Well Performance Monitor (WPM) provides real-time, field-wide production surveillance for Upstream Oil & Gas. Delivering value out of the box helps to maximize recovery and turn data into actionable information for faster and smarter decisions.

Well Performance Monitor (WPM) offers the tools needed to continuously monitor and analyze production issues, and take smarter decisions to optimize production. It helps to detect problems sooner, boost collaboration and improve responses, for safer, more reliable and more efficient operations.

WPM is available in two main versions; an advanced version leveraged on Honeywell’s Intuition® Executive™ (IX), using cutting edge technology to boost enterprise collaboration and user configurability at a superb level; and a lighter version based on other excellent Honeywell technologies; both effective solutions that suits different needs. The advanced version leverages on rich IX features that includes advanced collaboration tools, automated workflows, data federation, and intelligent and fully user configurable dashboards.

**Value out of the Box**

Well Performance Monitor is built to meet users’ requirements from the start. Easily deployable, with an intuitive interface and a range of templated KPI calculations and displays, provides fast implementation and fast return on investment.

WPM is vendor neutral, harnessing the value of existing customer investments by connecting securely using open industry standards to existing 3rd party control systems, data historians, data bases and applications.

Deployable in phases, WPM can grow in functionality as the field evolves. From simple, field production and individual well surveillance and flow rate estimation, to full engineering model integration and workflow automation, WPM satisfies user requirements across the enterprise including engineering, management and operations.

**Typical benefits**

- Early identification of well performance issues to minimize production losses, for a typical 5% production increase
- Production increase between 2-5% through rapid identification and rectification of well or process instability
- Improved well operation, like faster return to optimum after a start-up Quicker identification of well integrity issues to reduce risks to on-site personnel and reduce deferred production
- Increased collaboration across disciplines for better decisions, improving operation efficiency
- Prioritized improvement opportunities, reducing equipment and well downtime where better outcome can be obtained

**Figure 1 Well Dashboard using Intuition® Executive™**

**More Power with Intuition**

Users of the advanced version of WPM, leveraged on IX, can access a range of additional tools and features like:

- **Collaboration:** Use Microsoft® Sharepoint® dashboards for a single shared view of field/well performance in user configurable multi-Web Part workspaces.
Well Performance Monitor - The Complete Solution for Agile Well and Field Surveillance

- **Intelligent displays: Templated** displays adapt automatically to reflect available data and information. Only relevant variables and data appear for trends, graphs, document lists and schematics. Views can be tailored for various user roles.

- **Integration**: Ability to integrate Honeywell’s and 3rd party’s web parts for customizing dashboards, as well as integrating schematics from other Honeywell products or 3rd party widgets.

- **Automation**: Set workflows to capture expert knowledge, standardize and enforce best practices and increase utilization of limited resources. Set triggers to detect problems, generate work orders, assign tasks, and follow up – all automatically.

**Clearer Insight**

WPM’s simple and powerful field overview gives at-a-glance insight into the performance and health of wells across your operation. Color-coded well performance KPIs let users quickly identify and prioritize performance issues (Figure 2). Wells, shown as blocks, are sized according to the selected KPI like oil capacity, and color-coded according to the selected KPI e.g. ratio between estimated oil rate vs. oil capacity to reflect deviation from production capacity. On Figure 2 wells performing as expected will have a green color, wells performing below capacity will have a yellow/red color, and wells performing above capacity (sometimes not desirable) will have a blue color; this helps to easily inspect well performance for the whole field or facility, based on real-time information. A side panel shows summary information from the selected well, and users can filter and click on any well to jump to more detailed views.

**Figure 2: A standard Facility Production overview**

Using WPM, users can also visualize process data, well test data and production data – all in context, with access to the relevant schematics, trends and plots. Summary overviews will help to quickly identify problems and define priorities, with wells grouped according to their field or other characteristics. When spotting issues, users can easily drill down to detailed views for analysis.

WPM gives access to the data in the way engineers need to get better results:

- Compare oil, gas and water rates, metered and virtual, at field and facility levels;
- View well stability and total well uptime; access producer/injector well schematics, trends and plots;
- See pump/motor Performance plots for ESP wells.

**Cleaner Data for Reliable Calculations**

Bad data can lead to bad decisions. WPM’s automatic data cleansing removes bad points from the raw data. Verifications, range checks to remove outliers, identify frozen tags, and filtering to carefully remove noise and nuisances from raw data to ensure high quality data used for a range of KPI calculations:

- Stability benchmarks
- Well mode (stable, unstable, shut-In)
- Well uptime
- Liquid rate estimation, based on –
  - Well engineering models
  - Critical/subcritical choke models
  - Productivity Index model
- Gas injection rate estimation based on critical / subcritical choke models
- Water injection rate estimation based on –
  - Subcritical choke model
  - Injectivity Index model
- Best real time rate estimate generation for oil, water and gas phases
- Pump motor KPIs and diagnostic plots for ESP wells

**Value of Real-Time Virtual Metering**

Traditional well tests provide the key data for assessing and monitoring well performance, as well as validating well models. Even though well tests are periodic, they are discontinuous which might mean significant gaps before performance issues can be detected in the next well test to address them.

WPM’s virtual metering fills those well testing gaps (Figure 3), enabling continuous well surveillance to quickly detect deviations from targets and help engineers and operators to quickly respond to problems. Also the use of well models for virtual metering along with other estimation methods enables the continuous validation of well models, spotting deviations that could indicate the need to update parameters on well models. The latter
improves the quality of well models, for better integrated asset modeling and optimization.

![Diagram](image)

Figure 3: Virtual metering for continuous surveillance, well model validation, and impact on model based optimization

**Integration**

WPM integrates with all commercial DCS, SCADA and data historians. It also connects to production engineering models and 3rd party applications, including Petex and Weatherford well models, and can directly connect to Petex Prosper and IFM for flow rate estimation and well model validation. It also supports all ODBC production databases.

**Optional Modules**

Two optional modules are available:

- **Well test validation**: Capture well tests from the real-time process data stream. Analyze data for stability, calculate average results and export to your official well test repository

- **Water Injection Performance & Diagnostics (WiPD)**: Identify developing water injection issues on injector wells

**Support Services**

Honeywell offers a full service. From the site survey and requirements gathering to pilot deployment, we will fit WPM to your requirements, ensuring integration with existing field automation and data historians and programming/supporting client-specific reports and workflows. We offer a turn-key solution for well performance monitoring.

Well Performance Monitor comes with worldwide, premium support services through our Benefits Guardianship Program (BGP), helping customers improve and extend the usage of their applications and the benefits they deliver.

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**For More Information**

To learn more about Honeywell’s Well Performance Monitor, visit our website [www.honeywellprocess.com/software](http://www.honeywellprocess.com/software) or contact your Honeywell account manager.

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