# InfoWorks WS Advances

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# Additions and Improvements

- Cumulative Flow link result
- Multi-component reservoirs
- Optimiser Control Fields
- Improved simulation performance

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# Cumulative Flow link result

- The **Cumulative Flow** result reports the total flow that has passed through the link from the start of the simulation to the present timestep (value is flow direction dependent).

Grid Results [Pipe] - Leakage Incident>Leakage Locator

01/10/1998 00:00:00

| From Node ID | To Node ID | Suffix | Headloss per Unit Distance (m/km) | Velocity (m/s) | Cumulative Flow (l) |
|---|---|---|---|---|---|
| K104 | K400207 | 1 | 0.06 | -0.06 | 0.00 |
| K157 | K400135 | 1 | 0.35 | -0.15 | 0.00 |
| K400008 | K400268 | 1 | 0.01 | -0.01 | 0.00 |
| K400009 | K400008 | 1 | 0.00 | -0.00 | 0.00 |
| K400010 | K400009 | 1 | 0.00 | 0.00 | 0.00 |
| K400010 | K400239 | 1 | 0.00 | -0.01 | 0.00 |
| K400011 | K400184 | 1 | 0.00 | 0.00 | 0.00 |
| K400012 | K400011 | 1 | 0.00 | 0.01 | 0.00 |
| K400012 | K400074 | 1 | 0.00 | 0.00 | 0.00 |
| K400013 | K400266 | 1 | 0.01 | -0.01 | 0.00 |
| K400014 | K400093 | 1 | 0.00 | 0.00 | 0.00 |
| K400015 | K400114 | 1 | 0.00 | 0.00 | 0.00 |

Grid Results [Pipe] - Leakage Incident>Leakage Locator

01/10/1998 23:50:00

| From Node ID | To Node ID | Suffix | Headloss per Unit Distance (m/km) | Velocity (m/s) | Cumulative Flow (l) |
|---|---|---|---|---|---|
| K104 | K400207 | 1 | 0.06 | -0.06 | -140415.20 |
| K157 | K400135 | 1 | 0.42 | -0.16 | -600469.19 |
| K400008 | K400268 | 1 | 0.01 | -0.01 | -7964.82 |
| K400009 | K400008 | 1 | 0.00 | -0.00 | -3780.75 |
| K400010 | K400009 | 1 | 0.00 | 0.00 | 1599.05 |
| K400010 | K400239 | 1 | 0.00 | -0.01 | -10736.85 |
| K400011 | K400184 | 1 | 0.00 | 0.01 | 2399.45 |
| K400012 | K400011 | 1 | 0.00 | 0.01 | 3594.60 |
| K400012 | K400074 | 1 | 0.00 | 0.00 | 603.26 |
| K400013 | K400266 | 1 | 0.01 | -0.02 | -10460.77 |
| K400014 | K400093 | 1 | 0.00 | 0.00 | 298.88 |
| K400015 | K400114 | 1 | 0.00 | 0.00 | 896.64 |

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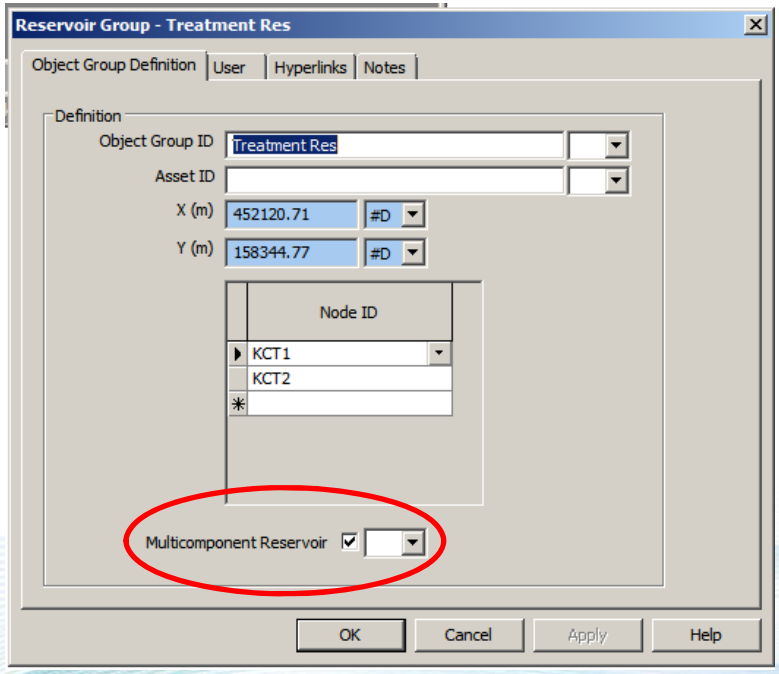
# Multi-component reservoirs

