	14	\$ 10.00	S	140.00
11/13/2013	15mm G.I elbow	30	\$ 12.00	S	360.00
11/13/2013	20mm(3/4") G.I Elbow	26	\$ 14.00	S	364.00
11/13/2013	ThreadTape	30	\$ 4.00	\$	120.00
11/13/2013	16mm Poly Tee	2	\$ 85.00	\$	170.00
11/13/2013	3/4" G.I Socket	20		S	240.00
		Total per F	Requisition =	S	10,298.00

DEPARTMEN	FMENT NAME: NRW PROJECT TEAM 1 RECEIVED BY: John Teno				
RECOMMENI	DED BY: Silas Talosui	ISSUED BY: Paul Seda			
REQUISITION	NO: 2454	DATE ISS	SUED: 23/10/20	13	
JOB DESCRIP	TION: Materials required for Mbokona Pilot	project site	for Meter Raisir	ıg.	
Date	Materials Description	Quantity	Unit Cost	Total Cost	
10/23/2013	40 KG Bag cement	10	\$ 78.00	\$	780.00
10/23/2013	50 metres 16mm poly pipe	50	\$ 14.50	\$	725.00
10/23/2013	16mm Poly Coupling	10	\$ 45.00	S	450.00
10/23/2013	20mm x 16mm Poly Reduce Coupling	10	\$ 56.00	\$	560.00
10/23/2013	16mm x 1/2" female poly Adaptor	10	\$ 45.00	S	450.00
10/23/2013	16mm x 1/2" male Poly Adaptor	10	\$ 45.00	S	450.00
10/23/2013	20mm Poly Coupling	10	\$ 45.00	\$	450.00
10/23/2013	20mm Stop Cock	5	\$ 168.00	S	840.00
10/23/2013	15mm Stop Cock	5	\$ 95.00	S	475.00
10/23/2013	ThreadTape	5	\$ 4.00	\$	20.00
	•	Total per F	Requisition =	S	5,200.00

	DEPARTMENT NAME: NRW PROJECT TEAM 1 RECEIVED BY: David.Akwa'asi						
RECOMMENDED BY: Benjimen Billy ISSUED BY: Paul Seda							
	REQUISITION NO: 2455 DATE ISSUED: 23/10/2013						
	TION: Being for maintenace of Leakage @ !						
Date	Materials Description	Quantity	Unit Cost	Total Cost			
	15mm Stop Cock	5	\$ 95.00	\$	475.00		
	1/2" G.I Nipple	9	\$ 8.00	S	72.00		
10/23/2013	1/2" G.I Socket	4	\$ 10.00	\$	40.00		
10/23/2013	ThreadTape	5	\$ 4.00	\$	20.00		
	16mm x 1/2" female poly Adaptor	10	\$ 45.00	S	450.00		
10/23/2013	16mm Poly Coupling	5	\$ 45.00	S	225.00		
		Total per F	Requisition =	S	1,282.00		

DEPARTME	NT NAME: NRW PROJECT TEAM 1	RECEIVE	ED BY: David A	Akoeasi	
RECOMME	NDED BY: Eric Unga	ISSUED E	Y: Paul Seda		
REQUISITIO	ON NO: 2456	DATE ISS	SUED: 24/10/20	013	
JOB DESCR	IPTION: Materials required for Mbokona Vall	ey Project Pi	lot Site for Mete	er Raising .	
Date	Materials Description	Quantity	Unit Cost	Total Cost	
10/24/201	3 50mm Poly Coupling	2	\$ 66.00	S	132.00
		Total per I	Poquicition -	c	122.00

DEPARTMEN	DEPARTMENT NAME: NRW PROJECT TEAM 1 RECEIVED BY: David Akoeasi						
RECOMMENDED BY: Benjimen Billy ISSUED BY: Paul Seda							
REQUISITION			SUED: 25/10/20				
	TION: Materials required for Repair @ Mbo	okona Valley					
Date	Materials Description	Quantity	Unit Cost	Total Cost			
	63mm Poly Plain Coupling	1	\$ 99.20	\$ 99.20			
	63mm x 2" Poly male Adaptor	1	\$ 62.40	\$ 62.40			
	2 metres 32mm poly Pipe	2	\$ 30.00	\$ 60.00			
	2 " x 1 1/4" G.I reduce Socket	1	\$ 60.00	\$ 60.00			
	32mm x 1 1/4" male poly Adaptor	1	\$ 55.00				
10/25/2013	32mm poly Coupling	1	\$ 70.00				
	·	Total per F	Requisition =	\$ 406.60			

DEPARTMEN	DEPARTMENT NAME: NRW PROJECT TEAM 1 RECEIVED BY: Selina						
RECOMMENDED BY: Nathaniel Legu (For Eric Unga) ISSUED BY: George Blamoli							
REQUISITION NO: 2465 DATE ISSUED: 13/11/2013							
JOB DESCRIE	TION: Being for Meter Raising Project @ M	bokona Pilo	ot Site .				
Date	Materials Description	Quantity	Unit Cost	Total Cost			
11/13/2013	16mm x 3/4 Female Poly Adaptor	20	\$ 50.00	\$	1,000.00		
11/13/2013	1/2" G.I Nipple	10	\$ 8.00	S	80.00		
	ThreadTape	20	\$ 4.00	\$	80.00		
11/13/2013	20mm(3/4") G.I Elbow	20 S 14.00 S					
		Total per F	Requisition =	S	1.440.00		

DEPARTMENT NAME: NRW PROJECT TEAM 1 RECEIVED BY: John Teno						
	DED BY: Eric Unga	ISSUED BY: George Blamoli				
REQUISITION NO: 2466 DATE ISSUED: 14/11/2013						
JOB DESCRIPTION: Being for Meter Raising Project @ Mbokona Pilot Site .						
	Materials Description	Quantity	Unit Cost	Total Cost		
	20mm(3/4") G.I Elbow	26	\$ 14.00	S	364.00	
	16mm Poly Coupling	10	\$ 45.00	S	450.00	
	20mm x 16mm Poly Reduce Coupling	6	\$ 56.00	S	336.00	
	ThreadTape	20	\$ 4.00	S	80.00	
11/14/2013	1/2"G I Tee	1	\$8.00	\$	8.00	
		Total ner I	Requisition =	S	1 238 00	

DEPARTMEN	T NAME: NRW PROJECT TEAM 1	RECEIVED BY: Dykes			
RECOMMENI	DED BY: Benjimen Billy	ISSUED BY: George Blamoli			
REQUISITION NO: 2467 DATE ISSUED: 14/11/2013					
JOB DESCRIPTION: Being for Meter Raising Project @ Mbokona Pilot Site .					
Date	Materials Description	Quantity	Unit Cost	Total Cost	
11/14/2013	10mm Steel Rods	5	\$ 68.00	S	340.00
11/14/2013	16mm x 3/4 Female Poly Adaptor	10	\$ 50.00	S	500.00
		Total ner I	Pennisition =	S	840 00

DEPARTMEN	T NAME: NRW PROJECT TEAM 1	RECEIVE	D BY: selina		
RECOMMEN	DED BY: Silas Talosiu	ISSUED E	Y: Paul Seda		
REQUISITION	N NO: 2468	DATE ISS	SUED: 15/11/20	013	
JOB DESCRIE	PTION: Materials Required for Mbokona Pilo	t Project Site			
Date	Materials Description	Quantity	Unit Cost	Total Cost	
11/15/2013	20mm x 16mm x 20mm Poly reduce Tee	1	\$ 31.00	S	31.00
11/15/2013	20mm x 16mm Poly Reduce Coupling	4	\$ 56.00	\$	224.00
11/15/2013	16mm Poly Coupling	6	\$ 45.00	\$	270.00
11/15/2013	16mm x 1/2" male Poly Adaptor	8	\$ 45.00	S	360.00
11/15/2013	16mm x 1/2" female poly Adaptor	8	\$ 45.00	S	360.00
11/15/2013	ThreadTape	20	\$ 4.00	\$	80.00
11/15/2013	3/4" x 1/2" G.I reduce Socket	8	\$ 12.50	S	100.00
		Total per I	Pagnicition -	c	1 425 00

DEPARTMEN' NRW Team1 RECEIVED BY: Selina Fai						
RECOMMENDED BY: Benjamin ISSUED BY: Paul Seda						
REQUISITION NO: 2470 DATE ISSUED: 16/11/2013						
JOB DESCRIPTION: Materials required for Raising meters@ Mbokona pilot site.						
Date Materials Description	Quantity	Unit Cost	Total Cost			
11/16/2013 16mm x 1/2" female poly Adaptor	15	\$ 45.00	\$	675.00		
11/16/2013 ThreadTape	10	\$ 4.00	\$	40.00		
11/16/2013 32mm x 1"Fe male Poly Adaptor	1	\$ 55.00	\$	55.00		
11/16/2013 1" x 3/4" Poly Reduce Bush	1	\$ 7.00	S	7.00		
11/16/2013 16mm x 3/4" Poly Male Adaptor	1	\$ 28.00	\$	28.00		
	Total per F	Requisition =	S	805.00		

DED A DOD AND	American d	DECEM I	D D1/ 11 C		
DEPARTMEN		RECEIVED BY: John Chede			
RECOMMENI	DED BY: Benjamin	ISSUED E	Y: Paul Seda		
REQUISITION	I NO: 2469	DATE ISS	SUED: 16/11/20	013	
	TION: Materials required for Raising meter	s@ Mbokon	a pilot site.		
	Materials Description	Quantity	Unit Cost	Total Cost	
	20 metres 20mm Poly Pipe	20	\$ 16.00	S	320.00
	20mm Poly Coupling	4	\$ 45.00	S	180.00
	16mm x 1/2" male PVC Adaptor	4	\$ 5.00	S	20.00
	16mm x 1/2"Fe male PVC Adaptor	4	\$ 5.00	S	20.00
	ThreadTape	10	\$ 4.00	S	40.00
	Hack Saw Blade	1	\$ 21.00	\$	21.00
11/16/2013	1 container 500ml PVC Glue	1	\$ 42.22	\$	42.22
		Total per I	Requisition =	\$	643.22

DEPARTMEN	RECEIVED BY: John Chede/M. Caulos					
RECOMMENDED BY : Benjamin			ISSUED BY: Paul Seda			
REQUISITION	N NO: 2471	DATE ISSUED: 16/11/2013				
JOB DESCRII	PTION: Materials required for Raising meter	s@ Mbokon	a pilot site.			
Date	Materials Description	Quantity	Unit Cost	Total Cost		
11/16/2013	40 KG Bag cement	6	\$ 80.00	\$	480.00	
		Total per Requisition = \$		1,123.22		

DEPARTMEN	NRW Team1	RECEIVED BY: Moses Metea				
RECOMMENI	DED BY: Eric Unga	ISSUED E	Y: Pat	ıl Seda		
REQUISITION	NO: 2472	DATE ISS	SUED:	18/11/20	13	
JOB DESCRIP	TION: Materials required for Raising met	ers@ Mbokon	a pilot :	site.		
Date	Materials Description	Quantity	Unit	Cost	Total Cost	
11/18/2013	40 KG Bag cement	6	\$	80.00	\$	480.00
11/18/2013	10mm Steel Rods	7	\$	68.00	\$	476.00
11/18/2013	16mm Poly Coupling	5	\$	45.00	\$	225.00
11/18/2013	16mm x 1/2" female poly Adaptor	5	\$	45.00	\$	225.00
11/18/2013	20mm Stop Cock	20	\$	168.00	\$	3,360.00
11/18/2013	20mm(3/4") G.I Elbow	80	\$	14.00	\$	1,120.00
11/18/2013	3/4" G.I Socket	20	\$	12.00	\$	240.00
11/18/2013	ThreadTape	40	\$	4.00	\$	160.00
11/18/2013	20mm x 3/4" Poly female Adaptor	20	\$	48.00		\$960.00
11/18/2013	20mm x 16mm Poly Reduce Coupling	20	\$	56.00	\$	1,120.00
		Total per I	Requisi	tion =	\$	8,366.00

	NT NAME: NRW PROJECT TEAM 1		RECEIVED BY: John Chede			
	DED BY : Eric Unga		ISSUED BY: Paul Seda			
REQUISITIO			SUED: 2 4/11/2	013		
	PTION: List of Materials for raising water					
Date	Materials Description	Quantity		Total Cost		
11/24/2013	40 KG Bag cement	5	\$ 80.00	\$	400.0	
11/24/2013	15mm (1/2") G.I Tee	1	\$ 5.00	\$	5.0	
		Total per I	Requisition =	\$	405.0	
DEPARTMEN	VT NAME: NRW PROJECT TEAM 1	RECEIVE	ED BY: John T	eno		
RECOMMEN	DED BY : Bejamin	ISSUED E	Y: Paul Seda			
REQUISITIO	N NO: 2319	DATE ISS	SUED: 2 5/11/2	013		
JOB DESCRI	PTION: List of Materials for raising water	meters@ Mbo	kona pilot site			
Date	Materials Description	Quantity	Unit Cost	Total Cost		
11/25/2013	40 KG Bag cement	6	\$ 80.00	\$	480.	
		Total per I	Requisition =	\$	480.	
DEPARTMEN	VT NAME: NRW PROJECT TEAM 1	RECEIVE	ED BY: John T	eno		
RECOMMEN	DED BY : Eric Unga	ISSUED I	Y: Paul Seda			
REQUISITIO		DATE ISS	SUED: 2 6/11/2	013		
JOB DESCRI	PTION: List of Materials for raising water	meters@ Mbo	kona pilot site			
Date	Materials Description		Unit Cost	Total Cost		
11/26/2013	40 KG Bag cement	4	\$ 80.00	\$	320.	
11/26/2013	20mm Water Meter	1	\$ 394.00	\$	394.	
11/26/2013	10mm Steel Rods	3	\$ 68.00	\$	204.	
		Total per I	Requisition =	\$	918.	
DEPARTMEN	VT NAME: NRW PROJECT TEAM 1	RECEIVE	ED BY: John C	hede		
RECOMMEN	DED BY : Nathaniel	ISSUED E	Y: George Bla	moli		
REQUISITIO	N NO: 2320	DATE ISS	SUED: 2 8/11/2	013		
JOB DESCRI	PTION: List of Materials for raising water	meters@ Mbo	kona pilot site			
Date	Materials Description	Quantity	Unit Cost	Total Cost		
11/26/2013	3 40 KG Bag cement	6	\$ 80.00	\$	480.	
		Total per I	Requisition =	\$	480.	
	VT NAME: NRW PROJECT TEAM 1	RECEIVE	ED BY: John C	hede		
DEPARTMEN	DED BY : Nathaniel	ISSUED I	Y: George Bla	moli		
			SUED: 2 9/11/2			
	N NO: 2320	DATE ISS				
RECOMMEN REQUISITIO	N NO: 2320 PTION: List of Materials for raising water		kona pilot site			
RECOMMEN REQUISITIO JOB DESCRI		meters@ Mbo	Unit Cost	Total Cost		
RECOMMEN REQUISITIO JOB DESCRI Date	PTION: List of Materials for raising water	meters@ Mbo			560.	

DEPARTMENT NAME: NRW PROJECT TEAM 1
RECOMMENDED BY: Eric Unga
REQUISITION NO: 2359
JOB DESCRIPTION: Being for Mbokona Pilot Site
METER LD
Date Materials Description
12/2/2013 40 KG Bag cement

RECOMMENI REQUISITION	T NAME: NRW PROJECT TEAM 1 DED BY: Vincent N NO: 2473 TION: Materials Required for Mbokona Pilo	ISSUED B DATE ISS	D BY: selina SY: Paul Seda SUED: 18/11/20	13	
	Materials Description	Quantity	Unit Cost	Total Cost	
11/18/2013	20mm x 3/4" Poly female Adaptor	20	\$ 48.00	\$	960.00
11/18/2013	ThreadTape	40	\$ 4.00	\$	160.00
	•	Total per I	Requisition =	S	1.120.00

DECEIVED DV . John To

DEPARTMEN	I NAME: NKW Team I	RECEIVE	EDBY: John 1	eno	
AUTHORISEI	HORISED BY: Benjamin ISSUED BY: Paul Seda				
REQUISITION	NO: 2474	DATE ISSUED: 19/11/2013			
JOB DESCRIPTION: Being for New Service Connection for David Day Pacha @ Mbuburu.					
METER I.D:	12B086453-457(5pieces)12B086443-447(5	Spce)			
Date	Materials Description	Quantity	Unit Cost	Total Cost	
11/19/2013	20mm Water Meter	10	\$ 394.00	\$	3,940.00
11/19/2013	30 metres 16mm poly pipe	30	\$ 14.50	\$	435.00
11/19/2013	30 metres 20mm Poly Pipe	30	\$ 16.00	\$	480.00
11/19/2013	20mm x 16mm Poly Reduce Coupling	10	\$ 56.00	\$	560.00
11/19/2013	20mm Poly Coupling	5	\$ 45.00	\$	225.00
11/19/2013	16mm Poly Coupling	5	\$ 45.00	\$	225.00
		Total per l	Requisition =	\$	5,865.00

DEPARTMENT NAME, NRW Toom 1

DEPARTMEN	T NAME: NRW PROJECT TEAM 1	RECEIVE	RECEIVED BY: John Chede			
RECOMMENI	ISSUED F	ISSUED BY:George Blamoli				
REOUISITION NO: 2473 DATE ISSUED: 19/11/2013						
JOB DESCRIPTION: Materials Required for Mbokona Pilot Project Site .						
Date	Materials Description	Quantity	Unit Cost	Total Cost		
11/19/2013	3/4"G I Tee	1	\$10.00	\$	10.00	
11/10/2012	16mm x 3/4" Poly Male Adaptor	1	\$ 28.00	\$	28.00	
11/19/2013			Requisition =		38.00	

DEPARTMEN	T NAME: NRW PROJECT TEAM 1	RECEIVED BY: John Chede			
RECOMMENI	DED BY : Nathaniel	ISSUED BY:George Blamoli			
REQUISITION			SUED: 20/11/20	13	
JOB DESCRIP	TION: Materials Required for Mbokona Pi	lot Project Sit	е.		
Date	Materials Description	Quantity	Unit Cost	Total Cost	
	3/4" G.I Socket	15	\$ 12.00	\$	180.00
11/20/2013	ThreadTape	15	\$ 4.00	\$	60.00
11/20/2013	20mm(3/4") G.I Elbow	20	\$ 14.00	\$	280.00
11/20/2013	20mm Stop Cock	20	\$ 168.00	\$	3,360.00
11/20/2013	20mm x 3/4" Poly female Adaptor	20	\$ 48.00	\$	960.00
11/20/2013	30 metres 20mm Poly Pipe	30	\$ 16.00	\$	480.00
11/20/2013	30 metres 16mm poly pipe	30	\$ 14.50	\$	435.00
11/20/2013	16mm Poly Coupling	10	\$ 45.00	\$	450.00
11/20/2013	20mm x 16mm Poly Reduce Coupling	10	\$ 56.00	\$	560.00
		Total per l	Requisition =	\$	6,765.00

RECOMMENI REQUISITION JOB DESCRIP					
Date	Materials Description	Quantity	Unit Cost	Total Cost	
12/5/2013	20mm Water Meter	2	\$ 394.00	\$	788.00
	16mm Poly Coupling	6	\$ 45.00	\$	270.00
12/5/2013	20 metres 16mm poly pipe	20	\$ 14.50	\$	290.00
12/5/2013	ThreadTape	40	\$ 4.00	\$	160.00
	·	Total per I	Requisition =	\$	1,508.00

	NT NAME: NRW PROJECT TEAM 1 IDED BY: Eric Unga	RECEIVED BY: John Chede ISSUED BY: George Blamoli								
REQUISITIO			DATE ISSUED: 09/12/2013							
	PTION: List of Materials required for M	bokona Pilot Pro	ject Site .							
METER I.D Date	12B172501 Materials Description	Quantity	Unit Cost	Total Cost						
12/9/2013	16mm Poly Tee	2.	\$ 85.00	\$	170.00					
12/9/2013	20mm Water Meter	1	\$ 394.00	\$	394.00					
12/9/2013	ThreadTape	5	\$ 4.00	\$	20.00					
12/9/2013	20mm x 3/4" Poly female Adaptor	2	\$ 48.00		\$96.00					
12/9/2013	3/4" G.I Socket	1	\$ 12.00	\$	12.00					
12/9/2013	16mm Poly Coupling	10	\$ 45.00	\$	450.00					
12/9/2013	20mm x 1/2" Poly male Adaptor	1	\$ 48.00	\$	48.00					
12/9/2013	16mm x 1/2" male Poly Adaptor	2	\$ 45.00	\$	90.00					
		Total per I	Requisition =	\$	1,280.00					

RECOMMENT REQUISITION	T NAME: NRW PROJECT TEAM 1 DED BY: Benjimen Billy NO: 2481 TION: List of Materials required for Mboke	RECEIVE ISSUED E DATE ISS			
Date	Materials Description	Quantity	Unit Cost	Total Cost	
12/9/2013	50 metres 16mm poly pipe	50	\$ 14.50	\$	725.00
12/9/2013	20 metres 20mm Poly Pipe	20	\$ 16.00	\$	320.00
12/9/2013	25mm x 1/2" x 25mm Poly female threaded "	1	\$ 35.00	\$	35.00
12/9/2013	16mm x 1/2" male Poly Adaptor	1	\$ 45.00	\$	45.00
		Total per I	Requisition =	\$	1,125.00

DEPARTMEN	T NAME: NRW PROJECT TEAM 1	RECEIVED BY: Francis Hiri									
RECOMMEN	DED BY : Silas Talosui	ISSUED I	Y: George Bla	moli							
REQUISITION	N NO: 2360	DATE ISS	SUED: 10/12/20	13							
JOB DESCRIPTION: List of Materials required for Mbokona Pilot Project Site .											
Date	Materials Description	Quantity	Unit Cost	Total Cost							
12/10/2013	32mm Poly Coupling	5	\$ 70.00	\$	350.00						
12/10/2013	16mm Poly Coupling	10	\$ 45.00	\$	450.00						
12/10/2013	20 metres 16mm poly pipe	20	\$ 14.50	\$	290.00						
12/10/2013	ThreadTape	3	\$ 4.00	\$	12.00						
		Total per I	Requisition =	\$	1,102.00						

	T NAME: NRW PROJECT TEAM 1 DED BY: Eric Unga	RECEIVED BY: John Chede ISSUED BY: George Blamoli DATE ISSUED: 12/12/2013								
JOB DESCRIPTION: List of Materials required for Mbokona Pilot Project Site for Meter raising.										
Date	Materials Description	Quantity	Unit Cost	Total Cost						
12/12/2013	16mm Poly Coupling	4	\$ 45.00	\$	180.00					
12/12/2013	20mm x 16mm Poly Reduce Coupling	4	\$ 60.00	\$	240.00					
12/12/2013	16mm x 3/4" female Poly Adaptor	4	\$ 50.00	\$	200.00					
		Total per I	620.00							

RECEIVED BY: Dykes ISSUED BY: George Blamoli DATE ISSUED: 02/12/2013

TOTAL COST FOR MBARANAMBA

	Before Counter	measure	After Counte	rmeasure	
	Before Countermeasure	Countermeasure	After Countermeasure	Routine Activities	
Personnel Cost	19,481.40	13,235.10	5,598.30	1,182.75	39,497.55
Consumable	1,131.74	565.87	239.41	21.76	5,958.79
Material and Equipment	9,669.26	23,423.00	0.00	0.00	33,092.26
Sub total	30,282.40	37,223.97	5,837.71	1,204.51	78,548.60
TOTAL	67,506.3	8	7,042.3		

TOTAL MAN DAYS	961

									per day
Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Pipes (PVC)	50mm	1	piece		154.00			154.00	
Pipes (PVC)	80mm	1	piece		189.00			189.00	
Pipes (PVC)	100mm		piece		248.00			0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm	1	piece		812.40			812.40	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece					0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
Other Materials									
Sub-total								9,669.26	
Total								30,282.40	
1AUD=6.534SBD	was applied to t	he above (rat	te as of 30	Sentember 5	2013 of Oan	da)			

Location	Mbaranamba								per
Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
1. Personnel	Grades- Steps								
Staff-3	3.1	0	Person	15.38	115.35				
	3.2	0	Person	15.90	119.25 123.08				
	3.4	0	Person Person	16.41 16.92	123.08				
	3.5	0	Person	17.44	130.80				
Staff-4	4.1	10	Person	19.23	144.23	19.00		2,740.28	
Dani 4	4.2	20	Person	20.00	150.00	38.00		5,700.00	
	4.3	0	Person	20.77	155.78			0.00	
	4.4	0		21.54	161.55			0.00	
	4.5	0		22.31	167.33			0.00	
Staff-5	5.1	0		24.10	180.75			0.00	
	5.2	0		25.13	188.48			0.00	
	5.3 5.4	0		26.15 27.18	196.13 203.85			0.00	
	5.4	9		28.21	203.85	17.00		3,596.78	
Staff-6	6.1	2		31.54	236.55	2.00		473.10	
Stati-0	6.2	9		32.82	246.15	17.00		4.184.55	
	6.3	0		34.10	255.75	27.00		0.00	
	6.4	0		35.38	265.35			0.00	
	6.5	0		36.67	275.03			0.00	
Staff-7	7.1	0		38.46	288.45			0.00	
	7.2	0		39.74	298.05			0.00	
	7.3	0		41.03	307.73			0.00	
	7.4 7.5	0		42.31 43.59	317.33 326.93			0.00	
Staff-8	7.5 8.1	0		43.59	359.63			0.00	
Stati-0	8.2	0		49.23	369.23			0.00	
	8.3	0		50.51	378.83			0.00	
	8.4	0		51.79	388.43			0.00	
	8.5	2		53.08	398.10	7.00		2,786.70	
Staff-9	9.1	0		58.21	436.58			0.00	
	9.2	0		59.49	446.18			0.00	
	9.3	0		60.77	455.78			0.00	
	9.4	0		62.05	465.38			0.00	
0.11	9.5	0		63.33	474.98	100.00		0.00	
Sub-total 2. Consumable				S Per Liter	Y down	100.00	S/km	19,481.40	
. Consumante				5 Per Liter	L/KIII		S/KIII		50km/7km/liter=7.14liter
									11liter/hrs (fuel consumption fo
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	about 60PS) x 1hr=11liter
									11liter +7.1liter=18.1liter/50kr
Diesel	For Pick-up	635.44	Liter	11.80	0.1428	90.7408	1.68504	1,070.74	50km/7km/liter=7.14liter/50kn
									100km x 252days=25,200km
									25,200km/ 10,000km x
Engine Oil	For Excavator	0	Liter	60.00			0.096	0.00	8liter=20.16liter
									20.16liter/
					0.0016				252days=0.08liter/day/50km 100km x 252days=25,200km
T 1 00	n n. 1	005.44	* **	00.00			0.000	04.00	25,200km/ 10,000km x 8liter=20.16liter
Engine Oil	For Pick-up	635.44	Liter	60.00			0.096	61.00	8liter=20.1bliter 20.16liter/
					0.0016				20.16fiter/ 252days=0.08liter/day/50km
					0.0010				50km x 252days=12.600km
									12.600km/30.000km x
Tires		0	Nos	770.00			1.078	0.00	4nos=1 68nos
					0.0014				1.68nos/ 252days=0.07nos/50k
Sub-total		_						1,131.74	
3. Material &									
Equipment				-	L				
Sluice/ Gate Valve	25mm	2	piece	-	190.00				Gate Valve
Sluice/ Gate Valve Sluice/ Gate Valve	40mm 50mm	1	piece piece	-	350.00 310.00				Gate Valve Gate Valve
Sluice/ Gate Valve	50mm 80mm	3	piece	-	2,397.12		-	7 191 24	Sluice Valve
Sluice/ Gate Valve	100mm		piece		2,423.00				Sluice Valve
Sluice/ Gate Valve	150mm		piece		2,423.00				Sluice Valve
Sluice/ Gate Valve	200mm		piece						Sluice Valve
Sluice/ Gate Valve	250mm		piece					0.00	Sluice Valve225mm AUD1785
Sluice/ Gate Valve	300mm		piece					0.00	
Pipes (Poly)	15mm	5	coil		14.50			72.50	Length on 1 coil =300m
Pipes (Poly)	20mm	_	coil					0.00	Length on 1 coil =300m
Pipes (Poly)	25mm		coil					0.00	Length on 1 coil =200m
Pipes (Poly)	50mm		coil						Length on 1 coil =150m
Pipes (Poly)	32mm	7		1	30.00		1	210.00	Length on 1 coil =100m
Pipes (PVC)	25mm		piece					0.00	

2.	Countermeasu
2.	Countermeasu

ocation	Mbaranaml	oa							per
Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
. Personnel	Grades- Steps	0	Person	15.38	115.35				
Staff-3	3.1	0	Person	15.38	115.35				
	3.3	0	Person	16.41	123.08				
	3.4	0	Person	16.92	126.90				
	3.5	0	Person	17.44	130.80				
Staff-4	4.1	4 8	Person Person	19.23	144.23	18.00 16.00		2,596.05	
	4.3	0	Person	20.77	155.78	10.00		0.00	
	4.4	0	Person	21.54	161.55			0.00	
	4.5	0	Person	22.31	167.33			0.00	
Staff-5	5.1 5.2	0	Person Person	24.10	180.75 188.48			0.00	
	5.3	0	Person	26.15	196.13			0.00	
	5.4	0	Person	27.18	203.85			0.00	
	5.5	4	Person	28.21	211.58	18.00		3,808.35	
Staff-6	6.1	0	Person Person	31.54 32.82	236.55 246.15	18.00		4.430.70	
	6.3	0	Person	34.10	255.75	18.00		4,430.70	
	6.4	0	Person	35.38	265.35			0.00	
	6.5	0	Person	36.67	275.03			0.00	
Staff-7	7.1	0	Person	38.46	288.45			0.00	
	7.2	0	Person Person	39.74	298.05 307.73			0.00	
	7.4	0	Person	42.31	317.33			0.00	
	7.5	0	Person	43.59	326.93			0.00	
Staff-8	8.1	0	Person	47.95	359.63			0.00	
	8.2	0	Person	49.23	369.23			0.00	
	8.3 8.4	0	Person Person	50.51 51.79	378.83 388.43			0.00	
	8.5	0	Person	53.08	398.10			0.00	
Staff-9	9.1	0	Person	58.21	436.58			0.00	
	9.2	0	Person	59.49	446.18			0.00	
	9.3	0	Person	60.77	455.78			0.00	
	9.4 9.5	0	Person Person	62.05	465.38 474.98			0.00	
Sub-total	9.3	20	Person	03.33	4/4.98	70.00		13,235.10	
. Consumable				\$ Per Liter	L/km		\$/km	,	
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	50km/7km/liter=7.14liter 11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter
Diesel	For Pick-up	317.72	Liter	11.80	0.1428	45.3704	1.68504	535 37	11liter +7.1liter=18.1liter/50km 50km/7km/liter=7.14liter/50km
Engine Oil	For Excavator	0	Liter	60.00	0.0016	43.3704	0.096	0.00	100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km
Engine Oil	For Pick-up	317.72	Liter	60.00	0.0016		0.096	30.50	100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km
Tires		0	Nos	770.00	0.0014		1.078	0.00	50km x 252days=12,600km 12,600km/ 30,000km x 4nos=1.68nos 1.68nos/ 252days=0.07nos/50kr
Sub-total								565.87	
. Material & quipment									
Sluice/ Gate Valve Sluice/ Gate Valve	25mm 40mm		piece piece	-	190.00	-			Gate Valve Gate Valve
Sluice/ Gate Valve	50mm		piece		310.00			0.00	Gate Valve
Sluice/Gate Valve	80mm		piece		2,397.12			0.00	Sluice Valve
Sluice/Gate Valve	100mm		piece		2,423.00			0.00	Sluice Valve
Sluice/Gate Valve	150mm		piece					0.00	Sluice Valve
Sluice/ Gate Valve Sluice/ Gate Valve	200mm 250mm		piece						Sluice Valve Sluice Valve225mm AUD1785
Sluice/ Gate Valve Sluice/ Gate Valve	250mm 300mm		piece piece	-				0.00	Stute Valve225mm AUD1/85
Pipes (Poly)	15mm		coil		14.50			0.00	Length on 1 coil =300m
Pipes (Poly)	20mm		coil					0.00	Length on 1 coil =300m
Pipes (Poly)	25mm		coil					0.00	Length on 1 coil =200m
Pipes (Poly) Pipes (Poly)	50mm 32mm		coil		30.00			0.00	Length on 1 coil =150m Length on 1 coil =100m

									per day
Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Pipes (PVC)	25mm		piece					0.00	
Pipes (PVC)	50mm		piece		154.00			0.00	
Pipes (PVC)	80mm		piece		189.00			0.00	
Pipes (PVC)	100mm		piece		248.00			0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece		812.40			0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece					0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm	45	piece		394.00			17,730.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
Other Materials								5,693.00	
Sub-total								23,423.00	
Total								37,223.97	

Total

1AUD=6.534SBD was applied to the above (rate as of 30 September, 2013 of Oanda).

Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Pipes (PVC)	50mm		piece					0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece		248.00			0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece					0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece					0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
Other Materials									
Sub-total								0.00	
Total								5,837.71	

3. Costing Before Countermeasure

			Cos	ting Bei	fore Co	unterm	easure		
Location	Mbaranaml	ba							
Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	per day Reamarks
1. Personnel	Grades- Steps								
Staff-3	3.1	0	Person	15.38	115.35				
	3.2	0	Person Person	15.90 16.41	119.25 123.08				
	3.3	0	Person	16.41	123.08				
	3.5	0	Person	17.44	130.80				
Staff-4	4.1	3	Person	19.23	144.23	4.00		576.90	
	4.2	6	Person	20.00	150.00	8.00		1,200.00	
	4.3	0	Person	20.77	155.78			0.00	
	4.4	0		21.54	161.55 167.33			0.00	
Staff-5	5.1	0		24.10	180.75			0.00	
	5.2	0		25.13	188.48			0.00	
	5.3	0		26.15	196.13			0.00	
	5.4	0		27.18	203.85			0.00	
0.00	5.5	3		28.21	211.58	4.00		846.30	
Staff-6	6.1 6.2	3		31.54 32.82	236.55 246.15	4.00		0.00 984.60	
	6.3	0		34.10	255.75	4.00		0.00	
	6.4	0		35.38	265.35			0.00	
	6.5	0		36.67	275.03			0.00	
Staff-7	7.1	0		38.46	288.45			0.00	
	7.2	0		39.74	298.05			0.00	
	7.3 7.4	0		41.03 42.31	307.73 317.33			0.00	
	7.5	0		43.59	326.93			0.00	
Staff-8	8.1	0		47.95	359.63			0.00	
	8.2	0		49.23	369.23			0.00	
	8.3	0		50.51	378.83			0.00	
	8.4	0		51.79	388.43			0.00	
Staff-9	8.5 9.1	1 0		53.08 58.21	398.10 436.58	5.00		1,990.50	
Statt-9	9.1	0		59.49	446.18			0.00	
	9.3	0		60.77	455.78			0.00	
	9.4	0		62.05	465.38			0.00	
	9.5	0		63.33	474.98			0.00	
Sub-total				0 D T I		25.00	0.5	5,598.30	
2. Consumable				\$ Per Liter	L/km		S/km		50km/7km/liter=7.14liter
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km
Diesel	For Pick-up	134.42	Liter	11.80	0.1428	19.1952	1.68504	226 50	50km/7km/liter=7.14liter/50km
Engine Oil	For Excavator	0	Liter	60.00	0.0016		0.096		100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km
Engine Oil	For Pick-up	134.42	Liter	60.00	0.0016		0.096	12.90	252days=0.06Hertady/50km 100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter/ 20.16liter/ 252days=0.08liter/day/50km 50km x 252days=12,600km
Tires		0	Nos	770.00	0.0014		1.078	0.00	50km x 252days=12,600km 12,600km/ 30,000km x 4nos=1.68nos 1.68nos/ 252days=0.07nos/50km
Sub-total	l							239.41	
3. Material & Equipment								230.41	
Sluice/ Gate Valve	25mm		piece	-				0.00	Gate Valve
Sluice/ Gate Valve	40mm		piece		350.00				Gate Valve
Sluice/ Gate Valve	50mm		piece		310.00				Gate Valve
Sluice/ Gate Valve	80mm		piece						Sluice Valve
Sluice/ Gate Valve	100mm		piece		2,423.00				Sluice Valve
Sluice/ Gate Valve	150mm		piece						Sluice Valve
Sluice/ Gate Valve Sluice/ Gate Valve	200mm 250mm		piece piece	-					Sluice Valve Sluice Valve225mm AUD1785
Sluice/ Gate Valve	300mm		piece					0.00	. mrcbiomm /tOD1/03
Di (D. L.)							_		

4. Costing Before Countermeasure Mbaranamba

	Mbaranaml)d							per
Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
. Personnel	Grades- Steps								
Staff-3	3.1	0	Person	15.38	115.35				
	3.2	0	Person	15.90	119.25				
	3.3	0	Person	16.41	123.08				
	3.4	0	Person	16.92	126.90				
0. 6.4	3.5	0	Person	17.44	130.80			0.00	
Staff-4	4.1	0	Person	19.23 20.00	144.23			0.00	
			Person						
	4.3	0	Person	20.77	155.78			0.00	
	4.5	0		22.31	161.55 167.33			0.00	
Staff-5	5.1	0		24.10	180.75			0.00	
Statt-5		0		25.13				0.00	
	5.2 5.3	0		26.15	188.48 196.13			0.00	
	5.4	0		27.18	203.85			0.00	
	5.5	0		28.21	211.58			0.00	
Staff-6	6.1	3		31.54	236.55	5.00		1,182.75	
Statt-0		0				3.00			
	6.2	0		32.82 34.10	246.15 255.75			0.00	
	6.4	0		35.38	265.35			0.00	
Cu-ff 7	6.5 7.1	0		36.67 38.46	275.03 288.45			0.00	
Staff-7									
	7.2	0		39.74	298.05			0.00	
	7.3	0		41.03	307.73			0.00	
	7.4	0		42.31	317.33			0.00	
	7.5	0		43.59	326.93			0.00	
Staff-8	8.1	0		47.95	359.63			0.00	
	8.2	0		49.23	369.23			0.00	
	8.3	0		50.51	378.83			0.00	
	8.4	0		51.79	388.43			0.00	
	8.5	0		53.08	398.10			0.00	
Staff-9	9.1	0		58.21	436.58			0.00	
	9.2	0		59.49	446.18			0.00	
	9.3	0		60.77	455.78			0.00	
	9.4	0		62.05	465.38			0.00	
	9.5	0		63.33	474.98			0.00	
Sub-total								1,182.75	
. Consumable				S Per Liter	L/km		\$/km		
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	50km/7km/liter=7.14liter 11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km
Diesel	For Pick-up	12.22	Liter	11.80	0.1428	1.7450	1.68504	20.59	50km/7km/liter=7.14liter/50km
Engine Oil	For Excavator	0	Liter	60.00	0.0016	1.7450	0.096		100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km
Engine Oil	For Pick-up	12.22	Liter	60.00	0.0016		0.096	1.17	100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km
Engine Oil Tires	For Pick-up	12.22	Liter	60.00 770.00	0.0016		1.078	0.00	25,200km/ 10,000km x 8liter=20.16liter
Tires	For Pick-up							0.00	25,200km/ 10,000km x 8liter=20.16liter 20.16liter/ 252davs=0.08liter/dav/50km 50km x 252days=12,600km 12,600km/ 30,000km x 4nos=1.68nos
Tires Sub-total	For Pick-up								25,200km/ 10,000km x 8liter=20.16liter 20.16liter/ 252davs=0.08liter/dav/50km 50km x 252days=12,600km 12,600km/ 30,000km x 4nos=1.68nos
Tires Sub-total . Material &	For Pick-up							0.00	25,200km/ 10,000km x 8liter=20.16liter 20.16liter/ 252davs=0.08liter/dav/50km 50km x 252days=12,600km 12,600km/ 30,000km x 4nos=1.68nos
Tires Sub-total . Material &	For Pick-up							0.00	25,200km/ 10,000km x 8liter=20.16liter 20.16liter/ 252davs=0.08liter/dav/50km 50km x 252days=12,600km 12,600km/ 30,000km x 4nos=1.68nos
Sub-total Material & quipment Sluice/ Gate Valve Sluice/ Gate Valve			Nos		0.0014			0.00 21.76	25,200km 10,000km x 8litter=20.16liter 20.16liter/ 25,2days=0.08liter/day/50km 25,2days=12,600km 12,600km/30,000km x 4mos=1.68mos 1.68mos/252days=0.07mos/50km
Sub-total Material & quipment Sluice/ Gate Valve Sluice/ Gate Valve	25mm		Nos		0.0014			0.00 21.76 0.00 0.00	25.200km 10.000km x 8ltter=20.16lter 20.16lter/ 20.46lter/ 20.40km x 252days=12.600km 12.600km 30.000km x 4mos=1.68mc 1.88mov 252days=0.07mos/50km
Sub-total Material & quipment Sluice/ Gate Valve Sluice/ Gate Valve Sluice/ Gate Valve	25mm 40mm 50mm		Nos piece		0.0014			0.00 21.76 0.00 0.00 0.00	25.200km 10.000km x 8ltter=20.16ltter 20.16ltter/ 252davs=0.08ltter/dav/50km 12.600km 30.000km x 4mos=1.68no 1.68now 252davs=0.07nos/50km Gate Valve Cate Valve Cate Valve
Sub-total Material & quipment Sluice/ Gate Valve Sluice/ Gate Valve Sluice/ Gate Valve Sluice/ Gate Valve	25mm 40mm 50mm 80mm		Nos piece piece piece piece		0.0014 350.00 310.00			0.00 21.76 0.00 0.00 0.00 0.00	25.200km / 10.000km x Silter-20.16liter 20.16liter 20.1
Sub-total Material & quipment Sluice/ Gate Valve Sluice/ Gate Valve Sluice/ Gate Valve Sluice/ Gate Valve	25mm 40mm 50mm 100mm		Nos piece piece piece piece piece		0.0014			0.00 21.76 0.00 0.00 0.00 0.00	25.200km v 10.000km x 8lliter-20.16llier/ 20.16llier/ 20.16llier/ 20.16llier/ 20.16llier/ 252days-10.8lliter/day/50km 50km x 252days-12.600km v 10.260km v 20.00km v 10.00km v 1
Sub-total Material & quipment Sluice/ Gate Valve	25mm 40mm 50mm 80mm 100mm		Nos piece piece piece piece piece piece		0.0014 350.00 310.00			0.00 21.76 0.00 0.00 0.00 0.00 0.00	25.200km 10.000km x Bliter-20.16liter 20.16liter 20.16l
Sub-total Material & quipment Sluice/ Gate Valve	25mm 40mm 50mm 80mm 100mm 150mm 200mm		Nos piece piece piece piece piece piece piece		0.0014 350.00 310.00			0.00 21.76 0.00 0.00 0.00 0.00 0.00 0.00	25.200km v 10.000km x 818tre-20.161ter v 20.161ter v 20.000km x 40.000km x 40.000km x 40.000km v 20.000km v 20.
Sub-total Material & quipment Stutes' Gate Valve	25mm 40mm 50mm 80mm 150mm 200mm 250mm		Nos piece piece piece piece piece piece piece		0.0014 350.00 310.00			0.00 21.76 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0	25.200km 10.000km x Bliter-20.16liter 20.16liter 20.16l
Sub-total . Material & quipment Sluice/ Gate Valve	25mm 40mm 50mm 80mm 100mm 150mm 200mm 250mm		Nos piece		0.0014 350.00 310.00			0.00 21.76 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0	25.200km v 10.000km x 81thre-20.161thre-20.1
Sub-total Material & Quipment Sluicer Gate Valve Pliper Gate Valve	25mm 40mm 50mm 80mm 100mm 150mm 250mm 250mm 300mm		Nos piece piece piece piece piece piece piece piece piece coil		0.0014 350.00 310.00			0.00 21.76 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0	25.200km v 10.000km v 818ter-20.161ter v 20.161ter v 2
Sub-total . Material & . guipment . Stucy Gate Valve . Stuccy Gate Valve . Pipes (Poly) . Pipes (Poly)	25mm 40mm 50mm 80mm 100mm 200mm 230mm 15mm 20mm		Nos piece piece piece piece piece piece piece piece piece coil		0.0014 350.00 310.00			0.00 21.76 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	25.200km v 10.000km x 81listre-20.16liter 20.16liter 20
Sub-total Material & Quipment Sluicer Gate Valve Pliper Gate Valve	25mm 40mm 50mm 80mm 100mm 150mm 250mm 250mm 300mm		Nos piece piece piece piece piece piece piece piece piece coil		0.0014 350.00 310.00			0.00 0.00	25.200km v 10.000km v 818ter-20.161ter v 10.00km v 818ter-20.161ter v 10.161ter v 10.161ter v 10.161ter v 10.161ter v 10.161ter v 10.161ter v 10.000km v 10.000km v 10.000km v 10.000km v 10.000km v 10.000km v 10.00km

Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Pipes (PVC)	50mm		piece					0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece		248.00			0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece					0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece					0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
Other Materials									
Sub-total								0.00	
Total								1,204.51	

NT NAME: NRW PROJECT TEAM 2	RECEIVE	D BY: Derick	Hoa
NDED BY: Benjimen Billy	ISSUED E	3Y: George Bla	ımoli
ON NO: 2312	DATE ISS	SUED: 12/11/20)13
IPTION: Materials Required for Mbaranamba Pi	lot Project Sit	e .	
Materials Description	Quantity	Unit Cost	Total Cost
80mm (3") Sluice Valve (Jica Order)	1	\$ 2,397.12	\$ 2,397.12
80mm (3") Flange Adaptor (Jica Order)	1	\$ 636.73	\$ 636.73
3" Gasket & boits (Jica Order)	2	\$ 134.83	\$ 269.66
50mm (2") female PVC Adaptor	1	\$ 90.00	\$ 90.00
	Total per I	Requisition =	\$ 3,393.51
NT NAME: NRW PROJECT TEAM 1	RECEIVE	DBY: Harri	son
NDED BY: Eric Unga	ISSUED E	3Y: Paul Seda	
ON NO: 2314	DATE ISS	SUED: 14/11/20)13
	ODED BY: Benjimen Billy N NO: 2312 PTION: Materials Required for Mbaranamba Pi Materials Description Materials Description Somm (3") Sliuce Valve (Jica Order) Somm (3") Flange Adaptor (Jica Order) "3" Gasket & Bobits (Jica Order) Somm (2") female PVC Adaptor NT NAME: NRW PROJECT TEAM 1 VDED BY: Eric Unga	INPUBLY Benjimen Billy INSUED F	INPUBLY Benjimen Billy INPUBLY SUED BY: George Bla

DEPARTME	NT NAME: NRW PROJECT TEAM 1	RECEIVE	ED BY: Harri	son
RECOMMEN	IDED BY : Eric Unga	ISSUED E	Y: Paul Seda	
REQUISITIO	N NO: 2314	DATE ISS	SUED: 14/11/20	13
JOB DESCRI	PTION: Being for Mbaranamba Pilot Site for Va	lve installation	on & Maintenan	ce.
Date	Materials Description	Quantity	Unit Cost	Total Cost
11/14/2013	50mm PVC Coupling	2	\$ 180.00	\$ 360.00
11/14/2013	32mm x 1" male Poly Adaptor	1	\$ 70.00	\$ 70.00
11/14/2013	7 metres 32mm poly Pipe	7	\$ 30.00	\$ 210.00
		Total per I	Requisition =	\$ 640,00

DEPARTMEN	NT NAME: NRW PROJECT TEAM 2	RECEIVE	ED BY: Andre	w Kopenao	
RECOMMEN	DED BY: Silas Talosiu		Y: George Bla		
REQUISITIO			SUED: 13/11/20	013	
JOB DESCRI	PTION: Materials Required for Mbaranamba Pile	ot Project Sit	е.		
Date	Materials Description	Quantity	Unit Cost	Total Cost	
11/13/2013	3" Sluice Valve	1	\$ 2,397.12	\$ 2,397.12	
	80mm (3") Flange Adaptor (Jica Order)	1	\$ 636.73	\$ 636.73	
11/13/2013	40mmx25mmx40mm Poly R/Tee	1	\$ 66.00	\$ 66.00	
		Total per I	Requisition =	\$ 3,099,85	

DEPARTM	ENT NAME: NRW PROJECT TEAM 2	RECEIVE	ED BY: Derick	Hoa
RECOMME	ENDED BY: Eric Unga	ISSUED E	Y: George Bla	moli
REQUISITI	ION NO: 2321	DATE ISS	SUED: 02/12/20	113
JOB DESCI	RIPTION: List of Materials required for Mbar	anamba Pilot Sit	e for Meter Rais	sing Project .
METER I.D	12B086583 - 587 (5pieces) 12B086798 - 802 (5	Pieces) 12B08683	8 - 842 (5 Pieces) 12B086778 - 782 (5)
Date	Materials Description	Quantity	Unit Cost	Total Cost
12/2/2013	20mm Water Meter	20	\$ 394.00	\$ 3,940.00
		Total ner I	Requisition –	\$ 3,940,00

	NT NAME: NRW PROJECT TEAM 2 NDED BY: Silas Talosui		ED BY: Derick BY: George Bla					
REQUISITIO	ON NO: 2322		DATE ISSUED: 03/12/2013					
JOB DESCR METER I.D	IPTION: List of Materials required for Nb	aranamba Pilot Site	e for Meter Rais	ing Project .				
Date	Materials Description	Quantity	Unit Cost	Total Cost				
12/3/2013	3/4" x 1/2" Poly Reducing Nipple	10	\$ 5.00	\$ 50.00				
12/3/2013	16mm Poly Tee	20	\$ 85.00	\$ 1,700.00				
12/3/2013	16mm Poly Coupling	10	\$ 45.00	\$ 450.00				
12/3/2013	20mm x 3/4" Poly female Adaptor	10	\$ 48.00	\$480.00				
12/3/2013	1/2" G.I Socket	14	\$ 10.00	\$ 140.00				
12/3/2013	16mm x 1/2" female poly Adaptor	10	\$ 45.00	\$ 450.00				
12/3/2013	ThreadTape	40	\$ 4.00	\$ 160.00				
		Total per I	Requisition =	\$ 3,430.00				

Cost for Ma	aterials (Mbaranamba)							
DEPARTME	NT NAME: NRW PROJECT TEAM 2	RECEIVE	ED BY	: Andrev	v Kope	nao		
RECOMMEN	NDED BY: Eric Unga	ISSUED BY: George Blamoli						
REQUISITIO		DATE ISS						
JOB DESCR	IPTION: Being for preparation of materials for	Mbaranamba V	/alley	Pilot Site				
Date	Materials Description	Quantity	Uni	t Cost	Total	Cost		
11/9/2013	32mm (1 1/4") PVC male Valve Socket	1	\$	22.00	\$	22.00		
11/9/2013	1 1/2" x 1 1/4" Poly reduce Bush	1	\$	28.00	\$	28.00		
11/9/2013	40mm Brass Gate Valve	1	\$	350.00	\$	350.00		
11/9/2013	1 1/4 G.I Nipple	2	\$	18.00	\$	36.00		
11/9/2013	50mm (2") Gate Valve	1	\$	310.00	\$	310.00		
11/9/2013	50mm G.I Nipple	1	\$	54.00	\$	54.00		
11/9/2013	40mm PVC male Valve Socket	3	\$	25.00	\$	75.00		
11/9/2013	50mm x 2" UPVC male valve Socket	2	\$	36.00	\$	72.00		
11/9/2013	40mm PVC Compression Coupling	2	\$	40.00	\$	80.00		
11/9/2013	32mm PVC Compression Coupling	1	\$	38.00	\$	38.00		
11/9/2013	1" Brass Gate valve	1	\$	190.00		\$190.00		
11/9/2013	25mm x 1" Poly male Adaptor	2	\$	50.00		\$100.00		
11/9/2013	1 length 50mm UPVC Presure Pipe	1	\$	154.00	\$	154.00		
	·	Total per I	Requi	sition =	\$	1,509.00		

DEPARTME	NT NAME: NRW PROJECT TEAM 2	RECEIVE	ED BY: Andrev	w Kopenao					
RECOMME	NDED BY: Benjimen Billy	ISSUED E	ISSUED BY: George Blamoli						
REQUISITIO	ON NO: 2310	DATE ISS	SUED: 09/11/20	013					
JOB DESCR	IPTION: Being for preparation of materials for M	baranamba V	/alley Pilot Site	· .					
Date	Materials Description	Quantity	Unit Cost	Total Cost					
11/9/2013	80mm (3") Sluice Valve (Jica order)	1	\$ 2,397.12	\$ 2,397.12					
11/9/2013	80mm (3") Flange Adaptor (Jica Order)	2	\$ 636.73	\$ 1,273.46					
11/9/2013	3" Gasket & boits (Jica Order)	2	\$ 134.83	\$ 269.66					
11/9/2013	3" UPVC Compression Coupling	1	\$ 190.00	\$ 190.00					
11/9/2013	8" x 1 1/4" brass Saddle/Tapping band	1	\$ 844.00	\$ 844.00					
11/9/2013	1 length 80mm UPVC Pressure Pipe (PN 12)	1	\$ 189.00	\$ 189.00					
11/9/2013	5 metres 16mm poly pipe	5	\$ 14.50	\$ 72.50					
11/9/2013	1 1/4 G.I Nipple	1	\$ 18.00	\$ 18.00					
11/9/2013	1 1/4" x 1" G.I Reduce Bush	1	\$ 22.00	\$ 22.00					
11/9/2013	20mm x 16mm Poly Reduce Coupling	1	\$ 56.00	\$ 56.00					
11/9/2013	16mm x 3/4" Poly Male Adaptor	1	\$ 28.00	\$ 28.00					
`		Total per I	Pagnicition -	\$ 5 350 74					

DEPARTME!	NT NAME: NRW PROJECT TEAM 2	RECEIVE	D BY: Derick	Hoa				
RECOMMENDED BY : Benjimen Billy		ISSUED BY: George Blamoli						
REQUISITIO			SUED: 12/11/20	013				
JOB DESCRI	PTION: Materials Required for Mbaranamba Pil	ot Project Sit	e .					
Date	Materials Description	Quantity	Unit Cost	Total Cost				
11/12/2013	40mm PVC Compression Coupling	1	\$ 40.00	\$ 40.00				
11/12/2013	Hack Saw Blade	1	\$ 21.00	\$ 21.00				
11/12/2013	1 1/4" gate valve	1	\$ 180.00	\$ 180.00				
11/12/2013	50mm x 25mm x 50mm Poly reduce Tee	1	\$ 95.30	\$ 95.30				
11/12/2013	32mm x 1 1/4" male poly Adaptor	2	\$ 55.00	\$ 110.00				
11/12/2013	1 Length 8" (200mm) Pressure Pipe	1	\$ 812.40	\$ 812.40				
11/12/2013	ThreadTape	20	\$ 4.00	\$ 80.00				
		Total per I	Requisition =	\$ 1,338.70				

DEPARTME	NT NAME: NRW PROJECT TEAM 2	RECEIVE	ED BY: Liston	Tora	
RECOMME	NDED BY: Eric Unga	ISSUED E	Y: George Bla	amoli	
REQUISITION	ON NO: 2323	DATE ISS	SUED: 04/12/20	013	
JOB DESCR	IPTION: List of Materials required for Nbaranan			sing Project	
Date	Materials Description	Quantity	Unit Cost	Total Cos	t
12/4/2013	1/2" G.I Socket	6	\$ 10.00	\$	60.00
12/4/2013	16mm x 1/2" female poly Adaptor	10	\$ 45.00	\$	450.00
					5.00
12/4/2013	15mm (1/2") G.I Tee	1	\$ 5.00	\$	5.00

DEPARTMENT NAME: NRW PROJECT TEAM 1 RECEIVED BY: Selyna Fai						
RECOMMENDED BY : Benjimen Billy ISSUED BY: George Blamoli						
REQUISITION NO: 2479 DATE ISSUED: 04/12/2013						
JOB DESCR	IPTION: List of Materials required for NI	paranamba Pilot Site	e for Meter Rais	ing Project .		
Date	Materials Description	Quantity	Quantity Unit Cost Total Cost			
12/4/2013	10mm Steel Rods	2	\$ 68.00	\$ 136.00		
		Total per Requisition = \$ 136.00				

DEPARTMENT NAME: NRW PROJECT TEAM 2 RECEIVED BY: Derick Hoa RECOMMENDED BY: Benjimen Billy ISSUED BY: George Blamoli REQUISITION NO: 2324 DATE ISSUED: 09/12/2013 JOB DESCRIPTION: List of Materials required for Nbaranamba & Ohi ola Project Area.					
Date	Materials Description	Quantity	Unit Cost Total C		al Cost
12/9/2013	1/2" G.I Socket	3	\$ 10.00	\$	30.00
12/9/2013	15mm Stop Cock	10	\$ 170.00	\$	1,700.00
12/9/2013	ThreadTape	45	\$ 4.00	\$	180.00
12/9/2013	15mm G.I elbow	20	\$ 12.00	\$	240.00
12/9/2013	16mm Poly Coupling	10	\$ 45.00	\$	450.00
		Total ner I	Pagnicition -	\$	2,600,00

DEPARTMENT NAME: NRW PROJECT TEAM 2 RECEIVED BY: Harrison Malai			i		
RECOMMENDED BY: Eric Unga ISSUED BY: George Blamoli					
REQUISITION NO: 2325 DATE ISSUED: 10/12/2013					
JOB DESCH	RIPTION: List of Materials required for meter ra	ising @ Mbar	ranamba Valley	pilot proj	ect site .
Date	Materials Description	Quantity	Quantity Unit Cost Total Cost		
Date				di .	9,850.00
	20mm Water Meter	25	\$ 394.00	2	2,020.00

DEPARTME	DEPARTMENT NAME: NRW PROJECT TEAM 2 RECEIVED BY: Derick Hoa					
RECOMMEN	NDED BY : Silas Talosui	ISSUED E	ISSUED BY: George Blamoli			
REQUISITIO	REQUISITION NO: 2326 DATE ISSUED: 11/12/2013					
JOB DESCR	JOB DESCRIPTION: List of Materials required for Mbaranamba & Oi'hola Pilot Project Site .					
Date	Materials Description	Quantity	Unit Cost	Total Cost		
12/11/2013	16mm x 1/2" female poly Adaptor	18	\$ 45.00	\$ 810.00		
12/11/2013	ThreadTape	10	\$ 4.00	\$ 40.00		
		Total per Requisition =		\$ 850.00		

DEPARTMENT NAME: NRW PROJECT TEAM 2 RECEIVED BY: Mafe RECOMMENDED BY: Benjimen Billy ISSUED BY: George Blamoli REQUISITION NO: 2337 JOB DESCRIPTION: List of Materials required for Mbaranamba & Ol'hola Pilot Project Site.			013		
Date	Materials Description	Quantity	Unit Cost	Total Cost	
12/12/2013	ThreadTape	30	\$ 4.00	S	120.00
12/12/2013	20mm x 1/2" Poly female Adaptor	4	\$ 40.00	\$	160.00
12/12/2013	25mm x 1/2" Poly Female Adaptor	3	\$ 48.00	\$	144.00
12/12/2013	16mm Poly Coupling	6	\$ 45.00	\$	270.00
		Total ner I	Requisition –	s	694 00

	NT NAME: NRW PROJECT TEAM 2	RECEIVE	DBY: Harris	on	
RECOMMENDED BY: Benjimen Billy ISSUED BY: George Blamoli			moli		
REQUISITIO	ON NO: 2328	DATE ISSUED: 13/12/2013			
JOB DESCR	JOB DESCRIPTION: List of Materials required for Mbaranamba & Oi'hola Pilot Project Site .				
Date	Materials Description	Quantity Unit Cost Total Cost			
12/12/2013	40 KG Bag cement	6	\$ 80.00	\$ 480.00	
		Total per Requisition = \$ 480		\$ 480.00	

DEPARTME	NT NAME: NRW PROJECT TEAM 2	RECEIVED BY: Derick				
RECOMMEN	ISSUED BY: George Blamoli					
REQUISITIO	ON NO: 2329	DATE ISSUED: 17/12/2013				
JOB DESCR	JOB DESCRIPTION: List of Materials required for Mbaranamba & Oi'hola Pilot Project Site .					
Date	Materials Description	Quantity	Unit Cost	Total Cost		
12/17/2013	40 KG Bag cement	6	\$ 80.00	\$ 480.00		
Total per Requisition = \$ 480			\$ 480.00			

DEPARTME!	NT NAME: NRW PROJECT TEAM 2	RECEIVE	DBY: Deric	k Hoa	
RECOMMENDED BY : Eric Unga ISSUED BY: George Blamoli				moli	
REQUISITION NO: 2330 DATE ISSUED: 18/12/2013				13	
JOB DESCRI	JOB DESCRIPTION: List of Materials required for Mbaranamba & Oi'hola Pilot Project Site .				
Date	Materials Description	Quantity	Unit Cost	Total Cost	
12/18/2013	40 KG Bag cement	4	\$ 80.00	\$ 320.00	
		Total ner E	Requisition –	\$ 320.00	

DEPARTMENT NAME: NRW PROJECT TEAM 1 RECEIVED BY: Liston Tora					
			ISSUED BY: George Blamoli		
	SITION NO: 2331 DATE ISSUED: 19/12/2013			013	
JOB DESCRIPTION: being for Meter Raising @ the project site(Mbaranamba).					
Date	Materials Description	Quantity	Unit Cost	Total Cost	
12/19/2013	25mm x 3/4" Poly female Adaptor	2	\$ 48.00	\$ 96.00	
12/19/2013	1/2" G.I Plug	1	\$ 8.00	\$ 8.00	
12/19/2013	3/4" G.I Socket	2	\$ 12.00	\$ 24.00	
		Total per Requisition = \$ 12			

TOTAL MATERIAL COST FOR MBARANAMBA	5	38,763.80

DEPARTMEN	IT NAME: NRW Project Team 1	RECEIVED B	Y: Dykes		
RECOMMENI	DED BY: Chris Meriko	ISSUED BY:	George Blamo	oli	
REQUISITION	NO: 0282	DATE ISSUE	D: 23/08/201	3	
JOB DESCRI	PTION: Being for Required to replace Gate Val	ve @ Tuvaruhu	pilot project	site	es.
Date	Materials Description	Quantity	Unit Cost	Т	otal Cost
	2" Gate Valve	5	\$ 310.00	\$	1,550.00
2013/8/23	50mm x 2" UPVC male valve Socket	10	\$ 36.00	\$	360.00
2013/8/23	40mm Brass Gate Valve	6	\$ 350.00	\$	2,100.00
2013/8/23	40mm PVC male Valve Socket	6	\$ 25.00	\$	150.00
2013/8/23	40mm PVC Compression Coupling	3	\$ 40.00	\$	120.00
2013/8/23	50mm PVC Compression Coupling	6	\$ 49.00	\$	294.00
2013/8/23	50mm G.I Tee	4	\$ 54.00	\$	216.00
2013/8/23	50mm x 40mm G.I Reduce Bush	2	\$ 60.00	\$	120.00
2013/8/23	ThreadTape	30	\$ 4.00	\$	120.00
	1" Brass Gate valve	3	\$ 190.00	\$	570.00
2013/8/23	1" PVC male Valve Socket	6	\$ 18.00	\$	108.00
		Total per Rec	quisition =	\$	5,708.00
				_	

RECOMMEN	DEPARTMENT NAME: NRW Project Team 1 RECEIVED BY : John Chede RECOMMENDED BY: Chris Meriko ISSUED BY: Paul Seda REQUISITION No: 0270 DATE ISSUED: 23/08/2013				
	NO: 0270 PTION: Being for Replacement of old gate Valv				
Date	Materials Description	Quantity	Unit Cost	Total Cost	
2013/8/23	1 length 50mm UPVC Pressure Pipe	1	\$ 152.00	\$ 152.00	
2013/8/23	1 length 40mm PVC Pressure Pipe	1	\$ 60.00	\$ 60.00	
2013/8/23	500 ml non pressure PVC pipe Glue	1	\$ 42.00	\$ 42.00	
		Total per Red	uisition =	\$ 254.00	

	IT NAME: NRW Project Team 1	RECEIVED BY: John Chede						
RECOMMEN	DED BY: Silas Talosui	ISSUED BY:	George Blamo	ge Blamoli				
REQUISITION NO: 0283 DATE ISSUED: 24/08/2013				3				
JOB DESCRI	PTION: Being for Repair and maintenance @ Tu	varuhu pilot pi	roject sites.					
Date	Materials Description	Quantity	Unit Cost	Total Cost				
	80mm Stainless steel Clamp/Clip	4	\$ 440.00	\$ 1,760.00				
2013/8/24	50mm x 2" male Poly Adaptor	4	\$ 36.00	\$ 144.00				
2013/8/24	50mm Poly Coupling	4	\$ 175.00	\$ 700.00				
2013/8/24	40mm x 1 1/2" poly male adaptor	4	\$ 70.00	\$ 280.00				
2013/8/24	50mm x 40mm Poly Reduce Coupling	4	\$ 65.00	\$ 260.00				
2013/8/24	ThreadTape	30	\$ 120.00					
Total per Requisition =				\$ 3,264.00				

RECOMMENI REQUISITION JOB DESCRI	PTION: Being for preparation work for Water me	ISSUED BY: DATE ISSUE eter Raising @		oli 3	
Date	Materials Description	Quantity	Unit Cost	Ţ	otal Cost
	ThreadTape	30	\$ 4.00	\$	120.00
	20 metres 16mm poly pipe	20	\$ 10.00	\$	200.00
2013/8/25	15mm Stop Cock	1	\$ 41.00	\$	41.00
	80mm Stainless steel Clamp/Clip	3	\$ 440.00	\$	1,320.00
2013/8/25	3/4" x 1/2" G.I Reducing Bush	1	\$ 9.00	\$	9.00
	1/2" G.I Nipple	5	\$ 8.00	\$	40.00
2013/8/25 3" x 3/4" Brass Tapping Saddle 1 \$ 257.00 \$					257.00
	·	Total per Rec	guisition =	\$	1,987.00

DEPARTMEN	T NAME: NRW Project Team 1	RECEIVED B	Y: John Tend)	
RECOMMEN	DMMENDED BY: Chris Meriko ISSUED BY: George Blamoli				
REQUISITION	SITION NO: 0285 DATE ISSUED: 26/08/2013				
JOB DESCRI	PTION: Being for building Chamber for all Gate	Valve replaced	d & Repaired f	or maintenan	
Date					

Area No.	Pilot Project Area	Pipe Distance	Number of Household	Personal Cost	Consumable Cost	Material and Equipment	Total Initial Cost Incurred
		(m)		(SBD)	(SBD)	(SBD)	(SBD)
No.14	Tuvaruhu-1	1,205.88	47	43,084	884	32,769	76,737
No.15	Tuvaruhu-2	1371.31	62	45,669	942	43,438	90,049

2013/8/26	40 KG Bag cement	5	\$	78.00	\$	390.00		
	20 metres 16mm poly pipe	20	\$	10.00		200.00		
2013/8/26	ThreadTape	10	\$	4.00		40.00		
	3 lengths 100mm (4") Pressure Pipe	3	\$	248.00	\$	744.00		
		Total per Red	quisit	tion =	\$	1,374.00		
DEDARTMEN	T MANE. NOW Door to A Town 1	RECEIVED B	. ·	I.h. Oh.	1.			
	T NAME: NRW Project Team 1 DED BY: Chris Meriko	ISSUED BY:						
REQUISITION		DATE ISSUE						
	PTION: Being for Tuvaruhu leakage test and ins							
Date	Materials Description	Quantity	Ur	nit Cost	To	tal Cost		
2013/8/26	1 length 80mm UPVC Pressure Pipe (PN 12)	1	\$	189.00		189.00		
2013/8/26	2 litres lubricant	1	\$	319.00	\$	319.00		
		Total per Rec	quisit	tion =	\$	508.00		
DEDARTMEN	T NAME: NRW Project Team 1	RECEIVED B	V . 1	Anna Ma				
	DED BY: Matthaus Bara	ISSUED BY:			tea			
REQUISITION		DATE ISSUE			2			
	PTION: Being for continue on Pilot Project @ T				,			
Date	Materials Description	Quantity		nit Cost	To	tal Cost		
2013/8/28	1 length 50mm UPVC Pressure Pipe	1	\$	152.00	\$	152.00		
2013/8/28	1/2" G.I Nipple	1	\$	8.00		8.00		
2013/8/28	15mm Stop Cock	1	\$	40.00		40.00		
	2" PVC Tee	1	\$	68.00		68.00		
	2" PVC Female Valve Socket	1	\$	90.00		90.00		
2013/8/28	2" x 1/2" G.I Reducing Bush	1	\$	35.00	\$	35.00		
		Total per Rec	quisn	tion =	•	393.00		
DEPARTMENT NAME: NRW Project team 1 RECEIVED BY: Dykes								
DEPARTMEN	T NAME: NRW Project team 1	RECEIVED B	Y: [Ovkes				
RECOMMEND	DED BY: Benjimen Billy	ISSUED BY:						
RECOMMEND REQUISITION	DED BY: Benjimen Billy I NO: 0288	ISSUED BY: DATE ISSUE	Pau D: 29	ul Seda 9/08/201				
RECOMMENT REQUISITION JOB DESCRI	DED BY: Benjimen Billy I NO: 0288 PTION: Being for Continue on Replacing of Old	ISSUED BY: DATE ISSUE Gate Valve @	Pau D: 29 Tuv	ul Seda 9/08/201 aruhu Are	a.			
RECOMMENT REQUISITION JOB DESCRI Date	DED BY: Benjimen Billy I NO: 0288 PTION: Being for Continue on Replacing of Old Materials Description	ISSUED BY: DATE ISSUE Gate Valve @ Quantity	Pau D: 29 Tuv	ul Seda 9/08/201: aruhu Are n it Cost	a. To	otal Cost		
RECOMMENT REQUISITION JOB DESCRI Date 2013/8/29	DED BY: Benjimen Billy I NO: 0288 PTION: Being for Continue on Replacing of Old Materials Description 1 1/4" (32mm) Brass Gate Valve	ISSUED BY: DATE ISSUE Gate Valve @ Quantity	Pau D: 29 Tuv	ul Seda 9/08/201 aruhu Are nit Cost 180.00	a. T c	180.00		
RECOMMENT REQUISITION JOB DESCRI Date 2013/8/29	DED BY: Benjimen Billy I NO: 0288 PTION: Being for Continue on Replacing of Old Materials Description 1 1/4" (32mm) Brass Gate Valve	ISSUED BY: DATE ISSUE Gate Valve @ Quantity 1 2	Pau D: 29 Tuv Ur \$	ul Seda 9/08/201 aruhu Are nit Cost 180.00 29.00	a. To \$	180.00 58.00		
RECOMMENT REQUISITION JOB DESCRI Date 2013/8/29 2013/8/29 2013/8/29	DED BY: Benjimen Billy NO: 0288 PTION: Being for Continue on Replacing of Old Materials Description 1 1/4" (32mm) Brass Gate Valve 32mm Gompression 40mm PVC Compression Coupling	ISSUED BY: DATE ISSUE Gate Valve @ Quantity 1 2 3	Pau D: 29 Tuv Ur \$	ul Seda 9/08/2019 aruhu Are nit Cost 180.00 29.00 40.00	a. Tc \$ \$	180.00 58.00 120.00		
RECOMMENII REQUISITION JOB DESCRI Date 2013/8/29 2013/8/29 2013/8/29 2013/8/29	DED BY: Benjimen Billy I MO: 0288 PTION: Being for Continue on Replacing of Old Materials Description 11/4" (32mm) Brass Gate Valve 32mm Compression 40mm PVC Compression Coupling ThreadTape	ISSUED BY: DATE ISSUE Gate Valve @ Quantity 1 2 3 10	Pau D: 29 Tuv Ur \$	ul Seda 9/08/201: aruhu Are nit Cost 180.00 29.00 40.00 4.00	a. \$ \$ \$	180.00 58.00 120.00 40.00		
RECOMMENIA REQUISITION JOB DESCRI Date 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29	DED BY: Benjimen Billy I NO: 0288 PTION: Being for Continue on Replacing of Old Materials Description 1 1/4* (32mm) Brass Gate Valve 32mm Compression 40mm PVG Compression Coupling ThreadTape 40 KG Bas cement	ISSUED BY: DATE ISSUE Gate Valve @ Quantity 1 2 3	Pau D: 29 Tuv Ur \$	ul Seda 9/08/2019 aruhu Are nit Cost 180.00 29.00 40.00	a. \$ \$ \$	180.00 58.00 120.00		
RECOMMENIA REQUISITION JOB DESCRI Date 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29	DED BY: Senjimen Billy I NO: 0288 PTION: Being for Continue on Replacing of Old Materials Description 1.1/4" (32mm) Brass Gate Valve 32mm Gemerassion 40mm PVC Compression Coupling ThreadTape 40 KG Bag cement 2" G.I Tee 40mm BYC Compress Gate Valve	ISSUED BY: DATE ISSUE Gate Valve @ Quantity 1 2 3 10 5	Pau D: 29 Tuv \$ \$ \$ \$	ul Seda 9/08/201: aruhu Are nit Cost 180.00 29.00 40.00 4.00 78.00	a. To \$	180.00 58.00 120.00 40.00 390.00		
RECOMMENT REQUISTTION JOB DESCRI Date 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29	DED BY: Benjimen Billy I MO: 0288 PTION: Being for Continue on Replacing of Old Materials Description 1 1/4" (32mm) Brass Gate Valve 32mm Compression 40mm PVC Compression Coupling ThreadTape 40 KG Bag cement 2" G.I Tee 40mm Brass Gate Valve 50mm x 2" UPVC male valve Socket	ISSUED BY: DATE ISSUE Gate Valve @ Quantity 1 2 3 10 5 1 2 1	Pau Dr. 29 Tuv Vr \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	ul Seda 9/08/201: aruhu Are nit Cost 180.00 29.00 40.00 4.00 78.00 54.00 350.00 36.00	a. To \$	180.00 58.00 120.00 40.00 390.00 54.00 700.00 36.00		
RECOMMENT REQUISTTION JOB DESCRI Date 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29	DED BY: Senjimen Billy I NO: 0288 PTION: Being for Continue on Replacing of Old Materials Description 1.1/4" (32mm) Brass Gate Valve 32mm Gemerassion 40mm PVC Compression Coupling ThreadTape 40 KG Bag cement 2" G.I Tee 40mm BYC Compress Gate Valve	ISSUED BY: DATE ISSUE Gate Valve @	Pau Dr. 29 Tuv Vr \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	ul Seda 9/08/201: aruhu Are nit Cost 180.00 29.00 40.00 78.00 54.00 350.00 25.00	a. To \$	180.00 58.00 120.00 40.00 390.00 54.00 700.00 36.00 25.00		
RECOMMENT REQUISTTION JOB DESCRI Date 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29	DED BY: Benjimen Billy I MO: 0288 PTION: Being for Continue on Replacing of Old Materials Description 1 1/4" (32mm) Brass Gate Valve 32mm Compression 40mm PVC Compression Coupling ThreadTape 40 KG Bag cement 2" G.I Tee 40mm Brass Gate Valve 50mm x 2" UPVC male valve Socket	ISSUED BY: DATE ISSUE Gate Valve @ Quantity 1 2 3 10 5 1 2 1	Pau Dr. 29 Tuv Vr \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	ul Seda 9/08/201: aruhu Are nit Cost 180.00 29.00 40.00 78.00 54.00 350.00 25.00	a. To \$	180.00 58.00 120.00 40.00 390.00 54.00 700.00 36.00		
RECOMMENT REQUISTION JOB DESCRI JOB DESCRI 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29	DED BY: Benjimen Billy I MO: 0288 PTION: Being for Continue on Replacing of Old Materials Description 11/4" (32mm) Brass Gate Valve 32mm Compression 40mm PVC Compression Coupling ThreadTape 40 KG Bag cement 2" GI Tee 40mm Brass Gate Valve 50mm x 2" UPVC male valve Socket 40mm x 25mm UPVC reduce Socket	ISSUED BY: DATE ISSUE Gate Valve @ Quantity 1 2 3 10 5 11 2 1 1 Total per Rei	Pau D: 29 Tuv \$ \$ \$ \$ \$ \$	ul Seda 9/08/201 aruhu Are nit Cost 180.00 29.00 40.00 78.00 54.00 350.00 36.00 25.00 tion =	a. To \$	180.00 58.00 120.00 40.00 390.00 54.00 700.00 36.00 25.00		
RECOMMENT REQUISITION JOB DESCRI Date 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29	DED BY: Benjimen Billy I NO: 0288 PTION: Being for Continue on Replacing of Old Materials Description 1 1/4" (32mm) Brass Gate Valve 33mm Compression 40mm PVC Compression Coupling ThreadTape 40 KG Bag cement 2" G1 Tee 40mm Brass Gate Valve 50mm x 2" UPVC male valve Socket 40mm x 25mm UPVC reduce Socket	ISSUED BY: DATE ISSUE Gate Valve @ Quantity 1 2 3 10 5 1 1 2 1 Total per Rei	Pau	ul Seda 9/08/201: aruhu Aren 180.00 29.00 40.00 40.00 78.00 54.00 350.00 36.00 25.00 tion =	a. To \$	180.00 58.00 120.00 40.00 390.00 54.00 700.00 36.00 25.00		
RECOMMENT REQUISITION JOB DESCRI Date 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29	DED BY: Benjimen Billy I NO: 0288 PTION: Being for Continue on Replacing of Old Materials Description 1 1/4" (32mm) Brass Gate Valve 32mm Compression 40mm PVC Compression Coupling ThreadTape 40 KG Bag cement 2" G.I Tee 40mm Brass Gate Valve 50mm x 2" UPVC male valve Socket 40mm x 25mm UPVC reduce Socket T NAME: NRW PROJECT TEAM 1 JED BY: Benjimen Billy	ISSUED BY: DATE ISSUE Gate Valve @ Quantity 1 2 3 10 5 11 2 1 1 Total per Rei	Pau	ul Seda 9/08/201 aruhu Are nit Cost 180.00 29.00 4.00 78.00 54.00 350.00 25.00 25.00 25.00 25.00	a. To \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	180.00 58.00 120.00 40.00 390.00 54.00 700.00 36.00 25.00		
RECOMMENT REQUISITION JOB DESCRI Date 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29	DED BY: Benjimen Billy INO: 0288 PTION: Being for Continue on Replacing of Old Materials Description 1 1/4" (32mm) Brass Gate Valve 32mm Compression 40mm PVC Compression Coupling ThreadTape 40 KG Bag cement 2" G.I Tee 40mm Brass Gate Valve 50mm x 2" UPVC male valve Socket 40mm x 25mm UPVC reduce Socket T NAME: NRW PROJECT TEAM 1 DED BY: Benjimen Billy INO: 0290 PTION: Being for Continue on Replacing & Rep.	ISSUED BY: DATE ISSUE Gate Valve @ Guantity 1 2 3 10 5 11 Total per Roi RECEIVED B ISSUED BY: DATE ISSUE DATE ISSUE Bring @ Tuvar	Pau	ul Seda 9/08/201 aruhu Are nit Cost 180.00 29.00 40.00 78.00 54.00 350.00 25.00 tion = Selina ul Seda 9/08/201. Pilot Site.	a. To \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	180.00 58.00 120.00 40.00 390.00 54.00 700.00 36.00 25.00 1,603.00		
RECOMMENT REQUISITION JOB DESCRI Dete 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 DEPARTMEN RECOMMENIUS RECQUISITION JOB DESCRI Data	DED BY: Senjimen Billy I NO: 0288 PTION: Being for Continue on Replacing of Old Materials Description 1 1/4" (32mm) Brass Gate Valve 32mm Gompression 40mm PVC Compression Coupling ThreadTape 40 KG Bag cement 2" GJ Tee 40mm Brass Gate Valve 50mm x 2" UPVC male valve Socket 40mm x 25mm UPVC reduce Socket T NAME: NRW PROJECT TEAM 1 DED BY: Benjimen Billy I NO: 0290 PTION: Being for Continue on Replacing & Rep.	ISSUED BY: DATE ISSUE Gate Valve @ Guentity 1 2 3 10 5 1 1 Total per Rei RECEIVED B SSUED BY: DATE ISSUE siring @ Tuvar Guentity Guentity	Pau	ul Seda 9/08/2011 aruhu Are nit Cost 180.00 29.00 40.00 78.00 54.00 35.00 25.00 tion = Selina ul Seda 9/08/2011 Pilot Site, nit Cost	a. To \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	180.00 58.00 120.00 390.00 54.00 700.00 36.00 25.00 1,603.00		
RECOMMENT REQUISITION JOB DESCRI Date 2013/8/29	DED BY: Benjimen Billy INO: 0288 PTION: Being for Continue on Replacing of Old Materials Description 1 1/4* (32mm) Brass Gate Valve 32mm Compression 40mm PVC Compression Coupling ThreadTape 40 KG Bag cement 2* G.I Tee 40mm Brass Gate Valve 50mm x 2* UPVC male valve Socket 40mm x 25mm UPVC reduce Socket IT NAME: NRW PROJECT TEAM 1 DED BY: Benjimen Billy INO: 0290 PTION: Being for Continue on Replacing & Rep. Materials Description 50mm PVC Compression Coupling	ISSUED BY: DATE ISSUE Gate Valve @ Guantity 1	Pau D: 29 Tuv Ur \$ \$ \$ \$ \$ \$ \$ \$ \$ Pau SP Pau PY: SP Py	ul Seda 9/08/201 aruhu Are nit Cost 180.00 29.00 40.00 78.00 54.00 350.00 350.00 350.00 25.00 tion = Selina ul Seda 9/08/201 Pilot Site. nit Cost	a. To \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	180.00 58.00 120.00 40.00 390.00 54.00 700.00 25.00 1,603.00 25.00 1,603.00		
RECOMMENT REQUISITION JOB DESCRI Date 2013/8/29	DED BY: Senjimen Billy INO: 0288 PTION: Being for Continue on Replacing of Old Materials Description 1 1/4" (32mm) Brass Gate Valve 32mm Gempression 40mm PVC Compression Coupling Thread Tape 40 KG Bag cement 2" G1 Tee 40mm Brass Gate Valve 50mm x 2" UPVC male valve Socket 40mm x 2" UPVC male valve Socket T NAME: NRW PROJECT TEAM 1 DED BY: Senjimen Billy INO: 0290 PTION: Being for Continue on Replacing & Rep. Meterials Description 50mm G1 Nipple	ISSUED BY: DATE ISSUE Gate Valve @ Guantity 1	Pau	ul Seda 9/08/201: aruhu Are nit Cost 180.00 29.00 40.00 4.00 78.00 54.00 350.00 25.00 tion = Selina ul Seda 9/08/201: Pilot Site. nit Cost 49.00 40.00	a. To \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	180.00 58.00 120.00 40.00 390.00 54.00 700.00 36.00 25.00 1,603.00		
RECOMMENT RECUISTRO JOB DESCRI Date 2013/8/29	DED BY: Benjimen Billy INO: 0288 PTION: Being for Continue on Replacing of Old Materials Description 1 1/4" (32mm) Brass Gate Valve 32mm Compression Coupling ThreadTape 40mm PVG Compression Coupling ThreadTape 40mm Brass Gate Valve 50mm x 2" UPVC male valve Socket 40mm x 25mm UPVC reduce Socket T NAME: NRW PROJECT TEAM 1 DED BY: Benjimen Billy INO: 0290 PTION: Being for Continue on Replacing & Rep- Materials Description 50mm PVC Compression Coupling 50mm PVC Compression Coupling 50mm PVC Compression Coupling 50mm PVC Compression Coupling 50mm PVC Gompression Socket	ISSUED BY: DATE ISSUE Gate Valve @ Guantity 1 1 2 3 10 5 11 Total per ReceiveD B ISSUED BY: DATE ISSUE BY: Guantity 5 2 1 Total per ReceiveD B ISSUED BY: DATE ISSUE ISSUED BY: DATE ISSUE IT ISSUED BY: DATE	Pau	ul Seda 9/08/201: aruhu Are nit Cost 180.00 29.00 40.00 40.00 54.00 350.00 350.00 36.00 25.00 36.00 25.00 36.00 25.00 25.00 54.00 54.00 55.00	a. To \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	180.00 58.00 120.00 40.00 390.00 54.00 700.00 36.00 25.00 1,603.00 25.00 1,603.00		
RECOMMENT REQUISITION JOB DESCRI Date 2013/8/29	DED BY: Senjimen Billy NO: 0288 PTION: Being for Continue on Replacing of Old Materials Description 1 1/4" (37mm) Brass Gate Valve 32mm Gempression 40mm PVC Compression Goupling ThreadTape 40 KG Bag cement 2" G1 Tee 40mm Brass Gate Valve 50mm x 2" UPVC male valve Socket 40mm x 2" UPVC reduce Socket T NAME: NRW PROJECT TEAM 1 DED BY: Benjimen Billy INO: 0290 PTION: Being for Continue on Replacing & Rep. Materials Description 50mm BVC Compression Goupling 50mm G1 Nipple 50mm x 1" G1 Reducing Socket 50mm x 3 4" G1 reducing Socket 50mm x 3 4" G1 reducing Socket	ISSUED BY: DATE ISSUE Gate Valve @ Guentity 1 2 3 10 5 1 1 Total per Rei RECEIVED B ISSUED BY: DATE ISSUE Guentity Cuentity Cuentity Cuentity Cuentity Cuentity Cuentity Cuentity 1 2 1 1 Total per Rei CEVED B GUENT CUENT CU	Pau	ul Seda 9/08/201: aruhu Are nit Cost 180:00 40:00 40:00 40:00 54:00 350:00 25:00 tion = Selina di Seda 9/08/201: Pilot Site nit Cost 49:00 54:00 55:00 55:00 30:00 30:00 50:00 55:00 55:00 30:00 50:00	a. TC \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	180.00 58.00 120.00 40.00 390.00 54.00 700.00 36.00 25.00 1,603.00 245.00 108.00 55.00 60.00		
RECOMMENT REQUISITION JOB DESCRI Date 2013/8/29	DED BY: Senjimen Billy NO: 0288 PTION: Being for Continue on Replacing of Old Materials Description 1 1/4" (37mm) Brass Gate Valve 32mm Gempression 40mm PVC Compression Goupling ThreadTape 40 KG Bag cement 2" G1 Tee 40mm Brass Gate Valve 50mm x 2" UPVC male valve Socket 40mm x 2" UPVC reduce Socket T NAME: NRW PROJECT TEAM 1 DED BY: Benjimen Billy INO: 0290 PTION: Being for Continue on Replacing & Rep. Materials Description 50mm BVC Compression Goupling 50mm G1 Nipple 50mm x 1" G1 Reducing Socket 50mm x 3 4" G1 reducing Socket 50mm x 3 4" G1 reducing Socket	ISSUED BY: DATE ISSUE Gate Valve @ Guartity 1 2 3 10 5 1 1 Total per ReceiveD B ISSUED BY: DATE ISSUE Signific @ Tuvar Quartity 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Pau D: 29 Tuv Ur \$ \$ \$ \$ \$ \$ \$ \$ \$	ul Seda 9/08/201. aruhu Arre nit Cost 180.00 29.00 40.00 4.00 54.00 350.00 36.00 25.00 tion = Selina ul Seda 9/08/201. Pilot Site, nit Cost 49.00 55.00 30.00 30.00 30.00 30.00 30.00 30.00 30.00 30.00 30.00 30.00	a. TC \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	180.00 58.00 120.00 40.00 390.00 700.00 36.00 25.00 1,603.00 25.00 1,603.00 55.00 60.00 160.00		
RECOMMENT REQUISITION JOB DESCRI Date 1013/8/29 2013/8/29	DED BY: Benjimen Billy INAME: NRW PROJECT TEAM 1 DED BY: Bening for Continue on Replacing of Old Materials Description 1 1/4" (32mm) Brass Gate Valve 32mm Compression 40mm PVC Compression Coupling ThreadTape 40mm Brass Gate Valve 50mm x 2" UPVC male valve Socket 40mm x 25mm UPVC reduce Socket T NAME: NRW PROJECT TEAM 1 DED BY: Benjimen Billy INO: 0290 PTION: Bening for Continue on Replacing & Rep. Materials Description 50mm pVC Compression Coupling 50mm By UFVC Compression Coupling 50mm x 1" GL Reducing Socket 50mm x 3" GL reducing Socket 50mm x 3" GL reducing Bush 10 metres 20mm Poly Pipe 20mm x 3" Poly male Adaptor	ISSUED BY: DATE ISSUE Gate Valve @ Guantity 1	Pau	ul Seda 9/08/201: aruhu Are nit Cost 180.00 29.00 40.00 78.00 54.00 35.00 25.00 tion = Selina ul Seda 9/08/201: pilot Site. nit Cost 49.00 54.00 30.00 30.00 30.00 40.00	a. TC \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	180.00 58.00 120.00 40.00 390.00 700.00 36.00 25.00 1,603.00 25.00 108.00 108.00 60.00 60.00 60.00 160.00 96.00		
RECOMMENT RECUISTROM JOB DESCRI Date 2013/8/29	JED BY: Benjimen Billy INO: 0288 PTION: Being for Continue on Replacing of Old Materials Description 1 1/4" (32mm) Brass Gate Valve 32mm Compression 40mm PVG Compression Coupling ThreadTape 40 KG Bag cement 2" G1 Tee 40mm Brass Gate Valve 50mm x 2" UPVC male valve Socket 40mm x 25mm UPVC reduce Socket 1 NAME: NRW PROJECT TEAM 1 IND 289 INO: 0290 PTION: Being for Continue on Replacing & Rep PTION: Being for Continue on Replacing & Rep Materials Description 50mm PVC. Compression Coupling 50mm PVC. Gengression Coupling 50mm BVG. Gall Reducing Socket 50mm x 3/4" G1 reducing Socket 10 metres 20mm Poly Pipe 20mm x 3/4" Poly male Adaptor 20mm x 3/4" Poly female Adaptor	ISSUED BY: DATE ISSUE Gate Valve @ Guentity 1 2 3 10 5 1 1 Total per Received BY: RECEIVED B ISSUED BY: DATE ISSUE 1 Guentity 1 Total per Received BY: Guentity 1 1 Total per Received B ISSUED BY: DATE ISSUE 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Pau	ul Seda 9/08/201: aruhu Are nit Cost 180.00 29.00 40.00 40.00 54.00 350.00 350.00 25.00 tion = Selina ul Seda 9/08/201: Pilot Site. nit Cost 49.00 54.00 36.00 25.00 tion = Selina ul Seda 49.00 54.00 48.00 48.00 48.00 48.00	a. TC \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	180.00 58.00 120.00 40.00 390.00 54.00 700.00 36.00 25.00 1,603.00 108.00 55.00 60.00 160.00 96.00		
RECOMMENT REGUISTION JOB DESCRI Date 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29	DED BY: Benjimen Billy INAME: NRW PROJECT TEAM 1 DED BY: Bening for Continue on Replacing of Old Materials Description 1 1/4" (32mm) Brass Gate Valve 32mm Compression 40mm PVC Compression Coupling ThreadTape 40mm Brass Gate Valve 50mm x 2" UPVC male valve Socket 40mm x 25mm UPVC reduce Socket T NAME: NRW PROJECT TEAM 1 DED BY: Benjimen Billy INO: 0290 PTION: Bening for Continue on Replacing & Rep. Materials Description 50mm pVC Compression Coupling 50mm By UFVC Compression Coupling 50mm x 1" GL Reducing Socket 50mm x 3" GL reducing Socket 50mm x 3" GL reducing Bush 10 metres 20mm Poly Pipe 20mm x 3" Poly male Adaptor	ISSUED BY: DATE ISSUE Gate Valve @ Guantity 1	Pau	ul Seda 9/08/201: aruhu Are nit Cost 180.00 29.00 40.00 78.00 54.00 35.00 25.00 tion = Selina ul Seda 9/08/201: pilot Site. nit Cost 49.00 54.00 30.00 30.00 30.00 40.00	a. TC \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	180.00 58.00 120.00 40.00 390.00 700.00 36.00 25.00 1,603.00 25.00 108.00 108.00 60.00 60.00 160.00 96.00		
RECOMMENT REGUISTION JOB DESCRI Date 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29 2013/8/29	DED BY: Benjimen Billy INO: 0288 PTION: Being for Continue on Replacing of Old Materials Description 1 1/4" (32mm) Brass Gate Valve 32mm Compression 40mm PVC Compression Coupling ThreadTape 40 KG Bag cement 2" GI Tee 40mm Brass Gate Valve 50mm x 2" UPVC male valve Socket 40mm x 25mm UPVC reduce Socket 1" NAME: NRW PROJECT TEAM 1 DED BY: Benjimen Billy INO: 0290 PTION: Being for Continue on Replacing & Rep. Materials Description 50mm PVC Compression Coupling 50mm B (I Reducing Socket 50mm x 3/4" GI reducing Bush 10 metres 20mm Poly Pipe 20mm x 3/4" Foly male Adaptor 20mm x 3/4" Poly male Adaptor 20mm YOC Compression Coupling	ISSUED BY: DATE ISSUE Gate Valve @ Guantity 1	Pau	ul Seda 9/08/2011 aruhu Are iit Cost 180.00 29.00 40.00 78.00 54.00 55.00 25.00 tion = Selina ul Seda 9/08/2011 Pilot Site, nit Cost 49.00 55.00 16.00 48.00 48.00 48.00 48.00 22.00	a. TC \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	180.00 58.00 120.00 40.00 390.00 54.00 700.00 25.00 1,603.00 245.00 108.00 55.00 108.00 60.00 160.00 96.00 94.00		

