

Water Management @ ITC Limited, Munger

Presentation for
CII - National Award for Excellence in Water Management 2008



 I T C L I M I T E D

Profile

- Celebrated its Centenary Year on 6th November, 2007.
- Located in Bihar, 173 km from Patna
- Product : Packaged Cigarettes



Key Achievements (2007- 2008)

- ISO 9001 : 2000 ; ISO 14001 : 2004 & OHSAS 18001 certified plant.
- National Award for excellence in Water Management 2007, CII – GBC.
- National Award for energy conservation - innovative project 2007, CII- GBC.
- First prize in eastern region Safety Health & Environment Award 2007, CII .

I T C L I M I T E D

ITC's Sustainability Report

ITC'S TRIPLE BOTTOM LINE



Economic Performance

Environmental Performance

- A 'Carbon Positive' Corporation
- A 'Water Positive' Corporation
- Towards A 'Zero Solid Waste' Corporation

Social Performance

- Labour Practices and Decent Work
- Occupational Health & Safety

ENVIRONMENTAL PERFORMANCE

ITC A WATER POSITIVE CORPORATION – SIX YEARS IN A ROW

Water remains a very serious sustainability and environmental concern globally and India in particular, faces a turbulent water future. With over 30% of the global population having access to less than 3% of total land mass and less than 4% of global fresh water resources, water scarcity in India is likely to worsen over the years. Hence, efficient water management will continue to be one of the key imperatives for sustainable growth.



Our sustainability strategy on water includes the following initiatives

- Water conservation through audits, benchmarking & use of new practices - to achieve the lowest specific water consumption (water per unit of production).





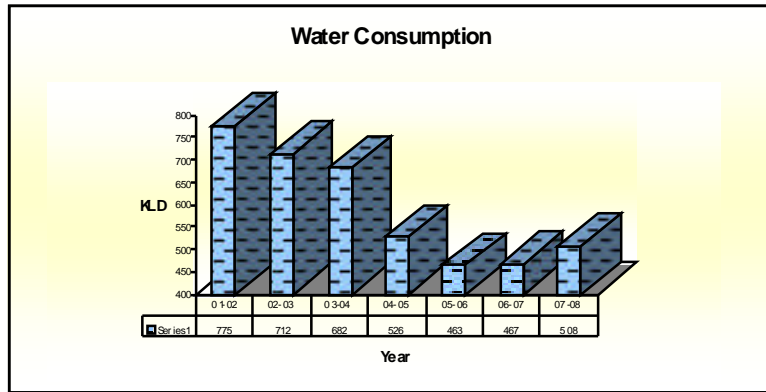
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■ ■ Water Management Approach

- Establish Overall Water Balance
- Reduce at source
- Reuse in other beneficial applications after treatment (land scaping, toilet flushing, cooling tower applications and civil constructions etc.,)
- Recycle back to process applications after appropriate treatment



