# How the Optimizer Schedules Tanks by Tank Type

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The Optimizer schedules tanks differently based on tank type. Understanding how each type behaves—and what the Optimizer needs to make good decisions—will help you trust the schedule and know when manual intervention may be necessary.

This article explains what to expect for the four tank types:

- Monitored Tanks
- K-Factor Tanks
- Will Call Tanks
- Julian Tanks

Each section covers how the Optimizer decides to schedule the tank, what data it relies on, and common reasons a tank may or may not appear on a route.

The scheduling behavior described in this article reflects standard Optimizer logic outside of Summer Fill mode and Route Exclusion periods.

## Foundational Requirements for All Tank Types

Regardless of tank type, the Optimizer relies on several core data elements to build routes successfully. If any of these are missing or incorrect, a tank may not appear on a schedule—even if everything else is set up correctly.

### Tank and Customer Status

- The tank must be an active *P* type tank assigned to an active customer.
- The tank must not be excluded from scheduling, including:
  - An active hold on the tank.
  - Exclusion by missing or incorrect setup in the *Customer / Delivery Type Matrix*.
  - Inclusion in the *Exclude Tanks for Export* table.

### Location and Routing Eligibility

- Accurate GPS data is required; incorrect or missing coordinates can prevent routing entirely.
- The tank must fall within the location and route start/end values defined in Optigistics Parameters.

### Delivery and Order Requirements

- Call-in deliveries must be in an eligible status to be considered for scheduling. Pending call-ins are skipped unless they export as a true delivery type (such as Auto Schedule or Julian).
- If the Over Balance setting is used, the customer's balance must fall within the Age Limits defined in*Division Maintenance*.

### Operational Constraints

- Driver availability and truck capacity must exist for the tank to be scheduled.
- Tanks already assigned to an existing schedule will not be scheduled again until they are completed or removed from that schedule.

Once these foundational requirements are met, tank type determines how and when the Optimizer evaluates a tank for scheduling.

# Monitored Tanks

### How They Are Scheduled

Monitored tanks are scheduled based on actual tank level readings received from the monitor. The Optimizer evaluates:

- Current gallons left and tank size.
- Usage rate calculated from the three most recent monitor readings, considering the date and time of each read.
- Target and critical delivery thresholds defined for the monitor.

If the Optimizer predicts the tank will reach a critical level within the scheduling window, it becomes a strong candidate for routing.

### What to Expect

- Tanks with rapidly declining levels are prioritized as they approach delivery thresholds.
- Non-critical tanks within the threshold range may drop out of consideration if usage stabilizes or slows, even if they previously appeared likely to be scheduled.

### Key Considerations

- Old or stale monitor readings still influence usage calculations.
- Lower critical limits should be set thoughtfully and not below what the tank could realistically consume over a few days, as overly low limits can delay scheduling.

### Best Practices

- A target-to-critical threshold spread of approximately 10 percent is recommended. Spreads that are too narrow may not give the Optimizer enough time to schedule deliveries effectively. Spreads that are too wide can allow tanks to be considered earlier than necessary, which may reduce routing efficiency even though other scheduling factors are still evaluated.
- Regularly review monitor health and last-read dates. Resolve monitor errors using the *View Remote Tank Read Audit* found at *Main Menu / Meter Menu / Import RTM Reads.*
- Investigate tanks that repeatedly appear critical but are not delivered, and evaluate whether the monitor's delivery thresholds need adjustment.

# K-Factor Tanks

### How They Are Scheduled

K-Factor tanks are scheduled using Energy Force tank data, not live readings. The Optimizer estimates usage based on:

- Estimated gallons left and tank size.
- Target and Limit Thresholds defined by route in the *Routes to Schedule* table.
- Degree days and weather forecast data.
- Assigned *K-Factor* and *Daily Use* values.

The Optimizer predicts when the tank will need a delivery and schedules it accordingly.

### What to Expect

- These tanks schedule predictably when data is accurate and consistent.
- New tanks or tanks with limited delivery history may behave less reliably.
- Seasonal changes or new appliances can temporarily impact projections.

### Key Considerations

- Bad data results in poor projections, and there is no workaround for that.
- Tanks with irregular usage may appear too early or too late. Consider whether the tank is truly a good K-Factor candidate.
  Examples that typically do not fit well include shops, garages, pools, fireplaces, and agricultural barns.
- Unscheduled deliveries can significantly disrupt seasonal projections.

### Best Practices

- Ensure tank data is accurate.
- Review K-Factors regularly, especially after customer behavior changes.
- Expect some stabilization time after conversions or major data cleanup.
- A target-to-critical threshold spread of approximately 10 percent is recommended. Spreads that are too narrow may not give the Optimizer enough time to schedule deliveries effectively. Spreads that are too wide can allow tanks to be considered earlier than necessary, which may reduce routing efficiency even though other scheduling factors are still evaluated.

# Will Call Tanks

### How They Are Scheduled

Will Call tanks are scheduled only when a call-in delivery exists or when the tank is included in a*Tank Group*. The Optimizer does not evaluate tank level or usage to determine priority for these tanks.

When a call-in is entered, the Optimizer schedules the tank based on:

- Delivery window rules.
- Route availability and capacity.
- *Estimated Gallons to Deliver* entered on the call-in order.

The *Estimated Gallons to Deliver* does not increase or decrease scheduling priority. Instead, it tells the Optimizer how many gallons to allocate to the route if the tank is scheduled.

In other words:

- Tank level alone does not make a Will Call tank urgent.
- The call-in creates eligibility, not priority.
- Gallons entered guide truck capacity planning, not scheduling rank.

### What to Expect

- Will Call tanks generally do not appear on routes unless:
  - A call-in delivery is entered, or
  - They are temporarily treated as scheduled tanks in a Tank Group.

The Optimizer will not estimate usage for these tanks.

### Key Considerations

- If no call-in exists, the tank is invisible to the Optimizer.
- If a customer forgets to call, no delivery will be scheduled.
- Changing a Will Call tank to another type changes its behavior immediately.

### Best Practices

- Enter all call-ins into Energy Force accurately and consistently.
- Train staff on how call-ins affect routing priority. Use *Immediate Fill* sparingly to avoid efficiency impacts.
- Periodically audit Will Call tanks to confirm they are still appropriate for that category.

# Julian Tanks

### How They Are Scheduled

Julian tanks are scheduled based on a fixed interval (for example, a set number of days or specific days of the week or month), not usage. The Optimizer looks at:

- Assigned Julian interval.
- Delivery window rules.
- An assumed fill amount, typically 60% of the tank's capacity.

When the Julian due date is reached, the tank becomes eligible for scheduling, either within the scheduling window or on the due date itself, depending on configuration.

### What to Expect

- Usage is not evaluated, only time.
- Julian tanks work best when monitors or K-Factors are not suitable, but the customer does not want to call in for deliveries.

### Key Considerations

- The Optimizer does not adjust for over- or under-usage; the assumed 60% fill is always applied.
- Seasonal usage changes are ignored unless the interval is updated.

### Best Practices

- Review Julian intervals regularly or after known usage changes.
- Avoid using Julian scheduling for highly variable consumption.

## Why Tank Type Matters in the Optimizer

The Optimizer is only as good as the tank type, data, and expectations provided. When a tank doesn't show up on a schedule, it's usually behaving exactly as designed, even if that design wasn't intentional.

If something feels off, it's almost always:

- A tank type decision.
- A data quality issue.
- A mismatch between expectations and system logic.

Understanding these differences upfront reduces overrides, improves confidence in the schedule, and leads to more consistent routing outcomes.