- During simulation, heads of all component reservoirs are set simultaneously to the same value except when one or more is isolated by pipe or valve closures.

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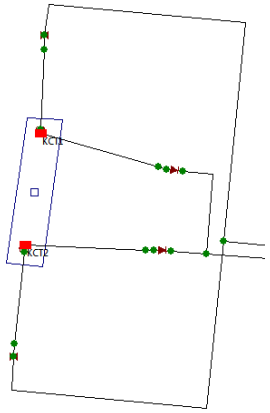
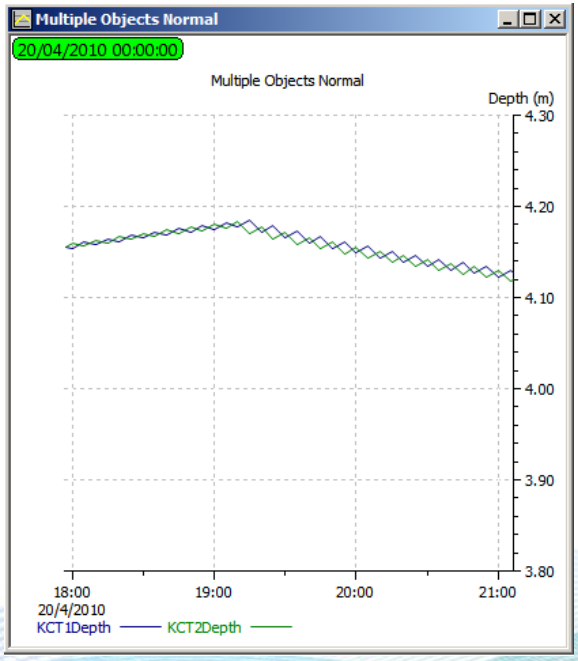
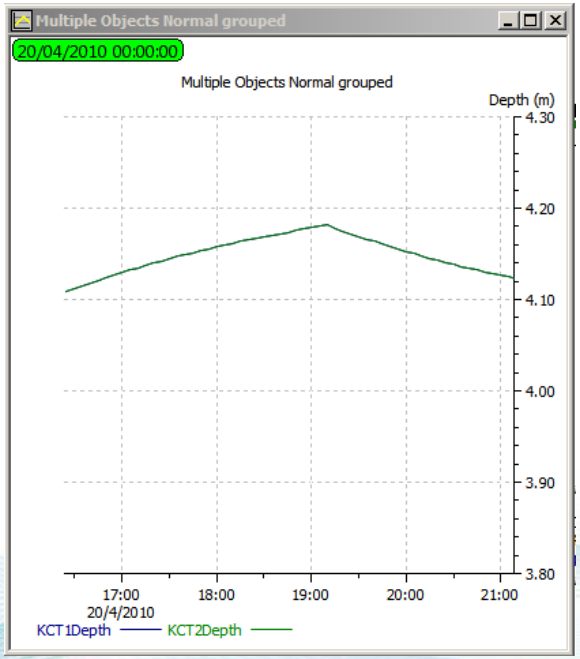
# Multi-component reservoirs