RECOMMENI REQUISITION	DEPARTMENT NAME: NRW PROJECT TEAM 2 RECEIVED BY: Dykes RECOMMENDED BY: Lawrence Iroi ISSUED BY: Paul Seda REQUISITION NO: 0289 DATE ISSUED: 31/08/2013 JOB DESCRIPTION: Being for Continue Repair & replace of Gate Valve @ Tuvaruhu Pilot				
Date	Materials Description	Quantity	Unit Cost	T	otal Cost
2013/8/31	ThreadTape	30	\$ 4.00	\$	120.00
2013/8/31	20 metres 20mm Poly Pipe	20	\$ 16.00	\$	320.00
2013/8/31	25mm x 1" Female poly Adaptor	3	\$ 48.00	\$	144.00
2013/8/31	10 metres 25mm Poly Pipe	10	\$ 18.00	\$	180.00
2013/8/31	3" G.I Tee	1	\$ 320.00	\$	320.00
2013/8/31	3" x 2" G.I Reducing Bush	1	\$ 92.00	\$	92.00
2013/8/31	40mm PVC Compression Coupling	1	\$ 40.00	\$	40.00
	Total per Requisition				1,216.00

	NT NAME: NRW PROJECT TEAM 1	RECEIVED BY: John Chede					
RECOMMEN	DED BY: Eric Unga	ISSUED BY: Paul Seda					
REQUISITION NO: 0224 DATE ISSUED: 01/09/2013			3				
JOB DESCR	IPTION: Being for Repair & replace Gate valve S	Service @ the	Pilot	Project S	Site	Tuvaruhu	
Date	Materials Description	Quantity	Uni	t Cost	To	tal Cost	
2013/9/1	40mm PVC male Valve Socket	1	\$	25.00	\$	25.00	
2013/9/1	40mm G.I Socket	1	\$	24.00	\$	24.00	
2013/9/1	40mm x 1" G.I Reducing Nipple	1	\$	20.00	\$	20.00	
2013/9/1	25mm x 1" Female poly Adaptor	1	\$	48.00	\$	48.00	
2013/9/1	25mm x 1" PVC male Valve Socket	1	\$	18.00	\$	18.00	
2013/9/1	25mm Plain PVC Socket	1	\$	15.00	\$	15.00	
2013/9/1	20mm PVC female Adaptor	1	\$	12.00	\$	12.00	
2013/9/1	1 metre 40mm PVC pressure Pipe	1	\$	40.00	\$	40.00	
2013/9/1	1 metre 20mm PVC pressure Pipe	1	\$	28.00	\$	28.00	
`		Total per Re	auisit	ion =	2	230.00	

DEPARTME RECOMMEN REQUISITION JOB DESCI	RECEIVED ISSUED BY DATE ISSU Service @ the	Paul ED: 0	Seda 1/09/201	3	(Tuvaruhı	
Date	Materials Description	Quantity				tal Cost
2013/9/1	25mm x 1" PVC Female Socket/adaptor	1	\$	18.00	\$	18.00
2013/9/1	25mm x 1" Poly female Adaptor	3	\$	48.00	\$	144.00
2013/9/1	25mm Poly Couping	1	\$	27.00	\$	27.00
2013/9/1	2" x 1" G.I reducing bush	1	\$	50.00	\$	50.00
2013/9/1	50mm (2") female PVC Adaptor	1	\$	90.00	\$	90.00
2013/9/1	50mm x 50mm PVC Tee	1	\$	90.00	\$	90.00
2013/9/1	3	\$	49.00	\$	147.00	
	· ·	Total per Re	quisit	ion =	\$	566.00

RECOMMENDED BY: Eric Unga REQUISITION NO: 0222 JOB DESCRIPTION: Being for Repair & replace Gate valve an		RECEIVED ISSUED BY DATE ISSU ye and branch Se	: Paul ED: 0	l Seda 1/09/201	13			
Date	Materials Description	Quantity	Uni	t Cost	Tot	tal Cost		
2013/9/1	10 metres 25mm Poly Pipe	10	\$	18.00	\$	180.00		
2013/9/1	Thread Tape	30	\$	4.00	\$	120.00		
2013/9/1	32mm Male PVC Valve Socket	4	\$	18.00	\$	72.00		
2013/9/1	32mm x 20mm G.I Reducing Socket	1	\$	18.00	\$	18.00		
2013/9/1	20mm female PVC Valve Socket	1	\$	12.00	\$	12.00		
2013/9/1	3/4" G.I nipple	1	\$	12.00	\$	12.00		
2013/9/1	40mm PVC Plain Tee	1	\$	35.00	\$	35.00		
2013/9/1	40mm PVC Female Valve Socket	3	\$	25.00	\$	75.00		
2013/9/1	40mm G.I Socket	1	\$	24.00	\$	24.00		
2013/9/1	40mm x 1" G.I reducing Nipple	1	\$	20.00	\$	20.00		
		Total per Re	auisit	ion =	\$	568.00		

DEPARTMEN RECOMMEN REQUISITION JOB DESCR	RECEIVED ISSUED BY DATE ISSU of Site .	Paul	Seda	3		
Date	Materials Description	Quantity	Uni	t Cost	To	tal Cost
	20mm x 16mm Poly Reduce Coupling	10	\$	56.00	\$	560.00
	16mm Poly Coupling	10	\$	45.00	\$	450.00
	16mm x 1/2" female poly Adaptor	10	\$	45.00	\$	450.00
2013/9/20	16mm x 1/2" male Poly Adaptor	10	\$	45.00	\$	450.00
2013/9/20	30 metres 16mm poly pipe	30	\$	10.00	\$	300.00
2013/9/20	ThreadTape	20	\$	\$ 4.00		80.00
2013/9/20 20mm x 1/2" Poly female Adaptor 2 \$ 40.00 \$				80.00		
		Total per Requisition = \$ 2,370.00				

DEPARTMEN	IT NAME: NRW PROJECT TEAM 1	RECEIVED E	3Y: D	avid .A.			
RECOMMENDED BY : Eric Unga ISSUED BY: Paul Seda							
REQUISITION NO: 0295 DATE ISSUED: 23/09/2013							
JOB DESCR	JOB DESCRIPTION: Being for Meter raising @ Tuvaruhu Pilot Site .						
	Materials Description	Quantity	Unit	Cost	Total Cost		
2013/9/23	40 KG Bag cement	6	\$	78.00	\$	468.00	
2013/9/23	30 metres 16mm poly pipe	30 \$ 10.00 \$				300.00	
		Total per Requisition = \$ 768.00					

DEPARTMEN RECOMMENI REQUISITION JOB DESCRI	RECEIVED E ISSUED BY: DATE ISSUE t Site .	Paul	Seda	3		
Date	Materials Description	Quantity	Uni	t Cost	Tot	al Cost
2013/9/24	40 KG Bag cement	6	\$	78.00	\$	468.00
2013/9/24 30 metres 16mm poly pipe 30 \$ 10.00 \$ 30						
						768.00

RECOMMEN REQUISITION	DEPARTMENT NAME: NRW PROJECT TEAM 1 RECEIVED BY: J.Teno RECOMMENDED BY: Frie Unga ISSUED BY: Paul Seda REGUISITION NO: 0296 JOB DESCRIPTION: Being for Meter raising @ Tuvaruhu Pilot Site.			
Date	Materials Description	Quantity	Unit Cost	Total Cost
2013/9/24	50 metres 16mm poly pipe	50	\$ 10.00	\$ 500.00
2013/9/24	16mm x 1/2" female poly Adaptor	10	\$ 45.00	\$ 450.00
2013/9/24	16mm x 1/2" male Poly Adaptor	10	\$ 45.00	
	-	Total per Rec	quisition =	\$ 1,400.00

RECOMMENI REQUISITION	DEPARTMENT NAME: NRW PROJECT TEAM 1 RECEIVED BY: David Akoes RECOMMENDED BY : Eric Unga ISSUED BY: Paul Sede REQUISITION NO: 0504 ATE ISSUED: 26/09/2013					
	IPTION: Being for preparation of Meter raising @ Materials Description		ot Site . Unit Cost	ΙΤ	otal Cost	
	15mm G.I elbow	40	\$ 12.00	\$	480.00	
2013/9/26	ThreadTape	20	\$ 4.00	\$	80.00	
2013/9/26	2013/9/26 16mm x 1/2" female poly Adaptor 20 \$ 45.00 \$				900.00	
		Total per Rec	quisition =	\$	1,460.00	

RECOMMENI REQUISITION	IT NAME: NRW PROJECT TEAM 1 DED BY: Benjimen Billy N NO: 0298 IPTION: Being for preparation of Meter raising @	RECEIVED BY: ISSUED BY: DATE ISSUE Tuvaruhu Pil	Paul ED: 20	Seda 3/09/201	3	
Date	Materials Description	Quantity	Unit	Cost	Tot	al Cost
2013/9/26	50 metre 20mm Pipe	50	\$	16.00	\$	800.00
2013/9/26	30 metres 16mm poly pipe	30	\$	10.00	\$	300.00
2013/9/26	20mm x 1/2" Poly male Adaptor	1	\$	40.00	\$	40.00

RECOMMENI REQUISITION JOB DESCRI	IPTION: Being for Repair & replace Gate valve @	ISSUED BY: DATE ISSUE the Pilot Pro		oli 3 varuhu) .
	Materials Description	Quantity	Unit Cost	Total Cost
	20mm Poly Coupling	2	\$ 45.00	\$ 90.00
2013/9/2	10 metre 20mm Pipe	10	\$ 16.00	\$ 160.00
2013/9/2	20mm PVC Compression Coupling	2	\$ 22.00	\$ 44.00
2013/9/2	1" Brass Gate valve	1	\$ 190.00	\$ 190.00
	40mm PVC male Valve Socket	3	\$ 25.00	\$ 75.00
	40mm Brass Gate Valve	1	\$ 350.00	\$ 350.00
2013/9/2	50mm G.I Socket	1	\$ 40.00	\$ 40.00
	40mm G.I Socket	1	\$ 24.00	\$ 24.00
2013/9/2	50mm x 2" UPVC male valve Socket	1	\$ 36.00	\$ 36.00
2013/9/2	50mm x 25mm Poly Reduce Bush	1	\$ 13.00	\$ 13.00
2013/9/2	40mm x 20mm Poly Reduce Bush	1	\$ 9.00	\$ 9.00
		Total per Rec	uisition =	\$ 1.031.00

	·	Total per Re	quisi	tion =	\$	1,031.00
	ENT NAME: NRW PROJECT TEAM 2	RECEIVED				
	NDED BY: Eric Unga	ISSUED BY				
	ON NO: 0233	DATE ISSU		0/09/201	3	
	RIPTION: Being for continue meter raising @ Tuv					
Meter LD	13B019404 - 408(5 pieces),13B019509 -513(5					
Meter LD	13B019444- 448(5 pieces),13B019499 -503(5	pieces),13B01	9664	- 668(5 p	iec	es),
Meter LD	13B019474 - 478(5pieces),13B019489 - 493(1957	9 - 583 &		
Date	Materials Description	Quantity		it Cost		tal Cost
	0 20mm Water Meter	50	\$			19,700.00
	0 20mm Stop Cock	40	\$	65.00		2,600.00
	0 3/4" G.I nipple 0 15mm G.I elbow	40 120	\$	12.00 12.00		480.00
			\$	12.00		1,440.00
	0 3/4" x 1/2" G.I Reducing Socket	20	\$			3,600.00
	0 16mm x 1/2" female poly Adaptor 0 ThreadTape	80 20	\$	45.00	\$	80.00
2013/9/1	U I i i read i ape	ZU	1.9	4.00		80.00 28.140.00
DEDARTME	ENT NAME: NRW PROJECT TEAM 1	BECEIVED	BV: r	Neso		
RECOMME	ENT NAME: NRW PROJECT TEAM 1 NDED BY: Natheniel Legu (for Eric)	RECEIVED ISSUED BY	: Geo	rge Blam		
RECOMME REQUISITION	NDED BY: Natheniel Legu (for Eric) ON NO: 0502	ISSUED BY DATE ISSU	: Geo	rge Blam		
RECOMME REQUISITION JOB DESC	NDED BY: Natheniel Legu (for Eric) ON NO: 0502 RIPTION: Being for Measuring flow in Meters/me	ISSUED BY DATE ISSU	: Geo	rge Blam		
RECOMME REQUISITION JOB DESC Meter LD	NDED BY: Natheniel Legu (for Eric) ON NO: 0502 RIPTION: Being for Measuring flow in Meters/me 138019357,138019358	ISSUED BY DATE ISSU eter testing .	: Geo	orge Blam 12/09/201	13	tal Cost
RECOMME REQUISITION JOB DESC Meter I.D Date	NDED BY: Natheniel Legu (for Eric) ON NO: 0502 RIPTION: Being for Measuring flow in Meters/me 13B019357,13B019358 Materials Description	ISSUED BY DATE ISSU eter testing .	: Geo	orge Blam 12/09/201	3 To	
RECOMME REQUISITION JOB DESC Meter LD Date 2013/9/1	NDED BY: Natheniel Legu (for Eric) ON NO: 0502 RUPTION: Being for Measuring flow in Meters/me 13B019357,13B019358 Materials Description 2 20mm Water Meter	ISSUED BY DATE ISSU eter testing .	: Geo ED: 1	orge Blam 12/09/201	Tc	788.00
RECOMME REQUISITION JOB DESC Meter LD Date 2013/9/1 2013/9/1	NDED BY: Natheniel Legu (for Eric) ON NO: 0502 RIPTION: Being for Measuring flow in Meters/me 13B019357,13B019358 Materials Description	ISSUED BY DATE ISSU eter testing . Quantity 2	ED: 1	it Cost 394.00	To \$	788.00 26.00
RECOMME REQUISITION JOB DESC Meter LD Date 2013/9/1 2013/9/1 2013/9/1	NDED BY: Natheniel Legu (for Eric) M NO: 0502 RIPTION: Being for Measuring flow in Meters/me 138019357,138019358 Materials Description 2 20mm Water Meter	ISSUED BY DATE ISSUeter testing . Quantity 2 2	ED: 1	it Cost 394.00	3 \$ \$	788.00 26.00 96.00
RECOMME REQUISITION JOB DESC Meter I.D Date 2013/9/1 2013/9/1 2013/9/1	NOED BY: Natheniel Legu (for Eric) DN No: 0502 RIPTION: Being for Measuring flow in Meters/mc 138019357,138019358 Matarials Description 2 Zomm Water Meter 2 Zomm x 1/2 female Threaded Adaptor 2 Zomm x 3/4 * Poly female Adaptor	ISSUED BY DATE ISSUE ter testing . Quantity 2 2 2	Un	it Cost 394.00 48.00	3 \$ \$	26.00 96.00 45.00 45.00
RECOMME REQUISITION JOB DESC Meter I.D Date 2013/9/1 2013/9/1 2013/9/1	NDED BY: Natheniel Legu (for Eric) N MO: 0502 RIPTION: Being for Measuring flow in Meters/me. 138019357, 138019358 Materials Description 2 20mm water Meter 2 20mm x 1/2 female Threaded Adaptor 2 20mm x 3/4 "Poly female Adaptor 2 16mm Poly Coupling	ISSUED BY DATE ISSUE ter testing . Quantity 2 2 2	Un	it Cost 394.00 13.00 48.00 45.00	3 \$ \$ \$	788.00 26.00 96.00 45.00 45.00
RECOMME REQUISITION JOB DESC Meter I.D Date 2013/9/1 2013/9/1 2013/9/1 2013/9/1	NOED BY: Natheniel Legu (for Eric) DN NO: 0502 NIPTION: Being for Measuring flow in Meters/me 138019357,138019358 Materials Description 2 20mm Water Meter 2 20mm x 12" female Threaded Adaptor 2 20mm x 3/4" Poly female Adaptor 2 16mm Poly Coupling 2 20mm Poly Coupling	ISSUED BY DATE ISSUE ter testing . Quantity 2 2 2 1 1 Total per Re	Un \$ \$ \$ \$ \$	it Cost 394.00 13.00 48.00 45.00 45.00	3 \$ \$ \$	788.00 26.00 96.00 45.00 45.00
RECOMME REQUISITION JOB DESC Meter LD Date 2013/9/1 2013/9/1 2013/9/1 2013/9/1 2013/9/1	NOED BY: Natheniel Legu (for Eric) DN NO: 0502 RIPTION: Being for Measuring flow in Meters/mr 138019357,138019358 Materials Description 2 Zomm Water Meter 2 Zomm x 1/2 female Threaded Adaptor 2 Itoms 2 / Poly female Adaptor 2 Itoms Poly Coupling 2 Zomm Poly Coupling	ISSUED BY DATE ISSUeter testing . Quantity 2 2 2 1 1 Total per Re	Un \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	it Cost 394.00 13.00 48.00 45.00 45.00	3 \$ \$ \$	788.00 26.00 96.00 45.00 45.00
RECOMME REQUISITION JOB DESC Meter ID Date 2013/9/1 2013/9/1 2013/9/1 2013/9/1 2013/9/1 2013/9/1	NOED BY: Natheniel Legu (for Eric) DN NO: 0502 RIPTION: Being for Measuring flow in Meters/me 138019357,138019358 Materials Description 2 20mm water Meter 2 20mm x 12" female Threaded Adaptor 2 20mm x 12" female Threaded Adaptor 2 20mm x 10" female Adaptor 2 16mm Paly Coupling 2 120mm Poly Coupling 2 120mm ROW Coupling ENT NAME: NRW PROJECT TEAM 1 NDED BY: Benjimen Billy	ISSUED BY DATE ISSU ster testing . Quantity 2 2 2 1 1	Un \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	it Cost 394.00 13.00 48.00 45.00 45.00 tion =	Tc \$ \$ \$ \$ \$	788.00 26.00 96.00 45.00 45.00
RECOMME REQUISITION DESC Meter LD Date 2013/9/1 2013/9/1 2013/9/1 2013/9/1 2013/9/1 2013/9/1 DEPARTME RECOMME REQUISITION	NOED BY: Natheniel Legu (for Eric) DN NO: 0502 RIPTION: Being for Measuring flow in Meters/me 138019357,138019358 Materials Description 2 20mm Water Meter 2 20mm x 1/2" female Threaded Adaptor 2 10mm x 3/4" Poly female Adaptor 2 10mm Poly Coupling 2 20mm x Sy Noed Sy N	ISSUED BY DATE ISSUeter testing . Quantity 2 2 2 1 1 Total per ReceiveD ISSUED BY DATE ISSUED	Un \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	it Cost 394.00 13.00 48.00 45.00 45.00 tion =	Tc \$ \$ \$ \$ \$	788.00 26.00 96.00 45.00 45.00
RECOMME REQUISITION JOB DESC Meter ID Date 2013/9/1 2013/9/1 2013/9/1 2013/9/1 2013/9/1 DEPARTME RECOMME RECOMME RECOMME TREQUISITION JOB DESC	NOED BY: Natheniel Legu (for Eric) N MO: 0502 RIPTION: Being for Measuring flow in Meters/me 138019357.138019358 Materials Description 2 Zomm water Meter 2 Zomm x 1/2" female Threaded Adaptor 2 Zomm x 3/4" Poly female Adaptor 2 Iffinm Poly Coupling 2 Zomm x 1/8" poly female Adaptor 2 Zomm Poly Coupling ENT NAME: NRW PROJECT TEAM 1 NDED BY: Benjimen Billy N NO: 0117	ISSUED BY DATE ISSUED	Un \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	rge Blam 2/09/201 it Cost 394.00 13.00 45.00 45.00 5 delina 1 Seda 6/09/201	3 Tc \$ \$ \$ \$ \$ \$ \$ \$	788.00 26.00 96.00 45.00 45.00 1,000.00
RECOMME REQUISITION Meter LD Date 2013/9/1 2013/9/1 2013/9/1 2013/9/1 2013/9/1 DEPARTME RECOMME RECOMME RECOMME	NOED BY: Natheniel Legu (for Eric) DN NO: 0502 RIPTION: Being for Measuring flow in Meters/me 138019357,138019358 Materials Description 2 20mm Water Meter 2 20mm x 12" female Threaded Adaptor 2 10mm x 3/4" Poly female Adaptor 2 10mm Poly Coupling 2 120mm Poly Coupling ENT NAME: NRW PROJECT TEAM 1 NDED BY: Benjimen Billy DN NO: 0117 RIPTION: Being for Meter raising @ Tuvaruhu Pil Materials Description	ISSUED BY DATE ISSU ster testing . Guantity 2 2 2 1 1 Total per Re RECEIVED ISSUED BY DATE ISSU of Site . Guantity .	Un S S S S S S S S S S S S S S S S S S S	rge Blam 2/09/201 it Cost 394.00 13.00 45.00 45.00 45.00 ition =	3 Tc \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	788.00 26.00 96.00 45.00 45.00 1,000.00
RECOMME REQUISITION JOB DESC Meter LD Date 2013/9/1 2013/9/1 2013/9/1 2013/9/1 2013/9/1 2013/9/1 2013/9/1 DEPARTME RECOMME REQUISITION JOB DESC Date 2013/9/16	NOED BY: Natheniel Legu (for Eric) N NO: 0502 RIPTION: Being for Measuring flow in Meters/me 138019357,138019358 Materials Description 2 20mm valer Meter 2 20mm x 1/2 female Threaded Adaptor 2 20mm x 3/4 "Poly female Adaptor 2 20mm x 3/4" Poly female Adaptor 2 20mm poly Coupling 2 20mm Poly Coupling ENT NAME: NRW PROJECT TEAM 1 NDED BY: Berjimen Billy DN NO: 0117 RUPTION: Being for Meter raising @ Tuvaruhu Pil Materials Description	ISSUED BY DATE ISSU ster testing . Quantity 2 2 2 1 1 Total per Re RECEIVED ISSUED BY DATE ISSU ot Site . Quantity 30	Un \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	it Cost 394.00 13.00 48.00 45.00 45.00 ition = Celina I Seda 6/09/201	3 Tc \$	788.00 26.00 96.00 45.00 45.00 1,000.00
RECOMME REQUISITION JOB DESC Meter LD Date 2013/9/1 2013/9/1 2013/9/1 2013/9/1 2013/9/1 2013/9/1 2013/9/1 2013/9/1 2013/9/1 2013/9/1	NOED BY: Natheniel Legu (for Eric) DN NO: 0502 RIPTION: Being for Measuring flow in Meters/me 138019357,138019358 Materials Description 2 20mm Water Meter 2 20mm x 12" female Threaded Adaptor 2 10mm x 3/4" Poly female Adaptor 2 10mm Poly Coupling 2 120mm Poly Coupling ENT NAME: NRW PROJECT TEAM 1 NDED BY: Benjimen Billy DN NO: 0117 RIPTION: Being for Meter raising @ Tuvaruhu Pil Materials Description	ISSUED BY DATE ISSU ster testing . Guantity 2 2 2 1 1 Total per Re RECEIVED ISSUED BY DATE ISSU of Site . Guantity .	Un S S S S S S S S S S S S S S S S S S S	rge Blam 2/09/201 it Cost 394.00 13.00 45.00 45.00 45.00 ition =	3 Tc \$	788.00 26.00 96.00 45.00 45.00

2013/9/26	20mm x 16mm Poly Reduce Coupling	1	\$ 56.00	\$	56.00
		Total per Re	equisition =	• \$	1,196.00
DEPARTMEN	IT NAME: NRW PROJECT TEAM 1	RECEIVED	BY: Teno		
RECOMMEN	DED BY: Benjimen Billy	ISSUED BY	': Paul Seda		
REQUISITION	N NO: 0299	DATE ISSU	IED: 27/09/20	13	
JOB DESCR	PTION: Being for preparation of Meter raising @	Tuvaruhu P	ilot Site .		
Date	Materials Description	Quantity	Unit Cost	T	otal Cost
2013/9/27	30 metres 16mm poly pipe	30	\$ 10.00	\$	300.00
2013/9/27	40 KG Bag cement	6	\$ 78.00) \$	468.00
	16mm x 1/2" female poly Adaptor	10	\$ 45.00) \$	450.00
2013/9/27	16mm x 1/2" male Poly Adaptor	10	\$ 45.00	\$	450.00
2013/9/27	16mm Poly Coupling	10	\$ 45.00	\$	450.00
		Total per Re	quisition =	\$	2,118.00
DEDADTMEN	IT NAME: NRW PROJECT TEAM 1	DECEIVED	BY: David Ak		
	DED BY : Eric Unga		: Paul Seda	Ubas	
REQUISITION			. Faul Seda IED: 27/09/20	112	
	IPTION: Being for preparation of Meter raising @			113	

REQUISITION	DED BY: Eric Unga N NO: 0505 IPTION: Being for preparation of Meter raising @		D: 27/09/201	13	
	Materials Description	Quantity	Unit Cost	To	otal Cost
	3/4" G.I nipple	20	\$ 12.00	\$	240.00
	20mm Stop Cock	10	\$ 168.00	\$	1,680.00
	15mm G.I elbow	20	\$ 12.00	\$	240.00
	16mm x 1/2" female poly Adaptor	20	\$ 45.00	\$	900.00
2013/9/27	ThreadTape	20	\$ 4.00	\$	80.00
		Total per Rec	quisition =	\$	3,140.00

EPARTMENT NAME: NRW PROJECT TEAM 1 RECEIVED BY: John Teno RECOMMENDED BY: Senjimen Billy REQUISITION NO: 0300 OB DESCRIPTION: Being for preparation of Meter raising @ Tuvaruhu Pilot Site.						
Date	Materials Description	Quantity	Uni	t Cost	To	otal Cost
2013/9/29	40 KG Bag cement	6	\$	78.00	\$	468.00
	·····.Continued next page·····					
2013/9/29	15mm G.I elbow	40	\$	12.00	\$	480.00
2013/9/29	1/2" G.I Socket	20	\$	10.00	\$	200.00
2013/9/29	40 metres 16mm poly pipe	40	\$	10.00	\$	400.00
2013/9/29	16mm x 1/2" female poly Adaptor	5	\$	45.00	\$	225.00
2013/9/29	16mm x 1/2" male Poly Adaptor	5	\$	45.00	\$	225.00
		Total per Re	quisit	ion =	\$	1,998.00

RECOMMENI REQUISITION JOB DESCRI	PTION: Being for preparation of Meter raising @	ISSUED BY: DATE ISSUE	D: 30/09/20	13
	Materials Description	Quantity	Unit Cost	Total Cost
2013/9/30	10mm Steel Rods	6	\$ 68.00	\$ 408.00
2013/9/30	ThreadTape	40	\$ 4.00	\$ 160.00
	20mm Stop Cock	15	\$ 168.00	\$ 2,520.00
	3/4" G.I nipple	10	\$ 12.00	\$ 120.00
	15mm G.I elbow	20	\$ 12.00	\$ 240.00
2013/9/30	16mm x 1/2" female poly Adaptor	10	\$ 45.00	\$ 450.00
	_	Total per Rec	quisition =	\$ 3,898.00

RECOMMENDED BY: Eric Unga REQUISITION NO: 0506 JOB DESCRIPTION: Being for preparation of Meter raising @ Tobate Materials Description		RECEIVED BY: ISSUED BY: DATE ISSUE Tuvaruhu 2 F	Paul Seda ED: 30/09/2	
Date		Quantity	Unit Cost	: Total Cost
2013/9/30	50 metres 16mm poly pipe	50	\$ 10.0	00 \$ 500.00

I	2013/9/30 40 KG Bag cement	4	\$ 78.00	\$ 312.00
I	2013/9/30 16mm x 1/2" female poly Adaptor	20	\$ 45.00	\$ 900.00
I	2013/9/30 25mm x 3/4" x 25mm Poly female threaded Te	3	\$ 36.00	\$ 108.00
ſ	2013/9/30 1/2" Poly Nipple	10	\$ 3.00	\$ 30.00
[2013/9/30 3/4 x 1/2" Poly Reducing Bush	3	\$ 5.50	\$ 16.50

DEPARTMI RECOMME REQUISITION	RECEIVED I ISSUED BY: DATE ISSUI	Paul D: 30	Seda 0/09/201	3		
JOB DESC Date	RIPTION: Being for preparation of Meter rai Materials Description			Site . L Cost	To	tal Cost
2013/9/30 15mm G.I elbow 20 \$ 12.00						240.00
	Total per Re	uisit	ion =	\$	240.00	

RECOMMENI REQUISITION JOB DESCRI	IPTION: Being for Meter Raising @ the Pilot Proj	ISSUED BY: DATE ISSUE ect Site (Tuva	ED: 04/09/201 aruhu) .	13
Date	Materials Description	Quantity	Unit Cost	Total Cost
2013/10/4	40 metres 20mm Poly Pipe	40	\$ 16.00	\$ 640.00
2013/10/4	20mm x 1/2" Poly female Adaptor	20	\$ 40.00	\$ 800.00
2013/10/4	20mm x 16mm Poly Reduce Coupling	20	\$ 56.00	\$ 1,120.00
2013/10/4	ThreadTape	10	\$ 4.00	\$ 40.00
		Total per Rec	ujeition =	\$ 2,600,00

RECOMMENI REQUISITION JOB DESCRI	IPTION: Being for Meter Raising @ the Pilot Proj	ISSUED BY: DATE ISSUE ect Site (Tuva	D: 07/09/201 aruhu) .	13	
	Materials Description	Quantity	Unit Cost	Tota	al Cost
	25mm x 3/4" male poly Adaptor	2	\$ 48.00	\$	96.00
	25mm x 3/4" female poly Adaptor	2	\$ 48.00	\$	96.00
2013/10/7	3/4" G.I nipple	1	\$ 12.00	\$	12.00
		Total per Rec	uisition =	\$	204.00

#REF!

1. Costing Before Countermeasure

			1. Cu	sting be	1016 C	Juntern	icasui c		
Location	Vavaya Ridge								per da
Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
I. Personnel	Grades- Steps								
Staff-3	3.1	0		15.38	115.35				
	3.2	0		15.90	119.25				
	3.3	0		16.41 16.92	123.08 126.90				
	3.4	0		17.44	130.80				
Staff-4	4.1	10	Person	19.23	144.23	22.00		3.172.95	
	4.2	20	Person	20.00	150.00	38.00		5,700.00	
	4.3	0	Person	20.77	155.78			0.00	
	4.4	0		21.54	161.55			0.00	
Staff-5	4.5 5.1	0		22.31 24.10	167.33 180.75			0.00	
Statt-5	5.2	0		25.13	188.48			0.00	
	5.3	0		26.15	196.13			0.00	
	5.4	0		27.18	203.85			0.00	
	5.5	9		28.21	211.58	17.00		3,596.78	
Staff-6	6.1	2		31.54	236.55	2.00		473.10	
	6.2	8		32.82 34.10	246.15 255.75	14.00		3,446.10	
	6.4	0		35.38	265.75			0.00	
	6.5	0		36.67	275.03			0.00	
Staff-7	7.1	0		38.46	288.45			0.00	
	7.2	0		39.74	298.05			0.00	
	7.3	0		41.03	307.73			0.00	
	7.4	0		42.31	317.33			0.00	
Staff-8	7.5 8.1	0		43.59 47.95	326.93 359.63			0.00	
Statt-6	8.2	0		49.23	369.23			0.00	
	8.3	0		50.51	378.83			0.00	
	8.4	0		51.79	388.43			0.00	
	8.5	3		53.08	398.10	10.00		3,981.00	
Staff-9	9.1	0		58.21	436.58			0.00	
	9.2	0		59.49 60.77	446.18 455.78			0.00	
	9.4	0		62.05	465.38			0.00	
	9.5	0		63.33	474.98			0.00	
Sub-total						103.00		20,369.93	
. Consumable				\$ Per Liter	L/km		\$/km		
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	50km/7km/liter=7.14liter 11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km
Diesel	For Pick-up	114	Liter	11.80	0.1428	16.2792	1.68504	192.09	50km/7km/liter=7.14liter/50km
Engine Oil	For Excavator	0	Liter	60.00	0.0016		0.096	0.00	100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km
Engine Oil	For Pick-up	114	Liter	60.00	0.0016		0.096	10.94	100km x 252days=25,200km 25,200km/ 10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km
Tires		0	Nos	770.00	0.0014		1.078	0.00	50km x 252days=12,600km 12,600km/30,000km x 4nos=1.68nos 1.68nos/252days=0.07nos/50km
Sub-total								203.04	
. Material &									
Equipment Sluice/ Gate Valve	25mm		piece					0.00	Gate Valve
Sluice/ Gate Valve	40mm	1	piece		350.00			350.00	Gate Valve
Sluice/ Gate Valve	50mm	2	piece		310.00			620.00	Gate Valve
Sluice/ Gate Valve	80mm		piece					0.00	Sluice Valve
Sluice/ Gate Valve	100mm	2	piece		2,423.00			4,846.00	Sluice Valve
Sluice/ Gate Valve	150mm		piece					0.00	Sluice Valve
Sluice/ Gate Valve	200mm		piece						Sluice Valve
Sluice/ Gate Valve Sluice/ Gate Valve	250mm 300mm		piece piece	-				0.00	Sluice Valve225mm AUD1785
Pipes (Poly)	15mm		coil						Length on 1 coil =300m
Pipes (Poly)	20mm								Length on 1 coil =300m

GE	ľ
KID	ζ
XΑ	٠
4	٢
Á	
OR VA	
I FOR V	
FOR V	
AL COST FOR VA	
COST FOR VA	
OTAL COST FOR VA	

	Before Countermeasure	rmeasure	After Countermeasure	ermeasure	
	Before Countermeasure	Countermeasure	After Countermeasure	Routine Activities Total	Total
Personnel Cost	20,369.93	22,020.00	9,198.30	5,163.75	56,751.98
Consumable	203.04	213.72	42.74	21.37	4,080.88
Material and Equipment	11,020.00	93,796.00	0.00	0.00	104,816.00
Sub Total	31,592.96	116,029.72	9,241.04		5,185.12 165,648.86
TOTAL	147,622.69	69	14,426.17	.17	

									per day
Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Pipes (Poly)	25mm		coil					0.00	Length on 1 coil =200m
Pipes (Poly)	50mm		coil						Length on 1 coil =150m
Pipes (PVC)	25mm		piece					0.00	
Pipes (PVC)	50mm		piece					0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm	1	piece		248.00			248.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece					0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece					0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
Other Materials								4,956.00	
Sub-total								11,020.00	
Total								31,592.96	
1AUD=6.534SBD v	vas applied to th	ne above (ra	te as of 30	September,	2013 of Oa	nda).			

2. Costing for Countermeasure

ocation									
ocation	Vavaya Ridge								per
Items	Specification	Quantity	Unit	Hourly Rate	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
	1			(SBD)	(SBD)		(SBD)	(SBD)	
. Personnel	Grades- Steps								
Staff-3	3.1	0	Person Person	15.38 15.90	115.35 119.25				
	3.3	0	Person	16.41	123.08				
	3.4	0	Person	16.92	126.90				
	3.5	0		17.44	130.80				
Staff-4	4.1	4		19.23	144.23	20.00		2,884.50	
	4.2	8	Person	20.00	150.00	40.00		6,000.00	
	4.3	0	Person	20.77	155.78			0.00	
	4.4	0		22.31	161.55 167.33			0.00	
Staff-5	5.1	0		24.10	180.75			0.00	
Dian-J	5.2	0		25.13	188.48			0.00	
	5.3	0		26.15	196.13			0.00	
	5.4	0		27.18	203.85			0.00	
	5.5	4		28.21	211.58	20.00		4,231.50	
Staff-6	6.1	0		31.54	236.55	40.00		0.00	
	6.2	4		32.82 34.10	246.15 255.75	20.00		4,923.00	
	6.4	0		35.38	255.75			0.00	
	6.5	0		36.67	275.03			0.00	
Staff-7	7.1	0		38.46	288.45			0.00	
	7.2	0		39.74	298.05			0.00	
-	7.3	0		41.03	307.73			0.00	
	7.4	0		42.31	317.33			0.00	
Staff-8	7.5 8.1	0		43.59	326.93 359.63			0.00	
Stati-8	8.2	0		47.95 49.23	369.23			0.00	
	8.3	0		50.51	378.83			0.00	
	8.4	0		51.79	388.43			0.00	
	8.5	0		53.08	398.10	10.00		3,981.00	
Staff-9	9.1	0		58.21	436.58			0.00	
	9.2	0		59.49	446.18			0.00	
	9.3	0		60.77	455.78			0.00	
	9.4	0		62.05	465.38			0.00	
	0.5			(2.22					
Sub total	9.5	0		63.33	474.98	110.00		0.00	
Sub-total Consumable	9.5	0		63.33 S Per Liter	474.98	110.00	S/km	0.00 22,020.00	
Sub-total Consumable Diesel	For Excavator	0	Liter	S Per Liter 11.80	474.98	110.00	S/km 4.2716	0.00	50km/7km/liter=7.14liter 11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km
Consumable			Liter	S Per Liter	474.98 L/km	110.00 17.1360		22,020.00	11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km 50km/7km/liter=7.14liter/50km
Consumable	For Excavator	0		S Per Liter 11.80	474.98 L/km 0.3620		4.2716	0.00	11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km 50km/7km/liter=7.14liter/50km 100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km
Consumable Diesel Diesel Engine Oil	For Excavator For Pick-up	0	Liter	\$ Per Liter 11.80	474.98 L/km 0.3620 0.1428		4.2716 1.68504	0.00	Illiter/hrs (fael consumption for shout 60PS) x Ihre I Illier I Illier - 7. Illiere I 8. Illier/50km 50km / Zhm Ilrier I - Illiere/50km 100km x 552dsys-25, 2000km 100km x 552dsys-25, 2000km 100km x 552dsys-25, 2000km 100km x 552dsys-25, 2000km 100km x 552dsys-25, 200km 10,000km 10,000km x 8liter=20. Isliter 25,20km 10,000km x 8liter=20. Isliter 25,20km 10,000km x
Consumable Diesel Diesel Engine Oil Engine Oil	For Excavator For Pick-up For Excavator	0 120 0	Liter	S Per Liter 11.80 11.80 60.00	0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.00 0.00 202.20 0.00 11.52	11liter/hrs (fuel consumption for about 60PS) x Ihr-11liter 11liter +7.1liter=18.1liter/50km 50km/7km/liter=7.14liter/50km 10km x 252day=25_200km 25_200km 10_000km x 8liter=20.16liter 20.16liter/ 20.16liter/ 20.16liter/ x 852day=25_200km 25_200km 10_00km x 8liter=20.16liter
Consumable Diesel Diesel Engine Oil Engine Oil Tires Sub-total	For Excavator For Pick-up For Excavator	0 120 0	Liter Liter	11.80 11.80 60.00	0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.00 202.20 0.00	Illiter hrs. (fael consumption for bodo of GPNs. In He Illier e Illier e 15 litter e 15 li
Consumable Diesel Diesel Engine Oil Engine Oil Tires Sub-total Material &	For Excavator For Pick-up For Excavator	0 120 0	Liter Liter	11.80 11.80 60.00	0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.00 0.00 202.20 0.00 11.52	Illiter hrs. (fael consumption for bodo of GPNs. In He Illier e Illier e 15 litter e 15 li
Consumable Diesel Diesel Engine Oil Engine Oil Tires Sub-total Material & ujupment	For Excavator For Pick-up For Excavator	0 120 0	Liter Liter Liter	11.80 11.80 60.00	0.3620 0.1428 0.0016		4.2716 1.68504 0.096	22,020.00 0.00 202.20 0.00 11.52 0.00 213.72	Illiter hrs. (fael consumption for bodo of GPNs. In He Illier e Illier e 15 litter e 15 li
Consumable Diesel Diesel Engine Oil Engine Oil Tires Sub-total Material & quipment uice: Gate Valve	For Excavator For Pick-up For Excavator For Pick-up	0 120 0	Liter Liter	11.80 11.80 60.00	0.3620 0.1428 0.0016 0.0016		4.2716 1.68504 0.096	22,020.00 0.00 202.20 0.00 11.52 0.00 213.72	Illiter/hrs (fael consumption for bound of 89%) x Hrs - Illier Slam Illier
Consumable Diesel Diesel Engine Oil Engine Oil Tires Sub-total Material & guipment uice: Gate Valve Sluice/ Gate Valve	For Excavator For Pick-up For Excavator For Pick-up 25mm 40mm 50mm	0 120 0	Liter Liter Nos	11.80 11.80 60.00	0.3620 0.1428 0.0016 0.0016		4.2716 1.68504 0.096	22,020.00 0.00 202.20 0.00 11.52 0.00 213.72 570.00 0.00 0.00	Illiter.hrs (fael consumption for bodo of GPPs, 1 http://liter.hlliter
Consumable Diesel Diesel Engine Oil Engine Oil Tires Sub-total Material & Juginement uice Gate Valve Skinice Gate Valve Skinice Gate Valve	For Excavator For Pick-up For Pick-up For Pick-up 25mm 40mm 50mm	0 120 0	Liter Liter Nos	11.80 11.80 60.00	0.3620 0.1428 0.0016 0.0014 0.0014		4.2716 1.68504 0.096	22,020,00 0.00 202,20 0.00 11.52 0.00 213.72 570.00 0.00 0.00 0.00	Illitechnic (fuel consumption for bound of 89%) x 1hr - 11liner
Consumable Diesel Diesel Diesel Engine Oil Engine Oil Tires Sub-total Material & Sub-total Staice Gate Valve Staice Gate Use Staice Gate Use Staice Gate Use	For Excavator For Pick-up For Excavator For Pick-up 25mm 40mm 50mm 100mm	0 120 0	Liter Liter Nos piece piece piece piece piece	11.80 11.80 60.00	0.3620 0.1428 0.0016 0.0014		4.2716 1.68504 0.096	22,020,00 0.00 202.20 0.00 11.52 0.00 213.72 570.00 0.00 0.00 0.00 0.00 0.00	Illiter/hrs (fuel consumption for bound of BPS) x Hor-Illier (Illiter-17, Illiter-18, Illiter-18m; Illiter-18
Consumable Diesel Diesel Engine Oil Engine Oil Tites Sub-total Material & ujujoment Suice Gate Valve Suice Gate Valve Suice Gate Valve Suice Oat Valve Suice Oat Valve	For Excavator For Pick-up For Pick-up For Pick-up 25mm 40mm 50mm 100mm	0 120 0	Liter Liter Nos Piece piece piece piece piece piece piece	11.80 11.80 60.00	0.3620 0.1428 0.0016 0.0014 0.0014		4.2716 1.68504 0.096	22,020,00 0.00 202,20 0.00 11.52 0.00 213.72 570.00 0.00 0.00 0.00 0.00 0.00	Illiter/hrs (fuel consumption for both of 1878; http://liter/sliners/s
Consumable Diesel Diesel Engine Oil Engine Oil Tires Sub-total Material & juipment uiser Gate Valve Shaice Gate Valve Shaice Gate Gate Valve Shaice Gate Valve	For Excavator For Pick-up For Excavator For Pick-up 25mm 40mm 150mm 1100mm 1200mm	0 120 0	Liter Liter Nos piece piece piece piece piece piece piece piece piece	11.80 11.80 60.00	0.3620 0.1428 0.0016 0.0014 0.0014		4.2716 1.68504 0.096	22,020,00 0.00 202,20 0.00 11.52 0.00 213.72 570.00 0.00 0.00 0.00 0.00 0.00 0.00	Illitechnic (fuel consumption for bound of 69%) x 1he 1 litier e 1
Consumable Diesel Diesel Engine Oil Engine Oil Tires Sub-total Material & pipinynent mice Gate Valve Sluice Gate Valve	For Excavator For Pick-up For Excavator For Pick-up For Excavator For Pick-up 256mm 46mm 56mm 56mm 100mm 1150mm 200mm 225mm	0 120 0	Liter Liter Nos piece piece piece piece piece piece piece piece piece	11.80 11.80 60.00	0.3620 0.1428 0.0016 0.0014 0.0014		4.2716 1.68504 0.096	22,020,00 0.00 202,20 0.00 11.52 0.00 213,72 570,00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	Illitechnic (fael consumption for bound offers) x Ihr-Illiner Illiner Slim Illiner Illi
Consumable Diesel Diesel Engine Oil Engine Oil Engine Oil Tires Sub-total Material & guipement suice Gate Valve Shaice Gate Valve	For Excavator For Pick-up For Pick-up For Pick-up For Pick-up 25mm 40mm 50mm 150mm 120mm 250mm 300mm	0 120 0 120 0 3 3	Liter Liter Nos piece	11.80 11.80 60.00	0.3620 0.1428 0.0016 0.0016 0.0014 190.00 350.00 310.00 2,423.00		4.2716 1.68504 0.096	22,020,00 0.00 202,20 0.00 11.52 0.00 213,72 570.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	Illitechnic (fael consumption for bound of 69%) x 1her-1 litier et 1 litier et 3,1 litier et 58. litier 50km (75 km 7 litier et 1 litier et 50km 7 litier et 51 litier 50km (100km x 525dbys=15,200km 100km x 525dbys=15,200km 100km x 525dbys=25,200km 100km x 525dbys=25,200km 100km x 525dbys=25,200km 100km x 525dbys=25,200km 100km x 525dbys=12,500km x 100km x 525dbys=12,500km x 100km x 525dbys=12,500km x 100km x 525dbys=12,500km x 100km x 10km x 525dbys=12,500km x 10km x
Consumable Diesel Diesel Engine Oil Engine Oil	For Excavator For Pick-up For Excavator For Pick-up For Excavator For Pick-up 256mm 46mm 56mm 56mm 100mm 1150mm 200mm 225mm	0 120 0	Liter Liter Nos piece piece piece piece piece piece piece piece piece	11.80 11.80 60.00	0.3620 0.1428 0.0016 0.0014 0.0014		4.2716 1.68504 0.096	22,020,00 0.00 202.20 0.00 11.52 0.00 213.72 570.00 0.00 0.00 0.00 0.00 0.00 0.00 2,900.00	Illitechnic (fael consumption for bound of 69%) x 1he-1 litier e 1 litier e 7,1 litter e 18.1 litier 95km 7 litter e 18.1 litier 95km 100km x 525days-15,200km 100km x 525days-15,200km 100km x 525days-16,200km 100km x 525days-16,00km 100km x 525days-12,00km 100km x 10km

									per day
Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Pipes (Poly)	50mm	5	coil		45.00			225.00	Length on 1 coil =150m
Pipes (PVC)	25mm		piece					0.00	
Pipes (PVC)	50mm		piece					0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece		248.00			0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece					0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece					0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm	90	piece		394.00			35,460.00	
Water Meter	25mm	3	piece		918.68			2,756.04	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
Other Materials								48,584.96	
Sub-total								93,796.00	
Total								116 029 72	

Total 116,029.72 1AUD=6.534SBD was applied to the above (rate as of 30 September, 2013 of Oanda).

3. Costing for After Countermeasure

Location	Vavaya Rid		B. Cost	ing for	After C	Counter	measur	9	per da
Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
. Personnel	Grades- Steps								
Staff-3	3.1	0	Person	15.38	115.35				
	3.2 3.3	0	Person Person	15.90 16.41	119.25 123.08				
	3.3	0	Person	16.41	123.08				
	3.5	0	Person	17.44	130.80				
Staff-4	4.1	3		19.23	144.23	4.00		576.90	
	4.2	6		20.00	150.00	32.00		4,800.00	
	4.3	0	Person	20.77	155.78			0.00	
	4.4	0		21.54	161.55			0.00	
Staff-5	4.5 5.1	0		22.31 24.10	167.33 180.75			0.00	
Dun 0	5.2	0		25.13	188.48			0.00	
	5.3	0		26.15	196.13			0.00	
	5.4	0		27.18	203.85			0.00	
	5.5	3		28.21	211.58	4.00		846.30	
Staff-6	6.1	0		31.54	236.55	4.00		0.00	
	6.2 6.3	3		32.82 34.10	246.15 255.75	4.00		984.60 0.00	
	6.4	0		35.38	265.35			0.00	
	6.5	0		36.67	275.03			0.00	
Staff-7	7.1	0		38.46	288.45			0.00	
	7.2	0		39.74	298.05			0.00	
	7.3	0		41.03	307.73			0.00	
	7.4 7.5	0		42.31 43.59	317.33 326.93			0.00	
Staff-8	8.1	0		47.95	359.63			0.00	
Dun 0	8.2	0		49.23	369.23			0.00	
	8.3	0		50.51	378.83			0.00	
	8.4	0		51.79	388.43			0.00	
	8.5	1		53.08	398.10	5.00		1,990.50	
Staff-9	9.1 9.2	0		58.21 59.49	436.58 446.18			0.00	
	9.3	0		60.77	455.78			0.00	
	9.4	0		62.05	465.38			0.00	
	9.5	0		63.33	474.98			0.00	
Sub-total						49.00		9,198.30	
2. Consumable				\$ Per Liter	L/km		\$/km		50km/7km/liter=7.14liter
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km
Diesel	For Pick-up	24	Liter	11.80	0.1428	3.4272	1.68504	40.44	50km/7km/liter=7.14liter/50km
Engine Oil	For Excavator	0	Liter	60.00	0.0016	0.4272	0.096	0.00	100km x 252days=25,200km 25,200km/ 10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km
Engine Oil	For Pick-up	24	Liter	60.00	0.0016		0.096	2.30	100km x 252days=25,200km 25,200km/ 10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km
Tires		0	Nos	770.00	0.0014		1.078	0.00	50km x 252days=12,600km 12,600km/ 30,000km x 4nos=1.68nos 1.68nos/ 252days=0.07nos/50km
Sub-total								42.74	
5. Material & Equipment						1			
Squipment Sluice/ Gate Valve	25mm		piece					0.00	Gate Valve
Sluice/ Gate Valve	40mm		piece		350.00			0.00	Gate Valve
Sluice/ Gate Valve	50mm		piece		310.00			0.00	Gate Valve
Sluice/ Gate Valve	80mm		piece						
Sluice/ Gate Valve	100mm		piece		2,423.00			0.00	Sluice Valve
Sluice/ Gate Valve	150mm 200mm		piece						Sluice Valve
Sluice/ Gate Valve Sluice/ Gate Valve	200mm 250mm		piece piece	-	-	-			Sluice Valve Sluice Valve225mm AUD1785
Sluice/ Gate Valve	300mm		piece			-		0.00	DIMEC VALVELLUMIN AUDI / 63
Pipes (Poly)	15mm		coil						Length on 1 coil =300m
Pipes (Poly)	20mm		coil					0.00	Length on 1 coil =300m
Pipes (Poly)	25mm		coil						Length on 1 coil =200m

Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	per day Reamarks
Pipes (Poly)	50mm		coil					0.00	Length on 1 coil =150m
Pipes (PVC)	25mm		piece					0.00	
Pipes (PVC)	50mm		piece					0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece		248.00			0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece					0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece					0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
Other Materials	1				1			0.00	
Sub-total								0.00	
Total								9,241.04	

4. Costing for Routine Activities

Location	Vavaya Ridge			_					per day
Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
1. Personnel	Grades- Steps								
Staff-3	3.1	0	Person	15.38	115.35				
	3.2	0	Person	15.90	119.25				
	3.3	0		16.41	123.08				
	3.4	0		16.92	126.90				
	3.5	0	Person	17.44	130.80				
Staff-4	4.1	0	Person	19.23	144.23			0.00	
	4.2	0	Person	20.00	150.00			0.00	
	4.3	0	Person	20.77	155.78			0.00	
	4.4	0		21.54	161.55			0.00	
	4.5	0		22.31	167.33			0.00	
Staff-5	5.1	0		24.10	180.75			0.00	
	5.2	0		25.13	188.48			0.00	
	5.3	0		26.15	196.13			0.00	
	5.4	0		27.18	203.85			0.00	
	5.5	0		28.21	211.58			0.00	
Staff-6	6.1	3		31.54	236.55	5.00		1,182.75	
	6.2	0		32.82	246.15			0.00	
	6.3	0		34.10	255.75			0.00	
	6.4	0		35.38	265.35			0.00	
	6.5	0		36.67	275.03			0.00	
Staff-7	7.1	0		38.46	288.45			0.00	
	7.2	0		39.74	298.05			0.00	
	7.3	0		41.03	307.73			0.00	
	7.4	0		42.31	317.33			0.00	
	7.5	0		43.59	326.93			0.00	
Staff-8	8.1	0		47.95	359.63			0.00	
	8.2	0		49.23	369.23			0.00	
	8.3	0		50.51	378.83			0.00	
	8.4	0		51.79	388.43			0.00	
	8.5	0		53.08	398.10	10.00		3.981.00	
Staff-9	9.1	0		58.21	436.58	10.00		0.00	
Stati-9	9.2	0		59.49	446.18			0.00	
	9.3	0		60.77	455.78			0.00	
	9.4	0		62.05	465.38			0.00	
	9.4	0		63.33	474.98			0.00	
Sub-total	9.3	U		03.33	474.98	15.00		5,163.75	
2. Consumable				\$ Per Liter	T /I	15.00	S/km	3,103.73	
2. Consumable				5 Per Liter	L/KIII		5/KIII		50km/7km/liter=7.14liter
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km
Diesel	For Pick-up	12	Liter	11.80	0.1428	1.7136	1.68504	20.22	50km/7km/liter=7.14liter/50km
Engine Oil	For Excavator	0	Liter	60.00	0.0016		0.096	0.00	100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km 100km x 252days=25,200km
Engine Oil	For Pick-up	12	Liter	60.00	0.0016		0.096	1.15	25,200km/ 10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km
Tires		0	Nos	770.00	0.0014		1.078	0.00	50km x 252days=12,600km 12,600km/30,000km x 4nos=1.68nos 1.68nos/252days=0.07nos/50km
Sub-total	-							21.37	
3. Material &	1								
Equipment Sluice/ Gate Valve	25mm		als so					0.00	Gate Valve
Sluice/ Gate Valve Sluice/ Gate Valve			piece		250.00				Gate Valve Gate Valve
Sluice/ Gate Valve Sluice/ Gate Valve	40mm 50mm		piece		350.00 310.00				Gate Valve Gate Valve
			piece		310.00				
Sluice/ Gate Valve	80mm		piece		0.400.07				Sluice Valve
Sluice/ Gate Valve	100mm		piece		2,423.00				Sluice Valve
Sluice/ Gate Valve	150mm		piece					0.00	Sluice Valve
Sluice/ Gate Valve	200mm		piece					0.00	Sluice Valve
Sluice/ Gate Valve	250mm		piece					0.00	Sluice Valve225mm AUD1785
Sluice/ Gate Valve	300mm		piece					0.00	
Pipes (Poly)	15mm		coil					0.00	Length on 1 coil =300m
Pipes (Poly)	20mm		coil					0.00	Length on 1 coil =300m
Pipes (Poly)	25mm		coil		_		i -	0.00	Length on 1 coil =200m

Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Pipes (Poly)	50mm		coil					0.00	Length on 1 coil =150m
Pipes (PVC)	25mm		piece					0.00	
Pipes (PVC)	50mm		piece					0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece		248.00			0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece					0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece					0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
Other Materials								0.00	
Sub-total								0.00	
Total								5,185.12	
1AUD=6.534SBD	was applied to th	ne above (ra	te as of 30	September,	2013 of Oa	nda).			

Cost for Mate	erials (Vavaya Ridge)				
DEPARTMENT	NAME: NRW PROJECT TEAM 2	RECEIVE	ED BY: Mafe		
RECOMMEND	ED BY: Benjimen Billy	ISSUED P	3Y: Paul Seda		
REQUISITION	NO: 0236	DATE ISS	SUED: 16/09/201	3	
JOB DESCRIPT	ΓΙΟΝ: Being for Mbokonavera & Vavaya Ri	dge .			
Date	Materials Description	Quantity	Unit Cost	Total (Cost
	100mm Flange Gilbault	2	\$ 580.00	\$ 1	1,160.00
9/17/2013	100mm Gilbault Joint	2	S 413.00	S	826.00
	1 lengths 100mm (4") UPVC Pressure				
9/17/2013	Pipe	1	\$ 248.00	S	248.00
9/17/2013	100mm Sluice Valve	1	\$ 2,423.00	S 2	2,423.00
9/17/2013	40 KG Bag cement	3	\$ 78.00	S	234.00
9/17/2013	100mm (4") x 3/4" Brass Tapping Saddle	1	\$ 250.00	S	250.00
9/17/2013	Hack Saw blade	3	\$ 10.00	S	30.00
9/17/2013	1/2" x 3/4" G.I reduce nipple	1	\$ 12.00	\$	12.00
9/17/2013	15mm Stop Cock	1	\$ 40.00	S	40.00
9/17/2013	ThreadTape	4	\$ 4.00	S	16.00
		Total per F	Requisition =	\$ 5	5,239.00

DEPARTMEN' RECOMMENI REQUISITION JOB DESCRIP	RECEIVED BY: Liston Tora ISSUED BY: Paul Seda DATE ISSUED: 24/09/2013 avaya Ridge .					
Date	Materials Description	Quantity	Un	it Cost	Tot	tal Cost
9/24/2013	100mm Sluice Valve	1	\$	2,423.00	\$	2,423.00
9/24/2013	100mm Gilbault Joint	2	\$	413.00	\$	826.00
9/24/2013	100mm Flange Gilbault	1	\$	580.00	\$	580.00
9/24/2013	50mm (2") Brass Gate Valve	1	\$	310.00	\$	310.00
9/24/2013	50mm x 2" male Poly Adaptor	2	\$	36.00	\$	72.00
9/24/2013	15mm G.I elbow	10	\$	12.00	\$	120.00
		Total per l	Requ	isition =	\$	4,331.00

DEPARTMENT NAME: NRW PROJECT TEAM 2 RECEIVED BY: Derick Hoa						
RECOMMENI	DED BY: Nathaniel Lega	ISSUED BY: Paul Seda				
REQUISITION	NO: 0238	DATE ISSUED: 24/09/2013				
JOB DESCRIP	TION: Being for Valve installation @ Vava	ya Ridge .				
Date	Materials Description	Quantity	Uni	it Cost	Tot	al Cost
9/24/2013	40mm Brass Gate Valve	1	\$	350.00	\$	350.00
9/24/2013	40mm x 1 1/2" poly male adaptor	2	\$	70.00	\$	140.00
9/24/2013	25mm Poly Couping	1	\$	56.00	\$	56.00
9/24/2013	50mm (2") Brass Gate Valve	1	\$	310.00	\$	310.00
9/24/2013	50mm x 2" male Poly Adaptor	2	\$	36.00	\$	72.00
9/24/2013	100mm (4") x 3/4" Brass Tapping Saddle	1	\$	250.00	\$	250.00
9/24/2013	5 metre 20mm Pipe	5	\$	16.00	\$	80.00
9/24/2013	20mm x 3/4" Poly male Adaptor	1	\$	48.00	\$	48.00
9/24/2013	ThreadTape	6	\$	4.00	\$	24.00
9/24/2013	15mm G.I elbow	10	\$	12.00	\$	120.00
		Total per I	Reani	sition =	ŝ	1.450.00

	T NAME: NRW PROJECT TEAM 2 DED BY: Benjimen Billy NO: 0239	ISSUED I	ED BY: David A BY: Paul Seda SUED: 27/09/201		și
JOB DESCRIE Date	TION: Being for Materials to be used @ Materials Description	Vavaya Ridge .	Unit Cost	Tot	tal Cost
9/27/2013	15mm G.I elbow	48	S 12.00	S	576.00
9/27/2013	16mm x 1/2" female poly Adaptor	28	\$ 45.00	\$	1,260.00
9/27/2013	20mm Stop Cock	12	\$ 65.00	\$	780.00
9/27/2013	ThreadTape	20	\$ 4.00	\$	80.00
9/27/2013	20mm Water Meter	12	\$ 394.00	\$	4,728.00
9/27/2013	1/2" G.I Nipple	12	\$ 8.00	\$	96.00
		Total per I	Requisition =	Ś	7,520,00

DEPARTMENT	NAME: NRW PROJECT TEAM 1	RECEIVE	ED BY: David A	kwa'	asi
RECOMMEND	ED BY : Benjimen Billy	ISSUED B	Y: Paul Seda		
REQUISITION	NO: 0240	DATE ISS	SUED: 7/10/2013	;	
JOB DESCRIP	TION: Being for Meter Raising @ the Pilot 13B0199554 -557 (5 pieces) 13B019349-	Project Site (Vavaya Ridge) .		
	352 (5 pieces) 13B019574-578 (5 pieces)				
Meter ID :	13B019459 - 463(5 pieces) 13B019399-402 (5 Pieces)				
	13B019379 - 383 (5 pieces) 13B019359 -				
	363 (5 Pices)				
	13B019559 - 563 (5 pieces)				
Date	Materials Description	Quantity	Unit Cost	To	tal Cost
10/7/2013	40 KG Bag cement	10	\$ 78.00	\$	780.00
10/7/2013	10mm Steel Rods	5	\$ 68.00	\$	340.00
10/7/2013	20mm Water Meter	40	\$ 394.00	\$	15,760.00
10/7/2013	20mm Stop Cock	40	\$ 168.00	\$	6,720.00
		Total per I	Requisition =	\$	23,600.00
		Total per r	xequisition =	٠	23,000.

DEPARTMENT	NAME: NRW PROJECT TEAM 1	RECEIVE	ED BY	: David Al	kwa'	asi
RECOMMEND	ED BY: Eric Unga	ISSUED I	SY: Pa	ul Seda		
REQUISITION	NO: 2453	DATE ISS	SUED	8/10/2013	;	
JOB DESCRIPT	TION: Being for Meter Raising @ the Pil 13B019782	ot Project Site (Vavay	a Ridge) .		
,13B019495,13B019813,13019621,13B01						
Meter ID :	9620,13B019619(6 pieces)					
Date	Materials Description	Quantity	Unit	Cost	Tot	tal Cost
10/8/2013	15mm G.I elbow	24	\$	12.00	\$	288.00
10/8/2013	3/4" x 1/2" G.I reduce Bush	6	\$	18.50	\$	111.00
	3/4" x 1/2" G.I reduce Socket	6	\$	12.50	\$	75.00
10/8/2013	16mm x 1/2" female poly Adaptor	10	\$	45.00	\$	450.00
10/8/2013	20mm Water Meter	6	\$	394.00	\$	2,364.00
10/8/2013	20mm Stop Cock	6	\$	168.00	\$	1,008.00
		Total per I	omnio	ition -	٠.	4,296,00

DEPARTMENT RECOMMEND REQUISITION	RECEIVED BY: Liston Tora ISSUED BY: Paul Seda DATE ISSUED: 9/10/2013					
JOB DESCRIP Date	Materials Description @ the Pil-	Quantity	(Vavay Unit		Tot	al Cost
10/9/2013	3/4" x 1/2" G.I reduce Socket	12	\$	12.50	\$	150.00
10/9/2013	3/4" x 1/2" G.I reduce Bush	12	\$	18.50	\$	222.00
10/9/2013	15mm G.I elbow	48	\$	12.00	\$	576.00
10/9/2013	16mm x 1/2" female poly Adaptor	24	\$	45.00	\$	1,080.00
10/9/2013	3/4" G.I Tee	1	\$	8.00	\$	8.00
		Total per l	Requis	ition =	\$	2,036.00

DEPARTMENT	NAME: NRW PROJECT TEAM 1	RECEIVED BY: Liston Tora				
RECOMMEND	ISSUED BY: Paul Seda					
REQUISITION	NO: 0242	DATE ISS	SUED: 9/10/2013	3		
JOB DESCRIPTION: Being for Additional fittings for Meter Raising @ the Pilot Project Site (Vava				Site (Vavaya Rids		
Date	Materials Description	Quantity Unit Cost Total Cost				
	15mm G.I elbow	28	\$ 12.00	\$ 336.00		
	3/4" x 1/2" G.I reduce Socket	7	\$ 12.50	\$ 87.50		
10/9/2013	3/4" x 1/2" G.I reduce Bush	7	\$ 18.50	\$ 129.50		
10/9/2013	16mm x 1/2" female poly Adaptor	14	\$ 45.00	\$ 630.00		
		Total per I	Requisition =	\$ 1,183.00		

RECOMMENI REQUISITION	PPARTMENT NAME: NRW PROJECT TEAM 2 COMMENDED BY: Benjimen Billy QUISITION NO: 0243 B DESCRIPTION: Being for the Pilot Project Site @ Vavaya Ridge.			rry Webo		enao
Date	Materials Description	Quantity Unit Cost Total Cos				tal Cost
10/10/2013	40mm x 25mm x 40mm Poly Tee	1	\$	66.00	\$	66.00
10/10/2013	25mm x 20mm x 25mm Poly Tee	1	\$	36.00	\$	36.00
10/10/2013	20mm Poly Plain Tee	1	\$	28.00	\$	28.00
10/10/2013	20mm x 16mm Poly Reduce Coupling	2	\$	60.00	\$	120.00
10/10/2013	25mm x 1" Poly female Adaptor	1	\$	48.00	\$	48.00
10/10/2013	25mm G.I Plug	1	\$	16.00	\$	16.00
10/10/2013	25mm G.I Nipple	1	\$	18.00	\$	18.00
10/10/2013	3/4" x 1/2" G.I Reducing Socket	1	\$	12.00	\$	12.00
10/10/2013	1/2" G.I Plug	1	\$	8.00	\$	8.00
10/10/2013	100 metres 25mm Poly Pipe	100	\$	18.00	\$	1,800.00
10/10/2013	ThreadTape	3	\$	4.00	\$	12.00
10/10/2013	30 metres 20mm Poly Pipe	30	\$	16.00	\$	480.00
		Total per I	Requisi	ition =	\$	2,644.00

DEPARTMENT NAME: NRW PROJECT TEAM 2 RECOMMENDED BY: Eric Unga REQUISITION NO: 0244 JOB DESCRIPTION: Being for the Pilot Project Site @ Va		ISSUED I DATE ISS Vavaya Ridge		3	
Date	Materials Description	Quantity	Unit Cost	Tota	l Cost
10/11/2013	25mm Poly Plain Tee	2	\$ 29.00	\$	58.00
10/11/2013	40mm Poly Plain Coupling	2	\$ 40.00	\$	80.00
10/11/2013	5 Metres 40mm Poly Pipe	5	\$ 45.00	\$	225.00
10/11/2013	ThreadTape	3	\$ 4.00	\$	12.00
		Total per I	Requisition =	Ś	375.00

	'NAME: NRW PROJECT TEAM 2 ED BY: Benjimen Billy NO: 0246	RECEIVED BY: Liston Tora ISSUED BY: Jerry Webo DATE ISSUED: 12/10/2013					
JOB DESCRIP	TION: Being for the Pilot Project Site @ Va	vaya Ridge					
Date	Materials Description	Quantity	tity Unit Cost Total Cost				
10/12/2013	25mm Poly Plain Tee	10	\$ 29.00	\$ 290.00			
10/12/2013	25mm x 16mm poly reduce coupling	5	\$ 65.00	\$ 325.00			
	20mm x 16mm Poly Reduce Coupling	10	\$ 60.00	\$ 600.00			
10/12/2013	ThreadTape	10	\$ 4.00	\$ 40.00			
10/12/2013	Hack Saw Blade	2	\$ 21.00	\$ 42.00			
		Total per I	Requisition =	\$ 1,297.00			

DEPARTMENT NAME: NRW PROJECT TEAM 2 RECEIVED B RECOMMENDED BY: Benjimen Billy ISSUED BY; J. REQUISITION NO: 0245 DATE ISSUEJ JOB DESCRIPTION: Being for the Pilot Project Site @ Vavaya Ridge.				y Webo		
Date	Materials Description	Quantity	Unit C	ost	Tot	al Cost
10/12/2013	16mm Poly Coupling	10	\$	45.00	\$	450.00
10/12/2013	20mm x 16mm Poly Reduce Coupling	10	\$	60.00	\$	600.00
10/12/2013	16mm Poly Plain Tee	10	\$	85.00	\$	850.00
10/12/2013	20mm Poly Plain Tee	10	\$	28.00	\$	280.00
10/12/2013	16mm x 1/2" male Poly Adaptor	10	\$	45.00	\$	450.00
10/12/2013	16mm x 1/2" female poly Adaptor	10	\$	45.00	\$	450.00
10/12/2013	20mm Poly Coupling	10	\$	45.00	\$	450.00
10/12/2013	30 metres 20mm Poly Pipe	30	\$	16.00	\$	480.00
10/12/2013	30 metres 25mm Poly Pipe	30	\$	18.00	\$	540.00
10/12/2013	25mm Poly Couping	10	\$	56.00	\$	560.00
		Total per I	Requisiti	on =	\$	5,110.00

DEPARTMEN	F NAME: NRW PROJECT TEAM 2	RECEIVE	D RV	: Derick F	[na	
	DED BY : Benjimen Billy	ISSUED E				
REQUISITION				: 21/10/201	3	
	TION: Materials required for Vavaya Ridge	Project Pilo	t Site		-	
JOD DESCRI	12B0866668 - 672(5 pieces) 12B086768		· Dite			
Meter ID :	772 (5 pieces) 12B086853-857 (5 pieces					
	12B086898 - 902 (5 pieces)					
Date	Materials Description	Quantity	Unit	Cost	To	tal Cost
10/21/2013	ThreadTape (6 Pkts)	60	\$	4.00	\$	240.00
10/21/2013	10mm Steel Rods	2	\$	68.00	\$	136.00
10/21/2013	3/4" G.I Elbow	20	\$	14.00	\$	280.00
10/21/2013	3/4" G.I Socket	10	\$	12.00	\$	120.00
10/21/2013	20mm Water Meter	20	\$	394.00	\$	7,880.00
10/21/2013	16mm Poly Coupling	20	\$	45.00	\$	900.00
10/21/2013	3/4" x 1/2" G.I reduce Bush	20	\$	18.50	\$	370.00
10/21/2013	3/4" x 1/2" G.I Reducing Socket	20	\$	12.00	\$	240.00
10/21/2013	16mm x 1/2" female poly Adaptor	20	\$	45.00	\$	900.00
		Total per I	Requis	ition =	\$	11,066.00

RECOMMEND	DEPARTMENT NAME: NRW PROJECT TEAM 2 RECOMMENDED BY: Benjimen Billy RECOMMENDED BY: Paul Seda						
REQUISITION NO: 2302 DATE ISSUED: 22/10/2013 JOB DESCRIPTION: Materials required for Vavaya Ridge Project Pilot Site .							
Date	Materials Description	Quantity		Tota	al Cost		
10/22/2013	20mm x 3/4" Poly female Adaptor	20	\$ 48.00	\$	960.00		
10/22/2013	10/22/2013 20mm(3/4") G.I Elbow 20 \$ 14.00 \$ 28						
	Total per Requisition = \$ 1,240.00						

DEPARTMENT	NAME: NRW PROJECT TEAM 2	RECEIVE	ED BY	: Harry		
RECOMMEND	ISSUED BY: Paul Seda					
REQUISITION	DATE ISS	SUED	24/10/201	3		
JOB DESCRIPT	TION: Materials required for Vavaya Ridge	Project Pilo	t Site	for Meter R	aisin	g.
Date	Materials Description	Quantity	Unit	Cost	Tot	al Cost
10/24/2013	20mm Water Meter	10	\$	394.00	\$	3,940.00
10/24/2013	20mm Stop Cock	5	\$	168.00	\$	840.00
10/24/2013	16mm x 1/2" female poly Adaptor	20	\$	45.00	\$	900.00
10/24/2013	16mm Poly Coupling	10	\$	45.00	\$	450.00
10/24/2013	ThreadTape	13	\$	4.00	\$	52.00
10/24/2013	25mm x 3/4" female poly Adaptor	10	\$	48.00	\$	480.00
10/24/2013	25mm x 16mm poly reduce coupling	10 \$ 65.00			\$	650.00
	20mm x 3/4" Poly female Adaptor	10	\$	48.00	\$	480.00
		Total per I	Reanis	ition =	Ś	7.792.00

RECOMMENI REQUISITION	DEPARTMENT NAME: NRW PROJECT TEAM 1 RECOMMENDED BY: Eric Unga REQUISITION NO: 2304 JOB DESCRIPTION: Materials required for Repair @ Vavyax Ridge Project Polio Site for Meter Raisin							
JOB DESCRIP			roject Pilot Site f	or Meter Raising				
	12B011101-105(5 Pieces) 12B0111151-							
Meter ID :	155 (5 pieces)							
Date	Materials Description	Quantity	Unit Cost	Total Cost				
10/26/2013	40 KG Bag cement	6	\$ 78.00	\$ 468.00				
10/26/2013	200 metres (1 roll) 16mm poly pipe	200	\$ 14.50	\$ 2,900.00				
10/26/2013	20mm Water Meter	10	\$ 394.00	\$ 3,940.00				
		on		A # 300.00				

RECOMMEND REQUISITION	NAME: NRW PROJECT TEAM 2 ED BY: Eric Unga NO: 0248 TON: Being for the Pilot Project Site(Mete	ISSUED B DATE ISS	D BY: Derick F SY: Paul Seda SUED: 14/10/201 Vavaya Ridge.		
Date	Materials Description	Quantity	Quantity Unit Cost Total Cost		
10/14/2013	3/4" x 1/2" G.I reduce Bush	10	\$ 18.50	\$	185.00
10/14/2013	3/4" x 1/2" G.I Reducing Socket	10	\$ 12.00	\$	120.00
10/14/2013	16mm x 1/2" female poly Adaptor	20	\$ 45.00	\$	900.00
10/14/2013 ThreadTape		20	\$ 4.00	\$	80.00
		Total per I	Requisition =	Ś	1.285.00

RECOMMEND REQUISITION	TON: Being for the Pilot Project Site(Me	RECEIVED BY: Harrison ISSUED BY: Paul Seda DATE ISSUED: 14/10/2013 eter Raising) @ Vavaya Ridge.				
Date	Materials Description	Quantity Unit Cost Total Cost				
10/14/2013	20mm Stop Cock	10	\$ 168.00	\$	1,680.00	
10/14/2013	3/4" x 1/2" G.I reduce Bush	10	\$ 18.50	\$	185.00	
10/14/2013	3/4" x 1/2" G.I Reducing Socket	10	\$ 12.00	\$	120.00	
10/14/2013	ThreadTape	20	\$ 4.00	\$	80.00	
10/14/2013	Hack Saw Blade	2	\$ 21.00	\$	42.00	
	•	Total per I	Requisition =	\$	2,107.00	

DEPARTMENT	NAME: NRW PROJECT TEAM 2	RECEIVED BY: Harrison Malau					
RECOMMENDED BY : Eric Unga		ISSUED E	Y: Pa	ul Seda			
REQUISITION	NO: 0250	DATE ISS	SUED:	16/10/201	3		
JOB DESCRIPTION: Being for Vavaya Ridge Meter Raising Pilot Project Site .							
Date	Materials Description	Quantity	Unit	Cost	Tot	tal Cost	
10/16/2013	20mm Stop Cock	10	\$	168.00	\$	1,680.00	
10/16/2013	3/4" x 1/2" G.I Reducing Socket	10	\$	12.00	\$	120.00	
10/16/2013	16mm x 1/2" female poly Adaptor	20	\$	45.00	\$	900.00	
10/16/2013	ThreadTape (3 Pkts)	30	\$	4.00	\$	120.00	
	Total per I	oamie	ition –	٠	2 820 00		

DEPARTMEN	T NAME: NRW PROJECT TEAM 2	RECEIVED BY: Liston Tora					
RECOMMEN	DED BY: Benjimen Billy	ISSUED I	Y: Paul Seda				
REQUISITIO	N NO: 0249	DATE ISS	SUED: 16/10/20	13			
JOB DESCRI	PTION: Being for Vavaya Ridge Meter R	ng for Vavaya Ridge Meter Raising Pilot Project Site .					
Date	Materials Description	Quantity	Unit Cost	al Cost			
	13 20mm Stop Cock	10	\$ 168.00	\$	1,680.00		
10/16/20	13 3/4" x 1/2" G.I Reducing Socket	10	\$ 12.00	\$	120.00		
10/16/20	13 16mm x 1/2" female poly Adaptor	20	\$ 45.00	\$	900.00		
10/16/20	13 ThreadTape (5 Pkts)	50	\$ 4.00	\$	200.00		
		Total per Requisition = \$ 2,90					

RECOMMEND REQUISITION	NAME: NRW PROJECT TEAM 1 ED BY: Benjimen Billy NO: 2305 TON: Materials required for Repair @ Vav	ISSUED B DATE ISS	D BY: Harrison Y: Paul Seda SUED: 28/10/201 roject Pilot Site fo	3	eter Raising
Date	Materials Description	Quantity Unit Cost Total Co			
10/28/2013	20mm Stop Cock	10	\$ 168.00	\$	1,680.00
10/28/2013	3/4" x 1/2" G.I Reducing Socket	10	\$ 12.00	\$	120.00
10/28/2013	3/4" x 1/2" G.I reduce Bush	10	\$ 18.50	\$	185.00
10/28/2013 16mm Poly Coupling		10	\$ 45.00	\$	450.00
	Total per I	Requisition =	\$	2,435.00	

RECOMMEND REQUISITION JOB DESCRIPT METER I.D:	RECEIVED BY: Derick Hoa ISSUED BY: Paul Seda DATE ISSUED: 29/10/2013 Vavaya Ridge Project Pilot Site for Meter R 7					
Date	Materials Description	Quantity	Unit	Cost	Tot	al Cost
10/29/2013	25mm x 1" Poly female Adaptor	6	\$	48.00	\$	288.00
10/29/2013	25mm (1")G.I Elbow	3	\$	30.00	\$	90.00
10/29/2013	1" Brass Gate valve	3	\$	190.00	\$	570.00
10/29/2013	1" G.I Nipple	3	\$	18.00	\$	54.00
10/29/2013	25mm G.I Socket	4	\$	14.00	\$	56.00
10/29/2013	25mm Water Meter	3	\$	918.68	\$	2,756.04
10/29/2013	1" x 3/4" G.I reduce nipple	1	\$	16.00	\$	16.00
10/29/2013	20mm(3/4") G.I Elbow	1	\$	14.00	\$	14.00
10/29/2013	20mm x 3/4" Poly male Adaptor	1	\$	48.00	\$	48.00
		Total ner I	Reanis	ition =	ŝ	3.892.04

DEPARTMENT				
RECOMMENDED BY: Benjimen Billy REQUISITION NO: 0774 JOB DESCRIPTION: Materials required for Installation @			BY: Paul Seda SUED: 31/10/201	3
Date	Materials Description	Rock Havens . Quantity Unit Cost Total C		
	25mm Air Valve 25mm G.I Socket	1	\$ 45.00 \$ 14.00	\$ 45.00 \$ 14.00
10/31/2013	1" x 3/4" G.I reduce nipple	1 Total per I	\$ 16.00 Requisition =	\$ 16.00 \$ 75.00

DEPARTMENT NAME: NRW PROJECT TEAM 2 RECOMMENDED BY: Ray Andersen REQUISITION NO: 2459 RECOMMENDED BY: Ray Andersen REQUISITION MO: 2459		RECEIVED BY: Janan Capu ISSUED BY: Jerry Webo DATE ISSUED: 28/10/2013					
JOB DESCRIPTION: Materials required for Repair @ Vava Date Materials Description		Ouantity				al Cost	
11/2/2013	30 metres 16mm poly pipe	30	\$	14.50	\$	435.00	
11/2/2013	20mm Poly Plain Tee	1	\$	28.00	\$	28.00	
11/2/2013	20mm x 1/2" Poly male Adaptor	1	\$	40.00	\$	40.00	
11/2/2013	16mm x 1/2" female poly Adaptor	5	\$	45.00	\$	225.00	
11/2/2013	16mm x 1/2" male Poly Adaptor	5	\$	45.00	\$	225.00	
		Total per l	Requis	ition =	\$	953.00	

RECOMMENI REQUISITION	F NAME: NRW PROJECT TEAM 2 DED BY: Benjimen Billy NO: 2307 TION: Last Materials Required for Meter 1	RECEIVED BY: Derick Hoa ISSUED BY: Paul Seda DATE ISSUED: 13/11/2013 using @ Lower Vayaya Ridge (Rock Heaven)					
Date	Materials Description	Quantity		Paul Seda 2D: 13/11/2013 Vavaya Ridge (Rock Heaven; nit Cost			
11/13/2013	25mm (1")G.I Elbow	4	\$	30.00	\$	120.00	
11/13/2013	25mm G.I Socket	1	\$	14.00	\$	14.00	
11/13/2013	25mm G.I Nipple	1	\$	18.00	\$	18.00	
11/13/2013	25mm x 1" Poly female Adaptor	2	\$	48.00	\$	96.00	
11/13/2013	3" UPVC Compression Coupling	1	\$	190.00	\$	190.00	
11/13/2013	1 metre 80mm UPVC Pressure Pipe	1	\$	140.00	\$	140.00	
11/13/2013	8" x 1 1/4" brass Saddle/Tapping band	1	\$	844.00	\$	844.00	
		Total per l	2eanie	rition -	8	1 422 00	

DEPARTMENT	NRW Team1	RECEIVE	D BY: David Al	coasi				
RECOMMEND	ED BY: Chris Meriko	ISSUED B	Y: Paul Seda					
REQUISITION	NO: 2317	DATE ISSUED: 18/11/2013						
JOB DESCRIPT	TION: Materials required for valve installm	tallment/step test @ Vavaya Ridge.						
Date	Materials Description	Quantity	Unit Cost	Total Cost				
11/18/2013	25mm x 1" Poly male Adaptor	2	\$ 50.00	\$ 100.00				
11/18/2013	ThreadTape	1	\$ 4.00	\$ 4.00				
11/18/2013	20mm x 16mm Poly Reduce Coupling	6	\$ 56.00	\$ 336.00				
	•	Total per I	Requisition =	\$ 440.00				

TOTAL MATERIAL	COST FOR VAVAYA RIDGE	\$ 104,816.04

33,599.85	Countermeasure 48,230.55	After Counter After Countermeasure 8,734,73	Routine Activities	Total
ntermeasure 33,599.85	Countermeasure 48,230.55	After Countermeasure	Routine Activities	Total
33,599.85	48,230.55			
		8 734 73		
1,175.49	1,645.68	117.55	78.37	7,417
8,859.24	137,407.27	0.00	0.00	146,268
43,634.58	187,283.50	8,852.27	974.62	245,144.9
230.918.0	08	9,826.	89	
	08	9,826.	89	
	200,010.	200,010.00		606

1. Costing	Delore	Countermeasur

	Mbokona								
				Hourly	Unit Cost		Amount	Amount	per day
Items	Specification	Quantity	Unit	Rate	(SBD)	Total Days	(SBD)	(SBD)	Reamarks
1. Personnel	Grades- Steps			(SBD)					
Staff-3	3.1	0	Person	15.38	115.35				
	3.2	0	Person	15.90	119.25				
	3.3	0		16.41	123.08				
	3.4	0		16.92 17.44	126.90 130.80				
Staff-4	4.1	40	Person	19.23	144.23	116.00		16,730.10	
Dan 4	4.2	20	Person	20.00	150.00	40.00		6,000.00	
	4.3	0	Person	20.77	155.78			0.00	
	4.4	0		21.54	161.55			0.00	
0.00	4.5	0		22.31	167.33	00.00		0.00	
Staff-5	5.1 5.2	10		24.10 25.13	180.75	20.00		3,615.00	
	5.3	0		26.15	188.48 196.13			0.00	
	5.4	0		27.18	203.85			0.00	
	5.5	10		28.21	211.58	20.00		4,231.50	
Staff-6	6.1	2		31.54	236.55	1.00		236.55	
	6.2	0		32.82	246.15			0.00	
	6.3	0		34.10	255.75			0.00	
	6.4	0		35.38 36.67	265.35 275.03	_		0.00	
Staff-7	7.1	0		38.46	288.45			0.00	
	7.2	0		39.74	298.05			0.00	
	7.3	0		41.03	307.73			0.00	
	7.4	0		42.31	317.33			0.00	
	7.5	0		43.59	326.93			0.00	
Staff-8	8.1	0		47.95	359.63			0.00	
	8.2 8.3	0		49.23 50.51	369.23 378.83			0.00	
	8.4	0		51.79	388.43			0.00	
	8.5	2		53.08	398.10	7.00		2,786.70	
Staff-9	9.1	0		58.21	436.58			0.00	
	9.2	0		59.49	446.18			0.00	
	9.3	0		60.77	455.78			0.00	
	9.4	0		62.05 63.33	465.38 474.98			0.00	
Sub-total	3.3	- 0		03.33	474.30	204.00		33,599.85	
2. Consumable				S Per Liter	L/km		\$/km	001000100	
									50km/7km/liter=7.14liter
Diesel	For Excavator	0	Liter	11.80			4.2716	0.00	11liter/hrs (fuel consumption for
Diesel			Later	11.60	0.3620		4.2710	0.00	about 60PS) x 1hr=11liter
	For Dick up	een				04 9490			about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km
Dicaci	For Pick-up	660	Liter	11.80	0.3620	94.2480	1.68504	1,112.13	about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km 50km/7km/liter=7.14liter/50km
Dicari	For Pick-up	660				94.2480			about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km
Engine Oil	For Pick-up	660				94.2480			about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km 50km/7km/liter=7.14liter/50km 100km x 252days=25,200km
			Liter	11.80	0.1428	94.2480	1.68504	1,112.13	about 60PS) x 1hr=11liter 11liter+7.1liter=18.1liter/50km 50km/7km/liter=7.14liter/50km 100km x 252days=25,200km 25,200km/10.000km x 8liter=20.16liter 20.16liter/
			Liter	11.80		94.2480	1.68504	1,112.13	about 60PS) x 1hr=11liter 11liter+7.1liter=18.1liter/50km 50km/7km/liter=7.4liter/50km 100km x 252days=25.200km 25.200km/10.000km x 8liter=20.16liter 20.16liter/ 25.2days=0.08liter/day/50km
			Liter	11.80	0.1428	94.2480	1.68504	1,112.13	about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km 50km/7km/liter=7.1 dliter/50km 100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km 100km x 252days=25,200km
Engine Oil	For Excavator	0	Liter Liter	11.80	0.1428	94.2480	1.68504 0.096	1,112.13	about 60PS) x 1h=11liter 11liter +7.1liter=18.1liter/50km 50km/7km/liter=7.1dliter/50km 100km x 232days=25.200km 25.200km 10.000km x 8liter=20.16liter 25.2days=0.08liter/day/50km 100km x 232days=25.200km 25.200km 10.000km x
			Liter	11.80	0.1428	94.2480	1.68504	1,112.13	about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km 50km/7km/liter=7.1 dliter/50km 100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km 100km x 252days=25,200km
Engine Oil	For Excavator	0	Liter Liter	11.80	0.1428	94.2480	1.68504 0.096	1,112.13	about 60FS) x lhr=11liter 1liter+7.1liter=18 1liter50km 50km/km/ltter=7.1diter50km 100km x 252days=25,200km 25.200km / 10,000km x 8liter=20.16liter 20.16liter 25.2days=0.08liter/day/50km 100km x 252days=25,200km 25,200km / 10,000km x 8liter=20.16liter
Engine Oil	For Excavator	0	Liter Liter	11.80	0.1428	94.2480	1.68504 0.096	1,112.13	about 60PS; x lhr-11liter 1, llittler 1, llittler 1, llittler 50km 50km/Tkmlitter-7, llittler 50km 50km/Tkmlitter-7, llittler 50km 10.000km x 2524ay-25, 200km 25, 200km 10.000km x 8litter-20, llittler 20, 16littler 22, 200km 10.000km 8littler-20, llittler 25, 200km 10.000km 8littler-20, llittler 25, 200km
Engine Oil Engine Oil	For Excavator	660	Liter Liter Liter	60.00	0.1428	94.2480	0.096 0.096	1,112.13 0.00 63.36	about 609'S) x lhr-11liter -7.liller-18.liller50km 50km/7km/liter-7.1dller50km 50km/7km/liter-7.1dller50km 25.200km x 2524ays-25.200km 25.200km 10.000km x 818ter-20.16ller 20.16ller 20.16ller 20.16ller 8122days-20.08lleriday50km 100km x 252days-25.200km 100km x 252days-25.200km 100km x 252days-25.200km 252days-10.8llterday50km 20.16ller 20.16l
Engine Oil	For Excavator	0	Liter Liter	11.80	0.1428 0.0016 0.0016	94.2480	1.68504 0.096	1,112.13	about 609°S; x lhr-11liter 1/Illiter 1/Illiter 18.Illiter/50km 50km/Thmilter-7.14liter/50km 50km/Thmilter-7.14liter/50km 55.200km 10.000km x 58.100km x 55.200km 55.200km 10.000km x 58.100km x 55.200km 55.200km 10.000km x 58.100km x 55.200km 55.200km x 55.200km 55.200km x 55.200km 12.600km x 30.000km x 10.600km x 30.0
Engine Oil Engine Oil	For Excavator	660	Liter Liter Liter	60.00	0.1428	94.2480	0.096 0.096	1,112.13 0.00 63.36	about 609'S) x lhr-11liter - Tilliter-18.1liter50km 50km/7km/liter-7.1dliter50km 50km/7km/liter-7.1dliter50km 25.200km x 2524ay=25.200km 25.200km 10.000km x 818ter-20.16liter 20.16liter 20.16liter 20.16liter 100km x 2524ay=25.200km 100km x 2524ay=25.00km 100km x 2524ay=25.00km 2524ay=0.08literiday/50km 2524ay=0.08literiday/50km 20.16liter 20.00km x 2524ay=0.00km
Engine Oil Engine Oil Tires	For Excavator	660	Liter Liter Liter	60.00	0.1428 0.0016 0.0016	94.2480	0.096 0.096	1,112.13 0.00 63.36	about 609°S; x lhr-11liter 1/Illiter 1/Illiter 18.Illiter/50km 50km/Thmilter-7.14liter/50km 50km/Thmilter-7.14liter/50km 55.200km 10.000km x 58.100km x 55.200km 55.200km 10.000km x 58.100km x 55.200km 55.200km 10.000km x 58.100km x 55.200km 55.200km x 55.200km 55.200km x 55.200km 12.600km x 30.000km x 10.600km x 30.0
Engine Oil Engine Oil	For Excavator	660	Liter Liter Liter	60.00	0.1428 0.0016 0.0016	94.2480	0.096 0.096	1,112.13 0.00 63.36	about 609°S; x lhr-11liter 1/Illiter 1/Illiter 18.Illiter/50km 50km/Thmilter-7.14liter/50km 50km/Thmilter-7.14liter/50km 55.200km 10.000km x 58.100km x 55.200km 55.200km 10.000km x 58.100km x 55.200km 55.200km 10.000km x 58.100km x 55.200km 55.200km x 55.200km 55.200km x 55.200km 12.600km x 30.000km x 10.600km x 30.0
Engine Oil Engine Oil Tires Sub-total 3. Material & Equipment	For Excavator For Pick-up	660	Liter Liter Liter	60.00	0.1428 0.0016 0.0016	94.2480	0.096 0.096	1,112.13 0.00 63.36 0.00	about 6095 x lb=11liter 11liter 1.7 liliter 1.8 liliter 50km 20hm/Ymillter-7.1 liliter 50km 20hm/Ymillter-7.1 liliter 50km 20hm/Ymillter-7.1 liliter 50km 20hm/Ymillter-7.1 liliter 50km 20hm x 252day-2.2 00km 20hm/Ymillter-7.2 00km 252day-2.0 foliter day/50km
Engine Oil Engine Oil Tires Sub-total 3. Material & Equipment Sluice Gate Valve	For Excavator For Pick-up	660	Liter Liter Liter Nos	60.00	0.1428 0.0016 0.0016	94.2480	0.096 0.096	1,112.13 0.00 63.36 0.00 1,175.49	aboot 6097 x 1b=11lier Hiller -7, Hiber 3, Hiller 500, about 100 x 1b=2, about 100 x
Engine Oil Engine Oil Tires Sub-total 3. Material & Equipment Sluice Gate Valve	For Excavator For Pick-up 25mm 40mm	660	Liter Liter Liter Nos	60.00	0.1428 0.0016 0.0014	94.2480	0.096 0.096	1,112.13 0.00 63.36 0.00 1,175.49	about 00F9 x 1h=11liter 11liter 1.71liter 14lliter 15th littler 57lliter 14lliter 50h littler 57lliter 14lliter 50h littler 57lliter 14lliter 50h littler 57lliter 57lli
Engine Oil Engine Oil Tires Sub-total 3. Material & Equipment Sulace Gate Valve Sluice Gate Valve Sluice Gate Valve	For Pick-up For Pick-up 25mm 40mm 50mm	660	Liter Liter Liter Nos	60.00	0.0016 0.0016 0.0014 350.00 310.00	94.2480	0.096 0.096	1,112.13 0.00 63.36 0.00 1,175.49 0.00 0.00	about 6097 x 1b=11liter Hiller 2.7 Hilber 3.1 Hirer 50hn 16hm 2/miller 2.7 Hirer 3.0 Min 2.5 200km 2.1 Miller 50hn 18hm 2.5 200km 2.5 Miller 50hn 18hm 2.5 200km 2.5 Miller 50hn 18hm 2.5 200km 2.5 Miller 50hn 18hm 2.5 20km 2.5 Miller 50hn 18hm 2.5 Miller 50hn 18
Engine Oil Engine Oil Tires Sub-total 3. Material & Equipment Sluice Gate Valve Sluice Gate Valve Sluice Gate Valve Sluice Gate Valve	For Pick-up For Pick-up 25mm 40mm 50mm	0 660	Liter Liter Nos piece piece piece piece	60.00	0.1428 0.0016 0.0014 0.0014 350.00 310.00 1,229.00	94.2480	0.096 0.096	1,112.13 0.00 63.36 0.00 1,175.49 0.00 0.00 310.00 2,458.00	about 00P3 x 1b=11liter 11liter 1.1liter 1.1liter 1.5tliter 1.5tli
Engine Oil Engine Oil Tires Sub-total 3. Material & Equipment Stuice Gate Valve	For Pick-up For Pick-up 25mm 40mm 80mm 80mm	660	Liter Liter Nos piece piece piece piece piece	60.00	0.0016 0.0016 0.0014 350.00 310.00 11,229.00 2,397.12	94.2480	0.096 0.096	1,112.13 0.00 63.36 0.00 1,175.49 0.00 310.00 2,458.00 2,397.12	about 60PS x 1h=11liter HIHE et 7.1liter 1 HIHE et 81Hm=50km 150km 72miller-7.1liter=50km 150km 72miller-7.1liter=50km 150km 72miller-7.1liter=50km 150km 72miller-7.2km 150km 72miller-7.2km 150km 72miller-7.2km 150km 72miller-7.2km 150km 72miller-7.2km 152km 72
Engine Oil Engine Oil Tires Sub-total 3. Material & Equipment Suice Gate Valve Sluice Gate Valve	For Excavator For Pick-up 25mm 40mm 50mm 80mm 100mm	0 660	Liter Liter Nos piece piece piece piece piece piece piece piece piece	60.00	0.1428 0.0016 0.0014 0.0014 350.00 310.00 1,229.00	94.2480	0.096 0.096	1,112.13 0.00 63.36 0.00 1,175.49 0.00 0.00 2,458.00 2,2458.00 0.00	about 60 PS x In-1 Illier Hiller -7 Hiller -1
Engine Oil Engine Oil Tires Sub-total 3. Material & Equipment Suice Gate Valve	For Excavator For Pick-up 25mm 40mm 50mm 80mm 100mm 1200mm	0 660	Liter Liter Nos piece piece piece piece piece	60.00	0.0016 0.0016 0.0014 350.00 310.00 11,229.00 2,397.12	94.2480	0.096 0.096	1,112.13 0.00 63.36 0.00 1,175.49 0.00 0.00 2,458.00 0.00 0.00 0.00 0.00	about 6097 x 1h=11liter Hiller 2.7 Hilber 3.1 Hirer 50hm Hillmer 7.1 Hilber 3.2 Hirer 50hm Hillmer 7.1 Hilber 3.2 Hirer 50hm Hilber 7.2 Hilber 60hm Hilber 7.2 Hilber 60hm Hilber 7.2 Hilber 60hm Hilber 7.2 Hilber 7
Engine Oil Engine Oil Tires Sub-total 3. Material & Equipment Sluice Gate Valve	For Excavator For Pick-up 25mm 40mm 80mm 100mm 1150mm 200mm 220mm	0 660	Liter Liter Nos piece	60.00	0.0016 0.0016 0.0014 350.00 310.00 11,229.00 2,397.12	94.2480	0.096 0.096	1,112.13 0.00 63.36 0.00 1,175.49 0.00 0.00 2,397.12 0.00 0.00 0.00 0.00 0.00	about 6097 x 1h=11liter 11liter 1.7 lilliter 18 lilliter 50 lilliter 57 lilliter 18 lilliter 50 lilliter 57 lilliter 18 lilliter 50 lilliter 57 lilliter 50 lilliter 57 lilliter 50 lillit
Engine Oil Engine Oil Tires Sub-total 3. Material & Engineeral Engineeral & Engineeral Sub-total Sub-total 5. Material & Engineeral Sub-total S	For Excavator For Pick-up 25mm 40mm 50mm 80mm 1100mm 1200mm 2200mm 3300mm	0 660	Liter Liter Liter Nos piece	60.00	0.0016 0.0016 0.0014 350.00 310.00 11,229.00 2,397.12	94.2480	0.096 0.096	1,112.13 0.00 63.36 0.00 1,175.49 0.00 0.00 2,458.00 2,397.12 0.00 0.00 0.00 0.00	about 6097 S. 1h=11liter HIHE et 7. HIHE et 18. HIHE 950m 36hm/Ymillier 7. HIHE et 500m 36hm/Ymillier 7. HIHE 950m 36
Engine Oil Engine Oil Tires Sub-total 3. Material & Equipmen Sulicic Gate Valve Sluice Gate Valve	For Pick-up For Pick-up 25mm 40mm 50mm 100mm 120mm 220mm 220mm 300mm 300mm	0 660	Liter Liter Nos piece piece piece piece piece piece piece piece piece coil	60.00	0.0016 0.0016 0.0014 350.00 310.00 11,229.00 2,397.12	94.2480	0.096 0.096	1,112.13 0.00 63.36 0.00 1,175.49 0.00 310.00 2,458.02 0.397.02 0.00 0.00 0.00 0.00 0.00	aboot 6097 s. 1h=11liter Hiller 4.7 Hilber 3.1 Hirer 3.0 hiller 3.
Engine Oil Engine Oil Tires Sub-total 3. Material & Engineeral Engineeral & Engineeral Sub-total Sub-total 5. Material & Engineeral Sub-total S	For Excavator For Pick-up 25mm 40mm 50mm 80mm 1100mm 1200mm 2200mm 3300mm	0 660	Liter Liter Liter Nos piece	60.00	0.0016 0.0016 0.0014 350.00 310.00 11,229.00 2,397.12	94.2480	0.096 0.096	1,112.13 0.00 63.36 0.00 1,175.49 0.00 0.00 2,458.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	aboot 6097 x 1h=11liter 11liter 2.7 liliter 3.1 liliter 3.7 lilite

									per day
Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Pipes (PVC)	25mm		piece					0.00	
Pipes (PVC)	50mm	1	piece		154.00			154.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece		248.00			0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece					0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece					0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
Other Materials								3,540.12	
Sub-total								8,859.24	
Total								43,634.58	
1AUD=6.534SBD v	vas applied to th	e above (rate	e as of 30 Se	ptember, 20	13 of Oanda).			