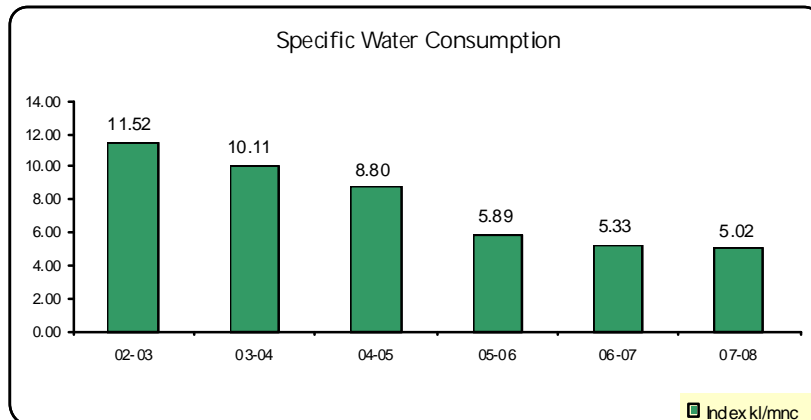
Water Consumption Trend



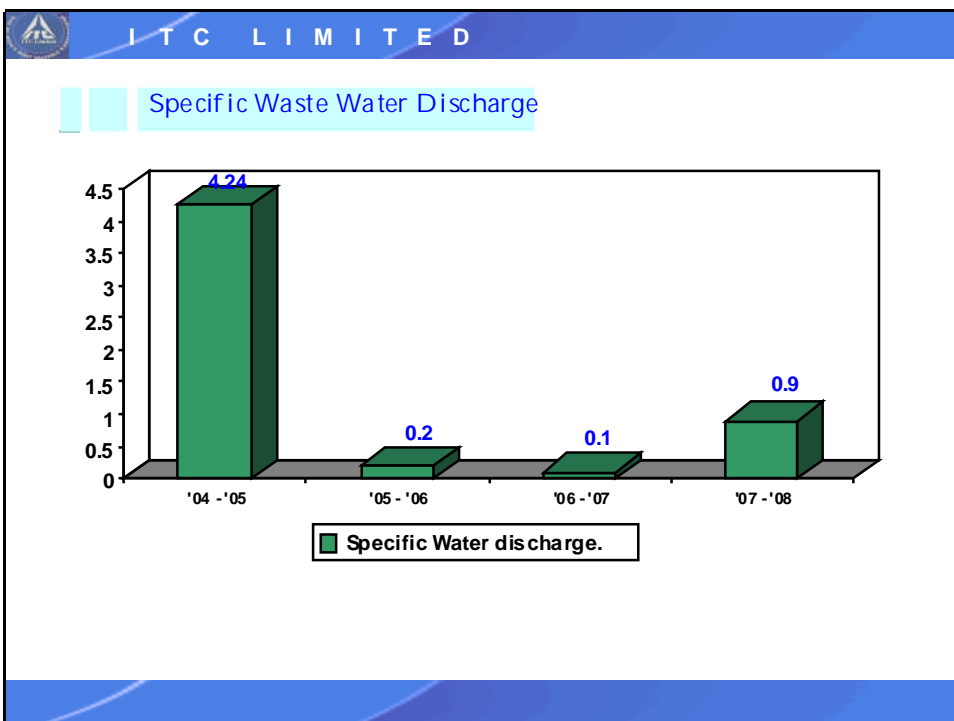
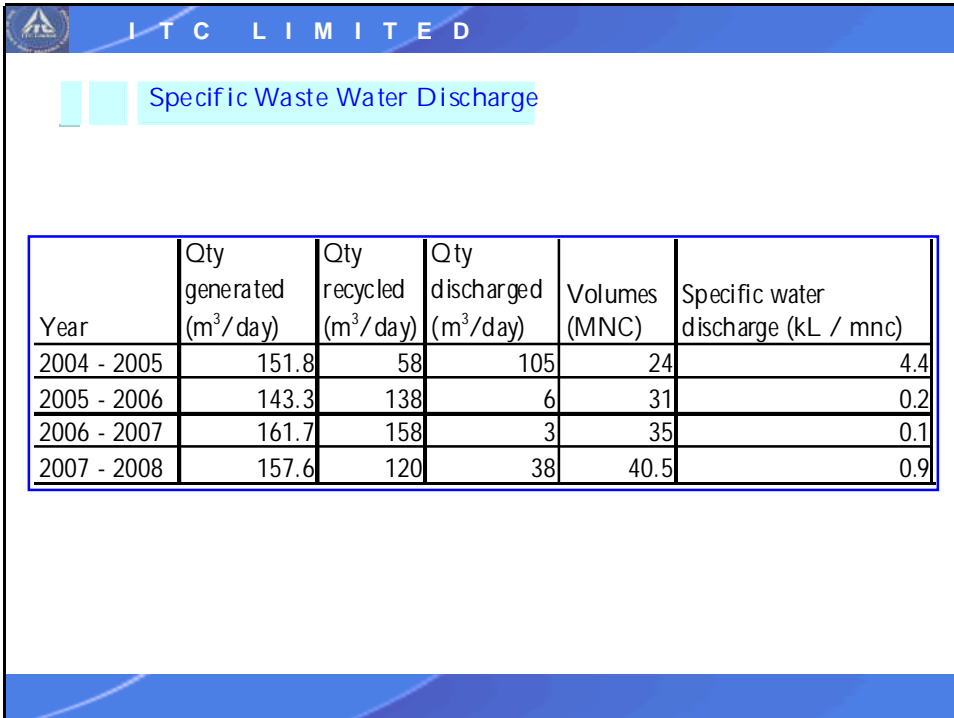
Please Note: Please Note: Water consumption increased by 8.7 % as production increased by 15.0 % compared to last year however the specific water consumption is reduced by 6 %.



