Cycle Cost Breakdown

CYCLE COST BREAKDOWN

1. **Consumption Information**
    a. Water:
        i. FULL/HIGH LEVEL CYCLE:
            345 gallons (1306L) usage with automated rinse cycle
            220 gallons (800L) usage without automated rinse cycle
        ii. HALF/LOW LEVEL CYCLE:
            215 gallons (814L) usage with automated rinse cycle
            140 gallons (530L) usage without automated rinse cycle
    b. Energy:
        i. FULL/HIGH LEVEL CYCLE:
            75-89kwh, depending on incoming water temperature
        ii. HALF/LOW LEVEL CYCLE:
            45-55kwh
    c. Alkali:
        i. Added based on the weight of the tissue.
2. **Cost Inputs**
    a. Water:
        i. Per data from the US Dept of Energy's 2017 report, the national average cost of water in the US is $3.38 per 1000 gal ($0.00338/gal).
    b. Energy:
        i. Per data from the US Energy Information Administration's 2019 report, the national average cost of electricity in the US is 12.70 cents per kwh residential and 10.52 cents per kwh commercial.
    c. Alkali:
        i. Using the chemical blend most preferred by our customers, and the current average price for dry alkali as of May 2019, this cost breaks down to 10.67 cents per pound.
3. **Calculations**
    a. Cycle Cost Calculation Example:
        i. 200 lb Full/High Level Cycle:
            WATER: 345 gal water x $0.00338/gal = $1.17 (with automated rinse)
            ENERGY: 75kw x $0.1052/kw = $10.52
            ALKALI: 200 lb x $0.1067/lb = $21.34
            TOTAL: $30.40, or $0.15/lb
            Cycle Cost Calculations for Various Cycles

DOWNLOAD THE CUSTOMIZABLE EXCEL FILE HERE

PET-400 CYCLE COST BREAKDOWN

BIO-RESPONSE SOLUTIONS

COST INPUTS	Nat'l Avg
Cost of Water Per 1000 Gallons:	$3.3800
Cost of Energy per kwh:	$0.1052
Cost of alkali per pound of tissue:	$0.1067

CONSUMPTION INFORMATION	High Level	Low Level
Water consumption (gal)		
with automated rinse	345	215
without automated rinse	220	140
Energy consumption (kwh)	75	45

CALCULATED CYCLE COSTS

WITH AUTOMATED RINSE

HIGH LEVEL CYCLES

POUNDS	WATER	ENERGY	ALKALI	TOTAL CYCLE COST	COST PER LB
400	$1.17	$7.89	$42.68	$51.74	$0.13
300	$1.17	$7.89	$32.01	$41.07	$0.14
200	$1.17	$7.89	$21.34	$30.40	$0.15

LOW LEVEL CYCLES

POUNDS	WATER	ENERGY	ALKALI	TOTAL CYCLE COST	COST PER LB
200	$0.73	$4.73	$21.34	$26.80	$0.13
100	$0.73	$4.73	$10.67	$16.13	$0.16
50	$0.73	$4.73	$5.34	$10.80	$0.22

WITHOUT AUTOMATED RINSE

HIGH LEVEL CYCLES

POUNDS	WATER	ENERGY	ALKALI	TOTAL CYCLE COST	COST PER LB
400	$0.73	$7.89	$42.68	$51.30	$0.13
300	$0.73	$7.89	$32.01	$40.63	$0.14
200	$0.73	$7.89	$21.34	$29.96	$0.15

LOW LEVEL CYCLES

POUNDS	WATER	ENERGY	ALKALI	TOTAL CYCLE COST	COST PER LB
200	$0.47	$4.73	$21.34	$26.55	$0.13
100	$0.47	$4.73	$10.67	$15.88	$0.16
50	$0.47	$4.73	$5.34	$10.54	$0.16

4. Summary

- Full cycles range from $30-52 for all process costs
- Half cycles range from $10-27 for all process costs

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