2. Countermeasure

Mbokona

Location	Mbokona								,
Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	per day Reamarks
1. Personnel	Grades-Steps								
Staff-3	3.1	0	Person	15.38 15.90	115.35 119.25				
	3.2	0	Person Person	15.90	123.08				
	3.4	0	Person	16.92	125.08				
	3.5	0	Person	17.44	130.80				
Staff-4	4.1	16	Person	19.23	144.23	152.00		21,922.20	
	4.2	8	Person	20.00	150.00	76.00		11,400.00	
	4.3	0	Person	20.77	155.78			0.00	
	4.4	0		21.54	161.55			0.00	
	4.5	0		22.31	167.33			0.00	
Staff-5	5.1	3		24.10	180.75	38.00		6,868.50	
	5.2	0		25.13	188.48			0.00	
	5.3	0		26.15	196.13			0.00	
	5.4	0		27.18	203.85	40.00		0.00	
Staff-6	6.1	4		28.21 31.54	211.58	38.00		8,039.85	
Stall-6	6.2	0		31.54	236.55			0.00	
	6.3	0		34.10	255.75			0.00	
	6.4	0		35.38	265.35			0.00	
	6.5	0		35.38	275.03			0.00	
Staff-7	7.1	0		38.46	288.45			0.00	
	7.2	0		39.74	298.05			0.00	
	7.3	0		41.03	307.73			0.00	
	7.4	0		42.31	317.33			0.00	
	7.5	0		43.59	326.93			0.00	
Staff-8	8.1	0		47.95	359.63			0.00	
	8.2	0		49.23	369.23			0.00	
	8.3	0		50.51	378.83			0.00	
	8.4	0		51.79	388.43			0.00	
	8.5	0		53.08	398.10			0.00	
Staff-9	9.1	0		58.21	436.58			0.00	
	9.2	0		59.49	446.18			0.00	
	9.3	0		60.77	455.78			0.00	
	9.4	0		62.05	465.38 474.98			0.00	
Sub-total	9.3	- 0		03.33	474.98	304.00		48,230.55	
2. Consumable				\$ Per Liter	I A/m	304.00	\$/km	40,230,33	
z. c.onominiosc				p r cr micr	Lenin		J. KIII		50km/7km/liter=7.14liter
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km
Diesel	For Pick-up	924	Liter	11.80	0.1428	131.9472	1.68504	1,556.98	50km/7km/liter=7.14liter/50km
Engine Oil	For Excavator	0	Liter	60.00	0.0016		0.096		100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km
Engine Oil	For Pick-up	924	Liter	60.00	0.0016		0.096	88.70	100km x 252days=25,200km 25,200km/ 10,000km x 8liter=20.16liter 20.16liter/ 20.16liter/ 50km x 252days=0.08liter/day/50km 50km x 252days=12,600km
Tires		0	Nos	770.00	0.0014		1.078	0.00	50km x 252days=12,600km 12,600km/ 30,000km x 4nos=1.68nos 1.68nos/ 252days=0.07nos/50km
Sub-total	1							1.645.68	
3. Material &								,	
Equipment									
Sluice/Gate Valve			piece						Gate Valve
Sluice/Gate Valve			piece		350.00				Gate Valve
Sluice/ Gate Valve			piece		310.00				Gate Valve
Sluice/ Gate Valve			piece						Sluice Valve
Sluice/ Gate Valve			piece		2,423.00			0.00	
Sluice/Gate Valve	150mm		piece	-	-			0.00	Sluice Valve
Sluice/Gate Valve			piece					0.00	Sluice Valve
Sluice/ Gate Valve			piece	-					Sluice Valve225mm AUD1785
Sluice/ Gate Valve	300mm	200	piece	-	14.50			0.00	V 1 1 200
Pipes (Poly)	15mm	200 100	coil	-	14.50	_			Length on 1 coil =300m
Pipes (Poly) Pipes (Poly)	20mm 25mm	100	coil	-	10.00	_			Length on 1 coil =300m Length on 1 coil =200m
Pipes (Poly)	50mm		coil	-					Length on 1 coil =200m
Pipes (PVC)	25mm		piece	-				0.00	

Per day

Amount (SBD)

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0 Hourly
Rate (SBD)
Unit Cost (SBD)
Total Days
Amount (SBD) hems Specification

Pipes (PVC) 50mm

Pipes (PVC) 80mm

Pipes (PVC) 100mm

Pipes (PVC) 100mm

Pipes (PVC) 150mm

Pipes (PVC) 200mm

Pipes (PVC) 300mm

Water Meter 10mm

Water Meter 10mm

Water Meter 25mm

Water Meter 25mm

Water Meter 25mm

Water Meter 35mm

Water Meter 25mm

Water Meter 25mm

Water Meter 25mm

Water Meter 35mm

Other Materials

Other Materials

Water Meter 35mm

Other Materials

Other Materials

Other Materials

Water Meter 35mm

Other Materials

Other Ma 248.00

3. After Countermeasure

Location	Mbokona								per day
				Hourly					pei day
Items	Specification	Quantity	Unit	Rate	Unit Cost	Total Days	Amount	Amount	Reamarks
		****		(SBD)	(SBD)		(SBD)	(SBD)	
1. Personnel	Grades- Steps								
Staff-3	3.1	0	Person	15.38	115.35				
	3.2	0		15.90	119.25				
	3.3	0	Person	16.41	123.08				
	3.4	0	Person	16.92	126.90				
	3.5	0	Person	17.44	130.80				
Staff-4	4.1	12	Person	19.23	144.23	20.00		2,884.50	
	4.2	6	Person	20.00	150.00	10.00		1,500.00	
	4.3	0	Person	20.77	155.78			0.00	
	4.4	0		21.54	161.55			0.00	
	4.5	0		22.31	167.33			0.00	
Staff-5	5.1	3		24.10	180.75	5.00		903.75	
	5.2 5.3	0		25.13 26.15	188.48 196.13			0.00	
	5.4	0		27.18	203.85			0.00	
	5.5	3		28.21	211.58	5.00		1,057.88	
Staff-6	6.1	0		31.54	236.55	5.00		0.00	
Stall*0	6.2	0		32.82	246.15			0.00	
	6.3	0		34.10	255.75			0.00	
	6.4	0		35,38	265.35			0.00	
	6.5	0		36.67	275.03			0.00	
Staff-7	7.1	0		38.46	288.45			0.00	
	7.2	0		39.74	298.05			0.00	
	7.3	0		41.03	307.73			0.00	
	7.4	0		42.31	317.33			0.00	
	7.5	0		43.59	326.93			0.00	
Staff-8	8.1	0		47.95	359.63			0.00	
	8.2	0		49.23	369.23			0.00	
	8.3	0		50.51	378.83			0.00	
	8.4	0		51.79	388.43			0.00	
	8.5	2		53.08	398.10	6.00		2,388.60	
Staff-9	9.1	0		58.21	436.58			0.00	
	9.2	0		59.49	446.18			0.00	
	9.3	0		60.77	455.78			0.00	
	9.4	0		62.05	465.38			0.00	
	9.5	0		63.33	474.98			0.00	
Sub-total						46.00		8,734.73	
2. Consumable				S Per Liter	L/km		\$/km		
									50km/7km/liter=7.14liter
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	11liter/hrs (fuel consumption for
									about 60PS) x 1hr=11liter
ni i	71 Pt 1		7.0	44.00	0.4.400	0.4040	4.00504	444.04	11liter +7.1liter=18.1liter/50km 50km/7km/liter=7.14liter/50km
Diesel	For Pick-up	66	Liter	11.80	0.1428	9.4248	1.68504	111.21	50km/7km/liter=7.14liter/50km 100km x 252davs=25.200km
									25,200km/ 10,000km x
T 1 00	n n .		* * *	00.00			0.000	0.00	
Engine Oil	For Excavator	0	Liter	60.00			0.096	0.00	8liter=20.16liter
					0.0016				20.16liter/
					0.0016				252days=0.08liter/day/50km 100km x 252days=25,200km
									25,200km/ 10,000km x
Engine Oil	For Pick-up	66	Liter	60.00			0.096	0.04	8liter=20.16liter
Engine Oil	For Pick-up	- 66	Liter	60.00			0.096	0.34	20 16liter/
					0.0016				252davs=0.08liter/dav/50km
					0.0010				50km x 252days=12,600km
									12.600km/ 30.000km x
Tires		0	Nos	770.00			1.078	0.00	4nos=1.68nos
					0.0014				1.68nos/ 252days=0.07nos/50km
									Docum yo-o.o. moa Jokin
Sub-total								117.55	
3. Material &									
Equipment									
Sluice/ Gate Valve	25mm		piece						Gate Valve
Sluice/ Gate Valve	40mm		piece		350.00			0.00	Gate Valve
Sluice/ Gate Valve	50mm		piece		310.00			0.00	Gate Valve
Sluice/ Gate Valve	80mm		piece					0.00	Sluice Valve
Sluice/ Gate Valve	100mm		piece		2,423.00				Sluice Valve
Sluice/ Gate Valve	150mm		piece						Sluice Valve
Sluice/ Gate Valve	200mm		piece						Sluice Valve
Sluice/ Gate Valve	250mm		piece						Sluice Valve225mm AUD1785
Sluice/ Gate Valve	300mm		piece					0.00	
Pipes (Poly)	15mm		coil					0.00	Length on 1 coil =300m
Pipes (Poly)	20mm		coil						Length on 1 coil =300m
Pipes (Poly)	25mm 50mm		coil					0.00	Length on 1 coil =200m
Pipes (Poly)								0.00	Length on 1 coil =150m
Pipes (PVC)	25mm		piece					υ.00	

									per uay
Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Pipes (PVC)	50mm		piece					0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece		248.00			0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece					0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece					0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
Other Materials									
Sub-total								0.00	
Total								8,852.27	
1 AUD_C E24CDD v									

4. Costing for Routine Activities

bokona

Location	Mbokona								per
Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
. Personnel	Grades- Steps			(SDD)					
Staff-3	3.1	0	Person	15.38	115.35				
	3.2	0	Person	15.90	119.25				
	3.3	0	Person	16.41	123.08				
	3.4	0	Person	16.92	126.90				
	3.5	0	Person	17.44	130.80				
Staff-4	4.1	0	Person	19.23	144.23			0.00	
	4.2	0	Person	20.00	150.00			0.00	
	4.3	0	Person	20.77	155.78			0.00	
	4.4	0		21.54	161.55			0.00	
	4.5	0		22.31	167.33			0.00	
Staff-5	5.1	0		24.10	180.75			0.00	
	5.2	0		25.13	188.48			0.00	
	5.3	0		26.15	196.13			0.00	
	5.4	0		27.18	203.85			0.00	
	5.5	1		28.21	211.58	2.00		423.15	
Staff-6	6.1	2		31.54	236.55	2.00		473.10	
	6.2	0		32.82	246.15			0.00	
	6.3	0		34.10	255.75			0.00	
	6.4	0		35.38	265.35			0.00	
	6.5	0		36.67	275.03			0.00	
Staff-7	7.1	0		38.46	288.45			0.00	
	7.2	0		39.74	298.05			0.00	
	7.3	0		41.03	307.73			0.00	
	7.4	0		42.31	317.33			0.00	
	7.5	0		43.59	326.93			0.00	
Staff-8	8.1	0		47.95	359.63			0.00	
	8.2	0		49.23	369.23			0.00	
	8.3	0		50.51	378.83			0.00	
	8.4	0		51.79	388.43			0.00	
	8.5	0		53.08	398.10			0.00	
Staff-9	9.1	0		58.21	436.58			0.00	
	9.2	0		59.49	446.18			0.00	
	9.3	0		60.77	455.78			0.00	
	9.4	0		62.05	465.38			0.00	
	9.5	0		63.33	474.98			0.00	
Sub-total						4.00		896.25	
. Consumable				S Per Liter	L/km		\$/km		
									50km/7km/liter=7.14liter
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	11liter/hrs (fuel consumption for
Diesei	FOR EXCAVATOR		Liter	11.60	0.3620		4.2710	0.00	about 60PS) x 1hr=11liter
		1							11liter +7.1liter=18.1liter/50km
Diesel	For Pick-up	44	Liter	11.80	0.1428	6.2832	1.68504	74.14	50km/7km/liter=7.14liter/50km
		l .			0.000	0.2002		/4.14	100km x 252days=25,200km
Engine Oil	1					0.2002			25,200km/ 10,000km x
Engine Oil	For Excavator	0	Liter	60.00		0.2002	0.096		
Engine On	For Excavator	0	Liter			0.2002	0.096		25,200km/ 10,000km x 8liter=20.16liter
Lingine On	For Excavator	0	Liter			0.2002	0.096		25,200km/ 10,000km x 8liter=20.16liter 20.16liter/
Engine On	For Excavator	0	Liter		0.0016	0.2002	0.096		25,200km/ 10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km
Engine On	For Excavator	0	Liter			0.2002	0.096		25,200km/ 10,000km x 8liter=20.16liter 20.16liter/
				60.00		0.2002		0.00	25,200km/ 10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km 100km x 252days=25,200km 25,200km/ 10,000km x
Engine Oil	For Excavator	44	Liter			0.2002	0.096	0.00	25,200km/ 10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km 100km x 252days=25,200km 25,200km/ 10,000km x 8liter=20.16liter
				60.00	0.0016	0.2002		0.00	25,200km/ 10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km 100km x 252days=25,200km/ 25,200km/ 10,000km x 8liter=20.16liter 20.16liter/
				60.00		0.2002		0.00	25,200km/ 10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km 100km x 252days=25,200km 25,200km/ 10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km
Engine Oil		44	Liter	60.00	0.0016	0.2002	0.096	0.00 4.22	25.200km² 10.000km x 8liter=20.16liter 20.16liter 25.2days=0.08liter/day/50km 100km x 252days=25.200km 25.200km² 10.000km x 8liter=20.16liter 20.16liter 25.2days=0.08liter/day/50km 50km x 252days=12.600km
				60.00	0.0016	0.2002		0.00	25.200km/10.000km x 8liter=20.16liter 25.2days=0.08liter/day/50km 100km x 252days=25.200km 25.200km/10.000km x 8liter=20.16liter 25.2days=0.08liter/day/50km 50km x 252days=12.600km 12.600km/30.000km x
Engine Oil		44	Liter	60.00	0.0016	0.2002	0.096	0.00 4.22	25.200km 10.000km x 8liter=20.16liter 20.16liter) 25.2day=0.08literiday/50km 100km x 252days=25.200km 25.200km 10.000km x 8liter=20.16literiday/50km 50km x 252days=12.600km 12.600km 30.000km x 4mos=1.68mo
Engine Oil		44	Liter	60.00	0.0016	0.000	0.096	0.00 4.22	25.200km 10.000km x 8liter=20.16liter 20.16liter) 25.2day=0.08literiday/50km 100km x 252days=25.200km 25.200km 10.000km x 8liter=20.16literiday/50km 50km x 252days=12.600km 12.600km 30.000km x 4mos=1.68mo
Engine Oil Tires		44	Liter	60.00	0.0016	0.000	0.096	0.00 4.22 0.00	25.200km 10.000km x 8liter=20.16liter 20.16liter) 25.2day=0.08literiday/50km 100km x 252days=25.200km 25.200km 10.000km x 8liter=20.16literiday/50km 50km x 252days=12.600km 12.600km 30.000km x 4mos=1.68mo
Engine Oil Tires Sub-total		44	Liter	60.00	0.0016		0.096	0.00 4.22	25.200km 10.000km x 8liter=20.16liter 20.16liter) 25.2day=0.08literiday/50km 100km x 252days=25.200km 25.200km 10.000km x 8liter=20.16literiday/50km 50km x 252days=12.600km 12.600km 30.000km x 4mos=1.68mo
Engine Oil Tires Sub-total 3. Material &		44	Liter	60.00	0.0016		0.096	0.00 4.22 0.00	25.200km 10.000km x 8liter=20.16liter 20.16liter) 25.2day=0.08literiday/50km 100km x 252days=25.200km 25.200km 10.000km x 8liter=20.16literiday/50km 50km x 252days=12.600km 12.600km 30.000km x 4mos=1.68mo
Engine Oil Tires Sub-total i. Material & Squipment	For Pick-up	44	Liter Nos	60.00	0.0016		0.096	0.00 4.22 0.00	25.200km v 10.000km x Silter-20.16liter/ 20.16liter/ 252days-0.08liter/day-50km 100km x 252days-25,200km v 252days-0.08liter/20.25liter/ 252days-0.08liter/20.16liter/ 252days-0.08liter/day-50km 252days-0.08liter/day-50km 112.000km x 252days-0.08liter/day-50km 1.68mm/ 252days-0.07nm/50km
Engine Oil Tires Sub-total Material & Gudpment SulforG Gate Valve	For Pick-up	44	Liter Nos	60.00	0.0016 0.0016		0.096	0.00 4.22 0.00 78.37	25.200km v 10.000km x Silier-20.16liter/ 20.16liter/ 2
Engine Oil Tires Sub-total i. Material & Gaufgment Sluice/ Gate Valve	For Pick-up 25mm 40mm	44	Liter Nos piece piece	60.00	0.0016 0.0014		0.096	0.00 4.22 0.00 78.37	25. 200 km x 10.00 km x 818te-20.161ter 20.161ter 20.161
Engine Oil Tires Sub-total . Material & guipment Sluice/ Gate Valve Sluice/ Gate Valve	For Pick-up 25mm 40mm 50mm	44	Liter Nos piece piece piece	60.00	0.0016 0.0016		0.096	0.00 4.22 0.00 78.37 0.00 0.00	25.200km v 10.000km x Silicre-20.16lited* 20.16lited* 20.16lited* 25.26days-0.08lited*shy50km 100km x 252days-25.200km v Silicre-20.16lited* 25.200km v 10.00km x Silicre-20.16lited* 25.26days-0.08lited*shy50km 150km x 252days-12.800km x 4nos-1.88nos 1.88nos* 1.88nos* 1.88nos* 25.2days-0.07nos*50km Gate Valve Gate Valve Gate Valve
Engine Oil Tires Sub-total Material & Gaughment Sluice' Gate Valve Sluice' Gate Valve Sluice' Gate Valve	For Pick-up 25mm 40mm 50mm 80mm	44	Liter Nos piece piece piece piece	60.00	0.0016 0.0014 0.0014 350.00 310.00		0.096	0.00 4.22 0.00 78.37 0.00 0.00 0.00	25.200km v 10.000km x 81kine-20.161ker 2 20.161ker 2 2
Engine Oil Tires Sub-total A Material & Sudicerial Sulucic Gate Valve	For Pick-up 25mm 40mm 50mm 80mm 100mm	44	Liter Nos piece piece piece piece piece	60.00	0.0016 0.0014		0.096	0.00 4.22 0.00 78.37 0.00 0.00 0.00 0.00	25. 200 km x 10. 000 km x 818 ter-20. 161
Engine Oil Sub-total Sub-total Subcrotal Subcrot Gate Valve Sulucio: Gate Valve	For Pick-up 25mm 40mm 50mm 100mm 150mm	44	Nos piece piece piece piece piece	60.00	0.0016 0.0014 0.0014 350.00 310.00		0.096	0.00 4.22 0.00 78.37 0.00 0.00 0.00 0.00 0.00	25.200km v 10.000km x Biller-20.16liter 20.16liter 20.1
Engine Oil Tires Sub-total Material & Gudinment Sluice/ Gate Valve	For Pick-up 25mm 40mm 50mm 100mm 150mm	44	Nos piece piece piece piece piece piece piece	60.00	0.0016 0.0014 0.0014 350.00 310.00		0.096	0.00 4.22 0.00 78.37 0.00 0.00 0.00 0.00 0.00 0.00	25. 200 km x 10.00 km x 818te-20.161ter 20.161ter 20.161
Engine Oil Tires Sub-total Material & Continent Suluce Gate Valve Sluice/ Gate Valve	25mm 40mm 80mm 100mm 220mm 220mm	44	Liter Nos piece piece piece piece piece piece piece piece	60.00	0.0016 0.0014 0.0014 350.00 310.00		0.096	0.00 4.22 0.00 78.37 0.00 0.00 0.00 0.00 0.00 0.00 0.00	25.200km v 10.000km x Biller-20.16liter 20.16liter 20.1
Engine Oil Tires Sub-total 3. Material & Supplement Sluice/ Gate Valve	For Pick-up 25mm 40mm 50mm 100mm 1200mm 2250mm 3300mm	44	Nos piece	60.00	0.0016 0.0014 0.0014 350.00 310.00		0.096	0.00 4.22 0.00 78.37 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0	25. 200 km v 10. 000 km x Biller-20. 16 littler 20. 16 littler 21. 20 littler 22. 20 littler 23. 200 km v 25. 200 km v 26. 200 km v 25. 200 km v 25
Engine Oil Tires Sub-total . Material & Guipment Shuice Gate Valve	25mm 40mm 50mm 100ms 120ms 220ms 220ms 300ms 15ms	44	Liter Nos piece piece piece piece piece piece piece piece coil	60.00	0.0016 0.0014 0.0014 350.00 310.00		0.096	0.00 4.22 0.00 78.37 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0	25. 2006 km x 8 Bitter-20. 1611 km r 20. 161
Engine Oil Sub-total Sub-	25mm 25mm 30mm 80mm 100mm 220mm 310mm 220mm 15mm 220mm	44	Nos piece piece piece piece piece piece piece piece coil coil	60.00	0.0016 0.0014 0.0014 350.00 310.00		0.096	0.00 4.22 0.00 78.37 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0	25. 200 km v 10. 000 km x 8 lister-20. 16 litter 20. 16 li
Engine Oil Tires Sub-total 3. Material & Enginement Sluice Cate Valve Sluice Cate	25mm 40mm 50mm 100mm 200mm 220mm 250mm 250mm 250mm 250mm 250mm 250mm 250mm	44	Nos piece piece piece piece piece piece piece piece coil coil	60.00	0.0016 0.0014 0.0014 350.00 310.00		0.096	0.00 4.22 0.00 78.37 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0	25. 200 km v 10. 000 km x Bitler-20. 16 littler 20. 16 littler 21. 20 km v 10. 000 km x Bitler-20. 16 littler 21. 20 km v 10. 000 km x Bitler-20. 16 littler 20. 16 littler 21. 20 km v 10. 000 km x Bitler-20. 16 littler 21. 20 km v 10. 000 km x Bitler-20. 16 littler 21. 20 km v 10. 000 km x Bitler-20. 16 littler 21. 20 km v 10. 000 km x Bitler-20. 16 littler 22 km v 10. 000 km x Bitler-20. 16 littler 24 km v 10. 000 km x Bitler-20. 16 littler 25 km v 10. 000 km x Bitler-20. 16 littler 26 km v 10. 000 km x Bitler-20. 16 littler 26 km v 10. 000 km x Bitler-20. 16 littler 27 km v 10. 000 km x Bitler-20. 16 littler 28 km v 10. 000 km
Engine Oil Tires Sub-total 3. Material & Equipment Slutco Cate Valve Slutco Gate Valve Pipes (Poly)	25mm 25mm 30mm 80mm 100mm 220mm 310mm 220mm 15mm 220mm	44	Nos piece piece piece piece piece piece piece piece coil coil	60.00	0.0016 0.0014 0.0014 350.00 310.00		0.096	0.00 4.22 0.00 78.37 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0	25. 200 km v 10. 000 km x 8 lister-20. 16 litter 20. 16 li

Cost for Materials (Mbokona)
DEPARTMENT NAME: NRW PROJE
DECOMMENDED BY . E.:. U

	DEPARTMENT NAME: NRW PROJECT TEAM 1 RECEIVED BY: J.Teno				
RECOMMENI	DED BY: Eric Unga	ISSUED BY: Jerry Webo			
REQUISITION	NO: 0126	DATE ISSUED: 12/10/2013			
JOB DESCRIP	TION: Being for Mbokona Pilot Project Site				
Date	Materials Description	Quantity	Unit Cost	Total Cost	
10/12/2013	80mm (3") Brass Gate Valve	1	\$ 1,229.00	\$ 1,229.00	
	8" x 1 1/4" brass Saddle/Tapping band	1	\$ 844.00	\$ 844.00	
	15mm Stop Cock	1	\$ 95.00	\$ 95.00	
10/12/2013	1/2" G.I Nipple	1	\$ 8.00	\$ 8.00	
10/12/2013	80mm (3") Sluice Valve	1	\$ 2,397.12	\$ 2,397.12	
10/12/2013	80mm (3") Flange Adaptor	2	\$ 636.73	\$ 1,273.46	
10/12/2013	16mm Poly Tee	1	\$ 85.00	\$ 85.00	
10/12/2013	3" Gasket & boits	2	\$ 134.83	\$ 269.66	
		Total per I	Requisition =	\$ 6,201.24	

DEPARTMENT NAME: NRW PROJECT TEAM 2 RECOMMENDED BY: Benjimen Billy REQUISITION NO: 2352 JOB DESCRIPTION: Being for Mbokona Pilot Project Site		RECEIVE ISSUED E DATE ISS			
Date	Materials Description	Quantity	Unit Cost	Total Cost	
10/14/2013	3" UPVC Compression Coupling	1	\$ 180.00	\$	180.00
		Total per I	Requisition =	\$	180.00

RECOMMENI	T NAME: NRW PROJECT TEAM 2 DED BY: Benjimen Billy	RECEIVE ISSUED B			
REQUISITION			SUED: 15/10/20	113	
	TION: Being for Mbokona Pilot Project Site Materials Description	Ouantity	Unit Cost	Total Cost	
	80mm (3") Brass Gate Valve	1	\$ 1,229.00	\$ 1,	229.00
10/15/2013	50mm UPVC Presure Pipe	1	\$ 154.00	\$	154.00
10/15/2013	2" (50mm) Gilbault Joint	1	\$ 231.00	\$	231.00
	3" UPVC Compression Coupling	2	\$ 180.00	\$	360.00
	80mm (3") UPVC Male threaded Socket	2	\$ 77.00	\$	154.00
10/15/2013	ThreadTape	10	\$ 4.00	\$	40.00
10/15/2013	50mm (2") Gate Valve	1	\$ 310.00	\$	310.00
		Total per I	Requisition =	\$ 2,	478.00

DEPARTMEN	T NAME: NRW PROJECT TEAM 1	RECEIVE	DBY: Moses	Metea	
RECOMMEN	DED BY : Benjimen Billy	ISSUED B	Y: Paul Seda		
REQUISITION	ION NO: 2355 DATE ISSUED: 21/10/2013				
JOB DESCRII	TION: Materials required for Mbokona Pilot	project site			
Meter ID :	12B011266 - 270 (5 Pieces) 12B010941 - 9-	45 (5 pieces))		
Date	Materials Description	Quantity	Unit Cost	Total Cost	
10/21/2013	ThreadTape (5 Pkts)	50	\$ 4.00	\$	200.00
10/21/2013	3/4" x 1/2" G.I Reducing Socket	10	\$ 12.00	\$	120.00
10/21/2013	16mm x 1/2" female poly Adaptor	20	\$ 45.00	\$	900.00
10/21/2013	3/4" G.I nipple	10	\$ 12.00	\$	120.00
10/21/2013	20mm Water Meter	10	\$ 394.00	\$	3,940.00
	•	Total per I	Requisition =	\$	5,280.00

RECOMMENT REQUISITION		RECEIVE ISSUED E DATE ISS			
Date	TION: Materials required for Mbokona Pilot Materials Description	Quantity		Total Cost	
10/21/2013	3/4" x 1/2" G.I Reducing Socket	20	\$ 12.00	\$	240.00
10/21/2013	16mm x 1/2" female poly Adaptor	20	\$ 45.00	\$	900.00
10/21/2013	3/4" G.I nipple	10	\$ 12.00	\$	120.00
		Total per I	Requisition =	\$	1,260.00

Pipes (PVC)	50mm	piece		0.00	
Pipes (PVC)	80mm	piece		0.00	
Pipes (PVC)	100mm	piece	248.00	0.00	
Pipes (PVC)	150mm	piece		0.00	
Pipes (PVC)	200mm	piece		0.00	
Pipes (PVC)	250mm	piece		0.00	
Pipes (PVC)	300mm	piece		0.00	
Water Meter	10mm	piece		0.00	
Water Meter	16mm	piece		0.00	
Water Meter	20mm	piece		0.00	
Water Meter	25mm	piece		0.00	
Water Meter	32mm	piece		0.00	
Water Meter	40mm	piece		0.00	
Other Materials				0.00	
Sub-total				0.00	
Total				974 62	· · · · · · · · · · · · · · · · · · ·

Total

1AUD=6.534SBD was applied to the above (rate as of 30 September, 2013 of Oanda).

DEPARTMEN	T NAME: NRW PROJECT TEAM 1	RECEIVE	D BY: John T	eno	
RECOMMENI	DED BY: Silas Talosui	ISSUED BY: Paul Seda			
REQUISITION	N NO: 2454	DATE ISS	SUED: 23/10/20	13	
JOB DESCRIP	TION: Materials required for Mbokona Pilot	project site	for Meter Raisir	ng.	
Date	Materials Description	Quantity	Unit Cost	Total Cost	
10/23/2013	40 KG Bag cement	10	\$ 78.00	\$	780.00
10/23/2013	50 metres 16mm poly pipe	50	\$ 14.50	\$	725.00
10/23/2013	16mm Poly Coupling	10	\$ 45.00	\$	450.00
10/23/2013	20mm x 16mm Poly Reduce Coupling	10	\$ 56.00	\$	560.00
10/23/2013	16mm x 1/2" female poly Adaptor	10	\$ 45.00	\$	450.00
10/23/2013	16mm x 1/2" male Poly Adaptor	10	\$ 45.00	\$	450.00
10/23/2013	20mm Poly Coupling	10	\$ 45.00	\$	450.00
10/23/2013	20mm Stop Cock	5	\$ 168.00	\$	840.00
10/23/2013	15mm Stop Cock	5	\$ 95.00	\$	475.00
10/23/2013	ThreadTape	5	\$ 4.00	\$	20.00
		Total per I	Requisition =	\$	5,200.00

DEPARTMENT NAME: NRW PROJECT TEAM 1 RECOMMENDED BY: Benjimen Billy			RECEIVED BY: David.Akwa'asi ISSUED BY: Paul Seda			
REQUISITIO	N NO: 2455	DATE ISS	SUED: 23/10/20	13		
JOB DESCRIPTION: Being for maintenace of Leakage @ Mbokona Pilot project				or Meter Raising .		
Date	Materials Description	Quantity	Unit Cost	Total Cost		
10/23/2013	15mm Stop Cock	5	\$ 95.00	\$	475.00	
10/23/2013	1/2" G.I Nipple	9	\$ 8.00	\$	72.00	
10/23/2013	1/2" G.I Socket	4	\$ 10.00	\$	40.00	
10/23/2013	ThreadTape	5	\$ 4.00	\$	20.00	
10/23/2013	16mm x 1/2" female poly Adaptor	10	\$ 45.00	\$	450.00	
10/23/2013	16mm Poly Coupling	5	\$ 45.00	\$	225.00	
		Total per I	Requisition =	\$ 1	.282.00	

DEPARTMEN	T NAME: NRW PROJECT TEAM 1	RECEIVE	ED BY: David	Akoeasi	
RECOMMENDED BY : Eric Unga			Y: Paul Seda		
REQUISITION	NO: 2456	DATE ISS	SUED: 24/10/20	13	
JOB DESCRIP	TION: Materials required for Mbokona Val	ley Project Pi	lot Site for Mete	er Raising .	
Date	Materials Description	Quantity	Unit Cost	Total Cost	
10/24/2013	50mm Poly Coupling	2	\$ 66.00	\$	132.00
		Total per I	Requisition =	\$	132.00

DEPARTMENT NAME: NRW PROJECT TEAM 1 RECOMMENDED BY: Benjimen Billy SSUED BY: Paul Seda DATE ISSUED: 25/10/2013 JOB DESCRIPTION: Materials required for Repair @ Mbokona Valley Project Pilot Site for Meter Raising.					
	Materials Description			Total Cost	-8
10/25/2013	63mm Poly Plain Coupling	1	\$ 99.20	\$	99.20
10/25/2013	63mm x 2" Poly male Adaptor	1	\$ 62.40	\$	62.40
10/25/2013	2 metres 32mm poly Pipe	2	\$ 30.00	\$	60.00
10/25/2013	2 " x 1 1/4" G.I reduce Socket	1	\$ 60.00	\$	60.00
10/25/2013	32mm x 1 1/4" male poly Adaptor	1	\$ 55.00	\$	55.00
10/25/2013	32mm poly Coupling	1	\$ 70.00	\$	70.00
		Total per I	Requisition =	\$	406.60

DEPARTMEN	T NAME: NRW PROJECT TEAM 1	RECEIVE	ED BY: Moses	DEPARTMENT NAME: NRW PROJECT TEAM 1 RECEIVED BY: Moses Meitea							
RECOMMEN	RECOMMENDED BY : Silas Talosui ISSUED BY: Paul Seda										
REQUISITION	REQUISITION NO: 2460 DATE ISSUED: 04/11/2013										
JOB DESCRIPTION: Materials required for Project Pilot Site @ Mbokona for Meter raising .											
METER I.D:	12B086598 - 602(5 Pies), 12B086843-847(5 pies),12B01	1041-045(5 pie	s),12B011226-	230(5 pies)						
Date	Materials Description	Quantity	Unit Cost	Total Cost							
11/4/2013	15mm G.I elbow	80	\$ 12.00	\$	960.00						
11/4/2013	3/4" x 1/2" G.I reduce Socket	4	\$ 12.50	\$	50.00						
11/4/2013	20mm Stop Cock	20	\$ 180.00	\$	3,600.00						
11/4/2013	16mm x 1/2" female poly Adaptor	40	\$ 45.00	\$	1,800.00						
11/4/2013	3/4" G.I nipple	20	\$ 12.00	\$	240.00						
11/4/2013	20mm Water Meter	20	\$ 394.00	\$	7,880.00						
		Total per I	Requisition =	\$	14,530.00						

DEPARTMEN	NT NAME: NRW PROJECT TEAM 1	RECEIVE	ED BY: Selina		
RECOMMEN	DED BY: M.Bera for Benjimen	ISSUED BY: George Blamoli			
REQUISITIO	N NO: 2461	DATE ISSUED: 07/11/2013			
JOB DESCRI	PTION: Being for continue work on Meter R	taising Pilot P	roject site @ M	bokona .	
Date	Materials Description	Quantity	Unit Cost	Total Cost	
11/7/2013	40 KG Bag cement	3	\$ 80.00	\$	240.00
		Total per I	Requisition =	\$	240.00

DEPARTMEN	NT NAME: NRW PROJECT TEAM	1 RECEIVE	ED BY: Moses	Metea		
RECOMMENDED BY : Eric Unga		ISSUED I	ISSUED BY: Paul Seda			
REQUISITIO	N NO: 2462	DATE ISS	SUED: 08/11/20	13		
JOB DESCRI	PTION: Being for continue work on l	Meter Raising Pilot P	roject site @ M	bokona .		
Date	Materials Description	Quantity	Quantity Unit Cost Total Cost			
11/8/2013	10mm Steel Rods	5	\$ 68.00	\$	340.00	
	•	Total per I	Requisition =	\$	340.00	

DEPARTMENT NAME: NRW PROJECT TEAM 1 RECOMMENDED BY: Eric Unga			ED BY: John T BY: George Bla	
REQUISITIO			SUED: 13/11/20	
JOB DESCRI	PTION: Being for Meter Raising Project @	Mbokona Pilo	ot Site .	
Date	Materials Description	Quantity	Unit Cost	Total Cost
11/13/2013	15mm Stop Cock	10	\$ 170.00	\$ 1,700.00
11/13/2013	20mm Stop Cock	20	\$ 180.00	\$ 3,600.00
11/13/2013	16mm x 1/2" female poly Adaptor	22	\$ 45.00	\$ 990.00
11/13/2013	16mm x 3/4 Female Poly Adaptor	24	\$ 50.00	\$ 1,200.00
11/13/2013	16mm Poly Coupling	14	\$ 45.00	\$ 630.00
11/13/2013	20mm x 16mm Poly Reduce Coupling	14	\$ 56.00	\$ 784.00
11/13/2013	1/2" G.I Socket	14	\$ 10.00	\$ 140.00
11/13/2013	15mm G.I elbow	30	\$ 12.00	\$ 360.00
11/13/2013	20mm(3/4") G.I Elbow	26	\$ 14.00	\$ 364.00
11/13/2013	ThreadTape	30	\$ 4.00	\$ 120.00
11/13/2013	16mm Poly Tee	2	\$ 85.00	\$ 170.00
11/13/2013	3/4" G.I Socket	20	\$ 12.00	\$ 240.00
	•	Total per I	Requisition =	\$ 10,298,00

	N' NRW Team1	RECEIVED BY: John Chede				
RECOMMEN	DED BY : Benjamin	ISSUED BY: Paul Seda				
REQUISITIO	N NO: 2469	DATE ISS	SUED: 16/11/20	13		
JOB DESCRI	PTION: Materials required for Raising m	eters@ Mbokon	a pilot site.			
Date	Materials Description	Quantity	Unit Cost	Total Cost	Τ	
11/16/201	3 20 metres 20mm Poly Pipe	20	\$ 16.00	\$ 320.00)	
	3 20mm Poly Coupling	4	\$ 45.00	\$ 180.00)	
11/16/201	3 16mm x 1/2" male PVC Adaptor	4	\$ 5.00	\$ 20.00)	
11/16/201	3 16mm x 1/2"Fe male PVC Adaptor	4	\$ 5.00	\$ 20.00)	
11/16/201	3 ThreadTape	10	\$ 4.00	\$ 40.00)	
11/16/201	3 Hack Saw Blade	1	\$ 21.00	\$ 21.00)	
11/16/201	3 1 container 500ml PVC Glue	1	\$ 42.22	\$ 42.23	2	
		Total per I	Requisition =	\$ 643.22	2	

DEPARTMEN	NRW Team1	RECEIVED BY: John Chede/M. Caulos				
RECOMMENDED BY : Benjamin		ISSUED BY: Paul Seda				
REQUISITION	DATE ISSUED: 16/11/2013					
JOB DESCRIP	TION: Materials required for Raising meter	s@ Mbokon:	a pilot site.			
Date	Materials Description	Quantity	Unit Cost	Total Cost		
11/16/2013	40 KG Bag cement	6	\$ 80.00	\$	480.00	
		Total per I	Requisition =	\$	1,123.22	

DEPARTMEN			RECEIVED BY: Moses Metea			
	DED BY: Eric Unga	ISSUED BY: Paul Seda			: Eric Unga ISSUED BY: Paul Seda	
REQUISITION	NO: 2472	DATE ISS	SUED: 18/11/20	013		
JOB DESCRIP	TION: Materials required for Raising met	ers@ Mbokon	a pilot site.			
Date	Materials Description	Quantity	Unit Cost	Total Cost		
11/18/2013	40 KG Bag cement	6	\$ 80.00	\$	480.00	
11/18/2013	10mm Steel Rods	7	\$ 68.00	\$	476.00	
11/18/2013	16mm Poly Coupling	5	\$ 45.00	\$	225.00	
11/18/2013	16mm x 1/2" female poly Adaptor	5	\$ 45.00	\$	225.00	
11/18/2013	20mm Stop Cock	20	\$ 168.00	\$	3,360.00	
11/18/2013	20mm(3/4") G.I Elbow	80	\$ 14.00	\$	1,120.00	
11/18/2013	3/4" G.I Socket	20	\$ 12.00	\$	240.00	
11/18/2013	ThreadTape	40	\$ 4.00	\$	160.00	
11/18/2013	20mm x 3/4" Poly female Adaptor	20	\$ 48.00		\$960.00	
11/18/2013	20mm x 16mm Poly Reduce Coupling	20	\$ 56.00	S	1,120.00	
		Total ner l	Pagnicition -	•	8 366 00	

DEPARTMENT NAME: NRW PROJECT TEAM 1 RECOMMENDED BY: Nathaniel Legu (For Eric Unga) REQUISITION NO: 2465 JOB DESCRIPTION: Being for Meter Raising Project @ Mbokona Pilot Site .						
Date	Materials Description	Quantity	Unit Cost	Total Cost		
11/13/2013	16mm x 3/4 Female Poly Adaptor	20	\$ 50.00	\$	1,000.00	
11/13/2013	1/2" G.I Nipple	10	\$ 8.00	\$	80.00	
11/13/2013	ThreadTape	20	\$ 4.00	\$	80.00	
11/13/2013	20mm(3/4") G.I Elbow	20	\$ 14.00	\$	280.00	
		Total per I	Requisition =	S	1.440.00	

DEPARTMENT NAME: NRW PROJECT TEAM 1 RECOMMENDED BY: Eric Unga REQUISITION NO: 2466 JOB DESCRIPTION: Being for Meter Raising Project @ M		RECEIVED BY: John Teno ISSUED BY: George Blamoli DATE ISSUED: 14/11/2013 fbokona Pilot Site .			
Date	Materials Description	Quantity Unit Cost Total Cost			
11/14/2013	20mm(3/4") G.I Elbow	26	\$ 14.00	\$	364.00
11/14/2013	16mm Poly Coupling	10	\$ 45.00	\$	450.00
11/14/2013	20mm x 16mm Poly Reduce Coupling	6	\$ 56.00	\$	336.00
11/14/2013	ThreadTape	20	\$ 4.00	\$	80.00
11/14/2013	1/2"G I Tee	1	\$8.00	\$	8.00
		Total per I	Requisition =	\$	1,238.00

RECOMMENI	T NAME: NRW PROJECT TEAM 1 DED BY: Benjimen Billy	ISSUED I	ED BY: Dykes BY: George Bla	moli	
REQUISITION JOB DESCRIP	I NO: 2467 TION: Being for Meter Raising Project @ M		SUED: 14/11/20 ot Site .	13	
Date	Materials Description	Quantity	Unit Cost	Total Cost	
11/14/2013	10mm Steel Rods	5	\$ 68.00	\$	340.00
11/14/2013	16mm x 3/4 Female Poly Adaptor	10	\$ 50.00	\$	500.00
-		Total per I	Requisition –	\$	840.00

	VT NAME: NRW PROJECT TEAM 1 DED BY: Silas Talosiu		ED BY: selina BY: Paul Seda			
REQUISITIO		DATE ISSUED: 15/11/2013				
JOB DESCRIPTION: Materials Required for Mbokona Pilot Project Site . Date Materials Description Ouantity Unit Cost Total Cost						
11/15/2013	20mm x 16mm x 20mm Poly reduce Tee	1	\$ 31.00	S	31.00	
11/15/2013	20mm x 16mm Poly Reduce Coupling	4	\$ 56.00	\$	224.00	
11/15/2013	16mm Poly Coupling	6	\$ 45.00	\$	270.00	
11/15/2013	16mm x 1/2" male Poly Adaptor	8	\$ 45.00	\$	360.00	
11/15/2013	16mm x 1/2" female poly Adaptor	8	\$ 45.00	\$	360.00	
11/15/2013	ThreadTape	20	\$ 4.00	\$	80.00	
11/15/2013	3/4" x 1/2" G.I reduce Socket	8	\$ 12.50	\$	100.00	
		Total per I	Requisition =	S	1,425,00	

DEPARTMEN' NRW Team1 RECOMMENDED BY : Benjamin		RECEIVE	RECEIVED BY: Selina Fai		
		ISSUED F	ISSUED BY: Paul Seda		
REQUISITION NO: 2470		DATE ISS	SUED: 16/11/20	13	
JOB DESCRIP	TION: Materials required for Raising meter	ers@ Mbokon	a pilot site.		
	Materials Description	Quantity	Unit Cost	Total Cost	
11/16/2013	16mm x 1/2" female poly Adaptor	15	\$ 45.00	\$	675.00
11/16/2013	ThreadTape	10	\$ 4.00	\$	40.00
11/16/2013	32mm x 1"Fe male Poly Adaptor	1	\$ 55.00	\$	55.00
11/16/2013	1" x 3/4" Poly Reduce Bush	1	\$ 7.00	\$	7.00
11/16/2013	16mm x 3/4" Poly Male Adaptor	1	\$ 28.00	\$	28.00
		Total per I	Requisition =	\$	805.00

DEPARTMENT NAME: NRW PROJECT TEAM 1		RECEIVED BY: selina				
RECOMMENDED BY: Vincent		ISSUED BY: Paul Seda				
REQUISITION	NO: 2473	DATE ISS	SUED: 18/11/20	13		
JOB DESCRIP	JOB DESCRIPTION: Materials Required for Mbokona Pilot Project Site .					
Date	Materials Description	Quantity	Unit Cost	Total Cost		
11/18/2013	20mm x 3/4" Poly female Adaptor	20	\$ 48.00	\$	960.00	
11/18/2013	ThreadTape	40	\$ 4.00	\$	160.00	
		Total ner I	Requisition –	S	1 120 00	

DEPARTMEN	T NAME: NRW Team 1	RECEIVI	ED BY : John T	eno		
AUTHORISED BY: Benjamin		ISSUED I	ISSUED BY: Paul Seda			
REQUISITION	DATE ISS	SUED: 19/11/20	13			
JOB DESCRIP	TION: Being for New Service Connection	for David Day	Pacha @ Mbub	ouru.		
METER I.D:	12B086453-457(5pieces)12B086443-447(5pce)				
Date	Materials Description	Quantity	Unit Cost	Total Cost		
11/19/2013	20mm Water Meter	10	\$ 394.00	\$	3,940.00	
11/19/2013	30 metres 16mm poly pipe	30	\$ 14.50	\$	435.00	
11/19/2013	30 metres 20mm Poly Pipe	30	\$ 16.00	\$	480.00	
11/19/2013	20mm x 16mm Poly Reduce Coupling	10	\$ 56.00	\$	560.00	
11/19/2013	20mm Poly Coupling	5	\$ 45.00	\$	225.00	
11/19/2013	16mm Poly Coupling	5	\$ 45.00	\$	225.00	
		Total per l	Requisition =	S	5.865.00	

	T NAME: NRW PROJECT TEAM 1 DED BY: Silas Talosiu		ED BY: John C SY:George Blan			
REQUISITION		DATE ISS	DATE ISSUED: 19/11/2013			
Date	Materials Description	Quantity	Unit Cost	Total Cost		
	Materials Description 3/4"G I Tee	Quantity 1	Unit Cost \$10.00	Total Cost	10.00	
		Quantity 1		Total Cost \$ \$	10.00	

DEPARTMENT NAME: NRW PROJECT TEAM 1 RECOMMENDED BY: Nathaniel REQUISITION NO: 2475 JOB DESCRIPTION: Materials Required for Mbokona Pilo		RECEIVED BY: John Chede ISSUED BY: George Blamoli DATE ISSUED: 20/11/2013			
Date	Materials Description		Unit Cost	Total Cost	
11/20/2013	3/4" G.I Socket	15	\$ 12.00	\$ 180.	
11/20/2013	ThreadTape	15	\$ 4.00	\$ 60.	
11/20/2013	20mm(3/4") G.I Elbow	20	\$ 14.00	\$ 280.	
11/20/2013	20mm Stop Cock	20	\$ 168.00	\$ 3,360.	
11/20/2013	20mm x 3/4" Poly female Adaptor	20	\$ 48.00	\$ 960.	
11/20/2013	30 metres 20mm Poly Pipe	30	\$ 16.00	\$ 480.	
11/20/2013	30 metres 16mm poly pipe	30	\$ 14.50	\$ 435.	
	16mm Poly Coupling	10	\$ 45.00	\$ 450.	
11/20/2013	20mm x 16mm Poly Reduce Coupling	10	\$ 56.00	\$ 560.	
		Total per l	Requisition =	\$ 6.765.	

	T NAME: NRW PROJECT TEAM 1 DED BY: Eric Unga N NO: 2476	ISSUED E	ED BY: John C BY: Paul Seda SUED: 2 4/11/2			
JOB DESCRIE	JOB DESCRIPTION: List of Materials for raising water meters@ Mbokona pilot site .					
Date	Materials Description	Quantity	Unit Cost	Total Cost		
11/24/2013	40 KG Bag cement	5	\$ 80.00	\$	400.00	
11/24/2013	15mm (1/2") G.I Tee	1	\$ 5.00	\$	5.00	
	•	Total per Requisition =		\$	405.00	

RECOMMEN	T NAME: NRW PROJECT TEAM 1 DED BY: Bejamin N NO: 2319	ISSUED B	ED BY: John T SY: Paul Seda SUED: 2 5/11/2		
	REQUISITION NO: 2319 JOB DESCRIPTION: List of Materials for raising water in Date Materials Description				
	40 KG Bag cement	6	\$ 80.00		480.00
		Total per I	Total per Requisition =		480.00

	DEPARTMENT NAME: NRW PROJECT TEAM 1 RECOMMENDED BY: Eric Unga		ED BY: John To SY: Paul Seda	eno	
			SUED: 2 6/11/2	013	
Date	Materials Description	Quantity		Total Cost	
11/26/2013	40 KG Bag cement	4	\$ 80.00	\$	320.00
11/26/2013	20mm Water Meter	1	\$ 394.00	\$	394.00
11/26/2013	10mm Steel Rods	3	\$ 68.00	\$	204.00
		Total per Requisition =		\$	918.00

DEPARTMEN	T NAME: NRW PROJECT TEAM 1	RECEIVE	D BY: John C	hede	
RECOMMENDED BY: Nathaniel		ISSUED BY: George Blamoli			
REQUISITION NO: 2320			SUED: 2 8/11/2		
JOB DESCRIF	TION: List of Materials for raising water n	neters@ Mbo	kona pilot site		
Date	Materials Description	Quantity Unit Cost Total Cost			
11/26/2013	40 KG Bag cement	6	\$ 80.00	\$	480.00
		Total per I	Requisition =	\$	480.00

DEPARTME	NT NAME: NRW PROJECT TEAM 1	RECEIVE	ED BY: John C	hede		
RECOMMENDED BY: Nathaniel		ISSUED I	ISSUED BY: George Blamoli			
REQUISITION NO: 2320		DATE ISS	DATE ISSUED: 2 9/11/2013			
JOB DESCRI	PTION: List of Materials for raising water	meters@ Mbo	kona pilot site			
Date	Materials Description	Quantity	Unit Cost	Total Cost		
11/29/201	3 40 KG Bag cement	7	\$ 80.00	\$	560.00	
		Total per I	Requisition =	\$	560.00	

RECOMME REQUISITION	DEPARTMENT NAME: NRW PROJECT TEAM 1 RECOMMENDED BY : Eric Unga REQUISITION NO: 2359 JOB DESCRIPTION: Being for Mbokona Pilot Site METER LD		ED BY: Dykes BY: George Bla SUED: 02/12/20		
Date	Materials Description	Quantity	Unit Cost	Total Cost	
12/2/2013	40 KG Bag cement	12	\$ 80.00	\$	960.00
		Total ner l	Requisition –	s	960.00

TOTAL COST FOR MBARANAMBA

Before Countermeasure After Countermeasure

	Before Countermeasure	Countermeasure	After Countermeasure	Routine Activities	Total	
Personnel Cost	19,481.40	13,235.10	5,598.30	1,182.75		39,497.55
Consumable	1,131.74	565.87	239.41	21.76		5,958.79
Material and Equipment	9,669.26	23,423.00	0.00	0.00		33,092.26
Sub total	30,282.40	37,223.97	5,837.71	1,204.51		78,548.60
TOTAL	TOTAL 67,506.38		7,042.3			
					,	
TOTAL MAN DAYS	261					

DEPARTMEN	T NAME: NRW PROJECT TEAM 1	RECEIVE	ED BY: John T	eno	
RECOMMEN	DED BY: Ray Andersen	ISSUED E	Y: George Bla	moli	
REQUISITIO	N NO: 2480	DATE ISS	SUED: 05/12/20	013	
JOB DESCRI	PTION: List of Materials required for Mbol	cona Pilot Sit	te for Meter Rai	sing Project .	
METER I.D	12B072442 & 12B072443				
Date	Materials Description	Quantity	Unit Cost	Total Cost	
12/5/2013	20mm Water Meter	2	\$ 394.00	\$	788.00
12/5/2013	16mm Poly Coupling	6	\$ 45.00	\$	270.00
12/5/2013	20 metres 16mm poly pipe	20	\$ 14.50	\$	290.00
12/5/2013	ThreadTape	40	\$ 4.00	\$	160.00
-		Total per I	Requisition =	\$	1,508.00

RECOMMEN REQUISITIO	NT NAME: NRW PROJECT TEAM 1 (DED BY: Eric Unga IN NO: 2482 PTION: List of Materials required for M 12B172501	ISSUED I DATE ISS	ED BY: John C BY: George Bla SUED: 09/12/20 oject Site .	nmoli
Date	Materials Description	Quantity	Unit Cost	Total Cost
12/9/2013	16mm Poly Tee	2	\$ 85.00	\$ 170.00
12/9/2013	20mm Water Meter	1	\$ 394.00	\$ 394.00
12/9/2013	ThreadTape	5	\$ 4.00	\$ 20.00
12/9/2013	20mm x 3/4" Poly female Adaptor	2	\$ 48.00	\$96.00
12/9/2013	3/4" G.I Socket	1	\$ 12.00	\$ 12.00
12/9/2013	16mm Poly Coupling	10	\$ 45.00	\$ 450.00
12/9/2013	20mm x 1/2" Poly male Adaptor	1	\$ 48.00	\$ 48.00
12/9/2013	16mm x 1/2" male Poly Adaptor	2	\$ 45.00	\$ 90.00
	-	Total per I	Requisition =	\$ 1,280.00

DEPARTMEN	T NAME: NRW PROJECT TEAM 1	RECEIVED BY: John Teno							
RECOMMEN	DED BY : Benjimen Billy	ISSUED E	Y: George Bla	moli					
REQUISITIO	N NO: 2481	DATE ISS	SUED: 09/12/20	13					
JOB DESCRI	PTION: List of Materials required for Mboke	ona Pilot Pro	ject Site .						
Date	Materials Description	Quantity	Unit Cost	Total Cost					
12/9/2013	50 metres 16mm poly pipe	50	\$ 14.50	\$	725.00				
12/9/2013	20 metres 20mm Poly Pipe	20	\$ 16.00	\$	320.00				
12/9/2013	25mm x 1/2" x 25mm Poly female threaded	1	\$ 35.00	\$	35.00				
12/9/2013	16mm x 1/2" male Poly Adaptor	1	\$ 45.00	\$	45.00				
		Total per I	Requisition =	S	1.125.00				

RECOMMEN REQUISITIO		ISSUED BY: George Blamoli DATE ISSUED: 10/12/2013							
Date	PTION: List of Materials required for Materials Description		Unit Cost	Total Cost					
12/10/2013	32mm Poly Coupling	5	\$ 70.00	\$	350.00				
12/10/2013	16mm Poly Coupling	10	\$ 45.00	\$	450.00				
12/10/2013	20 metres 16mm poly pipe	20	\$ 14.50	\$	290.00				
12/10/2013	ThreadTape	3	\$ 4.00	\$	12.00				
		Total per I	Requisition =	\$	1,102.00				

DEPARTMEN	T NAME: NRW PROJECT TEAM 1	RECEIVED BY: John Chede						
	DED BY: Eric Unga	ISSUED BY: George Blamoli						
REQUISITION			SUED: 12/12/20					
	TION: List of Materials required for Mboke							
Date	Materials Description	Quantity	Unit Cost	Total Cost				
12/12/2013	16mm Poly Coupling	4	\$ 45.00	\$	180.00			
12/12/2013	20mm x 16mm Poly Reduce Coupling	4	\$ 60.00	\$	240.00			
12/12/2013	16mm x 3/4" female Poly Adaptor	4	\$ 50.00	\$	200.00			
		Total per I	Requisition =	\$	620.00			

\$ 86,934.28
\$

ocation	.vi.ou dildiliod								per da
Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
. Personnel	Grades- Steps			(ZRD)					
Staff-3	3.1	0	Person	15.38	115.35				
Stati-3	3.2	0	Person	15.90	119.25				
	3.3	0	Person	16.41	123.08				
	3.4	0	Person	16.92	126.90				
	3.5	0	Person	17.44	130.80				
Staff-4	4.1	10	Person	19.23	144.23	19.00		2.740.28	
Dian 4	4.2	20	Person	20.00	150.00	38.00		5,700.00	
	4.3	0	Person	20.77	155.78	50.00		0.00	
	4.4	0	1 (13011	21.54	161.55			0.00	
	4.5	0		22.31	167.33			0.00	
Staff-5	5.1	0		24.10	180.75			0.00	
	5.2	0		25.13	188.48			0.00	
	5.3	0		26.15	196.13			0.00	
	5.4	0		27.18	203.85			0.00	
	5.5	9		28.21	211.58	17.00		3.596.78	
Staff-6	6.1	2		31.54	236.55	2.00		473.10	
	6.2	9		32.82	246.15	17.00		4.184.55	
	6.3	0		34.10	255.75			0.00	
	6.4	0		35.38	265.35			0.00	
	6.5	0		36.67	275.03			0.00	
Staff-7	7.1	0		38.46	288.45			0.00	
	7.2	0		39.74	298.05			0.00	
	7.3	0		41.03	307.73			0.00	
	7.4	0		42.31	317.33			0.00	
	7.5	0		43.59	326.93			0.00	
Staff-8	8.1	0		47.95	359.63			0.00	
	8.2	0		49.23	369.23			0.00	
	8.3	0		50.51	378.83			0.00	
	8.4	0		51.79	388.43			0.00	
	8.5	2		53.08	398.10	7.00		2.786.70	
Staff-9	9.1	0		58.21	436.58			0.00	
	9.2	0		59.49	446.18			0.00	
	9.3	0		60.77	455.78			0.00	
	9.4	0		62.05	465.38			0.00	
	9.5	0		63.33	474.98			0.00	
Sub-total						100.00		19.481.40	
. Consumable				S Per Liter	L/km	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	S/km		
									50km/7km/liter=7.14liter
Di I	n n .	0		44.00		1		0.00	11liter/hrs (fuel consumption for
Diesel	For Excavator	0	Liter	11.80	0.3620	1	4.2716	0.00	about 60PS) x 1hr=11liter
	1			1	1	1			11liter +7.1liter=18.1liter/50km
Diesel	For Pick-up	635.44	Liter	11.80	0.1428	90.7408	1.68504	1.070.74	50km/7km/liter=7.14liter/50km
							,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		100km x 252days=25,200km
	1			1	1	1			25,200km/10,000km x
Engine Oil	For Excavator	0	Liter	60.00	1	1	0.096	0.00	8liter=20.16liter
					1	1			20.16liter/
	1			1	0.0016	1			252davs=0.08liter/dav/50km
									100km x 252days=25,200km
	1	l		1	1	1	1	l	95 900km/10 000km v

								25,200km/10,000km x
Engine Oil	For Pick-up	635.44	Liter	60.00		0.096	61.00	8liter=20.16liter
								20.16liter/
					0.0016			252days=0.08liter/day/50km
								50km x 252days=12,600km
Tires		0	Nos	770.00		1.078	0.00	12,600km/30,000km x
Tires		U	IVOS	770.00		1.078	0.00	4nos=1.68nos
					0.0014			1.68nos/ 252days=0.07nos/50km
Sub-total							1,131.74	
3. Material &								
Equipment								
Sluice/ Gate Valve		2	piece		190.00			Gate Valve
Sluice/ Gate Valve	40mm	1	piece		350.00			Gate Valve
Sluice/ Gate Valve	50mm	1	piece		310.00			Gate Valve
Sluice/ Gate Valve	80mm	3	piece		2,397.12			Sluice Valve
Sluice/ Gate Valve	100mm		piece		2,423.00			Sluice Valve
Sluice/ Gate Valve	150mm		piece					Sluice Valve
Sluice/ Gate Valve	200mm		piece					Sluice Valve
Sluice/ Gate Valve	250mm		piece					Sluice Valve225mm AUD1785
Sluice/ Gate Valve	300mm		piece				0.00	
Pipes (Poly)	15mm	5	coil		14.50			Length on 1 coil =300m
Pipes (Poly)	20mm		coil				0.00	Length on 1 coil =300m
Pipes (Poly)	25mm		coil					Length on 1 coil =200m
Pipes (Poly)	50mm		coil					Length on 1 coil =150m
Pipes (Poly)	32mm	7			30.00		210.00	Length on 1 coil =100m
Pipes (PVC)	25mm		piece				0.00	

Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Pipes (PVC)	50mm	1	piece		154.00			154.00	
Pipes (PVC)	80mm	1	piece		189.00			189.00	
Pipes (PVC)	100mm		piece		248.00			0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm	1	piece		812.40			812.40	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece					0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
Other Materials									
Sub-total								9,669.26	
Total								30,282.40	

Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Pipes (PVC)	25mm		piece					0.00	
Pipes (PVC)	50mm		piece		154.00			0.00	
Pipes (PVC)	80mm		piece		189.00			0.00	
Pipes (PVC)	100mm		piece		248.00			0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece		812.40			0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece					0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm	45	piece		394.00			17,730.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
Other Materials								5,693.00	
Sub-total								23,423.00	
Total								37,223.97	

2. Countermeasure

				2. CO	ınterm	casure			
Location	Mbaranaml	ba							
				Hourly					pe
Items	Specification	Quantity	Unit	Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
. Personnel	Grades- Steps			15 38					
Staff-3	3.1	0	Person Person	15.38	115.35 119.25				
	3.3	0	Person	16.41	123.08				
	3.4	0	Person	16.92	126.90				
	3.5	0	Person	17.44	130.80				
Staff-4	4.1	4	Person	19.23	144.23	18.00		2,596.05	
	4.2	8	Person	20.00	150.00	16.00		2,400.00	
	4.3	0	Person	20.77	155.78			0.00	
	4.4	0	Person	21.54	161.55			0.00	
	4.5	0	Person	22.31	167.33			0.00	
Staff-5	5.1	0	Person	24.10	180.75			0.00	
	5.2	0	Person Person	25.13	188.48 196.13			0.00	
	5.4	0	Person	27.18	203.85			0.00	
	5.5	4	Person	28.21	211.58	18.00		3,808,35	
Staff-6	6.1	0	Person	31.54	236.55			0.00	
	6.2	4	Person	32.82	246.15	18.00		4,430.70	
	6.3	0	Person	34.10	255.75			0.00	
	6.4	0	Person	35.38	265.35			0.00	
	6.5	0	Person	36.67	275.03			0.00	
Staff-7	7.1 7.2	0	Person Person	38.46 39.74	288.45 298.05			0.00	
	7.2	0	Person Person	39.74 41.03	298.05 307.73			0.00	
	7.3	0	Person	42.31	307.73	_		0.00	
	7.4	0	Person	43.59	326.93			0.00	
Staff-8	8.1	0	Person	47.95	359.63			0.00	
	8.2	0	Person	49.23	369.23			0.00	
	8.3	0	Person	50.51	378.83			0.00	
	8.4	0	Person	51.79	388.43			0.00	
	8.5	0	Person	53.08	398.10			0.00	
Staff-9	9.1	0	Person	58.21	436.58			0.00	
	9.2	0	Person	59.49	446.18			0.00	
	9.3	0	Person	60.77	455.78			0.00	
	9.4 9.5	0	Person Person	62.05 63.33	465.38 474.98			0.00	
Sub-total	9.3	20	Person	03.33	474.98	70,00		13,235,10	
. Consumable		20		\$ Per Liter	I /km	70.00	\$/km	10,000.10	
									50km/7km/liter=7.14liter
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	11liter/hrs (fuel consumption f
Diesei	FOR Excavator	U	Liter	11.80	0.3620		4.2/10	0.00	about 60PS) x 1hr=11liter
									11liter +7.1liter=18.1liter/50k
Diesel	For Pick-up	317.72	Liter	11.80	0.1428	45.3704	1.68504	535.37	50km/7km/liter=7.14liter/50k
									100km x 252days=25,200km
									25,200km/ 10,000km x
Engine Oil	For Excavator	0	Liter	60.00			0.096	0.00	8liter=20.16liter
					0.0016				20.16liter/
					0.0016				252days=0.08liter/day/50km 100km x 252days=25,200km
									25,200km/ 10,000km x
Engine Oil	For Pick-up	317.72	Liter	60.00			0.096	30.50	8liter=20.16liter
									20.16liter/
					0.0016				252days=0.08liter/day/50km
									50km x 252days=12,600km
Tires		0	Nos	770.00			1.078	0.00	12,600km/ 30,000km x
rnes		·	1403	770.00			1.078	0.00	4nos=1.68nos
					0.0014				1.68nos/ 252days=0.07nos/50i

Sub-total Material &				-	-			565.87	
Equipment	25		-1	-	100.00			0.00	Con Malon
Sluice/ Gate Valve	25mm		piece		190.00 350.00				Gate Valve
Sluice/ Gate Valve Sluice/ Gate Valve	40mm 50mm		piece piece	-	350.00				Gate Valve Gate Valve
Sluice/ Gate Valve	80mm		piece	†	2.397.12			0.00	Sluice Valve
Sluice/ Gate Valve	100mm		piece	-	2,423.00				Sluice Valve
Sluice/ Gate Valve	150mm		piece		-,723.00				Sluice Valve
Sluice/ Gate Valve	200mm		piece						Sluice Valve
Sluice/Gate Valve	250mm		piece					0.00	Sluice Valve225mm AUD178
Sluice/ Gate Valve	300mm		piece					0.00	
Pipes (Poly)	15mm		coil		14.50			0.00	Length on 1 coil =300m
Pipes (Poly)	20mm		coil					0.00	Length on 1 coil =300m
Pipes (Poly)	25mm		coil					0.00	Length on 1 coil =200m
Pipes (Poly)	50mm		coil	1	I			0.00	Length on 1 coil =150m
Pipes (Poly)	32mm				30.00				Length on 1 coil =100m

Location	Mbaranaml	ba							
				Hourly					per
Items	Specification	Quantity	Unit	Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
I. Personnel	Grades- Steps								
Staff-3	3.1	0	Person	15.38	115.35				
	3.2	0	Person Person	15.90 16.41	119.25 123.08				
	3.4	0	Person	16.92	126.90				
	3.5	0	Person	17.44	130.80				
Staff-4	4.1	3	Person	19.23	144.23	4.00		576.90	
	4.2	6	Person	20.00	150.00	8.00		1,200.00	
	4.3	0	Person	20.77	155.78			0.00	
	4.4	0		21.54 22.31	161.55			0.00	
Staff-5	5.1	0		24.10	180.75			0.00	
Dani 5	5.2	0		25.13	188.48			0.00	
	5.3	0		26.15	196.13			0.00	
	5.4	0		27.18	203.85			0.00	
	5.5	3		28.21	211.58	4.00		846.30	
Staff-6	6.1	0		31.54	236.55	4.00		0.00	
	6.2	3		32.82 34.10	246.15 255.75	4.00		984.60 0.00	
	6.4	0		35.38	265.35			0.00	
	6.5	0		36.67	275.03			0.00	
Staff-7	7.1	0		38.46	288.45			0.00	
	7.2	0		39.74	298.05			0.00	
	7.3	0		41.03	307.73			0.00	
	7.4	0		42.31	317.33			0.00	
Staff-8	7.5 8.1	0		43.59 47.95	326.93 359.63			0.00	
2011-6	8.1	0		49.23	369.63			0.00	
	8.3	0		50.51	378.83			0.00	
	8.4	0		51.79	388.43			0.00	
	8.5	1		53.08	398.10	5.00		1,990.50	
Staff-9	9.1	0		58.21	436.58			0.00	
	9.2 9.3	0		59.49	446.18			0.00	
	9.3	0		60.77	455.78 465.38			0.00	
	9.4	0		63.33	474.98			0.00	
Sub-total						25.00		5.598.30	
2. Consumable				\$ Per Liter	L/km		S/km		
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	50km/7km/liter=7.14liter 11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km
Diesel	For Pick-up	134.42	Liter	11.80	0.1428	19.1952	1.68504	226.50	50km/7km/liter=7.14liter/50km 100km x 252days=25,200km
Engine Oil	For Excavator	0	Liter	60.00	0.0016		0.096	0.00	25,200km/ 10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km
Engine Oil	For Pick-up	134.42	Liter	60.00	0.0016		0.096	12.90	100km x 252days=25,200km 25,200km/ 10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km
Tires		0	Nos	770.00	0.0014		1.078	0.00	50km x 252days=12,600km 12,600km/30,000km x 4nos=1.68nos 1.68nos/252days=0.07nos/50km
Sub-total								239.41	
B. Material & Equipment									
Sluice/ Gate Valve	25mm		piece						Gate Valve
Sluice/ Gate Valve	40mm		piece	_	350.00			0.00	Gate Valve
Sluice/ Gate Valve	50mm 80mm		piece	-	310.00				Gate Valve Sluice Valve
Sluice/ Gate Valve Sluice/ Gate Valve	80mm 100mm	-	piece	-	2,423.00			0.00	Sluice Valve
Sluice/ Gate Valve	150mm		piece	†	2,423.00				Sluice Valve
Sluice/ Gate Valve	200mm		piece					0.00	Sluice Valve
Sluice/ Gate Valve	250mm		piece					0.00	Sluice Valve225mm AUD1785
Sluice/ Gate Valve	300mm		piece					0.00	
Pipes (Poly)	15mm		coil					0.00	Length on 1 coil =300m
Pipes (Poly)	20mm		coil					0.00	Length on 1 coil =300m
Pipes (Poly)	25mm		coil	-					Length on 1 coil =200m
Pipes (Poly) Pipes (PVC)	50mm 25mm		coil					0.00	Length on 1 coil =150m

Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Pipes (PVC)	50mm		piece					0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece		248.00			0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece					0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece					0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
Other Materials									
Sub-total								0.00	
Total								5,837.71	

									per day
Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Pipes (PVC)	50mm		piece					0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece		248.00			0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece					0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece					0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
Other Materials									
Sub-total								0.00	
Total								1,204.51	
1AUD=6.534SBD	was applied to t	he above (rat	e as of 30 S	entember 21	113 of Oand	a)			

Location	Mbaranaml	oa				unterm	cusure		
				Hourly					pe
Items	Specification	Quantity	Unit	Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
1. Personnel	Grades- Steps								
Staff-3	3.1	0	Person	15.38	115.35				
	3.2	0	Person	15.90	119.25				
	3.3	0	Person	16.41 16.92	123.08 126.90				
	3.4	0	Person	17.44	130.80				
Staff-4	4.1	0	Person	19.23	144.23			0.00	
Siaii-4	4.1	0	Person	20.00	150.00			0.00	
	4.3	0	Person	20.77	155.78			0.00	
	4.4	0		21.54	161.55			0.00	
	4.5	0		22.31	167.33			0.00	
Staff-5	5.1	0		24.10	180.75			0.00	
	5.2	0		25.13	188.48			0.00	
	5.3	0		26.15	196.13			0.00	
	5.4	0		27.18	203.85			0.00	
0. 6.0	5.5	0		28.21	211.58			0.00	
Staff-6	6.1	3		31.54	236.55	5.00		1,182.75	
	6.2	0		32.82	246.15			0.00	
	6.3	0		34.10 35.38	255.75 265.35			0.00	
	6.5	0		35.38	265.35			0.00	
Staff-7	7.1	0		38.46	288.45			0.00	
LAMES A	7.2	0		39.74	298.05			0.00	
	7.3	0		41.03	307.73			0.00	
	7.4	0		42.31	317.33			0.00	
	7.5	0		43.59	326.93			0.00	
Staff-8	8.1	0		47.95	359.63			0.00	
	8.2	0		49.23	369.23			0.00	
	8.3	0		50.51	378.83			0.00	
	8.4	0		51.79	388.43			0.00	
0. 60	8.5	0		53.08	398.10			0.00	
Staff-9	9.1	0		58.21	436.58			0.00	
	9.2	0		59.49 60.77	446.18 455.78			0.00	
	9.4	0		62.05	465.38			0.00	
	9.5	0		63.33	474.98			0.00	
Sub-total		_						1,182.75	
2. Consumable				S Per Liter	L/km		\$/km		
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	50km/7km/liter=7.14liter 11liter/hrs (fuel consumption fo about 60PS) x 1hr=11liter 11liter+7.1liter=18.1liter/50km
Diesel	For Pick-up	12.22	Liter	11.80	0.1428	1.7450	1.68504	20.59	50km/7km/liter=7.14liter/50km
Engine Oil	For Excavator	0	Liter	60.00	0.0016		0.096	0.00	100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km 100km x 252days=25.200km
Engine Oil	For Pick-up	12.22	Liter	60.00	0.0016		0.096	1.17	25,200km/ 10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km
Tires		0	Nos	770.00	0.0014		1.078	0.00	50km x 252days=12,600km 12,600km/ 30,000km x 4nos=1.68nos 1.68nos/ 252days=0.07nos/50k
Sub-total				-	-			21.76	
3. Material &				 				21./0	
Equipment				1					
Sluice/ Gate Valve	25mm		piece					0.00	Gate Valve
Sluice/ Gate Valve	40mm		piece		350.00			0.00	Gate Valve
Sluice/ Gate Valve	50mm		piece		310.00			0.00	Gate Valve
Sluice/ Gate Valve	80mm		piece					0.00	Sluice Valve
Sluice/ Gate Valve	100mm		piece		2,423.00			0.00	
Sluice/ Gate Valve	150mm		piece					0.00	Sluice Valve
Sluice/ Gate Valve	200mm		piece					0.00	
Sluice/ Gate Valve	250mm		piece					0.00	Sluice Valve225mm AUD1785
Sluice/ Gate Valve	300mm		piece					0.00	
Pipes (Poly)	15mm		coil					0.00	
Pipes (Poly)	20mm		coil					0.00	Length on 1 coil =300m
Pipes (Poly)	25mm		coil					0.00	Length on 1 coil =200m Length on 1 coil =150m
Pipes (Poly)	50mm								

Cost for Materials (Mbaranamba)

DEPARTME	PARTMENT NAME: NRW PROJECT TEAM 2			Y: Andrev	v Kope	nao		
RECOMME	NDED BY : Eric Unga	ISSUED E	3Y: G	eorge Bla	moli			
REQUISITIO	ON NO: 2309	DATE ISS	DATE ISSUED: 09/11/2013					
JOB DESCR	IPTION: Being for preparation of materials for	Mbaranamba V	Valley	Pilot Site				
Date	Materials Description	Quantity	Unit Cost		Total Cost			
11/9/2013	32mm (1 1/4") PVC male Valve Socket	1	\$	22.00	\$	22.00		
11/9/2013	1 1/2" x 1 1/4" Poly reduce Bush	1	\$	28.00	\$	28.00		
11/9/2013	40mm Brass Gate Valve	1	\$	350.00	\$	350.00		
11/9/2013	1 1/4 G.I Nipple	2	\$	18.00	\$	36.00		
11/9/2013	50mm (2") Gate Valve	1	\$	310.00	\$	310.00		
11/9/2013	50mm G.I Nipple	1	\$	54.00	\$	54.00		
11/9/2013	40mm PVC male Valve Socket	3	\$	25.00	\$	75.00		
11/9/2013	50mm x 2" UPVC male valve Socket	2	\$	36.00	\$	72.00		
11/9/2013	40mm PVC Compression Coupling	2	\$	40.00	\$	80.00		
11/9/2013	32mm PVC Compression Coupling	1	\$	38.00	\$	38.00		
11/9/2013	1" Brass Gate valve	1	\$	190.00		\$190.00		
11/9/2013	25mm x 1" Poly male Adaptor	2	\$	50.00		\$100.00		
11/9/2013	1 length 50mm UPVC Presure Pipe	1	\$	154.00	\$	154.00		
	•	Total per I	Requi	sition =	\$	1,509.00		

	NT NAME: NRW PROJECT TEAM 2 NDED BY: Benjimen Billy		RECEIVED BY: Andrew Kopenao ISSUED BY: George Blamoli						
	ON NO: 2310		SUED: 09/11/20						
JOB DESCR	IPTION: Being for preparation of materials for M	Ibaranamba V	/alley Pilot Site						
Date	Materials Description	Quantity	Unit Cost	Total Cos	Total Cost				
11/9/2013	80mm (3") Sluice Valve (Jica order)	1	\$ 2,397.12	\$ 2	,397.12				
11/9/2013	80mm (3") Flange Adaptor (Jica Order)	2	\$ 636.73	\$,273.46				
11/9/2013	3" Gasket & boits (Jica Order)	2	\$ 134.83	\$	269.66				
11/9/2013	3" UPVC Compression Coupling	1	\$ 190.00	\$	190.00				
11/9/2013	8" x 1 1/4" brass Saddle/Tapping band	1	\$ 844.00	\$	844.00				
11/9/2013	1 length 80mm UPVC Pressure Pipe (PN 12)	1	\$ 189.00	\$	189.00				
11/9/2013	5 metres 16mm poly pipe	5	\$ 14.50	\$	72.50				
11/9/2013	1 1/4 G.I Nipple	1	\$ 18.00	\$	18.00				
11/9/2013	1 1/4" x 1" G.I Reduce Bush	1	\$ 22.00	\$	22.00				
11/9/2013	20mm x 16mm Poly Reduce Coupling	1	\$ 56.00	\$	56.00				
11/9/2013	16mm x 3/4" Poly Male Adaptor	1	\$ 28.00	\$	28.00				
	•	Total per I	Requisition =	\$ 5	.359.74				