Specific Consumption



Please Note: Specific Water Consumption has reduced by 6 %



I T C L I M I T E D

Performance Index

Benchmark & Trend Setting



Benchmark

Water Index (National)
: 4.88 KL/Million of cigarettes**

Water Index (International)
: 4.85 KL/Million of cigarettes*

* BAT's Social Report 2007
** ITC's Bangalore Factory



ITC Munger


Water Index : 5.02 KL/Million of cigarettes


Target : August, 2009 (To achieve national and International Bench mark).

I T C L I M I T E D


Sustainability – People Involvement


- ✓ Water Manager.
- ✓ Awareness Programmes.
- ✓ Operatives training at OEMs.
- ✓ Water brigade formation.
- ✓ Water leakage Audit.
- ✓ SGA
- ✓ Suggestion to implementation competitions & Quizzes.
- ✓ Lean-sigma approaches.

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Sustainability – Review & Monitoring

Daily

- ü Water Analysis Report
- ü Effluent Report

Monthly

- ü Management Review (BM)
- ü Report to Chief Engineer.

Yearly

- ü Annual Water & EHS Report
- ü Director's Report
- ü Unit Achievement Report

Beyond Equipment Performance....

- ü Performance appraisal of Managers

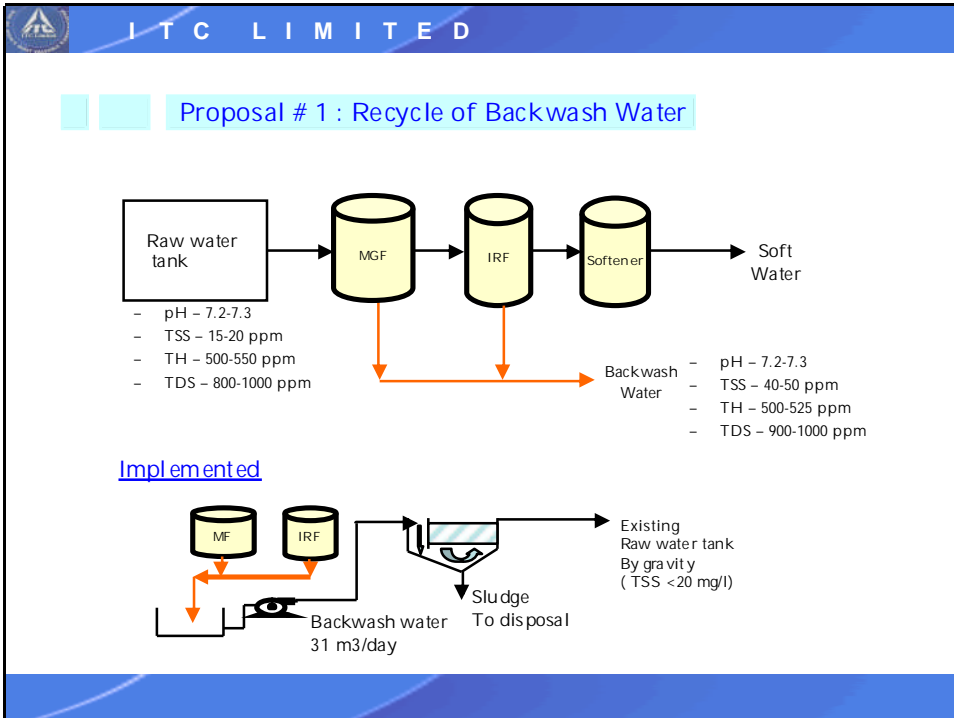
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Water Conservation Projects

- CII Water Audit carried out in 2005-06. The following savings potentials were identified:

Effluent discharge (2005 – 2006)	160 m ³ /day
Reduction through recycle of MGF /IRF b/w water	30 m ³ /day
Reduction in domestic water consumption	15 m ³ /day
RO product for CT make-up	50 m ³ /day
RO reject for gardening & Toilet flashings	65 m ³ /day
Total	160 m ³ /day

- Earlier Treated Discharge Water is being used by
 - Local farmers for irrigation
 - Small scale gardening inside factory





