



ENGLISH EDITION

CALCULATOR

Fuel Contamination Cost Calculator

Estimate the Hidden Costs of Water, Sludge, Microbial Contamination and Fuel System Failures in Diesel Storage and Mission-Critical Applications

This tool helps quantify the financial impact of fuel contamination. Use it to build a business case for better fuel management, filtration, and polishing systems.

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1. How to Use the Calculator

Enter your site-specific values in the **Input** column. The calculator provides estimated annual costs. All monetary values in USD (or your local currency). Adjust assumptions as needed.

2. Key Inputs & Assumptions

- **Annual Fuel Consumption (gallons or liters):** Total diesel used/stored annually.
- **Fuel Cost per Gallon:** Current price.
- **Number of Critical Assets:** e.g., generators, trucks, vessels.
- **Average Downtime Cost per Hour:** Lost production, penalties, or emergency rentals.
- **Current Contamination Level:** Low / Medium / High (affects multipliers).

3. Cost Components & Formulas

- **Fuel Replacement / Disposal Cost**
 - Formula: Contaminated Volume (gallons) × Fuel Price × Disposal Factor (1.2–2.0)
 - Example: 5,000 gallons contaminated at \$4/gal, 1.5x factor = \$30,000.
- **Filter and Maintenance Cost Increase**
 - Formula: Base Annual Filter Cost × Contamination Multiplier (1.5–4.0)
 - Example: Base \$10,000 × 2.5 = \$25,000 extra.
- **Injector / Pump / Component Repair/Replacement**
 - Formula: (Number of Failures/year) × Average Repair Cost per Failure
 - Typical: \$5,000–\$50,000 per major failure.
- **Unplanned Downtime Cost**
 - Formula: (Hours of Downtime/year) × Hourly Cost
 - Often the largest hidden cost in mission-critical applications.
- **Increased Fuel Consumption**
 - Formula: Annual Consumption × Fuel Price × Efficiency Loss % (0.5–5%)
- **Microbial Treatment & Cleaning**
 - Formula: Number of Treatments × Cost per Treatment (biocide, tank cleaning).
- **Labor & Inspection Overhead**
 - Formula: Extra Hours × Hourly Labor Rate.
- **Total Estimated Annual Cost** = Sum of all components.

4. Interactive Calculation Table (Example)

Component	Low Contamination	Medium	High	Your Estimate
1. Fuel Replacement	\$5,000	\$15,000	\$40,000	
2. Extra Filter/Maintenance	\$8,000	\$20,000	\$50,000	

Component	Low Contamination	Medium	High	Your Estimate
3. Component Repairs	\$10,000	\$35,000	\$100,000	
4. Downtime	\$20,000	\$80,000	\$250,000+	
5. Extra Fuel Use	\$3,000	\$10,000	\$25,000	
6. Microbial Treatment	\$2,000	\$8,000	\$20,000	
7. Labor Overhead	\$4,000	\$12,000	\$25,000	
Total Annual Cost	\$52,000	\$180,000	\$510,000+	Your Total

5. Example Scenario (Data Center – 10 Backup Generators)

- Annual fuel: 20,000 gallons @ \$4.50/gal
- Medium contamination
- Downtime cost: \$50,000/hour (conservative)
- Estimated Total: ~\$150,000–\$300,000/year

Potential Savings with Best Practices: 60–85% reduction through proactive polishing, monitoring, and additives (often pays for itself in <12 months).

6. Recommendations

- Run scenarios for Low/Medium/High.
- Track actual costs over time for accuracy.
- Invest in prevention: Automated polishing, real-time sensors, and regular testing yield high ROI in mission-critical operations.

Copy this table into a spreadsheet for dynamic calculations. Adjust multipliers based on your industry (e.g., higher downtime in mining/data centers).