	NT NAME: NRW PROJECT TEAM 2		ED BY: Derick					
	NDED BY: Benjimen Billy		ISSUED BY: George Blamoli					
REQUISITIO			SUED: 12/11/2	013				
JOB DESCR	IPTION: Materials Required for Mbaranamba	Pilot Project Sit	e .					
Date	Materials Description	Quantity	Unit Cost	Total	Cost			
11/12/2013	40mm PVC Compression Coupling	1	\$ 40.00	\$	40.00			
11/12/2013	Hack Saw Blade	1	\$ 21.00	\$	21.00			
11/12/2013	1 1/4" gate valve	1	\$ 180.00	\$	180.00			
11/12/2013	50mm x 25mm x 50mm Poly reduce Tee	1	\$ 95.30	\$	95.30			
11/12/2013	32mm x 1 1/4" male poly Adaptor	2	\$ 55.00	\$	110.00			
11/12/2013	1 Length 8" (200mm) Pressure Pipe	1	\$ 812.40	\$	812.40			
11/12/2013	ThreadTape	20	\$ 4.00	\$	80.00			
		Total per l	Requisition =	\$	1,338.70			

	NT NAME: NRW PROJECT TEAM 2	RECEIVED BY: Derick Hoa					
	NDED BY : Benjimen Billy		BY: George Bla				
	ON NO: 2312		SUED: 12/11/20	013			
JOB DESCR	IPTION: Materials Required for Mbaranamba Pi	lot Project Sit					
Date	Materials Description	Quantity	Unit Cost	Total Cost			
11/12/2013	80mm (3") Sluice Valve (Jica Order)	1	\$ 2,397.12	\$ 2,397.12			
11/12/2013	80mm (3") Flange Adaptor (Jica Order)	1	\$ 636.73	\$ 636.73			
11/12/2013	3" Gasket & boits (Jica Order)	2	\$ 134.83	\$ 269.66			
11/12/2013	50mm (2") female PVC Adaptor	1	\$ 90.00	\$ 90.00			
		Total per l	Requisition =	\$ 3,393.51			
DEPARTME	NT NAME: NRW PROJECT TEAM 1	RECEIVE	ED BY: Harri	son			
RECOMME	NDED BY : Eric Unga	ISSUED I	ISSUED BY: Paul Seda				
REQUISITIO	ON NO: 2314	DATE ISSUED: 14/11/2013					
JOB DESCR	IPTION: Being for Mbaranamba Pilot Site for V	alve installation	on & Maintenar	ice.			
Date	Materials Description	Quantity	Unit Cost	Total Cost			
11/14/2013	50mm PVC Coupling	2	\$ 180.00	\$ 360.00			

DEPARTME	NT NAME: NRW PROJECT TEAM 2	RECEIVED BY: Andrew Kopenao						
RECOMMEN	ISSUED E	ISSUED BY: George Blamoli						
REQUISITIO	N NO: 2313	DATE ISS	DATE ISSUED: 13/11/2013					
JOB DESCRIPTION: Materials Required for Mbaranamba Pilot Project Site .								
Date	Materials Description	0 11	TI 'A CL A					
Date	Materials Description	Quantity	Unit Cost	Total Cost				
	3" Sluice Valve	Quantity 1	\$ 2,397.12	\$ 2,397.12				
11/13/2013 11/13/2013	3" Sluice Valve 80mm (3") Flange Adaptor (Jica Order)	Quantity 1						
11/13/2013 11/13/2013	3" Sluice Valve	1 1 1	\$ 2,397.12	\$ 2,397.12 \$ 636.73				

RECOMMEN REQUISITION		ISSUED E DATE ISS	ED BY: Derick BY: George Bla SUED: 02/12/20	amoli 013				
	JOB DESCRIPTION: List of Materials required for Mbaranamba Pilot Site for Meter Raising Project . METER I.D 12B086583 - 587 (5pieces) 12B086798 - 802 (5 Pieces) 12B086838 - 842 (5 Pieces) 12B086778 - 782 (5)							
	Materials Description		Unit Cost	Total Cost	32 (J)			
12/2/2013	20mm Water Meter	20	\$ 394.00					
		Total per I	Requisition =	\$ 3,940	0.00			

RECOMME! REQUISITION	INT NAME: NRW PROJECT TEAM 2 NDED BY: Silas Talosui DN NO: 2322 IPTION: List of Materials required for Nb	ISSUED E DATE ISS	RECEIVED BY: Derick Hoa ISSUED BY: George Blamoli DATE ISSUED: 03/12/2013 amba Pilot Site for Meter Raising Project					
Date	Materials Description	Quantity	Unit Cost	Total Cost				
12/3/2013	3/4" x 1/2" Poly Reducing Nipple	10	\$ 5.00	\$ 50.00				
12/3/2013	16mm Poly Tee	20	\$ 85.00	\$ 1,700.00				
12/3/2013	16mm Poly Coupling	10	\$ 45.00	\$ 450.00				
12/3/2013	20mm x 3/4" Poly female Adaptor	10	\$ 48.00	\$480.00				
12/3/2013	1/2" G.I Socket	14	\$ 10.00	\$ 140.00				
12/3/2013	16mm x 1/2" female poly Adaptor	10	\$ 45.00	\$ 450.00				
12/3/2013	ThreadTape	40	\$ 4.00	\$ 160.00				
		Total per I	Requisition =	\$ 3,430.00				

DEPARTM	ENT NAME: NRW PROJECT TEAM 2	RECEIVED BY: Harrison					
RECOMM	ENDED BY: Benjimen Billy	ISSUED E	Y: George Bla	moli			
REQUISIT	ION NO: 2328	DATE ISS	SUED: 13/12/20	013			
JOB DESC	RIPTION: List of Materials required for Mbar	anamba & Oi'ho	la Pilot Project	Site .			
Date	Materials Description	Quantity	Unit Cost	Total Cost			
12/12/2013	3 40 KG Bag cement	6	\$ 80.00	\$ 480.00			
		Total per I	Requisition =	\$ 480.00			
	ENT NAME: NRW PROJECT TEAM 2		ED BY: Derick	-			
	ENDED BY: Benjimen Billy		SY: George Bla				
	ION NO: 2329		SUED: 17/12/20				
	RIPTION: List of Materials required for Mbar						
Date	Materials Description	Quantity		Total Cost			
12/17/201	3 40 KG Bag cement	6	\$ 80.00	\$ 480.00			
		Total per I	Requisition =	\$ 480.00			
	ENT NAME: NRW PROJECT TEAM 2		ED BY: Deric				
	ENDED BY : Eric Unga		SY: George Bla				
	ION NO: 2330		SUED: 18/12/20				
	RIPTION: List of Materials required for Mbar						
Date	Materials Description		Unit Cost	Total Cost			
12/18/20	13 40 KG Bag cement	4	\$ 80.00	\$ 320.00			
		Total per I	Requisition =	\$ 320.00			
	ENT NAME: NRW PROJECT TEAM 1	RECEIVE	ED BY: Liston	Tora			
RECOMM	ENDED BY: Eric Unga	ISSUED E	Y: George Bla	ımoli			
REQUISIT	ION NO: 2331	DATE ISS	SUED: 19/12/20	013			
JOB DESC	RIPTION: being for Meter Raising @ the proje	ect site(Mbarana	mba).				
Date	Materials Description		Unit Cost	Total Cost			
12/19/2013	3 25mm x 3/4" Poly female Adaptor	2	\$ 48.00				
	2 11/2" C I Dl	1	6 0.00	6 9.00			

TOTAL MATERIAL COST FOR MBARANAMBA

	NT NAME: NRW PROJECT TEAM 2	RECEIVI				
	NDED BY: Eric Unga	ISSUED I				
REQUISITIO		DATE IS				
	IPTION: List of Materials required for Nbar					
Date	Materials Description	Quantity			Total	
12/4/2013	1/2" G.I Socket	6	\$	10.00	\$	60.00
	16mm x 1/2" female poly Adaptor	10	\$	45.00	\$	450.00
12/4/2013	15mm (1/2") G.I Tee	1	\$	5.00	\$	5.00
		Total per	Requisi	tion =	\$	515.00
DEPARTME	NT NAME: NRW PROJECT TEAM 1	RECEIVI	ED BY:	Selyna	Fai	
RECOMME	NDED BY : Benjimen Billy	ISSUED 1	BY: Ge	orge Bla	moli	
REQUISITIO		DATE IS				
JOB DESCR	IPTION: List of Materials required for Nbara	anamba Pilot Sit	e for M	eter Rais	ing Pro	ject .
Date	Materials Description	Quantity	Unit	Cost	Total	Cost
12/4/2013	10mm Steel Rods	2.	S	68.00	\$	136.00
		Total per		tion =	\$	136.00
DEPARTME	NT NAME: NRW PROJECT TEAM 2	Total per	Requisi			136.00
DEL	TI TO ENTER THE THOUSE OF TENTE		Requisi ED BY:	: Derick	Hoa	136.00
DEL	NDED BY : Benjimen Billy	RECEIVI	Requisi ED BY: BY: Ge	: Derick	Hoa moli	136.00
RECOMME REQUISITION	NDED BY : Benjimen Billy	RECEIVI ISSUED I DATE IS	Requisi ED BY: BY: Ge SUED:	: Derick orge Bla 09/12/20	Hoa moli	136.00
RECOMME REQUISITION	NDED BY: Benjimen Billy DN NO: 2324	RECEIVI ISSUED I DATE IS	Requisi ED BY: BY: Ge SUED: la Proje	: Derick orge Bla 09/12/20 ect Area	Hoa moli	
RECOMME REQUISITION JOB DESCR	NDED BY: Benjimen Billy ON NO: 2324 IPTION: List of Materials required for Nbara	RECEIVI ISSUED I DATE IS: anamba & Ohi o	Requisi ED BY: BY: Ge SUED: la Proje	: Derick orge Bla 09/12/20 ect Area	Hoa moli 013	
RECOMME REQUISITION JOB DESCR Date 12/9/2013	NDED BY: Benjimen Billy NNO: 2324 IPTION: List of Materials required for Nbar. Materials Description	RECEIVI ISSUED I DATE IS: anamba & Ohi o	Requisi ED BY: BY: Ge SUED: la Proje Unit	: Derick orge Bla 09/12/20 ect Area Cost	Hoa moli 013	Cost
RECOMME REQUISITION JOB DESCR Date 12/9/2013	NDED BY: Benjimen Billy NNO: 2324 IPTION: List of Materials required for Nbar: Materials Description 1/2" G.I Socket	RECEIVI ISSUED I DATE IS: anamba & Ohi o Quantity	Requisi ED BY: BY: Ge SUED: la Proje Unit	: Derick orge Bla 09/12/20 ect Area Cost	Hoa moli 013 Total	Cost 30.00
RECOMME REQUISITION JOB DESCR Date 12/9/2013 12/9/2013	NDED BY: Benjimen Billy NN NO: 2324 PPTION: List of Materials required for Nbar. Materials Description 1/2" G.I Socket 15mm Stop Cock	RECEIVI ISSUED I DATE IS: anamba & Ohi o Quantity 3	Requisi ED BY: BY: Ge SUED: la Proje Unit \$: Derick orge Bla 09/12/20 ect Area Cost 10.00 170.00	Hoa amoli 013 Total	Cost 30.00 1,700.00
RECOMMEI REQUISITIO JOB DESCR Date 12/9/2013 12/9/2013 12/9/2013	NDED BY: Benjimen Billy NN 0: 2324 PPTION: List of Materials required for Nban Materials Description 1/2" G.I Socket 15mm Stop Cock ThreadTape	RECEIVI ISSUED I DATE ISS anamba & Ohi o Quantity 3 10 45	ED BY: BY: Ge SUED: la Proje Unit \$: Derick orge Bla 09/12/20 ect Area Cost 10.00 170.00 4.00	Hoa amoli 013 Total \$	Cost 30.00 1,700.00 180.00
RECOMMEI REQUISITIO JOB DESCR Date 12/9/2013 12/9/2013 12/9/2013	NDED BY: Benjimen Billy N NO: 2324 PITION: List of Materials required for Nbar: Materials Description 1/2" GLI Socket 15mm Stop Cock ThreadTape 15mm GL elbow	RECEIVI ISSUED I DATE ISS anamba & Ohi o Quantity 3 10 45 20	Requisi ED BY: BY: Ge SUED: la Proje Unit \$ \$ \$ \$ \$ \$: Derick lorge Bla 09/12/20 ect Area Cost 10.00 170.00 4.00 12.00 45.00	Hoa moli 013 Total \$ \$ \$	Cost 30.00 1,700.00 180.00 240.00
RECOMME REQUISITION JOB DESCR Date 12/9/2013 12/9/2013 12/9/2013 12/9/2013 12/9/2013	NDED BY: Benjimen Billy N NO: 2324 PITION: List of Materials required for Nbar: Materials Description 1/2" GLI Socket 15mm Stop Cock ThreadTape 15mm GL elbow	RECEIVI ISSUED ID DATE IS anamba & Ohi o Quantity 3 10 45 20	Requisi ED BY: BY: Ge SUED: la Proje Unit \$ \$ \$ \$ Requisi	: Derick orge Bla 09/12/20 ext Area Cost 10.00 170.00 4.00 12.00 45.00 tion =	Hoa moli 113 Total \$ \$ \$ \$	Cost 30.00 1,700.00 180.00 240.00 450.00 2,600.00
RECOMME REQUISITIO JOB DESCR Date 12/9/2013 12/9/2013 12/9/2013 12/9/2013 12/9/2013	NDED BY: Benjimen Billy NN 02: 2324 PTION: List of Materials required for Nbari Materials Description 1/2" G.I Socket 1/3" mn Stop Cock ThreadTape 1.5mm G.I elbow 1.6mm Poly Coupling NT NAME: NRW PROJECT TEAM 2	RECEIVI ISSUED DATE ISSUED DATE ISSUED DATE ISSUED DATE ISSUED SECOND DATE DATE	Requisi ED BY: BY: Ge SUED: la Proje Unit \$ \$ \$ \$ Requisi	: Derick orge Bla 09/12/20 ext Area Cost 10.00 170.00 4.00 45.00 tion =	Hoa moli 013 Total \$ \$ \$ \$ \$	Cost 30.00 1,700.00 180.00 240.00 450.00 2,600.00
RECOMME REQUISITIO JOB DESCR Date 12/9/2013 12/9/2013 12/9/2013 12/9/2013 12/9/2013	NDED BY: Benjimen Billy NN 02: 2324 PPTION: List of Materials required for Nbar: Materials Description 1/2" G.I Socket 15mm Stop Cock ThreadTape 15mm G.I elbow 16mm Poly Coupling NT NAME: NRW PROJECT TEAM 2 NDED BY: Eric Unga	RECEIVI ISSUED I DATE ISS anamba & Ohi o Quantity 3 10 45 20 10 Total per I	Requisi ED BY: BY: Ge SUED: la Proje Unit \$ \$ \$ \$ \$ Requisi	: Derick orge Bla 09/12/20 ect Area Cost 10.00 170.00 4.00 12.00 45.00 tion =	Hoa moli 013 Total \$ \$ \$ \$ \$ \$	Cost 30.00 1,700.00 180.00 240.00 450.00 2,600.00
RECOMME REQUISITION JOB DESCR Date 12/9/2013 12/9/2013 12/9/2013 12/9/2013 12/9/2013 DEPARTME RECOMME REQUISITION	NDED BY: Benjimen Billy NN 02: 2324 PTION: List of Materials required for Nbar. Materials Description 1/2" G.I Socket 1/3" mn Stop Cock 1/4" mn Stop Cock 1/	RECEIVI ISSUED I DATE IS: anamba & Ohi o Quantity 3 10 45 20 10 Total per I RECEIVI ISSUED I DATE IS:	Requisi ED BY: BY: Ge SUED: la Proje Unit \$ \$ \$ \$ \$ Requisi ED BY: BY: Ge SUED:	: Derick orge Bla 09/12/20 ext Area Cost 10.00 170.00 4.00 45.00 tion = : Harris orge Bla 10/12/20	For Malamoli	Cost 30.00 1,700.00 180.00 240.00 450.00 2,600.00
RECOMME REQUISITION JOB DESCR Date 12/9/2013 12/9/2013 12/9/2013 12/9/2013 12/9/2013 DEPARTME RECOMME REQUISITION	NDED BY: Benjimen Billy NN 02: 2324 PTION: List of Materials required for Nbari Materials Description 1/2" G.I Socket 1.5mm Stop Cock ThreadTape 1.5mm G.I elbow 1.6mm Poly Coupling NT NAME: NRW PROJECT TEAM 2 NDED BY: Eric Unga NN 02: 2325 PTION: List of Materials required for meter	RECEIVI ISSUED I DATE IS: anamba & Ohi o Quantity 3 10 45 20 10 Total per I RECEIVI ISSUED I DATE IS:	Requisi ED BY: BY: Ge SUED: la Proje Unit \$ \$ \$ \$ \$ Requisi ED BY: BY: Ge SUED: ranamb	: Derick orge Bla 09/12/20 ext Area Cost 10.00 170.00 4.00 45.00 tion = : Harris orge Bla 10/12/20 a Valley	For Malamoli	Cost 30.00 1,700.000 1,80.00 240.000 2,600.00 2,600.00 lai
RECOMMEI REQUISITIO JOB DESCR Date 12/9/2013 12/9/2013 12/9/2013 12/9/2013 12/9/2013 DEPARTME RECOMMEI REQUISITIO JOB DESCR	NDED BY: Benjimen Billy NN: 2324 PTION: List of Materials required for Nban Materials Description Li2° GL Socket I5mm Stop Cock ThreadTape I5mm GL elbow I6mm Poly Coupling NT NAME: NRW PROJECT TEAM 2 NDED BY: Eric Unga NN O: 2325 PTION: List of Materials required for meter Materials Description	RECEIVI ISSUED I DATE IS: anamba & Ohi o Quantity 3 10 45 20 10 Total per I RECEIVI ISSUED I DATE IS: raising @ Mba	Requisi ED BY: BY: Ge SUED: la Proje Unit \$ \$ \$ \$ \$ Requisi ED BY: BY: Ge SUED: ranamb	: Derick orge Bla 09/12/20 ext Area Cost 10.00 170.00 4.00 45.00 tion = : Harris orge Bla 10/12/20 a Valley	For Malamoli 113	Cost 30.00 1,700.00 180.00 240.00 450.00 2,600.00 lai

DEPARTM	ENT NAME: NRW PROJECT TEAM 2	RECEIVE	ED BY: I)erick	Hoa				
	ENDED BY : Silas Talosui		ISSUED BY: George Blamoli						
	ION NO: 2326	DATE ISS							
	RIPTION: List of Materials required for M	baranamba & Oi'ho	la Pilot Pr	oiect S	Site .				
Date	Materials Description	Quantity			Total	Cost			
12/11/2013	3 16mm x 1/2" female poly Adaptor	18	\$ 4	5.00	\$	810.0			
		10	S	4.00					
12/11/2013	3 ThreadTape	10	2	4.00	\$	40.0			
DEPARTM	ENT NAME: NRW PROJECT TEAM 2	Total per l	Requisitio	n = ⁄Iafe	\$				
DEPARTM RECOMM	ENT NAME: NRW PROJECT TEAM 2 ENDED BY: Benjimen Billy	Total per l RECEIVI	Requisition ED BY: Market SY: George	n = Aafe ge Bla	\$ moli				
DEPARTM RECOMM REQUISIT	ENT NAME: NRW PROJECT TEAM 2 ENDED BY: Benjimen Billy ION NO: 2327	Total per l RECEIVE ISSUED E DATE ISS	Requisition ED BY: M BY: Georg SUED: 12	n = Mafe ge Bla /12/20	\$ imoli 013				
DEPARTM RECOMMI REQUISIT IOB DESC	ENT NAME: NRW PROJECT TEAM 2 ENDED BY: Benjimen Billy	Total per l RECEIVE ISSUED E DATE ISS	Requisition ED BY: M BY: Georg SUED: 12	n = Mafe ge Bla /12/20 oject S	\$ imoli 013	850.00			
DEPARTM RECOMMI REQUISIT IOB DESC Date	ENT NAME: NRW PROJECT TEAM 2 ENDED BY: Benjimen Billy ION NO: 2327 RIPTION: List of Materials required for M	Total per l RECEIVE ISSUED E DATE ISSUBDATE I	Requisition ED BY: M BY: Georg SUED: 12	n = Mafe ge Bla /12/20 oject S	\$ moli 013	850.00 Cost			
DEPARTM RECOMMI REQUISIT JOB DESC Date 12/12/20	ENT NAME: NRW PROJECT TEAM 2 ENDED BY: Benjimen Billy ION NO: 2327 IRPTION: List of Materials required for M Materials Description	RECEIVI ISSUED I DATE ISS baranamba & Oi'ho Quantity	ED BY: M BY: Georg SUED: 12 bla Pilot Pr Unit Co	n = Mafe ge Bla /12/20 oject S	\$ moli 013	850.00 Cost 120.00			
DEPARTM RECOMMI REQUISIT JOB DESC Date 12/12/20 12/12/20 12/12/20	ENT NAME: NRW PROJECT TEAM 2 ENDED BY: Benjimen Billy ION NO: 2327 RIPTION: List of Materials required for M Materials Description 33 ThreadTape 33 20mm x 1/2" Poly female Adaptor 313 25mm x 1/2" Poly Female Adaptor	Total per 1 RECEIVI ISSUED I DATE ISS baranamba & Oi'ho Quantity 30	ED BY: M BY: Georg SUED: 12 da Pilot Pr Unit Co	n = Mafe ge Bla /12/20 oject S st 4.00	\$ moli 013 Site . Total	850.00 Cost 120.00 160.00			
DEPARTM RECOMMI REQUISIT JOB DESC Date 12/12/20 12/12/20 12/12/20	ENT NAME: NRW PROJECT TEAM 2 ENDED BY: Benjimen Billy ION NO: 2327 MEPTION: List of Materials required for M Materials Description 13 ThreadTape 13 20mm x 1/2" Poly female Adaptor	Total per l RECEIVI ISSUED I DATE ISS baranamba & Oi'ho Quantity 30 4	Requisitio ED BY: M BY: Georg SUED: 12 la Pilot Pr Unit Co \$ \$ 4 \$ 4	Mafe ge Bla /12/20 oject S st 4.00 0.00 18.00	\$ moli 013 Site Total \$ \$	850.00			

	Before Counter		After Countern		
					Total
Personnel Cost	74,940.83				128,708.2
Consumable	660.72	299.21	62.34	78.37	6,700.6
Material and Equipment	4,973.95	163,535.84	7,346.28	0.00	175,856.0
Sub Total	80,575.49	199,708.83	21,403.99	974.62	308,262.93
TOTAL	280,284.	32	22,378.6	H	
TOTAL MAN DAYS FOR MBUA VALLEY PILOT	657				

1. Costing Before Countermeasure Mbua Valley

Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	per day Reamarks
1. Personnel	Grades- Steps								
Staff-3	3.1	0	Person	15.85	118.88				
	3.2	0	Person	16.37	122.78				
	3.3	0	Person	16.90	126.75				
	3.4	0	Person	17.43	130.73				
	3.5	0	Person	17.96	134.70				
Staff-4	4.1	50	Person	19.81	148.58	144.00		21,394.80	
	4.2	20	Person	20.60	154.50	56.00		8,652.00	
	4.3	0	Person	21.39	160.43			0.00	
	4.4	0	Person	22.18	166.35			0.00	
	4.5	10	Person	22.98	172.35	29.00		4,998.15	
Staff-5	5.1	10	Person	24.83	186.23	26.00		4,841.85	
	5.2	0	Person	25.88	194.10			0.00	
	5.3	0	Person	26.94	202.05			0.00	
	5.4	0	Person	27.99	209.93			0.00	
	5.5	10	Person	29.05	217.88	29.00		6,318.38	
Staff-6	6.1	1	Person	32.48	243.60	2.00		487.20	
	6.2	1	Person	33.81	253.58	1.00		253.58	
	6.3	0	Person	35.13	263.48			0.00	
	64	0	Person	36.45	273.38			0.00	
	6.5	0	Person	37.77	283.28			0.00	
Staff-7	7.1	8	Person	39.62	297.15	23.00		6,834.45	
Statt+/	7.1	0	Person	40.94	307.05	43.00		0,834.43	-
	7.3	0	Person	42.26	316.95	-		0.00	
	7.4	0	Person Person	42.26	316.95			0.00	
	7.5	0	Person	44.90	336.75			0.00	
Staff-8	8.1	0	Person	49.39	370.43			0.00	
	8.2	0	Person	50.71	380.33			0.00	
	8.3	0	Person	52.03	390.23			0.00	
	8.4	0	Person	53.35	400.13			0.00	
	8.5	7	Person	54.67	410.03	22.00		9,020.55	
Staff-9	9.1	8	Person	59.95	449.63	27.00		12,139.88	
	9.2	0	Person	61.27	459.53			0.00	
	9.3	0	Person	62.59	469.43			0.00	
	9.4	0	Person	63.91	479.33			0.00	
	9.4 9.5							0.00	
Sub-total		0	Person	63.91	479.33	359.00		0.00	
Sub-total 2. Consumable		0	Person	63.91 65.23	479.33	359.00	S/km	0.00	
		0	Person	63.91 65.23	479.33 489.23	359.00	\$/km 4.2716	0.00 0.00 74,940.83	50km/7km/liter=7,14liter 11liter/hrs (fuel consumption for about 60PS) x lhr=11liter 11liter +7,1liter=18.1liter/50km
2. Consumable Diesel	9.5 For Excavator	17.5	Person Person	63.91 65.23 \$ Per Liter 11.80	479.33 489.23 L/km 0.3620		4.2716	0.00 0.00 74,940.83 74.75	11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km
2. Consumable	9.5	0	Person Person	63.91 65.23 \$ Per Liter	479.33 489.23 L/km	359.00 359.00 46.9812		0.00 0.00 74,940.83 74.75	11liter/hrs (fuel consumption for about 60PS) x lhr=11liter 11liter +7.1liter=18.1liter/50km +7.1liter=18.252days=25.200km 25.200km 10,000km x 8liter=20.16liter
2. Consumable Diesel Diesel	9.5 For Excavator For Pick-up	17.5	Person Person Liter	63.91 65.23 \$ Per Liter 11.80	479.33 489.23 L/km 0.3620 0.1428		4.2716 1.68504	0.00 0.00 74,940.83 74.75 554.38	Illiter/hrs (fuel consumption for about 60PS) s. Ihr=1 lliter Illiter +7. lliter=18.1 liter/50km >>okm r Jahren +7. 1 state +7. liter=18.1 liter/50km >>okm r Jahren +7. 1 state +7. lstate +7. lst
Diesel Diesel Engine Oil	9.5 For Excavator For Pick-up For Excavator	17.5 329	Person Person Liter Liter	63.91 65.23 \$ Per Liter 11.80 11.80	479.33 489.23 L/km 0.3620 0.1428		4.2716 1.68504 0.096	0.00 74,940.83 74.75 554.38 0.00	Illiter/hrs (fuel consumption for about 66PS) x lhr=1 liter 11liter 11liter 11liter 2. Illiter 2. Illiter 2. Illiter 2. Illiter 3. I
Diesel Diesel Engine Oil Engine Oil	9.5 For Excavator For Pick-up For Excavator	17.5 329 0	Person Person Liter Liter Liter	63.91 65.23 \$ Per Liter 11.80 60.00	479.33 489.23 L/km 0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.00 0.00 74,940.83 74.75 554.38 0.00 31.58	11liner/hrs (fuel consumption for about 600°S) s. 1hr=11 liter 11liner 11liner 1-7.1liner=18.1liner/50km 7-7.1liner=18.1liner/50km 7-8.0liner/50km x 52.200 km 52.520day=25.200km 52.520day=25.200km 50.000km 70.000km 70.0
Desel Desel Engine Od Engine Od Tires	9.5 For Excavator For Pick-up For Excavator	17.5 329 0	Person Person Liter Liter Liter	63.91 65.23 \$ Per Liter 11.80 60.00	479.33 489.23 L/km 0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.00 74,940.83 74.75 554.38 0.00	11liner/hrs (fuel consumption for about 600°S) s. 1hr=11 liter 11liner 11liner 1-7.1liner=18.1liner/50km 7-7.1liner=18.1liner/50km 7-8.0liner/50km x 52.200 km 52.520day=25.200km 52.520day=25.200km 50.000km 70.000km 70.0
Diesel Diesel Engine Oil Engine Oil Tires Sub-total 3. Material & Equipment	9.5 For Excavator For Excavator For Pick-up	17.5 329 0	Person Person Liter Liter Liter Liter Nos	63.91 65.23 \$ Per Liter 11.80 60.00	479.33 489.23 L/km 0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.00 0.00 74,940.83 74.75 554.38 0.00 31.58	Hitter/her (fixel community) in the hard Hitter (1975); her Hitter Hitter (1975); her Hit
2. Consumable Diesel Diesel Engine Oil Engine Oil Tires Sub-total Sub-total Sub-total Sub-total	9.5 For Excavator For Fick-up For Excavator For Fick-up 25mm	17.5 329 0	Person Person Liter Liter Liter Nos	63.91 65.23 \$ Per Liter 11.80 60.00	479.33 489.23 L/km 0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.000 74,940.83 74.75 554.38 0.00 31.58 0.00 660.72	Hitter-her (fiel consumption for about 60F8); I her 1 Hiter 60F8, her 1 Hiter 1 Hiter 60F8, her 1 Hiter 1 Hite
Diesel Diesel Diesel Engine Oil Engine Oil Tires Sub-total 3. Material & Engine Oil Silvice Gate Valve Silvice Gate Valve	For Excavator For Pick-up For Pick-up For Pick-up 25mm	17.5 329 0	Person Person Liter Liter Liter Liter Liter Liter Liter	63.91 65.23 \$ Per Liter 11.80 60.00	479.33 489.23 L/km 0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.000 74,940.83 74.75 554.38 0.00 31.58 0.00 660.72	Hitter-hre (fieel community of methods (60%) x Har-1 Hiter Hitter Hitter Hitter 1 Hiter 50% on 50% of the 1 Hiter 50% on 50% of the 1 Hiter 50% on 50% of the 1 Hitter
Diesel Diesel Diesel Engine Oil Engine Oil Tres Sub-testal Sub-testal Sub-testal Sub-testal Sub-testal	9.5 For Excavator For Fick-up For Excavator For Fick-up 25mm	17.5 329 0	Person Person Liter Liter Liter Nos	63.91 65.23 \$ Per Liter 11.80 60.00	479.33 489.23 L/km 0.3620 0.1428 0.0016	46.9812	4.2716 1.68504 0.096	0.000 74,940.83 74.75 554.38 0.00 31.58 0.00 660.72 0.00 0.00 0.00	Hitter-Inc (fiel community) in the hard Hitter (1878) in Ihra-Hillier Hillier (1878) in Ihra-Hillier Hillier (1878) in Ihra-Hillier (1878

2. Costing Countermeasure

Location	Mbua Valley			osting .	Journe	measui			
Items	Specification	Quantity	Unit	Hourly	Unit Cost	Total Days	Amount	Amount	per day Reamarks
		Quantity	Unit	Rate	(SBD)	Total Days	(SBD)	(SBD)	Reamarks
1. Personnel	Grades- Steps		n	15.05	110.00				
Staff-3	3.1	0	Person	15.85	118.88				
	3.2	0	Person Person	16.37 16.90	122.78 126.75				
	3.3	0	Person	17.43	126.75				
	3.5	0	Person	17.45	130.73				
Staff-4	4.1	17	Person	19.81	148.58	68.00		10,103,10	
Duii 4	4.2	7	Person	20.60	154.50	18.00		2,781.00	
	4.3	0	Person	21.39	160.43	10.00		0.00	
	4.4	0	Person	22.18	166.35			0.00	
	4.5	3	Person	22.98	172.35	8.00		1,378.80	
Staff-5	5.1	4	Person	24.83	186.23	22.00		4,096.95	
	5.2	0	Person	25.88	194.10			0.00	
	5.3	0	Person	26.94	202.05			0.00	
	5.4	0	Person	27.99	209.93			0.00	
	5.5	4	Person	29.05	217.88	9.00		1,960.88	
Staff-6	6.1	1	Person	32.48	243.60	1.00		243.60	
	6.2	0	Person	33.81	253.58	1.00		253.58	
	6.3	0	Person	35.13	263.48			0.00	
	6.4	0	Person	36.45	273.38			0.00	
	6.5	0	Person	37.77	283.28			0.00	
Staff-7	7.1	2	Person	39.62	297.15	5.00		1,485.75	
	7.2	0	Person	40.94	307.05			0.00	
	7.3	0	Person	42.26	316.95			0.00	
	7.4	0	Person	43.58	326.85			0.00	
	7.5	0	Person	44.90	336.75			0.00	
Staff-8	8.1	0	Person	49.39	370.43			0.00	
	8.2	0	Person	50.71	380.33			0.00	
	8.3	0	Person	52.03	390.23			0.00	
	8.4	0	Person	53.35	400.13			0.00	
	8.5	2	Person	54.67	410.03	5.00		2,050.13	
Staff-9	9.1	0	Person	59.95	449.63			0.00	
			Person	61.27	459.53			0.00	
	9.3	0	Person	62.59	469.43			0.00	
	9.4	0	Person	63.91	479.33			0.00	
Contractors	9.5	- 0	Person	65.23	489.23			\$11.520.00	
Contractors				-				\$11,520.00	
Sub-total						137,00		35,873.78	
2. Consumable				\$ Per Liter	I./km	157100	\$/km	55,075176	
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	r 11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter
Diesel	For Pick-up	168	Liter	11.80	0.1428	23.9904	1.68504	283.09	50km/7km/liter=7.14lite r/50km
Engine Oil	For Excavator	0	Liter	60.00	0.0016		0.096	0.00	100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter/ 20.16liter/ 252days=0.08liter/day/5
Engine Oil	For Pick-up	168	Liter	60.00	0.0016		0.096	16.13	252days=0.08liter/day/5. 100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter/ 20.16liter/ 252days=0.08liter/day/5.

Items	Specification	Quantity	Unit	Hourly Rate	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Tires		0	Nos	770.00			1.078	0.00	50km x 252days=12,600km 12,600km/30,000km x
					0.0014				4nos=1.68nos 1.68nos/
								200.21	
Sub-total 3 Material &								299.21	
Equipment Sluice/ Gate Va	25mm		piece					0.00	Gate Valve
Sluice/ Gate V:	40mm		piece				1		Gate Valve
Sluice/ Gate V:	50mm		piece				1		Gate Valve
Sluice/ Gate Va	80mm		piece						Sluice Valve
Sluice/ Gate Va	100mm		piece						Sluice Valve
Sluice/ Gate V:	150mm		piece						Sluice Valve
Sluice/ Gate Va	200mm		piece					0.00	Sluice Valve Sluice Valve225mm
Sluice/ Gate Va	250mm		piece					0.00	AUD1785
Sluice/ Gate Va	300mm		piece					0.00	
Pipes (Poly)	15mm		coil					0.00	Length on 1 coil =300m
Pipes (Poly)	20mm	1 i	coil			1		0.00	Length on 1 coil =300m
Pipes (Poly)	25mm	1 i	coil			1		0.00	Length on 1 coil =200m
Pipes (Poly)	50mm		coil			1	l i	0.00	Length on 1 coil =150m
Pipes (PVC)	25mm		piece					0.00	
Pipes (PVC)	50mm		piece			1		0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece			i		0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece			i		0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece			i		0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
All Materials fo		ines	p					163,535.84	
Sub-total								163,535,84	
Total								199,708,83	

1AUD=6.534SBD was applied to the above (rate as of 30 September, 2013 of Oanda).

Location	Mbua Valley		per day						
Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
1. Personnel	Grades- Steps			(355)	(355)		(555)	(555)	
Staff-3	3.1	0	Person	15.85	118.88				
	3.2	0	Person	16.37	122.78				
	3.3	0	Person	16.90	126.75				
	3.4	0	Person	17.43	130.73				
	3.5	0	Person	17.96	134.70				
Staff-4	4.1	15	Person	19.81 20.60	148.58 154.50	23.00 9.00		3,417.23 1,390.50	
	4.2	0	Person Person	21.39	160.43	9.00		0.00	
	4.4	0	Person	22.18	166.35			0.00	
	4.5	3	Person	22.98	172.35	5.00		861.75	
Staff-5	5.1	3	Person	24.83	186.23	22.00		4,096.95	
	5.2	0	Person	25.88	194.10			0.00	
	5.3	0	Person	26.94	202.05			0.00	
	5.4	0	Person	27.99	209.93			0.00	
	5.5	3	Person	29.05	217.88	5.00		1,089.38	
Staff-6	6.1	0	Person	32.48	243.60			0.00	
	6.2	0	Person	33.81 35.13	253.58 263.48			0.00	
	6.3	0	Person Person	36.45	273.38			0.00	
	6.5	0	Person	37.77	283.28			0.00	
Staff-7	7.1	1	Person	39.62	297.15	3.00		891.45	
	7.2	0	Person	40,94	307.05			0.00	
	7.3	0	Person	42.26	316.95			0.00	
	7.4	0	Person	43.58	326.85			0.00	
	7.5	0	Person	44.90	336.75			0.00	
Staff-8	8.1	0	Person	49.39	370.43			0.00	
	8.2	0	Person	50.71	380.33			0.00	
	8.3	0	Person	52.03	390.23			0.00	
	8.4 8.5	0	Person	53.35	400.13 410.03			0.00	
Staff-9	9.1	- 0	Person Person	54.67 59.95	449.63	5.00		2.248.13	
Starr-9	9.1	0	Person	61.27	459.53	5.00		2,248.13	
	9.3	0	Person	62.59	469,43			0.00	
	9.4	0	Person	63.91	479.33			0.00	
	9.5	0	Person	65.23	489.23			0.00	
Sub-total						72.00		13,995.38	
2. Consumable				S Per Liter	L/km		S/km		
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	00PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km
Diesel	For Pick-up	35	Liter	11.80	0.1428	4.9980	1.68504	58.98	km
Engine Oil	For Excavator	0	Liter	60.00	0.0016		0.096	0.00	100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km
Engine Oil	For Pick-up	35	Liter	60.00	0.0016		0.096	3.36	100km x 252days=25,200km
Tires		0	Nos	770.00	0.0014		1.078	0.00	50km x 252days=12,600km 12,600km/30,000km x 4nos=1.68nos 1.68nos/ 252days=0.07nos/50km

Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
. Material &:									
iquipment									
Sluice/ Gate Valve	25mm		piece]			Gate Valve
Sluice/ Gate Valve	40mm		piece]			Gate Valve
Sluice/ Gate Valve	50mm		piece			1			Gate Valve
Sluice/ Gate Valve	80mm		piece						Sluice Valve
Sluice/ Gate Valve	100mm		piece					0.00	Sluice Valve
Sluice/ Gate Valve	150mm		piece					0.00	Sluice Valve
Sluice/ Gate Valve	200mm		piece			1			Sluice Valve
Sluice/ Gate Valve	250mm		piece					0.00	Sluice Valve225mm
Sluice/ Gate Valve	300mm		piece			1		0.00	
Pipes (Poly)	15mm		coil					0.00	Length on 1 coil =300m
Pipes (Poly)	20mm		coil			1		0.00	Length on 1 coil =300m
Pipes (Poly)	25mm		coil			1		0.00	Length on 1 coil =200m
Pipes (Poly)	50mm		coil			1		0.00	Length on 1 coil =150m
Pipes (PVC)	25mm		piece					0.00	
Pipes (PVC)	50mm		piece			1		0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece			1		0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece			1		0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece			1		0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
All Materials for C	ountermeasures							7,346.28	
Sub-total								7,346.28	
Total								21,403,99	

Location	Mbua Valley			4. Rout	ine Acti	vities			per day
Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
I. Personnel	Grades- Steps			Kate (SBD)	(SBD)	Days	(SBD)	(SBD)	
Staff-3	3.1	0	Person	15.85	118.88				
	3.2	0	Person	16.37	122.78				
	3.3	0	Person	16.90	126.75				
	3.4	0	Person	17.43	130.73				
	3.5	0	Person	17.96 19.81	134.70 148.58				
Staff-4	4.1	0	Person Person	20.60	148.58			0.00	
	4.3	0	Person	21.39	160.43			0.00	
	4.4	0	Person	22.18	166.35			0.00	
	4.5	0	Person	22.98	172.35			0.00	
Staff-5	5.1	0	Person	24.83	186.23			0.00	
	5.2	0	Person	25.88	194.10			0.00	
	5.3	- 0	Person	26.94	202.05			0.00	
	5.4	0	Person	27.99	209.93			0.00	
Staff-6	5.5	0	Person	29.05 32.48	217.88 243.60	9.00		2.192.40	
Staff-6	6.1	0	Person Person	32.48	253.58	9.00		2,192.40	
	6.3	0	Person	35.13	263.48			0.00	
	6.4	0	Person	36,45	273.38			0.00	
	6.5	0	Person	37.77	283.28			0.00	
Staff-7	7.1	0	Person	39.62	297.15			0.00	
	7.2	0	Person	40.94	307.05			0.00	
	7.3	0	Person	42.26	316.95			0.00	
	7.4	0	Person	43.58	326.85			0.00	
	7.5	0	Person	44.90	336.75			0.00	
Staff-8	8.1	0	Person	49.39	370.43			0.00	
	8.2	0	Person	50.71	380.33			0.00	
	8.3 8.4	0	Person	52.03 53.35	390.23 400.13			0.00	
	8.5	0	Person Person	54.67	410.03			0.00	
Staff-9	9.1	0	Person	59.95	449.63			0.00	
Dian-7	9.2	0	Person	61.27	459.53			0.00	
	9.3	0	Person	62.59	469.43			0.00	
	9.4	0	Person	63.91	479.33			0.00	
	9.5	- 0	Person	65.23	489.23			0.00	
Sub-total						9.00		2,192.40	
2. Consumable				\$ Per Liter	L/km		S/km		50km/7km/liter=7.14liter
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter+7 lliter=18 lliter/50km
Diesel	For Pick-up	7	Liter	11.80	0.1428	0.9996	1.68504	11.80	50km/7km/liter=7.14liter/50km
Engine Oil	For Excavator	0	Liter	60.00	0.0016		0.096	0.00	100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km 100km x 252days=25,200km
Engine Oil	For Pick-up	7	Liter	60.00	0.0016		0.096	0.67	100km x 252days=25,200km 25,200km/ 10,000km x 8liter=20.16liter 20.16liter/ 252days=0 08liter/day/50km
Tires		0	Nos	770.00	0.0014		1.078	0.00	50km x 252days=12,600km 12,600km/30,000km x 4nos=1.68nos/252days=0.07nos/50km
Sub-total								12.47	
3. Material &								12.47	
Sluice/ Gate Valve	25mm		piece					0.00	Gate Valve
Sluice/ Gate Valve	40mm	1	piece					0.00	Gate Valve
Sluice/ Gate Valve	50mm	<u></u>	piece					0.00	Gate Valve
Sluice/ Gate Valve	80mm		piece					0.00	Sluice Valve
Sluice/ Gate Valve	100mm		piece					0.00	
Sluice/ Gate Valve	150mm	L	piece)	0.00	Sluice Valve

Items	Specification	Quantity	Unit	Rate (SBD)	(SBD)	Days	(SBD)	(SBD)	Reamarks
Sluice/ Gate Valve	200mm		piece					0.00	Sluice Valve
Sluice/ Gate Valve	250mm		piece					0.00	Sluice Valve225mm AUD1785
Sluice/ Gate Valve	300mm		piece					0.00	
Pipes (Poly)	15mm		coil					0.00	Length on 1 coil =300m
Pipes (Poly)	20mm	1	coil					0.00	Length on 1 coil =300m
Pipes (Poly)	25mm	1 1	coil					0.00	Length on 1 coil =200m
Pipes (Poly)	50mm		coil					0.00	Length on 1 coil =150m
Pipes (PVC)	25mm		piece					0.00	
Pipes (PVC)	50mm		piece					0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece					0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece					0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece					0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
All Materials for Cou	ntermeasures							0.00	
Sub-total								0.00	
Total								2,204.87	
1AUD=6.534SBD wa	s applied to the	above (ra	te as of 30 S	September, 20	13 of Oanda).			

S4.7-1-31

	TOTAL COST FOR I	BAHAI KUKUM	PILOT		
	Before Counter		After Countern		
	Before Countermeasure	Countermeasure	After Countermeasure	Routine Activities	
Personnel Cost	50,028.68				95,087.68
Consumable	361.16				6,349.43
Material and Equipment	4,973.95	168,624.15	7,346.28	0.00	180,944,38
Sub Total	55,383.79	200,598.79	19,836.29	974.02	282,361.48
TOTAL	255,950.	58	20,810.9	0	

Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Sluice/ Gate Valve	100mm		piece					0.00	Sluice Valve
Sluice/ Gate Valve	150mm		piece					0.00	Sluice Valve
Sluice/ Gate Valve	200mm		piece			1			Sluice Valve
Sluice/ Gate Valve	250mm		piece					0.00	Sluice Valve225mm AUD1785
Sluice/ Gate Valve	300mm		piece			1		0.00	
Pipes (Poly)	15mm		coil					0.00	Length on 1 coil
Pipes (Poly)	20mm		coil			1		0.00	Length on 1 coil
Pipes (Poly)	25mm		coil			1			Length on 1 coil
Pipes (Poly)	50mm		coil			1		0.00	Length on 1 coil
Pipes (PVC)	25mm		piece					0.00	
Pipes (PVC)	50mm		piece			1		0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece			1		0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece			1		0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece			1		0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
All Materials for Cou	ntermeasures							4,973.95	
Sub-total								4,973.95	
Total								55,363,79	

1. Costing Before Countermeasure

Location	Bahai Kukum	1. C							
ν.	0 10 1	0 4	W. 1.	Hourly	Unit Cost	m . 1 m	Amount	Amount	per
Items	Specification	Quantity	Unit	Rate (SBD)	(SBD)	Total Days	(SBD)	(SBD)	Reamarks
1. Personnel	Grades- Steps								
Staff-3	3.1	0	Person	15.85	118.88				
	3.2	0	Person Person	16.37 16.90	122.78				
	3.4	0	Person	17.43	130.73				
	3.5	0	Person	17.96	134.70				
Staff-4	4.1	40	Person	19.81	148.58	116.00		17,234.70	
	4.2	10	Person	20.60	154.50	29.00		4,480.50	
	4.3	0	Person	21.39	160.43			0.00	
	4.4	0	Person	22.18	166.35			0.00	
	4.5	10	Person	22.98	172.35	29.00		4,998.15	
Staff-5	5.1	10	Person	24.83	186.23	26.00		4,841.85	
	5.2	0	Person	25.88	194.10			0.00	
	5.3	0	Person Person	26.94 27.99	202.05			0.00	
	5.5	0	Person	29.05	217.88	0.00		0.00	
Staff-6	6.1	1	Person	32.48	243.60	2.00		487.20	
Statio	6.2	1	Person	33.81	253.58	1.00		253.58	
	6.3	0	Person	35.13	263.48			0.00	
	6.4	0	Person	36.45	273.38			0.00	
	6.5	0	Person	37.77	283.28			0.00	
Staff-7	7.1	9	Person	39.62	297.15	23.00		6,834.45	
	7.2	0	Person	40.94	307.05			0.00	
	7.3	0	Person	42.26	316.95			0.00	
	7.4	0	Person	43.58	326.85			0.00	
Staff-8	7.5 8.1	0	Person Person	44.90 49.39	336.75 370.43			0.00	
Stall-8	8.1	0	Person	50.71	380.33			0.00	
	8.3	0	Person	52.03	390.23			0.00	
	8.4	0	Person	53.35	400.13			0.00	
	8.5	7	Person	54.67	410.03	20.00		8,200.50	
Staff-9	9.1	2	Person	59.95	449.63	6.00		2,697.75	
	9.2	0	Person	61.27	459.53			0.00	
	9.3	0	Person	62.59	469.43			0.00	
	9.4	0	Person	63.91	479.33			0.00	
	9.5	0	Person	65.23	489.23			0.00	
Sub-total 2. Consumable				S Per Liter	Y 0	252.00	S/km	50,028.68	
Consumable				5 Per Liter	L/KIII		3/KIII		50km/7km/liter=7.
Diesel	For Excavator	12	Liter	11.80	0.3620		4.2716	51.26	er 11liter/hrs (fuel consumption for ab 60PS) x 1hr=11liter 11liter 50km/7km/liter=7.
Diesel	For Pick-up	174	Liter	11.80	0.1428	24.8472	1.68504	293.20	50km/7km/liter=7. er/50km 100km x
Engine Oil	For Excavator	0	Liter	60.00			0.096	0.00	252days=25,200km 25,200km/10,000k 8liter=20.16liter 20.16liter/ 252days=0.08liter/
					0.0016				50km
Engine Oil	For Pick-up	174	Liter	60.00	0.0016		0.096	16.70	25,200km/10,000l 8liter=20.16liter 20.16liter/ 252days=0.08liter/
Engine Oil Tires	For Pick-up	174	Liter	60.00 770.00			1.078	16.70	252days=25,200km/10,000k 25,200km/10,000k 8liter=20.16liter 20.16liter/ 252days=0.08liter/ 50km x 252days=12,600km/12,600km/30,000k 4nos=1.68nos 1.68nos/
Tires	For Pick-up				0.0016			0.00	252days=25,200km/10,000k 25,200km/10,000k 8liter=20.16liter 20.16liter/ 252days=0.08liter/ 50km x 252days=12,600km/12,600km/30,000k 4nos=1.68nos 1.68nos/
Tires Sub-total	For Pick-up				0.0016				252days=25,200km/10,000k 25,200km/10,000k 8liter=20.16liter 20.16liter/ 252days=0.08liter/ 50km x 252days=12,600km/12,600km/30,000k 4nos=1.68nos 1.68nos/
Tires Sub-total 5. Material & Equipment Sluice/ Gate Valve	25mm				0.0016			0.00 361.16	252days=25,200km / 10,000 88iter=20.16liter 20.16liter/ 252days=0.08liter/ 50km x 50km x 50km x 12,600km / 30,000km / 30,
Sub-total 5. Material & Equipment Sluice/ Gate Valve Sluice/ Gate Valve	25mm 40mm		Nos piece piece		0.0016			0.00 361.16 0.00 0.00	25.2days=25,200km 20,000km 10,000km 10,000km 10,000km 10,000km 10,000km 10,000km 10,000km 10,000km 10,000km 30,000km 30,
Tires Sub-total 5. Material & Equipment Sluice/ Gate Valve	25mm		Nos		0.0016			0.00 361.16 0.00 0.00 0.00	252days=25,200km 20,000km 10,000 km 25,200km 10,000 km 20,16liter 20,16liter 20,16liter 25,2days=0.08liter/c 50km x 252days=12,600km 12,600km 30,000 km 30,0

2. Costing	Countermeasure

Location	Bahai Kukum								per o
Items	Specification	Quantity	Unit	Hourly Rate	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
. Personnel	Grades- Steps				(UDD)		(ODD)	(555)	
Staff-3	3.1	0	Person	15.85	118.88				
	3.2	0	Person	16.37	122.78				
	3.3	0	Person	16.90	126.75				
	3.4	0	Person	17.43	130.73			i	
	3.5	0	Person	17.96	134.70				
Staff-4	4.1	14	Person	19.81	148.58	60.00		8,914.50	
	4.2	4	Person	20.60	154.50	10.00		1,545.00	
	4.3	0	Person	21.39	160.43			0.00	
	4.4	0	Person	22.18	166.35			0.00	
	4.5	3	Person	22.98	172.35	8.00		1,378.80	
Staff-5	5.1	4	Person	24.83	186.23	22.00		4,096.95	
	5.2	0	Person	25.88	194.10			0.00	
	5.3	0	Person	26.94	202.05			0.00	
	5.4	0	Person	27.99	209.93			0.00	
	5.5	1	Person	29.05	217.88	1.00		217.88	
Staff-6	6.1	1	Person	32.48	243.60	1.00		243.60	
	6.2	0	Person	33.81	253.58	1.00		253.58	
	6.3	0	Person	35.13	263.48			0.00	
	6.4	0	Person	36.45	273.38			0.00	
_	6.5	0	Person	37.77	283.28			0.00	
Staff-7	7.1	2	Person	39.62	297.15	5.00		1,485.75	
	7.2	0	Person	40.94	307.05			0.00	
	7.3	0	Person	42.26	316.95			0.00	
	7.4	0	Person	43.58	326.85			0.00	
	7.5	0	Person	44.90	336.75			0.00	
Staff-8	8.1	0	Person	49.39	370.43			0.00	
	8.2	0	Person	50.71	380.33			0.00	
	8.3	0	Person	52.03	390.23			0.00	
	8.4	0	Person	53.35	400.13			0.00	
	8.5	2	Person	54.67	410.03	5.00		2,050.13	
Staff-9	9.1	0	Person	59.95	449.63			0.00	
	9.2	0	Person	61.27	459.53			0.00	
	9.3	0	Person	62.59	469.43			0.00	
	9.4	0	Person	63.91	479.33			0.00	
	9.5	0	Person	65.23	489.23			0.00	
Contractors								\$ 11,520.00	
Sub-total						113.00		31,706.18	
Consumable				\$ Per Liter	L/km		\$/km		
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	50km/7km/liter=7.14liter 11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter
Diesel					l				+7.1liter=18.1liter/50km
	For Pick-up	144	Liter	11.80	0.1428	20.5632	1.68504	242.65	50km/7km/liter=7.14liter
Engine Oil	For Pick-up For Excavator	144	Liter	11.80	0.1428	20.5632	1.68504 0.096	0.00	50km/7km/liter=7.14lite 0km 100km x 252days=25,200km 25,200km / 10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50
Engine Oil Engine Oil						20.5632		0.00	50km/7km/liter=7.14lite 0km 100km x 100km x 252days=25,200km 25,200km /10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/5/ 700km x 252days=25,200km 10,000km x 8liter=20.16liter 20.16liter 20.16liter 20.16liter 20.16liter 20.16liter 252days=0.08liter/day/5/
	For Excavator	0	Liter	60.00	0.0016	20.5632	0.096	0.00	50km/7km/liter=7.14lite 100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter/ 25.16liter/ 252days=0.08liter/day/5/ 100km x 252days=25,200km/10,000km x 8liter=20.16liter 25.2days=0.08liter/day/5/ 8liter=20.16liter 25.2days=0.08liter/day/5/ 8liter=20.16liter 25.2days=0.08liter/day/5/ 8liter=20.16liter 25.2days=0.08liter/day/5/ 8liter=20.16liter
Engine Oil	For Excavator	0	Liter	60.00	0.0016	20.5632	0.096	13.82	50km/ThmHtter-7.14ltin from 1100km x 125.200km 10.000km x 8kiter-20.16ltine 20.16ltine 20.16ltine 20.16ltine 215.200km 10.000km x 8kiter-20.10ltine 215.20dsys-10.00km terday/5 700km x 8kiter-20.16ltine 215.20dsys-10.00km x 8kiter-20.16ltine 215.20dsys-10.00km x 8kiter-20.16ltine 215.20dsys-10.8ltineriday/5 700km x 25.2dsys-10.8ltineriday/5 70km x 25.2dsys-12.600km x 4aos-1.68aos
Engine Oil Tires	For Excavator	0	Liter	60.00	0.0016	20.5632	0.096	0.00	50km/ThmHtter-7.14ltin from 1100km x 125.200km 10.000km x 8kiter-20.16ltine 20.16ltine 20.16ltine 20.16ltine 215.200km 10.000km x 8kiter-20.10ltine 215.20dsys-10.00km terday/5 700km x 8kiter-20.16ltine 215.20dsys-10.00km x 8kiter-20.16ltine 215.20dsys-10.00km x 8kiter-20.16ltine 215.20dsys-10.8ltineriday/5 700km x 25.2dsys-10.8ltineriday/5 70km x 25.2dsys-12.600km x 4aos-1.68aos
Engine Oil Tires Sub-total Material &	For Excavator	0	Liter	60.00	0.0016	20.5632	0.096	13.82	50km/ThmHtter-7.14ltin from 1100km x 125.200km 10.000km x 8kiter-20.16ltine 20.16ltine 20.16ltine 20.16ltine 215.200km 10.000km x 8kiter-20.10ltine 215.20dsys-10.00km terday/5 700km x 8kiter-20.16ltine 215.20dsys-10.00km x 8kiter-20.16ltine 215.20dsys-10.00km x 8kiter-20.16ltine 215.20dsys-10.8ltineriday/5 700km x 25.2dsys-10.8ltineriday/5 70km x 25.2dsys-12.600km x 4aos-1.68aos
Engine Oil Tires Sub-total Material & quipment	For Excavator For Pick-up	0	Liter Liter	60.00	0.0016	20.5632	0.096	0.00 13.82 0.00 256.47	Sakm "Namiteer", 1-4line Shim 100km x 1100km x 1252days-25_200km 25_20days-25_200km 25_20days-25_200km 25_20days-20_08iteer day/5 Ploom x 25_20days-25_200km 25_20days-0.08iteer day/5 Ploom x 25_20days-25_200km 25_20days-0.08iteer day/5 Ploom x 25_20days-20_08iteer day/5 Ploom x 25_20days-20_08iteer day/5 Ploom x 25_20days-20_08iteer day/5 Ploom x 25_2days-20_08iteer day/5 Ploom x 25_2days-21_2600km 25_2day
Engine Oil Tires	For Excavator	0	Liter	60.00	0.0016	20.5632	0.096	0.00 13.82 0.00 256.47	0.000 x 25.200km x 25.200km x 25.200km 25.200km 10.000km x 8itter=20.16itter 20.16itter 10.16itter 20.16itter

Items	Specification	Quantity	Unit	Hourly Rate	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Sluice/ Gate Valve	50mm		piece					0.00	Gate Valve
Sluice/ Gate Valve	80mm		piece					0.00	Sluice Valve
Sluice/ Gate Valve	100mm		piece			1 1		0.00	Sluice Valve
Sluice/ Gate Valve	150mm		piece					0.00	Sluice Valve
Sluice/ Gate Valve	200mm		piece			1		0.00	Sluice Valve
Sluice/ Gate Valve	250mm		piece						Sluice Valve225mm AUD1785
Sluice/ Gate Valve	300mm		piece			1		0.00	
Pipes (Poly)	15mm		coil					0.00	Length on 1 coil =300m
Pipes (Poly)	20mm		coil			1		0.00	Length on 1 coil =300m
Pipes (Poly)	25mm		coil			1		0.00	Length on 1 coil =200m
Pipes (Poly)	50mm		coil			1 1		0.00	Length on 1 coil =150m
Pipes (PVC)	25mm		piece					0.00	
Pipes (PVC)	50mm		piece			1 1		0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece			1 1		0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece			1		0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece			1		0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
All Materials for Co	untermeasures							168,624.15	
Sub-total								168,624.15	
Total								200,586.79	

Items	Specification	Ouantity	Unit	Hourly	Unit Cost	Total Days	Amount	Amount	Reamarks
	-			Rate	(SBD)		(SBD)	(SBD)	
Sluice/ Gate Valve	200mm		piece						Sluice Valve
Sluice/ Gate Valve	250mm		piece						Sluice Valve225mm
Sluice/ Gate Valve	300mm		piece					0.00	
Pipes (Poly)	15mm		coil					0.00	Length on 1 coil =300m
Pipes (Poly)	20mm		coil			1		0.00	Length on 1 coil =300m
Pipes (Poly)	25mm		coil					0.00	Length on 1 coil =200m
Pipes (Poly)	50mm		coil			1		0.00	Length on 1 coil =150m
Pipes (PVC)	25mm		piece					0.00	
Pipes (PVC)	50mm		piece			1		0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece			1		0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece					0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece			1		0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
All Materials for Cou	ntermeasures							7,346.28	
Sub-total								7,346.28	
Total								19,836.29	
1AUD-6 534SRD w	or applied to the	obovo (soto o	s of 20 Cont	ombor 2012	of Oanda)				

3. Costing After Countermeasure

Location									per da
Items	Specification	Quantity	Unit	Hourly Rate	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
1. Personnel	Grades- Steps			Rate	(SDD)		(300)	(SBD)	
Staff-3	3.1	0	Person	15.85	118.88				
	3.2	0	Person	16.37	122.78				
	3.3	0	Person	16.90	126.75				
	3.4	0	Person	17.43	130.73				
0.001	3.5	0	Person	17.96	134.70	4100		0.555.00	
Staff-4	4.1 4.2	12	Person Person	19.81	148.58 154.50	24.00		3,565.80 772.50	
	4.3	0	Person	21.39	160.43	3.00		0.00	
	4.4	0	Person	22.18	166.35			0.00	
	4.5	3	Person	22.98	172.35	5.00		861.75	
Staff-5	5.1	3	Person	24.83	186.23	22.00		4,096.95	
	5.2	0	Person	25.88	194.10			0.00	
	5.3	0	Person	26.94	202.05			0.00	
	5.4	0	Person	27.99	209.93	0.00		0.00	
Staff-6	6.1	0	Person Person	29.05 32.48	217.88 243.60	0.00		0.00	
Stall-6	6.2	0	Person Person	32.48	253.58			0.00	
	6.3	0	Person	35.13	263.48			0.00	
	6.4	0	Person	36.45	273.38			0.00	
	6.5	0	Person	37.77	283.28			0.00	
Staff-7	7.1	3	Person	39.62	297.15	3.00		891.45	
	7.2	0	Person	40.94	307.05			0.00	
	7.3	0	Person	42.26	316.95			0.00	
	7.4	0	Person	43.58	326.85			0.00	
Staff-8	7.5 8.1	0	Person	44.90 49.39	336.75 370.43			0.00	
Starr-8	8.1 8.2	0	Person Person	49.39 50.71	380.33			0.00	
	8.3	0	Person	52.03	390.23			0.00	
	8.4	0	Person	53.35	400.13			0.00	
	8.5	2	Person	54.67	410.03			0.00	
Staff-9	9.1	1	Person	59.95	449.63	5.00		2,248.13	
								0.00	
Dian-2	9.2	0	Person	61.27	459.53				
Jani-7	9.3	0	Person	62.59	469.43			0.00	
5/1411-2	9.3 9.4	0	Person Person	62.59 63.91	469.43 479.33			0.00	
	9.3	0	Person	62.59	469.43	Z4.00		0.00 0.00 0.00	
Sub-total	9.3 9.4	0	Person Person	62.59 63.91 65.23	469.43 479.33 489.23	64.00	S/km	0.00	
Sub-total	9.3 9.4	0	Person Person	62.59 63.91	469.43 479.33 489.23	64.00	\$/km 4.2716	0.00 0.00 0.00 12,436.58	50km/7km/liter=7.14liter 11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter
Sub-total 2. Consumable	9.3 9.4 9.5	0 0	Person Person Person	62.59 63.91 65.23 \$ Per Liter	469.43 479.33 489.23 L/km	64.00 4.2840		0.00 0.00 0.00 12,436.58	11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter 50km/7km/liter=7.14liter/ 0km
Sub-total 2. Consumable Diesel	9.3 9.4 9.5 For Excavator	0 0 0	Person Person Person	62.59 63.91 65.23 \$ Per Liter	469.43 479.33 489.23 L/km 0.3620		4.2716	0.00 0.00 0.00 12,436.58 0.00	11liter/hrs (fuel consumption for about 60PS) x lbr=11liter 11liter 11liter 50km/7km/liter=7.14liter/0km 7km/liter=25.4dys=25.200km 252days=25.200km 25.200km 10,000km x 8liter=20.16liter 20.16liter 25.2days=0.08liter/day/50/
Sub-total e. Consumable Diesel Diesel	9.3 9.4 9.5 For Excavator	0 0 0	Person Person Person Liter	62.59 63.91 65.23 \$ Per Liter 11.80	469.43 479.33 489.23 L/km 0.3620		4.2716 1.68504	0.00 0.00 0.00 12,436.58 0.00	11lite/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter 11liter 20km/Tkm/titer=7.14liter. 0km 700km x 252days=25.200km 25.200km/10,000km x 8liter=20.16liter/ 252days=0.52days=0.08liter/day/50 700km x 252days=0.52days=0.08liter/day/50 8liter=20.16liter/ 252days=0.08liter/day/50 8liter=20.16liter/ 252days=0.08liter/day/50 8liter=20.16liter/ 25.200km/10,000km x 8liter=20.16liter/ 20.16liter/
Sub-total 2. Consumable Diesel Diesel Engine Oil	9.3 9.4 9.5 For Excavator For Pick-up	0 0 0 0	Person Person Liter Liter Liter	62.59 63.91 65.23 65.23 5 Per Liter 11.80	469.43 479.33 489.23 L/km 0.3620 0.1428		4.2716 1.68504 0.096	0.00 0.00 0.00 12,436.58 0.00	Illiter/hrs (fuel consumption for about 60PS) x lhr=1 lliter llliter llliter 50km/7km/liter=7.14 lliter/6km x 5254ay=25.200km 25.200km/10.000km x 8liter=20.16 liter 20.16 liter 10.16 liter 20.16 liter 20.26 lliter/day/50 km 25.20 km/10.000km x 8liter=20.16 liter 20.16 l
Sub-total Consumable Diesel Diesel Engine Otl Engine Otl	9.3 9.4 9.5 For Excavator For Pick-up	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Person Person Person Liter Liter Liter	62.59 63.91 65.23 \$ Per Liter 11.80 60.00	469.43 479.33 489.23 L/km 0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.00 0.00 0.00 12,436.58 0.00 50.55	Illitechnic (fixel consumption for about 60PS) x 1 hrs - 11 liter 11 litter 950 km / 7 km ftree 7.1 4 liter (6 km ftree 7.1 6 liter (7 km ftree 7.1 6
Sub-total Consumable Diesel Diesel Engine Oil Engine Oil	9.3 9.4 9.5 For Excavator For Pick-up	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Person Person Person Liter Liter Liter	62.59 63.91 65.23 \$ Per Liter 11.80 60.00	469.43 479.33 489.23 L/km 0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.00 0.00 12,436.58 0.00 50.55	Illitechne (fleel consumption for about 60PS) x Ihre-1 Illiter 11lliter 11lliter 50km / Tkmfter-7.1 fleter (60km / Tkmfter-7.1 fleter (60km / Tkmfter-7.1 fleter (60km / Tkmfter-7.1 fleter (70km / Tkmfter-7.1 fl
Sub-total Diesel Diesel Engine Oil Engine Oil Sub-total Sub-total Material &	9.3 9.4 9.5 For Excavator For Pick-up For Pick-up	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Person Person Person Liter Liter Liter Liter	62.59 63.91 65.23 \$ Per Liter 11.80 60.00	469.43 479.33 489.23 L/km 0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.00 0.00 0.00 12,436.58 0.00 50.55	11litec/nsc (fuel consumption for about consumption for about cores, and the full conformation for the full conformation for the full conformation for the full conformation for the full conformation full conformation for the full conformation ful
Sub-total Diesel Diesel Engine Oil Engine Oil **Tires** Sub-total **Material & Sub-total **Material & Sub-total	9.3 9.4 9.5 For Excavator For Pick-up For Pick-up	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Person Person Person Liter Liter Liter Nos	62.59 63.91 65.23 \$ Per Liter 11.80 60.00	469.43 479.33 489.23 L/km 0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.00 0.00 0.00 12,436.58 0.00 50.55 0.00 2.88	Illitechne (fluel community fluel community fl
Sub-total 2. Consumable Diesel Diesel Engine Oil Engine Oil Tires Sub-total 5. Material & Shice Gate Valve Shice Gate Valve	9.3 9.4 9.5 For Excavator For Pick-up For Excavator For Pick-up 40mm	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Person Person Liter Liter Liter Nos	62.59 63.91 65.23 \$ Per Liter 11.80 60.00	469.43 479.33 489.23 L/km 0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.00 0.00 0.00 12,436.58 0.00 50.55	11litechne (fleel community for about communit
Sub-total Diesel Diesel Engine Oil Engine Oil Sub-total Sub-total Sub-total Sub-total	9.3 9.4 9.5 For Excavator For Pick-up For Pick-up	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Person Person Person Liter Liter Liter Nos	62.59 63.91 65.23 \$ Per Liter 11.80 60.00	469.43 479.33 489.23 L/km 0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.00 0.00 0.00 12,436.58 0.00 50.55	Illitechnic (fixed consumption for about 60PS) x 1.hr-11liter 11litter 50km 7km/ter-7.14kter/ 60km 7km/ter-7.14kter/ 60km 7km-7km/ter-7.14kter/ 60km 7km-7km/ter-7.14kter/ 60km 7km-7km/ter-7.14kter/ 60km 7km-7km/ter-7.14kter/ 60km 7km-7km-7km/ter-7.14kter/ 60km 7km-7km-7km-7km-7km-7km-7km-7km-7km-7km-
Sub-total 2. Consumable Diesel Diesel Diesel Engine Otl Engine Otl Tires Sub-total 3. Material & Succeeding Care Valve Stilice Gate Valve Stilice Gate Valve	9.3 9.4 9.5 For Excavator For Pick-up For Pick-up For Pick-up 35mm 40mm 50mm	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Person Person Person Liter Liter Liter Liter Liter Liter Liter Nos	62.59 63.91 65.23 \$ Per Liter 11.80 60.00	469.43 479.33 489.23 L/km 0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.00 0.00 0.00 12,436.58 0.00 50.55 0.00 2.88 0.00 0.00 0.00 0.00 0.00	Histerhre (fisel cossumption for about consumption for about coff/87). In Her Hillier (Hillier Cossumption for about coff/87), In Her Hillier (Hillier Cossumption for about cossumption for a c

4. Routine Activities Location Bahai Kukum

Location	Bahai Kukum								
Items	Specification	Quantity	Unit	Hourly Rate	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	per da Reamarks
1. Personnel	Grades- Steps								
Staff-3	3.1	0	Person Person	15.85	118.88 122.78				
	3.3	0	Person	16.90	126.75				
	3.4	0	Person	17.43	130.73				
	3.5	0	Person	17.96	134.70				
Staff-4	4.1	0	Person	19.81	148.58			0.00	
	4.2	0	Person	20.60	154.50			0.00	
	4.3	0	Person	21.39	160.43			0.00	
	4.4	0	Person	22.18	166.35			0.00	
	4.5	0	Person	22.98	172.35			0.00	
Staff-5	5.1 5.2	0	Person Person	24.83 25.88	186.23 194.10			0.00	
	5.3	0	Person	26.94	202.05			0.00	
	5.4	0	Person	27.99	202.03			0.00	
	5.5	0	Person	29.05	217.88			0.00	
Staff-6	6.1	3	Person	32.48	243.60	9.00		2,192.40	
	6.2	0	Person	33.81	253.58	,,,,,,		0.00	
	6.3	0	Person	35.13	263.48			0.00	
	6.4	0	Person	36.45	273.38			0.00	
	6.5	0	Person	37.77	283.28			0.00	
Staff-7	7.1	0	Person	39.62	297.15			0.00	
	7.2	0	Person	40.94	307.05			0.00	
	7.3	0	Person	42.26	316.95			0.00	
	7.4	0	Person	43.58	326.85			0.00	
0.000	7.5 8.1	0	Person	44.90 49.39	336.75 370.43			0.00	
Staff-8	8.1	0	Person Person	50.71	370.43			0.00	
	8.3	0	Person	52.03	390.23			0.00	
	8.4	0	Person	53.35	400.13			0.00	
	8.5	0	Person	54.67	410.03			0.00	
Staff-9	9.1	0	Person	59.95	449.63			0.00	
	9.2	0	Person	61.27	459.53			0.00	
	9.3	0	Person	62.59	469.43			0.00	
	9.4	0	Person	63.91	479.33			0.00	
	9.4 9.5	0		63.91 65.23				0.00	
Sub-total			Person	63.91 65.23	479.33 489.23	9.00		0.00	
			Person	63.91 65.23	479.33	9.00	S/km	0.00	
			Person	63.91 65.23	479.33 489.23	9.00	\$/km 4.2716	0.00	about 60PS) x 1hr=11liter
2. Consumable	9.5	0	Person Person	63.91 65.23 \$ Per Liter	479.33 489.23 L/km	9.00		0.00 0.00 2,192.40 0.00	11 liter/hrs (fuel consumption for
2. Consumable Diesel	9.5 For Excavator	0	Person Person Liter	63.91 65.23 \$ Per Liter 11.80	479.33 489.23 L/km 0.3620		4.2716	0.00 0.00 2,192.40 0.00	11liter/hrs (fuel consumption fo about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km
. Consumable Diesel Diesel	9.5 For Excavator For Pick-up	0	Person Person Liter	63.91 65.23 S Per Liter 11.80	479.33 489.23 L/km 0.3620 0.1428		4.2716 1.68504	0.00 0.00 2,192.40 0.00 20.22	11 liter/hrs (fuel consumption fo about 60PS) x 1hr=11 liter 11 liter +7,1 liter=18.1 liter/50km 50km/7km/liter=7,14 liter/50km 100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16 liter 20.16 liter
Diesel Diesel Engine Oil	9.5 For Excavator For Pick-up	0 12	Person Person Liter Liter Liter	63.91 65.23 S Per Liter 11.80 11.80	479.33 489.23 L/km 0.3620 0.1428		4.2716 1.68504 0.096	0.00 0.00 2,192.40 0.00 20.22	Illiterher (fuel consumption fo about 60Pl's 1 hter 1 liter 11 liter + 7.1 liter=18.1 liter 50km 11 liter + 7.1 liter=19.1 liter 50km 100km x 252days=25.200km 100km x 252days=25.200km 100km x 250days-10.0 liter 252days=0.08liter/day/50km 100km x 253days=25.200km 25.200km 10.000km x 81ker=20.1 liter 20.1 lit
Diesel Diesel Engine Oil Engine Oil	9.5 For Excavator For Pick-up	0 12	Person Person Liter Liter Liter	63.91 65.23 \$ Per Liter 11.80 11.80 60.00	479.33 489.23 L/km 0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.00 0.00 2,192.40 0.00 20.22 0.00	Illiter/hrs (fuel consumption for about 60PS) x Her-Illier Illiter +7.1llier=18.1llier/50km 50km/7km/liter=7.14llier/50km 50km/7km/liter=7.14llier/50km 100km x 252days=25.200km 52.00km x 10.00km 52.0days=0.08llier/day/50km 52.0days=0.08llier/day/50km 52.0days=0.08llier/day/50km 52.0days=0.08llier/day/50km 52.0days=0.08llier/day/50km 52.0days=0.08llier/day/50km 52.0days=12.600km 52.0days=12.600km 52.0days=12.600km 52.0days=12.600km 52.0days=12.600km 52.0days=12.600km 52.0days=12.600km 52.0days=12.600km
Diesel Diesel Engine Oil Engine Oil Tires	9.5 For Excavator For Pick-up	0 12	Person Person Liter Liter Liter	63.91 65.23 \$ Per Liter 11.80 11.80 60.00	479.33 489.23 L/km 0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.00 0.00 2,192.40 0.00 20.22	Illiter/hrs (Guel consumption G about 60PS) x Hier-Illier Illiter +7.1lier=18.1lier/50km 50km/1km/liter=7.14lier/50km 100km x 252days=25.200km 52.00km 10.00km Silkier=20.16liter 20.16liter 25.2days=25.200km 100km x 252days=25.200km 52.0km 10.00km Silkier=20.16liter 20.16lite
Diesel Diesel Diesel Engine Oil Engine Oil Mires Sub-total Material &	9.5 For Excavator For Pick-up	0 12	Person Person Liter Liter Liter	63.91 65.23 \$ Per Liter 11.80 11.80 60.00	479.33 489.23 L/km 0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.00 0.00 2,192.40 0.00 20.22 0.00	Illiter/hrs (Guel consumption G about 60PS) x Hier-Illier Illiter +7.1lier=18.1lier/50km 50km/1km/liter=7.14lier/50km 100km x 252days=25.200km 52.00km 10.00km Silkier=20.16liter 20.16liter 25.2days=25.200km 100km x 252days=25.200km 52.0km 10.00km Silkier=20.16liter 20.16lite
Diesel Diesel Diesel Engine Oil Engine Oil Mires Sub-total Material &	9.5 For Excavator For Pick-up	0 12	Person Person Liter Liter Liter	63.91 65.23 \$ Per Liter 11.80 11.80 60.00	479.33 489.23 L/km 0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.000 0.000 2,192.40 0.00 20.22 0.00 1.15	Illiter/hrs (Guel consumption G about 60PS) x Hier-Illier Illiter +7.1lier=18.1lier/50km 50km/1km/liter=7.14lier/50km 100km x 252days=25.200km 52.00km 10.00km Silkier=20.16liter 20.16liter 25.2days=25.200km 100km x 252days=25.200km 52.0km 10.00km Silkier=20.16liter 20.16lite
Diesel Diesel Diesel Diesel Engine Oil Engine Oil Tires Sub-total Meterial &	9.5 For Excavator For Pick-up For Excavator For Pick-up	0 12	Person Person Liter Liter Liter Nos	63.91 65.23 \$ Per Liter 11.80 11.80 60.00	479.33 489.23 L/km 0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.000 2,192.40 0.000 20.22 0.00 1.15 0.00	11liter/hrs (fuel consumption for about 60Pl's 1, Her-1 liter 11liter +7.1 liter=18.1 liter/50km 11liter +7.1 liter=18.1 liter/50km 100km x 252days-25.200km 25.00km x 10.00km x 25.00km x 10.00km x 25.00km x 10.00km x 25.00km 10.00km x 25.00km x 10.00km x 25.00km 10.00km x 20.00km x 25.00km 10.00km x 20.00km x 2
Diesel Diesel Diesel Engine Oil Engine Oil Sub-total Morenta & Component Slinice Gate Valve Slinice Gate Valve	9.5 For Excavator For Pick-up For Excavator For Pick-up	0 12	Person Person Liter Liter Liter Nos	63.91 65.23 \$ Per Liter 11.80 11.80 60.00	479.33 489.23 L/km 0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.00 0.00 2,192.40 0.00 20.22 0.00 1.15	Illiter/hrs (fuel consumption for about 69/93; http-1llier 11llier+7.1llier=18.1llier/50km 11llier+7.1llier=18.1llier/50km 11llier+7.1llier=18.1llier/50km 100km x 252days-25.200km 1000km x 252days-25.200km 1000km x 38llier-20.16llier 152days-0.08llier/day/50km 1000km x 252days-2.200km 1000km x 252da
Diesel Diesel Diesel Engine Oil Engine Oil Tures Sub-total Material & Sub-total	For Excavator For Pick-up For Excavator For Pick-up 5 or Pick-up 5 one 5 one 5 one	0 12	Person Person Liter Liter Liter Nos	63.91 65.23 \$ Per Liter 11.80 11.80 60.00	479.33 489.23 L/km 0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.000 0.000 2,192.40 0.00 20.22 0.00 1.15 0.00 0.00 0.00 0.00	1 litter/hrs (fuel consumption 6 about 60Ps) x Hrs-1 litter et 1 litter et 7-1 litter et 18. litter/50km 50km/km/liter-7. l'itter-18. l'itter/50km 100km x 252days-25,200km 100km x 252days-25,200km 100km x 252days-25,200km 100km x 252days-20. Slitter/day/50km 100km x 252days-20. Slitter/day/50km 100km x 252days-20. Slitter/day/50km 50km x 252days-0.08titer/day/50km 50km x 252days-0.08titer/day/50km 10km x 252days-0.08titer/day/50km 10km x 252days-0.08titer/day/50km x 252days-0.08titer/day/50km 50km x 252days-0.08titer/day/50km x 252d
Diesel Diesel Diesel Engine Oil Engine Oil Tires Sub-total Suice Gast Valve Skince Gast Valve Skince Gast Valve Skince Gast Valve	For Excavator For Pick-up For Excavator For Pick-up For Pick-up 25mm 40mm 50mm 100mm	0 12	Person Person Liter Liter Liter Liter Liter Liter Liter Liter Nos	63.91 65.23 \$ Per Liter 11.80 11.80 60.00	479.33 489.23 L/km 0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	11liter/hrs (fuel consumption for bobot of BPS) x 1hr-1 liter 11liter = 11. litter=18.1 litter=50km / 11liter=18.1 litter=50km / 11liter=18.1 litter=50km / 11liter=18.1 litter=50km / 100km x 252days=25,200km 100km x 252days=25,200km 100km x 252days=0.08 litter=10.2 litter 252days=0.08 litter=10.00km x 252days=0.08 litter=10.00km x 252days=25,200km 10,000km x 252days=0.08 litter=10.1 litter 20.1 litter 20.
Diesel Diesel Diesel Engine Oil Engine Oil Sub-total Material & Sub-total	For Excavator For Pick-up For Excavator For Pick-up 5 or Pick-up 5 one 5 one 5 one	0 12	Person Person Liter Liter Liter Liter piece piece piece piece piece	63.91 65.23 \$ Per Liter 11.80 11.80 60.00	479.33 489.23 L/km 0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.000 0.000	Illiter/hrs (fuel consumption for bout of 697s). Hrs - Illier el

S4.7-1-34

1			ORDER	ISSUED					BALANCE	COUNTED
ſ	- 1	1/2" G.I Elbow (NRW Stock)	428	240	\$	10.00	\$	2,400.00	247	247
ſ	2	1/2" G.I Socket (NRW Stock)	105	60	\$	10.00	\$	600.00	18	18
ſ	3	15mm Kent Stop Cock/Tap New Zealend Ltd		60	\$	45.25	\$	2,715.00	274	274
[4	16mm x 1/2" Poly female Adaptor (NRW stock)	LKP	120	\$	54.00	\$	6,480.00	167	167
	5	Threaded Tape (NRW Stock)	636	80	\$	10.00	\$	800.00	340	340
ſ		500mm x 1/2" threaded Galvanised pipe		240	\$	71.00	\$	17,040.00	148	148
ſ	7	200mm x 1/2" threaded Galvanised pipe		120	\$	53.60	\$	6,432.00	122	122
			Total po	er Requisit	ion	=	*	36,467.00		

AUTHO REQUIS JOB DI	ITMENT NAME: NRW PROJECT TEAM RIZED BY: Ray Andersen SITION NO: 1655 ESCRIPTION: Being for Metre Raising Stand for Kuk			DA roje		ul Se	eda 5/2014		
ITEM			Quantity ISSUED		Unit Cost			BIN CARD BALANCE	
- 1	3/4" G.I Elbow (NRW Stock) (LKP)	428	40	\$	22.00	\$	880.00	484	484
2	3/4" G.I Socket (NRW Stock) (LKP)	105	10	\$	20.00	\$	200.00	95	95
	20mm Kent Stop Cock/Tap New Zealend Ltd		10	\$	65.22	\$	652.20	291	291
	20mm x 3/4" Female poly Adaptor (NRW stock		20	\$	68.00	\$	1,360.00	140	140
5	500mm x 1/2" threaded Galvanised pipe (LKP)	428	40	\$	71.00	\$	2,840.00	148	148
6	200mm x 1/2" threaded Galvanised pipe (LKP	212	20	\$	53.60	\$	1,072.00	122	122
7	Threaded Tape (NRW Stock) (LKP)	636	60	\$	10.00	\$	600.00	340	340
		Total pe	er Requisit	ion	=	\$	7,804.20	1 —	

	TMENT NAME: NRW PROJECT TEAM		RECEIVED BY: David Akwa'asi										
	RIZED BY: Benjimen Billy			18	SUED BY : Pa	ul Se	da						
	SITION NO: 1656			DATE ISSUED: 08/05/2014									
	ESCRIPTION: Being for Metre Raising Stand for Kuki												
ITEM			Quantity		Unit Cost	BIN CARD							
			ISSUED					BALANCE					
1	500mm x 3/4" threaded Galvanised pipe (LKP	428	160	\$	74.50	\$	11,920.00	228	228				
	200mm x 3/4" threaded Galvanised pipe (LKP	212	80	93	55.70	\$	4,456.00	122	122				
3	3/4" G.I Elbow (NRW Stock) (LKP)	428	160	\$	22.00	\$	3,520.00	688	688				
	20mm Kent Stop Cock/Tap New Zealend Ltd		40	3	65.22	\$	2,608.80	233	233				
	20mm x 3/4" Female poly Adaptor (NRW stock	105	80	\$	68.00	\$	5,440.00	60	60				
	3/4" G.I Socket (NRW Stock) (LKP)	105	40	43	20.00	\$	800.00	55	55				
7	500mm x 1/2" threaded Galvanised pipe (LKP)	428	120	43	71.00	\$	8,520.00	28	28				
	200mm x 1/2" threaded Galvanised pipe (LKP	212	60	43	53.60	\$	3,216.00	62	62				
9	1/2" G.I Elbow (NRW Stock)	428	120	43	10.00	\$	1,200.00	127	127				
10	15mm Kent Stop Cock/Tap New Zealend Ltd		30	47	45.25	\$	1,357.50	274	274				
- 11	16mm x 1/2" Poly female Adaptor (NRW stock)	LKP	60	\$	54.00	\$	3,240.00	167	167				
		Total po	er Requisit	io	n =	*	46,278.30						

DEPAR	TMENT NAME: NRW PROJECT TEAM			RECE	IVED BY:	Dav	id Akwa'asi		
AUTHO	RIZED BY: Benjimen Billy				D BY: Pa				
REQUIS	ITION NO: 1657			DATE	ISSUED:	08/0	5/2014		
	SCRIPTION: Being for Metre Raising Stand for Kuk			roject	Site .				
ITEM			Quantity	Un	it Cost			BIN CARD	
		ORDER	ISSUED					BALANCE	COUNTE
- 1	1/2" G.I Socket (NRW Stock)	105	30	\$	10.00	\$	300.00	18	18

DEPAR		9	00	7	ø	()	L	L	L	ŀ	МВШ	STONO	WETER	REQUIE	AUTHO			2	1	пви	0.00	REQUIE	ANABO		ļ	a	L	4	3	2	_	пви	0.00	AUTHO	2
DEPARTMENT NAME: NRW PROJECT TEAM 2		16mm UPVC Compression Coupling	Threaded Tape (NRW Stock) (UP)	Bag Cement	16mm x 1/2" male Poly Adaptor (UKP Order)	16mm Poly Coupling	20mm x 16mm Poly reduce Coupling	40 Metres 15mm Poly Pipe (LIQP)	15mm Kent Water meter New Zealand Ltd	1/2 GI Socket (NRW Kukum Baha) Stock J	Maturials Description	\$13A00456.513A00457.513A00458.513A00458.513A00460.	DOS DESCRIPTION E BATS for Motor making for Kulum & Bahai Plot Project Site . METER (I : SIAND 44) SI 34/044), SI 34/0443, SI 34/0443, SI 34/0491, SI 34/0451, SI 34/0452, SI 34/0453, SI 34/0453, SI 34/0454, SI 34/0455	EQUISITION NO: 1672	AUTHORIZED BY: Berjiman Billy	2000		Hadi Sav Blade (ITA)	10mm Reinforce Sted Rod	Materials Description	JOB DESCRIPTION: Being for breeing of Meter Stand for I	EQUISITION NO: 1671	ALTINOSIZED BY: Viscout Lid for Star Talouti		to pita i fireades i ape (With ocost) (Line)	500mm x 3/4 threaded Galvarised pipe LIKP	threaded Galvanised pipe (20mm x 3./4" Female poly Adaptor (NRW stoo	20mm Kent Stop Cock/Tap New Zealand Ltd	3/4" GI Socket (NRW Stock) (LKP.)	3/4" GLEbow (NRW Stock) (LIP)	Materials Description	JOB DESCRIPTION: Being for Meter relains Project & Kultum	AUTHORIZED BY: Benjiman Billy REQUISITION NO: 1986	Threaded Tape (NRW Stock) (LKP.)
	1001 04		980			Ī	Ī	Ī	Ī	160	NEW ST		S134004				Total per			NEW ST ORDER	Kukum & Bahai			1000	900	۰	1	105	Ī	105	428	EW 81 PROER			636 Tobal p
	Management	4	10	5	00	()	4	40	15	-	18SUED		80,813,400				er Roquisi	4		Guentity	Bahai Mbua			THE PERSON	100	120	60	37	36	30	120	Daniely	/Bahai Paot Proj		636 120 S
RECIBIYED BY: Mulico	- 600	s	*	ss	55	50		•	60	4	2	1	851,S13#	DATE	BUSS		lien .	s	s	C E	Valley P	DATE	E SECON	-	٠		s	s	60	ss	69	5	931 510	DATE	- C
RECIEWED BY: Miles		16.00	1000	80.00	54.00	76.00	74.00	58.6	318.84	1000	Unit Cost	١	00452,5	DATE ISSUED: 22/05/2014	ISSUED BY: Paul Sada			21.00	45.50	Unit Cost	alloy, Panatina and Naha Pilot	DATE ISSUED: 22/05/2014	RECEIVED BY : David Akwa'as		10,00	74.50	55.70	68.00	6522	20.00	22.00	Unit Cost	ĺ	ISSUED BY: Pad Seda DATE ISSUED: 15/05/201	10,00
Maria	F	65	*	65	60	60	05	•	05	•		1	13,40040	22/05/	ad Sad		-	s	s		rod Plate	22/05/	David	ŀ	۰	- 61	40	65	60	65	50		l	ad Seda 15/05/2014	•
	OFTHER	6400	10000	400.00	43200	38000	296.00	397.20	4,78260	4000	Total Cost		13,513,400,454,513,4	2014	I erio		5,544,00	8400	5,460.00	Total Cost	a Pilot Project Site	2014	Alora'asi arredi	STATE SAN	1,000,00	8,940,00	334200	2,516.00	1,956.60	600.00	2640.00	Total Cost		2014	1,200,00
	_	6	1354	75	Г	71	T	-	t		BALANCE GRAO MER		00455				_	106		BALANCE COUNTER	ĺ			-	1,139		t	3	263	30	588 588	BALANCE			130
		6	1354	75	88	71	38	1180m	299	Т	STOOK							106	0	STOOK E COUNTI	l				1,104	108	52	3	263	30	588	STOOK E COUNTI	l		130

RECON	ITMENT NAME: NRW PROJECT TEAM IMENDED BY: Eric Unga STITON NO: 2333 ESCRIPTION: Being for Test Site preparation ® Kul	RECEIVED BY: Liston Tora ISSUED BY: Paul Seds DATE ISSUED: 03/02/2014							
ITEM	Materials Description		Quentity ISSUED		Unit Cost		Total Cost	BIN CARD BALANCE	
- 1	100mm Sluice Valve		1	\$	2,508.00	\$	2,508.00	4	4
2	100mm Gibault Fangce Socket (Jica Order)		1	\$	454.62	\$	454.62	9	9
3	100mm Brass tapping Band/Saddle		1	\$	234.00	\$	234.00	183	183
4	1/2" G.I Nipple		1	\$	10.00	\$	10.00	148	148
5	1/2" Stop Tap		1	\$	95.00	\$	95.00	654	654
6	ThreadTape		2	\$	4.00	\$	8.00	432	432
7	HacK Saw Blade		1	\$	21.00	\$	21.00	5	5
8	1/2" G. Plug		1	\$	8.00	\$	8.00	106	106
9	3/4" x 1/2" G.I reduce Bush		1	\$	9.00	\$	9.00	42	42
10	100mm Gibault Joint		2	\$	413.00	\$	826.00	20	20
			Total per	Re	quisition =	\$	4,173.62		

	TMENT NAME: NRW PROJECT TEAM IMENDED BY: Benimen Billy	RECEIVED BY: Mafe ISSUED BY: George Blamoli							
	SITION NO: 1729					TE ISSUED: 23/03/20			
	SCRIPTION: Materials used for Pilot Project site 6								
ITEM	Materials Description		Quantity		Unit Cost			BIN CARD	
		ORDER	ISSUED					BALANCE	COUNTE
1	40mm Brass Gate Valve (KITANO stock)		2	\$	180.00	\$	360.00	0	0
2	36 metre 16mm Poly Pipe(LKP Order)	3 Roll	36	\$	9.93	\$	357.48	1317m	1317m
3	20mm x 16mm Poly Reduce Coupling		1	\$	60.00	\$	60.00	68	68
4	40mm x 1 1/2" UPVC Male Adaptor		2	\$	25.00	\$	50.00	61	61
5	16mm x 1/2" Poly Male Adaptor (NRW stock)		3	\$	45.00	\$	95.00	31	31
6	15mm Kent Stop Cock/Tap New Zealend Ltd		1	\$	45.25	\$	45.25	493	493
7	16mm x 1/2" Poly female Adaptor (NRW stock	()	1	\$	45.00	\$	95.00	29	29
		Total pr	er Requisit	ion	=	2	1 082 73		

DEPAR	TIMENT NAME: NRW PROJECT TEAM	RECEIVED BY : M.Mafe						
AUTHO	ORIZED BY: Ray Andersen	ISSUED BY : Paul Seda						
REQUI	SITION NO: 0788	DATE ISSUED: 03 /05/2014						
JOB D	ESCRIPTION: Being for Valve Replacement @ Kukun							
ITEM	Materials Description	NEW ST	Quantity	Unit Cost	Total Cost	BIN CARD	STOCK	
	•	ORDER	ISSUED			BALANCE	COUNTE	
- 1	4" Gaskets & Bolts & Nuts (JICA Stock)		6	\$146.07	876.42	3	3	
	•	Total p	er Requisi	tion =	\$ 876.42			

DEPARTMENT NAME: NRW PROJECT TEAM	RECEIVED BY: Mafe	
AUTHORIZED BY: Eric Unga	ISSUED BY: Paul Seda	
REQUISITION NO: 1654	DATE ISSUED: 07/05/2014	
JOB DESCRIPTION: Being for Metre Raising Stand for Kukum and Bahai Pilot	t Project Site .	
ITEM Materials Description NEW ST Quantity	y Unit Cost Total Cost BIN CARD	STOCK

ITEM		NEW ST ORDER	Quantity ISSUED		Unit Cost		BIN CARD BALANCE	
	3/4" G.I Tee		6	\$	14.00	\$ 84.00	35	35
	3/4" G.I Nipple		5	\$	12.00	\$ 60.00	40	40
	3/4" G.I Elbow (NRW Stock) (LKP)	428	4	\$	22.00	\$ 88.00	601	601
4	3/4" G.I Socket (NRW Stock) (LKP)	105	4	\$	20.00	\$ 80.00	26	26
5	20mm x 3/4 " poly male Adaptor (NRW)		6	\$	68.00	\$ 408.00	18	18
6	15mm Kent Water meter New Zealend Ltd		5	\$	318.84	\$ 1,594.20	295	295
		Total po	er Requisit	ion	=	\$ 2,314.20		

DEPARTMENT NAME: NRW PROJECT TEAM 2 AUTHORIZED BY: Mattaus Bera for Benjimen Billy RECEIVED BY : John Teno ISSUED BY: George Blamoli DATE ISSUED: 28/05/2014 REQUISITION NO: 1681 JOB DESCRIPTION: Being for Meter Raising @ Kukum & Bahai Pilot Project Site.