Proposal # 2 : Reduction in domestic Water

- Dual Flush
- e- Flash
- e- Tap



Proposal # 2 Accomplished

Domestic Water Savings



Foam- Taps

E-Taps



People Awareness



Dual Flush

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Proposal # 3 Accomplished

Local Usage



Toilet Usage



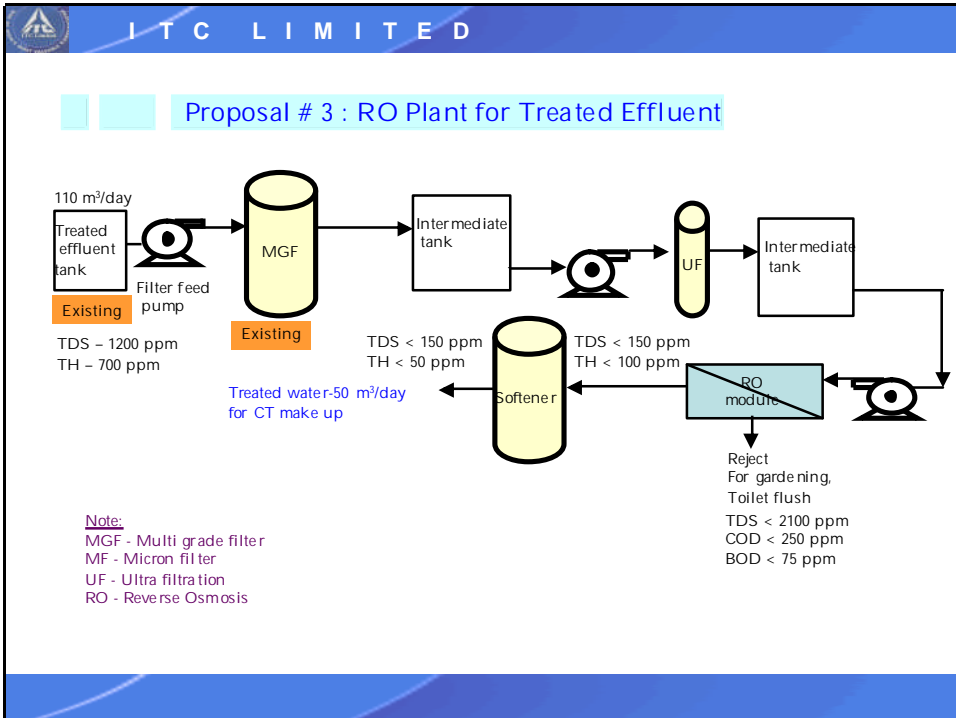
Landscaping

Usage: 65-70 m³/day

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Proposal # 3 : RO Plant for Treated Effluent

- √ Segregate High TDS stream and directly pump to Final effluent tank
 - Ø Avoid the unnecessary TDS load to Aeration
 - Ø Help improve the Aeration tank performance
- √ Treat the final effluent through RO – 115 m³/day
 - Ø 50 m³/day output as Cooling Tower Make-up
 - Ø 65 m³/day reject to garden use, toilet flush



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Proposal # 3 Accomplished

Local Usage

Toilet Usage

Landscaping

Usage: 65-70 m³/day

I T C L I M I T E D

Other Initiatives

Remote Radiator/ Table Cooler

- √ ITC Munger has procured a Rotary UPS: A world class technology that has a mechanical stor ehouse of energy coupled with a Diesel Engine
- √ In place of a conventional Cooling Tower, we have gone for a Table Cooler which is an Air Cooling Remote Radiator
- √ High on Cost
- √ But saves over 400 KL water annually

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Other Initiatives

Better Effluent Handling

- ✓ Parallel Plate Separator post chemical treatment
 - ✓ Organic Waste removed as sludge
- ✓ Sludge Dewatering / Filter Press
 - ✓ For Better Sludge handling
- ✓ Oil Catch Pits
 - ✓ To arrest oil from entering ETP Process



