

AQUAWATCH

Water Quality Risk Assessment
System

Automating WHO-based contamination analysis for villages
From hours of manual calculation → to seconds of instant insights

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THE PROBLEM

Water testing labs receive samples daily from multiple villages.
But technicians still must manually compute WQI/HPI, compare values with WHO limits, and classify risk levels.

Challenges:

- Time-consuming calculations
- High chance of human error
- Delayed intervention
- Unsafe water may be misclassified as safe

Water safety should not require complex manual work.

OUR SOLUTION

AquaWatch: Instant Risk Intelligence

AquaWatch transforms raw lab values into:

- Automatic contamination indices
- Color-coded risk classification
- Alerts for dangerous pollutants
- Actionable recommendations for authorities

Result:

Accurate water safety assessment in seconds

WHAT AQUAWATCH PROVIDES

WHO Guideline-Based Risk Classification

Instant detection of Lead, Arsenic, Fluoride risks

Suggested actions for villagers & officials

Dynamic Multi-Village Support

Unsafe villages automatically surfaced first

Authority – ready documentation in one click

LIVE DASHBOARD VIEW

AquaWatch provides:

- Total villages analyzed
- Safe vs Unsafe distribution
- Visual WQI comparison chart
- Emergency attention villages highlighted

Not just data → but actionable monitoring

INNOVATION

Most solutions stop at “analysis.”

AquaWatch goes further:

From Assessment → to Intervention Support

- Prioritizes critical villages automatically
- Generates AI-based advisory actions
- Produces reports ready for government/NGO response

This is a deployable real-world public health tool.

REAL WORLD IMPACT

AquaWatch can be used by:

- Water testing laboratories
- Rural health departments
- NGOs monitoring safe drinking water
- Government intervention programs
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Impact:

- Faster contamination response
- Reduced human error
- Safer drinking water for communities
- Scalable monitoring across districts

TECH STACK

Frontend:

- React.js + Tailwind CSS
- Recharts Dashboard Visualization

Backend:

- Automated WHO formula computation
- Risk classification engine

Other Tools:

- Google Sheets Import
- PDF Report Export (jsPDF)

WORKFLOW

- Lab technician enters village sample values
- Data imported manually or via Google Sheets
- System computes WQI + HPI automatically
- Risk levels classified instantly
- Alerts + Advisory recommendations generated
- Authority-ready PDF report exported

FUTURE SCOPE

- District-wide monitoring dashboards
- SMS alerts to village officers for critical cases
- GIS-based contamination risk mapping
- Historical trend analysis over months
- AI anomaly detection for suspicious patterns

AquaWatch can become a national-scale water safety platform.

CONCLUSION

AquaWatch is not just a project.
It is a real solution that ensures:

- Faster water safety decisions
- Reduced manual workload
- Early contamination intervention
- Better protection for rural communities

“Safe water is not a luxury — it is a right.”