METER LD: \$13800377,\$13800372,\$13800371.

ITEM Meterials Description NEW ST Quartity NEW ST Quantity Unit Cost ISSUED 3 \$ 329.3 BIN CARD STOCK BALANCE COUNTED 988.14 141 141

DEPARTMENT NAME: NRW PROJECT TEAM 1 IRI
AUTHORIZED BY: Frank for Unga REQUISITION NO: 1882 D.
JOB DESCRIPTION: Being for Meter Raising ₩ Kukum & Bahai Pilot Project Site. RECEIVED BY : Mathias Dykes ISSUED BY: George Blamol DATE ISSUED: 29/05/2014 METER LD: S13B00391-398
ITEM Materials Description
 bib OARD
 STOOK BALANCE COUNTED

 56.00
 22
 22

 7.29
 18
 18

 454.50
 599
 599

 476.64
 932
 932

 532.00
 49
 49

 234.00
 22
 22

 22
 22
 22

 255.01
 100
 20
 NEW ST Quantity Unit Cost ORDER ISSUED 1 25mm PVC compression Coupling 2 1" x 3/4" poly reduce bush 3 30 metre 20mm Poly Pipe 4 48 Metres 16mm Poly Pipe (LKP) 5 16mm Poly Coupling (LKP) 78.00 2,635.04 122 122 160.00 94 94 14.00 94 94 50.00 68 68 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 2011 | 100 2 \$ 80.00 1 \$ 14.00 100 1 148.00 223 223 1,020.00 292 292 60.00 14 14 5,847.47 12 60 metres 25mm Poly Pipe
13 25mm x 16mm Poly Reduce Coupling

DEPARTMENT NAME: NRW PROJECT TEAM 1 AUTHORIZED BY: Frank for Eric Unga REQUISITION NO: 1683 RECEIVED BY : Mathias Dykes ISSUED BY : Paul Seda DATE ISSUED: 29/05/2014 JOB DESCRIPTION: Being for Meter Raising @ Kukum & Bahai Pilot Project Site

NEW ST Quantity Unit Cost ORDER ISSUED BIN CARD STOCK BALANCE COUNTED 1 20 metre 20mm Poly Pipe 2 3/4" G.I Tee 20 \$ 303.00 579 579 56.00 31 31

9	20mm x 16mm Poly reduce Coupling (LKP)		6	\$ 74.00	\$ 444.00	17	17
8	25mm x 3/4" Poly Male Adaptor		1	\$ 48.00	\$ 48.00	102	102
7	20mm x 20mm Poly Plain Tee		2	\$ 90.00	\$ 180.00	21	21
6	1/2" G.I Nipple (LKP)		4	\$ 10.00	\$ 40.00	14	14
5	20mm x 1/2" female poly Adaptor (LKP)		4	\$ 40.00	\$ 160.00	170	170
4	3/4" G.I Elbow (NRW Stock) (LKP)	428	4	\$ 22.00	\$ 88.00	597	597
3	3/4" G.I Nipple		4	\$ 12.00	\$ 48.00	36	36

RECEIVED BY: Matthew Mafe ISSUED BY: Paul Seda DATE ISSUED: 30/05/2014 DEPARTMENT NAME: NRW PROJECT TEAM 2 AUTHORIZED BY: Benjimen Billy REQUISITION NO: 1688 JOB DESCRIPTION: Being for Meter Raising @ Kukum & Bahai pilot project site METER LD:

BIN CARD STOCK
BALANCE COUNTED
438.40 594 594
522.70 394 394
80.00 93 93
55.00 8 8
5.00 6 6
6
29.00 34 34 NEW ST Quantity Unit Cost ORDER ISSUED 3 40kg bag Cement (Advance Tech)
4 32mm x 1" poly female Adaptor 100 1 \$ 80.00 1 \$ 55.00 5 1" x 3/4" poly reduce bush 6 16mm x 3/4" Poly male Adaptor (TONGS Order 1 \$ 28.00 28.00 34 34 1,129.10

> Summary of May \$ 116,080.19

Month of June requisition report
DEPARTMENT NAME: NRW PROJECT TEAM
AUTHORIZED BY: Benjimen Billy
REQUISITION NO: 1691 ISSUED BY: Paul Seda **DATE ISSUED: 02** /06/2014 RIPTION: Being for Pilot Project Site @ Kukum & Bahai site NEW ST Quantity Unit Cost ORDER ISSUED BIN CARD STOCK BALANCE COUNTE Materials Description Total Cost

1 25mm Poly Coupling (NRW)
2 25mm x 1/2" x 25mm Poly Tee
3 16mm Poly Coupling (LKP)
4 40 Metres 16mm Poly Pipe (LKP) 75.00 0 0 37.00 40 40 228.00 40 40 40 \$ 397.20 847m 847m 5 16mm x 1/2" male Poly Adaptor (LKP Order) 6 3/4" G.I Tee 7 3/4" G.I Nipple 54.00 54.00 54 54 84.00 25 25 72.00 29 29 8 20mm x 3/4" Female poly Adaptor (NRW stock 105 6 \$ 9 20mm x 16mm Poly reduce Coupling 6 \$ 12 5 metres 25mm Poly Pipe 5 408.00 6 6 444.00 9 9 85.00 283 283 68.00 74.00 17.00 \$ 13 20 metre 20mm Poly Pipe 20 \$ 15.15 303.00 558m 558m 240.00 86 86 100 3 \$ 980 5 \$ 80.00 50.00 1,315 1,315 2,477.20 15 Threaded Tape (NRW Stock) (LKP)

DEPARTMENT NAME: NRW PROJECT TEAM RECEIVED BY: John Teno

	LD: S13B00101 - S13B0010 (10 pics)							
ITEM	Materials Description	NEW ST	Quantity		Unit Cost		BIN CARD	
		ORDER	ISSUED				BALANCE	COUNTED
- 1	1/2" G.I Socket (NRW Kukum Bahai Stock)	160	4	\$	10.00	\$ 40.00	150	150
2	1 metre 20mm Poly Pipe		1	\$	15.15	\$ 15.15	799	799
3	32mm x 25mm Poly reduce coupling		1	\$	90.00	\$ 90.00	42	42
4	25mm x 20mm x 25mm Poly reduce Tee		3	\$	37.00	\$ 111.00	7	7
5	20mm x 16mm Poly reduce Coupling		3	\$	74.00	\$ 222.00	36	36
6	20mm Kent Water meter New Zealend Ltd		10	\$	329.38	\$ 3,293.80	157	157
7	40kg bag Cement		5	\$	80.00	\$ 400.00	10	10
8	10 Metres 16mm Poly Pipe (LKP)		10	\$	9.93	\$ 99.30	1150m	1150m
9	16mm x 1/2" male Poly Adaptor (LKP Order)	100	2	\$	54.00	\$ 108.00	330	330
10	Threaded Tape (NRW Stock) (LKP)	980	10	\$	10.00	\$ 100.00	1,339	1,339
11	32mmx 25mm x 32mm Poly reduce Tee		1	\$	47.00	\$ 47.00	1	1
12	2 metres 25mm Poly Pipe		2	\$	17.00	\$ 34.00	382	382
	•	Total pe	r Requisit	ion	=	\$ 4,580,25		

DEPARTMENT NAME: NRW PROJECT TEAM 2 AUTHORIZED BY: Eric Unga RECEIVED BY: Dykes ISSUED BY: George Blamoli DATE ISSUED: 25/05/2014 REQUISITION NO: 1673 JOB DESCRIPTION: Being for Meter Raising ® Kukum & Bahai Pilot Project Site.

METER LD: S13A00259,S13A00249,S13A00245,S13A00250,S13A00255,S13A00260,S13A00244

ITEM			Quantity		Unit Cost		BIN CARD	
		ORDER	ISSUED				BALANCE	COUNTED
- 1	15mm Kent Water meter New Zealend Ltd		7	\$	318.84	\$ 2,231.88	7	7
2	16mm x 1/2" male Poly Adaptor (LKP Order)	100	12	\$	54.00	\$ 648.00	12	12
3	30 Metres 16mm Poly Pipe (LKP)		30	\$	9.93	\$ 297.90	1120	1120
4	20mm x 16mm Poly reduce Coupling (LKP)		3	\$	74.00	\$ 222.00	23	23
5	16mm Poly Coupling (LKP)		5	\$	76.00	\$ 380.00	56	56
6	1/2" G.I Socket (NRW Kukum Bahai Stock)	160	6	\$	10.00	\$ 60.00	109	109
		Total pr	er Requisit	ion	=	\$ 3,839.78		

DEPARTMENT NAME: NRW PROJECT TEAM 2 AUTHORIZED BY: Benjimen Billy REQUISITION NO: 2370 RECEIVED BY: John Teno ISSUED BY: George Blamoli DATE ISSUED: 26/05/2014 JOB DESCRIPTION: Being for Meter Raising @ Kukum & Bahai Pilot Project Site.

MEIEL								
ITEM	Materials Description	NEW ST	Quantity		Unit Cost		BIN CARD	
		ORDER	ISSUED				BALANCE	COUNTED
1	16mm x 1/2" male Poly Adaptor (LKP Order)	100	25	\$	54.00	\$ 1,350.00	61	61
2	16mm x 16mm poly plain Tee (Tongs)		5	\$	85.00	\$ 425.00	14	14
3	20 Metres 16mm Poly Pipe (LKP)		20	\$	9.93	\$ 198.60	1100m	1100m
4	20 metre 20mm Poly Pipe		20	\$	15.15	\$ 303.00	749m	749m
5	1/2" G.I Socket (NRW Kukum Bahai Stock)	160	5	\$	10.00	\$ 50.00	145	145
6	40kg bag Cement (Advance Tech)	100	5	\$	80.00	\$ 400.00	7	7
		Total pr	er Requisit	ion	=	\$ 2,726,60		

DEPARTMENT NAME: NRW PROJECT TEAM 2 RECEIVED BY - Mafe

ISSUED BY : Paul Seda AUTHORIZED BY: Benjimen Billy REQUISITION NO: 1676

JOB DESCRIPTION: Being for Meter Raising @ Kukum & Bahai Pilot Project Site. DATE ISSUED: 27/05/2014 METER LD: et BIN CARD STOCK BALANCE COUNTED 297.90 1070m 1070m 60.00 30 30 66.00 605 605 NEW ST Quantity ORDER ISSUED Unit Cost Total Cost 1 30 Metres 16mm Poly Pipe (LKP)
2 3/4" G1 Socket (NRW Stock) (LKP)
3 3/4" G1 Elbow (NRW Stock) (LKP)
4 3/4" G1 Nipple
5 40kg bag Cement (Advance Tech) 30 \$ 105 3 \$ 428 36.00 47 47 80.00 104 104 12.00 100 80.00

DEPARTMENT NAME: NRW PROJECT TEAM 1 RECEIVED BY - Salina Fa AUTHORIZED BY: Eric Unga REQUISITION NO: 2371 ISSUED BY: Paul Seda DATE ISSUED: 27/05/2014 JOB DESCRIPTION: Being for Meter Raising @ Kukum & Bahai Pilot Project Site. METER LD : NEW ST Quantity ORDER ISSUED BIN CARD STOCK BALANCE COUNTED Materials Description Unit Cost 28.00 41 41 156.00 26 26 24.00 45 45 42.00 103 103 1 3/4" G.I Tee 2 20mm Poly Coupling (LKP)
3 3/4" G.I Nipple
4 Hacksaw Blade (ITA) 78.00 S 12.00 S 21.00 S 100 5 60 metre 20mm Poly Pipe 909.00 689m 689m 1.159.00

AUTHO	TMENT NAME: NRW PROJECT TEAM 1 RIZED BY: Frank Daukalia for Eric Unga STION NO: 1677		RECEIVED BY: Francis Hiri ISSUED BY: Paul Seda DATE ISSUED: 27/05/2014								
JOB DESCRIPTION: Being for Meter Raising @ Kukum & Bahai Pilot Project Site. METER LD: S13A00441,S13A00444 & S13B00277,S13B00376.											
ITEM	Materials Description		Quantity ISSUED		Unit Cost			BIN CARD BALANCE			
- 1	60 metre 20mm Poly Pipe		60	\$	15.15	\$	909.00	629m	629m		
2	20mm Poly Coupling (LKP)		2	\$	78.00	\$	156.00	25	25		
3	15mm Kent Water meter New Zealend Ltd		2	\$	318.84	\$	637.68	296	296		
4	30 Metres 16mm Poly Pipe (LKP)		30	\$	9.93	\$	297.90	1040m	1040m		
5	40kg bag Cement		5	\$	80.00	\$	400.00	102	102		
6	20mm Kent Water meter New Zealend Ltd		10	\$	329.38	\$	3,293.80	145	145		

RECEIVED BY : David .A **DEPARTMENT NAME:** NRW PROJECT TEAM 2 AUTHORIZED BY: Benjimen Billy REQUISITION NO: 1680 ISSUED BY: Paul Seda DATE ISSUED: 28/05/2014 JOB DESCRIPTION: Being for Meter Raising @ Kukum & Bahai Pilot Project Site. METER LD: \$13A00251,\$13A00258,\$13A00243,\$13A00254,\$13A00442

TOTAL COST FOR PANATINA VALLEY PILOT

	Before Counter	measure	After Countern	neasure							
	Before Countermeasure	Countermeasure	After Countermeasure	Routine Activities	Total						
Personnel Cost	45,801.45	23,301.68	11,505.15	2,192.40	82,800.68						
Consumable	841.87	598.43	106.86	85.49	6,032.65						
Material and Equipment	7,216.18	33,880.76	0.00	0.00	41,096.94						
Sub Total	53,859.50	57,780.86	11,612.01	2,277.89	129,930.26						
TOTAL	111,640.	36	13,889.9								

TOTAL MAN DAYS FOR PANATINA VALLEY PILOT

Length on 1 coil =200m	0.00					coil		25mm	Pipes (Poly)
0.00 Length on 1 coil =300m	0.00					coil		20mm	Pipes (Poly)
0.00 Length on 1 coil =300m	0.00					coil		15mm	Pipes (Poly)
	0.00					piece			Sluice/Gate Valve
0.00 Sluice Valve225mm	0.00					piece			Sluice/Gate Valve
Sluice Valve	0.00					piece		-	Sluice/Gate Valve
Sluice Valve	0.00					piece		ı	Sluice/Gate Valve
Sluice Valve	0.00					nioce		1	Shippe/Gate Valve
Sluice Valve	000			2 432 00		ninon		-	Shipp/Gate Valve
Gate Valve	000					nico		50mm	Shipp/Gate Valve
Gate Valve	0.00					niece		-	Shice/Gate Valve
Gate Valve	0.00					piece		25mm	Sluice/Gate Valve
	0.00					ĺ			3 Material & Foundment
	841.87								Sub-total
LOSSINGS				0.000					
4nos=1.68nos				0.0014					
252days=12,600km 12,600km/30,000km x	0.00	1.078			770.00	Nos	0		Tires
50km x				orogo					
25.24ays=25.200km 25.200km/10,000km x 81iter=20.16liter 20.16liter/	28.80	0.096		0.0016	00.00	Lier	300	For Pick-up	Engine Oil
20.16liter/				0.0016					
100km x 252days=25,200km 25,200km/ 10,000km x 81iter=20,16liter	0.00	0.096			60.00	Liter	0	For Excavator	Engine Oil
COMMUNICATION TO THE REAL PROPERTY.	505.51	1.68504	42.8400	0.1428	11.80	Liter	300	For Pick-up	Diesel
consumption for about 60PS) x Thr=1 Hiter									
50km/7km/liter=7.14liter 11liter/hrs (fuel	307.56	4.2716		0.3620	11.80	Lier	72	For Excavator	Diesel
		\$/km		Lkm	S Per Liter L/km				2. Consumable
	45,801,45		234.00	- Company	90000				Sub-total
	0000			489.23	65.23	Person	0 0	9.5	
	00.0			409.43	62.29	Person		9.3	
	0.00			459.53	61.27	Person		9.2	
	2,248.13		5.00	449.63	59.95	Person		9.1	Staff-9
	6,970.43		17.00	410.03	54.67	Person	7	85	
	0.00			400.13	53.35	Person	0 0	00 00 34 U	
	0.00			380.33	50.71	Person		0 00	
	0.00			370.43	49.39	Person	0	8.1	Staff-8
	0.00			336.75	44.90	Person	0	7.5	
	0.00			326.85	43.58	Person	0	7.4	
	0.00			307.05	40.94	Person	0	7.2	
	5,943.00		20.00	297.15	39.62	Person	9	7.1	Staff-7
	0.00			283.28	37.77	Person	0	6.5	
	000			203.48	36.45	Person	0 0	64	
	253.58		1.00	253.58	33.81	Person		6.2	
	487.20		2.00	243.60	32.48	Person	_	6.1	Staff-6
	0000		0.00	217.88	29.05	Person	0 0	55 3	
	0.00			202.05	26.94	Person		5.3	
	0.00			194.10	25.88	Person		5.2	
	5,028.08		27.00	186.23	24.83	Person	10	5.1	Staff-5
	4,653.45		27.00	172.35	22.98	Person	10	4.5	
	0.00			166.35	22.18	Person	0 0	4.4	
	4,171.30		27.00	150.43	20.00	Person	0 10	42	
	16,046.10		108.00	148.58	19.81	Person	40	4.1	Staff-4
				134.70	17.96	Person	0	3.5	
				130.73	17.43	Person	0	3.4	
				126.75	16.90	Person		33 6	
				118.88	15.85	Person	0	2 22	Staff-3
								Grades-Steps	1. Personnel
Reamarks	(SBD)	(SBD)	Total Days	(SBD)	Rate	Unit	Quantity	Specification	Items
per day									

ISSUED BY: Paul Seda DATE ISSUED: 03/06/2014 NEW ST Quantity Unit Cost ORDER ISSUED Total Cost | 1.20mm Kent. Water meter New Zealand Ltd | 6 | 8 | 8 | 2 | 40kg bag Cement | 2 | 8 | 8 | 120mm Poly Coupling (LKP) | 4 | 8 | 4 | 20 metre 20mm Poly Pipe | 4 | 5 | 20 Metre 20mm Poly Pipe | 20 | 8 | 5 | 20 Metre 16mm Poly Pipe (LKP) | 20 | 5 | 6 | 16mm Poly Coupling (LKP) | 6 | 0 | 3 | 6 | 16mm Poly Coupling (LKP) | 6 | 0 | 3 | 6 | 16mm Poly Coupling (LKP) | 6 | 0 | 3 | 6 | 16mm Poly Coupling (LKP) | 6 | 0 | 3 | 6 | 16mm Poly Coupling (LKP) | 7 | 16mm Poly Poly Adaptor (LKP Order) | 100 | 36 | 3 | 8 | 16mm Galvaniaed Societt | 100 | 3 | 16mm Calvaniaed Societt | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 329.38 \$
80.00 \$
78.00 \$
15.15 \$
9.93 \$
76.00 \$
54.00 \$

BEASTRICH MARE. HIST PROJECT TEAM

RECEIVED BY 1 Dailes

RECEIVED BY 1 Dailes

BAUTO BY 1

ITEM			Quantity ISSUED		Unit Cost		BIN CARD BALANCE	
- 1	15mm Kent Water meter New Zealend Ltd		5	\$	318.84	\$ 1,594.20	250	250
	20mm Kent Water meter New Zealend Ltd		6	S	329.38	\$ 1,976.28	102	102
	1/2" G.I Elbow (NRW Stock)	460	8	\$	10.00	\$ 80.00	8	8
	1/2" G.I Nipple (LKP)		8	\$	10.00	80.00	6	6
5	20mm x 3/4" Poly male Adaptor (TONGs order	100	6	\$	35.00	210.00	85	85
6	20 metre 20mm Poly Pipe		20	\$	15.15	\$ 303.00	507m	507m
7	20 Metres 16mm Poly Pipe (LKP)		20	\$	9.93	\$ 198.60	647m	647m
8	40kg bag Cement		1	\$	80.00	\$ 80.00	78	78
	20mm Poly Coupling (LKP)		4	\$	78.00	312.00	14	14
10	20mm x 16mm Poly reduce Coupling (LKP NRV	V)	4	\$	74.00	\$ 296.00	20	20
-11	16mm Poly Coupling (LKP)		4	\$	76.00	\$ 304.00	10	10

DEPARTMENT NAME: NRW PROJECT TEAM
AUTHORIZED BY: Find Ungs

REQUISITION No. 2:78

AUTHORIZED BY: Paul Seds
DATE ISSUED: 05/06/2014

JOB DESCRIPTION: Being for meter raising @ Kukum and Bahai Pilot Project Site
METER ID: 51800333 \$1310400332.

ITEM	Materials Description	NEW ST	Quantity	Unit Cost	Total Cost	BIN CARD	STOCK
		ORDER	ISSUED			BALANCE	COUNTED
- 1	15mm Kent Water meter New Zealend Ltd		3	\$ 318.84	\$ 956.52	236	236
2	30 Metres 16mm Poly Pipe (LKP)		30	\$ 9.93	\$ 297.90	477	477
3	40kg hag Cement		1	\$ 80.00	\$ 80.00	75	75

DEPARTMENT NAME: NRW PROJECT TEAM AUTHORIZED BY: Benjimen Billy REQUISITION NO: 2483 RECEIVED BY: Mafe ISSUED BY: George Blamoli DATE ISSUED: 19 /07/2014

1,334.42

Total per Requisition = \$

TEM			Quantity ISSUED	·	Jnit Cost	Total Cost	BIN CARD BALANCE	
1	20mm Kent Water meter New Zealend Ltd		7	\$	329.38	\$ 2,305.66	21	21
2	20mm x 20mm Poly Coupling (Tongs order)	100	4	\$	50.00	\$ 200.00	64	64
3	40kg bag Cement (Advance Tech)	100	3	\$	80.00	\$ 240.00	31	31
4	30 metres 20mm Poly Pipe		30	\$	15.50	\$ 465.00	154m	154m
5	20mm x 16mm Poly Reduce Coupling		5	\$	60.00	\$ 300.00	73	73
	20mm x 3/4" Poly female Adaptor (TONGs or		4	\$	40.00	\$ 160.00	131	131
7	20mm x 3/4" Poly male Adaptor (TONGs orde	100	4	\$	35.00	\$ 140.00	95	95
8	5 metres 16mm Poly Pipe(LKP Order Stores)	3 Rolls	5	\$	9.93	\$ 49.65	345m	345m
9	Threaded Tape (NRW order)		10	\$	10.00	\$ 100.00	1235	1235
		Total pe	r Requisit	ion	=	\$ 3,960.31		

Total Material Cost for Kukum Bahai

Items	Specification	Quantity	Unit	Hourly Rate	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Pipes (Poly)	50mm		coil					0.00	Length on 1 coil =150m
Pipes (PVC)	25mm		piece					0.00	
Pipes (PVC)	50mm		piece			1		0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece]		0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece			1		0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece			1		0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
All Materials for Coun	termeasures							7,216.18	
Sub-total								7,216.18	
Total								53,859.50	

1AUD=6.534SBD was applied to the above (rate as of 30 September, 2013 of Oanda)

Items	Specification	Quantity	Unit	Hourly Rate	(SBD)	Total Days	(SBD)	Amount (SBD)	Reamarks
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece					0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece					0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
All Materials for Countermea	sures							33,880.76	
Sub-total								33,880.76	
Total								57,780.86	

1AUD=6.534SBD was applied to the above (rate as of 30 September, 2013 of Oanda).

Location	IATINA VAL								
Items	Specification	Quantity	Unit	Hourly	Unit Cost	Total Days	Amount	Amount	per d Reamarks
		Q		Rate	(SBD)		(SBD)	(SBD)	
I. Personnel Staff-3	Grades- Steps	0	Person	15.85	118.88				
3411-3	3.2	0	Person	16.37	122.78				
	3.3	0	Person	16.90	126.75				
	3.4	0	Person	17.43	130.73				
	3.5	0	Person	17.96	134.70				
Staff-4	4.1	14	Person	19.81	148.58	45.00		6,685.88	
	4.2	4	Person	20.60	154.50	8.00		1,236.00	
	4.3	0	Person	22.18	160.43			0.00	
	4.5	3	Person	22.18	172.35	7.00		1,206.45	
Staff-5	5.1	4	Person	24.83	186.23	23.00		4,283.18	
	5.2	0	Person	25.88	194.10			0.00	
	5.3	0	Person	26.94	202.05			0.00	
	5.4	0	Person	27.99	209.93			0.00	
Staff-6	5.5	1	Person	29.05	217.88	1.00		217.88	
Staff-6	6.2	0	Person	32.48	253.58	1.00		243.60	
	6.3	0	Person	35.13	263.48			0.00	
	6.4	0	Person	36.45	273.38			0.00	
	6.5	0	Person	37.77	283.28			0.00	
Staff-7	7.1	2	Person	39.62	297.15	4.00		1,188.60	
	7.2	0	Person	40.94	307.05			0.00	
	7.3	0	Person	42.26	316.95			0.00	
	7.4	0	Person Person	43.58	326.85 336.75			0.00	
Staff-8	7.5	0	Person	44.90	336.75			0.00	
Jun-0	8.2	0	Person	50.71	380.33			0.00	
	8.3	0	Person	52.03	390.23			0.00	
	8.4	0	Person	53.35	400.13			0.00	
	8.5	2	Person	54.67	410.03	4.00		1,640.10	
Staff-9	9.1	0	Person	59.95	449.63			0.00	
	9.2	0	Person	61.27	459.53			0.00	
	9.3	0	Person Person	62.59	469.43 479.33			0.00	
	9.4	0	Person	65.23	489.33			0.00	
Contractors	7.0	- 0	Person	03.23	407.23			\$ 6,600.00	
									
Sub-total						93.00		23,301.68	
2. Consumable				\$ Per Liter	L/km		S/km		
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	50km/7km/liter=7.14lite 11liter/hrs (fuel consumption for about
									60PS) x 1hr=11liter
Diesel	For Pick-up	336	Liter	11.80	0.1428	47.9808	1.68504	566.17	100km x
Engine Oil	For Excavator	0	Liter	60.00	0.0016		0.096	0.00	252days=25,200km 25200km/10,000km x 8liter=20.16liter 20.16liter/ 100km x
Engine Oil	For Pick-up	336	Liter	60.00	0.0016		0.096	32.26	252days=25,200km 25,200km/10,000km x 8liter=20.16liter/ 20.16liter/ 50km x 252days=12,600
						l			50km x 252days=12,600 12,600km/ 30,000km x 4nos=1.68nos/
Tires		0.	Nos	770.00	0.0014		1.078	0.00	252days=0.07nos/50kn
		0.	Nos	770.00	0.0014		1.078		
Sub-total		0.	Nos	770.00	0.0014		1.078	598.43	
	25mm	0.		770.00	0.0014		1.078	598.43	252davs=0.07nos/50kn
Sub-total 3. Material & Equipment Sluice/ Gate Valve	40mm	0.	Nos piece	770.00	0.0014		1.078	598.43	252davs=0.07nos/50kn Gate Valve
Sub-total 3. Material & Equipment Sluice/ Gate Valve Sluice/ Gate Valve Sluice/ Gate Valve	40mm 50mm	0.	piece piece	770.00	0.0014		1.078	598.43 0.00 0.00 0.00	252davs=0.07nos/50kn Gate Valve Gate Valve Gate Valve
Sub-total 3. Material & Equipment Sluice/ Gate Valve Sluice/ Gate Valve Sluice/ Gate Valve Sluice/ Gate Valve	40mm 50mm 80mm	0.	piece piece piece	770.00	0.0014		1.078	598.43 0.00 0.00 0.00 0.00	252davs=0.07nox/50kn Gate Valve Gate Valve Gate Valve Sluice Valve
Sub-total Sub-total Material & Equipment Sluice/ Gate Valve	40mm 50mm 80mm 100mm	0	piece piece piece piece piece	770.00	0.0014		1.078	598.43 0.00 0.00 0.00 0.00 0.00	252davx=0.07nos/50kn Gate Valve Gate Valve Gate Valve Sluice Valve Sluice Valve
Sub-total 3. Material & Equipment Sluice/ Gate Valve	40mm 50mm 80mm 100mm	0	piece piece piece piece piece piece	770.00	0.0014		1.078	598.43 0.00 0.00 0.00 0.00 0.00 0.00	252davs=0.07nos/S0kn Gate Valve Gate Valve Sluice Valve Sluice Valve Sluice Valve
Sub-total 3. Material & Equipment Sluice/ Gate Valve	40mm 50mm 80mm 100mm 150mm 200mm	0.	piece piece piece piece piece piece	770.00	0.0014		1.078	598.43 0.00 0.00 0.00 0.00 0.00 0.00	252dayx=0.07nos/50kn Gate Valve Gate Valve Sluice Valve Sluice Valve Sluice Valve Sluice Valve Sluice Valve Sluice Valve
Sub-total 3. Material & Equipment Sluice/ Gate Valve	40mm 50mm 80mm 100mm 150mm 200mm 250mm	0.	piece piece piece piece piece piece piece piece	770.00	0.0014		1.078	598.43 0.000 0.000 0.000 0.000 0.000 0.000 0.000	252davx=0.07nos/\$0kn Gate Valve Gate Valve Stuice Valve
Sub-total 3. Material & Equipment Slaice/ Gate Valve	40mm 50mm 80mm 100mm 150mm 200mm 250mm 300mm	. 0.	piece piece piece piece piece piece piece piece piece	770.00	0.0014		1.078	598.43 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	252davs=0.07nos/50kn Gate Valve Gate Valve Gate Valve Stuice Valve Stuice Valve Stuice Valve Stuice Valve Stuice Valve Stuice Valve
Sub-total 5. Material & Equipment Slaice Gate Valve	40mm 50mm 80mm 100mm 150mm 200mm 250mm 300mm	0	piece piece piece piece piece piece piece piece piece piece coil	770.00	0.0014		1.078	598.43 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0	252davs=0.07nos/50kn Gate Valve Gate Valve Gate Valve Sluice Valve Sluice Valve Sluice Valve Sluice Valve Sluice Valve Length on 1 coil = 300m
Sub-total Sub-total Material & Equipment Sluice Gate Valve Pipes (Poly) Pipes (Poly)	40mm 50mm 80mm 100mm 150mm 200mm 250mm 300mm 15mm 20mm	0.	piece piece piece piece piece piece piece piece piece coil	770.00	0.0014		1.078	\$98.43 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	252davs=0.07nos/50kn Gate Valve Gate Valve Gate Valve Sluice Valve Sluice Valve Sluice Valve Sluice Valve Sluice Valve Length on 1 coil =300m Length on 1 coil =300m
Sub-total Material & Equipment Slaice/ Gate Valve Pipes (Poly) Pipes (Poly) Pipes (Poly)	40mm 50mm 80mm 100mm 150mm 200mm 250mm 300mm 15mm 20mm	0.	piece piece piece piece piece piece piece piece coil coil	770.00	0.0014		1.078	598.43 0.00 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	252davs=0.07nos/50kn Gate Valve Gate Valve Gate Valve Sluice Valve Sluice Valve Sluice Valve Sluice Valve Sluice Valve Length on 1 coil =300m Length on 1 coil =300m Length on 1 coil =300m
Sub-total Sub-total Material & Equipment Sluice Gate Valve Pipes (Poly) Pipes (Poly) Pipes (Poly) Pipes (Poly)	40mm 50mm 80mm 100mm 150mm 200mm 250mm 300mm 15mm 20mm 25mm 50mm	0	piece piece piece piece piece piece piece piece coil coil	770.00	0.0014		1.078	598.43 0.00 0.00 0.00 0.00 0.00 0.00 0.00	252davx=0.07nos/50kn_ Gate Valve Gate Valve Gate Valve Stuice Valve Stuice Valve Stuice Valve Stuice Valve Stuice Valve Hength on I coil =300m Length on I coil =300m Length on I coil =300m Length on I coil =300m Length on I coil =300m
Sub-total Sub-total Shaterial & Equipment Shatee Gate Valve Pipes (Poly)	40mm 50mm 80mm 100mm 150mm 200mm 250mm 300mm 15mm 20mm 25mm 25mm	0	piece piece piece piece piece piece piece piece piece coil coil coil	770.00	0.0014		1.078	598.43 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	252davs=0.07nos/50kn Gate Valve Gate Valve Gate Valve Stuice Valve Length on 1 coil =300m
Sub-total 3. Material & Equipment Stalice Gate Valve Pipes (Poly) Pipes (Poly) Pipes (Poly) Pipes (Poly)	40mm 50mm 80mm 100mm 150mm 200mm 250mm 300mm 15mm 20mm 25mm 50mm	0	piece piece piece piece piece piece piece piece coil coil	770.00	0.0014		1.078	598.43 0.00 0.00 0.00 0.00 0.00 0.00 0.00	Gate Valve Gate Valve Gate Valve Gate Valve Gate Valve Sluice Valve Sluice Valve Sluice Valve Sluice Valve Sluice Valve Sluice Valve Length or I coil = 300m

3. Costing After Countermeasure NATINA VALLEY

Location

tity Unit Hearty Unit Cost Rate (SRD) T

0 Person 15.85 118.88 0
Person 15.85 118.88 0
Person 16.37 122.78 0
0 Person 16.37 122.78 0
0 Person 16.37 122.78 0
0 Person 17.43 180.73 1
1 Person 19.31 144.85 1
2 Person Items 2,971.50 772.50 0.00 0.00 861.75 931.13 0.00 0.00 Staff-4 Staff-5 Staff-6 Staff-7 Staff-8 Staff-9 Sub-total 2. Consumable 51.00 S/ks 1.505.15

SIKEN / KIN INTER* / I Allife*

111ife: the (field
0.00 consumption for about
60075). I her 1 Illier

101.10

100.81

252days=25.200km
25.200km/10,000km x
81ife: 20.16iliter
25.216ys=0.08iliter/day/50k
25.250kys=0.08iliter/day/50k
25.250kys=0.08iliter/day/50k
25.250kys=0.08iliter/day/50k
25.250kys=0.08iliter/day/50k
25.250kys=0.08iliter/day/50k
25.250kys=0.08iliter/day/50k
25.250kys=0.08iliter/day/50k
25.250kys=0.08iliter/day/50k
15.50kys=0.08iliter/day/50k
15.50kys=0.08iliter/day/50k
15.50kys=0.08iliter/day/50k
15.50kys=0.08iliter/day/50k
15.50kys=0.08iliter/day/50k
15.50kys=0.08iliter/day/50k
15.50kys=0.08iliter/day/50k \$ Per Liter L/km 11.80 0.3620 Diesel For Pick-up 11.80 0.1428 Engine Oil For Excavato Liter 60.00 0.096 0.0016 Engine Oil For Pick-up Liter 0.096 Tires Nos 770.00 1.078 0.0014 Sub-total 3. Material & 106.86 Material & Equipment Equipment Sluice/ Gate Valve piece
piece
piece
piece
piece
piece
piece
piece
piece

Items	Specification	Quantity	Unit	Hourly Rate	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Sluice/ Gate Valve	300mm		piece					0.00	
Pipes (Poly)	15mm		coil					0.00	Length on 1 coil =30
Pipes (Poly)	20mm	1	coil					0.00	Length on 1 coil =30
Pipes (Poly)	25mm	1	coil					0.00	Length on 1 coil =20
Pipes (Poly)	50mm		coil]		0.00	Length on 1 coil =15
Pipes (PVC)	25mm		piece					0.00	
Pipes (PVC)	50mm		piece					0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece			1		0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece			1 1		0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece					0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
All Materials for Co	ountermeasures							0.00	
Sub-total								0.00	
Total								11,612.01	

1AUD=6.534SBD	was applied to the	above (rate	e as of 30 Se	ptember, 20	13 of Oanda)

Sluice/ Gate Valve	100mm	piece	0.00 Sluice Valve	
Shrice/Gate Valve	150mm	piece	0.00 Sluice Valve	
Sluice/ Gate Valve	200mm	piece	0.00 Sluice Valve	
Sluice/ Gate Valve	250mm	piece	0.00 Sluice Valve225mm AUD17	85
Sluice/ Gate Valve	300mm	piece	0.00	
Pipes (Poly)	15mm	coil	0.00 Length on 1 coil =300m	
Pipes (Poly)	20mm	coil	0.00 Length on 1 coil =300m	
Pipes (Poly)	25mm	coil	0.00 Length on 1 coil =200m	
Pipes (Poly)	50mm	coil	0.00 Length on 1 coil =150m	
Pipes (PVC)	25mm	piece	0.00	
Pipes (PVC)	50mm	piece	0.00	
Pipes (PVC)	80mm	piece	0.00	
Pipes (PVC)	100mm	piece	0.00	
Pipes (PVC)	150mm	piece	0.00	
Pipes (PVC)	200mm	piece	0.00	
Pipes (PVC)	250mm	piece	0.00	
Pipes (PVC)	300mm	piece	0.00	
Water Meter	10mm	piece	0.00	
Water Meter	16mm	piece	0.00	
Water Meter	20mm	piece	0.00	
Water Meter	25mm	piece	0.00	
Water Meter	32mm	piece	0.00	
Water Meter	40mm	piece	0.00	
All Materials for Cou	intermeasures		0.00	
Sub-total			0.00	
Total			2,277.89	

4. Routine Activities

PANATINA

									per
Items	Specification	Quantity	Unit	Hourly	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
. Personnel	Grades- Steps			Rate	(SBD)		(SBD)	(SBD)	
Staff-3	3.1	0	Person	15.85	118.88				
Suii-3									
	3.2	. 0	Person	16.37	122.78				
	3.3	0	Person	16.90	126.75				
	3.4	0	Person	17.43	130.73				
	3.5	0	Person	17.96	134.70				
Staff-4	4.1	0	Person	19.81	148.58			0.00	
	4.2	0	Person	20.60	154.50			0.00	
	4.3	0	Person	21.39	160.43			0.00	
	4.4	0	Person	22.18	166.35			0.00	
	4.5	0	Person	22.98	172.35			0.00	
Staff-5	5.1	0	Person	24.83	186.23			0.00	
- Juni-J	5.2	0		25.88	194.10			0.00	
	5.3	0	Person	26.94	202.05			0.00	
	5.4	0	Person	27.99	209.93			0.00	
	5.5	0	Person	29.05	217.88			0.00	
Staff-6	6.1	3	Person	32.48	243.60	9.00		2,192.40	
	6.2	0	Person	33.81	253.58			0.00	
	6.3	0	Person	35.13	263.48			0.00	
	6.4	0	Person	36.45	273.38			0.00	
	6.5	0	Person	37.77	283.28			0.00	
Staff-7	7.1	0	Person	39.62	283.28			0.00	
Statt-/									
	7.2	0	Person	40.94	307.05			0.00	
	7.3	0	Person	42.26	316.95			0.00	
	7.4	0	Person	43.58	326.85			0.00	
	7.5	0	Person	44.90	336.75			0.00	
Staff-8	8.1	0	Person	49.39	370.43			0.00	
	8.2	0	Person	50.71	380.33			0.00	
	8.3	0	Person	52.03	390.23			0.00	
	8.4	0		53.35	400.13			0.00	
	8.5	0	Person		410.03			0.00	
			Person	54.67					
Staff-9	9.1	0	Person	59.95	449.63			0.00	
	9.2	0	Person	61.27	459.53			0.00	
	9.3	0	Person	62.59	469.43			0.00	
	9.4	0	Person	63.91	479.33			0.00	
	9.5	0	Person	65.23	489.23			0.00	
Sub-total						9.00	-	2,192.40	
. Consumable									
				\$ Per Liter	L/km		\$/km		
Diesel	For Excavator	0	Liter	\$ Per Liter	L/km 0.3620		\$/km 4.2716	0.00	50km/7km/liter=7.14liter 11liter/hrs (fuel consumption I about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50ks
Diesel	For Excavator	0	Liter			6.8544			11liter/hrs (fuel consumption tabout 60PS) x 1hr=11liter
				11.80	0.3620	6.8544	4.2716	80.88	11liter/hrs (fuel consumption about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50k
Diesel	For Pick-up	48	Liter	11.80	0.3620	6.8544	4.2716 1.68504	80.88	11liter/hrs (fuel consumption I about 60/PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50ki 50km/7km/liter=7.14liter/50ki 100km x 252days=25,200km 10,00km x 10,000km
Diesel Engine Oil	For Pick-up For Excavator	48	Liter Liter	11.80	0.3620 0.1428 0.0016	6.8544	4.2716 1.68504 0.096	80.88	11liter/nsc (fuel consumption about 60PS) x 1her-1 litier 11liter +7.1liter=18.1liter/50k: 50km/km/liter=7.14liter/50k: 100km x 252dsy=25,200km / 10,000km x 83iter=20.16liter 252dsys=0.08liter/day/50km x 100km x 252dsys=25,200km / 10,000km x 83iter=20.16liter 100km x 252dsys=25,200km / 10,000km x 83iter=20.16liter 252dsys=10.16liter 20.16lit
Diesel Engine Oil Engine Oil	For Pick-up For Excavator	0 48	Liter Liter	11.80	0.3620 0.1428 0.0016	6.8544	4.2716 1.68504 0.096	80.88 0.00 4.61	Illiter/ns (fuel consumption obsort 60%) s. Ihe-Illiter 11liter +7.1liter=18.1liter/50k. 50km/Tkm/iter-7.1.4liter/50k. 100km x 252days-25,200km 100km x 252days-25,200km 51liter-20.16liter 252days-0.08liter/day/50km 100km x 252days-25,200km 100km x 252days-25,200km 51liter-20.10liter 252days-0.08liter/day/50km 51liter-20.10liter 252days-0.08liter/day/50km 51liter-20.08liter/day/50km 51liter-20.08liter/day/50km 51liter-20.08liter/day/50km 51liter-20.08liter/day/50km 51liter-20.00liter/day/
Diesel Engine Oil Engine Oil Tires Sub-total	For Pick-up For Excavator	0 48	Liter Liter	11.80	0.3620 0.1428 0.0016	6.8544	4.2716 1.68504 0.096	0.00	Illiter/nrs (fuel consumption) about of 90% 3, the "Illier Illier +7.1 liter=18.1 liter=50k 50km/Tkm/liter=7.1.4 liter=50k 100km x 252days=25,200km 100km x 252days=25,200km 100km x 252days=0.1 foliter 252days=0.08 liter/day/50km 100km x 252days=0.20 liter 252days=0.08 liter/day/50km 100km x 252days=0.08 liter/day/50km 100km x 252days=0.08 liter/day/50km 100km x 252days=12.600km 100km x 252days=12.600km 100km x 250days=12.600km 100km x 250days=12.600km
Diesel Engine Oil Engine Oil Tires Sub-total Material &	For Pick-up For Excavator For Pick-up	0 48	Liter Liter Nos	11.80	0.3620 0.1428 0.0016	6.8544	4.2716 1.68504 0.096	80.88 0.00 4.61 0.00	Illiter/nrs (duel consumption) about of 90's). Ihr - Illier 11liter +7.1liter=18.1liter=50k 11liter +7.1liter=18.1liter=50k 100km x 252days=25,200km 1000km x 252days=25,200km 1000km x 252days=0.08liter 25.200km-10.00km x 25.200km 10.00km x 25.200km x 25.200km 10.00km x 25.200km x
Diesel Engine Oil Engine Oil Tires Sub-total Material & Silice Gate Valve	For Pick-up For Excavator For Pick-up	0 48	Liter Liter	11.80	0.3620 0.1428 0.0016	6.8544	4.2716 1.68504 0.096	80.88 0.00 4.61 0.00 85.49	Illiter/ns (duel consumption about 09/89), http://liter.illite
Diesel Engine Oil Engine Oil Tires Sub-total Material & Silice Cate Valve	For Pick-up For Excavator For Pick-up 25mm 40mm	0 48	Liter Liter Nos	11.80	0.3620 0.1428 0.0016	6.8544	4.2716 1.68504 0.096	80.88 0.00 4.61 0.00 85.49	Illiter/nrs (fuel consumption) about 09f9's, 14n-11lier 11liter +7.1liter=18.1liter50s. 50km/Tkm/liter=7.14liter50s. 100km x 252days=25,200km 100km x 252days=25,200km 100km x 252days=0.08liter/day/50km 25.200km/1000km x 152.200km/1000km x 152.200km/10000km x 152.20
Diesel Engine Oil Engine Oil Tires Sub-total Material & Slinice Gate Valve	For Pick-up For Excavator For Pick-up	0 48	Liter Liter Nos	11.80	0.3620 0.1428 0.0016	6.8544	4.2716 1.68504 0.096	80.88 0.00 4.61 0.00 85.49	Illiter/ns (duel consumption) about of 90's). In 11 liter 11 liter +7.1 liter=18.1 liter=50k. 50km/7km/liter=7.1.4 liter=50k. 100km x \$252dsyx=25,200km 100km x \$252dsyx=25,200km 100km x \$252dsyx=0.08liter/day/50km 100km x \$252dsyx=0.08liter/day/50km 100km x \$252dsyx=25,200km 100km x \$252dsyx=25,200km 100km x \$252dsyx=0.08liter/day/50km 50km x \$252dsyx=0.08liter/day/50km 1250km x \$252dsyx=0.08liter/day/50km 1250km x \$252dsyx=0.08liter/day/50km 100km x \$254dsyx=0.08liter/day/50km 100km x \$254d

RECOM REQUIS	IMENT NAME: NRW PROJECT TEAM MENDED BY: Eric Unga ITION NO: 2335 SCRIPTION: Being for NRW Pilot Site for Test I			e P		ISS DA	CEIVED BY : SUED BY: Go TE ISSUED:	orge Blamoli 14/02/2014	
ITEM	Materials Description		Quantity ISSUED		Jnit Cost		Total Cost	BIN CARD BALANCE	
1	75mm (80 mm)Sluice Valve		1	\$	2,432.00	\$	2,432.00	1	1
2	75mm(80 mm) DI socket Flange (JICA orde	ır)	2	\$	636.73	\$	1,273.46	6	6
3	75mm(80 mm) Gilbault Joint (JICA order)		1	\$	659.20	\$	659.20	3	3
4	80mm x 3/4" Brass Tapping Band		1	\$	234.00	\$	234.00	17	17
5	20mm x 15mm reduce nipple		1	\$	14.00	\$	14.00	53	53
6	15mm Stop Cock (Last year Order, Tongs)	600	1	\$	95.00	\$	95.00	621	621
7	ThreadTape		1	\$	4.00	\$	4.00	399	399
8	2Kg Pipe Lubricant		1		329.86	\$	329.86	10	10
9	set 80mm Gaskets,Bolts & Nuts		2	\$	134.83	\$	269.66	24	24
	•		Total per	Req	uisition =	\$	5,311.18		

RECOMI REQUISI JOB DE	MENT NAME: NRW PROJECT TEAM MENDED BY: Vincent Lui TION NO: 0783 SCRIPTION: Materials to be used @ Panatina P					DA'	DEIVED BY : UED BY: Ger TE ISSUED:	orge Blamoli 28/03/2014	
ITEM	Materials Description		Quantity ISSUED	u	nit Cost	1		BIN CARD BALANCE	
1	80mm Brass Gate Valve (NRW Stock)		1	\$	775.00	\$	775.00	2	2
2	50mm Brass Gate Valve		1	\$	320.00	\$	320.00	25	25
	1 1/4" Brass Gate Valve		2	\$	180.00	\$	360.00	2	2
	80mm x 3" PVC male Adaptor		2	\$	77.00	\$	154.00	10	10
5	50mm x 2" poly male Adaptor		2	\$	38.00	\$	76.00	49	49
6	32mm x 1 1/4" poly male Adaptor		4	\$	55.00	\$	220.00	7	7
		Total p	oer Requisi	tion	=	\$	1,905.00		

		I OTAI	per Requisi	tion	=	•	1,900.00	J	
DEPART	MENT NAME: NRW PROJECT TEAM 2			REC	EIVED BY	: Jo	hn Chede		
AUTHOR	RIZED BY: Chris Meriko			188	UED BY : F	aul	Seda		
REQUIS	ITION NO: 1668			DAT	E ISSUED:	16	05/2014		
JOB DE	SCRIPTION: Being for Meter raising @ Panatina	Pilot Pr	oject Site .						
ITEM	Materials Description	NEW S	Quantity	U	nit Cost	T	otal Cost	BIN CARD	STOCK
	-	ORDER	ISSUED					BALANCE	COUNTE
1	15mm Stop Tap (Tongs order)	100	10	\$	95.00	\$	950.00	91	91
2	500mm x 1/2" threaded Galvanised pipe (LR	640	40	\$	71.00	\$	2,840.00	347	347
3	200mm x 1/2" threaded Galvanised pipe (L	320	20	\$	53.60	\$	1,072.00	388	388
4	1/2" G.I Socket (NRW Mbua valley Stock)	160	15	\$	10.00	\$	150.00	62	62
5	1/2" G.I Elbow (NRW Stock)	460	50	\$	10.00	\$	500.00	407	407
6	16mm x 1/2" Poly female Adaptor (NRW sto	LKP	40	\$	54.00	\$	2,160.00	237	237
	•	Total p	er Requisi	tion	=	\$	7.672.00		

DEPAR	TMENT NAME: NRW PROJECT TEAM 1			REC	EIVED BY	: Da	vid Akwa'asi		
AUTHO	RIZED BY: Vincent Lui for Silas Talosui			ISSL	JED BY : 0	Georg	ge Blamoli		
REQUIS	SITION NO: 1671			DAT	E ISSUED:	22/	05/2014		
JOB DI	ESCRIPTION: Being for brasing of Meter Stand	for Kukum	& Bahai,Mb	ua Va	alley,Panati	na ai	nd Naha Pik	ot Project Si	te.
ITEM	Materials Description	NEW S	Quantity	Uı	nit Cost	Т	otal Cost	BIN CARD	STOCK
		ORDER	ISSUED					BALANCE	COUNT
					45.50		5 460 00	0	n
- 1	10mm Reinforce Steel Rod		120	- A	40.00	٠,			
1 2	10mm Reinforce Steel Rod Hack Saw Blade (ITA)		120	\$	21.00	\$	84.00	106	106

Summary of May	TOTAL COST	\$ 20,432.18

	Month of June requisition report							
DEPART	MENT NAME: NRW PROJECT TEAM			RECEIVED BY	: Jo	hn Teno		
AUTHOR	RIZED BY : Benjimen Billy			ISSUED BY:	Paul	Seda		
	ITION NO: 1692			DATE ISSUED	: 02	/06/2014		
	SCRIPTION: Being for Panatina Pilot Project Site							
METER :	LD: S13A00547,S13A00548,S13A00545,S13A005	49,S13A	00550,S13A	.00546,S13A005	44,S	13A00551,S1	3A552,S13A	00553
ITEM	Materials Description	NEW S'	Quantity	Unit Cost	T	otal Cost	BIN CARD	STOCK
		ORDER	ISSUED				BALANCE	COUNTER
- 1	40 Metres 16mm Poly Pipe (LKP)		40	\$ 9.93	\$	397.20	887m	887m

_	15mm Kent Water meter New Zealend Ltd		10		318.84		0.100.40	270	070
			10	2		2	3,188.40		270
3	16mm Poly Coupling (LKP)		6	\$	76.00	\$	456.00	43	43
4	16mm x 1/2" male Poly Adaptor (LKP Orde	100	4	\$	54.00	\$	216.00	322	322
5	Threaded Tape (NRW Stock) (LKP)	980	10	\$	10.00	\$	100.00	1,320	1,320
	16mm x 3/4" Poly female Adaptor (tongs or		2	\$	50.00	\$	100.00	63	63
7	20mm x 16mm Poly reduce Coupling (TONG	S,Stor	2	\$	56.00	\$	112.00	15	15
8	20mm x 16mm Poly reduce Coupling (LKP N	NRW)	2	\$	74.00	\$	148.00	25	25
9	25mm x 16mm Poly Reduce Coupling	1	1	\$	60.00	\$	60.00	23	23
10	40kg bag Cement (Advance Tech)	100	3	\$	80.00	\$	240.00	86	86
		Total	er Requisi	tion	=		5,017.60		

AUTHO: REQUIS	TMENT NAME: NRW PROJECT TEAM RIZED BY: Vincent Lui aTION NO: 1866 SCRIPTION: Being for Pilot Project Test Site @	Decetion		ISS	DEIVED BY UED BY : F TE ISSUED:	aul S	eda		
METER METER		Panatina	1.						
ITEM	Materials Description		Quantity ISSUED	U	nit Cost	То		BIN CARD BALANCE	
1	50mm(2") G.I Plug	60	_1_	\$	14.00	\$	14.00	27	27

AUTHO REQUIS	TMENT NAME: NRW PROJECT TEAM RIZED BY: Frank Daukali ITION NO: 1693 ISCRIPTION: Being for Pilot Project Test Site @ I LD:	Panatina	L	1881	EIVED BY JED BY : F TE ISSUED:	Paul	Seda		
ITEM			Quantity ISSUED	U	nit Cost		Total Cost	BIN CARD BALANCE	
- 1	32mm x 20mm x 32mm Poly Tee		1	\$	70.00	\$	70.00	47	47
2	16mm Poly Coupling (LKP)		2	\$	76.00	\$	152.00	30	30
3	5 metre 20mm Poly Pipe		5	\$	15.15	\$	75.75	550m	550m
4	3/4" G.I Tee		1	\$	14.00	\$	14.00	24	24
5	16mm x 3/4" Male Poly Adaptor (TONGS of		2	\$	28.00	\$	56.00	30	30
6	20mm x 3/4" Poly male Adaptor (TONGs o		1	\$	35.00	\$	35.00	11	11
		Total a	er Requisi	tion	=	\$	402.75		

	MENT NAME: NRW PROJECT TEAM				CEIVED BY				
	RIZED BY: Benjimen Billy				SUED BY:				
	ITION NO: 1695			D/	TE ISSUED:	03	/06/2014		
JOB DE	SCRIPTION: Being for Meter Raising @ Panatina	a Pilot P	roject Site.						
	LD: S13A00376-380 (4 pics),S13A00372-375 (4			5(3p	ics),S13A00	367			
ITEM			Quantity		Unit Cost		Total Cost	BIN CARD	STOCK
		ORDER	ISSUED					BALANCE	COUNTE
- 1	15mm Kent Water meter New Zealend Ltd		15	\$	318.84	\$	4,782.60	265	265
2	16mm x 1/2" male Poly Adaptor (LKP Orde	100	10	\$	54.00	\$	540.00	310	310
3	30 Metres 16mm Poly Pipe (LKP)		30	\$	9.93	\$	297.90	787m	787m
4	15mm Galvanised Socket		5	\$	10.00	\$	50.00	139	139
5	40kg bag Cement		2	\$	80.00	\$	160.00	81	81
6	Threaded Tape (NRW Stock) (LKP)	980	5	\$	10.00	\$	50.00	1310m	1310m
		Total p	er Requisi	tio	1 =	\$	5,880.50		

AUTHOI REQUIS	TMENT NAME: NRW PROJECT TEAM RIZED BY: Benjimen Billy ITION NO: 1698 SCRIPTION: Being for Pilot Project Site @ Pana ID:	tina.		188	CEIVED BY SUED BY : F TE ISSUED:	Paul	Seda 3/06/2014		
ITEM			Quantity ISSUED	ı	Jnit Gost		Total Cost	BIN CARD BALANCE	
1	80mm x 1" brass Tapping band/saddle		1	\$	401.00	\$	401.00	6	6
2	20mm x 3/4" Poly male Adaptor (TONGs o	100	1	\$	35.00	\$	35.00	89	89
3	3 metre 20mm Poly Pipe		3	\$	15.15	\$	45.45	527m	527m
4	16mm Poly Coupling (LKP)		2	\$	76.00	\$	152.00	22	22
5	20mm x 16mm Poly reduce Coupling (LKP I		1	\$	74.00	\$	74.00	24	24
		Total p	oer Requisi	tion	=	\$	707.45]	

20mm x 16mm Poly Reduce Coupling		6	ŝ	60.00	360.00	46	46
10 metres 20mm Poly Pipe 15mm Water Meter (JICA order)		10	\$	15.50 234.00	155.00	39m 574	39m 574
20 metres 16mm Poly Pipe(LKP Order Stor	3 Rolls	20	\$	9.93	198.60	220m	220m

	TMENT NAME: NRW PROJECT TEAM				EIVED BY				
	RIZED BY: Benjimen Billy				ED BY : F				
REQUI	SITION NO: 1713			DATI	ISSUED:	25/0	07/2014		
JOB D	ESCRIPTION: Being required for Meter raising 6	₽ Panatina	Pilot project	t Site					
METER	ILD:								
METER ITEM	I.D: . Meterials Description	NEW S	Quantity	Un	it Cost	То	tal Cost	BIN CARD	s тоск
			Quantity ISSUED	Un	it Cost	То		BIN CARD BALANCE	
				Un \$	it Cost	To \$			
	Materiale Description			Un \$		\$ \$		BALANCE	COUNT

Total Material Costing for Panatina Valley Pilot	\$ 50,150.90
	\$ 41,096.94

DEPARTMENT NAME: NRW PROJECT TEAM AUTHORIZED BY: Benjimen Billy REQUISITION NO: 1700 JOB DESCRIPTION: Being for Panatina Valley Pilot Project Site METER LD: ITEM					RECEIVED BY: Francis Hiri ISSUED BY: Paul Seds DATE ISSUED: 04/06/2014					
ITEM	Materials Description		Quantity ISSUED	u	nit Cost	1	Total Cost	BIN CARD BALANCE		
1	70 Metres 16mm Poly Pipe (LKP)	UNDER	70	\$	9.93	\$	695.10	667m	667m	
2	16mm x 1/2" male Poly Adaptor (LKP Orde	100	6	\$	54.00		324.00	298	298	
3	40kg bag Cement		1	\$	80.00	\$	80.00	77	77	
4	16mm Poly Coupling (LKP)		5	\$	76.00		380.00	130	130	
5	15mm Galvanised Socket	T	8 er Requisi	\$	10.00	\$	80.00 1,559,10	130	130	
		I otal	er Requis	tion	=	•	1,009.10	J		
AUTHOR REQUISE JOB DE	THENT NAME: NRW PROJECT TEAM RIZED BY: Benjimen Billy STION NO: 1697 SCRIPTION: Being for meter raising @ Panatina LD: S13B00100.S13A00401,S13A00336,S13A003	Pilot Pri 37,S13A	nject Site 00338,S13A	DAT	E ISSUED:	Geor	rge Blamoli /06/2014			
ITEM	Materials Description	NEW S'	Quantity ISSUED	u	nit Cost	1	Total Cost	BIN CARD BALANCE		
1	20mm Kent Water meter New Zealend Ltd		1	\$	329.38	\$	329.38	97	97	
2	15mm Kent Water meter New Zealend Ltd		7	\$	318.84	\$	2,231.88	222	222	
3	30 Metres 16mm Poly Pipe (LKP) 40kg bag Cement		50 2	\$	9.93		496.50 160.00		547m 70	
5	16mm x 1/2" male Poly Adaptor (LKP Orde	100	- 8	\$	54.00		432.00		284	
6	15mm Galvanised Socket	100	6	\$	10.00		60.00		120	
AUTHOR REQUIS: JOB DE	TMENT NAME: NRW PROJECT TEAM RIZED BY: Vincent Lui ITION NO: 2396 SCRIPTION: Being for Bulk Site Testing # Lenge LD: 07-001578 & SN-10-4176	ıkiki & Pa	anatina	1881	EIVED BY JED BY : F E ISSUED:	Paul	Seda			
ITEM										
	Meterials Description	NEW S'	Quantity ISSUED		nit Cost		Total Cost	BIN CARD BALANCE	COUNTED	
1	Meteriale Description 150mm Bulk Water Meter		Quantity ISSUED	\$	1,101.00	\$	1,101.00	BALANCE 5	COUNTED 5	
1 2	Meteriale Description 150mm Bulk Water Meter 150mm Flange Gibault Adaptor(NZ stock)		Quantity ISSUED	\$	1,101.00 796.29	\$	1,101.00 1,592.58	5 7	COUNTED 5 7	
1 2 3	Materiale Description 150mm Bulk Water Meter 150mm Flange Gibault Adaptor(NZ stock) 150mm Gibault Coupling		Quantity ISSUED 1 2 2	\$	1,101.00 796.29 497.00	\$	1,101.00 1,592.58 994.00	5 7 15	5 7 15	
1 2 3 4	Materiale Description 150mm Bulk Water Meter 150mm Flange Gibault Adaptor(NZ stock) 150mm Gibault Coupling 80mm Bulk Water Meter		Quantity ISSUED 1 2 2	\$ \$	1,101.00 796.29 497.00 3,317.00	\$ \$	1,101.00 1,592.58 994.00 3,317.00	5 7 15 6	5 7 15 6	
1 2 3	Materiale Description 150mm Bulk Water Meter 150mm Flange Gibault Adaptor(NZ stock) 150mm Gibault Coupling		Quantity ISSUED 1 2 2	\$	1,101.00 796.29 497.00	\$ \$ \$ \$	1,101.00 1,592.58 994.00	5 7 15 6	5 7 15	
1 2 3 4 5	Materiale Description 150mm Bulk Water Meter 150mm Flange Gibault Adaptor(NZ stock) 150mm Gibault Coupling 80mm Bulk Water Meter 80mm Flange Gibault Adaptor(NZ stock)	ORDER	Quantity ISSUED 1 2 2 1 2	\$ \$ \$ \$	1,101.00 796.29 497.00 3,317.00 500.00 524.69	\$ \$ \$ \$	1,101.00 1,592.58 994.00 3,317.00 1,000.00	5 7 15 6 8	5 7 15 6 8	
1 2 3 4 5 6 DEPART AUTHOI REQUISING JOB DE METER	Metarial Description 150mm Bulk Water Meter 150mm Ringe Gibault Adaptor(NZ stock.) 150mm Gibault Coupling 150mm Bulk Water Meter 150mm Flange Gibault Adaptor(NZ stock.) 150mm Bulk Water Meter 150mm Flange Gibault Adaptor(NZ stock.) 150mm Flange Gibault Coupling NZ stock.) TIMENT NAME: NRW PROJECT TEAM RZED 8Y: Eric Unga TITION NO: 2485 2008/PTION: Being for Replacement of Stop God	Total p	Quantity ISSUED 1 2 2 1 2 2 2 er Requisi	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	1,101.00 796.29 497.00 3,317.00 500.00 524.69 =	\$ \$ \$ \$ \$ Paul	1,101.00 1,592.58 994.00 3,317.00 1,000.00 1,049.38 9,053.96 ykes Seda	5 7 15 6 8 2	5 7 15 6 8 2	
1 2 3 4 5 6 6 DEPARTI AUTHOR REQUISE METER ITEM	Metarial Description 150mm Blung Gibsult Adaptort NZ stock.) 150mm Gibsult Coupling 150mm Flung Gibsult Adaptort NZ stock.) 150mm Gibsult Coupling 50mm Flung Gibsult Adaptort NZ stock.) 50mm Flung Gibsult Adaptort NZ stock.) 50mm Flung Gibsult Adaptort NZ stock.) 50mm Flung Gibsult Coupling (NZ stock.)	Total j	Quantity ISSUED 1 2 1 2 2 2 er Requisi	S S S S S S S S S S S S S S S S S S S	1.101.00 796.29 497.00 3.317.00 500.00 524.69 = EEVED BY: FE ISSUED: bus Valley. mit Coet	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	1,101.00 1,592.58 994.00 3,317.00 1,000.00 1,049.38 9,053.96 ykes Seda (/07/2014	S	COUNTED 5 7 15 6 8 2	
1 2 3 4 5 6 6 DEPARTI AUTHOR REQUIS: JOB DE METER: ITEM	Metarial Description 150mm Bulk Water Meter 150mm Flange Gibault Adaptor(NZ stock) 150mm Gibault Coupling 30mm Bulk Water Meter 30mm Bulk Water Meter 30mm Flange Gibault Adaptor(NZ stock) NEMT MAME. NRW PROJECT TEAM REED BY: Fire Ungs TION NO: 2465 SORSPTION: Being for Replacement of Stop Coci D: Metarial Description 15mm Stop Tag (NRW order)	Total ;	Quentity ISSUED 1 2 1 2 2 2 2 2 2 2 Cuentity Guentity ISSUED 4	S S S S S S S S S S S S S S S S S S S	1.101.00 796.29 497.00 3.317.00 500.00 524.69 EVEL BY: If TE ISSUED bus Valley. nit Cost	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	1,101.00 1,592.58 994.00 3,317.00 1,000.03 1,049.38 9,053.96 y/kes Seda //07/2014	BALANCE 5 7 7 15 6 8 2 2 BIN CARD BALANCE 121	5 7 7 15 6 8 2 2 STOCK COUNTED	
1 2 3 4 5 6 EPARTA AUTHOR REQUISE JOB DE METER : ITEM	Metarial Description 150mm Bulk Water Meter 150mm Bulk Water Meter 150mm Glasult Coupling 150mm Flarge Glasult Adaptor(NZ stock) 150mm Flarge Glasult Coupling (NZ stock) 150mm Flarge Glasult Coupling (NZ stock) 150mm Flarge Glasult Coupling (NZ stock) 150mm Stage Solder (NEW Glasult) 150mm Stage Solder (NEW order) 150mm Stop Tag (NEW order)	Total j	Quentity ISSUED 2 2 2 2 2 2 er Requise Quantity ISSUED 4 6	RECO ISSI DAT	1.101.00 796.29 497.00 3.317.00 500.00 524.69 = SEEVED BY: F TE ISSUED: bus Valley.	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	1,101.00 1,592.58 994.00 3,317.00 1,000.00 1,049.38 8,053.96 y/kes Seda //07/2014	SIN CARD BALANCE 121 1199 1	STOCK COUNTED 121 1199	
1 2 3 4 5 6 6 DEPARTI AUTHOR REQUIS: JOB DE METER: ITEM	Metarial Description 150mm Bulk Water Meter 150mm Flange Gibault Adaptor(NZ stock) 150mm Gibault Coupling 30mm Bulk Water Meter 30mm Bulk Water Meter 30mm Flange Gibault Adaptor(NZ stock) NEMT MAME. NRW PROJECT TEAM REED BY: Fire Ungs TION NO: 2465 SORSPTION: Being for Replacement of Stop Coci D: Metarial Description 15mm Stop Tag (NRW order)	Total p	Quentity ISSUED 1 2 1 2 2 2 2 2 2 2 Cuentity Guentity ISSUED 4	RECO ISSI DATI	1.101.00 796.29 497.00 3.317.00 500.00 524.69 = SELVED BY: FE ISSUED: bus Valley. mit Cost 95.00 10.00 54.00	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	1,101.00 1,592.58 994.00 3,317.00 1,000.03 1,049.38 9,053.96 y/kes Seda //07/2014	BALANCE 5 7 7 15 6 8 2 2 BIN CARD BALANCE 121	5 7 7 15 6 8 2 2 STOCK COUNTED	
1 2 3 4 5 6 6 DEPARTI AAUTHOI REQUIS: JOB DE METER: ITEM 1 2 3 DEPARTI AUTHOIS JOB DE	Metarial Description 150mm Bulk Water Meter 150mm Riange Gibault Adaptor(NZ stock) 150mm Gibault Coupling 50mm Gibault Coupling 50mm Gibault Coupling 50mm Gibault Coupling 50mm Flange Gibault Adaptor(NZ stock) 50mm Flange Gibault Coupling (NZ stock) TIMENT NAME: NEW PROJECT TEAM RIZED BY: Eric Unga STION NO: 2485 508/BTION Energy For Replacement of Stop Cool 10: Metarials Description 15mm Stop Tap (NRW order)	Total ; NEW S ORDER 100 Total ji total ji total ji	Quentity ISSUED 1 2 2 1 1 2 2 2 er Requise Quentity ISSUED 4 4 6 6 2 per Requise	RECO ISSU UU	1,101.00 796.29 497.00 3.317.00 500.00 524.69 = SEIVED BY: FE ISSUED: bus Valley. nit Cost 95.00 10.00 54.00 = SEIVED BY: Cost 10.00 54.00 = SEIVED BY: Cost 10.00 54.00 =	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	1.101.00 1.592.58 994.00 1.000.00 1.000.00 1.000.00 1.049.38 9.053.96 Y/kes Seda 4/07/2014 Total Cost 380.00 60.00 108.00 548.00 obn Chede ge Blamoli /07/2014	SIN CARD BALANCE 121 1199 1	STOCK STOC	



									per day
Items	Specification	Quantity	Unit	Hourly Rate	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
1. Personnel	Grades- Steps			- Kuit	(555)		(555)	(5555)	
Staff-3	3.1	0	Person	15.85	118.88				
	3.2	0		16.37	122.78				
	3.3	0	Person	16.90	126.75				
	3.4	- 0	Person	17.43	130.73				
D. F. A	3.5	40	Person	17.96	134.70	124.00		10 422 20	
Staff-4	4.1	10	Person Person	19.81 20.60	148.58 154.50	124.00 31.00		18,423.30 4,789.50	
	4.3	0	Person	21.39	160.43	31.00		0.00	
	4.4	0	Person	22.18	166.35			0.00	
	4.5	10	Person	22.98	172.35	31.00		5,342.85	
Staff-5	5.1	10	Person	24.83	186.23	31.00		5,772.98	
	5.2	0	Person	25.88	194.10			0.00	
	5.3	0	Person	26.94	202.05			0.00	
	5.4	- 0	Person	27.99	209.93			0.00	
	5.5	0	Person	29.05	217.88	0.00		0.00	
Staff-6	6.1	1	Person	32.48	243.60	2.00		487.20	
	6.2	1 0	Person	33.81	253.58 263.48	1.00		253.58	
	6.3	0	Person Person	35.13 36.45	273.38			0.00	
	6.5	0	Person	37.77	283.28	************		0.00	
Staff-7	7.1	9	Person	39.62	297.15	24.00		7,131,60	
	7.2	0	Person	40.94	307.05			0.00	
	7.3	0	Person	42.26	316.95			0.00	
	7.4	0	Person	43.58	326.85			0.00	
	7.5	- 0	Person	44.90	336.75			0.00	
Staff-8	8.1	0		49_39	370.43			0.00	
	8.2	0	Person Person	50.71 52.03	380.33 390.23			0.00	
	8.4	0		52.03	390.23 400.13			0.00	
	8.5	7	Person Person	54.67	410.03	21.00		8,610.53	
Staff-9	9.1	í	Person	59.95	449.63	5.00		2,248.13	
5557	92	0	Person	61.27	459.53	2.00		0.00	
	9.3	- 0	Person	62.59	469.43			0.00	
	9.4	0	Person	63.91	479.33			0.00	
	9.5	0	Person	65.23	489.23			0.00	
Sub-total						270.00		53,059.65	
2. Consumable				\$ Per Liter	L/km		\$/km		761 CT 41 7 7 1 01
									50km/7km/liter=7.14liter 11liter/hrs (fuel consumption for
Diesel	For Excavator	62.4	Liter	11.80	0.3620		4.2716	266.55	about 60PS) x 1hr=11liter
									11liter +7.1liter=18.1liter/50km
Diesel	For Pick-up	322.4	Liter	11.80	0.1428	46.0387	1.68504	543.26	50km/7km/liter=7.14liter/50km
									100km x 252days=25,200kr
Engine Oil	1								25,200km/10,000km x
	For Excavator	0	Liter	60.00			0.096	0.00	25,200km/ 10,000km x 8liter=20.16liter
_	For Excavator	0	Liter	60.00	0.0016		0.096	0.00	25,200km/ 10,000km x 8liter=20.16liter 20.16liter/
-	For Excavator	0	Liter	60.00	0.0016		0.096	0.00	25,200km/ 10,000km x 8liter=20.16liter 20.16liter/
			Liter		0.0016				25,200km/10,000km x 8liter=20.16liter 20.16liter/ 25,2days=0.08liter/day/50km 100km x 25,2days=25,200km 25,200km/10,000km x
Engine Oil	For Excavator	322.4	Liter	60.00	0.0016		0.096		25,200km/10,000km x 8liter=20.16liter 20.16liter/ 25,2davx=0.08liter/day/50km 100km x 25,2dayx=25,200km 25,200km/10,000km x 8liter=20.16liter
									25,200km/10,000km x 8liter=20.16liter 20.16liter/ 25.2davs=0.08liter/day/50kn 100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/
					0.0016				25,200km/10,000km x 8liter=20.16liter 20.16liter/ 25.2davs=0.08liter/day/50kn 100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/
Engine Oil		322.4	Liter	60.00			0.096	30.95	25.200km/ 10.000km x Slitte=20.16itier 20.16itier/ 25.2days=0.88jier/day/50km 100km x 25.2days=25.200ke 25.200km/ 10.000km x Sliter=20.16itier/ 20.16itier/ 20.16itier/ 25.200km/ 25.2days=12.600kn
								30.95	25.200km/ 10.000km x Sliter=20.16liter 20.16liter=20.16liter 25.2dnvs=0.08liter/day/50km 100km x 25.2dnys=25.200km 25.200km/ 10.000km x Sliter=20.16liter 20.16liter/ 25.2davx=0.08liter/day/50km 50km x 25.2dayx=12.600km 12.600km/ 30.000km x
Engine Oil		322.4	Liter	60.00			0.096	30.95	25.200km/ 10.000km x Slitte=20.16itier 20.16itier/ 25.2days=0.88jier/day/50km 100km x 25.2days=25.200ke 25.200km/ 10.000km x Sliter=20.16itier/ 20.16itier/ 20.16itier/ 25.200km/ 25.2days=12.600kn
Engine Oil Tires		322.4	Liter	60.00	0.0016		0.096	30.95	25.200km 10.000km x 8liter=20.16liter 20.16liter/ 25.2dav=20.8liter/day/50km 100km x 25.2days=25.200ku 25.200km 10.000km x 8liter=20.16liter/ 20.16liter/ 25.2davs=0.08liter/day/50km 50km x 25.2days=12.600km 12.600km 30.000km x
Engine Oil Tires Sub-total		322.4	Liter	60.00	0.0016		0.096	30.95	25.200km 10.000km x 8liter=20.16liter 20.16liter/ 25.2dav=20.8liter/day/50km 100km x 25.2days=25.200ku 25.200km 10.000km x 8liter=20.16liter/ 20.16liter/ 25.2davs=0.08liter/day/50km 50km x 25.2days=12.600km 12.600km 30.000km x
Engine Oil Tires Sub-total 3. Material & Equipment	For Pick-up	322.4	Liter	60.00	0.0016		0.096	30.95 0.00 840.76	25.200km 10.000km x Slitier=20.16ileter 20.16ileter 20.16ileter 25.26day=20.000km x \$5.2day=25.200km 10.000km x \$100km x \$5.2day=25.200km 10.000km x Slitier=20.16ileter 25.2day=0.08ilete/day/50km 550km x \$25.2day=12.200km 10.26ileter 40.16ileter
Engine Oil Tires Sub-total 3. Material & Equipment Sluice/ Gate Valve	For Pick-up	322.4	Liter	60.00	0.0016		0.096	30.95 0.00 840.76	25.200km / 10.000km x Silter-20.16liner 20.16liner 20.16liner 25.2dansen 0.88lineriday/58hn 160km x 25.2dansen 0.88lineriday/58hn Silter-20.16liner 20.16liner 25.2dansen 10.88lineriday/58hn 12.5ddansen 10.88lineriday/58hn 4.68msen 1.68msen
Engine Oil Tires Sub-total 3. Material & Equipment Sluice Gate Valve Sluice Gate Valve	For Pick-up 25mm 40mm	322.4	Liter Nos piece	60.00	0.0016		0.096	30.95 0.00 840.76	25.200km v10.000km x Silare-20.16tiere 20.16tiere 20.16tiere 20.16tiere 20.16tiere 20.16tiere 20.16tiere 25.200km v10000km x Silare-20.16tiere 20.16tiere 20.16tiere 20.16tiere 20.16tiere 12.016tiers 20.16tiere 12.000km v3000km x slaues-16.800km x Silare-20.16tiere 6.000km x slaues-16.800km x slaues-
Engine Oil Tires Sub-total S. Malerial & Equipment Slaince Gate Valve Slaince Gate Valve Slaince Gate Valve	For Pick-up 25mm 40mm 50mm	322.4	Nos Piece piece piece	60.00	0.0016		0.096	30.95 0.00 840.76 0.00 0.00	25.200km v10.000km x Silmer-20.16liner 20.16liner 20.16liner 20.16liner 25.200km v10.000km x Silmer-20.16liner 20.16liner
Engine Oil Tires Sub-total S. Maketal & Engineers Shince Gate Valve	For Pick-up 25mm 40mm 50mm 80mm	322.4	Liter Nos piece piece piece piece	60.00	0.0016		0.096	30.95 0.00 840.76 0.00 0.00 0.00	25.200km v10.000km x Silare-20.16liner 20.16liner 20.16
Engine Oil Tires Sub-total 3. Material & Equipment Shlaice Gate Valve	For Pick-up 25mm 40mm 50mm	322.4	Liter Nos piece piece piece piece piece	60.00	0.0016		0.096	30.95 0.00 840.76 0.00 0.00 0.00 0.00	25.200km v10.000km x Silaer-20.16liner 20.16liner 20.16liner 20.16liner 20.16liner 20.16liner 20.16liner 25.200km x Silaer-20.16liner 25.200km x Silaer-20.16liner 25.200km x Silaer-20.16liner 20.16liner 25.200km x Silaer-20.16liner 26line 26line
Engine Oil Tires Sub-total S. Maketal & Engineers Shince Gate Valve	For Pick-up 25mm 40mm 50mm 100mm	322.4	Liter Nos piece piece piece piece piece piece piece	60.00	0.0016		0.096	30.95 0.00 840.76 0.00 0.00 0.00 0.00 0.00	25.200km v10.000km x Silare-20.16liner 20.16liner 20.16
Engine Oil Tires Sub-total Sub	For Pick-up 25mm 40mm 50mm 100mm 150mm 200mm	322.4	Liter Nos piece piece piece piece piece	60.00	0.0016		0.096	30.95 0.00 840.76 0.00 0.00 0.00 0.00 0.00 0.00 0.00	25.200km v10.000km x Siliser-20.16itier 20.16itier 20.16itier 20.16itier 20.16itier 20.16itier 20.16itier 20.16itier 20.16itier 25.200km v20.00km x Siliser-20.16itier 20.16itier 20.16itie
Engine Oil Tires Sub-total 3. Material & Equipment Shine: Gate Valve	For Pick-up 25mm 40mm 50mm 100mm 150mm 250mm 30mm	322.4	Nos Piece	60.00	0.0016		0.096	30.95 0.00 840.76 0.00 0.0	25. 200km v 10.000km x 8 8 8 10 20.10 6 10 2
Engine Oil Tires Sub-total 3. Maieral & Equipment Maker Gair Walve Shiner Gate Valve	For Pick-up 25mm 40mm 50mm 100mm 150mm 200mm 300mm 15mm	322.4	Liter Nos piece piece piece piece piece piece piece piece coil	60.00	0.0016		0.096	30.95 0.00 840.76 0.00 0.0	25. 200/km vi 10.000km x Silmer-20.16/iner 20.16/iner 20.16/iner 20.16/iner 20.16/iner 20.16/iner 20.16/iner 20.16/iner 25. 200/km vi 25. 200/
Engine Oil Tires Sub-total 3. Malerial & Equipment Shince Gate Valve	For Pick-up 25mm 40mm 50mm 100mm 150mm 250mm 200mm 15mm 200mm	322.4	Nos piece piece piece piece piece piece piece piece piece coil	60.00	0.0016		0.096	30.95 0.00 840.76 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	25.200km v10.000km x Siliser-20.16ities v20.16ities v2
Engine Oil Tires Sub-total 3. Malerial & Equipment Milice Gaire Valve Shlaice Gaire Valve Pipes (Poby) Pipes (Poby)	25mm 40mm 50mm 106mm 106	322.4	Liter Nos piece piece piece piece piece piece coil coil	60.00	0.0016		0.096	30.95 840.76 0.00 0.0	25. 200Rm 10.000km as 88mer-20.16line; 20.16line; 25.200km 25.200k
Engine Oil Tires Sub-total Sub-total Subertal & Enginement Shince Gate Valve Figes (Poly) Figes (Poly) Figes (Poly)	For Pick-up	322.4	Liter Nos piece piece piece piece piece piece coil coil coil	60.00	0.0016		0.096	30.95 0.00 840.76 0.00 0.0	25.200km v10.000km x Siliser-20.16ities v20.16ities v2
Engine Oil Tires 3. Maierat de Equipment 3. Maierat de Equipment Shlaice Gate Valve Pipes (Poby)	25mm 40mm 50mm 100mm	322.4	Liter Nos piece piece piece piece piece piece piece coil coil coil piece	60.00	0.0016		0.096	30.95 0.00	25. 200Rm 10.000km as 88mer-20.16line; 20.16line; 25.200km 25.200k
Engine Oil Tires Sub-total Sub-total Sub-total Subertorial Suber	For Pick-up Stem	322.4	Liter Nos piece piece piece piece piece piece piece coil coil piece piece	60.00	0.0016		0.096	30.95 0.00 840.76 0.00 0.0	25. 200Rm 10.000km as 88mer-20.16line; 20.16line; 25.200km 25.200k
Engine Oil Tires Sub-total 3. Malertal & Equipment Shlaice Gate Valve Pipes (Poly)	For Pick-up 25mm 40mm 50mm 150mm 200mm 150mm 220mm 220mm 230mm 250mm 50mm 50mm 50mm 50mm 50mm 50mm	322.4	Liter Nos piece piece piece piece piece piece coil coil coil piece piece piece	60.00	0.0016		0.096	30.95 0.00	25. 200Rm 10.000km as 88mer-20.16line; 20.16line; 25.200km 25.200k
Engine Oil Tires Sub-total 3. Material & Equipment Subice Gate Valve Shine: Gate	For Pick-up Stem	322.4	Nos piece	60.00	0.0016		0.096	30.95 0.00	25. 200Rm 10.000km as 88mer-20.16line; 20.16line; 25.200km 25.200k
Engine Oil Tires Sub-total 3. Malertal & Equipment Shlaice Gate Valve Pipes (Poly)	For Pick-up 25mm	322.4	Liter Nos piece piece piece piece piece piece coil coil coil piece piece piece	60.00	0.0016		0.096	30.95 840.76 0.00 0.0	25. 200Rm 10.000km as 88mer-20.16line; 20.16line; 25.200km 25.200k

Specification Quantity Unit
300mm piece
10mm piece
20mm piece
25mm piece
32mm piece
40mm piece