Parallel Plate Separator



Filter Press



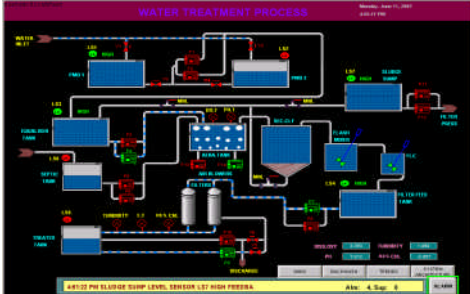
Oil Catch Pits


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Other Initiatives

Better Effluent Handling


✓ ETP Automation



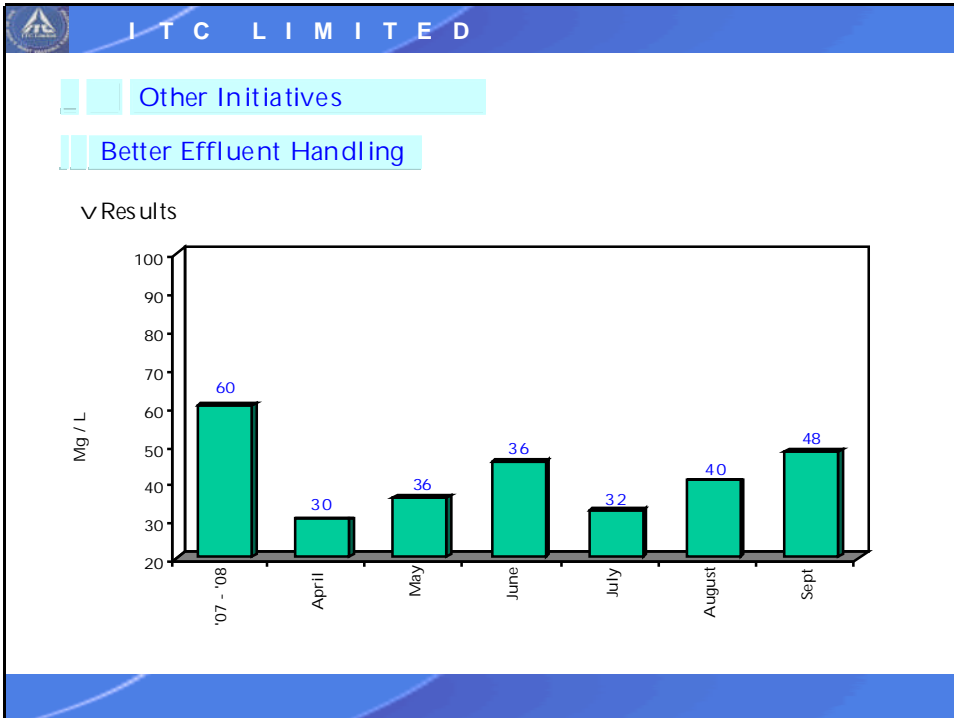


- 8 Level Sensors
- 14 Auto valves
- 6 NRVs
- 5 parameter sensors

Controlled from HMI



On line monitoring of DO, pH, Turbidity, Free Chlorine



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Initiatives in Residential Colony

Rain Water Harvesting

Recharge Structures :

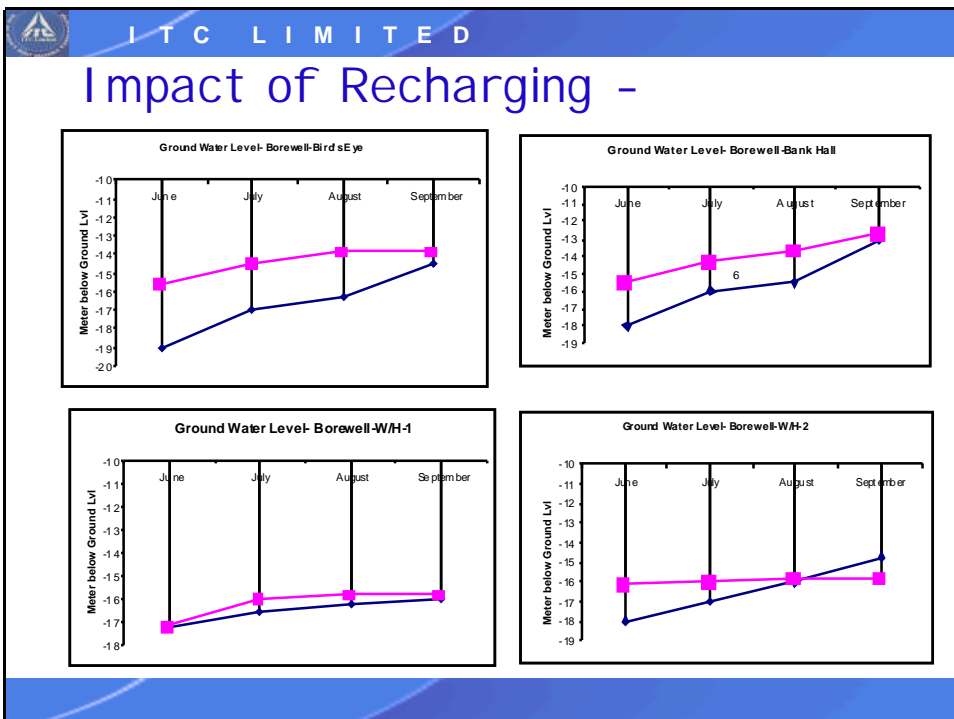
- Roof Top Water – Aquifer Recharge Structures
- Recharge Trench
- On line Recharge Pit