Ungrouped




Grouped

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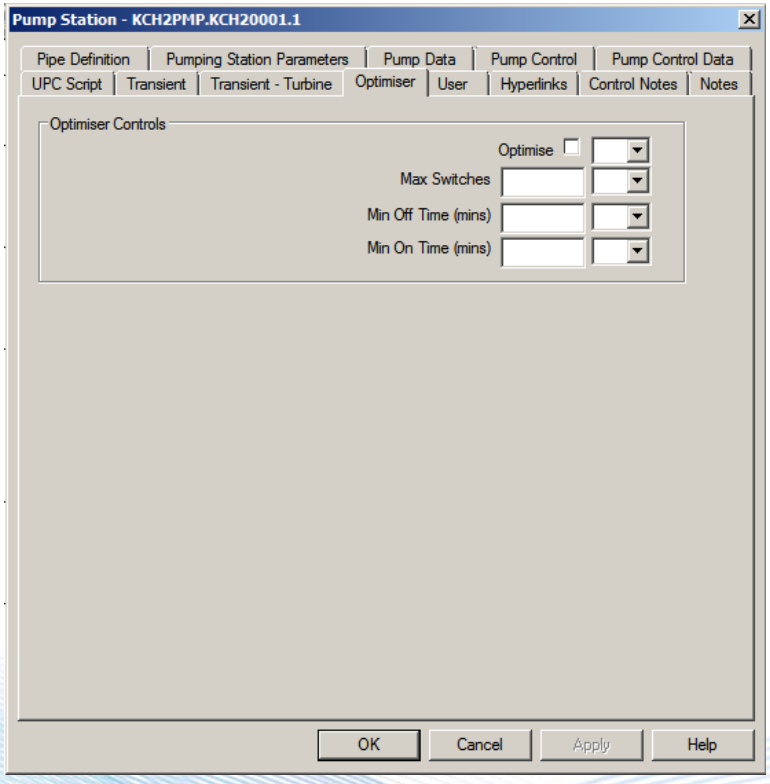
# Optimiser Control Fields

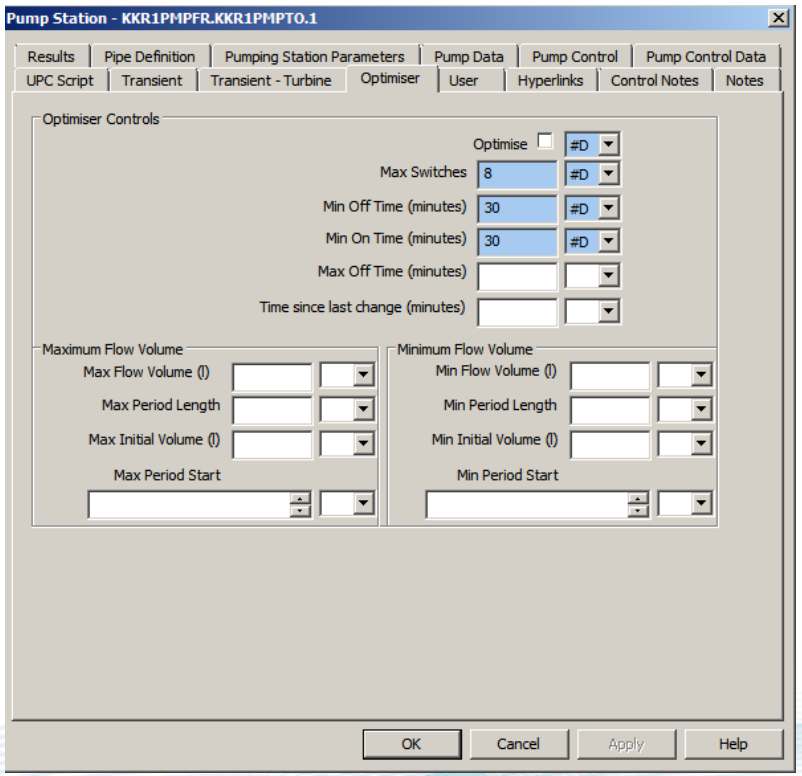
- Max off time - the target maximum time for which the pump can be switched off
- Time since last change - time at start of simulation since previous state change (from on to off, or from off to on)
- Max/Min flow volume fields - used to define target minimum and maximum volume of flow through pump over a given period of time.
- Delay profile change option is used to specify the duration from the start of the simulation before the optimiser is allowed to make any changes to profiles.

# Optimiser Control Fields

Previous parameters




New parameters

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# Improved simulation performance

- Derived results such as minimum and maximum results are now calculated in the simulation rather than during post processing.