2. Costing Countermeasure

Personal Control Con		I			Hourly	Unit Cost	I	Amount	Amount	per day
Suff 3	Items	Specification	Quantity	Unit			Total Days			Reamarks
3.2										
3.3 O Presson 11-50 12-57	Staff-3									
3.4										
Suff-4										
Suff-4		3.5								
4.3	Staff-4									
4.4							9.00			
Suff 5										
Suff S										
Saff	n. m.s									
S.3	Stati-5						24.00			
Section						202.05				
Suff 6										
6.2 0 Person 33.81 25.558 0.00		5.5	1	Person	29.05	217.88	1.00		217.88	
6.3	Staff-6						1.00			
6.4										
Suff 7 1 2 Person 37.77 28.3.5 0.00						263.48				
Suff 7		6.4			36.45	273.38			0.00	
7.2	Staff.7				39.62		4.00			
7.3	Juli!/						4.00			
7.4										
Suff										
S.2										
8.3	Staff-8									
S.4										
Solf-9										
Suff 9							1.00			
9.2 0 Person 61.27 459.53 0.00 9.3 0 Person 6.259 469.43 0.00 9.4 0 Person 6.259 469.43 0.00 Constructors 9.3 0 Person 6.250 479.33 0.00 Sub-total	E4-6E 0						4.00			
9.3 0 Person 6.59 469.43 0.00 9.4 0 Person 6.59 479.33 0.00 Contractors 9.5 0 Person 6.521 489.23 5 0.00 Contractors 1 1 1 1 1 1 1 1 1 Consumable 5 Per Liter 1 1 1 1 1 Diesel For Excavator 0 Liter 11.50 0.3620 4.2716 0.00 Diesel For Pick-up 270.4 Liter 11.50 0.1428 38.6131 1.6850 4.876 10.00 Eagine Od For Excavator 0 Liter 60.00 0.0016 0.0016 0.0016 0.0016 0.0016 Engine Od For Pick-up 270.4 Liter 60.00 0.0016 0.00	Stati-9									
9.5										
Separation Sep		9.4	0	Person	63.91	479.33			0.00	
Sub-total See Liter LAsm Sum		9.5	0	Person	65.23	489.23				
2. Consumable S Per Liter L/am S/am	Contractors								\$ 7,500.00	
2. Consumable S Per Liter L/am S/am										
Diesel For Exervator O Liter 11.50 0.3620 4.2716 0.00 4.2716 0.00 4.2716 0.00 4.2716 0.00 4.2716 0.00 4.2716 0.00 4.2716 0.00 4.2716 0.00 4.2716 0.00 4.2716 0.00 4.2716 0.00 4.2716 0.00 4.2716 0.00 4.2716 0.00 4.2716 0.00					en ro		100.00	ė a	25,309.05	
Diesel For Exervator O Liter 11.80 0.3620 4.2716 0.00 Historius Guide of fine Studies (For Fix Guide of	2. Consumanie				5 Per Liter	L/Km		5/Km		50km//km/liter=/.14lit
Detail For Pack-up 2.0.4 Liter 11.00 0.1428 38.6131 130.00 43.00 65.00 150.00	Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter
Engine Oil For Excavator 0 Liter 60.00 0.096 0.096 0.006 c.250.250.250.250.006 c.250.250.250.250.006 c.250.250.250.250.006 c.250.250.250.250.006 c.250.250.250.250.006 c.250.250.250.250.250.006 c.250.250.250.250.250.250.250.250.250.250	Diesel	For Pick-up	270.4	Liter	11.80	0.1429	20 6121	1.68504	455.63	
Engine Oil For Pick-up 270.4 Liter 60.00 0.006 25.50 Miller-20.100km s. 5.200km 10.200km 10.2	Engine Oil	For Excavator	0	Liter	60.00		38.0131	0.096	0.00	252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/
Tires 0 Nos 770,500 1,078 0,000 1,078 0,000 1,08	Engine Oil	For Pick-up	270.4	Liter	60.00	0.0016		0.096	25.96	252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/
Sub-tatal	Tires		0	Nos	770.00	0.0014		1.078	0.00	252days=12,600km 12,600km/30,000km x 4nos=1.68nos 1.68nos/
	Sub-total								481.59	

Items	Specification	Quantity	Unit	Rate (SBD)	(SBD)	Total Days	(SBD)	(SBD)	Reamarks
Material & Equipment				Rac (SDD)	(30D)		(SDD)	(3017)	
Sluice/ Gate Valve	25mm		piece					0.00	Gate Valve
Sluice/ Gate Valve	40mm	1	piece			1			Gate Valve
Sluice/ Gate Valve	50mm	1	piece			1			Gate Valve
Sluice/ Gate Valve	80mm		piece						Sluice Valve
Sluice/ Gate Valve	100mm		piece			1			Sluice Valve
Sluice/ Gate Valve	150mm		piece						Sluice Valve
Sluice/ Gate Valve	200mm		piece			1			Sluice Valve
Sluice/ Gate Valve	250mm		piece					0.00	Sluica Valva??5mm
Sluice/ Gate Valve	300mm		piece			1		0.00	
Pipes (Poly)	15mm		coil					0.00	Length on 1 coil
Pipes (Poly)	20mm	1	coil			1		0.00	Length on 1 coil
Pipes (Poly)	25mm	1	coil			1		0.00	Length on 1 coil
Pipes (Poly)	50mm		coil			1		0.00	Length on 1 coil
Pipes (PVC)	25mm		piece					0.00	
Pipes (PVC)	50mm		piece			1		0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece			1		0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece			1		0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece			1		0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
All Materials for Counterr	neasures							30,553.70	
Sub-total								30,553.70	
Total								56,344.34	

Location	Nan
Items	Specifi

Location	Naha 2								
Items	Specification	Quantity	Unit	Hourly Rate	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	per day Reamarks
1. Personnel	Grades- Steps								
Staff-3	3.1	0	Person	15.85	118.88				
	3.2	0		16.37	122.78				
	3.3	0	Person Person	16.90 17.43	126.75 130.73				
	3.5	0	Person	17.45	134.70				
Staff-4	4.1	12	Person	19.81	148.58	20.00		2.971.50	
	4.2	3	Person	20.60	154.50	5.00		772.50	
	4.3	0	Person	21.39	160.43			0.00	
	4.4	0	Person	22.18	166.35			0.00	
	4.5	3	Person	22.98	172.35	5.00		861.75	
Staff-5	5.1	3	Person	24.83	186.23	5.00		931.13	
	5.2	0	Person	25.88	194.10			0.00	
	5.3	0	Person Person	26.94 27.99	202.05	-		0.00	
	5.5	0	Person	29.05	217.88			0.00	
Staff-6	6.1	0	Person	32.48	243.60			0.00	
	6.2	0	Person	33.81	253.58			0.00	
	6.3	0	Person	35.13	263.48			0.00	
	6.4	0	Person	36.45	273.38			0.00	
	6.5	0	Person	37.77	283.28			0.00	
Staff-7	7.1		Person	39.62	297.15	7.00		2,080.05	
	7.2	0		40.94	307.05			0.00	
	7.3	. 0	Person	42.26	316.95			0.00	
	7.4	0	Person	43.58	326.85 336.75			0.00	
Staff-8	8.1	0	Person Person	49.39	370.43			0.00	
Julie	8.2	0	Person	50.71	380.33		-	0.00	
	8.3	0	Person	52.03	390.23	-		0.00	
	8.4	0	Person	53.35	400.13			0.00	
	8.5	2	Person	54.67	410.03	4.00		1,640.10	
Staff-9	9.1	1	Person	59.95	449.63	5.00		2,248.13	
	9.2	0	Person	61.27	459.53			0.00	
	9.3	- 0	Person	62.59	469.43			0.00	
	9.4	0	Person	63.91	479.33			0.00	
0.1	9.5	0	Person	65.23	489.23			0.00	
Sub-total 2. Consumable				\$ Per Liter	I dom	51.00	S/km	11,505.15	
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km
Diesel	For Pick-up	52	Liter	11.80	0.1428	7.4256	1.68504	87.62	50km/7km/liter=7.14liter 50km 100km x
Engine Oil	For Excavator	0	Liter	60.00	0.0016		0.096	0.00	252days=25,200km
Engine Oil	For Pick-up	52	Liter	60.00	0.0016		0.096	4.99	100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 252days=0,08liter/day/50
Tires		0	Nos	770.00	0.0014		1.078	0.00	50km x 252days=12,600km 12,600km/30,000km x 4nos=1.68nos 1.68nos/ 252days=0.07nos/50km
Sub-total	l	-		-				92.61	
. Material &	1							92.01	
Sluice/ Gate Valve	25mm		piece					0.00	Gate Valve
Sluice/ Gate Valve	40mm		piece						Gate Valve
						1 !			Gate Valve
Sluice/ Gate Valve	50mm		piece			L			
Sluice/ Gate Valve Sluice/ Gate Valve	80mm		piece					0.00	Sluice Valve
Sluice/ Gate Valve								0.00	

Items	Specification	Quantity	Unit	Hourly Rate	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Sluice/ Gate Valve	200mm		piece					0.00	Sluice Valve
Sluice/ Gate Valve	250mm		piece					0.00	Sluice Valve225mm AUD1785
Sluice/ Gate Valve	300mm		piece		I			0.00	
Pipes (Poly)	15mm		coil		I			0.00	Length on 1 coil =300n
Pipes (Poly)	20mm	1	coil					0.00	Length on 1 coil =300n
Pipes (Poly)	25mm	1	coil		I	1 1		0.00	Length on 1 coil =200n
Pipes (Poly)	50mm		coil					0.00	Length on 1 coil =150n
Pipes (PVC)	25mm		piece		I			0.00	
Pipes (PVC)	50mm		piece		I			0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece					0.00	
Pipes (PVC)	150mm		piece		Ι			0.00	
Pipes (PVC)	200mm		piece					0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece					0.00	
Water Meter	10mm		piece		Ι			0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece		I			0.00	
Water Meter	40mm		piece		I			0.00	
All Materials for Cou	intermeasures							0.00	
Sub-total								0.00	
Total					I			11,597.76	

4. Routine Activities

Naha 2

Location	Nana 2								per day
Items	Specification	Quantity	Unit	Hourly Rate	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
l. Personnel	Grades- Steps								
Staff-3	3.1	0	Person	15.85	118.88				
	3.2	- 0	Person	16.37	122.78				
	3.3	- 0	Person	16.90	126.75				
	3.4	- 0	Person	17.43	130.73				
	3.5	. 0	Person	17.96	134.70				
Staff-4	4.1	0	Person	19.81	148.58			0.00	
	4.2	- 0	Person	20.60	154.50			0.00	
	4.3	0	Person	21.39	160.43			0.00	
	4.4	- 0	Person	22.18	166.35			0.00	
	4.5	- 0	Person	22.98	172.35			0.00	
Staff-5	5.1	0	Person	24.83	186.23			0.00	
	5.2	0	Person	25.88	194.10			0.00	
	5.3	- 0	Person	26.94	202.05			0.00	
	5.4	0	Person	27.99	209.93			0.00	
	5.5	0	Person	29.05	217.88			0.00	
Staff-6	6.1	3	Person	32.48	243.60	9.00		2,192.40	
	6.2	0	Person	33.81	253.58			0.00	
	6.3	0	Person	35.13	263.48			0.00	
	6.4	0	Person	36.45	273.38			0.00	
	6.5	0	Person	37.77	283.28			0.00	
Staff-7	7.1	0	Person	39.62	297.15			0.00	
	7.2	0	Person	40.94	307.05			0.00	
	7.3	0	Person	42.26	316.95			0.00	
	7.4	0	Person	43.58	326.85			0.00	
	7.5	0	Person	44.90	336.75			0.00	
Staff-8	8.1	0	Person	49.39	370.43			0.00	
Dian'-0	8.2	0	Person	50.71	380.33			0.00	
	8.3	0	Person	52.03	390.23			0.00	
	8.4	0	Person	53.35	400.13			0.00	
	8.5	0		54.67	410.03			0.00	
Staff-9	9.1	0	Person	59.95				0.00	
Starr-9			Person		449.63				
	9.2	0	Person	61.27	459.53 469.43			0.00	
			Person						
	9.4	0	Person	63.91	479.33			0.00	
	9.5	0	Person	65.23	489.23			0.00	
Sub-total 2. Consumable				S Per Liter		9.00	S/km	2,192.40	
z. Consumante				5 Per Liter	L/Km		5/KIII		
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	50km/7km/liter=7.14liter 11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km
Diesel	For Pick-up	41.6	Liter	11.80	0.1428	5.9405	1.68504	70.10	50km/7km/liter=7.14liter/50km
Engine Oil	For Excavator	0	Liter	60.00	0.0016		0.096	0.00	100km x 252days=25,200km 25,200km/ 10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km
									100km x 252days=25,200km 25,200km/ 10,000km x
Engine Oil	For Pick-up	41.6	Liter	60.00	0.0016		0.096	3.99	8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km
Engine Oil Tires	For Pick-up	41.6	Liter	770.00	0.0016		1.078	0.00	20.16liter/
Tires	For Pick-up							0.00	20.16liter/ 252days=0.08liter/day/50km 50km x 252days=12,600km 12,600km/ 30,000km x 4nos=1.68nos
Tires Sub-total	For Pick-up								20.16liter/ 252days=0.08liter/day/50km 50km x 252days=12,600km 12,600km/ 30,000km x 4nos=1.68nos
Tires Sub-total Material &	For Pick-up							0.00	20.16liter/ 252days=0.08liter/day/50km 50km x 252days=12,600km 12,600km/ 30,000km x 4nos=1.68nos
Tires Sub-total 3. Material & Equipment			Nos					74.09	20.16liter/ 252days=0.08liter/day/50km 252days=1.2,600km 12,600km/30,000km x 4nos=1.68nos/ 1.68nos/ 252days=0.07nos/50km
Sub-total 3. Material & Equipment Sluice/ Gate Vals	25mm		Nos					74.09 0.00	20.16lister/ 252days=0.08liter/day/50km 252days=0.08liter/day/50km 252days=12,600km 212,600km/30,000km x 4nos=1.68nos 1.68nos/252days=0.07nos/50km Gate Valve
Tires Sub-total 3. Material & Equipment	25mm 40mm		Nos					74.09 0.00 0.00	20.16liter/ 252days=0.08liter/day/50km 252days=1.2,600km 12,600km/30,000km x 4nos=1.68nos/ 1.68nos/ 252days=0.07nos/50km

Items	Specification	Quantity	Unit	Hourly	Unit Cost (SBD)	Total Days	Amount (SRD)	Amount (SBD)	Reamarks
Shrice/ Gate Valv	80mm			Rate	(SBD)		(SBD)		Sluice Valve
Sluice/ Gate Valv	80mm 100mm		piece						Sluice Valve
Sluice/ Gate Valv			piece						Shince Valve
	150mm		piece						
Sluice/ Gate Valv	200mm		piece						Sluice Valve
Sluice/ Gate Valv	250mm		piece						Sluice Valve225mm AUD1785
Sluice/ Gate Valv	300mm		piece					0.00	
Pipes (Poly)	15mm		coil						Length on 1 coil =300m
Pipes (Poly)	20mm		coil						Length on 1 coil =300m
Pipes (Poly)	25mm		coil						Length on 1 coil =200m
Pipes (Poly)	50mm		coil			1		0.00	Length on 1 coil =150m
Pipes (PVC)	25mm		piece					0.00	
Pipes (PVC)	50mm		piece			1		0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece			1		0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece			1		0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece			1		0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
All Materials for 6	Countermeasure	s						0.00	
Sub-total								0.00	
Total								2,266.49	
1AUD=6.534SBE	was applied to	the above	(rate as of 3) September	, 2013 of Oa	nda).			

RECON REQUIS JOB DI	DEPARTMENT MAME: NRW PROJECT TEAM RECEIVED BY: Mafe												
ITEM	mass and occur pass.	NEW ST ORDER			Unit Cost		Total Cost	BIN CARD BALANCE					
- 1	50mm (2") G.I Nipple (Tongs order)	10	2	\$	42.00	\$	84.00	4	4				
2	50mm Gate Valve		1	\$	320.00	\$	320.00	11	11				
3	40mm Brass Gate Valve		1	\$	180.00	\$	180.00	0	0				
4	40mm x 1 1/2" UPVC Male Adaptor		4	\$	25.00	\$	100.00	63	63				
5	40mm UPVC Tee		1	\$	28.00	\$	28.00	49	49				
6	40mm UPVC Compression		3	\$	41.00	\$	123.00	53	53				
7	1 length 40mm UPVC PIpe		1	\$	300.00	\$	300.00	9	9				
8	500ml UPVC Pressure Glue (NRW)		1	\$	150.00	\$	150.00	2	2				
9	ThreadTape (NRW)		5	\$	4.00	\$	20.00	631	631				
10	2" x 1 1/2" G.I Reduce Socket		2	\$	38.00	\$	76.00	56	56				
11	50mm Gilbault Joint (KITANO stock)		1	\$	122.85	\$	122.85	3	3				
	•	Total as	m Dominiation		_	•	1 502 05						

		I oun pe	r requisit	ЮП			0,011.00	J	
DEPAR	RTMENT NAME: NRW PROJECT TEAM			RE	CEIVED BY : Mat	thev	/ Mafe		
AUTHO	ORIZED BY : Siles Talosui			188	UED BY : Paul S	eda			
REQUI	SITION NO: 1667			DA	TE ISSUED: 15/0	5/2	014		
	ESCRIPTION: Being for Used @ Naha 2 Pilot	Project S	ite						
ITEM	Materials Description		Quantity		Unit Cost		Total Cost	BIN CARD	STOCK
	·	ORDER	ISSUED					BALANCE	COUNTED
- 1	15mm G.I Nipple		1	\$	10.00	\$	10.00	120	120
2	100mm x 3/4" Brass Tapping Saddle		1	\$	234.00	\$	234.00	173	173
3	3/4" x 1/2" G.I Reduce Bush		1	\$	9.00	\$	9.00	45	45
4	Threaded Tape (NRW Stock) (LKP)	980	1	\$	10.00	\$	10.00	329	329
5	15mm Stop Tap (Tongs order)	100	1	\$	95.00	\$	95.00	134	134
6	1/2" G.I Plug	100	1	\$	8.00	\$	8.00	84	84
		Total pe	r Requisiti	on	=	\$	366.00		
DEPAR	TIMENT NAME: NRW PROJECT TEAM 1			RE	CEIVED BY : Day	id A	kwa'asi	•	
AUTHO	ORIZED BY : Vincent Lui for Silas Talosui			188	UED BY : George	Bla	moli		
REQUI	SITION NO: 1671			DA	TE ISSUED: 22/0	5/2	014		
JOB D	ESCRIPTION: Being for brasing of Meter Star	nd for Kuk	um & Bahai,	Mbu	a Valley,Panatina	and	Naha Pilot Project S	lite .	
ITEM	Materials Description	NEW ST	Quantity		Unit Cost		Total Cost	BIN CARD	STOCK
	•	ORDER	ISSUED					BALANCE	COUNTED
- 1	10mm Reinforce Steel Rod		120	\$	45.50	\$	5,460.00	0	0
2	Hack Saw Blade (ITA)		4	\$	21.00	\$	84.00	106	106
	•	Total pe	r Requisiti	on	=	\$	5,544,00		

	TMENT NAME: NRW PROJECT TEAM			RECEIVED BY: John Teno						
	RIZED BY: Eric Unga		ISSUED BY: George Blamoli							
REQUISITION NO: 2394 DATE ISSUED: 11/07/2014										
JOB DESCRIPTION: Being for Meter Raising @ Naha 2 Pilot project Site .										
METER LD: \$13A00381,\$13A00382,\$13A00392,\$13A00393,\$13A00397,\$13A00387,\$13B00303.										
ITEM	Materials Description	NEW ST	Quantity	Unit Cost		BIN CARD				
			ISSUED			BALANCE	COUNTED			
1	15mm Kent Water meter New Zealend Lt	d	6	\$ 318.84	\$ 1,913.04	23	23			
	20mm Kent Water meter New Zealend Lt		1	\$ 329.38	\$ 329.38	37	37			
3	35 metres 16mm Poly Pipe(LKP Order S	3 Rolls	35	\$ 9.93	\$ 347.55	685m	685m			

1	15mm Kent Water meter New Zealend Lt	d	2	\$	318.84	\$	637.68	1	1
2	16mm Poly Coupling (Tongs order Store	100	10	\$	50.00	\$	500.00	40	40
3	20 metres 16mm Poly Pipe(LKP Order S	3 Rolls	20	\$	9.93	\$	198.60	350m	350m
4	20mm x 20mm Poly Coupling (Tongs or	100	6	\$	50.00	\$	300.00	68	68
5	20mm x 16mm Poly Reduce Coupling		6	\$	60.00	\$	360.00	78	78
6	40 metres 20mm Poly Pipe		40	\$	15.50	\$	620.00	184m	184m
7	16mm x 16mm x 16mm Poly Tee		3	\$	85.00	\$	255.00	78	78
8	20mm x 20mm Poly Tee (Tongs order)		2	\$	90.00	\$	180.00	49	49
9	Threaded Tape (NRW order)		10	\$	10.00	\$	100.00	1248	1248
		Total pe	r Requisiti	on =		*	3,151.28		

	TMENT NAME: NRW PROJECT TEAM				CEIVED BY : Selin				
	RIZED BY: Eric Unga				SUED BY : George				
REQUISITION NO: 1516 DATE ISSUED: 17/07/2014									
JOB DESCRIPTION: Being for meter raising @ Naha 2 Pilot Project Site set up.									
	LD: 14A644468,14A644463,14A644451,14A6			1644		A64			
ITEM	Materials Description	Quantity							
		ORDER	ISSUED					BALANCE	COUNTED
	40kg bag Cement (Advance Tech)	100	4	\$	80.00	\$	320.00	34	34
2	60 metres 16mm Poly Pipe(LKP Order S	3 Rolls	60	\$	9.93	\$	595.80	385	385
3	16mm Poly Coupling (Tongs order Store	100	10	\$	50.00	\$	500.00	50	50
4	15mm Water Meter (JICA order)	10	\$	234.00	\$	2,340.00	613	613	
		Total na	w Doministi	on	_	•	2 755 90		

DEPARTMENT NAME: NRW PROJECT TEAM AUTHORIZED BY: Ray Andersen SSUED BY: Paul Sodia REQUISITION NO: 1518 DATE ISSUED: 19 /07/2014 JUSD DESCRIPTION: Being for neter raising @ Naha 2 pilot project site. METER ID: 146644707.146644453;146644653;14664465,146844454											
ITEM		Quantity ISSUED									
1	16mm Poly Coupling (Tongs order Store		10	\$	50.00	\$	500.00	28	28		
2	30 metres 16mm Poly Pipe(LKP Order 5	3 Rolls	30	\$	9.93	\$	297.90	315m	315m		
3	15mm Water Meter (JICA order)		5	\$	234.00	\$	1,170.00	599	599		
4	20mm x 16mm Poly Reduce Coupling		5	\$	60.00	\$	300.00	73	73		
5	40kg bag Cement (Advance Tech)	80.00	\$	320.00	27	27					
	Total per Requisition = \$ 2,587.90										

Total Material Cost for Naha 2 \$ 32,057.55

4	20mm x 16mm Poly Reduce Coupling		4	\$	60.00	\$	240.00	99	99
5	40kg bag Cement (Advance Tech)	100	3	\$	80.00	\$	240.00	43	43
6	16mm x 1/2" male Poly Adaptor (LKP C	rder)	4	\$	54.00	\$	216.00	0	0
12	16mm x 1/2" female Poly Adaptor	100	4	\$	45.00	\$	180.00	92	92
13	16mm Poly Coupling (Tongs order Store	100	4	\$	50.00	\$	200.00	85	85
	Total new Demoistics -						2 005 07		

DEPARTMENT NAME: NRW PROJECT TEAM AUTHORIZED 9T: Benjimen Billy REQUISTION NO: 2395 JOB DESCRIPTION: Being for Meter Raising # Naha 2 Pilot project Site METER 1D:					RECEIVED BY: Dykes ISSUED BY: Paul Seda DATE ISSUED: 11/07/2014					
ITEM					Unit Gost			BIN CARD BALANCE		
- 1	16mm x 3/4" poly female Adaptor (N/stoc	ck)	6	\$	50.00	\$	300.00	87	87	
2	20mm x 16mm Poly Reduce Coupling		6	\$	60.00	\$	360.00	93	93	
3	25mm x 16mm Poly Reduce Coupling (N	100	4	\$	60.00	\$	240.00	26	26	
4	16mm x 1/2" male Poly Adaptor (NRW N	3	\$	54.00	\$	162.00	90	90		
		otal pe	r Requisiti	on	=	\$	1.062.00			

AUTHO	RTMENT NAME: NRW PROJECT TEAM DRIZED BY: Benjimen Billy SITION NO: 2399	ck H Blar 7/20	noli						
JOB DI	ESCRIPTION: Being for Naha 2 Pilot Project LID: .								
ITEM	Materials Description		Quantity ISSUED		Unit Cost			BIN CARD BALANCE	
- 1	60 metres 16mm Poly Pipe(LKP Orde	r S3 Rolls	60	\$	9.93	\$	595.80	535m	535m
		Total pe	er Requisiti	on	=	\$	595.80		

AUTHO	ITMENT NAME: NRW PROJECT TEAM PRIZED BY: Benjimen Billy SITION NO: 2399 ESCRIPTION: Being for Naha 2 Pilot Project LLD: .	Site for St	tep Test.	ISS	CEIVED BY: Der SUED BY: George TE ISSUED: 14/0	Bla	moli		
ITEM	Materials Description		Quantity ISSUED		Unit Cost			BIN CARD BALANCE	
1	60 metres 16mm Poly Pipe(LKP Order	\$3 Rolls	60	\$	9.93	\$	595.80	535m	535m
AUTHO REQUE JOB DO METER	TMENT NAME: NRW PROJECT TEAM RIZED BY: Benjimen Billy STION NO: 1512 ESORIPTION: Being for Meter raising @ Nah; LD: .513A00104,513A00103,513A00102,51	3A00107,S	13A00109.	ISS	CEIVED BY: Mat SUED BY: Paul S TE ISSUED: 15/0	eda	014		
AUTHO REQUE JOB D	ORIZED BY: Benjimen Billy SITION NO: 1512 ESCRIPTION: Being for Meter raising @ Nahi	3A00107,S NEW ST		ISS	UED BY : Paul S	eda	014	BIN CARD	
AUTHO REQUE JOB DO METER	PRIZED BY: Benjimen Billy SITION NO: 1512 ESCRIPTION: Being for Meter raising @ Nahi LLD: .S13A00104,S13A00103,S13A00102,S1	3A00107,S NEW ST	Quantity	ISS	TE ISSUED: 15/0	eda	014		
AUTHO REQUE JOB DO METER	PRIZED BY: Benjimen Billy SITION NO: 1512 SEOREPTION: Being for Meter raising @ Nah. LD: .S13A00104.S13A00103.S13A00102.S1. Materials Description	NEW ST ORDER	Quentity ISSUED	ISS DA	UED BY: Paul S TE ISSUED: 15/0 Unit Cost	eda 7/20	Total Cost	BALANCE	COUNTED
AUTHO REQUIS JOB DI METER ITEM	PRIZED BY: Berjimen Billy STITION NO: 1512 ESCRIPTION: Being for Meter raising @ Nah. LD:S13A00104.S13A00103.S13A00102.S1: Materiale Description 30 metres 20mm Poly Pipe	NEW ST ORDER	Quantity ISSUED	ISS DA	Unit Cost	eda 7/20	Total Cost 465.00	BALANCE 264m	COUNTED 264m

DEPAR	TMENT NAME: NRW PROJECT TEAM			RECEIVED BY: M. Keni						
AUTHORIZED BY: Vincent Lui ISSUED BY: George Blamoli										
REQUIS	REQUISITION NO: 2400 DATE ISSUED: 16/07/2014									
JOB DE	SCRIPTION: Being for meter raising @ Nah	a 2 Pilot I	Project Site	set up.						
METER	LD: S13A00101,S13A00105.									
ITEM	Materials Description	NEW ST	Quentity	Unit Cost	Total Cost	BIN CARD STOCK				
		ORDER	ISSUED			BALANCE COUNTED				

	TOTAL COST FO	R NAHA 3 PILO	DΤ		
	Before Counters		After Countern		
	Before Countermeasure	Countermeasure	After Countermeasure	Routine Activities	
Personnel Cost	55,332.68				
Consumable	966.65	555.68	98.31	74.09	
Material and Equipment	1,470.46	23,457.00	0.00	0.00	24,927.48
Sub Total	57,789.79	53,932.73	12,989.99	2,268.49	131,759.00
TOTAL	111,702.	52	15,256.4	8	
TOTAL MAN DAYS FOR MAHA 3	601				

Location	Naha 3

									per o
Items	Specification	Quantity	Unit	Hourly Rate	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
. Personnel	Grades- Steps			Puite	(555)		(555)	(500)	
Staff-3	3.1	0	Person	15.85	118.88				
	3.2	0	Person	16.37	122.78				
	3.3	- 0		16.90	126.75				
	3.4	0	Person	17.43	130.73				
	3.5	0	Person	17.96	134.70				
Staff-4	4.1	40	Person	19.81	148.58	132.00		19,611.90	
	4.2	10	Person	20.60	154.50	33.00		5,098.50	
	4.3	0	Person	21.39	160.43			0.00	
	4.4	0	Person	22.18	166.35			0.00	
	4.5	10		22.98	172.35	33.00		5,687.55	
Staff-5	5.1	10		24.83	186.23	33.00		6.145.43	
	5.2	0	Person	25.88	194.10			0.00	
	5.3	0	Person	26.94	202.05			0.00	
	5.4	0		27.99	209.93			0.00	
	5.5	10		29.05	217.88	33.00		7,189.88	
Staff-6	6.1	1	Person	32.48	243.60	2.00		487.20	
Dimi-0	6.2	i	Person	33.81	253.58	1.00		253.58	
	6.3	0	Person	35.13	263,48	1.00		0.00	
	6.4	0	Person	36.45	273.38			0.00	
	6.5	0	Person	37.77	283.28			0.00	
Staff-7	7.1	0	Person	39.62	297.15	0.00		0.00	
Starr/	7.1	0	Person	40 94	307.05	0.00		0.00	
	7.3	0	Person	42.26	316.95			0.00	
	7.4	0	Person	43.58	326.85			0.00	
	7.5	0		44.90	336.75			0.00	
Staff-8	8.1	0		49.39	370.43			0.00	
Stativo	8.2	0	Person	50.71	380.33			0.00	
	8.3	0		52.03	390.23			0.00	
	8.4	0		53.35	400.13			0.00	
	8.5	7	Person	54.67	410.03	21.00		8,610.53	
Staff-9		- 1				5.00			
Statt-9	9.1		Person	59.95	449.63	5.00		2,248.13	
	9.2	0	Person Person	61.27	459.53 469.43			0.00	
	9.3	- 0	Person	63.91	479.33			0.00	
	9.4	0	Person	65.23	489.23			0.00	
Sub-total	9.5	. 0	Person	65.23	489.23	293.00		55,332,68	
2. Consumable		-		S Per Liter	1.1		\$/km	55,332.68	
. Consumante		-		3 Fei Litei	L/KIII		3/KIII		50km/7km/liter=7.14liter
Diesel	For Excavator	83.2	Liter	11.80	0.3620		4.2716	355.40	11liter/hrs (fuel consumption for about 60PS) x 1hr=11lite 11liter
	l			l					+7.1liter=18.1liter/50km
Diesel	For Pick-up	343.2	Liter	11.80	0.1428	49.0090	1.68504	578.31	+7.1liter=18.1liter/50km 50km/7km/liter=7.14liter/50
Diesel Engine Oil	For Pick-up For Excavator	343.2	Liter Liter	11.80		49.0090	1.68504 0.096	578.31	50km/7km/liter=7.14liter/50 100km x 252days=25,200kr 25,200km/10,000km x 8liter=20.16liter 20.16liter/
					0.1428	49.0090			50km/7km/liter=7.14liter/56 100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 252days=0.08liter/day/50km 100km x 252days=25,200km 252days=0.08liter/day/50km 8liter=20.16liter 20.16liter/20.16liter 20.16liter
Engine Oil	For Excavator	0	Liter	60.00	0.0016	49.0090	0.096	32.95	50km/7km/liter=7.14liter=/50 100km x 252,200km/10,000km x 8liter=20.16liter 20.16liter 20.16liter 20.2day=0.08liter/day/50kn 100km x 252day=25,200km 25,200km/10,000km x 8liter=20.16liter
Engine Oil Engine Oil	For Excavator	343.2	Liter	60.00	0.0016	49.0090	0.096	0.00 32.95	50km/7km/liter=7.14liter/55 100km x 252days=25.200kr 25.200km/10.000km x 818liter=20.16liter 20.16liter/ 20.16liter/ 20.16liter/ 25.200km/10.000km x 10.000km x 252days=25.200kr 25.200km/10.000km x 818liter=20.16liter/ 20.16liter/ 20.16liter/ 352days=0.58liter/day/50kn 50km x 252days=12.600km 4nos=1.68nos
Engine Oil Engine Oil	For Excavator	343.2	Liter	60.00	0.0016	49.0090	0.096	0.00 32.95	50km/7km/liter=7.14liter=/550km/7km/liter=7.14liter=/5.200ks 25.200km/10.000km x 81kiter=20.16liter 20.16liter/ 20.16liter/ 22.2day=0.08liter/day/50kn 10.00km x 252day=25.200km/10.000km x 81kiter=20.16liter 20.16liter/ 20.16liter/ 20.16liter/ 352day=0.08liter/day/50kn 50km x 252day=12.600km x 4mos=1.68mos
Engine Oil Engine Oil Tires	For Excavator	343.2	Liter	60.00	0.0016	49.0090	0.096	32.95	50km/7km/liter=7.14liter/55 100km x 252days=25.200kr 25.200km/10.000km x 818liter=20.16liter 20.16liter/ 20.16liter/ 20.16liter/ 25.200km/10.000km x 10.000km x 252days=25.200kr 25.200km/10.000km x 818liter=20.16liter/ 20.16liter/ 20.16liter/ 352days=0.58liter/day/50kn 50km x 252days=12.600km 4nos=1.68nos
Engine Oil Engine Oil Tires Sub-total Material & Equipment	For Excavator	343.2	Liter Liter	60.00	0.0016	49.0090	0.096	0.00 32.95 0.00	50km/7km/liter=7.14liter/55 100km x 252days=25.200kr 25.200km/10.000km x 818liter=20.16liter 20.16liter/ 20.16liter/ 20.16liter/ 25.200km/10.000km x 10.000km x 252days=25.200kr 25.200km/10.000km x 818liter=20.16liter/ 20.16liter/ 20.16liter/ 352days=0.58liter/day/50kn 50km x 252days=12.600km 4nos=1.68nos
Engine Oil Engine Oil Tires Sub-total Material & Equipment	For Excavator For Pick-up 25mm	343.2	Liter Liter Nos	60.00	0.0016	49.0090	0.096	0.00 32.95 0.00 966.65	90km 7km/liner7,14liner50, 100km x 252days=25,200km x 252days=25,200km 10,000km x 38sac=20,16liner 20,16liner 20,16liner 20,16liner 20,16liner 20,16liner 20,16liner 20,16liner 20,16liner 20,16liner 3252days=25,200km 10,000km x 38sac=20,16liner 40,978km x 252days=25,200km 10,000km x 38sac=20,16liner 40,978km x 252days=25,200km 30,000km x 40as=1,680km x 252days=3,000km x 40as=1,680km 252days=3,000km x 525days=3,000km x 526days=3,000km x 526da
Engine Oil Engine Oil Tires Sub-total Material & Equipment Slinice/ Cate Valve	For Excavator For Pick-up 25mm 40mm	343.2	Liter Liter Nos	60.00	0.0016	49.0090	0.096	0.00 32.95 0.00 966.65	50km 7km/liner 7,14liner 55, 100km x 252days 25,200km 10,000km x 15,200km 10,000km x 100km x 252days 20,16liner 40,750km 20,16liner 20,16liner 40,750km 100km x 252days 25,200km 10,000km x 1520km 10,000km x 1520km 10,000km x 1520km 1252days 12,600km x 160km x 252days 12,600km x
Engine Oil Engine Oil Engine Oil Tires Sub-total Material & Equipment Slinker Gate Valve Slinker Gate Valve Slinker Gate Valve	For Pick-up For Pick-up 25mm 40mm 50mm	343.2	Liter Liter Nos	60.00	0.0016	49.0090	0.096	0.00 32.95 0.00 966.65 0.00 0.00	50km 7km/liner 7,14liner 55, 100km x 252days 25,200km x 10,000km x 252days -0.00linerday/50km 10,000km x 252days -0.00linerday/50km 10,000km x
Engine Oil Engine Oil Tires Sub-total Material & Equipment Slinice/ Cate Valve	For Excavator For Pick-up 25mm 40mm	343.2	Liter Liter Nos	60.00	0.0016	49.0090	0.096	0.00 32.95 0.00 966.65 0.00 0.00 0.00	90km 7km/liner 7,14liner 95, 100km x 252days 25,200km x 100km x 252days 25,200km 10,000km x 10,000

Items	Specification	Quantity	Unit	Hourly Rate	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Sluice/ Gate Valve	200mm		piece	Rate	(SDD)		(SDD)		Sluice Valve
Sluice/ Gate Valve	200mm 250mm								Sluice Valve225mm AUD1785
			piece						Sluice Valve225mm AUD1785
Sluice/ Gate Valve	300mm		piece					0.00	
Pipes (Poly)	15mm		coil						Length on 1 coil =300m
Pipes (Poly)	20mm		coil		L			0.00	Length on 1 coil =300m
Pipes (Poly)	25mm		coil		L			0.00	Length on 1 coil =200m
Pipes (Poly)	50mm		coil					0.00	Length on 1 coil =150m
Pipes (PVC)	25mm		piece		1	1		0.00	
Pipes (PVC)	50mm		piece					0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece					0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece					0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece			1		0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
All Materials for Befor	e Countermeasures							1,470.46	
Sub-total			i					1,470.46	
Total								57,769.79	
1AUD_6 \$24\$ DD mor	and the day of the other	(20.0	2012 -6	04.)			,	

2. Costing Countermeasure

Location	Naha 3		2. Cos	ting Co	ınterm	easure			per day
Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
1. Personnel	Grades- Steps			reme (DDD)	(SDD)		(555)	(500)	
Staff-3	3.1	0	Person	15.85	118.88				
	3.2	0	Person	16.37	122.78				
	3.3	0	Person	16.90	126.75				
	3.4	0	Person	17.43	130.73				
	3.5	0	Person	17.96	134.70				
Staff-4	4.1	14	Person	19.81	148.58	57.00		8,468.78	
	4.2	4	Person	20.60	154.50	10.00		1,545.00	
	4.3	0	Person	21.39	160.43			0.00	
	4.4	0	Person Person	22.18 22.98	166.35 172.35	9.00		0.00	
Staff-5	4.5 5.1	3 4		22.98	172.35	29.00		5,400.53	
Staff-5	5.1	0	Person Person	25.88	186.23	29.00			
	5.2	0		25.88	202.05			0.00	
	5.3	0	Person Person	26.94	202.05			0.00	
	5.5	4	Person	29.05	217.88	9.00		1.960.88	
Staff-6	6.1	1	Person	32.48	243.60	1.00		243.60	
Sun-o	6.2	0	Person	33.81	253.58	1.00		243.00	l
	6.3	0	Person	35.13	263.48			0.00	l
	6.4	0	Person	36,45	273.38			0.00	
	6.5	0	Person	37.77	283.28			0.00	
Staff-7	7.1	0	Person	39.62	297.15	0.00		0.00	
	7.2	0	Person	40.94	307.05			0.00	
	7.3	0	Person	42.26	316.95			0.00	
	7,4	0	Person	43.58	326.85			0.00	
	7.5	0	Person	44.90	336.75			0.00	
Staff-8	8.1	0	Person	49.39	370.43			0.00	
	8.2	0	Person	50.71	380.33			0.00	
	8.3	0	Person	52.03	390.23			0.00	
	8.4	0	Person	53.35	400.13			0.00	
	8.5	2	Person	54.67	410.03	5.00		2,050.13	
Staff-9	9.1	0	Person	59.95	449.63			0.00	
	9.2	0	Person	61.27	459.53			0.00	
	9.3	0	Person	62.59	469.43			0.00	
	9.4	0	Person	63.91	479.33			0.00	
	9.5	0	Person	65.23	489.23			0.00	
Contractors								\$8,700.00	
Sub-total						120.00		29,920.05	
. Consumable				\$ Per Liter	L/km		\$/km		
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	50km/7km/liter=7.14liter 11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km
Diesel	For Pick-up	312	Liter	11.80	0.1428	44.5536	1.68504	525.73	50km/7km/liter=7.14liter/5 0km
Engine Oil	For Excavator	0	Liter	60.00	0.0016		0.096	0.00	100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km
Engine Oil	For Pick-up	312	Liter	60.00	0.0016		0.096	29.95	TOURIN X 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km

Items	Specification	Ouantity	Unit	Hourly	Unit Cost	Total Days	Amount	Amount	Reamarks
	operation	Q		Rate (SBD)	(SBD)		(SBD)	(SBD)	
									50km x 252days=12,600kr
									12,600km/30,000km x
Tires		0	Nos	770.00			1.078	0.00	4nos=1.68nos
									1.68nos/
					0.0014				252days=0.07nos/50km
Sub-total								555,68	
. Material & Equipment								202300	
Sluice/ Gate Valve	25mm		piece					0.00	Gate Valve
Sluice/ Gate Valve	40mm	1	piece			1	t		Gate Valve
Sluice/ Gate Valve	50mm	1	piece			1	ŀ		Gate Valve
Sluice/ Gate Valve	80mm		piece						Sluice Valve
Sluice/ Gate Valve	100mm		piece			1	1		Sluice Valve
Sluice/ Gate Valve	150mm		piece						Sluice Valve
Sluice/ Gate Valve	200mm		piece			1	ŀ	0.00	Sluice Valve
									Sluice Valve225mm
Sluice/ Gate Valve	250mm		piece						AUD1785
Sluice/ Gate Valve	300mm		piece			1	T I	0.00	
Pipes (Poly)	15mm		coil					0.00	Length on 1 coil =300m
Pipes (Poly)	20mm	1	coil			1	T I	0.00	Length on 1 coil =300m
Pipes (Poly)	25mm	1	coil			1	T I	0.00	Length on 1 coil =200m
Pipes (Poly)	50mm		coil			1	T I	0.00	Length on 1 coil =150m
Pipes (PVC)	25mm		piece					0.00	
Pipes (PVC)	50mm		piece			1		0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece			1		0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece			1		0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece			1		0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
All Materials for Counter	measures		,					23,457,00	
Sub-total								23,457,00	
Total								53,932,73	

S4.7-1-43

Items	Specification	Ouantity	Unit	Hourly	Unit Cost	Total Days	Amount	Amount	per day Reamarks
1 Personnel	Grades- Steps	Quantity	- Cim	Rate	(SBD)	Total Days	(SBD)	(SBD)	RCamarics
Staff-3	3.1	0	Person	15.85	118.88				
Juni-5	3.2	0	Person	16.37	122.78				
	3.3	0	Person	16.90	126.75				
	3.4	0	Person	17.43	130.73				
	3.5	0	Person	17.96	134.70				
Staff-4	4.1	12	Person	19.81	148.58	22.00		3,268.65	
	4.2	3	Person	20.60	154.50	5.00		772.50	
	4.3	0	Person Person	21.39	160.43 166.35			0.00	
	4.5	3	Person	22.18	172.35	5.00		861.75	
Staff-5	5.1	3	Person	24.83	186.23	5.00		931.13	
	5.2	0	Person	25.88	194.10			0.00	
	5.3	0	Person	26.94	202.05			0.00	
	5.4	0	Person	27.99	209.93			0.00	
	5.5	3	Person	29.05	217.88	5.00		1,089.38	
Staff-6	6.1	0	Person	32.48 33.81	243.60 253.58			0.00	
	6.3	0	Person Person	35.13	263.48			0.00	
	6.4	0	Person	36.45	273.38			0.00	
	6.5	0	Person	37.77	283.28			0.00	
Staff-7	7.1	3	Person	39.62	297.15	7.00		2,080.05	
	7.2	0	Person	40.94	307.05			0.00	
	7.3	0	Person	42.26	316.95			0.00	
	7.4	0	Person	43.58	326.85			0.00	
Staff-8	7.5	0	Person Person	44.90	336.75 370.43			0.00	
Julii o	8.2	0	Person	50.71	380.33			0.00	
	8.3	0	Person	52.03	390.23			0.00	
	8.4	0	Person	53.35	400.13			0.00	
	8.5	2	Person	54.67	410.03	4.00		1,640.10	
Staff-9	9.1		Person	59.95	449.63	5.00		2,248.13	
	9.2	0	Person	61.27	459.53			0.00	
	9.3	0	Person Person	62.59 63.91	469.43 479.33			0.00	
	9.5	0	Person	65.23	489.23			0.00	
Sub-total					103,120	58.00		12,891.68	
2. Consumable				S Per Liter	L/km		\$/km		
	l .								50km/7km/liter=7.14liter
									11liter/hrs (fuel consumption
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	11liter/hrs (fuel consumption for about 60PS) x
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	11liter/hrs (fuel consumption
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km
Diesel		55.2	Liter	11.80			4.2716	93.01	11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km 50km/7km/liter=7.14liter/50
	For Excavator				0.3620	7.8826			11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km
						7.8826			11liter/hrs (fuel consumption for about 60PS) x 11hr=11liter 11liter +7.1liter=18.1liter/50km 50km/7km/liter=7.14liter/50 km 100km x
Diesel	For Pick-up	55.2	Liter	11.80		7.8826	1.68504	93.01	11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter 4-7. liter=18.1liter/50km 50km/7km/liter=7.14liter/50 km 100km x 252days=25,200km x
						7.8826		93.01	11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km 50km/7km/liter=7.14liter/50 km 100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter
Diesel	For Pick-up	55.2	Liter	11.80		7.8826	1.68504	93.01	11liter/hrs (fuel consumption for about 60PS) x lhr=11liter 11liter 17.1liter=18.1liter/50km 50km/7km/liter=7.14liter/50 km 100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter
Diesel	For Pick-up	55.2	Liter	11.80	0.1428	7.8826	1.68504	93.01	11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km 50km/7km/liter=7.14liter/50 km 100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter
Diesel	For Pick-up	55.2	Liter	11.80		7.8826	1.68504	93.01	11liter/hrs (fuel consumption for about 60PS) x lhr=11liter 11liter 17.1liter=18.1liter/50km 50km/7km/liter=7.14liter/50 km 100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter
Diesel	For Pick-up	55.2	Liter	11.80	0.1428	7.8826	1.68504	93.01	11literhrs (fuel consumption for about 60PS) x lhn=11liter st. littler(50km 50km/50km/50km/50km/14liter/50km 50km/14liter/50km 50km/14liter/50km 50km/14liter/50km 50km/14liter/50km 50km/14liter/50km 50km/14liter/50km 525,00km/10.00km x 8liter=20.16liter 25,20km/10.00km x 50km/50km/50km/50km/50km/50km/50km/50km/
Diesel Engine Oil	For Pick-up For Excavator	55.2	Liter	11.80	0.1428	7.8826	1.68504 0.096	93.01	11 Hiterhrs (the! consumption for about 60Ps x Hn=11 Hiter 11 Hiter 27.1 Hiter=18.1 Hiter/50km 50km/7km Hiter=7.1 4 Hiter/50km 50km/7km Hiter=7.1 4 Hiter/50km 50km/7km Hiter=7.1 4 Hiter/50km 50km/7km Hiter=7.1 4 Hiter/50km 50km/7km Hiter-7.1 4 Hiter/50km 50km/7km Hiter/50km x 25 2 days=25.200km 10 Hiter 10 Hiter/50km 10 Hi
Diesel	For Pick-up	55.2	Liter	11.80	0.1428	7.8826	1.68504	93.01	11literhrs (fuel consumption for about 60PS) x lhn=11liter st. littler(50km + 27.1liters 18.1liter/50km + 50km/7km/liter-7.1.liter/50km + 50km/7km/liter-7.1.liter/50km + 25.20day=25.200km / 10.000km x 8iliter=20.16liter 25.20day=0.08liter/day/50km / 100km x - 25.20day=0.08liter/day/50km / 10.00km x 8iliter=20.16liter st. littler(50km/10.000km x - 25.20day=25.200km / 10.000km x 8iliter=20.16liter x - 25.20day=15.200km / 10.000km x 8iliter=20.16liter x - 25.20day=15.200km / 10.000km x 8iliter=20.16liter x - 20.00km x - 25.200km / 10.000km x 8iliter=20.16liter x - 20.00km x - 25.200km / 10.000km x 8iliter=20.16liter x - 20.00km x - 25.200km / 10.000km x - 20.00km x - 20.00
Diesel Engine Oil	For Pick-up For Excavator	55.2	Liter	11.80	0.1428	7.8826	1.68504 0.096	93.01	11 literhrs (tole Consumption for about 60Ps x lhr=1 liter 11 liter 2-7 littler=18 tilter/50km 50km/7km/liter=8.1 liter/50km 50km/7km/liter=8.1 liter/50km 2-2 20km/2-200km 10 200km/2-200km 2-2 20km/2-0 08liter/2-200km 2-2 20km/2-0 08liter/2-200km 2-2 20km/2-0 08liter/2-200km 2-2 20km/2-2 00km 2-2 20km/2-2 00km 3-2 20km/2-2 00km 3-2 20km/2-2 00km 3-2 20km/2-2 00km 3-2 20km/2-2 0.16liter/2-200km/2
Diesel Engine Oil	For Pick-up For Excavator	55.2	Liter	11.80	0.1428	7.8826	1.68504 0.096	93.01	11 liter/hrs (fuel consumption for about 60PS; th=11 liter 50 km = 11 liter 2.7 litter=18.1 liter/50km = 50km / 7km liter=7.1 diner/50 liter/50km / 10 liter/50km / 50km
Diesel Engine Oil	For Pick-up For Excavator	55.2	Liter	11.80	0.1428	7.8826	1.68504 0.096	93.01	11 liter/hrs (fuel consumption for about 60PS), the—11 litter of the fuel fuel fuel fuel fuel fuel fuel fue
Diesel Engine Oil	For Pick-up For Excavator	55.2	Liter	11.80	0.1428	7.8826	1.68504 0.096	93.01	11 liter/hrs (fuel consumption for about 60PS; th=11 liter 50 km = 11 liter 2.7 litter=18.1 liter/50km = 50km / 7km liter=7.1 diner/50 liter/50km / 10 liter/50km / 50km
Diesel Engine Oil	For Pick-up For Excavator	55.2	Liter	11.80	0.1428	7.8826	1.68504 0.096	93.01	11 liter/hrs (fuel consumption for about 60Ps.) lher-l littler 11 littler 11 littler 11 littler 11 littler 12 littler 13 littler 14 littler 15
Diesel Engine Oil Engine Oil	For Pick-up For Excavator	55.2	Liter Liter	60.00	0.1428	7.8826	1.68504 0.096 0.096	93.01	11 liter/hrs (the! consumption for about 60PS). the=11 littler 12.1 liter=12.1 littler=13.4 littler=250.m. 100.km x 10.km 10.km x 100.km x
Diesel Engine Oil Engine Oil	For Pick-up For Excavator	55.2	Liter Liter	60.00	0.1428	7.8826	1.68504 0.096 0.096	93.01	11 liter/hrs (fuel consumption for about 60Ps.) lher-l littler 11 littler 11 littler 11 littler 11 littler 12 littler 13 littler 14 littler 15
Diesel Engine Oil Engine Oil	For Pick-up For Excavator	55.2	Liter Liter	60.00	0.1428	7.8826	1.68504 0.096 0.096	93.01 0.00 5.30	11 liter/hrs (the! consumption for about 60PS). the=11 littler 12.1 liter=12.1 littler=13.4 littler=250.m. 100.km x 10.km 10.km x 100.km x
Diesel Engine Oil Engine Oil Tires Sub-total	For Pick-up For Excavator	55.2	Liter Liter	60.00	0.1428	7.8826	1.68504 0.096 0.096	93.01	11 liter/hrs (the! consumption for about 60PS). the=11 littler 12.1 liter=12.1 littler=13.4 littler=250.m. 100.km x 10.km 10.km x 100.km x
Diesel Engine Oil Engine Oil Tires Sub-total 3, Material & Equipment	For Pick-up For Excavator For Pick-up	55.2	Liter Liter Nos	60.00	0.1428	7.8826	1.68504 0.096 0.096	93.01 0.00 5.30 0.00	11 liter/hrs (fuel consumption for about 60Ps.) the 11 littler 12.1 littler 18.1 littler 25.0 km. 2.1 littler 25.0 km. 2.1 littler 25.0 km. 2.1 littler 25.0 km. 2.2 littler 25.0 km. 25.20 km. 25.2
Diesel Engine Oil Engine Oil Tires Sub-total 3. Material & Equipment	For Pick-up For Excavator For Pick-up	55.2	Liter Liter Nos	60.00	0.1428	7.8826	1.68504 0.096 0.096	93.01 0.00 5.30 0.00 98.31	11 liter/hrs (fuel consumption for about 60PS), the—11 litter 11 litter 21 litter 21 litter 21 litter 22 litter 22 litter 23 litter 25 l
Diesel Engine Oil Engine Oil Tires Sub-total Subset Gale Valve Slaice Gale Valve	For Pick-up For Excavator For Pick-up 25mm 40mm	55.2	Liter Liter Nos	60.00	0.1428	7.8826	1.68504 0.096 0.096	93.01 0.00 5.30 0.00 98.31	11 liter/hrs (fuel consumption for about 60Ps), then 11 liter 11 liter 11 liter 12 liter 18 liter/506m 506m/7km/iter-7.14liter/30 100m/x 12504m/y=5.200km 125.200km/10.000km 18liter-20.16liter 125.20day-10.000km 18liter-20.16liter 20.16liter 18liter-20.16liter-20.16liter-20.16liter 18liter-20.16liter-20.1
Diesel Engine Oil Engine Oil Tires Sub-total S. Malerial & Equipment Shaice Gate Valve Shaice Gate Valve Shaice Gate Valve	For Pick-up For Excavator For Pick-up 25mm 40mm 50mm	55.2	Liter Liter Nos	60.00	0.1428	7,8826	1.68504 0.096 0.096	93.01 0.00 5.30 0.00 98.31 0.00 0.00	11 liter/hrs (fuel consumption for about 60PS). Ihm-11 litter of for about 60PS). Ihm-11 litter of fuel fuel fuel fuel fuel fuel fuel fue
Diesel Engine Oil Engine Oil Tires Sub-total 3. Material & Equipment Slace Gate Valve Slace Valve	For Pick-up For Excavator For Pick-up 25mm 40mm	55.2	Liter Liter Nos	60.00	0.1428	7.8826	1.68504 0.096 0.096	93.01 0.00 5.30 0.00 98.31 0.00 0.00 0.00	11 liter/hrs (fuel consumption for about 60Ps), then 11 liter 11 liter 11 liter 12 liter 18 liter/506m 506m/7km/iter-7.14liter/30 100m/x 12504m/y=5.200km 125.200km/10.000km 18liter-20.16liter 125.20day-10.000km 18liter-20.16liter 20.16liter 18liter-20.16liter-20.16liter-20.16liter 18liter-20.16liter-20.1

Items	Specification	Quantity	Unit	Hourly Rate	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Sluice/ Gate Valve	150mm		piece	Rate	(SDD)		(SBD)		Sluice Valve
Sluice/ Gate Valve	200mm		piece						Sluice Valve
Sluice/ Gate Valve									Sluice Valve225mm
Sluice/ Gate Valve	250mm		piece					0.00	AUD1785
Sluice/ Gate Valve	300mm		piece					0.00	
Pipes (Poly)	15mm		coil					0.00	Length on 1 coil =300m
Pipes (Poly)	20mm		coil						Length on 1 coil =300m
Pipes (Poly)	25mm		coil						Length on 1 coil =200m
Pipes (Poly)	50mm		coil					0.00	Length on 1 coil =150m
Pipes (PVC)	25mm		piece					0.00	
Pipes (PVC)	50mm		piece					0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece			1		0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece					0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece			1		0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
All Materials for After C	ountermeasures							0.00	
Sub-total								0.00	
Total								12,989.99	
1AUD=6.534SBD was a	applied to the abo	we (rate as o	f 30 Septem	ber, 2013 of	Oanda).				

4. Routine Activities

Naha 3

Items	Specification	Quantity	Unit	Hourly Rate	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
1. Personnel	Grades- Steps			Rate	(dac)		(JDD)	(SDD)	
Staff-3	3.1	0	Person	15.85	118.88				
Stati-5	3.2	0	Person	16.37	122.78				
	3.3	0	Person	16.90	126.75				
	3.4	0	Person	17.43	130.73	 	H		
	3.4	0	Person	17.43	134.70				
Staff-4	4.1			17.96	134.70			0.00	
Statt-4		0							
	4.2	0	Person	20.60	154.50			0.00	
	4.3	0	Person	21.39	160.43			0.00	
	4.4	0	Person	22.18	166.35			0.00	
	4.5	0		22.98	172.35			0.00	
Staff-5	5.1	0		24.83	186.23			0.00	
	5.2	0	Person	25.88	194.10			0.00	
	5.3	0	Person	26.94	202.05			0.00	
	5.4	0		27.99	209.93			0.00	
	5.5	0	Person	29.05	217.88			0.00	
Staff-6	6.1	3	Person	32.48	243.60	9.00		2,192.40	
	6.2	0		33.81	253.58			0.00	
	6.3	0	Person	35.13	263.48			0.00	
	6.4	0	Person	36.45	273.38			0.00	
	6.5	0	Person	37.77	283.28			0.00	
Staff-7	7.1	0	Person	39.62	297.15			0.00	
	7.2	0	Person	40.94	307.05			0.00	
	7.3	0	Person	42.26	316.95			0.00	
	7.4	0	Person	43.58	326.85			0.00	
	7.5	0	Person	44.90	336.75			0.00	
Staff-8	8.1	0		49.39	370.43			0.00	
	8.2	0		50.71	380.33			0.00	
	8.3	0		52.03	390.23			0.00	
	8.4	0	Person	53.35	400.13			0.00	
	8.5	0		54.67	410.03			0.00	
Staff-9	9.1	0		59.95	449.63			0.00	
Stati-9	9.1	0			459.53				
	9.2			61.27	459.53			0.00	
	9.3	0		62.59	469.43 479.33			0.00	
		0		63.91					
	9.5	0	Person	65.23	489.23	L		0.00	
Sub-total						9.00		2,192.40	
Sub-total 2. Consumable				\$ Per Liter	L/km	9.00	\$/km	2,192,40	
	For Excavator	0	Liter	\$ Per Liter	L/km 0.3620	9.00	\$/km 4.2716		50km/7km/liter=7.14liter 11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter
2. Consumable	For Excavator	0	Liter			9.00			11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km
2. Consumable Diesel				11.80	0.3620		4.2716	0.00	11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter
2. Consumable	For Excavator	0 41.6	Liter			5.9405			11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km
2. Consumable Diesel				11.80	0.3620 0.1428		4.2716	70.10	11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km
2. Consumable Diesel Diesel	For Pick-up	41.6	Liter	11.80	0.3620		4.2716 1.68504	70.10	11liter Ans (fuel consumption for about 60PS) x 1h=11liter 11liter 11liter +7.1liter=18.1liter/50km 50km/7km/iter=7.14liter/50k m 100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter
2. Consumable Diesel Diesel	For Pick-up	41.6	Liter	11.80	0.3620 0.1428		4.2716 1.68504	70.10 0.00	Illiter.hrs (fuel consumption for about 60Fb; N: hr=1liner 11liter 11liter 7. Illiter=18.1liter/50km 50km/Tanliter=7.14liter/50k m. 100km v \$25days=2.5200km
2. Consumable Diesel Diesel Engine Oil	For Pick-up For Excavator	41.6	Liter Liter	11.80	0.3620 0.1428 0.0016		4.2716 1.68504 0.096	70.10 0.00	Illiter/hrs (fuel consumption for about 60PS) x. hr= Illier 11liter 11liter 17. lilier=18. lilier=50km 50km/7km/liter=7.14liter=50km 100km x 252days=25,200km 25,200km x 81ktr=20.16liter 20.16liter 20.16liter 25,200km x 25,200km x 25,2
2. Consumable Diesel Diesel Engine Oil	For Pick-up For Excavator	41.6	Liter Liter	11.80	0.3620 0.1428		4.2716 1.68504 0.096	70.10 0.00	Illiterhrs (fuel consumption for about 60Pls y him-Illier 11liter 7. Illier-18. Illier/50km 50km/7.mliter-7.14liter/50k 100km x 252days-25,200km 25,200km x 10,000km x 8liter-20. 16liter 25.20km x 0.08liter/day/50km 100km x 252days-25,200km 25.20km x 10,000km x 8liter-20. 16liter 20. 16liter
2. Consumable Diesel Diesel Engine Oil	For Pick-up For Excavator	41.6	Liter Liter	11.80	0.3620 0.1428 0.0016		4.2716 1.68504 0.096	70.10 0.00	Illiter-hrs (fuel consumption for about 60Fb; N: hr-Illiter- 11liter - T. Illiter-18. Illiter-50km - Sokm-7km/liter-7, 14liter/50k - Sokm-7km/liter-7, 14liter/50k - Sokm-7km/liter-7, 14liter/50k - Sokm-19, 16liter - Sokm-1
2. Consumable Diesel Diesel Engine Oil Engine Oil	For Pick-up For Excavator	41.6	Liter Liter	11.80 11.80 60.00	0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.00 70.10 0.00	Illiter-hrs (fuel consumption for about 60PS) x Int-11liter 11liter 50km 7-1.1liter-18. Illiter-50km 50km/7-km/liter-7. 14liter-50k 50km/7-km/liter-7. 14liter-50k 50km/7-km/liter-7. 14liter-50k 50km 12.50km/1-2
2. Consumable Diesel Diesel Engine Oil	For Pick-up For Excavator	41.6	Liter Liter	11.80	0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.00 70.10 0.00 3.99	Illiter-hrs (fuel consumption for about 0978); Mri-Illiter Illiter 11liter 11liter 150km/T-Mitter-Il-Illiter/50km 50km/T-Mitter-Il-I-Illiter/50km 100km v. 252days-25,200km 100km v. 252days-25,200km 100km v. 252days-25,200km 100km v. 252days-25,200km 100km v. 252days-20,200km 1520km/1000km 1520km/1000km 1520km/1000km/100km 1520km/1000km/100km 1520km/1000km/1000km v. 3000km v. 352days-12,00km 12,600km/1000km v. 3000km v. 300km v. 352days-12,00km 12,600km/1000km v. 300km v. 352days-12,00km 12,600km/100km v. 300km v. 300km v. 30km v. 352days-12,00km 12,600km/100km v. 300km v. 30km v. 352days-12,00km
2. Consumable Diesel Diesel Engine Oil Engine Oil	For Pick-up For Excavator	41.6	Liter Liter	11.80 11.80 60.00	0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.00 70.10 0.00 3.99	Illiter-hrs (fuel consumption for about 60%) x. hr=11liter 11liter 7. filter=18.1liter=50km 50km/7km/hiter=7.14liter=50 50km/7km/hiter=7.14liter=50 100km x 252days=25,200km 100km x 252days=10km 10km x 25days=10km 10
2. Consumable Diesel Diesel Engine Oil Engine Oil	For Pick-up For Excavator	41.6	Liter Liter	11.80 11.80 60.00	0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.00 70.10 0.00 3.99	Illiter-hrs (fuel consumption for about 0978); Mri-Illiter Illiter 11liter 11liter 150km/T-Mitter-Il-Illiter/50km 50km/T-Mitter-Il-I-Illiter/50km 100km v. 252days-25,200km 100km v. 252days-25,200km 100km v. 252days-25,200km 100km v. 252days-25,200km 100km v. 252days-20,200km 1520km/1000km 1520km/1000km 1520km/1000km/100km 1520km/1000km/100km 1520km/1000km/1000km v. 3000km v. 352days-12,00km 12,600km/1000km v. 3000km v. 300km v. 352days-12,00km 12,600km/1000km v. 300km v. 352days-12,00km 12,600km/100km v. 300km v. 300km v. 30km v. 352days-12,00km 12,600km/100km v. 300km v. 30km v. 352days-12,00km
2. Consumable Diesel Diesel Engine Oil Engine Oil	For Pick-up For Excavator	41.6	Liter Liter	11.80 11.80 60.00	0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.00 70.10 0.00 3.99	Illiter-hrs (fuel consumption for about 60%) x. hr=11liter 11liter 7. filter=18.1liter=50km 50km/7km/hiter=7.14liter=50 50km/7km/hiter=7.14liter=50 100km x 252days=25,200km 100km x 252days=10km 10km x 25days=10km 10
2. Consumable Diesel Diesel Engine Oil Engine Oil Tires Sub-total	For Pick-up For Excavator	41.6	Liter Liter	11.80 11.80 60.00	0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.00 70.10 0.00 3.99	Illiter-hrs (fuel consumption for about 60%) x. hr=11liter 11liter 7. filter=18.1liter=50km 50km/7km/hiter=7.14liter=50 50km/7km/hiter=7.14liter=50 100km x 252days=25,200km 100km x 252days=10km 10km x 25days=10km 10
2. Consumable Diesel Diesel Engine Oil Engine Oil Tires Sub-total 3. Material & Equipment	For Pick-up For Excavator For Pick-up	41.6	Liter Liter	11.80 11.80 60.00	0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.00 70.10 0.00 3.99	Illiter-hrs (fuel consumption for about 60PS). In F-Illiter Illiter 'T. Illiter-18. Illiter-50km 50km/Tkm/liter-7. I-4lliter/50k 100km x 252days-25.200km 5220dkm 1200db 18. Illiter/50k 100km x 252days-25.200km 100km x 252days-25.200km 100km x 252days-25.200km 100km x 252days-0.08lter/day/50km 100km x 252days-0.08lter/day/50km 100km x 252days-12.000km 12.50dkm/100km x 252days-12.000km 12.50dkm/100km x 252days-12.000km 12.50dkm/100km x 252days-12.000km
2. Consumable Diesel Diesel Engine Oil Engine Oil Tires Sub-total	For Pick-up For Excavator	41.6	Liter Liter	11.80 11.80 60.00	0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.00 70.10 0.00 3.99	Illiter-hrs (fuel consumption for about 60%) x. hr=11liter 11liter 7. filter=18.1liter=50km 50km/7km/hiter=7.14liter=50 50km/7km/hiter=7.14liter=50 100km x 252days=25,200km 100km x 252days=10km 10km x 25days=10km 10
2. Consumable Diesel Diesel Engine Oil Engine Oil Tires Sub-total 3. Material & Equipment	For Pick-up For Excavator For Pick-up	41.6	Liter Liter Liter	11.80 11.80 60.00	0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.00 70.10 0.00 3.99 0.00 74.09	Illiter-hrs (fuel consumption for about 60PS). In Fill Illier 11llier 11llier 150km 50km/Nm 11llier 150km/Nm 11llier 150km/Nm 16er-71.4llier/50km 50km/Nm 16er-71.4llier/50km 100km x 252days-25.200km 100c0 x 5250km 100km 15250km/100km 100km/
2. Consumable Diesel Diesel Engine Oil Engine Oil Tires Sub-total 3. Material & Equipment	For Pick-up For Excavator For Pick-up	41.6	Liter Liter Nos	11.80 11.80 60.00	0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.00 70.10 0.00 3.99 0.00 74.09	Illiter-hrs (fuel consumption for about 60Fb; Nr. 11liter 11liter 7. Illiter-18. Illiter-50km 50km/7km/liter-7, 14liter-50km 100km x 525days-25,200km 5250km 1/100km 5250km-1/100km 5250
2. Consumable Diesel Diesel Engine Oil Engine Oil Tires Sub-total 3. Material & Equipment Slike' Gate Valve	For Pick-up For Excavator For Pick-up 25mm 40mm 50mm 80mm	41.6	Liter Liter Nos	11.80 11.80 60.00	0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.00 70.10 0.00 3.99 0.00 74.09 0.00 0.00 0.00	Illiter-hrs (fuel consumption for about 60Fb; N: hr=Illiner 11liter 11liter 11liter 150km/T-Alliter-18.1liter-50km 50km/T-Alliter-18.1liter-50km 100km x 252days-25_200km 100km x 352days-15_200km 12_200km x 100km x 10km
2. Consumable Diesel Diesel Engine Oil Engine Oil Tires Sub-total 3. Material & Enginement Siluce Gate Valve Siluce Gate Valve Siluce Gate Valve	For Pick-up For Excavator For Pick-up 25mm 40mm 50mm 80mm	41.6	Liter Liter Nos piece piece piece piece	11.80 11.80 60.00	0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.00 70.10 0.00 3.99 0.00 74.09 0.00 0.00 0.00	Illiter-hrs (fuel consumption for about 60Fb; N: hr=Illiner 11liter 11liter 11liter 150km/T-Alliter-18.1liter-50km 50km/T-Alliter-18.1liter-50km 100km x 252days-25_200km 100km x 352days-15_200km 12_200km x 100km x 10km
2. Consumable Diesel Diesel Engine Oil Engine Oil Tires Sub-total 3. Material & Enginement Shae'd Gast Valve Shize'd Gast Valve	For Pick-up For Excavator For Pick-up 25mm 40mm 50mm	41.6	Liter Liter Nos piece piece piece piece	11.80 11.80 60.00	0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.00 70.10 0.00 3.99 0.00 74.09 0.00 0.00 0.00 0.00	Illiterhrs (fuel consumption for about 60PS). Int-Illiter 11liter 7. Illiter-18. Illiter-50km 50km/7km/liter-7. 14liter-50k 50km/7km/liter-7. 14liter-50k 100km x 252days-25.200km 100km x 252days-25.200km 100km x 252days-25.200km 125.0dkm/1000km x 125.0dkm/1000km 100km x 252days-25.200km 125.0dkm/1000km 100km x 252days-25.00km 125.0dkm/1000km 100km x 252days-200km

Items	Specification	Quantity	Unit	Hourly Rate	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Sluice/ Gate Valve	200mm		piece	Ruit	(000)		(000)		Sluice Valve
Sluice/ Gate Valve	250mm		piece					0.00	Sluice Valve225mm AUD1785
Sluice/ Gate Valve	300mm		piece			1 1		0.00	
Pipes (Poly)	15mm		coil					0.00	Length on 1 coil =300m
Pipes (Poly)	20mm		coil]		0.00	Length on 1 coil =300m
Pipes (Poly)	25mm		coil			1 1		0.00	Length on 1 coil =200m
Pipes (Poly)	50mm		coil			1 1		0.00	Length on 1 coil =150m
Pipes (PVC)	25mm		piece					0.00	
Pipes (PVC)	50mm		piece]		0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece			1 1		0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece]		0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece			1 1		0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
All Materials for routine	activites							0.00	
Sub-total								0.00	
Total								2,266.49	
1AUD=6.534SBD was ar	oplied to the above	e (rate as of	30 Septemb	er, 2013 of	Danda).				

	2014 Material	Listing for	Naha 3	Pilot			
AUTHORIZ REQUISITI	ENT NAME: NRW PROJECT TEAM 2 ZED BY: Benjimen Billy ON NO: 1674			ISSUED BY	BY: David Aka'asi ': George Blamoli ED: 22/05/2014		
ITEM	RIPTION: Being for Repair @ Naha Pilot project site . Materials Description	NEW ST ORDER	Quantity ISSUED	Unit Cost	Total Cost	BIN CARD	STOCK
1	40mm x 1 1/2" Upvc Male Adaptor	UNDER	188050	\$ 25.00	\$ 25.00	55	55
2	40mm Brass Gate Valve		1	\$ 180.00	\$ 180.00		28
3	40mm Upvc compression Coupling		1	\$ 41.00	\$ 41.00		42
4	Threaded Tape (NRW Stock) (LKP)	980	5	\$ 10.00	\$ 50.00	1,349	1,359
		Total per	Requisition	=	\$ 296.00	J	
AUTHORIZ REQUISITI	ENT NAME: NRW PROJECT TEAM 2 IED BY: Benjimen Billy ON NO: 1889 REPTION: Being for installation of Valve for testing @ Naha	3 pilot projec	t site.	ISSUED BY	BY : David Akoasi ': George Blamoli ED: 30/05/2014		
ITEM	Materials Description	NEW ST ORDER	Quantity	Unit Cost	Total Cost	BIN CARD BALANCE	
1	100mm x 20mm Brass Tapping Band		1	\$ 234.00	\$ 234.00	166	166
2	15mm Stop Tap (Tongs order)	100	1	\$ 95.00			9
3	40mm Poly Couplings		1	\$ 41.00	\$ 41.00		27
4	3/4" x 1/2" G.I reduce Bush		1	\$ 9.00			76
5	200mm x 1/2" threaded Galvanised pipe (LKP)	320	1				428
6	40mm Upvc compression Coupling	100	1 4	\$ 41.00	\$ 41.00 \$ 32.00		41 68
/_	1/2" G.I Plug		Requisition	\$ 8.00	\$ 32.00 \$ 505.60		88
AUTHORIZ REQUISITI	ENT NAME: NRW PROJECT TEAM 2 IED BY: Benjimen Billy ON NO: 1685 REPTION: Being for installation of Valve for testing @ Naha	3 pilot projec	t site.	ISSUED BY	BY: David Akoasi : Paul Seda ED: 30/05/2014		
ITEM	Materials Description	NEW ST ORDER	Quantity ISSUED	Unit Cost	Total Cost	BIN CARD BALANCE	
1	2 metre 40mm Poly Pipe		2	\$ 45.00	\$ 90.00		2m
2	Threaded Tape (NRW Stock) (LKP)	980	4	\$ 10.00	\$ 40.00		1,330
3	2 Set 4" gasket & bolts (Kitano)		2	\$146.07	\$ 292.14	14	14
		Total per	Requisition	=	\$ 422.14		
AUTHORIZ REQUISITI JOB DESC	ENT NAME: NRW PROJECT TEAM ED BY: Eric Unga ON NO: 2383 RIPTION: Being for Naha 3 Pilot project site .	Total per	Requisition	RECEIVED ISSUED BY			
AUTHORIZ REQUISITI JOB DESC METER LD	TED BY: Eric Unga ON NO: 2383 REPTION: Being for Naha 3 Pilot project site .	NEW ST	Requisition Quantity ISSUED	RECEIVED ISSUED BY	BY: Dykes : George Blamoli		STOCK
AUTHORIZ REQUISITI JOB DESC METER LD	TED BY: Eric Unga ON NO: 2383 FRIPTION: Being for Naha 3 Pilot project site .	NEW ST	Quantity	RECEIVED ISSUED BY DATE ISSU	BY: Dykes : George Blamoli ED: 09/07/2014	BIN CARD BALANCE	STOCK
AUTHORIZ REQUISITI JOB DESC METER LD TEM	ED BY: Enc Unga ON NO: 283 REPTION: Being for Naha 3 Pilot project site . : *** **Material Description** 40mm Pressure UPVC Tee 40mm compression Ooupling	NEW ST	Quantity ISSUED	BEOEIVED ISSUED BY DATE ISSUED BY DATE ISSUED BY DATE ISSUED BY LONG B	BY: Dykes ': George Blamoli ED: 09/07/2014 Total Coet \$ 28.00 \$ 41.00	BIN CARD BALANCE 47 41	STOCK COUNTE 47 41
AUTHORIZ REQUISITI JOB DESC METER LD ITEM	ED BY: Enc Ungs ON Mo: 288 REPTION: Being for Naha 3 Pilot project site . Materials Description 40mm Pressure UPVC Tee 40mm compression Coupling 3/4" poly nipole	NEW ST	Quantity ISSUED	RECEIVED ISSUED BY DATE ISSUE Unit Coet \$ 28.00 \$ 41.00 \$ 3.72	BY: Dykes ': George Blamoli ED: 09/07/2014 Total Cost \$ 28.00 \$ 41.00 \$ 3.72	BIN CARD BALANCE 47 41 32	STOCK COUNTE 47 41 32
AUTHORIZ REQUISITI JOB DESC METER LD ITEM 1 2 3 4	ED 8Y: File Ungs ON No. 233 RBPTION: Being for Naha 3. Pilot project site . Materials Description 40mm compression Coupling 3.4" poly nipple 25mm GI Socket	NEW ST	Quantity ISSUED	Unit Cost	BY: Dykes ; George Blamoli ED: 09/07/2014 Total Coet \$ 28.00 \$ 41.00 \$ 3.72 \$ 15.00	BIN CARD BALANCE 47 41 32 44	STOCK COUNTE 47 41 32 44
NUTHORIZ REQUISITI JOB DESC METER LD TEM 1 2 3 4 5	ED 8Y: File Ungs ON No. 233 RBPTION: Being for Naha 3. Pilot project site . Materials Description 40mm compression Coupling 3.4" poly nipple 25mm GI Socket	NEW ST	Quantity ISSUED 1 1 1 1 2	Unit Cost \$ 28.00 \$ 41.00 \$ 15.00 \$ 40.00	BY: Dykes : George Blamoli ED: 09/07/2014 Total Cost \$ 28.00 \$ 41.00 \$ 3.72 \$ 15.00 \$ 80.00	### BIN CARD BALANCE	STOCK COUNTE 47 41 32 44 36
TEM 1 2 3 4 5 6	280 9Y : Fix Use 0 Mo. 233 3 Pilot project site	NEW ST ORDER	Quantity ISSUED 1 1 1 1 1 2	RECEIVED ISSUED BY DATE ISSUED BY DATE ISSUED BY DATE ISSUED BY	BY: Dykes ; George Blamoli ED: 09/07/2014 Total Cost \$ 28.00 \$ 41.00 \$ 3.72 \$ 15.00 \$ 80.00 \$ 9.00	BIN CARD BALANCE 47 41 32 44 36 37	STOCK COUNTE 47 41 32 44 36 37
AUTHORIZ REQUISITI JOB DESC METER LD ITEM 1 2 3 4 5	ED 8Y: File Ungs ON No. 233 RBPTION: Being for Naha 3. Pilot project site . Materials Description 40mm compression Coupling 3.4" poly nipple 25mm GI Socket	NEW ST ORDER	Quantity ISSUED 1 1 1 1 1 2 1 2	Unit Cost \$ 28.00 \$ 41.00 \$ 15.00 \$ 40.00	BY: Dykes ; George Blamoli ED: 09/07/2014 Total Cost \$ 28.00 \$ 41.00 \$ 3.72 \$ 15.00 \$ 9.00 \$ 9.00	BIN CARD BALANCE 47 41 32 44 36 37 122	STOCK COUNTED 47 41 32 44 36
AUTHORIZ REQUISITI JOB DESC METER LD ITEM 1 2 3 4 5 6 7 DEPARTM AUTHORIZ REQUISITI JOB DESC METER LD METER LD	280 9Y : Fix Useg ON INC: 283 RRPTION: Being for Naha 3 Pilot project site. **Materials Description 45mm Pressure UPVC Tee 45mm compression Coupling 23-mm cl. 1 Section 24- Poly malar Adaptor (TONGs order) 11/2 * 3/4 Poly malar Adaptor (TONGs order) BOTH MAIR: NRW PROJECT TEAM 200 Testing Coupling 100	NEW ST ORDER	Quantity ISSUED 1 1 1 1 2 1 2 Regulation	Unix Cost	BY: Dykes : George Blamoli ED: 09/07/2014 Total Coet \$ 28.00 \$ 41.00 \$ 3.72 \$ 15.00 \$ 80.00 \$ 9.00 \$ 70.00 \$ 246.72 BY: Dykes : George Blamoli ED: 14/07/2014	BIN CARD BALANCE 47 41 32 44 36 37 122	STOCK COUNTEL 47 41 32 44 46 37
AUTHORIZ REQUISITI JOB DESC METER LD TEM 1 2 3 4 5 6 7 DEPARTMI AUTHORIZ REQUISITI JOB DESC METER LD SI 3 A 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	EXB 9Y; 5 for Useg ON INC 233 REPTION: Beng for Naha 3 Pilot project site. ** ** ** ** ** ** ** ** **	NEW ST ORDER	Quantity ISSUED 1 1 1 1 2 1 2 Regulation	Unix Cost	BY: Dykes : George Blamoli ED: 09/07/2014 Total Coet \$ 28.00 \$ 41.00 \$ 3.72 \$ 15.00 \$ 80.00 \$ 9.00 \$ 70.00 \$ 246.72 BY: Dykes : George Blamoli ED: 14/07/2014	BIN CARD BALANCE 47 41 32 44 36 37 122	STOCK COUNTE 47 41 32 44 36 36 37 122
AUTHORIZ REQUISITI JOB DESC METER LD TEM 1 2 3 4 5 6 7 DEPARTMI AUTHORIZ REQUISITI JOB DESC METER LD SI 3 A 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	280 9Y is fix Use on Mo. 2333 GerriDok Been, fir Naha 3 Pilot project site . Material Description 40mn Pressure UPVC Tee 40mm Concentration Counting 20mm x 14° Poly familia Adaptor (TONGs order) 117 x 3 4° poly relate Bush 20mm x 14° Poly familia Adaptor (TONGs order) 117 x 3 4° poly relate Bush 200 9Y is 6 poly familia Adaptor (TONGs order) 200 9Y is 6 poly familia Adaptor (TONGs order) 200 9Y is 6 poly familia Adaptor (TONGs order) 200 9Y is 6 poly familia Adaptor (TONGs order) 201 100 100 100 100 100 100 100 100 100	100 Total per	Quantity ISSUED 1 1 1 1 1 2 2 1 1 2 2 Regulation	Unit Cost S 28.00 \$ 28.00 \$ 41.00 \$ 3.72 \$ 15.00 \$ 40.00 \$ 35.00 =	BY; Dykes ; George Blamoli ED: 09/07/2014 \$ 28.00 \$ 41.00 \$ 31.00 \$ 15.00 \$ 9.00 \$ 246.72 BY: Dykes : George Blamoli ED: 14/07/2014 \$ 401.19	BIN CARD SALANCE 47 41 32 44 36 37 122 BIN CARD BALANCE 0	STOCK COUNTE 47 41 32 44 36 36 37 122
AUTHORIZ REQUISITI JOB DESC METER LD 1 2 3 4 4 5 6 6 7 DEPARTM AUTHORIZ REQUISITI JOB DESC METER LD SI 3A0011 ITEM	200 9Y : Fix Useg Materials Description 40mm Pressure UPVC Tee 40mm compression Cougling 23mm 01 Section 40mm Pressure UPVC Tee 40mm compression Cougling 23mm 01 Section 23mm 01 Section 23mm 01 Section 23mm 01 Section 23mm 01 Very Policy Produce Bush 20mm 24 VP Poly male Adaptor (TONGs order) 11/2 * 24 Poly male Reductor (TONGs order) 20mm 24 VP Poly male Reductor (TONGs order) 20mm 24 VP Poly male Reductor (TONGs order) 20mm 24 VP Poly male Reductor (TONGs order) 20mm 12 VP Poly Male Reductor (TONGs order) 313A0010 S13A00114 S13A0011 S13A00112 S13A0011 35Mm 12 VP Poly Male Reductor (TONGs order) 35Mm 12 VP Poly Male Reduct	100 Total per	Quantity ISSUED 1 1 1 1 2 2 Regulation S13A00115.: Quantity ISSUED 1 2	Unit Cost S 28.00 \$ 48.00 \$ 9.0	BY: Dykes : George Blamoli ED: 09/07/2014 Total Cost \$ 28.00 \$ 41.00 \$ 3.10 \$ 3.72 \$ 15.00 \$ 9.00 \$ 246.72 BY: Dykes : George Blamoli ED: 14/07/2014 Total Cost \$ 401.19 \$ 241.19 \$ 242.50	BIN CARD BALANCE 47 41 32 44 36 37 122 BIN CARD BALANCE 0	STOCK COUNTED STOCK COUNTED O O O
AUTHORIZ REQUISITI JOB DESC METER LD TEM 1 2 3 4 4 5 6 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	280 9Y 1: Fix Useg ON No. 2383 FIRSTIDNE Beneg for Naha 3 Pilot project site. ON No. 2383 German State of S	100 Total per 3.3.S13A00114, NEW ST ORDER	Quantity ISSUED 1	Unit Cost Unit Cost Unit Cost \$ 28.00 \$ 41.00 \$ 3.72 \$ 15.00 \$ 9.00 \$ 9.00 \$ 9.00 \$ 9.00 \$ 3.00 \$ 9.00 \$ 9.00 \$ 10.0	BY: Dykes : George Blamols ED: 09/07/2014 Total Coet \$ 28,00 \$ 41,00 \$ 3,72 \$ 15,00 \$ 80,00 \$ 9,00 \$ 70,00 \$ 244,72 BY: Dykes : George Blamols ED: 14/07/2014 13A,0017. Total Coet \$ 401,19 \$ 262,56 \$ 3,18,40 \$ 3,26	BIN CARD BALANCE 47 41 32 444 36 37 122	STOCK COUNTEL 32 44 44 36 37 122 STOCK COUNTEL 0 0 11
AUTHORIZ REQUISITI JOB DESC METER LD TTEM 1 2 3 4 5 6 7 DEPARTM AUTHORIZ REQUISITI JOB DESC METER LD SI3A0011 ITEM 1 2 3 4 4 5 6 7	280 BY I: Fix Useg ON INC: 283 REPTION: Being for Naha 3 Pilot project site . ** ** ** ** ** ** ** ** **	NEW ST ORDER	Quantity ISSUED 1	Unit Cost \$ 28.00 \$ 40.00 \$ 9.0	BY: Dykes : George Blamoli ED: 09/07/2014 Total Cost \$ 28,00 \$ 41,00 \$ 3,72 \$ 15,00 \$ 80,00 \$ 9,00 \$ 9,00 \$ 9,00 \$ 9,00 \$ 10,000	BIN CARD BALANCE 41 41 32 44 36 37 122 BIN CARD BALANCE 0 0 111	STOCK COUNTE! 47 41 32 44 36 37 122 STOCK COUNTE! 0 0
AUTHORIZ REQUISITI JOB DESC METER LD ITEM 1 2 3 4 5 6 7 DEPARTM AUTHORIZ REQUISITI JOB DESC METER LD DISIANOUT ITEM 1 2 3 4 5 6 7 DEPARTM AUTHORIZ REQUISITI JOB DESC METER LD 1 2 3 4 5 6 7 DEPARTM AUTHORIZ REQUISITI JOB DESC METER LD 1 2 3 4 5 5 6 7	289 9Y; 5 for Useg ON NO. 2383 REPTION: Being for Naha 3 Pilot project site. Materials Description 4down Pressure UPVC Tee 4down compression Coupling. 3.4 Forb rights 20mm p. 3.4 F. Poly female Adaptor (TONGs order) 1.17 * 3.74 F. poly reduce Bush 20mm p. 3.4 F. Poly female Adaptor (TONGs order) 1.17 * 3.74 Poly male Adaptor (TONGs order) 1.17 * 3.74 Poly male Adaptor (TONGs order) 1.17 * 3.74 Poly male Adaptor (TONGs order) 1.17 * S. Poly Forbics 1.18 F. Poly	100 Total per 3.3.S13A00114, NEW ST ORDER	Quantity ISSUED 1	Unit Cost \$ 28.00 \$ 31.00 \$ 41.00 \$ 37.2 \$ 15.00 \$ 9	DY: Dybras Total Coet \$ 2800	BIN CARD BALANCE 47 41 32 44 43 38 37 122 BIN CARD BALANCE 0 0 11 40 71	STOCK COUNTED 47
AUTHORIZ REQUISITI JODO DESCRIPTION OF DESCRIPTION OF THE PROPERTY OF THE PROP	280 9Y is for Useg Michael Description 40mn Pressure UPVC Tee 40mm Pressure UPVC Tee 50mm Pressure Market Pressure United Pressure UPVC Tee 50mm Pressure Market Pressure UPVC Tee 50mm Pressure Market Pressure UPVC Tee 50mm Pressure Market Description 100mm Pressure Adect Public services stock 1 100mm Pressure Adect Public services stock 1 100mm Pressure Adect Pressure UPVC Tee 50mm Pressure Market Pressure Stock 1	NEW ST ORDER	Quantity ISSUED 1	Unit Cost \$28.00 \$41.00 \$37.20 \$15.00 \$3.0	DY 10 phose SED: 09/07/2014 Total Coet \$ 280,007/2014 \$ 4100,008 \$ 4100,008 \$ 800,00 \$ 900,000 \$ 900	BIN CARD SALANCE BIN CARD 32 44 36 37 122 BIN CARD SALANCE 0 0 11 40 71	STOCK COUNTE 47 41 32 44 36 37 122 STOCK COUNTE 0 0 11 1 40 71 85 85
AUTHORIZ REQUISITION OF DESCRIPTION OF THE PROPERTY OF THE PRO	280 9Y 1: Fix Useg ON INC: 283 REPTION: Being for Naha 3 Pilot project site. Materials Description 4down Pressure UPVC Toe 4down compression Coupling. 4down Pressure UPVC Toe 4down compression Coupling. 23 win 0.1 4 February Coupling. 23 win 0.1 4 February February Coupling. 25 win 0.1 4 February February February Coupling. 25 win 0.1 4 February February Coupling. 25 win 0.1 4 February February February Coupling. 26 win 24 February February February Coupling. 26 win	100 Total per 3.3.S13A00114. NEW ST ONDER	Quantity ISSUED 1	Unit Cost S 28:00 \$ 41:00 \$ 37:2 \$ 15:00 \$ 41:00 \$ 37:00 \$ 40:00 \$ 4	9Y : Dyhes Total Coet \$ 280,007,2014 Total Coet \$ 280,007,2014 \$ 410,00 \$ 3 3.72 \$ 150,000 \$ 3 3.72 \$ 150,000 \$ 3 3.72 \$ 150,000 \$ 3 3.72 \$ 150,000 \$ 3 3.72 \$ 150,000 \$ 3 3.72 \$ 150,000 \$ 3 3.72 \$ 150,000 \$ 3 3.72 \$ 150,000 \$ 150,0	BIN CARD BALANCE 47 41 32 44 43 38 37 122 BIN CARD BALANCE 0 0 11 40 71 85 84	### STOCK COUNTE! 47 41 32 44 36 37 122 ### STOCK COUNTE! 0 0 11 1 40 71 85 84
AUTHORIZ REJUSTII JOB DESCO METER LD TTEM 1 2 3 4 5 6 7 DEPARTMI AUTHORIZ REQUISTII JOB DESC METER LD SI 33A0011 ITEM 1 2 3 4 5 6 7 8	280 9Y 1: Fix Useg ON INC. 2833 FIRPTION: Beneg for Naha 3 Pilot project site. Materials Description 4down Pressare UPVC Tae 4down Description 4down Pressare UPVC Tae 4down Address County County 4down Pressare UPVC Tae 4down Address County 4down Pressare UPVC Tae 4down Address County 4down Pressare UPVC Tae 4down Pressare UPVC Tae 4down Pressare UPVC Tae 100mm 24 47 Poly female Adaptor (TONGs order) 11/2 x 347 Poly male Adaptor (TONGs order) 11/2 x 347 Poly male Adaptor (TONGs order) 100mm 247 Poly male Adaptor (TONGs order) 100mm 247 Poly male Adaptor (TONGs order) 100mm 248 Poly Male (Tongs order) 100mm 248 Poly Male (Tongs order Stores) 200mm x 16mm Poly Adaptor (Tongs order Stores) 200mm x 16mm Poly Adaptor (TONGs Order) 100mm x 1/2 Finance Poly Adaptor (TONGs Order)	100 Total per 3.3.513A00114. NIEW ST ORDER	Quantity ISSUED 1	Unit Cost \$28.00 \$40.00 \$3.72 \$1.50 \$2.00 \$3.72 \$1.50	9Y : Dyhee 1 Coera Blands BD: 09/07/2014 Total Coet 5 3 4000 3 4 3 3/2 3 4000 3 5 900 3 7 000 5 900 5 1 000 5 1	BIN CARD SALANCE 47 41 32 44 36 37 122 BIN CARD SALANCE 0 0 11 40 71 85 84	STOCK COUNTER 32 44 36 37 122 STOCK COUNTER 0 0 11 14 14 15 15 16 16 17 17 17 18 18 18 18 18
AUTHORIZ REQUISITI JOBO DESCO METER LD TEM 1 2 3 4 5 6 6 7 DEPARTMENT LOS STANDARD S	280 9Y 1: Fix Useg ON INC: 283 REPTION: Being for Naha 3 Pilot project site. Materials Description 4down Pressure UPVC Toe 4down compression Coupling. 4down Pressure UPVC Toe 4down compression Coupling. 23 win 0.1 4 February Coupling. 23 win 0.1 4 February February Coupling. 25 win 0.1 4 February February February Coupling. 25 win 0.1 4 February February Coupling. 25 win 0.1 4 February February February Coupling. 26 win 24 February February February Coupling. 26 win	100 Total per 3.3.S13A00114. NEW ST ONDER	Quantity ISSUED 1	Unix Cost S 28 00 \$ 41 00 \$ 37.2 \$ 15.00 \$ 40.00 \$ 35.00 \$ 40.00 \$ 35.00 \$ 40.00 \$ 35.00 \$ 40.00 \$ 35.00 \$ 40.00 \$ 35.00 \$ 40.00 \$ 35.00 \$ 40.00 \$ 35.00 \$ 40.00 \$ 35.00 \$ 40.00 \$ 40.00 \$ 40.00 \$ 45.00 \$ 45.00 \$ 45.00 \$ 45.00 \$ 45.00 \$ 45.00 \$ 9.93	9Y : Dyhes ; C deorge Bland	BIN CARD BALANCE 47 47 41 41 41 41 43 86 37 122 BIN CARD BALANCE 0 0 11 40 71 85 84 84 835m	STOCK QOUNTER 47 41 32 44 36 37 122