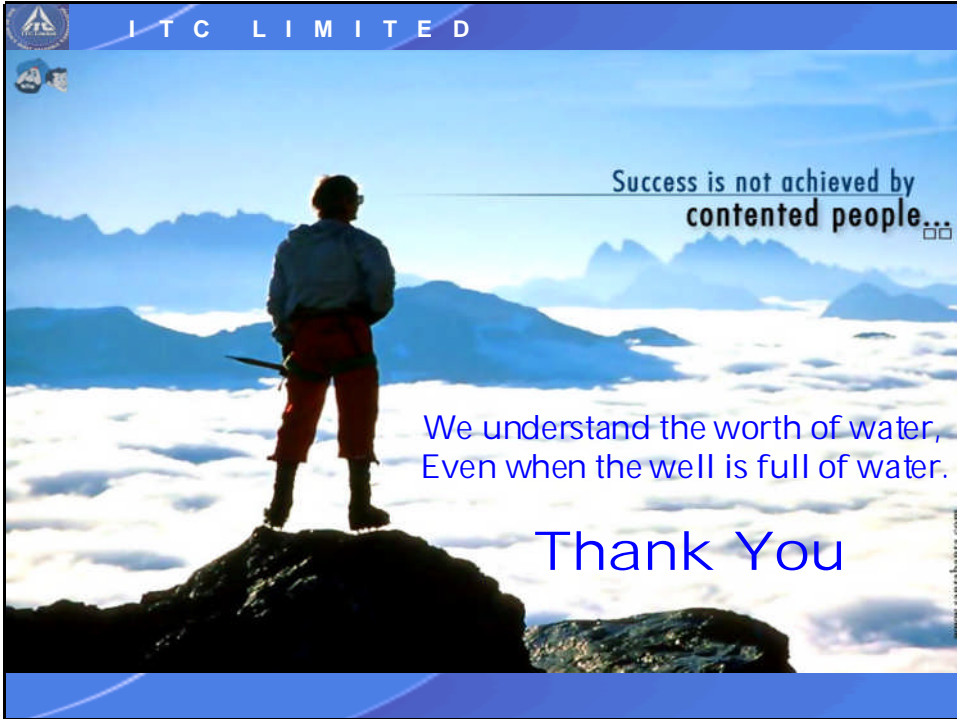
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Impact of Recharging -

Depth to Water Level (mbs)
ITC Park, Munger

Hydrograph Station	Year	Total	June	July	Aug	Sept.
1 Borewell near Bird's eye	2006		19.00	17.00	16.25	14.50
	2007		15.60	14.40	13.82	13.80
Increment			3.40	2.60	2.43	0.70
2 Borewell near Bank Hall	2006		18.00	16.00	15.50	13.00
	2007		15.50	14.30	13.65	12.65
Increment			2.50	1.70	1.85	0.35
3 Borewell near Near Warehouse I	2006		17.25	16.50	16.25	16.00
	2007		17.13	16.00	15.80	15.80
Increment			0.12	0.50	0.45	0.20
4 Borewell near Near Warehouse II	2006		18.00	17.00	16.00	14.70
	2007		16.13	16.00	15.80	15.80
Increment			1.87	1.00	0.20	-1.10
Rainfall (mm)						
	2006	916	13	284	416	203
	2007	1109	250	246	142	471





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Success is not achieved by
contented people...

We understand the worth of water,
Even when the well is full of water.

Thank You

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