		Requisition		\$ 296,00		
					_	
			RECEIVED	BY : David Akoasi		
				; George Blamoli		
				ED: 30/05/2014		
nil	ot projec	t site				
p						
	NEW ST	Quantity	Unit Cost	Total Cost	BIN CARD	STOCK
	ORDER	ISSUED				COUNTED
		1	\$ 234 00	\$ 234.00		166
	100	1	\$ 95.00			9
	100	1	\$ 41.00	\$ 41.00		27
		1	\$ 9.00	\$ 9.00		76
(P)	320	1	\$ 53.60			428
_	320	-	\$ 41.00	\$ 41.00		41
	100	4	\$ 8.00			68
		Requisition		\$ 505.60	00	- 00
_	TOTAL DEL	requisition		BY: David Akoasi		
			ISSUED BY			
				: Paul Seda ED: 30/05/2014		
_	3-4:		DATE ISSUE	SU/U5/2014		
	ot projec			7.110.1	BIN CARD	lozoov
	NEW ST	Quantity	Unit Cost	Total Cost		
_	ORDER	ISSUED				COUNTED
_	1	2	\$ 45.00	\$ 90.00		2m
	980	4	\$ 10.00			1,330
		2	\$146.07			14
_	Total per	Requisition		\$ 422.14	. [
Æ.			RECEIVED			
				: George Blamoli		
			DATE ISSU	ED: 09/07/2014		
1	NEW ST	Quantity	Unit Cost	Total Cost	BIN CARD	
	ORDER	ISSUED				COUNTED
t		1	\$ 28.00	\$ 28.00		47
٠	T	i	\$ 41.00	\$ 41.00		41
	T	i	\$ 3.72	\$ 3.72		32
-	 	1	\$ 15.00	\$ 15.00		44
•	+	2	\$ 40.00	\$ 80.00		36
٠	+	1	\$ 9.00	\$ 9.00		37
╀	100	2	\$ 35.00			122
				\$ 246.72		122
	1 OUR DEP	Requisition	RECEIVED			
To						
T.			ISSUED BY			
				: George Blamoli		
			DATE ISSU	ED: 14/07/2014		
Test.			DATE ISSU	ED: 14/07/2014		
Test. 00113,	S13A00114,	S13A00115,	DATE ISSU \$13A00116,S	ED: 14/07/2014		
3,			DATE ISSU S13A00116,S	ED: 14/07/2014 13A00117.		lama au
Test. 30113,	NEW ST	Quantity	DATE ISSU	ED: 14/07/2014	BIN CARD	STOCK
			DATE ISSU S13A00116,S Unit Cost	ED: 14/07/2014 13A00117. Total Cost.	BALANCE	COUNTED
S13	EW ST	Quantity ISSUED	DATE ISSU S13A00116,S Unit Cost \$ 401.19	ED: 14/07/2014 13A00117. Total Cost. \$ 401.19	BALANCE	COUNTED
S1	IEW ST	Quantity ISSUED	DATE ISSU S13A00116,S Unit Cost	ED: 14/07/2014 13A00117. Total Cost \$ 401.19 \$ 262.56	BALANCE	O 0
SI	NEW ST ORDER	Quantity ISSUED	DATE ISSU \$13A00116,S Unit Cost \$ 401.19 131.28 \$ 318.84	ED: 14/07/2014 13A00117. Total Cost \$ 401.19 \$ 262.56 \$ 3,188.40	BALANCE 0 0 11	0 0 11
S13	EW ST RDER	Quantity ISSUED	DATE ISSU 513A00116,S Unit Cost \$ 401.19 131.28 \$ 318.84 \$ 80.00	ED: 14/07/2014 13A00117. Total Coet \$ 401.19 \$ 262.56 \$ 3.188.40 \$ 240.00	BALANCE 0 0 1 0 11 11 0 40	0 0 0 11 40
S1	IEW ST ORDER	Quantity ISSUED 1 2 10 3 8	DATE ISSUE \$13A00116,S Unit Coet \$401.19 \$131.28 \$318.84 \$80.00 \$50.00	ED: 14/07/2014 13A00117. Total Cost \$ 401.19 \$ 262.56 \$ 3.188.40 \$ 240.00 \$ 400.00	BALANCE 0 0 1 0 1 11 0 40 0 71	0 0 0 11 40 71
3.	NEW ST ORDER	Quantity ISSUED 1 2 10 3 8 8 8	DATE ISSUE S13A00116,S Unit Coet \$ 401.19 131.28 \$ 318.84 \$ 50.00 \$ 60.00	ED: 14/07/2014 13A00117. Total Cost \$ 401.19 \$ 262.56 \$ 3,188.40 \$ 240.00 \$ 400.00 \$ 480.00	BALANCE 0 0 1 0 1 11 0 40 0 71 0 85	0 0 11 40 71 85
it. 13,	100 100	Quantity ISSUED 1 2 10 3 8	DATE ISSUI \$13A00116,S Unit Coet \$ 401.19 131.28 \$ 318.84 \$ 80.00 \$ 60.00 \$ 54.00	### Total Cost Total Cost	BALANCE 0 0 1 1 1 1 40 71 0 85 0 84	0 0 0 11 40 71 85 84
	NEW ST ORDER	Quantity ISSUED 1 2 10 3 8 8 8	DATE ISSUE S13A00116,S Unit Coet \$ 401.19 131.28 \$ 318.84 \$ 50.00 \$ 60.00	ED: 14/07/2014 13A00117. Total Cost \$ 401.19 \$ 262.56 \$ 3,188.40 \$ 240.00 \$ 400.00 \$ 480.00	BALANCE 0 0 1 1 1 1 40 71 0 85 0 84	0 0 11 40 71 85
	NEW ST ORDER	Quantity ISSUED 1 2 10 3 8 8 6 6 6	DATE ISSUI \$13A00116,S Unit Coet \$ 401.19 131.28 \$ 318.84 \$ 80.00 \$ 60.00 \$ 54.00	### Total Cost Total Cost	BALANCE 0 0 1 0 11 140 71 0 85 0 84 0 84	0 0 0 11 40 71 85 84
S1	100 100	Quantity ISSUED 1 2 10 3 8 8 6 6 6 40	DATE ISSUI \$13A00116,S Unix Coet \$ 401.19 131.28 \$ 318.84 \$ 80.00 \$ 50.00 \$ 60.00 \$ 45.00 \$ 9.93	ED: 14/07/2014 13A00117. Total Coet \$ 401.19 \$ 262.56 \$ 3.188.40 \$ 400.00 \$ 480.00 \$ 324.00 \$ 270.00 \$ 397.20	BALANCE 0 0 1 11 1 40 1 71 1 85 1 84 1 84 1 635m	0 0 0 11 40 71 85 84 84 635m
s	100 100 100 3 Rolls	Quantity ISSUED 1 2 10 3 8 8 6 6 6	DATE ISSUE \$13A00116,S Unit Coet \$401.19 131.28 \$318.84 \$80.00 \$50.00 \$60.00 \$54.00 \$9.93 \$15.50	ED: 14/07/2014 13A00117. Total Cost \$ 401.19 \$ 262.56 \$ 3.188.40 \$ 240.00 \$ 480.00 \$ 324.00 \$ 324.00 \$ 270.00	BALANCE 0 1 0 1 11 0 40 0 71 0 85 0 84 0 635m 0 384m	0 0 11 40 71 85 84 84

	TOTAL	TOTAL COST FOR FFA PILOT	A PILOT		
	Before Countermeasure	neasure	After Countermeasure	easure	
	Before Countermeasure	Countermeasure	After Countermeasure	Routine Activities	Total
Personnel Cost	55,502.70	31,528.43	12,475,58	2,192.40	101,699.10
Consumable	413.83	320.59	53.43	42.74	4,830.59
Material and Equipment	8,274.01	61,631.78	0.00	00:00	69,905.79
Sub Total	64,190.54	93,480.79	12,529.01	2,235.14	176,435.48
TOTAL	157,671.33	3	14,764.15	2	
TOTAL MAN DAYS FOR FFA	574				

Items	Specification	Quantity	Unit	Hourly	Unit Cost	Total Days	Amount	Amount	per da Reamarks
	-	Quantity	Cint	Rate	(SBD)	Total Days	(SBD)	(SBD)	reminists.
. Personnel Staff-3	Grades- Steps		Descrip	15.85	118.88		_		
Staff-3	3.1	0	Person						
	3.2	0	Person	16.37 16.90	122.78				
	3.3	0	Person		126.75				
	3.4	0	Person Person	17.43	130.73 134.70				
Staff-4	4.1	40	Person	17.90	148.58	133.00		19,760.48	
Sian-4	4.2	21	Person	20.60	154.50	51.00	_	7,879.50	
	4.3	0	Person	21.39	160.43	31.00		0.00	
	4.3	0	Person	22.18	166.35			0.00	
	4.5	10	Person	22.18	172.35	25.00		4,308.75	
Staff-5	5.1	10	Person	24.83	186.23	25.00		4,655.63	
	5.2	0	Person	25.88	194.10			0.00	
	5.3	0	Person	26.94	202.05			0.00	
	5.4	0	Person	27.99	209.93			0.00	
	5.5	10	Person	29.05	217.88	25.00		5,446.88	
Staff-6	6.1	- 1	Person	32.48	243.60	1.00		243.60	
	6.2	1	Person	33.81	253.58	1.00		253.58	
	6.3	0	Person	35.13	263.48			0.00	
	6.4	0	Person	36.45	273.38			0.00	
	6.5	0	Person	37.77	283.28			0.00	
Staff-7	7.1	0	Person	39.62	297.15	0.00		0.00	
	7.2	0	Person	40.94	307.05			0.00	
	7.3	0	Person	42.26	316.95			0.00	
	7.4	0	Person	43.58	326.85			0.00	
	7.5	1	Person	44.90	336.75	1.00		336.75	
Staff-8	8.1	0	Person	49.39	370.43			0.00	
	8.2	0	Person	50.71	380.33			0.00	
	8.3	0	Person	52.03	390.23			0.00	
	8.4	0	Person	53.35	400.13			0.00	
	8.5	8	Person	54.67	410.03	22.00		9,020.55	
Staff-9	9.1	4	Person	59.95	449.63	8.00		3,597.00	
	9.2	0	Person	61.27	459.53			0.00	
	9.3	0	Person	62.59	469.43			0.00	
	9.4	0	Person	63.91	479.33			0.00	
	9.5	0	Person	65.23	489.23			0.00	
Sub-total						292.00		55,502.70	
. Consumable				S Per Liter	L/km		\$/km		50km/7km/liter=7.14liter
Diesel	For Excavator	30	Liter	11.80	0.3620		4.2716	128.15	11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km
Diesel	For Pick-up	160.4	Liter	11.80	0.1428	22.9051	1.68504	270.28	50km/7km/liter=7.14liter/50k
Engine Oil	For Excavator	0	Liter	60.00	0.0016		0.096	0.00	100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km
Engine Oil	For Pick-up	160.4	Liter	60.00	0.0016		0.096	15.40	100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km
		0	Nos	770.00	0.0014		1.078	0.00	50km x 252days=12,600km 12,600km/ 30,000km x 4nos=1.68nos 1.68nos/ 252days=0.07nos/50km
Tires									
Tires Sub-total								413.83	
Sub-total								413.83	
Sub-total . Material &	25mm		piece						Gate Valve
Sub-total	25mm 40mm		piece piece					0.00	Gate Valve Gate Valve
Sub-total . Material & Sluice/ Gate Valve			piece					0.00	Gate Valve Gate Valve Gate Valve
Sub-total Sub-total Successful & Sluices Gate Valve Sluices Gate Valve	40mm		piece piece					0.00 0.00 0.00	Gate Valve
Sub-total . Material & Sluice/ Gate Valve Sluice/ Gate Valve Sluice/ Gate Valve	40mm 50mm		piece piece					0.00 0.00 0.00 0.00	Gate Valve Gate Valve
Sub-total Sub-total Suice/ Gate Valve Sluice/ Gate Valve Sluice/ Gate Valve Sluice/ Gate Valve	40mm 50mm 80mm		piece piece					0.00 0.00 0.00 0.00 0.00 0.00	Gate Valve Gate Valve Sluice Valve

Items	Specification	Quantity	Unit	Hourly Rate	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Sluice/ Gate Valve	250mm		piece					0.00	Sluice Valve225mm AUD1785
Sluice/ Gate Valve	300mm		piece					0.00	
Pipes (Poly)	15mm		coil					0.00	Length on 1 coil =300m
Pipes (Poly)	20mm		coil						Length on 1 coil =300m
Pipes (Poly)	25mm		coil					0.00	Length on 1 coil =200m
Pipes (Poly)	50mm		coil					0.00	Length on 1 coil =150m
Pipes (PVC)	25mm		piece					0.00	
Pipes (PVC)	50mm		piece					0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece					0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece					0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece					0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
All Materials for Bef	ore Countermeas	ures						8,274.01	
Sub-total								8,274.01	
Total								64,190.54	

1AUD=6.534SBD w	as applied to the	above (rate	as of 30 Sep	tember, 2013	of Oanda).

Items	Specification	Quantity	Unit	Hourly	Unit Cost	Total Days	Amount	Amount	Reamarks
	эрссикацыя	Quantity	Oiiii	Rate (SBD)	(SBD)	Total Days	(SBD)	(SBD)	reminists.
Sub-total								320.59	
Material & Equipment									
Sluice/ Gate Valve	25mm		piece						Gate Valve
Sluice/ Gate Valve	40mm		piece						Gate Valve
Sluice/ Gate Valve	50mm		piece						Gate Valve
Sluice/ Gate Valve	80mm		piece					0.00	Sluice Valve
Sluice/ Gate Valve	100mm		piece						Sluice Valve
Sluice/ Gate Valve	150mm		piece						Sluice Valve
Sluice/ Gate Valve	200mm		piece						Sluice Valve
Sluice/ Gate Valve	250mm		piece					0.00	Sluice Valve225mm
Sluice/ Gate Valve	300mm		piece			1		0.00	
Pipes (Poly)	15mm		coil						Length on 1 coil =300m
Pipes (Poly)	20mm		coil						Length on 1 coil =300m
Pipes (Poly)	25mm		coil						Length on 1 coil =200m
Pipes (Poly)	50mm		coil			1		0.00	Length on 1 coil =150m
Pipes (PVC)	25mm		piece					0.00	
Pipes (PVC)	50mm		piece			1		0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece					0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece					0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece			1		0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
All Materials for Counte	rmeasures							61,631.78	
Sub-total								61,631.78	
Total	1		1	1	l			93,480.79	I

	2. Costing Countermeasure
FFA	

									per
Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
. Personnel	Grades- Steps			Kate (SBD)	(30D)		(300)	(SDD)	
Staff-3	3.1	0	Person	15.85	118.88				
	3.2	0	Person	16.37	122.78				
	3.3	0	Person	16.90	126.75				
	3.4	0	Person	17.43	130.73				
	3.5	0	Person	17.96	134.70				
Staff-4	4.1	14	Person	19.81	148.58	57.00		8,468.78	
	4.2	7	Person	20.60	154.50	19.00		2,935.50	
	4.3	0	Person	21.39	160.43			0.00	
	4.4	0	Person	22.18	166.35			0.00	
	4.5 5.1	3	Person	22.98 24.83	172.35	9.00		1,551.15	
Staff-5	5.1	4	Person Person	24.83	186.23 194.10	29.00		5,400.53	
	5.2	0	Person	25.88	202.05			0.00	
	5.4	0	Person	27.99	202.03			0.00	
	5.5	4	Person	29.05	217.88	10.00		2,178,75	
Staff-6	6.1	1	Person	32.48	243.60	1.00		243.60	
Dian-0	6.2	0	Person	33.81	253.58	1.00		0.00	
	6.3	0	Person	35.13	263.48			0.00	
	6.4	0	Person	36,45	273.38			0.00	
	6.5	0	Person	37.77	283.28			0.00	
Staff-7	7.1	0	Person	39.62	297.15	0.00		0.00	
	7.2	0	Person	40.94	307.05			0.00	
	7.3	0	Person	42.26	316.95			0.00	
	7.4	0	Person	43.58	326.85			0.00	
	7.5	0	Person	44.90	336.75			0.00	
Staff-8	8.1	0	Person	49.39	370.43			0.00	
	8.2	0	Person	50.71	380.33			0.00	
	8.3	0	Person	52.03	390.23			0.00	
	8.4	0	Person	53.35	400.13			0.00	
	8.5	2	Person	54.67	410.03	5.00		2,050.13	
Staff-9	9.1	0	Person	59.95	449.63			0.00	
	9.2	0	Person	61.27	459.53			0.00	
	9.3	0	Person	62.59	469.43			0.00	
	9.4	0	Person Person	65.23	479.33 489.23			0.00	
	9.5	0	Person	65.23	489.23			\$ 8,700.00	
Contractors								\$ 6,700.00	
Sub-total	_					130.00		31,528,43	
Consumable				S Per Liter	I /km	130.00	S/km	31,320,43	
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	50km/7km/liter=7.14li 11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50k
Diesel	For Pick-up	180	Liter	11.80	0.1428	25.7040	1.68504	303.31	50km/7km/liter=7.14li 0km
Engine Oil	For Excavator	0	Liter	60.00	0.0016		0.096	0.00	100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/ m 100km x
Engine Oil	For Pick-up	180	Liter	60.00	0.0016		0.096	17.28	100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 50km x 252days=12,60
Tires		0	Nos	770.00	0.0014		1.078	0.00	50km x 252days=12,60 12,600km/30,000km x 4nos=1.68nos 1.68nos/ 252days=0.07nos/50km

				Hourly	Unit Cost		Amount	Amount	per c
Items	Specification	Quantity	Unit	Rate	(SBD)	Total Days	(SBD)	(SBD)	Reamarks
l. Personnel	Grades- Steps								
Staff-3	3.1	0	Person	15.85	118.88				
	3.2	0	Person	16.37	122.78				
	3.3	0	Person	16.90	126.75				
	3.4	0	Person	17.43	130.73				
Staff-4	3.5 4.1	12	Person Person	17.96 19.81	134.70 148.58	20.00		2.971.50	
Statt-4	4.1	6	Person	20.60	154.50	10.00		1,545.00	
	4.3	0	Person	21.39	160.43	10.00		0.00	
	4.4	0	Person	22.18	166.35			0.00	
	4.5	3	Person	22.98	172.35	5.00		861.75	
Staff-5	5.1	3	Person	24.83	186.23	5.00		931.13	
	5.2	0	Person	25.88	194.10			0.00	
	5.3	0	Person	26.94	202.05			0.00	
	5.4	0	Person	27.99	209.93			0.00	
	5.5	3	Person	29.05	217.88	5.00		1,089.38	
Staff-6	6.1	0	Person Person	32.48 33.81	243.60 253.58			0.00	
	6.3	0	Person	35.13	263.48			0.00	
	6.4	0	Person	36.45	273.38			0.00	
	6.5	0	Person	37.77	283.28			0.00	
Staff-7	7.1	2	Person	39.62	297.15	4.00		1,188.60	
	7.2	0	Person	40.94	307.05			0.00	
	7.3	0	Person	42.26	316.95			0.00	
	7.4	0	Person	43.58	326.85			0.00	
	7.5	0	Person	44.90	336.75			0.00	
Staff-8	8.1	0	Person	49.39	370.43			0.00	
	8.2	- 0	Person	50.71	380.33			0.00	
	8.3 8.4	0	Person Person	52.03	390.23 400.13			0.00	
	8.5	2	Person	54.67	410.03	4.00		1,640.10	
Staff-9	9.1	1	Person	59.95	449.63	5.00		2,248.13	
Statt*9	9.2	0	Person	61.27	459.53	3.00		0.00	
	9.3	0	Person	62.59	469.43			0.00	
	9.4	0	Person	63.91	479.33			0.00	
	9.5	0	Person	65.23	489.23			0.00	
Sub-total						58.00		12,475.58	
. Consumable				\$ Per Liter	L/km		\$/km		
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	50km/7km/liter=7.14liter 11liter/hrs (fuel consumpti for about 60PS) x 1hr=11li 11liter +7.1liter=18.1liter/50km
Diesel	For Pick-up	30	Liter	11.80	0.1428	4.2840	1.68504	50.55	50km/7km/liter=7.14liter/5 m
Engine Oil	For Excavator	0	Liter	60.00	0.0016		0.096	0.00	100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50k
Engine Oil	For Pick-up	30	Liter	60.00	0.0016		0.096	2.88	100km x 252days=25,200k 25,200km/ 10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50k
Tires		0	Nos	770.00	0.0014		1.078	0.00	252days=0.08liter/day/50k 50km x 252days=12,600km 12,600km/30,000km x 4nos=1.68nos 1.68nos/ 252days=0.07nos/50km
Sub-total								53,43	
Sub-total 3. Material &								55.43	
	1								
									0 . 11 .
Equipment Sluice/ Gate Valve	25mm		piece			1			Gate Valve
Sluice/ Gate Valve Sluice/ Gate Valve	40mm		piece piece					0.00	Gate Valve
Equipment Sluice/ Gate Valve	40mm 50mm							0.00	

Items	Specification	Quantity	Unit	Hourly Rate	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Sluice/ Gate Valve	100mm		piece	Rate	(SBD)		(SBD)		Sluice Valve
Sluice/ Gate Valve	150mm		piece						Strice Valve
Sluice/ Gate Valve	200mm		piece					0.00	Sluice Valve
Sluice/ Gate Valve	250mm		piece					0.00	Sluice Valve225mm AUD1785
Sluice/ Gate Valve	300mm		piece					0.00	
Pipes (Poly)	15mm		coil					0.00	Length on 1 coil =300m
Pipes (Poly)	20mm	1 1	coil					0.00	Length on 1 coil =300m
Pipes (Poly)	25mm	1 1	coil		Ι			0.00	Length on 1 coil =200m
Pipes (Poly)	50mm		coil					0.00	Length on 1 coil =150m
Pipes (PVC)	25mm		piece					0.00	
Pipes (PVC)	50mm		piece					0.00	
Pipes (PVC)	80mm		piece		Ι			0.00	
Pipes (PVC)	100mm		piece					0.00	
Pipes (PVC)	150mm		piece		1			0.00	
Pipes (PVC)	200mm		piece					0.00	
Pipes (PVC)	250mm		piece		Ι			0.00	
Pipes (PVC)	300mm		piece					0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece		I			0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece		T			0.00	
Water Meter	40mm		piece					0.00	
All Materials for At	ter Countermea	sures			I			0.00	
Sub-total								0.00	
Total					l			12,529.01	

Items	Specification	Quantity	Unit	Hourly	Unit Cost	Total Days	Amount	Amount	Reamarks
		Quantity	· · · · · · · ·	Rate	(SBD)	roun Duys	(SBD)	(SBD)	
Sluice/ Gate Val	40mm		piece						Gate Valve
Sluice/ Gate Val	50mm		piece						Gate Valve
Sluice/ Gate Val	80mm		piece]			Sluice Valve
Sluice/ Gate Val	100mm	l	piece						Sluice Valve
Sluice/ Gate Val	150mm		piece		1			0.00	Sluice Valve
Sluice/ Gate Val	200mm		piece			1		0.00	Sluice Valve
Sluice/ Gate Val	250mm		piece					0.00	Sluice Valve225mm AUD1785
Sluice/ Gate Val	300mm		piece			1 1	l f	0.00	
Pipes (Poly)	15mm		coil					0.00	Length on 1 coil =300m
Pipes (Poly)	20mm	1 [coil			1 1	l f	0.00	Length on 1 coil =300m
Pipes (Poly)	25mm	1 [coil			1 1	l f	0.00	Length on 1 coil =200m
Pipes (Poly)	50mm		coil			1	l	0.00	Length on 1 coil =150m
Pipes (PVC)	25mm		piece					0.00	
Pipes (PVC)	50mm		piece			1		0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece			1		0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece			1		0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece			1 1		0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
All Materials for	routine activite	s						0.00	
Sub-total								0.00	
Total					T			2,235,14	

									pe
Items	Specification	Quantity	Unit	Hourly Rate	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
. Personnel	Grades- Steps			Kate	(SBD)	-	(SBD)	(SBD)	
Staff-3	3.1	0	Person	15.85	118.88			0.00	
	3.2	- 0	Person	16.37	122.78			0.00	
	3.3	0	Person	16.90	126.75			0.00	
	3.4	0	Person	17.43	130.73			0.00	
	3.5	0	Person	17.96	134.70			0.00	
Staff-4	4.1	0	Person	19.81	148.58			0.00	
	4.2	0	Person	20.60	154.50			0.00	
	4.3	0	Person	21.39	160.43			0.00	
	4.4	- 0	Person	22.18	166.35			0.00	
	4.5	- 0	Person	22.98	172.35			0.00	
Staff-5	5.1	0	Person	24.83	186.23			0.00	
	5.2	. 0	Person	25.88	194.10			0.00	
	5.3	. 0	Person	26.94	202.05			0.00	
	5.4	0	Person	27.99	209.93			0.00	
0.00	5.5	0	Person	29.05	217.88	0.00		0.00	
Staff-6	6.1	3	Person	32.48	243.60	9.00		2,192.40	
	6.2	. 0	Person	33.81	253.58			0.00	
	6.3	0	Person	35.13	263.48			0.00	
	6.4		Person	36.45	273.38	<u> </u>			
C01.7	6.5	0	Person	37.77	283.28			0.00	
Staff-7	7.1	0	Person	39.62 40.94	297.15			0.00	
	7.3	0	Person	42.26	307.05			0.00	
	7.3	0	Person Person	42.26	316.95 326.85	ļ		0.00	
	7.5	0	Person	43.58	326.85			0.00	
Staff-8	8.1	0	Person	49.39	370.43			0.00	
Statt-8		0			380.33			0.00	
	8.2	0	Person	50.71	390.23			0.00	
	8.4	0	Person Person	53.35	400.13			0.00	
	8.5	0	Person	54.67	410.03			0.00	
Staff-9	9.1	0	Person	59.95	449.63			0.00	
Statt-9	9.1	0	Person	61.27	459.53			0.00	
	9.2	0	Person	62.59	469.43			0.00	
	9.4	0	Person	63.91	479.33			0.00	
Sub-total	9.5	. 0	Person	65.23	489.23	9.00		2 192 40	
Sub-total Consumable	9.5	0	Person	S Per Liter		9.00	S/km	2,192.40	
Sub-total 2. Consumable Diesel	For Excavator	0	Liter			9.00	S/km 4.2716		about 60PS) x 1hr=11liter
. Consumable				S Per Liter	L/km	9.00 3.4272		2,192.40	11liter/hrs (fuel consumption about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50ks
Consumable Diesel	For Excavator	0	Liter	S Per Liter	L/km 0.3620		4.2716	2,192.40 0.00 40.44	11liter/hrs (fuel consumption about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50ks
Consumable Diesel Diesel	For Excavator	0 24	Liter	S Per Liter 11.80 11.80	0.3620 0.1428		4.2716 1.68504	0.00 40.44	11liter/hrs (fuel consumption about 60FS) x lhr=11liter 11liter+7.1liter=18.1liter/50k: 50km/7km/liter=7.14liter/50k: 100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/
Consumable Diesel Diesel Engine Oil	For Excavator For Pick-up For Excavator	0 24	Liter Liter	11.80 11.80 60.00	0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.00 40.44	11liter.hrs (fuel consumption) about 0698's, 14n-11liter 11liter +7.1liter=18.1liter=50k: 50km/7km/liter=7.1.4liter=50k 100km x 252days=25,200km 25.200km 10.000km x 818ter=20.16liter 20.16liter 20.16liter 25.200km v 252days=25,200km 10.000km x 30.000km x 40.000km x 30.000km x 30.000km x 40.000km x 30.000km x 40.000km x 30.000km x 40.000km x
Consumable Diesel Diesel Engine Oil Engine Oil	For Excavator For Pick-up For Excavator	0 24 0	Liter Liter Liter	S Per Liter 11.80 11.80 60.00	0.3620 0.1428 0.0016		4.2716 1.68504 0.096	2,192,40 0.00 40,44 0.00 2,30	11liter/hrs (fuel consumption obout 069%) x Hrs-Illier 11liter +7.1liter=18.1liter/50k. 50km/km/liter=7.14liter/50k. 100km x 252days=25,200km x 25,200km 10,000km x 818ter=20.16liter 20.16liter 20.16liter 20.16liter 20.252days=0.08liter/day/50km 100km x 252days=25,200km x 2520km 10,000km x 818ter=20.16liter 20.16liter
Diesel Diesel Engine Oil Engine Oil Sub-total	For Excavator For Pick-up For Excavator	0 24 0	Liter Liter Liter	S Per Liter 11.80 11.80 60.00	0.3620 0.1428 0.0016		4.2716 1.68504 0.096	2.192.40 0.00 40.44 0.00	11liter/hrs (fuel consumption obout 069%) x Hrs-Illier 11liter +7.1liter=18.1liter/50k. 50km/km/liter=7.14liter/50k. 100km x 252days=25,200km x 25,200km 10,000km x 818ter=20.16liter 20.16liter 20.16liter 20.16liter 20.252days=0.08liter/day/50km 100km x 252days=25,200km x 2520km 10,000km x 818ter=20.16liter 20.16liter
Diesel Diesel Diesel Engine Oil Engine Oil Tires Sub-total Material &	For Excavator For Pick-up For Excavator	0 24 0	Liter Liter Liter	S Per Liter 11.80 11.80 60.00	0.3620 0.1428 0.0016		4.2716 1.68504 0.096	2,192,40 0.00 40,44 0.00 2,30	11liter.hrs (fuel consumption) about 0698's, 14n-11liter 11liter +7.1liter=18.1liter=50k: 50km/7km/liter=7.1.4liter=50k 100km x 252days=25,200km 25.200km 10.000km x 818ter=20.16liter 20.16liter 20.16liter 25.200km v 252days=25,200km 10.000km x 30.000km x 40.000km x 30.000km x 30.000km x 40.000km x 30.000km x 40.000km x 30.000km x 40.000km x
Diesel Diesel Diesel Engine Oil Engine Oil	For Excavator For Pick-up For Excavator	0 24 0	Liter Liter Liter	S Per Liter 11.80 11.80 60.00	0.3620 0.1428 0.0016		4.2716 1.68504 0.096	2,192,40 0.00 40,44 0.00 2,30	11liter.hrs (fuel consumption of babout 08PS) x 1hre-11liter 11liter +7.1liter=18.1liter=50ka 50km/7km/liter=7.14liter=50km 100km x 252dsy=25,200km 25.200km 10.000km x 81ter=201.6liter 20.16liter 25.20dsy=0.08liter/day/50km 1000km x 253dsy=25,200km 25.20dsy=0.08liter/day/50km 25.20dsy=0.08liter/day/50km 50km x 252dsy=0.08liter/day/50km 50km x 252dsy=12,600km 50km x 252dsy=12,600km 50km x 252dsy=12,600km 50km x 252dsy=12,600km 50km x 252dsy=12,600km

4. Routine Activities

AUTHORE REQUISIT	IENT NAME: NRW PROJECT TEAM ZZED BY: Silas Talosui ION NO: 1514 CRIPTION: Being for FFA Pilot Project Site .):			ISS	UED BY:	Pai	11/07/2014		
ITEM	Materials Description	NEW ST ORDER	Quantity	U	nit Cost		Total Cost	BIN CARD BALANCE	
1	100mm Sluice Valve (New Zealand stock)		1	\$	1,759.25			5	5
2	100mm x 3/4" Brass Tapping Saddle/Band		1	\$	234.00			163	163
3	Flange Collar Adaptor (New Zealand Stock)		4	\$	586.41			6	6
4	100mm Gasket & Bolts,Nuts		4		131.28			2	2
5	100mm BulkWater Meter		1	\$	3,306.00 9.00	2	3,306.00	3 55	3 55
7	3/4" x 1/2" G.I reduce bush 15mm Stop Tap (NRW order)	100	1	\$	95.00			134	134
	Tomini Stop Tap (NRW order)		r Reguisiti			1		134	134
AUTHORIZ REQUISIT	IENT NAME: NRW PROJECT TEAM ZED BY: Binjaman ION NO: 2493 ORUPTION: Being for meter raising @ FFA area.			ISS	UED BY:	Pai	John Chede ul Seda 05/08/2014		
1	50mm Gate Valve (NRW Order)LKP		1	\$	580.00	S	580.00	1	1
2	50mm Gibault Coupling (NZ Order)		1	\$	530.86	S	530.86	2	2
3	50mm PVC Male Adaptor		2	\$	530.86	\$	1,061.72	57	57
4	Threaded Tape (NRW order)		4	\$	10.00	\$		1098	1098
		Total pe	r Reguisiti	on		1	2,212.58	1	
JOB DESC 1 2	RIPTION: Being for meter raising @ FFA area . 80mm SLUICEValve (Kitano) Threaded Tape (NRW order)		1 6	\$	823.85 10.00	\$	60.00	3 1092	3 1092
	80mm UPVC Pressure Pipe PVC Glue 250ml Island enterprise order	Total pe	1 1 or Requisiti	REC	DEIVED BY	\$	180.00 2,053.85 John Chede	67 5	67 5
DEPARTM AUTHORE REQUISIT: JOB DESC	PVC Glue 250ml Island enterprise order IENT NAME: NRW PROJECT TEAM EED BY: Eric Ungs ION NO: 2494 RRPTION: Being for meter raising @ FFA area.	Total pa	1	REG ISS DA	180.00 EIVED BY: UED BY:	Pai	180.00 2,053.85 John Chede ul Seda 08/08/2014	5	5
4 DEPARTM UTHORE REQUISITION DESC	PVC Glue 250ml Island enterprise order IENT NAME: NRW PROJECT TEAM ZED 91'; Erfo Ungs ON NO: 2494 GRIPTION: Being for meter raising @ FFA area.	Total pe	1 or Requisiti	REG ISS DA	180.00 EDEIVED BY: UED BY: ITE ISSUED	S Par E (180.00 2,053.85 John Chede ul Seda 08/08/2014 41.00	5	5
EPARTM NUTHORE REQUISIT:	PVC Glue 250ml Island enterprise order IENT NAME: NRW PROJECT TEAM EED BY: Eric Ungs ION NO: 2494 RRPTION: Being for meter raising @ FFA area.		1 Pr Requisiti	REG ISS DA	180.00 EDEIVED BY: UED BY: ITE ISSUED 41.00 171.00	S Par E (180.00 2,053.85 John Chede ul Seda 08/08/2014 41.00	5	5
4 DEPARTMANE REQUISITION DESCRIPTION DESCRIPTION DESCRIPTION DESCRIPTION DEPARTMANENTH ORIZONAL DEPARTMANENTA DEPARTMANEN	PVC Glue 250ml Island enterprise order IENT NAME: NRW PROJECT TEAM ZED 91'; Erfo Ungs ON NO: 2494 GRIPTION: Being for meter raising @ FFA area.		1 or Requisiti	RECON S	180.00 E DEIVED BY: ITE ISSUED 41.00 171.00 E DEIVED BY: UED BY: ITE ISSUED	S Pai	180.00 2,053.85 John Chede ul Seda 08/08/2014 41.00 171.00 212.00 John Chede	5	5
DEPARTMAUTHORE REQUISIT: JOB DESC	PVC Glue 230ml Island enterprise order EENT NAME: NRW PROJECT TEAM EED BY: Eric Unga ON NO: 2494 Amm PVC Compression Coupling 100mm UPVC Wpips EENT NAME: NRW PROJECT TEAM EED BY: Eric Unga ON NO: 2494 AMTON POWER for meter raising # FFA area .		i r Requisiti	REC ISS DA'	180.00 EDEVED BY: ITE ISSUED 41.00 171.00 EDEVED BY: ITE ISSUED DELVED BY: ITE ISSUED	Pail S	: 180.00 \$ 2,053.85 John Chede ul Seda 18/08/2014 : 41.00 : 171.00 \$ 212.00 John Chede ul Seda 18/08/2014	37 81	38 81
DEPARTMUTHORIZEQUISITION DESCRIPTION DE	PVC Glue 250ml Island enterprise order BEST TANKE. NRW PROJECT TEAM 200 BY: 5Ft Ung DIOD BY: 5Ft Ung DIOD BY: 5Ft Ung DIOD BY: 5Ft Ung BY: 5Ft Ung BY: 5Ft Ung BY: 5Ft Ung DIOD BY: 5Ft Ung DIOD BY: 5Ft Ung DIOD BY: 5Ft Ung DIOD BY: 5Ft Ung DION NO: 2484 DION NO: 2484 Somm SE Valve (NRW Order/LKP Somm SE Valve (NEW Order/LKP Somm SE Valve (NEW Order/LKP		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	REC S S DA	180.00 =	S S S S S S	: 180.00 \$ 2,053.85 John Chede ul Seds : 41.00 : 171.00 \$ 212.00 John Chede ul Seds 18/08/2014	37 81	38 81
DEPARTMAUTHORE REQUISIT: JOB DESC	PVC Glue 230ml Island enterprise order EENT NAME: NRW PROJECT TEAM EED BY: Eric Unga ON NO: 2494 Amm PVC Compression Coupling 100mm UPVC Wpips EENT NAME: NRW PROJECT TEAM EED BY: Eric Unga ON NO: 2494 AMTON POWER for meter raising # FFA area .	Total pa	i r Requisiti	RECON S S DA	180.00 = DEIVED BY : ITE ISSUED 41.00 171.00 = DEIVED BY : ITE ISSUED 580.00 38.00 10.00	S S S S S S	180.00 10	37 81	38 81
DEPARTM AUTHORIZEGUISTITIOB DESCRIPTION 1 2 DEPARTM AUTHORIZEGUISTITIOB DESCRIPTION 1 2 3 DEPARTM AUTHORIZEGUISTITIOB DESCRIPTION 1 2 3 DEPARTM AUTHORIZEGUISTITIOB DESCRIPTION 1 2 3	PVC Glue 250ml Island enterprise order BEST TANKE. NRW PROJECT TEAM 200 BY: 5Ft Ung DIOD BY: 5Ft Ung DIOD BY: 5Ft Ung DIOD BY: 5Ft Ung BY: 5Ft Ung BY: 5Ft Ung BY: 5Ft Ung DIOD BY: 5Ft Ung DIOD BY: 5Ft Ung DIOD BY: 5Ft Ung DIOD BY: 5Ft Ung DION NO: 2484 DION NO: 2484 Somm SE Valve (NRW Order/LKP Somm SE Valve (NEW Order/LKP Somm SE Valve (NEW Order/LKP	Total pa	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	RECON S S S S S S S S S S S S S S S S S S S	180.00 = 180.00 BY UED BY: 17E ISSUED BY UED BY: 17E ISSUED BY UED BY: 17E ISSUED	Paris (180.00 2,053.85 2,053.85 2,053.85 2,053.85 2,053.85 2,054 2,05	37 81	38 81
DEPARTM AUTHORIZEGUISTITIOB DESCRIPTION 1 2 DEPARTM AUTHORIZEGUISTITIOB DESCRIPTION 1 2 3 DEPARTM AUTHORIZEGUISTITIOB DESCRIPTION 1 2 3 DEPARTM AUTHORIZEGUISTITIOB DESCRIPTION 1 2 3	PVC Glue 250ml Island enterprise order EENT NAME: NRW PROJECT TEAM EED BY: Eric Unga DREPTION: Being for meter raising @ FFA area. 40mm PVC Compression Coupling 1100mm UPVO W/pipe IENT NAME: NRW PROJECT TEAM EON NO: 2494 PREPTION: Being for meter raising @ FFA area. 50mm of Sept Male Adaptor Threaded Tape. (NRW order) IENT NAME: NRW PROJECT TEAM EON TO SEPT MALE AND TEAM EON TO SEPT MALE AND TEAM EON TO SEPT MALE AND TEAM ENT NAME: NRW PROJECT TEAM EON NO: 2492 EINT TON. Being for meter raising @ FFA area.	Total pa	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	RECON S S S S S S S S S S S S S S S S S S S	180.00 = 180.00 BY UED BY: 17E ISSUED BY UED BY: 17E ISSUED BY UED BY: 17E ISSUED	Pail S	180.00 2,083.85 2,083.85 2,083.85 2,083.85 2,083.85 2,084.85	37 81	38 81
DEPARTM AUTHORIZEGUISTITIOB DESCRIPTION 1 2 DEPARTM AUTHORIZEGUISTITIOB DESCRIPTION 1 2 3 DEPARTM AUTHORIZEGUISTITIOB DESCRIPTION 1 2 3 DEPARTM AUTHORIZEGUISTITIOB DESCRIPTION 1 2 3	PVC Glue 250ml Island enterprise order ERNT NAME: NRW PROJECT TEAM EED 8Y: Eric Ungs ON NO: 2494 ROPTION: Being for meter raising @ FFA area . 40mm PVC Compression Coupling 100mm UPVC W/ pipe EENT NAME: NRW PROJECT TEAM ZED 8Y: 5Fic Ungs FFA area . Somm Gate Valve (NRW Order)LKP Somm x 2° Fely Male Adaptor 11 Preaded Tape (NRW order) EENT NAME: NRW PROJECT TEAM ZED 8Y: 58 June 10 NRW PROJECT TEAM SOMM CALL STATE OF TEAM SOMM C	Total pa	1 1 1 or Requisiti	REGISS DA	180.00 EDEVED BY UED BY: 17 ISSUED 41.00 171.00 EDEVED BY: 18 ISSUED 580.00 38.00 10.00 EDEVED BY: 18 ISSUED 580.00 10.00 EDEVED BY: 18 ISSUED	S S S S S S S S S S S S S S S S S S S	i 180.00 b 2,053.85 John Chede ut Seds 18/08/2014 i 541.00 i 171.00 b 212.00 John Chede ut Seds 38/08/2014 i 580.00 j 698.00 John Chede ut Seds 38/08/2014 i 598.20 John Chede ut Seds 38/08/2014 i 598.20 John Chede ut Seds 38/08/2014	37 81 1 20 1092	38 81 1 20 1092

4	16mm x 16mm x 16mm Poly Tee	Г	1	2	85.00	Ś	85.00	37	37
5	16mm x 16mm Poly Coupling		2	\$	50.00		100.00	37	37
6	Threaded Tape (NRW order)		4	\$	10.00	\$	40.00	1092	1092
7	40mm x 1" Male Adaptor poly		1	\$	55.00	\$	55.00	45	45
8	16mm x 1/2" poly Male Adaptor LKP Order		4	\$	65.00	\$	260.00	280	280
		Total pe	r Requisition	on =		\$	918.90		

AUTHORIZ REQUISITION JOB DESC	INT NAME: NRW PROJECT TEAM ED BY: Benjamin NN NO: 2089 RIPTION: Being for meter raising at FFA . : 14A644629, 14A644621, 14A644612, 14A644626, 14A64462 14A644630	0, 14A64	1625, 14A64	DAT	DEVED BY: C TE ISSUED	3eor : 18	ge Blamoli /08/2014		
1	30mx 16mm Poly pipe (NRW)LKP		30	\$	9.93	\$	297.90	325	325
2	10m x 20mm Poly pipe(NRW LKP order)		10	\$	15.50		155.00	317m	317m
3	20mm x 16mm Reducing Poly Coupling		10	\$	60.00	\$	600.00	29	29
4	16mm Poly Coupling (Tongs order)		8	\$	50.00	\$	400.00	126	126
5	16mm x 1/2" poly female Adaptor (NRW stock)		4	\$	45.00	\$	180.00	357	357
6	16mm x 1/2" poly Male Adaptor LKP Order		4	\$	65.00	\$	260.00	276	276
7	20mm x 1/2" poly Male Adaptor		3	\$	35.00	\$	105.00	67	67
8	15mm Water Meter (JICA order)		10	\$	234.00	\$	2,340.00	415	415
9	Threaded Tape (NRW order)		10	\$	10.00	\$	100.00	1074	1074
10	40Kg Bag Cement (Tongs Order)		6	\$	81.00	\$	486.00	87	87

EQUISITION NO: 2089 DB DESCRIPTION: Being for meter raising at FFA. IETER LD: 14A644871. 14A644870, 14A644866, 14A644869, 14A1 1 60mx 16mm Poly pipe (NRW)LKP	644865, 14A644	863, 14A64		E ISSUED	: 18	/08/2014		
 -	644865, 14A644	863, 14A64	4864,					
			_					
		60	\$	9.93	\$	595.80	265	265
2 20 metres 20mm Poly Pipe (NRW order)LKP		20	\$	15.50	\$	310.00	297m	297m
3 16mm G.I Tee		1	\$	5.00	\$	5.00	74	74
4 20 mm G,I Tee		1	\$	8.00	\$	8.00	84	84
5 40Kg Bag Cement (Tongs Order)		3	\$	81.00	\$	243.00	84	84
6 20mm x 1/2" poly Male Adaptor		3	\$	35.00	\$	105.00	64	64

AUTHORI REQUISIT	MENT NAME: NRW PROJECT TEAM ZED BY: Siles Taloeiu TON NO: 2082 CRIPTION: Being for meter raising at FFA.			ISSI	DEIVED BY UED BY : O TE ISSUED	Beor	ge Blamoli		
1	15mm Water Meter (JICA order)		7	\$	234.00	\$	1,638.00	406	406
2	16mm Poly Coupling (Tongs order)		6	\$	50.00	\$	300.00	117	117
3	16mm x 1/2" poly Male Adaptor (NRW stock)		5	\$	70.00	\$	350.00	271	271
4	16mm x 1/2" poly female Adaptor (NRW stock)		5	\$	65.00	\$	325.00	305	305
5	16mm x 16mm x 16mm Poly Tee		4	\$	85.00	\$	340.00	31	31
6	16mm x 3/4" poly female Adaptor (N/stock)		3	\$	50.00	\$	150.00	43	43
7	20mm x 16mm R/ Poly Coupling (Tongs order)		4	\$	50.00	\$	200.00	25	25
8	25mm x 16mm R/ Poly Coupling (LKP NRW)		2	\$	110.00	\$	220.00	38	38
9	20mm x 15mm R/ Nipple G.I (Tongs order)		2	\$	12.00	\$	24.00	47	47
10	20mm x 15mm R/ Socket G.I (Tongs order)		2	\$	12.00	\$	24.00	212	212
11	Threaded Tape (NRW order)		30	\$	10.00	\$	300.00	1044	1044
	Inreaded Tape (NHW order)	Total or	n Doguloiti	3		9	300.00	1044	-

AUTHORIZ REQUISITI	ON NO: 2086	DEPARTMENT NAME: NRW PROJECT TEAM RECEIVED 9Y: 3-8 laine Fai JUNFORCED 9Y: 5-6 lugs REQUISTRON NO: 2085 DATE ISSUED: 21/ 08/2014 DOB DESORPHTON Being for meter raising at FFA.									
	RPTION: Being for meter raising at FFA . : 14A644858, 14A644857, 14A644852, 14A644853, 14A64485 14A644814, 14A644815, 14A644816, 14A644817 II5mm Water Meter (JICA order)	4, 14A64	13 13	4856	. 14A6448 234.00		4A644813 3 042 00	389	389		
2	16mm x 16mm Poly Coupling		8	\$	50.00		400.00	106	106		
3	50mx 16mm Poly pipe (NRW)LKP		50	\$	9.93	\$	496.50	215	215		
4	20 metres 20mm Poly Pipe (NRW order)LKP		20	\$	15.50	\$	310.00	270m	270m		
5	25mm x 25mm Poly Coupling (NRW LKP order)		2	\$	85.00	\$	170.00	13	13		
6	40Kg Bag Cement (Tongs Order)		2	\$	81.00	\$	162.00	82	82		

REQUISITION JOB DESCRIPTION METER ID		BIN CARD								
ITEM		ription NEW ST Quantity Unit Cost Total Cost ORDER ISSUED								
1	15mm Water Meter (JICA order)		8	\$	234.00	\$	1,872.00	354	354	
2	16mm x 1/2" poly Male Adaptor (NRW stock)		5	\$	70.00	\$	350.00	260	260	
3	16mm x 1/2" poly female Adaptor (NRW stock)		5	\$	65.00	\$	325.00	231	231	
4	50mx 16mm Poly pipe (NRW)LKP		50	\$	9.93	\$	496.50	75	75	
5	16mm Poly Coupling (Tongs order)		6	\$	50.00	\$	300.00	82	82	
6	20mm x 16mm R/ Poly Coupling (LKP Order)		4	\$	98.00		392.00	4	4	
7	16mm x 3/4" poly female Adaptor (N/stock)		4	\$	50.00	\$	200.00	31	31	
8	20mm x 20mm Poly Coupling (LKP Order)		3	\$	78.00	\$	234.00	4	4	
9	40Kg Bag Cement (SI Cement Order)		4	\$	81.00	\$	324.00	73	73	
1`0	25mm x 25mm Poly Tee (Tongs order)		1	\$	105.00	\$	105.00	39	39	
Total per Requisition = \$ 4.598.50										

AUTHORIZI REQUISITIO	ENT NAME: NRW PROJECT TEAM ED BY: Eric Ungs N NO: 1285 REPTION: Being for meter raising at FFA.		RECEIVED BY : Solina Fai ISSUED BY : George Blamoli DATE ISSUED: 25/ 08/2014							
ITEM	Materials Description	NEW ST ORDER	Quantity ISSUED	Un		BIN CARD BALANCE				
1	15mm Stop Tap (Tongs order)		5	\$	95.00	\$ 475.00	16	16		
2	Threaded Tape (NRW order)		2	\$	10.00	\$ 20.00	949	949		
		Total pe	Total per Requisition =							

AUTHORI REQUISIT	MENT NAME: NRW PROJECT TEAM ZED BY: Eric Ungs TON NO: 1265 CRIPTION: Being for meter raising at FFA. MID 14W706956			RECEIVED BY : Selina Fai ISSUED BY : George Blamoli DATE ISSUED: 25/ 08/2014						
ITEM	Materials Description	NEW ST ORDER	Quantity ISSUED	1	Unit Cost		Total Cost	BIN CARD BALANCE		
- 1	200mm x 50mm Galvanise pipe (NRW)LKP		2	\$	90.00	\$	180.00	2	2	
2	Threaded Tape (NRW order)		20	\$	10.00	\$	200.00	929	929	
3	15mm Socket Galvanise(NRW LKP order)		20	\$	8.00	\$	160.00	130	130	
4	50mm Water Meter (JICA order)		1	\$	3,306.00	\$	3,306.00	0	0	
5	50mm Nipple Galvanise (2")		2	\$	42.00	\$	84.00	21	21	
6	50mm Water Strainer (Island enterprise order)		1	\$	550.00	\$	550.00	4	4	
5	50mm Flange Galvanise (2")		4	\$	30.00	\$	120.00	45	45	
6	50mm Elbow Galvanise (2" NRW)		2	\$	54.00	\$	108.00	4	4	
7	500mm x 50mm Galvanise pipe (NRW)LKP		4	\$	135.00	\$	540.00	4	4	
8	50mm Gasket/ Bolts/Nuts/ Washers (JICA order)		5	\$	114.87	\$	574.35	6	6	
		Total pa	r Requisiti	nn	=	2	5 822 35			

AUTHORIZ REQUISITION JOB DESC	RTIMENT NAME: INFW PROJECT TEAM RECEIVED 91: Solids Fail ORRED 91: Self-tipe ISSUED 97: George Blamoß ISSTION NO: 1287 DATE ISSUED: 26/ 08/2014 DESCRETTION: Being for meter raising at FFA. RD: 1:4648/9015, 14648/9014, 185/90318 RT.								
ITEM	Materials Description		Quantity ISSUED	U	nit Cost	T		BIN CARD BALANCE	
1	40mx 16mm Poly pipe (NRW)LKP		40	\$	9.93	\$	397.20	35	35
2	10 metres 20mm Poly Pipe (NRW order)LKP		10	\$	15.50	\$	155.00	260m	260m
3	15mm Water Meter (JICA order)		1	\$	234.00	\$	234.00	349	349
4	40Kg Bag Cement (SI Cement Order)		4	\$	81.00	\$	324.00	68	68
5	Threaded Tape (NRW order)		5	\$	10.00	\$	50.00	924	924
6	40mm Gate Valve Brass		1	\$	220.00	\$	220.00	24	24
7	40mm Nipple Galvanise		2	\$	28.00	\$	56.00	31	31
8	50mm x 40mm R/Socket Galvanise (2")		2	\$	46.00	\$	92.00	18	18
		Total pe	r Requisiti	on :		*	1.528.20		

DEPARTM	IENT NAME: NRW PROJECT TEAM			RECEIVED BY	: M. Mafe	
AUTHORE	ZED BY : Eric Unga			ISSUED BY: G	leorge Blamoli	
REQUISIT	ION NO: 2499			DATE ISSUED:	28/08/2014	
JOB DESC	ORIPTION: Being for meter raising at FFA .					
ITEM	Materials Description	NEW ST	Quantity	Unit Cost	Total Cost	BIN CARD STOCK
		ORDER	ISSUED			BALANCE COUNTED

7	15 metres 25mm Poly Pipe		15	\$	17.00	\$ 255.00	84m	84m
8	20mm x 16mm R/ Poly Coupling (Tongs order)		4	\$	50.00	\$ 200.00	21	21
9	20mm x 1/2" poly female Adaptor (NRW LKP)		1	\$	68.00	\$ 68.00	264	264
		Total per Requisition =				5 103 50		

AUTHORI REQUISIT	IENT NAME: NRW PROJECT TEAM ZED BY: Erio Unga ION NO: 2090 CRIPTION: Being for meter raising at FFA Pilot Site .			ISSL		leor	riok ge Blamoli /08/2014		
1	16mm x 1/2" poly Male Adaptor (NRW stock)		1	\$	70.00	\$	70.00	270	270
2	20mm x 1/2" x 20mm Poly reduce F/ Thread Tee		1	\$	24.00	\$	24.00	197	197
3	500mm x 15mm Galvanise pipe (NRW)LKP		80	\$	72.00	\$	5,760.00	136	136
4	200mm x 15mm Galvanise pipe (NRW)LKP		40	\$	65.00	\$	2,600.00	67	67
5	16mm x 1/2" poly female Adaptor (NRW stock)		40	\$	65.00	\$	2,600.00	262	262
6	15mm Stop Tap (Tongs order)		20	\$	95.00	\$	1,900.00	31	31
7	15mm Socket Galvanise(NRW LKP order)		20	\$	8.00	\$	160.00	160	160
8	Threaded Tape (NRW order)		40	\$	10.00	\$	400.00	989	989
9	16mm Poly Coupling (Tongs order)		2	\$	50.00	\$	100.00	103	103
	*	Total p	ar Reguleiti	on =			13 814 00		

	IENT NAME: NRW PROJECT TEAM				EIVED BY									
	ZED BY : Erio Unga	ISSUED BY : George Blamoli DATE ISSUED: 21/ 08/2014												
	ION NO: 1264													
	CRIPTION: Being for meter raising at FFA.													
METER LI): 14A644824, 14A644821, 14A644831, 14A644823, 14A6448	30, 14A64		4825		9,								
1	15mm Water Meter (JICA order)		8	\$	234.00	\$	1,872.00	378	378					
2	40mx 16mm Poly pipe (NRW)LKP		40	\$	9.93	\$	397.20	175	175					
5	16mm x 1/2" poly female Adaptor (NRW stock)		6	\$	65.00	\$	390.00	256	256					
6	16mm Poly Coupling (Tongs order)		8	\$	50.00	\$	400.00	95	95					
7	20mm x 16mm R/ Poly Coupling (LKP Order)		3	\$	98.00	\$	294.00	10	10					
8	16mm x 3/4" poly female Adaptor (N/stock)		3	\$	50.00	\$	150.00	39	39					
9	16mm x 3/4" poly Male Adaptor		2	\$	28.00	\$	56.00	42	42					
10	40Kg Bag Cement (SI Cement Order)		1	\$	81.00	\$	81.00	82	82					
		Total na	er Dominiti		_	•	2 840 20							

AUTHORI REQUISIT	MENT NAME: NRW PROJECT TEAM ZED BY: Silas Tabosiu TON NO: 2496 ORIPTION: Being for meter raising at FFA Pilot Site.		RECEIVED BY : J Chede ISSUED BY : George Blamoli DATE ISSUED: 22 /08/2014							
- 1	16mm x 1/2" poly female Adaptor (NRW stock)		20	\$	65.00	\$	1,300.00	236	236	
2	15mm Socket Galvanise(NRW LKP order)		10	\$	8.00	\$	80.00	150	150	
3	15mm Elbow Galvanise (NRW LKP Order)		40	\$	10.00	\$	400.00	830	830	
4	15mm Stop Tap (Tongs order)		10	\$	95.00	\$	950.00	21	21	
5	Threaded Tape (NRW order)		20	\$	10.00	\$	200.00	969	969	
6	40mx 16mm Poly pipe (NRW)LKP		20	\$	9.93	\$	198.60	155	155	
7	16mm Poly Coupling (Tongs order)	1	2	\$	50.00	\$	100.00	92	92	
8	15mm UPVC Fenale Fauccet Adaptor Pressure		2	\$	9.00	\$	18.00	20	20	
9	15mm G.I Plug		2	ŝ	9.00	Ŝ	18.00	20	20	

AUTHORIZ REQUISITI JOB DESC	ENT NAME: NRW PROJECT TEAM ED BY: Siles Talcelu ON NO: 2498 RRPTION: Being for meter raising ® FFA pilot project site . : 14A644977, 14A644988, 14A644988, 14A644984, 14A64498	3, 14A64		188	CEIVED BY LUED BY : C TE ISSUED	Beor	rge Blamoli	Inn oann letoor						
ITEM		NEW ST Quantity Unit Cost Total Cost BIN CARD S' ORDER ISSUED BALANCE O												
1	30 mx 16mm Poly pipe (NRW)LKP		30	\$	9.93	\$	297.90	125	125					
2	15mm Water Meter (JICA order)		6	\$	234.00	\$	1,404.00	362	362					
3	16mm x 16mm x 16mm Poly Tee		1	\$	85.00	\$	85.00	26	26					
4	40Kg Bag Cement (SI Cement Order)		2	\$	81.00	\$	162.00	77	77					
5	20mm x 1/2" Female Poly Adaptor		1	\$	45.00	\$	45.00	261	261					
6	20mm x 16mm R/ Poly Coupling (LKP Order)		2	\$	98.00	\$	196.00	8	8					
7	20mm x 20mm Poly Coupling (LKP Order)		2	\$	78.00	\$	156.00	7	7					
		Total as	r Peguleiti	nn.	-		2 245 00							

DEPARTMENT NAME: NRW PROJECT TEAM	RECEIVED BY : Selina Fai
AUTHORIZED BY : Eric Unga	ISSUED BY : George Blamoli

1	50mm x 25mmx50mm R/ Poly Tee		4	\$	99.00	\$ 396.00	4	4
2	2 metres 25mm Poly Pipe		2	\$	17.00	\$ 34.00	56m	56m
3	25mm x 20mm Poly reduce Coupling		1	\$	60.00	\$ 60.00	61	61
4	Threaded Tape (NRW order)		3	\$	10.00	\$ 30.00	921	921
		Total pe	er Requisition	n =		\$ 520.00		

Total Material Cost for FFA	\$69.747.79

	TOTAL COST FOR LENGAKIKI PILOT	ENGAKIKI PILOT			
	Before Countermeasure	rmeasure	After Countermeasure	measure	
	Before Countermeasure Countermeasure	Countermeasure	After Countermeasure	Routine Activities	Total
Personnel Cost	64,560.08	90,028.05	18,553.05	3,897.60	177,038.78
Consumable	06.555,1	1,310.85	341.96	26.99	11,043.70
Material and Equipment	39,170.87	225,566.00	00:0	00'0	264,736.87
Sub Total	105,064.85	316,904.90	18,895.01	3,954.59	3,954.59 452,819.35
TOTAL	421,969.74	1.74	22,849.60	90	
TOTAL MAN DAYS BEFORE COUNTERMEASURE FOR					

Items	Specification	Quantity	Unit	Hourly Rate	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Pipes (PVC)	25mm		piece					0.00	
Pipes (PVC)	50mm		piece					0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece					0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece					0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece					0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
All Materials for Before	Countermeasure	s						39,170.87	
Sub-total								39,170.87	
Total								105,064.85	
1AUD=6.534SBD was a	pplied to the abo	ve (rate as	of 30 Septe	mber, 2013	of Oanda).				

Location	Lengakiki								
Items	Specification	Quantity	Unit	Hourly	Unit Cost	Total Days	Amount	Amount	per da Reamarks
	1 -	Quantity	Omt	Rate	(SBD)	Total Days	(SBD)	(SBD)	Redilialks
1. Personnel	Grades- Steps	- 2	D	15.85	118.88	4.00		475.50	
Staff-3	3.1	0	Person Person	15.85	122.78	4.00		475.50 0.00	
	3.3	- 0	Person	16.90	126.75			0.00	
	3.4	0	Person	17.43	130.73			0.00	
	3.5	0	Person	17.96	134.70			0.00	
Staff-4	4.1	50	Person	19.81	148.58	175.00		26,000,63	
	4.2	20	Person	20.60	154.50	70.00		10,815.00	
	4.3	0	Person	21.39	160.43			0.00	
	4.4	0	Person	22.18	166.35			0.00	
	4.5	10	Person	22.98	172.35	35.00		6,032.25	
Staff-5	5.1	10	Person	24.83	186.23	35.00		6,517.88	
	5.2	0	Person	25.88	194.10			0.00	
	5.3	0	Person	26.94	202.05			0.00	
	5.4	. 0	Person	27.99	209.93			0.00	
0.00	5.5	10	Person	29.05 32.48	217.88	35.00 2.00		7,625.63 487.20	
Staff-6	6.1	1	Person		243.60			487.20 253.58	
	6.3	- 1	Person Person	33.81 35.13	253.58 263.48	1.00		253.58	
	6.4	- 0	Person	36.45	273.38			0.00	
	6.5	0	Person	37.77	283.28	\vdash		0.00	
Staff-7	7.1	4	Person	39.62	297.15	7.00		2,080.05	
Julii-1	7.2	- 4		40.94	307.05	7.00		2,080.03	
	7.3	0	Person	42.26	316.95			0.00	
	7.4	0	Person	43.58	326.85			0.00	
	7.5	0	Person	44.90	336.75	0.00		0.00	
Staff-8	8.1	0		49.39	370.43			0.00	
	8.2	0	Person	50.71	380.33			0.00	
	8.3	0	Person	52.03	390.23			0.00	
	8.4	0	Person	53.35	400.13			0.00	
	8.5	4	Person	54.67	410.03	5.00		2,050.13	
Staff-9	9.1	2	Person	59.95	449.63	6.00		2,697.75	
	9.2	0	Person	61.27	459.53			0.00	
	9.3	0	Person	62.59	469.43			0.00	
	9.4	0	Person	63.91	479.33			0.00	
	9.5	. 0	Person	65.23	489.23			0.00	
Sub-total 2. Consumable				C.D. T.L.	Y 2	375.00	S/km	64,560.08	
z. Consumable				\$ Per Liter	L/KIII		J/KIII		50km/7km/liter=7.14liter
Diesel	For Excavator	64	Liter	11.80	0.3620		4.2716	273.38	11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter
Diesel	For Pick-up	592	Liter	11.80	0.1428	84.5376	1.68504	997.54	50km/7km/liter=7.14liter/50ki
Engine Oil	For Excavator	64	Liter	60.00	0.0016		0.096	6.14	100km x 252days=25,200km 25,200km/ 10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km
Engine Oil Engine Oil			Liter Liter		0.0016		0.096	56.83	25,200km/10,000km x 8liter=20.16liter 20.16liter/ 25,2davs=0.08liter/dav/50km 100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter/
	For Excavator	64		60.00					25,200km/ 10,000km x 8liter=20.16liter 20.16liter/ 25,2davs=0.08liter/dav/50km 100km x 252days=25,200km 25,200km/ 10,000km 8liter=20.16liter x
Engine Oil	For Excavator	64 592	Liter	60.00	0.0016		0.096	56.83	25,200km/ 10,000km x 8liter=20.16liter 25_dvs=0.08liter/dav/50km 100km x 25_doky=25_200km 25_200km/ 10,000km x 8liter=20.16liter 20.16liter/ 20.16liter/ 12,600km/ 30,000km x 12,600km/ 30,000km x
Engine Oil Tires Sub-total	For Excavator	64 592	Liter	60.00	0.0016		0.096	56.83	25,200km/ 10,000km x 8liter=20.16liter 25_dvs=0.08liter/dav/50km 100km x 25_doky=25_200km 25_200km/ 10,000km x 8liter=20.16liter 20.16liter/ 20.16liter/ 12,600km/ 30,000km x 12,600km/ 30,000km x
Engine Oil Tires Sub-total 3. Material & Equipment	For Excavator For Pick-up	64 592	Liter	60.00	0.0016		0.096	56.83 0.00 1,333.90	25.200km ¹ (10,000km x 8liner-20.1 filter 20.1 filter 25.2days=0.06liter 25.2days=0.06liter 25.200km (10,000km x 8liter-20.1 filter 25.200km (10,000km x 90km x x 30,000km x 4nos-1.68nos 1.68nos Gate Valve
Engine Oil Tires Sub-total 3. Material & Equipment	For Excavator For Pick-up 25mm 40mm	64 592	Liter	60.00	0.0016		0.096	56.83 0.00 1,333.90 0.00 0.00	25.200km 10.000km x 8liter=20.16liter 20.16liter/ 25.davs=0.08liter(davs-00km 100km x 25.days=25.00km / 1000km x 8liter=20.16liter 20.16liter 20.16liter/20x50km x 25.days=0.08liter/davs/50km x 25.days=0.08liter/davs/50km x 25.days=12.600km 12.600km x 30.000km x 40x40km / 10.000km / 10.00
Engine Oil Tires Sub-tofal 3. Material & Equipment Sluice Gate Valve Sluice Gate Valve Sluice Valve Valve	For Excavator For Pick-up 25mm 40mm 50mm	64 592	Liter Nos	60.00	0.0016		0.096	56.83 0.00 1,333.90 0.00 0.00	25.200km 10.000km x 8ilier=2.0.16ilier 20.16ilier 20.16ilier X2.16ilier 25.2davs—0.08ilier X2.2davs—25.200km 100km x 32.2davs=25.200km 10.000km x 8ilier=20.16ilier 25.2davs—6.06ilier/dov.5km 90km x 4.000km x 4.000km x 4.000km x 6.000km x 4.000km x 6.000km x 4.000km x 6.000km x 4.000km x 4.000km x 6.000km x 4.000km
Engine Oil Tires Sub-tofal 3. Material & Equipment Slluice Gate Valve Slluice Gate Valve Slluice Gate Valve Slluice Gate Valve	For Pick-up For Pick-up 25mm 40mm 50mm 80mm	64 592	Liter Nos piece piece piece piece	60.00	0.0016		0.096	56.83 0.00 1,333.90 0.00 0.00 0.00	25,200km 10,000km x 8ilier=20,16iliere 20,16iliere 210,16iliere 210,16iliere 210,16iliere 210,16iliere 210,16iliere 210,16iliere 210,16iliere 210,16iliere 210,16iliere 25,16iliere 26,16iliere 26,16i
Engine Oil Tires Sub-total Material & Equipment Sluice Gate Valve	For Excavator For Pick-up 25mm 40mm 50mm 100mm	64 592	Liter Nos piece piece piece piece piece piece	60.00	0.0016		0.096	56.83 0.00 1,333.90 0.00 0.00 0.00 0.00	25,200km 10,000km x Silier-20,16lister 20,16lister 21,16lister 21,16lister 22,500km 10,000km x Silier-20,16lister 22,500km 10,000km x Silier-20,16lister 21,16lister 25,24we 0,06lister 15,24we 0,06lister 15,26we 10,000km x 4,000km x 4,000km x 4,000km x 4,000km x 4,000km x 4,000km x 5,000km x 4,000km x 5,000km x 5,00
Engine Oil Tires Sub-total Sub-total Shakerial & Equipment Sluice Gate Valve	For Excavator For Pick-up 25mm 40mm 50mm 100mm 110mm	64 592	Liter Nos piece piece piece piece	60.00	0.0016		0.096	56.83 0.00 1,333.90 0.00 0.00 0.00 0.00 0.00	25,200km 10,000km x Silier=20,16liter 20,16liter 21,16liter 25,16liter 26,16liter 26,16l
Engine Oil Tires Sub-total Material & Equipment Sluice Gast Valve	For Excavator For Pick-up 25mm 40mm 50mm 100mm 1100mm 1200mm	64 592	Nos piece piece piece piece piece piece	60.00	0.0016		0.096	56.83 0.00 1,333.90 0.00 0.00 0.00 0.00 0.00 0.00	25,200km 10,000km x Silier-20,16liter 20,16liter 20,16liter 20,16liter 20,16liter 21,16liter 22,200km 10,000km x Silier-20,16liter 20,16liter 21,16liter 2
Engine Oil Tires Sub-total Sub-total Subsection Valve Sluce Gate Valve	For Pick-up For Pick-up 25mm 40mm 50mm 100mm 1150mm 200mm 220mm	64 592	Nos piece	60.00	0.0016		0.096	56.83 0.00 1,333.90 0.00 0.00 0.00 0.00 0.00 0.00 0.0	25,200km 10,000km x Silier-20,16liter 20,16liter 20,16liter 20,16liter 20,16liter 21,16liter 22,200km 10,000km x Silier-20,16liter 20,16liter 21,16liter 2
Engine Oil Tires Sub-total Material & Equipment Sluce (Gas Valve	For Excavator For Pick-up 25mm 40mm 50mm 100mm 1200mm 1200mm 300mm	64 592	Nos piece	60.00	0.0016		0.096	1,333,90 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0	25,200km 10,000km x Silier-20,16liter 20,16liter 20,16liter 20,16liter 21,16liter 25,16lite-10,500km 25,200km 10,000km x Silier-20,16liter 25,16liter 25,16liter 25,16liter 25,16liter 12,500km 20,000km x 4mos-1 1,60mx 1,
Engine Oil Tires Sub-total 5. Material & Egopment Silice Gate Valve	For Pick-up For Pick-up 25mm 40mm 50mm 100mm 1150mm 2200mm 300mm 3100mm	64 592	Liter Nos piece piece piece piece piece piece piece piece coil	60.00	0.0016		0.096	56.83 0.00 1,333.90 0.00 0.00 0.00 0.00 0.00 0.00 0.0	25,200km 10,000km x Silier-20,16liter 25,16km 20,16liter 25,16km 20,16liter 25,16km 20,16liter 25,16km 20,16liter 25,200km 10,000km x Silier-20,16liter 20,16liter 20,16liter 21,16km 20,000km x 112,600km 30,000km x 12,600km 30,000km x 12,600km 30,000km x 14,600km 30,000km x 16,800x 30,000km x 1,6800x 1
Engine Oil Tires Sub-total Material & Equipment Sluice Gate Valve Plyes (Foly) Plyes (Foly)	For Excavator For Pick-up 25mm 40mm 50mm 100mm 220mm 300mm 15mm 220mm	64 592	Nos piece piece piece piece piece piece piece piece piece coil coil	60.00	0.0016		0.096	56.83 0.00 1,333.90 0.00 0	25,200km 10,000km x 8ilier=20,16ilier 20,16ilier 25,2day=0,16ilier 25,2day=0,16ilier 25,2day=0,16ilier 25,2day=0,16ilier 25,2day=0,16ilier 25,2day=0,16ilier 25,2day=0,16ilier 25,2day=0,16ilier 26,00km x 4mos-1,68mox 1,68mox
Engine Oil Tires Sub-total 3. Material & Equipment Siliace Gate Valve	For Pick-up For Pick-up 25mm 40mm 50mm 100mm 1150mm 2200mm 300mm 3100mm	64 592	Liter Nos piece piece piece piece piece piece piece piece coil	60.00	0.0016		0.096	56.83 0.00 1,333.99 0.00 0	25,200km 10,000km x 8ilier=20,16ilier 20,16ilier 21,16ilier 21,16i

2. Costing Countermeasure

ocation	Lengakiki								per
Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Personnel	Grades- Steps			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	(0.000)		(ULLE)	(0.000)	
Staff-3	3.1	- 1	Person	15.85	118.88	1.00		118.88	
	3.2	0	Person	16.37	122.78			0.00	
	3.3	0	Person	16.90	126.75			0.00	
	3.4	0	Person	17.43	130.73			0.00	
	3.5	0	Person	17.96	134.70			0.00	
Staff-4	4.1	30	Person	19.81	148.58	230.00		34,172.25	
	4.2	12	Person	20.60	154.50	92.00		14.214.00	
	4.3	0	Person	21.39	160.43	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		0.00	
	4.4	0	Person	22.18	166.35			0.00	
	4.5	6	Person	22.18	172.35	46.00		7.928.10	
Staff-5	5.1	6	Person	24.83	186.23	46.00		8,566.35	
Sianis	5.2	0	Person	25.88	194.10	40.00		0.00	
	5.3	0	Person	26.94	202.05			0.00	
		0	Person	27.99	209.93			0.00	
	5.5	5	Person	29.05	217.88	41.00		8,932.88	
Staff-6	6.1	0	Person	32.48	243.60	0.00		0.00	
	6.2	0	Person	33.81	253.58			0.00	
	6.3	0	Person	35.13	263.48			0.00	
	6.4	0	Person	36.45	273.38			0.00	
	6.5	0	Person	37.77	283.28			0.00	
Staff-7	7.1	1	Person	39.62	297.15	2.00		594.30	
	7.2	0	Person	40.94	307.05			0.00	
	7.3	0	Person	42.26	316.95			0.00	
	7.4	0	Person	43.58	326.85			0.00	
	7.5	0	Person	44.90	336.75			0.00	
Staff-8	8.1	0	Person	49.39	370.43			0.00	
Dian-0	8.2	0	Person	50.71	380.33			0.00	
	8.3	0	Person	52.03	390.23			0.00	
	8.4	0		53.35	400.13			0.00	
		2	Person			7.00		2.870.18	
	8.5		Person	54.67	410.03	7.00			
Staff-9	9.1	0	Person	59.95	449.63			0.00	
	9.2	0	Person	61.27	459.53			0.00	
	9.3	0	Person	62.59	469.43			0.00	
	9.4	0	Person	63.91	479.33			0.00	
	9.5	0	Person	65.23	489.23			0.00	
Contractors								\$ 12,750.00	
Sub-total						465.00		90,028.05	
Consumable				\$ Per Liter	L/km		S/km		50km/7km/liter=7.14liter
									1 Hiter/hrs (fuel consump
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	for about 60PS) x 1hr=11
					0.1428	105.1008	1.68504	1.240.19	Uliter
Diesel	For Pick-up	736	Liter	11.80					
Diesel	For Pick-up	736	Liter	11.80	0.1428		1100000		
					0.1428	10011000			25,200km/10,000km x
Diesel Engine Oil	For Pick-up For Excavator	736	Liter	60.00	0.1428		0.096	0.00	25,200km/ 10,000km x 8liter=20.16liter
								0.00	25,200km/ 10,000km x 8liter=20.16liter 20.16liter/
					0.1428			0.00	25,200km/ 10,000km x 8liter=20.16liter 20.16liter/
								0.00	25,200km/10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/5/ 100km x 252days=25,200
Engine Oil	For Excavator	0	Liter	60.00			0.096		25,200km/10,000km x 8liter=20.16liter 20.16liter/ 252/avs=0.08liter/day/5f 100km x 252/avs=25,200 25,200km/10,000km x
					0.0016				25,200km/10,000km x 8liter=20.16liter 20.16liter/ 25,2days=0.08liter/day/5f 100km x 252days=25,200 25,200km/10,000km x 8liter=20.16liter
Engine Oil	For Excavator	0	Liter	60.00			0.096		25,200km/10,000km x 8liter=20.16liter 20.16liter/ 252davs=0.08liter/dav/5/ 100km x 252days=25,200 25,200km/10,000km x 8liter=20.16liter 20.16liter/
Engine Oil	For Excavator	0	Liter	60.00	0.0016		0.096		25,200km/10,000km x 8itier=20.16liter 20.16liter/ 25.1daver_0.08liter/day/50 100km x 25.2days=25,200 25,200km/10,00km x 8itier=20.16liter 20.16liter/ 25.1dave=1.08liter/day/50 30km x 25.2days=12,600km
Engine Oil Engine Oil	For Excavator	736	Liter Liter	60.00	0.0016		0.096	70.66	25,200km/10,000km x 8itter=20.16itter 20.16itter/ 25,2davs=0.18itter/day-54 100km x 252days=25,200 25,200km/10,000km x 8itter=20.16itter/ 20.16itter/ 25,2davs=0.18itter/day-54 25,2davs=0.18itter/day-54 25,2davs=0.18iter/day-54 26,000km/30,000km x
Engine Oil	For Excavator	0	Liter	60.00	0.0016		0.096		25,200km/10,000km x 8liter=20.16liter 20.16liter/ 257dnc=0.18liter/day/5/ 100km x 252days=25,200 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 25/davs=0.18liter/day/5/ 50km x 252days=12,600 12,600km/30,000km x 4nos=1.68nos
Engine Oil Engine Oil	For Excavator	736	Liter Liter	60.00	0.0016		0.096	70.66	25,200km/10,000km x 8itter=20.16itter 20.16itter/ 25,2davs=0.18itter/day-54 100km x 252days=25,200 25,200km/10,000km x 8itter=20.16itter/ 20.16itter/ 25,2davs=0.18itter/day-54 25,2davs=0.18itter/day-54 25,2davs=0.18iter/day-54 26,000km/30,000km x
Engine Oil Engine Oil Tires	For Excavator	736	Liter Liter	60.00	0.0016		0.096	70.66	25,200km/10,000km x 8liter=20.16liter 20.16liter/ 257dnc=0.18liter/day/5/ 100km x 252days=25,200 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 25/davs=0.18liter/day/5/ 50km x 252days=12,600 12,600km/30,000km x 4nos=1.68nos
Engine Oil Engine Oil	For Excavator	736	Liter Liter	60.00	0.0016		0.096	70.66	25,200km/10,000km x 8liter=20.16liter 20.16liter/ 25,04mc=0.18liter/day/50 100km x 252days=25,200 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 25/days=0.08liter/day/50 50km x 252days=12,600 12,600km/30,000km x 4nos=1.68nos
Engine Oil Engine Oil Tires Sub-total	For Excavator For Pick-up	736	Liter Liter Nos	60.00	0.0016		0.096	70.66 0.00 1,310.85	25,200km / 10,000km x 8liter=20.16liter 20.16liter/ 20.16liter/ 25,240x=0.18liter/dex-530 8liter=20.16liter/ 25,200km / 10,000km x 8liter=20.16liter/ 20.16liter/ 25,240x=0.10liter/dex-53 50km x 25,240x=12,600km 40,000km x
Engine Oil Engine Oil Tires	For Excavator	736	Liter Liter	60.00	0.0016		0.096	70.66 0.00 1,310.85	8liter=20.16liter 20.16liter/ 20.16liter/ 25/dave=0.08liter/day/50 100km x 25/days=25,200 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 25/dave=0.08liter/day/50 50km x 25/days=12,600km/ 21,600km/30,000km x 4nos=1.68nos

Total				316,904.90	
Sub-total				225,566.00	
All Materials for Cou	ntermeasures			225,566.00	
Water Meter	40mm	piece		0.00	
Water Meter	32mm	piece		0.00	
Water Meter	25mm	piece		0.00	
Water Meter	20mm	piece		0.00	
Water Meter	16mm	piece		0.00	
Water Meter	10mm	piece		0.00	
Pipes (PVC)	300mm	piece		0.00	
Pipes (PVC)	250mm	piece		0.00	
Pipes (PVC)	200mm	piece		0.00	
Pipes (PVC)	150mm	piece		0.00	
Pipes (PVC)	100mm	piece		0.00	
Pipes (PVC)	80mm	piece		0.00	
Pipes (PVC)	50mm	piece		0.00	
Pipes (PVC)	25mm	piece		0.00	
Pipes (Poly)	50mm	coil		0.00	Length on 1 coil =150m
Pipes (Poly)	25mm	coil		0.00	Length on 1 coil =200m
Pipes (Poly)	20mm	coil			Length on 1 coil =300m
Pipes (Poly)	15mm	coil		0.00	Length on 1 coil =300m
Sluice/ Gate Valve	300mm	piece		0.00	ATHATAGE
Sluice/ Gate Valve	250mm	piece		0.00	Stuice varvezz.mini
Sluice/ Gate Valve	200mm	piece		0.00	Sluice Valve
Sluice/ Gate Valve	150mm	piece		0.00	Sluice Valve
Sluice/ Gate Valve	100mm	piece		0.00	Sluice Valve
Sluice/ Gate Valve	80mm	piece		0.00	Sluice Valve
Sluice/ Gate Valve	50mm	piece		0.00	Gate Valve

Items	Specification	Quantity	Unit	Hourly Rate	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Pipes (Poly)	50mm		coil					0.00	Length on 1 coil =150m
Pipes (PVC)	25mm		piece					0.00	
Pipes (PVC)	50mm		piece					0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece			1		0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece			1 1		0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece			1		0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
All Materials for After	Countermeasure	es						0.00	
Sub-total								0.00	
Total								18,895.01	

1AUD=6.534SBD was applied to the above (rate as of 30 September, 2013 of Oanda)

3. Costing After Countermeasure

				Honrly	Unit Cost		Amount	Amount	pe
Items	Specification	Quantity	Unit	Rate	(SBD)	Total Days	(SBD)	(SBD)	Reamarks
. Personnel	Grades- Steps								
Staff-3	3.1	0	Person	15.85	118.88				l
	3.2	0	Person	16.37	122.78				L
	3.3	0	Person	16.90	126.75				
	3.4	0	Person	17.43	130.73				
	3.5	0	Person	17.96	134.70				
Staff-4	4.1	15	Person	19.81	148,58	40.00		5 943 00	
	4.2	6	Person	20.60	154.50	16.00		2,472.00	
	4.3	0	Person	21.39	160.43	10.00		0.00	
	4.4	0	Person	22.18	166.35			0.00	
	4.4	3	Person	22.18	172.35	8.00		1,378.80	
0.004	5.1			22.98					
Staff-5		3	Person	24.83	186.23	8.00		1,489.80	
	5.2	- 0	Person	25.88	194.10			0.00	
	5.3	0	Person	26.94	202.05			0.00	
	5.4	- 0	Person	27.99	209.93			0.00	
	5.5	3	Person	29.05	217.88	8.00		1,743.00	
Staff-6	6.1	0	Person	32.48	243.60			0.00	
	6.2	0	Person	33.81	253.58			0.00	
	6.3	0	Person	35.13	263.48			0.00	
	6.4	0	Person	36.45	273.38			0.00	
	6.5	0	Person	37.77	283.28			0.00	
Staff-7	7.1	2	Person	39.62	297.15	4.00		1,188.60	
Statt*/	7.2	0	Person	40.94	307.05	4.00		0.00	
	7.3	0	Person	42.26	316.95			0.00	
	7.4	0	Person	43.58	326.85			0.00	
	7.5	- 0	Person	44.90	336.75			0.00	
Staff-8	8.1	0	Person	49.39	370.43			0.00	
	8.2	0	Person	50.71	380.33			0.00	
	8.3	0	Person	52.03	390.23			0.00	
	8.4	0	Person	53.35	400.13			0.00	
	8.5	3	Person	54.67	410.03	4.00		1,640.10	
Staff-9	9.1	1	Person	59.95	449.63	6.00		2,697.75	
	9.2	0	Person	61.27	459.53			0.00	
	9.3	0	Person	62.59	469.43			0.00	
	9.4	0	Person	63.91	479.33			0.00	
	9.5	0		65.23	489.23			0.00	
Sub-total	9.5		Person	05.23	489.23	94.00		18,553.05	
. Consumable				S Per Liter	T. A	94.00	S/km	18,555.05	
Consumable				3 Fei Litei	L/KIII		3/KIII		50km/7km/liter=7.14li
									11liter/hrs (fuel
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	consumption for about
***		100			0.1100			222.52	60PS) x 1hr=11liter
Diesel	For Pick-up	192	Liter	11.80	0.1428	27.4176	1.68504	323.53	08 100km x
	i								
W 1 00		0	Liter	60.00			0.096		252days=25,200km
Engine Oil	For Excavator	- 0	Liter	60.00			0.096	0.00	25,200km/ 10,000km
									8liter=20.16liter
					0.0016				20.16liter/
									100km x
									252days=25,200km
Engine Oil	For Pick-up	192	Liter	60.00			0.096	18.43	25,200km/ 10,000km
									8liter=20.16liter
					0.0016				20.16liter/ 50km x 252days=12,6
				1	1				50km x 252days=12,60
	l				l				12,600km/ 30,000km 3
Tires	ĺ	0	Nos	770.00			1.078	0.00	4nos=1.68nos
									1.68nos/
	L				0.0014				252days=0.07nos/50kr
									L
Sub-total								341.96	
Material & Equipment			-						
Sluice/ Gate Valve	25mm		piece					0.00	Gate Valve
Sluice/ Gate Valve	40mm		piece						Gate Valve
Sluice/ Gate Valve	50mm		piece						Gate Valve
Sluice/ Gate Valve	90mm							0.00	Sluice Valve
Sluice/ Gate Valve	80mm 100mm		piece	<u> </u>	<u> </u>			0.00	Sluice Valve Sluice Valve
			piece						
Sluice/ Gate Valve	150mm		piece						Sluice Valve
Sluice/ Gate Valve	200mm		piece						Sluice Valve
	250mm		piece					0.00	Sluice Valve225mm
Sluice/ Gate Valve			piece					0.00	
Sluice/ Gate Valve	300mm 15mm		coil					0.00	Length on 1 coil =300s
Sluice/ Gate Valve Pipes (Poly)	15mm		coil						
Sluice/ Gate Valve			coil coil					0.00	Length on 1 coil =300s Length on 1 coil =300s Length on 1 coil =200s

	4. Routine Activitie
Longolciki	

									per
Items	Specification	Quantity	Unit	Hourly Rate	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
. Personnel	Grades- Steps				1000		-(0.000)		
Staff-3	3.1	1	Person	15.85	118.88	15.00			
	3.2		Person	16.37	122.78				
	3.3	0		16.90	126.75				
	3.4	0		17.43	130.73				
	3.5	0		17.96	134.70				
Staff-4	4.1	0	Person	19.81	148.58			0.00	
Stati-4	4.2	0	Person	20.60	154.50			0.00	
	4.2			20.60	154.50			0.00	
		0	Person						
	4.4	- 0	Person	22.18	166.35			0.00	
	4.5	- 0		22.98	172.35			0.00	
Staff-5	5.1	0	Person	24.83	186.23			0.00	
	5.2	0	Person	25.88	194.10			0.00	
	5.3	0		26.94	202.05			0.00	l
	5.4	0		27.99	209.93			0.00	
	5.5	0	Person	29.05	217.88			0.00	
Staff-6	6.1	2	Person	32.48	243.60	16.00		3,897.60	
	6.2	0		33.81	253.58			0.00	
	6.3	0		35.13	263.48			0.00	
	6.4	0		36.45	273.38		\vdash	0.00	
	6.5	0		37.77	283.28			0.00	
Staff-7	7.1					H		0.00	
Starr-/		0		39.62	297.15				
	7.2	0		40.94	307.05			0.00	
	7.3	0		42.26	316.95			0.00	
	7.4	0		43.58	326.85			0.00	
	7.5	0		44.90	336.75			0.00	
Staff-8	8.1	0	Person	49.39	370.43			0.00	
	8.2	0	Person	50.71	380.33			0.00	
	8.3	0	Person	52.03	390.23			0.00	
	8.4	0	Person	53.35	400.13			0.00	
	8.5	0	Person	54.67	410.03			0.00	
Staff-9	9.1	0	Person	59.95	449.63			0.00	
Starr-9	9.1				459.53				
		0	Person	61.27				0.00	l
	0.0				120.10				
	9.3	- 0	Person	62.59	469.43			0.00	
	9.3 9.4	0	Person	63.91	469.43 479.33			0.00	
	9.3		Person		469.43			0.00	
Sub-total	9.3 9.4	0	Person	63.91 65.23	469.43 479.33 489.23	31.00		0.00	
	9.3 9.4	0	Person	63.91 65.23	469.43 479.33	31.00	S/km	0.00	
	9.3 9.4	0	Person	63.91 65.23	469.43 479.33 489.23	31.00	\$/km 4.2716	0.00	about 60PS) x 1hr=11liter
Consumable	9.3 9.4 9.5	0	Person Person	63.91 65.23 \$ Per Liter	469.43 479.33 489.23 L/km	31.00		0.00 0.00 3.897.60	11liter/hrs (fuel consumptio about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50
Consumable Diesel	9.3 9.4 9.5 For Excavator	0	Person Person Liter	63.91 65.23 \$ Per Liter 11.80	469.43 479.33 489.23 L/km 0.3620		4.2716	0.00 0.00 3.897.60 0.00	11liter/hrs (fuel consumptio about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50 50km/7km/liter=7.14liter/50 100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter
Consumable Diesel Diesel	9.3 9.4 9.5 For Excavator	0 0 32	Person Person Liter Liter	63.91 65.23 \$ Per Liter 11.80	469.43 479.33 489.23 L/km 0.3620 0.1428		4.2716 1.68504	0.00 3.897.60 0.00 53.92	11liter/hrs (fuel consumption bound 60PS) 18 hrs 11liter 11liter +7.1liter=18.1liter/51 11liter+7.1liter=18.1liter/55 50km/7km/liter=7.14liter/55 50km/7km/liter=7.14liter/55 100km x 252days=25,200km 10,000km x 8liter=20.16liter 252days=0.08liter/day/50kx 100km x 252days=25,200km x 10,000km x 8liter=20.16liter x 252days=0.16liter x 252days=0.16l
Consumable Diesel Diesel Engine Oil	9.3 9.4 9.5 For Excavator For Pick-up	0 0 32	Person Person Liter Liter Liter	63.91 65.23 S Per Liter 11.80 11.80	469.43 479.33 489.23 L/km 0.3620 0.1428		4.2716 1.68504 0.096	0.00 0.00 3.897.60 0.00 53.92	11liter/hrs (fuel consumption about 60PS) x 1hrs 11liter 11liter +7.1liter=18.1liter/s 11liter +7.1liter=18.1liter/s 11liter/s 11liter/s 150km/km/liter=7.14liter/s 100km x 252days=25.200km/10,000km x 100km x 252days=0.5liter/d 20.16liter/s 25.200km/10,000km x 10.1liter/s 25.200km/10,000km x 10.1liter/s 25.16liter/s 20.16liter/s 25.16liter/s
Diesel Diesel Diesel Engine Oil Engine Oil	9.3 9.4 9.5 For Excavator For Pick-up	0 0 32	Person Person Liter Liter Liter	63.91 65.23 \$ Per Liter 11.80 11.80 60.00	469.43 479.33 489.23 L/km 0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.00 0.00 3.897.60 0.00 53.92 0.00	Illier hrs. (fuel consumpts) about 60%); In Fall liter 1111ter 7,111ter 18,111ter 5, 111ter 18,11ter 5 50km/Namliter 7,1 41ter 5, 50km/Namliter 7, 141ter 5, 50km/Namliter 7, 141ter 5, 50km/Namliter 7, 141ter 5, 50km/Namliter 7,
Diesel Diesel Diesel Engine Oil Engine Oil Tites	9.3 9.4 9.5 For Excavator For Pick-up	0 0 32	Person Person Liter Liter Liter	63.91 65.23 \$ Per Liter 11.80 11.80 60.00	469.43 479.33 489.23 L/km 0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.00 0.00 3.897.60 0.00 53.92	Illier hrs. (fuel consumpts) about 60%); In Fall liter 1111ter 7,111ter 18,111ter 5, 111ter 18,11ter 5 50km/Namliter 7,1 41ter 5, 50km/Namliter 7, 141ter 5, 50km/Namliter 7, 141ter 5, 50km/Namliter 7, 141ter 5, 50km/Namliter 7,
Consumable Diesel Diesel Engine Oil Engine Oil Tires Sub-total Material &	9.3 9.4 9.5 For Excavator For Pick-up For Pick-up	0 0 32	Person Person Liter Liter Liter Nos	63.91 65.23 \$ Per Liter 11.80 11.80 60.00	469.43 479.33 489.23 L/km 0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.00 0.00 3.897.60 0.00 53.92 0.00	Illier hrs. (feel consumption boots of 69%) a Hrs.—Illier 1111ter + 7.11ter
Consumable Diesel Diesel Engine Oil Engine Oil Tires Sub-total Material & Sub-cotal	9.3 9.4 9.5 For Excavator For Pick-up For Pick-up	0 0 32	Person Person Liter Liter Liter Liter	63.91 65.23 \$ Per Liter 11.80 11.80 60.00	469.43 479.33 489.23 L/km 0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.00 0.00 3.897.60 0.00 53.92 0.00	Illiter hrs. (fuel consumption boots of 69%) s. Hrs.—Illiter 7.1. Illiter 5.50km 7.km illiter 7.1. Illiter 5.50km 7.km illiter 7.1. Illiter 5.50km 1.0.00km x. 252.days-25.20km 2.0.00km x. 252.days-25.days-2
Consumable Diesel Diesel Engine Oil Engine Oil Engine Oil Sub-steld Material & Sub-steld Material & Sub-steld	9.3 9.4 9.5 For Excavator For Pick-up For Pick-up Z5mm 40mm	0 0 32	Person Liter Liter Liter Nos	63.91 65.23 \$ Per Liter 11.80 11.80 60.00	469.43 479.33 489.23 L/km 0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.00 0.00 3,897,60 0.00 53,92 0.00 3.07	Illiter hrs. (fuel consumption in the Consumption of the Consumption of Consumpti
Diesel Diesel Diesel Engine Oil Engine Oil Tires Sub-total Material & Sub-total Sub-coll Valve Slike Gate Valve Slike Gate Valve	9.3 9.4 9.5 For Excavator For Pick-up For Pick-up 25mm 40mm 50mm	0 0 32	Person Person Liter Liter Liter Liter piece piece piece piece	63.91 65.23 \$ Per Liter 11.80 11.80 60.00	469.43 479.33 489.23 L/km 0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.00 0.00 3.897.60 0.00 53.92 0.00 0.00 0.00 0.00	Illiter hrs. (fuel consumpts) about 66953, 146 m-1 lliter 111liter 7, 11liter 18, 11liter 50km/Ram liter 9, 14liter 50 50km/Ram liter 9, 15liter 10 50km/Ram liter 10 50k
Diesel Diesel Diesel Engine Oil Engine Oil Abhotel Material E. Stab-botel	9.3 9.4 9.5 For Excavator For Pick-up For Pick-up Z5mm 40mm	0 0 32	Person Liter Liter Liter Nos	63.91 65.23 \$ Per Liter 11.80 11.80 60.00	469.43 479.33 489.23 L/km 0.3620 0.1428 0.0016		4.2716 1.68504 0.096	0.00 0.00 3,897,60 0.00 53,92 0.00 0.00 0.00 0.00 0.00	Illiter Ins. (fuel consumption about 60%) in File Illiter 7-1 Illiter 7-1 Illiter 7-1 Illiter 7-1 Illiter 7-1 Illiter 5-1 Illi

Items	Specification	Quantity	Unit	Hourly Rate	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Sluice/ Gate Valve	150mm		piece	Rate	(300)		(35D)		Sluice Valve
Sluice/ Gate Valve	200mm		piece					0.00	Sluice Valve
Sluice/ Gate Valve	250mm		piece						Sluice Valve225mm AUD1785
Sluice/ Gate Valve	300mm		piece					0.00	
Pipes (Poly)	15mm		coil					0.00	Length on 1 coil =300m
Pipes (Poly)	20mm		coil					0.00	Length on 1 coil =300m
Pipes (Poly)	25mm		coil						Length on 1 coil =200m
Pipes (Poly)	50mm		coil					0.00	Length on 1 coil =150m
Pipes (PVC)	25mm		piece					0.00	
Pipes (PVC)	50mm		piece					0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece					0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece					0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece					0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
All Materials for rou	tine activites							0.00	
Sub-total								0.00	
Total								3,954.59	

Total			ł	ł		
1AUD=6 534SBD w	as applied to the	above (rate	as of 30 S	entember 20	113 of Oanda)

	Before Countermeasure	armeasure	After Countermeasure	neasure	
	Before Countermeasure	Countermeasure	After Countermeasure	Routine Activities Total	Total
Personnel Cost	56,271.53	153,338.54	21,147.98	8,282.40	239,040,44
Consumable	3,522.51	8,890.38	564.23	125.39	23 102.51
Material and Equipment	11,569.20	402,188.93	1,630.16	00:00	415,388.29
Sub Total	71,363.23	564,417.85	23,342.37	8,407.79	677,531.24
TOTAL	635,781.08	90'	31,750.15	2	

ocation	Tasahe A&B								per d
Items	Specification	Quantity	Unit	Hourly Rate	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Personnel	Grades- Steps								
Staff-3	3.1	4	Person	15.85	118.88	3.00		356.63	
	3.2	0	Person	16.37	122.78			0.00	
	3.3	0	Person	16.90	126.75			0.00	
	3.4	0	Person	17.43	130.73			0.00	
	3.5	0	Person	17.96	134.70			0.00	
Staff-4	4.1	38	Person	19.81	148.58	160.00		23,772.00	L
	4.2	16		20.60	154.50	64.00		9,888.00	
	4.3	0	Person	21.39	160.43			0.00	
	4.4	0		22.18	166.35			0.00	
Staff-5	4.5	6	Person	22.98	172.35	13.00		2,240.55	
Staff-5		6		25.88		13.00			
	5.2	0	Person		194.10			0.00	
	5.3	0	Person	26.94 27.99	202.05			0.00	
	5.5	0		29.05	217.88	0.00		0.00	
Staff-6	6.1	1	Person	32.48	243.60	3.00		730.80	
Statt-0	6.2	1	Person	33.81	253.58	1.00		253.58	
	6.3	0		35.13	263.48	1.00		0.00	
	6.4	0		36.45	273.38			0.00	
	6.5	0		37.77	283.28			0.00	
Staff-7	7.1	4	Person Person	39.62	297.15	8.00		2,377.20	
Dian's	7.2	0	Person	40.94	307.05	0.00		0.00	
	7.3	0	Person	42.26	316.95			0.00	
	7.4	0	Person	43.58	326.85			0.00	
	7.5	0	Person	44.90	336.75	0.00		0.00	
Staff-8	8.1	0		49.39	370.43	0.00		0.00	
Dian'-0	8.2	0		50.71	380.33			0.00	
	8.3	0		52.03	390.23			0.00	
	8.4	0	Person	53.35	400.13			0.00	
	8.5	6	Person	54.67	410.03	29.00		11,890.73	
Staff-9	9.1	2	Person	59.95	449.63	6.00		2,697.75	
	9.2	0	Person	61.27	459.53			0.00	
	9.3	0	Person	62.59	469.43			0.00	·
	9.4	0	Person	63.91	479.33			0.00	
	9.5	0		65.23	489.23			0.00	
Sub-total						300.00		56,271.53	
Consumable				\$ Per Liter	L/km		\$/km		I
Diesel	For Excavator	281.6	Liter	11.80	0.3620		4.2716	1,202.88	50km/7km/liter=7.14liter 11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km
Diesel	For Pick-up	1302.4	Liter	11.80	0.1428	185.9827	1.68504	2,194.60	50km/7km/liter=7.14liter/50
Engine Oil	For Excavator	0	Liter	60.00	0.0016		0.096	0.00	100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km
Engine Oil	For Pick-up	1302.4	Liter	60.00	0.0016		0.096	125.03	100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km
Tires		0	Nos	770.00	0.0014		1.078	0.00	50km x 252days=12,600km 12,600km/30,000km x 4nos=1.68nos 1.68nos/ 252days=0.07nos/50km
		-		-				3,522,51	
Cub total		-						3,344.31	
Sub-total Material &									
Material &	25mm	 	niece						
Material & Sluice/ Gate Valve	25mm 40mm		piece						Gate Valve
Material & Sluice/ Gate Valve Sluice/ Gate Valve	40mm		piece					0.00	Gate Valve
Material & Sluice/ Gate Valve								0.00	

Items	Specification	Quantity	Unit	Hourly Rate	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Sluice/ Gate Valve	150mm		piece		(0.0.0.)		.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	0.00	Sluice Valve
Sluice/ Gate Valve	200mm		piece			1		0.00	Sluice Valve
Sluice/ Gate Valve	250mm		piece					0.00	Sluice Valve225mm AUD1785
Sluice/ Gate Valve	300mm		piece			1 1		0.00	
Pipes (Poly)	15mm		coil					0.00	Length on 1 coil =300m
Pipes (Poly)	20mm	1	coil			1		0.00	Length on 1 coil =300m
Pipes (Poly)	25mm	1	coil			1 1		0.00	Length on 1 coil =200m
Pipes (Poly)	50mm		coil			1 1		0.00	Length on 1 coil =150m
Pipes (PVC)	25mm		piece					0.00	
Pipes (PVC)	50mm		piece			1		0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece			1 1		0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece			1		0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece			1 1		0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
All Materials for Bef	ore Countermeas	ures						11,569.20	
Sub-total								11,569.20	
Total								71,363.23	
1AUD=6.534SBD w	as applied to the	above (rate	as of 30 S	eptember, 2	013 of Oand	a).			

2. Costing Countermeasure

									per da
Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
I. Personnel	Grades- Steps			Rate (SBD)	(SBD)		(SBD)	(SBD)	
Staff-3	3.1	0	Person	15.85	118.88				
	3.2	0	Person	16.37	122.78				
	3.3	0	Person	16.90	126.75				
	3.4	0	Person	17.43	130.73				
	3.5	0	Person	17.96	134.70				
Staff-4	4.1	17	Person	19.81	148.58	280.00		41,601.00	
	4.2	8	Person	20.60	154.50	139.00		21,475.50	
	4.3	0	Person	21.39	160.43			0.00	
	4.4	0	Person	22.18	166.35			0.00	
	4.5	7	Person	22.98	172.35	137.00		23,611.95	
Staff-5	5.1	1	Person	24.83	186.23	2.00		372.45	
	5.2	0	Person	25.88	194.10			0.00	
	5.3	0	Person	26.94	202.05			0.00	
	5.4	0	Person	27.99	209.93			0.00	
	5.5	- 1	Person	29.05	217.88	5.00		1,089.38	
Staff-6	6.1	- 1	Person	32.48	243.60	1.00		243.60	
	6.2	0	Person	33.81	253.58			0.00	
	6.3	0	Person	35.13	263.48			0.00	
	6.4	0	Person	36.45	273.38			0.00	
D- 07.7	6.5 7.1	0	Person	37.77 39.62	283.28 297.15	2.00		0.00 594.30	
Staff-7			Person	39.62 40.94		2.00			
	7.2	0	Person	40.94	307.05 316.95			0.00	
			Person	42.26	316.95			0.00	
	7.4	0	Person	43.58	326.85			0.00	
Staff-8	7.5 8.1	0	Person Person	44.90	336.75			0.00	
Statt-8	8.2	0	Person	50.71	380.33			0.00	
	8.3	0	Person	52.03	390.23			0.00	
	8.4	0	Person	53.35	400.13			0.00	
	8.5	2	Person	54.67	410.03	10.00		4,100.25	
Staff-9	9.1	0	Person	59.95	449.63	10.00		4,100.25	
Statt-9	9.1	0	Person	61.27	459.53			0.00	
	93	0	Person	62.59	469.43			0.00	
	9.4	0	Person	63.91	479.33			0.00	
	9.5	0	Person	65.23	489.23			0.00	
Contractors		Contractors	1 (130)11	00.20	407.20			20.250.11	
	/ chamber contra							40,000.00	
1.6	Ciminoci comin	CEURA						0.00	
Sub-total						576.00		153,338.54	
. Consumable				\$ Per Liter	L/km		S/km		
Diesel	For Excavator	140.8	Liter	11.80	0.3620		4.2716	601.44	50km/7km/liter=7.14liter 11liter/hrs (fuel consumption for about 60PS) x 1hr=11lite 11liter +7.1liter=18.1liter/50km
Diesel	For Pick-up	4646.4	Liter	11.80	0.1428	663.5059	1.68504	7,829.37	50km/7km/liter=7.14liter/50 m
Engine Oil	For Excavator	140.8	Liter	60.00	0.0016		0.096	13.52	100km x 252days=25,200ks 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50kr
Engine Oil	For Pick-up	4646.4	Liter	60.00	0.0016		0.096	446.05	100km x 252days=25,200ks 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50kr

Items	Specification	Quantity	Unit	Hourly Rate (SBD)	(SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Tires		0	Nos	770.00			1.078		50km x 252days=12,600km 12,600km/30,000km x 4nos=1.68nos 1.68nos/
					0.0014				252days=0.07nos/50km
Sub-total								8,890,38	
3. Material & Equipment									
Shrice/ Gate Valve	25mm		piece					0.00	Gate Valve
Sluice/ Gate Valve	40mm	1	piece			1	T I	0.00	Gate Valve
Sluice/ Gate Valve	50mm	1	piece			1	T I	0.00	Gate Valve
Sluice/ Gate Valve	80mm		piece					0.00	Sluice Valve
Shrice/ Gate Valve	100mm		piece			1	T I		Sluice Valve
Sluice/ Gate Valve	150mm		piece					0.00	Sluice Valve
Sluice/ Gate Valve	200mm		piece			1	ı	0.00	Sluice Valve
Sluice/ Gate Valve	250mm		piece					0.00	Sluice Valve225mm AUD1785
Sluice/ Gate Valve	300mm		piece			1	1	0.00	
Pipes (Poly)	15mm		coil						Length on 1 coil =300m
Pipes (Poly)	20mm	1	coil			1	T I		Length on 1 coil =300m
Pipes (Poly)	25mm	1	coil			1	T I		Length on 1 coil =200m
Pipes (Poly)	50mm		coil			1	T I		Length on 1 coil =150m
Pipes (PVC)	25mm		piece					0.00	
Pipes (PVC)	50mm		piece			1		0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece			1		0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece			1		0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece			1		0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
All Materials for Counte	rmeasures							206,548.93	
PRV Set								115,640.00	
PRV Chamber								80,000.00	
Sub-total								402,188.93	
Total								564,417,85	

3. Costing After Countermeasure

Location	Tasahe A&B	3.	Costin	g After	Count	ermeası	ire		
Items	Specification	Quantity	Unit	Hourly Rate	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	per day Reamarks
1. Personnel	Grades- Steps								
Staff-3	3.1	0	Person	15.85	118.88				
	3.2	- 0	Person	16.37	122.78				
	3.3	0	Person Person	16.90	126.75 130.73				
	3.5	0	Person	17.45	134.70				
Staff-4	4.1	12	Person	19.81	148.58			7,428.75	
	4.2	5	Person	20.60	154.50	21.00		3,244.50	
	4.3	0	Person	21.39	160.43			0.00	
	4.4	- 0	Person	22.18	166.35			0.00	
	4.5	3	Person		172.35	13.00		2,240.55	<u> </u>
Staff-5	5.1 5.2	2	Person	24.83	186.23	8.00		1,489.80	
	5.2	0	Person	25.88	194.10 202.05			0.00	
	5.4	0	Person Person	27.99	202.03			0.00	
	5.5	0	Person	29.05	217.88	0.00		0.00	
Staff-6	6.1	0	Person	32.48	243.60			0.00	
	6.2	0		33.81	253.58			0.00	
	6.3	. 0	Person	35.13	263.48			0.00	
	6.4	0	Person	36.45	273.38			0.00	
	6.5	0	Person	37.77	283.28			0.00	
Staff-7	7.1	0	Person	39.62	297.15	0.00		0.00	
	7.2 7.3	0	Person	40.94 42.26	307.05 316.95			0.00	
	7.4	0	Person Person	42.26	316.95			0.00	
	7.5	0	Person	43.38	320.83			0.00	
Staff-8	8.1	0	Person	49.39	370.43			0.00	
	8.2	0	Person	50.71	380.33			0.00	
	8.3	0	Person	52.03	390.23			0.00	
	8.4	0	Person	53.35	400.13			0.00	
	8.5	0	Person	54.67	410.03			0.00	
Staff-9	9.1	1	Person	59.95	449.63	15.00		6,744.38	
	9.2	0	Person	61.27	459.53 469.43			0.00	
	9.3	0	Person Person	63.91	469.43			0.00	
	9.5	0	Person	65.23	489.23			0.00	
Sub-total		<u>-</u>	Terson	00.20	407.23	107.00		21,147.98	
2. Consumable				S Per Liter	L/km		\$/km		
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	50km/7km/liter=7.14liter 11liter/hrs (fuel consumption for about 60PS) x lhr=11liter 50km/shmmer=7.14mer/3
Diesel	For Pick-up	316.8	Liter	11.80	0.1428	45.2390	1.68504	533.82	
Engine Oil	For Excavator	0	Liter	60.00	0.0016		0.096	0.00	100km x 252days=25,200km 25,200km/ 10,000km x 8liter=20.16liter 20.16liter/
Engine Oil	For Pick-up	316.8	Liter	60.00	0.0016		0.096	30.41	100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 50km x 252days=12,600km
Tires		0	Nos	770.00	0.0014		1.078	0.00	12,600km/30,000km x 4nos=1.68nos 1.68nos/ 252davs=0.07nos/50km
Sub-total								564.23	
3. Material &									
Sluice/ Gate Valve	25mm		piece						Gate Valve
Sluice/ Gate Valve	40mm		piece			1			Gate Valve
Sluice/ Gate Valve	50mm	<u> </u>	piece	ļ					Gate Valve
Sluice/ Gate Valve	80mm		piece						Sluice Valve
Sluice/ Gate Valve	100mm		piece						Sluice Valve
Sluice/ Gate Valve Sluice/ Gate Valve	150mm 200mm		piece			-			Sluice Valve Sluice Valve
Sluice/ Gate Valve Sluice/ Gate Valve	200mm 250mm		piece piece						Sluice Valve Sluice Valve225mm
Sluice/ Gate Valve	300mm		piece	 		1		0.00	Stute varve223mm
Pipes (Poly)	15mm		coil	 					Length on 1 coil =300m
Pipes (Poly)	20mm		coil			1			Length on 1 coil =300m
Pipes (Poly)	25mm		coil			1			Length on 1 coil =200m

Items	Specification	Quantity	Unit	Hourly Rate	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Pipes (Poly)	50mm		coil					0.00	Length on 1 coil =150m
Pipes (PVC)	25mm		piece					0.00	
Pipes (PVC)	50mm		piece	T		1		0.00	
Pipes (PVC)	80mm		piece	l				0.00	
Pipes (PVC)	100mm		piece			1		0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece	T		1 1		0.00	
Pipes (PVC)	250mm		piece	l				0.00	
Pipes (PVC)	300mm		piece			1		0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece	1				0.00	
Water Meter	20mm		piece	l				0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
All Materials for Af	ter Countermeasu	res						1,630.16	
Sub-total								1,630.16	
Total	T							23,342.37	

4. Routine Activities

Tasahe A&B

Location	Tasahe A&B								per d
Items	Specification	Quantity	Unit	Hourly Rate	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
1. Personnel	Grades- Steps								
Staff-3	3.1	1	Person	15.85 16.37	118.88 122.78	20.00		2,377.50 0.00	
	3.3	0	Person Person	16.90	126.75			0.00	
	3.4	0	Person	17.43	130.73			0.00	
	3.5	0	Person	17.96	134.70			0.00	
Staff-4	4.1	0	Person	19.81	148.58			0.00	
	4.2	0	Person	20.60	154.50			0.00	
	4.3	. 0	Person	21.39	160.43			0.00	
	4.4	0	Person	22.18	166.35			0.00	
Staff-5	4.5 5.1	0	Person Person	22.98 24.83	172.35 186.23			0.00	
Stati-5	5.1	0	Person	25.88	194.10			0.00	
	5.3	0	Person	26.94	202.05			0.00	
	5.4	0	Person	27.99	209.93			0.00	
	5.5	0	Person	29.05	217.88			0.00	
Staff-6	6.1	2	Person	32.48	243.60	34.00		8,282.40	
	6.2	0	Person	33.81	253.58			0.00	
	6.3	0	Person	35.13	263.48			0.00	
	6.4	0	Person	36.45	273.38			0.00	
Pr- 65 7	6.5	. 0	Person	37.77	283.28			0.00	
Staff-7	7.1	. 0	Person Person	39.62 40.94	297.15 307.05			0.00	
	7.3	0	Person	42.26	316.95		<u> </u>	0.00	
	7.4	0	Person	43.58	326.85			0.00	
	7.5	0	Person	44.90	336.75			0.00	
Staff-8	8.1	0	Person	49.39	370.43			0.00	
	8.2	0	Person	50.71	380.33			0.00	
	8.3	0	Person	52.03	390.23			0.00	
	8.4	0	Person	53.35	400.13			0.00	
	8.5	0	Person	54.67	410.03			0.00	
Staff-9	9.1	0	Person	59.95	449.63			0.00	
	9.2	0	Person Person	61.27	459.53 469.43			0.00	
	9.3	0	Person	63.91	479.33			0.00	
	9.5	0	Person	65.23	489.23			0.00	
Sub-total	/		1 (13011	00.20	407.23	54.00		8,282.40	
2. Consumable	1			S Per Liter	L/km		S/km		JOKHE 7 KHE INCL. 27.14
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	er 11liter/hrs (fuel consumption for abou 60PS) x 1hr=11liter
	-								
Diesel	For Pick-up	70.4	Liter	11.80			1.68504	110.63	+7.1liter=18.1liter/50 50km/7km/liter=7.14
Diesel	For Pick-up	70.4	Liter	11.80	0.1428	10.0531	1.68504	110.63	+7.1liter=18.1liter/50
Diesel Engine Oil	For Pick-up For Excavator	70.4	Liter	11.80	0.1428	10.0531	1.68504 0.096	0.00	+7.1liter=18.1liter/50 50km/7km/liter=7.14 er/50km 100km x 252days=25,200km 25,200km/10,000km 8liter=20.16liter 20.16liter
						10.0531		0.00	+7.1liter=18.1liter/50 50km/7km/liter=7.14 ev/50km 100km x 25.200km/10,000kn 25.200km/10,000kn 81iter=20.16liter 20.16liter 20.252days=25.200km 100km x 1252days=25.200km 100km x 1252days=25.200km 100km x 1252days=25.200km
Engine Oil	For Excavator	0	Liter	60.00	0.0016	10.0531	0.096	118.63 0.00	4-7.1liter=18.1liter/50 50km/7km/liter=7.14 er/50km 100km x 252days=25,200km 25,200km/10,000km 8liter=20.16liter 252days=0.08liter/da 0km 100km x 252days=25,200km 252days=25,200km 252days=25,200km 25,200km/10,000km 25,200km/10,000km 25,200km/10,000km 25,200km/10,000km 20.16liter/ 20.16

Items	Specification	Quantity	Unit	Rate	(SBD)	Total Days	(SBD)	(SBD)	Reamarks	Stuice/ Gate vary		piece				0.00
Personnel	Grades- Steps			Rate	(SBD)		(300)	(SBD)		Sluice/ Gate Vals		piece				0.00
Staff-3	3.1		Person	15.85	118.88	20.00		2,377.50		Sluice/ Gate Valv		piece				0.00
Juni-J	3.2	- 0	Person	16.37	122.78			0.00		Sluice/ Gate Valv		piece			 	0.00
	3.3		Person	16.90	126.75			0.00		Sluice/ Gate Vals		piece				0.00
	3.4		Person	17.43	130.73			0.00		Sluice/ Gate Vals	e 200mm	piece				0.00
	3.5	0	Person	17.96	134.70			0.00		Sluice/ Gate Valv	e 250mm	piece				0.00
Staff-4	4.1	0	Person	19.81	148.58			0.00		Sluice/ Gate Valv	e 300mm	piece				0.00
	4.2	0	Person	20.60	154.50			0.00		Pipes (Poly)	15mm	coil				0.00
	4.3	0	Person	21.39	160.43			0.00		Pipes (Poly)	20mm	coil				0.00
	4.4	0	Person	22.18	166.35			0.00		Pipes (Poly)	25mm	coil				0.00
	4.5	0	Person	22.98	172.35			0.00		Pipes (Poly)	50mm	coil				0.00
Staff-5	5.1	0	Person	24.83	186.23			0.00		Pipes (PVC)	25mm	piece				0.00
	5.2	0	Person	25.88	194.10			0.00		Pipes (PVC)	50mm	piece				0.00
	5.3	0	Person	26.94	202.05			0.00		Pipes (PVC)	80mm	piece				0.00
	5.4	0	Person	27.99	209.93			0.00		Pipes (PVC)	100mm	piece				0.00
	5.5	0	Person	29.05	217.88			0.00		Pipes (PVC)	150mm	piece				0.00
Staff-6	6.1		Person	32.48	243.60	34.00		8,282.40		Pipes (PVC)	200mm	piece				0.00
	6.2	0	Person	33.81	253.58			0.00		Pipes (PVC)	250mm	piece				0.00
	6.3	0	Person	35.13	263.48			0.00		Pipes (PVC)	300mm	piece				0.00
	6.4	0	Person	36.45	273.38			0.00		Water Meter	10mm	piece				0.00
	6.5	0	Person	37.77	283.28	1		0.00		Water Meter	16mm	piece			 	0.00
Staff-7	7.1	0	Person	39.62	297.15	I		0.00		Water Meter	20mm	piece				0.00
	7.2	0	Person	40.94	307.05	Ι		0.00		Water Meter	25mm	piece				0.00
	7.3	0	Person	42.26	316.95			0.00		Water Meter	32mm	piece			 	0.00
	7.4	0	Person	43.58	326.85	1		0.00		Water Meter	40mm	piece			 	0.00
	7.5	0	Person	44.90	336.75			0.00		All Materials for		- Piece			 	0.00
Staff-8	8.1	0	Person	49.39	370.43	Ι		0.00		Sub-total	Outline sicurines					0.00
	8.2	0	Person	50.71	380.33	I		0.00		Total					 	8,407.79
	8.3	0	Person	52.03	390.23	i		0.00			was applied to the abo	ove (rate as of 30 Sent	ember 201	R of Oanda)		0,407.77
	8.4	0	Person	53.35	400.13	i		0.00		1700-0334001	was applied to the ao	ove (rate as or 50 pep	LIIIOCI, 201.	or Gunday.		
	8.5	0	Person	54.67	410.03	Ι		0.00								
Staff-9	9.1	0	Person	59.95	449.63	i		0.00								
	9.2	0	Person	61.27	459,53			0.00								
	9.3	0	Person	62.59	469.43			0.00								
	9.4	0	Person	63.91	479.33			0.00								
	9.5	0	Person	65.23	489.23			0.00								
Sub-total						54.00		8,282,40								
Consumable				\$ Per Liter	L/km		S/km									
									ookhr7khrhier≐7.14hr* er							
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50k							
Diesel	For Pick-up	70.4	Liter	11.80			1.68504		50km/7km/liter=7.14lit er/50km							

1.	Costing	Before	Countermeasure

				Hourly	Unit Cost		Amount	Amount	per d
Items	Specification	Quantity	Unit	Rate	(SBD)	Total Days	(SBD)	(SBD)	Reamarks
. Personnel	Grades- Steps								
Staff-3	3.1	2	Person	15.85	118.88	4.00		475.50	
	3.2	- 0		16.37	122.78			0.00	
	3.3	- 0	Person	16.90	126.75			0.00	
	3.4	0	Person	17.43	130.73			0.00	
Staff-4	3.5	34	Person	17.96 19.81	134.70 148.58	108.00		0.00	
Starr-4	4.1	12	Person Person	20.60	154.50	38.00		5,871.00	
	4.2	12	Person	21.39	160,43	38.00		0.00	
	4.4	0	Person	22.18	166.35			0.00	
	4.5	2	Person	22.18	172.35	4.00		689.40	
Staff-5	5.1	8	Person	24.83	186.23	25.00		4,655.63	
	5.2	0	Person	25.88	194.10			0.00	
	5.3	0	Person	26.94	202.05			0.00	
	5.4	0	Person	27.99	209.93			0.00	
	5.5	- 0	Person	29.05	217.88	0.00		0.00	
Staff-6	6.1	- 1	Person	32.48	243.60	3.00		730.80	
	6.2	1	Person	33.81	253.58	1.00		253.58	
	6.3	- 0		35.13	263.48			0.00	
	6.4	. 0	Person	36.45	273.38			0.00	
	6.5	0	Person	37.77	283.28			0.00	
Staff-7	7.1		Person	39.62	297.15	6.00		1,782.90	
	7.2	0	Person	40.94	307.05			0.00	
	7.3	0	Person	42.26	316.95			0.00	
	7.4	0	Person Person	43.58	326.85 336.75	0.00		0.00	
Staff-8	8.1	- 0	Person	49.39	370,43	0.00		0.00	
Starr-8	8.2	0		50.71	380.33			0.00	
	8.3	0	Person	52.03	390.23			0.00	
	8.4	0		53.35	400.13			0.00	
	8.5	6		54.67	410.03	12.00		4,920.30	
Staff-9	9.1	1	Person	59.95	449.63	5.00		2.248.13	
Dian-7	9.2	0	Person	61.27	459.53	2.00		0.00	
	9.3	0		62.59	469.43			0.00	
	9.4	0	Person	63.91	479.33			0.00	
	9.5	0	Person	65.23	489.23			0.00	
Sub-total						206.00		37,197.83	
. Consumable				\$ Per Liter	L/km		\$/km		
Diesel	For Excavator	32	Liter	11.80	0.3620		4.2716	136.69	
Diesel	For Excavator For Pick-up	32 608	Liter Liter	11.80	0.3620	86.8224	4.2716 1.68504		11liter/hrs (fuel consumption for about 60PS) x 1hr=11lite 11liter
						86.8224			11liter/hrs (fuel consumptior for about 60PS) x lhr=11lite 11liter +7.1liter=18.1liter/50km 50km/7km/liter=7.14liter/50 100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter
Diesel	For Pick-up	608	Liter	11.80	0.1428	86.8224	1.68504	1,024.50	11liter/hrs (fuel consumption for about 60PS) x lhr=11lite 11liter +7.1liter=18.1liter/50km 50km/7km/liter=7.14liter/50 100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter
Diesel Engine Oil	For Pick-up For Excavator	608	Liter Liter	11.80	0.1428	86.8224	1.68504 0.096	1,024.50 3.07 58.37	Illiter/hrs (fuel consumption for about 60PS, 1 hrs 1 lite illiter for about 60PS, 1 hrs 1 lite illiter 50km 50km/km/liter=7.14liter=18.1liter/50km 50km/km/liter=7.14liter/50km 25_200km 100km x 25_200km 10,000km x 8liter=20_16liter 20_26liter 100km x 25_2days=25_200km 100km x 8liter=20_16liter x 8liter=20_16liter x 8liter=20_16liter x 8liter=20_16liter x 8liter=20_16liter x 100km x 10km x 10
Diesel Engine Oil Engine Oil Tires	For Pick-up For Excavator	608	Liter Liter	60.00	0.1428 0.0016	86.8224	0.096 0.096	1,024.50 3.07 58.37	IlliterIns, (tole consumption for about of 97s.) At Illiter 18, Illiter 50km 50km 7km filter 21, Illiter 50km 50km 7km filter 21, Illiter 50km 100km x 252days=25,200km 100km x 252days=12,200km
Diesel Engine Oil Engine Oil Tires	For Pick-up For Excavator	608	Liter Liter	60.00	0.1428 0.0016	86.8224	0.096 0.096	1,024.50 3.07 58.37	IlliterIns, (usle consumption for about 60°Fs, 14". Illiers 18, Illiers 50km 50°Km 71. Illiers 18, Illiers 50km 50°Km 71. Illiers 18, Illiers 50km 50°Km 72 Milliers 27, 41liers 50°Km 1000000000000000000000000000000000000
Diesel Engine Oil Engine Oil Tires Sub-total Material &	For Pick-up For Excavator For Pick-up	608	Liter Liter Liter	60.00	0.1428 0.0016	86.8224	0.096 0.096	1,024.50 3.07 58.37	IlliterIns, (usle consumption for about 60%) S. Illiter S. Illiter S0km 50km 72 hillier S. 25 00km 10,000km x 52 5,00km 10,000km x 10 5,20km 10,000km x 10 5,00km 10,00km 10,00km 10,00
Diesel Engine Oil Engine Oil Tires Sub-total Material & Slikee' Gate Valve	For Pick-up For Excavator For Pick-up	608	Liter Liter Nos	60.00	0.1428 0.0016	86.8224	0.096 0.096	1,024.50 3.07 58.37 0.00	IlliterIns, (sele consumption for about 60%) 5.1 Hiller 5.1 Hiter 50km 50km 71km liner 7.1 Hiller 1.5 Hiter 50km 50km 71km liner 7.1 Hiller 5.2 Hiller 50km 50km 71km liner 7.1 Hiller 5.2
Diesel Engine Oil Engine Oil Tires Sub-total Material &	For Pick-up For Excavator For Pick-up	608	Liter Liter Liter	60.00	0.1428 0.0016	86.8224	0.096 0.096	1,024.50 3.07 58.37 0.00 1,222.64 0.00 0.00	IlliterIns, (usle consumption for about 60%) S. Illiter S. Illiter S0km 50km 72 hillier S. 25 00km 10,000km x 52 5,00km 10,000km x 10 5,20km 10,000km x 10 5,00km 10,00km 10,00km 10,00

Items	Specification	Quantity	Unit	Hourly Rate	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SRD)	Reamarks
Sluice/ Gate Valve	100mm		piece	runc	(000)		(555)		Sluice Valve
Sluice/ Gate Valve	150mm		piece					0.00	Sluice Valve
Sluice/ Gate Valve	200mm		piece			1			Sluice Valve
Sluice/ Gate Valve	250mm		piece						Sluice Valve225mm AUD1785
Sluice/ Gate Valve	300mm		piece			1		0.00	
Pipes (Poly)	15mm		coil					0.00	Length on 1 coil =300m
Pipes (Poly)	20mm		coil			1			Length on 1 coil =300m
Pipes (Poly)	25mm		coil			1 1		0.00	Length on 1 coil =200m
Pipes (Poly)	50mm		coil			1		0.00	Length on 1 coil =150m
Pipes (PVC)	25mm		piece					0.00	
Pipes (PVC)	50mm		piece			1		0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece			1		0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece			1 1		0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece			1		0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
All Materials for Befor	re Countermeasu	ires						28,283.88	
Sub-total								28,283.88	
Total								66,704.34	

Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Sluice/ Gate Valve	25mm		piece						Gate Valve
Sluice/ Gate Valve	40mm		piece						Gate Valve
Sluice/ Gate Valve	50mm		piece						Gate Valve
Sluice/ Gate Valve	80mm		piece						Sluice Valve
Sluice/ Gate Valve	100mm		piece						Sluice Valve
Sluice/ Gate Valve	150mm		piece						Sluice Valve
Sluice/ Gate Valve	200mm		piece			1			Sluice Valve
Sluice/ Gate Valve	250mm		piece					0.00	Sluice Valve225mm AUI
Sluice/ Gate Valve	300mm		piece			1		0.00	
Pipes (Poly)	15mm		coil					0.00	Length on 1 coil =300m
Pipes (Poly)	20mm		coil			1		0.00	Length on 1 coil =300m
Pipes (Poly)	25mm		coil			1		0.00	Length on 1 coil =200m
Pipes (Poly)	50mm		coil			1		0.00	Length on 1 coil =150m
Pipes (PVC)	25mm		piece					0.00	
Pipes (PVC)	50mm		piece			1		0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece			1		0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece			1		0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece			1		0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
All Materials for Coun	termeasures							141,664.84	
Sub-total								141,664.84	
Total								233,549,75	

ocation	West Kola A		2. Cost	ing Cou	ınterme	easure			
ocation	West Rola A								per da
Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Personnel	Grades- Steps	0	_	15.85				0.00	
Staff-3	3.1	0	Person Person	16.37	118.88			0.00	
	3.2	0	Person	16.90	126.75			0.00	
	3.4	0	Person	17.43	120.73			0.00	
	3.4	0	Person	17.43	130.73			0.00	
Staff-4	4.1	20	Person	17.96	134.70	236.00		35,063.70	
Starr-4	4.1	20	Person	20.60	154.50	72.00		11.124.00	
	4.2	0	Person	21.39	154.50	72.00		0.00	
	4.4	0	Person	22.18	166.35			0.00	
	4.5	1	Person	22.98	172.35	2.00		344.70	
Staff-5	5.1	6	Person	24.83	186.23	70.00		13,035.75	
Statt-3	5.2	0	Person	25.88	194.10	70.00		0.00	
	5.3	0	Person	26.94	202.05			0.00	
	5.4	0	Person	27.99	202.03			0.00	
	5.5	0	Person	29.05	217.88	0.00		0.00	
Staff-6	6.1	0	Person	32.48	243.60	0.00		0.00	
Diani-0	6.2	0	Person	33.81	253.58	0.00		0.00	
	6.3	0	Person	35.13	263.48			0.00	
	6.4	0	Person	36.45	273.38			0.00	
	6.5	0	Person	37.77	283.28			0.00	
Staff-7	7.1	1	Person	39.62	297.15	2.00		594.30	
	7.2	0	Person	40.94	307.05			0.00	
	7.3	0	Person	42.26	316.95			0.00	
	7.4	0	Person	43.58	326.85			0.00	
	7.5	0	Person	44 90	336.75			0.00	
Staff-8	8.1	0	Person	49.39	370.43			0.00	
	8.2	0	Person	50.71	380.33			0.00	
	8.3	0	Person	52.03	390.23			0.00	
	8.4	0	Person	53.35	400.13			0.00	
	8.5	2	Person	54.67	410.03	7.00		2.870.18	
Staff-9	9.1	0	Person	59.95	449.63	1100		0.00	
	9.2	0	Person	61.27	459.53			0.00	
	9.3	0	Person	62.59	469,43			0.00	
	9.4	0	Person	63.91	479.33			0.00	
	9.5	0	Person	65.23	489.23			0.00	
Contractors								\$27,000.00	
Sub-total						389.00		90,032,63	
Consumable				S Per Liter	L/km		S/km		
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	50km/7km/liter=7.14liter 11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter
Diesel	For Pick-up	1040	Liter	11.80	0.1428	148.5120	1.68504	1,752.44	+7.1liter=18.1liter/50km 50km/7km/liter=7.14liter 0km
Engine Oil	For Excavator	0	Liter	60.00	0.0016		0.096	0.00	100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50 m
Engine Oil	For Pick-up	1040	Liter	60.00	0.0016		0.096	99.84	m 100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20,16liter/
	1			1					
Tires		0	Nos	770.00			1.078	0.00	252days=12,600km 12,600km/ 30,000km x

ocation	West Kola A	3. (cosung	Anter	counter	rmeasu	re		
Items	Specification	Quantity	Unit	Hourly Rate	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	per da Reamarks
Personnel	Grades- Steps								
Staff-3	3.1	0	Person	15.85	118.88				
	3.2	0	Person Person	16.37 16.90	122.78 126.75				
	3.3	0	Person	17.43	130.73				
	3.5	0	Person	17.96	134.70				
Staff-4	4.1	13	Person	19.81	148.58	52.00		7,725.90	
	4.2	5	Person	20.60	154.50	20.00		3,090.00	
	4.3	0	Person	21.39	160.43			0.00	
	4.4	- 0	Person	22.18	166.35			0.00	
	4.5	2	Person	22.98	172.35 186.23	8.00		1,378.80	
Staff-5	5.1	3	Person			12.00		2,234.70	
	5.2	0	Person	25.88	194.10			0.00	
	5.3	0	Person Person	26.94	202.05			0.00	
	5.5	0	Person	29.05	217.88	0.00		0.00	
Staff-6	6.1	0	Person	32.48	243.60	0.00		0.00	
	6.2	0	Person	33.81	253.58			0.00	
	6.3	0	Person	35.13	263.48			0.00	
	6.4	0	Person	36.45	273.38			0.00	
	6.5	0	Person	37.77	283.28			0.00	
Staff-7	7.1	2	Person	39.62	297.15	8.00		2,377.20	
	7.2	0	Person	40.94	307.05			0.00	
	7.3	0	Person	42.26	316.95			0.00	
	7.4	0	Person	43.58	326.85			0.00	
Staff-8	8.1	0	Person Person	49.39	336.75 370.43			0.00	
Statt-8	8.2	0	Person	50.71	380.33			0.00	
	8.3	0	Person	52.03	390.23			0.00	
	8.4	0	Person	53.35	400.13			0.00	
	8.5	2	Person	54.67	410.03	8.00		3,280.20	
Staff-9	9.1	1	Person	59.95	449.63	10.00		4,496.25	
	9.2	0	Person	61.27	459.53			0.00	
	9.3	0	Person	62.59	469.43			0.00	
	9.4	0	Person	63.91	479.33			0.00	
	9.5	- 0	Person	65.23	489.23			0.00	
Sub-total Consumable				S Per Liter	Y 0	118.00	\$/km	24,583.05	
Consumable	+			3 FCI LIICI	L/KIII		3/ KIII		50km/7km/liter=7.14l
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716		er 11liter/hrs (fuel consumption for abou 60PS) x 1hr=11liter
Diesel	For Pick-up	192	Liter	11.80	0.1428	27.4176	1.68504	323.53	11liter 50km/7km/liter=7.14l er/50km
Engine Oil	For Excavator	0	Liter	60.00	0.0016		0.096		252days=25,200km 25,200km/10,000km 8liter=20.16liter 20.16liter/ 252days=0.08liter/day 100km x
Engine Oil	For Pick-up	192	Liter	60.00	0.0016		0.096	18.43	100km x 252days=25,200km 25,200km/10,000km 8liter=20.16liter 20.16liter/ 252days=0.08liter/day 50km x
Tires		0	Nos	770.00	0.0014		1.078	0.00	50km x 252days=12,600km 12,600km/30,000km 4nos=1.68nos/
Sub-total	+							341.96	
Material &	+			 					
Sluice/ Gate Valve	25mm		piece	1				0.00	Gate Valve
Sluice/ Gate Valve	40mm		piece	-		1			Gate Valve
Sluice/ Gate Valve	50mm		piece	T		1			Gate Valve
Sluice/ Gate Valve	80mm		piece	Ι				0.00	Sluice Valve
				1		1	1	0.00	Sluice Valve
Sluice/ Gate Valve	100mm		piece						
Sluice/ Gate Valve Sluice/ Gate Valve Sluice/ Gate Valve	100mm 150mm 200mm		piece piece					0.00	Sluice Valve Sluice Valve

Items S _I	pecification	Quantity	Unit	Hourly Rate	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Sluice/ Gate Valve	250mm		piece					0.00	Sluice Valve225mm
									AUD1785
Sluice/ Gate Valve	300mm		piece					0.00	
Pipes (Poly)	15mm		coil						Length on 1 coil =30
Pipes (Poly)	20mm		coil						Length on 1 coil =30
Pipes (Poly)	25mm		coil					0.00	Length on 1 coil =20
Pipes (Poly)	50mm		coil						Length on 1 coil =15
Pipes (PVC)	25mm		piece					0.00	
Pipes (PVC)	50mm		piece			1 1		0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece]		0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece			1 !		0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece			1 1		0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
All Materials for After Co	untermeasure	28						0.00	
Sub-total								0.00	
Total								24,925.01	

Items	Specification	Quantity	Unit	Hourly Rate	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Sluice/ Gate Valve	50mm		piece						Gate Valve
Sluice/ Gate Valve	80mm		piece						Sluice Valve
Sluice/ Gate Valve	100mm		piece			l			Sluice Valve
Sluice/ Gate Valve	150mm		piece						Sluice Valve
Sluice/ Gate Valve	200mm		piece						Sluice Valve
Sluice/ Gate Valve	250mm		piece					0.00	Sluice Valve225mm AUD1785
Sluice/ Gate Valve	300mm		piece			1		0.00	
Pipes (Poly)	15mm		coil						Length on 1 coil =300m
Pipes (Poly)	20mm		coil						Length on 1 coil =300m
Pipes (Poly)	25mm		coil]		0.00	Length on 1 coil =200m
Pipes (Poly)	50mm		coil			1			Length on 1 coil =150m
Pipes (PVC)	25mm		piece]		0.00	
Pipes (PVC)	50mm		piece					0.00	
Pipes (PVC)	80mm		piece		l			0.00	
Pipes (PVC)	100mm		piece			1		0.00	
Pipes (PVC)	150mm		piece]		0.00	
Pipes (PVC)	200mm		piece					0.00	
Pipes (PVC)	250mm		piece		l			0.00	
Pipes (PVC)	300mm		piece			1		0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm	L	piece			L		0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
All Materials for rout	tine activites							0.00	
Sub-total	i				l			0.00	
Total								4,198.19	

Total

1AUD=6.534SBD was applied to the above (rate as of 30 September, 2013 of Oanda).

4. Routine Activities

									pe
Items	Specification	Quantity	Unit	Hourly Rate	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
. Personnel	Grades- Steps								
Staff-3	3.1	1	Person	15.85	118.88	20.00			
	3.2	0	Person	16.37	122.78				
	3.3	0	Person	16.90	126.75				
	3.4	0	Person	17.43	130.73				
	3.5	0	Person	17.96	134.70				
Staff-4	4.1	0		19.81	148.58			0.00	
	4.2	0		20.60	154.50			0.00	
	4.3	0	Person	21.39	160.43			0.00	
	4.4	0		22.18	166.35			0.00	
	4.5	0	Person	22.98	172.35			0.00	
Staff-5	5.1	0	Person	24.83	186.23			0.00	
	5.2	0	Person	25.88	194.10			0.00	
	5.3	0	Person	26.94	202.05			0.00	
	5.4	0	Person	27.99	209.93			0.00	
	5.5	0	Person	29.05	217.88			0.00	
Staff-6	6.1	2	Person	32.48	243.60	17.00		4,141.20	
	6.2	0	Person	33.81	253.58			0.00	
	6.3	0		35.13	263.48			0.00	
	6.4	0		36.45	273.38			0.00	
	6.5	0	Person	37.77	283.28			0.00	
Staff-7	7.1	0		39.62	297.15			0.00	
	7.2	0	Person	40.94	307.05			0.00	
	7.3	0	Person	42.26	316.95			0.00	
	7.4	0	Person	43.58	326.85			0.00	
	7.5	0	Person	44.90	336.75			0.00	
Staff-8	8.1	0	Person	49.39	370.43			0.00	
	8.2	0	Person	50.71	380.33			0.00	
	8.3	0	Person	52.03	390.23			0.00	
	8.4	0		53.35	400.13			0.00	
	8.5	0		54.67	410.03			0.00	
Staff-9	9.1	0	Person	59.95	449.63			0.00	
	9.2	0		61.27	459.53		l	0.00	
	9.3	0	Person	62.59	469.43			0.00	
	9.4	0	Person	63.91	479.33			0.00	
	9.5	0	Person	65.23	489.23			0.00	
				Ostano.	407.23				
Sub-total						37.00		4,141.20	
				\$ Per Liter		37.00	\$/km		
	For Excavator	0	Liter			37.00	\$/km 4.2716	4,141.20	11liter/hrs (fuel consum for about 60PS) x 1hr=1 11liter
Consumable				\$ Per Liter	L/km	37.00 4.5696		4,141.20	11liter/hrs (fuel consum for about 60PS) x 1hr=1 11liter +7.1liter=18.1liter/50km
Consumable Diesel	For Excavator	0	Liter	\$ Per Liter	L/km 0.3620		4.2716	4,141.20 0.00 53.92	11liter/hrs (fuel consum for about 60PS) x 1hr=1 11liter +7.1liter=18.1liter/50km 50km/7km/liter=7.14lite m 100km x 252days=25,2(25.200km/10.000km x 8liter=20.16liter
Consumable Diesel Diesel Engine Oil	For Excavator For Pick-up	32	Liter	\$ Per Liter 11.80 11.80	U/km 0.3620 0.1428		4.2716 1.68504	4,141.20 0.00 53.92	11literhrs (deal consum for about 60PS) x lhr=1 11liter +7.1liter=18.1liter/50km 50km/7km liter=7.14liter 100km x 252days=25,20 25.200km 10.000km x 8liter=20.16liter 20.16liter 100km x 252days=25,20 25.200km/10.000km x 8liter=20.10liter 8liter=20.16liter 8liter=20.16liter 8liter=20.16liter 9liter=10.16liter 9liter=10.16liter 9liter=10.16liter 9liter=10.16liter 9liter=10.16liter
Consumable Diesel Diesel Engine Oil	For Excavator For Pick-up For Excavator	32	Liter Liter	\$ Per Liter 11.80 11.80 60.00	0.3620 0.1428 0.0016		4.2716 1.68504 0.096	4,141.20 0.00 53.92 0.00	11liter/hrs (fue) consum for about 60F9; x lhr=11liter 11liter 50km/Tkm/liter=18.1liter/50km 50km/Tkm/liter=7.14liter m 100km x 252days=25,22 52,200km/10,000km x 8liter=20.16liter 252days=0.08liter/day/5 100km x 252days=25,20 8liter=20.16liter 252days-10,000km x 8liter=20.16liter 252days-0.08liter/day/5 100km x 252days=0.08liter/day/5
Diesel Diesel Engine Oil Engine Oil	For Excavator For Pick-up For Excavator	0 32 32	Liter Liter Liter	11.80 11.80 60.00	0.3620 0.1428 0.0016		4.2716 1.68504 0.096	4,141.20 0.00 53.92 0.00	11liter/hrs (fuel consum for about 60/95) x lhr=1 11liter 17.1liter=18.1liter/50km 50km/7km/liter=7.14liter 100km x 252days=25,20 150km x 252days=25,20 150km x 252days=25,20 100km x 252days=25,20 10
Diesel Diesel Diesel Engine Oil Engine Oil	For Excavator For Pick-up For Excavator	0 32 32	Liter Liter Liter	11.80 11.80 60.00	0.3620 0.1428 0.0016		4.2716 1.68504 0.096	4,141.20 0.00 53.92 0.00	11liter/hrs (fuel consum for about 60/95) x lhr=1 11liter 17.1liter=18.1liter/50km 50km/7km/liter=7.14liter 100km x 252days=25,20 150km x 252days=25,20 150km x 252days=25,20 100km x 252days=25,20 10
Consumable Diesel Diesel Engine Oil Engine Oil Tires Sub-total Material &	For Pick-up For Pick-up	0 32 32	Liter Liter Liter	11.80 11.80 60.00	0.3620 0.1428 0.0016		4.2716 1.68504 0.096	4,141.20 0.00 53.92 0.00 3.07	11liter/hrs (fuel consum for about 60PS) x lhr=1 11liter 11liter 150km/km/liter=7.14lite 50km/km/liter=7.14lite 100km x 252days=25,20 152days=0.08liter/day/5 100km x 252days=25,20 100km x 252days=0.08liter/day/5 100km x 252days=0.08liter/day/5 100km x 252days=0.08liter/day/5 100km x 252days=0.08liter/day/5 100km x 252days=0.08liter/day/5 10km/km/km/km/km/km/km/km/km/km/km/km/km/k
Diesel Diesel Diesel Engine Oil Engine Oil	For Excavator For Pick-up For Excavator	0 32 32	Liter Liter Liter	11.80 11.80 60.00	0.3620 0.1428 0.0016		4.2716 1.68504 0.096	4,141.20 0.00 53.92 0.00 3.07 0.00	+7.1 line=18.1 liner50km 50km/km/lite=7.14lite m 100km x 252days=25,20 25.200km/10,000km x Silate=20.1 filtier 25.2days=0.08literiday/5 100km x 252days=25,20 100km x 252days=25,20 25.200km/10,000km x Silate=20.1 filtier 25.2days=0.08literiday/5 50km x 252days=10,20 50km x 252days=10,20 100km x 252days=10,20 10km x 252days=10,20

	TOTAL COST FOR TASAHE C PILOT	ASAHE C PILOT			
	Before Countermeasure	rmeasure	After Countermeasure	measure	
	Before Countermeasure	Countermeasure	After Countermeasure	Routine Activities	Total
Personnel Cost	57,819.07	104,310.36	9,877.73	9,664.50	181,671.66
Consumable	1,557.12	2,030.39	124.67	01841	11,890.28
Material and Equipment	169,465.67	156,575.35	0000	00'0	326,041.02
Sub Total	228,841.86	262,916.10	10,002.40	9,842.60	519,602.96
TOTAL	491,757.96	96	19,845.00	00	
TOTAL MAN DAYS BEFORE COUNTERMEASURE FOR WEST KOLA	288.22				

Location	TASAHE
----------	--------

				Hourly	Unit Cost		Amount	Amount	per c
Items	Specification	Quantity	Unit	Rate	(SBD)	Total Days	(SBD)	(SBD)	Reamarks
Personnel	Grades- Steps								
Staff-3	3.1	- 1	Person	15.85	118.88	1.00		118.88	
	3.2	0	Person	16.37	122.78			0.00	
	3.3	0	Person	16.90	126.75			0.00	
	3.4	0	Person	17.43	130.73			0.00	
	3.5	0	Person	17.96	134.70			0.00	
Staff-4	4.1	23	Person	19.81	148.58	20.90		3,105.22	
	4.2	26	Person	20.60	154.50	28.16		4,350.72	
	4.3	0	Person	21.39	160.43			0.00	
	4.4	0	Person	22.18	166.35			0.00	
	4.5	9	Person	22.98	172.35	21.00		3,619,35	
Staff-5	5.1	5	Person	24.83	186.23	15.58		2,901.39	
	5.2	0	Person	25.88	194.10			0.00	
	5.3	0	Person	26.94	202.05			0.00	
	5.4	0	Person	27.99	209.93			0.00	
	5.5	6	Person	29.05	217.88	15.58		3,394.49	
Staff-6	6.1	2	Person	32.48	243.60	2.00		487.20	
Dilli-0	6.2	4	Person	33.81	253.58	3.58		908.64	
	6.3	0	Person	35.13	263.48	3.30		0.00	
	6.4	0	Person	36.45	273.38			0.00	
	6.5	0	Person	37.77	283.28			0.00	
Staff-7	7.1	7	Person	39.62	297.15	6.08		1,807.66	
Stati-/	7.1	0	Person	40.94	307.05	0.08		0.00	
	7.2	0	Person	42.26	316.95			0.00	
	7.4			43.58				0.00	
	7.4	0	Person Person	43.38	326.85 336.75	0.00		0.00	
0.000						0.00			
Staff-8	8.1	0	Person	49.39	370.43			0.00	
	8.2	0	Person	50.71	380.33			0.00	
	8.3	0	Person	52.03	390.23			0.00	
	8.4	- 0	Person	53.35	400.13			0.00	
	8.5	4	Person	54.67	410.03	3.08		1,264.24	
Staff-9	9.1		Person	59.95	449.63	3.25		1,461.28	
	9.2	0	Person	61.27	459.53			0.00	
	9.3	0	Person	62.59	469.43			0.00	
	9.4	0	Person	63.91	479.33			0.00	
	9.5	0	Person	65.23	489.23			0.00	
n-house Consultant				160.00	1,200.00	12.00		14,400.00	
or for Chamber const	ruction							20,000.00	
Sub-total						120.22		57,819.07	
Consumable	l			S Per Liter	L/km		\$/km	l	
Diesel	For Excavator	120	Liter	11.80	0.3620		4.2716	512.59	50km/7km/liter=7.14liter 11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km
Diesel	For Pick-up	580	Liter	11.80	0.1428	82.8240	1.68504	977.32	50km/7km/liter=7.14liter/50km
Engine Oil	For Excavator	120	Liter	60.00	0.0016		0.096	11.52	100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km
Engine Oil	For Pick-up	580	Liter	60.00	0.0016		0.096	55.68	100km x 252days=25,200km 25,200km/ 10,000km x 8liter=20.16liter
Tires		0	Nos	770.00	0.0014		1.078	0.00	50km x 252days=12,600km 12,600km/ 30,000km x 4nos=1.68 1.68nos/ 252days=0.07nos/50km
Sub total				-				1,557.12	
Sub-total								1,557.12	
Material & Sluice/ Gate Valve	25mm		-1					0.00	Gate Valve
			piece						
Sluice/ Gate Valve	40mm		piece						Gate Valve
Sluice/ Gate Valve	50mm		piece						Gate Valve
Sluice/ Gate Valve	80mm		piece						Sluice Valve
Sluice/ Gate Valve	100mm		piece						Sluice Valve
Sluice/ Gate Valve	150mm		piece						Sluice Valve
			piece	1		1		0.00	Sluice Valve
Sluice/ Gate Valve	200mm								
Sluice/ Gate Valve Sluice/ Gate Valve	250mm		piece					0.00	Sluice Valve225mm AUD1785
Sluice/ Gate Valve									

2. Costing Countermeasure

ocation	West Kola A		2. 00	oung C	ountern	icasui c			per da
Items	Specification	Quantity	Unit	Hourly Rate (SBD)	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
. Personnel	Grades- Steps			Kinc (DDD)	(SDD)		(DDD)	(SDD)	
Staff-3	3.1	0	Person	15.85	118.88			0.00	
	3.2	0	Person	16.37	122.78			0.00	
	3.3	0	Person	16.90	126.75			0.00	
	3.4	0	Person	17.43	130.73			0.00	
	3.5	0	Person	17.96	134.70			0.00	
Staff-4	4.1	2	Person	19.81	148.58	2.00		297.15	
3tan-+	4.2	7	Person	20.60	154.50	50.00		7,725.00	
	4.3	0	Person	21.39	160.43	30.00		0.00	
	4.4	0	Person	22.18	166.35			0.00	
	4.5	6	Person	22.18	172.35	49.00		8,445.15	
Staff-5	5.1	1	Person	24.83	172.33	3.00		558.68	
Statt-5					194.10	3.00			
	5.2	0	Person	25.88				0.00	
	5.3	0	Person	26.94	202.05			0.00	
	5.4	0	Person	27.99	209.93			0.00	
	5.5	0	Person	29.05	217.88	0.00		0.00	
Staff-6	6.1	- 1	Person	32.48	243.60	3.00		730.80	
	6.2	0	Person	33.81	253.58			0.00	
	6.3	0	Person	35.13	263.48			0.00	
	6.4	- 0	Person	36.45	273.38			0.00	
	6.5	0	Person	37.77	283.28			0.00	
Staff-7	7.1	- 1	Person	39.62	297.15	0.50		148.58	
	7.2	0	Person	40.94	307.05			0.00	
	7.3	0	Person	42.26	316.95			0.00	
	7.4	0	Person	43.58	326.85			0.00	
	7.5	0	Person	44.90	336.75			0.00	
Staff-8	8.1	0	Person	49.39	370.43			0.00	
	8.2	0	Person	50.71	380.33			0.00	
	8.3	0	Person	52.03	390.23			0.00	
	8.4	0	Person	53.35	400.13			0.00	
	8.5	1	Person	54.67	410.03	0.50		205.01	
Staff-9	9.1	0	Person	59.95	449.63	0.50		0.00	
Statt+9	9.2	0	Person	61.27	459.53			0.00	
	9.3	0	Person	62.59	469.43			0.00	
	9.4	0	Person	63.91	479.33			0.00	
	9.5	0	Person	65.23	489.23			0.00	
Inhouse consultant	7.3	- 0	reison	160.00	1,200.00	1.00		1,200.00	
	1			100.00	1,200.00	1.00		#######	
ntractors for meter raisin	ng							********	
6-1-1-1-1						108.00		104 310 36	
Sub-total Consumable				S Per Liter		108.00	\$/km	104,310.36	
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	50km/7km/liter=7.14liter 11liter/hrs (fuel consumption for about 60PS) x
Diesel	Eng Birds .	1140	Liter	11.80	0.1428	162.7920	1.68504	1.920.95	Jhr=1 Uiter
Diesel	For Pick-up	1140	Litter	11.80	0.1428	104.7920	1.08304	1,920.95	100km x
Engine Oil	For Excavator	0	Liter	60.00	0.0016		0.096	0.00	252days=25,200km 25,200km/10,000km x 8liter=20.16liter 20.16liter/ 100km x
Engine Oil	For Pick-up	1140	Liter	60.00	0.0016		0.096	109.44	252days=25,200km 25,200km/10,000km x 8liter=20.16liter/ 20.16liter/ 30km x 252days=12,600km
Tires		0	Nos	770.00	0.0014		1.078	0.00	50km x 252days=12,600km 12,600km/30,000km x 4nos=1.68nos 1.68nos/ 252days=0.07nos/50km
Sub-total								2,030,39	
				_				2,030.39	
Material & Equipment	25			-				0	C . 1/ 1
Sluice/ Gate Valve	25mm		piece						Gate Valve
Sluice/ Gate Valve	40mm		piece						Gate Valve
Sluice/ Gate Valve	50mm		piece						Gate Valve
Sluice/ Gate Valve	80mm		piece						Sluice Valve
Sluice/ Gate Valve	100mm	l	piece	1	l	l	l	0.00	Sluice Valve

Items	Specification	Quantity	Unit	Rate (SBD)	(SRD)	Total Days	(SBD)	(SBD)	Reamarks
Sluice/ Gate Valve	150mm		piece	ruic (DDD)	(355)		(555)		Sluice Valve
Sluice/ Gate Valve	200mm		piece			1		0.00	Sluice Valve
Sluice/ Gate Valve	250mm		piece					0.00	Sluice Valve225mm
Sluice/ Gate Valve	300mm		piece			1		0.00	
Pipes (Poly)	15mm		coil					0.00	Length on 1 coil =300m
Pipes (Poly)	20mm	1	coil			1		0.00	Length on 1 coil =300m
Pipes (Poly)	25mm	1	coil			1		0.00	Length on 1 coil =200m
Pipes (Poly)	50mm		coil			1		0.00	Length on 1 coil =150m
Pipes (PVC)	25mm		piece					0.00	
Pipes (PVC)	50mm		piece			1		0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece			1		0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece			1		0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece			1		0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
All Materials for Coun	termeasures							156,575.35	
Sub-total								156,575.35	
Total								262,916.10	

S4.7-1-56

									per day
Items	Specification	Quantity	Unit	Hourly	Unit Cost	Total Days	Amount	Amount	Reamarks
1. Personnel	Grades- Steps	-		Rate	(SBD)	-	(SBD)	(SBD)	
Staff-3	3.1	- 1	Person	15.85	118.88	1.00			
	3.2	0	Person	16.37	122.78				
	3.3		Person	16.90	126.75				
	3.4	. 0		17.43	130.73				
Staff-4	3.5	0	Person Person	17.96 19.81	134.70 148.58	0.00		0.00	
Statt-4	4.1	1	Person	20.60	154.50	3.00		463.50	
	4.3	0	Person	21.39	160.43	3.00		0.00	
	4.4	0	Person	22.18	166.35			0.00	
	4.5	- 1		22.98	172.35	3.00		517.05	
Staff-5	5.1	0		24.83	186.23	0.00		0.00	
	5.2	0		25.88	194.10			0.00	
	5.3	0	Person Person	26.94 27.99	202.05			0.00	
	5.5		Person	29.05	209.93	0.00		0.00	
Staff-6	6.1	1		32.48	243.60	1.00		243.60	
	6.2	1		33.81	253.58	1.00		253.58	
	6.3	0	Person	35.13	263.48			0.00	
	6.4	0		36.45	273.38			0.00	
	6.5	0	Person	37.77	283.28	L		0.00	
Staff-7	7.1	0	Person Person	39.62 40.94	297.15 307.05	0.00		0.00	
	7.3	0		42.26	316.95			0.00	
	7.4	0		43.58	326.85			0.00	
	7.5	0		44.90	336.75			0.00	
Staff-8	8.1	0	Person	49.39	370.43			0.00	
	8.2	0		50.71	380.33			0.00	
	8.3	0		52.03	390.23			0.00	
	8.4 8.5	0		53.35 54.67	400.13	0.00		0.00	
Staff-9	9.1	0	Person Person	59.95	449.63	0.00		0.00	
Dian-)	9.2	0	Person	61.27	459.53	0.00		0.00	
	9.3	0	Person	62.59	469.43			0.00	
	9.4	0	Person	63.91	479.33			0.00	
	9.5	. 0	Person	65.23	489.23			0.00	
Inhouse Consultant Contractor				160.00	1,200.00	7.00		8,400.00	
Sub-total						9,00		9,877,73	
2. Consumable	-			\$ Per Liter	L/km	2.00	\$/km	. ,,,,,,,,	
	1								
Diesel	For Excavator	0	Liter	11.80	0.3620		4.2716		50km/7km/liter=7.14liter 11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km
Diesel	For Excavator	70	Liter	11.80	0.3620	9.9960	4.2716		11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km
						9.9960		117.95	Illier/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter 11liter 17.1liter=18.1liter/50km 200km r knii riter=7, 1910cr 100km x 25.2days=25.200km 25.200km / 10,000km x 8liter=20.16liter 25.2days=0.08liter/day/50 km
Diesel	For Pick-up	70	Liter	11.80	0.1428	9,9960	1.68504	0.00	Illitechnic (fuel comsumption for about 600Ps) x lbr-1 lliter 1 lliter 50km comsumption for about 600Ps) x lbr-1 lliter 1 lliter 50km community for the fuel fuel fuel fuel fuel fuel fuel fue
Diesel Engine Oil	For Pick-up	70	Liter	60.00	0.1428	9,9960	1.68504 0.096	0.00	Illiterhic (fuel consumption for about 60PS) x Ihr-1 Illiter 1 Tilliter 7-1. Illiter 150km 150km
Diesel Engine Oil Engine Oil	For Pick-up	70	Liter Liter	60.00	0.1428 0.0016	9,9960	1.68504 0.096	0.00 6.72	Illiter/hrs (fuel consumption for about 600Ps) x Ihr-1 Illiter 11lliter 11lliter 4.7- Illiter-18. Illiter 50km 500Ps x Ihr-1 Illiter 100km x 50km 74km 100km x 50km 74km 100km x 52kdays-25. 200km 10.000km x 5lkm-20.16liter 20.16liter 20.16lite
Diesel Engine Oil Engine Oil Tires Sub-total	For Pick-up	70	Liter Liter	60.00	0.1428 0.0016	9,9960	1.68504 0.096	0.00	Illiter/hrs (fuel consumption for about 600Ps) x Ihr-1 Illiter 11lliter 11lliter 4.7- Illiter-18. Illiter 50km 500Ps x Ihr-1 Illiter 100km x 50km 74km 100km x 50km 74km 100km x 52kdays-25. 200km 10.000km x 5lkm-20.16liter 20.16liter 20.16lite
Diesel Engine Oil Engine Oil	For Pick-up	70	Liter Liter	60.00	0.1428 0.0016	9.9960	1.68504 0.096	0.00 6.72 0.00	Illiter/hrs (fuel consumption for about 600Ps) x Ihr-1 Illiter 11lliter 11lliter 4.7- Illiter-18. Illiter 50km 500Ps x Ihr-1 Illiter 100km x 50km 74km 100km x 50km 74km 100km x 52kdays-25. 200km 10.000km x 5lkm-20.16liter 20.16liter 20.16lite

					XX 1. 00				
Items	Specification	Quantity	Unit	Hourly Rate	Unit Cost (SBD)	Total Days	Amount (SBD)	Amount (SBD)	Reamarks
Sluice/ Gate Valve	50mm		piece					0.00	Gate Valve
Sluice/ Gate Valve	80mm		piece					0.00	Sluice Valve
Sluice/ Gate Valve	100mm		piece					0.00	Sluice Valve
Sluice/ Gate Valve	150mm		piece					0.00	Sluice Valve
Sluice/ Gate Valve	200mm		piece					0.00	Sluice Valve
Sluice/ Gate Valve	250mm		piece					0.00	Sluice Valve225mm
Sluice/ Gate Valve	300mm		piece					0.00	
Pipes (Poly)	15mm		coil					0.00	Length on 1 coil =300m
Pipes (Poly)	20mm		coil						Length on 1 coil =300m
Pipes (Poly)	25mm	1	coil					0.00	Length on 1 coil =200m
Pipes (Poly)	50mm		coil					0.00	Length on 1 coil =150m
Pipes (PVC)	25mm		piece					0.00	
Pipes (PVC)	50mm		piece					0.00	
Pipes (PVC)	80mm		piece					0.00	
Pipes (PVC)	100mm		piece					0.00	
Pipes (PVC)	150mm		piece					0.00	
Pipes (PVC)	200mm		piece					0.00	
Pipes (PVC)	250mm		piece					0.00	
Pipes (PVC)	300mm		piece					0.00	
Water Meter	10mm		piece					0.00	
Water Meter	16mm		piece					0.00	
Water Meter	20mm		piece					0.00	
Water Meter	25mm		piece					0.00	
Water Meter	32mm		piece					0.00	
Water Meter	40mm		piece					0.00	
All Materials for After C	ountermeasures							0.00	
Sub-total								0.00	
Total								10,002.40	

Total

1AUD=6.534SBD was applied to the above (rate as of 30 September, 2013 of Oanda).

4.	Routine	Activitie

West Kola A

Items									per day
	Specification	Quantity	Unit	Hourly	Unit Cost	Total Days	Amount	Amount	Reamarks
		Quantity	Om	Rate	(SBD)	Total Days	(SBD)	(SBD)	Realitanks
1. Personnel	Grades- Steps								
Staff-3	3.1	0	Person	15.85	118.88	0.00		0.00	
	3.2	0	Person	16.37	122.78			0.00	
	3.3	0	Person	16.90	126.75			0.00	
	3.4	0	Person	17.43	130.73			0.00	
	3.5	0	Person	17.96	134.70			0.00	
Staff-4	4.1	1	Person	17.96	134.70	5.00		742.88	
Statt-4						5.00			
	4.2	0	Person	20.60	154.50			0.00	
	4.3	. 0	Person	21.39	160.43			0.00	
	4.4	0	Person	22.18	166.35			0.00	
	4.5	0	Person	22.98	172.35			0.00	
Staff-5	5.1	0	Person	24.83	186.23			0.00	
	5.2	0	Person	25.88	194.10			0.00	
	5.3	0	Person	26.94	202.05			0.00	
	5.4	0	Person	27.99	209.93			0.00	
	5.5	1	Person	29.05	217.88	2.00		435.75	
Staff-6	6.1	1	Person	32.48	243.60	5.00		1,218.00	
	6.2	1	Person	33.81	253.58	5.00		1,267.88	
	6.3	0	Person	35.13	263.48			0.00	
	6.4	0	Person	36.45	273.38			0.00	
	6.5	0	Person	37.77	283.28			0.00	
Staff-7	7.1	0	Person	39.62	297.15			0.00	
	7.2	0	Person	40.94	307.05			0.00	
	7.3	0	Person	42.26	316.95		\vdash	0.00	
	7.4	0	Person	43.58	326.85			0.00	
	7.5	0	Person	44.90	336.75			0.00	
Staff-8	8.1	0	Person	49.39	370.43			0.00	
	8.2	0	Person	50.71	380.33			0.00	L
	8.3	0	Person	52.03	390.23		1 1	0.00	
	8.4	0	Person	53.35	400.13			0.00	
	8.5	0	Person	54.67	410.03			0.00	
Staff-9	9.1	0	Person	59.95	449.63			0.00	
Dini->	9.2	0	Person	61.27	459.53			0.00	
	9.3	0	Person	62.59	469.43			0.00	
	9.3	0	Person	63.91	479,33			0.00	
	9.5	. 0	Person	65.23	489.23			0.00	
Inhouse Consultant				160.00	1,200.00	5.00		6,000.00	
Contractor									
Sub-total						17.00		9,664.50	
2. Consumable				\$ Per Liter	L/km		\$/km		
									50km/7km/liter=7.14liter
	1								
Diesel	1								
	For Excavator		Liter	11.80	0.3620		4 2716	0.00	11liter/hrs (fuel consumption
	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter
	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter
	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter
	For Excavator	0	Liter	11.80	0.3620		4.2716	0.00	11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter
					0.3620				11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km
Diesel	For Excavator For Pick-up	100	Liter	11.80			4.2716 1.68504		11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km
					0.3620	14.2800			11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter
						14.2800			11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km 50km/7km/liter=7.14liter/50km
						14.2800			11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km 50km/7km/liter=7.14liter/50kn 100km x 252days=25,200km
Diesel	For Pick-up	100	Liter	11.80		14.2800	1.68504	168.50	11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km 50km/7km/hter=7.14liter/50km 100km x 252days=25,200km 25,200km/10,000km x
						14.2800		168.50	11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km 50km/7km/hter=7.14liter/50kn 100km x 252days=25,200km 25,200km / 10,000km x 8liter=20.16liter
Diesel	For Pick-up	100	Liter	11.80		14.2800	1.68504	168.50	11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km 50km/7km/liter=7.14liter/50km 100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter
Diesel	For Pick-up	100	Liter	11.80		14.2800	1.68504	168.50	11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km 50km/7km/liter=7.14liter/50km 100km x 252days=25,200km 25,200km 10,000km x 8liter=20.16liter
Diesel	For Pick-up	100	Liter	11.80	0.1428	14.2800	1.68504	168.50	11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km 50km/7km/liter=7.14liter/50km 100km x 252days=25,200km 25,200km/10,000km x 8liter=20.16liter
Diesel	For Pick-up	100	Liter	11.80	0.1428	14.2800	1.68504	168.50	11liter/hrs (fuel consumption for about 60PS) x 1hr=11liter 11liter +7.1liter=18.1liter/50km 50km/7km/liter=7.14liter/50km 100km x 252days=25.200km 25.200km/10.000km x 8liter=20.16liter 20.16liter/ 252days=0.08liter/day/50km
Diesel	For Pick-up	100	Liter	11.80	0.1428	14.2800	1.68504	168.50	1liter-hrs (uel consumption of about 60PS) x lhr=1lliter 1-lliter +7.1liter=18.1liter/50km 50km/7km/liter=7.14liter/50km 100km x 252days-25,200km 25,200km x 10,000km x 8 8iter=20.16liter/ 20.16liter/ 20.16liter/ 100km x 252days-20.8liter/day/50km
Diesel Engine Oil	For Pick-up For Excavator	100	Liter Liter	11.80	0.1428	14,2800	1.68504 0.096	168.50	Illiter.hrs (fuel consumption of about 60PS) x lhr=Illiter Illiter - 7.1liter=18. Illiter/50km 50km/7km/liter=7.14liter/50km 100km x 252days=2,200km 25.200km 10.000km x 8liter=20.16liter 252days=0.08liter/day/50km 100km x 252days=2,5200km
Diesel	For Pick-up	100	Liter	11.80	0.1428	14.2800	1.68504	168.50	Illiter/hrs (fuel consumption for about 60PS). Inte-Illiter Illiter - 7.1.liter-18.1liter/50km - 50km/Tkm/liter-7.1.liter/50km - 50km/Tkm/liter-7.1.4liter/50km - 100km r 252days-25.200km 10.000km r 252days-0.08liter/20.16liter - 20.16liter
Diesel Engine Oil	For Pick-up For Excavator	100	Liter Liter	11.80	0.1428	14.2800	1.68504 0.096	168.50	Illiter.hrs (fuel consumption of rabout 60PS) x lhr=1lliter 11liter - 7.1liter=18. Illiter/50km 50km/7km/liter=7.14liter/50km 50km/7km/liter=7.14liter/50km 100km x 252days=25,200km 25,200km y 10,00km 8liter=20.16liter 252days=0.08liter/day/50km 100km x 252days=25,200km 100km x 525days=25,200km 8liter=20.16liter 20.16liter/squ-25,200km x 10,00km
Diesel Engine Oil	For Pick-up For Excavator	100	Liter Liter	11.80	0.1428	14.2800	1.68504 0.096	168.50	Illiter/hrs (fuel consumption for about 60PS). Inte-Illiter Illiter - 7.1.liter-18.1liter/50km - 50km/Tkm/liter-7.1.liter/50km - 50km/Tkm/liter-7.1.4liter/50km - 100km r 252days-25.200km 10.000km r 252days-0.08liter/20.16liter - 20.16liter
Diesel Engine Oil	For Pick-up For Excavator	100	Liter Liter	11.80	0.1428	14.2800	1.68504 0.096	168.50	Illiter.hrs (fuel consumption of rabout 60PS) x lhr=1lliter 11liter - 7.1liter=18. Illiter/50km 50km/7km/liter=7.14liter/50km 50km/7km/liter=7.14liter/50km 100km x 252days=25,200km 25,200km y 10,00km 8liter=20.16liter 252days=0.08liter/day/50km 100km x 252days=25,200km 100km x 525days=25,200km 8liter=20.16liter 20.16liter/squ-25,200km x 10,00km
Diesel Engine Oil	For Pick-up For Excavator	100	Liter Liter	11.80	0.1428	14.2800	1.68504 0.096	168.50	Illiter/hrs (fuel consumption of rabout 09/89; Mr=Illiter 11liter 11liter 12. Illiter18. Illiter50km 50km/km/liter=7.14liter150km 100km x 252days=25,200km 25,200km 10,000km x Silter=20.16liter 20.16liter 25,200km 10,000km x Silter=20.00km x Silter20.16liter 25,200km 10,000km x Silter20.16liter 25,200km 10,000km x
Diesel Engine Oil	For Pick-up For Excavator	100	Liter Liter	11.80	0.1428	14.2800	1.68504 0.096	168.50	Illiter-hrs (uel consumption for about 60Ps). Int-Illiter Illiter 50km/km/liter-71.4liter/50km 50km/km/liter-71.4liter/50km 100km x 252days-25,200km 25,200km/10,000km x 81kter-201.6liter 201.6liter 352days-25,200km 552days-10,600km x 552days-25,200km
Diesel Engine Oil Engine Oil	For Pick-up For Excavator	100	Liter Liter	60.00	0.1428	14.2800	1.68504 0.096	0.00	Illiter-hrs (fuel consumption for about 60Pts). httm-Illiter Illiter - 7.1liter-18. Illiter/50km 50km/7km/liter-7.14liter/50km 100km x 252days-25_200km 125_200km x 10,000km x 8iter-20.16liter 20.16liter 25_20days-0.08liter/day/50km 100km x 252days-25_200km 100km x 252days-25_200km 25_20days-0.08liter/day/50km 50km x 252days-12_500km
Diesel Engine Oil	For Pick-up For Excavator	100	Liter Liter	11.80	0.1428	14.2800	1.68504 0.096	0.00	Illiter/hrs (fuel consumption for about 60PS). Ihre-Illiter Illiter -7. Illiter-Ills Illiter/50km -7. Illiter-Ills Illiter-Ills Illiter/50km -7. Illiter-Ills Illiter-I
Diesel Engine Oil Engine Oil	For Pick-up For Excavator	100	Liter Liter	60.00	0.1428 0.0016	14.2800	1.68504 0.096	0.00	Illiter-hrs (fuel consumption for about 60Pts). Int-Illiter- 11liter - 7.1liter-18.1liter/50km 50km/Tkm/liter-7.14liter/50km 50km/Tkm/liter-7.14liter/50km 1000km x 252days-25.200km 15.2000km x 15.2000km x 10.000km x 8liter-20.16liter/ 20.16liter/ 40.160km x 252days-12.600km x 252days-12.600km x 25.000km x 3.000km x 3.
Diesel Engine Oil Engine Oil	For Pick-up For Excavator	100	Liter Liter	60.00	0.1428	14.2800	1.68504 0.096	0.00	Illiter/hrs (fuel consumption for about 60PS). Ihre-Illiter Illiter -7. Illiter-Ills Illiter/50km -7. Illiter-Ills Illiter-Ills Illiter/50km -7. Illiter-Ills Illiter-I
Diesel Engine Oil Engine Oil	For Pick-up For Excavator	100	Liter Liter	60.00	0.1428 0.0016	14.2800	1.68504 0.096	0.00	Illiter-hrs (fuel consumption for about 60Pts). Int-Illiter- 11liter - 7.1liter-18.1liter/50km 50km/Tkm/liter-7.14liter/50km 50km/Tkm/liter-7.14liter/50km 1000km x 252days-25.200km 15.2000km x 15.2000km x 10.000km x 8liter-20.16liter/ 20.16liter/ 40.160km x 252days-12.600km x 252days-12.600km x 25.000km x 3.000km x 3.
Diesel Engine Oil Engine Oil	For Pick-up For Excavator	100	Liter Liter	60.00	0.1428 0.0016	14.2800	1.68504 0.096	9.60 0.00	Illiter-hrs (fuel consumption for about 60Pts). Int-Illiter- 11liter - 7.1liter-18.1liter/50km 50km/Tkm/liter-7.14liter/50km 50km/Tkm/liter-7.14liter/50km 1000km x 252days-25.200km 15.2000km x 15.2000km x 10.000km x 8liter-20.16liter/ 20.16liter/ 40.160km x 252days-12.600km x 252days-12.600km x 25.000km x 3.000km x 3.
Diesel Engine Oil Engine Oil Tires Sub-total	For Pick-up For Excavator	100	Liter Liter	60.00	0.1428 0.0016	14.2800	1.68504 0.096	0.00	Illiter-hrs (fuel consumption for about 60Pls y htm-11liter 11liter T. Illiter-18 Illiter 50km 50km / km/liter-7.14liter 50km 100km x 252days-25_200km 15_200km x 10,000km x 100km x 252days-25_200km 100km x 252days-25_200km 100km x 252days-20_5kliter/day/50km 100km x 252days-20_5kliter/day/50km 100km x 252days-20_5kliter/day/50km 100km x 252days-10_5kliter/day/50km 100km x 252days-
Diesel Engine Oil Engine Oil Tires Sub-total 3. Material & Equipment	For Pick-up For Excavator For Pick-up	100	Liter Liter Nos	60.00	0.1428 0.0016	14.2800	1.68504 0.096	9.60 0.00	Illiter-hrs (fuel consumption for about 60Pts). Int-Illiter- 11liter - 7.1liter-18. Illiter/50km 50km/7km/liter-7.14liter/50km 50km/7km/liter-7.14liter/50km 1000km x 25.200km 10.000km x 52.00km 10.000km x 52.00km 10.000km x 52.00km 10.000km x 52.00km 10.000km x 52.20dys-0.08liter/day/50km 100km x 25.20dys-0.08liter/day/50km 52.50dys-0.08liter/day/50km 50km x 55.days-12.600km 50km x 55.days-12.600km 50km x 55.days-12.600km 40km-21.61km 50km x 55.days-12.600km 50km x 55.days-1
Diesel Engine Oil Engine Oil Tires Sub-total	For Pick-up For Excavator	100	Liter Liter	60.00	0.1428 0.0016	14.2800	1.68504 0.096	9.60 0.00	Illiter-hrs (fuel consumption for about 60Pls y htm-11liter 11liter T. Illiter-18 Illiter 50km 50km / km/liter-7.14liter 50km 100km x 252days-25_200km 15_200km x 10,000km x 100km x 252days-25_200km 100km x 252days-25_200km 100km x 252days-20_5kliter/day/50km 100km x 252days-20_5kliter/day/50km 100km x 252days-20_5kliter/day/50km 100km x 252days-10_5kliter/day/50km 100km x 252days-

Sluice/ Gate Valve	50mm	piece			Gate Valve
Sluice/ Gate Valve	80mm	piece			Sluice Valve
Sluice/ Gate Valve	100mm	piece	- 1	0.00	Sluice Valve
Sluice/ Gate Valve	150mm	piece		0.00	Sluice Valve
Sluice/ Gate Valve	200mm	piece			Sluice Valve
Sluice/ Gate Valve	250mm	piece		0.00	Sluice Valve225mm AUD17
Sluice/ Gate Valve	300mm	piece	- 1	0.00	
Pipes (Poly)	15mm	coil		0.00	Length on 1 coil =300m
Pipes (Poly)	20mm	coil	ı	0.00	Length on 1 coil =300m
Pipes (Poly)	25mm	coil	i	0.00	Length on 1 coil =200m
Pipes (Poly)	50mm	coil	- 1	0.00	Length on 1 coil =150m
Pipes (PVC)	25mm	piece		0.00	
Pipes (PVC)	50mm	piece		0.00	
Pipes (PVC)	80mm	piece		0.00	
Pipes (PVC)	100mm	piece		0.00	
Pipes (PVC)	150mm	piece		0.00	
Pipes (PVC)	200mm	piece		0.00	
Pipes (PVC)	250mm	piece		0.00	
Pipes (PVC)	300mm	piece		0.00	
Water Meter	10mm	piece		0.00	
Water Meter	16mm	piece		0.00	
Water Meter	20mm	piece		0.00	
Water Meter	25mm	piece		0.00	
Water Meter	32mm	piece		0.00	
Water Meter	40mm	piece		0.00	
All Materials for routin	ne activites			0.00	
Sub-total				0.00	
Total				9,842.60	